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1. Correspondence and Communications

1.1 Mailing information

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1.2 Responsible official

Names and title of persons authorized to communicate with EPA and CARB

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2. Durability Group Description

.01 Durability Group Name	FTYXGPGNN62M	FTYXGPGNN62X	FTYXHHGNN625	FTYXGPGNN62U	FTYXGPGNN62K
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Piston	Piston	Hybrid Electric (Piston)	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port Injection	Port Injection	Port Injection	Port Injection	Port Injection
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIS26+3-IIZ23 (tC, CAMRY) 3-IIS31+3-IIZ23 (RAV4)	3-IIZ26+3-IIZ26+ 3-IIh8 (RX 350, SIENNA, HIGHLANDER) 3-IIZ26+3-IIZ26+ 3-IIg13 (VENZA)	3-IIZ19+3-IIZ19+ 3-IIg10	3-IIj3+3-IIj4	3-IIj5+3-IIj4

2. Durability Group Description

.01 Durability Group Name	FTYXHHGNN626	FTYXHHGNN629	FTYXHHGNN628	FTYXGPGNN62J	FTYXGPGNN62A
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Hybrid Electric (Piston)	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port Injection	Port Injection	Port Injection	Port Injection	Port Injection
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIZ19+3-IIS22	3-IIZ19+3-IIS22	3-IIZ27+3-IIS22	3-IIZ30+3-IIZ31	3-IIZ29+3-IIS33

2. Durability Group Description

.01 Durability Group Name	FTYXGPGNN62Y	FTYXHHGNN623	FTYXGPGNN62W	FTYXGPGNN62R	FTYXGPGNN626
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Piston	Hybrid Electric (Piston)	Piston	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port Injection	Port Injection	Port Injection	Chamber Injection	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIS26+3-IIZ23	3-IIS27+3-IIg12	3-IIZ25+3-IIZ25+ 3-IIh8	3-IIZ25+3-IIZ25+ 3-IIZ28+3-IIZ28	3-IIZ25+3-IIZ25+ 3-IIZ23+3-IIZ23

2. Durability Group Description

.01 Durability Group Name	FTYXHHGNN622	FTYXGPGNN621	FTYXHHGNN62C	FTYXGPGNN62N	FTYXGPGNN62Q
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)	Piston	Hybrid Electric (Piston)	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections	Port & Chamber Injections	Port Injection	Port Injection	Port Injection
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIZ27+3-IIZ27+ 3-IIS29+3-IIS29	3-IIS17+3-IIS17+ 3-IIJ1+3-IIJ1	3-IIS27+3-IIg12	3-IIS32+3-IIS35	3-IIS31+3-IIZ23

2. Durability Group Description

.01 Durability Group Name	FTYXGPGNN62C	FTYXGPGNN62D	FTYXHHGNN621	FTYXGPGNN62B	FTYXGPGNN62F
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Piston	Piston	Hybrid Electric (Piston)	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port Injection	Port Injection	Port Injection	Port Injection	Port Injection
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIS32+3-IIg11	3-IIZ25+3-IIZ25+ 3-IIS28+3-IIS28	3-IIZ19+3-IIZ19+ 3-IIg10	3-IIZ25+3-IIZ25+ 3-IIS28+3-IIS28	3-IIS34+3-IIS34+ 3-IIh9+3-IIh9 (TUNDRA) 3-IIS34+3-IIS34+ 3-IIh8+3-IIh8 (GX 460)

2. Durability Group Description

.01 Durability Group Name	FTYXGPGNN62H	FTYXGPGEN621	FTYXHHGNN62B	FTYXGPGNN622	FTYXGPGNN625
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Piston	Piston	Hybrid Electric (Piston)	Piston	Piston
.04 Fuel Used	Gasoline	Gasoline,Ethanol	Gasoline	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port Injection	Port Injection	Port Injection	Port Injection	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith	Monolith	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.				
.08 Range of Catalyst Grouping Statistics (g/l)					
.09 Catalyst Code	3-IIS30+3-IIS30+ 3-IIh9+3-IIh9	3-IIS30+3-IIS30+ 3-IIh9+3-IIh9	3-IIf5+3-IIf6	3-IIS13+3-IIZ5	3-IIS17+3-IIS17+ 3-IIh7+3-IIh7 (LS 460, LS 460 L) 3-IIS18+3-IIS18+ 3-IIJ1+3-IIJ1 (LS 460 AWD, LS 460 L AWD)

2. Durability Group Description

.01 Durability Group Name	FTYXHHGNN624	FTYXGPGNN628
.02 Combustion Cycle	Otto Cycle 4 stroke	Otto Cycle 4 stroke
.03 Engine Type	Hybrid Electric (Piston)	Piston
.04 Fuel Used	Gasoline	Gasoline
.05 Basic Fuel Metering System	Port & Chamber Injections	Port & Chamber Injections
.06 Catalyst Construction	Monolith	Monolith
.07 Precious Metals in Catalyst	Refer to confidential file.	
.08 Range of Catalyst Grouping Statistics (g/l)		
.09 Catalyst Code	3-IIS18+3-IIS18+ 4-IIIk1+4-IIIk1+ 3-IIJ2+3-IIJ2	3-IIZ37+3-IIh36

3. Evaporative/Refueling Family Description

Evap. Family	Carline	Type of vapor storage device	Basic canister design									Vapor hose material
			Working capacity (gram)		Size (cc)		Number / Method of connection	Geometry	Construction	Material	Fuel system	
			Main	Sub	Main	Sub						
FTYXR0115P12	tC	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	COROLLA	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	COROLLA LE ECO	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	xB	Canister	115	/	2230	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0160E52	RX 450h	Canister	160	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	RX 450h AWD	Canister	160	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0165P22	RX 350	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	RX 350 AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	HIGHLANDER	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	HIGHLANDER AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	SIENNA	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	SIENNA AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TACOMA 2WD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TACOMA 4WD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0085P12	iQ	Canister	85	/	1660	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	YARIS	Canister	85	/	1660	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0105P12	CT 200h	Canister	105	/	1790	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	PRIUS v	Canister	105	/	1790	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0110P42	PRIUS	Canister	110	/	1490	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0115J42	PRIUS Plug-in Hybrid	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0120A42	CAMRY	Canister	120	/	2230	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0115A12	CAMRY	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	ES 350	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	AVALON	Canister	115	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0130A42	CAMRY HYBRID LE	Canister	130	/	2037	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	CAMRY HYBRID XLE/SE	Canister	130	/	2037	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	ES 300h	Canister	130	/	2037	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	AVALON HYBRID	Canister	130	/	2037	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0155P12	GS 450h	Canister	155	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
FTYXR0165A12	IS 250 C	Canister	165	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Direct fuel injection	Plastic
	IS 350 C	Canister	165	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
FTYXR0165P12	GS 350	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	GS 350 AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	IS 250	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Direct fuel injection	Plastic
	IS 250 AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Direct fuel injection	Plastic
	IS 350	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	IS 350 AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	RC 350	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	RC 350 AWD	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	RC F	Canister	165	/	2900	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic

3. Evaporative/Refueling Family Description

Evap. Family	Carline	Fuel tank Material	Type of refueling emission control system	Vapor control system	Fill pipe seal mechanism	Purge control system	Carbon filter in the air cleaner box	Key-off monitor system
FTYXR0115P12	tC	Plastic	Integrated	N/A	Liquid seal	Purge control valve	YES	YES*1
	COROLLA	Plastic	Integrated	N/A				
	COROLLA LE ECO	Plastic	Integrated	N/A				
	xB	Plastic	Integrated	N/A				
FTYXR0160E52	RX 450h	Steel	Non-Integrated	Fuel vapor-containment valve				
	RX 450h AWD	Steel	Non-Integrated	Fuel vapor-containment valve				
FTYXR0165P22	RX 350	Plastic	Integrated	N/A				
	RX 350 AWD	Plastic	Integrated	N/A				
	HIGHLANDER	Plastic	Integrated	N/A				
	HIGHLANDER AWD	Plastic	Integrated	N/A				
	SIENNA	Plastic	Integrated	N/A				
	SIENNA AWD	Plastic	Integrated	N/A				
	TACOMA 2WD	Plastic	Integrated	N/A				
	TACOMA 4WD	Plastic	Integrated	N/A				
FTYXR0085P12	iQ	Plastic	Integrated	N/A				
	YARIS	Plastic	Integrated	N/A				
FTYXR0105P12	CT 200h	Plastic	Integrated	N/A				
	PRIUS v	Plastic	Integrated	N/A				
FTYXR0110P42	PRIUS	Plastic	Integrated	N/A				
FTYXR0115J42	PRIUS Plug-in Hybrid	Plastic	Non-Integrated	Fuel vapor-containment valve				
FTYXR0120A42	CAMRY	Steel	Integrated	N/A				
FTYXR0115A12	CAMRY	Steel	Integrated	N/A				
	ES 350	Steel	Integrated	N/A				
	AVALON	Steel	Integrated	N/A				
FTYXR0130A42	CAMRY HYBRID LE	Steel	Integrated	N/A				
	CAMRY HYBRID XLE/SE	Steel	Integrated	N/A				
	ES 300h	Steel	Integrated	N/A				
	AVALON HYBRID	Steel	Integrated	N/A				
FTYXR0155P12	GS 450h	Plastic	Integrated	N/A				
FTYXR0165A12	IS 250 C	Steel	Integrated	N/A				
	IS 350 C	Steel	Integrated	N/A				
FTYXR0165P12	GS 350	Plastic	Integrated	N/A				
	GS 350 AWD	Plastic	Integrated	N/A				
	IS 250	Plastic	Integrated	N/A				
	IS 250 AWD	Plastic	Integrated	N/A				
	IS 350	Plastic	Integrated	N/A				
	IS 350 AWD	Plastic	Integrated	N/A				
	RC 350	Plastic	Integrated	N/A				
	RC 350 AWD	Plastic	Integrated	N/A				
	RC F	Plastic	Integrated	N/A				

*1) 2DBL/3DBL result calculation in case adopting key-off monitor system.
According to the agreement with EPA and CARB at the meeting in March 2003 for CPM/CPP, evaporative emissions by key-off monitor is added to the first day of diurnal test of both 2DBL and 3DBL. It is because that the key-off monitor may work out of DBL test.

3. Evaporative/Refueling Family Description

Evap. Family	Carline	Type of vapor storage device	Basic canister design									Vapor hose material
			Working capacity (gram)		Size (cc)		Number / Method of connection	Geometry	Construction	Material	Fuel system	
			Main	Sub	Main	Sub						
FTYXR0130A22	RAV4	Canister	130	/	2140	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	RAV4 LE/XLE	Canister	130	/	2140	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	RAV4 AWD	Canister	130	/	2140	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	RAV4 Limited AWD	Canister	130	/	2140	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	NX 300h	Canister	130	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	NX 300h AWD	Canister	130	/	2190	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0165A22	VENZA	Canister	165	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	VENZA 4WD	Canister	165	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0190E62	HIGHLANDER HYBRID AWD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	HIGHLANDER HYBRID AWD LE Plus	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0190P32	4RUNNER 2WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	4RUNNER 4WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	GX 460	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	LAND CRUISER WAGON 4WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	LX 570	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	SEQUOIA 2WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	SEQUOIA 4WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	SEQUOIA 4WD FFV	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TUNDRA 2WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TUNDRA 4WD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TUNDRA 4WD FFV	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0300P32	TUNDRA 2WD	Canister	300	/	4700	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TUNDRA 4WD	Canister	300	/	4700	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
	TUNDRA 4WD FFV	Canister	300	/	4700	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0095P12	PRIUS c	Canister	95	/	1490	/	1/-	Box	Closed bottom	PLASTIC	Port fuel injection	Plastic
FTYXR0190A12	LS 460	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	LS 460 AWD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	LS 460 L	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	LS 460 L AWD	Canister	190	/	3000	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
FTYXR0190E12	LS 600h L	Canister	190	/	2950	/	1/-	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
FTYXR0132A22	NX 200t	Canister	130	2	2140	30	2/Series	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	NX 200t AWD	Canister	130	2	2140	30	2/Series	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic
	NX 200t AWD F SPORT	Canister	130	2	2140	30	2/Series	Box	Closed bottom	PLASTIC	Port and Direct fuel injection	Plastic

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3. Evaporative/Refueling Family Description

Evap. Family	Carline	Fuel tank Material	Type of refueling emission control system	Vapor control system	Fill pipe seal mechanism	Purge control system	Carbon filter in the air cleaner box	Key-off monitor system
FTYXR0130A22	RAV4	Steel	Integrated	N/A	Liquid seal	Purge control valve	YES	YES*1
	RAV4 LE/XLE	Steel	Integrated	N/A				
	RAV4 AWD	Steel	Integrated	N/A				
	RAV4 Limited AWD	Steel	Integrated	N/A				
	NX 300h	Steel	Integrated	N/A				
	NX 300h AWD	Steel	Integrated	N/A				
FTYXR0165A22	VENZA	Steel	Integrated	N/A				
	VENZA 4WD	Steel	Integrated	N/A				
FTYXR0190E62	HIGHLANDER HYBRID AWD	Steel	Non-Integrated	Fuel vapor-containment valve				
	HIGHLANDER HYBRID AWD LE Plus	Steel	Non-Integrated	Fuel vapor-containment valve				
FTYXR0190P32	4RUNNER 2WD	Plastic	Integrated	N/A				
	4RUNNER 4WD	Plastic	Integrated	N/A				
	GX 460	Plastic	Integrated	N/A				
	LAND CRUISER WAGON 4WD	Plastic	Integrated	N/A				
	LX 570	Plastic	Integrated	N/A				
	SEQUOIA 2WD	Plastic	Integrated	N/A				
	SEQUOIA 4WD	Plastic	Integrated	N/A				
	SEQUOIA 4WD FFV	Plastic	Integrated	N/A				
	TUNDRA 2WD	Plastic	Integrated	N/A				
	TUNDRA 4WD	Plastic	Integrated	N/A				
	TUNDRA 4WD FFV	Plastic	Integrated	N/A				
FTYXR0300P32	TUNDRA 2WD	Plastic	Integrated	N/A				
	TUNDRA 4WD	Plastic	Integrated	N/A				
	TUNDRA 4WD FFV	Plastic	Integrated	N/A				
FTYXR0095P12	PRIUS c	Plastic	Integrated	N/A				
FTYXR0190A12	LS 460	Steel	Integrated	N/A				
	LS 460 AWD	Steel	Integrated	N/A				
	LS 460 L	Steel	Integrated	N/A				
	LS 460 L AWD	Steel	Integrated	N/A				
FTYXR0190E12	LS 600h L	Steel	Non-Integrated	Fuel vapor-containment valve				
FTYXR0132A22	NX 200t	Steel	Integrated	N/A				
	NX 200t AWD	Steel	Integrated	N/A				
	NX 200t AWD F SPORT	Steel	Integrated	N/A				

*1) 2DBL/3DBL result calculation in case adopting key-off monitor system.

According to the agreement with EPA and CARB at the meeting in March 2003 for CPM/CPP, evaporative emissions by key-off monitor is added to the first day of diurnal test of both 2DBL and 3DBL. It is because that the key-off monitor may work out of DBL test.

4. Durability Procedure Description

4.1 Exhaust durability test procedure

Please refer to the CBI common file.

4.2 Exhaust emission deterioration factors

Please refer to Certification Summary Information Report in section 7 of the each test group file.

4.3 Evap/refueling durability test procedure

Please refer to the CBI common file.

4.4 Evap/refueling emission deterioration factors

Please refer to Certification Summary Information Report in section 7 of the each test group file.

4.5 Equivalency factor

Durability Group	Model	Test Group	Equivalency factor
FTYXGPGNN62M	tC	FTYXV02.5BEB	0.81*1
	CAMRY	FTYXJ02.5BEL	0.89*1
	RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD		1.06*1
FTYXGPGNN62X	RX 350, RX 350 AWD	FTYXT03.5BER	0.82*1
	HIGHLANDER, HIGHLANDER AWD		0.90*1
	VENZA, VENZA 4WD		0.88*1
	SIENNA, SIENNA AWD		0.98*1
FTYXHHGNN625	RX 450h, RX 450h AWD	FTYXT03.5CC4	1.23*2
FTYXGPGNN62U	iQ	FTYXV01.3BEA	1.22*1
FTYXGPGNN62K	YARIS	FTYXV01.5BEB	0.84*1
FTYXHHGNN626	PRIUS	FTYXV01.8HC3	1.15*2
FTYXHHGNN629	CT 200h	FTYXV01.8CCU	0.94*2
	PRIUS v		1.03*2
FTYXHHGNN628	PRIUS Plug-in Hybrid	FTYXV01.8HCU	1.37*2
FTYXGPGNN62J	COROLLA	FTYXV01.8BEC	0.90*1
FTYXGPGNN62A	COROLLA LE ECO	FTYXV01.8MEA	0.81*1
FTYXGPGNN62Y	CAMRY	FTYXV02.5BED	0.89*1
FTYXHHGNN623	CAMRY HYBRID LE, CAMRY HYBRID XLE/SE	FTYXV02.5HC3	0.84*2
	ES 300h	FTYXV02.5CC4	
	AVALON HYBRID		
FTYXGPGNN62W	CAMRY	FTYXV03.5BEC	0.99*1
	ES 350		0.97*1
	AVALON		1.09*1
FTYXGPGNN62R	IS 250, IS 250 AWD, IS 250 C	FTYXV02.5BEC	0.98*1

Note *1: U02/SRC
Note *2: 9LAP/SRC

4.5 Equivalency factor

Durability Group	Model	Test Group	Equivalency factor
FTYXGPGNN626	IS 350, IS 350 AWD, IS 350 C	FTYXV03.5BEB	1.13*1
	GS 350 AWD, GS 350*4		1.01*1
	RC 350, RC 350 AWD		
	GS 350*3	FTYXV03.5BED	1.01*1
FTYXHHGNN622	GS 450h	FTYXV03.5CC4	1.55*2
FTYXGPGNN621	RC F	FTYXV05.0MEA	0.93*1
FTYXHHGNN62C	NX 300h, NX 300h AWD	FTYXT02.5PCM	1.00*2
FTYXGPGNN62N	HIGHLANDER	FTYXT02.7BEN	0.74*1
FTYXGPGNN62Q	VENZA, VENZA 4WD	FTYXT02.7BEP	0.87*1
FTYXGPGNN62C	TACOMA 2WD/4WD	FTYXT02.7BER	1.06*1
FTYXGPGNN62D	TACOMA 2WD/4WD	FTYXT04.0BEM	1.02*1
FTYXHHGNN621	HIGHLANDER HYBRID AWD, HIGHLANDER HYBRID AWD LE Plus	FTYXT03.5CCU	1.09*2
FTYXGPGNN62B	4RUNNER 2WD/4WD	FTYXT04.0BES	1.01*1
FTYXGPGNN62F	TUNDRA 2WD/4WD	FTYXT04.6BEW	0.90*1
	GX 460	FTYXT04.6BEX	0.82*1
FTYXGPGNN62H	LAND CRUISER WAGON 4WD	FTYXT05.7BEY	1.17*1
	LX 570		
	SEQUOIA 2WD/4WD		1.10*1
	TUNDRA 2WD/4WD	FTYXT05.7BEW	1.10*1
FTYXGPGEN621	SEQUOIA 4WD FFV	FTYXT05.7XE8	1.13*1
	TUNDRA 4WD FFV		
FTYXHHGNN62B	PRIUS c	FTYXV01.5CC4	1.06*2
FTYXGPGNN622	xB	FTYXV02.4BEB	1.06*1
FTYXGPGNN625	LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD	FTYXV04.6BEA	0.99*1
FTYXHHGNN624	LS 600h L	FTYXV05.0CC4	1.04*2
FTYXGPGNN628	NX 200t, NX 200t AWD, NX 200t AWD F SPORT	FTYXT02.0KEM	1.04*1

Note *1: U02/SRC
Note *2: 9LAP/SRC
Note *3: Before Running Change 15-TR-17
Note *4: After Running Change 15-TR-17

5. Test Group Description

Please refer to each test group file.

6. Test Vehicle Description

Please refer to each test group file.

7. Test Results

Please refer to each test group file.

8. Emission testing waiver statements

8.1 Statement of Compliance

TOYOTA MOTOR CORPORATION states that:

A Pursuant to 40CFR§86.1810-01(a)(1), Toyota states;
Any element of design, system or emission control device installed on or incorporated in our new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of our information and belief, cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk to public health or welfare except as specifically permitted by the standards prescribed under section 202 of the Clean Air Act. We further state that any element of design, system or emission control device installed on or incorporated in our new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of our information and belief, cause or contribute to an unreasonable risk to public safety.

"The term pollutant means:

a. Diesel particulates
b. Nickel
c. MMT combustion products
d. Ammonia
e. Sulfates
f. Hydrogen sulfide
g. Hydrogen cyanide
h. Ruthenium combustion products
i. Nitrosamines

or any other pollutant which we have identified which can reasonably be expected to be emitted from these vehicles."

B Pursuant to 40CFR§86.1810-01(a)(2), Toyota states;
Such system will not, in its operation, function or malfunction, result in any unsafe condition endangering the motor vehicle, its occupants, or persons or property in close proximity to the vehicle, except under the following reasonably foreseeable conditions of malfunction, abuse or misuse of the vehicle equipped with catalytic converter:

(1) Certain engine malfunctions caused by vehicle abuse, misuse, tampering or significant failure to perform essential maintenance, particularly involving the electrical (or electronic), fuel injection or ignition system, must result in large amounts of unburned fuel reaching the catalytic converter, which could cause the converter to overheat. Such malfunction will cause engine misfires, noticeable loss of performance or other unusual operating conditions.
In this event, occupants are cautioned in the Owner's Manual to discontinue operation of the vehicle and have the vehicle serviced.

(2) Parking or stopping the vehicle at the place where flammable materials, such as dry grass, waste paper or rags may come in contact with the exhaust system, may ignite such materials.
A caution against such parking and stopping is given in the Owner's Manual.

(3) Pushing or towing the vehicle to start the engine, running out of fuel so as to cause intermittent fuel supply to engine or coasting with the ignition key off could cause the catalytic converter to overheat.
Cautions against such events are contained in the Owner's Manual.

(4) Under the conditions described in B (1), (2) and (3) above, disregard of these cautions could result in damage to the converter, to the vehicle or to the property in close proximity to the vehicle.

C. Pursuant to 40CFR§86.1810-01(b), Toyota states;
Such system will provide safe vehicle driveability characteristics within the physically adjustable range of each adjustable parameter.
In our opinion, based on engineering tests and judgments, Toyota Vehicles meet the requirements of applicable emission regulations and will not represent a risk to motor vehicle safety.

D. Pursuant to 40CFR§86.1809-10(d)(2)(ii), Toyota states;
The applicable test group complies with CFR §86.1811-10(g)(1) in regards to defeat devices for CO emissions at intermediate cold temperatures since the CO emissions at these intermediate points can be considered less than the line connecting the cold CO limit at 25°F and the FTP limit at 68°F. This is because the cold temperature CO emissions are determined by the temperature of the engine coolant when the engine is started and the amount of fuel enrichment. Generally, the colder the engine coolant temperature, the richer the air/fuel ratio and the greater the amount of fuel enrichment.
Therefore, the amount of CO emissions are greater for colder coolant temperatures since the amount of injected fuel is greater and the time between engine start and the activation of the air/fuel ratio feedback is longer;
The applicable test group complies with CFR §86.1811-10(g)(2) in regards to defeat devices for NMHC emissions at intermediate cold temperatures since the NMHC emissions at these intermediate points can be considered less than the line connecting the NMHC FEL pass limit (e.g. 0.3499 g/mi for a 0.3 g/mi FEL) applicable at 20 °F and the Tier 2 NMOG standard to which the vehicle was certified at 68 °F. This is because the cold temperature NMHC emissions are determined by the temperature of the engine coolant when the engine is started and the amount of fuel enrichment. Generally, the colder the engine coolant temperature, the richer the air/fuel ratio and the greater the amount of fuel enrichment.
Therefore, the amount of NMHC emissions are greater for colder coolant temperatures since the amount of injected fuel is greater and the time between engine start and the activation of the air/fuel ratio feedback is longer.

E. Pursuant to 40CFR§86.1603(b), Toyota has determined that the vehicles within this test group are exempted from the requirements of submitting altitude performance adjustment instructions. All of vehicles within this test group have oxygen sensors which maintain a stoichiometric air-fuel ratio at all altitude conditions.

8.1 Statement of Compliance

F. The vehicles and engines with respect to which data are being submitted, are in all material respects as described in the Application for Certification, have been tested in accordance with the applicable test procedures utilizing the fuels and equipment described in the Application; these vehicles and engines meet the requirements of such tests and on the basis of such tests, they conform to the requirements of the regulations.

G. Pursuant to 40CFR§86.1844-01 (d)(16),
For Tier 2 and interim non-Tier 2 vehicles other than vehicles whose certification is carried over from the NLEV program or carried across from the California LEV I program, Toyota has conducted an engineering analysis of the complete exhaust system to ensure that the exhaust system has been designed: (A) to facilitate leak-free assembly, installation and operation for the full useful life of the vehicles; and (B) to facilitate that such repairs as might be necessary on a properly maintained and used vehicle can be performed in such a manner as to maintain leak-free operation, using tools commonly available in a motor vehicle dealership or independent repair shop for the full useful life of the vehicle.

H. Based on Toyota's good engineering judgement, all the vehicle described in this Application for Certification comply with all applicable intermediate and full useful life standards.

I. Pursuant to 40CFR§86.1810-09(f)(2), for vehicles that comply with the cold temperature NMHC standards, Toyota states that common calibration approaches and auxiliary emission control device (AECD) at low altitude for all light-duty vehicles and light-duty trucks are utilized at high altitude.

J. Toyota has a responsibility to make sure that an emission control system will not cause or contribute to an unreasonable risk to public health, welfare or safety in its operation or function under sections 202(a)(4) and 206(a)(3) of the Clean Air Act.

K. Toyota states, based on Toyota's good engineering judgment and available information, that the emission control devices on our vehicles or engines are durable and are designed and will be manufactured to operate properly and in compliance with all applicable requirements for the full useful life (or allowable maintenance interval) of the vehicles or engines.

L. Pursuant to 40CFR§86.1810-01(i)(6), Toyota states that the air to fuel ratio is not be richer at any time than the leanest air to fuel mixture required to obtain maximum torque (lean best torque), plus a tolerance of six percent, except the additional enrichment needed to protect the engine or emissions control hardware.

8.2 Emission Testing Waiver Statement

TOYOTA MOTOR CORPORATION states that:

A. Pursuant to 40 CFR §86.1829-01(b)(1)(ii)(B) and (2)(ii)(B), we have conducted high-altitude testing and, based on the engineering evaluation, all vehicles in these test groups comply with all of the emission standards except SFTP standards at high altitude.

B. Pursuant to 40 CFR §86.1829-01(b)(1)(iii)(B), Toyota states that all light-duty vehicles and light-duty trucks comply with the particulate emission standards based on our good engineering evaluation.

C. Pursuant to VPCD-97-01, we attest, based on the engineering evaluation, the city and highway fuel economy test result differences between comparing 91 RON operation and 96 RON operation is within 3%, and there are no emissions increases (beyond normal test variability) using 91 RON fuel when tested on the FTP (or SFTP as applicable).

D. Pursuant to 40 CFR §86.1829-01(b)(4)(i)(B), Toyota states that all light-duty vehicles and light-duty trucks comply with the CST emission standards based on our good engineering evaluation.

E. Pursuant to 40 CFR §86.1829-01(b)(1)(iii)(E), Toyota states that all gasoline Tier 2 and interim non – Tier 2 vehicles comply with the applicable formaldehyde (HCHO) emissions standards based on our good engineering judgment.

F. Pursuant to 40 CFR §86.1829-01(b)(2)(iii), we have conducted 2DBL Evap testing and, based on the engineering evaluation, all vehicles in this Evap group comply with the emission standards at 2DBL Evap.

G. Pursuant to 40 CFR §86.1829-01(b)(1)(iii)(C), Toyota states that, in lieu of testing a certification light-duty vehicle or light-duty truck for total hydrocarbon emissions, such vehicles comply with the applicable standards based on previous emission tests, development tests, or other appropriate information.

H. Pursuant to 40 CFR §86.1829-01(b)(5)(ii), Toyota states that, in lieu of testing light trucks for idle CO emissions, based on our engineering evaluation of such idle CO testing as we deem appropriate, all light-duty trucks comply with the idle CO emission standards.

I. Pursuant to 40 CFR §86.1829-15(d)(6), Toyota states that, for the 2012 through 2016 model years, in lieu of testing a vehicle for N2O emissions, such vehicles comply with the applicable standards based on previous emission tests, development tests, or other appropriate information and good engineering judgment.

J. Pursuant to 40 CFR §86.1810-01(l)(1), Toyota states that, the vehicles certified to the refueling emission standards inherently comply with the fuel dispensing spitback standard based on our good engineering evaluation.

9. OBD System Description

9.1 General Description

General method of detecting malfunctions for each emission related-component

By analyzing the signals from various sensors, the ECM detects system malfunctions and failures. The ECM stores the diagnostic fault codes associated with each malfunction upon detection. The fault code is not erased unless the battery terminal is taken off or sending erasing command by the diagnostic scan tool or the same fault is not re-registered during 40 engine warm-up cycles.

(a) Malfunction indicator light
A malfunction indicator lamp (MIL) informs the driver of system malfunctions or failures. The MIL turns on when a fault is detected. The MIL remains illuminated unless the following conditions are met:

(1) Misfire or Fuel System Malfunctions: The malfunction does not recur when monitored during three subsequent sequential driving cycles in which conditions are similar to those under which the malfunction was first determined.

(2) Other Emission-related Component/System Malfunctions: The malfunction does not recur and no other malfunction has been identified in three subsequent sequential trips.

(b) Output of diagnostic trouble code

(1) Diagnostic trouble codes stored in the ECM can be read by the scan tool connected to the on-board data link connector.

(c) Back-up function
When the microprocessor fails, a back-up circuit takes over to provide minimal driveability. If the ECM detects an improper temperature sensor signal, the data is replaced with an alternate value and the MIL is simultaneously activated.

(d) Signal access
The required freeze frame information, calculated load value, diagnostic trouble codes, engine coolant temperature and others are provided through the serial data port on the standardized data link connector. This data is standardized according to SAE J1850 or ISO 9141-2 and SAE J1979.

9.2 Summary Table

Please refer to the CBI common file..

10. Description of Alternate-fueled Vehicles

Dedicated alternate fuel vehicles

In 2015MY Toyota has no plans to introduce any dedicated alternate fueled vehicles.

Flexible fuel vehicles

In 2015MY Toyota introduces flexible fueled vehicles.

11. Auxiliary Emission Control Devices (AECD) Descriptions

Please refer to the CBI common file.

12. Test Parameters

12.1 Engine starting procedures

(i) Preparation

Manual transmission
Shift into neutral and hold down the clutch pedal until the engine starts.
Automatic transmission
Depress the brake pedal until driving off.
Put the gear selector in "P" or "N" range.

(ii) Engine start

In case of key type
Turn the “key” to start poison
In case of push button type
Be equipped with “key” and push the “START STOP BUTTON” (=engine switch)

12.1.1 Preparation for Toyota HV's tests on the 2WD/4WD dynamo with customer's vehicle.

						2WD dynamo				4WD dynamo			
						for driving		for road load investigation and setting		for driving		for road load investigation and setting	
Model name	Drive	System start by	Engine start at cold start	Engine start at hot start	Indication when system ready	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *2) How to set "Special Mode"**	Indication on instrumental panel	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *2) How to set "Special Mode"**	Indication on instrumental panel
RX 450h	FF	Power Button	No	No	READY	**Type a**	FWD CERTIFICATION MODE	**Type A**	FWD MAINTENANCE MODE	**Type a**	FWD CERTIFICATION MODE	**Type A**	FWD MAINTENANCE MODE
RX 450h AWD	E-4WD	Power Button	No	No	READY	**Type a**	FWD CERTIFICATION MODE	**Type A**	FWD MAINTENANCE MODE	**Type b**	AWD CERTIFICATION MODE	**Type B**	AWD MAINTENANCE MODE
PRIUS	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
CT 200h	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
PRIUS Plug-in Hybrid	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
ES 300h	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
CAMRY HYBRID LE CAMRY HYBRID XLE/SE	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
GS 450h	FR	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
NX 300h	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
NX 300h AWD	E-4WD	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type b**	CERTIFICATION MODE	**Type B**	MAINTENANCE MODE
HIGHLANDER HYBRID AWD, HIGHLANDER HYBRID AWD LE Plus	E-4WD	Power Button Key	No	No	READY	**Type a**	FWD CERTIFICATION MODE	**Type A**	FWD MAINTENANCE MODE	**Type b**	AWD CERTIFICATION MODE	**Type B**	AWD MAINTENANCE MODE
PRIUS c	FF	Power Button Key	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
PRIUS v	FF	Power Button	No	No	READY	**Type a**	"Hybrid System Warning Light"flashes with a period of two seconds.	**Type A**	"Hybrid System Warning Light"flashes with a period of one second.	**Type a**	"Hybrid System Warning Light"flashes with a period of two seconds.	**Type A**	"Hybrid System Warning Light"flashes with a period of one second.
AVALON HYBRID	FF	Power Button	No	No	READY	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE	**Type a**	CERTIFICATION MODE	**Type A**	MAINTENANCE MODE
LS 600h L	4WD	Power Button	Yes	No	READY	**Type b**	AWD CERTIFICATION MODE	**Type B**	AWD MAINTENANCE MODE	**Type b**	AWD CERTIFICATION MODE	**Type B**	AWD MAINTENANCE MODE

***1) How to set "Special Mode" before drive on the dynamo.**

Type a

1	Shift to "P" range
2	Turn IG off
3	Release brake pedal
4	Turn IG on
5	Push and hold brake pedal
6	Depress accel pedal deeply x 3
7	Shift to "N" range
8	Depress accel pedal deeply x 3
9	Shift to "P" range
10	Depress accel pedal deeply x 3
11	Confirm that indication on instrumental panel becomes same as above list.
12	Press "POWER" button / Turn "Key"
13	Confirm the indication as "READY"

Type b

1	Shift to "P" range
2	Turn IG off
3	Release brake pedal
4	Turn IG on
5	Push and hold brake pedal
6	Depress accel pedal deeply x 5
7	Shift to "N" range
8	Depress accel pedal deeply x 5
9	Shift to "P" range
10	Depress accel pedal deeply x 5
11	Confirm that indication on instrumental panel becomes same as above list.
12	Press "POWER" button / Turn "Key"
13	Confirm the indication as "READY"

***2) How to set "Special Mode" before road load investigation and setting.**

Type A

1	Shift to "P" range
2	Turn IG off
3	Release brake pedal
4	Turn IG on
5	Push and hold brake pedal
6	Depress accel pedal deeply x 2
7	Shift to "N" range
8	Depress accel pedal deeply x 2
9	Shift to "P" range
10	Depress accel pedal deeply x 2
11	Confirm that indication on instrumental panel becomes same as above list.
12	Press "POWER" button / Turn "KEY"
13	Confirm the indication as "READY"

Type B

1	Shift to "P" range
2	Turn IG off
3	Release brake pedal
4	Turn IG on
5	Push and hold brake pedal
6	Depress accel pedal deeply x 4
7	Shift to "N" range
8	Depress accel pedal deeply x 4
9	Shift to "P" range
10	Depress accel pedal deeply x 4
11	Confirm that indication on instrumental panel becomes same as above list.
12	Press "POWER" button / Turn "KEY"
13	Confirm the indication as "READY"

12.1.2 Preparation for Toyota CVT vehicle's tests on the 2WD/4WD dynamo with customer's vehicle.

		2WD dynamo				4WD dynamo			
		for driving		for road load investigation and setting		for driving		for road load investigation and setting	
Model name	Drive	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *2) How to set "Special Mode"**	Indication on instrumental panel	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *2) How to set "Special Mode"**	Indication on instrumental panel
COROLLA, COROLLA LE ECO	FF	**Type a**	"D" range indication is turned off in 2 seconds after the operation "6" described below.	**Type A**	"D" range indication is turned off in 2 seconds after the operation "6" described below.	**Type a**	"D" range indication is turned off in 2 seconds after the operation "6" described below.	**Type A**	"D" range indication is turned off in 2 seconds after the operation "6" described below.
iQ	FF	**Type a**	"D" range indication is turned off in 2 seconds after the operation "6" described below.	**Type A**	"D" range indication is turned off in 2 seconds after the operation "6" described below.	**Type a**	"D" range indication is turned off in 2 seconds after the operation "6" described below.	**Type A**	"D" range indication is turned off in 2 seconds after the operation "6" described below.

***1) How to set "Special Mode" before drive on the dynamo.**

Type a

1 Turn IG on
2 Shift to "N" range
3 Short-circuit TC terminal (similar to inspection of diagnosis)
4 Push and hold brake pedal and accel pedal during the following "5" and "6"
5 Shift to "R" range and shift back to "N" range. Repeat this five times.
6 Shift to "D" range
"5" and "6" above means "N→R→N→R→N→R→N→R→N→R→N→D".
7 Confirm D range indication is turned off in 2 seconds after the operation "6" described above.
8 Shift to "N" range
9 Release brake pedal and accel pedal
10 Stop short-circuit of TC terminal
11 Start engine. (Do not turn off IG/ignition switch before start engine.)

***2) How to set "Special Mode" before road load investigation and setting.**

Type A

1 Turn IG on
2 Shift to "N" range
3 Short-circuit TC terminal (similar to inspection of diagnosis)
4 Push and hold brake pedal and accel pedal during the following "5" and "6"
5 Shift to "R" range and shift back to "N" range. Repeat this five times.
6 Shift to "D" range
"5" and "6" above means "N→R→N→R→N→R→N→R→N→R→N→D".
7 Confirm D range indication is turned off in 2 seconds after the operation "6" described above.
8 Shift to "N" range
9 Release brake pedal and accel pedal
10 Stop short-circuit of TC terminal
11 Start engine. (Do not turn off IG/ignition switch before start engine.)

12.1.3 Preparation for Toyota Non-HV's tests on the 2WD dynamo with customer's vehicle.

		for driving		for road load investigation and setting	
Model name	Drive	**(see *1) How to set "Special Mode"**	Indication on instrumental panel	**(see *1) How to set "Special Mode"**	Indication on instrumental panel
RC F	FR	**Type c**	N/A*2	**Type c**	N/A*2
NX 200t, NX 200t AWD, NX 200t AWD F SPORT	FF	**Type c**	CDY-2	**Type c**	CDY-2

***1) How to set "Special Mode" before drive on the dynamo.**

Type c

Steps 5-13 must be conducted within 30 seconds.

1 Ensure foot is not on the brake pedal
2 Shift to "P"
3 Turn IG off
4 Depress parking brake (pedal or button) to turn it on
5 Turn IG on
6 Depress parking brake (pedal or button) to turn it off
7 Depress the accelerator pedal to the floor twice
8 Depress parking brake (pedal or button) to turn it on
9 Depress the accelerator pedal to the floor twice
10 Depress parking brake (pedal or button) to turn it off
11 Depress the accelerator pedal to the floor twice
12 Depress parking brake (pedal or button) to turn it on
13 Depress parking brake (pedal or button) to turn it off
14 Confirm "CDY-2" is displayed on the dashboard, or VSC=OFF lamp is illuminated

*2) Confirm VSC=OFF lamp is illuminated

12.2 Shifting

1) Manual transmission

(a) Idling

Idle modes shall be run with transmission in gear and with clutch disengaged (except first idle).

(b) Acceleration

Acceleration modes shall be run in accordance with the upshift speeds on the Table in section 12.3.

(c) Deceleration

Deceleration modes shall be run with the clutch engaged and without shifting the gear from the previous mode.

For those modes which decelerate to zero, the clutch shall be depressed when the speed drops below 15 mph.

(d) Downshifting

The vehicle shall be shifted down during the transient from the speed less than the downshift speed on the Table in section 12.3 to the acceleration mode.

2) Automatic transmission

All test conditions shall be run with the transmission in "Drive".

Idle modes shall be run with the transmission in "Drive" and the wheels braked (except first idle).

Note for PRIUS, PRIUS Plug-in Hybrid, CT 200h and PRIUS v

- "Parking" range is selected by pushing "P" button.
- Shift lever operation from "Parking" must be done with depressing the brake pedal, otherwise "Parking" is held.
- Shift lever always return to neutral position (not "Neutral range position") after every shift lever operation.

12.3 Shift schedules

1) Shift point for FTP

	Acceleration up-shift speed							Cruising up-shift speed							Special up-shift speed							Down shift time(sec.)-Gears								
No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8									
FT4	15	25	40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187;3-2	840;3-2							
FT5	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187;3-2	840;3-2							
FT6	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187;3-2	840;3-2							
0059	15	25	40	45	N/A	N/A	N/A	15	25	40	45	N/A	N/A	N/A	N/A	40	47	54	N/A	N/A	N/A	187;3-2	840;3-2							
0061	15	25	40	45	N/A	N/A	N/A	15	25	40	45	N/A	N/A	N/A	N/A	36	45	55	N/A	N/A	N/A	187;3-2	840;3-2							
0067	13	24	33	41	47	N/A	N/A	8	14	25	34	41	N/A	N/A	15	25	40	45	50	N/A	N/A	187;3-2	825;5-4	840;4-2	990;4-3	1089;4-3				
0074	14	25	35	44	N/A	N/A	N/A	8	16	28	37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187;3-2	840;4-2	909;4-3	990;4-3					
0075	15	25	37	44	NA	N/A	N/A	7	18	29	39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187;3-2	840;4-2	890;4-3						
0076	14	24	34	43	N/A	N/A	N/A	8	17	27	36	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55;3-2	187;3-2	472;5-4	588;3-2	841;4-2	866;4-3	900;4-3	982;4-3	
0080	15	23*1,2	40*2	45*2	N/A	N/A	N/A	15	23	28	40	N/A	N/A	N/A	N/A	25/40	47	54	N/A	N/A	N/A	187;3-2								
0081	15	23*3	40	45	N/A	N/A	N/A	15	23	28	40	N/A	N/A	N/A	N/A	25	N/A	N/A	N/A	N/A	N/A	187;3-2								
0085	15	25	40	45	50	N/A	N/A	15	20	28	34	43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55;3-2	187;3-2	217;6-5	791;4-3	840;4-2	868;4-3	889;4-3	990;4-3	
0092	15	25	40	45	50	55	60	15	25	40	45	50	55	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	187;3-2	840;3-2							
0095	13	22	31	40	48	N/A	N/A	7	14	25	34	41	N/A	N/A	15	25	40	45	50	N/A	N/A	43;3-2	55;3-2	81;4-3	187;3-2	592;3-2	840;5-2	919;4-3	990;4-3	1089;4-3

*1: Under cold engine conditions (1st hill in FTP), up-shifts delay to match standard shift speed.

*2: During 2nd acceleration in 2nd hill of FTP, up-shifts delay to match speeds.

*3: Under cold engine conditions (1st and 2nd hill in FTP), up-shifts delay to match standard shift speed.

2) Shift point for HWY

	Acceleration up-shift speed							Cruising up-shift speed							Down shift time(sec.)-Gears				
No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8					
HW4	15	25	40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
HW5	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
HW6	15	25	40	45	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0007	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	297;5-3				
0024	15	23	40	45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	297;5-3				
0068	13	24	33	41	47	N/A	N/A	8	14	25	34	41	N/A	N/A	297;6-3				
0071	14	25	35	44	N/A	N/A	N/A	8	16	28	37	N/A	N/A	N/A	50;5-4	297;5-3			
0073	15	25	37	44	N/A	N/A	N/A	7	18	29	39	N/A	N/A	N/A	297;5-3				
0077	14	24	34	43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	50;5-4				
0084	15	25	40	45	50	N/A	N/A	15	20	28	34	43	N/A	N/A	50;5-3	142;6-5	211;6-5	296;6-3	323;6-5
0086	15	25	34	42	48	N/A	N/A	15	25	33	37	41	N/A	N/A	50;5-4	142;6-5	215;6-4	297;6-3	
0093	15	25	40	45	50	55	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0096	13	22	31	40	48	N/A	N/A	7	14	25	34	41	N/A	N/A	49;5-4	142;6-5	215;6-5	296;6-3	

12.3 Shift schedules

3) Shift point for SC03 mode

	Acceleration up-shift speed					Cruising up-shift speed					Down shift time(sec.)-Gears		
No.	1-2	2-3	3-4	4-5	5-6	1-2	2-3	3-4	4-5	5-6			
0028	15	23	40	45	N/A	15	23	28	40	N/A	66;3-2	121;4-2	432;4-3
0041	15	25	40	N/A	N/A	15	25	40	N/A	N/A	121;3-2		
0044	15	25*4	40*5	45*6	N/A	N/A	N/A	N/A	N/A	N/A	66;2-1	85;2-1	121;3-1
0052	15	25	40	45	N/A	N/A	N/A	N/A	N/A	N/A	121;3-2		
0054	15	25	40	45	50	15	25	40	45	N/A	121;3-2		
0056	15	25	40	45	N/A	15	25	40	45	N/A	121;3-2		

*4: Up-shifts delay to 36mph during 2nd and 3rd hill.
*5: Up-shifts delay to 45mph during 2nd and 3rd hill.
*6: Up-shifts delay to 55mph during 2nd and 3rd hill.

4) Shift point for US06 mode

	Acceleration up-shift speed							Cruising up-shift speed							Down shift Gears						
No.	1-2	2-3	3-4	4-5	5-6	6-7	7-8	1-2	2-3	3-4	4-5	5-6	6-7	7-8							
0053	21	40*7	56*8	80	N/A	N/A	N/A	16	29	42	60	N/A	N/A	N/A	82;4-3	185;5-4	283;5-4	314;5-4	514;2-1	530;2-1	546;2-1
0062	15	25	40	45	N/A	N/A	N/A	15	25	40	45	N/A	N/A	N/A	514;3-2	530;3-1	546;3-1				
0063	15	25	40	45	50	N/A	N/A	15	25	40	45	50	N/A	N/A	514;3-2	530;3-1	546;3-1				
0064	24	44	64	80	N/A	N/A	N/A	24	44	64	80	N/A	N/A	N/A	514;2-1	530;2-1	546;2-1				
0065	22	36	48	61	75	N/A	N/A	17	27	41	53	62	N/A	N/A	514;2-1	530;2-1	546;2-1				
0066	22	36	43	57	66	N/A	N/A	16	27	37	50	57	N/A	N/A	81;5-4	185;5-4	514;2-1	530;2-1	546;2-1		
0078	15	25	40	N/A	N/A	N/A	N/A	15	25	40	N/A	N/A	N/A	N/A	514;3-2	530;3-1	546;3-1				
0079	23	37	47	70	N/A	N/A	N/A	17	28	41	60	N/A	N/A	N/A	166;5-4	283;5-4	514;3-2	530;3-1	546;3-1		
0082	21	35	46	65	85	N/A	N/A	15	26	39	56	73	N/A	N/A	81;5-4	185;5-4	514;2-1	530;2-1	546;2-1		
0090	25	38	45	60	75	N/A	N/A	25	38	45	60	64.3	N/A	N/A	514;2-1	530;2-1	546;2-1				
0091	24	44	64	80	N/A	N/A	N/A	15	25	40	45	N/A	N/A	N/A	185;4-3	514;2-1	530;2-1	546;2-1			
0094	15	25	40	45	50	55	60	15	25	40	45	50	55	60	514;3-2	530;3-1	546;3-1				
0097	21	40	50	70	85	N/A	N/A	15	26	39	56	73	N/A	N/A	82;5-4	188;5-4	348;6-5	514;2-1	530;2-1	546;2-1	

*7: Up-shifts delay to 45mph during 2nd, 3rd and 5th hill.
*8: Up-shifts delay to 70mph during 2nd hill.

This shift point is based on Advisory Circular No. 72A.IV.2

12.3 Shift schedules

Applicable Test Group

Test Group	Model	TM	Low-altitude		High-altitude		Highway	SC03	US06
			FTP	Cold CO /NMHC	FTP	Cold CO			
FTYXV02.5BEB	tC	M6	0085	FT6	FT6	FT6	0084	0054	0082
		S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT03.5BER	RX 350, RX 350 AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	RX 350 AWD	S8	0092	0092	0092	0092	0093	0054	0094
	HIGHLANDER, HIGHLANDER AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	VENZA, VENZA 4WD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	SIENNA, SIENNA AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT03.5CC4	RX 450h, RX 450h AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXV01.5BEB	YARIS	M5	FT5	FT5	0059	0059	0007	0056	0091
FTYXV01.8BEC	COROLLA	S7	0092	0092	0092	0092	0093	0054	0097
		M6	0095	FT6	FT6	FT6	0096	0054	0097
FTYXV02.5BED	CAMRY	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXV02.5CC4	ES 300h	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	AVALON HYBRID	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXV03.5BEC	CAMRY	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	ES 350	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	AVALON	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXV02.5BEC	IS 250, IS 250 AWD, IS 250 C	S6	FT6	FT6	FT6	FT6	HW6	0054	0065
FTYXV03.5BEB	IS 350	S8	0092	0092	0092	0092	0093	0054	0094
	RC 350	S8	0092	0092	0092	0092	0093	0054	0094
	IS 350 AWD, IS 350 C	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	GS 350 AWD, GS 350*2	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	RC 350 AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXV03.5BED	GS 350*1	S8	0092	0092	0092	0092	0093	0054	0094
FTYXV03.5CC4	GS 450h	S8	0092	FT6	FT6	FT6	HW6	0052	0066
FTYXV05.0MEA	RC F	S8	0092	0092	0092	0092	0093	0054	0094

Note*1: Before Running Change 15-TR-17

Note*2: After Running Change 15-TR-17

12.3 Shift schedules

Applicable Test Group

Test Group	Model	TM	Low-altitude		High-altitude		Highway	SC03	US06
			FTP	Cold CO /NMHC	FTP	Cold CO			
FTYXJ02.5BEL	CAMRY	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	RAV4, RAV4 AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT02.5PCM	NX 300h, NX 300h AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT02.7BEN	HIGHLANDER	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT02.7BEP	VENZA, VENZA 4WD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT02.7BER	TACOMA 2WD	M5	0074	0061	0061	0061	0071	0044	0053
	TACOMA 4WD	M5	0075	0061	0061	0061	0073	0044	0053
FTYXT04.0BEM	TACOMA 2WD/4WD	M6	0067	0067	FT6	FT6	0068	0054	0090
FTYXT03.5CCU	HIGHLANDER HYBRID AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXT04.0BES	4RUNNER 2WD/4WD	S5	FT5	FT5	FT5	FT5	HW5	0056	0062
FTYXT04.6BEW	TUNDRA 2WD/4WD	S6	FT6	FT6	FT6	FT6	HW6	0052	0066
FTYXT04.6BEX	GX 460	S6	FT6	FT6	FT6	FT6	HW6	0052	0066
FTYXT05.7BEY	LAND CRUISER WAGON 4WD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	LX 570	S6	FT6	FT6	FT6	FT6	HW6	0054	0063
	SEQUOIA 2WD/4WD	S6	FT6	FT6	FT6	FT6	HW6	0052	0066
FTYXT05.7BEW	TUNDRA 2WD/4WD	S6	FT6	FT6	FT6	FT6	HW6	0052	0066
FTYXT05.7XE8	TUNDRA 4WD FFV, SEQUOIA 4WD FFV	S6	FT6	FT6	FT6	FT6	HW6	0052	0066
FTYXV02.4BEB	xB	M5	0076	FT5	FT5	FT5	0077	0056	0062
		S4	FT4	FT4	FT4	FT4	HW4	0041	0078
FTYXV04.6BEA	LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD	S8	FT6	FT6	FT6	FT6	HW6	0054	0063
FTYXV05.0CC4	LS 600h L	S8	FT6	FT6	FT6	FT6	HW6	0052	0066
FTYXT02.0KEM	NX 200t, NX 200t AWD	S6	FT6	FT6	FT6	FT6	HW6	0054	0063

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
AGT20L-ALFGKA	P225/45R18 AS	3375	1443	117.18	0.7924	0.03302	130.20	0.8804	0.03669
AGT20L-ALFGKA	235/35ZR19 AS	3375	1443	122.34	0.7592	0.03305	135.93	0.8436	0.03672
AGT20L-ALTGKA	235/35ZR19 AS	3500	1465	148.38	0.0326	0.03786	164.87	0.0362	0.04207
AGT20L-ALTGKA	P225/45R18 AS	3500	1465	144.80	0.0824	0.03763	160.89	0.0916	0.04181
GGL10L-AWTGKA	P235/55R19 AS	4750	2004	168.54	-0.1026	0.05150	187.27	-0.1140	0.05722
GGL10L-AWTGKA	P235/60R18 AS	4750	2004	162.81	-0.1093	0.05113	180.90	-0.1214	0.05681
GGL10L-CWTGKA	P235/55R19 AS	4750	2004	168.54	-0.1026	0.05150	187.27	-0.1140	0.05722
GGL10L-CWTGKA	P235/60R18 AS	4750	2004	162.81	-0.1093	0.05113	180.90	-0.1214	0.05681
GGL15L-AWTGKA	P235/55R19 AS	4750	2081	192.59	0.1738	0.04956	213.99	0.1931	0.05507
GGL15L-AWTGKA	P235/60R18 AS	4750	2081	187.29	0.1509	0.04933	208.10	0.1677	0.05481
GGL15L-CWTGKA	P235/55R19 AS	4750	2081	192.59	0.1738	0.04956	213.99	0.1931	0.05507
GGL15L-CWTGKA	P235/60R18 AS	4750	2081	187.29	0.1509	0.04933	208.10	0.1677	0.05481
GGL15L-CWZGKA	P235/55R19 AS	4750	2081	175.51	0.7433	0.04525	195.01	0.8259	0.05028

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GYL10L-AWXGKA	P235/55R19 AS	5000	2149	162.60	0.0163	0.05120	180.67	0.0181	0.05689
GYL10L-AWXGKA	P235/60R18 AS	5000	2149	141.82	0.9095	0.04393	157.58	1.0106	0.04881
GYL10L-CWXGKA	P235/55R19 AS	5000	2149	162.60	0.0163	0.05120	180.67	0.0181	0.05689
GYL10L-CWXGKA	P235/60R18 AS	5000	2149	141.82	0.9095	0.04393	157.58	1.0106	0.04881
GYL15L-AWXGKA	P235/55R19 AS	5000	2221	170.24	0.5621	0.04533	189.16	0.6246	0.05037
GYL15L-AWXGKA	P235/60R18 AS	5000	2221	157.83	0.9587	0.04220	175.37	1.0652	0.04689
GYL15L-CWXGKA	P235/55R19 AS	5000	2221	170.24	0.5621	0.04533	189.16	0.6246	0.05037
GYL15L-CWXGKA	P235/60R18 AS	5000	2221	157.83	0.9587	0.04220	175.37	1.0652	0.04689

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
NGJ10L-BGXNGA	175/60R16 AS	2375	1027	105.48	-0.2095	0.03827	117.20	-0.2328	0.04252
NCP131L-CGMRKA	P175/65R15 AS	2625	1091	75.50	0.6342	0.03211	83.89	0.7047	0.03568
NCP131L-CGMRKA	P195/50R16 AS	2625	1091	85.97	0.5193	0.03436	95.52	0.5770	0.03818
NCP131L-CHMRKA	P175/65R15 AS	2625	1091	75.50	0.6342	0.03211	83.89	0.7047	0.03568
NCP131L-CHMRKA	P195/50R16 AS	2625	1091	85.97	0.5193	0.03436	95.52	0.5770	0.03818
NCP131L-CGPRKA	P175/65R15 AS	2625	1100	93.15	0.4739	0.03329	103.50	0.5266	0.03699
NCP131L-CGPRKA	P195/50R16 AS	2625	1100	99.61	0.4537	0.03472	110.68	0.5041	0.03858
NCP131L-CHPRKA	P175/65R15 AS	2625	1100	93.15	0.4739	0.03329	103.50	0.5266	0.03699
NCP131L-CHPRKA	P195/50R16 AS	2625	1100	99.61	0.4537	0.03472	110.68	0.5041	0.03858

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
ZVW30L-AHXBBA	P195/65R15 AS	3375	1418	80.60	0.0525	0.03290	89.56	0.0583	0.03656
ZVW30L-AHXEBA	P195/65R15 AS	3375	1445	82.30	0.0618	0.03112	91.44	0.0687	0.03458
ZVW30L-AHXEBA	P215/45R17 AS	3375	1445	90.01	0.0551	0.03220	100.01	0.0612	0.03578
ZVW30L-AHXGBA	P195/65R15 AS	3375	1445	82.30	0.0618	0.03112	91.44	0.0687	0.03458
ZVW30L-AHXGBA	P215/45R17 AS	3375	1445	90.01	0.0551	0.03220	100.01	0.0612	0.03578
ZWA10L-AHXBBA	P205/55R16 AS	3500	1502	143.26	-0.3470	0.03781	159.18	-0.3856	0.04201
ZWA10L-AHXBBA	P215/45R17 AS	3500	1502	151.90	-0.3767	0.03852	168.78	-0.4186	0.04280
ZVW35L-BHXBBA	P195/65R15 AS	3500	1502	101.79	-0.4401	0.03461	113.10	-0.4890	0.03846
ZVW35L-BHXEBA	P195/65R15 AS	3500	1502	101.79	-0.4401	0.03461	113.10	-0.4890	0.03846
ZVW35L-BHXGBA	P195/65R15 AS	3500	1502	101.79	-0.4401	0.03461	113.10	-0.4890	0.03846

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
ZRE172L-DEFDKA	195/65R15 AS	3125	1327	90.62	0.3834	0.03112	100.69	0.4260	0.03458
ZRE172L-DEFDKA	P205/55R16 AS	3125	1327	94.76	0.6464	0.03060	105.29	0.7182	0.03400
ZRE172L-DEFSKA	P205/55R16 AS	3125	1327	99.67	0.6459	0.02982	110.74	0.7177	0.03313
ZRE172L-DEFSKA	P215/45R17 AS	3125	1327	111.82	0.6182	0.03110	124.24	0.6869	0.03456
ZRE172L-DEXNKA	P205/55R16 AS	3125	1341	132.71	-0.2336	0.03629	147.46	-0.2596	0.04032
ZRE172L-DEXSKA	P205/55R16 AS	3125	1341	137.61	-0.2346	0.03552	152.90	-0.2607	0.03947
ZRE172L-DEXSKA	P215/45R17 AS	3125	1341	152.76	-0.2605	0.03653	169.73	-0.2894	0.04059
ZRE172L-DEPDKA	195/65R15 AS	3125	1316	119.06	-0.3072	0.03484	132.29	-0.3413	0.03871
ZRE172L-DEPDKA	P205/55R16 AS	3125	1316	123.24	-0.0473	0.03433	136.93	-0.0526	0.03814
ZRE172L-DEXPPA	P205/55R16 AS	3125	1341	132.62	-0.2303	0.03679	147.36	-0.2559	0.04088
ZRE172L-DEXQPA	195/65R15 AS	3125	1341	128.59	-0.5012	0.03606	142.88	-0.5569	0.04007

Note *1: Vehicle weight at road load test
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*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
ASV50L-CETNKA	P205/65R16 AS	3500	1477	121.14	0.1194	0.03329	134.60	0.1327	0.03699
ASV50L-CETNKA	P215/55R17 AS	3500	1508	127.67	0.1183	0.03420	141.86	0.1314	0.03800
ASV50L-SETNKA	P205/65R16 AS	3500	1477	121.14	0.1194	0.03329	134.60	0.1327	0.03699
ASV50L-SETNKA	P215/55R17 AS	3500	1508	127.67	0.1183	0.03420	141.86	0.1314	0.03800
AVV50L-CEXNBA	P205/65R16 AS	3750	1598	111.03	0.8346	0.02507	123.37	0.9273	0.02786
AVV50L-CEXGBA	P205/65R16 AS	3875	1638	113.41	0.8398	0.02506	126.01	0.9331	0.02784
AVV50L-CEXGBA	P215/55R17 AS	3875	1638	119.50	0.9172	0.02517	132.78	1.0191	0.02797
AVV50L-CEXSBA	P215/55R17 AS	3875	1638	119.50	0.9172	0.02517	132.78	1.0191	0.02797
AVV60L-BEXGBA	P215/55R17 AS	4000	1717	114.67	0.6585	0.02800	127.41	0.7317	0.03111
GSV50L-CETGKA	P215/55R17 AS	3750	1573	119.25	0.2996	0.03311	132.50	0.3329	0.03679
GSV50L-CETSKA	P225/45R18 AS	3750	1583	131.31	0.3006	0.03308	145.90	0.3340	0.03676
GSV60L-BETGKA	P215/55R17 AS	3875	1667	123.28	0.1627	0.03313	136.98	0.1808	0.03681
GSV60L-BETGKA	P225/45R18 AS	3875	1667	133.82	0.1126	0.03416	148.69	0.1251	0.03796

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GSE30L-AETLHA	225/45R17 AS	3875	1679	154.33	0.3780	0.03325	171.48	0.4200	0.03694
GSE30L-AETLHA	225/45R17 SM#2	3875	1679	151.91	0.3885	0.03306	168.79	0.4317	0.03673
GSE30L-AETLHA	255/35R18 AS	3875	1679	139.95	0.4172	0.03426	155.50	0.4636	0.03807
GSE30L-AETLHA	255/35R18 SM	3875	1679	174.43	0.3515	0.03410	193.81	0.3906	0.03789
GSE30L-AETLHA	255/35R18 SM#2	3875	1679	174.43	0.3515	0.03410	193.81	0.3906	0.03789
GSE30L-AETLHA	255/35ZR19 SM	3875	1679	169.97	0.1527	0.03526	188.86	0.1697	0.03918
GSE35L-AETLHA	225/45R17 AS	4000	1761	195.79	0.7846	0.03273	217.54	0.8718	0.03637
GSE35L-AETLHA	225/45R17 SM#2	4000	1761	193.09	0.8046	0.03248	214.54	0.8940	0.03609
GSE35L-AETLHA	255/35R18 AS	4000	1761	182.28	0.8616	0.03338	202.53	0.9573	0.03709
GSE20L-AKTLHA	245/45R17 AS	4250	1790	145.63	0.4209	0.03273	161.81	0.4677	0.03637
GSE20L-AKTLHA	245/45R17 SM#2	4250	1790	162.33	0.4209	0.03273	180.37	0.4677	0.03637
GSE20L-AKTLHA	255/35ZR19 SM	4250	1790	182.02	0.2650	0.03383	202.24	0.2944	0.03759
GSE20L-AKTLHA	255/40R18 AS	4250	1790	137.74	0.4445	0.03331	153.04	0.4939	0.03701
GSE20L-AKTLHA	255/40R18 SM	4250	1790	153.64	0.3934	0.03334	170.71	0.4371	0.03704
GSE20L-AKTLHA	255/40RF18 RF-AS	4250	1790	156.68	0.4426	0.03333	174.09	0.4918	0.03703

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GSE31L-AEZLHA	225/45R17 AS	4000	1720	166.48	0.7263	0.03009	184.98	0.8070	0.03343
GSE31L-AEZLHA	225/45R17 SM#2	4000	1720	163.78	0.7463	0.02984	181.98	0.8292	0.03316
GSE31L-AEZLHA	255/35R18 AS	4000	1720	148.61	0.8035	0.03077	165.12	0.8928	0.03419
GSE31L-AEZLHA	255/35R18 SM	4000	1720	191.19	0.7377	0.03066	212.43	0.8197	0.03407
GSE31L-AEZLHA	255/35R18 SM#2	4000	1720	191.19	0.7377	0.03066	212.43	0.8197	0.03407
GSE31L-AEZLHA	255/35ZR19 SM	4000	1720	182.25	0.4959	0.03206	202.50	0.5510	0.03562
GSE36L-AETLHA	225/45R17 AS	4250	1788	195.99	0.7706	0.03282	217.77	0.8562	0.03647
GSE36L-AETLHA	225/45R17 SM#2	4250	1788	190.95	0.7880	0.03258	212.17	0.8756	0.03620
GSE36L-AETLHA	255/35R18 AS	4250	1788	182.50	0.8442	0.03340	202.78	0.9380	0.03711
GSE36L-AETLHA	255/35R18 SM	4250	1788	217.51	0.7975	0.03311	241.68	0.8861	0.03679
GSE36L-AETLHA	255/35R18 SM#2	4250	1788	217.51	0.7975	0.03311	241.68	0.8861	0.03679

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GSE21L-AKTLHA	245/45R17 AS	4250	1818	151.62	0.5215	0.03198	168.47	0.5794	0.03553
GSE21L-AKTLHA	245/45R17 SM#2	4250	1818	170.59	0.5182	0.03201	189.54	0.5758	0.03557
GSE21L-AKTLHA	255/35ZR19 SM	4250	1817	190.37	0.3578	0.03314	211.52	0.3976	0.03682
GSE21L-AKTLHA	255/40R18 AS	4250	1818	143.77	0.5364	0.03263	159.74	0.5960	0.03626
GSE21L-AKTLHA	255/40R18 SM	4250	1818	159.64	0.4871	0.03264	177.38	0.5412	0.03627
GSE21L-AKTLHA	255/40RF18 RF-AS	4250	1818	162.63	0.5399	0.03261	180.70	0.5999	0.03623
GSC10L-RCZLHA	235/40R19 AS	4000	1767	168.61	0.7188	0.03110	187.34	0.7987	0.03456
GSC10L-RCZLHA	235/45R18 SM	4000	1767	174.57	0.7949	0.03091	193.97	0.8832	0.03434
GSC10L-RCZLHA	265/35R19 SM	4000	1767	182.75	0.7083	0.03137	203.06	0.7870	0.03486
GSC10L-RCZLHA	P235/45R18 AS	4000	1767	154.50	0.7168	0.03080	171.67	0.7964	0.03422
GSC15L-RCTLHA	235/40R19 AS	4250	1842	202.87	0.7065	0.03426	225.41	0.7850	0.03807
GSC15L-RCTLHA	235/45R18 SM	4250	1842	209.42	0.7735	0.03401	232.69	0.8594	0.03779
GSC15L-RCTLHA	P235/45R18 AS	4250	1842	187.74	0.7166	0.03407	208.60	0.7962	0.03786

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GRL10L-BEZQHA*4	225/50R17 SM	4000	1769	169.83	0.8219	0.02815	188.70	0.9132	0.03128
GRL10L-BEZQHA*4	235/40R19 AS	4000	1769	171.30	0.7141	0.02974	190.33	0.7934	0.03304
GRL10L-BEZQHA*4	235/40R19 SM	4000	1769	201.10	0.7177	0.02955	223.44	0.7974	0.03283
GRL10L-BEZQHA*4	235/45R18 SM	4000	1769	179.69	0.7665	0.02949	199.66	0.8517	0.03277
GRL10L-BEZQHA*4	265/35R19 SM	4000	1769	187.52	0.6956	0.03000	208.36	0.7729	0.03333
GRL10L-BEZQHA*4	P235/45R18 AS	4000	1769	161.83	0.7615	0.02908	179.81	0.8461	0.03231
GRL10L-BEZQHA*5	225/50R17 SM	4250	1769	169.83	0.8219	0.02815	188.70	0.9132	0.03128
GRL10L-BEZQHA*5	235/40R19 AS	4250	1769	171.30	0.7141	0.02974	190.33	0.7934	0.03304
GRL10L-BEZQHA*5	235/40R19 SM	4250	1769	201.10	0.7177	0.02955	223.44	0.7974	0.03283
GRL10L-BEZQHA*5	235/45R18 SM	4250	1769	179.69	0.7665	0.02949	199.66	0.8517	0.03277
GRL10L-BEZQHA*5	265/35R19 SM	4250	1769	187.52	0.6956	0.03000	208.36	0.7729	0.03333
GRL10L-BEZQHA*5	P235/45R18 AS	4250	1769	161.83	0.7615	0.02908	179.81	0.8461	0.03231
GRL15L-BETQHA	235/40R19 AS	4250	1834	198.28	0.9088	0.03249	220.31	1.0098	0.03610
GRL15L-BETQHA	235/40R19 SM	4250	1834	225.53	0.9222	0.03234	250.59	1.0247	0.03593
GRL15L-BETQHA	235/45R18 SM	4250	1834	206.41	0.9769	0.03219	229.34	1.0854	0.03577
GRL15L-BETQHA	P235/45R18 AS	4250	1834	192.23	0.9406	0.03189	213.59	1.0451	0.03543

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire
*4: Before Running Change 15-TR-17
*5: After Running Change 15-TR-17

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GWL10L-BEXQBA	225/50R17 SM	4500	1940	218.08	0.1291	0.03288	242.31	0.1434	0.03653
GWL10L-BEXQBA	235/40R19 AS	4500	1940	213.07	0.3100	0.03194	236.74	0.3444	0.03549
GWL10L-BEXQBA	235/40R19 SM	4500	1940	244.58	0.1911	0.03243	271.76	0.2123	0.03603
GWL10L-BEXQBA	235/45R18 SM	4500	1940	226.63	0.1694	0.03247	251.81	0.1882	0.03608
GWL10L-BEXQBA	265/35R19 SM	4500	1940	235.55	0.1407	0.03358	261.72	0.1563	0.03731
GWL10L-BEXQBA	P235/45R18 AS	4500	1940	197.87	0.2850	0.03197	219.86	0.3167	0.03552
USC10L-FCZRHA	275/35ZR19 SM	4250	1862	189.15	0.9446	0.03304	210.17	1.0496	0.03671

Note *1: Vehicle weight at road load test
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*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
ASV50L-CETGKA	P215/55R17 AS	3625	1508	127.67	0.1183	0.03420	141.86	0.1314	0.03800
ASV50L-CETPKA	P225/45R18 AS	3625	1508	138.43	0.1151	0.03406	153.81	0.1279	0.03784
ASV50L-CETSKA	P215/55R17 AS	3625	1508	127.67	0.1183	0.03420	141.86	0.1314	0.03800
ASV50L-SETGKA	P215/55R17 AS	3625	1508	127.67	0.1183	0.03420	141.86	0.1314	0.03800
ASA42L-ANTGKA	225/65R17 AS	3750	1629	129.29	0.0747	0.04650	143.66	0.0830	0.05167
ASA42L-ANTGKA	235/55R18 AS	3750	1629	141.10	0.1190	0.04634	156.78	0.1322	0.05149
ASA42L-ANTGKA	225/65R17 AS	3875	1638	129.79	0.0791	0.04556	144.21	0.0879	0.05062
ASA42L-ANTGKA	235/55R18 AS	3875	1638	141.84	0.1166	0.04658	157.60	0.1296	0.05176
ASA42L-ANTMKA	225/65R17 AS	3750	1629	129.29	0.0747	0.04650	143.66	0.0830	0.05167
ASA42L-ANTXKA	225/65R17 AS	3750	1629	129.29	0.0747	0.04650	143.66	0.0830	0.05167
ASA42L-CNTGKA	225/65R17 AS	3750	1629	129.29	0.0747	0.04650	143.66	0.0830	0.05167
ASA42L-CNTGKA	235/55R18 AS	3750	1629	141.10	0.1190	0.04634	156.78	0.1322	0.05149
ASA42L-CNTGKA	225/65R17 AS	3875	1638	129.79	0.0791	0.04556	144.21	0.0879	0.05062
ASA42L-CNTGKA	235/55R18 AS	3875	1638	141.84	0.1166	0.04658	157.60	0.1296	0.05176
ASA42L-CNTMKA	225/65R17 AS	3750	1629	129.29	0.0747	0.04650	143.66	0.0830	0.05167
ASA42L-CNTXKA	225/65R17 AS	3750	1629	129.29	0.0747	0.04650	143.66	0.0830	0.05167

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
ASA44L-ANTMKA	225/65R17 AS	3875	1651	148.65	0.2022	0.04591	165.17	0.2247	0.05101
ASA44L-ANTXKA	225/65R17 AS	3875	1651	148.65	0.2022	0.04591	165.17	0.2247	0.05101
ASA44L-CNTMKA	225/65R17 AS	3875	1651	148.65	0.2022	0.04591	165.17	0.2247	0.05101
ASA44L-CNTXKA	225/65R17 AS	3875	1651	148.65	0.2022	0.04591	165.17	0.2247	0.05101
ASA44L-ANTGKA	225/65R17 AS	3875	1678	150.87	0.2077	0.04587	167.63	0.2308	0.05097
ASA44L-ANTGKA	235/55R18 AS	3875	1678	163.29	0.2451	0.04576	181.43	0.2723	0.05084
ASA44L-CNTGKA	225/65R17 AS	3875	1678	150.87	0.2077	0.04587	167.63	0.2308	0.05097
ASA44L-CNTGKA	235/55R18 AS	3875	1678	163.29	0.2451	0.04576	181.43	0.2723	0.05084

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
AYZ10L-AWXLBA	225/60R18 AS	4250	1876	130.94	1.7272	0.03422	145.49	1.9191	0.03802
AYZ10L-AWXLBA	225/65R17 AS	4250	1876	115.18	1.6975	0.03464	127.98	1.8861	0.03849
AYZ10L-AWXLBA	P235/50R19 AS	4250	1876	130.19	1.6834	0.03437	144.66	1.8704	0.03819
AYZ15L-AWXLBA	225/60R18 AS	4500	1938	177.31	0.5204	0.04442	197.01	0.5782	0.04936
AYZ15L-AWXLBA	225/65R17 AS	4500	1938	159.28	0.5238	0.04461	176.98	0.5820	0.04957
AYZ15L-AWXLBA	P235/50R19 AS	4500	1938	174.33	0.5021	0.04441	193.70	0.5579	0.04934
ASU50L-ARTNKA	245/60R18 AS	4500	1918	151.67	-0.2046	0.05329	168.52	-0.2273	0.05921
AGV10L-AWTGKA	P245/55R19 AS	4250	1792	141.91	0.0891	0.04492	157.68	0.0990	0.04991
AGV15L-AWTGKA	P245/55R19 AS	4250	1878	166.11	0.0915	0.04570	184.57	0.1017	0.05078

Note *1: Vehicle weight at road load test
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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GSU50L-ARTGKA	245/55R19 AS	4750	2029	162.15	0.0919	0.05115	180.17	0.1021	0.05683
GSU50L-ARTMKA	245/55R19 AS	4750	2029	162.15	0.0919	0.05115	180.17	0.1021	0.05683
GSU50L-ARTMKA	245/60R18 AS	4750	2016	163.07	0.0159	0.05153	181.19	0.0177	0.05726
GSU50L-ARTNKA	245/60R18 AS	4500	1989	161.29	0.0135	0.05155	179.21	0.0150	0.05728
GSU55L-ARTGKA	245/55R19 AS	4750	2099	188.87	0.2143	0.05154	209.86	0.2381	0.05727
GSU55L-ARTMKA	245/55R19 AS	4750	2099	188.87	0.2143	0.05154	209.86	0.2381	0.05727
GSU55L-ARTMKA	245/60R18 AS	4750	2084	177.66	0.1142	0.05206	197.40	0.1269	0.05784
GSU55L-ARTNKA	245/60R18 AS	4750	2084	177.66	0.1142	0.05206	197.40	0.1269	0.05784

Note *1: Vehicle weight at road load test
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OFF: Off-road tire
RF-AS: Run-flat all-season tire
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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GSL30L-PFTDKA	P235/60R17 AS	4750	2082	172.69	-0.1296	0.05151	191.88	-0.1440	0.05723
GSL30L-PFTEKA	P235/60R17 AS	4750	2082	172.69	-0.1296	0.05151	191.88	-0.1440	0.05723
GSL30L-PFTQKA	P235/55R18 AS	4750	2082	176.27	-0.1607	0.05204	195.86	-0.1786	0.05782
GSL30L-PFTQKA	P235/60R17 AS	4750	2082	172.69	-0.1296	0.05151	191.88	-0.1440	0.05723
GSL30L-PRTEKA	P235/60R17 AS	4750	2082	172.69	-0.1296	0.05151	191.88	-0.1440	0.05723
GSL30L-PRTQKA	P235/60R17 AS	4750	2082	172.69	-0.1296	0.05151	191.88	-0.1440	0.05723
GSL30L-PRTSKA	P235/50R19 AS	4750	2082	161.95	-0.1396	0.05214	179.94	-0.1551	0.05793
GSL33L-SBTDKA	P235/60R17 AS	4500	1933	161.39	-0.1296	0.05150	179.32	-0.1440	0.05722
GSL35L-PFTEKA	P235/55RF18 RF-AS	5000	2180	218.73	0.3146	0.04832	243.03	0.3496	0.05369
GSL35L-PFTQKA	P235/55RF18 RF-AS	5000	2180	218.73	0.3146	0.04832	243.03	0.3496	0.05369
GGV10L-AWTGKA	P245/50R20 AS	4250	1876	133.81	0.6246	0.04367	148.68	0.6940	0.04852
GGV15L-AWTGKA	P245/50R20 AS	4500	1960	186.95	0.0794	0.04705	207.72	0.0882	0.05228

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RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
TRN225L-CRPDKA	P215/70R15 AS	4000	1656	149.25	0.6001	0.04614	165.83	0.6668	0.05127
TRN225L-PRPDKA	P215/70R15 AS	4000	1712	153.31	0.6020	0.04612	170.34	0.6689	0.05124
TRN265L-CRPDKA	P245/75R16 AS	4250	1733	137.28	0.7318	0.05694	152.53	0.8131	0.06327
TRN265L-PRPDKA	P245/75R16 AS	4250	1772	140.31	0.7256	0.05690	155.90	0.8062	0.06322
TRN225L-CRMDKA	P215/70R15 AS	3875	1648	125.82	0.8864	0.04480	139.80	0.9849	0.04978
TRN245L-CRPDKA	P245/75R16 AS	4250	1839	150.41	1.0546	0.05599	167.12	1.1718	0.06221
TRN245L-CRMDKA	P245/75R16 AS	4250	1831	151.75	0.9649	0.05661	168.61	1.0721	0.06290

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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GRN265L-CRADKA	P245/75R16 AS	4250	1767	128.16	0.9316	0.05637	142.40	1.0351	0.06263
GRN265L-CRADKA	P265/60R18 AS	4250	1826	144.81	1.1335	0.05749	160.90	1.2594	0.06388
GRN265L-CRADKA	P265/65R17 AS	4250	1806	151.43	0.9709	0.05923	168.26	1.0788	0.06581
GRN265L-CRADKA	P265/70R16 OFF	4250	1767	186.13	0.9672	0.05886	206.81	1.0747	0.06540
GRN265L-PRADKA	P245/75R16 AS	4250	1831	132.89	0.9322	0.05628	147.66	1.0358	0.06253
GRN265L-PRADKA	P265/60R18 AS	4250	1831	145.12	1.1358	0.05747	161.24	1.2620	0.06386
GRN265L-PRADKA	P265/65R17 AS	4250	1831	153.44	0.9732	0.05914	170.49	1.0813	0.06571
GRN265L-PRADKA	P265/70R16 OFF	4250	1806	190.09	0.9659	0.05879	211.21	1.0732	0.06532
GRN270L-PRADKA	P245/75R16 AS	4500	1831	132.89	0.9322	0.05628	147.66	1.0358	0.06253
GRN270L-PRADKA	P265/60R18 AS	4500	1831	145.12	1.1358	0.05747	161.24	1.2620	0.06386
GRN270L-PRADKA	P265/65R17 AS	4500	1831	153.44	0.9732	0.05914	170.49	1.0813	0.06571
GRN225L-CRFDKA	P255/45R18 SM	4250	1768	200.94	0.9313	0.04679	223.27	1.0348	0.05199

Note *1: Vehicle weight at road load test
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RF-AS: Run-flat all-season tire
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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GRN245L-CRADKA	P245/75R16 AS	4500	1906	150.50	1.1677	0.05529	167.22	1.2974	0.06143
GRN245L-CRADKA	P265/60R18 AS	4500	1919	166.69	1.2109	0.05704	185.21	1.3454	0.06338
GRN245L-CRADKA	P265/65R17 AS	4500	1906	174.25	1.0091	0.05922	193.61	1.1212	0.06580
GRN245L-CRADKA	P265/70R16 OFF	4500	1906	210.37	1.0074	0.05872	233.74	1.1193	0.06524
GRN245L-PRADKA	P245/75R16 AS	4500	1938	152.19	1.1733	0.05517	169.10	1.3037	0.06130
GRN245L-PRADKA	P265/60R18 AS	4500	1938	168.09	1.2109	0.05704	186.77	1.3454	0.06338
GRN245L-PRADKA	P265/65R17 AS	4500	1938	177.00	1.0073	0.05915	196.67	1.1192	0.06572
GRN245L-PRADKA	P265/70R16 OFF	4500	1913	210.94	1.0116	0.05861	234.38	1.1240	0.06512
GRN250L-PRADKA	P245/75R16 AS	4500	1938	152.19	1.1733	0.05517	169.10	1.3037	0.06130
GRN250L-PRADKA	P265/60R18 AS	4500	1938	168.09	1.2109	0.05704	186.77	1.3454	0.06338
GRN250L-PRADKA	P265/65R17 AS	4500	1938	177.00	1.0073	0.05915	196.67	1.1192	0.06572

Note *1: Vehicle weight at road load test
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RF-AS: Run-flat all-season tire
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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GRN245L-CRFDKA	P245/75R16 AS	4500	1895	158.42	1.1002	0.05553	176.02	1.2224	0.06170
GRN245L-CRFDKA	P265/65R17 AS	4500	1895	179.77	0.9512	0.05954	199.74	1.0569	0.06616
GRN245L-CRFDKA	P265/70R16 OFF	4500	1895	223.35	0.8641	0.05972	248.17	0.9601	0.06636
GRN245L-PRFDKA	P245/75R16 AS	4500	1902	158.84	1.1008	0.05544	176.49	1.2231	0.06160
GRN245L-PRFDKA	P265/65R17 AS	4500	1902	180.36	0.9486	0.05948	200.40	1.0540	0.06609
GRN245L-PRFDKA	P265/70R16 OFF	4500	1902	224.01	0.8628	0.05965	248.90	0.9587	0.06628
GVU58L-ARXGKA	245/55R19 AS	5250	2250	144.07	2.2941	0.02996	160.08	2.5490	0.03329
GVU58L-ARXMKA	245/55R19 AS	5250	2250	144.07	2.2941	0.02996	160.08	2.5490	0.03329
GVU58L-ARXMKA	245/60R18 AS	5250	2231	140.79	2.3521	0.02968	156.43	2.6134	0.03298
GVU58L-ARXNKA	245/60R18 AS	5000	2213	139.79	2.3513	0.02962	155.32	2.6126	0.03291

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RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
GRN280L-GKAGKA	P245/60R20 AS	4750	2025	128.95	1.1007	0.05225	143.28	1.2230	0.05806
GRN280L-GKAGKA	P265/70R17 AS	4750	2025	146.86	1.0545	0.05314	163.18	1.1717	0.05904
GRN285L-GKAGKA	P245/60R20 AS	5000	2149	158.99	1.4357	0.05252	176.66	1.5952	0.05836
GRN285L-GKAGKA	P265/70R17 AS	5000	2149	169.91	1.1075	0.05415	188.79	1.2306	0.06017
UPK51L-CRTSKA	P255/70R18 AS	5500	2479	154.78	1.0505	0.06506	171.98	1.1672	0.07229
UPK51L-CRTSKA	P275/55R20 AS	5500	2479	191.68	1.3711	0.06417	212.98	1.5234	0.07130
UPK51L-CRTSKA	P275/65R18 AS	5500	2443	169.16	1.0529	0.06504	187.96	1.1699	0.07227
UPK51L-CRTSKA	P275/65R18 OFF	5500	2479	206.17	1.3735	0.06415	229.08	1.5261	0.07128
UPK51L-PSTSKA	P255/70R18 AS	5500	2479	154.78	1.0505	0.06506	171.98	1.1672	0.07229
UPK51L-PSTSKA	P275/55R20 AS	5500	2479	191.68	1.3711	0.06417	212.98	1.5234	0.07130
UPK51L-PSTSKA	P275/65R18 AS	5500	2443	169.16	1.0529	0.06504	187.96	1.1699	0.07227
UPK51L-PSTSKA	P275/65R18 OFF	5500	2479	206.17	1.3735	0.06415	229.08	1.5261	0.07128

Note *1: Vehicle weight at road load test
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RF-AS: Run-flat all-season tire
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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
UPK56L-CRTSKA	P255/70R18 AS	6000	2638	162.34	1.8406	0.06299	180.38	2.0451	0.06999
UPK56L-CRTSKA	P275/55R20 AS	6000	2638	195.50	1.1726	0.06994	217.22	1.3029	0.07771
UPK56L-CRTSKA	P275/65R18 AS	6000	2575	175.66	1.8456	0.06296	195.18	2.0507	0.06996
UPK56L-CRTSKA	P275/65R18 OFF	6000	2638	210.00	1.1726	0.06994	233.33	1.3029	0.07771
UPK56L-PSTSKA	P255/70R18 AS	6000	2638	162.34	1.8406	0.06299	180.38	2.0451	0.06999
UPK56L-PSTSKA	P275/55R20 AS	6000	2638	195.50	1.1726	0.06994	217.22	1.3029	0.07771
UPK56L-PSTSKA	P275/65R18 AS	6000	2575	175.66	1.8456	0.06296	195.18	2.0507	0.06996
UPK56L-PSTSKA	P275/65R18 OFF	6000	2638	210.00	1.1726	0.06994	233.33	1.3029	0.07771

Note *1: Vehicle weight at road load test
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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
URJ150L-GKTGKA	P265/60R18 AS	5500	2469	202.01	1.2831	0.05030	224.46	1.4257	0.05589
URJ150L-GKTZKA	P265/60R18 AS	5500	2469	202.01	1.2831	0.05030	224.46	1.4257	0.05589
USK60L-GKTLKA	P275/55R20 AS	6000	2632	242.10	0.8687	0.06326	269.00	0.9652	0.07029
USK60L-GKTLKA	P275/65R18 AS	6000	2623	170.70	1.8168	0.05602	189.67	2.0187	0.06224
USK60L-GKTSKA	P275/55R20 AS	6000	2632	242.10	0.8687	0.06326	269.00	0.9652	0.07029
USK60L-GKTSKA	P275/65R18 AS	6000	2623	170.70	1.8168	0.05602	189.67	2.0187	0.06224
USK60L-GKTZKA	P275/55R20 AS	6000	2632	242.10	0.8687	0.06326	269.00	0.9652	0.07029
USK65L-GKTLKA	P275/55R20 AS	6500	2744	267.30	1.0445	0.06247	297.00	1.1606	0.06941
USK65L-GKTLKA	P275/65R18 AS	6500	2738	232.70	1.3265	0.06138	258.56	1.4739	0.06820
USK65L-GKTSKA	P275/55R20 AS	6500	2744	267.30	1.0445	0.06247	297.00	1.1606	0.06941
USK65L-GKTSKA	P275/65R18 AS	6500	2738	232.70	1.3265	0.06138	258.56	1.4739	0.06820
USK65L-GKTZKA	P275/55R20 AS	6500	2744	267.30	1.0445	0.06247	297.00	1.1606	0.06941

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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK51L-CRTLKA	P255/70R18 AS	6000	2460	204.66	-0.0898	0.07410	227.40	-0.0998	0.08233
USK51L-CRTLKA	P275/55R20 AS	6000	2497	211.00	0.9013	0.06896	234.44	1.0014	0.07662
USK51L-CRTLKA	P275/65R18 OFF	6000	2459	221.47	0.9037	0.06940	246.08	1.0041	0.07711
USK51L-CRTSKA	P255/70R18 AS	5500	2460	204.66	-0.0898	0.07410	227.40	-0.0998	0.08233
USK51L-CRTSKA	P275/55R20 AS	5500	2497	211.00	0.9013	0.06896	234.44	1.0014	0.07662
USK51L-CRTSKA	P275/65R18 AS	5500	2461	221.88	-0.0886	0.07398	246.53	-0.0984	0.08220
USK51L-CRTSKA	P275/65R18 OFF	5500	2459	221.47	0.9037	0.06940	246.08	1.0041	0.07711
USK51L-PSTLKA	P255/70R18 AS	6000	2582	213.30	-0.0950	0.07404	237.00	-0.1056	0.08227
USK51L-PSTLKA	P275/55R20 AS	6000	2581	217.70	0.9063	0.06982	241.89	1.0070	0.07758
USK51L-PSTLKA	P275/65R18 OFF	6000	2543	228.58	0.9012	0.06940	253.98	1.0013	0.07711

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK51L-PSTSKA	P255/70R18 AS	6000	2582	213.30	-0.0950	0.07404	237.00	-0.1056	0.08227
USK51L-PSTSKA	P275/55R20 AS	6000	2581	217.70	0.9063	0.06982	241.89	1.0070	0.07758
USK51L-PSTSKA	P275/65R18 AS	6000	2551	228.68	-0.0886	0.07398	254.09	-0.0984	0.08220
USK51L-PSTSKA	P275/65R18 OFF	6000	2543	228.58	0.9012	0.06940	253.98	1.0013	0.07711
USK51L-PSTZKA	P275/55R20 AS	6000	2581	217.70	0.9063	0.06982	241.89	1.0070	0.07758
USK51L-THTSKA	P255/70R18 AS	5500	2332	153.76	1.1152	0.06640	170.84	1.2391	0.07378
USK51L-THTSKA	P275/55R20 AS	5500	2361	183.25	1.1112	0.06627	203.61	1.2347	0.07363
USK51L-THTSKA	P275/65R18 AS	5500	2361	172.34	1.1137	0.06625	191.49	1.2374	0.07361
USK51L-THTSKA	P275/65R18 OFF	5500	2329	192.66	1.1152	0.06637	214.07	1.2391	0.07374
USK52L-CHTSKA	P255/70R18 AS	6000	2582	213.30	-0.0950	0.07404	237.00	-0.1056	0.08227
USK52L-CHTSKA	P275/55R20 AS	6000	2581	217.70	0.9063	0.06982	241.89	1.0070	0.07758
USK52L-CHTSKA	P275/65R18 AS	6000	2551	228.68	-0.0886	0.07398	254.09	-0.0984	0.08220
USK52L-CHTSKA	P275/65R18 OFF	6000	2543	228.58	0.9012	0.06940	253.98	1.0013	0.07711

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK56L-CRTLKA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-CRTLKA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-CRTLKA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743
USK56L-CRTSKA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-CRTSKA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-CRTSKA	P275/65R18 AS	6000	2681	196.77	1.5128	0.06989	218.63	1.6809	0.07766
USK56L-CRTSKA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743
USK56L-PSTLKA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-PSTLKA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-PSTLKA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK56L-PSTSKA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-PSTSKA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-PSTSKA	P275/65R18 AS	6000	2681	196.77	1.5128	0.06989	218.63	1.6809	0.07766
USK56L-PSTSKA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743
USK56L-PSTZKA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-THTSKA	P255/70R18 AS	5500	2459	164.22	1.7550	0.06708	182.47	1.9500	0.07453
USK56L-THTSKA	P275/55R20 AS	5500	2481	214.51	0.8416	0.07491	238.34	0.9351	0.08323
USK56L-THTSKA	P275/65R18 AS	5500	2481	182.97	1.7539	0.06696	203.30	1.9488	0.07440
USK56L-THTSKA	P275/65R18 OFF	5500	2459	234.26	0.8486	0.07498	260.29	0.9429	0.08331
USK57L-CHTSKA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK57L-CHTSKA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK57L-CHTSKA	P275/65R18 AS	6000	2681	196.77	1.5128	0.06989	218.63	1.6809	0.07766
USK57L-CHTSKA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
URJ200L-GNTEKA	P285/60R18 AS	6000	2616	273.57	1.2302	0.05677	303.97	1.3669	0.06308
URJ201L-GNTGKA	P285/50R20 AS	6500	2725	275.48	1.5447	0.05413	306.09	1.7163	0.06014
USK65L-GKTLGA	P275/55R20 AS	6500	2744	267.30	1.0445	0.06247	297.00	1.1606	0.06941
USK65L-GKTLGA	P275/65R18 AS	6500	2738	232.70	1.3265	0.06138	258.56	1.4739	0.06820
USK65L-GKTSGA	P275/55R20 AS	6500	2744	267.30	1.0445	0.06247	297.00	1.1606	0.06941
USK65L-GKTSGA	P275/65R18 AS	6500	2738	232.70	1.3265	0.06138	258.56	1.4739	0.06820
USK65L-GKTZGA	P275/55R20 AS	6500	2744	267.30	1.0445	0.06247	297.00	1.1606	0.06941

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK56L-CRTLGA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-CRTLGA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-CRTLGA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743
USK56L-CRTSGA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-CRTSGA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-CRTSGA	P275/65R18 AS	6000	2681	196.77	1.5128	0.06989	218.63	1.6809	0.07766
USK56L-CRTSGA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743
USK56L-PSTLGA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-PSTLGA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-PSTLGA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK56L-PSTSGA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK56L-PSTSGA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-PSTSGA	P275/65R18 AS	6000	2681	196.77	1.5128	0.06989	218.63	1.6809	0.07766
USK56L-PSTSGA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743
USK56L-PSTZGA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK56L-THTSGA	P255/70R18 AS	5500	2459	164.22	1.7550	0.06708	182.47	1.9500	0.07453
USK56L-THTSGA	P275/55R20 AS	5500	2481	214.51	0.8416	0.07491	238.34	0.9351	0.08323
USK56L-THTSGA	P275/65R18 AS	5500	2481	182.97	1.7539	0.06696	203.30	1.9488	0.07440
USK56L-THTSGA	P275/65R18 OFF	5500	2459	234.26	0.8486	0.07498	260.29	0.9429	0.08331

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USK57L-CHTSGA	P255/70R18 AS	6000	2708	180.05	1.5152	0.06987	200.06	1.6836	0.07763
USK57L-CHTSGA	P275/55R20 AS	6000	2713	230.53	1.4862	0.06931	256.14	1.6513	0.07701
USK57L-CHTSGA	P275/65R18 AS	6000	2681	196.77	1.5128	0.06989	218.63	1.6809	0.07766
USK57L-CHTSGA	P275/65R18 OFF	6000	2665	247.48	1.4579	0.06969	274.98	1.6199	0.07743

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
NHP10L-AHXGBA	P175/65R15 AS	2750	1186	79.71	0.5026	0.02673	88.57	0.5584	0.02970
NHP10L-AHXGBA	P195/50R16 AS	2750	1186	92.27	0.5352	0.02777	102.52	0.5947	0.03086
NHP10L-AHXRBA	P175/65R15 AS	2750	1186	79.71	0.5026	0.02673	88.57	0.5584	0.02970
NHP10L-AHXVBA	P175/65R15 AS	2750	1186	79.71	0.5026	0.02673	88.57	0.5584	0.02970
ZVW41L-AXXEBA	P205/60R16 AS	3625	1549	139.53	-1.1357	0.04833	155.03	-1.2619	0.05370
ZVW41L-AXXEBA	P215/50R17 AS	3625	1549	153.73	-0.9575	0.04764	170.81	-1.0639	0.05293

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

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12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
AZE151L-FHMNKA	P205/55R16 AS	3375	1446	117.79	0.9322	0.03860	130.88	1.0358	0.04289
AZE151L-FHPNKA	P205/55R16 AS	3375	1473	150.00	-0.0419	0.04443	166.67	-0.0466	0.04937
AVX40L-AEXGBA	P215/55R17 AS	4000	1704	114.51	0.7895	0.02685	127.23	0.8772	0.02983
AVX40L-AEXPBA	P215/55R17 AS	4000	1704	114.51	0.7895	0.02685	127.23	0.8772	0.02983
GSX40L-AETGKA	P215/55R17 AS	3875	1638	137.34	0.0261	0.03448	152.60	0.0290	0.03831
GSX40L-AETPKA	P215/55R17 AS	3875	1679	140.29	0.0252	0.03449	155.88	0.0280	0.03832
GSX40L-AETPKA	P225/45R18 AS	3875	1659	159.25	-0.0228	0.03516	176.94	-0.0253	0.03907
GSX40L-AETQKA	P225/45R18 AS	3875	1659	159.25	-0.0228	0.03516	176.94	-0.0253	0.03907

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
USF40L-AEZGHA	235/50R18 SM	4750	2046	222.65	0.8127	0.02897	247.39	0.9030	0.03219
USF40L-AEZGHA	245/45R19 SM	4750	2046	224.03	0.8139	0.02891	248.92	0.9043	0.03212
USF40L-AEZGHA	P235/50R18 AS	4750	2046	223.89	0.5338	0.02981	248.77	0.5931	0.03312
USF40L-AEZGHA	P245/45R19 AS	4750	2046	210.66	0.7655	0.02951	234.07	0.8506	0.03279
USF45L-AEZGHA	P235/50R18 AS	5000	2188	240.56	1.2650	0.02909	267.29	1.4056	0.03232
USF45L-AEZGHA	P245/45R19 AS	5000	2188	228.17	1.4699	0.02919	253.52	1.6332	0.03243
USF41L-AEZGHA	235/50R18 SM	4750	2046	222.65	0.8127	0.02897	247.39	0.9030	0.03219
USF41L-AEZGHA	245/45R19 SM	4750	2046	224.03	0.8139	0.02891	248.92	0.9043	0.03212
USF41L-AEZGHA	P235/50R18 AS	4750	2046	223.89	0.5338	0.02981	248.77	0.5931	0.03312
USF41L-AEZGHA	P245/45R19 AS	4750	2046	210.66	0.7655	0.02951	234.07	0.8506	0.03279
USF46L-AEZGHA	P235/50R18 AS	5000	2188	240.56	1.2650	0.02909	267.29	1.4056	0.03232
USF46L-AEZGHA	P245/45R19 AS	5000	2188	228.17	1.4699	0.02919	253.52	1.6332	0.03243

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

12.4 Dynamometer loading information
FTP, SFTP and Cold CO testing

Vehicle model	Tire*3	ETW (lbs)	W*1 (Kg)	R/L*2 coefficients for FTP & SFTP $F(N)=a+bv+cv^2$ (v: km/h)			R/L*2 coefficients for Cold CO $F(N)=a+bv+cv^2$ (v: km/h)		
				a	b	c	a	b	c
UVF46L-AEXGHA	235/50R18 SM	5500	2463	245.45	2.0308	0.02387	272.72	2.2564	0.02652
UVF46L-AEXGHA	245/45R19 SM	5500	2463	236.53	1.5537	0.02905	262.81	1.7263	0.03228
UVF46L-AEXGHA	245/45RF19 RF-SM	5500	2463	236.53	1.5537	0.02905	262.81	1.7263	0.03228
UVF46L-AEXGHA	P235/50R18 AS	5500	2463	245.45	2.0308	0.02387	272.72	2.2564	0.02652
UVF46L-AEXGHA	P245/45R19 AS	5500	2463	245.45	2.0308	0.02387	272.72	2.2564	0.02652
AGZ10L-AWTLTA	225/60R18 AS	4250	1830	142.74	1.0132	0.03932	158.60	1.1258	0.04369
AGZ10L-AWTLTA	225/65R17 AS	4250	1830	124.79	1.0093	0.03998	138.66	1.1214	0.04442
AGZ10L-AWTLTA	235/55R18 SM	4250	1830	140.04	1.0938	0.03977	155.60	1.2153	0.04419
AGZ10L-AWTLTA	P235/50R19 AS	4250	1830	139.83	0.9899	0.03971	155.37	1.0999	0.04412
AGZ15L-AWTLTA	225/60R18 AS	4250	1880	185.90	0.2782	0.04416	206.56	0.3091	0.04907
AGZ15L-AWTLTA	225/65R17 AS	4250	1880	158.46	0.3784	0.04415	176.07	0.4204	0.04906
AGZ15L-AWTLTA	P235/50R19 AS	4250	1880	176.80	0.2742	0.04439	196.44	0.3047	0.04932
AGZ15L-AWTLTA	235/55R18 SM	4250	1880	177.72	0.3592	0.04455	197.47	0.3991	0.04950

Note *1: Vehicle weight at road load test
*2: Road Load
*3: AS: All-season tire
SM/SM#2: Summer-season tire
RF: Run-flat tire
OFF: Off-road tire
RF-AS: Run-flat all-season tire
RF-SM: Run-flat summer tire

13. Projected Sales and Compliance Plans

Please refer to the CBI common file.

14. Request for Certificate

Please refer to each test group file.

15. Other Information

Reserved.

16. Confidential Information

Please refer to the CBI common file.

17. California ARB Information

17.1 Statement of Compliance

General statement

The production vehicles which are subject to registration or sale in the state of California will be, in all material respects, substantially the same in construction as the test vehicles which are certified by the California Air Resources Board, and will meet all the applicable vehicle emission standards which are set forth by the California Air Resources Board in accordance with Section 43101 of the Health and Safety Code.

Driveability Statement

In accordance with "California Exhaust Emission Standards and Test Procedures for 1988 And Subsequent Model Passenger Cars, Light-Duty Trucks and Medium-Duty Vehicles, 11.e." as amended September 22,1993, Toyota certifies that its production vehicles covered by the certificate for the applicable model year have driveability and performance characteristics which satisfy the manufacturer's specific driveability and performance requirements. This statement is based on driveability data and other evidence showing compliance with the manufacturer's in-house performance criteria which, we believe, assures elimination of one of the major causes of wide-spread tampering with the emission control systems.

Durability Warranty Statement

In accordance with "California Exhaust Emission Standards & Test Procedures for 2001 & Subsequent MY PC, LDT, and MDV" F.4.1, "California Evaporative Emission Standards & Test Procedures for 2001 & Subsequent Model Motor Vehicles" PART II.2 and "California Refueling Emission Standards & Test Procedures for 2001 & Subsequent Model Motor Vehicles" G, Toyota states, based on our good engineering judgment and available information, that the exhaust, evaporative and refueling emission control devices on our vehicles or engines are durable and are designed and will be manufactured to operate properly and in compliance with all applicable requirements for the full useful life (or allowable maintenance interval) of the vehicles or engines.

California I/M Test and California ASM Test

Based on Toyota's good engineering judgment, all the vehicle described in this Application for Certification comply with the emission standards for which emissions data are not provided, as allowed under " California Exhaust Emission Standards and Test Procedures for 2001 and Subsequent Model PC, LDT and MDV" as amended March 29, 2010, Part I, G.3.1.5.

17.2 High-Altitude Test Requirements

Demonstration for fuel injected engines

Fuel injection system which consists of electronic fuel injection and closed loop are using an air flow sensor to sense the air mass flow. Therefore, they can control the air-fuel ratio stoichiometrically. To comply with California and federal emission standards and to ensure vehicle driveability at high altitude.

17.3 Compliance with fuel fill pipe specifications

Statement

The fill pipes and openings for the models covered by this application are in compliance with the requirements specified by the Air Resources Board's "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012, and are not obstructed in any manner by bumpers, body parts, body trims or accessories that are either factory or dealer installed.

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV02.5BEB
Carline(s) tC
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		35°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	271°
of reference plane.	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.25
Offset B	none		0.069

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT03.5BER
Carline(s): RX 350, RX 350 AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.5
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	273°
	each side	RS**	37°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT03.5CC4
Carline(s): RX 450h, RX 450h AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	273°
	each side	RS**	37°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.3BEA
Carline(s) iQ
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		2.7
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.23
Offset B	none		0.073

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.5BEB
Carline(s) YARIS
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1.8°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		32°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.5
(4) Angle β in degrees.	none		1.5°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.06

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.8HC3
Carline(s) PRIUS
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		2.70
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.8CCU
Carline(s) CT 200h
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		35°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.35
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.8HCU
Carline(s) PRIUS Plug-in Hybrid
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		2.70
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV01.8BEC, FTYXV01.8MEA
Carline(s): COROLLA, COROLLA LE ECO
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2.4°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		31°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1.0°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	271°
of reference plane.	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.27
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV02.5HC3
Carline(s): CAMRY HYBRID LE, CAMRY HYBRID XLE/SE
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-3°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		44°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	271°
of reference plane.	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV02.5CC4
Carline(s): ES 300h
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1.8°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		42°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		1.5°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.32
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.060

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV02.5BED, FTYXV03.5BEC, FTYXJ02.5BEL
Carline(s): CAMRY
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-3°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		44°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	271°
of reference plane.	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV03.5BEC
Carline(s) ES 350
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1.8°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		42°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		1.5°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.32
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.060

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV02.5BEC, FTYXV03.5BEB
Carline(s): IS 250, IS 250 AWD, IS 350, IS 350 AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		35°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.5
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		306°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.20
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV02.5BEC, FTYXV03.5BEB
Carline(s): IS 250 C, IS 350 C
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-3°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		40°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	278°
		RS**	42°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV03.5BEB, FTYXV03.5BED*1
Carline(s): GS 350, GS 350 AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		35°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		306°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.20
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard
Note*1: Before Running Change 15-TR-17

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV03.5BEB
Carline(s): RC 350, RC 350 AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2.4°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		34.6°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.47
(4) Angle β in degrees.	none		0.91°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		306°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.27
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV03.5CC4
Carline(s) GS 450h
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		35°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		306°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.20
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV05.0MEA
Carline(s) RC F
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2.4°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		34.6°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.47
(4) Angle β in degrees.	none		0.91°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		306°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.27
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXJ02.5BEL
Carline(s) RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		43°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.4
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXT02.5PCM
Carline(s) NX 300h, NX 300h AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		43°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.4
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT02.7BEN, FTYXT03.5BER
Carline(s): HIGHLANDER, HIGHLANDER AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	273°
		RS**	37°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT02.7BEP, FTYXT03.5BER
Carline(s): VENZA, VENZA 4WD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-3°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		31°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXT03.5BER
Carline(s) SIENNA, SIENNA AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	273°
		RS**	37°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT02.7BER, FTYXT04.0BEM
Carline(s): TACOMA 2WD, TACOMA 4WD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-3°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		38°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	273°
of reference plane.	each side	RS**	37°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.29
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
**Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXT03.5CCU
Carline(s) HIGHLANDER HYBRID AWD, HIGHLANDER HYBRID AWD LE Plus
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		33°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	273°
	each side	RS**	37°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXT04.0BES
Carline(s) 4RUNNER 2WD, 4RUNNER 4WD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1.65°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		37.9°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.60
(4) Angle β in degrees.	none		-1.77°
(5) Length 'X' in centimeters.	none		1.1
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	223°
of reference plane.	each side	RS**	83°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.0 thru 1.3
Offset			
Offset A	none		0.25
Offset B	none		0.07

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT04.6BEW, FTYXT05.7BEW
Carline(s): TUNDRA 2WD, TUNDRA 4WD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2.43°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		61.68°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.47
(4) Angle β in degrees.	none		0.91°
(5) Length 'X' in centimeters.	none		12.59
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	225°
		RS**	85°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.275
Offset B	none		0.036

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT04.6BEX
Carline(s): GX 460
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1.65°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		37.9°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.60
(4) Angle β in degrees.	none		-1.77°
(5) Length 'X' in centimeters.	none		1.1
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	223°
of reference plane.	each side	RS**	83°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.0 thru 1.3
Offset			
Offset A	none		0.25
Offset B	none		0.07

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT05.7BEY
Carline(s): LAND CRUISER WAGON 4WD, LX 570
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		50°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.60
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.1
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	223°
		RS**	83°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.1 thru 1.2
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT05.7BEY
Carline(s): SEQUOIA 2WD, SEQUOIA 4WD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*	
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		0.4°*1	-1.7°*2
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		45°*1	44°*2
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.49*1	3.54*2
(4) Angle β in degrees.	none		3.4°*1	1.7°*2
(5) Length 'X' in centimeters.	none		0.91*1	1.30*2
Fill Pipe Specification				
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025	
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05	
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°	
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	225°*1	273°*2
	each side	RS**	85°*1	37°*2
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28*1	0.32*2
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A	
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		0.8 thru 0.9*1	
			1.2 thru 1.3*2	
Offset				
Offset A	none		0.18*1	0.25*2
Offset B	none		0.136*1	0.066*2

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard
*1: Before Running Change 15-TR-14
*2: After Running Change 15-TR-14

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.5CC4
Carline(s) PRIUS c
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-1.8°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		31°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.5
(4) Angle β in degrees.	none		1.5°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	271°
of reference plane.	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.06

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV01.8CCU
Carline(s) PRIUS v
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		34°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		2.70
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV02.4BEB
Carline(s) xB
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		32°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.45
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.25
Offset B	none		0.070

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV02.5CC4
Carline(s) AVALON HYBRID
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		- 2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		42°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.06

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV03.5BEC
Carline(s) AVALON
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		- 2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		42°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side	35° (MIN)	LS**	271°
of reference plane.	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.26
Offset B	none		0.06

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXV04.6BEA
Carline(s): LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		31°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.20
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer TOYOTA
Test Group FTYXV05.0CC4
Carline(s) LS 600h L
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		31°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.50
(4) Angle β in degrees.	none		2°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN) each side	LS**	271°
		RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.20
Offset B	none		0.08

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.3 Compliance with fuel fill pipe specifications

AIR RESOURCES BOARD APPLICATION FORMAT
FOR COMPLIANCE WITH THE FILL PIPE REQUIREMENTS

Manufacturer: TOYOTA
Test Group: FTYXT02.0KEM
Carline(s): NX 200t, NX 200t AWD, NX 200t F SPORT
(use extra sheets if required)

The nomenclature and symbols used below are the same as those defined in "Specifications for Fill Pipes and Openings of 2015 and Subsequent Model Motor Vehicle Fuel Tanks" adopted March 22, 2012.

General Specification	ARB Specification		Manufacturer Specification*
(1) Angle α in degrees.	$-10 \leq a \leq 20°$		-2°
(2) Spill prevention in degrees (angle between centerline of test spout in its resting position and the horizontal plane).	30° (MIN)		43°
(3) Test nozzle penetration of restrictor.	2.25 CM (MIN)		3.4
(4) Angle β in degrees.	none		1°
(5) Length 'X' in centimeters.	none		1.3
Fill Pipe Specification			
(1) Fill pipe face surface in TIR.	0.025 CM (MAX)		0.025
(2) Fill pipe face outside diameter.	6.16 CM (MAX)***		6.05
(3) Internal locking lip in degrees of the inside circumference	100° (MIN)		320°
(a) degrees extending each side of reference plane.	35° (MIN)	LS**	271°
	each side	RS**	35°
(4) Height of lip measured from fill pipe inside wall; or	0.25 CM (MIN)		0.28
height of lip measured from fill pipe outside wall for outside diameters between 5.20 and 5.75 CM.	0.85 CM (MIN)		N/A
(5) Depth of lip (D) in centimeters.	$0.4 \leq D \leq 1.3$		1.2 thru 1.3
Offset			
Offset A	none		0.28
Offset B	none		0.04

*dimension should include adverse tolerance condition
**LS = Left side of reference plane
**RS = Right side of reference plane
***Max value stated in J1114 of SAE standard

17.4 Compliance with the location requirement of the vent tube opening in the fill pipe

Not applicable

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

[Test vehicle]

Model name	:	tC

[Test conditions]

Date	:	02/06/2008
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	129.7 °F
Track surface temperature (at completion)	:	130.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	02/06/2008
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	130.8 °F
Track surface temperature (at completion)	:	130.3 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance wirh 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

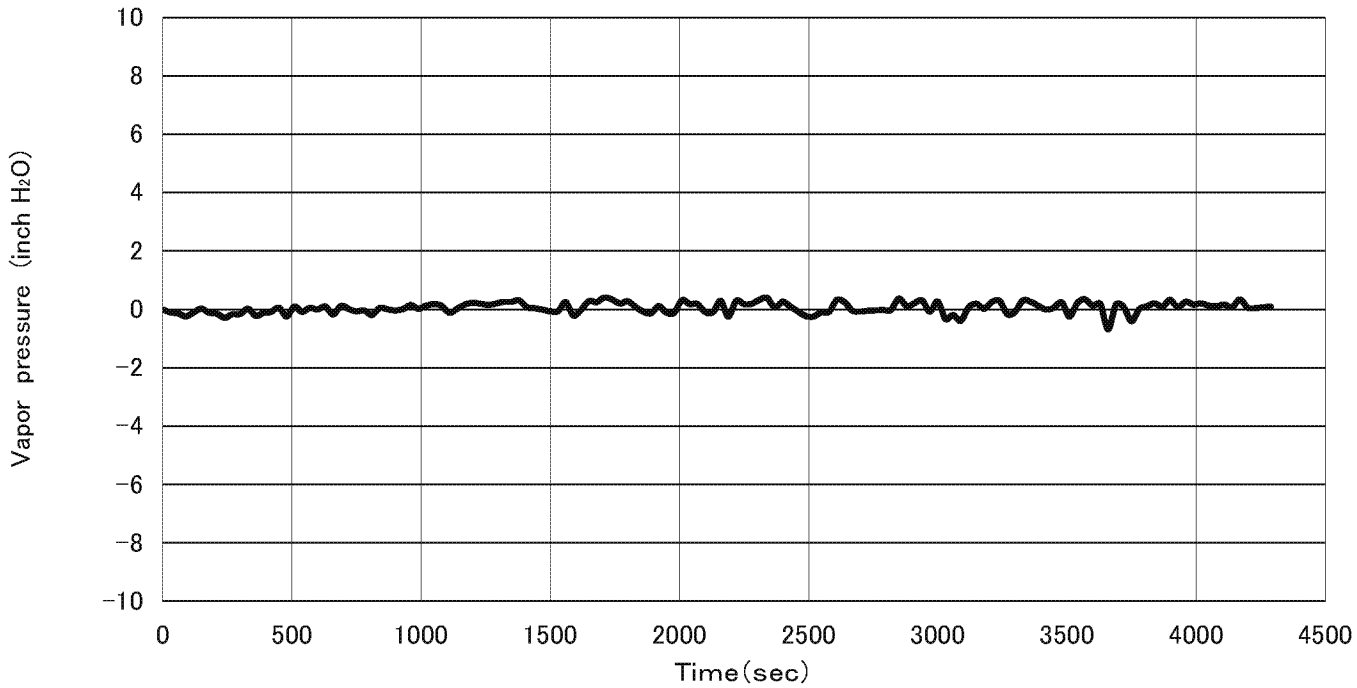
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	103.5	2400	112.0	3600	118.6
30	95.5	1230	103.7	2430	112.2	3630	118.8
60	95.6	1260	103.8	2460	112.4	3660	119.1
90	95.8	1290	104.1	2490	112.6	3690	119.2
120	95.8	1320	104.4	2520	112.8	3720	119.3
150	96.2	1350	104.6	2550	113.0	3750	119.4
180	96.2	1380	104.8	2580	113.2	3780	119.3
210	96.5	1410	105.0	2610	113.4	3810	119.6
240	96.6	1440	105.3	2640	113.7	3840	119.6
270	96.7	1470	105.4	2670	113.8	3870	119.8
300	96.9	1500	105.8	2700	114.0	3900	120.0
330	97.1	1530	105.9	2730	114.2	3930	120.0
360	97.3	1560	106.2	2760	114.4	3960	120.4
390	97.5	1590	106.4	2790	114.6	3990	120.2
420	97.7	1620	106.7	2820	114.8	4020	120.4
450	98.0	1650	106.8	2850	115.0	4050	120.7
480	98.2	1680	107.0	2880	115.2	4080	120.8
510	98.4	1710	107.2	2910	115.4	4110	121.0
540	98.6	1740	107.5	2940	115.6	4140	121.1
570	98.8	1770	107.6	2970	115.8	4170	121.2
600	99.0	1800	107.9	3000	115.8	4200	121.4
630	99.1	1830	108.0	3030	116.0	4230	121.5
660	99.5	1860	108.3	3060	116.1	4260	121.6
690	99.7	1890	108.5	3090	116.2	4290	122.0
720	100.0	1920	108.7	3120	116.3		
750	100.2	1950	109.0	3150	116.4		
780	100.4	1980	109.1	3180	116.6		
810	100.6	2010	109.2	3210	116.6		
840	100.9	2040	109.6	3240	116.9		
870	101.2	2070	109.7	3270	117.0		
900	101.3	2100	109.9	3300	117.2		
930	101.6	2130	110.3	3330	117.3		
960	101.8	2160	110.4	3360	117.5		
990	101.9	2190	110.6	3390	117.5		
1020	102.1	2220	110.8	3420	117.7		
1050	102.3	2250	111.0	3450	117.9		
1080	102.6	2280	111.2	3480	118.1		
1110	102.8	2310	111.4	3510	118.1		
1140	103.1	2340	111.6	3540	118.3		
1170	103.3	2370	111.8	3570	118.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

[Test vehicle]

Model name	:	COROLLA(2ZR-FE)
Trans. code	:	K313

[Test conditions]

Date	:	12/25/2012
Ambient air temperature (at initiation)	:	96.3 °F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	130.1 °F
Track surface temperature (at completion)	:	131.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	12/25/2012
Ambient air temperature (at initiation)	:	96.6 °F
Ambient air temperature (at completion)	:	97.2 °F
Track surface temperature (at initiation)	:	131.5 °F
Track surface temperature (at completion)	:	129.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

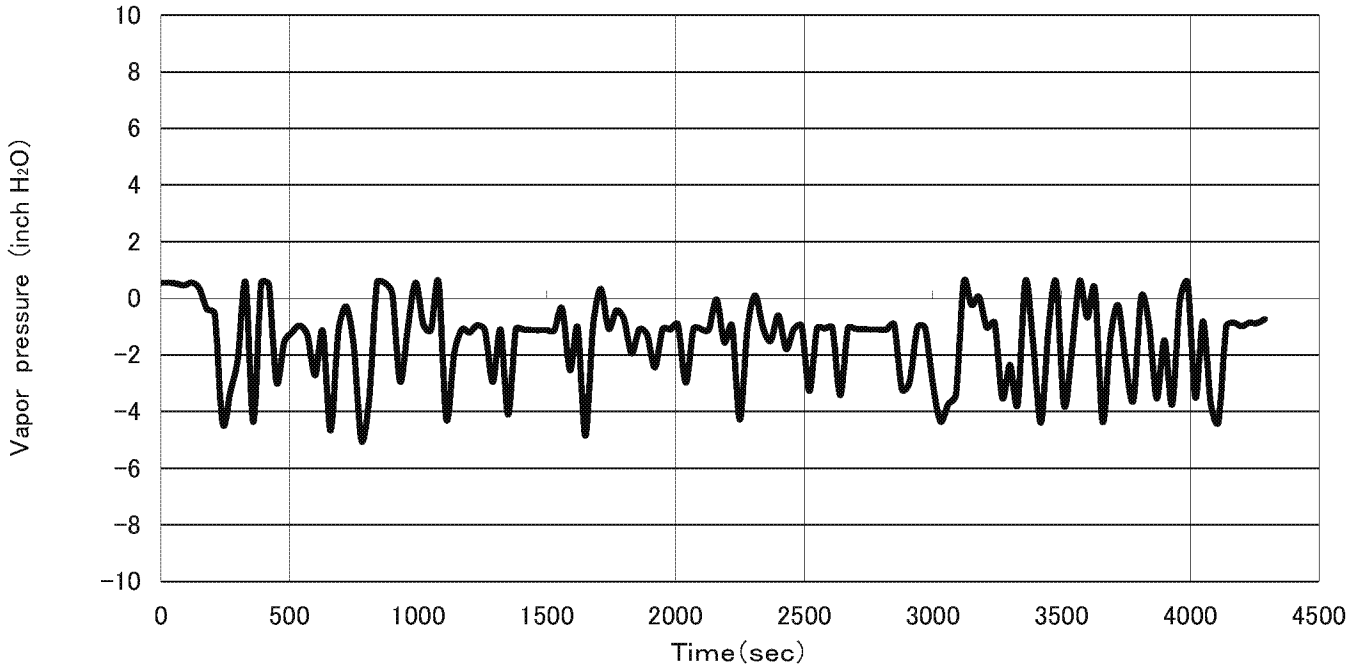
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.2	1200	101.7	2400	110.1	3600	117.5
30	95.4	1230	102.0	2430	110.3	3630	117.7
60	95.4	1260	102.2	2460	110.7	3660	117.9
90	95.5	1290	102.4	2490	110.8	3690	118.0
120	95.5	1320	102.6	2520	111.0	3720	118.0
150	95.4	1350	102.7	2550	111.2	3750	118.2
180	95.5	1380	102.9	2580	111.6	3780	118.4
210	95.4	1410	102.9	2610	111.6	3810	118.4
240	95.5	1440	103.3	2640	111.9	3840	118.4
270	95.5	1470	103.5	2670	112.1	3870	118.4
300	95.7	1500	103.6	2700	112.3	3900	118.4
330	95.9	1530	103.8	2730	112.5	3930	118.4
360	96.1	1560	104.0	2760	112.8	3960	118.8
390	96.1	1590	104.2	2790	112.8	3990	118.8
420	96.3	1620	104.4	2820	113.2	4020	118.9
450	96.6	1650	104.7	2850	113.4	4050	119.1
480	96.8	1680	104.9	2880	113.5	4080	119.1
510	97.0	1710	104.9	2910	113.9	4110	119.1
540	97.2	1740	105.3	2940	114.1	4140	119.3
570	97.5	1770	105.4	2970	114.3	4170	119.5
600	97.9	1800	105.8	3000	114.3	4200	119.7
630	97.9	1830	106.0	3030	114.6	4230	119.7
660	98.1	1860	106.3	3060	115.0	4260	119.8
690	98.4	1890	106.5	3090	115.2	4290	119.8
720	98.6	1920	106.7	3120	115.3		
750	98.6	1950	106.9	3150	115.3		
780	99.0	1980	107.1	3180	115.5		
810	99.1	2010	107.2	3210	115.7		
840	99.5	2040	107.4	3240	115.7		
870	99.7	2070	107.6	3270	116.1		
900	99.7	2100	108.0	3300	116.2		
930	100.0	2130	108.1	3330	116.4		
960	100.2	2160	108.3	3360	116.4		
990	100.4	2190	108.7	3390	116.6		
1020	100.6	2220	108.9	3420	116.6		
1050	100.8	2250	109.0	3450	116.8		
1080	100.9	2280	109.2	3480	117.0		
1110	101.3	2310	109.4	3510	117.1		
1140	101.3	2340	109.6	3540	117.3		
1170	101.5	2370	109.9	3570	117.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

[Test vehicle]

Model name	:	COROLLA(2ZR-FAE)
Trans. code	:	K313

[Test conditions]

Date	:	10/30/2012
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	131.0 °F
Track surface temperature (at completion)	:	132.3 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	10/30/2012
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	97.3 °F
Track surface temperature (at initiation)	:	131.7 °F
Track surface temperature (at completion)	:	131.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

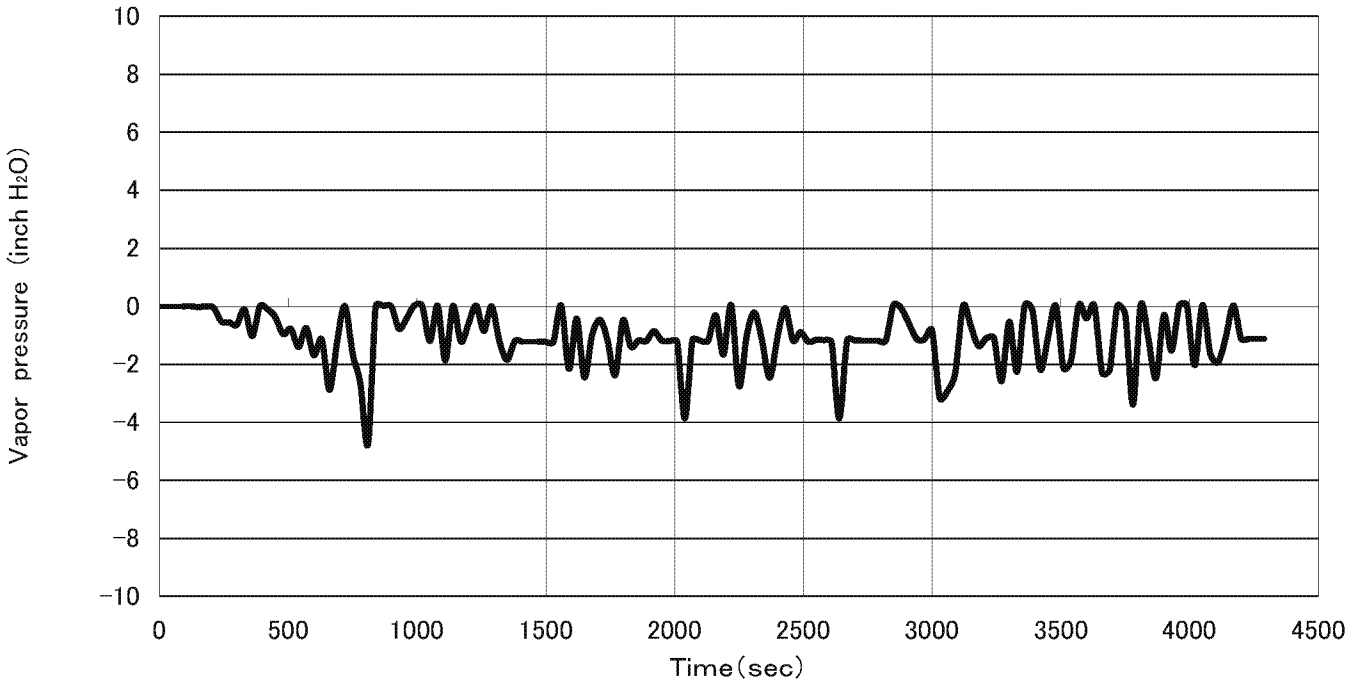
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.2	1200	101.3	2400	109.0	3600	115.5
30	95.2	1230	101.5	2430	109.2	3630	115.7
60	95.2	1260	101.7	2460	109.6	3660	115.9
90	95.4	1290	101.8	2490	109.8	3690	115.9
120	95.4	1320	102.0	2520	109.8	3720	116.1
150	95.4	1350	102.2	2550	109.9	3750	116.4
180	95.5	1380	102.4	2580	110.3	3780	116.2
210	95.5	1410	102.7	2610	110.3	3810	116.4
240	95.9	1440	102.9	2640	110.7	3840	116.4
270	96.1	1470	103.1	2670	110.8	3870	116.6
300	96.1	1500	103.3	2700	111.2	3900	116.8
330	96.1	1530	103.5	2730	111.2	3930	116.8
360	96.3	1560	103.6	2760	111.4	3960	117.0
390	96.4	1590	103.8	2790	111.6	3990	117.1
420	96.6	1620	104.0	2820	111.7	4020	117.1
450	96.8	1650	104.2	2850	111.9	4050	117.3
480	96.8	1680	104.5	2880	112.1	4080	117.1
510	97.2	1710	104.7	2910	112.3	4110	117.3
540	97.3	1740	104.7	2940	112.5	4140	117.5
570	97.5	1770	104.9	2970	112.8	4170	117.7
600	97.7	1800	105.1	3000	112.8	4200	117.9
630	97.9	1830	105.4	3030	113.2	4230	118.0
660	98.1	1860	105.6	3060	113.2	4260	118.2
690	98.2	1890	105.8	3090	113.4	4290	118.2
720	98.4	1920	106.0	3120	113.5		
750	98.6	1950	106.2	3150	113.7		
780	98.8	1980	106.5	3180	113.9		
810	99.0	2010	106.5	3210	113.9		
840	99.3	2040	106.7	3240	114.1		
870	99.5	2070	106.9	3270	114.1		
900	99.7	2100	107.1	3300	114.3		
930	99.9	2130	107.4	3330	114.3		
960	99.9	2160	107.6	3360	114.4		
990	100.0	2190	107.8	3390	114.6		
1020	100.2	2220	108.0	3420	114.8		
1050	100.4	2250	108.1	3450	114.8		
1080	100.6	2280	108.3	3480	115.0		
1110	100.8	2310	108.3	3510	115.2		
1140	100.9	2340	108.7	3540	115.2		
1170	101.1	2370	108.9	3570	115.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

[Test vehicle]

Model name	:	xB

[Test conditions]

Date	:	06/14/2006
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	97.0
Track surface temperature (at initiation)	:	130.1 °F
Track surface temperature (at completion)	:	134.8 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	06/15/2006
Ambient air temperature (at initiation)	:	97.2 °F
Ambient air temperature (at completion)	:	97.2 °F
Track surface temperature (at initiation)	:	130.1 °F
Track surface temperature (at completion)	:	130.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance wirh 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

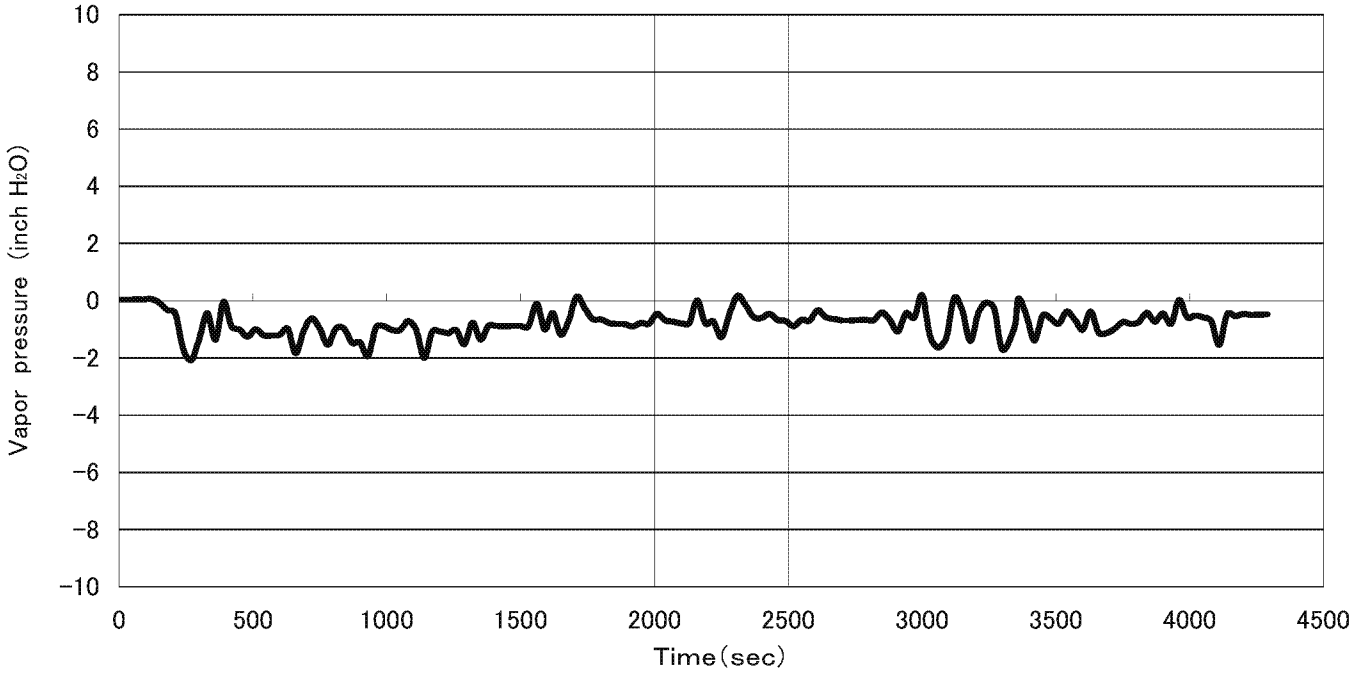
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.1	1200	104.9	2400	112.5	3600	118.5
30	96.1	1230	105.1	2430	112.7	3630	118.6
60	96.1	1260	105.4	2460	112.7	3660	118.7
90	96.4	1290	105.5	2490	112.9	3690	118.8
120	96.6	1320	105.8	2520	113.3	3720	119.0
150	96.8	1350	106.0	2550	113.4	3750	119.2
180	96.9	1380	106.0	2580	113.5	3780	119.5
210	97.1	1410	106.3	2610	113.8	3810	119.4
240	97.3	1440	106.5	2640	113.9	3840	119.7
270	97.5	1470	106.7	2670	113.9	3870	119.8
300	97.8	1500	106.9	2700	114.1	3900	119.7
330	98.2	1530	107.2	2730	114.3	3930	119.8
360	98.4	1560	107.5	2760	114.5	3960	119.9
390	98.6	1590	107.4	2790	114.6	3990	120.1
420	98.8	1620	107.6	2820	114.9	4020	120.1
450	98.9	1650	107.8	2850	115.1	4050	120.1
480	99.2	1680	108.0	2880	115.3	4080	120.2
510	99.5	1710	108.2	2910	115.4	4110	120.3
540	99.7	1740	108.5	2940	115.7	4140	120.4
570	99.9	1770	108.7	2970	115.7	4170	120.5
600	100.4	1800	108.9	3000	116.1	4200	120.7
630	100.6	1830	109.0	3030	116.0	4230	120.6
660	100.7	1860	109.0	3060	116.1	4260	120.6
690	101.0	1890	109.4	3090	116.1	4290	120.7
720	101.1	1920	109.5	3120	116.2		
750	101.4	1950	109.7	3150	116.9		
780	101.6	1980	109.8	3180	116.9		
810	102.0	2010	110.1	3210	117.1		
840	102.3	2040	110.4	3240	117.1		
870	102.6	2070	110.4	3270	117.4		
900	102.7	2100	110.5	3300	117.2		
930	103.1	2130	110.7	3330	117.7		
960	103.2	2160	111.1	3360	117.7		
990	103.4	2190	111.2	3390	118.0		
1020	103.7	2220	111.4	3420	117.9		
1050	103.9	2250	111.4	3450	118.2		
1080	104.1	2280	111.7	3480	118.3		
1110	104.3	2310	112.0	3510	118.3		
1140	104.6	2340	112.3	3540	118.4		
1170	104.7	2370	112.3	3570	118.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115P12.

Evaporative emission test log

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	5TYXV01.8VRA	BTYXV02.5BEB
Vehicle ID	:	05-ZE4	11-AT1M
Rep. car/truck line	:	COROLLA MATRIX	tC
Rep. vehicle model	:	ZZE133L-DHFSFA	AGT20L-ALFGKA
Displacement	:	109.5CID	152.2CID
Transmission	:	M6/C60	M6/EB60
Test weight	:	3,125 lbs.	3,375 lbs.
Road load	:	12.8 HP	11.8 HP
Evap. code	:	ZE2B	AT1H

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMHC	:	0.0362	(g/mile)
	CO	:	0.327	(g/mile)
	NOx	:	0.102	(g/mile)
Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.04	(g/test)
3DBL	1st day	:	0.19*1	(g/test)
	2nd day	:	0.17	(g/test)
	3rd day	:	0.17	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMHC	:	0.0363	(g/mile)
	CO	:	0.426	(g/mile)
	NOx	:	0.079	(g/mile)
Hot soak loss		:	0.01	(g/test)
2DBL	1st day	:	0.20*1	(g/test)
	2nd day	:	0.18	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0175	(g/mile)
	CO	:	0.20	(g/mile)
	NOx	:	0.016	(g/mile)
Refueling emission		:	0.001	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0196 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

[Test vehicle]

Model name	:	RX 350
Trans. Conf.	:	L5

[Test conditions]

Date	:	09/19/2007
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	95.9 °F
Track surface temperature (at initiation)	:	130.3 °F
Track surface temperature (at completion)	:	130.6 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	09/19/2007
Ambient air temperature (at initiation)	:	96.3°F
Ambient air temperature (at completion)	:	95.9 °F
Track surface temperature (at initiation)	:	131.5 °F
Track surface temperature (at completion)	:	131.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance wirh 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

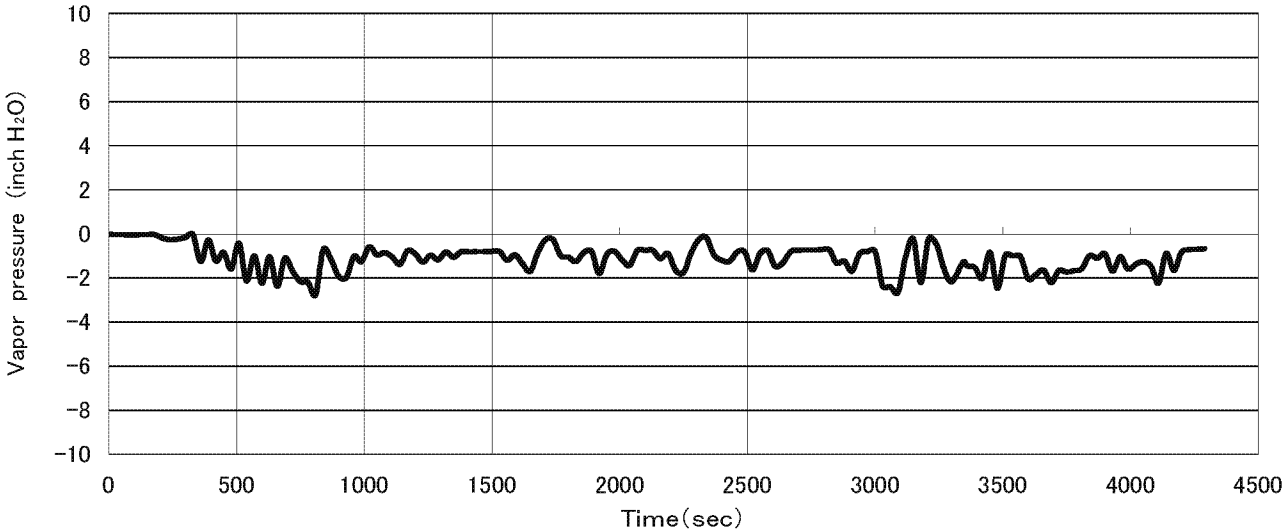
(a) Measured temperature and pressure profiles

Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	99.1	2400	104.5	3600	109.3
30	95.4	1230	99.3	2430	104.5	3630	109.4
60	95.5	1260	99.4	2460	104.5	3660	109.5
90	95.5	1290	99.6	2490	104.6	3690	109.6
120	95.4	1320	99.7	2520	104.9	3720	109.8
150	95.6	1350	99.8	2550	105.0	3750	109.9
180	95.5	1380	100.0	2580	105.1	3780	109.9
210	95.7	1410	100.1	2610	105.3	3810	110.1
240	95.8	1440	100.2	2640	105.5	3840	110.2
270	95.9	1470	100.3	2670	105.6	3870	110.3
300	95.9	1500	100.4	2700	105.6	3900	110.4
330	96.0	1530	100.6	2730	105.8	3930	110.5
360	96.1	1560	100.6	2760	105.9	3960	110.6
390	96.3	1590	100.7	2790	106.2	3990	110.7
420	96.4	1620	100.9	2820	106.2	4020	110.8
450	96.5	1650	101.0	2850	106.4	4050	110.9
480	96.6	1680	101.2	2880	106.5	4080	111.0
510	96.6	1710	101.3	2910	106.6	4110	111.1
540	96.7	1740	101.6	2940	106.7	4140	111.3
570	96.8	1770	101.6	2970	106.8	4170	111.3
600	97.0	1800	101.7	3000	106.9	4200	111.4
630	96.9	1830	101.8	3030	107.2	4230	111.6
660	97.1	1860	101.9	3060	107.2	4260	111.7
690	97.2	1890	102.1	3090	107.4	4290	111.9
720	97.3	1920	102.2	3120	107.5		
750	97.4	1950	102.4	3150	107.6		
780	97.6	1980	102.5	3180	107.6		
810	97.6	2010	102.6	3210	107.7		
840	97.7	2040	102.8	3240	108.0		
870	97.9	2070	102.9	3270	108.0		
900	98.0	2100	103.0	3300	108.1		
930	98.2	2130	103.1	3330	108.3		
960	98.2	2160	103.3	3360	108.4		
990	98.3	2190	103.4	3390	108.5		
1020	98.6	2220	103.5	3420	108.6		
1050	98.7	2250	103.6	3450	108.7		
1080	98.8	2280	103.8	3480	108.9		
1110	98.9	2310	104.0	3510	109.1		
1140	98.9	2340	104.0	3540	109.2		
1170	99.1	2370	104.4	3570	109.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

[Test vehicle]

Model name	:	HIGHLANDER
Trans. Conf.	:	U151F

[Test conditions]

Date	:	10/25/2006
Ambient air temperature (at initiation)	:	95.9°F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	130.8 °F
Track surface temperature (at completion)	:	131.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	10/25/2006
Ambient air temperature (at initiation)	:	96.3°F
Ambient air temperature (at completion)	:	96.6 °F
Track surface temperature (at initiation)	:	136.0 °F
Track surface temperature (at completion)	:	132.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

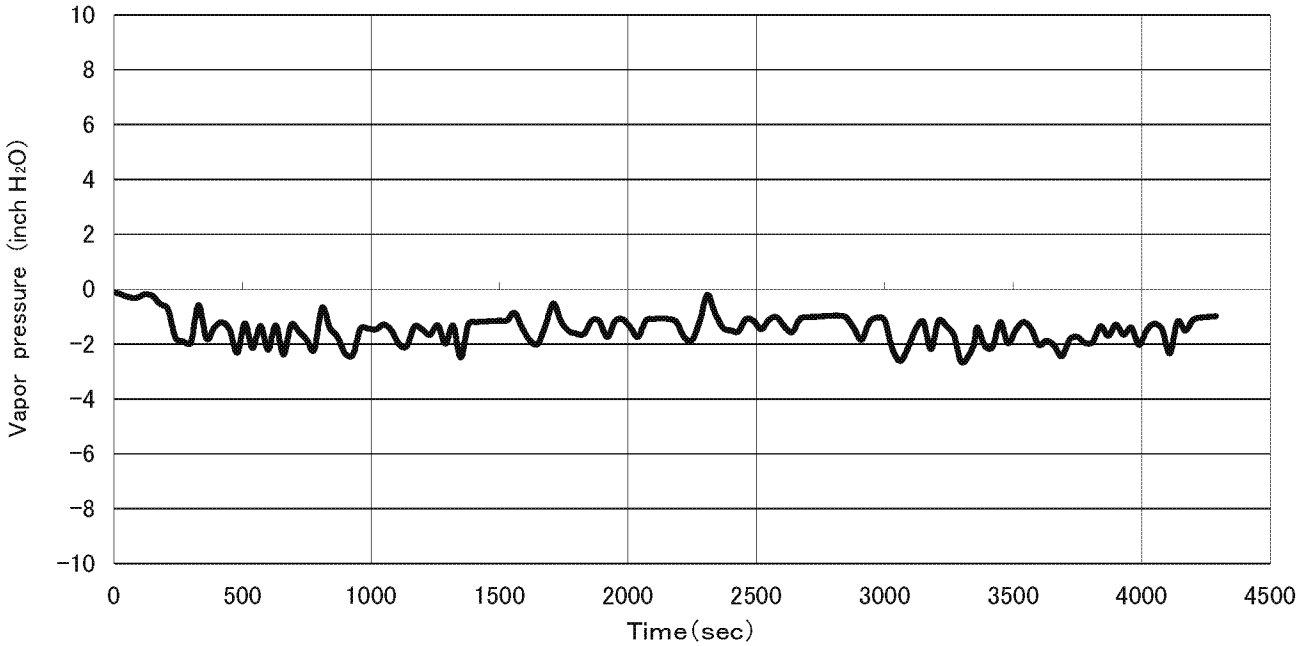
(a) Measured temperature and pressure profiles

Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	100.9	2400	106.4	3600	111.7
30	95.0	1230	101.0	2430	106.7	3630	111.7
60	95.2	1260	101.1	2460	106.8	3660	111.8
90	95.5	1290	101.2	2490	106.7	3690	111.9
120	95.9	1320	101.3	2520	107.1	3720	112.1
150	96.0	1350	101.3	2550	107.3	3750	112.1
180	96.0	1380	101.6	2580	107.3	3780	112.3
210	96.4	1410	101.5	2610	107.3	3810	112.3
240	96.6	1440	101.8	2640	107.5	3840	112.5
270	96.7	1470	101.8	2670	107.7	3870	112.6
300	96.8	1500	102.0	2700	107.8	3900	112.7
330	97.0	1530	102.1	2730	107.8	3930	112.8
360	97.1	1560	102.3	2760	108.0	3960	112.9
390	97.3	1590	102.3	2790	108.2	3990	113.0
420	97.4	1620	102.6	2820	108.3	4020	113.2
450	97.6	1650	102.7	2850	108.5	4050	113.1
480	97.7	1680	102.8	2880	108.6	4080	113.3
510	97.7	1710	103.1	2910	108.8	4110	113.4
540	97.9	1740	103.1	2940	109.0	4140	113.4
570	98.2	1770	103.4	2970	109.2	4170	113.6
600	98.3	1800	103.5	3000	109.3	4200	113.7
630	98.4	1830	103.6	3030	109.4	4230	113.8
660	98.5	1860	103.8	3060	109.6	4260	113.8
690	98.6	1890	103.9	3090	109.7	4290	114.1
720	98.7	1920	104.0	3120	109.8		
750	99.0	1950	104.2	3150	109.9		
780	99.0	1980	104.2	3180	109.9		
810	99.1	2010	104.5	3210	109.9		
840	99.2	2040	104.6	3240	110.2		
870	99.4	2070	104.7	3270	110.3		
900	99.5	2100	104.9	3300	110.5		
930	99.5	2130	104.9	3330	110.5		
960	99.6	2160	105.4	3360	110.8		
990	99.9	2190	105.3	3390	110.8		
1020	100.1	2220	105.5	3420	110.9		
1050	100.2	2250	105.6	3450	111.2		
1080	100.4	2280	105.8	3480	111.2		
1110	100.5	2310	106.0	3510	111.3		
1140	100.6	2340	106.1	3540	111.4		
1170	100.9	2370	106.3	3570	111.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

[Test vehicle]

Model name	:	SIENNA
Trans. conf.	:	L5

[Test conditions]

Date	:	07/24/2006
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	131.5°F
Track surface temperature (at completion)	:	131.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	07/24/2006
Ambient air temperature (at initiation)	:	96.8 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	130.6°F
Track surface temperature (at completion)	:	131.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

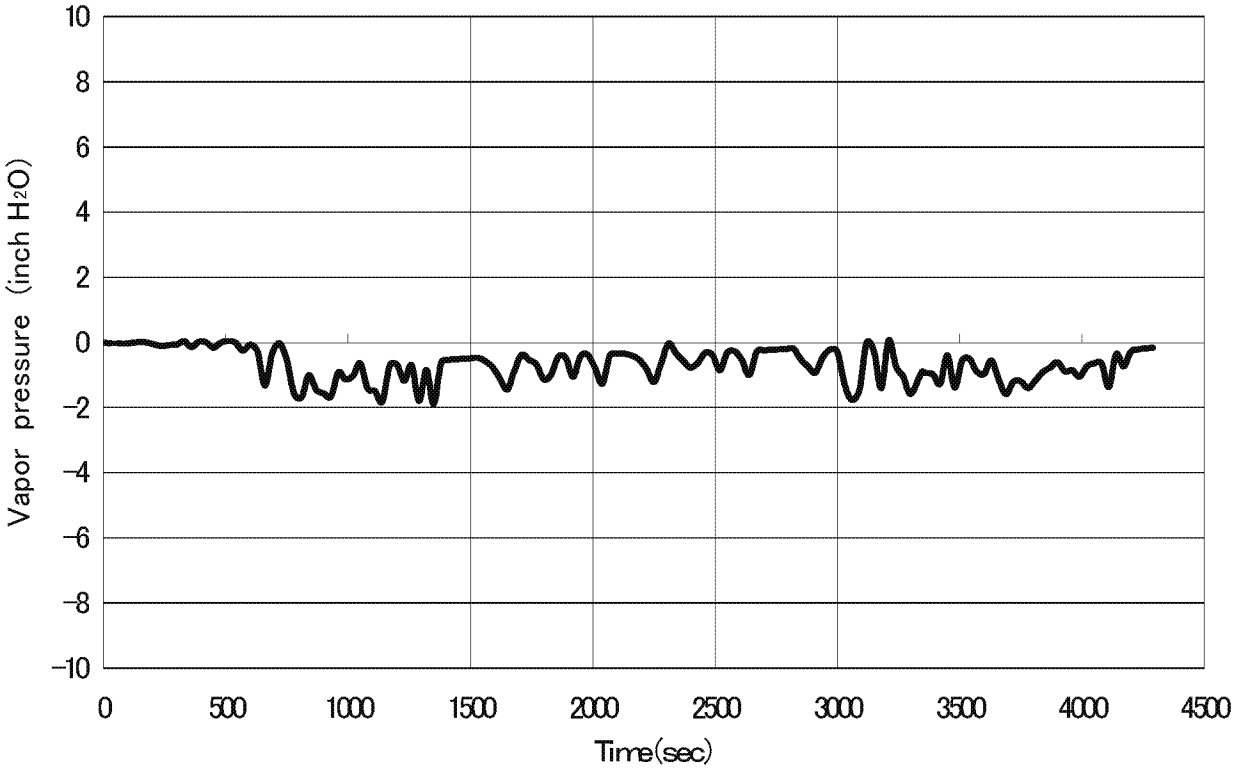
(a) Measured temperature and pressure profiles

Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.2	1200	102.0	2400	109.7	3600	116.6
30	95.1	1230	102.1	2430	109.9	3630	116.7
60	95.4	1260	102.3	2460	110.0	3660	116.8
90	95.6	1290	102.4	2490	110.3	3690	117.0
120	95.7	1320	102.9	2520	110.4	3720	117.0
150	95.9	1350	103.1	2550	110.7	3750	117.1
180	96.0	1380	103.2	2580	110.9	3780	117.2
210	95.9	1410	103.1	2610	111.1	3810	117.4
240	96.1	1440	103.2	2640	111.2	3840	117.4
270	96.3	1470	103.5	2670	111.5	3870	117.5
300	96.3	1500	103.7	2700	111.7	3900	117.7
330	96.5	1530	103.8	2730	111.8	3930	117.9
360	96.8	1560	104.2	2760	112.0	3960	118.0
390	96.7	1590	104.3	2790	112.2	3990	118.2
420	96.9	1620	104.5	2820	112.3	4020	118.3
450	97.1	1650	104.7	2850	112.5	4050	118.4
480	97.3	1680	104.8	2880	112.7	4080	118.5
510	97.5	1710	105.1	2910	113.0	4110	118.6
540	97.7	1740	105.3	2940	113.1	4140	118.7
570	98.0	1770	105.5	2970	113.5	4170	118.9
600	97.9	1800	105.8	3000	113.5	4200	119.0
630	98.3	1830	105.9	3030	113.7	4230	119.1
660	98.5	1860	106.1	3060	113.9	4260	119.3
690	98.6	1890	106.2	3090	114.1	4290	119.5
720	98.7	1920	106.5	3120	114.4		
750	99.0	1950	106.7	3150	114.4		
780	99.1	1980	106.8	3180	114.5		
810	99.3	2010	107.1	3210	114.7		
840	99.5	2040	107.2	3240	114.8		
870	99.6	2070	107.5	3270	114.9		
900	100.0	2100	107.7	3300	115.1		
930	100.3	2130	107.9	3330	115.2		
960	100.8	2160	108.0	3360	115.4		
990	100.4	2190	108.2	3390	115.5		
1020	100.6	2220	108.5	3420	115.7		
1050	100.9	2250	108.6	3450	115.8		
1080	101.2	2280	108.8	3480	115.9		
1110	101.3	2310	109.1	3510	116.1		
1140	101.5	2340	109.4	3540	116.2		
1170	101.8	2370	109.6	3570	116.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

[Test vehicle]

Model name	:	TACOMA 4WD
Trans. conf.	:	L4/A340F-A

[Test conditions]

Date	:	05/15/2009
Ambient air temperature (at initiation)	:	97.5 °F
Ambient air temperature (at completion)	:	96.6 °F
Track surface temperature (at initiation)	:	131.7°F
Track surface temperature (at completion)	:	131.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	05/15/2009
Ambient air temperature (at initiation)	:	97.9 °F
Ambient air temperature (at completion)	:	97.2 °F
Track surface temperature (at initiation)	:	131.7°F
Track surface temperature (at completion)	:	130.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

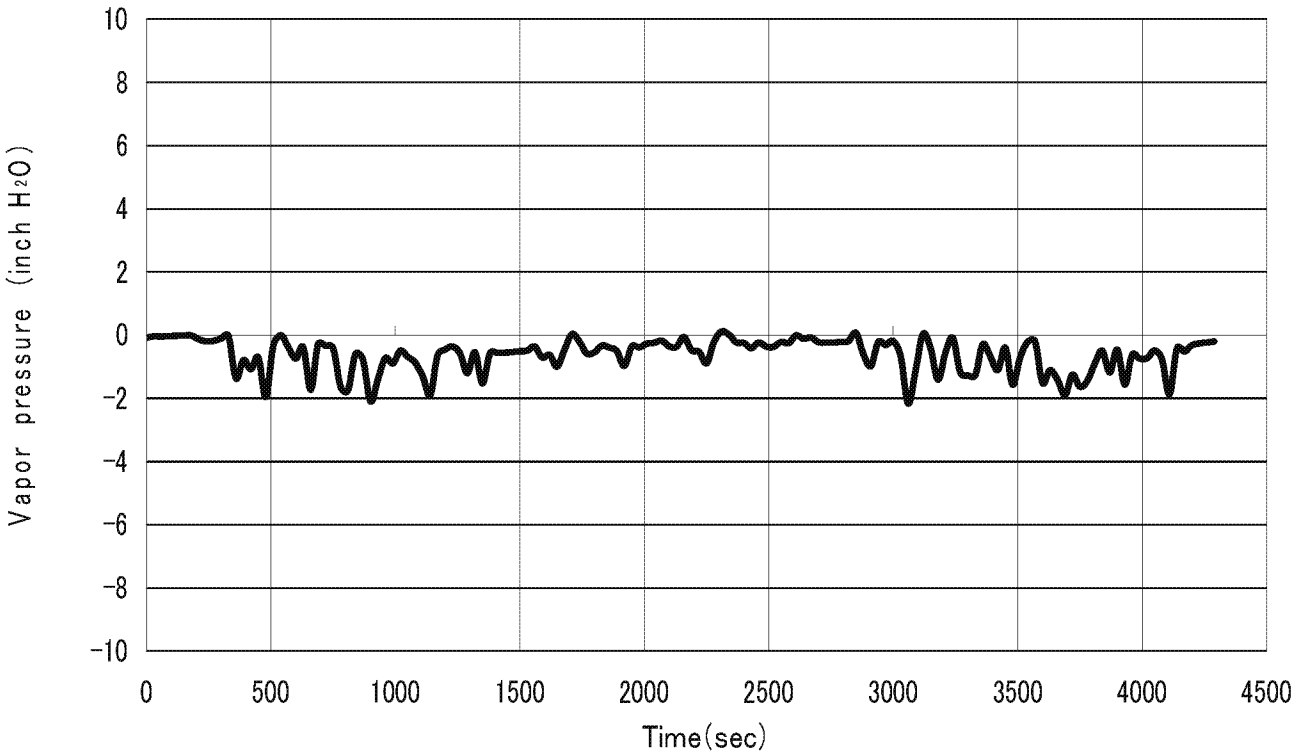
(a) Measured temperature and pressure profiles

Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.7	1200	101.8	2400	110.3	3600	117.5
30	95.7	1230	102.0	2430	110.7	3630	117.5
60	95.7	1260	102.2	2460	111.1	3660	117.6
90	95.7	1290	102.4	2490	111.4	3690	117.8
120	95.8	1320	102.7	2520	111.5	3720	117.9
150	95.7	1350	102.8	2550	111.7	3750	118.0
180	95.8	1380	103.1	2580	112.0	3780	118.2
210	95.9	1410	103.4	2610	112.2	3810	118.3
240	95.8	1440	103.8	2640	112.4	3840	118.4
270	95.7	1470	104.0	2670	112.4	3870	118.9
300	95.7	1500	104.4	2700	112.8	3900	118.8
330	95.9	1530	104.6	2730	113.2	3930	118.9
360	96.1	1560	104.8	2760	113.5	3960	118.9
390	96.2	1590	105.0	2790	113.8	3990	119.1
420	96.4	1620	105.1	2820	114.1	4020	119.3
450	96.7	1650	105.3	2850	114.0	4050	119.4
480	96.8	1680	105.3	2880	113.8	4080	119.4
510	96.8	1710	105.5	2910	113.7	4110	119.6
540	97.1	1740	105.6	2940	113.9	4140	119.7
570	97.3	1770	105.9	2970	114.3	4170	119.8
600	97.5	1800	106.2	3000	114.2	4200	120.0
630	97.8	1830	106.5	3030	113.8	4230	120.4
660	97.9	1860	106.7	3060	113.5	4260	120.6
690	98.1	1890	107.1	3090	113.9	4290	120.7
720	98.3	1920	107.3	3120	114.5		
750	98.5	1950	107.3	3150	115.3		
780	98.6	1980	107.6	3180	115.4		
810	98.8	2010	107.7	3210	115.7		
840	99.0	2040	108.0	3240	116.0		
870	99.2	2070	108.1	3270	116.1		
900	99.4	2100	108.6	3300	116.0		
930	99.6	2130	109.0	3330	116.5		
960	100.0	2160	109.0	3360	116.5		
990	100.2	2190	109.1	3390	116.7		
1020	100.4	2220	109.3	3420	116.8		
1050	100.7	2250	109.4	3450	116.9		
1080	101.0	2280	109.6	3480	117.1		
1110	101.2	2310	109.8	3510	117.3		
1140	101.3	2340	109.7	3540	117.3		
1170	101.5	2370	110.3	3570	117.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

[Test vehicle]

Model name	:	TACOMA 4WD
Trans. conf./code	:	L5/A750F

[Test conditions]

Date	:	11/15/2002
Ambient air temperature (at initiation)	:	97.0 °F
Ambient air temperature (at completion)	:	98.6 °F
Track surface temperature (at initiation)	:	128.1 °F
Track surface temperature (at completion)	:	130.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

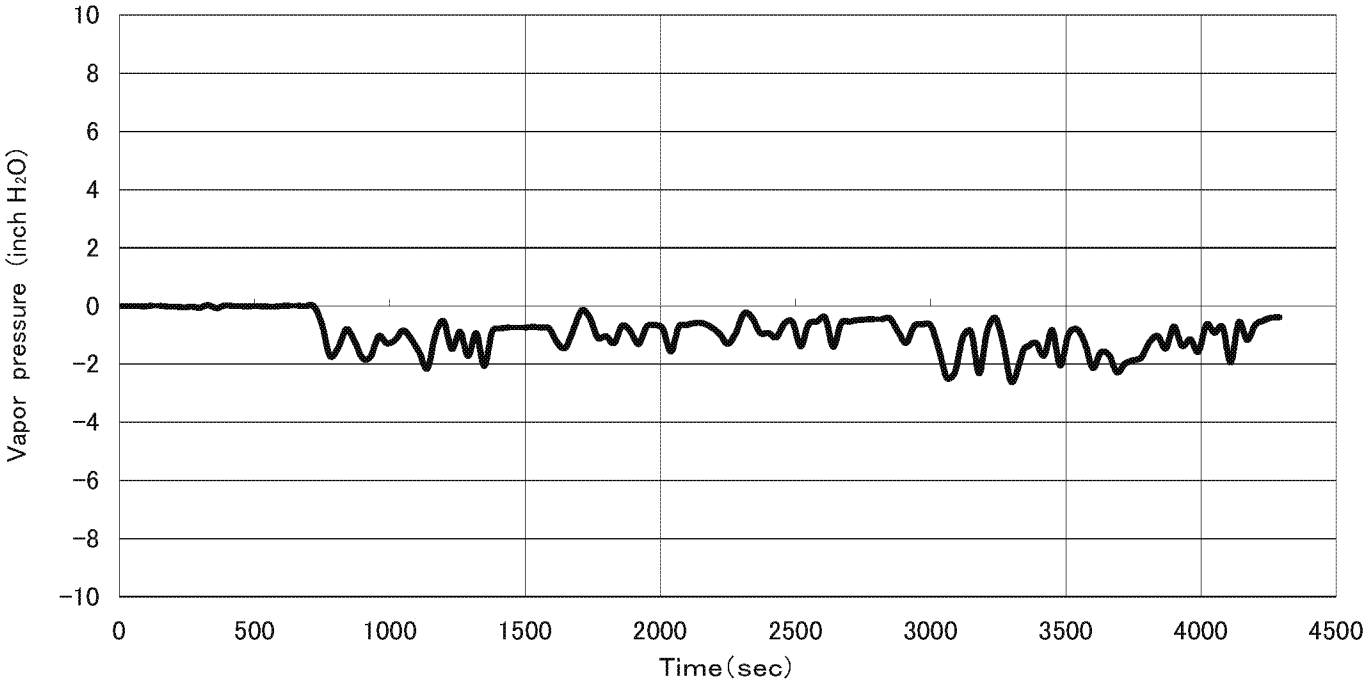
(a) Measured temperature and pressure profiles

Measured average fuel temperature

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.3	1200	103.4	2400	111.0	3600	117.0
30	96.3	1230	103.6	2430	111.5	3630	116.8
60	96.5	1260	103.8	2460	111.3	3660	117.3
90	97.1	1290	104.1	2490	111.6	3690	117.3
120	97.4	1320	103.8	2520	112.0	3720	117.4
150	97.2	1350	104.3	2550	112.0	3750	117.6
180	97.6	1380	104.5	2580	112.0	3780	117.8
210	97.7	1410	104.3	2610	112.3	3810	118.1
240	98.0	1440	104.5	2640	112.8	3840	117.8
270	98.2	1470	104.6	2670	112.6	3870	117.9
300	98.4	1500	104.9	2700	112.6	3900	118.5
330	98.5	1530	105.2	2730	112.7	3930	118.4
360	98.5	1560	105.7	2760	113.1	3960	118.6
390	98.7	1590	106.0	2790	113.3	3990	118.7
420	99.2	1620	106.3	2820	113.5	4020	118.8
450	99.1	1650	106.4	2850	113.4	4050	118.8
480	99.0	1680	106.5	2880	113.3	4080	119.0
510	99.2	1710	106.7	2910	113.2	4110	119.2
540	99.2	1740	106.8	2940	113.7	4140	119.3
570	99.5	1770	107.2	2970	113.8	4170	119.3
600	99.8	1800	107.2	3000	113.5	4200	119.7
630	99.9	1830	107.7	3030	113.4	4230	119.7
660	100.2	1860	107.8	3060	113.8	4260	119.8
690	100.7	1890	107.9	3090	114.1	4290	119.9
720	100.8	1920	108.1	3120	114.5		
750	100.9	1950	108.5	3150	115.0		
780	101.1	1980	108.4	3180	115.0		
810	101.2	2010	108.7	3210	115.3		
840	101.2	2040	109.2	3240	115.3		
870	101.8	2070	109.0	3270	115.8		
900	101.7	2100	109.1	3300	115.6		
930	102.0	2130	109.2	3330	116.1		
960	101.9	2160	109.7	3360	116.1		
990	102.1	2190	110.0	3390	116.2		
1020	102.5	2220	110.5	3420	116.4		
1050	102.3	2250	110.1	3450	116.4		
1080	102.7	2280	110.2	3480	116.7		
1110	103.1	2310	110.4	3510	116.7		
1140	102.7	2340	110.4	3540	117.1		
1170	103.1	2370	110.6	3570	116.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P22.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	BTYXT02.7BEM	DTYXT02.7BER
Vehicle ID	:	11-AL1A	13-TN1M
Rep. car/truck line	:	Sienna	TACOMA 4WD
Rep. vehicle model	:	ASL30L-PFTEKA	TRN245L-CRMDKA
Displacement	:	163.1 CID	164.4 CID
Transmission	:	L6/U760E	R155F
Test weight	:	4,500 lbs.	4,250 lbs.
Road load	:	15.1 HP	17.9 HP
Evap. code	:	AL1A	TN1A

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0182	(g/mile)
	CO	:	0.17	(g/mile)
	NOx	:	0.022	(g/mile)
Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.030	(g/mile)
3DBL	1st day	:	0.167*1	(g/test)
	2nd day	:	0.146	(g/test)
	3rd day	:	0.125	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0179	(g/mile)
	CO	:	0.16	(g/mile)
	NOx	:	0.021	(g/mile)
Hot soak loss		:	0.018	(g/mile)
2DBL	1st day	:	0.189*1	(g/test)
	2nd day	:	0.195	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0118	(g/mile)
	CO	:	0.32	(g/mile)
	NOx	:	0.016	(g/mile)
Refueling emission		:	0.001	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0004 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0160E52.

[Test vehicle]

Model name	:	RX450h
Trans. conf./code	:	AV/P313

[Test conditions]

Date	:	06/03/2008
Ambient air temperature (at initiation)	:	105.4 °F
Ambient air temperature (at completion)	:	106.3 °F
Track surface temperature (at initiation)	:	148.6 °F
Track surface temperature (at completion)	:	148.5° F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	06/03/2008
Ambient air temperature (at initiation)	:	106.5 °F
Ambient air temperature (at completion)	:	106.5°F
Track surface temperature (at initiation)	:	147.2 ° F
Track surface temperature (at completion)	:	148.6 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance wirh 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0160E52.

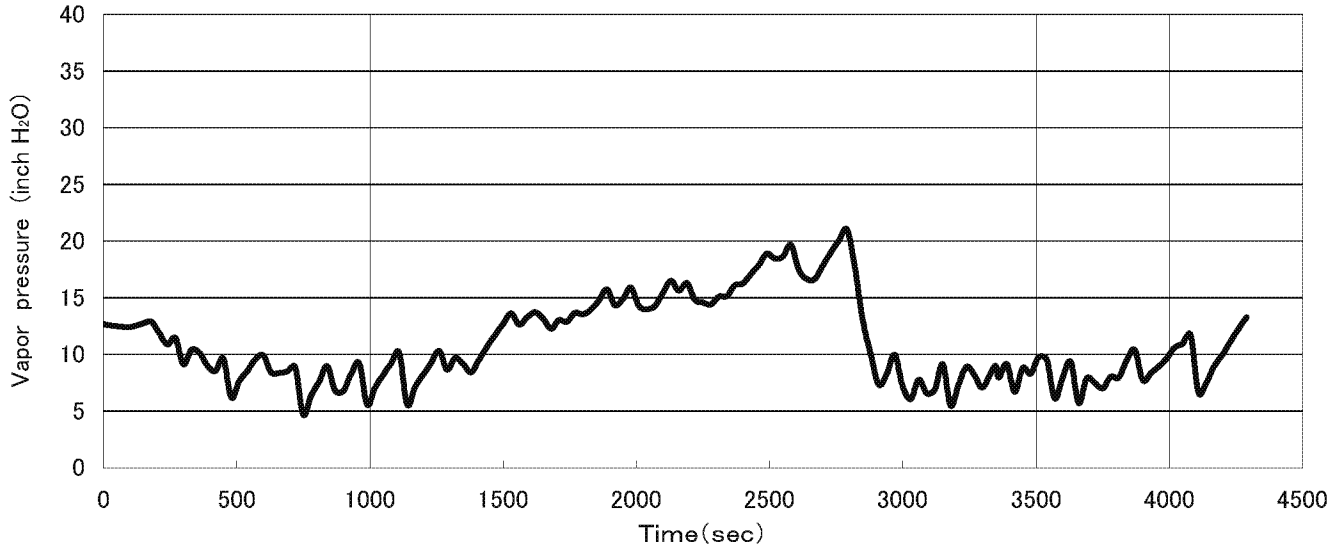
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.3	1200	109.5	2400	115.1	3600	119.5
30	105.2	1230	109.7	2430	115.3	3630	119.7
60	105.1	1260	109.9	2460	115.8	3660	119.8
90	104.9	1290	110.1	2490	116.2	3690	120.0
120	105.1	1320	110.3	2520	115.6	3720	120.1
150	105.2	1350	110.8	2550	115.7	3750	120.1
180	105.2	1380	110.7	2580	116.2	3780	120.2
210	105.1	1410	111.3	2610	115.8	3810	120.2
240	105.2	1440	111.7	2640	115.8	3840	120.5
270	105.3	1470	111.7	2670	116.2	3870	120.7
300	105.4	1500	111.7	2700	116.6	3900	120.9
330	105.5	1530	111.7	2730	116.9	3930	121.0
360	105.7	1560	111.2	2760	116.8	3960	121.1
390	105.7	1590	111.5	2790	116.9	3990	121.4
420	105.7	1620	111.5	2820	117.0	4020	121.4
450	106.0	1650	111.5	2850	116.2	4050	121.6
480	106.0	1680	111.6	2880	116.0	4080	121.7
510	106.2	1710	111.7	2910	116.2	4110	121.7
540	106.3	1740	112.3	2940	116.8	4140	122.1
570	106.7	1770	112.6	2970	117.3	4170	122.0
600	106.7	1800	112.5	3000	116.9	4200	122.5
630	106.6	1830	112.8	3030	116.8	4230	122.7
660	106.9	1860	113.4	3060	117.1	4260	122.8
690	106.7	1890	113.6	3090	117.2	4290	123.1
720	106.9	1920	113.1	3120	117.4		
750	106.8	1950	113.2	3150	117.7		
780	107.2	1980	113.7	3180	117.7		
810	107.3	2010	113.3	3210	117.9		
840	107.5	2040	113.3	3240	118.1		
870	107.6	2070	113.7	3270	118.3		
900	107.7	2100	114.2	3300	118.4		
930	107.8	2130	114.4	3330	118.5		
960	108.1	2160	113.8	3360	118.6		
990	108.3	2190	114.1	3390	118.9		
1020	108.5	2220	114.2	3420	118.9		
1050	109.0	2250	114.4	3450	119.4		
1080	108.6	2280	114.5	3480	119.3		
1110	108.8	2310	114.5	3510	119.5		
1140	108.9	2340	114.8	3540	119.6		
1170	109.3	2370	115.2	3570	119.6		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0160E52.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0160E52.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	6TYXT03.3CC1
Vehicle ID	:	06-MU1C
Rep. car/truck line	:	RX400h 4WD
Rep. vehicle model	:	MHU38L-AWXGKA
Displacement	:	202.0 CID
Transmission	:	P310
Test weight	:	4,750 lbs.
Road load	:	16.1 HP
Evap. code	:	MU1C

Test results

Test procedure : EPA's procedure

Running loss		:	0.007	(g/mile)
Hot soak loss		:	0.043	(g/mile)
3DBL	1st day	:	0.171*1	(g/test)
	2nd day	:	0.154	(g/test)
	3rd day	:	0.157	(g/test)
Hot soak loss		:	0.031	(g/mile)
2DBL	1st day	:	0.091*1	(g/test)
	2nd day	:	0.084	(g/test)

Refueling sequence test results

Refueling emission	:	0.001	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0000 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

[Test vehicle]

Model name	: iQ	

[Test conditions]

Date	:	11/05/2009	11/05/2009
Ambient air temperature (at initiation)	:	96.1 °F	96.1 °F
Ambient air temperature (at completion)	:	97.0 °F	97.0 °F
Track surface temperature (at initiation)	:	129.9 °F	131.9 °F
Track surface temperature (at completion)	:	134.8 °F	134.4 °F
Wind speed	:	N/A	N/A
Test fuel RVP	:	9.0 PSI	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4	
Percent cloud cover	:	N/A	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

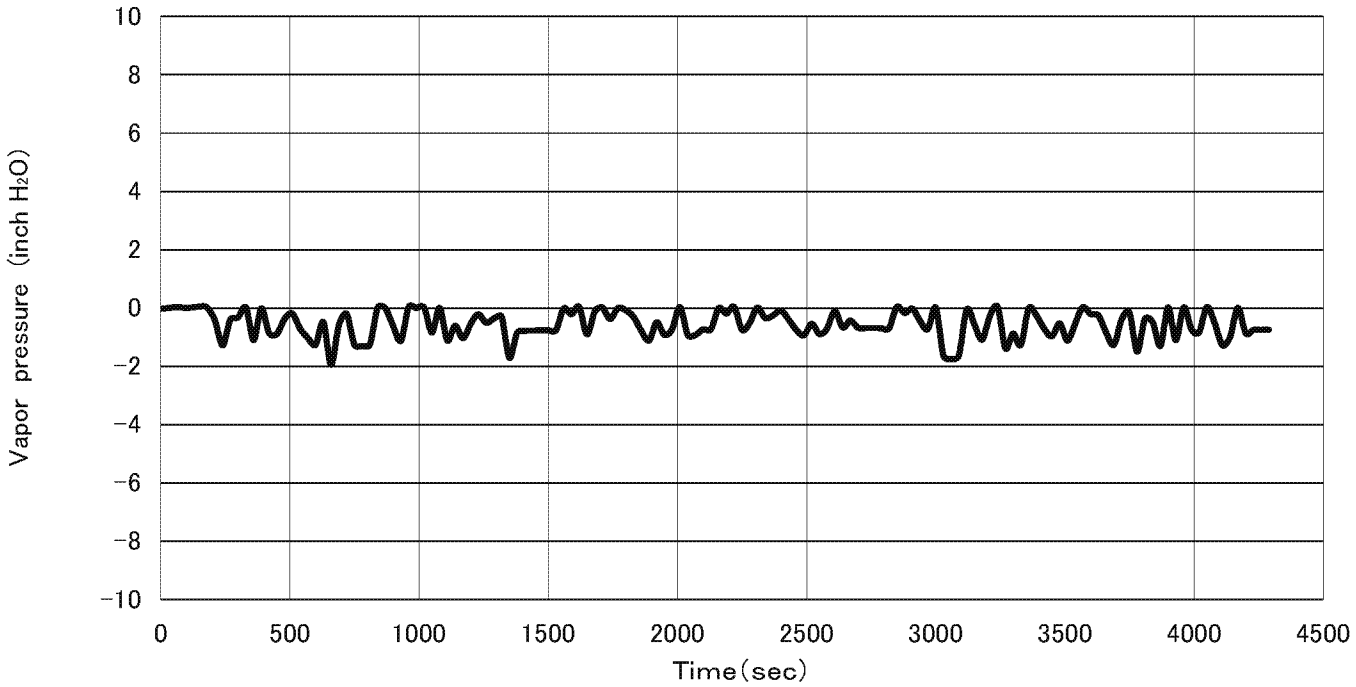
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.5	1200	100.7	2400	108.7	3600	114.5
30	95.7	1230	100.8	2430	109.0	3630	114.7
60	95.7	1260	100.9	2460	109.3	3660	114.7
90	95.9	1290	101.2	2490	109.4	3690	114.9
120	95.8	1320	101.4	2520	109.6	3720	114.9
150	95.9	1350	101.6	2550	109.9	3750	114.9
180	96.1	1380	101.8	2580	110.0	3780	115.0
210	96.2	1410	102.0	2610	110.0	3810	115.0
240	96.3	1440	102.2	2640	110.3	3840	115.0
270	96.4	1470	102.4	2670	110.7	3870	115.1
300	96.4	1500	102.6	2700	110.9	3900	115.3
330	96.4	1530	102.8	2730	111.2	3930	115.3
360	96.5	1560	102.9	2760	111.3	3960	115.4
390	96.6	1590	103.1	2790	111.5	3990	115.3
420	96.7	1620	103.2	2820	111.8	4020	115.4
450	97.0	1650	103.6	2850	111.9	4050	115.6
480	97.0	1680	103.8	2880	112.1	4080	115.6
510	97.1	1710	103.8	2910	112.4	4110	115.7
540	97.3	1740	104.1	2940	112.5	4140	115.9
570	97.4	1770	104.4	2970	112.7	4170	115.9
600	97.6	1800	104.5	3000	112.8	4200	116.1
630	97.7	1830	104.8	3030	113.0	4230	116.2
660	97.8	1860	105.0	3060	113.1	4260	116.2
690	98.1	1890	105.2	3090	113.2	4290	116.4
720	98.2	1920	105.4	3120	113.2		
750	98.4	1950	105.6	3150	113.3		
780	98.6	1980	105.9	3180	113.4		
810	98.8	2010	105.9	3210	113.3		
840	98.9	2040	106.3	3240	113.5		
870	99.1	2070	106.5	3270	113.6		
900	99.2	2100	106.7	3300	113.7		
930	99.4	2130	106.9	3330	113.8		
960	99.4	2160	107.0	3360	113.9		
990	99.6	2190	107.2	3390	113.9		
1020	99.8	2220	107.5	3420	113.9		
1050	100.0	2250	107.8	3450	114.0		
1080	100.1	2280	108.0	3480	114.1		
1110	100.1	2310	108.1	3510	114.3		
1140	100.4	2340	108.3	3540	114.1		
1170	100.5	2370	108.6	3570	114.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

[Test vehicle]

Model name	:	YARIS
Trans. conf./code	:	L4/U340E

[Test conditions]

Date	:	03/23/2004
Ambient air temperature (at initiation)	:	96.8 °F
Ambient air temperature (at completion)	:	98.2 °F
Track surface temperature (at initiation)	:	130.8 °F
Track surface temperature (at completion)	:	131.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	03/23/2004
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	97.2 °F
Track surface temperature (at initiation)	:	131.2 °F
Track surface temperature (at completion)	:	130.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

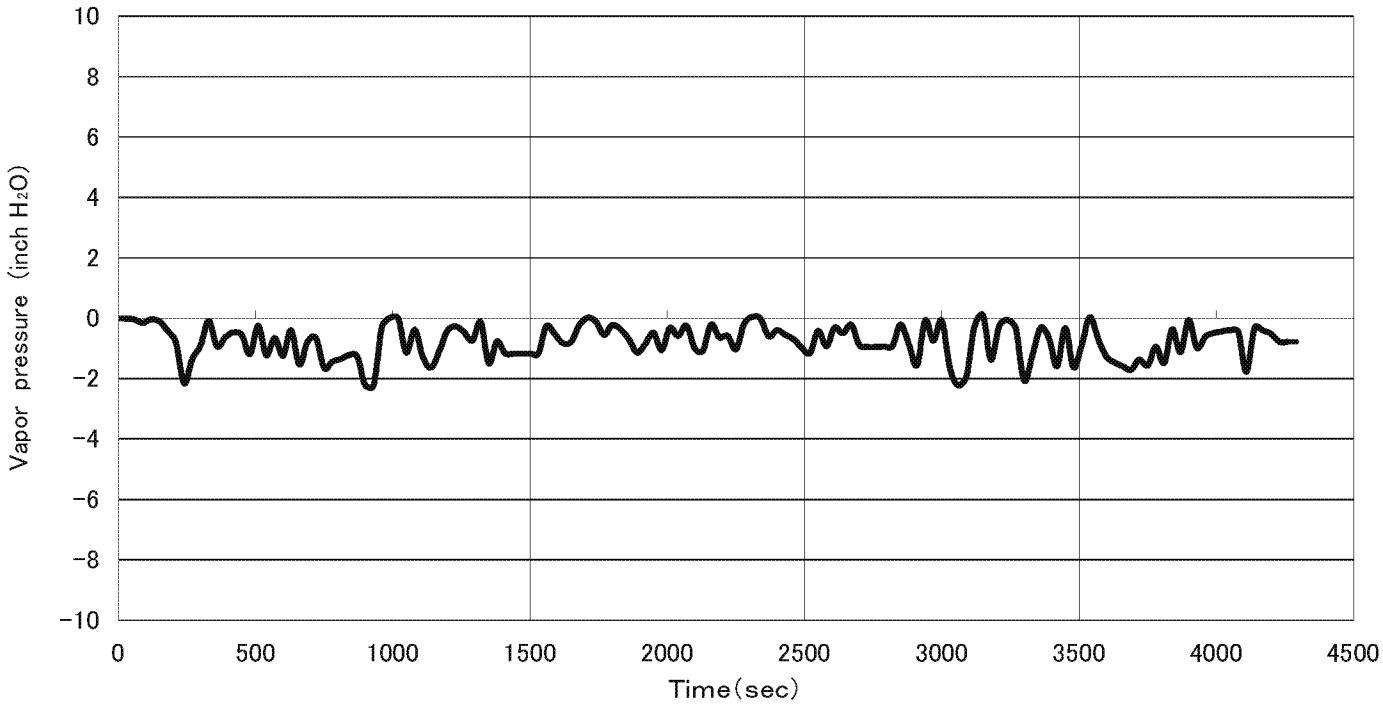
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid(°F)	Time(sec.)	Liquid(°F)	Time(sec.)	Liquid(°F)	Time(sec.)	Liquid(°F)
0	95.36	1200	105.04	2400	113.05	3600	120.16
30	95.50	1230	105.17	2430	113.23	3630	120.43
60	95.86	1260	105.40	2460	113.50	3660	120.61
90	96.08	1290	105.53	2490	113.63	3690	120.74
120	96.31	1320	105.76	2520	113.86	3720	121.01
150	96.44	1350	105.98	2550	113.99	3750	121.19
180	96.71	1380	106.16	2580	114.13	3780	121.24
210	96.85	1410	106.30	2610	114.31	3810	121.33
240	96.98	1440	106.48	2640	114.58	3840	121.51
270	97.25	1470	106.61	2670	114.85	3870	121.64
300	97.57	1500	106.88	2700	114.98	3900	121.73
330	97.75	1530	107.06	2730	115.16	3930	121.87
360	98.06	1560	107.20	2760	115.25	3960	121.96
390	98.24	1590	107.42	2790	115.39	3990	122.18
420	98.56	1620	107.65	2820	115.57	4020	122.23
450	98.83	1650	107.83	2850	115.84	4050	122.36
480	99.01	1680	108.05	2880	116.02	4080	122.50
510	99.37	1710	108.41	2910	116.33	4110	122.59
540	99.59	1740	108.59	2940	116.47	4140	122.68
570	99.82	1770	108.77	2970	116.65	4170	122.77
600	100.04	1800	109.00	3000	116.78	4200	122.95
630	100.27	1830	109.18	3030	117.10	4230	123.17
660	100.54	1860	109.45	3060	117.23	4260	123.22
690	100.90	1890	109.63	3090	117.41	4290	123.26
720	101.12	1920	109.76	3120	117.68		
750	101.39	1950	109.99	3150	117.86		
780	101.62	1980	110.17	3180	117.91		
810	101.75	2010	110.26	3210	118.09		
840	102.16	2040	110.57	3240	118.22		
870	102.43	2070	110.84	3270	118.36		
900	102.74	2100	111.02	3300	118.54		
930	102.88	2130	111.20	3345	118.76		
960	103.15	2160	111.29	3360	118.85		
990	103.37	2190	111.47	3390	118.99		
1020	103.69	2220	111.70	3420	119.17		
1050	103.82	2250	111.88	3450	119.39		
1080	104.05	2280	112.19	3480	119.53		
1110	104.32	2310	112.46	3510	119.66		
1140	104.45	2340	112.69	3540	119.80		
1170	104.81	2370	112.87	3570	120.02		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0085P12.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	BTYXV01.3BEA	6TYXV01.5PEA
Vehicle ID	:	11-NJ2C	06-NP2M
Rep. car/truck line	:	iQ	YARIS
Rep. vehicle model	:	NGJ10L-BGXNGA	NCP91L-AGMRKA
Displacement	:	81.1 CID	91.3 CID
Transmission	:	AV/K41B	M5/C50
Test weight	:	2375 lbs.	2,625 lbs.
Road load	:	9.8 HP	10.8HP
Evap. code	:	NJ1V	NP1V

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0148	(g/mile)
	CO	:	0.15	(g/mile)
	NOx	:	0.007	(g/mile)
Running loss		:	0.001	(g/mile)
Hot soak loss		:	0.001	(g/test)
3DBL	1st day	:	0.195*1	(g/test)
	2nd day	:	0.168	(g/test)
	3rd day	:	0.176	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMHC	:	0.015	(g/mile)
	CO	:	0.08	(g/mile)
	NOx	:	0.015	(g/mile)
Refueling emission		:	0.021	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0011 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0110P42.

[Test vehicle]

Model name	:	PRIUS
Trans. conf./code	:	AV/P410

[Test conditions]

Date	:	08/02/2008
Ambient air temperature (at initiation)	:	106.3 °F
Ambient air temperature (at completion)	:	106.7 °F
Track surface temperature (at initiation)	:	149.2 °F
Track surface temperature (at completion)	:	149.0 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	08/02/2008
Ambient air temperature (at initiation)	:	106.2 °F
Ambient air temperature (at completion)	:	105.6 °F
Track surface temperature (at initiation)	:	152.1 °F
Track surface temperature (at completion)	:	149.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0110P42.

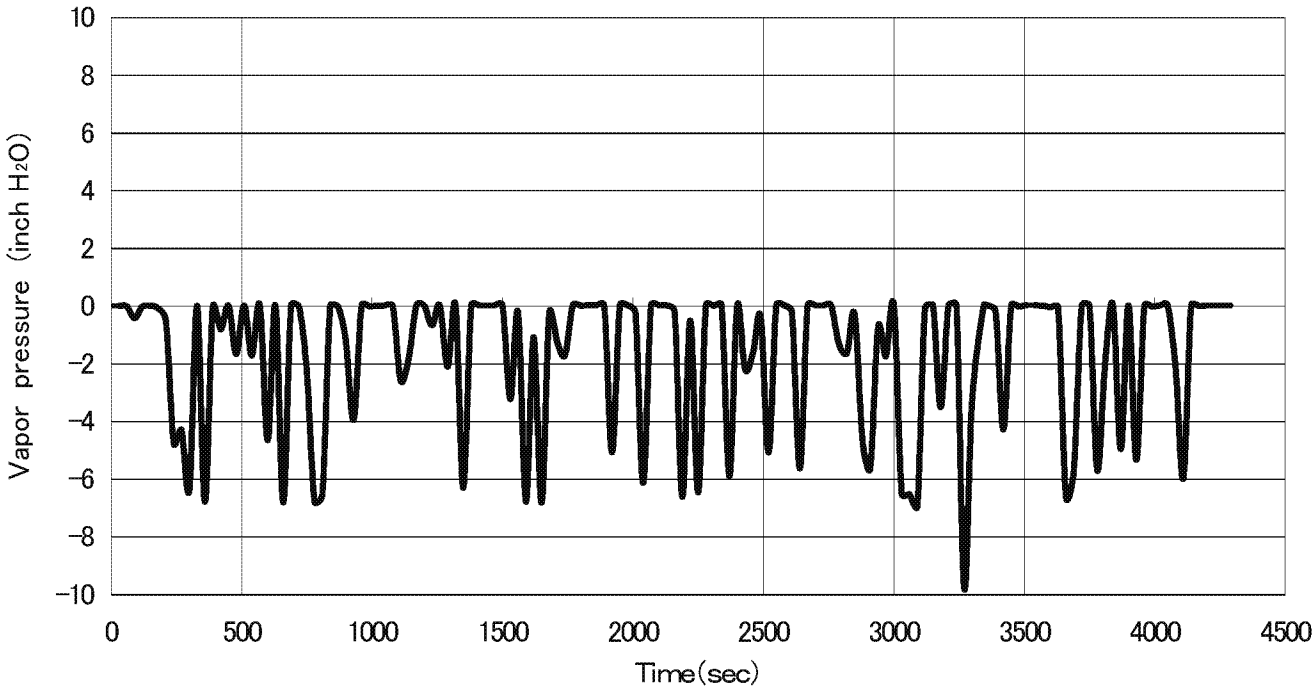
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.4	1200	111.5	2400	118.4	3600	124.1
30	105.4	1230	111.7	2430	118.5	3630	124.2
60	105.5	1260	111.9	2460	118.9	3660	124.3
90	105.6	1290	112.0	2490	119.1	3690	124.4
120	105.7	1320	112.0	2520	119.1	3720	124.4
150	105.9	1350	112.3	2550	119.3	3750	124.7
180	106.0	1380	112.5	2580	119.4	3780	124.7
210	105.9	1410	112.6	2610	119.7	3810	124.7
240	106.1	1440	112.8	2640	119.9	3840	124.8
270	106.3	1470	113.0	2670	120.1	3870	125.0
300	106.6	1500	113.1	2700	120.1	3900	125.0
330	106.7	1530	113.3	2730	120.3	3930	125.2
360	107.0	1560	113.5	2760	120.5	3960	125.2
390	107.1	1590	113.6	2790	120.6	3990	125.3
420	107.2	1620	113.9	2820	120.8	4020	125.4
450	107.3	1650	114.0	2850	120.9	4050	125.5
480	107.6	1680	114.1	2880	121.0	4080	125.6
510	107.7	1710	114.4	2910	121.2	4110	125.7
540	107.9	1740	114.6	2940	121.3	4140	125.8
570	108.1	1770	114.8	2970	121.5	4170	125.8
600	108.3	1800	115.0	3000	121.7	4200	126.0
630	108.4	1830	115.3	3030	121.6	4230	126.1
660	108.5	1860	115.4	3060	121.7	4260	126.3
690	108.8	1890	115.6	3090	121.9	4290	126.5
720	108.9	1920	115.7	3120	122.2		
750	109.0	1950	115.8	3150	122.3		
780	109.2	1980	116.0	3180	122.5		
810	109.5	2010	116.1	3210	122.6		
840	109.4	2040	116.3	3240	122.8		
870	109.6	2070	116.6	3270	122.9		
900	109.8	2100	116.7	3300	123.1		
930	109.9	2130	116.8	3330	123.2		
960	110.2	2160	117.0	3360	123.3		
990	110.4	2190	117.3	3390	123.4		
1020	110.5	2220	117.4	3420	123.5		
1050	110.7	2250	117.7	3450	123.6		
1080	110.8	2280	117.7	3480	123.8		
1110	111.0	2310	118.0	3510	124.0		
1140	111.2	2340	118.0	3540	124.0		
1170	111.3	2370	118.2	3570	124.1		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0110P42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0110P42.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	ATYXV01.8HC3
Vehicle ID	:	10-ZW2H
Rep. car/truck line	:	PRIUS
Rep. vehicle model	:	ZVW30L-AHXGBA
Displacement	:	109.7 CID
Transmission	:	P410
Test weight	:	3,375 lbs.
Road load	:	9.1 HP
Evap. code	:	ZW12

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.027	(g/test)
3DBL	1st day	:	0.177*1	(g/test)
	2nd day	:	0.164	(g/test)
	3rd day	:	0.163	(g/test)

2-day diurnal sequence test results

Hot soak loss	:	0.011	(g/mile)
2DBL	:	0.272*1	(g/test)

Refueling sequence test results

Refueling emission	:	0.008	(g/gal)

*1: DBL is added key off monitor loss (0.0000 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12.

[Test vehicle]

Model name	:	CT 200h

[Test conditions]

Date	:	04/27/2010
Ambient air temperature (at initiation)	:	96.4 °F
Ambient air temperature (at completion)	:	97.3 °F
Track surface temperature (at initiation)	:	131.9 °F
Track surface temperature (at completion)	:	131.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	04/27/2010
Ambient air temperature (at initiation)	:	97.0 °F
Ambient air temperature (at completion)	:	97.3 °F
Track surface temperature (at initiation)	:	130.8°F
Track surface temperature (at completion)	:	131.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12

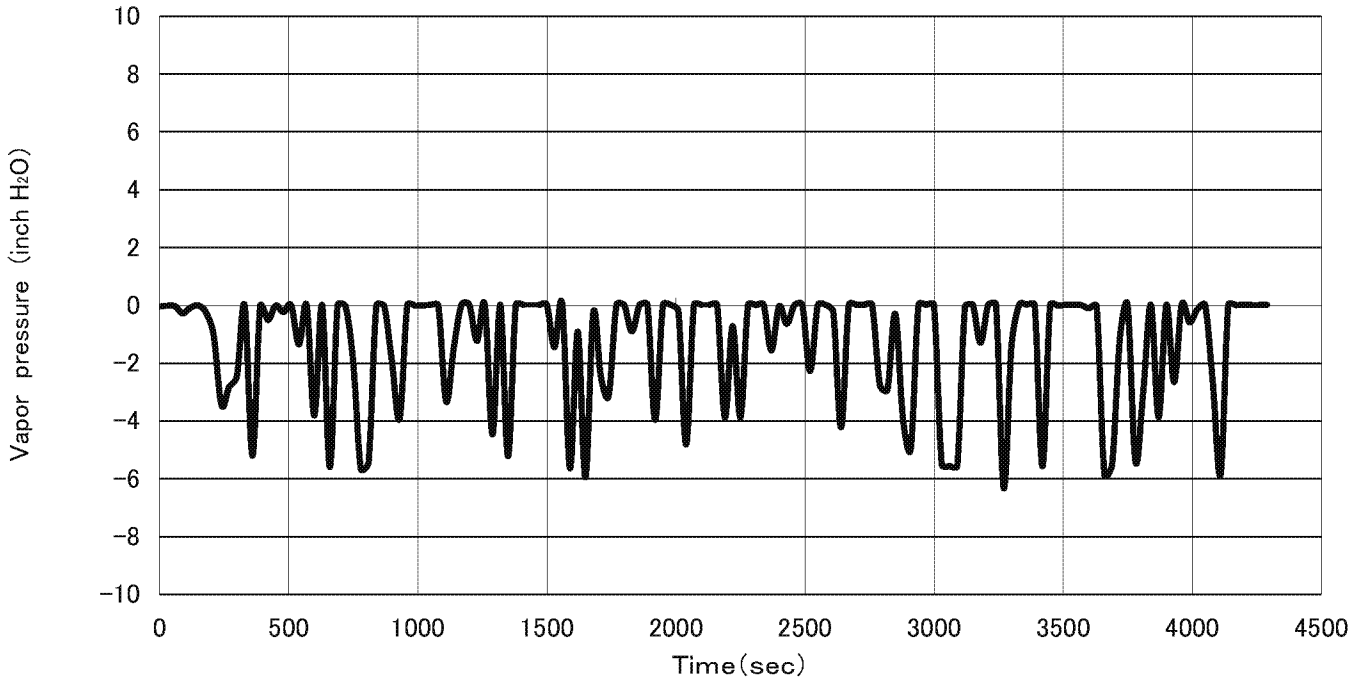
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	101.4	2400	108.1	3600	113.5
30	95.5	1230	101.6	2430	108.4	3630	113.6
60	95.6	1260	101.7	2460	108.5	3660	113.7
90	95.8	1290	101.8	2490	108.6	3690	113.9
120	95.8	1320	102.0	2520	108.8	3720	114.0
150	95.9	1350	102.2	2550	109.0	3750	114.1
180	95.8	1380	102.3	2580	109.0	3780	114.2
210	96.1	1410	102.4	2610	109.2	3810	114.2
240	96.1	1440	102.6	2640	109.5	3840	114.2
270	96.3	1470	102.6	2670	109.5	3870	114.3
300	96.4	1500	102.7	2700	109.7	3900	114.4
330	96.5	1530	102.9	2730	109.7	3930	114.4
360	96.8	1560	103.2	2760	109.9	3960	114.6
390	97.0	1590	103.5	2790	110.1	3990	114.5
420	97.1	1620	103.6	2820	110.3	4020	114.7
450	97.2	1650	103.6	2850	110.5	4050	114.7
480	97.3	1680	103.9	2880	110.6	4080	114.7
510	97.4	1710	104.2	2910	110.8	4110	115.0
540	97.7	1740	104.3	2940	110.9	4140	115.0
570	97.9	1770	104.5	2970	111.1	4170	115.0
600	98.0	1800	104.7	3000	111.2	4200	115.2
630	98.2	1830	105.0	3030	111.5	4230	115.2
660	98.3	1860	105.2	3060	111.7	4260	115.2
690	98.5	1890	105.1	3090	111.8	4290	115.2
720	98.7	1920	105.4	3120	111.9		
750	98.8	1950	105.5	3150	112.1		
780	99.1	1980	105.6	3180	112.2		
810	99.2	2010	105.8	3210	112.2		
840	99.3	2040	106.3	3240	112.4		
870	99.5	2070	106.3	3270	112.6		
900	99.9	2100	106.3	3300	112.7		
930	99.9	2130	106.5	3330	112.7		
960	100.0	2160	106.7	3360	112.9		
990	100.2	2190	106.9	3390	112.9		
1020	100.3	2220	107.1	3420	112.9		
1050	100.6	2250	107.3	3450	113.1		
1080	100.7	2280	107.4	3480	113.2		
1110	100.9	2310	107.6	3510	113.3		
1140	101.2	2340	107.9	3540	113.4		
1170	101.3	2370	108.0	3570	113.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12.

[Test vehicle]

Model name	:	PRIUS v

[Test conditions]

Date	:	06/08/2010
Ambient air temperature (at initiation)	:	97.7 °F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	132.3 °F
Track surface temperature (at completion)	:	131.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	06/08/2010
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	96.8 °F
Track surface temperature (at initiation)	:	133.0°F
Track surface temperature (at completion)	:	132.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance wirh 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12.

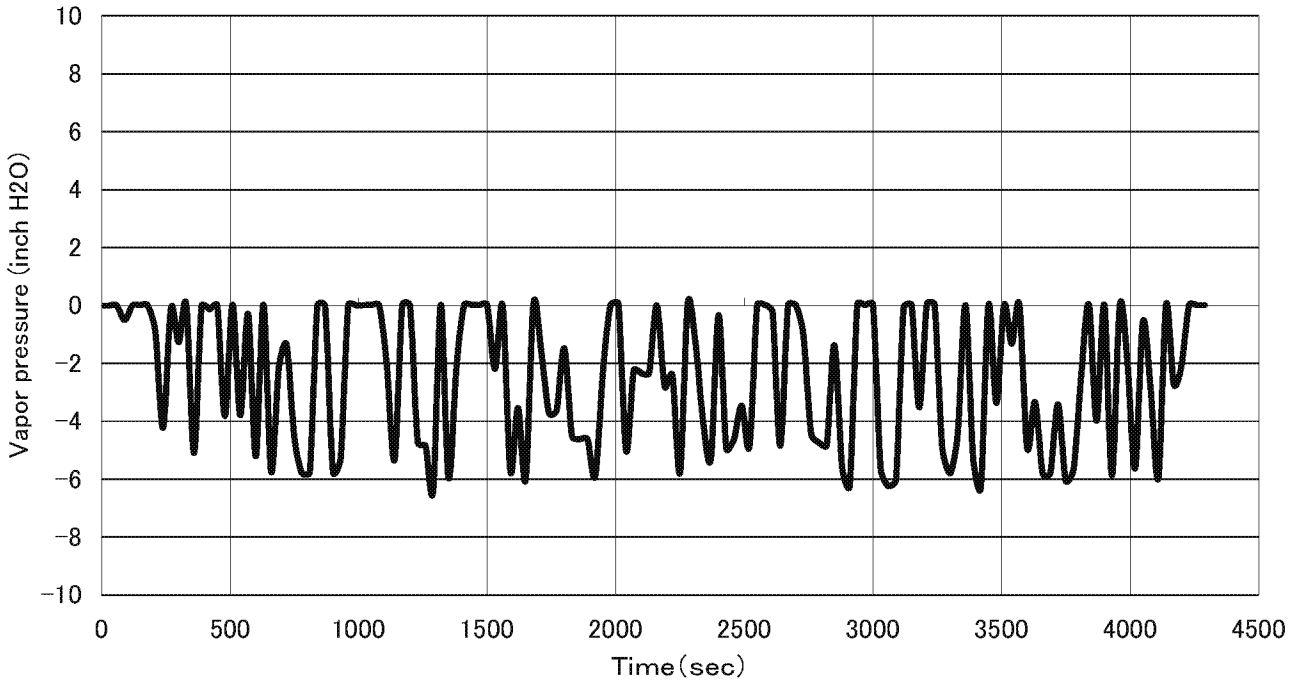
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	100.8	2400	108.1	3600	112.8
30	95.0	1230	100.9	2430	108.5	3630	112.8
60	95.2	1260	101.1	2460	108.9	3660	113.2
90	95.0	1290	101.3	2490	109.2	3690	113.0
120	95.2	1320	101.5	2520	109.0	3720	113.2
150	95.4	1350	101.7	2550	109.2	3750	113.4
180	95.2	1380	101.7	2580	109.4	3780	113.2
210	95.2	1410	102.0	2610	109.6	3810	113.2
240	95.0	1440	102.2	2640	109.8	3840	113.4
270	95.2	1470	102.4	2670	110.1	3870	113.7
300	95.5	1500	102.6	2700	110.5	3900	113.5
330	95.5	1530	102.7	2730	110.5	3930	113.5
360	95.9	1560	102.7	2760	110.8	3960	113.7
390	95.9	1590	103.1	2790	111.0	3990	113.7
420	95.9	1620	103.3	2820	111.2	4020	113.9
450	96.1	1650	103.6	2850	111.2	4050	113.7
480	96.1	1680	103.3	2880	111.0	4080	114.1
510	96.4	1710	103.5	2910	111.2	4110	113.7
540	96.6	1740	103.8	2940	111.4	4140	114.3
570	96.8	1770	104.4	2970	111.7	4170	114.1
600	97.0	1800	104.2	3000	111.6	4200	114.6
630	97.2	1830	104.5	3030	111.0	4230	115.0
660	97.3	1860	104.9	3060	111.2	4260	115.0
690	97.5	1890	105.3	3090	111.4	4290	115.2
720	97.7	1920	105.1	3120	111.6		
750	97.9	1950	105.4	3150	111.9		
780	98.2	1980	105.6	3180	111.9		
810	98.4	2010	105.8	3210	112.1		
840	98.4	2040	106.0	3240	112.1		
870	98.4	2070	106.2	3270	112.1		
900	98.8	2100	106.5	3300	111.9		
930	99.0	2130	106.9	3330	112.3		
960	99.1	2160	106.9	3360	112.3		
990	99.3	2190	107.1	3390	112.3		
1020	99.5	2220	107.1	3420	112.3		
1050	99.9	2250	107.4	3450	112.6		
1080	99.9	2280	107.2	3480	112.6		
1110	99.9	2310	107.6	3510	113.0		
1140	100.2	2340	108.0	3540	112.8		
1170	100.4	2370	108.3	3570	112.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0105P12.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	CTYXV01.8CCU
Vehicle ID	:	12-ZW1H
Rep. car/truck line	:	PRIUS v
Rep. vehicle model	:	ZVW41L-AXXEBA
Displacement	:	109.7 CID
Transmission	:	AV/ P410
Test weight	:	3,625 lbs.
Road load	:	11.5 HP
Evap. code	:	ZW17

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.003	(g/mile)
Hot soak loss		:	0.013	(g/test)
3DBL	1st day	:	0.169*1	(g/test)
	2nd day	:	0.143	(g/test)
	3rd day	:	0.133	(g/test)

2-day diurnal sequence test results*2

Hot soak loss		:	N/A	(g/mile)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Refueling emission	:	0.004	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0012 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115J42.

[Test vehicle]

Model name	:	PRIUS Plug-in Hybrid
Trans. conf./code	:	AV/P410

[Test conditions]

Date	:	12/24/2010
Ambient air temperature (at initiation)	:	105.4 °F
Ambient air temperature (at completion)	:	107.4 °F
Track surface temperature (at initiation)	:	149.4 °F
Track surface temperature (at completion)	:	149.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	12/27/2010
Ambient air temperature (at initiation)	:	106.3 °F
Ambient air temperature (at completion)	:	107.8 °F
Track surface temperature (at initiation)	:	151.0°F
Track surface temperature (at completion)	:	145.9 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115J42.

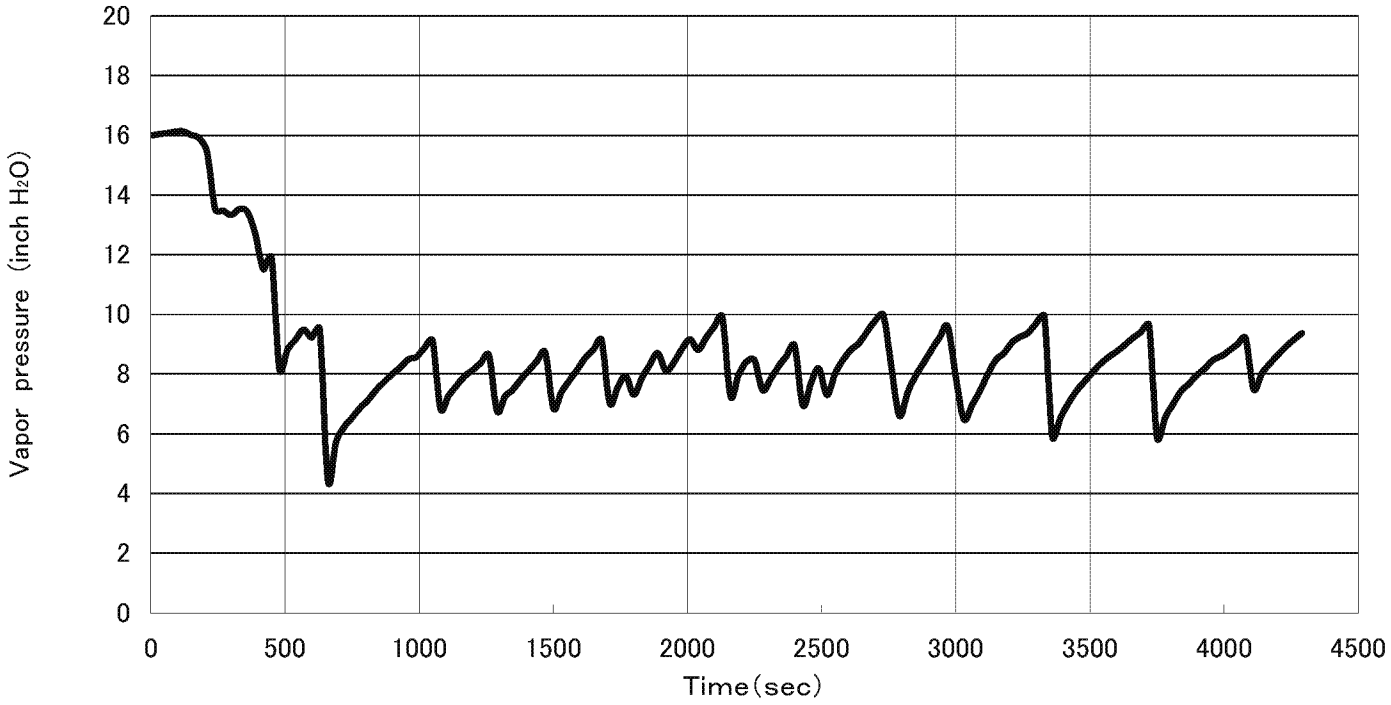
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	94.3	1200	97.2	2400	100.4	3600	103.5
30	94.5	1230	97.2	2430	100.4	3630	103.6
60	94.5	1260	97.3	2460	100.4	3660	103.8
90	94.5	1290	97.3	2490	100.4	3690	103.8
120	94.6	1320	97.5	2520	100.6	3720	104.0
150	94.5	1350	97.3	2550	100.6	3750	104.0
180	94.6	1380	97.5	2580	100.6	3780	104.0
210	94.8	1410	97.5	2610	100.8	3810	104.2
240	94.8	1440	97.5	2640	100.9	3840	104.2
270	95.0	1470	97.7	2670	101.1	3870	104.2
300	95.0	1500	97.7	2700	101.1	3900	104.4
330	95.2	1530	97.7	2730	101.1	3930	104.4
360	95.0	1560	97.9	2760	101.1	3960	104.5
390	95.2	1590	97.9	2790	101.3	3990	104.4
420	95.2	1620	98.1	2820	101.5	4020	104.5
450	95.4	1650	98.2	2850	101.5	4050	104.5
480	95.7	1680	98.2	2880	101.7	4080	104.5
510	95.7	1710	98.2	2910	101.7	4110	104.7
540	95.7	1740	98.6	2940	101.8	4140	104.9
570	95.5	1770	98.4	2970	101.7	4170	104.9
600	95.7	1800	98.8	3000	102.0	4200	104.9
630	95.7	1830	98.6	3030	101.8	4230	104.9
660	95.9	1860	98.6	3060	102.0	4260	104.9
690	95.9	1890	98.8	3090	102.2	4290	104.9
720	96.1	1920	99.0	3120	102.4		
750	96.1	1950	99.0	3150	102.4		
780	96.3	1980	99.1	3180	102.6		
810	96.3	2010	99.3	3210	102.7		
840	96.3	2040	99.3	3240	102.9		
870	96.3	2070	99.5	3270	102.7		
900	96.4	2100	99.3	3300	103.1		
930	96.4	2130	99.5	3330	103.1		
960	96.6	2160	99.5	3360	103.1		
990	96.8	2190	99.7	3390	103.1		
1020	96.8	2220	99.9	3420	103.3		
1050	96.6	2250	99.9	3450	103.3		
1080	96.8	2280	100.0	3480	103.5		
1110	96.8	2310	100.0	3510	103.5		
1140	97.2	2340	100.2	3540	103.5		
1170	97.0	2370	100.2	3570	103.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115J42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115J42.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	CTYXV01.8HCU
Vehicle ID	:	12-ZW3H
Rep. car/truck line	:	Prius Plug-in Hybrid
Rep. vehicle model	:	ZVW35L-BHXEBA
Displacement	:	109.7 CID
Transmission	:	P410
Test weight	:	3,500 lbs.
Road load	:	8.7 HP
Evap. code	:	ZW19

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.003	(g/mile)
Hot soak loss		:	0.028	(g/test)
3DBL	1st day	:	0.107	(g/test)
	2nd day	:	0.095	(g/test)
	3rd day	:	0.088	(g/test)

2-day diurnal sequence test results

Hot soak loss	:	0.003	(g/mile)
2DBL	:	0.119*1	(g/test)

Refueling sequence test results

Refueling emission	:	0.004	(g/gal)

*1: DBL is added key off monitor loss (0.0000 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0120A42.

[Test vehicle]

Model name	:	Camry
Trans. conf./code	:	L6/U760E

[Test conditions]

Date	:	05/20/2010
Ambient air temperature (at initiation)	:	106.0 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	148.6 °F
Track surface temperature (at completion)	:	150.8 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	05/20/2010
Ambient air temperature (at initiation)	:	105.3 °F
Ambient air temperature (at completion)	:	106.3 °F
Track surface temperature (at initiation)	:	150.1 °F
Track surface temperature (at completion)	:	150.3 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0120A42.

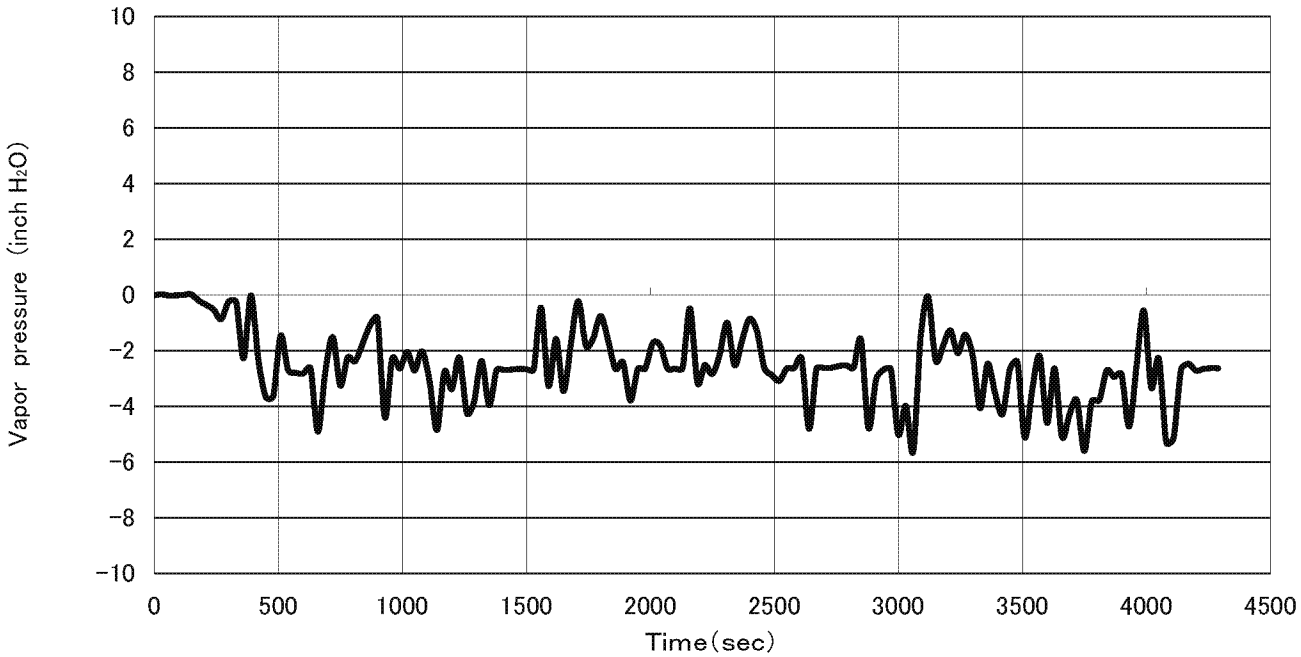
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.1	1200	114.4	2400	123.4	3600	129.9
30	105.3	1230	114.6	2430	124.3	3630	129.2
60	105.4	1260	115.0	2460	124.9	3660	129.7
90	105.4	1290	114.8	2490	125.2	3690	129.9
120	105.4	1320	114.8	2520	125.1	3720	130.1
150	106.0	1350	115.7	2550	125.4	3750	130.1
180	106.2	1380	115.9	2580	125.8	3780	130.6
210	106.2	1410	116.4	2610	125.2	3810	130.5
240	106.2	1440	117.0	2640	125.6	3840	130.6
270	106.5	1470	117.3	2670	126.0	3870	131.2
300	106.9	1500	117.7	2700	126.7	3900	131.0
330	107.4	1530	118.0	2730	127.0	3930	131.2
360	108.0	1560	117.5	2760	127.6	3960	130.6
390	107.8	1590	118.0	2790	127.9	3990	131.4
420	108.1	1620	118.0	2820	128.1	4020	131.5
450	108.5	1650	117.9	2850	126.9	4050	131.2
480	108.3	1680	117.7	2880	126.0	4080	131.7
510	108.7	1710	117.7	2910	125.2	4110	131.2
540	109.2	1740	118.2	2940	126.3	4140	131.9
570	109.6	1770	118.9	2970	127.8	4170	131.7
600	109.8	1800	118.8	3000	127.2	4200	132.3
630	109.9	1830	119.7	3030	125.8	4230	132.6
660	110.5	1860	120.2	3060	126.0	4260	133.0
690	110.5	1890	120.6	3090	126.9	4290	133.3
720	110.7	1920	120.4	3120	127.4		
750	110.7	1950	120.7	3150	128.5		
780	111.2	1980	121.1	3180	128.3		
810	110.8	2010	120.7	3210	128.5		
840	110.8	2040	121.1	3240	128.8		
870	111.4	2070	121.6	3270	129.2		
900	111.6	2100	122.0	3300	128.3		
930	111.9	2130	122.5	3330	129.2		
960	112.3	2160	122.2	3360	129.0		
990	112.5	2190	122.9	3390	129.7		
1020	112.6	2220	122.7	3420	129.4		
1050	113.4	2250	122.5	3450	129.9		
1080	113.4	2280	122.4	3480	129.7		
1110	113.7	2310	122.4	3510	130.5		
1140	113.5	2340	122.7	3540	130.1		
1170	114.1	2370	123.8	3570	129.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0120A42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0120A42.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	CTYXV02.5HE2
Vehicle ID	:	12-AV3A
Rep. car/truck line	:	Camry
Rep. vehicle model	:	ASV50L-CETSKA
Displacement	:	152.2 CID
Transmission	:	L6/U760E
Test weight	:	3,500 lbs.
Road load	:	11.0 HP
Evap. code	:	AV1U

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0033	(g/mile)
	CO	:	0.03	(g/mile)
	NOx	:	0.01	(g/mile)
Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.019	(g/mile)
3DBL	1st day	:	0.089*1	(g/test)
	2nd day	:	0.078	(g/test)
	3rd day	:	0.076	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/mile)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0036	(g/mile)
	CO	:	0.02	(g/mile)
	NOx	:	0.02	(g/mile)
Refueling emission		:	0.004	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0003 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A42.

[Test vehicle]

Model name	:	CAMRY HYBRID
Trans. conf./code	:	AV/P314

[Test conditions]

Date	:	11/04/2010
Ambient air temperature (at initiation)	:	105.6 °F
Ambient air temperature (at completion)	:	106.5 °F
Track surface temperature (at initiation)	:	149.7 °F
Track surface temperature (at completion)	:	149.7° F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	11/04/2010
Ambient air temperature (at initiation)	:	104.9 °F
Ambient air temperature (at completion)	:	107.1 °F
Track surface temperature (at initiation)	:	149.5° F
Track surface temperature (at completion)	:	150.3 °F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A42.

Measured temperature and pressure profiles

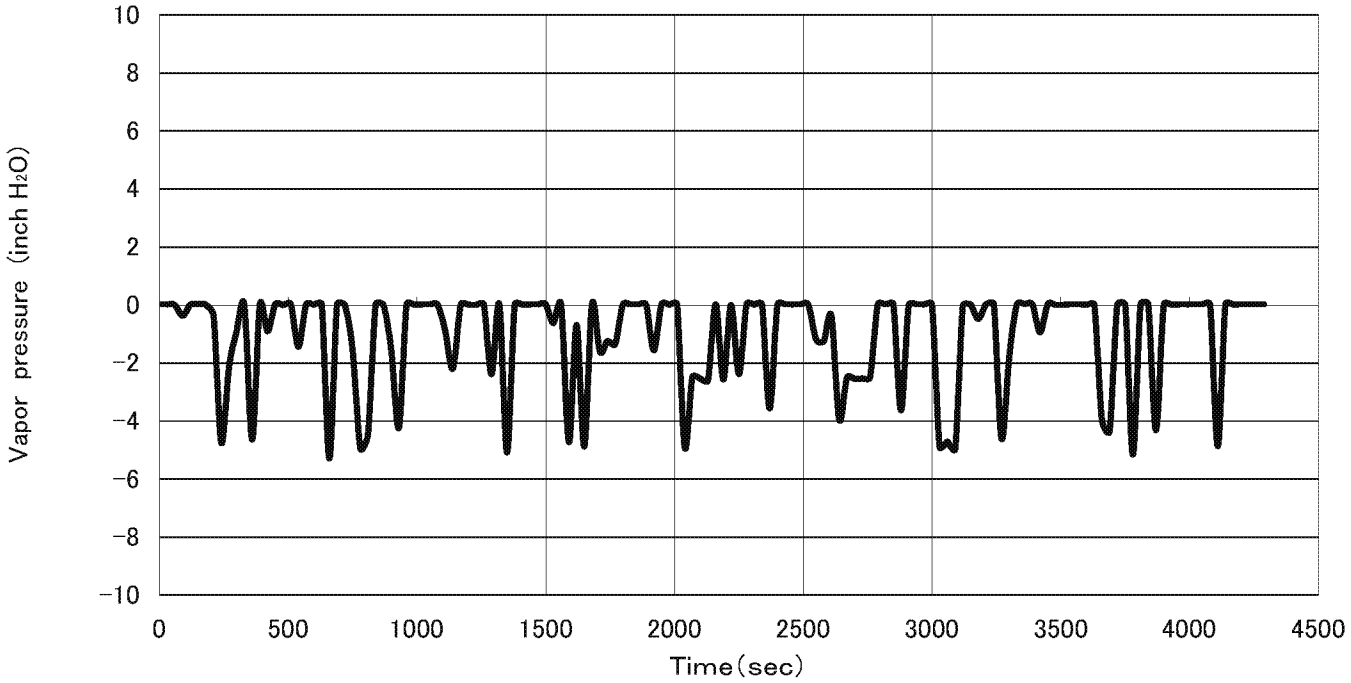
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.3	1200	110.3	2400	114.4	3600	118.8
30	105.4	1230	110.0	2430	115.0	3630	118.5
60	105.5	1260	110.4	2460	115.4	3660	118.8
90	105.5	1290	110.1	2490	115.7	3690	118.9
120	105.5	1320	110.3	2520	115.3	3720	118.9
150	105.9	1350	110.9	2550	115.5	3750	119.0
180	105.9	1380	110.8	2580	115.9	3780	119.5
210	105.6	1410	111.3	2610	115.4	3810	119.3
240	105.6	1440	111.5	2640	115.7	3840	119.5
270	105.9	1470	111.7	2670	115.9	3870	119.9
300	106.2	1500	111.7	2700	116.4	3900	119.6
330	106.3	1530	111.8	2730	116.9	3930	119.7
360	106.9	1560	111.4	2760	117.1	3960	119.4
390	106.5	1590	111.7	2790	117.3	3990	119.8
420	106.8	1620	111.7	2820	117.4	4020	120.0
450	107.2	1650	111.6	2850	116.6	4050	119.6
480	106.8	1680	111.4	2880	115.7	4080	120.1
510	107.1	1710	111.4	2910	115.6	4110	119.5
540	107.3	1740	111.7	2940	116.5	4140	119.9
570	107.6	1770	112.4	2970	117.3	4170	119.9
600	107.7	1800	112.2	3000	117.0	4200	120.3
630	107.8	1830	112.6	3030	116.1	4230	120.5
660	108.1	1860	113.0	3060	116.5	4260	120.7
690	108.1	1890	113.3	3090	117.0	4290	120.7
720	108.1	1920	112.8	3120	117.3		
750	108.1	1950	113.1	3150	117.9		
780	108.3	1980	113.4	3180	118.0		
810	108.0	2010	113.0	3210	118.0		
840	108.2	2040	113.1	3240	118.2		
870	108.4	2070	113.4	3270	118.7		
900	108.6	2100	113.9	3300	118.0		
930	108.9	2130	114.3	3330	118.6		
960	109.0	2160	114.0	3360	118.4		
990	109.2	2190	114.4	3390	118.9		
1020	109.3	2220	114.2	3420	118.6		
1050	109.9	2250	114.2	3450	119.0		
1080	109.6	2280	113.9	3480	118.8		
1110	110.0	2310	113.8	3510	119.2		
1140	109.5	2340	114.2	3540	119.0		
1170	110.0	2370	114.8	3570	118.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A42.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A42.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	CTYXV02.5HC3	CTYXV02.5HC3
Vehicle ID	:	12-AV1H	12-AV2H
Rep. car/truck line	:	CAMRY HYBRID XLE	CAMRY HYBRID XLE
Rep. vehicle model	:	AVV50L-CEXGBA	AVV50L-CEXGBA
Displacement	:	152.2 CID	152.2 CID
Transmission	:	AV/P314	AV/P314
Test weight	:	3,875 lbs.	3,875 lbs.
Road load	:	10.7 HP	10.7HP
Evap. code	:	AV1P	AV1P

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.002	(g/mile)
Hot soak loss		:	0.012	(g/test)
3DBL	1st day	:	0.103*1	(g/test)
	2nd day	:	0.092	(g/test)
	3rd day	:	0.084	(g/test)

2-day diurnal sequence test results*2

Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Refueling emission	:	0.043	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0008 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115A12.

[Test vehicle]

Model name	:	Camry
Trans. conf.	:	L6/U660E

[Test conditions]

Date	:	04/17/2010
Ambient air temperature (at initiation)	:	96.6 °F
Ambient air temperature (at completion)	:	97.3 °F
Track surface temperature (at initiation)	:	130.3 °F
Track surface temperature (at completion)	:	130.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	04/17/2010
Ambient air temperature (at initiation)	:	97.7 °F
Ambient air temperature (at completion)	:	97.3 °F
Track surface temperature (at initiation)	:	132.4 °F
Track surface temperature (at completion)	:	132.3 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115A12.

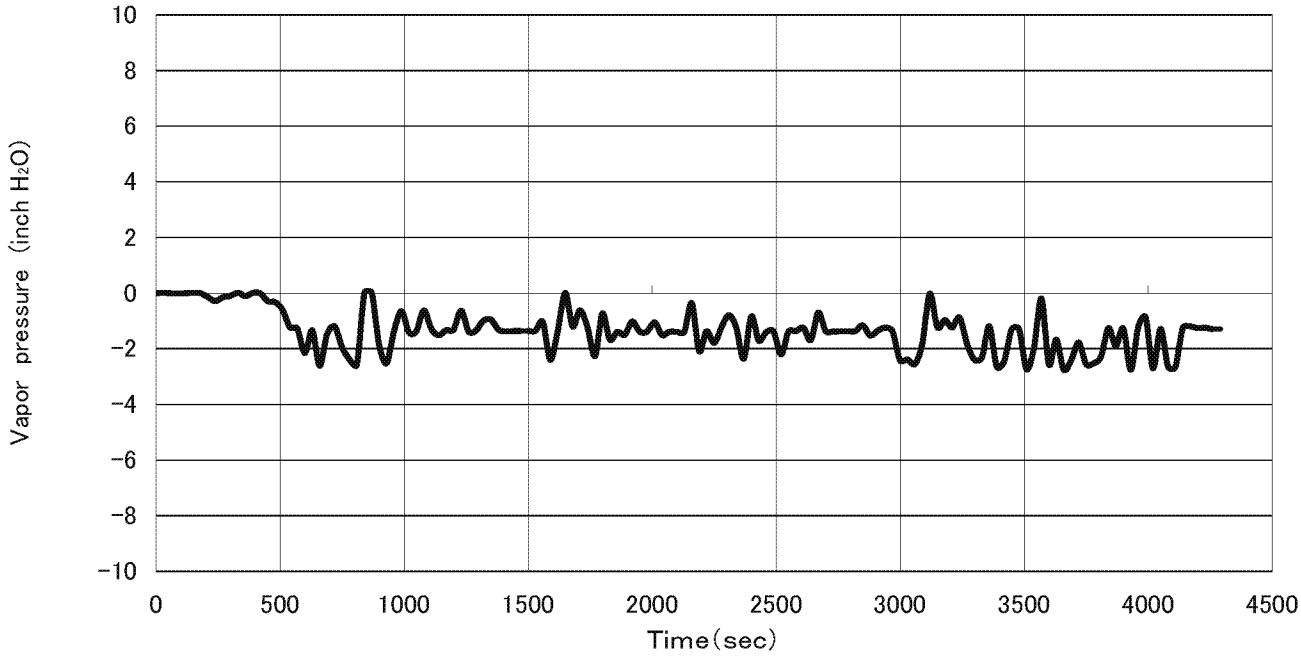
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	100.9	2400	109.9	3600	117.0
30	95.4	1230	101.1	2430	109.9	3630	117.1
60	95.5	1260	101.1	2460	109.9	3660	117.3
90	95.5	1290	101.7	2490	109.9	3690	117.5
120	95.5	1320	101.8	2520	110.7	3720	117.5
150	95.5	1350	101.8	2550	110.7	3750	117.7
180	95.7	1380	102.0	2580	110.7	3780	117.9
210	95.7	1410	101.8	2610	111.2	3810	117.9
240	95.9	1440	102.0	2640	111.4	3840	117.9
270	96.1	1470	102.2	2670	111.7	3870	117.7
300	96.3	1500	102.6	2700	111.4	3900	118.0
330	96.4	1530	102.9	2730	111.9	3930	118.2
360	96.3	1560	103.3	2760	112.1	3960	118.4
390	96.6	1590	103.5	2790	112.5	3990	118.4
420	96.6	1620	103.8	2820	112.6	4020	118.4
450	96.4	1650	104.0	2850	113.0	4050	118.6
480	96.8	1680	104.4	2880	113.0	4080	118.6
510	97.0	1710	104.5	2910	113.2	4110	118.9
540	97.2	1740	104.9	2940	113.9	4140	118.9
570	97.2	1770	104.9	2970	113.7	4170	118.9
600	97.5	1800	105.4	3000	114.1	4200	119.1
630	97.5	1830	105.3	3030	114.1	4230	118.8
660	97.5	1860	105.3	3060	114.4	4260	119.1
690	97.9	1890	105.4	3090	115.0	4290	119.3
720	98.1	1920	106.2	3120	115.3		
750	98.2	1950	106.3	3150	115.3		
780	98.4	1980	106.2	3180	115.3		
810	98.4	2010	106.9	3210	115.5		
840	98.8	2040	106.9	3240	115.7		
870	99.1	2070	107.1	3270	115.5		
900	99.3	2100	106.9	3300	115.7		
930	99.5	2130	107.2	3330	115.9		
960	99.7	2160	107.8	3360	116.1		
990	99.9	2190	108.1	3390	116.1		
1020	100.0	2220	108.5	3420	116.4		
1050	99.9	2250	108.5	3450	116.2		
1080	100.2	2280	109.0	3480	116.4		
1110	100.4	2310	109.0	3510	116.4		
1140	100.8	2340	109.6	3540	116.8		
1170	100.8	2370	109.4	3570	116.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115A12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0115A12.

Evaporative emission test log

Vehicle Description

	Evaporative/ Refueling emission vehicle
Test group	: CTYXV02.5BED
Vehicle ID	: 12-AV1A
Rep. car/truck line	: Camry
Rep. vehicle model	: ASV50L-CETSKA
Displacement	: 152.2CID
Transmission	: L6/U760E
Test weight	: 3,500 lbs.
Road load	: 11.0 HP
Evap. code	: AV1N

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0128	(g/mile)
	CO	:	0.09	(g/mile)
	NOx	:	0.02	(g/mile)
Running loss		:	0.005	(g/mile)
Hot soak loss		:	0.022	(g/test)
3DBL	1st day	:	0.136*1	(g/test)
	2nd day	:	0.120	(g/test)
	3rd day	:	0.113	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/test)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0114	(g/mile)
	CO	:	0.09	(g/mile)
	NOx	:	0.02	(g/mile)
Refueling emission		:	0.023	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0005 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

[Test vehicle]

Model name	:	IS 350 AWD
Trans. conf./code	:	L6

[Test conditions]

Date	:	08/06/2012
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	132.1 °F
Track surface temperature (at completion)	:	133.3 ° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	08/06/2012
Ambient air temperature (at initiation)	:	96.6 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	132.4° F
Track surface temperature (at completion)	:	133.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

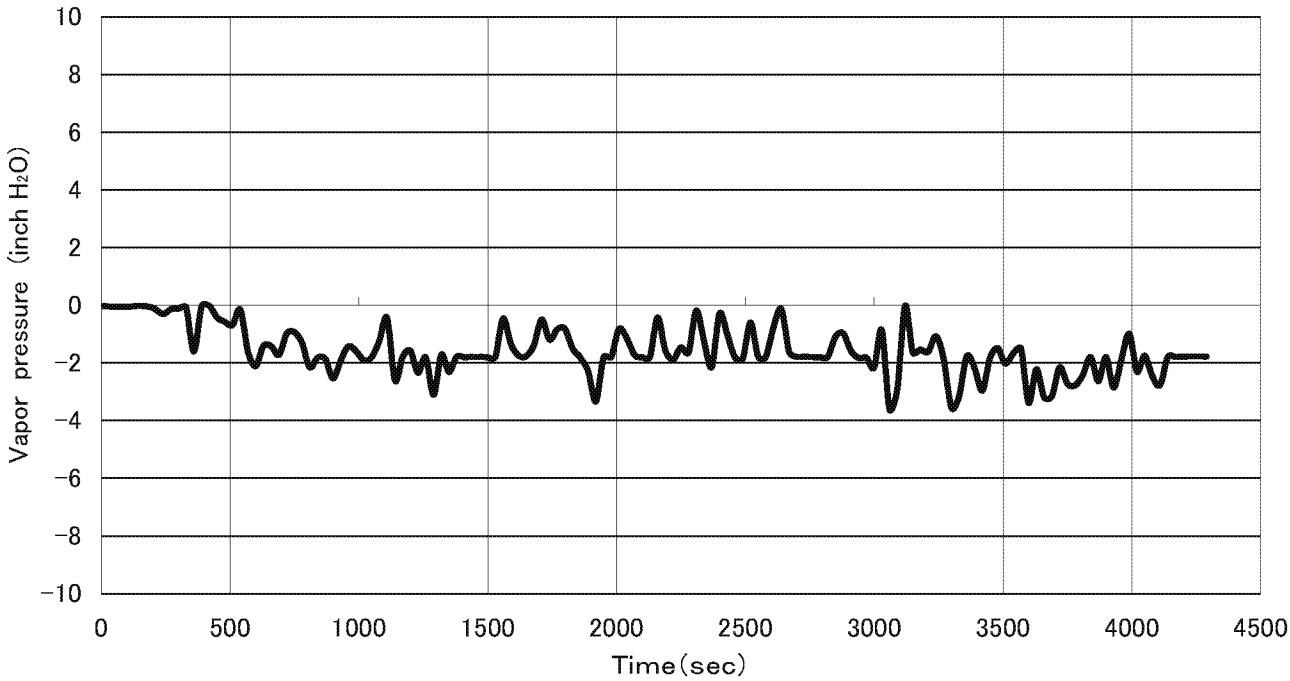
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.5	1200	101.1	2400	107.2	3600	113.2
30	95.5	1230	101.3	2430	107.4	3630	113.4
60	95.9	1260	101.5	2460	107.6	3660	113.7
90	96.1	1290	101.7	2490	107.8	3690	113.7
120	96.4	1320	101.8	2520	108.0	3720	113.9
150	96.6	1350	102.0	2550	108.1	3750	114.1
180	97.0	1380	102.0	2580	108.3	3780	114.1
210	97.0	1410	102.0	2610	108.5	3810	114.3
240	97.0	1440	102.2	2640	108.5	3840	114.4
270	97.2	1470	102.4	2670	108.7	3870	114.4
300	97.3	1500	102.6	2700	109.0	3900	114.6
330	97.3	1530	102.7	2730	109.0	3930	114.6
360	97.5	1560	102.9	2760	109.4	3960	115.0
390	97.7	1590	103.1	2790	109.4	3990	115.0
420	97.9	1620	103.3	2820	109.6	4020	115.2
450	97.9	1650	103.3	2850	109.8	4050	115.2
480	97.9	1680	103.5	2880	109.8	4080	115.3
510	98.1	1710	103.6	2910	110.1	4110	115.5
540	98.2	1740	103.8	2940	110.1	4140	115.5
570	98.4	1770	104.0	2970	110.5	4170	115.9
600	98.6	1800	104.2	3000	110.7	4200	115.9
630	98.6	1830	104.4	3030	110.8	4230	116.1
660	98.8	1860	104.5	3060	110.8	4260	116.2
690	99.0	1890	104.5	3090	110.8	4290	116.4
720	99.0	1920	104.7	3120	111.0		
750	99.1	1950	104.9	3150	111.2		
780	99.3	1980	105.1	3180	111.4		
810	99.5	2010	105.3	3210	111.6		
840	99.5	2040	105.4	3240	111.6		
870	99.7	2070	105.6	3270	111.7		
900	99.9	2100	105.6	3300	111.9		
930	100.0	2130	105.8	3330	112.1		
960	100.0	2160	106.0	3360	112.1		
990	100.2	2190	106.2	3390	112.3		
1020	100.4	2220	106.3	3420	112.5		
1050	100.6	2250	106.5	3450	112.6		
1080	100.8	2280	106.7	3480	112.8		
1110	100.9	2310	106.9	3510	112.8		
1140	100.9	2340	107.1	3540	113.0		
1170	100.9	2370	107.2	3570	113.0		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

[Test vehicle]

Model name	:	GS 350
Trans. conf./code	:	L6

[Test conditions]

Date	:	05/30/2011
Ambient air temperature (at initiation)	:	96.3 °F
Ambient air temperature (at completion)	:	97.2 °F
Track surface temperature (at initiation)	:	131.9 °F
Track surface temperature (at completion)	:	133.0 ° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	05/30/2011
Ambient air temperature (at initiation)	:	96.3 °F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	131.4° F
Track surface temperature (at completion)	:	133.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

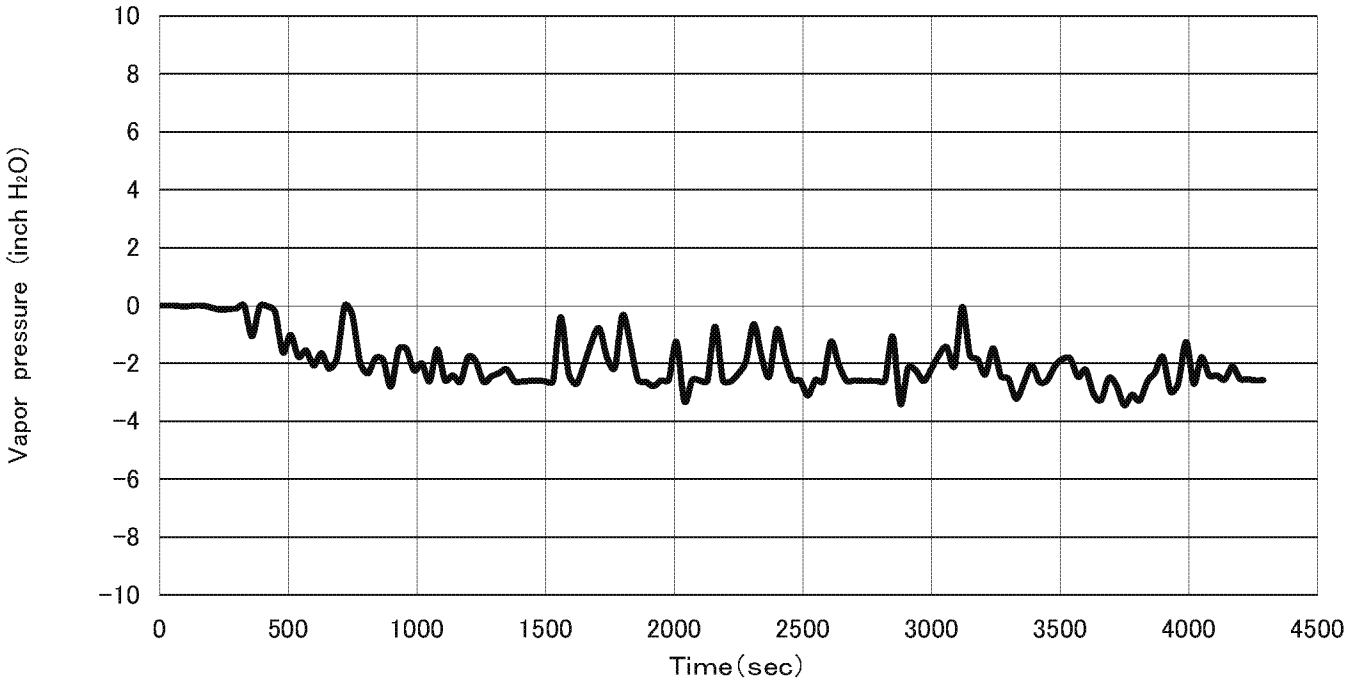
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.2	1200	99.9	2400	105.6	3600	110.7
30	95.2	1230	100.0	2430	105.6	3630	110.8
60	95.2	1260	100.0	2460	105.8	3660	110.8
90	95.4	1290	100.2	2490	106.0	3690	111.0
120	95.5	1320	100.2	2520	106.2	3720	111.0
150	95.9	1350	100.6	2550	106.2	3750	111.2
180	95.9	1380	100.8	2580	106.3	3780	111.4
210	96.3	1410	100.9	2610	106.5	3810	111.4
240	96.3	1440	101.1	2640	106.7	3840	111.6
270	96.3	1470	101.1	2670	106.7	3870	111.7
300	96.4	1500	101.3	2700	106.9	3900	111.7
330	96.6	1530	101.3	2730	107.1	3930	111.9
360	96.8	1560	101.5	2760	107.1	3960	112.1
390	96.8	1590	101.7	2790	107.2	3990	112.3
420	97.0	1620	101.8	2820	107.4	4020	112.3
450	97.0	1650	101.8	2850	107.6	4050	112.3
480	97.2	1680	102.0	2880	107.8	4080	112.6
510	97.3	1710	102.2	2910	108.0	4110	112.6
540	97.3	1740	102.4	2940	108.1	4140	112.8
570	97.5	1770	102.6	2970	108.3	4170	112.8
600	97.5	1800	102.7	3000	108.3	4200	113.0
630	97.7	1830	102.7	3030	108.5	4230	113.0
660	97.9	1860	102.9	3060	108.7	4260	113.2
690	97.9	1890	102.9	3090	108.7	4290	113.2
720	98.2	1920	103.1	3120	108.9		
750	98.2	1950	103.3	3150	109.0		
780	98.4	1980	103.5	3180	109.0		
810	98.4	2010	103.6	3210	109.2		
840	98.8	2040	103.8	3240	109.2		
870	98.8	2070	103.8	3270	109.4		
900	99.0	2100	104.0	3300	109.4		
930	99.0	2130	104.2	3330	109.6		
960	99.1	2160	104.4	3360	109.6		
990	99.3	2190	104.4	3390	109.8		
1020	99.5	2220	104.5	3420	109.8		
1050	99.3	2250	104.7	3450	110.1		
1080	99.5	2280	104.9	3480	110.1		
1110	99.5	2310	105.1	3510	110.3		
1140	99.7	2340	105.3	3540	110.3		
1170	99.7	2370	105.4	3570	110.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

[Test vehicle]

Model name	:	RC F
Trans. conf./code	:	L8

[Test conditions]

Date	:	11/05/2013
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	132.1 °F
Track surface temperature (at completion)	:	135.7 ° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	11/05/2013
Ambient air temperature (at initiation)	:	95.9 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	130.3° F
Track surface temperature (at completion)	:	135.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

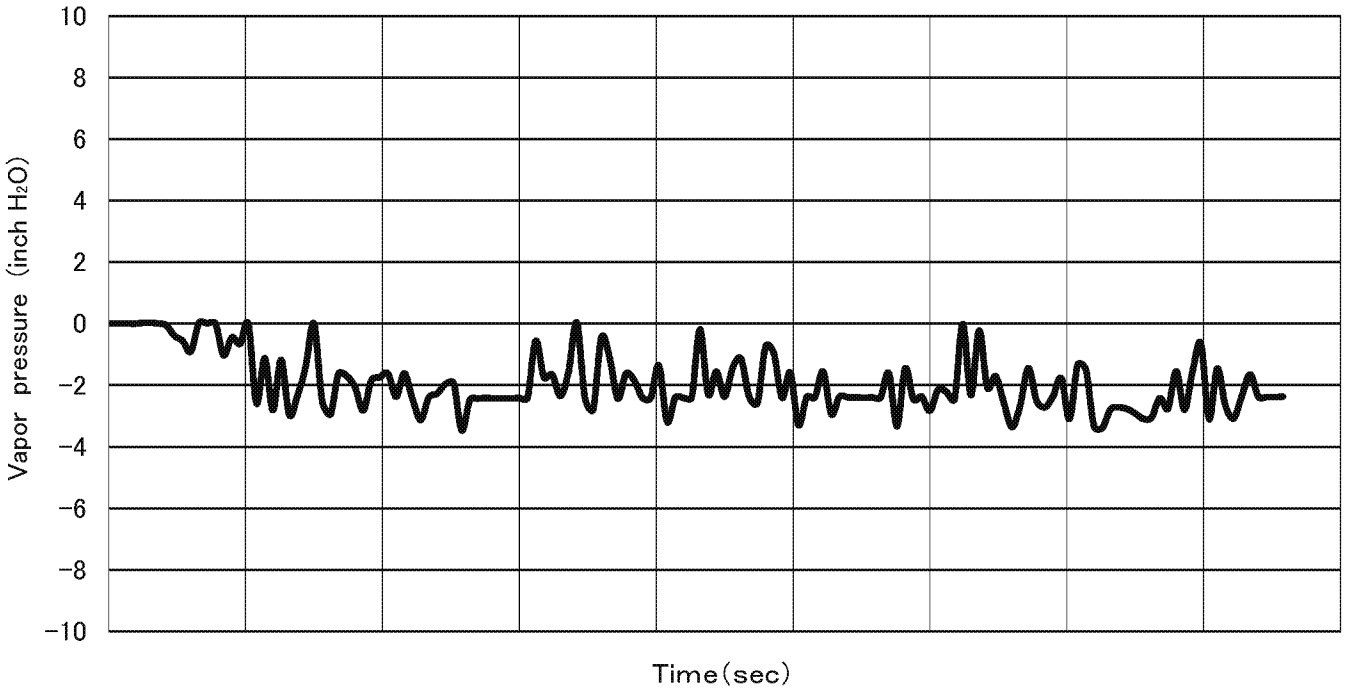
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	100.4	2400	107.1	3600	114.6
30	95.7	1230	100.2	2430	107.4	3630	114.6
60	95.9	1260	100.8	2460	107.8	3660	115.2
90	96.1	1290	100.6	2490	108.0	3690	115.5
120	96.1	1320	101.1	2520	108.1	3720	115.7
150	96.3	1350	101.1	2550	108.3	3750	116.1
180	96.3	1380	101.5	2580	108.5	3780	116.2
210	96.1	1410	101.7	2610	108.1	3810	116.2
240	95.9	1440	101.7	2640	108.7	3840	116.4
270	96.1	1470	101.8	2670	108.7	3870	116.2
300	96.4	1500	102.0	2700	108.9	3900	116.6
330	96.8	1530	102.4	2730	109.4	3930	116.8
360	97.0	1560	102.2	2760	109.6	3960	116.8
390	97.0	1590	102.6	2790	109.8	3990	117.0
420	97.0	1620	102.7	2820	109.9	4020	117.3
450	97.2	1650	102.9	2850	109.6	4050	117.1
480	97.2	1680	102.7	2880	109.6	4080	117.5
510	97.3	1710	102.7	2910	109.8	4110	117.3
540	97.3	1740	103.3	2940	110.3	4140	117.5
570	97.5	1770	103.5	2970	110.5	4170	117.5
600	97.7	1800	103.5	3000	110.5	4200	118.0
630	97.9	1830	103.8	3030	109.9	4230	118.4
660	97.9	1860	104.2	3060	109.9	4260	118.6
690	97.9	1890	104.4	3090	110.5	4290	118.8
720	97.9	1920	104.4	3120	111.0		
750	98.1	1950	104.7	3150	111.6		
780	98.2	1980	104.5	3180	112.1		
810	98.2	2010	104.4	3210	112.6		
840	98.6	2040	104.9	3240	112.8		
870	99.0	2070	105.1	3270	112.8		
900	99.0	2100	105.3	3300	112.8		
930	99.1	2130	105.8	3330	113.4		
960	99.5	2160	105.6	3360	113.5		
990	99.5	2190	106.0	3390	113.5		
1020	99.7	2220	106.2	3420	113.9		
1050	99.5	2250	106.3	3450	113.9		
1080	99.7	2280	106.3	3480	114.1		
1110	100.2	2310	106.3	3510	114.3		
1140	100.0	2340	106.9	3540	114.6		
1170	100.2	2370	107.2	3570	114.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165P12.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	ETYXV02.5BEC
Vehicle ID	:	14-GE4A
Rep. car/truck line	:	IS 250 AWD
Rep. vehicle model	:	GSE35L-AETLHA
Displacement	:	152.5 CID
Transmission	:	A760H-A
Test weight	:	4,000 lbs.
Road load	:	14.0 HP
Evap. code	:	GE1D

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0191	(g/mile)
	CO	:	0.12	(g/mile)
	NOx	:	0.035	(g/mile)
Running loss		:	0.006	(g/mile)
Hot soak loss		:	0.047	(g/mile)
3DBL	1st day	:	0.175*1	(g/test)
	2nd day	:	0.134	(g/test)
	3rd day	:	0.119	(g/test)

2-day diurnal sequence test results*2

Exhaust emission	NMOG	:	N/A	(g/mile)
	CO	:	N/A	(g/mile)
	NOx	:	N/A	(g/mile)
Hot soak loss		:	N/A	(g/mile)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0309	(g/mile)
	CO	:	0.14	(g/mile)
	NOx	:	0.017	(g/mile)
Refueling emission		:	0.002	(g/gal)

*1 : 1st DBL is added key off monitor loss (0.0074 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A12.

[Test vehicle]

Model name	:	IS 350
Trans. conf./code	:	L6/ A760E

[Test conditions]

Date	:	07/28/2004
Ambient air temperature (at initiation)	:	97.3 °F
Ambient air temperature (at completion)	:	97.3 °F
Track surface temperature (at initiation)	:	129.2 °F
Track surface temperature (at completion)	:	133.9 ° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	07/28/2004
Ambient air temperature (at initiation)	:	97.3 °F
Ambient air temperature (at completion)	:	97.2 °F
Track surface temperature (at initiation)	:	131.0° F
Track surface temperature (at completion)	:	131.2 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A12.

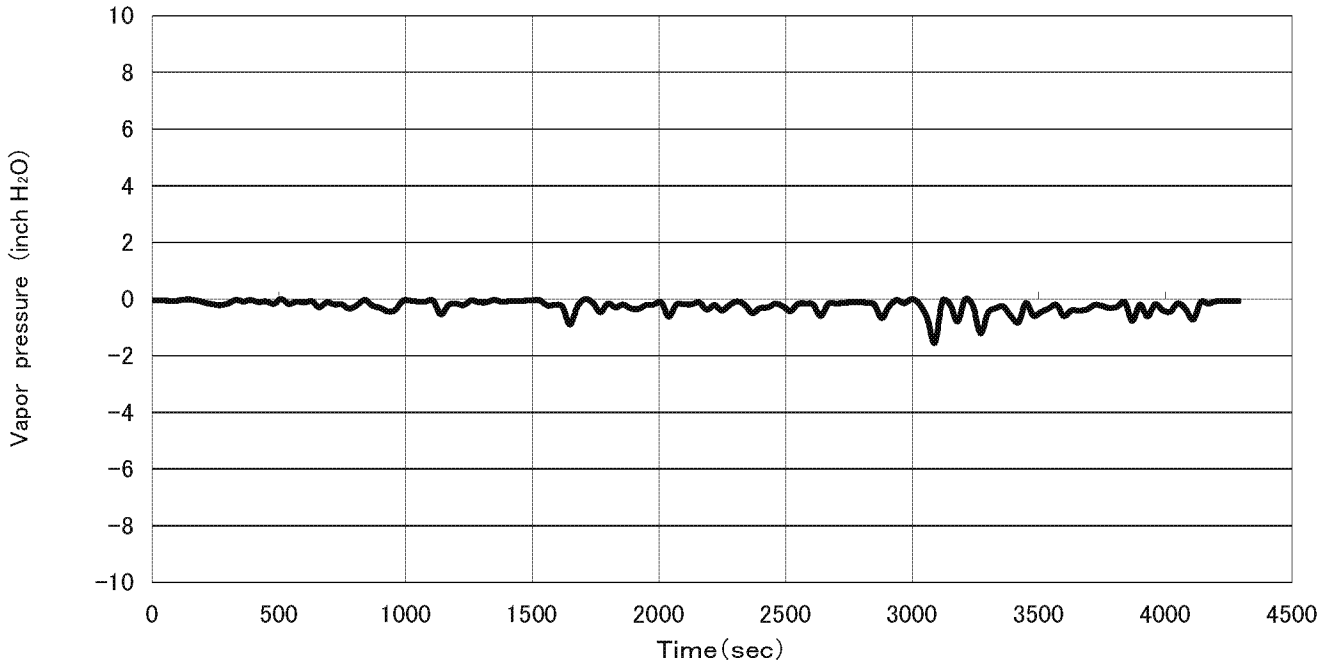
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.18	1200	103.64	2400	111.61	3600	118.49
30	95.23	1230	103.82	2430	111.83	3630	118.58
60	95.32	1260	103.96	2460	111.97	3660	118.72
90	95.50	1290	104.32	2490	112.01	3690	119.03
120	95.63	1320	104.41	2520	112.33	3720	119.08
150	95.77	1350	104.63	2550	112.51	3750	119.21
180	96.13	1380	104.77	2580	112.64	3780	119.30
210	96.35	1410	104.95	2610	112.82	3810	119.57
240	96.71	1440	105.13	2640	113.09	3840	119.62
270	97.16	1470	105.35	2670	113.32	3870	119.84
300	97.39	1500	105.44	2700	113.32	3900	119.98
330	97.52	1530	105.62	2730	113.50	3930	120.11
360	97.70	1560	105.85	2760	113.72	3960	120.20
390	97.79	1590	106.07	2790	113.81	3990	120.38
420	98.15	1620	106.57	2820	113.95	4020	120.52
450	98.29	1650	106.70	2850	114.08	4050	120.70
480	98.56	1680	106.88	2880	114.44	4080	120.83
510	98.65	1710	107.15	2910	114.58	4110	121.19
540	98.96	1740	107.29	2940	114.85	4140	121.15
570	99.05	1770	107.51	2970	114.98	4170	121.24
600	99.32	1800	107.69	3000	115.16	4200	121.42
630	99.50	1830	107.87	3030	115.43	4230	121.64
660	99.68	1860	108.05	3060	115.52	4260	121.73
690	100.04	1890	108.23	3090	115.66	4290	122.18
720	100.13	1920	108.50	3120	115.79		
750	100.36	1950	108.73	3150	115.88		
780	100.58	1980	108.82	3180	116.15		
810	100.81	2010	109.00	3210	116.33		
840	100.99	2040	109.31	3240	116.65		
870	101.21	2070	109.54	3270	116.69		
900	101.30	2100	109.63	3300	116.83		
930	101.48	2130	109.76	3345	117.01		
960	101.66	2160	109.90	3360	117.19		
990	101.93	2190	110.17	3390	117.37		
1020	102.11	2220	110.57	3420	117.50		
1050	102.43	2250	110.71	3450	117.68		
1080	102.61	2280	110.84	3480	117.86		
1110	102.79	2310	111.07	3510	117.95		
1140	103.06	2340	111.25	3540	118.18		
1170	103.24	2370	111.52	3570	118.27		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A12.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	6TYXV02.5PEA	6TYXV04.3WMA
Vehicle ID	:	06-GE1M	06-UZ1A
Rep. car/truck line	:	IS 250	SC 430
Rep. vehicle model	:	GSE20L-AEFLHA	UZZ40L-DKTQKA
Displacement	:	152.5 CID	261.9 CID
Transmission	:	M6/RA62	L6/A761E-A
Test weight	:	3,875 lbs.	4,250 lbs
Road load	:	13.2 HP	14.1 HP
Evap. code	:	GE2Q	UZ1Q

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMHC	:	0.020	(g/mile)
	CO	:	0.10	(g/mile)
	NOx	:	0.014	(g/mile)
Running loss		:	0.005	(g/mile)
Hot soak loss		:	0.053	(g/mile)
3DBL	1st day	:	0.181*1	(g/test)
	2nd day	:	0.148	(g/test)
	3rd day	:	0.135	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMHC	:	0.022	(g/mile)
	CO	:	0.11	(g/mile)
	NOx	:	0.011	(g/mile)
Hot soak loss		:	0.060	(g/mile)
2DBL	1st day	:	0.190*1	(g/test)
	2nd day	:	0.193	(g/test)

Refueling sequence test results

Exhaust emission	NMHC	:	0.0184	(g/mile)
	CO	:	0.27	(g/mile)
	NOx	:	0.02	(g/mile)
Refueling emission		:	0.021	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0047 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0155P12.

[Test vehicle]

Model name	:	GS 450h
Trans. conf./code	:	AV

[Test conditions]

Date	:	06/22/2011
Ambient air temperature (at initiation)	:	96.8°F
Ambient air temperature (at completion)	:	97.0 °F
Track surface temperature (at initiation)	:	126.7 °F
Track surface temperature (at completion)	:	135.1° F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	06/22/2011
Ambient air temperature (at initiation)	:	97.0 °F
Ambient air temperature (at completion)	:	97.0°F
Track surface temperature (at initiation)	:	128.5° F
Track surface temperature (at completion)	:	129.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1)

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0155P12.

Measured temperature and pressure profiles

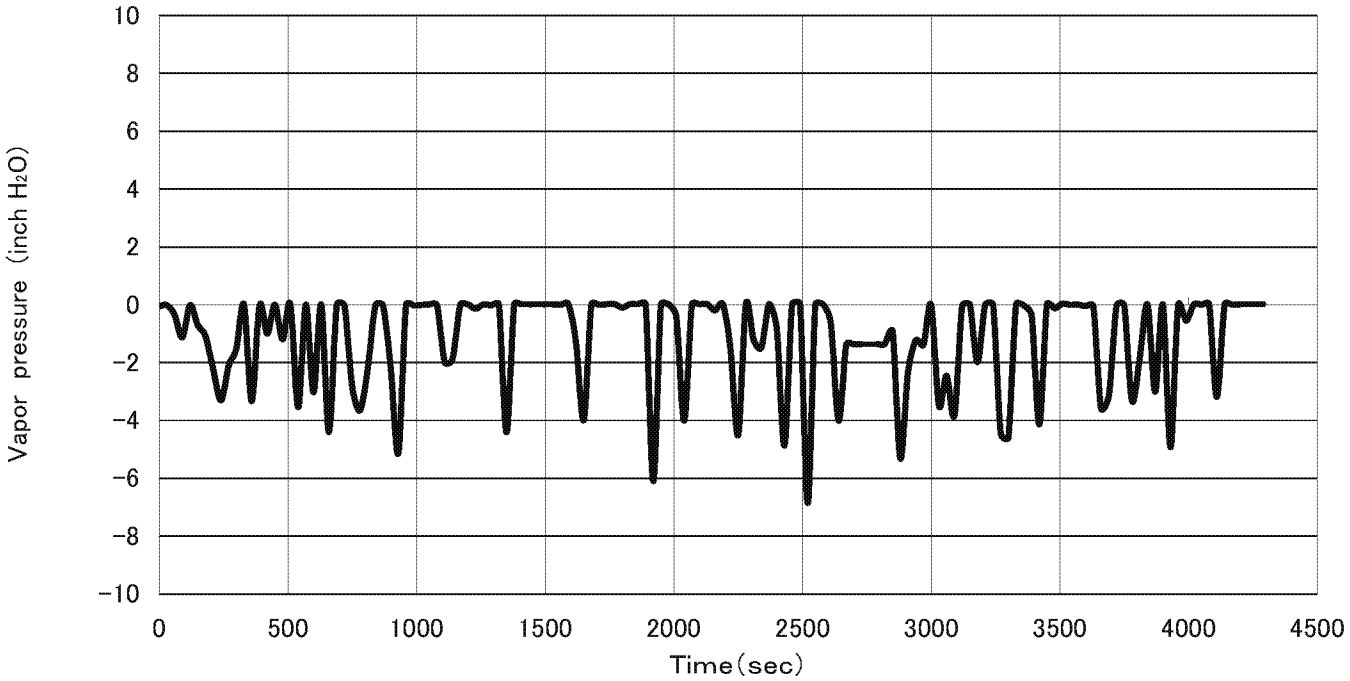
(a) Measured average fuel temperature

This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	98.4	2400	101.5	3600	105.3
30	95.5	1230	98.4	2430	101.5	3630	105.4
60	95.7	1260	98.4	2460	101.7	3660	105.4
90	95.7	1290	98.4	2490	101.8	3690	105.6
120	95.9	1320	98.6	2520	101.8	3720	105.6
150	95.9	1350	98.8	2550	102.0	3750	105.6
180	96.1	1380	98.8	2580	102.0	3780	105.8
210	96.1	1410	99.0	2610	102.0	3810	105.8
240	96.3	1440	99.0	2640	102.2	3840	106.0
270	96.4	1470	99.0	2670	102.4	3870	106.0
300	96.4	1500	99.0	2700	102.2	3900	106.2
330	96.6	1530	99.0	2730	102.6	3930	106.2
360	96.4	1560	99.1	2760	102.6	3960	106.2
390	96.6	1590	99.1	2790	102.7	3990	106.3
420	96.6	1620	99.3	2820	102.9	4020	106.3
450	96.6	1650	99.1	2850	102.9	4050	106.3
480	96.8	1680	99.3	2880	102.9	4080	106.5
510	97.0	1710	99.5	2910	103.1	4110	106.5
540	97.0	1740	99.7	2940	103.3	4140	106.7
570	97.0	1770	99.7	2970	103.3	4170	106.7
600	97.0	1800	99.7	3000	103.5	4200	106.9
630	97.0	1830	99.9	3030	103.6	4230	106.9
660	97.2	1860	100.0	3060	103.8	4260	106.9
690	97.2	1890	100.0	3090	103.8	4290	107.1
720	97.3	1920	100.0	3120	104.0		
750	97.3	1950	100.2	3150	104.2		
780	97.3	1980	100.2	3180	104.2		
810	97.3	2010	100.4	3210	104.2		
840	97.3	2040	100.4	3240	104.4		
870	97.5	2070	100.6	3270	104.5		
900	97.7	2100	100.6	3300	104.5		
930	97.9	2130	100.6	3330	104.5		
960	97.9	2160	100.6	3360	104.7		
990	97.9	2190	100.8	3390	104.7		
1020	97.9	2220	100.9	3420	104.9		
1050	98.1	2250	100.9	3450	104.9		
1080	98.1	2280	101.1	3480	105.1		
1110	98.1	2310	101.1	3510	105.1		
1140	98.2	2340	101.5	3540	105.3		
1170	98.4	2370	101.5	3570	105.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0155P12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0155P12.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	DTYXV03.5CC4
Vehicle ID	:	13-GW1H
Rep. car/truck line	:	GS 450h
Rep. vehicle model	:	GWL10L-BEXQBA
Displacement	:	210.9 CID
Transmission	:	AV/L110
Test weight	:	4,500 lbs.
Road load	:	13.9 HP
Evap. code	:	GL1E

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.002	(g/mile)
Hot soak loss		:	0.044	(g/mile)
3DBL	1st day	:	0.199	(g/test)
	2nd day	:	0.144	(g/test)
	3rd day	:	0.124	(g/test)

2-day diurnal sequence test results*2

Hot soak loss		:	N/A	(g/mile)
2DBL	1st day	:	N/A	(g/test)
	2nd day	:	N/A	(g/test)

Refueling sequence test results

Refueling emission	:	0.003	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0009 gram).
*2: In lieu of testing, Toyota is providing a compliance statement in §8.2.

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

[Test vehicle]

Model name	:	RAV4

[Test conditions]

Date	:	12/21/2011
Ambient air temperature (at initiation)	:	95.9°F
Ambient air temperature (at completion)	:	96.8°F
Track surface temperature (at initiation)	:	130.8°F
Track surface temperature (at completion)	:	132.1°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	12/21/2011
Ambient air temperature (at initiation)	:	96.6°F
Ambient air temperature (at completion)	:	96.6°F
Track surface temperature (at initiation)	:	131.5°F
Track surface temperature (at completion)	:	132.1°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

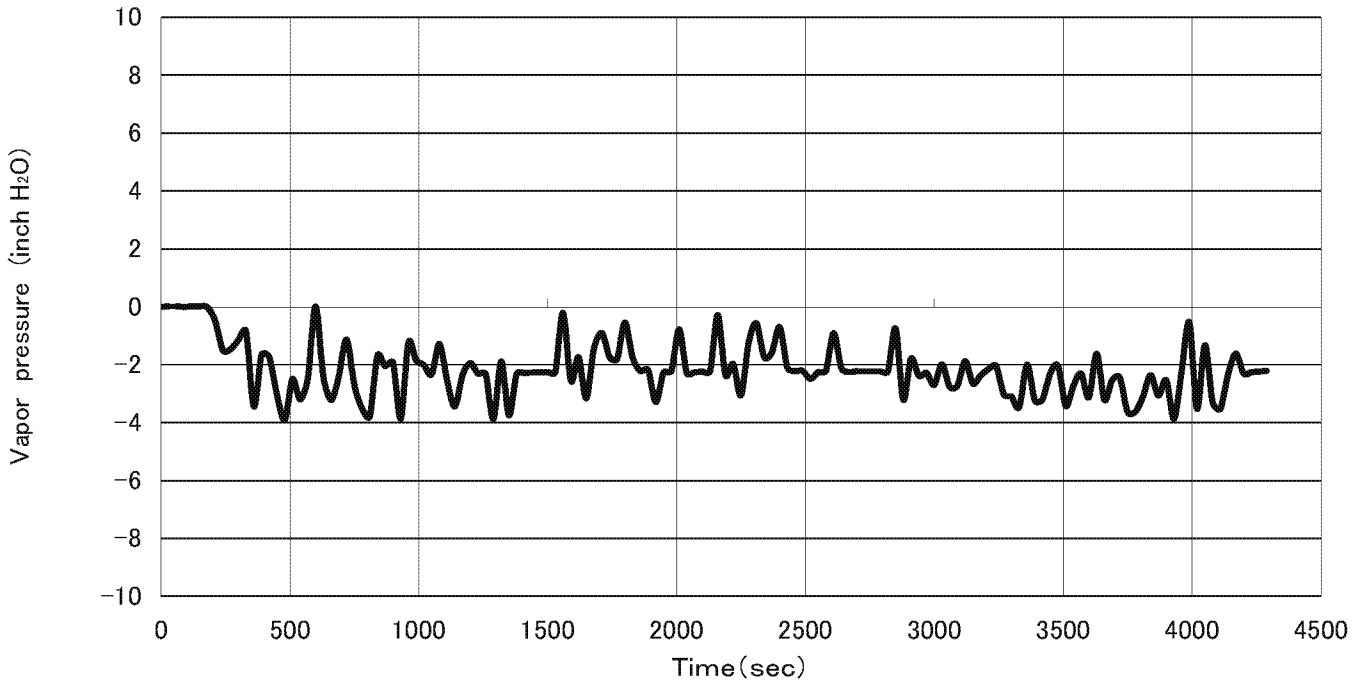
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	103.5	2400	112.1	3600	117.5
30	95.5	1230	103.8	2430	112.5	3630	117.7
60	95.7	1260	104.0	2460	112.6	3660	117.7
90	95.7	1290	104.4	2490	112.8	3690	117.9
120	95.7	1320	104.5	2520	113.0	3720	117.9
150	95.9	1350	104.7	2550	113.2	3750	118.0
180	95.9	1380	104.9	2580	113.4	3780	118.0
210	96.1	1410	105.3	2610	113.4	3810	118.0
240	96.1	1440	105.4	2640	113.7	3840	118.2
270	96.3	1470	105.6	2670	113.9	3870	118.4
300	96.4	1500	106.0	2700	114.1	3900	118.4
330	96.6	1530	106.2	2730	114.3	3930	118.4
360	97.0	1560	106.3	2760	114.4	3960	118.6
390	97.2	1590	106.5	2790	114.8	3990	118.8
420	97.2	1620	106.7	2820	114.8	4020	118.8
450	97.5	1650	106.9	2850	115.2	4050	118.8
480	97.7	1680	107.1	2880	115.2	4080	118.9
510	98.1	1710	107.6	2910	115.3	4110	119.1
540	98.2	1740	107.8	2940	115.5	4140	119.1
570	98.4	1770	108.0	2970	115.7	4170	119.1
600	98.8	1800	108.1	3000	115.7	4200	119.3
630	99.0	1830	108.3	3030	115.9	4230	119.5
660	99.3	1860	108.7	3060	115.9	4260	119.7
690	99.5	1890	108.7	3090	116.1	4290	119.7
720	99.9	1920	108.9	3120	116.1		
750	100.0	1950	109.2	3150	116.1		
780	100.2	1980	109.4	3180	116.1		
810	100.6	2010	109.6	3210	116.4		
840	100.8	2040	109.8	3240	116.4		
870	101.1	2070	109.9	3270	116.4		
900	101.3	2100	110.1	3300	116.6		
930	101.7	2130	110.3	3330	116.6		
960	101.8	2160	110.5	3360	116.6		
990	102.0	2190	110.8	3390	116.8		
1020	102.4	2220	111.0	3420	117.0		
1050	102.6	2250	111.2	3450	117.0		
1080	102.7	2280	111.4	3480	117.1		
1110	102.9	2310	111.6	3510	117.1		
1140	103.1	2340	111.7	3540	117.3		
1170	103.5	2370	111.9	3570	117.5		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

[Test vehicle]

Model name	:	NX 300h

[Test conditions]

Date	:	10/04/2013
Ambient air temperature (at initiation)	:	96.3°F
Ambient air temperature (at completion)	:	96.6°F
Track surface temperature (at initiation)	:	130.3°F
Track surface temperature (at completion)	:	132.3°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/04/2013
Ambient air temperature (at initiation)	:	96.1°F
Ambient air temperature (at completion)	:	96.4°F
Track surface temperature (at initiation)	:	130.3°F
Track surface temperature (at completion)	:	131.9°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

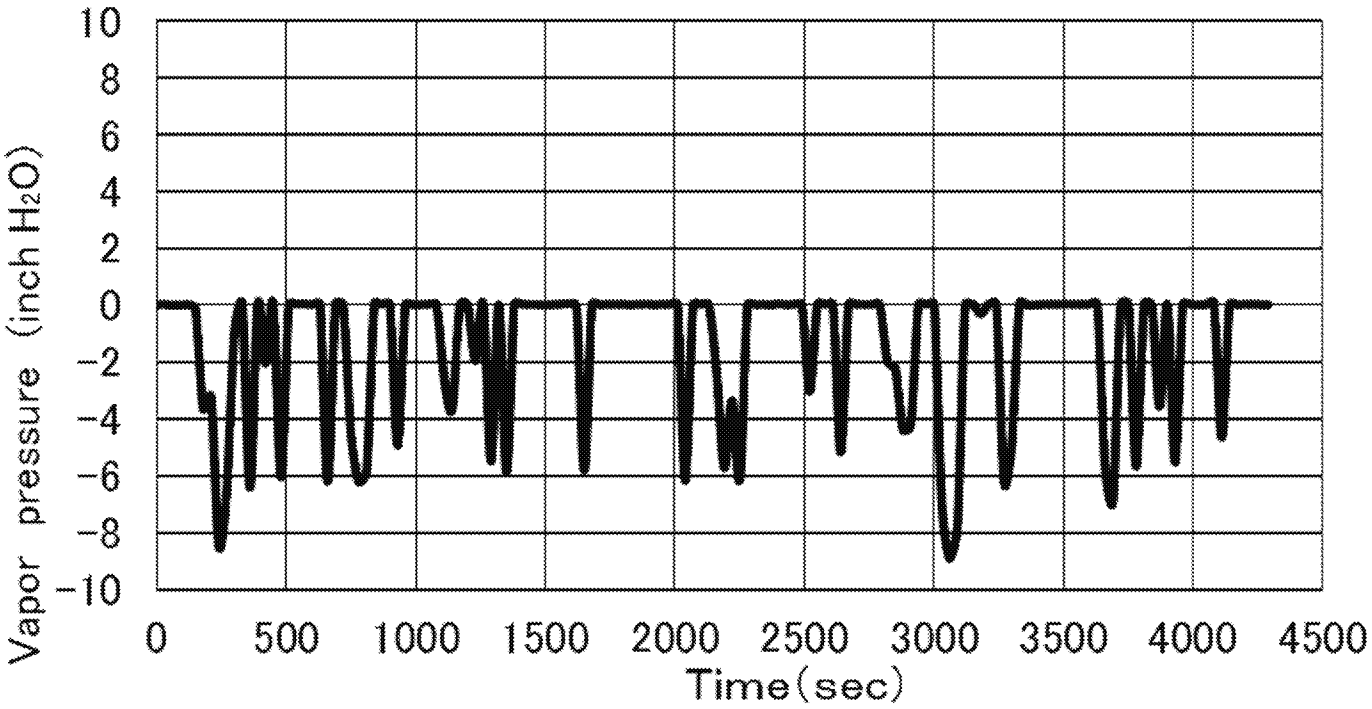
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.1	1200	104.0	2400	110.5	3600	115.5
30	95.9	1230	104.5	2430	110.3	3630	115.9
60	96.1	1260	104.4	2460	110.3	3660	115.9
90	96.3	1290	104.7	2490	110.5	3690	116.2
120	96.4	1320	104.9	2520	110.8	3720	116.2
150	96.3	1350	105.1	2550	110.8	3750	116.4
180	96.4	1380	105.1	2580	110.8	3780	116.2
210	96.8	1410	105.1	2610	111.2	3810	116.6
240	97.3	1440	105.3	2640	111.2	3840	116.4
270	97.3	1470	105.4	2670	111.2	3870	116.6
300	97.9	1500	105.6	2700	111.2	3900	116.6
330	97.9	1530	105.8	2730	111.4	3930	117.0
360	98.2	1560	106.0	2760	111.6	3960	117.1
390	98.8	1590	106.2	2790	111.7	3990	117.0
420	98.8	1620	106.2	2820	112.1	4020	117.0
450	98.8	1650	106.3	2850	112.6	4050	117.3
480	99.7	1680	106.5	2880	112.6	4080	117.0
510	99.7	1710	106.9	2910	112.8	4110	117.7
540	100.0	1740	106.9	2940	112.6	4140	117.3
570	100.0	1770	106.9	2970	112.5	4170	117.5
600	100.2	1800	107.2	3000	113.0	4200	117.5
630	100.6	1830	107.4	3030	113.5	4230	117.5
660	100.8	1860	107.4	3060	113.9	4260	117.5
690	100.8	1890	107.4	3090	114.1	4290	117.7
720	101.1	1920	107.8	3120	114.1		
750	101.5	1950	108.0	3150	113.7		
780	101.7	1980	108.0	3180	113.9		
810	102.0	2010	108.3	3210	114.1		
840	102.2	2040	108.1	3240	114.1		
870	102.6	2070	108.3	3270	114.3		
900	102.7	2100	108.5	3300	114.6		
930	102.9	2130	108.7	3330	114.4		
960	102.9	2160	109.0	3360	114.6		
990	103.3	2190	109.0	3390	114.6		
1020	103.5	2220	109.0	3420	115.0		
1050	103.3	2250	109.2	3450	114.8		
1080	103.8	2280	109.6	3480	115.2		
1110	103.5	2310	109.8	3510	115.0		
1140	104.2	2340	109.9	3540	115.2		
1170	104.0	2370	110.1	3570	115.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0130A22.

Evaporative emission test log

Vehicle Description

	Evaporative emission vehicle	Refueling emission vehicle
Test group:	FTYXT02.5PCM	6TYXT02.4PEM
Vehicle ID:	15-AZ1H	06-AA2A
Rep. car/truck line:	NX 300h	RAV4
Rep. vehicle model:	AYZ15L-AWXLBA	ACA33L-ANPSKA
Displacement:	152.2CID	144.1CID
Transmission:	AV/P314-C	L4/U140F-C
Test weight:	4,500 lbs.	3,875lbs.
Road load:	15.1 HP	15.3 HP
Evap. code:	AZ1T	AA1T

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0054	(g/mile)
	CO	:	0.08	(g/mile)
	NOx	:	0.001	(g/mile)
Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.047	(g/test)
3DBL	1st day	:	0.246*1	(g/test)
	2nd day	:	0.164	(g/test)
	3rd day	:	0.135	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0057	(g/mile)
	CO	:	0.07	(g/mile)
	NOx	:	0.001	(g/mile)
Hot soak loss		:	0.016	(g/test)
2DBL	1st day	:	0.213*1	(g/test)
	2nd day	:	0.152	(g/test)

Refueling sequence test results

Exhaust emission	NMHC	:	0.0157	(g/mile)
	CO	:	0.15	(g/mile)
	NOx	:	0.020	(g/mile)
Refueling emission		:	0.003	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0002 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A22.

[Test vehicle]

Model name	:	VENZA
Trans. conf./code	:	L6/U760E

[Test conditions]

Date	:	03/12/2007
Ambient air temperature (at initiation)	:	95.9°F
Ambient air temperature (at completion)	:	97.5°F
Track surface temperature (at initiation)	:	129.9°F
Track surface temperature (at completion)	:	131.2°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	03/12/2007
Ambient air temperature (at initiation)	:	96.6°F
Ambient air temperature (at completion)	:	97.2°F
Track surface temperature (at initiation)	:	129.9°F
Track surface temperature (at completion)	:	131.4°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A22.

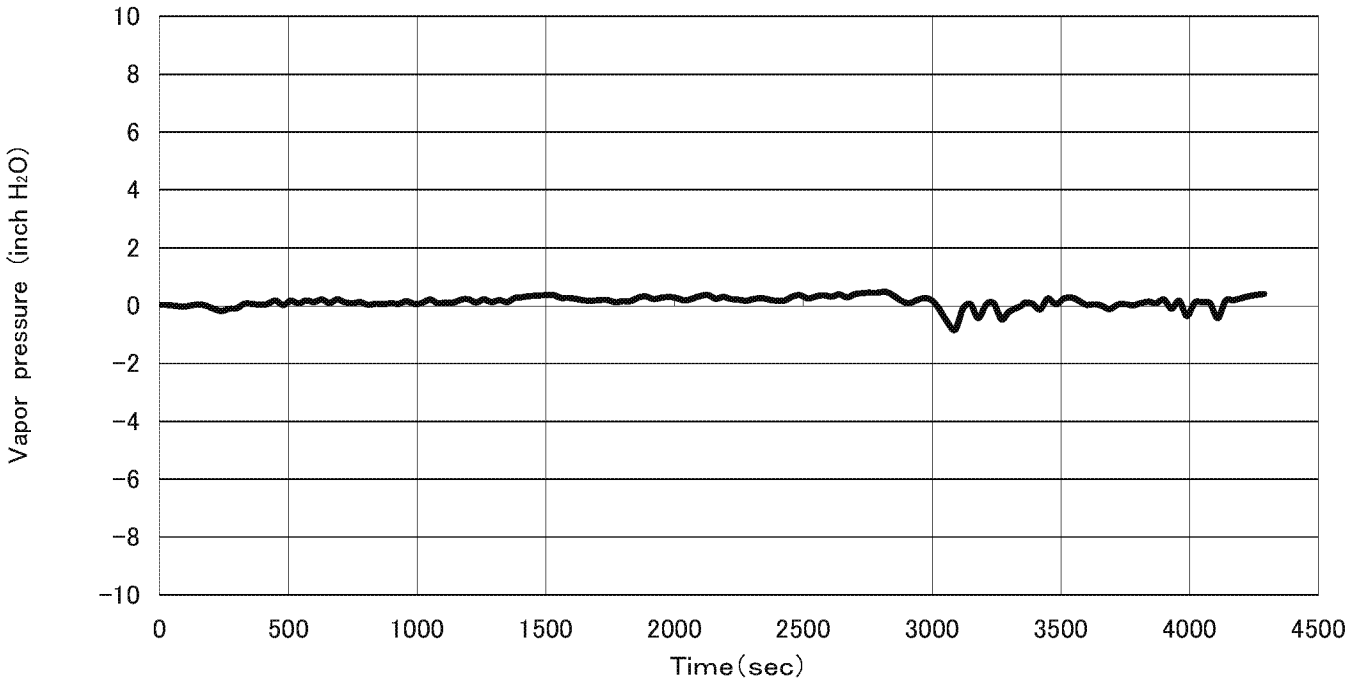
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	102.6	2400	111.1	3600	117.6
30	95.0	1230	102.8	2430	111.3	3630	117.6
60	95.1	1260	102.9	2460	111.5	3660	117.7
90	95.2	1290	103.2	2490	111.6	3690	117.8
120	95.4	1320	103.3	2520	111.8	3720	117.9
150	95.5	1350	103.6	2550	112.0	3750	118.0
180	95.6	1380	103.7	2580	112.1	3780	118.2
210	95.9	1410	103.9	2610	112.4	3810	118.3
240	95.9	1440	104.0	2640	112.6	3840	118.4
270	96.2	1470	104.2	2670	112.9	3870	118.5
300	96.4	1500	104.5	2700	113.0	3900	118.7
330	96.7	1530	104.6	2730	113.1	3930	118.8
360	96.9	1560	105.0	2760	113.3	3960	118.9
390	97.1	1590	105.2	2790	113.5	3990	119.0
420	97.3	1620	105.5	2820	113.6	4020	119.2
450	97.5	1650	105.8	2850	114.0	4050	119.3
480	97.7	1680	105.9	2880	114.2	4080	119.4
510	97.8	1710	106.3	2910	114.3	4110	119.6
540	98.2	1740	106.4	2940	114.5	4140	119.7
570	98.3	1770	106.6	2970	114.6	4170	119.7
600	98.5	1800	106.8	3000	114.9	4200	119.9
630	98.6	1830	107.0	3030	115.0	4230	119.9
660	98.9	1860	107.2	3060	115.2	4260	120.0
690	99.1	1890	107.3	3090	115.3	4290	120.2
720	99.3	1920	107.6	3120	115.3		
750	99.5	1950	107.8	3150	115.4		
780	99.7	1980	108.0	3180	115.7		
810	99.9	2010	108.2	3210	115.8		
840	100.0	2040	108.5	3240	116.0		
870	100.2	2070	108.7	3270	116.2		
900	100.4	2100	108.9	3300	116.2		
930	100.6	2130	109.0	3330	116.3		
960	100.8	2160	109.2	3360	116.5		
990	101.1	2190	109.5	3390	116.6		
1020	101.3	2220	109.9	3420	116.7		
1050	101.6	2250	110.0	3450	117.0		
1080	101.7	2280	110.2	3480	117.1		
1110	101.9	2310	110.4	3510	117.1		
1140	102.1	2340	110.7	3540	117.3		
1170	102.3	2370	110.8	3570	117.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A22.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0165A22.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	6TYXV02.5PEA	6TYXV04.3WMA
Vehicle ID	:	06-GE1M	06-UZ1A
Rep. car/truck line	:	IS 250	SC 430
Rep. vehicle model	:	GSE20L-AEFLHA	UZZ40L-DKTQKA
Displacement	:	152.5 CID	261.9 CID
Transmission	:	M6/RA62	L6/A761E-A
Test weight	:	3,875 lbs.	4,250 lbs
Road load	:	13.2 HP	14.1 HP
Evap. code	:	GE2Q	UZ1Q

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMHC	:	0.020	(g/mile)
	CO	:	0.10	(g/mile)
	NOx	:	0.014	(g/mile)
Running loss		:	0.005	(g/mile)
Hot soak loss		:	0.053	(g/mile)
3DBL	1st day	:	0.181*1	(g/test)
	2nd day	:	0.148	(g/test)
	3rd day	:	0.135	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMHC	:	0.022	(g/mile)
	CO	:	0.11	(g/mile)
	NOx	:	0.011	(g/mile)
Hot soak loss		:	0.060	(g/mile)
2DBL	1st day	:	0.190*1	(g/test)
	2nd day	:	0.193	(g/test)

Refueling sequence test results

Exhaust emission	NMHC	:	0.0184	(g/mile)
	CO	:	0.27	(g/mile)
	NOx	:	0.024	(g/mile)
Refueling emission		:	0.021	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0047 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E62.

[Test vehicle]

Model name	:	HIGHLANDER HYBRID AWD
Trans. conf./code	:	P313-B

[Test conditions]

Date	:	12/07/2012
Ambient air temperature (at initiation)	:	106.0°F
Ambient air temperature (at completion)	:	107.1°F
Track surface temperature (at initiation)	:	148.3°F
Track surface temperature (at completion)	:	150.4°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	12/10/2012
Ambient air temperature (at initiation)	:	106.2°F
Ambient air temperature (at completion)	:	107.6°F
Track surface temperature (at initiation)	:	148.8°F
Track surface temperature (at completion)	:	150.1°F
Wind speed	:	N/A
Test fuel RVP	:	7.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E62.

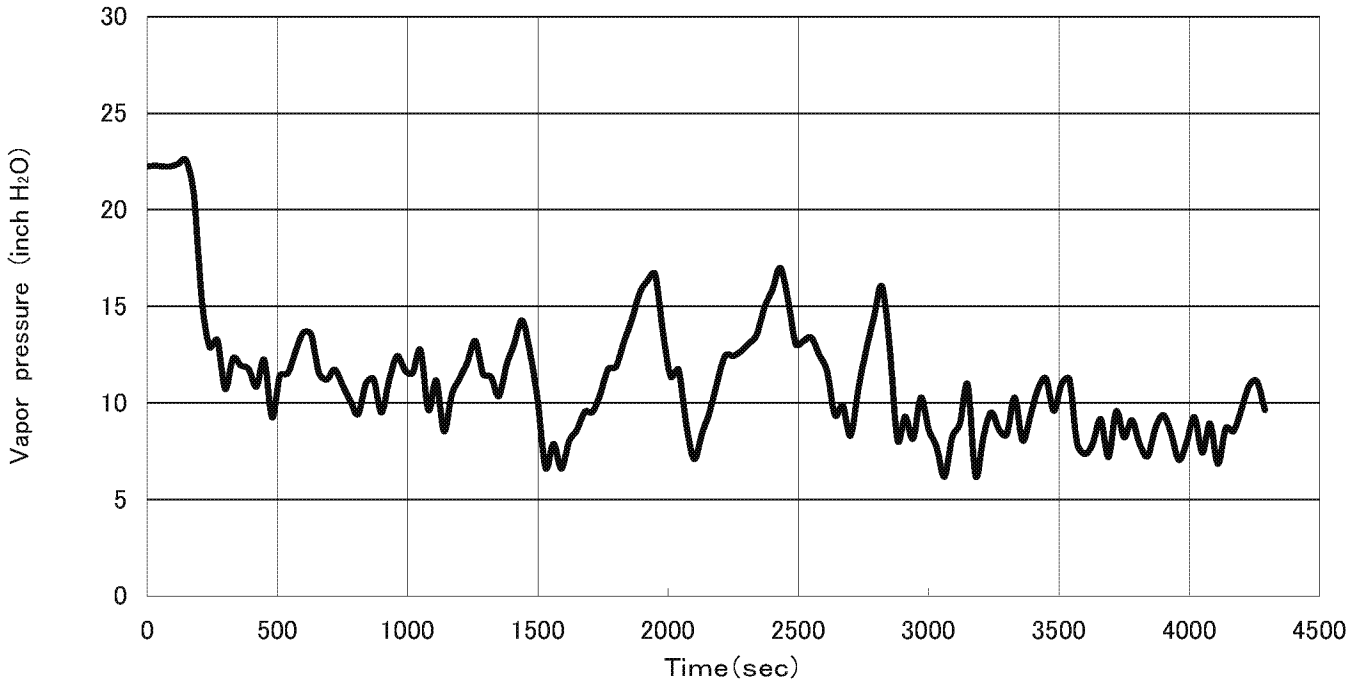
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	105.8	1200	110.5	2400	117.3	3600	123.3
30	105.6	1230	110.5	2430	117.5	3630	123.1
60	105.4	1260	110.8	2460	117.7	3660	123.4
90	105.3	1290	110.8	2490	117.7	3690	123.6
120	105.3	1320	111.2	2520	117.7	3720	123.6
150	105.3	1350	111.4	2550	118.0	3750	123.6
180	105.3	1380	111.6	2580	118.0	3780	124.0
210	105.3	1410	111.6	2610	118.2	3810	124.0
240	105.4	1440	111.6	2640	118.2	3840	124.2
270	105.6	1470	111.7	2670	118.6	3870	124.2
300	105.8	1500	111.7	2700	118.6	3900	124.5
330	105.8	1530	111.9	2730	118.8	3930	124.5
360	105.8	1560	112.1	2760	118.8	3960	124.3
390	106.0	1590	112.5	2790	118.9	3990	124.7
420	106.2	1620	112.6	2820	119.1	4020	124.9
450	106.2	1650	112.8	2850	118.9	4050	124.9
480	106.5	1680	113.0	2880	119.1	4080	125.1
510	106.9	1710	113.0	2910	119.1	4110	124.9
540	106.7	1740	113.5	2940	119.8	4140	125.2
570	106.9	1770	113.7	2970	120.0	4170	125.2
600	107.1	1800	113.9	3000	120.2	4200	125.4
630	107.2	1830	114.1	3030	119.8	4230	125.2
660	107.4	1860	114.3	3060	120.2	4260	125.4
690	107.6	1890	114.4	3090	120.6	4290	125.4
720	107.8	1920	114.4	3120	120.9		
750	108.0	1950	114.6	3150	121.3		
780	108.1	1980	114.8	3180	121.5		
810	108.1	2010	114.8	3210	121.6		
840	108.3	2040	114.8	3240	121.8		
870	108.5	2070	115.2	3270	121.8		
900	108.7	2100	115.3	3300	122.0		
930	109.0	2130	115.5	3330	122.2		
960	109.2	2160	115.3	3360	122.2		
990	109.2	2190	115.9	3390	122.4		
1020	109.4	2220	116.1	3420	122.4		
1050	109.6	2250	116.1	3450	122.5		
1080	109.8	2280	116.4	3480	122.7		
1110	109.9	2310	116.4	3510	122.9		
1140	109.9	2340	117.0	3540	123.3		
1170	110.3	2370	117.3	3570	123.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E62.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E62.

Evaporative emission test log

Vehicle Description

		Evaporative / Refueling emission vehicle
Test group	:	ETYXT03.5CCU
Vehicle ID	:	14-GU2H
Rep. car/truck line	:	HIGHLANDER HYBRID AWD
Rep. vehicle model	:	GVU58L-ARXMKA
Displacement	:	210.9CID
Transmission	:	P313-B
Test weight	:	5,250 lbs.
Road load	:	15.6 HP
Evap. code	:	GU1Y

Test results

Test procedure		:	CARB's procedure	
Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.048	(g/test)
3DBL	1st day	:	0.141	(g/test)
	2nd day	:	0.125	(g/test)
	3rd day	:	0.114	(g/test)

2-day diurnal sequence test results

Hot soak loss	:	0.020	(g/mile)
2DBL	:	0.126*1	(g/test)

Refueling sequence test results

Refueling emission	:	0.003	(g/gal)

*1: DBL is added key off monitor loss (0.0000 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

[Test vehicle]

Model name	:	Land Cruiser WGN
Trans. conf./code	:	L6/AB60FC

[Test conditions]

Date	:	07/15/2006
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	131 °F
Track surface temperature (at completion)	:	131.4°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	08/17/2006
Ambient air temperature (at initiation)	:	95.9°F
Ambient air temperature (at completion)	:	95.9 °F
Track surface temperature (at initiation)	:	132.3°F
Track surface temperature (at completion)	:	130 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

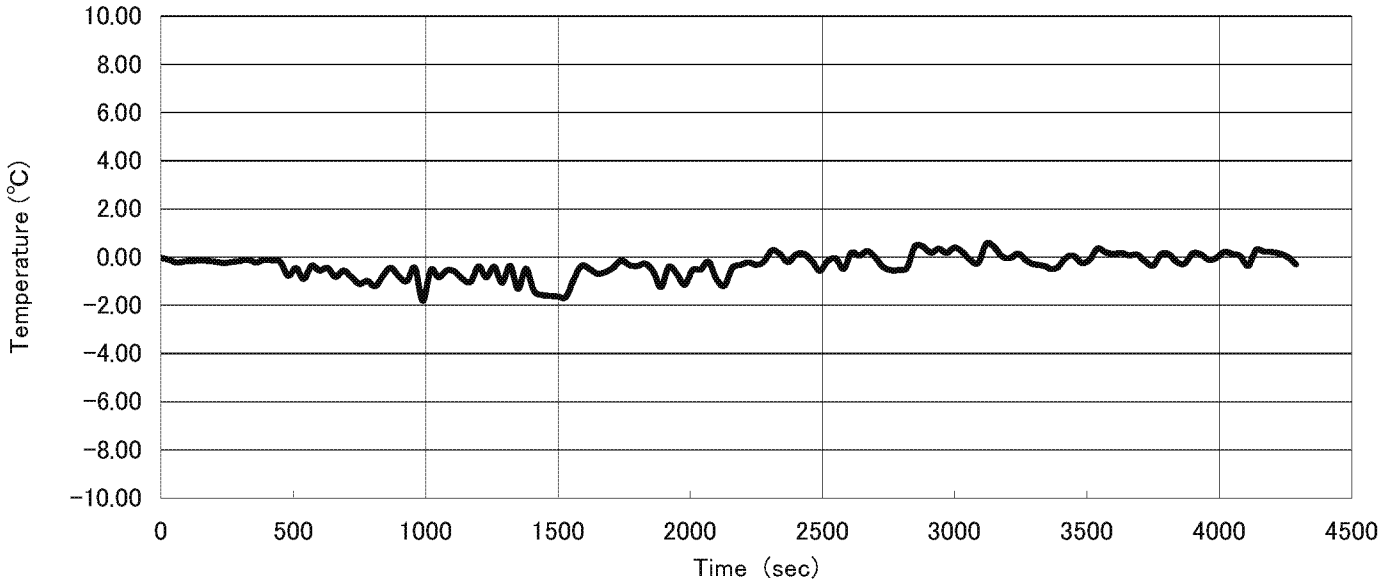
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	100.9	2400	111.0	3600	119.7
30	95.2	1230	101.3	2430	111.2	3630	120.2
60	95.2	1260	101.5	2460	111.2	3660	120.4
90	95.2	1290	101.7	2490	111.6	3690	120.4
120	95.4	1320	102.2	2520	111.7	3720	120.7
150	95.4	1350	102.0	2550	112.1	3750	120.7
180	95.4	1380	102.4	2580	112.3	3780	120.9
210	95.5	1410	102.6	2610	112.6	3810	121.1
240	95.7	1440	102.6	2640	112.8	3840	121.3
270	95.7	1470	102.9	2670	113.2	3870	121.1
300	95.9	1500	103.1	2700	113.4	3900	121.5
330	95.9	1530	103.3	2730	113.5	3930	121.5
360	95.9	1560	103.3	2760	113.9	3960	121.8
390	96.3	1590	103.6	2790	114.1	3990	121.6
420	96.3	1620	104.2	2820	114.3	4020	121.8
450	96.4	1650	104.4	2850	114.6	4050	122.2
480	96.6	1680	104.9	2880	115.0	4080	122.4
510	96.8	1710	105.3	2910	115.3	4110	122.5
540	96.8	1740	105.6	2940	115.7	4140	122.7
570	97.0	1770	105.6	2970	115.7	4170	122.7
600	97.2	1800	106.0	3000	116.1	4200	122.9
630	97.3	1830	106.2	3030	116.4	4230	123.1
660	97.3	1860	106.3	3060	116.8	4260	123.3
690	97.7	1890	106.5	3090	116.8	4290	123.4
720	97.7	1920	106.9	3120	117.1		
750	97.9	1950	107.1	3150	117.0		
780	98.1	1980	107.2	3180	117.1		
810	98.4	2010	107.6	3210	117.5		
840	98.8	2040	107.8	3240	117.5		
870	99.0	2070	108.1	3270	117.5		
900	99.1	2100	108.3	3300	118.0		
930	99.3	2130	108.5	3330	118.0		
960	99.7	2160	108.7	3360	118.2		
990	99.9	2190	109.0	3390	118.2		
1020	100.0	2220	109.2	3420	118.4		
1050	100.0	2250	109.6	3450	118.8		
1080	100.2	2280	110.1	3480	118.8		
1110	100.4	2310	110.3	3510	119.1		
1140	100.6	2340	110.7	3540	119.3		
1170	100.8	2370	110.7	3570	119.7		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

[Test vehicle]

Model name	:	GX 460
Trans. conf./code	:	L6/A760F

[Test conditions]

Date	:	09/27/2007
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	96.1 °F
Track surface temperature (at initiation)	:	129.9 °F
Track surface temperature (at completion)	:	128.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	10/23/2007
Ambient air temperature (at initiation)	:	96.8 °F
Ambient air temperature (at completion)	:	96.3 °F
Track surface temperature (at initiation)	:	129.2 °F
Track surface temperature (at completion)	:	131.5 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

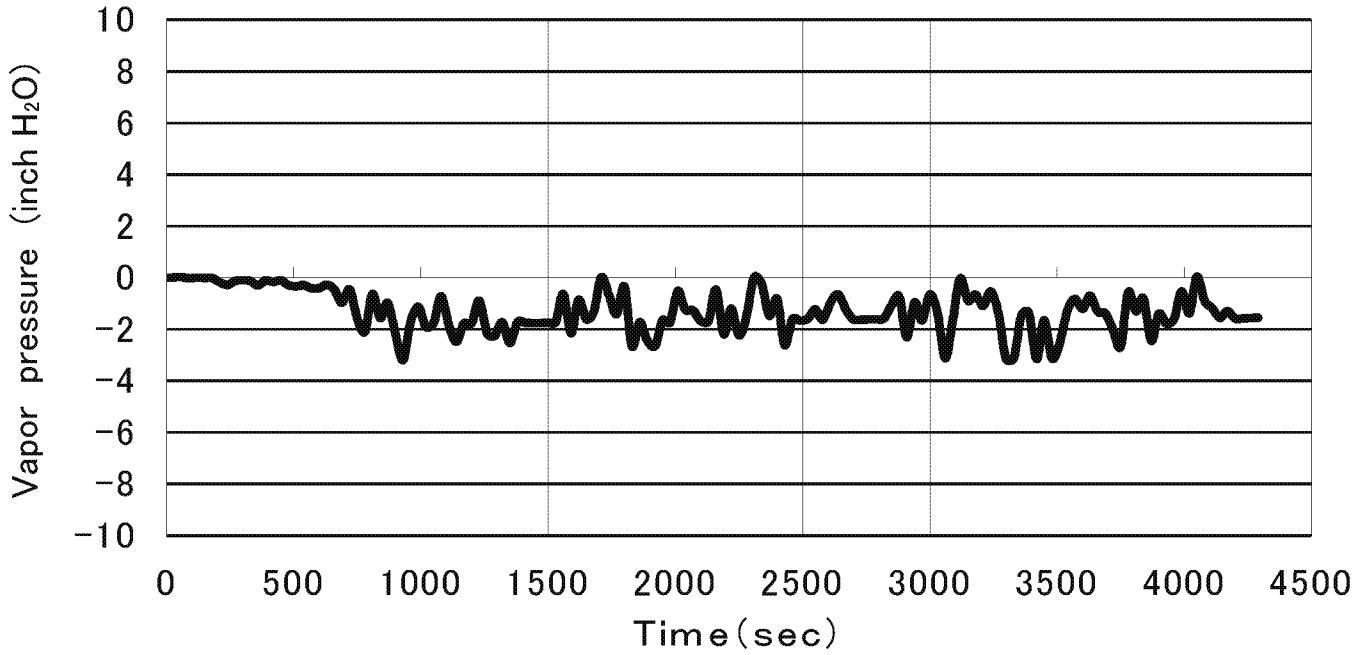
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	101.8	2400	110.4	3600	118.6
30	95.6	1230	102.0	2430	110.9	3630	118.6
60	95.7	1260	102.2	2460	111.2	3660	118.8
90	95.7	1290	102.2	2490	111.6	3690	119.0
120	95.9	1320	102.6	2520	111.5	3720	119.1
150	96.2	1350	102.9	2550	111.7	3750	119.3
180	96.3	1380	103.1	2580	112.1	3780	119.5
210	96.2	1410	103.4	2610	112.2	3810	119.5
240	96.3	1440	103.8	2640	112.7	3840	119.8
270	96.5	1470	104.0	2670	112.7	3870	120.3
300	96.8	1500	104.3	2700	113.1	3900	120.2
330	96.8	1530	104.5	2730	113.4	3930	120.5
360	97.2	1560	104.7	2760	113.6	3960	120.3
390	97.1	1590	104.7	2790	113.9	3990	120.7
420	97.3	1620	104.9	2820	114.2	4020	120.9
450	97.4	1650	104.9	2850	114.3	4050	120.9
480	97.4	1680	104.9	2880	114.0	4080	121.3
510	97.6	1710	105.0	2910	113.6	4110	121.1
540	97.9	1740	105.3	2940	114.1	4140	121.2
570	97.9	1770	105.8	2970	114.8	4170	121.7
600	98.1	1800	106.0	3000	114.9	4200	121.6
630	98.1	1830	106.3	3030	114.5	4230	122.0
660	98.5	1860	106.7	3060	114.7	4260	122.1
690	98.5	1890	107.1	3090	115.1	4290	122.4
720	98.7	1920	107.1	3120	115.5		
750	98.7	1950	107.3	3150	115.9		
780	99.0	1980	107.6	3180	116.2		
810	99.0	2010	107.6	3210	116.4		
840	99.0	2040	108.0	3240	116.7		
870	99.3	2070	108.1	3270	117.1		
900	99.5	2100	108.5	3300	117.0		
930	99.9	2130	108.8	3330	117.1		
960	100.0	2160	109.1	3360	117.4		
990	100.0	2190	109.3	3390	117.7		
1020	100.4	2220	109.4	3420	117.9		
1050	100.7	2250	109.4	3450	118.0		
1080	100.7	2280	109.4	3480	118.3		
1110	101.2	2310	109.5	3510	118.3		
1140	101.3	2340	109.7	3540	118.5		
1170	101.6	2370	110.3	3570	118.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

[Test vehicle]

Model name	:	4RUNNER 4WD
Trans. conf./code	:	L5/A750F

[Test conditions]

Date	:	04/07/2008
Ambient air temperature (at initiation)	:	97.0°F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	131.2 °F
Track surface temperature (at completion)	:	131.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	04/07/2008
Ambient air temperature (at initiation)	:	95.0°F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	129.2 °F
Track surface temperature (at completion)	:	131.9 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

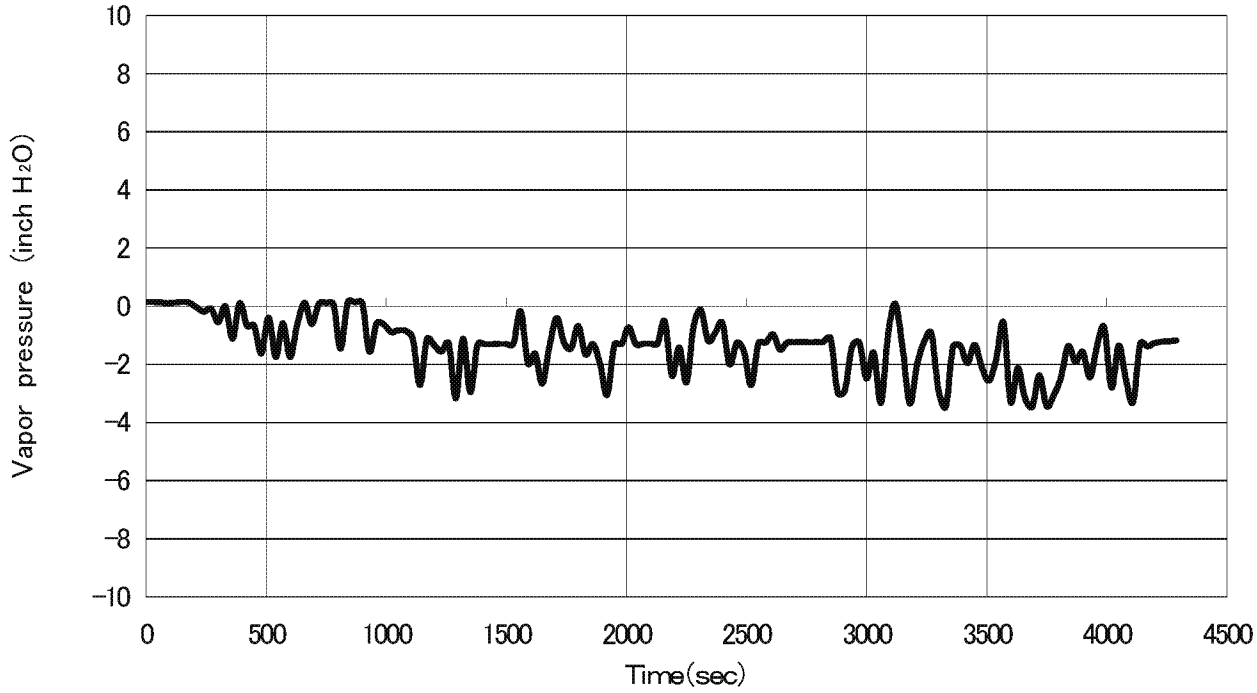
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	100.0	2400	108.2	3600	116.1
30	95.0	1230	100.2	2430	108.6	3630	116.1
60	95.1	1260	100.3	2460	108.5	3660	116.2
90	95.1	1290	100.4	2490	108.7	3690	116.1
120	95.2	1320	100.5	2520	109.0	3720	116.3
150	95.3	1350	100.7	2550	109.1	3750	116.5
180	95.3	1380	100.9	2580	109.6	3780	116.8
210	95.5	1410	101.2	2610	109.7	3810	116.8
240	95.5	1440	101.3	2640	109.9	3840	116.8
270	95.5	1470	101.5	2670	110.3	3870	117.1
300	95.5	1500	101.7	2700	110.1	3900	117.2
330	95.5	1530	101.9	2730	110.5	3930	117.5
360	95.6	1560	102.0	2760	110.7	3960	117.4
390	95.8	1590	102.6	2790	110.8	3990	117.6
420	96.0	1620	102.6	2820	111.1	4020	118.0
450	96.0	1650	102.6	2850	111.3	4050	118.1
480	96.2	1680	102.9	2880	111.7	4080	118.0
510	96.2	1710	103.2	2910	111.9	4110	118.2
540	96.3	1740	103.6	2940	111.8	4140	118.2
570	96.4	1770	103.9	2970	112.2	4170	118.4
600	96.5	1800	103.8	3000	112.6	4200	118.6
630	96.6	1830	104.0	3030	112.9	4230	118.8
660	96.7	1860	104.3	3060	112.7	4260	118.8
690	97.1	1890	104.4	3090	112.9	4290	118.9
720	97.0	1920	104.5	3120	113.2		
750	97.2	1950	104.8	3150	113.5		
780	97.3	1980	105.0	3180	113.7		
810	97.5	2010	105.1	3210	113.9		
840	97.6	2040	105.4	3240	113.8		
870	97.8	2070	105.6	3270	114.0		
900	98.0	2100	105.9	3300	114.4		
930	98.2	2130	105.9	3330	114.4		
960	98.4	2160	106.6	3360	114.6		
990	98.7	2190	106.7	3390	114.7		
1020	98.9	2220	106.9	3420	114.9		
1050	99.0	2250	107.2	3450	114.9		
1080	99.1	2280	107.2	3480	115.2		
1110	99.4	2310	107.3	3510	115.5		
1140	99.5	2340	107.9	3540	115.8		
1170	99.6	2370	108.1	3570	115.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

(b) Measured vapor space pressure profile



17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

[Test vehicle]

Model name	:	Sequoia
Trans. conf.	:	L6

[Test conditions]

Date	:	06/07/2005
Ambient air temperature (at initiation)	:	96.6 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	130.1 °F
Track surface temperature (at completion)	:	132.4 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	06/07/2005
Ambient air temperature (at initiation)	:	96.8 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	130.3 °F
Track surface temperature (at completion)	:	131.7 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

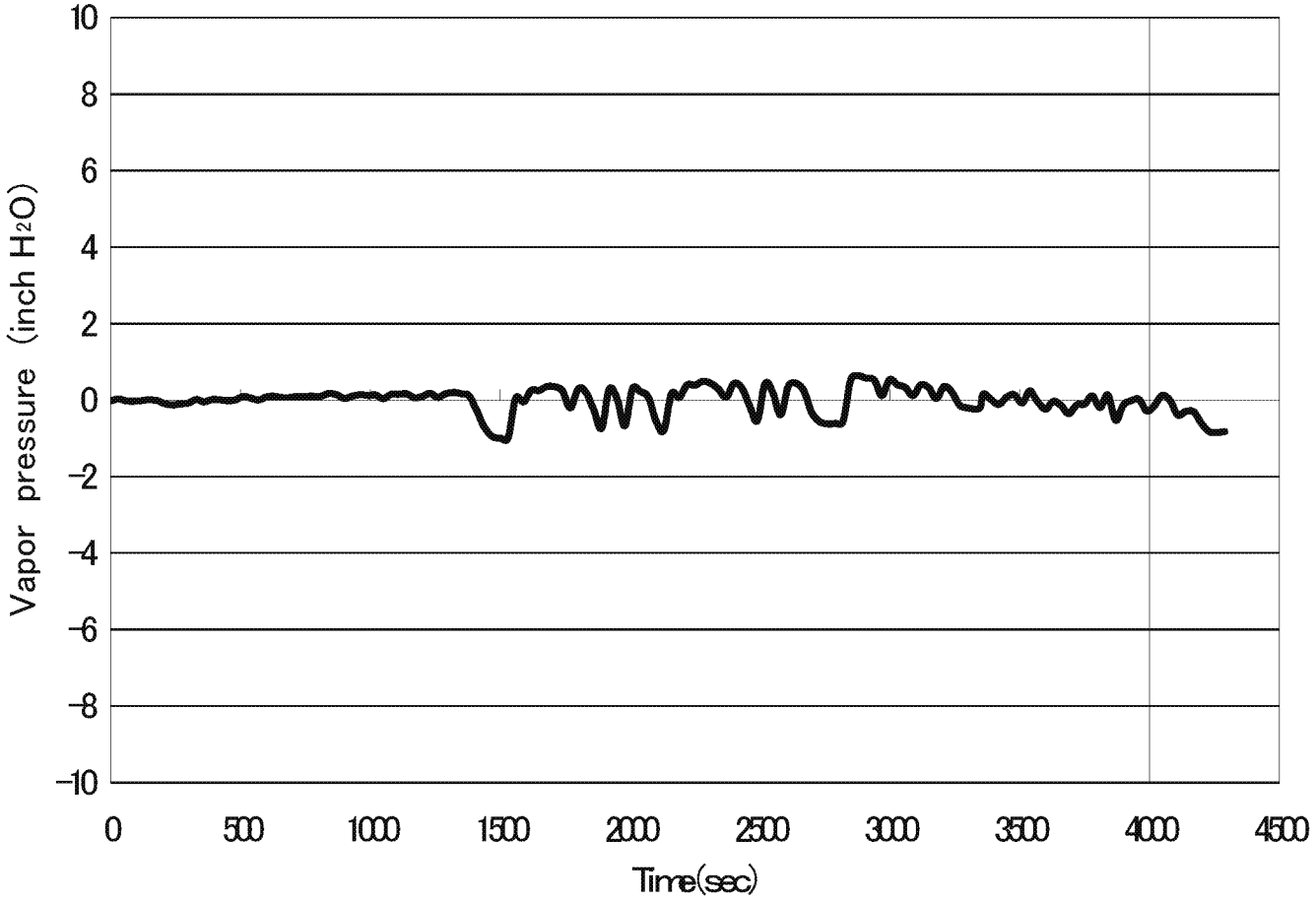
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.5	1200	103.5	2400	113.1	3600	120.8
30	95.5	1230	103.9	2430	113.1	3630	121.1
60	95.6	1260	103.9	2460	113.3	3660	121.1
90	95.6	1290	104.3	2490	113.6	3690	121.1
120	95.8	1320	104.4	2520	113.9	3720	121.3
150	95.8	1350	104.5	2550	114.1	3750	121.3
180	95.9	1380	104.9	2580	114.3	3780	121.2
210	96.3	1410	104.9	2610	114.8	3810	121.4
240	96.6	1440	105.0	2640	114.9	3840	121.5
270	96.8	1470	105.3	2670	115.0	3870	121.5
300	97.0	1500	105.4	2700	115.2	3900	121.5
330	97.1	1530	105.6	2730	115.5	3930	121.7
360	97.2	1560	106.2	2760	115.7	3960	122.0
390	97.4	1590	106.3	2790	115.8	3990	121.7
420	97.6	1620	106.7	2820	116.2	4020	121.9
450	97.7	1650	106.9	2850	116.7	4050	122.2
480	97.9	1680	107.2	2880	117.1	4080	122.0
510	98.2	1710	107.6	2910	117.1	4110	122.5
540	98.4	1740	107.6	2940	117.3	4140	122.3
570	98.5	1770	107.8	2970	117.4	4170	122.5
600	98.9	1800	108.1	3000	117.7	4200	122.4
630	99.0	1830	108.2	3030	118.0	4230	122.5
660	99.2	1860	108.5	3060	118.0	4260	122.7
690	99.4	1890	108.7	3090	118.4	4290	122.9
720	99.9	1920	109.1	3120	118.4		
750	100.2	1950	109.1	3150	118.7		
780	100.3	1980	109.4	3180	118.7		
810	100.7	2010	109.8	3210	118.9		
840	100.8	2040	109.9	3240	119.2		
870	101.1	2070	110.1	3270	119.1		
900	101.4	2100	110.2	3300	119.4		
930	101.5	2130	110.8	3330	119.3		
960	101.7	2160	111.0	3360	119.8		
990	101.9	2190	110.9	3390	119.6		
1020	102.2	2220	111.2	3420	120.2		
1050	102.2	2250	111.7	3450	120.0		
1080	102.7	2280	112.0	3480	120.2		
1110	102.8	2310	112.4	3510	120.1		
1140	103.2	2340	112.5	3540	120.6		
1170	103.2	2370	112.6	3570	120.8		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190P32.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	5TYXT04.0NEM
Vehicle ID	:	05-GSK1
Rep. car/truck line	:	Tundra
Rep. vehicle model	:	GSK30L-ARBSKA
Displacement	:	241.4 CID
Transmission	:	A750E
Test weight	:	4,500 lbs.
Road load	:	20.0 HP
Evap. code	:	GK1K

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMHC	:	0.037	(g/mile)
	CO	:	0.48	(g/mile)
	NOx	:	0.014	(g/mile)
Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.048	(g/mile)
3DBL	1st day	:	0.217*1	(g/test)
	2nd day	:	0.231	(g/test)
	3rd day	:	0.279	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMHC	:	0.034	(g/mile)
	CO	:	0.36	(g/mile)
	NOx	:	0.016	(g/mile)
Hot soak loss		:	0.018	(g/mile)
2DBL	1st day	:	0.248	(g/test)
	2nd day	:	0.303*1	(g/test)

Refueling sequence test results

Exhaust emission	NMHC	:	0.043	(g/mile)
	CO	:	0.59	(g/mile)
	NOx	:	0.018	(g/mile)
Refueling emission		:	0.020	(g/gal)

*1: DBL is added key off monitor loss (0.0012 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0300P32.

[Test vehicle]

Model name	:	TUNDRA
Trans. conf./code	:	L6

[Test conditions]

Date	:	10/07/2013
Ambient air temperature (at initiation)	:	96.1 °F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	131.2 °F
Track surface temperature (at completion)	:	134.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Date	:	10/07/2013
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	96.3 °F
Track surface temperature (at initiation)	:	130.8 °F
Track surface temperature (at completion)	:	132.6 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0300P32.

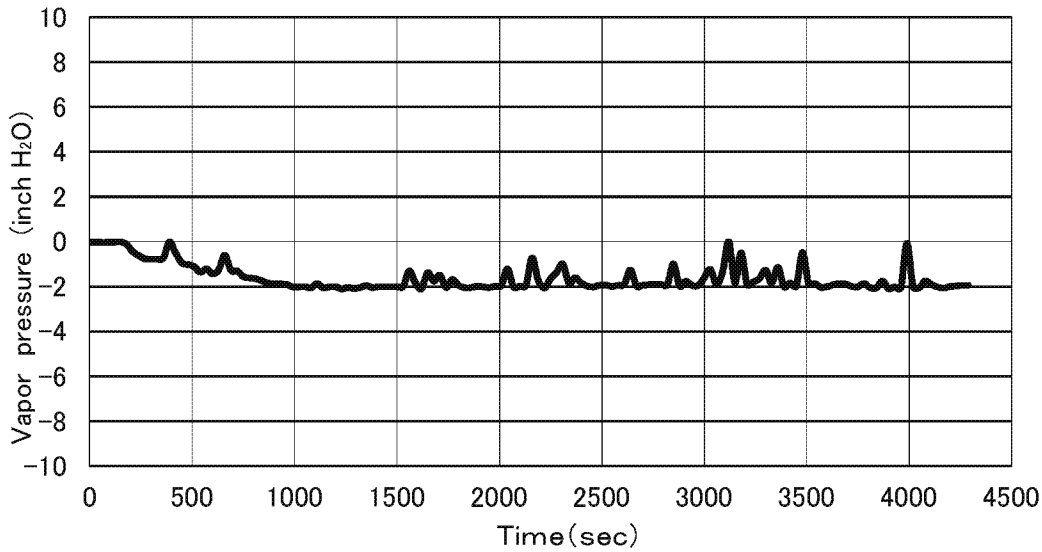
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.3	1200	101.8	2400	110.3	3600	116.6
30	96.4	1230	102.2	2430	110.5	3630	116.6
60	96.4	1260	102.4	2460	110.8	3660	117.0
90	96.4	1290	102.6	2490	111.0	3690	116.8
120	96.4	1320	102.7	2520	111.2	3720	117.0
150	96.6	1350	103.3	2550	111.2	3750	117.1
180	96.8	1380	103.3	2580	111.4	3780	117.3
210	97.0	1410	103.6	2610	111.4	3810	117.3
240	97.0	1440	103.8	2640	111.7	3840	117.7
270	97.0	1470	103.8	2670	111.9	3870	117.7
300	97.0	1500	104.0	2700	111.9	3900	118.0
330	96.8	1530	104.2	2730	112.1	3930	118.0
360	97.2	1560	104.5	2760	112.3	3960	118.0
390	97.0	1590	104.5	2790	112.5	3990	118.4
420	97.3	1620	104.9	2820	112.6	4020	118.4
450	97.3	1650	104.9	2850	112.6	4050	118.4
480	97.7	1680	105.1	2880	112.6	4080	118.4
510	97.5	1710	105.4	2910	112.8	4110	118.4
540	97.9	1740	105.8	2940	113.0	4140	118.9
570	98.1	1770	106.2	2970	113.5	4170	118.8
600	98.1	1800	106.3	3000	113.4	4200	119.1
630	98.4	1830	106.7	3030	113.0	4230	119.5
660	98.8	1860	106.9	3060	112.8	4260	119.5
690	98.6	1890	107.1	3090	113.2	4290	119.8
720	99.0	1920	107.2	3120	113.5		
750	99.0	1950	107.4	3150	113.9		
780	99.1	1980	107.4	3180	114.3		
810	99.5	2010	107.6	3210	114.4		
840	99.5	2040	107.8	3240	115.0		
870	99.9	2070	108.0	3270	115.2		
900	100.0	2100	108.1	3300	115.0		
930	100.0	2130	108.3	3330	115.3		
960	100.2	2160	108.5	3360	115.3		
990	100.4	2190	108.7	3390	115.9		
1020	100.4	2220	108.9	3420	115.7		
1050	100.9	2250	109.0	3450	116.1		
1080	100.9	2280	109.2	3480	116.1		
1110	101.3	2310	109.6	3510	116.2		
1140	101.5	2340	109.9	3540	116.2		
1170	101.8	2370	110.1	3570	116.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0300P32.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0300P32.

Evaporative emission test log

Vehicle Description

		Evaporative emission vehicle	Refueling emission vehicle
Test group	:	FTYXT05.7BEW	FTYXT05.7BEW
Vehicle ID	:	15-SK1A	15-SK2A
Rep. car/truck line	:	TUNDRA	TUNDRA
Rep. vehicle model	:	USK56L-PSTSKA	USK56L-PSTSKA
Displacement	:	345.6 CID	345.6 CID
Transmission	:	AB60F-A	AB60F-A
Test weight	:	6,000 lbs.	6,000 lbs
Road load	:	24.5 HP	24.5 HP
Evap. code	:	UK1M	UK1M

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0175	(g/mile)
	CO	:	0.21	(g/mile)
	NOx	:	0.012	(g/mile)
Running loss		:	0.006	(g/mile)
Hot soak loss		:	0.070	(g/mile)
3DBL	1st day	:	0.363*1	(g/test)
	2nd day	:	0.323	(g/test)
	3rd day	:	0.331	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0181	(g/mile)
	CO	:	0.23	(g/mile)
	NOx	:	0.011	(g/mile)
Hot soak loss		:	0.033	(g/mile)
2DBL	1st day	:	0.354*1	(g/test)
	2nd day	:	0.333	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0176	(g/mile)
	CO	:	0.21	(g/mile)
	NOx	:	0.013	(g/mile)
Refueling emission		:	0.001	(g/gal)

*1: DBL is added key off monitor loss (0.0160 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0095P12.

[Test vehicle]

Model name	:	PRIUS c
Trans. conf./code	:	AV/P510

[Test conditions]

Date	:	11/30/2010
Ambient air temperature (at initiation)	:	96.3 °F
Ambient air temperature (at completion)	:	97 .0°F
Track surface temperature (at initiation)	:	131.5 °F
Track surface temperature (at completion)	:	132.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	11/30/2010
Ambient air temperature (at initiation)	:	95.7 °F
Ambient air temperature (at completion)	:	96.8 °F
Track surface temperature (at initiation)	:	131.4 °F
Track surface temperature (at completion)	:	132.1 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0095P12.

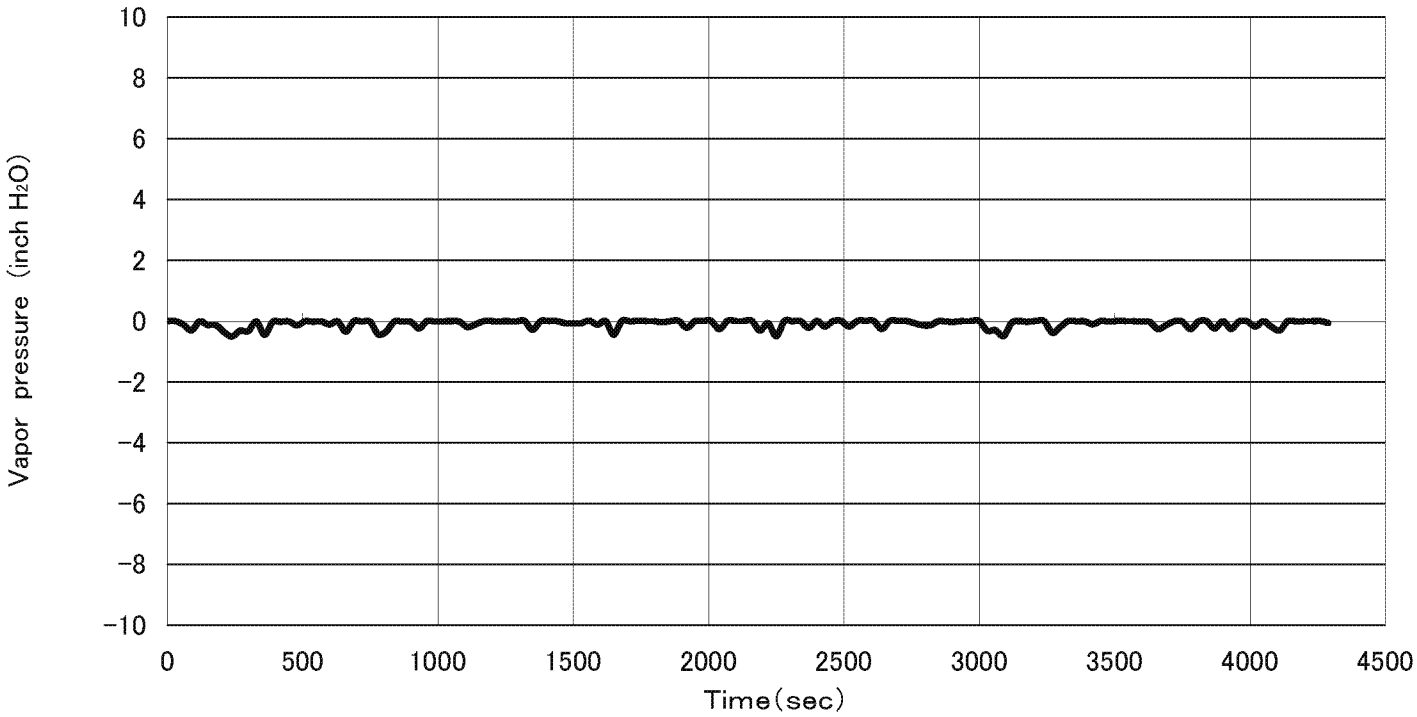
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid(°F)	Time(sec.)	Liquid(°F)	Time(sec.)	Liquid(°F)	Time(sec.)	Liquid(°F)
0	95.2	1200	101.5	2400	108.0	3600	113.5
30	95.2	1230	101.5	2430	108.0	3630	113.7
60	95.4	1260	101.7	2460	108.1	3660	113.7
90	95.4	1290	101.8	2490	108.1	3690	113.9
120	95.4	1320	102.0	2520	108.3	3720	113.9
150	95.7	1350	102.2	2550	108.5	3750	114.1
180	95.7	1380	102.4	2580	108.7	3780	114.1
210	95.7	1410	102.4	2610	108.9	3810	114.1
240	95.9	1440	102.4	2640	109.2	3840	114.3
270	96.1	1470	102.6	2670	109.4	3870	114.3
300	96.3	1500	102.6	2700	109.4	3900	114.3
330	96.4	1530	102.7	2730	109.4	3930	114.4
360	96.8	1560	102.9	2760	109.4	3960	114.4
390	96.8	1590	103.1	2790	109.6	3990	114.6
420	97.2	1620	103.5	2820	109.6	4020	114.8
450	97.3	1650	103.6	2850	110.3	4050	114.8
480	97.3	1680	103.8	2880	110.8	4080	114.8
510	97.7	1710	104.2	2910	111.0	4110	115.0
540	97.7	1740	104.4	2940	110.8	4140	115.2
570	98.1	1770	104.4	2970	110.8	4170	115.2
600	98.2	1800	104.7	3000	111.2	4200	115.2
630	98.4	1830	104.7	3030	111.7	4230	115.0
660	98.4	1860	104.7	3060	111.6	4260	115.2
690	98.6	1890	104.9	3090	111.7	4290	115.3
720	98.8	1920	105.1	3120	111.7		
750	99.0	1950	105.3	3150	111.7		
780	99.1	1980	105.3	3180	111.9		
810	99.3	2010	105.6	3210	112.1		
840	99.5	2040	105.8	3240	112.3		
870	99.7	2070	106.0	3270	112.3		
900	99.9	2100	106.0	3300	112.5		
930	100.0	2130	106.0	3330	112.6		
960	100.2	2160	106.3	3360	112.6		
990	100.2	2190	106.3	3390	112.8		
1020	100.4	2220	106.7	3420	112.8		
1050	100.8	2250	106.9	3450	113.0		
1080	100.8	2280	107.2	3480	113.0		
1110	100.9	2310	107.6	3510	113.2		
1140	101.1	2340	107.6	3540	113.4		
1170	101.3	2370	107.8	3570	113.4		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0095P12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0095P12.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	CTYXV01.5CC4
Vehicle ID	:	12-NP1H
Rep. car/truck line	:	Prius c
Rep. vehicle model	:	NHP10L-AHXGBA
Displacement	:	91.3 CID
Transmission	:	P510
Test weight	:	2,750 lbs.
Road load	:	9.4 HP
Evap. code	:	NP1G

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.038	(g/test)
3DBL	1st day	:	0.194*1	(g/test)
	2nd day	:	0.159	(g/test)
	3rd day	:	0.148	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.030	(g/mile)
2DBL	1st day	:	0.193*1	(g/test)
	2nd day	:	0.202	(g/test)

Refueling sequence test results

Refueling emission	:	0.003	(g/gal)

*1: DBL is added key off monitor loss (0.0010 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190A12.

[Test vehicle]

Model name	:	LS 460
Trans. conf./code	:	L8/AA80E

[Test conditions]

Date	:	10/06/2005
Ambient air temperature (at initiation)	:	96.8°F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	132.3 °F
Track surface temperature (at completion)	:	131.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	10/06/2005
Ambient air temperature (at initiation)	:	96.8°F
Ambient air temperature (at completion)	:	96.4 °F
Track surface temperature (at initiation)	:	130.1 °F
Track surface temperature (at completion)	:	131.0 °F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190A12.

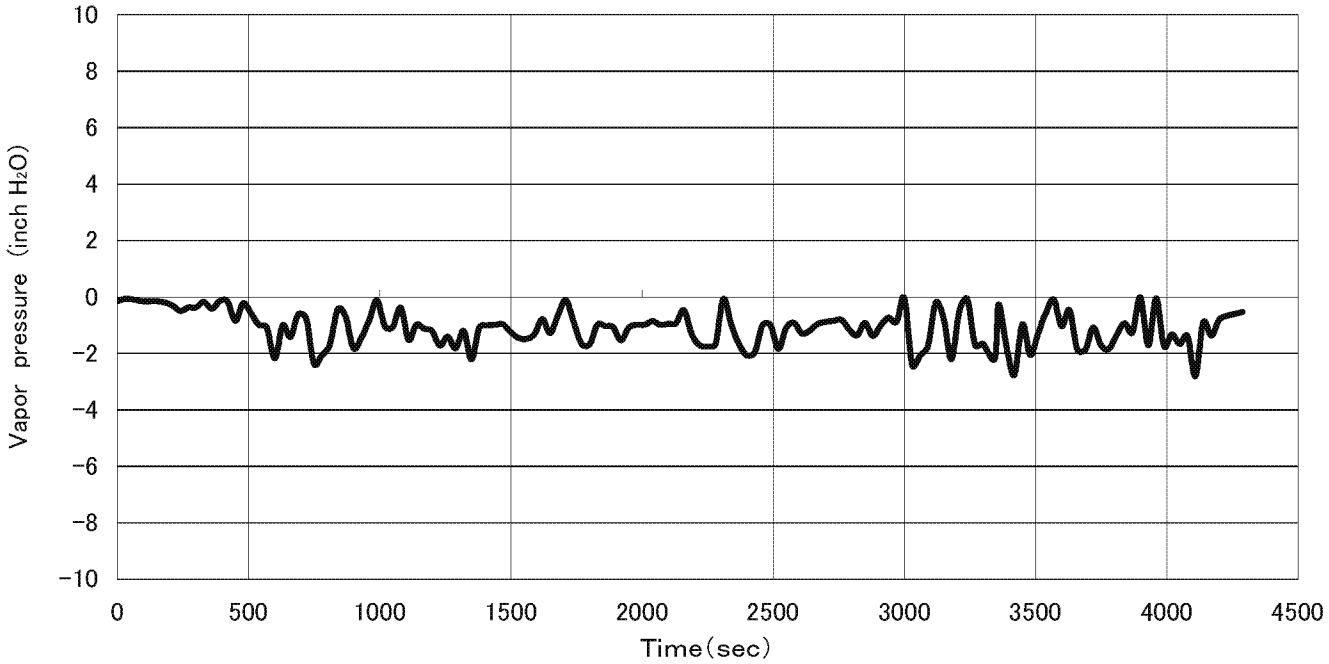
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.0	1200	100.2	2400	107.8	3600	115.3
30	95.0	1230	100.5	2430	108.0	3630	115.6
60	95.1	1260	100.6	2460	108.3	3660	115.7
90	95.2	1290	100.7	2490	108.5	3690	115.9
120	95.2	1320	100.8	2520	108.6	3720	116.1
150	95.3	1350	101.0	2550	108.8	3750	116.2
180	95.4	1380	101.2	2580	109.0	3780	116.4
210	95.5	1410	101.3	2610	109.0	3810	116.6
240	95.7	1440	101.4	2640	109.4	3840	116.7
270	95.8	1470	101.6	2670	109.7	3870	117.0
300	95.8	1500	101.6	2700	109.8	3900	117.1
330	96.0	1530	101.8	2730	109.9	3930	117.3
360	96.1	1560	101.8	2760	109.9	3960	117.5
390	96.3	1590	102.2	2790	110.1	3990	117.5
420	96.4	1620	102.6	2820	110.2	4020	117.8
450	96.5	1650	102.7	2850	110.4	4050	117.9
480	96.8	1680	102.9	2880	110.8	4080	118.2
510	96.8	1710	103.1	2910	111.0	4110	118.4
540	96.9	1740	103.2	2940	111.2	4140	118.5
570	97.1	1770	103.5	2970	111.4	4170	118.6
600	97.3	1800	103.7	3000	111.6	4200	118.8
630	97.4	1830	104.0	3030	111.8	4230	118.9
660	97.5	1860	104.2	3060	112.1	4260	119.0
690	97.7	1890	104.3	3090	112.3	4290	119.3
720	97.7	1920	104.4	3120	112.4		
750	97.9	1950	104.6	3150	112.6		
780	98.0	1980	104.8	3180	113.0		
810	98.1	2010	104.9	3210	113.0		
840	98.3	2040	105.2	3240	113.3		
870	98.4	2070	105.4	3270	113.4		
900	98.5	2100	105.5	3300	113.6		
930	98.6	2130	105.7	3330	113.8		
960	98.8	2160	105.8	3360	114.0		
990	99.1	2190	106.3	3390	114.2		
1020	99.1	2220	106.4	3420	114.4		
1050	99.4	2250	106.7	3450	114.5		
1080	99.5	2280	106.9	3480	114.8		
1110	99.7	2310	107.2	3510	114.9		
1140	99.8	2340	107.4	3540	115.1		
1170	100.0	2370	107.6	3570	115.3		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190A12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190A12.

Evaporative emission test log

Vehicle Description

		Evaporative/Refueling emission vehicle
Test group	:	6TYXV04.3WMA
Vehicle ID	:	06-UF1A
Rep. car/truck line	:	LS430
Rep. vehicle model	:	UCF30L-AETGKA
Displacement	:	261.9 CID
Transmission	:	L6/A761E-A
Test weight	:	4,500 lbs.
Road load	:	14.1 HP
Evap. code	:	UF1S

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMHC	:	0.0277	(g/mile)
	CO	:	0.33	(g/mile)
	NOx	:	0.02	(g/mile)
Running loss		:	0.006	(g/mile)
Hot soak loss		:	0.043	(g/mile)
3DBL	1st day	:	0.104*1	(g/test)
	2nd day	:	0.079	(g/test)
	3rd day	:	0.067	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMHC	:	0.0173	(g/mile)
	CO	:	0.21	(g/mile)
	NOx	:	0.02	(g/mile)
Hot soak loss		:	0.038	(g/mile)
2DBL	1st day	:	0.146*1	(g/test)
	2nd day	:	0.110	(g/test)

Refueling sequence test results

Exhaust emission	NMHC	:	0.0266	(g/mile)
	CO	:	0.25	(g/mile)
	NOx	:	0.02	(g/mile)
Refueling emission		:	0.032	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0022 gram).

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E12.

[Test vehicle]

Model name	: LS 600h L	
Trans. conf./code	: L110F	

[Test conditions]

Date	:	05/09/2006	05/09/2006
Ambient air temperature (at initiation)	:	97.7 °F	96.8 °F
Ambient air temperature (at completion)	:	96.8 °F	96.8 °F
Track surface temperature (at initiation)	:	130.6 °F	134.8 °F
Track surface temperature (at completion)	:	130.5 °F	131.7 °F
Wind speed	:	N/A	N/A
Test fuel RVP	:	9.0 PSI	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4	
Percent cloud cover	:	N/A	N/A

Note : Fuel tank temperature profiles in this section are averaged with these two profiles in accordance wirh 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E12.

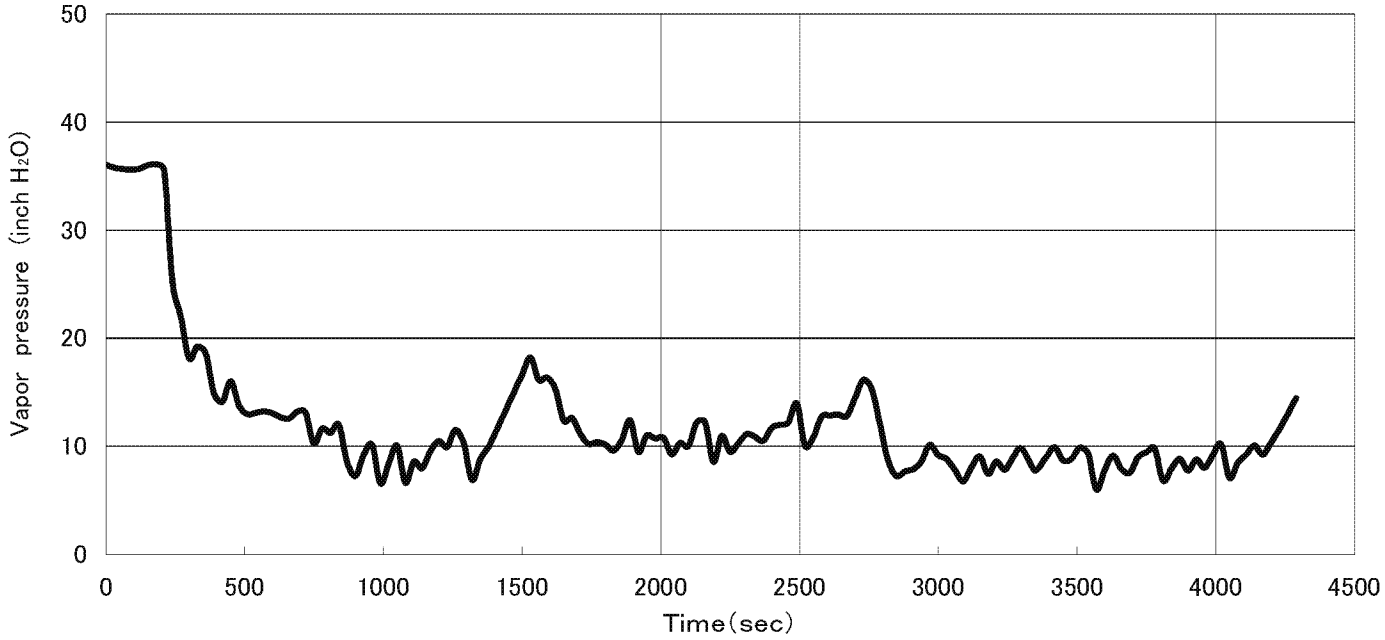
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	95.4	1200	101.3	2400	106.5	3600	112.1
30	95.5	1230	101.2	2430	106.9	3630	112.0
60	95.5	1260	101.5	2460	107.2	3660	112.3
90	95.7	1290	101.5	2490	107.3	3690	112.3
120	95.9	1320	101.7	2520	107.1	3720	112.5
150	96.1	1350	101.8	2550	107.4	3750	112.7
180	96.3	1380	102.1	2580	107.6	3780	113.1
210	96.4	1410	102.3	2610	107.3	3810	113.1
240	96.3	1440	102.4	2640	107.4	3840	113.3
270	96.5	1470	102.5	2670	107.9	3870	113.5
300	96.8	1500	102.7	2700	108.2	3900	113.4
330	97.0	1530	102.7	2730	108.4	3930	113.5
360	97.1	1560	102.3	2760	108.6	3960	113.4
390	97.3	1590	102.7	2790	5054.0	3990	113.7
420	97.5	1620	102.6	2820	5108.0	4020	114.2
450	97.7	1650	102.7	2850	5162.0	4050	114.1
480	97.7	1680	102.7	2880	5216.0	4080	114.3
510	98.0	1710	102.9	2910	5270.0	4110	113.9
540	98.2	1740	103.4	2940	5324.0	4140	114.3
570	98.4	1770	103.7	2970	5378.0	4170	114.3
600	98.4	1800	103.6	3000	109.2	4200	114.6
630	98.6	1830	104.0	3030	108.9	4230	114.8
660	98.6	1860	104.2	3060	109.1	4260	114.9
690	98.7	1890	104.2	3090	109.4	4290	115.2
720	98.7	1920	104.2	3120	109.8		
750	98.9	1950	104.5	3150	110.4		
780	99.3	1980	104.8	3180	110.5		
810	99.0	2010	104.5	3210	110.7		
840	99.2	2040	104.8	3240	110.8		
870	99.4	2070	105.0	3270	111.0		
900	99.5	2100	105.2	3300	110.7		
930	99.7	2130	105.5	3330	111.0		
960	100.2	2160	105.4	3360	111.1		
990	100.2	2190	105.8	3390	111.7		
1020	100.4	2220	105.7	3420	111.6		
1050	100.6	2250	105.8	3450	111.9		
1080	100.5	2280	105.6	3480	111.6		
1110	100.9	2310	105.9	3510	111.9		
1140	100.8	2340	106.3	3540	111.9		
1170	101.2	2370	106.7	3570	111.9		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E12.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0190E12.

Evaporative emission test log

Vehicle Description

		Evaporative/ Refueling emission vehicle
Test group	:	BTYXV05.0CC4
Vehicle ID	:	11-UF1H
Rep. car/truck line	:	LS 600h L
Rep. vehicle model	:	UVF46L-AEXGHA
Displacement	:	303.2 CID
Transmission	:	AV/L110F
Test weight	:	5,500 lbs.
Road load	:	16.9 HP
Evap. code	:	UF13

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Running loss		:	0.000	(g/mile)
Hot soak loss		:	0.062	(g/mile)
3DBL	1st day	:	0.178*1	(g/test)
	2nd day	:	0.118	(g/test)
	3rd day	:	0.102	(g/test)

2-day diurnal sequence test results

Hot soak loss		:	0.036	(g/mile)
2DBL	1st day	:	0.135*1	(g/test)
	2nd day	:	0.107	(g/test)

Refueling sequence test results

Refueling emission	:	0.000	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0001 gram)

17.5 Supplemental information and data for compliance with the enhanced evaporative requirements for California

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0132A22.

[Test vehicle]

Model name	:	NX 200t

[Test conditions]

Date	:	02/22/2014
Ambient air temperature (at initiation)	:	97.2°F
Ambient air temperature (at completion)	:	97.3°F
Track surface temperature (at initiation)	:	127.6°F
Track surface temperature (at completion)	:	135.0°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

[Test conditions]

Date	:	02/22/2014
Ambient air temperature (at initiation)	:	97.0°F
Ambient air temperature (at completion)	:	97.2°F
Track surface temperature (at initiation)	:	131.4°F
Track surface temperature (at completion)	:	130.6°F
Wind speed	:	N/A
Test fuel RVP	:	9.0 PSI
Driving cycles	:	LA#4+NYCC+NYCC+LA#4
Percent cloud cover	:	N/A

Note: Fuel tank temperature profiles in this section are averaged with these two profiles in accordance with 40CFR §86.129-94(d)(1).

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0132A22.

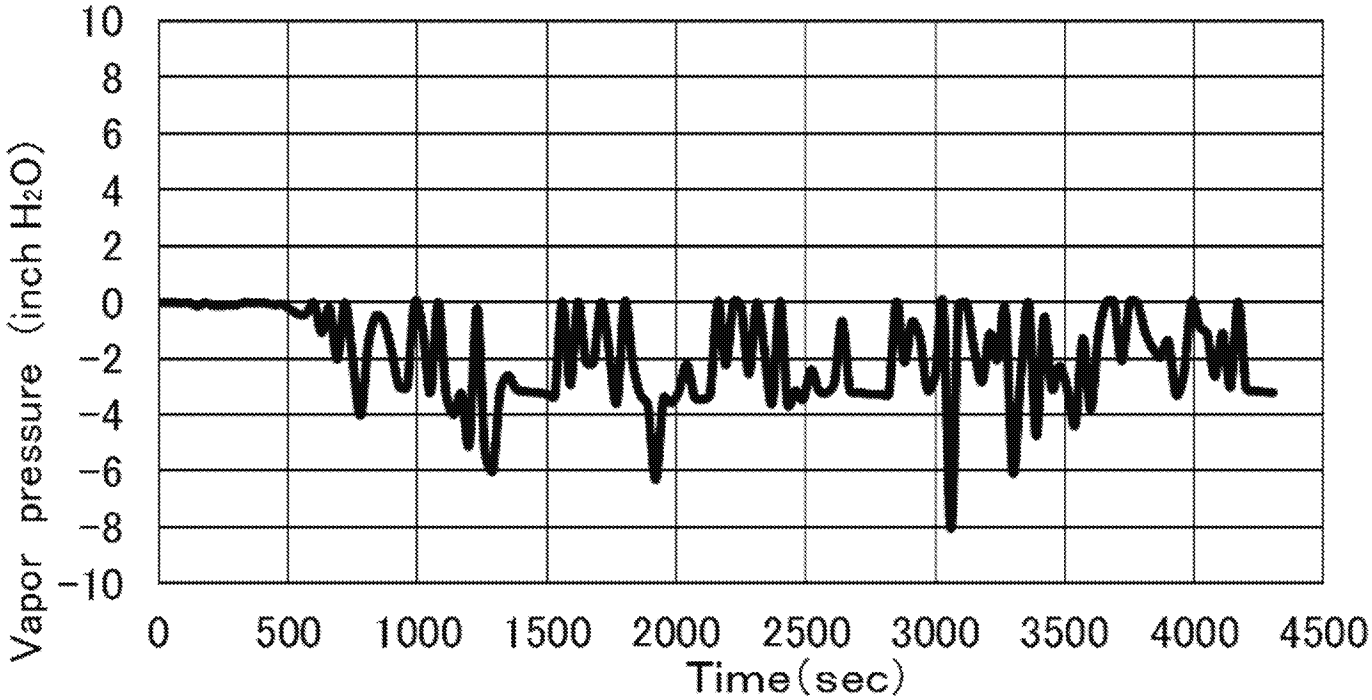
Measured temperature and pressure profiles

(a) Measured average fuel temperature
This profile is raw data and not corrected actually.

Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)	Time(sec.)	Liquid('F)
0	96.1	1200	102.4	2400	110.3	3600	115.3
30	96.3	1230	102.6	2430	110.3	3630	115.5
60	96.3	1260	102.7	2460	110.3	3660	115.5
90	96.4	1290	102.9	2490	110.5	3690	115.7
120	96.4	1320	102.9	2520	110.8	3720	115.7
150	96.4	1350	103.1	2550	111.0	3750	115.9
180	96.4	1380	103.5	2580	111.0	3780	115.7
210	96.6	1410	103.6	2610	111.6	3810	115.9
240	96.6	1440	103.8	2640	111.6	3840	115.9
270	96.6	1470	103.8	2670	111.6	3870	115.7
300	96.6	1500	103.8	2700	111.6	3900	116.1
330	96.8	1530	104.2	2730	111.7	3930	115.9
360	97.2	1560	104.5	2760	111.9	3960	116.1
390	97.3	1590	104.7	2790	112.1	3990	115.9
420	97.2	1620	105.1	2820	112.1	4020	116.1
450	97.3	1650	105.3	2850	112.8	4050	116.4
480	97.7	1680	105.6	2880	113.4	4080	116.2
510	97.7	1710	105.8	2910	113.5	4110	116.6
540	98.1	1740	105.8	2940	113.4	4140	116.4
570	98.2	1770	106.0	2970	113.4	4170	116.6
600	98.4	1800	106.5	3000	113.9	4200	116.4
630	98.6	1830	106.3	3030	114.3	4230	116.6
660	98.8	1860	106.5	3060	114.1	4260	116.6
690	99.0	1890	106.7	3090	114.3	4290	116.8
720	99.1	1920	107.1	3120	114.1		
750	99.3	1950	107.2	3150	113.9		
780	99.5	1980	107.2	3180	114.3		
810	99.9	2010	107.8	3210	114.3		
840	100.0	2040	107.8	3240	114.3		
870	100.2	2070	107.8	3270	114.3		
900	100.4	2100	108.0	3300	114.4		
930	100.6	2130	108.1	3330	114.3		
960	100.8	2160	108.7	3360	114.6		
990	101.1	2190	108.7	3390	114.4		
1020	101.3	2220	108.9	3420	114.8		
1050	101.3	2250	109.2	3450	114.6		
1080	101.5	2280	109.6	3480	114.8		
1110	101.7	2310	109.8	3510	114.6		
1140	102.0	2340	109.8	3540	115.0		
1170	102.0	2370	109.8	3570	115.2		

17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0132A22.

(b) Measured vapor space pressure profile



17.5.1 Fuel tank temperature profile (FTTP) and pressure profile for FTYXR0132A22.

Evaporative emission test log

Vehicle Description

	Evaporative/Refueling emission vehicle
Test group:	FTYXT02.0KEM
Vehicle ID:	15-AZ1A
Rep. car/truck line:	NX 200t
Rep. vehicle model:	AGZ15L-AWTLTA
Displacement:	121.9CID
Transmission:	L6/U661F-B
Test weight:	4,250 lbs.
Road load:	14.8 HP
Evap. code:	AZ1J

Test results

Test procedure : EPA's procedure

3-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0083	(g/mile)
	CO	:	0.10	(g/mile)
	NOx	:	0.012	(g/mile)
Running loss		:	0.004	(g/mile)
Hot soak loss		:	0.035	(g/test)
3DBL	1st day	:	0.165*1	(g/test)
	2nd day	:	0.140	(g/test)
	3rd day	:	0.140	(g/test)

2-day diurnal sequence test results

Exhaust emission	NMOG	:	0.0093	(g/mile)
	CO	:	0.12	(g/mile)
	NOx	:	0.017	(g/mile)
Hot soak loss		:	0.027	(g/mile)
2DBL	1st day	:	0.172	(g/test)
	2nd day	:	0.146	(g/test)

Refueling sequence test results

Exhaust emission	NMOG	:	0.0094	(g/mile)
	CO	:	0.07	(g/mile)
	NOx	:	0.013	(g/mile)
Refueling emission		:	0.004	(g/gal)

*1: 1st DBL is added key off monitor loss (0.0018 gram).

17.6 New unique or changed emission control technology

New, unique or changed Exhaust, Evaporative/Refueling emission control technology or parts in Toyota 2015 MY is shown below

New, unique or changed emission control technology

Test group	New, unique or changed emission control technology
Not applicable	Not applicable for 2015 model year

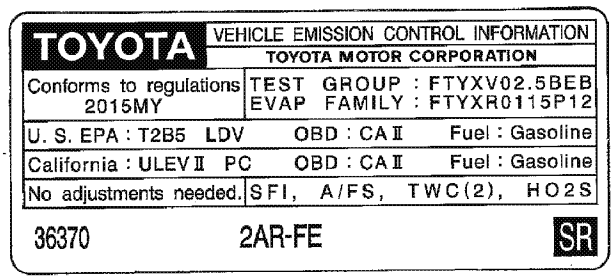
17.7 Service literature

“Shop manuals”, “Owner's manuals” and “Technical service bulletins” will be submitted as those become available.

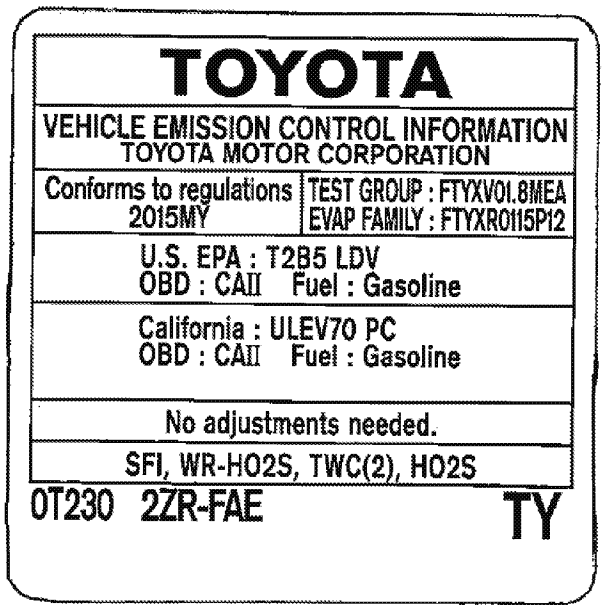
ED_004326_00013785-00253

17.8 Emission Control Information Labels.

50-State LDV



TOYOTA	VEHICLE EMISSION CONTROL INFORMATION TOYOTA MOTOR CORPORATION	
Conforms to regulations 2015MY	TEST GROUP : FTYXV02.5BEB EVAP FAMILY : FTYXR0115P12	
U. S. EPA : T2B5 LDV	OBD : CA II	Fuel : Gasoline
California : ULEV II PC	OBD : CA II	Fuel : Gasoline
No adjustments needed.	SFI, A/FS, TWC(2), HO2S	
36370	2AR-FE	SR



TOYOTA	
VEHICLE EMISSION CONTROL INFORMATION TOYOTA MOTOR CORPORATION	
Conforms to regulations 2015MY	TEST GROUP : FTYXV01.8MEA EVAP FAMILY : FTYXR0115P12
U.S. EPA : T2B5 LDV OBD : CAII Fuel : Gasoline	
California : ULEV70 PC OBD : CAII Fuel : Gasoline	
No adjustments needed.	
SFI, WR-HO2S, TWC(2), HO2S	
0T230 2ZR-FAE	TY

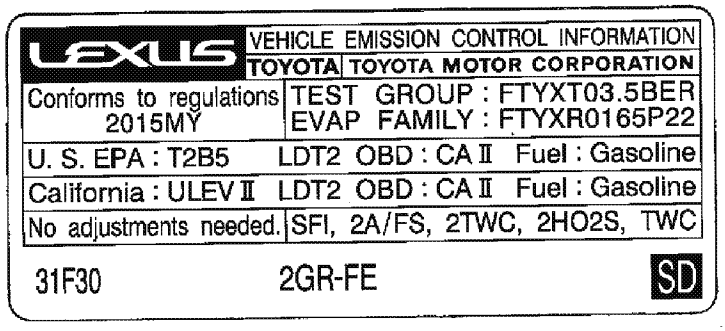
17.8 Emission Control Information Labels.

California LDV

N/A

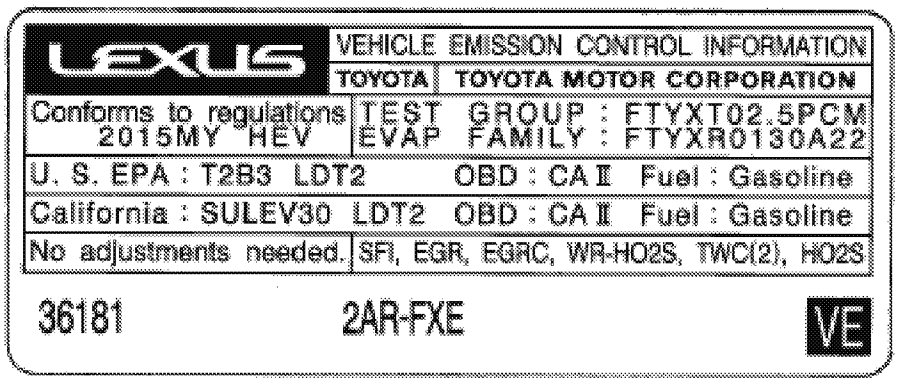
17.8 Emission Control Information Labels.

50-State LDT



LEXUS TOYOTA	VEHICLE EMISSION CONTROL INFORMATION TOYOTA MOTOR CORPORATION
Conforms to regulations 2015MY	TEST GROUP : FTYXT03.5BER EVAP FAMILY : FTYXR0165P22
U. S. EPA : T2B5	LDT2 OBD : CA II Fuel : Gasoline
California : ULEV II	LDT2 OBD : CA II Fuel : Gasoline
No adjustments needed.	SFI, 2A/FS, 2TWC, 2HO2S, TWC

31F30 2GR-FE SD



LEXUS TOYOTA	VEHICLE EMISSION CONTROL INFORMATION TOYOTA MOTOR CORPORATION
Conforms to regulations 2015MY HEV	TEST GROUP : FTYXT02.5PCM EVAP FAMILY : FTYXR0130A22
U. S. EPA : T2B3 LDT2	OBD : CA II Fuel : Gasoline
California : SULEV30 LDT2	OBD : CA II Fuel : Gasoline
No adjustments needed.	SFI, EGR, EGRC, WR-HO2S, TWC(2), HO2S

36181 2AR-FXE VE

17.8 Emission Control Information Labels.

California LDT

N/A

17.9 Service Information Availability

In compliance with CARB's mail-out #MSO 97-11, Toyota's policy for availability of service information is described below:

All service information, repair manuals, electrical wiring diagrams, technical service bulletins and training literature, for 1980 and later model years, which are available to franchised Toyota/Lexus dealers, are also available to the public through the FedWorld database, at http://www.fedworld.gov.

Through FedWorld, the public can search our database of over 1200 pieces of service information by model, model year, and keyword. The database is updated every 2 weeks.

Additionally, data stream information for Toyota/Lexus OBD systems provided to ETI for distribution to the service equipment industry.

Please find a sample of the ordering information which can be found on FedWorld as follows. We believe this is sufficient to comply with AB 2852.

SAMPLE

DESCRIPTION	:	REPAIR MANUAL
MANUFACTURER	:	TOYOTA
MAKE	:	TOYOTA
MODEL(S)	:	TERCEL
YEAR(S)	:	1988
PART NUMBER	:	00400-RM065
PRICE	:	$40.58 (PLUS TAX, SHIPPING AND HANDLING)

ORDERING INFORMATION: CALL 1-800-622-2033 7:00 AM - 4:30 PM PST MONDAY THROUGH FRIDAY. WE ACCEPT MASTER CARD, VISA AND CHECKS. ALL ORDERS SHIPPED WITHIN 24 HOURS. OVERNIGHT OR SECOND DAY SERVICE AVAILABLE AT ADDITIONAL COST. FAX SERVICE AVAILABLE FOR DOCUMENTS UNDER 20 PAGES AT ADDITIONAL COST.

17.10 Identification of AB71-Qualified Vehicles (Mail-Out #MSO-2000-04)

No vehicles qualified for the 2015MY.

Table of contents

Section No.	Title
1.00.00	**Part numbers**
01.00	Exhaust emission related parts
02.00	Engine control module and calibration ID
03.00	Evap./refueling emission related parts

ED_004326_00013785-00260

1.00.00 Part numbers

1.01.00 Exhaust emission related parts
Parenthetical information represents identifying marks found on production parts.
Unless otherwise specified, part numbers are applicable to all engine codes.

Test group: FTYXV01.3BEA (1NR-FE/ iQ)

Part name	Part number	Applicability	Note
Spark plug	SC16HR11		
PCV valve	12204-47050		
Injector	23209-47010		
Throttle body	22030-47020		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-47080(NR4)	Front	
	18450-47070(NE5)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-74040	Front	
Oxygen sensor	89465-74030	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

ED_004326_00013785-00261

1.01.00 Exhaust emission related parts

Test group: FTYXV01.5BEB (1NZ-FE/ YARIS)

Part name	Part number	Applicability	Note
Spark plug	SK16R11		
	IFR5A11		
PCV valve	12204-21013		
Injector	23250-21040		
Throttle body	22030-21030		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-21780(ND8)	Front	
	18450-21720(ND4)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-22010		
	22204-0C020		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-52170	Front	
Oxygen sensor	89465-52770	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

ED_004326_00013785-00262

1.01.00 Exhaust emission related parts

Test group: FTYXV01.5CC4 (1NZ-FXE/ PRIUS c)

Part name	Part number	Applicability	Note
Spark plug	FK16R-A8		
PCV valve	12204-21013		
Injector	23250-21091		
Throttle body	22030-47040		
Throttle position sensor	Included in throttle body		
EGR valve	25620-21020(2562021020)		
	25620-21021(2562021021)		Field Fix 15-TF-07
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-21090(21090)	Front	
	18450-21830 (FA5)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-52080	Front	
Oxygen sensor	89465-52670	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-47010		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30900-52010(1LM)		
Battery Pack	G9280-52031		
	G9510-52031		
Battery Current Sensor	Included in HV junction block		
HV junction block	G92Z1-33011		
Battery voltage sensor	89892-52011		

1.01.00 Exhaust emission related parts

Test group: FTYXV01.8HC3 (2ZR-FXE/ PRIUS)

Part name	Part number	Applicability	Note
Spark plug	SC20HR11		
	SC16HR11		Running Change 15-TR-23
PCV valve	12204-37010 (37010)		
Injector	23250-37021		
	23250-37070		
Throttle body	22030-37060		
Throttle position sensor	Included in throttle body		
EGR valve	25620-37120		
	25620-37130 (25620 37130)		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-37110 (GP1)	Front	
	18450-37160 (TB1)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-37010		
	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-52060	Front	
Oxygen sensor	89465-76010	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-47010		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30900-47064(3JM)		
	30900-47084(3JM)		
Battery Pack	G9280-76011		
	G9510-76010		
	G9510-76012		Field Fix 15-TF-11
Battery Current Sensor	Included in HV junction block		
HV junction block	G92Z1-47020		
	G92Z1-48010		
Battery voltage sensor	89892-47080		

1.01.00 Exhaust emission related parts

Test group: FTYXV01.8HCU (2ZR-FXE/ PRIUS Plug-in Hybrid)

Part name	Part number	Applicability	Note
Spark plug	SC20HR11		
	SC16HR11		Running Change 15-TR-23
PCV valve	12204-37010 (37010)		
Injector	23250-37021		
	23250-37070		
Throttle body	22030-37060		
Throttle position sensor	Included in throttle body		
EGR valve	25620-37120		
	25620-37130 (25620 37130)		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-37350 (GZ4)	Front	
	18450-37160 (TB1)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-37010		
	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-52060	Front	
Oxygen sensor	89465-76010	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-47010		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30900-47064(3JM)		
	30900-47084(3JM)		
Battery Pack	G9280-47131		
	G9510-47091		
Battery Current Sensor	Included in HV junction block		
HV junction block	G92Z0-47040		
Battery voltage sensor	89892-47011		

1.01.00 Exhaust emission related parts

Test group: FTYXV01.8CCU (2ZR-FXE/ PRIUS v, CT 200h)

Part name	Part number	Applicability	Note
Spark plug	SC20HR11		
	SC16HR11		Running Change 15-TR-23
PCV valve	12204-37010 (37010)		
Injector	23250-37021		
	23250-37070		
Throttle body	22030-37060		
Throttle position sensor	Included in throttle body		
EGR valve	25620-37120		
	25620-37130 (25620 37130)		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-37110 (GP1)	Front	
	18450-37290 (TD6)	Rear	
	18450-37250 (TD4)	Rear	
	18450-37280 (TC9)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-52060	Front	
Oxygen sensor	89465-76010	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-47010		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30900-47073(5JM)		
	30900-47130(5JM)		Running Change 15-TR-28
	30900-47064(3JM)		
	30900-47084(3JM)		
Battery Pack	G9280-76011		
	G9510-76010		
	G9510-76012		Field Fix 15-TF-11
Battery Current Sensor	Included in HV junction block		
HV junction block	G92Z1-47020		
	G92Z1-48010		
Battery voltage sensor	89892-47080		

1.01.00 Exhaust emission related parts

Test group: FTYXV01.8BEC (2ZR-FE/ COROLLA)

Part name	Part number	Applicability	Note
Spark plug	SC20HR11		
	SC16HR11		Running Change 15-TR-23
PCV valve	12204-37010(37010)		
	12204-37040		
Injector	23250-37010		
	23250-0T020		
Throttle body	22030-37050		
	22030-0T080		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0T580(RE8)	Front	
	18450-0T590(RE9)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-02090	Front	
Oxygen sensor	89465-02390	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV01.8MEA (2ZR-FAE/ COROLLA LE ECO)

Part name	Part number	Applicability	Note
Spark plug	SC20HR11		
	SC16HR11		Running Change 15-TR-23
PCV valve	12204-37010(37010)		
Injector	23250-37040		
	23250-0T050		
Throttle body	22030-37050		
	22030-0T080		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0T600(RE7)	Front	
	18450-0T610(TH3)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-02090	Front	
Oxygen sensor	89465-02390	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-26030		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV02.4BEB (2AZ-FE/ xB)

Part name	Part number	Applicability	Note
Spark plug	SK16R11		
	IFR5A11		
PCV valve	12204-28030(28030)		
	12204-0H020		
Injector	23250-28080		
	23250-0H060		
Throttle body	22030-28071		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-0H070(28340)	Front	
	25051-28340(28340)		
	18450-37010(GG8)	Rear	
Mass air flow sensor	22204-31020		
	22204-0H010		
	22204-0P010		
	22204-0T010		
Air pump	N/A		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-72010	Front	
Oxygen sensor	89465-12A00	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
	89422-0D010		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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1.01.00 Exhaust emission related parts

Test group: FTYXV02.5BED (2AR-FE/ CAMRY)

Part name	Part number	Applicability	Note
Spark plug	SK16HR11		
PCV valve	12204-36020		
	12204-36030		Running Change 15-TR-10
Injector	23250-36010		
	23250-0V010		
Throttle body	22030-36010		
	22030-0V010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36090(36090)	Front	
	25051-0V030(0V030)		
	18450-0V080(GX1)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-06120	Front	
	89467-48190		
Oxygen sensor	89465-06290	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV02.5BEB (2AR-FE/ tC)

Part name	Part number	Applicability	Note
Spark plug	SK16HR11		
PCV valve	12204-36020		
Injector	23250-36010		
Throttle body	22030-36010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36180(36180)	Front	
	18450-36200(RH3)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-21020	Front	
Oxygen sensor	89465-21050	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

ED_004326_00013785-00271

1.01.00 Exhaust emission related parts

Test group: FTYXV02.5HC3 (2AR-FXE/ CAMRY HYBRID LE, CAMRY HYBRID XLE/SE)

Part name	Part number	Applicability	Note
Spark plug	FK16HR-A8		
PCV valve	12204-36020		
Injector	23250-36010		
	23250-0V010		
Throttle body	22030-36020		
	22030-0V050		Running Change 15-TR-26
Throttle position sensor	Included in throttle body		
EGR valve	25620-36030(36030)		
	25620-36060		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36080(36080)	Front	
	25051-0V230(0V230)		Running Change 15-TR-13
	18450-0V100(UC6)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-48190	Front	
	89467-06120		
Oxygen sensor	89465-06260	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-26030		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30900-33030(2JM)		
Battery Pack	G9280-33030		
	G9510-33050		
Battery current sensor	Included in HV junction block		
HV junction block	G92Z1-33011		
Battery voltage sensor	89892-33020		

1.01.00 Exhaust emission related parts

Test group: FTYXV02.5CC4 (2AR-FXE/ ES 300h, AVALON HYBRID)

Part name	Part number	Applicability	Note
Spark plug	FK16HR-A8		
PCV valve	12204-36020		
Injector	23250-36010		
	23250-0V010		
Throttle body	22030-36020		
	22030-0V050		Running Change 15-TR-26
Throttle position sensor	Included in throttle body		
EGR valve	25620-36030(36030)		
	25620-36060		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36080(36080)	Front	
	25051-0V230(0V230)		Running Change 15-TR-13
	18450-36020(UE2)	Rear	
	18450-0V100(UC6)		
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
	22204-0T040		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-48190	Front	
	89467-06120		
Oxygen sensor	89465-33470	Rear	
	89465-06260		
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-26030		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30900-33051(2JM)		
	30900-33053(2JM)		Running Change 15-TR-07
Battery Pack	G9280-33030		
	G9510-33050		
Battery current sensor	Included in HV junction block		
HV junction block	G92Z1-33011		
Battery voltage sensor	89892-33020		

1.01.00 Exhaust emission related parts

Test group: FTYXV03.5BEC (2GR-FE/ AVALON, ES 350, CAMRY)

Part name	Part number	Applicability	Note
Spark plug	FK20HR11		
PCV valve	12204-31120		
Injector	23250-31090		
	23250-0P010		
Throttle body	22030-0P050		
	22030-31030		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-31720(R31720)	Front RH	
	17140-0P220(R0P220)		
	17150-31230(L31230)	Front LH	
	17150-0P300(L0P300)		
	18450-31470(X69)	Rear	
	18450-0P200(X60)		
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
	22204-0T040		
Fuel pressure regulator	23280-38020		
Air fuel ratio sensor	89467-48280	Front LH	
	89467-0E190		
	89467-33260	Front RH	
	89467-06190		
Oxygen sensor	89465-33600	Rear LH	
	89465-06320		
	89465-33610	Rear RH	
	89465-06330		
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV02.5BEC (4GR-FSE/ IS 250, IS 250 C, IS 250 AWD)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR11		
PCV valve	12204-31130		
Injector	23250-31020		
Throttle body	22030-31020		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-31770 (R31770)	Front RH	
	17140-31790 (R31790)	Front RH	
	17150-31770 (L31770)	Front LH	
	17150-31790 (L31790)	Front LH	
	18450-31420(RA4)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V010		
	22204-0V020		
	22204-31020		
	22204-0T010		
	22204-0P010		
	22204-0H010		
Fuel pressure regulator	23280-38020		
	23280-31020		
Air fuel ratio sensor	89467-53060	Front LH	
	89467-53070		
	89467-22030		
	89467-53080	Front RH	
	89467-22050		
Oxygen sensor	89465-53290	Rear LH	
	89465-53240		
	89465-30A70		
	89465-30730		
	89465-53300	Rear RH	
	89465-30730		
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-30011		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV03.5CC4 (2GR-FXE/ GS 450h)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR8		
PCV valve	12204-31140		
Injector	23250-31140		
	23250-31120		
Throttle body	22030-31070		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-31A40(R31A40)	Front RH	
	17150-31A40(L31A40)	Front LH	
	18450-31430(TF3)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-38020		
Air fuel ratio sensor	89467-53070	Front RH	
	89467-30070	Front LH	
Oxygen sensor	89465-53300	Rear RH	
	89465-30A80	Rear LH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-30020		
Manifold absolute pressure sensor	89421-52010		
	89421-47010		Field Fix 15-TF-08
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30910-30110(1KM)		
Battery Pack	G9280-30090		
	G9510-30050		
Battery Current Sensor	Included in HV junction block		
HV junction block	G92Z1-48010		
Battery Voltage Sensor	89892-30020		

1.01.00 Exhaust emission related parts

Test group: FTYXV03.5BEB (2GR-FSE/ GS 350 AWD, IS 350, IS 350 C, IS 350 AWD, RC 350, RC 350 AWD, GS 350*1)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR11		
PCV valve	12204-31050(31050)		
Injector	23250-31030		
	23250-31070		
Throttle body	22030-31040		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-31770(R31770)	Front RH	
	17140-31790(R31790)	Front RH	
	17150-31770(L31770)	Front LH	
	17150-31790(L31790)	Front LH	
	18450-31400(RA3)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V010		
	22204-0V020		
	22204-31020		
	22204-0T010		
	22204-0P010		
	22204-0H010		
Fuel pressure regulator	23280-38020		
	23280-31020		
Air fuel ratio sensor	89467-53060	Front LH	
	89467-53070		
	89467-22030		
	89467-53080	Front RH	
	89467-22050		
Oxygen sensor	89465-53290	Rear LH	
	89465-53240		
	89465-30A70		
	89465-30730		
	89465-53300	Rear RH	
	89465-30730		
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-30011		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

*1: After Running Change 15-TR-17

1.01.00 Exhaust emission related parts

Test group: FTYXV03.5BED*1 (2GR-FSE/ GS 350)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR11		
PCV valve	12204-31050(31050)		
Injector	23250-31030		
	23250-31070		
Throttle body	22030-31040		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-31790(R31790)	Front RH	
	17150-31770(L31770)	Front LH	
	18450-31400(RA3)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	23280-38020		
Air fuel ratio sensor	89467-53060	Front LH	
	89467-53080	Front RH	
Oxygen sensor	89465-53290	Rear LH	
	89465-53300	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-30011		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

*1: Before Running Chage 15-TR-17

1.01.00 Exhaust emission related parts

Test group: FTYXV04.6BEA (1UR-FSE/ LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR11		
PCV valve	12204-38010(38010)		
Injector	23250-31030	DFI	
	23250-38050	FPI	
Throttle body	22030-38010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17104-38020(R38020)	Front RH	
	17104-38080(R38080)	Front RH	
	17105-38020(L38020)	Front LH	
	17105-38080(L38080)	Front LH	
	18450-38110(X55)	Rear	
	18450-38020(PA1)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-38020		
Fuel pressure regulator	23280-38020		
Air fuel ratio sensor	89467-53060	Front LH&RH	
	89467-50070	Front LH	
	89467-50080	Front RH	
Oxygen sensor	89465-50240	Rear LH(2WD)& RH(2WD/4WD)	
	89465-30A80	Rear LH(4WD)	
Intake air temp. sensor	Included in Mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-22010		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV05.0MEA (2UR-GSE/ RC F)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR-J8		
PCV valve	12204-38020(38020)		
Injector	23250-31120	DFI	
	23250-38050	PFI	
Throttle body	22030-38050		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17104-38090(R38090)	Front RH	
	17105-38090(L38090)	Front LH	
	18450-38130(PA6)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-75040		
Fuel pressure regulator	23280-38020		
Air fuel ratio sensor	89467-24010	Front LH	
	89467-24020	Front RH	
Oxygen sensor	89465-53290	Rear LH	
	89465-53300	Rear RH	
Intake air temp. sensor	Included in Mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-78010		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXV05.0CC4 (2UR-FSE/ LS 600h L)

Part name	Part number	Applicability	Note
Spark plug	FK20HBR11		
PCV valve	12204-38040(38040)		
Injector	23250-31030	DFI	
	23250-38050	PFI	
Throttle body	22030-38010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17104-38050(R38050)	Front RH	
	17105-38050(L38050)	Front LH	
	18470-38010(WA1)	Rear RH	
	18470-38020(WA2)	Rear LH	
Air pump	N/A		
Mass air flow sensor	22204-38020		
Fuel pressure regulator	23280-38020		
Air fuel ratio sensor	89467-53030	Front	
Oxygen sensor	89465-50200	Rear LH	
	89465-50170	Rear RH	
Intake air temp. sensor	Included in Mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-22010		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy	30930-50050(1KM)		
Battery Pack	G9280-50020		
	G9510-50041		
	G9510-50051		
Battery Current Sensor	Included in HV junction block		
HV junction block	G92Z1-50010		
Battery Voltage sensor	89892-50020		

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1.01.00 Exhaust emission related parts

Test group: FTYXJ02.5BEL (2AR-FE/ CAMRY, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD)

Part name	Part number	Applicability	Note
Spark plug	SK16HR11		
PCV valve	12204-36020		
	12204-36030		Running Change 15-TR-06 Running Change 15-TR-10
Injector	23250-36010		
	23250-0V010		
	23250-0V030		
Throttle body	22030-36010		
	22030-0V010		
	22030-0V040		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36090(36090)	Front	
	25051-0V030(0V030)		
	25051-36150(36150)		
	25051-0V110(0V110)		
	18450-0V080(GX1)	Rear	
	18450-0V270(RB3)		
	18450-36070(RB7)		
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
	22204-0T040		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-06120	Front	
	89467-48190		
	89467-21020		
	89467-0R050		
	89467-0R060		
Oxygen sensor	89465-06290	Rear	
	89465-42230		
	89465-0R040		
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
	89422-0D010		Running Change 15-TR-25
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXT02.0KEM (8AR-FTS/ NX 200t, NX 200t AWD, NX 200t AWD F SPORT)

Part name	Part number	Applicability	Note
Spark plug	DILFR7K9G		
PCV valve	12204-36050		
	12217-36010		
Injector	23250-36020	PFI	
	23250-36030	DFI	
Throttle body	22030-36040		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36240(36240)	Front	
	18450-36240(X78)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V010		
	22204-0V020		
Fuel pressure regulator	N/A		
Air fuel ratio sensor	89467-78010	Front	
Oxygen sensor	89465-78010	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	89458-78010	High	
	89458-78020	Low	
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	89421-78020		

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1.01.00 Exhaust emission related parts

Test group: FTYXT02.5PCM (2AR-FXE/ NX 300h , NX 300h AWD)

Part name	Part number	Applicability	Note
Spark plug	FK16HR-A8		
PCV valve	12204-36020		
Injector	23250-36010		
Throttle body	22030-36020		
Throttle position sensor	Included in throttle body		
EGR valve	25620-36030(36030)		
	25620-36060		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-36080(36080)	Front	
	18450-36220(UF2)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V010		
	22204-0V020		
	22204-0T040		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-48270	Front	
Oxygen sensor	89465-42230	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-26030		
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Rear Motor	Included in Rear Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy (Front)	30900-78010(2JM)		
	30900-78011(2JM)		
	30900-48120(2JM)		
	30900-48121(2JM)		
Transaxle Assy(Rear)	G1050-48020(2FM)		
Battery Pack	G9280-48100		
	G9510-48080		
Battery current sensor	Included in HV junction block		
HV junction block	G92Z1-53010		
Battery voltage sensor	89892-48050		

1.01.00 Exhaust emission related parts

Test group: FTYXT02.7BEN (1AR-FE/ HIGHLANDER)

Part name	Part number	Applicability	Note
Spark plug	SK16HR11		
PCV valve	12204-36020		
Injector	23250-0V010		
Throttle body	22030-0V010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0V300(TH7)	Front	
	18450-0V310(TH5)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-0E180	Front	
Oxygen sensor	89465-0E110	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-06010		
	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXT02.7BEP (1AR-FE/ VENZA, VENZA 4WD)

Part name	Part number	Applicability	Note
Spark plug	SK16HR11		
PCV valve	12204-36020		
Injector	23250-0V010		
Throttle body	22030-0V010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	25051-0V270(0V270)	Front	
	18450-0V080(GX1)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-31020		
	22204-0H010		
Fuel pressure regulator	23280-21010		
Air fuel ratio sensor	89467-06120	Front	
	89467-0T020		
Oxygen sensor	89465-0T060	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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Test group: FTYXT03.5BER (2GR-FE/ RX 350, RX 350 AWD, VENZA, VENZA 4WD, SIENNA, SIENNA AWD, HIGHLANDER, HIGHLANDER AWD)

Part name	Part number	Applicability	Note
Spark plug	FK20HR11		
PCV valve	12204-31120		
Injector	23250-31090		
	23250-0P010		
	23250-31050		
	23250-0P040		
Throttle body	22030-0P050		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17150-0P250(L0P250)	Front LH	
	17150-31810(L31810)		
	17150-0P310(L0P310)		
	17140-0P250(R0P250)	Front RH	
	17140-31810(R31810)		
	17140-0P240(R0P240)		
	17140-0P270(R0P270)		
	18450-0P350 (X64)	Rear	
	18450-31460 (X63)		
	18450-0P330(UD7)		
	18450-0P360(X67)		
	18450-0P420(UE7)		
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V020		
	22204-0V010		
	22204-0T040		
	22204-31020		
	22204-0H010		
Fuel pressure regulator	23280-38020		
	23280-21010		
Air fuel ratio sensor	89467-48280	Front LH	
	89467-06180		
	89467-0E190		
	89467-48290	Front RH	
	89467-0E200		
Oxygen sensor	89465-48370	Rear LH	
	89465-08120		
	89465-08150		
	89465-0T040		
	89465-0E120		
	89465-48380	Rear RH	
	89465-0E130		
	89465-0T050		
	89465-08130		
	89465-08140		
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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1.01.00 Exhaust emission related parts

Test group: FTYXT03.5CC4 (2GR-FXE/ RX 450h, RX 450h AWD)

Part name	Part number	Applicability	Note
Spark plug	FK20HR11		
PCV valve	12204-31100		
Injector	23250-31090		
	23250-31150		
Throttle body	22030-31030		
	22030-0P050		
Throttle position sensor	Included in throttle body		
EGR valve	25620-31070		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17150-31380(L31380)	Front LH	
	17140-31410(R31410)	Front RH	
	18450-31210 (UB2)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-46040		
Air fuel ratio sensor	89467-0E130	Front LH	
	89467-0E140	Front RH	
Oxygen sensor	89465-48350	Rear LH	
	89465-0E240		
	89465-0E150	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-52010		
	89421-47010		Running Change 15-TR-33
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Rear Motor	Included in Rear Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy (Front)	30900-48071(4JM)		
	30900-48072(4JM)		Running Change 15-TR-09
	30900-48250(4JM)		Running Change 15-TR-16
	30900-48251(4JM)		Field Fix 15-TF-12
Transaxle Assy(Rear)	G1050-48010(2FM)		
Battery Pack	G9510-48050		
	G9280-48040		
Battery current sensor	Included in HEV junction block		
HEV junction block	G92Z1-48010		
Battery voltage sensor	89892-48020		

1.01.00 Exhaust emission related parts

Test group: FTYXT02.7BER (2TR-FE/TACOMA 2WD/4WD)

Part name	Part number	Applicability	Note
Spark plug	SK20HR-A11		
PCV valve	12204-0C010		
Injector	23250-75100		
Throttle body	22030-75020		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0C300(TG3)	Front	
	18450-0C310(UE4)	Rear	
Air pump	17600-0C020		
	17600-0C040		
Mass air flow sensor	22204-0F030		
Fuel pressure regulator	23280-75061		
Air fuel ratio sensor	89467-04080	Front	
Oxygen sensor	89465-35650	Rear	
	89465-04480	Rear	
	89465-35750	Rear	
	89465-04510	Rear	
	89465-35760	Rear	
	89465-04520	Rear	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXT04.0BEM (1GR-FE/TACOMA 2WD/4WD)

Part name	Part number	Applicability	Note
Spark plug	K20HR-U11		
	LFR6C11		
PCV valve	12204-31030		
Injector	23250-0P030		
Throttle body	22030-0P010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-0P230	Front RH	
	17150-0P230	Front LH	
	18450-0P370(TG5)	Rear RH	
	18450-0P380(TG6)	Rear LH	
Air pump	17600-0P040		
Mass air flow sensor	22204-22010		
Fuel pressure regulator	23280-31060		
Air fuel ratio sensor	89467-0C060	Front	
Oxygen sensor	89465-35730	Rear LH	
	89465-04490	Rear LH	
	89465-35740	Rear RH	
	89465-04500	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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1.01.00 Exhaust emission related parts

Test group: FTYXT04.0BES (1GR-FE/4RUNNER 2WD/4WD)

Part name	Part number	Applicability	Note
Spark plug	SK20HR11		
	SK16HR11		
PCV valve	12204-31110		
Injector	23250-31100		
Throttle body	22030-31060		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-31610	Front RH	
	17150-31610	Front LH	
	18450-31290(TG9)	Rear RH	
	18450-31480(TH1)	Rear LH	
Air pump	17610-0C030		
Mass air flow sensor	22204-28010		
	22204-0T040		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-31051		
Air fuel ratio sensor	89467-35120	Front LH	
	89467-35130	Front RH	
Oxygen sensor	89465-35770	Rear LH	
	89465-35780	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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1.01.00 Exhaust emission related parts

Test group: FTYXT03.5CCU (2GR-FXE/ HIGHLANDER HYBRID AWD, HIGHLANDER HYBRID AWD LE Plus)

Part name	Part number	Applicability	Note
Spark plug	FK20HR11		
PCV valve	12204-31100		
Injector	23250-31090		
	23250-31150		
Throttle body	22030-0P050		
Throttle position sensor	Included in throttle body		
EGR valve	25620-31070		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17150-31380(L31380)	Front LH	
	17140-31410(R31410)	Front RH	
	18450-0P430(UE8)	Rear	
Air pump	N/A		
Mass air flow sensor	22204-28010		
	22204-0V020		
	22204-0V010		
Fuel pressure regulator	23280-46040		
Air fuel ratio sensor	89467-0E130	Front LH	
	89467-0E140	Front RH	
Oxygen sensor	89465-0E140	Rear LH	
	89465-0E150	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-52010		
	89421-47010		Running Change 15-TR-33
Turbo pressure sensor	N/A		
Motor	Included in Transaxle Assy		
Rear Motor	Included in Rear Transaxle Assy		
Generator	Included in Transaxle Assy		
Transaxle Assy (Front)	30900-48071(4JM)		
	30900-48072(4JM)		Running Change 15-TR-09
	30900-48250(4JM)		Running Change 15-TR-16
	30900-48251(4JM)		Field Fix 15-TF-12
Transaxle Assy(Rear)	G1050-48010(2FM)		
Battery Pack	G9280-48080		
	G9510-48070		
Battery current sensor	Included in HV junction block		
HV junction block	G92Z1-48010		
Battery voltage sensor	89892-48040		

Issued: 12/01/2014 15-TR-09: 10/30/2014 15-TR-16: 01/29/2015 15-TR-33: 08/27/2015 15-TF-12: 07/14/2016

1.01.00 Exhaust emission related parts

Test group: FTYXT04.6BEW (1UR-FE/TUNDRA 2WD/4WD)

Part name	Part number	Applicability	Note
Spark plug	SK20HR11		
PCV valve	12204-38030		
Injector	23250-0S020		
	23250-38040		
Throttle body	22030-0S021		
	22030-38041		
Throttle position sensor	Included in throttle body		
EGR valve	25620-38240(38240)		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0S100(TH8)	Front	
	18450-0S070(X62)	Rear	
Air pump	17610-0S030		
Mass air flow sensor	22204-0F030		
Fuel pressure regulator	23280-38051		
Air fuel ratio sensor	89467-0C060	Front	
Oxygen sensor	89465-34160	Rear LH	
	89465-0C290	Rear LH	
	89465-34170	Rear RH	
	89465-0C300	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-47010		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXT04.6BEX (1UR-FE/ GX 460)

Part name	Part number	Applicability	Note
Spark plug	SK20HR11		
PCV valve	12204-38010(38010)		
Injector	23250-38040		
Throttle body	22030-38041		
Throttle position sensor	Included in throttle body		
EGR valve	25620-38240(38240)		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	17140-38130	Front RH	
	17150-38130	Front LH	
	18450-31470(X69)	Rear RH	
	18450-38170(X72)	Rear LH	
Air pump	17610-0C030		
Mass air flow sensor	22204-75030		
Fuel pressure regulator	23280-38061		
Air fuel ratio sensor	89467-60140	Front	
Oxygen sensor	89465-34160	Rear LH	
	89465-0C290	Rear LH	
	89465-60460	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	89421-47010		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXT05.7BEY(3UR-FE/LAND CRUISER WAGON 4WD, LX 570, SEQUOIA 2WD/4WD)

Part name	Part number	Applicability	Note
Spark plug	SK20HR11		
PCV valve	12204-38010(38010)		
	12204-38030		
Injector	23250-38040		
	23250-0S020		
Throttle body	22030-38020		
	22030-0S010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0S090(TF4)	Front	
	18450-38150(TG1)	Front	
	18450-0S070(X62)	Rear	
	18450-38160(X71)	Rear	
Air pump	17610-0S030		
Mass air flow sensor	22204-0F030		
	22204-75030		
Fuel pressure regulator	23280-38011		
	23280-38091		
Air fuel ratio sensor	89467-0C060	Front LH	
	89467-0C070	Front RH	
	89467-60140	Front	
Oxygen sensor	89465-34160	Rear LH	
	89465-0C290	Rear LH	
	89465-34170	Rear RH	
	89465-0C300	Rear RH	
	89465-60470	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

1.01.00 Exhaust emission related parts

Test group: FTYXT05.7BEW (3UR-FE/TUNDRA 2WD/4WD)

Part name	Part number	Applicability	Note
Spark plug	SK20HR11		
PCV valve	12204-38030		
Injector	23250-38040		
	23250-0S020		
Throttle body	22030-38020		
	22030-0S010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0S090(TF4)	Front	
	18450-0S070(X62)	Rear	
Air pump	17610-0S030		
Mass air flow sensor	22204-0F030		
Fuel pressure regulator	23280-38091		
Air fuel ratio sensor	89467-0C060	Front LH	
	89467-0C070	Front RH	
Oxygen sensor	89465-34160	Rear LH	
	89465-0C290	Rear LH	
	89465-34170	Rear RH	
	89465-0C300	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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1.01.00 Exhaust emission related parts

Test group: FTYXT05.7XE8 (3UR-FBE/TUNDRA 4WD FFV, SEQUOIA 4WD FFV)

Part name	Part number	Applicability	Note
Spark plug	SK20HR11		
PCV valve	12204-38030		
Injector	23250-38040		
	23250-0S020		
Throttle body	22030-38020		
	22030-0S010		
Throttle position sensor	Included in throttle body		
EGR valve	N/A		
Idle air control valve (Idle speed control valve)	N/A		
Catalytic converter	18450-0S090(TF4)	Front	
	18450-0S070(X62)	Rear	
Air pump	17610-0S030		
Mass air flow sensor	22204-0F030		
Fuel pressure regulator	23280-38041		
	23280-0S010		
Air fuel ratio sensor	89467-04090	Front LH	
	89467-0C050	Front RH	
Oxygen sensor	89465-0C180	Rear LH	
	89465-0C190	Rear RH	
Intake air temp. sensor	Included in mass air flow sensor		
Engine coolant temp. sensor	89422-33030		
Knock sensor	89615-20090		
	89615-06010		
Fuel pressure sensor	N/A		
Manifold absolute pressure sensor	N/A		
Turbo pressure sensor	N/A		

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	iQ	1.3	A/T	FTYXV01.3BEA	$07E8	89661-74470	37424000	5302CE93	Main
2015	TOYOTA	iQ	1.3	A/T	FTYXV01.3BEA	$07E8		A0C01000	2C411C65	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	YARIS	1.5	M/T	FTYXV01.5BEB	$07E8	89661-0DR30	30DL4000	62299218	Main
2015	TOYOTA	YARIS	1.5	M/T	FTYXV01.5BEB	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	YARIS	1.5	A/T	FTYXV01.5BEB	$07E8	89661-0DR50	30DL5000	45096647	Main
2015	TOYOTA	YARIS	1.5	A/T	FTYXV01.5BEB	$07E8		A0C01000	2C411C65	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07E8	89661-5C330	35C16000	DD8E5EFA	Main
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07E8	89661-5C331	35C16100	46080B3E	Main
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07E8	89661-5C332	35C16200	319B7938	Main Running Change 15-TR-18
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07E8		A4701000	611F6EF2	Sub Running Change 15-TR-18
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA	89981-52030	899835201000	76C26154	Main
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA		899856201000	6D85C844	Sub
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA	89981-52031	899835201100	942C164F	Main Running Change 15-TR-31
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA		899856201000	6D85C844	Sub Running Change 15-TR-31
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA	89981-52060	899835204000	34AD323F	Main
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA		899856201000	6D85C844	Sub
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA	89981-52061	899835204100	49A323A8	Main Running Change 15-TR-31
2015	TOYOTA	PRIUS c	1.5	A/T	FTYXV01.5CC4	$07EA		899856201000	6D85C844	Sub Running Change 15-TR-31

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07E8	89661-47590	34754000	54E1AA13	Main
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07E8	89661-47591	34754100	2D6958A5	Main
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07E8	89661-47592	34754200	A383CB7A	Main Field Fix 15-TF-02
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07E8		A4701000	611F6EF2	Sub Field Fix 15-TF-02
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07EA	89681-47251	896B34747100	35B5F9D9	Main
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07EA		896B57602000	AE0CAB38	Sub
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07EA	89681-47252	896B34747200	6F4ACF60	Main Field Fix 15-TF-06
2015	TOYOTA	PRIUS	1.8	A/T	FTYXV01.8HC3	$07EA		896B57602000	AE0CAB38	Sub Field Fix 15-TF-06

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07E8	89661-47600	34755000	7383FD1C	Main
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07E8	89661-47601	34755100	22EDE80B	Main Field Fix 15-TF-02
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07E8		A4701000	611F6EF2	Sub Field Fix 15-TF-02
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07EA	89681-47520	896B34743000	702854F1	Main
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07EA		896B54707100	A46A0562	Sub
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07EF	89261-47050	892634705000	1E8EAE56	Main
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07EF		892644701000	33AE3133	Sub
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07EF	89261-47051	892634705100	12BFA97E	Main Field Fix 15-TF-04
2015	TOYOTA	PRIUS Plug-in Hybrid	1.8	A/T	FTYXV01.8HCU	$07EF		892644701100	A803471D	Sub Field Fix 15-TF-04

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	CT 200h	1.8	A/T	FTYXV01.8CCU	$07E8	89661-76160	37616000	1A10A330	Main
2015	TOYOTA	CT 200h	1.8	A/T	FTYXV01.8CCU	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	CT 200h	1.8	A/T	FTYXV01.8CCU	$07E8	89661-76161	37616100	79BD7B02	Main Field Fix 15-TF-02
2015	TOYOTA	CT 200h	1.8	A/T	FTYXV01.8CCU	$07E8		A4701000	611F6EF2	Sub Field Fix 15-TF-02
2015	TOYOTA	CT 200h	1.8	A/T	FTYXV01.8CCU	$07EA	89681-76200	896B37617000	BF17E9F8	Main
2015	TOYOTA	CT 200h	1.8	A/T	FTYXV01.8CCU	$07EA		896B57603000	900D42CC	Sub
2015	TOYOTA	PRIUS v	1.8	A/T	FTYXV01.8CCU	$07E8	89661-47630	34758000	335A8E23	Main
2015	TOYOTA	PRIUS v	1.8	A/T	FTYXV01.8CCU	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	PRIUS v	1.8	A/T	FTYXV01.8CCU	$07E8	89661-47631	34758100	E6FAA806	Main Field Fix 15-TF-02
2015	TOYOTA	PRIUS v	1.8	A/T	FTYXV01.8CCU	$07E8		A4701000	611F6EF2	Sub Field Fix 15-TF-02
2015	TOYOTA	PRIUS v	1.8	A/T	FTYXV01.8CCU	$07EA	89681-47030	896B34755000	A95152B7	Main
2015	TOYOTA	PRIUS v	1.8	A/T	FTYXV01.8CCU	$07EA		896B54716000	25D94C78	Sub

ED_004326_00013785-00303

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8	89661-0Z630	30Z58000	A4141A8C	Main
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8	89661-0Z631	30Z58100	18D127B7	Main Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8	89661-0Z640	30Z59000	DF6560E7	Main
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8	89661-0Z641	30Z59100	E446D0BB	Main Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8	89661-0Z650	30Z60000	2CA121D9	Main
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8	89661-0Z651	30Z60100	7EAB00DC	Main Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	A/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	M/T	FTYXV01.8BEC	$07E8	89661-0Z660	30Z61000	AAFDD072	Main
2015	TOYOTA	COROLLA	1.8	M/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub
2015	TOYOTA	COROLLA	1.8	M/T	FTYXV01.8BEC	$07E8	89661-0Z661	30Z61100	FAB81A20	Main Running Change 15-TR-30
2015	TOYOTA	COROLLA	1.8	M/T	FTYXV01.8BEC	$07E8		50206000	8A8B7848	Sub Running Change 15-TR-30

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	COROLLA LE ECO	1.8	A/T	FTYXV01.8MEA	$07E8	89661-0Z620	302U1000	FABF2774	Main
2015	TOYOTA	COROLLA LE ECO	1.8	A/T	FTYXV01.8MEA	$07E8		50206000	8A8B7848	Sub
2015	TOYOTA	COROLLA LE ECO	1.8	A/T	FTYXV01.8MEA	$07E8	89661-0Z621	302U1100	6D2E834D	Main Running Change 15-TR-30
2015	TOYOTA	COROLLA LE ECO	1.8	A/T	FTYXV01.8MEA	$07E8		50206000	8A8B7848	Sub Running Change 15-TR-30

ED_004326_00013785-00305

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	xB	2.4	M/T	FTYXV02.4BEB	$07E8	89661-12T80	312A6000	2585A909	
2015	TOYOTA	xB	2.4	A/T	FTYXV02.4BEB	$07E8	89661-12T90	312A7000	E08A6227	

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	CAMRY	2.5	A/T	FTYXV02.5BED	$07E8	89661-06N10	306E7000	30D302B3	Main
2015	TOYOTA	CAMRY	2.5	A/T	FTYXV02.5BED	$07E8		50625000	5858F46E	Sub
2015	TOYOTA	CAMRY	2.5	A/T	FTYXV02.5BED	$07E8	89661-06N11	306E7100	36D304B2	Main Running Change 15-TR-15
2015	TOYOTA	CAMRY	2.5	A/T	FTYXV02.5BED	$07E8		50625100	5FF2F937	Sub Running Change 15-TR-15

ED_004326_00013785-00307

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	tC	2.5	A/T	FTYXV02.5BEB	$07E8	89661-21640	32127000	44A2A0C6	Main
2015	TOYOTA	tC	2.5	A/T	FTYXV02.5BEB	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	tC	2.5	A/T	FTYXV02.5BEB	$07E8	89661-21641	32127100	3F42DB26	Main Running Change 15-TR-19
2015	TOYOTA	tC	2.5	A/T	FTYXV02.5BEB	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-19
2015	TOYOTA	tC	2.5	M/T	FTYXV02.5BEB	$07E8	89661-21650	32128000	D1E21940	Main
2015	TOYOTA	tC	2.5	M/T	FTYXV02.5BEB	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	tC	2.5	M/T	FTYXV02.5BEB	$07E8	89661-21651	32128100	AA0263A0	Main Running Change 15-TR-19
2015	TOYOTA	tC	2.5	M/T	FTYXV02.5BEB	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-19
2015	TOYOTA	tC	2.5	A/T	FTYXV02.5BEB	$07E9	89530-21010	895362107000	9E4C9B49	

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	ES 350	3.5	A/T	FTYXV03.5BEC	$07E8	89661-33Q10	333J9000	BC34858D	Main
2015	TOYOTA	ES 350	3.5	A/T	FTYXV03.5BEC	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	ES 350	3.5	A/T	FTYXV03.5BEC	$07E8	89661-33Q11	333J9100	AC6E858C	Main Running Change 15-TR-05
2015	TOYOTA	ES 350	3.5	A/T	FTYXV03.5BEC	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-05
2015	TOYOTA	ES 350	3.5	A/T	FTYXV03.5BEC	$07E9	89530-33291	895363329100	C5C1EB16	
2015	TOYOTA	AVALON	3.5	A/T	FTYXV03.5BEC	$07E8	89661-07530	30712000	00CDBB74	Main
2015	TOYOTA	AVALON	3.5	A/T	FTYXV03.5BEC	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	AVALON	3.5	A/T	FTYXV03.5BEC	$07E9	89530-07071	895360706100	7AC27B59	
2015	TOYOTA	CAMRY	3.5	A/T	FTYXV03.5BEC	$07E8	89661-06U10	306F5000	DB82B0FE	Main
2015	TOYOTA	CAMRY	3.5	A/T	FTYXV03.5BEC	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	CAMRY	3.5	A/T	FTYXV03.5BEC	$07E9	89530-33201	895363320100	C93A4932	
2015	TOYOTA	CAMRY	3.5	A/T	FTYXV03.5BEC	$07E9	89530-33211	895363321100	E0B651CB	

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	CAMRY HYBRID	2.5	A/T	FTYXV02.5HC3	$07E8	89661-06T90	306F7000	F818DF19	Main
2015	TOYOTA	CAMRY HYBRID	2.5	A/T	FTYXV02.5HC3	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	CAMRY HYBRID	2.5	A/T	FTYXV02.5HC3	$07EA	89681-06050	896B30605000	8C0B7B2C	Main
2015	TOYOTA	CAMRY HYBRID	2.5	A/T	FTYXV02.5HC3	$07EA		896B50602000	38027FEA	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	ES 300h	2.5	A/T	FTYXV02.5CC4	$07E8	89661-33Q40	333L1000	05928DA5	Main
2015	TOYOTA	ES 300h	2.5	A/T	FTYXV02.5CC4	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	ES 300h	2.5	A/T	FTYXV02.5CC4	$07EA	89681-33140	896B33314000	A0DAD06A	Main
2015	TOYOTA	ES 300h	2.5	A/T	FTYXV02.5CC4	$07EA		896B53302000	9171286D	Sub
2015	TOYOTA	AVALON HYBRID	2.5	A/T	FTYXV02.5CC4	$07E8	89661-07620	30720000	EC316838	Main
2015	TOYOTA	AVALON HYBRID	2.5	A/T	FTYXV02.5CC4	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	AVALON HYBRID	2.5	A/T	FTYXV02.5CC4	$07EA	89681-07020	896B30702000	68B2BB94	Main
2015	TOYOTA	AVALON HYBRID	2.5	A/T	FTYXV02.5CC4	$07EA		896B50701000	B660B838	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8	89661-53R30	353M5000	5350E491	Main
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8		553C4000	81B01261	Sub
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8	89661-53R31	353M5100	CD634317	Main Running Change 15-TR-29
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8		553C4000	81B01261	Sub Running Change 15-TR-29
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8	89661-53R40	353M6000	5186F88C	Main
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8		553C5000	95B5364F	Sub
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8	89661-53R41	353M6100	D3A841C1	Main Running Change 15-TR-29
2015	TOYOTA	IS 250	2.5	A/T	FTYXV02.5BEC	$07E8		553C5000	95B5364F	Sub Running Change 15-TR-29
2015	TOYOTA	IS 250 C	2.5	A/T	FTYXV02.5BEC	$07E8	89661-53Q31	353L5100	1974447A	Main
2015	TOYOTA	IS 250 C	2.5	A/T	FTYXV02.5BEC	$07E9		553D3100	B70FFE41	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	GS 450h	3.5	A/T	FTYXV03.5CC4	$07E8	89661-30Z40	330X5000	1F32FF17	Main
2015	TOYOTA	GS 450h	3.5	A/T	FTYXV03.5CC4	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	GS 450h	3.5	A/T	FTYXV03.5CC4	$07EA	89681-30320	896B33020000	DDE652DE	Main
2015	TOYOTA	GS 450h	3.5	A/T	FTYXV03.5CC4	$07EA		896B53004000	7D292410	Sub
2015	TOYOTA	GS 450h	3.5	A/T	FTYXV03.5CC4	$07EA	89681-30321	896B33020100	86A76676	Main
2015	TOYOTA	GS 450h	3.5	A/T	FTYXV03.5CC4	$07EA		896B53004000	7D292410	Sub

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	IS 350	3.5	A/T	FTYXV03.5BEB	$07E8	89661-53R10	353M3000	56DC7F36	Main
2015	TOYOTA	IS 350	3.5	A/T	FTYXV03.5BEB	$07E8		530J5000	A0AAEB60	Sub
2015	TOYOTA	IS 350	3.5	A/T	FTYXV03.5BEB	$07E8	89661-53R20	353M4000	DD64C603	Main
2015	TOYOTA	IS 350	3.5	A/T	FTYXV03.5BEB	$07E8		553C1000	118BA6ED	Sub
2015	TOYOTA	IS 350	3.5	A/T	FTYXV03.5BEB	$07E9	89535-53100	895365310000	602E6755	
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BEB	$07E8	89661-30X51	330V7100	502F553F	Main
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BEB	$07E8		530K4000	AF4A4EF1	Sub
2015	TOYOTA	IS 350 C	3.5	A/T	FTYXV03.5BEB	$07E8	89661-53Q11	353L3100	55505352	Main
2015	TOYOTA	IS 350 C	3.5	A/T	FTYXV03.5BEB	$07E8		553D1100	123BDD63	Sub
2015	TOYOTA	RC 350	3.5	A/T	FTYXV03.5BEB	$07E8	89661-24840	32423000	3631AE13	Main
2015	TOYOTA	RC 350	3.5	A/T	FTYXV03.5BEB	$07E8		530J5000	A0AAEB60	Sub
2015	TOYOTA	RC 350	3.5	A/T	FTYXV03.5BEB	$07E8	89661-24850	32424000	302AF031	Main
2015	TOYOTA	RC 350	3.5	A/T	FTYXV03.5BEB	$07E8		52421000	1DF50CD2	Sub
2015	TOYOTA	RC 350	3.5	A/T	FTYXV03.5BEB	$07E9	89535-24010	895362401000	920DC53A	
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BEB	$07E8	89661-30X41	330V6100	FFB0CB97	Main After Running Change 15-TR-17
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BEB	$07E8		530K3000	CFDF2269	Sub After Running Change 15-TR-17
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BEB	$07E9	89535-30200	895363020000	57B88B7E	After Running Change 15-TR-17

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BED	$07E8	89661-30X41	330V6100	FFB0CB97	Main Before Running Change 15-TR-17
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BED	$07E8		530K3000	CFDF2269	Sub Before Running Change 15-TR-17
2015	TOYOTA	GS 350	3.5	A/T	FTYXV03.5BED	$07E9	89535-30200	895363020000	57B88B7E	Before Running Change 15-TR-17

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E8	89661-50P11	350G5100	CFBEEC6E	Main
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E8		350G5101	CFBEEC6E	Ver.SZ
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E8		55059000	51345A73	Sub
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E8	89661-50P20	350G6000	122CBE01	Main
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E8		350G6001	122CBE01	Ver.SZ
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E8		55059000	51345A73	Sub
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E9	89530-50340	895365034000	198916F7	
2015	TOYOTA	LS 460, LS 460 L	4.6	A/T	FTYXV04.6BEA	$07E9	89530-50420	895365042000	89DB72CB	

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E8	89661-24890	32428000	52EF6B4B	Main
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E8		52422000	DEC5D69C	Sub
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E8	89661-24891	32428100	B8BAF218	Main Field Fix 15-TF-03
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E8		52422000	DEC5D69C	Sub Field Fix 15-TF-03
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E8	89661-24893	32428300	BE380498	Main Field Fix 15-TF-10
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E8		52422000	DEC5D69C	Sub Field Fix 15-TF-10
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E9	89535-24050	895362405000	2331E441	
2015	TOYOTA	RC F	5.0	A/T	FTYXV05.0MEA	$07E9	89535-24051	895362405100	1130E441	Field Fix 15-TF-03

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	LS 600h L	5.0	A/T	FTYXV05.0CC4	$07E8	89661-50P70	350G3000	C5C25786	Main
2015	TOYOTA	LS 600h L	5.0	A/T	FTYXV05.0CC4	$07E8		55063000	6CD4B2FE	Sub
2015	TOYOTA	LS 600h L	5.0	A/T	FTYXV05.0CC4	$07EA	89981-50180	899835018000	926DAD2B	Main
2015	TOYOTA	LS 600h L	5.0	A/T	FTYXV05.0CC4	$07EA		899855003000	91F34FF5	Sub

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Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-06N10	306E7000	30D302B3	Main
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8		50625000	5858F46E	Sub
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-06N11	306E7100	36D304B2	Main Running Change 15-TR-15
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8		50625100	5FF2F937	Sub Running Change 15-TR-15
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-06T20	306E8000	33CF02B3	Main
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8		50626000	AE3B1826	Sub
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-06T21	306E8100	35CF04B2	Main Running Change 15-TR-15
2015	TOYOTA	CAMRY	2.5	A/T	FTYXJ02.5BEL	$07E8		50626100	A52E1E8C	Sub Running Change 15-TR-15
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-42U31	342N5100	80C7B96A	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54204100	A67A34A2	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-0R381	342N5100	80C7B96A	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54204100	A67A34A2	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-42U60	342G4000	5A69A7DD	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54210000	253821C6	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-42U61	342G4100	5A68B5DC	Main Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54210100	28873835	Sub Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-0R460	342G4000	5A69A7DD	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54210000	253821C6	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-0R461	342G4100	5A68B5DC	Main Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54210100	28873835	Sub Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-42U41	342N6100	9A936866	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54205100	D089FE33	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-0R391	342N6100	9A936866	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54205100	D089FE33	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-42U70	342G5000	05664D20	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54211000	FD4A5E44	Sub

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-42U71	342G5100	05675F21	Main Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54211100	F0F547B7	Sub Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-0R470	342G5000	05664D20	Main
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54211000	FD4A5E44	Sub
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8	89661-0R471	342G5100	05675F21	Main Running Change 15-TR-21
2015	TOYOTA	RAV4	2.5	A/T	FTYXJ02.5BEL	$07E8		54211100	F0F547B7	Sub Running Change 15-TR-21

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78050	896637805200	012D5693	Main
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802200	7A28A485	Sub
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78051	896637805300	CD3AA5F0	Main Running Change 15-TR-24
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802200	7A28A485	Sub Running Change 15-TR-24
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78052	896637805400	7676320D	Main Field Fix 15-TF-05
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802300	7AD8B585	Sub Field Fix 15-TF-05
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78053	896637805500	7504207E	Main Field Fix 15-TF-09
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802300	7AD8B585	Sub Field Fix 15-TF-09
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78060	896637806200	DA1FA82F	Main
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802200	7A28A485	Sub
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78061	896637806300	0C78270C	Main Running Change 15-TR-24
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802200	7A28A485	Sub Running Change 15-TR-24
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78062	896637806400	D221AE6B	Main Field Fix 15-TF-05
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802300	7AD8B585	Sub Field Fix 15-TF-05
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78063	896637806500	C320BD19	Main Field Fix 15-TF-09
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657802300	7AD8B585	Sub Field Fix 15-TF-09
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78070	896637807200	C03C6E40	Main
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657803200	748762AD	Sub
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78071	896637807300	AF4C2301	Main Running Change 15-TR-24
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657803200	748762AD	Sub Running Change 15-TR-24
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78072	896637807400	1043D41E	Main Field Fix 15-TF-05
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657803300	747773AD	Sub Field Fix 15-TF-05
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8	89661-78073	896637807500	0142C76C	Main Field Fix 15-TF-09
2015	TOYOTA	NX 200t	2.0	A/T	FTYXT02.0KEM	$07E8		896657803300	747773AD	Sub Field Fix 15-TF-09

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07E8	89661-78190	37819000	AE025F7C	Main
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA	89981-78030	899837803000	C52392A7	Main
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA		899857801000	F3211964	Sub
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA	89981-78031	899837803100	ABAAE312	Main Running Change 15-TR-32
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA		899857801000	F3211964	Sub Running Change 15-TR-32
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA	89981-78040	899837804000	985ADA3D	Main
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA		899857801000	F3211964	Sub
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA	89981-78041	899837804100	DB9BD493	Main Running Change 15-TR-32
2015	TOYOTA	NX 300h	2.5	A/T	FTYXT02.5PCM	$07EA		899857801000	F3211964	Sub Running Change 15-TR-32

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	HIGHLANDER	2.7	A/T	FTYXT02.7BEN	$07E8	89661-0E580	30E20000	97BD31F4	
2015	TOYOTA	HIGHLANDER	2.7	A/T	FTYXT02.7BEN	$07E8		50E01000	2CE20152	
2015	TOYOTA	HIGHLANDER	2.7	A/T	FTYXT02.7BEN	$07E8	89661-0E581	30E20100	1EBF8D1A	Running Change 15-TR-29
2015	TOYOTA	HIGHLANDER	2.7	A/T	FTYXT02.7BEN	$07E8		50E01000	2CE20152	Running Change 15-TR-29

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	VENZA	2.7	A/T	FTYXT02.7BEP	$07E8	89661-0T170	30T19000	689D1811	Main
2015	TOYOTA	VENZA	2.7	A/T	FTYXT02.7BEP	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	VENZA	2.7	A/T	FTYXT02.7BEP	$07E8	89661-0T180	30T20000	57BF77DD	Main
2015	TOYOTA	VENZA	2.7	A/T	FTYXT02.7BEP	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	VENZA	2.7	A/T	FTYXT02.7BEP	$07E9	89530-0T110	895360T06000	3C637E91	

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-48R00	348Q0000	40BFB111	Main
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-48R01	348Q0100	9880497F	Main Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E690	348Q0000	40BFB111	Main
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E691	348Q0100	9880497F	Main Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-48R10	348Q1000	E26085D0	Main
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-48R11	348Q1100	07F5A3A5	Main Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E700	348Q1000	E26085D0	Main
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E701	348Q1100	07F5A3A5	Main Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E710	30E32000	75DE2E42	Main
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E711	30E32100	C07035D1	Main Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E9	89530-48310	895364820100	F6C99628	
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E9	89530-0E090	895364820100	F6C99628	
2015	TOYOTA	RX 350	3.5	A/T	FTYXT03.5BER	$07E9	89535-48012	895364829200	AD7AEB06	

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	VENZA	3.5	A/T	FTYXT03.5BER	$07E8	89661-0T210	30T23000	8FEB5B36	Main
2015	TOYOTA	VENZA	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	VENZA	3.5	A/T	FTYXT03.5BER	$07E8	89661-0T220	30T24000	2D195CC4	Main
2015	TOYOTA	VENZA	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	VENZA	3.5	A/T	FTYXT03.5BER	$07E9	89530-0T101	895360T05100	0C53C7F2	
2015	TOYOTA	SIENNA	3.5	A/T	FTYXT03.5BER	$07E8	89661-08410	30833000	9B5346F7	Main
2015	TOYOTA	SIENNA	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	SIENNA	3.5	A/T	FTYXT03.5BER	$07E8	89661-08420	30834000	798D967A	Main
2015	TOYOTA	SIENNA	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	SIENNA	3.5	A/T	FTYXT03.5BER	$07E9	89530-08090	895360804100	04C81E8A	
2015	TOYOTA	SIENNA	3.5	A/T	FTYXT03.5BER	$07E9	89530-08100	895360805100	38382371	
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E521	30E14100	F344F608	Main
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E522	30E14200	80AD2CC6	Main Running Change 15-TR-29
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E531	30E15100	C8A1F64C	Main
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8	89661-0E532	30E15200	344500A2	Main Running Change 15-TR-29
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-29
2015	TOYOTA	HIGHLANDER	3.5	A/T	FTYXT03.5BER	$07E9	89530-0E070	895360E02000	964D311B	

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07E8	89661-48Q70	348Q7000	2ACFF2CF	Main
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07E8	89661-48Q71	348Q7100	3CC025F4	Main Running Change 15-TR-12
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07E8		A4701000	611F6EF2	Sub Running Change 15-TR-12
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07EA	89681-48310	896B34831000	7B095577	Main
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07EA		896B54802000	5DCC97B1	Sub
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07EA	89681-48320	896B34832000	7F80036C	Main
2015	TOYOTA	RX 450h	3.5	A/T	FTYXT03.5CC4	$07EA		896B54802000	5DCC97B1	Sub

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	TACOMA	2.7	M/T	FTYXT02.7BER	$07E8	89661-04J30	30487000	ECD2390D	Main
2015	TOYOTA	TACOMA	2.7	M/T	FTYXT02.7BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	TACOMA	2.7	M/T	FTYXT02.7BER	$07E8	89661-04J40	30488000	5A4D21EE	Main
2015	TOYOTA	TACOMA	2.7	M/T	FTYXT02.7BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	TACOMA	2.7	A/T	FTYXT02.7BER	$07E8	89661-04J50	30489000	D540E4B8	Main
2015	TOYOTA	TACOMA	2.7	A/T	FTYXT02.7BER	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	TACOMA	2.7	A/T	FTYXT02.7BER	$07E8	89661-04J60	304A0000	6C63524C	Main
2015	TOYOTA	TACOMA	2.7	A/T	FTYXT02.7BER	$07E8		A0C01000	2C411C65	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	TACOMA	4.0	A/T	FTYXT04.0BEM	$07E8	89661-04J80	304A3000	F4B78CC7	Main
2015	TOYOTA	TACOMA	4.0	A/T	FTYXT04.0BEM	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8	89661-04J90	304A4000	E04968C0	Main
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8	89661-04K00	304A5000	BE548EDF	Main
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8		A0C01000	2C411C65	Sub
2015	TOYOTA	TACOMA	4.0	A/T	FTYXT04.0BEM	$07E8	89661-04J81	304A3100	37FBBE81	Main Running Change 15-TR-27
2015	TOYOTA	TACOMA	4.0	A/T	FTYXT04.0BEM	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-27
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8	89661-04J91	304A4100	1EC31A43	Main Running Change 15-TR-27
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-27
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8	89661-04K01	304A5100	F7928A44	Main Running Change 15-TR-27
2015	TOYOTA	TACOMA	4.0	M/T	FTYXT04.0BEM	$07E8		A0C01000	2C411C65	Sub Running Change 15-TR-27

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8	89661-35M60	335E3000	DA22F467	Main
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8		53523000	24F1E97F	Sub
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8	89661-35M70	335E4000	2C265307	Main
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8		53524000	D71DC141	Sub
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8	89661-35M61	335E3100	B5C4DE3D	Main Running Change 15-TR-27
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8		53523000	24F1E97F	Sub Running Change 15-TR-27
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8	89661-35M71	335E4100	176884A8	Main Running Change 15-TR-27
2015	TOYOTA	4RUNNER	4.0	A/T	FTYXT04.0BES	$07E8		53524000	D71DC141	Sub Running Change 15-TR-27

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	HIGHLANDER HYBRID	3.5	A/T	FTYXT03.5CCU	$07E8	89661-0E500	30E26000	21A2D845	Main
2015	TOYOTA	HIGHLANDER HYBRID	3.5	A/T	FTYXT03.5CCU	$07E8		A4701000	611F6EF2	Sub
2015	TOYOTA	HIGHLANDER HYBRID	3.5	A/T	FTYXT03.5CCU	$07E8	89661-0E501	30E26100	69771A9A	Main Running Change 15-TR-12
2015	TOYOTA	HIGHLANDER HYBRID	3.5	A/T	FTYXT03.5CCU	$07E8		A4701000	611F6EF2	Sub Running Change 15-TR-12
2015	TOYOTA	HIGHLANDER HYBRID	3.5	A/T	FTYXT03.5CCU	$07EA	89681-0E041	896B30E01100	16A6581C	Main
2015	TOYOTA	HIGHLANDER HYBRID	3.5	A/T	FTYXT03.5CCU	$07EA		896B50E01000	7AF8BC64	Sub

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1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8	89661-0CN61	30CL5100	786D383B	Main
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		30CL5101	786D383B	Main
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85000	88D6ADFF	Sub
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85001	88D6ADFF	Sub
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8	89661-0CM11	30CM1100	07433E03	Main
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		30CM1101	07433E03	Main
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85000	88D6ADFF	Sub
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85001	88D6ADFF	Sub
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8	89661-0CN62	30CL5200	F26AE459	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		30CL5201	F26AE459	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85000	88D6ADFF	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85001	88D6ADFF	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8	89661-0CM12	30CM1200	8C769C7D	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		30CM1201	8C769C7D	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85000	88D6ADFF	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	4.6	A/T	FTYXT04.6BEW	$07E8		50C85001	88D6ADFF	Sub Field Fix 15-TF-01

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	GX 460	4.6	A/T	FTYXT04.6BEX	$07E8	89661-60W11	360Q9100	1147B9CE	Main
2015	TOYOTA	GX 460	4.6	A/T	FTYXT04.6BEX	$07E8		56084000	06EB18C6	Sub
2015	TOYOTA	GX 460	4.6	A/T	FTYXT04.6BEX	$07E8	89661-60W12	360Q9200	9826D18C	Main Field Fix 15-TF-01
2015	TOYOTA	GX 460	4.6	A/T	FTYXT04.6BEX	$07E8		56084000	06EB18C6	Sub Field Fix 15-TF-01

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	LAND CRUISER WAGON, LX 570	5.7	A/T	FTYXT05.7BEY	$07E8	89661-60U50	360P3000	BB41636C	Main
2015	TOYOTA	LAND CRUISER WAGON, LX 570	5.7	A/T	FTYXT05.7BEY	$07E8		56079000	CA06C8EA	Sub
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8	89661-0CL21	30CG3100	6D53A9BC	Main
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		30CG3101	6D53A9BC	Main
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C87100	3C528E61	Sub
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C87101	3C528E61	Sub
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8	89661-0CN81	30CJ4100	6688DF2C	Main
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		30CJ4101	6688DF2C	Main
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C88100	20DED88C	Sub
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C88101	20DED88C	Sub
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8	89661-0CL22	30CG3200	2CD649EB	Main Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		30CG3201	2CD649EB	Main Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C87100	3C528E61	Sub Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C87101	3C528E61	Sub Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8	89661-0CN82	30CJ4200	1D484846	Main Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		30CJ4201	1D484846	Main Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C88100	20DED88C	Sub Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C88101	20DED88C	Sub Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8	89661-0CL23	30CG3300	4027A3D1	Main Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		30CG3301	4027A3D1	Main Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C87100	3C528E61	Sub Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C87101	3C528E61	Sub Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8	89661-0CN83	30CJ4300	1A8D15E4	Main Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		30CJ4301	1A8D15E4	Main Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C88100	20DED88C	Sub Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7BEY	$07E8		50C88101	20DED88C	Sub Field Fix 15-TF-01

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP01	30CL0100	0885282F	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CL0101	0885282F	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C80100	421B0A29	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C80101	421B0A29	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP11	30CL1100	B060C90F	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CL1101	B060C90F	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81100	5FA56D64	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81101	5FA56D64	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP80	30CM2000	67D8E0E6	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CM2001	67D8E0E6	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81100	5FA56D64	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81101	5FA56D64	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP02	30CL0200	4E094A4B	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CL0201	4E094A4B	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C80100	421B0A29	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C80101	421B0A29	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP12	30CL1200	BFEB74AB	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CL1201	BFEB74AB	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81100	5FA56D64	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81101	5FA56D64	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP81	30CM2100	A9899E04	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CM2101	A9899E04	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81100	5FA56D64	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81101	5FA56D64	Sub Running Change 15-TR-08

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP03	30CL0300	E1379A2A	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CL0301	E1379A2A	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C80100	421B0A29	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C80101	421B0A29	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP13	30CL1300	02C34204	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CL1301	02C34204	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81100	5FA56D64	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81101	5FA56D64	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8	89661-0CP82	30CM2200	1CDAF8B8	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		30CM2201	1CDAF8B8	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81100	5FA56D64	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7BEW	$07E8		50C81101	5FA56D64	Sub Field Fix 15-TF-01

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP31	30CL3100	F241BF51	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C83100	ACBA57ED	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP41	30CL4100	E32D8CA4	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP90	30CM3000	CF6C75AF	Main
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP32	30CL3200	715A1D28	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C83100	ACBA57ED	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP42	30CL4200	3A5ED718	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP91	30CM3100	5FE0BBB1	Main Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub Running Change 15-TR-08
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP33	30CL3300	F5DA35E0	Main Running Change 15-TR-11
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C83100	ACBA57ED	Sub Running Change 15-TR-11
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP43	30CL4300	5752F519	Main Running Change 15-TR-11
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub Running Change 15-TR-11
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP92	30CM3200	F4740C44	Main Running Change 15-TR-11
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub Running Change 15-TR-11
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP34	30CL3400	5BB25C07	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C83100	ACBA57ED	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP44	30CL4400	E9F6AEEC	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP93	30CM3300	50CCC860	Main Field Fix 15-TF-01
2015	TOYOTA	TUNDRA	5.7	A/T	FTYXT05.7XE8	$07E8		50C84100	8C274639	Sub Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP71	30CM0100	F551DFDF	Main
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8		50CA2100	77226DFE	Sub

1.02.00 Engine Control Module (ECM), Calibration ID (CID) and Calibration Verification Number (CVN)

Model Year	Manufacturer	Model	Engine Size	Transmission	Test Group	Module ID	ECM	CAL ID	CVN	Note
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP72	30CM0200	667D71F4	Main Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8		50CA2100	77226DFE	Sub Running Change 15-TR-08
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP73	30CM0300	5AF8CABC	Main Running Change 15-TR-11
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8		50CA2100	77226DFE	Sub Running Change 15-TR-11
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8	89661-0CP74	30CM0400	0800F817	Main Field Fix 15-TF-01
2015	TOYOTA	SEQUOIA	5.7	A/T	FTYXT05.7XE8	$07E8		50CA2100	77226DFE	Sub Field Fix 15-TF-01

1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0085P12 (YARIS, iQ)

Part	Part number	Applicability	Note
Charcoal canister	77740-74010		
	77740-52110		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-TC001		
	90910-12282		
Carbon filter	17812-21010		
	17812-47010		

Evap./Refueling family: FTYXR0095P12 (PRIUS c)

Part	Part number	Applicability	Note
Charcoal canister	77740-52120		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-21040		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0110P42 (PRIUS)

Part	Part number	Applicability	Note
Charcoal canister	77740-47060		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-37030		

Evap./Refueling family: FTYXR0115J42 (PRIUS Plug-in Hybrid)

Part	Part number	Applicability	Note
Charcoal canister	77740-47100		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-37030		

Evap./Refueling family: FTYXR0105P12 (PRIUS v, CT 200h)

Part	Part number	Applicability	Note
Charcoal canister	77740-47080		
	77740-76010		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-37030		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0115P12 (tC, COROLLA, COROLLA LE ECO, xB)

Part	Part number	Applicability	Note
Charcoal canister	77740-21020		
	77740-02220		
	77740-12720		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-12283		
Carbon filter	17812-36010		
	17812-0T011		
	17812-31050		

Evap./Refueling family: FTYXR0115A12 (AVALON, ES 350, CAMRY)

Part	Part number	Applicability	Note
Charcoal canister	77740-33210		
	77740-06180		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-TC001		
Carbon filter	17812-31110		
	17812-0V020		
	17812-0P040		

Evap./Refueling family: FTYXR0120A42 (CAMRY)

Part	Part number	Applicability	Note
Charcoal canister	77740-06220		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-TC001		
Carbon filter	17812-0V020		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0165A12 (IS 250 C, IS 350 C)

Part	Part number	Applicability	Note
Charcoal canister	77740-30360		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
Carbon filter	17812-50030		

Evap./Refueling family: FTYXR0165P12 (IS 250, IS 250 AWD, IS 350, IS 350 AWD, GS 350, GS 350 AWD, RC 350, RC 350 AWD, RC F)

Part	Part number	Applicability	Note
Charcoal canister	77740-30350		
	77740-24100		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
Carbon filter	17812-31100		
	17812-38050		

Evap./Refueling family: FTYXR0155P12 (GS 450h)

Part	Part number	Applicability	Note
Charcoal canister	77740-30370		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-31100		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0130A42 (ES 300h, AVALON HYBRID, CAMRY HYBRID LE, XLE/SE)

Part	Part number	Applicability	Note
Charcoal canister	77740-33200		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-28050		
	17812-0V030		

Evap./Refueling family: FTYXR0160E52 (RX 450h)

Part	Part number	Applicability	Note
Charcoal canister	77740-48140		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
Carbon filter	17812-31080		

Evap./Refueling family: FTYXR0190E62 (HIGHLANDER HYBRID)

Part	Part number	Applicability	Note
Charcoal canister	77740-0E050		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
Carbon filter	17812-0P050		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0190A12 (LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD)

Part	Part number	Applicability	Note
Charcoal canister	77740-50133		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
Carbon filter	17812-38010		

Evap./Refueling family: FTYXR0190E12 (LS 600h L)

Part	Part number	Applicability	Note
Charcoal canister	77740-50143		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
Carbon filter	17812-38010		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0130A22 (RAV4, RAV4 AWD, RAV4 Limited AWD, NX 300h, NX 300h AWD)

Part	Part number	Applicability	Note
Charcoal canister	77740-0R020		
	77740-42110		Running Change 15-TR-22
	77740-78010		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-12279		
	90910-TC001		
Carbon filter	17812-28050		
	17812-0V030		
	17812-37030		

Evap./Refueling family: FTYXR0132A22 (NX 200t, NX 200t AWD)

Part	Part number	Applicability	Note
Charcoal canister	77730-78010		
	77740-78020		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12283		
Carbon filter	17812-31110		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0165A22 (VENZA)

Part	Part number	Applicability	Note
Charcoal canister	77740-0T020		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-TC001		
Carbon filter	17812-AD011		
	17812-0H021		
	17812-28040		

Evap./Refueling family: FTYXR0165P22 (RX 350, HIGHLANDER, SIENNA, Tacoma)

Part	Part number	Applicability	Note
Charcoal canister	77740-48160		
	77740-0E030		
	77740-08070		
	77740-04030		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-TC001		
	90910-12262		
Carbon filter	17812-0P031		
	17812-31070		
	17812-0P040		
	17812-31030		
	17812-0P021		
	17812-0F011		

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1.03.00 Evap./refueling emission related parts

Evap./Refueling family: FTYXR0190P32 (4Runner, Tundra, Sequoia, GX 460, Land Cruiser Wagon 4WD, LX 570)

Part	Part number	Applicability	Note
Charcoal canister	77740-0C090		
	77740-0C100		
	77740-35520		
	77740-60520		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12276		
	90910-TC001		
Carbon filter	17812-31060		
	17812-38031 (17812-0S011)		
	17812-0S020		

Evap./Refueling family: FTYXR0300P32 (Tundra, Tundra FFV)

Part	Part number	Applicability	Note
Charcoal canister	77740-0C090		
Pulse width modulated vacuum Switching valve (Purge VSV)	90910-12279		
Carbon filter	17812-0S020		

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2.00.00	**Calibration information**

2.00.00 Calibration information

Please refer to the CBI common file.

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3.00.00	**Description of Vehicles Covered by Certificate and Test Parameters**

3.00.00 Description of Vehicles Covered by Certificate and Test Parameters

Please refer to Part 1 applications.

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4.00.00	**Final US Sale**
01.00	**Final US Sales**
02.00	**Federal Phase-in Compliance**
03.00	**California Phase-in Compliance**

4.00.00 Final US Sales

4.01.00 Final US Sales

Test Group	Evap. Family	1) 50 states sales	2) Federal states sales(*1)	3) California sales	4) Section 177 states sales (*2)
FTYXV01.3BEA	FTYXR0085P12	409	175	136	98
FTYXV01.5BEB	FTYXR0085P12	27,083	22,119	2,896	2,068
FTYXV01.5CC4	FTYXR0095P12	35,989	15,279	13,615	7,095
FTYXV01.8HC3	FTYXR0110P42	144,142	59,409	60,007	24,726
FTYXV01.8CCU	FTYXR0105P12	39,030	15,939	15,295	7,796
FTYXV01.8HCU	FTYXR0115J42	5,835	44	5,043	748
FTYXV01.8BEC	FTYXR0115P12	357,388	236,561	59,293	61,534
FTYXV01.8MEA	FTYXR0115P12	10,792	6,086	1,659	3,047
FTYXV02.4BEB	FTYXR0115P12	14,154	7,999	4,019	2,136
FTYXV02.5BED	FTYXR0115A12	109,135	73,298	11,266	24,571
	FTYXR0120A42	0	0	0	0
FTYXV02.5BEB	FTYXR0115P12	20,656	11,321	5,039	4,296
FTYXV02.5HC3	FTYXR0130A42	31,422	16,147	6,506	8,769
FTYXV02.5CC4	FTYXR0130A42	22,734	11,883	6,265	4,586
FTYXV03.5BEC	FTYXR0115A12	110,326	71,086	14,683	24,557
FTYXV02.5BEC	FTYXR0165A12	1,691	1,175	293	223
	FTYXR0165P12	44,298	23,625	13,208	7,465
FTYXV03.5BEB	FTYXR0165A12	651	480	98	73
	FTYXR0165P12	40,306	21,411	8,904	9,991
FTYXV03.5BED	FTYXR0165P12	9,463	5,703	3,720	40
FTYXV03.5CC4	FTYXR0155P12	98	39	46	13
FTYXV04.6BEA	FTYXR0190A12	6,646	4,274	955	1,417
FTYXV05.0MEA	FTYXR0165P12	3,031	1,739	791	501
FTYXV05.0CC4	FTYXR0190E12	46	14	21	11

*1: Federal sales = 1) - 3) - 4)

*2: Please refer to the next page for individual state sales.

4.01.00 Final US Sales

Test Group	Evap. Family	1) 50 states sales	2) Federal states sales(*1)	3) California sales	4) Section 177 states sales (*2)
FTYXJ02.5BEL	FTYXR0115A12	210,761	145,369	33,831	31,561
	FTYXR0120A42	0	0	0	0
	FTYXR0130A22	357,658	207,251	37,170	113,237
FTYXT02.0KEM	FTYXR0132A22	38,683	22,191	6,360	10,132
FTYXT02.5PCM	FTYXR0130A22	2,975	1,335	1,063	577
FTYXT02.7BEN	FTYXR0165P22	6,904	5,338	1,126	440
FTYXT02.7BEP	FTYXR0165A22	14,232	6,520	1,748	5,964
FTYXT03.5BER	FTYXR0165A22	12,498	6,942	1,514	4,042
	FTYXR0165P22	514,344	302,646	74,434	137,264
FTYXT03.5CC4	FTYXR0160E52	13,411	6,352	3,846	3,213
FTYXT02.7BER	FTYXR0165P22	43,889	26,945	8,607	8,337
FTYXT04.0BEM	FTYXR0165P22	143,215	90,010	23,445	29,760
FTYXT03.5CCU	FTYXR0190E62	5,186	2,428	1,141	1,617
FTYXT04.0BES	FTYXR0190P32	91,686	70,193	7,108	14,385
FTYXT04.6BEW	FTYXR0190P32	16,784	11,768	2,612	2,404
FTYXT04.6BEX	FTYXR0190P32	24,595	16,885	2,534	5,176
FTYXT05.7BEY	FTYXR0190P32	12,795	7,661	1,969	3,165
FTYXT05.7BEW	FTYXR0190P32	45,764	20,402	11,009	14,353
	FTYXR0300P32	0	0	0	0
FTYXT05.7XE8	FTYXR0190P32	42,883	42,883	-	-
	FTYXR0300P32	0	0	-	-

*1: Federal sales = 1) - 3) - 4)

*2: Please refer to the next page for individual state sales.

4.01.00 Final US Sales

Test Group	Evap. Family	CT	DE	MA	MD	ME	NJ	NY	OR	PA	RI	VT	WA	D. C.
FTYXV01.3BEA	FTYXR0085P12	2	0	11	4	0	3	23	18	7	1	0	29	0
FTYXV01.5BEB	FTYXR0085P12	153	34	305	242	62	214	298	115	381	67	38	159	0
FTYXV01.5CC4	FTYXR0095P12	242	89	860	667	187	516	1,082	940	767	152	177	1,416	0
FTYXV01.8HC3	FTYXR0110P42	893	328	2,649	2,244	557	2,138	4,666	3,104	2,648	276	433	4,790	0
FTYXV01.8CCU	FTYXR0105P12	269	96	739	834	128	1,108	1,521	813	739	108	66	1,375	0
FTYXV01.8HCU	FTYXR0115J42	25	0	8	4	9	25	598	53	0	1	0	25	0
FTYXV01.8BEC	FTYXR0115P12	2,439	689	9,772	7,882	1,091	8,575	11,966	2,769	9,323	1,250	989	4,789	0
FTYXV01.8MEA	FTYXR0115P12	52	78	285	580	38	232	323	310	623	41	42	443	0
FTYXV02.4BEB	FTYXR0115P12	58	33	213	305	17	189	264	403	272	30	14	338	0
FTYXV02.5BED	FTYXR0115A12	958	186	3,964	2,357	392	4,311	5,775	1,097	3,342	437	211	1,541	0
	FTYXR0120A42	0	0	0	0	0	0	0	0	0	0	0	0	0
FTYXV02.5BEB	FTYXR0115P12	163	67	503	509	64	485	575	457	831	71	32	539	0
FTYXV02.5HC3	FTYXR0130A42	227	62	1,038	774	77	1,862	2,315	549	771	63	50	981	0
FTYXV02.5CC4	FTYXR0130A42	213	75	534	578	52	796	856	322	519	54	21	566	0
FTYXV03.5BEC	FTYXR0115A12	1,133	372	2,573	2,853	145	6,099	6,086	735	2,978	324	66	1,193	0
FTYXV02.5BEC	FTYXR0165A12	9	9	26	23	0	49	48	13	19	1	0	26	0
	FTYXR0165P12	492	68	595	411	16	2,169	2,138	225	641	71	0	639	0
FTYXV03.5BEB	FTYXR0165A12	1	4	13	5	0	16	15	2	6	0	0	11	0
	FTYXR0165P12	676	98	826	640	12	2,915	2,945	250	926	65	0	638	0
FTYXV03.5BED	FTYXR0165P12	1	0	0	6	0	5	2	10	0	0	0	16	0
FTYXV03.5CC4	FTYXR0155P12	0	0	0	6	0	2	1	1	1	0	0	2	0
FTYXV04.6BEA	FTYXR0190A12	95	8	154	135	4	387	380	22	151	16	0	65	0
FTYXV05.0MEA	FTYXR0165P12	26	6	36	61	2	125	117	20	57	3	0	48	0
FTYXV05.0CC4	FTYXR0190E12	0	1	0	1	0	5	3	1	0	0	0	0	0

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4.01.00 Final US Sales

Test Group	Evap. Family	CT	DE	MA	MD	ME	NJ	NY	OR	PA	RI	VT	WA	D. C.
FTYXJ02.5BEL	FTYXR0115A12	1,338	387	3,392	3,780	345	6,713	6,998	1,502	4,330	487	187	2,102	0
	FTYXR0120A42	0	0	0	0	0	0	0	0	0	0	0	0	0
	FTYXR0130A22	5,122	1,051	18,448	9,424	2,367	14,040	28,441	4,498	18,304	1,886	2,084	7,572	0
FTYXT02.0KEM	FTYXR0132A22	638	146	1,058	797	43	2,571	2,683	290	1,154	103	0	649	0
FTYXT02.5PCM	FTYXR0130A22	31	8	66	65	6	80	104	51	59	5	0	102	0
FTYXT02.7BEN	FTYXR0165P22	2	3	5	168	0	118	91	7	35	6	4	1	0
FTYXT02.7BEP	FTYXR0165A22	287	38	1,919	173	179	839	1,428	77	299	318	278	129	0
FTYXT03.5BER	FTYXR0165A22	168	75	657	480	70	492	704	184	797	74	51	290	0
	FTYXR0165P22	7,275	1,514	16,062	13,164	1,400	27,571	35,470	5,394	17,174	1,407	1,082	9,751	0
FTYXT03.5CC4	FTYXR0160E52	206	62	414	306	12	533	694	222	304	32	0	428	0
FTYXT02.7BER	FTYXR0165P22	307	135	1,214	867	376	1,066	977	799	1,089	195	380	932	0
FTYXT04.0BEM	FTYXR0165P22	1,267	367	4,270	2,399	1,061	2,378	4,107	3,348	5,011	510	1,104	3,938	0
FTYXT03.5CCU	FTYXR0190E62	84	11	184	136	22	154	332	204	130	12	24	324	0
FTYXT04.0BES	FTYXR0190P32	457	232	1,507	1,683	279	1,380	2,665	1,396	2,568	184	227	1,807	0
FTYXT04.6BEW	FTYXR0190P32	61	17	344	164	166	189	529	280	232	17	122	283	0
FTYXT04.6BEX	FTYXR0190P32	258	71	535	494	20	1,288	1,323	198	472	33	0	484	0
FTYXT05.7BEY	FTYXR0190P32	205	31	372	416	34	491	605	242	376	37	20	336	0
FTYXT05.7BEW	FTYXR0190P32	422	170	1,683	1,362	677	1,069	2,288	1,461	2,492	180	544	2,005	0
	FTYXR0300P32	0	0	0	0	0	0	0	0	0	0	0	0	0
FTYXT05.7XE8	FTYXR0190P32	-	-	-	-	-	-	-	-	-	-	-	-	-
	FTYXR0300P32	-	-	-	-	-	-	-	-	-	-	-	-	-

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4.02.00 Federal Phase-in Compliance

Please refer to the CBI common file.

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4.03.00 California Phase-in Compliance

Please refer to the CBI common file.

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Table of contents

Section No.	Title
5.00.00	**Service Manuals, Service Bulletins**

5.00.00 Service Manuals, Service Bulletins

Toyota will submit service manuals and service bulletins with the separate cover letter, when they are made available.

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Table of contents

Section No.	Title
6.00.00	**California requirements**
.01.00	Warranty information
.02.00	High priced warranty parts
.03.00	Test ratios
.04.00	Emission control system continuity at low temperature

CALIFORNIA EMISSION CONTROL WARRANTY (for Toyota)

Your Warranty Rights and Obligations

The California Air Resources Board (CARB) and Toyota are pleased to explain the emission control system warranty for your 2015 vehicle. In California, new motor vehicles must be designed, built and equipped to meet the state's stringent anti-smog standards. CARB regulations require that Toyota must warrant the emission control system on your vehicle for the time periods indicated on this page, provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as the fuel injection system, ignition system, catalytic converter and engine computer. Also included may be hoses, belts, connectors and other emissions-related assemblies.

Where a warrantable condition exists, Toyota will repair your vehicle at no cost to you, including diagnosis, parts and labor.

Manufacturer's Warranty Coverage (except for PRIUS, PRIUS Plug-in Hybrid, CAMRY HYBRID LE, CAMRY HYBRID XLE/SE)

1) For three years or 50,000 miles, whichever occurs first:

   - If your vehicle fails a smog-check test, all necessary repairs and adjustments will be made by Toyota to ensure that your vehicle passes the test. This is your Emission Control System PERFORMANCE WARRANTY.
   - If any emissions-related part on your vehicle is defective, the part will be repaired or replaced by Toyota. This is your SHORT-TERM Emission Control System DEFECT WARRANTY. Covered parts are listed on pages xx-xx. Specific components may have longer coverage under the terms of the Powertrain Warranty.

2) For seven years or 70,000 miles, whichever occurs first:

   - If an emissions-related part listed on page xx-xx is defective, the part will be repaired or replaced by Toyota. This is your LONG-TERM Emission Control System DEFECT WARRANTY.

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Manufacturer's Warranty Coverage Selected states*1(for PRIUS, PRIUS Plug-in Hybrid, CAMRY HYBRID LE, CAMRY HYBRID XLE/SE)

For 15 years or 150,000 miles, whichever occurs first:*2

- If your vehicle fails a smog-check test, all necessary repairs and adjustments will be made by Toyota to ensure that your vehicle passes the test. This is your Emission Control System PERFORMANCE WARRANTY.
- Subject to the specific terms pertaining to maintenance described on the following pages, if any emission-related part on your vehicle is defective, the part will be repaired or replaced by Toyota. This is your emission control system DEFECT WARRANTY.

*1 Applies to California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island and Vermont vehicles equipped with a California Certified Emission Control System.

*2 Warranty coverage for the hybrid battery is 10 years or 150,000 miles, whichever occurs first.

Manufacturer's Warranty Coverage (for Delaware, Pennsylvania and Washington Vehicle only*)

1). For 3 years or 50,000 miles, whichever occurs first:

- If your vehicle fails a smog-check test, all necessary repairs and adjustments will be made by Toyota to ensure that your vehicle passes the test. This is your Emission Control System PERFORMANCE WARRANTY.
- If an emissions-related part listed on page xx-xx is defective, the part will be repaired or replaced by Toyota. This is your SHORT-TERM Emission Control System DEFECT WARRANTY. Specific components may have longer coverage under the terms of the Powertrain Warranty.

2). For 7 years or 70,000 miles, whichever occurs first:

- If an emission-related part listed on page xx is defective, the part will be repaired or replaced by Toyota. This is your LONG-TERM Emission Control System DEFECT WARRANTY.

* Applies to Delaware, Pennsylvania and Washington vehicles equipped with a California Certified Emission Control Warranty.

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Owner's Warranty Responsibilities

You are responsible for performance of the required maintenance indicated in the *Owner's Manual* and the *Scheduled Maintenance Guide*. Toyota recommends that you retain all receipts covering maintenance on your vehicle, but Toyota cannot deny warranty coverage solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your vehicle to a Toyota dealership as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

You should also be aware that Toyota may deny you warranty coverage if your vehicle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact Toyota Customer Experience Center at (800)331-4331 or the California Air Resources Board, Mobile Source Control Division, at 9528 Telstar Avenue, P.O. Box 8001, El Monte, CA 91734-8001.

What Is Not Covered

These warranty obligations do not apply to failures or noncompliance caused by:

- The use of replacement parts not certified in accordance with aftermarket parts certification regulations.
- The use of replacement parts not equivalent in quality or design to original equipment parts.

Provisions under the "What Is Not Covered" section of the New Vehicle Limited Warranty also apply to this warranty.

2015MY Toyota (except for Toyota Hybrid models)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System

- Air Pump on 4RUNNER 2WD/4WD, LAND CRUISER WAGON 4WD, SEQUOIA 2WD/4WD, TACOMA 2WD/4WD, TUNDRA 2WD/4WD
- CV Valve Lift Controller on COROLLA LE ECO equipped with 2ZR-FAE
- Emission Control Valve on SEQUOIA 2WD/4WD, TUNDRA 2WD/4WD equipped with 3UR-FE
- Engine Control Computer (Engine Control Module)
- Fuel Delivery Pipe on HIGHLANDER equipped with 2GR-FE, HIGHLANDER AWD
- Fuel Pump on 4RUNNER 2WD/4WD, HIGHLANDER, HIGHLANDER AWD, LAND CRUISER WAGON 4WD, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD, SEQUOIA 2WD/4WD, SIENNA, SIENNA AWD, TUNDRA 2WD/4WD, VENZA, VENZA 4WD
- Injector on HIGHLANDER equipped with 2GR-FE, HIGHLANDER AWD
- Throttle Body
- Transmission Control Computer (Transmission Control Module) on AVALON, CAMRY equipped with 2GR-FE, HIGHLANDER equipped with 2GR-FE, HIGHLANDER AWD, SIENNA, SIENNA AWD, VENZA, VENZA 4WD

Air Induction System

- Air Switching Valve on TACOMA 2WD/4WD
- Intake Manifold
- Intake Air Surge Tank on 4RUNNER 2WD/4WD, AVALON, CAMRY equipped 2GR-FE, HIGHLANDER equipped with 2GR-FE, HIGHLANDER AWD, SIENNA, SIENNA AWD, TACOMA 2WD/4WD equipped with 1GR-FE, VENZA equipped with 2GR-FE, VENZA 4WD equipped with 2GR-FE

Ignition System

- Crank Position Sensor on HIGHLANDER equipped with 1AR-FE
- Knock Sensor on 4RUNNER 2WD/4WD, HIGHLANDER, HIGHLANDER AWD, LANDCRUISER WAGON 4WD, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD, SEQUOIA 2WD/4WD, TACOMA 2WD/4WD equipped with 1GR-FE, TUNDRA 2WD/4WD, VENZA, VENZA 4WD

Catalyst System

- Catalytic Converter(Warm Up Three Way Catalyst)
- Exhaust Center Pipe on HIGHLANDER, HIGHLANDER AWD, SIENNA, SIENNA AWD, VENZA, VENZA 4WD
- Exhaust Front Pipe on 4RUNNER 2WD/4WD, AVALON, CAMRY, COROLLA, COROLLA LE ECO, HIGHLANDER equipped with 1AR-FE, LAND CRUISER WAGON 4WD, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD, SEQUOIA 2WD/4WD, TACOMA 2WD/4WD, TUNDRA 2WD/4WD, YARIS
- Exhaust Front Pipe No.2 on 4RUNNER 2WD/4WD, LAND CRUISER WAGON 4WD, SEQUOIA 2WD/4WD, TACOMA 2WD/4WD equipped with 1GR-FE, TUNDRA 2WD/4WD
- Exhaust Manifold on 4RUNNER 2WD/4WD, AVALON, CAMRY, HIGHLANDER equipped with 2GR-FE, HIGHLANDER AWD, LAND CRUISER WAGON 4WD, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD, SEQUOIA 2WD/4WD, SIENNA, SIENNA AWD, TACOMA 2WD/4WD equipped with 1GR-FE, TUNDRA 2WD/4WD, VENZA, VENZA 4WD
- Exhaust Manifold Gasket on SEQUOIA 2WD/4WD, TUNDRA 2WD/4WD

Evaporative Control System

- Charcoal Canister on AVALON, CAMRY, HIGHLANDER, HIGHLANDER AWD, LAND CRUISER WAGON 4WD, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD, SEQUOIA 2WD/4WD, SIENNA, SIENNA AWD, TACOMA 2WD/4WD, TUNDRA 2WD/4WD, VENZA, VENZA 4WD, YARIS
- Fuel Tank
- Fuel Tank Filler Pipe on SIENNA, SIENNA AWD

EGR System

- EGR Cooler on TUNDRA 2WD/4WD equipped with 1UR-FE

Other Parts Used in above System

- Transmission Solenoid on 4RUNNER 2WD/4WD, AVALON, CAMRY, COROLLA LE ECO equipped with 2ZR-FAE, HIGHLANDER, HIGHLANDER AWD, LAND CRUISER WAGON 4WD, RAV4, RAV4 LE/XLE, RAV4 AWD, RAV4 Limited AWD, SEQUOIA 2WD/4WD, SIENNA, SIENNA AWD, TUNDRA 2WD/4WD, VENZA, VENZA 4WD
- Wire Transmission (Including Temperature Sensor) on AVALON, CAMRY, HIGHLANDER, HIGHLANDER AWD, SIENNA, SIENNA AWD, VENZA, VENZA 4WD

2015MY Toyota (for PRIUS c)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold

EGR System
- EGR Cooler

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)

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2015MY Toyota (for PRIUS)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Fuel Pump
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold

Evaporative Control System
- Charcoal Canister
- Fuel Tank

EGR System
- EGR Valve

HV System
- Battery
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)

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2015MY Toyota (for PRIUS v)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold

EGR System
- EGR Pipe With Cooler
- EGR Valve

Evaporative Control System
- Fuel Tank

HV System
- Battery
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)

2015MY Toyota (for PRIUS Plug-in Hybrid)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold

EGR System
- EGR Valve

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- Electric Vehicle Charger
- HV Battery Junction Block (Including System Main Relay)
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Plug-in Charge Control Computer
- Transaxle (Including Motor and Generator)

2015MY Toyota (for CAMRY HYBRID LE and CAMRY HYBRID XLE/SE)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)

EGR System
- EGR Cooler

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)

2015MY Toyota (for AVALON HYBRID)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)

EGR System
- EGR Cooler

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)
- Water Pump with Motor

2015MY Toyota (for HIGHLANDER HYBRID AWD and HIGHLANDER HYBRID AWD LE Plus)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Air Fuel Ratio Sensor
- Engine Control Computer (Engine Control Module)
- Fuel Delivery Pipe
- Fuel Pump
- Throttle Body

Air Induction System
- Intake Manifold and Intake Air Surge Tank

Catalyst System
- Exhaust Center Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)

EGR System
- EGR Cooler

Evaporative Control System
- Fuel Tank
- Fuel Tank Solenoid Main Valve

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Battery Junction Block (Including System Main Relay)
- HV Battery Thermistor
- HV Control Computer(Power Management Control Computer)
- Inverter with Converter
- Rr Traction Motor With Transaxle
- Transaxle (Including Motor and Generator)

Ignition System
- Knock Sensor

Replacement Parts

To ensure optimum performance and maintain the quality built into your vehicle's emission control systems, Toyota recommends the use of Genuine Toyota Parts when servicing or repairing the systems.

Warranty coverage is not dependent upon the use of any particular brand of replacement parts and you may elect to use non-Genuine Toyota Parts for maintenance and repairs. However, use of replacement parts that are not equivalent in quality to Genuine Toyota Parts may impair the effectiveness of the emission control systems.

If you use replacement parts that have maintenance or replacement schedules different from those of Genuine Toyota Parts, you must follow the maintenance and replacement schedules for the parts you are using. In addition, you should ensure that such parts are warranted by their manufacturers to be equivalent to Genuine Toyota Parts.

If Your Vehicle Fails a Smog-Check Test

If your vehicle fails a smog-check test, you may make a claim under the Emission Performance Warranty. To do so, take your vehicle to an authorized Toyota dealership and present a copy of the smog-check test report. Also, take your maintenance records in case they are needed.

If your claim qualifies for coverage, the dealership will repair your vehicle within 30 days (unless a shorter period is required by law). If your claim is denied, Toyota will notify you in writing of the reason within the same period. If we fail to do so, we will repair your vehicle free of charge. The only exceptions allowed are when you request or agree to a delay, or when a delay is caused by factors beyond the control of Toyota or the dealership.

For information on how to obtain service under the Emission Defect Warranty, see page xx, "Obtaining Warranty Service."

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If You Have Questions (except for PRIUS, PRIUS Plug-in Hybrid, CAMRY HYBRID LE, CAMRY HYBRID XLE/SE)

If you have questions or concerns about your vehicle's California emission warranty coverage, please follow the steps described under "If You Need Assistance" on page xx-xx. You may also request information from or report complaints to:

California Air Resources Board, Mobile Source Control Division
9528 Telstar Avenue, P.O. Box 8001
El Monte, CA 91734-8001
(800)242-4450

- Vehicles equipped with a California Certified Emission Control System that are sold, registered and operated in California or any state that adopts California emission warranty provisions are covered by this warranty. Currently, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington are the only other states to which this warranty applies. Vehicles covered by this warranty are also covered by the Federal Emission Control Warranty (see page xx).

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Repair Delays

If a Toyota dealership is unable to complete repairs on your vehicle within 30 days, you may have the repairs made under Toyota's provisions for emergency warranty repairs. See page xx for details.

If You Have Questions (for PRIUS, PRIUS Plug-in Hybrid, CAMRY HYBRID LE, CAMRY HYBRID XLE/SE)

If you have questions or concerns about your vehicle's California emission warranty coverage, please follow the steps described under "If You Need Assistance" on page xx-xx. You may also request information from or report complaints to:

California Air Resources Board
Mobile Source Control Division
9528 Telstar Avenue
P.O. Box 8001
El Monte, CA 91734-8001
(800)242-4450

* Vehicles equipped with a California Certified Emission Control System that are registered and operated in California or any state that adopts California emission warranty provisions are covered by this warranty. Currently, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington are the other states to which this warranty applies. Vehicles covered by this warranty are also covered by the Federal Emission Control Warranty. (See page XX.)

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NEW VEHICLE LIMITED WARRANTY (for TOYOTA)

The 2015 version of this warranty statement will be the same as the 2014 version.

Attachments

The following pages include information that applies to all Toyota vehicle warranties (including the California Emission Control Warranty). With the exception of the "General Warranty Provisions," all of this information is referenced in the California Emission Control Warranty.

Note: The "Warranty Parts List" information from the Federal Emission Control Warranty applies to the Federal Emission Control Warranty and California Emission Control Warranty only. This information is included as an attachment because it is referenced in the California Emission Control Warranty.

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Who Is the Warrantor
The warrantor for these limited warranties is Toyota Motor Sales, U.S.A., Inc. ("Toyota"), 19001 South Western Avenue, Torrance, California 90509-2991, a California corporation.

Which Vehicles Are Covered
These warranties apply to all 2015 model-year Toyota vehicles distributed by Toyota that are originally sold by an authorized dealer in the United States and normally operated or touring in the United States, U.S. territories or Canada. Warranty coverage is automatically transferred at no cost to subsequent vehicle owners.

Multiple Warranty Conditions
This booklet contains warranty terms and conditions that may vary depending on the part covered. A warranty for specific parts or systems, such as the Powertrain Warranty or Emission Performance Warranty, is governed by the coverage set forth in that warranty as well as the General Warranty Provisions.

When Warranty Begins
The warranty period begins on the vehicle's in-service date, which is the first date the vehicle is either delivered to an ultimate purchaser, leased, or used as a company car or demonstrator.

Repairs Made at No Charge
Repairs and adjustments covered by these warranties are made at no charge for parts and labor.

Parts Replacement
Any needed parts replacement will be made using new or remanufactured parts. The decision whether a part should be repaired or replaced will be made by the servicing Toyota dealership and/or Toyota. Parts scheduled to be replaced as required maintenance are warranted until their first replacement only.

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Limitations
The performance of necessary repairs and adjustments is the exclusive remedy under these warranties or any implied warranties. Toyota does not authorize any person to create for it any other obligation or liability in connection with this vehicle.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of these written warranties. Some states do not allow restrictions on how long an implied warranty lasts, so this limitation may not apply to you.

Your Rights Under State Law
These warranties give you specific legal rights. You may also have other rights which vary from state to state.

What Is Not Covered

This warranty does not cover damage or failures resulting directly or indirectly from any of the following:

- Fire, accidents or theft
- Abuse or negligence
- Misuse – for example, racing or overloading
- Improper repairs
- Alteration or tampering, including installation of non-Genuine Toyota Accessories
- Lack of or improper maintenance, including use of fluids other than those specified in the *Owner's Manual*
- Installation of non-Genuine Toyota Parts
- Airborne chemicals, tree sap, road debris (including stone chips), rail dust, salt, hail, floods, wind storms, lightning and other environmental conditions
- Water contamination

This warranty also does not cover the following:

Tires
Tires are covered by a separate warranty provided by the tire manufacturer. See page ##.

Normal Wear and Tear
Noise, vibration, cosmetic conditions and other deterioration caused by normal wear and tear.

Maintenance Expense
Normal maintenance services such as engine tune-ups; replacement of fluids and filters; lubrication; cleaning and polishing; replacement of spark plugs and fuses; and replacement of worn wiper blades, brake pads/linings and clutch linings.

Vehicles With Altered Odometer
Failure of a vehicle on which the odometer has been altered so that actual vehicle mileage cannot be readily determined.

Salvage or Total-Loss Vehicles
Any vehicle that has ever been issued a "salvage" title or similar title under any state's law; or has ever been declared a "total loss" or equivalent by a financial institution or insurer, such as by payment for a claim in lieu of repairs because the cost of repairs exceeded the cash value of the vehicle. This exclusion does not apply to the emission control warranties.

Incidental Damages
Incidental or consequential damages associated with a vehicle failure. Such damages include but are not limited to inconvenience; the cost of transportation, telephone calls and lodging; the loss of personal or commercial property; and the loss of pay or revenue.

Disclaimer of Extra Expenses and Damages

The performance of necessary repairs and adjustments is the exclusive remedy under this warranty or any implied warranty. Toyota does not authorize any person to create for it any other obligation or liability in connection with this vehicle. Toyota shall not be liable for incidental or consequential damages resulting from breach of this written warranty or any implied warranty.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this written warranty, except in states where this limitation is not allowed.

Warranty Parts List (for Toyota Hybrid models)

Air/Fuel Metering System

- Air/fuel ratio feedback control system
- Electronic fuel injection system components
  - -- Airflow sensor
  - -- Engine control module **(8/80)**
  - -- Throttle body
  - -- Other components

Air Induction System

- Intake manifold and/or intake air surge tank

Catalyst System

- Catalytic converter and protector **(8/80)**
- Constricted fuel filler neck
- Exhaust manifold
- Exhaust pipe (manifold to catalyst and/or catalyst to catalyst)

Evaporative Control System

- Charcoal canister
- Diaphragm valve
- Fuel filler cap
- Fuel tank

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

Ignition System

- Distributor and internal parts
- Ignition coil and igniter
- Ignition wires
- Spark plugs+

Positive Crankcase Ventilation (PCV) System

- Oil filler cap
- PCV valve or orifice

Hybrid Vehicle (HV) System

- Battery Control Module (Battery Voltage Sensor) **(8/80)***
- Battery thermistor
- Generator
- HV Control Module (Power Management Control Module) **(8/80)***
- Hybrid battery*
- Inverter with converter*
- Motor
- System main relay and Battery current sensor
- Hybrid battery junction block

Other Parts Used in Above Systems

- Data link connector **(8/80)**
- Hoses, clamps, fittings, tubing and mounting hardware
- Malfunction indicator light and bulb **(8/80)**
- Pulleys, belts and idlers
- Sealing gaskets and devices
- Sensors, switches, solenoids and valves

8/80 = Covered for eight years or 80,000 miles whichever occurs first.

+ Warranted until first required maintenance under terms of the California Emission Control Warranty.

* These components are covered under the Hybrid System Warranty for eight years or 100,000 miles, whichever occurs first.

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Warranty Parts List (for Toyota Non-Hybrid models)

Air/Fuel Metering System

- Air/fuel ratio feedback control system
- Cold-start enrichment system
- Deceleration control system
- Electronic fuel injection system components
  - -- Airflow sensor
  - -- Engine control module **(8/80)**
  - -- Throttle body
  - -- Other components

Air Induction System

- Intake manifold and/or intake air surge tank

Catalyst System

- Catalytic converter and protector **(8/80)**
- Constricted fuel filler neck
- Exhaust manifold
- Exhaust pipe (manifold to catalyst and/or catalyst to catalyst)

Evaporative Control System

- Charcoal canister
- Diaphragm valve
- Fuel filler cap
- Fuel tank
- Vapor liquid separator

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

Exhaust Gas Recirculation (EGR) System

- EGR gas temperature sensor
- EGR valve
- Associated Parts

Ignition System

- Distributor and internal parts
- Ignition coil and igniter
- Ignition wires
- Spark plugs*

Positive Crankcase Ventilation (PCV) System

- Oil filler cap
- PCV valve or orifice

Other Parts Used in Above Systems

- Data link connector **(8/80)**
- Hoses, clamps, fittings, tubing and mounting hardware
- Malfunction indicator light and bulb **(8/80)**
- Pulleys, belts and idlers
- Sealing gaskets and devices
- Sensors, switches, solenoids and valves

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* Warranted until first required maintenance under terms of the California Emission Control Warranty.
8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

General Information

You are responsible for ensuring that your Toyota is operated and maintained according to the instructions in the Owner's Manual and the Scheduled Maintenance Guide.

You should keep detailed records of vehicle maintenance, since under some circumstances they may be required for warranty coverage. These records should include date of service, mileage at time of service and a description of service performed and/or parts installed. For your convenience, a maintenance log is included in the *Scheduled Maintenance Guide*. If you sell your vehicle, you should give your maintenance records to the new owner.

Toyota will not deny a warranty claim solely because you do not have records to show that you maintained your vehicle. However, damage or failures caused by lack of proper maintenance are not covered under warranty.

Where to Go for Maintenance

You may have maintenance performed on your vehicle by any qualified person or facility. However, Toyota recommends having maintenance performed by an authorized Toyota dealership.

Toyota dealership technicians are specially trained to maintain and repair Toyota vehicles. They stay current on the latest service information through Toyota technical bulletins, service publications and training courses. Many are also certified through the Toyota Certification Program, which involves a series of rigorous written examinations. Feel free to ask any Toyota dealership to show you its technicians' credentials.

You can be confident you're getting the best possible service for your vehicle when you take it to a Toyota dealership. Plus, a Toyota dealership will always use Genuine Toyota Parts designed specifically for your vehicle.

By Geographic Region

In the United States, U.S. Territories and Canada

To obtain warranty service in the United States, U.S. territories or Canada, take your vehicle to an authorized Toyota dealership. If your vehicle cannot be driven, contact your nearest Toyota dealership for towing assistance. You do not have to pay for towing to the nearest Toyota dealership if your vehicle is inoperable due to failure of a warranted part.

Outside the United States, U.S. Territories and Canada

If you are using your vehicle outside the United States, U.S. territories and Canada and need warranty service, contact a local Toyota dealership. Please note, however, that your vehicle may not be repaired free of charge because the local Toyota distributor may have no obligation to provide warranty service for your vehicle, and/or your vehicle may not comply with local regulatory or environmental requirements.

Emergency Repairs

If your vehicle is inoperable or unsafe to drive and there is no Toyota dealership reasonably available to make repairs, you may perform the repairs yourself or have them performed by another automotive service provider. Toyota will reimburse you for any of the repairs that are covered by warranty. To receive reimbursement, present to an authorized Toyota dealership your paid repair invoices and any parts that were removed from the vehicle. You will be reimbursed for warranted parts at the manufacturer's suggested retail price and warranted labor at a geographically appropriate hourly rate multiplied by Toyota's recommended time allowance for the repair.

If your vehicle requires emergency repair, Toyota assumes no liability for subsequent failures caused by improper repairs or the use of non-Genuine Toyota Parts unless you have the vehicle properly repaired in a timely manner. To ensure that warranty coverage remains intact, have your vehicle inspected by an authorized Toyota dealership as soon as possible after an emergency repair.

If You Need Assistance

Both Toyota and your Toyota dealer are dedicated to serving your automotive needs. Your complete satisfaction is our first priority. Should you have a problem or concern – either during or after the warranty period – please take the following steps to ensure the quickest possible response:

Step 1

Discuss the situation with a dealership manager, such as the service manager or customer relations manager. In most cases, a satisfactory solution can be reached at this step.

Step 2

If the dealership does not address your concern to your satisfaction, call the Toyota Customer Assistance Center at (800)331-4331. If you are hearing- or speech-impaired,
call (800)443-4999 (TDD).

Please have the following information ready when you call:

- Your Toyota's vehicle identification number (located on the driver's side corner of the dashboard, under the window)
- Current mileage on your vehicle
- Name of your Toyota dealership

A Toyota customer relations representative will assist you in working with the dealership to find a satisfactory solution.

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Step 3

If your concern has still not been resolved to your satisfaction, Toyota offers additional assistance through the Dispute Settlement Program, a dispute resolution program administered by the National Center for Dispute Settlement. The purpose of the Dispute Settlement Program is to resolve disputes through arbitration – a process by which two parties authorize an independent third party to hear and resolve a dispute. The program is informal and free of charge. To request that your case be reviewed through the program,
complete the customer claim form in the Owner's Warranty Rights Notification booklet (found in your glove box) and mail it to:

National Center for Dispute Settlement
P.O. Box 688
Mt.Clemens, MI 48046

If you would like to request a customer claim form, call the Toyota Customer Experience Center at (800) 331-4331. When you call, please have your vehicle identification number, the current mileage on your Toyota and the names of your selling and servicing dealerships.

California Residents: Toyota offers you assistance through an Arbitration program called the California Dispute Settlement Program (CDSP). A brochure about the program is found in your glove box. For additional information, call the Toyota Customer Experience Center at (800) 331-4331. You may also contact the CDSP directly at (888) 300-6237. Failure to use the CDSP may affect your rights and remedies under California's "Lemon Laws."

Important: You must use the Dispute Settlement Program (or in California, the CDSP)before seeking remedies through a court action pursuant to the Magnuson-Moss Warranty Act. You may also be required to use the Dispute Settlement Program or CDSP before seeking remedies under the "Lemon Laws" of your state. Please check the appropriate page of the *Owner's Warranty Rights Notification* booklet for the requirements applicable to your state.

This information about the Dispute Settlement Program is correct as of the date of printing. However, the program may be changed without notice. For the most current information about the Dispute Settlement Programs, call the Toyota Customer Experience Center at (800) 331-4331.

CALIFORNIA EMISSION CONTROL WARRANTY (for Lexus)

Your Warranty Rights and Obligations

The California Air Resources Board (CARB) and Lexus are pleased to explain the emission control system warranty for your 2015 vehicle. In California, new motor vehicles must be designed, built and equipped to meet the state's stringent anti-smog standards. CARB regulations require that Lexus must warrant the emission control system on your vehicle for the time periods indicated on this page, provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as the fuel injection system, ignition system, catalytic converter and engine computer. Also included may be hoses, belts, connectors and other emissions-related assemblies.

Where a warrantable condition exists, Lexus will repair your vehicle at no cost to you, including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

1) For three years or 50,000 miles, whichever occurs first:

   - If your vehicle fails a smog-check test, all necessary repairs and adjustments will be made by Lexus to ensure that your vehicle passes the test. This is your Emission Control System PERFORMANCE WARRANTY.
   - If any emissions-related part on your vehicle is defective, the part will be repaired or replaced by Lexus. This is your SHORT-TERM Emission Control System DEFECT WARRANTY. Covered parts are listed on pages xx-xx. Note: Under the terms of the Basic Warranty, Lexus provides coverage of four years or 50,000 miles, whichever occurs first. Specific components may have longer coverage under the terms of the Powertrain Warranty.

2) For seven years or 70,000 miles, whichever occurs first:

   - If an emissions-related part listed on page xx-xx is defective, the part will be repaired or replaced by Lexus. This is your LONG-TERM Emission Control System DEFECT WARRANTY.

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Owner's Warranty Responsibilities

You are responsible for performance of the required maintenance indicated in the *Owner's Manual* and this guide. Lexus recommends that you retain all receipts covering maintenance on your vehicle, but Lexus cannot deny warranty coverage solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your vehicle to a Lexus dealership as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

You should also be aware that Lexus may deny you warranty coverage if your vehicle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact the Lexus Customer Satisfaction Department at (800)255-3987 or the California Air Resources Board, Mobile Source Control Division, at 9528 Telstar Avenue, P.O. Box 8001, El Monte, CA 91734-8001.

What Is Not Covered

These warranty obligations do not apply to failures or noncompliance caused by:

- The use of replacement parts not certified in accordance with aftermarket parts certification regulations.
- The use of replacement parts not equivalent in quality or design to original equipment parts.

Provisions under the "What Is Not Covered" section of the New Vehicle Limited Warranty also apply to this warranty.

2015MY Lexus (except for Lexus Hybrid models)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System

- Air Fuel Ratio Sensor on GX 460, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, RC F
- Air Pump on GX 460, LX 570
- Camshaft Timing Gear on RC F
- Engine Control Computer (Engine Control Module)
- Fuel Delivery Pipe on ES 350, GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD, RC F, RX 350, RX 350 AWD
- Fuel Pressure Sensor on GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD
- Fuel Pump on GX 460, LX 570
- High Pressure Fuel Pump on GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD, RC F
- Injector on GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD, RC F
- Injector Driver on GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, RC 350, RC 350 AWD, RC F
- Low Pressure Fuel Pump on IS 250, IS 250 AWD, IS 250 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, NX 200t, NX 200t AWD, NX 200t AWD F SPORT
- Throttle Body
- Transmission Control Computer (Transmission Control Module) on ES 350, GS 350, IS 350, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, RX 350, RX 350 AWD, RC 350, RC F

Air Induction System

- Intake Manifold
- Intake Air Surge Tank on ES 350, GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, RC 350, RC 350 AWD, RC F, RX 350, RX 350 AWD
- Turbocharger on NX 200t, NX 200t AWD, NX 200t AWD F SPORT

Ignition System

- Knock Sensor
- Crank Position Sensor on RX 350, RX 350 AWD

Catalyst System

- Catalytic Converter (Warm Up Three Way Catalyst)
- Exhaust Center Pipe on RX 350, RX 350 AWD
- Exhaust Front Pipe on ES 350, GS 350, GS 350 AWD, GX 460, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, LX 570, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD, RC F
- Exhaust Front Pipe No.2 on GX 460, LX 570
- Exhaust Manifold
- Exhaust Manifold Gasket on GX 460, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD
- Exhaust Manifold Heat Insulator on LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC F

Positive Crankcase Ventilation System

- Oil Drain Pipe on LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD
- Oil Return Pipe on LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD

Evaporative Control System

- Charcoal Canister on ES 350, GS 350, GS 350 AWD, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LS 460, LS 460 L, LS 460 AWD, LS 460 L AWD, LX 570, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD, RC F
- Fuel Relief Valve on GS 350, GS 350 AWD
- Fuel Tank

EGR System

- EGR Cooler on GX 460
- EGR Pipe on GX 460

Other Parts Used in above System

- Transmission Solenoid on ES 350, GS 350, GS 350 AWD, GX 460, IS 250, IS 250 AWD, IS 250 C, IS 350, IS 350 AWD, IS 350 C, LX 570, NX 200t, NX 200t AWD, NX 200t AWD F SPORT, RC 350, RC 350 AWD, RX 350, RX 350 AWD
- Wire Transmission (Including Temperature Sensor) on IS 250 AWD, IS 350 AWD, RC 350 AWD, RX 350, RX 350 AWD.

2015MY Lexus (for CT 200h)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Fuel Pump
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold

EGR System
- EGR Valve

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Battery Junction Block (Including System Main Relay)
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)

Ignition System
- Knock Sensor

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2015MY Lexus (for ES 300h)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Injector
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)

EGR System
- EGR Cooler

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator)

Ignition System
- Knock Sensor

2015MY Lexus (for GS 450h)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Air Fuel Ratio Sensor
- Engine Control Computer (Engine Control Module)
- Fuel Delivery Pipe
- Fuel Pressure Sensor
- High Pressure Fuel Pump
- Injector
- Injector Driver
- Throttle Body

Air Induction System
- Intake Manifold and Intake Air Surge Tank

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)
- Exhaust Manifold Gasket

Evaporative Control System
- Charcoal Canister
- Fuel Tank

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Battery Junction Block
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- Transaxle (Including Motor and Generator

Ignition System
- Knock Sensor

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2015MY Lexus (for LS 600h L)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Air Fuel Ratio Sensor
- Engine Control Computer (Engine Control Module)
- Fuel Delivery Pipe
- Fuel Pressure Sensor
- Fuel Pump (High pressure & Low Pressure)
- Fuel Relief Valve
- Injector
- Injector Driver
- Throttle Body

Air Induction System
- Intake Manifold

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold(Including Manifold Converter)
- Exhaust Manifold Gasket
- Exhaust Manifold Heat Insulator

Evaporative Control System
- Charcoal Canister
- Fuel Tank

Ignition System
- Knock Sensor

Positive Crankcase Ventilation System
- Oil Drain Pipe
- Oil Return Pipe

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Battery Junction Block (Including System Main Relay)
- HV Control Computer
- Inverter with Converter
- Transaxle (Including Motor and Generator)

2015 MY Lexus (for NX 300h, NX 300h AWD)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Engine Control Computer (Engine Control Module)
- Fuel Pump
- Injector
- Throttle Body

Air Induction System
- Intake Manifold and Intake Air Surge Tank

Ignition System
- Knock Sensor

Catalyst System
- Exhaust Front Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)

Evaporative Control System
- Charcoal Canister
- Fuel Tank

EGR System
- EGR Cooler

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Control Computer
- HV Battery Junction Block (Including System Main Relay)
- Inverter with Converter
- Rr Traction Motor With Transaxle
- Transaxle (Including Motor and Generator)

2015 MY Lexus (for RX 450h, RX450h AWD)

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System
- Air Cleaner
- Air Fuel Ratio Sensor
- Engine Control Computer (Engine Control Module)
- Fuel Delivery Pipe
- Fuel Pressure Regulator
- Fuel Pump
- Injector
- Throttle Body

Air Induction System
- Intake Manifold and Intake Air Surge Tank

Ignition System
- Knock Sensor

Catalyst System
- Exhaust Center Pipe (Including Catalytic Converter)
- Exhaust Manifold (Including Manifold Converter)

Evaporative Control System
- Charcoal Canister
- Fuel Tank
- Fuel Tank Solenoid Main Valve

EGR System
- EGR Cooler

HV System
- Battery
- Battery Control Computer (Battery Voltage Sensor)
- HV Battery Junction Block
- HV Control Computer (Power Management Control Computer)
- Inverter with Converter
- RR Traction Motor With Transaxle on models equipped with AWD
- Transaxle (Including Motor and Generator)

Maintenance

You are responsible for performance of the required maintenance indicated in the *Owner's Manual* and this guide. Lexus will not deny a warranty claim solely because you do not have records to show that you maintained your vehicle. However, any failure or noncompliance caused by lack of maintenance is not covered by this warranty.

When maintenance and repairs are paid for by you, these services may be performed by you or by any automotive service provider you choose. Lexus will not deny a warranty claim solely because you used a service provider other than a Lexus dealership for maintenance and repairs. However, any failure or noncompliance caused by improper maintenance or repairs is not covered by this warranty.

Replacement Parts

To ensure optimum performance and maintain the quality built into your vehicle's emission control systems, Lexus recommends the use of Genuine Lexus Parts when servicing or repairing the systems.

Warranty coverage is not dependent upon the use of any particular brand of replacement parts and you may elect to use non-Genuine Lexus Parts for maintenance and repairs. However, use of replacement parts that are not equivalent in quality to Genuine Lexus Parts may impair the effectiveness of the emission control systems.

If you use replacement parts that have maintenance or replacement schedules different from those of Genuine Lexus Parts, you must follow the maintenance and replacement schedules for the parts you are using. In addition, you should ensure that such parts are warranted by their manufacturers to be equivalent to Genuine Lexus Parts.

If Your Vehicle Fails a Smog-Check Test

If your vehicle fails a smog-check test, you may make a claim under the Emission Performance Warranty. To do so, take your vehicle to an authorized Lexus dealership and present a copy of the smog-check test report. Also, take your maintenance records in case they are needed.

If your claim qualifies for coverage, the dealership will repair your vehicle within 30 days (unless a shorter period is required by law). If your claim is denied, Lexus will notify you in writing of the reason within the same period. If we fail to do so, we will repair your vehicle free of charge. The only exceptions allowed are when you request or agree to a delay, or when a delay is caused by factors beyond the control of Lexus or the dealership.

For information on how to obtain service under the Emission Defect Warranty, see page xx, "Obtaining Warranty Service."

Repair Delays

If a Lexus dealership is unable to complete repairs on your vehicle within 30 days, you may have the repairs made under Lexus' provisions for emergency warranty repairs. See page xx for details.

If You Have Questions

If you have questions or concerns about your vehicle's California emission warranty coverage, please follow the steps described on page xx-xx. You may also request information from or report complaints to:

California Air Resources Board
Mobile Source Control Division
9528 Telstar Avenue
P.O. Box 8001
El Monte, CA 91734-8001
(800)242-4450

Vehicles equipped with a California Certified Emission Control System that are registered and operated in California or any state that adopts California emission warranty provisions are covered by this warranty. Currently Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington are the other states to which this warranty applies. Vehicles covered by this warranty are also covered by the Federal Emission Control Warranty (see page xx).

Attachments

The following pages include information that applies to all Lexus vehicle warranties (including the California Emission Control Warranty). With the exception of the "General Warranty Provisions," all of this information is referenced in the California Emission Control Warranty

Note: The "Warranty Parts List" information from the Federal Emission Control Warranty applies to the Federal Emission Control Warranty and California Emission Control Warranty only. This information is included as an attachment because it is referenced in the California Emission Control Warranty.

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Who Is the Warrantor

The warrantor for these limited warranties is Lexus, a division of Toyota Motor Sales, U.S.A., Inc, 19001 South Western Avenue, Torrance, California 90509-2991, a California corporation.

Which Vehicles Are Covered

These warranties apply to all 2015 model-year Lexus vehicles, Lexus luxury utility vehicles, Lexus Hybrid models registered and normally operated in the United States, U.S. territories and Canada. Warranty coverage is automatically transferred at no cost to subsequent vehicle owners.

Multiple Warranty Conditions

This booklet contains warranty terms and conditions that may vary depending on the part covered. A warranty for specific parts or systems, such as the Powertrain Warranty or Emission Performance Warranty, is governed by the coverage set forth in that warranty as well as the General Warranty Provisions.

When Warranty Begins

The warranty period begins on the vehicle's in-service date, which is the first date the vehicle is either delivered to an ultimate purchaser, leased, or used as a company car or demonstrator.

Repairs Made at No Charge

Repairs and adjustments covered by these warranties are made at no charge for parts and labor.

Parts Replacement

Any needed parts replacement will be made using new or remanufactured parts. The decision whether a part should be repaired or replaced will be made by the servicing Lexus dealership and/or Lexus. Parts scheduled to be replaced as required maintenance are warranted until their first replacement only.

Note : Lexus remanufactured parts meet or exceed all factory standards for safety, quality and reliability.

Limitations

The performance of necessary repairs and adjustments is the exclusive remedy under these warranties or any implied warranties. Lexus does not authorize any person to create for it any other obligation or liability in connection with this vehicle.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of these written warranties. Some states do not allow restrictions on how long an implied warranty lasts, so this limitation may not apply to you.

Your Rights Under State Law

These warranties give you specific legal rights. You may also have other rights that vary from state to state.

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What Is Not Covered

This warranty does not cover damage or failures resulting directly or indirectly from any of the following:

- Fire, accidents or theft
- Abuse or negligence
- Misuse – for example, racing or overloading
- Improper repairs
- Alteration or tampering, including installation of non-Genuine Lexus Accessories
- Lack of or improper maintenance, including use of fluids other than those specified in the *Owner's Manual*
- Installation of non-Genuine Lexus Parts
- Airborne chemicals, tree sap, road debris (including stone chips), rail dust, salt, hail, floods, wind storms, lightning and other environmental conditions
- Water contamination

This warranty also does not cover the following:

Tires
Tires are covered by a separate warranty provided by the tire manufacturer. See page xx-xx.

Normal Wear and Tear
Noise, vibration, cosmetic conditions and other deterioration caused by normal wear and tear.

Maintenance Expense *
Normal maintenance services such as engine tune-ups; replacement of fluids and filters; lubrication; cleaning and polishing; replacement of spark plugs and fuses; and replacement of worn wiper blades, brake pads/linings and clutch linings.

Vehicles With Altered Odometer
Failure of a vehicle on which the odometer has been altered so that actual vehicle mileage cannot be readily determined.

Vehicles With Unknown Vehicle Identification Number
Any vehicle for which the original factory-assigned vehicle identification number can not be determined.

* Lexus provides the first two scheduled maintenance services at no charge. See page xx for details.

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Salvage or Total-Loss Vehicles

Any vehicle that has ever been issued a "salvage" title or similar title under any state's law; or has ever been declared a "total loss" or equivalent by a financial institution or insurer, such as by payment for a claim in lieu of repairs because the cost of repairs exceeded the cash value of the vehicle. This exclusion does not apply to the emission control warranties.

Incidental Damages

Incidental or consequential damages associated with a vehicle failure. Such damages include but are not limited to inconvenience; the cost of transportation, telephone calls and lodging; the loss of personal or commercial property; and the loss of pay or revenue.

Disclaimer of Extra Expenses and Damages

The performance of necessary repairs and adjustments is the exclusive remedy under this warranty or any implied warranty. Lexus does not authorize any person to create for it any other obligation or liability in connection with this vehicle. Lexus shall not be liable for incidental or consequential damages resulting from breach of this written warranty or any implied warranty.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this written warranty, except in states where this limitation is not allowed.

Dispute Resolution

If a dispute arises regarding your warranty coverage, please follow the steps described on pages xx-xx. Please note that you must use the National Center for Dispute Settlement before seeking remedies through a court action pursuant to the Magnuson-Moss Warranty Act. You may also be required to use the National Center for Dispute Settlement before seeking remedies under the Lemon Laws of your state. For the requirements applicable to your state, see the appropriate page of the *Lemon Law Guide* located in your vehicle.

Warranty Parts List (For Lexus Hybrid models)

Air/Fuel Metering System

- Air/fuel ratio feedback control system
- Electronic fuel injection system components

-- Airflow sensor
-- Engine control module **(8/80)**
-- Throttle body
-- Other components

Air Induction System

- Intake manifold and/or intake air surge tank

Catalyst System

- Catalytic converter and protector **(8/80)**
- Constricted fuel filler neck
- Exhaust manifold
- Exhaust pipe (manifold to catalyst and/or catalyst to catalyst)

Evaporative Control System

- Charcoal canister
- Diaphragm valve
- Fuel filler cap
- Fuel tank

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

Ignition System

- Distributor and internal parts
- Ignition coil and ignitor
- Ignition wires
- Spark plugs+

Positive Crankcase Ventilation (PCV) System

- Oil filler cap
- PCV valve or orifice

Hybrid Vehicle (HV) System

- Battery Control Module (Battery Voltage Sensor) **(8/80)***
- Battery thermistor
- Generator
- HV Control Module (Power Management Control Module) **(8/80)***
- Hybrid battery*
- Inverter with converter*
- Motor
- System main relay and Battery current sensor
- Hybrid battery junction block

Other Parts Used in Above Systems

- Data link connector **(8/80)**
- Hoses, clamps, fittings, tubing and mounting hardware
- Malfunction indicator light and bulb **(8/80)**
- Pulleys, belts and idlers
- Sealing gaskets and devices
- Sensors, switches, solenoids and valves

+ Warranted until first required maintenance under terms of the California Emission Control Warranty.
8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

* These components, are covered under the Hybrid System Warranty for eight years or 100,000 miles, whichever occurs first.

Warranty Parts List (for Lexus Non-Hybrid models)

Air/Fuel Metering System

- Air/fuel ratio feedback control system
- Cold start enrichment system
- Deceleration control system
- Electronic fuel injection system components

-- Airflow sensor
-- Engine control module **(8/80)**
-- Throttle body
-- Other components

Air Induction System

- Intake manifold and/or intake air surge tank

Air Injection System

- Air injection manifold
- Air injection pump
- Airflow control valves

Catalyst System

- Catalytic converter and protector **(8/80)**
- Constricted fuel filler neck
- Exhaust manifold
- Exhaust pipe (manifold to catalyst and/or catalyst to catalyst)

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

Evaporative Control System

- Charcoal canister
- Fuel filler cap
- Fuel tank
- Vapor liquid separator
- Diaphragm valve

Exhaust Gas Recirculation (EGR) System

- EGR gas temperature sensor
- EGR valve
- Associated parts

Ignition System

- Distributor and internal parts
- Ignition coil and ignitor
- Ignition wires
- Spark plugs*

Positive Crankcase Ventilation (PCV) System

- Oil filler cap
- PCV valve or orifice

Other Parts Used in Above Systems

- Data link connector **(8/80)**
- Hoses, clamps, fittings, tubing and mounting hardware
- Malfunction indicator light and bulb **(8/80)**
- Pulleys, belts and idlers
- Sealing gaskets and devices
- Sensors, switches, solenoids and valves

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

*Warranted until first required maintenance under terms of the California Emission Control Warranty.

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General Information

You are responsible for ensuring that your Lexus is operated and maintained according to the instructions in the *Owner's Manual* and the "Maintenance Information" section of this guide.

You should keep detailed records of vehicle maintenance, since under some circumstances they may be required for warranty coverage. These records should include date of service, mileage at time of service and a description of service performed and/or parts installed. For your convenience, a maintenance logs are included in the "Maintenance Information" section of this guide. If you sell your vehicle, you should give your maintenance records to the new owner.

Lexus will not deny a warranty claim solely because you do not have records to show that you maintained your vehicle. However, damage or failures caused by lack of proper maintenance are not covered under warranty.

Where to Go for Maintenance

You may have maintenance performed on your vehicle by any qualified person or facility. However, Lexus recommends having maintenance performed by an authorized Lexus dealership.

Lexus dealership technicians are specially trained to maintain and repair Lexus vehicles. They stay current on the latest service information through Lexus technical bulletins, service publications and training courses. Many are also certified through the Lexus Commitment to Perfection Certification Program, which requires specialized, state-of-the-art training as well as rigorous exams through both Lexus and the National Institute for Automotive Service Excellence.

You can be confident you're getting the best possible service for your vehicle when you take it to a Lexus dealership. Plus, a Lexus dealership will always use Genuine Lexus Parts designed specifically for your vehicle.

By Geographic Region

In the United States, U.S. Territories and Canada

To obtain warranty service in the United States, U.S. territories or Canada, take your vehicle to an authorized Lexus dealership. If your vehicle cannot be driven, contact your nearest Lexus dealership for towing assistance. You do not have to pay for towing to the nearest Lexus dealership if your vehicle is inoperable due to failure of a warranted part.

Outside the United States, U.S. Territories and Canada

If you are using your vehicle outside the United States, U.S. Territories and Canada and need warranty service, contact a local Lexus dealership. Please note, however, that your vehicle may not be repaired free of charge because the local Lexus distributor may have no obligation to provide warranty service for your vehicle, and/or your vehicle may not comply with local regulatory or environmental requirements.

Emergency Repairs

Lexus recommends having maintenance and repairs for your vehicle performed by an authorized Lexus dealership. To locate your nearest authorized Lexus dealership, contact Lexus Customer Satisfaction at (800) 255-3987 or log on to **www.lexus.com**.

Maintenance and repairs not performed by an authorized Lexus dealership should be performed by a qualified technician following procedures in Lexus service and repair publication.

Please refer to the important safety precautions found on the inside front cover of this booklet.

If your vehicle is inoperable or unsafe to drive and there is no Lexus dealership reasonably available to make repairs, you may perform the repairs yourself or have them performed by another automotive service provider. Lexus will reimburse you for any of the repairs that are covered by warranty. To receive reimbursement, present to an authorized Lexus dealership your paid repair invoices and any parts that were removed from the vehicle. You will be reimbursed for warranted parts at the manufacturer's suggested retail price and warranted labor at a geographically appropriate hourly rate multiplied by Lexus's recommended time allowance for the repair.

If your vehicle requires emergency repair, Lexus assumes no liability for subsequent failures caused by improper repairs or the use of non-Genuine Lexus Parts unless you have the vehicle properly repaired in a timely manner. To ensure that warranty coverage remains intact, have your vehicle inspected by an authorized Lexus dealership as soon as possible after an emergency repair.

If You Need Assistance

Both Lexus and your Lexus dealer are dedicated to serving your automotive needs. Your complete satisfaction is our first priority. Should you have a problem or concern – please take the following steps to ensure the quickest possible response:

Step 1

Discuss the situation with a dealership manager, such as the service manager or customer satisfaction manager. If necessary, ask the dealership owner or general manager for assistance. In most cases, a satisfactory solution can be reached at this step.

Step 2

If the dealership does not address your concern to your satisfaction, call the Lexus Customer Satisfaction Department at (800)25-LEXUS (800/255-3987). In Canada,
call (800)26-LEXUS(800/265-3987) In Mexico, call 95-1-310-328-2075.If you are hearing- or speech-impaired, call (800)443-4999 (TDD).

You may also write to us at

Lexus Customer Satisfaction Department
P.O. Box 2991
Torrance, CA 90509-2991

Whether calling or writing, please provide the following information:

- Vehicle identification number (located on the driver's side corner of the dashboard, under the window)
- Current vehicle mileage
- Name of your selling and servicing Lexus dealerships
- Your day and evening telephone numbers

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Step 3

If your concern has still not been resolved to your satisfaction, Lexus offers additional assistance through:

National Center for Dispute
Settlements (NCDS)
P.O. Box 457
Mt.Clemens, MI 48046
(866) 272-4872

Important: You must use NCDS prior to exercising rights or seeking remedies available to you through a court action pursuant to the Magnuson-Moss Warranty Act. In addition; you must use NCDS if you are required to do so prior to exercising certain rights or seeking certain remedies available under the Lemon Laws of your state. See the *Lemon Law Guide* for specific requirements applicable in your state. However, if your state law permits and if you choose to exercise rights and seek remedies that are not created by the Act, you need not use NCDS.

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CALIFORNIA EMISSION CONTROL WARRANTY (for Scion)

Your Warranty Rights and Obligations

The California Air Resources Board (CARB) and Scion are pleased to explain the emission control system warranty for your 2015 vehicle. In California, new motor vehicles must be designed, built and equipped to meet the state's stringent anti-smog standards. CARB regulations require that Scion must warrant the emission control system on your vehicle for the time periods indicated on this page, provided there has been no abuse, neglect or improper maintenance of your vehicle.

Your emission control system may include parts such as the fuel injection system, ignition system, catalytic converter and engine computer. Also included may be hoses, belts, connectors and other emissions-related assemblies.

Where a warrantable condition exists, Scion will repair your vehicle at no cost to you, including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

1) For three years or 50,000 miles, whichever occurs first:

- If your vehicle fails a smog-check test, all necessary repairs and adjustments will be made by Scion to ensure that your vehicle passes the test. This is your Emission Control System PERFORMANCE WARRANTY.
- If any emissions-related part on your vehicle is defective, the part will be repaired or replaced by Scion. This is your SHORT-TERM Emission Control System DEFECT WARRANTY. Covered parts are listed on pages xx-xx. Specific components may have longer coverage under the terms of the Powertrain Warranty.

2) For seven years or 70,000 miles, whichever occurs first:

- If an emissions-related part listed on page xx-xx is defective, the part will be repaired or replaced by Scion. This is your LONG-TERM Emission Control System DEFECT WARRANTY.

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Owner's Warranty Responsibilities

You are responsible for performance of the required maintenance indicated in the *Owner's Manual* and this booklet. Scion recommends that you retain all receipts covering maintenance on your vehicle, but Scion cannot deny warranty coverage solely for the lack of receipts or your failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your vehicle to an Authorized Servicing Dealership as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

You should also be aware that Scion may deny you warranty coverage if your vehicle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact Scion Customer Experience at (866)70-SCION, or (866)707-2466. You may also contact the California Air Resources Board, Mobile Source Control Division, at 9528 Telstar Avenue, P.O. Box 8001, El Monte, CA 91734-8001.

What Is Not Covered

These warranty obligations do not apply to failures or noncompliance caused by:

- The use of replacement parts not certified in accordance with aftermarket parts certification regulations.
- The use of replacement parts not equivalent in quality or design to original equipment parts.

Provisions under the "What Is Not Covered" section of the New Vehicle Limited Warranty also apply to this warranty.

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2015MY Scion

PARTS LIST: LONG-TERM EMISSION DEFECT WARRANTY

The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first.

Air/Fuel Metering System

- Engine Control Computer (Engine Control Module)
- Fuel Pump on iQ
- Throttle Body
- Transmission Control Computer (Transmission Control Module) on tC

Air Induction System

- Intake Manifold

Ignition System

- Knock Sensor on tC

Catalyst System

- Catalytic Converter(Warm Up Three Way Catalyst)
- Exhaust Center Pipe on tC, xB
- Exhaust Front Pipe on iQ
- Exhaust Manifold on iQ, xB

Evaporative Control System

- Charcoal Canister on iQ, xB
- Fuel Tank

Other Parts Used in above System

- Transmission Solenoid on iQ, tC

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Maintenance

You are responsible for performance of the required maintenance indicated in the *Owner's Manual* and this booklet. Scion will not deny a warranty claim solely because you do not have records to show that you maintained your vehicle. However, any failure or noncompliance caused by lack of maintenance is not covered by this warranty.

When maintenance and repairs are paid for by you, these services may be performed by you or by any automotive service provider you choose. Scion will not deny a warranty claim solely because you used a service provider other than an Authorized Servicing Dealership for maintenance and repairs. However, any failure or noncompliance caused by improper maintenance or repairs is not covered by this warranty.

Replacement Parts

To ensure optimum performance and maintain the quality built into your vehicle's emission control systems, Scion recommends the use of Scion Authorized Parts when servicing or repairing the systems.

Warranty coverage is not dependent upon the use of any particular brand of replacement parts, and you may elect to use non-Scion Authorized Parts for maintenance and repairs. However, use of replacement parts that are not equivalent in quality to Scion Authorized Parts may impair the effectiveness of the emission control systems.

If you use replacement parts that have maintenance or replacement schedules different from those of Scion Authorized Parts, you must follow the maintenance and replacement schedules for the parts you are using. In addition, you should ensure that such parts are warranted by their manufacturers to be equivalent to Scion Authorized Parts.

If Your Vehicle Fails a Smog-Check Test

If your vehicle fails a smog-check test, you may make a claim under the Emission Performance Warranty. To do so, take your vehicle to an Authorized Servicing Dealership and present a copy of the smog-check test report. Also, take your maintenance records in case they are needed.

If your claim qualifies for coverage, the dealership will repair your vehicle within 30 days (unless a shorter period is required by law). If your claim is denied, Scion will notify you in writing of the reason within the same period. If we fail to do so, we will repair your vehicle free of charge. The only exceptions allowed are when you request or agree to a delay, or when a delay is caused by factors beyond the control of Scion or the dealership.

For information on how to obtain service under the Emission Defect Warranty, see page xx, "Obtaining Warranty Service."

Repair Delays

If an Authorized Servicing Dealership is unable to complete repairs on your vehicle within 30 days, you may have the repairs made under Scion's provisions for emergency warranty repairs.
See page xx for details.

If You Have Questions

If you have questions or concerns about your vehicle's California emission warranty coverage, please follow the steps described under "If You Need Assistance" on page xx-xx. You may also request information from or report complaints to:

California Air Resources Board,
Mobile Source Control Division
9528 Telstar Avenue, P.O. Box 8001
El Monte, CA 91734-8001
(800)242-4450

Vehicles equipped with a California Certified Emission Control System that are registered and operated in California or any state that adopts California emission warranty provisions are covered by this warranty. Currently, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, Oregon, Pennsylvania, Rhode Island, Vermont, and Washington are the other states to which this warranty applies. Vehicles covered by this warranty are also covered by the Federal Emission Control Warranty (see page xx).

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Attachments

The following pages include information that applies to all Scion vehicle warranties (including the California Emission Control Warranty). With the exception of the "General Warranty Provisions," all of this information is referenced in the California Emission Control Warranty.

Note: The "Warranty Parts List" information from the Federal Emission Control Warranty applies to the Federal Emission Control Warranty and California Emission Control Warranty only. This information is included as an attachment because it is referenced in the California Emission Control Warranty.

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Who Is the Warrantor
Scion is the warrantor for these limited warranties. Scion is a marque of Toyota Motor Sales, U.S.A., Inc., 19001 South Western Avenue, Torrance, California 90509-2991, a California corporation.

Which Vehicles Are Covered
These warranties apply to all 2015 model year Scion vehicles registered and normally operated in the United States, U.S. territories and Canada. Warranty coverage is automatically transferred at no cost to subsequent vehicle owners.

Multiple Warranty Conditions
This booklet contains warranty terms and conditions that may vary depending on the part covered. A warranty for specific parts or systems, such as the Powertrain Warranty or Emission Performance Warranty, is governed by the coverage set forth in that warranty as well as the General Warranty Provisions.

When Warranty Begins
The warranty period begins on the vehicle's in-service date, which is the first date the vehicle is either delivered to an ultimate purchaser, leased, or used as a company car or demonstrator.

Repairs Made at No Charge
Repairs and adjustments covered by these warranties are made at no charge for parts and labor.

Parts Replacement
Any needed parts replacement will be made using new or remanufactured parts. The decision whether a part should be repaired or replaced will be made by the Authorized Servicing Dealership and/or Scion. Parts scheduled to be replaced as required maintenance are warranted until their first replacement only.

Authorized Servicing Dealerships
For the purposes of these limited warranties, an Authorized Servicing Dealership is a Scion dealership or a Toyota dealership.

Scion Authorized Parts and Accessories
Scion Authorized Parts are any Scion brand parts manufactured by or on behalf of Scion or Toyota Motor Corporation for use with Scion vehicles. Scion Authorized Accessories are any Scion brand accessories manufactured by or on behalf of Scion or Toyota Motor Corporation for use with Scion vehicles.

Limitations
The performance of necessary repairs and adjustments is the exclusive remedy under these warranties or any implied warranties. Scion does not authorize any person to create for it any other obligation or liability in connection with this vehicle.

Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of these written warranties. Some states do not allow restrictions on how long an implied warranty lasts, so this limitation may not apply to you.

Your Rights Under State Law
These warranties give you specific legal rights. You may also have other rights that vary from state to state.

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What Is Not Covered

This warranty does not cover damage or failures resulting directly or indirectly from any of the following:

- Fire, accidents or theft
- Abuse or negligence
- Misuse – for example, racing or overloading
- Improper repairs
- Alteration or tampering, including installation of non-Scion Authorized Accessories
- Lack of or improper maintenance, including use of fluids other than those specified in the *Owner's Manual*
- Installation of non-Scion Authorized Parts
- Airborne chemicals, tree sap, road debris (including stone chips), rail dust, salt, hail, floods, wind storms, lightning and other environmental conditions
- Water contamination

This warranty also does not cover the following:

Tires
Tires are covered by a separate warranty provided by the tire manufacturer. See page ##.

Normal Wear and Tear
Noise, vibration, cosmetic conditions and other deterioration caused by normal wear and tear.

Maintenance Expense
Normal maintenance services such as:
- Engine tune-ups
- Replacement of fluids and filters
- Lubrication
- Cleaning and polishing
- Replacement of spark plugs and fuses
- Replacement of worn wiper blades, brake pads/linings and clutch linings.

Vehicles With Altered Odometer
Failure of a vehicle on which the odometer has been altered so that actual vehicle mileage cannot be readily determined.

Salvage or Total-Loss Vehicles
Any vehicle that has ever been issued a "salvage" title or similar title under any state's law; or has ever been declared a "total loss" or equivalent by a financial institution or insurer, such as by payment for a claim in lieu of repairs because the cost of repairs exceeded the cash value of the vehicle. This exclusion does not apply to the emission control warranties.

Incidental Damages
Incidental or consequential damages associated with a vehicle failure. Such damages include but are not limited to inconvenience; the cost of transportation, telephone calls and lodging; the loss of personal or commercial property; and the loss of pay or revenue.

Disclaimer of Extra Expenses and Damages

The performance of necessary repairs and adjustments is the exclusive remedy under this warranty or any implied warranty. Scion does not authorize any person to create for it any other obligation or liability in connection with this vehicle. Scion shall not be liable for incidental or consequential damages resulting from breach of this written warranty or any implied warranty. Any implied warranty of merchantability or fitness for a particular purpose is limited to the duration of this written warranty, except in states where this limitation is not allowed.

NEW VEHICLE LIMITED WARRANTY (for SCION)

DISPUTE RESOLUTION

If a dispute arises regarding your warranty coverage, please follow the steps described under "If You Need Assistance" on pages 7-8. Please note that you must use the Dispute Settlement Program (or, in California, the CDSP) before seeking remedies through a court action pursuant to the Magnuson-Moss Warranty Act. You may also be required to use the Dispute Settlement Program or CDSP before seeking remedies under the "Lemon Laws" of your state. Please check the appropriate page of the Owner's Warranty Rights Notification booklet (located in your glove box) for the requirements applicable to your state.

Warranty Parts List

Air/Fuel Metering System

- Air/fuel ratio feedback control system
- Cold-start enrichment system
- Deceleration control system
- Electronic fuel injection system components
  - -- Airflow sensor
  - -- Engine control module **(8/80)**
  - -- Throttle body
  - -- Other components

Air Induction System

- Intake manifold and/or intake air surge tank

Catalyst System

- Catalytic converter and protector **(8/80)**
- Constricted fuel filler neck
- Exhaust manifold
- Exhaust pipe (manifold to catalyst and/or catalyst to catalyst)

Evaporative Control System

- Charcoal canister
- Diaphragm valve
- Fuel filler cap
- Fuel tank
- Vapor liquid separator

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

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Exhaust Gas Recirculation (EGR) System

- EGR gas temperature sensor
- EGR valve
- Associated parts

Ignition System

- Distributor and internal parts
- Ignition coil and igniter
- Ignition wires
- Spark plugs*

Positive Crankcase Ventilation (PCV) System

- Oil filler cap
- PCV valve or orifice

Other Parts Used in Above Systems

- Data link connector **(8/80)**
- Hoses, clamps, fittings, tubing and mounting hardware
- Malfunction indicator light and bulb **(8/80)**
- Pulleys, belts and idlers
- Sealing gaskets and devices
- Sensors, solenoids, switches and valves

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* Warranted until first required maintenance under terms of the California Emission Control Warranty.

8/80 = Covered for eight years or 80,000 miles, whichever occurs first.

General Information

You are responsible for ensuring that your Scion is operated and maintained according to the instructions in the *Owner's Manual* and this booklet.

You should keep detailed records of vehicle maintenance, since under some circumstances they may be required for warranty coverage. These records should include date of service, mileage at time of service and a description of service performed and/or parts installed. For your convenience, a maintenance log is included in this booklet. If you sell your vehicle, you should give your maintenance records to the new owner.

Scion will not deny a warranty claim solely because you do not have records to show that you maintained your vehicle. However, damage or failures caused by improper maintenance or lack of maintenance are not covered under warranty.

Where to Go for Maintenance

You may have maintenance performed on your vehicle by any qualified person or facility. However, Scion recommends having maintenance performed by an Authorized Servicing Dealership.

Technicians at Authorized Servicing Dealerships are specially trained to maintain and repair Scion vehicles. They stay current on the latest service information through Scion technical bulletins, service publications and training courses. Many are also factory-certified. That means they have passed rigorous exams through both Scion and the National Institute for Automotive Service Excellence.

You can be confident you're getting the best possible service for your vehicle when you take it to an Authorized Servicing Dealership. Plus, an Authorized Servicing Dealership will always use Scion Authorized Parts designed specifically for your vehicle.

By Geographic Region

In the United States, U.S. Territories and Canada

To obtain warranty service in the United States, U.S. territories or Canada, take your vehicle to an Authorized Servicing Dealership. If your vehicle cannot be driven, contact your nearest Authorized Servicing Dealership for towing assistance. You do not have to pay for towing to the nearest Authorized Servicing Dealership if your vehicle is inoperable due to failure of a warranted part.

Outside the United States, U.S. Territories and Canada

If you are using your vehicle outside the United States, U.S. territories and Canada and need warranty service, contact a local Authorized Servicing Dealership. Please note, however, that your vehicle may not be repaired free of charge because the local Authorized Servicing Dealership distributor may have no obligation to provide warranty service for your vehicle, and/or your vehicle may not comply with local regulatory or environmental requirements.

Emergency Repairs

If your vehicle is inoperable or unsafe to drive and there is no Authorized Servicing Dealership reasonably available to make repairs, you may perform the repairs yourself or have them performed by another automotive service provider. Scion will reimburse you for any of the repairs that are covered by warranty. To receive reimbursement, present to an Authorized Servicing Dealership your paid repair invoices and any parts that were removed from the vehicle. You will be reimbursed for warranted parts at the manufacturer's suggested retail price and warranted labor at a geographically appropriate hourly rate multiplied by Scion's recommended time allowance for the repair.

If your vehicle requires emergency repair, Scion assumes no liability for subsequent failures caused by improper repairs or the use of non-Scion Authorized Parts unless you have the vehicle properly repaired in a timely manner. To ensure that warranty coverage remains intact, have your vehicle inspected by an Authorized Servicing Dealership as soon as possible after an emergency repair.

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If You Need Assistance

Both Scion and your dealership want to make your Scion ownership experience easy and convenient. If you have a problem or concern - either during or after the warranty period - please take the following steps to ensure a quick response:

Step 1

Talk to a dealership manager, such as the service manager or customer relations manager. In most cases, you can reach a satisfactory solution at this step.

Step 2

If you're not happy with the solution provided by the dealership, call Scion Customer Experience at (866) 70-SCION, or (866) 707-2466.

To help everything move quickly, please have the following information at hand when you call:

- Your Scion's vehicle identification number (located on the driver's side corner of the dashboard, under the window)
- Current mileage on your vehicle
- Name of your Scion dealership

A Scion customer relations representative will help you work with the dealership to find a satisfactory solution.

Step 3

If you're still not satisfied after pursuing steps 1 and 2, Scion offers additional assistance through the Dispute Settlement Program, a dispute resolution program administered by the National Center for Dispute Settlement. The purpose of this program is to resolve disputes through arbitration — a process by which two parties authorize an independent third party to hear and resolve a dispute. The program is informal and free of charge.

To request that your case be reviewed through the program, complete the customer claim form in the *Owner's Warranty Rights Notification* booklet (found in your glove box) and mail it to:

National Center for Dispute Settlement
P.O. Box 688
Mt.Clemens, MI 48046

If your customer claim form is missing, call Scion Customer Experience at (866) 70-SCION, or (866) 707-2466. When you call, be sure to have your vehicle identification number, your current mileage and the names of your selling and servicing dealerships.

California Residents: Scion offers you assistance through an arbitration program called the California Dispute Settlement Program (CDSP). A brochure about the program is found in your glove box. For additional information, call Scion Customer Experience at (866) 70-SCION, or (866) 707-2466. You may also contact the CDSP directly at (888) 300-6237. Failure to use the CDSP may affect your rights and remedies under California's "Lemon Laws."

Important: You must use the Dispute Settlement Program (or, in California, the CDSP)before seeking remedies through a court action pursuant to the Magnuson-Moss Warranty Act. You may also be required to use the Dispute Settlement Program or CDSP before seeking remedies under the "Lemon Laws" of your state. Please see the *Owner's Warranty Rights Notification* booklet for the requirements that apply to your state.

This information about the Dispute Settlement Programs is correct as of the date of printing. However, the programs may be changed without notice. For the most current information about the programs, call Scion Customer Experience at (866) 70-SCION, or (866) 707-2466.

6.02.00 The "high-priced" warranted parts identification

The cost limit is for 2015 model year determined according to Title 13, California Code of Regulations, Section 2037(c).

The cost limit for 2015 model year is calculated using the following equation:

$$\text{Cost limit}_{2014} = \$300 \times (229.6 / 118.3) = \$580^{*1}$$

where, 229.6 is the average nationwide urban consumer price index for 2012 calendar year published by the U.S. Bureau of Labor Statistics.

In determining total replacement costs, estimated labor times to replace particular parts are multiplied by the high California labor rate listed in the "high-priced" parts list for each models.

*1: The parts listed here are covered for seven years or 70,000 miles from the vehicle's in-service date, whichever occurs first according to the MAC2013-01.

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Charcoal Canister	2.1	142	298	544	842
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	847	903
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	866	965
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Exhaust Manifold (Including Manifold Converter)	1.3	142	185	309	493
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Fuel Tank	2.1	142	298	554	852
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Intake Manifold	2	142	284	390	674
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Knock Sensor	2	142	284	206	490
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Throttle Body	1.3	142	185	923	1108
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Transmission Solenoid	7	142	994	284	1278
CAMRY (ULEV)	FTYXJ02.5BEL	2AR-FE	Wire Transmission (Including Temperature Sensor)	7	142	994	74	1068
RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	1122	1193
RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Fuel Pump	2.5	142	355	338	693
RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Knock Sensor	2.5	142	355	194	549
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Charcoal Canister	0.4	142	57	525	582
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.8	142	114	851	964
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Exhaust Manifold (Including Manifold Converter)	1.4	142	199	296	495
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Fuel Pressure Regulator	2.5	142	355	140	495
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Fuel Suction Plate	2.5	142	355	183	538
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Fuel Tank	2.4	142	341	561	902
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Intake Manifold	2.5	142	355	390	745
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Throttle Body	1.1	142	156	923	1079
RAV4/RAV4 AWD	FTYXJ02.5BEL	2AR-FE	Transmission Solenoid	1.9	142	270	284	554
RAV4	FTYXJ02.5BEL	2AR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	1129	1200
RAV4	FTYXJ02.5BEL	2AR-FE	Fuel Pump	2.5	142	355	338	693
RAV4	FTYXJ02.5BEL	2AR-FE	Knock Sensor	2.6	142	369	194	563
NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Engine Control Computer (Engine Control Module)	0.5	160	80	1509	1589
NX 200t	FTYXT02.0KEM	8AR-FTS	Engine Control Computer (Engine Control Module)	0.5	160	80	1267	1347
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Charcoal Canister	0.5	160	80	767	847
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Exhaust Front Pipe (Including Catalytic Converter)	0.6	160	96	860	956
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Exhaust Manifold (Including Manifold Converter)	2	160	320	362	682
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Exhaust Manifold Heat Insulator	7.2	160	1152	37	1189
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Fuel Delivery Pipe	2.5	160	400	430	830
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Fuel Pressure Sensor	1.6	160	256	328	584
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Fuel Tank	2.1	160	336	681	1017
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	High Pressure Fuel Pump	0.8	160	128	1283	1411
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Injector	2.8	160	448	322	770
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Intake Manifold	2.1	160	336	426	762
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Knock Sensor	3.5	160	560	165	725
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Low Pressure Fuel Pump	1.8	160	288	339	627
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Throttle Body	1	160	160	1207	1367
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Transmission Solenoid	5	160	800	287	1087
NX 200t/NX 200t AWD	FTYXT02.0KEM	8AR-FTS	Turbocharger	2	160	320	3167	3487
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Battery Control Module (Battery Voltage Sensor)	1.6	160	256	255	511
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Charcoal Canister	0.4	160	64	539	603
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	EGR Cooler	1.3	160	208	375	583
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Engine Control Computer (Engine Control Module)	0.6	160	96	847	943
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	0.6	160	96	1390	1486
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Exhaust Manifold (Including Manifold Converter)	1.3	160	208	671	879
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Fuel Delivery Pipe	2.7	160	432	101	533
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Fuel Pump	1.6	160	256	335	591
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Fuel Tank	1.4	160	224	543	767
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Hybrid Battery	2.4	160	384	4891	5275
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Hybrid Battery Junction Block (Including System Main Relay)	2.4	160	384	242	626
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Injector	2.7	160	432	157	589
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Intake Manifold and Intake Air Surge Tank	2.6	160	416	390	806
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Inverter with Converter	2	160	320	5973	6293
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Knock Sensor	2.7	160	432	165	597
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Rr Traction Motor With Transaxle	6.7	160	1072	1606	2678
NX 300h/NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Throttle Body	1.1	160	176	1194	1370
NX 300h	FTYXT02.5PCM	2AR-FXE	Hybrid Control Module	0.3	160	48	1539	1587

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Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
NX 300h	FTYXT02.5PCM	2AR-FXE	Transaxle (Including Motor and Generator)	7.6	160	1216	4317	5533
NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Hybrid Control Module	0.3	160	48	1539	1587
NX 300h AWD	FTYXT02.5PCM	2AR-FXE	Transaxle (Including Motor and Generator)	7.6	160	1216	4317	5533
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Charcoal Canister	0.7	142	99	480	579
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Crank Position Sensor	3.7	142	525	114	639
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	815	886
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.7	142	99	1059	1159
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.9	142	128	1125	1253
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Fuel Pump	2	142	284	338	622
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Fuel Tank	4.8	142	682	668	1350
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Intake Manifold	3.6	142	511	422	933
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Intake Manifold Gasket	3.6	142	511	22	533
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Knock Sensor	3.7	142	525	194	720
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Throttle Body	1.1	142	156	923	1079
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Transmission Solenoid	9.3	142	1321	284	1604
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Ventilation Valve	3.7	142	525	9	534
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Ventilation Valve No.2	3.7	142	525	16	541
HIGHLANDER	FTYXT02.7BEN	1AR-FE	Wire Transmission (Including Temperature Sensor)	9.1	142	1292	74	1366
VENZA 4WD	FTYXT02.7BEP	1AR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	819	890
VENZA 4WD	FTYXT02.7BEP	1AR-FE	Fuel Tank	3	142	426	558	984
VENZA 4WD	FTYXT02.7BEP	1AR-FE	Transmission Solenoid	9.3	142	1321	284	1604
VENZA 4WD	FTYXT02.7BEP	1AR-FE	Wire Transmission (Including Temperature Sensor)	9.1	142	1292	74	1366
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Charcoal Canister	0.4	142	57	564	620
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Engine Control Computer (Engine Control Module)	1.1	142	156	857	1013
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	819	890
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Exhaust Manifold (Including Manifold Converter)	1.1	142	156	336	492
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Fuel Pump	1.3	142	185	336	520
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Intake Manifold	2.5	142	355	422	777
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Knock Sensor	2.5	142	355	194	549
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Throttle Body	1.9	142	270	923	1193
VENZA/VENZA 4WD	FTYXT02.7BEP	1AR-FE	Transmission Control Computer (Transmission Control Module)	0.5	142	71	805	876
VENZA	FTYXT02.7BEP	1AR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	819	890
VENZA	FTYXT02.7BEP	1AR-FE	Fuel Tank	2.5	142	355	558	913
VENZA	FTYXT02.7BEP	1AR-FE	Transmission Solenoid	8.3	142	1179	284	1462
VENZA	FTYXT02.7BEP	1AR-FE	Wire Transmission (Including Temperature Sensor)	8.1	142	1150	74	1224
TACOMA 2WD (4AT)	FTYXT02.7BER	2TR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
TACOMA 2WD (5MT)	FTYXT02.7BER	2TR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Air Pump	1.3	142	185	1275	1460
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Air Switching Valve	0.2	142	28	462	491
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Charcoal Canister	0.6	142	85	544	629
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	1648	1748
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Fuel Tank	1	142	142	724	866
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Intake Manifold	1.1	142	156	340	496
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Throttle Body	1	142	142	923	1065
TACOMA 2WD/TACOMA 4WD	FTYXT02.7BER	2TR-FE	Transmission Solenoid	1.9	142	270	226	496
TACOMA 4WD (4AT)	FTYXT02.7BER	2TR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
TACOMA 4WD (5MT)	FTYXT02.7BER	2TR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	767	838
HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.9	142	128	987	1114
HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	1.5	142	213	1022	1235
HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Fuel Tank	6.8	142	966	668	1634
HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Transmission Solenoid	10.1	142	1434	284	1718
HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	9.8	142	1392	49	1440
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Charcoal Canister	0.7	142	99	480	579
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.6	142	85	987	1072
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	3.1	142	440	1022	1462
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Fuel Delivery Pipe	3.5	142	497	235	732
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Fuel Pump	2	142	284	338	622
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Injector	3.5	142	497	144	641
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Intake Air Surge Tank	1.7	142	241	619	860
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Intake Manifold	3.7	142	525	511	1036

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Intake Manifold To Head Gasket	3.7	142	525	9	535
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Knock Sensor	3.7	142	525	194	720
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Throttle Body	1	142	142	923	1065
HIGHLANDER/HIGHLANDER AWD	FTYXT03.5BER	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.5	142	71	805	876
HIGHLANDER	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	774	845
HIGHLANDER	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.9	142	128	987	1114
HIGHLANDER	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	0.9	142	128	1022	1149
HIGHLANDER	FTYXT03.5BER	2GR-FE	Fuel Tank	4.8	142	682	668	1350
HIGHLANDER	FTYXT03.5BER	2GR-FE	Transmission Solenoid	9.2	142	1306	284	1590
HIGHLANDER	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	8.9	142	1264	49	1312
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Charcoal Canister	0.4	160	64	475	539
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Crank Position Sensor	3	160	480	80	560
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.7	160	112	1128	1240
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	2.6	160	416	982	1398
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Fuel Delivery Pipe	2.3	160	368	235	603
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Fuel Pump	1.3	160	208	323	531
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Injector	2.3	160	368	144	512
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Knock Sensor	2.7	160	432	192	624
RX 350 (6AT)/RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Throttle Body	1.7	160	272	914	1186
RX 350 (6AT)/RX 350 AWD(6AT)	FTYXT03.5BER	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.6	160	96	904	1000
RX 350 (6AT)	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	1	160	160	835	995
RX 350 (6AT)	FTYXT03.5BER	2GR-FE	Fuel Tank	2.3	160	368	652	1020
RX 350 (6AT)	FTYXT03.5BER	2GR-FE	Intake Air Surge Tank	1.9	160	304	684	988
RX 350 (6AT)	FTYXT03.5BER	2GR-FE	Intake Manifold	2.5	160	400	491	891
RX 350 (6AT)	FTYXT03.5BER	2GR-FE	Transmission Solenoid	8.9	160	1424	281	1705
RX 350 (6AT)	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	8.4	160	1344	48	1392
RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Fuel Tank	7.2	160	1152	652	1804
RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Intake Air Surge Tank	2	160	320	684	1004
RX 350 AWD(6AT)/RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Intake Manifold	2.6	160	416	491	907
RX 350 AWD(6AT)	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	1.1	160	176	807	983
RX 350 AWD(6AT)	FTYXT03.5BER	2GR-FE	Transmission Solenoid	9.8	160	1568	281	1849
RX 350 AWD(6AT)	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	9.5	160	1520	48	1568
RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	1.1	160	176	768	944
RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.6	160	96	950	1046
RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Transmission Solenoid	10.2	160	1632	314	1946
RX 350 AWD(8AT)	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	10.1	160	1616	65	1681
SIENNA AWD	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	0.9	142	128	782	910
SIENNA AWD	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.9	142	128	1009	1137
SIENNA AWD	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	2.4	142	341	1022	1362
SIENNA AWD	FTYXT03.5BER	2GR-FE	Fuel Tank	2.5	142	355	698	1053
SIENNA AWD	FTYXT03.5BER	2GR-FE	Fuel Tank Filler Pipe	2.4	142	341	252	593
SIENNA AWD	FTYXT03.5BER	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.3	142	43	805	848
SIENNA AWD	FTYXT03.5BER	2GR-FE	Transmission Solenoid	9.2	142	1306	284	1590
SIENNA AWD	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	8.9	142	1264	49	1312
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Charcoal Canister	0.4	142	57	464	520
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.6	142	85	978	1063
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Fuel Delivery Pipe	2	142	284	214	498
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Fuel Pump	2.3	142	327	332	659
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Intake Air Surge Tank	1.6	142	227	619	846
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Intake Manifold	2.3	142	327	511	837
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Knock Sensor	2.3	142	327	194	521
SIENNA/SIENNA AWD	FTYXT03.5BER	2GR-FE	Throttle Body	1.4	142	199	923	1122
SIENNA	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	0.9	142	128	782	910
SIENNA	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.8	142	114	978	1092
SIENNA	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	2.2	142	312	1022	1334
SIENNA	FTYXT03.5BER	2GR-FE	Fuel Tank	2.4	142	341	698	1039
SIENNA	FTYXT03.5BER	2GR-FE	Fuel Tank Filler Pipe	2.4	142	341	252	593
SIENNA	FTYXT03.5BER	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.3	142	43	805	848
SIENNA	FTYXT03.5BER	2GR-FE	Transmission Solenoid	8.1	142	1150	284	1434
SIENNA	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	7.8	142	1108	49	1156
VENZA 4WD	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	857	913

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
VENZA 4WD	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	957	1028
VENZA 4WD	FTYXT03.5BER	2GR-FE	Fuel Tank	3	142	426	558	984
VENZA 4WD	FTYXT03.5BER	2GR-FE	Transmission Solenoid	9.8	142	1392	284	1675
VENZA 4WD	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	8.7	142	1235	49	1284
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Charcoal Canister	0.4	142	57	564	620
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	957	1028
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Exhaust Manifold (Including Manifold Converter)	1.2	142	170	1022	1192
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Fuel Pump	1.3	142	185	336	520
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Intake Air Surge Tank	2	142	284	619	903
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Intake Manifold	2.4	142	341	468	808
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Knock Sensor	2.6	142	369	194	563
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Throttle Body	1.7	142	241	923	1164
VENZA/VENZA 4WD	FTYXT03.5BER	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.7	142	99	805	905
VENZA	FTYXT03.5BER	2GR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	791	847
VENZA	FTYXT03.5BER	2GR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	957	1028
VENZA	FTYXT03.5BER	2GR-FE	Fuel Tank	2.4	142	341	558	898
VENZA	FTYXT03.5BER	2GR-FE	Transmission Solenoid	9	142	1278	284	1562
VENZA	FTYXT03.5BER	2GR-FE	Wire Transmission (Including Temperature Sensor)	8.7	142	1235	49	1284
RX 450h AWD	FTYXT03.5CC4	2GR-FXE	Hybrid Control Module (Power Management Control Module)	1	160	160	931	1091
RX 450h AWD	FTYXT03.5CC4	2GR-FXE	Inverter with Converter	3	160	480	6560	7040
RX 450h AWD	FTYXT03.5CC4	2GR-FXE	RR Traction Motor With Transaxle	5.5	160	880	1605	2485
RX 450h AWD	FTYXT03.5CC4	2GR-FXE	Transaxle (Including Motor and Generator)	10.1	160	1616	4122	5738
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Air Cleaner	0.9	160	144	603	747
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Air Fuel Ratio Sensor	2.5	160	400	217	617
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Battery Control Module (Battery Voltage Sensor)	3	160	480	273	753
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Charcoal Canister	0.5	160	80	1072	1152
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	EGR Cooler	2.2	160	352	706	1058
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	EGR Pipe No.1	2.2	160	352	179	531
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	EGR Valve	1.2	160	192	325	517
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Engine Control Computer (Engine Control Module)	0.6	160	96	1080	1176
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Exhaust Center Pipe (Including Catalytic Converter)	1.4	160	224	4463	4687
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Exhaust Manifold (Including Manifold Converter)	2.5	160	400	1485	1885
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Fuel Delivery Pipe	2.6	160	416	235	651
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Fuel Filter	3.3	160	528	29	557
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Fuel Pressure Regulator	3.3	160	528	82	610
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Fuel Pump	3.3	160	528	323	851
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Fuel Tank	3.2	160	512	569	1081
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Fuel Tank Solenoid Main Valve	3.2	160	512	445	957
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Hybrid Battery	2.6	160	416	6158	6574
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Hybrid Battery Junction Block	1.8	160	288	308	596
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Hybrid Battery Thermistor	2.6	160	416	89	505
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Injector	2.6	160	416	143	559
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Intake Manifold and Intake Air Surge Tank	2.8	160	448	613	1061
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Knock Sensor	2.9	160	464	165	629
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Throttle Body	1.8	160	288	914	1202
RX 450h/RX450h AWD	FTYXT03.5CC4	2GR-FXE	Transaxle (Including Motor and Generator)	14.4	160	2304	1682	3986
RX 450h	FTYXT03.5CC4	2GR-FXE	Hybrid Control Module (Power Management Control Module)	1	160	160	931	1091
RX 450h	FTYXT03.5CC4	2GR-FXE	Inverter with Converter	3	160	480	6560	7040
RX 450h	FTYXT03.5CC4	2GR-FXE	Transaxle (Including Motor and Generator)	10	160	1600	4122	5722
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Air Cleaner	0.8	142	114	646	760
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Air Fuel Ratio Sensor	3	142	426	216	642
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Battery	3	142	426	6353	6779
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Battery Control Module (Battery Voltage Sensor)	2.5	142	355	251	606
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	EGR Cooler	2.7	142	383	714	1097
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	EGR Pipe No.1	2.7	142	383	155	538
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	EGR Valve	1.5	142	213	328	541
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Engine Control Computer (Engine Control Module)	0.5	142	71	761	832
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Exhaust Center Pipe (Including Catalytic Converter)	1.3	142	185	987	1171
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Exhaust Manifold (Including Manifold Converter)	3.4	142	483	1544	2027
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Exhaust Manifold To Head Gasket	3.4	142	483	17	499
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Fuel Delivery Pipe	2.5	142	355	235	590

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Fuel Pump	2	142	284	323	607
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Fuel Tank	2.4	142	341	561	902
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Fuel Tank Solenoid Main Valve	3.5	142	497	450	947
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	HV Battery Thermistor	3	142	426	80	506
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Hybrid Battery Junction Block (Including System Main Relay)	2.3	142	327	311	638
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Hybrid Control Module (Power Management Control Module)	0.4	142	57	753	809
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Injector	2.5	142	355	143	498
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Intake Manifold and Intake Air Surge Tank	2	142	284	684	968
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Inverter with Converter	2.5	142	355	5973	6328
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Knock Sensor	2.7	142	383	165	549
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Rr Traction Motor With Transaxle	4.9	142	696	1606	2302
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Throttle Body	1.6	142	227	923	1150
HIGHLANDER HYBRID AWD	FTYXT03.5CCU	2GR-FXE	Transaxle (Including Motor and Generator)	8	142	1136	4124	5260
TACOMA 2WD (6MT)	FTYXT04.0BEM	1GR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Air Cleaner	0.3	142	43	646	689
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Air Pump	0.5	142	71	761	832
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Air Switching Valve	0.5	142	71	615	686
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Charcoal Canister	0.7	142	99	544	644
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.4	142	57	914	971
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.4	142	57	1074	1131
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Exhaust Manifold (Including Manifold Converter)	0.9	142	128	682	810
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Fuel Pump	1.2	142	170	323	494
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Fuel Tank	1.1	142	156	724	880
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Intake Air Surge Tank	1.1	142	156	355	511
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Intake Manifold	1.5	142	213	277	490
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Throttle Body	1	142	142	923	1065
TACOMA 2WD/TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Transmission Solenoid	1.8	142	256	285	540
TACOMA 2WD	FTYXT04.0BEM	1GR-FE	Knock Sensor	11.8	142	1676	194	1870
TACOMA 4WD (5AT)	FTYXT04.0BEM	1GR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
TACOMA 4WD (6MT)	FTYXT04.0BEM	1GR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	845	902
TACOMA 4WD	FTYXT04.0BEM	1GR-FE	Knock Sensor	13.1	142	1860	194	2054
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Air Pump	0.5	142	71	744	815
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Charcoal Canister	0.4	142	57	464	520
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Exhaust Front Pipe (Including Catalytic Converter)	1.2	142	170	960	1130
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	1.2	142	170	1037	1208
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Exhaust Manifold (Including Manifold Converter)	1.6	142	227	682	910
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Fuel Pump	2.4	142	341	335	676
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Fuel Tank	2.2	142	312	757	1069
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Intake Air Surge Tank	1.3	142	185	457	641
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Intake Manifold	2.1	142	298	384	682
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Throttle Body	1.3	142	185	923	1108
4RUNNER 2WD/4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Transmission Solenoid	2.3	142	327	285	611
4RUNNER 2WD	FTYXT04.0BES	1GR-FE	Engine Control Computer (Engine Control Module)	0.7	142	99	918	1017
4RUNNER 2WD	FTYXT04.0BES	1GR-FE	Knock Sensor	14.5	142	2059	165	2224
4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Engine Control Computer (Engine Control Module)	0.7	142	99	906	1005
4RUNNER 4WD	FTYXT04.0BES	1GR-FE	Knock Sensor	16.2	142	2300	165	2466
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Air Pump	0.5	142	71	588	659
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Charcoal Canister	0.5	142	71	564	635
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	EGR Cooler	2.1	142	298	744	1042
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	1187	1243
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.6	142	85	1493	1578
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Exhaust Front Pipe (Including Catalytic Converter)/Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.6	142	85	1564	1649
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.6	142	85	1564	1649
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Exhaust Manifold	3.1	142	440	420	860
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Exhaust Manifold Gasket	3.1	142	440	52	492
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Exhaust Manifold Heat Insulator	3.1	142	440	58	498
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Fuel Pump	1.5	142	213	338	551
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Fuel Tank	1.4	142	199	835	1033
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Intake Manifold	1.7	142	241	563	804
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Knock Sensor	1.6	142	227	284	511
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Throttle Body	1.2	142	170	923	1093

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
TUNDRA 2WD/4WD	FTYXT04.6BEW	1UR-FE	Transmission Solenoid	2.2	142	312	285	597
GX 460	FTYXT04.6BEX	1UR-FE	Air Fuel Ratio Sensor	4.9	160	784	197	981
GX 460	FTYXT04.6BEX	1UR-FE	Air Pump	0.5	160	80	744	824
GX 460	FTYXT04.6BEX	1UR-FE	Charcoal Canister	0.3	160	48	464	512
GX 460	FTYXT04.6BEX	1UR-FE	Crank Position Sensor	2.6	160	416	114	530
GX 460	FTYXT04.6BEX	1UR-FE	EGR Cooler	2.6	160	416	744	1160
GX 460	FTYXT04.6BEX	1UR-FE	EGR Inlet	2.6	160	416	100	516
GX 460	FTYXT04.6BEX	1UR-FE	EGR Pipe	2.6	160	416	187	603
GX 460	FTYXT04.6BEX	1UR-FE	EGR Pipe No.2	2.6	160	416	119	535
GX 460	FTYXT04.6BEX	1UR-FE	EGR Pipe No.3	2.6	160	416	102	518
GX 460	FTYXT04.6BEX	1UR-FE	Engine Control Computer (Engine Control Module)	0.7	160	112	1380	1492
GX 460	FTYXT04.6BEX	1UR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.8	160	128	1281	1409
GX 460	FTYXT04.6BEX	1UR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.8	160	128	1380	1508
GX 460	FTYXT04.6BEX	1UR-FE	Exhaust Manifold (Including Manifold Converter)	4.8	160	768	1308	2076
GX 460	FTYXT04.6BEX	1UR-FE	Exhaust Manifold Gasket	4.8	160	768	36	804
GX 460	FTYXT04.6BEX	1UR-FE	Fuel Pump	2.3	160	368	335	703
GX 460	FTYXT04.6BEX	1UR-FE	Fuel Tank	2.1	160	336	757	1093
GX 460	FTYXT04.6BEX	1UR-FE	Intake Manifold	2.7	160	432	854	1286
GX 460	FTYXT04.6BEX	1UR-FE	Knock Sensor	2.9	160	464	165	629
GX 460	FTYXT04.6BEX	1UR-FE	Throttle Body	1.2	160	192	923	1115
GX 460	FTYXT04.6BEX	1UR-FE	Transmission Solenoid	2.6	160	416	285	701
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Air Pump	0.9	142	128	588	716
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Charcoal Canister	0.5	142	71	564	635
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Emission Control Valve	0.5	142	71	501	572
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	1102	1159
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.6	142	85	1738	1823
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Exhaust Front Pipe (Including Catalytic Converter)/Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.6	142	85	1564	1649
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.6	142	85	1564	1649
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Exhaust Manifold	3.1	142	440	519	959
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Exhaust Manifold Gasket	3.1	142	440	56	496
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Fuel Pump	1.5	142	213	338	551
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Fuel Tank	1.4	142	199	835	1033
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Intake Manifold	1.7	142	241	701	943
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Knock Sensor	1.6	142	227	284	511
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Throttle Body	1.2	142	170	1192	1362
TUNDRA 2WD/4WD	FTYXT05.7BEW	3UR-FE	Transmission Solenoid	2.1	142	298	285	583
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Air Pump	0.9	142	128	588	716
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Charcoal Canister	0.5	142	71	700	771
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	1370	1427
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.8	142	114	1525	1638
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.8	142	114	1525	1638
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Manifold	1.6	142	227	424	651
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Fuel Pump	1.9	142	270	338	607
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Fuel Tank	1.8	142	256	650	906
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Intake Manifold	1.7	142	241	701	943
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Knock Sensor	1.8	142	256	265	521
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Throttle Body	1.2	142	170	801	971
LAND CRUISER WAGON 4WD	FTYXT05.7BEY	3UR-FE	Transmission Solenoid	2.2	142	312	285	597
LX 570	FTYXT05.7BEY	3UR-FE	Air Fuel Ratio Sensor	2	160	320	197	517
LX 570	FTYXT05.7BEY	3UR-FE	Air Pump	0.9	160	144	588	732
LX 570	FTYXT05.7BEY	3UR-FE	Charcoal Canister	0.3	160	48	700	748
LX 570	FTYXT05.7BEY	3UR-FE	Engine Control Computer (Engine Control Module)	0.5	160	80	1370	1450
LX 570	FTYXT05.7BEY	3UR-FE	Exhaust Front Pipe (Including Catalytic Converter)	1	160	160	1525	1685
LX 570	FTYXT05.7BEY	3UR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	1	160	160	1525	1685
LX 570	FTYXT05.7BEY	3UR-FE	Exhaust Manifold	1.7	160	272	424	696
LX 570	FTYXT05.7BEY	3UR-FE	Fuel Pump	1.9	160	304	338	642
LX 570	FTYXT05.7BEY	3UR-FE	Fuel Tank	1.8	160	288	650	938
LX 570	FTYXT05.7BEY	3UR-FE	Intake Manifold	1.7	160	272	701	973
LX 570	FTYXT05.7BEY	3UR-FE	Knock Sensor	1.9	160	304	265	569
LX 570	FTYXT05.7BEY	3UR-FE	Throttle Body	1.3	160	208	801	1009
LX 570	FTYXT05.7BEY	3UR-FE	Transmission Solenoid	2.1	160	336	285	621

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Air Pump	1.9	142	270	588	858
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Charcoal Canister	0.5	142	71	544	615
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Emission Control Valve	0.5	142	71	501	572
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	1093	1149
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.6	142	85	1738	1823
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Front Pipe No.2 (Including Catalytic Converter)	0.6	142	85	1585	1671
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Manifold	3.2	142	454	519	973
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Manifold Gasket	3.2	142	454	56	510
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Fuel Pump	1.5	142	213	338	551
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Fuel Tank	1.4	142	199	835	1033
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Intake Manifold	1.7	142	241	701	943
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Knock Sensor	1.8	142	256	235	491
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Throttle Body	1.2	142	170	801	971
SEQUOIA 2WD/SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Transmission Solenoid	2.1	142	298	285	583
SEQUOIA 2WD	FTYXT05.7BEY	3UR-FE	Exhaust Manifold	2.8	142	398	519	916
SEQUOIA 4WD	FTYXT05.7BEY	3UR-FE	Exhaust Manifold	3.2	142	454	519	973
iQ	FTYXV01.3BEA	1NR-FE	Charcoal Canister	0.4	142	57	464	520
iQ	FTYXV01.3BEA	1NR-FE	Engine Control Computer (Engine Control Module)	1.2	142	170	682	852
iQ	FTYXV01.3BEA	1NR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.3	142	43	795	838
iQ	FTYXV01.3BEA	1NR-FE	Exhaust Manifold (Including Manifold Converter)	2.3	142	327	301	628
iQ	FTYXV01.3BEA	1NR-FE	Fuel Pump	1.8	142	256	323	579
iQ	FTYXV01.3BEA	1NR-FE	Fuel Tank	2	142	284	499	783
iQ	FTYXV01.3BEA	1NR-FE	Intake Manifold	1.6	142	227	268	495
iQ	FTYXV01.3BEA	1NR-FE	Throttle Body	1.2	142	170	923	1093
iQ	FTYXV01.3BEA	1NR-FE	Transmission Solenoid	6.4	142	909	12352	13260
YARIS (Liftback)	FTYXV01.5BEB	1NZ-FE	Charcoal Canister	0.4	142	57	500	557
YARIS (Liftback)	FTYXV01.5BEB	1NZ-FE	Engine Control Computer (Engine Control Module)	0.8	142	114	558	671
YARIS (Liftback)	FTYXV01.5BEB	1NZ-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.8	142	114	1081	1194
YARIS (Liftback)	FTYXV01.5BEB	1NZ-FE	Fuel Tank	2.2	142	312	499	811
YARIS (Liftback)	FTYXV01.5BEB	1NZ-FE	Intake Manifold	1.3	142	185	306	490
YARIS (Liftback)	FTYXV01.5BEB	1NZ-FE	Throttle Body	1	142	142	923	1065
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Battery	1.3	142	185	3807	3991
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Charcoal Canister	0.4	142	57	611	668
PRIUS c	FTYXV01.5CC4	1NZ-FXE	EGR Cooler	1.7	142	241	670	911
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Engine Control Computer (Engine Control Module)	0.9	142	128	802	930
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	142	156	1124	1280
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Exhaust Manifold	2.3	142	327	672	999
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Fuel Pump	1.2	142	170	339	509
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Fuel Tank	2.2	142	312	504	816
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Hybrid Control Module (Power Management Control Module)	0.9	142	128	817	945
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Injector	2.5	142	355	159	514
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Intake Manifold	1.3	142	185	310	494
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Inverter with Converter	1.5	142	213	2531	2744
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Throttle Body	1	142	142	935	1077
PRIUS c	FTYXV01.5CC4	1NZ-FXE	Transaxle (Including Motor and Generator)	7.5	142	1065	3006	4071
COROLLA	FTYXV01.8BEC	2ZR-FE	Charcoal Canister	0.3	142	43	500	542
COROLLA	FTYXV01.8BEC	2ZR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	543	600
COROLLA	FTYXV01.8BEC	2ZR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	1086	1186
COROLLA	FTYXV01.8BEC	2ZR-FE	Fuel Tank	2.1	142	298	558	856
COROLLA	FTYXV01.8BEC	2ZR-FE	Intake Manifold	1.3	142	185	312	496
COROLLA	FTYXV01.8BEC	2ZR-FE	Throttle Body	1	142	142	923	1065
CT 200h	FTYXV01.8CCU	2ZR-FXE	Battery Control Module (Battery Voltage Sensor)	1.6	160	256	245	501
CT 200h	FTYXV01.8CCU	2ZR-FXE	Charcoal Canister	1.9	160	304	391	695
CT 200h	FTYXV01.8CCU	2ZR-FXE	EGR Valve	1.8	160	288	297	585
CT 200h	FTYXV01.8CCU	2ZR-FXE	Engine Control Computer (Engine Control Module)	1.8	160	288	791	1079
CT 200h	FTYXV01.8CCU	2ZR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	1.4	160	224	2198	2422
CT 200h	FTYXV01.8CCU	2ZR-FXE	Exhaust Manifold	2.1	160	336	222	558
CT 200h	FTYXV01.8CCU	2ZR-FXE	Fuel Pump	0.9	160	144	369	513
CT 200h	FTYXV01.8CCU	2ZR-FXE	Fuel Tank	1.9	160	304	528	832
CT 200h	FTYXV01.8CCU	2ZR-FXE	Hybrid Battery	1.9	160	304	3939	4243
CT 200h	FTYXV01.8CCU	2ZR-FXE	Hybrid Battery Junction Block (Including System Main Relay)	1.2	160	192	300	492

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
CT 200h	FTYXV01.8CCU	2ZR-FXE	Hybrid Control Module (Power Management Control Module)	1.8	160	288	1043	1331
CT 200h	FTYXV01.8CCU	2ZR-FXE	Intake Manifold	1.7	160	272	272	544
CT 200h	FTYXV01.8CCU	2ZR-FXE	Inverter with Converter	1.6	160	256	2659	2915
CT 200h	FTYXV01.8CCU	2ZR-FXE	Knock Sensor	1.7	160	272	220	492
CT 200h	FTYXV01.8CCU	2ZR-FXE	Throttle Body	1.3	160	208	923	1131
CT 200h	FTYXV01.8CCU	2ZR-FXE	Transaxle (Including Motor and Generator)	7.6	160	1216	3160	4376
CT 200h	FTYXV01.8CCU	2ZR-FXE	Water Pump With Motor	1.8	160	288	217	505
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Battery	1.5	142	213	3939	4152
PRIUS v	FTYXV01.8CCU	2ZR-FXE	EGR Pipe With Cooler	1.2	142	170	334	505
PRIUS v	FTYXV01.8CCU	2ZR-FXE	EGR Valve	1.9	142	270	300	570
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Engine Control Computer (Engine Control Module)	1.8	142	256	876	1132
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	1565	1664
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Exhaust Manifold	1.6	142	227	265	492
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Fuel Pump	1.1	142	156	339	495
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Fuel Tank	2.9	142	412	533	945
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Hybrid Control Module (Power Management Control Module)	1	142	142	619	761
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Intake Manifold	1.4	142	199	295	493
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Inverter with Converter	1.6	142	227	2659	2887
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Throttle Body	1.1	142	156	932	1089
PRIUS v	FTYXV01.8CCU	2ZR-FXE	Transaxle (Including Motor and Generator)	8.6	142	1221	2980	4202
PRIUS	FTYXV01.8HC3	2ZR-FXE	Battery	1.6	142	227	3939	4166
PRIUS	FTYXV01.8HC3	2ZR-FXE	Charcoal Canister	0.4	142	57	783	840
PRIUS	FTYXV01.8HC3	2ZR-FXE	EGR Pipe With Cooler	1.2	142	170	331	501
PRIUS	FTYXV01.8HC3	2ZR-FXE	EGR Valve	1.9	142	270	297	567
PRIUS	FTYXV01.8HC3	2ZR-FXE	Engine Control Computer (Engine Control Module)	0.5	142	71	634	705
PRIUS	FTYXV01.8HC3	2ZR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	1.4	142	199	1549	1748
PRIUS	FTYXV01.8HC3	2ZR-FXE	Exhaust Manifold	1.7	142	241	252	494
PRIUS	FTYXV01.8HC3	2ZR-FXE	Fuel Pump	0.9	142	128	368	495
PRIUS	FTYXV01.8HC3	2ZR-FXE	Fuel Tank	2.6	142	369	528	897
PRIUS	FTYXV01.8HC3	2ZR-FXE	Hybrid Control Module (Power Management Control Module)	0.5	142	71	913	984
PRIUS	FTYXV01.8HC3	2ZR-FXE	Intake Manifold	1.5	142	213	282	495
PRIUS	FTYXV01.8HC3	2ZR-FXE	Inverter with Converter	1.6	142	227	2659	2886
PRIUS	FTYXV01.8HC3	2ZR-FXE	Throttle Body	1.1	142	156	923	1079
PRIUS	FTYXV01.8HC3	2ZR-FXE	Transaxle (Including Motor and Generator)	8.7	142	1235	3160	4396
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Battery	2	142	284	9980	10264
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Battery Control Module (Battery Voltage Sensor)	1.1	142	156	625	781
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Charcoal Canister	0.4	142	57	819	876
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	EGR Pipe With Cooler	1.2	142	170	331	501
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	EGR Valve	1.9	142	270	297	567
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Electric Vehicle Charger	0.8	142	114	1721	1835
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Engine Control Computer (Engine Control Module)	0.5	142	71	640	711
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	1.4	142	199	2065	2264
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Exhaust Manifold	1.7	142	241	252	494
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Fuel Tank	2.7	142	383	528	912
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Fuel Tank Solenoid Main Valve	0.4	142	57	450	507
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Hybrid Battery Junction Block (Including System Main Relay)	1.4	142	199	459	658
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Hybrid Control Module (Power Management Control Module)	0.5	142	71	931	1002
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Intake Manifold	1.5	142	213	282	495
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Inverter with Converter	2	142	284	2659	2943
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Plugin Charge Control Computer	0.3	142	43	472	514
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Throttle Body	1.1	142	156	923	1079
PRIUS Plug-in Hybrid	FTYXV01.8HCU	2ZR-FXE	Transaxle (Including Motor and Generator)	8.7	142	1235	3160	4396
COROLLA	FTYXV01.8MEA	2ZR-FAE	Charcoal Canister	0.3	142	43	500	542
COROLLA	FTYXV01.8MEA	2ZR-FAE	CV Valve Lift Controller	2.6	142	369	1065	1434
COROLLA	FTYXV01.8MEA	2ZR-FAE	Engine Control Computer (Engine Control Module)	0.4	142	57	543	600
COROLLA	FTYXV01.8MEA	2ZR-FAE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	1193	1292
COROLLA	FTYXV01.8MEA	2ZR-FAE	Fuel Tank	2.1	142	298	558	856
COROLLA	FTYXV01.8MEA	2ZR-FAE	Intake Manifold	1.3	142	185	308	493
COROLLA	FTYXV01.8MEA	2ZR-FAE	Throttle Body	1	142	142	923	1065
COROLLA	FTYXV01.8MEA	2ZR-FAE	Transmission Solenoid	6.3	142	895	3649	4544
xB	FTYXV02.4BEB	2AZ-FE		2.1	142	298	195	493

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Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
xB	FTYXV02.4BEB	2AZ-FE	Charcoal Canister	0.3	142	43	740	783
xB	FTYXV02.4BEB	2AZ-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	884	955
xB	FTYXV02.4BEB	2AZ-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.6	142	85	829	915
xB	FTYXV02.4BEB	2AZ-FE	Exhaust Manifold (Including Manifold Converter)	1.1	142	156	428	584
xB	FTYXV02.4BEB	2AZ-FE	Fuel Tank	1.9	142	270	463	732
xB	FTYXV02.4BEB	2AZ-FE	Intake Manifold	2	142	284	342	626
xB	FTYXV02.4BEB	2AZ-FE	Throttle Body	0.9	142	128	779	906
xB	FTYXV02.4BEB	2AZ-FE	Transmission Solenoid	1.8	142	256	288	543
tC	FTYXV02.5BEB	2AR-FE	Air Cleaner	0.1	142	14	582	597
tC	FTYXV02.5BEB	2AR-FE	Crank Position Sensor	2.7	142	383	113	496
tC	FTYXV02.5BEB	2AR-FE	Engine Control Computer (Engine Control Module)	0.6	142	85	964	1049
tC	FTYXV02.5BEB	2AR-FE	Exhaust Center Pipe (Including Catalytic Converter)	0.5	142	71	856	927
tC	FTYXV02.5BEB	2AR-FE	Fuel Tank	1.6	142	227	578	805
tC	FTYXV02.5BEB	2AR-FE	Intake Manifold	2.7	142	383	390	773
tC	FTYXV02.5BEB	2AR-FE	Knock Sensor	2.7	142	383	165	549
tC	FTYXV02.5BEB	2AR-FE	Throttle Body	1.3	142	185	878	1063
tC	FTYXV02.5BEB	2AR-FE	Transmission Control Computer (Transmission Control Module)	0.6	142	85	797	882
tC	FTYXV02.5BEB	2AR-FE	Transmission Solenoid	2.3	142	327	281	607
IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1474	1554
IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1701	1877
IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Exhaust Manifold (Including Manifold Converter)	2	160	320	1052	1372
IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Transmission Solenoid	7.1	160	1136	285	1421
IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Wire Transmission (Including Temperature Sensor)	6.7	160	1072	53	1125
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Charcoal Canister	0.4	160	64	758	822
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1701	1877
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Fuel Delivery Pipe	3	160	480	173	653
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Fuel Pressure Sensor	1.6	160	256	325	581
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Fuel Relief Valve	3	160	480	40	520
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Fuel Tank	3.5	160	560	674	1234
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	High Pressure Fuel Pump	1.6	160	256	1271	1527
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Injector	3	160	480	369	849
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Injector Driver	0.2	160	32	1325	1357
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Intake Air Control Valve	1.5	160	240	348	588
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Intake Air Surge Tank	1.8	160	288	711	999
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Intake Manifold	1.8	160	288	731	1019
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Knock Sensor	3	160	480	265	745
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Low Pressure Fuel Pump	0.8	160	128	1275	1403
IS 250/IS 250 AWD	FTYXV02.5BEC	4GR-FSE	Throttle Body	1	160	160	837	997
IS 250 C	FTYXV02.5BEC	4GR-FSE	Charcoal Canister	0.3	160	48	714	762
IS 250 C	FTYXV02.5BEC	4GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1030	1110
IS 250 C	FTYXV02.5BEC	4GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	0.6	160	96	1511	1607
IS 250 C	FTYXV02.5BEC	4GR-FSE	Exhaust Manifold (Including Manifold Converter)	1	160	160	1052	1212
IS 250 C	FTYXV02.5BEC	4GR-FSE	Fuel Delivery Pipe	2.5	160	400	173	573
IS 250 C	FTYXV02.5BEC	4GR-FSE	Fuel Pressure Sensor	0.7	160	112	380	492
IS 250 C	FTYXV02.5BEC	4GR-FSE	Fuel Tank	2.5	160	400	574	974
IS 250 C	FTYXV02.5BEC	4GR-FSE	High Pressure Fuel Pump	1	160	160	1271	1431
IS 250 C	FTYXV02.5BEC	4GR-FSE	Injector	2.5	160	400	369	769
IS 250 C	FTYXV02.5BEC	4GR-FSE	Injector Driver	0.5	160	80	1325	1405
IS 250 C	FTYXV02.5BEC	4GR-FSE	Intake Air Control Valve	1.2	160	192	348	540
IS 250 C	FTYXV02.5BEC	4GR-FSE	Intake Air Surge Tank	1.6	160	256	711	967
IS 250 C	FTYXV02.5BEC	4GR-FSE	Intake Manifold	1.6	160	256	731	987
IS 250 C	FTYXV02.5BEC	4GR-FSE	Knock Sensor	2.1	160	336	265	601
IS 250 C	FTYXV02.5BEC	4GR-FSE	Low Pressure Fuel Pump	0.7	160	112	1275	1387
IS 250 C	FTYXV02.5BEC	4GR-FSE	Throttle Body	0.8	160	128	837	965
IS 250 C	FTYXV02.5BEC	4GR-FSE	Transmission Solenoid	3	160	480	285	765
IS 250	FTYXV02.5BEC	4GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1448	1528
IS 250	FTYXV02.5BEC	4GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1701	1877
IS 250	FTYXV02.5BEC	4GR-FSE	Exhaust Manifold (Including Manifold Converter)	1.7	160	272	1052	1324
IS 250	FTYXV02.5BEC	4GR-FSE	Transmission Solenoid	2.3	160	368	285	653
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Charcoal Canister	2.1	142	298	544	842
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Engine Control Computer (Engine Control Module)	0.4	142	57	847	903

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Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	866	965
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Exhaust Manifold (Including Manifold Converter)	1.3	142	185	309	493
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Fuel Tank	2.1	142	298	554	852
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Intake Manifold	2	142	284	390	674
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Knock Sensor	2	142	284	206	490
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Throttle Body	1.3	142	185	923	1108
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Transmission Solenoid	7	142	994	284	1278
CAMRY (ULEV)	FTYXV02.5BED	2AR-FE	Wire Transmission (Including Temperature Sensor)	7	142	994	74	1068
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Battery	1.8	142	256	4891	5147
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Battery Control Module (Battery Voltage Sensor)	1.7	142	241	257	499
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Charcoal Canister	2.3	142	327	544	871
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	EGR Cooler	1.3	142	185	318	502
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Engine Control Computer (Engine Control Module)	0.5	142	71	647	718
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	1039	1138
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Exhaust Manifold (Including Manifold Converter)	1.3	142	185	678	862
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Fuel Tank	2.1	142	298	560	858
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Hybrid Control Module (Power Management Control Module)	0.5	142	71	431	502
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Injector	2.6	142	369	163	533
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Intake Manifold	2.3	142	327	394	720
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Inverter with Converter	1.7	142	241	5974	6215
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Knock Sensor	2.4	142	341	165	506
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Throttle Body	1.3	142	185	1207	1391
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Transaxle (Including Motor and Generator)	7.3	142	1037	4319	5355
AVALON HYBRID	FTYXV02.5CC4	2AR-FXE	Water Pump With Motor	2	142	284	316	600
ES 300h	FTYXV02.5CC4	2AR-FXE	Battery Control Module (Battery Voltage Sensor)	1.7	160	272	255	527
ES 300h	FTYXV02.5CC4	2AR-FXE	Charcoal Canister	2.3	160	368	539	907
ES 300h	FTYXV02.5CC4	2AR-FXE	Crank Position Sensor	2.5	160	400	114	514
ES 300h	FTYXV02.5CC4	2AR-FXE	EGR Cooler	1.3	160	208	315	523
ES 300h	FTYXV02.5CC4	2AR-FXE	Engine Control Computer (Engine Control Module)	0.5	160	80	585	665
ES 300h	FTYXV02.5CC4	2AR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	160	112	1390	1502
ES 300h	FTYXV02.5CC4	2AR-FXE	Exhaust Manifold (Including Manifold Converter)	1.4	160	224	345	569
ES 300h	FTYXV02.5CC4	2AR-FXE	Fuel Delivery Pipe	2.6	160	416	101	517
ES 300h	FTYXV02.5CC4	2AR-FXE	Fuel Tank	2.1	160	336	543	879
ES 300h	FTYXV02.5CC4	2AR-FXE	Hybrid Battery	2.1	160	336	4891	5227
ES 300h	FTYXV02.5CC4	2AR-FXE	Hybrid Control Module (Power Management Control Module)	1	160	160	860	1020
ES 300h	FTYXV02.5CC4	2AR-FXE	Injector	2.6	160	416	157	573
ES 300h	FTYXV02.5CC4	2AR-FXE	Intake Manifold	2.2	160	352	390	742
ES 300h	FTYXV02.5CC4	2AR-FXE	Inverter with Converter	1.7	160	272	5973	6245
ES 300h	FTYXV02.5CC4	2AR-FXE	Knock Sensor	2.6	160	416	165	581
ES 300h	FTYXV02.5CC4	2AR-FXE	Throttle Body	1.3	160	208	1194	1402
ES 300h	FTYXV02.5CC4	2AR-FXE	Transaxle (Including Motor and Generator)	7.9	160	1264	4317	5581
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Battery Control Module (Battery Voltage Sensor)	1.6	142	227	265	492
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Charcoal Canister	2.2	142	312	539	851
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	EGR Cooler	1.3	142	185	315	499
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Engine Control Computer (Engine Control Module)	0.5	142	71	828	899
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	0.7	142	99	1028	1128
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Exhaust Manifold (Including Manifold Converter)	1.3	142	185	345	529
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Fuel Tank	2.1	142	298	554	852
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Hybrid Battery	2.1	142	298	4891	5189
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Hybrid Control Module (Power Management Control Module)	1	142	142	720	862
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Intake Manifold	2.3	142	327	390	716
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Inverter with Converter	1.6	142	227	5981	6208
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Knock Sensor	2.4	142	341	165	506
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Throttle Body	1.3	142	185	1194	1379
CAMRY HYBRID	FTYXV02.5HC3	2AR-FXE	Transaxle (Including Motor and Generator)	8.1	142	1150	4316	5466
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Charcoal Canister	0.5	160	80	758	838
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1508	1588
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.3	160	208	1779	1987
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	2.6	160	416	1052	1468
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Delivery Pipe	3.2	160	512	169	681
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Pressure Sensor	1.6	160	256	325	581

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Relief Valve	3.2	160	512	90	602
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Relief Valve Gasket	3.2	160	512	2	514
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Tank	3.1	160	496	674	1170
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	High Pressure Fuel Pump	2.4	160	384	1271	1655
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Injector	3.2	160	512	144	656
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Injector Driver	0.5	160	80	1325	1405
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Intake Air Surge Tank	1.4	160	224	711	935
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Intake Manifold	2.1	160	336	731	1067
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Knock Sensor	3.2	160	512	165	677
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Throttle Body	1.1	160	176	840	1016
GS 350 AWD	FTYXV03.5BEB	2GR-FSE	Transmission Solenoid	2.2	160	352	285	637
IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1470	1550
IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1779	1955
IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	2	160	320	1052	1372
IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Transmission Solenoid	7.1	160	1136	285	1421
IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Wire Transmission (Including Temperature Sensor)	6.7	160	1072	53	1125
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Charcoal Canister	0.4	160	64	758	822
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1779	1955
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	1.5	160	240	1052	1292
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Delivery Pipe	3	160	480	169	649
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Pressure Sensor	1.6	160	256	325	581
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Relief Valve	3	160	480	40	520
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Tank	3.6	160	576	674	1250
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	High Pressure Fuel Pump	1.6	160	256	1271	1527
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Injector	3	160	480	319	799
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Injector Driver	2.5	160	400	1325	1725
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Intake Air Surge Tank	2	160	320	711	1031
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Intake Manifold	2	160	320	731	1051
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Knock Sensor	3.1	160	496	265	761
IS 350/IS 350 AWD	FTYXV03.5BEB	2GR-FSE	Throttle Body	1	160	160	840	1000
IS 350 C	FTYXV03.5BEB	2GR-FSE	Charcoal Canister	0.3	160	48	714	762
IS 350 C	FTYXV03.5BEB	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1033	1113
IS 350 C	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	0.6	160	96	1590	1686
IS 350 C	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	1	160	160	1052	1212
IS 350 C	FTYXV03.5BEB	2GR-FSE	Fuel Delivery Pipe	2.5	160	400	169	569
IS 350 C	FTYXV03.5BEB	2GR-FSE	Fuel Pressure Sensor	0.7	160	112	380	492
IS 350 C	FTYXV03.5BEB	2GR-FSE	Fuel Tank	2.5	160	400	574	974
IS 350 C	FTYXV03.5BEB	2GR-FSE	High Pressure Fuel Pump	1	160	160	1271	1431
IS 350 C	FTYXV03.5BEB	2GR-FSE	Injector	2.5	160	400	319	719
IS 350 C	FTYXV03.5BEB	2GR-FSE	Injector Driver	0.5	160	80	1325	1405
IS 350 C	FTYXV03.5BEB	2GR-FSE	Intake Air Surge Tank	1.6	160	256	711	967
IS 350 C	FTYXV03.5BEB	2GR-FSE	Intake Manifold	1.6	160	256	731	987
IS 350 C	FTYXV03.5BEB	2GR-FSE	Knock Sensor	2.1	160	336	265	601
IS 350 C	FTYXV03.5BEB	2GR-FSE	Throttle Body	0.8	160	128	840	968
IS 350 C	FTYXV03.5BEB	2GR-FSE	Transmission Solenoid	3	160	480	285	765
IS 350	FTYXV03.5BEB	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1297	1377
IS 350	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1779	1955
IS 350	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	1.7	160	272	1052	1324
IS 350	FTYXV03.5BEB	2GR-FSE	Transmission Control Computer (Transmission Control Module)	0.5	160	80	1057	1137
IS 350	FTYXV03.5BEB	2GR-FSE	Transmission Solenoid	2.2	160	352	224	576
RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1511	1591
RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1779	1955
RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	2	160	320	1052	1372
RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Transmission Solenoid	7.1	160	1136	285	1421
RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Wire Transmission (Including Temperature Sensor)	6.7	160	1072	53	1125
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Charcoal Canister	0.4	160	64	758	822
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1779	1955
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	1.7	160	272	1052	1324
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Delivery Pipe	3	160	480	169	649
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Pressure Sensor	1.6	160	256	325	581
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Relief Valve	3	160	480	40	520

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Fuel Tank	3.6	160	576	674	1250
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	High Pressure Fuel Pump	1	160	160	1271	1431
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Injector	3	160	480	144	624
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Injector Driver	0.4	160	64	1325	1389
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Intake Air Surge Tank	1.3	160	208	711	919
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Intake Manifold	2	160	320	731	1051
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Knock Sensor	3.1	160	496	165	661
RC 350/RC 350 AWD	FTYXV03.5BEB	2GR-FSE	Throttle Body	1	160	160	840	1000
RC 350	FTYXV03.5BEB	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1511	1591
RC 350	FTYXV03.5BEB	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.1	160	176	1779	1955
RC 350	FTYXV03.5BEB	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	1.7	160	272	1052	1324
RC 350	FTYXV03.5BEB	2GR-FSE	Transmission Control Computer (Transmission Control Module)	0.5	160	80	1057	1137
RC 350	FTYXV03.5BEB	2GR-FSE	Transmission Solenoid	2.2	160	352	224	576
GS 350	FTYXV03.5BEB*2	2GR-FSE	Charcoal Canister	0.5	160	80	758	838
GS 350	FTYXV03.5BEB*2	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1266	1346
GS 350	FTYXV03.5BEB*2	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.2	160	192	1779	1971
GS 350	FTYXV03.5BEB*2	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	2	160	320	1052	1372
GS 350	FTYXV03.5BEB*2	2GR-FSE	Fuel Delivery Pipe	3.2	160	512	169	681
GS 350	FTYXV03.5BEB*2	2GR-FSE	Fuel Pressure Sensor	1.6	160	256	325	581
GS 350	FTYXV03.5BEB*2	2GR-FSE	Fuel Relief Valve	3.2	160	512	90	602
GS 350	FTYXV03.5BEB*2	2GR-FSE	Fuel Relief Valve Gasket	3.2	160	512	2	514
GS 350	FTYXV03.5BEB*2	2GR-FSE	Fuel Tank	3.3	160	528	674	1202
GS 350	FTYXV03.5BEB*2	2GR-FSE	High Pressure Fuel Pump	2.4	160	384	1271	1655
GS 350	FTYXV03.5BEB*2	2GR-FSE	Injector	3.2	160	512	144	656
GS 350	FTYXV03.5BEB*2	2GR-FSE	Injector Driver	0.5	160	80	1325	1405
GS 350	FTYXV03.5BEB*2	2GR-FSE	Intake Air Surge Tank	1.4	160	224	711	935
GS 350	FTYXV03.5BEB*2	2GR-FSE	Intake Manifold	2.1	160	336	731	1067
GS 350	FTYXV03.5BEB*2	2GR-FSE	Knock Sensor	3.2	160	512	165	677
GS 350	FTYXV03.5BEB*2	2GR-FSE	Throttle Body	1.1	160	176	840	1016
GS 350	FTYXV03.5BEB*2	2GR-FSE	Transmission Control Computer (Transmission Control Module)	0.6	160	96	1057	1153
GS 350	FTYXV03.5BEB*2	2GR-FSE	Transmission Solenoid	2.3	160	368	224	592
AVALON	FTYXV03.5BEC	2GR-FE	Charcoal Canister	2.2	142	312	550	862
AVALON	FTYXV03.5BEC	2GR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	807	878
AVALON	FTYXV03.5BEC	2GR-FE	Exhaust Front Pipe (Including Catalytic Converter)	1	142	142	1117	1259
AVALON	FTYXV03.5BEC	2GR-FE	Exhaust Manifold (Including Manifold Converter)	1.3	142	185	678	862
AVALON	FTYXV03.5BEC	2GR-FE	Fuel Delivery Pipe	2.1	142	298	217	515
AVALON	FTYXV03.5BEC	2GR-FE	Fuel Tank	2.2	142	312	560	872
AVALON	FTYXV03.5BEC	2GR-FE	Intake Air Surge Tank	2.2	142	312	625	938
AVALON	FTYXV03.5BEC	2GR-FE	Intake Manifold	2.2	142	312	742	1055
AVALON	FTYXV03.5BEC	2GR-FE	Knock Sensor	2.3	142	327	196	523
AVALON	FTYXV03.5BEC	2GR-FE	Throttle Body	1.2	142	170	932	1103
AVALON	FTYXV03.5BEC	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.6	142	85	813	899
AVALON	FTYXV03.5BEC	2GR-FE	Transmission Solenoid	7.5	142	1065	287	1352
AVALON	FTYXV03.5BEC	2GR-FE	Wire Transmission (Including Temperature Sensor)	7.5	142	1065	49	1114
CAMRY	FTYXV03.5BEC	2GR-FE	Charcoal Canister	2.2	142	312	544	857
CAMRY	FTYXV03.5BEC	2GR-FE	Engine Control Computer (Engine Control Module)	0.5	142	71	828	899
CAMRY	FTYXV03.5BEC	2GR-FE	Exhaust Front Pipe (Including Catalytic Converter)	1	142	142	1105	1247
CAMRY	FTYXV03.5BEC	2GR-FE	Exhaust Manifold (Including Manifold Converter)	1.3	142	185	671	856
CAMRY	FTYXV03.5BEC	2GR-FE	Fuel Tank	2.2	142	312	554	866
CAMRY	FTYXV03.5BEC	2GR-FE	Intake Air Surge Tank	1.6	142	227	619	846
CAMRY	FTYXV03.5BEC	2GR-FE	Intake Manifold	2.1	142	298	468	766
CAMRY	FTYXV03.5BEC	2GR-FE	Knock Sensor	2.2	142	312	194	507
CAMRY	FTYXV03.5BEC	2GR-FE	Throttle Body	1.2	142	170	923	1093
CAMRY	FTYXV03.5BEC	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.6	142	85	805	890
CAMRY	FTYXV03.5BEC	2GR-FE	Transmission Solenoid	7.5	142	1065	284	1349
CAMRY	FTYXV03.5BEC	2GR-FE	Wire Transmission (Including Temperature Sensor)	7.4	142	1051	49	1099
ES 350	FTYXV03.5BEC	2GR-FE	Charcoal Canister	2.2	160	352	563	915
ES 350	FTYXV03.5BEC	2GR-FE	Engine Control Computer (Engine Control Module)	0.5	160	80	749	829
ES 350	FTYXV03.5BEC	2GR-FE	Exhaust Front Pipe (Including Catalytic Converter)	1	160	160	1383	1543
ES 350	FTYXV03.5BEC	2GR-FE	Exhaust Manifold (Including Manifold Converter)	1.3	160	208	1009	1217
ES 350	FTYXV03.5BEC	2GR-FE	Fuel Delivery Pipe	2.1	160	336	242	578

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
ES 350	FTYXV03.5BEC	2GR-FE	Fuel Tank	2.2	160	352	554	906
ES 350	FTYXV03.5BEC	2GR-FE	Intake Air Surge Tank	1.6	160	256	711	967
ES 350	FTYXV03.5BEC	2GR-FE	Intake Manifold	2.2	160	352	468	820
ES 350	FTYXV03.5BEC	2GR-FE	Knock Sensor	2.3	160	368	265	633
ES 350	FTYXV03.5BEC	2GR-FE	Throttle Body	1.2	160	192	923	1115
ES 350	FTYXV03.5BEC	2GR-FE	Transmission Control Computer (Transmission Control Module)	0.6	160	96	941	1037
ES 350	FTYXV03.5BEC	2GR-FE	Transmission Solenoid	8.2	160	1312	284	1596
GS 350	FTYXV03.5BED*1	2GR-FSE	Charcoal Canister	0.5	160	80	758	838
GS 350	FTYXV03.5BED*1	2GR-FSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1266	1346
GS 350	FTYXV03.5BED*1	2GR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	1.2	160	192	1779	1971
GS 350	FTYXV03.5BED*1	2GR-FSE	Exhaust Manifold (Including Manifold Converter)	2	160	320	1052	1372
GS 350	FTYXV03.5BED*1	2GR-FSE	Fuel Delivery Pipe	3.2	160	512	169	681
GS 350	FTYXV03.5BED*1	2GR-FSE	Fuel Pressure Sensor	1.6	160	256	325	581
GS 350	FTYXV03.5BED*1	2GR-FSE	Fuel Relief Valve	3.2	160	512	90	602
GS 350	FTYXV03.5BED*1	2GR-FSE	Fuel Relief Valve Gasket	3.2	160	512	2	514
GS 350	FTYXV03.5BED*1	2GR-FSE	Fuel Tank	3.3	160	528	674	1202
GS 350	FTYXV03.5BED*1	2GR-FSE	High Pressure Fuel Pump	2.4	160	384	1271	1655
GS 350	FTYXV03.5BED*1	2GR-FSE	Injector	3.2	160	512	144	656
GS 350	FTYXV03.5BED*1	2GR-FSE	Injector Driver	0.5	160	80	1325	1405
GS 350	FTYXV03.5BED*1	2GR-FSE	Intake Air Surge Tank	1.4	160	224	711	935
GS 350	FTYXV03.5BED*1	2GR-FSE	Intake Manifold	2.1	160	336	731	1067
GS 350	FTYXV03.5BED*1	2GR-FSE	Knock Sensor	3.2	160	512	165	677
GS 350	FTYXV03.5BED*1	2GR-FSE	Throttle Body	1.1	160	176	840	1016
GS 350	FTYXV03.5BED*1	2GR-FSE	Transmission Control Computer (Transmission Control Module)	0.6	160	96	1057	1153
GS 350	FTYXV03.5BED*1	2GR-FSE	Transmission Solenoid	2.3	160	368	224	592
GS 450h	FTYXV03.5CC4	2GR-FXE	Air Fuel Ratio Sensor	3.7	160	592	223	815
GS 450h	FTYXV03.5CC4	2GR-FXE	Battery Control Module (Battery Voltage Sensor)	1.9	160	304	279	583
GS 450h	FTYXV03.5CC4	2GR-FXE	Charcoal Canister	0.5	160	80	737	817
GS 450h	FTYXV03.5CC4	2GR-FXE	Engine Control Computer (Engine Control Module)	0.5	160	80	791	871
GS 450h	FTYXV03.5CC4	2GR-FXE	Exhaust Front Pipe (Including Catalytic Converter)	1.2	160	192	2214	2406
GS 450h	FTYXV03.5CC4	2GR-FXE	Exhaust Manifold (Including Manifold Converter)	3.5	160	560	1427	1987
GS 450h	FTYXV03.5CC4	2GR-FXE	Exhaust Manifold Gasket	3.5	160	560	16	576
GS 450h	FTYXV03.5CC4	2GR-FXE	Fuel Delivery Pipe	3.7	160	592	324	916
GS 450h	FTYXV03.5CC4	2GR-FXE	Fuel Pressure Sensor	1.4	160	224	455	679
GS 450h	FTYXV03.5CC4	2GR-FXE	Fuel Tank	3.7	160	592	674	1266
GS 450h	FTYXV03.5CC4	2GR-FXE	High Pressure Fuel Pump	2.4	160	384	1271	1655
GS 450h	FTYXV03.5CC4	2GR-FXE	Hybrid Battery	2.4	160	384	6289	6673
GS 450h	FTYXV03.5CC4	2GR-FXE	Hybrid Battery Junction Block	1.6	160	256	311	567
GS 450h	FTYXV03.5CC4	2GR-FXE	Hybrid Control Module (Power Management Control Module)	0.5	160	80	1050	1130
GS 450h	FTYXV03.5CC4	2GR-FXE	Injector	3.7	160	592	317	909
GS 450h	FTYXV03.5CC4	2GR-FXE	Injector Driver	0.5	160	80	1325	1405
GS 450h	FTYXV03.5CC4	2GR-FXE	Intake Manifold and Intake Air Surge Tank	1.5	160	240	711	951
GS 450h	FTYXV03.5CC4	2GR-FXE	Inverter with Converter	1.9	160	304	5981	6285
GS 450h	FTYXV03.5CC4	2GR-FXE	Knock Sensor	3.1	160	496	165	661
GS 450h	FTYXV03.5CC4	2GR-FXE	Throttle Body	1.1	160	176	840	1016
GS 450h	FTYXV03.5CC4	2GR-FXE	Transaxle (Including Motor and Generator)	9.7	160	1552	6775	8327
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Air Fuel Ratio Sensor	9.9	160	1584	225	1809
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Engine Control Computer (Engine Control Module)	0.4	160	64	1322	1386
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	2430	2750
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Exhaust Manifold (Including Manifold Converter)	10.6	160	1696	1861	3557
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Exhaust Manifold Gasket	10.6	160	1696	42	1738
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Exhaust Manifold Heat Insulator	9.9	160	1584	31	1615
LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Transmission Control Computer (Transmission Control Module)	0.4	160	64	1067	1131
LS 460 AWD	FTYXV04.6BEA	1UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	2403	2723
LS 460 AWD	FTYXV04.6BEA	1UR-FSE	Fuel Tank	4.8	160	768	670	1438
LS 460	FTYXV04.6BEA	1UR-FSE	Fuel Tank	4.8	160	768	670	1438
LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	2430	2750
LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Fuel Tank	5.7	160	912	670	1582
LS 460 L	FTYXV04.6BEA	1UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	2312	2632
LS 460 L	FTYXV04.6BEA	1UR-FSE	Fuel Tank	5.7	160	912	670	1582
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Air Cleaner Cap	0.3	160	48	487	535

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Charcoal Canister	0.5	160	80	987	1067
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Fuel Delivery Pipe	2.4	160	384	188	572
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Fuel Pressure Sensor	1.3	160	208	359	567
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	High Pressure Fuel Pump	1	160	160	1283	1443
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Injector	2.4	160	384	322	706
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Injector Driver	0.5	160	80	1244	1324
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Intake Manifold	2	160	320	1141	1461
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Knock Sensor	1.9	160	304	194	498
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Low Pressure Fuel Pump	1.3	160	208	345	553
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Oil Drain Pipe	12.3	160	1968	19	1987
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Oil Return Pipe	27.7	160	4432	21	4453
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Throttle Body	1.4	160	224	848	1072
LS 460/LS 460 L/LS 460 AWD/LS 460 L AWD	FTYXV04.6BEA	1UR-FSE	Transmission Solenoid	1.8	160	288	226	514
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Air Fuel Ratio Sensor	3.4	160	544	225	769
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Engine Control Computer (Engine Control Module)	0.4	160	64	1301	1365
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	2255	2575
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Exhaust Manifold (Including Manifold Converter)	3.2	160	512	1462	1974
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Exhaust Manifold Gasket	3.2	160	512	39	551
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Exhaust Manifold Heat Insulator	0.9	160	144	351	495
LS 460/LS 460 L	FTYXV04.6BEA	1UR-FSE	Transmission Control Computer (Transmission Control Module)	0.4	160	64	1067	1131
LS 460	FTYXV04.6BEA	1UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	2255	2575
LS 600h L	FTYXV05.0CC4	2UR-FSE	Air Cleaner Cap	0.2	160	32	487	519
LS 600h L	FTYXV05.0CC4	2UR-FSE	Air Fuel Ratio Sensor	12.1	160	1936	225	2161
LS 600h L	FTYXV05.0CC4	2UR-FSE	Battery	2.6	160	416	6289	6705
LS 600h L	FTYXV05.0CC4	2UR-FSE	Battery Control Module (Battery Voltage Sensor)	4.9	160	784	284	1068
LS 600h L	FTYXV05.0CC4	2UR-FSE	Charcoal Canister	0.4	160	64	1047	1111
LS 600h L	FTYXV05.0CC4	2UR-FSE	Engine Control Computer (Engine Control Module)	0.6	160	96	1305	1401
LS 600h L	FTYXV05.0CC4	2UR-FSE	Exhaust Front Pipe (Including Catalytic Converter)	2	160	320	5624	5944
LS 600h L	FTYXV05.0CC4	2UR-FSE	Exhaust Manifold (Including Manifold Converter)	12.5	160	2000	1879	3879
LS 600h L	FTYXV05.0CC4	2UR-FSE	Exhaust Manifold Gasket	12.5	160	2000	42	2042
LS 600h L	FTYXV05.0CC4	2UR-FSE	Exhaust Manifold Heat Insulator	12.1	160	1936	31	1967
LS 600h L	FTYXV05.0CC4	2UR-FSE	Fuel Delivery Pipe	2.9	160	464	188	652
LS 600h L	FTYXV05.0CC4	2UR-FSE	Fuel Pressure Sensor	1.3	160	208	361	569
LS 600h L	FTYXV05.0CC4	2UR-FSE	Fuel Relief Valve	2.9	160	464	969	1433
LS 600h L	FTYXV05.0CC4	2UR-FSE	Fuel Tank	5.6	160	896	624	1520
LS 600h L	FTYXV05.0CC4	2UR-FSE	High Pressure Fuel Pump	1	160	160	1283	1443
LS 600h L	FTYXV05.0CC4	2UR-FSE	HV Battery Thermistor	2.6	160	416	112	528
LS 600h L	FTYXV05.0CC4	2UR-FSE	Hybrid Battery Junction Block (Including System Main Relay)	4.9	160	784	683	1467
LS 600h L	FTYXV05.0CC4	2UR-FSE	Hybrid Control Module	0.6	160	96	694	790
LS 600h L	FTYXV05.0CC4	2UR-FSE	Injector	2.9	160	464	322	786
LS 600h L	FTYXV05.0CC4	2UR-FSE	Injector Driver	0.5	160	80	1244	1324
LS 600h L	FTYXV05.0CC4	2UR-FSE	Intake Manifold	2.6	160	416	1141	1557
LS 600h L	FTYXV05.0CC4	2UR-FSE	Inverter with Converter	1.5	160	240	8910	9150
LS 600h L	FTYXV05.0CC4	2UR-FSE	Knock Sensor	2.5	160	400	194	594
LS 600h L	FTYXV05.0CC4	2UR-FSE	Low Pressure Fuel Pump	1.3	160	208	379	587
LS 600h L	FTYXV05.0CC4	2UR-FSE	Oil Drain Pipe	14.5	160	2320	19	2339
LS 600h L	FTYXV05.0CC4	2UR-FSE	Oil Return Pipe	25.5	160	4080	21	4101
LS 600h L	FTYXV05.0CC4	2UR-FSE	Throttle Body	1.8	160	288	848	1136
LS 600h L	FTYXV05.0CC4	2UR-FSE	Transaxle (Including Motor and Generator)	15	160	2400	9055	11455
RC F	FTYXV05.0MEA	2UR-GSE	Air Fuel Ratio Sensor	7.1	160	1136	223	1359
RC F	FTYXV05.0MEA	2UR-GSE	Camshaft Timing Gear	7	160	1120	623	1743
RC F	FTYXV05.0MEA	2UR-GSE	Charcoal Canister	0.4	160	64	714	778
RC F	FTYXV05.0MEA	2UR-GSE	Engine Control Computer (Engine Control Module)	0.5	160	80	1149	1229
RC F	FTYXV05.0MEA	2UR-GSE	Exhaust Front Pipe (Including Catalytic Converter)	1.2	160	192	1281	1473
RC F	FTYXV05.0MEA	2UR-GSE	Exhaust Manifold (Including Manifold Converter)	7.5	160	1200	1570	2770
RC F	FTYXV05.0MEA	2UR-GSE	Exhaust Manifold Heat Insulator	7.2	160	1152	67	1219
RC F	FTYXV05.0MEA	2UR-GSE	Fuel Delivery Pipe	2.8	160	448	122	570
RC F	FTYXV05.0MEA	2UR-GSE	Fuel Tank	3.4	160	544	674	1218
RC F	FTYXV05.0MEA	2UR-GSE	High Pressure Fuel Pump	1	160	160	1271	1431
RC F	FTYXV05.0MEA	2UR-GSE	Injector	2.8	160	448	319	767

Note*1: Before R/C 15-TR-17 Note*2: After R/C 15-TR-17

Model	Test Group	Engine	Parts	Flat rate	Hour rate	Labor cost in dols.	Retail part cost in dols.	Replacement cost in dols.
RC F	FTYXV05.0MEA	2UR-GSE	Injector Driver	0.6	160	96	1325	1421
RC F	FTYXV05.0MEA	2UR-GSE	Intake Air Surge Tank	2.2	160	352	1527	1879
RC F	FTYXV05.0MEA	2UR-GSE	Knock Sensor	2.1	160	336	165	501
RC F	FTYXV05.0MEA	2UR-GSE	Throttle Body	1.2	160	192	840	1032
RC F	FTYXV05.0MEA	2UR-GSE	Transmission Control Computer (Transmission Control Module)	1.5	160	240	1057	1297
RC F	FTYXV05.0MEA	2UR-GSE	Transmission Solenoid	1.8	160	288	224	512

6.03.00 Test Ratios

In accordance with CALIFORNIA 2015 AND SUBSEQUENT MODEL CRITERIA POLLUTANT EXHAUST EMISSION STANDARDS AND TEST PROCEDURES AND 2017 AND SUBSEQUENT MODEL GREENHOUSE GAS EXHAUST EMISSION STANDARDS AND TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS, AND MEDIUM-DUTY VEHICLES, NMOG to NMHC ratio and HCHO to NMHC ratio for in-use testing is determined.

6.03.01 NMOG/NMHC Ratio

Toyota uses the following NMOG/NMHC ratio for certification testing according to § 86.1810-01 (p) and for in-use testing according to § 86.1845-04(f)(1):

NMOG/NMHC = 1.04 for LEV II vehicles that are certified using the California Gasoline Fuel Specifications set forth in Part II, section 100.3.1.1.

NMOG/NMHC = 1.1 for LEV III vehicles and LEV II vehicles that are certified using the California Gasoline Fuel Specifications set forth in Part II, section 100.3.1.2.

NMOG/NMHC = 1.03 for gasoline-fueled LEV II and LEV III vehicles that are certified with supplemental FTP standard.

6.03.02 HCHO/NMHC Ratio

Toyota uses the following HCHO/NMHC ratio for in-use testing based on EPA's approval dated December 4, 2002 according to § 86.1845-04(f)(3):

HCHO/NMHC = 0.018 for LEV II vehicles that are certified using the California Gasoline Fuel Specifications set forth in Part II, section 100.3.1.1.

6.03.02 HCHO/NMHC Ratio

Test Group : FTYXV01.8MEA

Exhaust emissions

Vehicle ID	E/G Code	Trans.	Axle Ratio	ETW	TRLHP	Test Loc.	HCHO/ NMHC
14-ZE2C (00)	02	AV	4.76	3125	10.6	MFR	0.0113

ED_004326_00013785-00449

6.03.02 HCHO/NMHC Ratio

Test Group : FTYXV05.0MEA

Exhaust emissions

Vehicle ID	E/G Code	Trans.	Axle Ratio	ETW	TRLHP	Test Loc.	HCHO/ NMHC
15-UC1A (00)	01	S8	2.94	4250	14.4	MFR	0.0085

ED_004326_00013785-00450

6.03.02 HCHO/NMHC Ratio

Test Group : FTYXT02.0KEM

Exhaust emissions

Vehicle ID	E/G Code	Trans.	Axle Ratio	ETW	TRLHP	Test Loc.	HCHO/ NMHC
15-AZ1A (00)	01	S6	4.40	4250	14.8	MFR	0.0228

ED_004326_00013785-00451

6.03.02 HCHO/NMHC Ratio

Test Group : FTYXT02.5PCM

Exhaust emissions

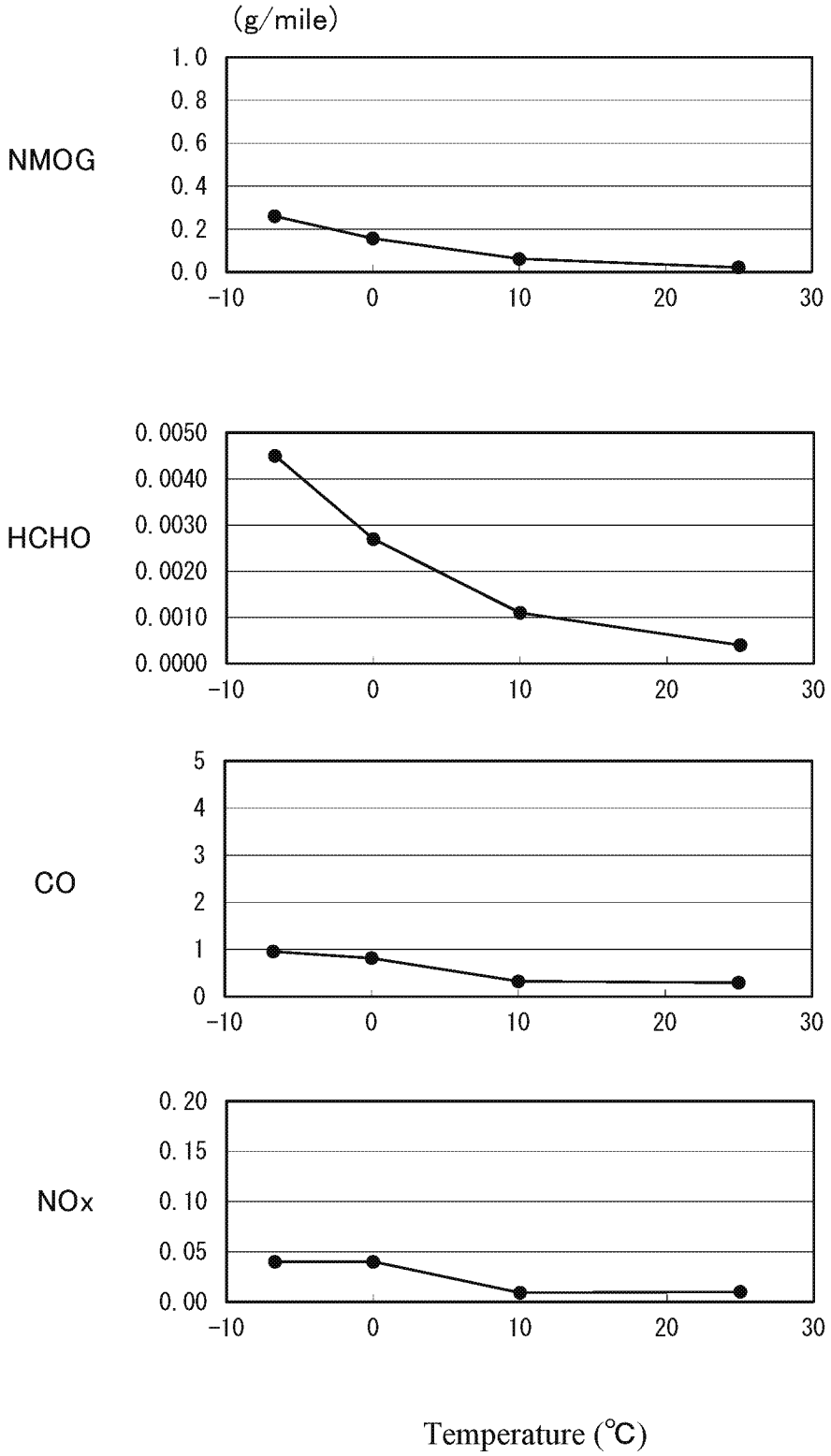
Vehicle ID	E/G Code	Trans.	Axle Ratio	ETW	TRLHP	Test Loc.	HCHO/ NMHC
15-AZ2H (00)	01	S6	3.54	4500	15.1	MFR*	0.0058

*: EPA confirmatory test has conducted, but HCHO is not available.

ED_004326_00013785-00452

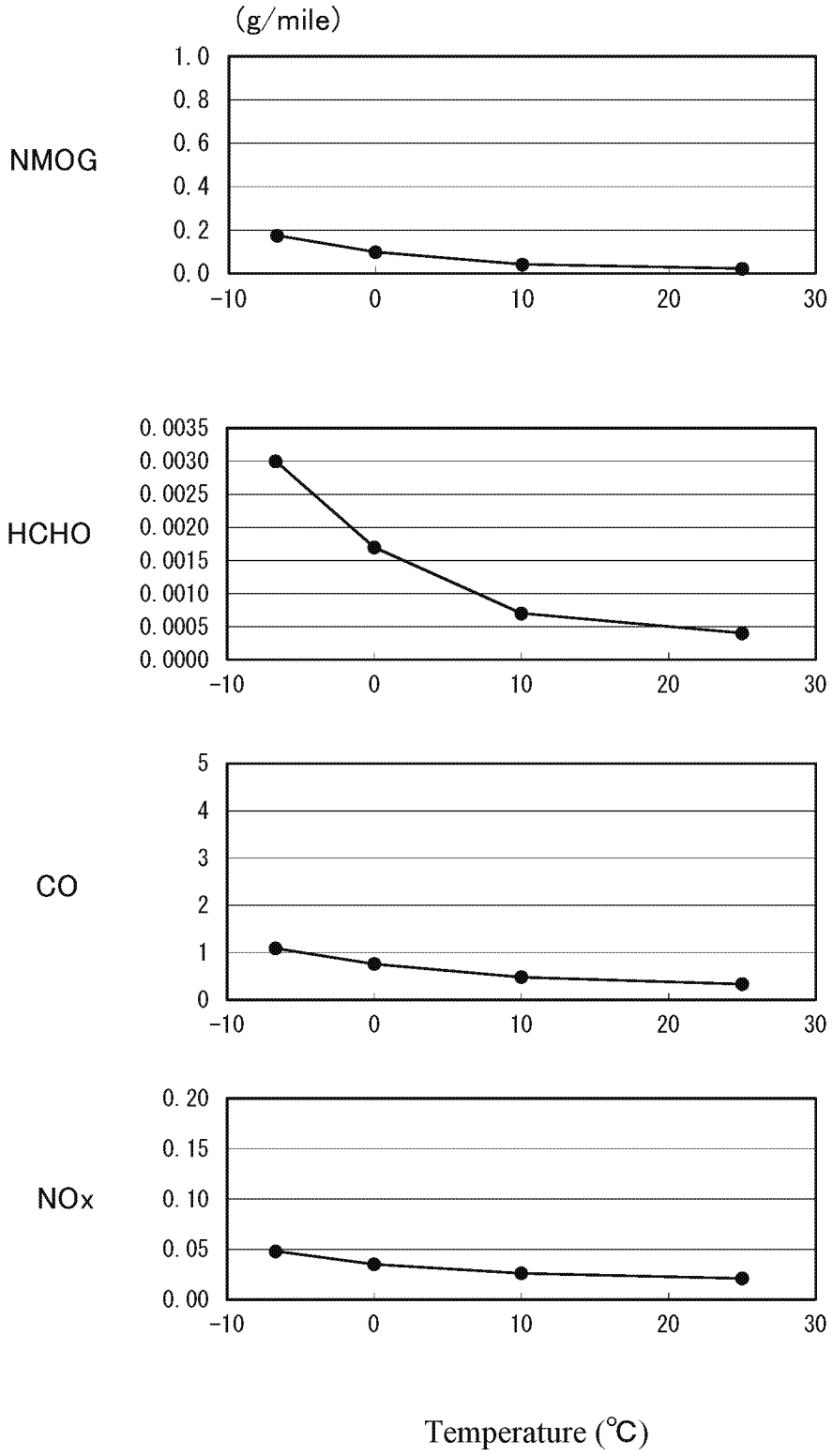
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXV01.3BEA



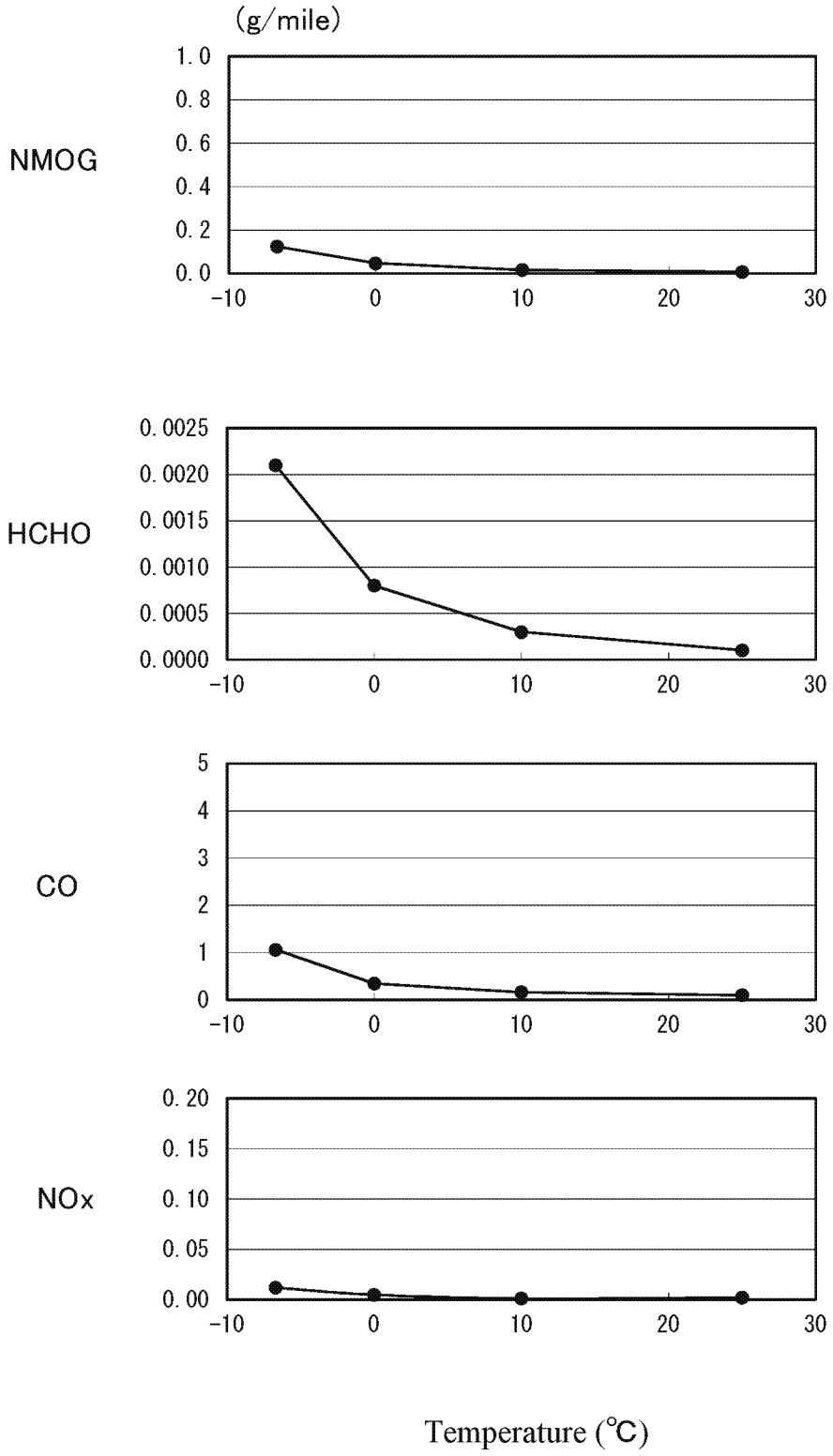
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXV01.5BEB



6.04.00 Emission control system continuity at low temperature

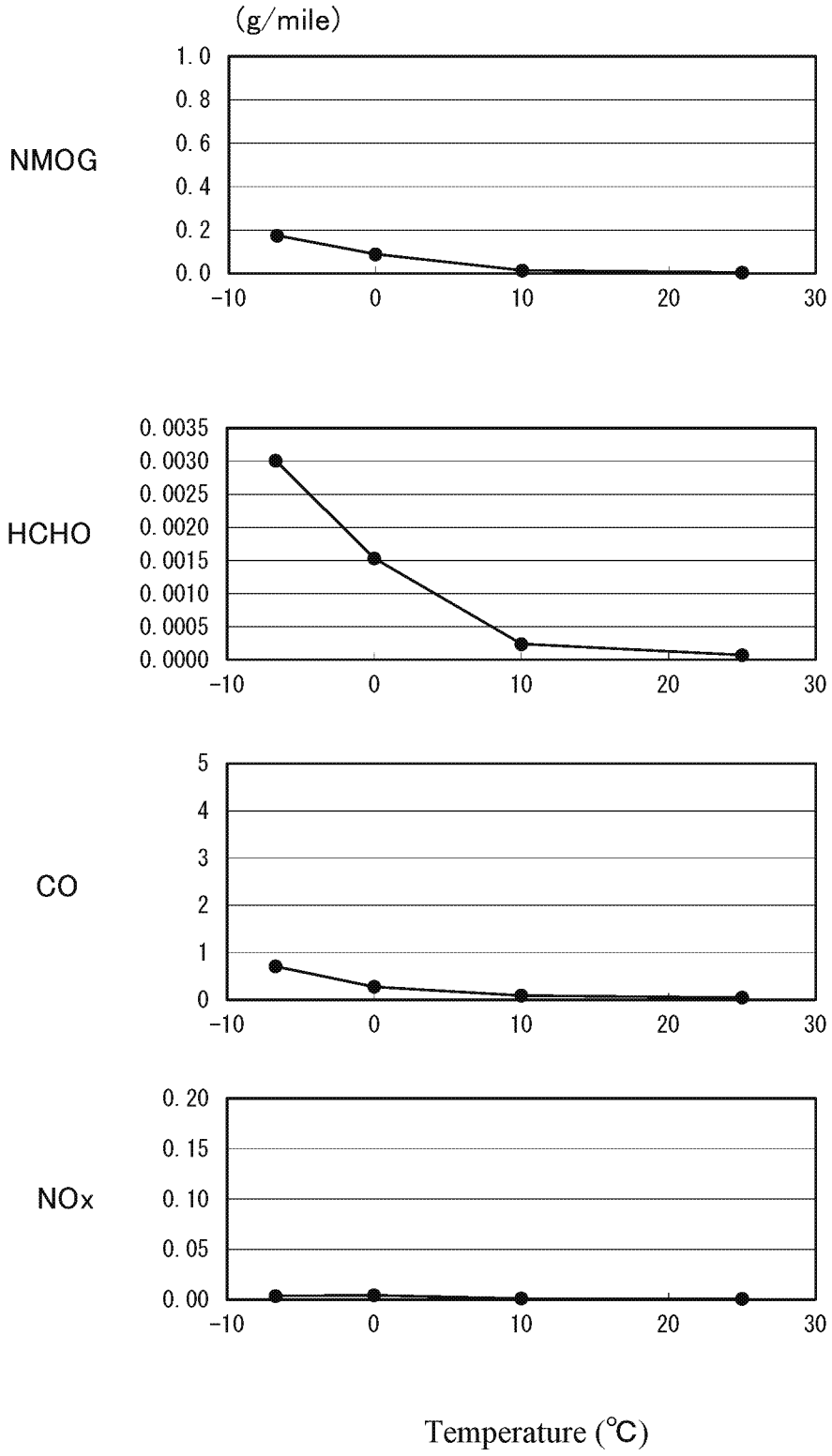
Test Group : FTYXV01.5CC4



ED_004326_00013785-00455

6.04.00 Emission control system continuity at low temperature

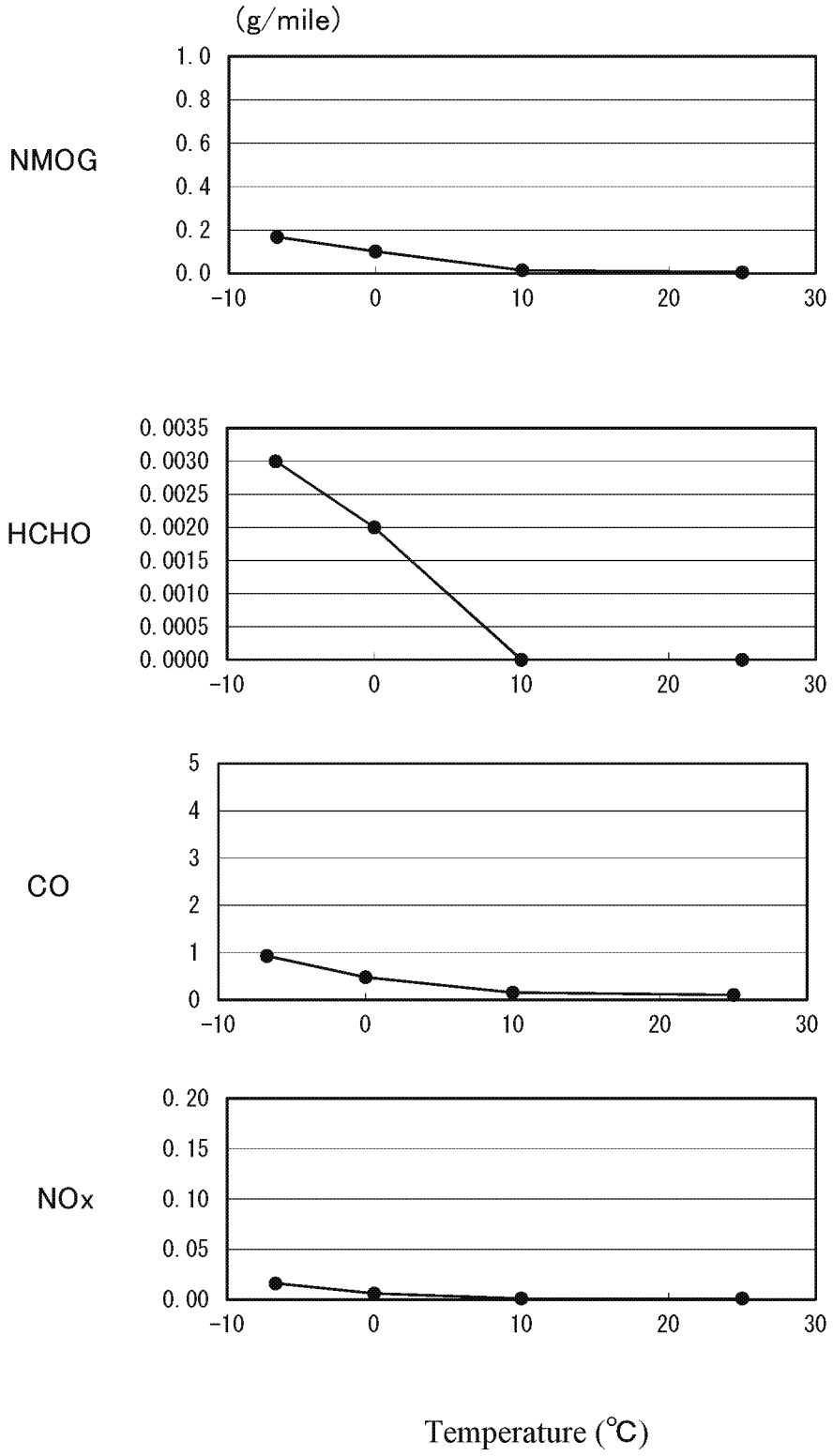
Test Group : FTYXV01.8HC3



ED_004326_00013785-00456

6.04.00 Emission control system continuity at low temperature

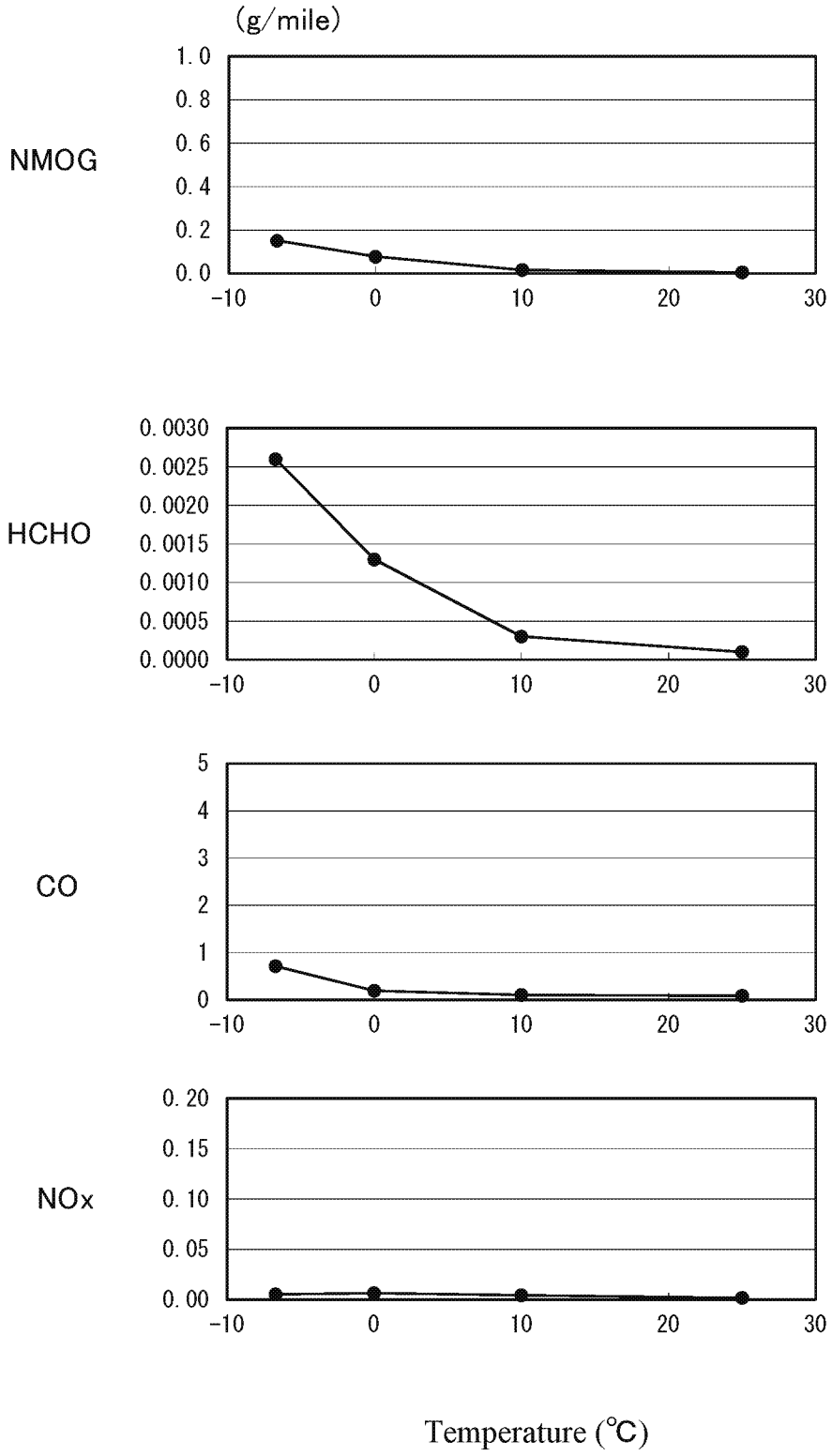
Test Group : FTYXV01.8CCU



ED_004326_00013785-00457

6.04.00 Emission control system continuity at low temperature

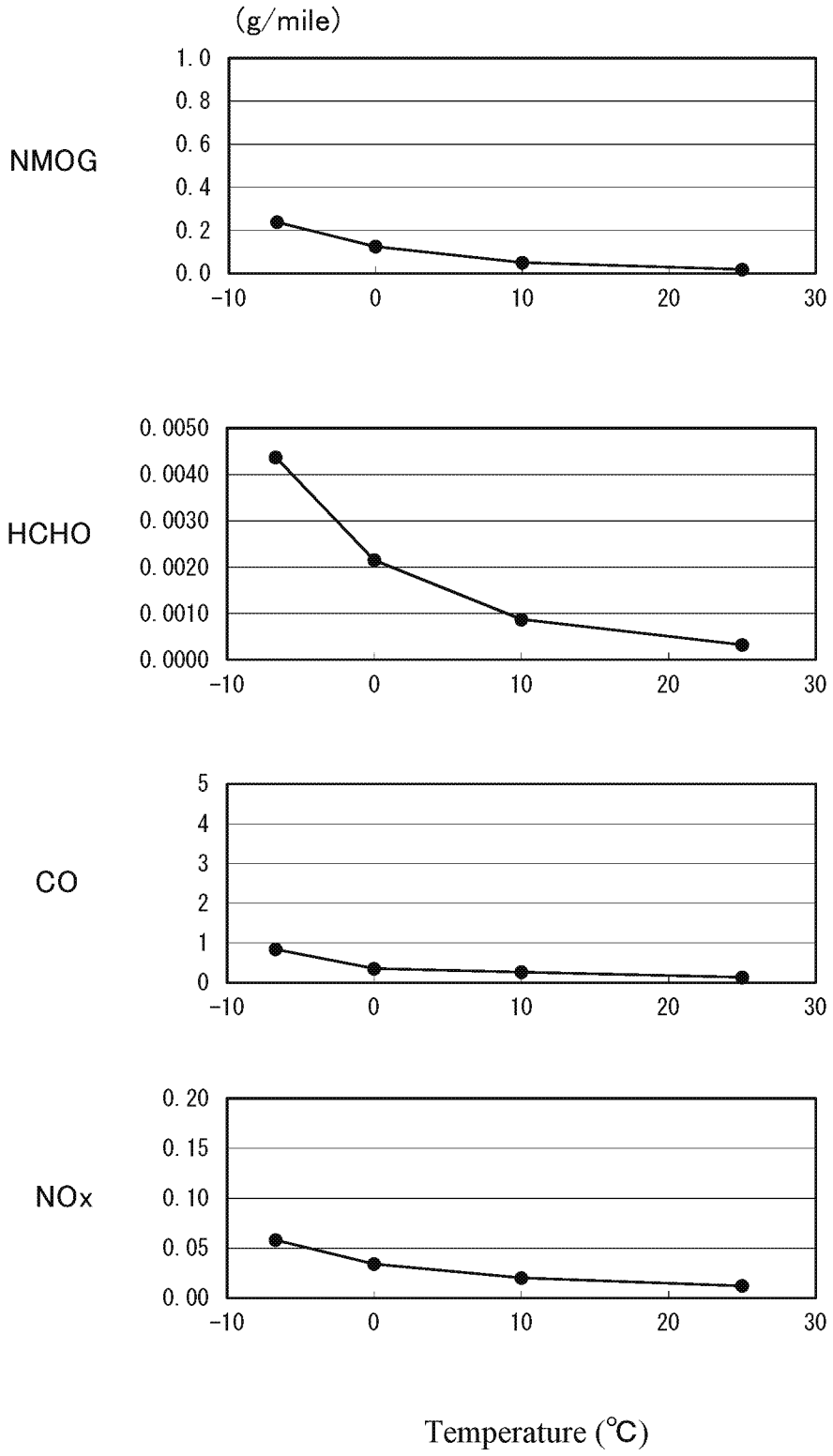
Test Group : FTYXV01.8HCU



ED_004326_00013785-00458

6.04.00 Emission control system continuity at low temperature

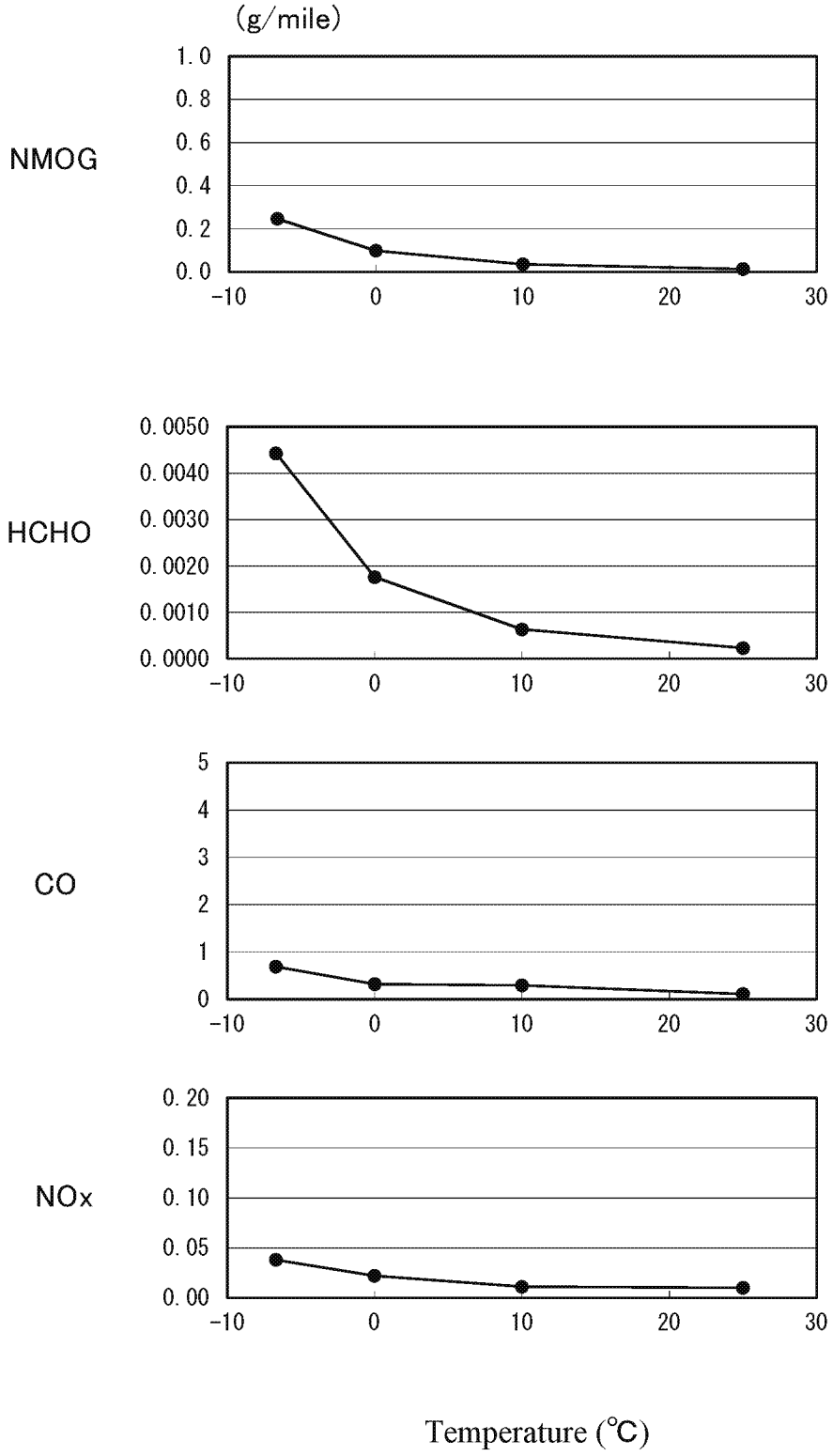
Test Group : FTYXV01.8BEC



ED_004326_00013785-00459

6.04.00 Emission control system continuity at low temperature

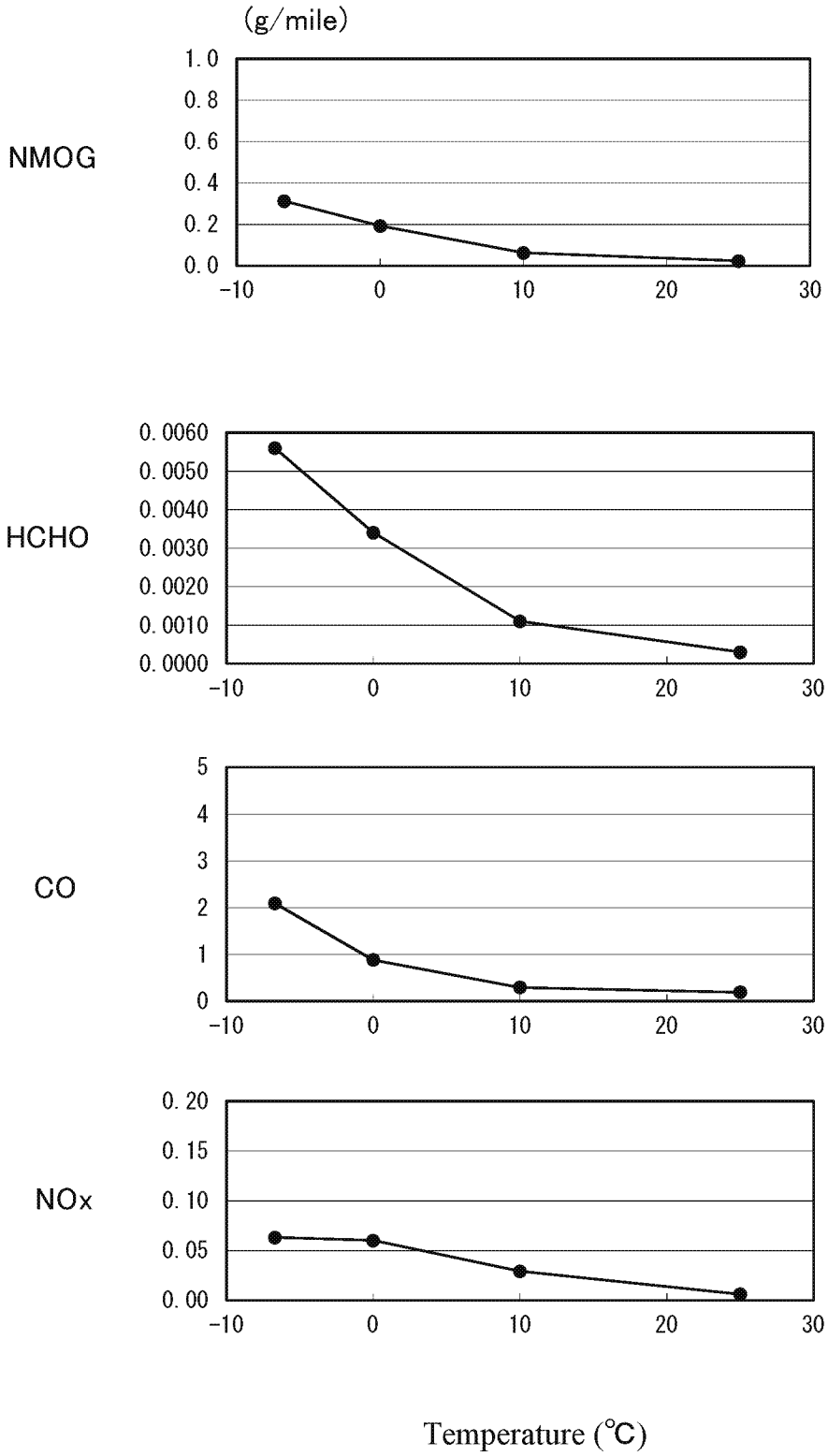
Test Group : FTYXV01.8MEA



ED_004326_00013785-00460

6.04.00 Emission control system continuity at low temperature

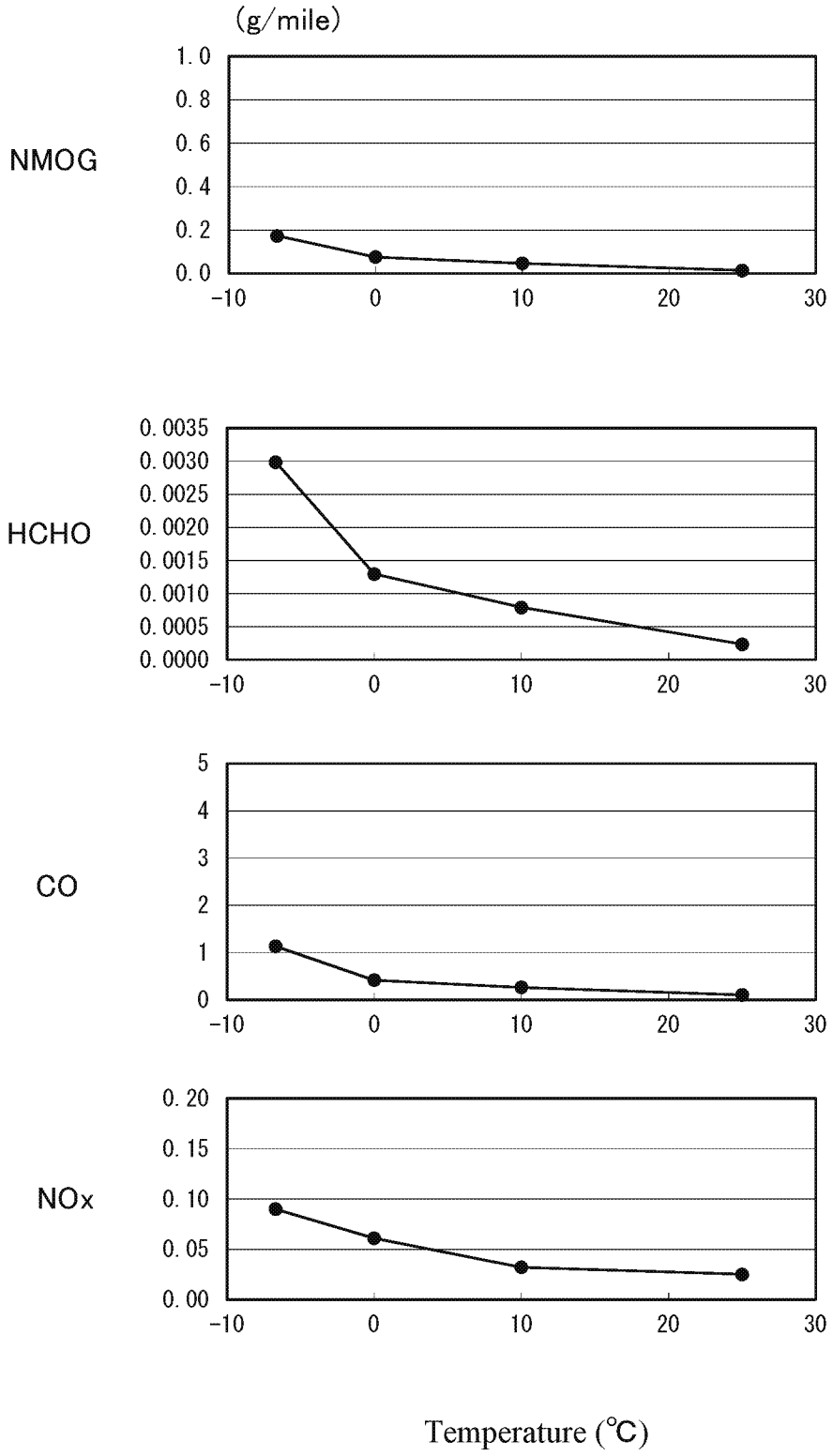
Test Group : FTYXV02.4BEB



ED_004326_00013785-00461

6.04.00 Emission control system continuity at low temperature

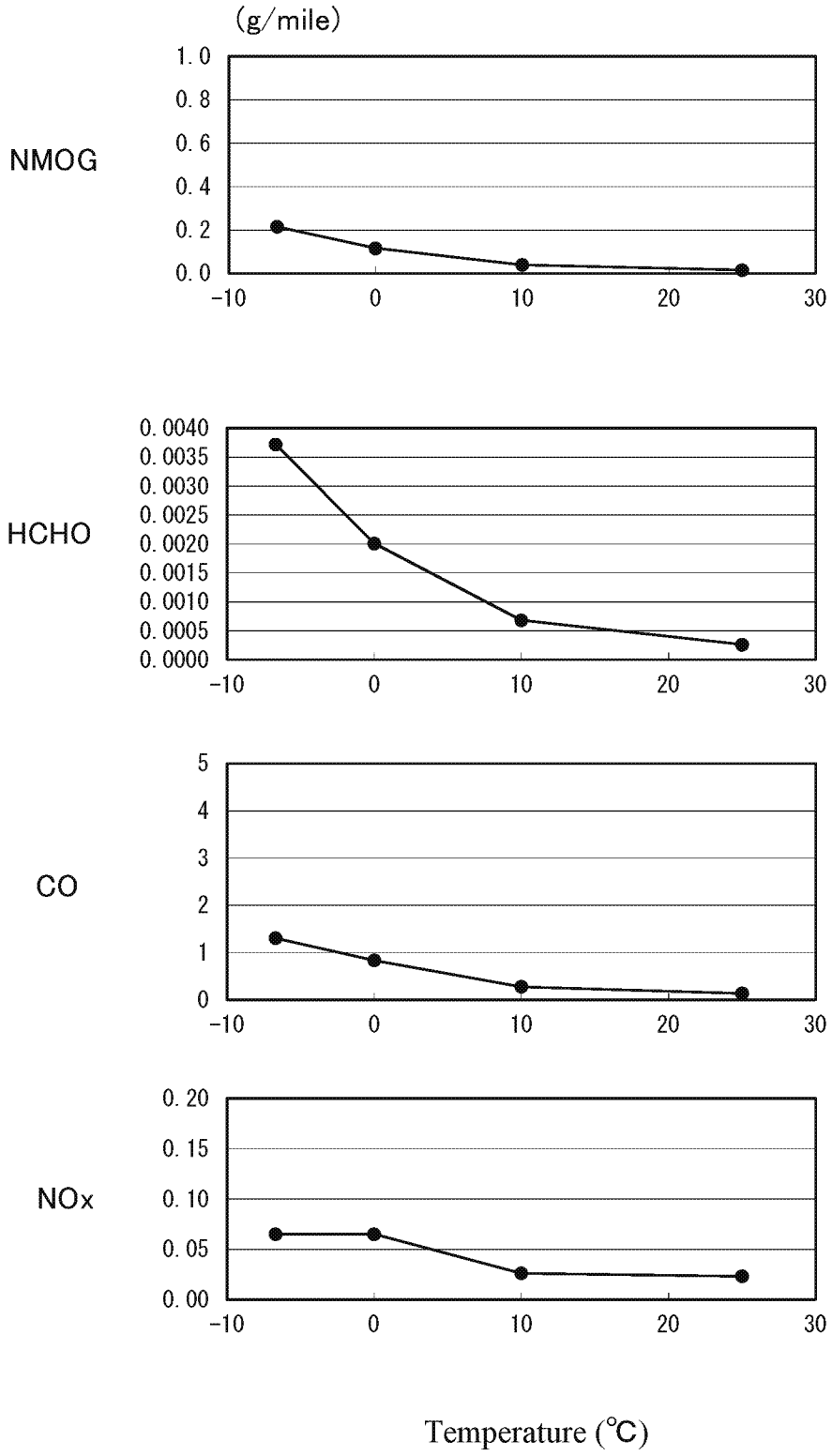
Test Group : FTYXV02.5BED



ED_004326_00013785-00462

6.04.00 Emission control system continuity at low temperature

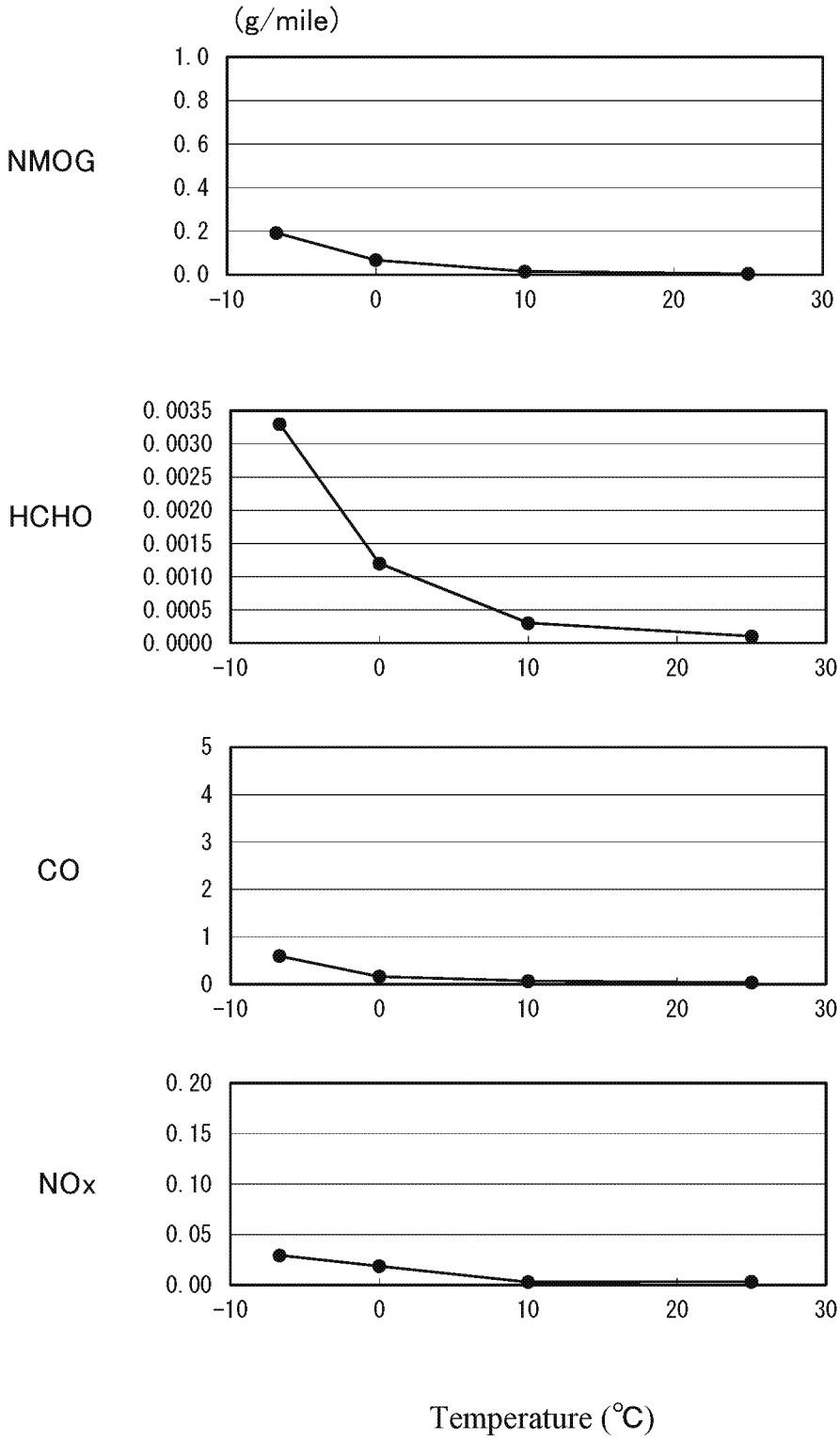
Test Group : FTYXV02.5BEB



ED_004326_00013785-00463

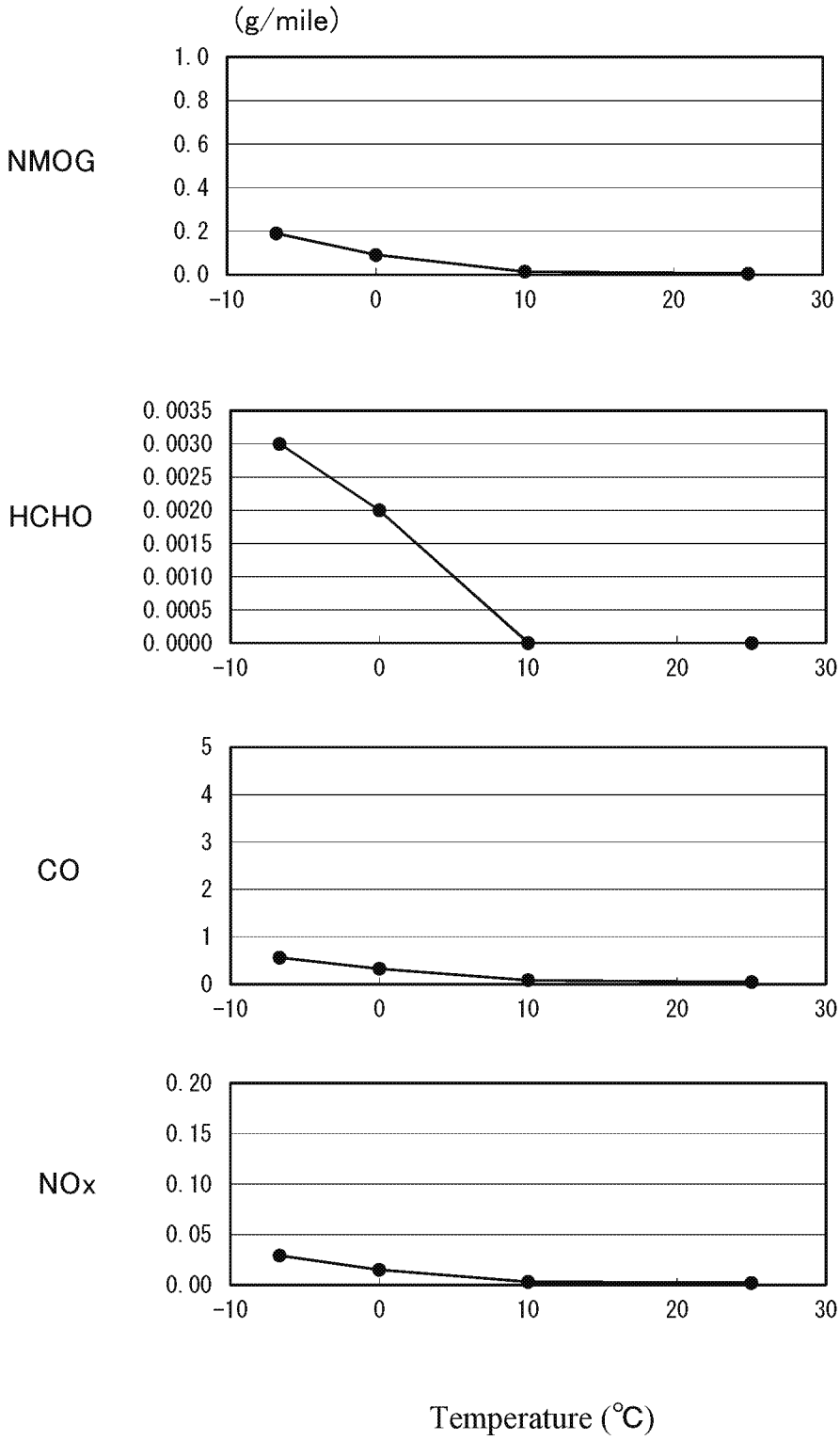
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXV02.5HC3



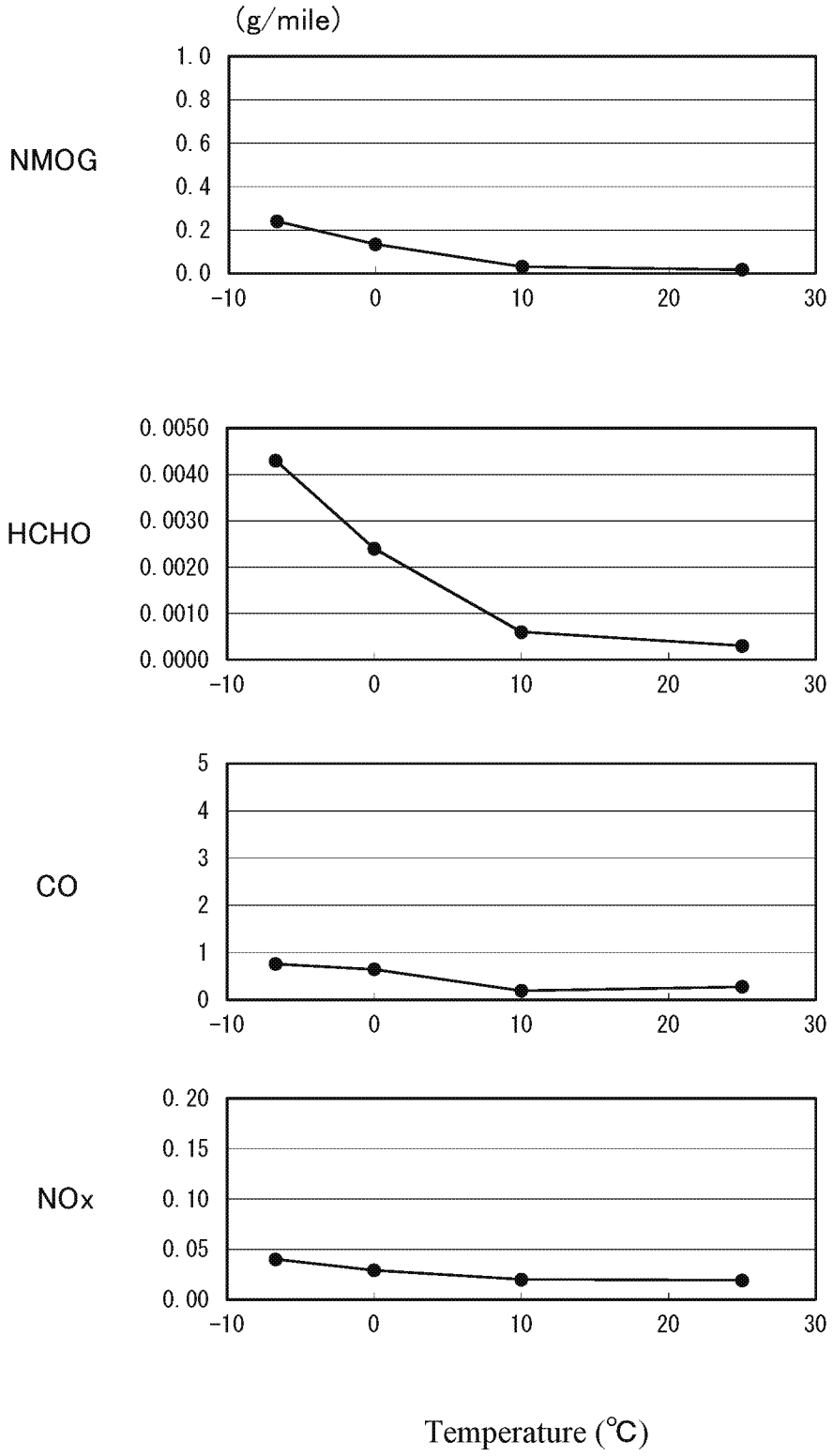
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXV02.5CC4



6.04.00 Emission control system continuity at low temperature

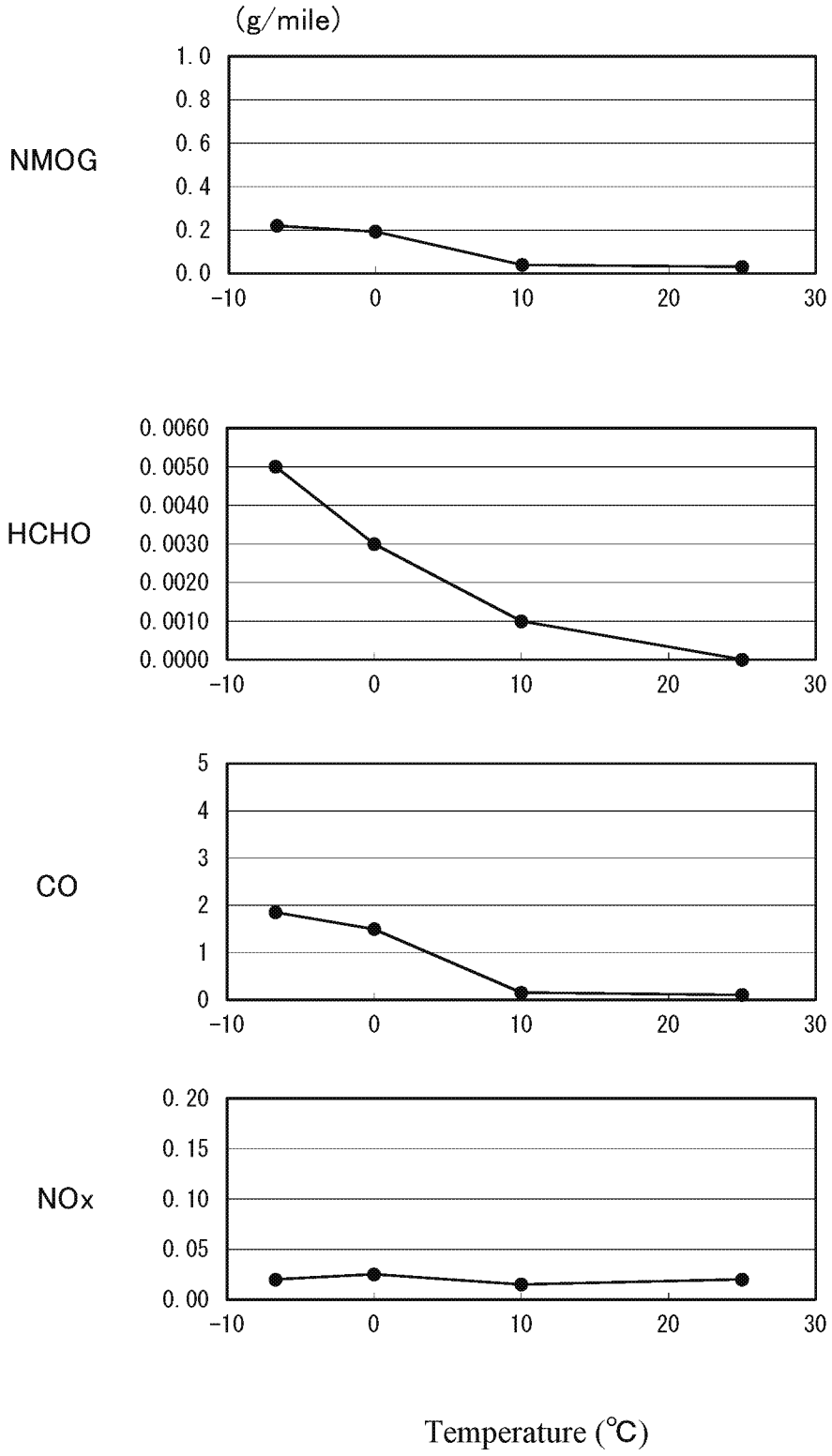
Test Group : FTYXV03.5BEC



ED_004326_00013785-00466

6.04.00 Emission control system continuity at low temperature

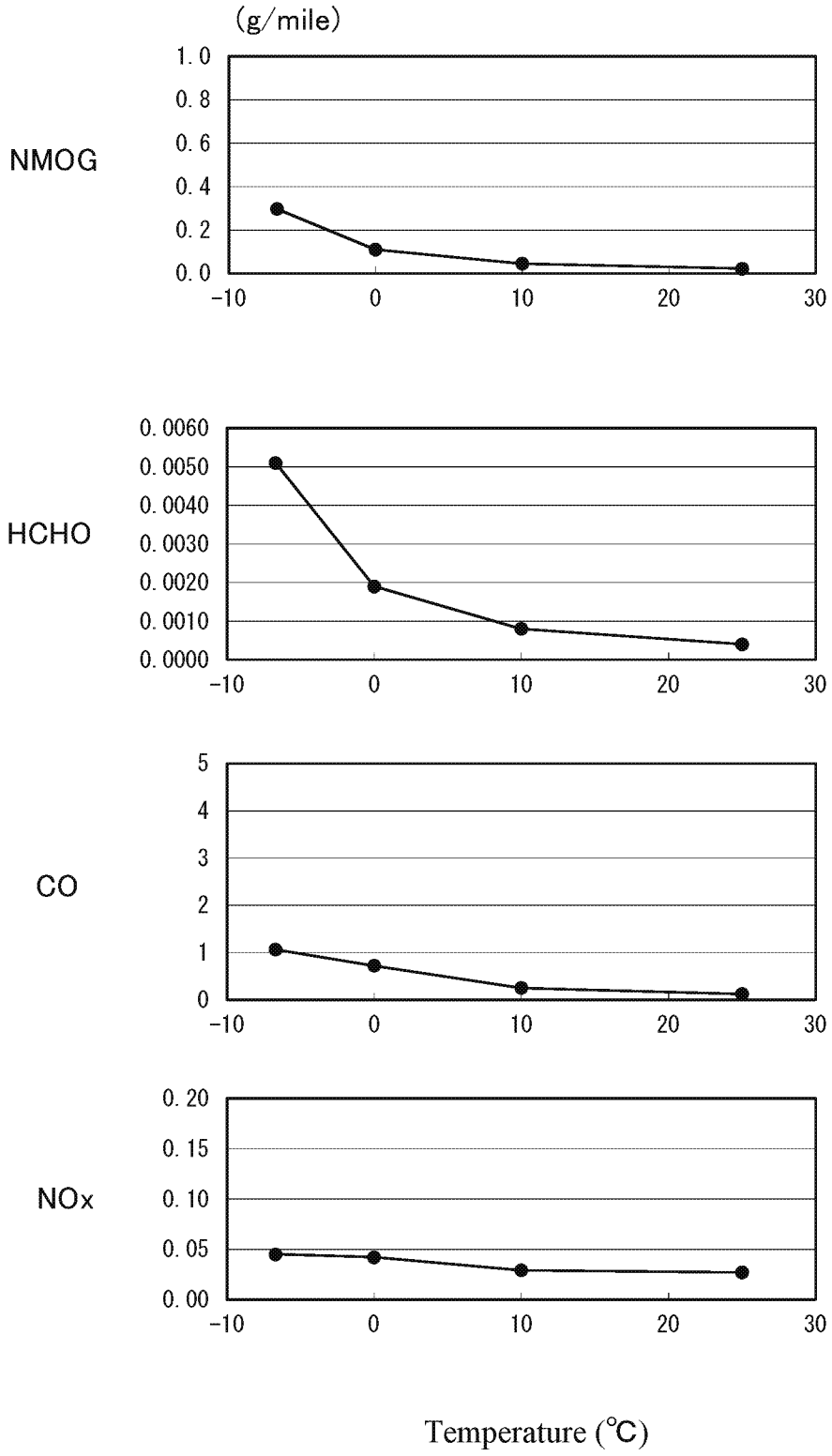
Test Group : FTYXV02.5BEC



ED_004326_00013785-00467

6.04.00 Emission control system continuity at low temperature

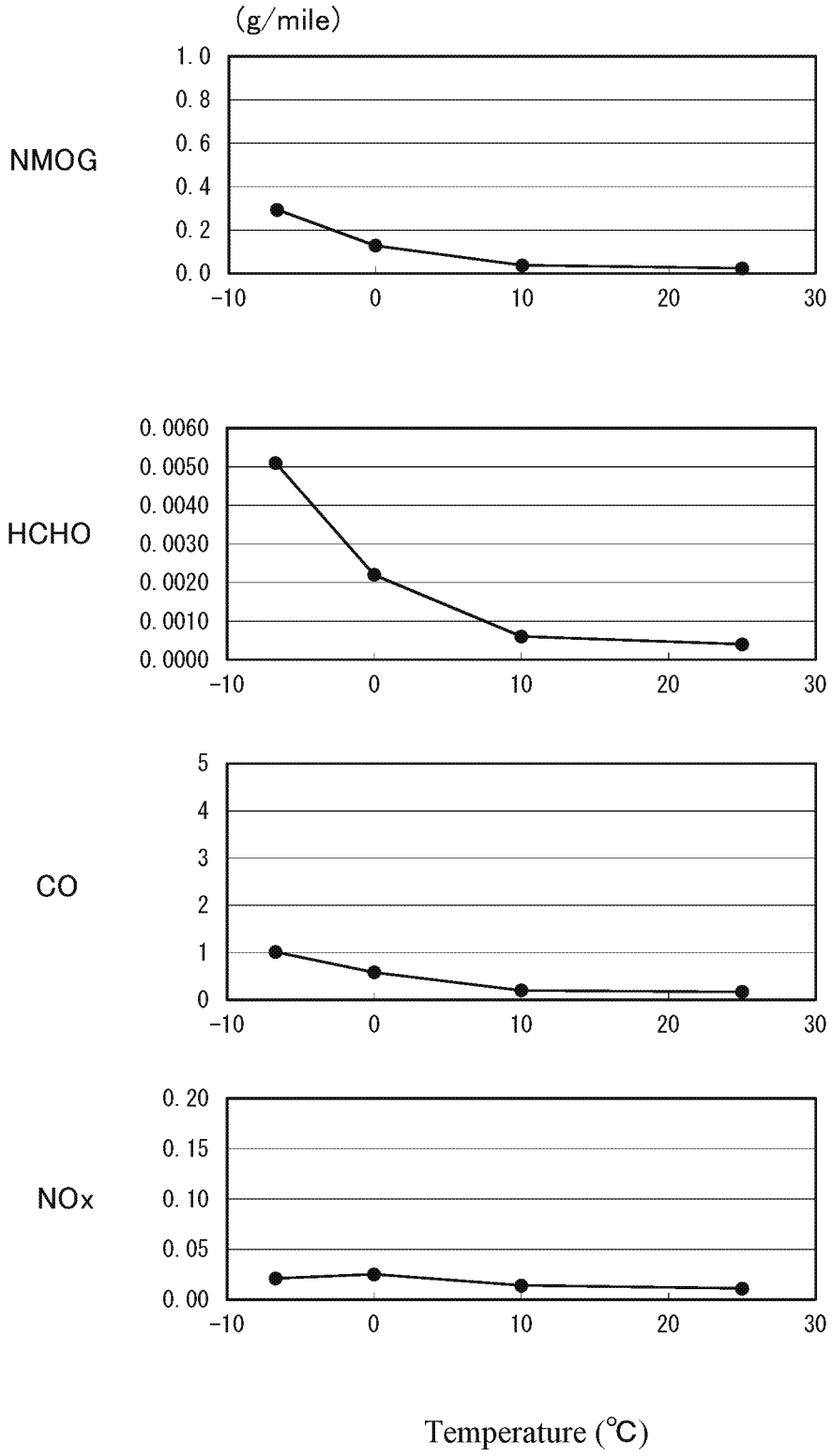
Test Group : FTYXV03.5BEB



ED_004326_00013785-00468

6.04.00 Emission control system continuity at low temperature

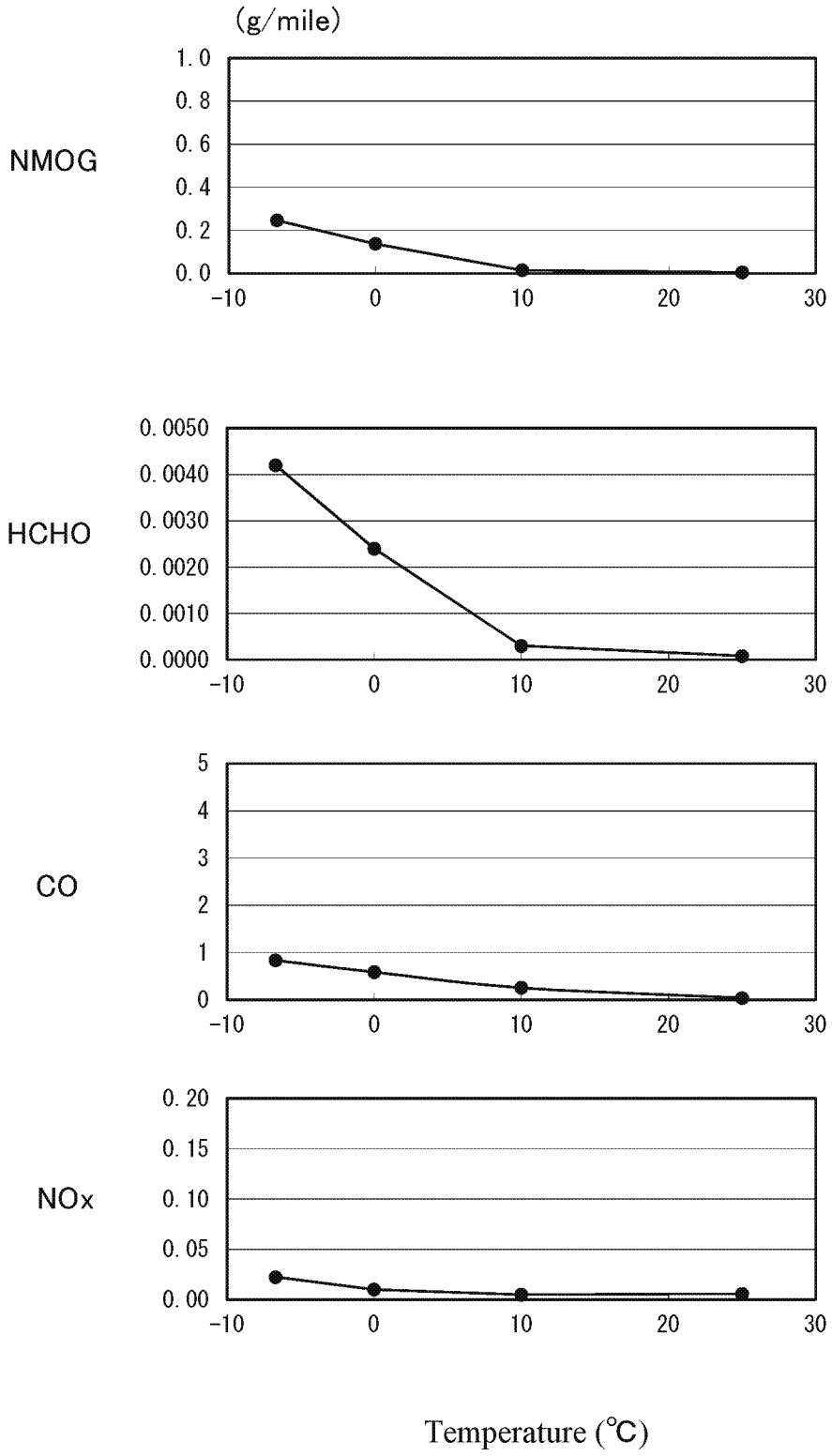
Test Group : FTYXV03.5BED



ED_004326_00013785-00469

6.04.00 Emission control system continuity at low temperature

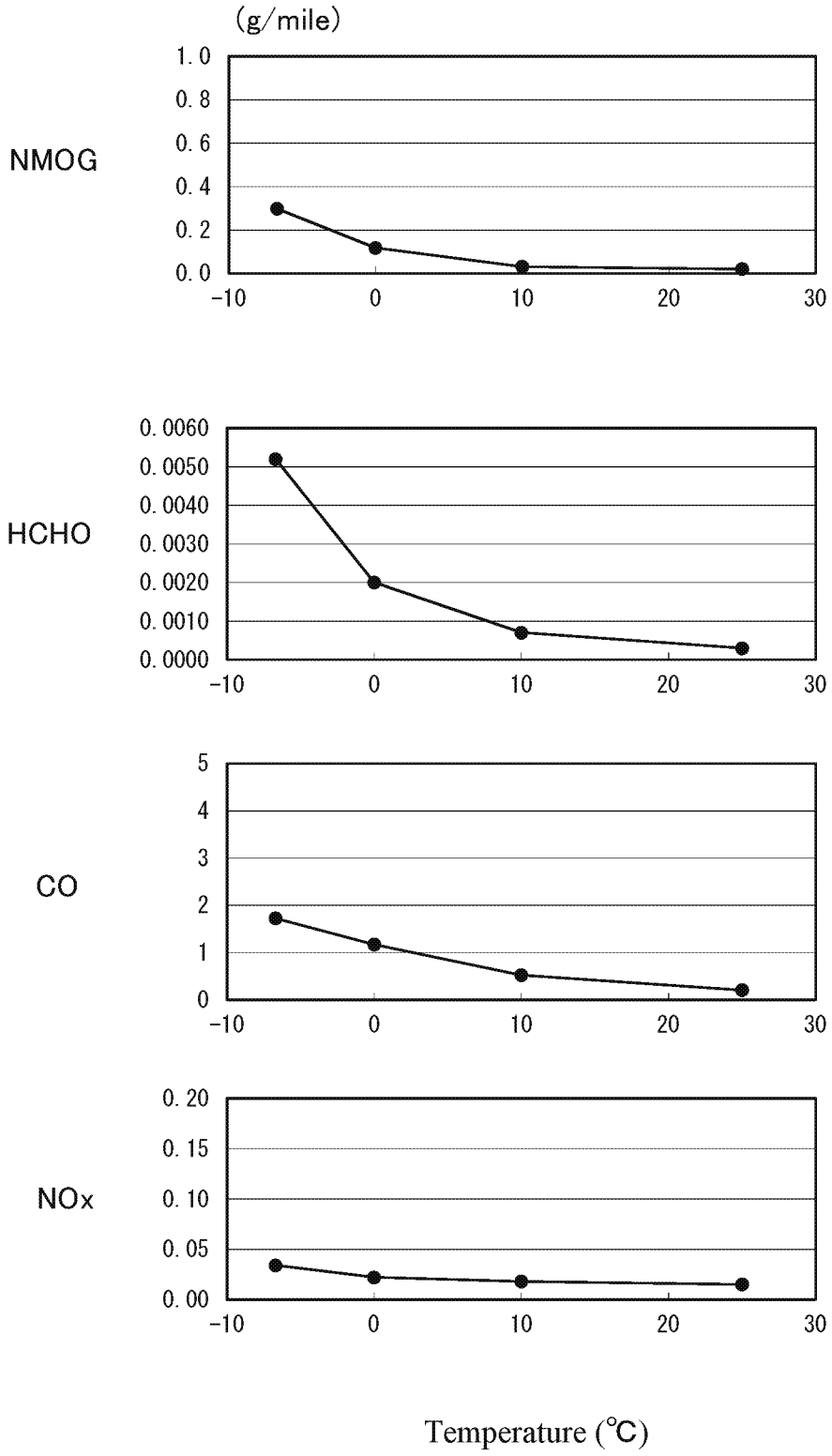
Test Group : FTYXV03.5CC4



ED_004326_00013785-00470

6.04.00 Emission control system continuity at low temperature

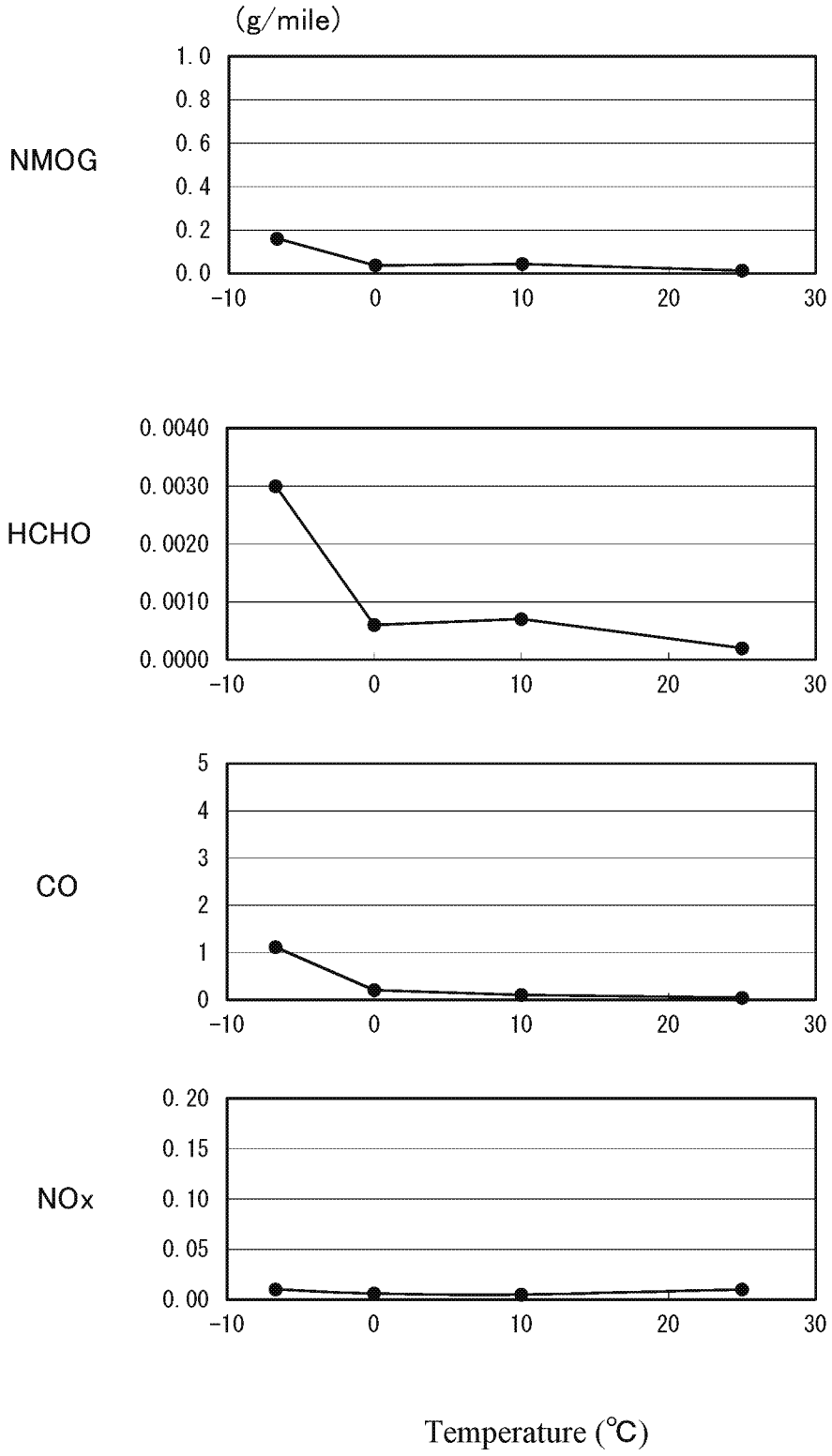
Test Group : FTYXV04.6BEA



ED_004326_00013785-00471

6.04.00 Emission control system continuity at low temperature

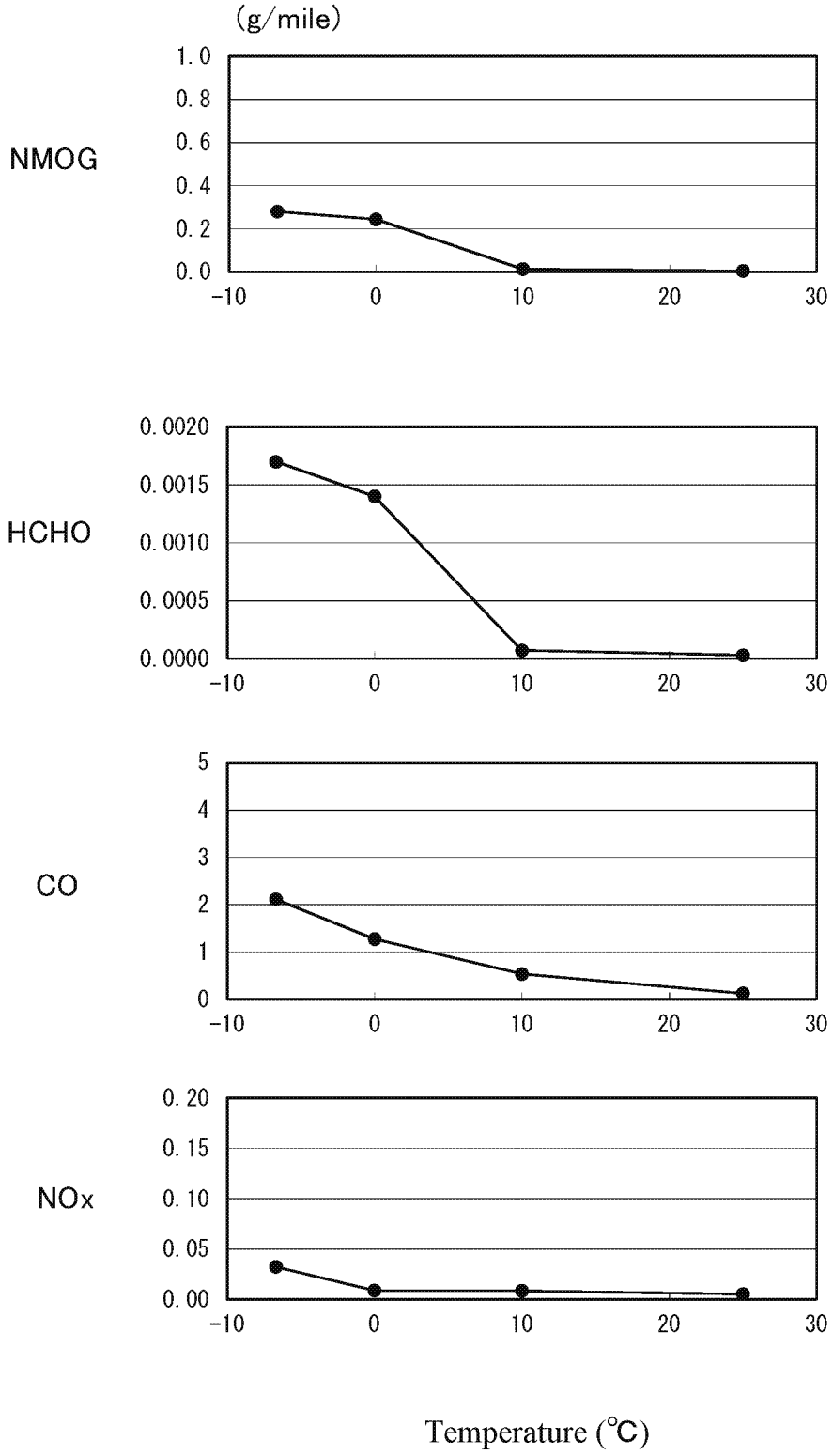
Test Group : FTYXV05.0MEA



ED_004326_00013785-00472

6.04.00 Emission control system continuity at low temperature

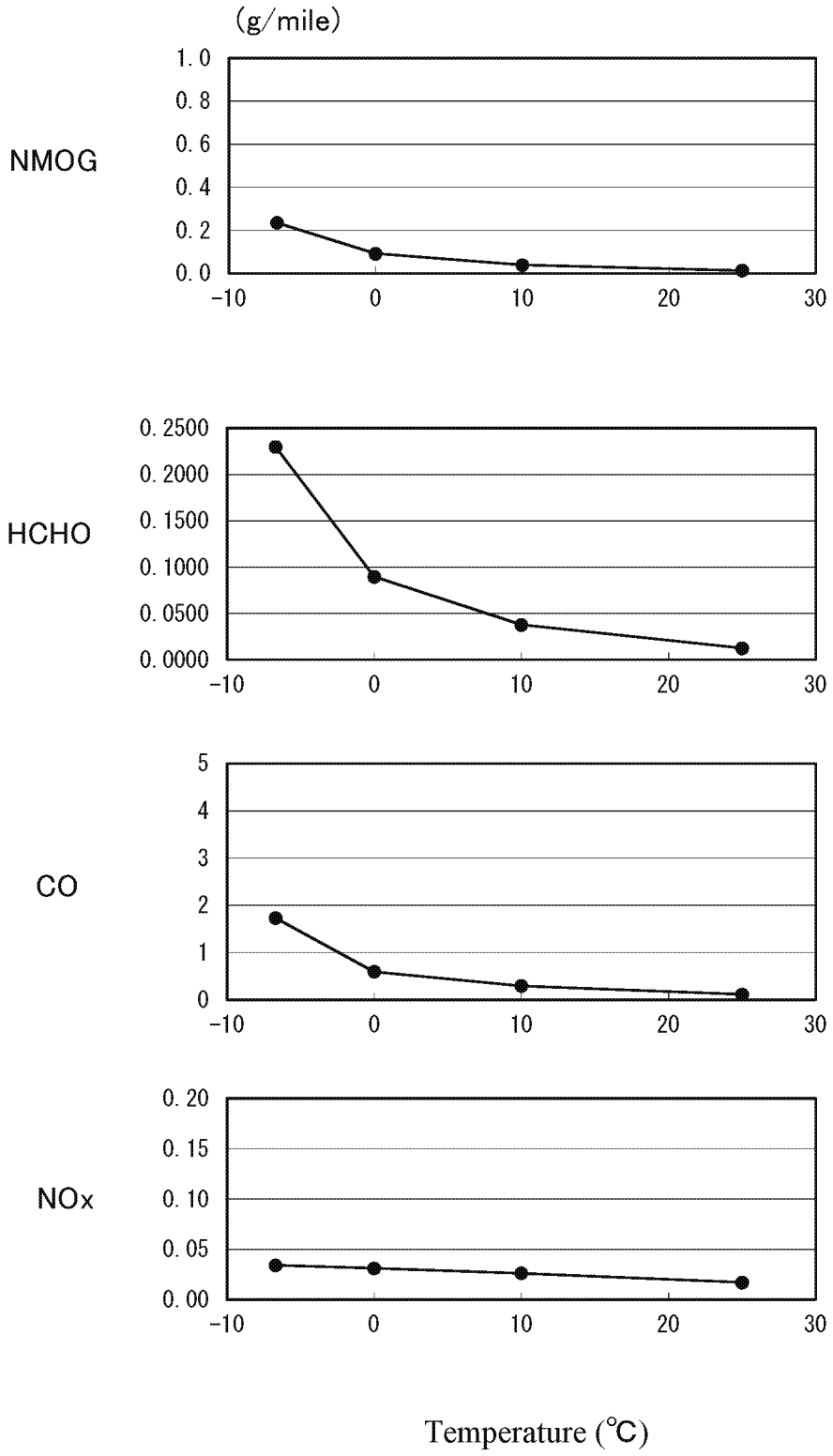
Test Group : FTYXV05.0CC4



ED_004326_00013785-00473

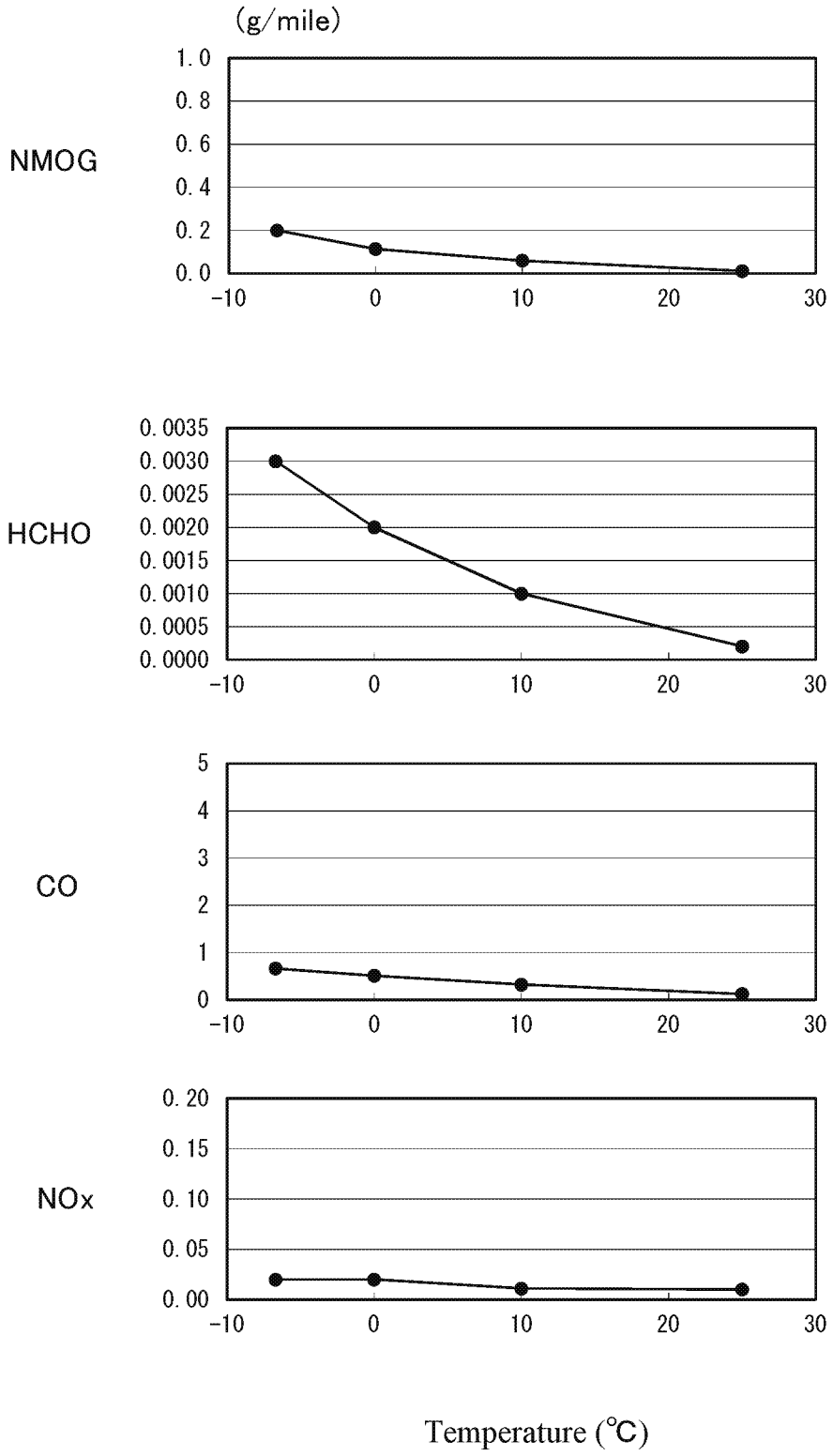
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXJ02.5BEL



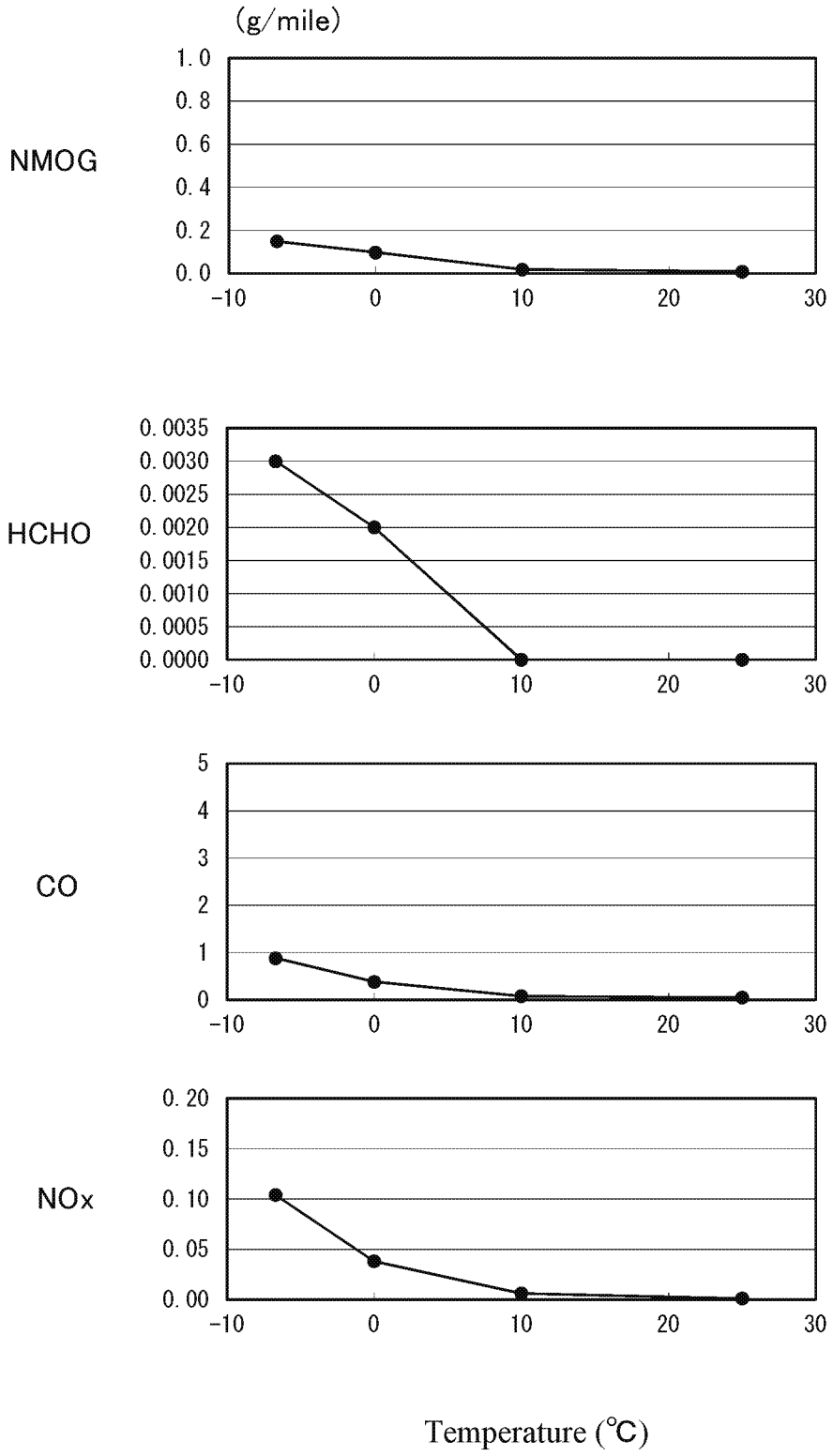
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXT02.0KEM



6.04.00 Emission control system continuity at low temperature

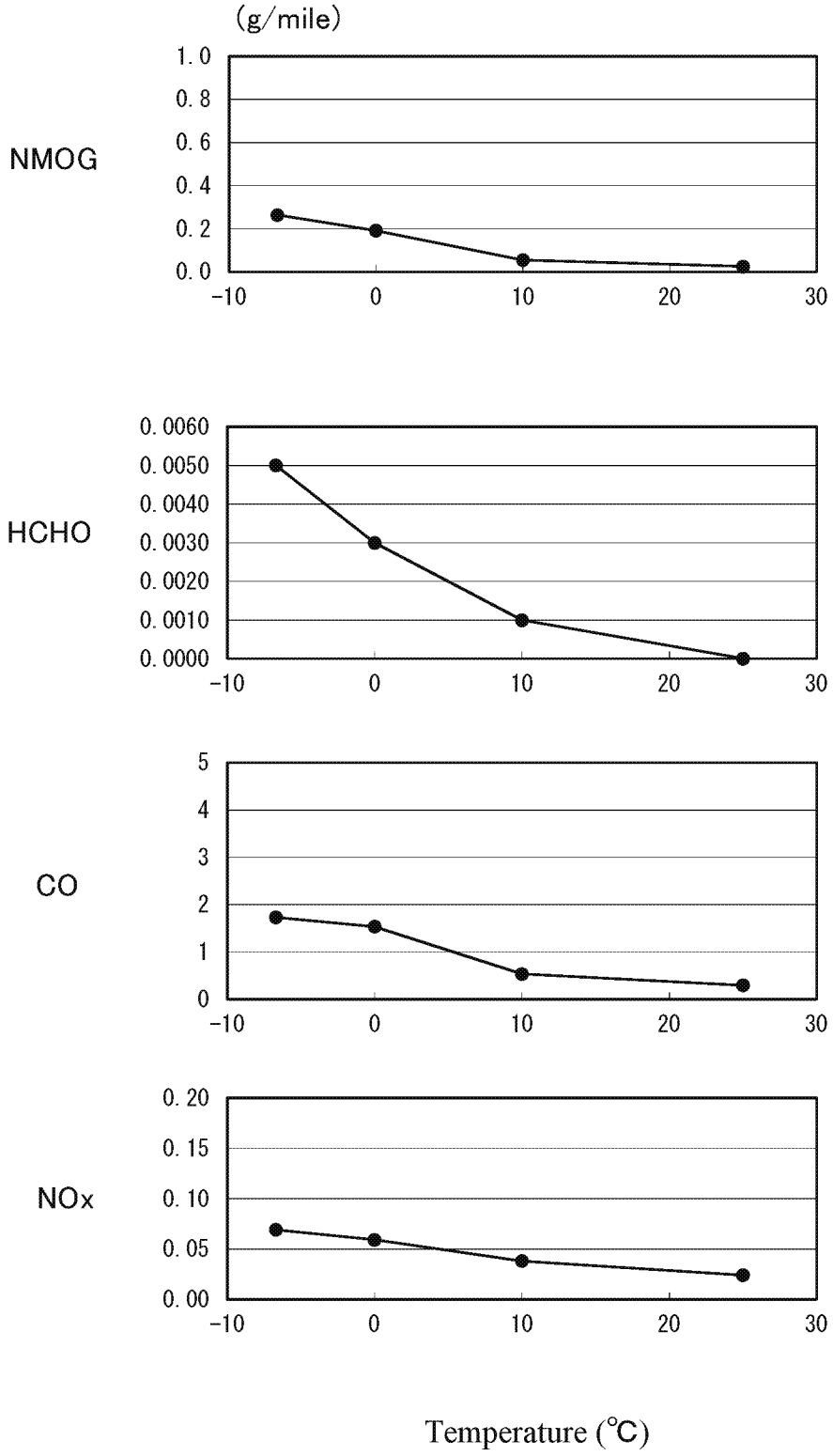
Test Group : FTYXT02.5PCM



ED_004326_00013785-00476

6.04.00 Emission control system continuity at low temperature

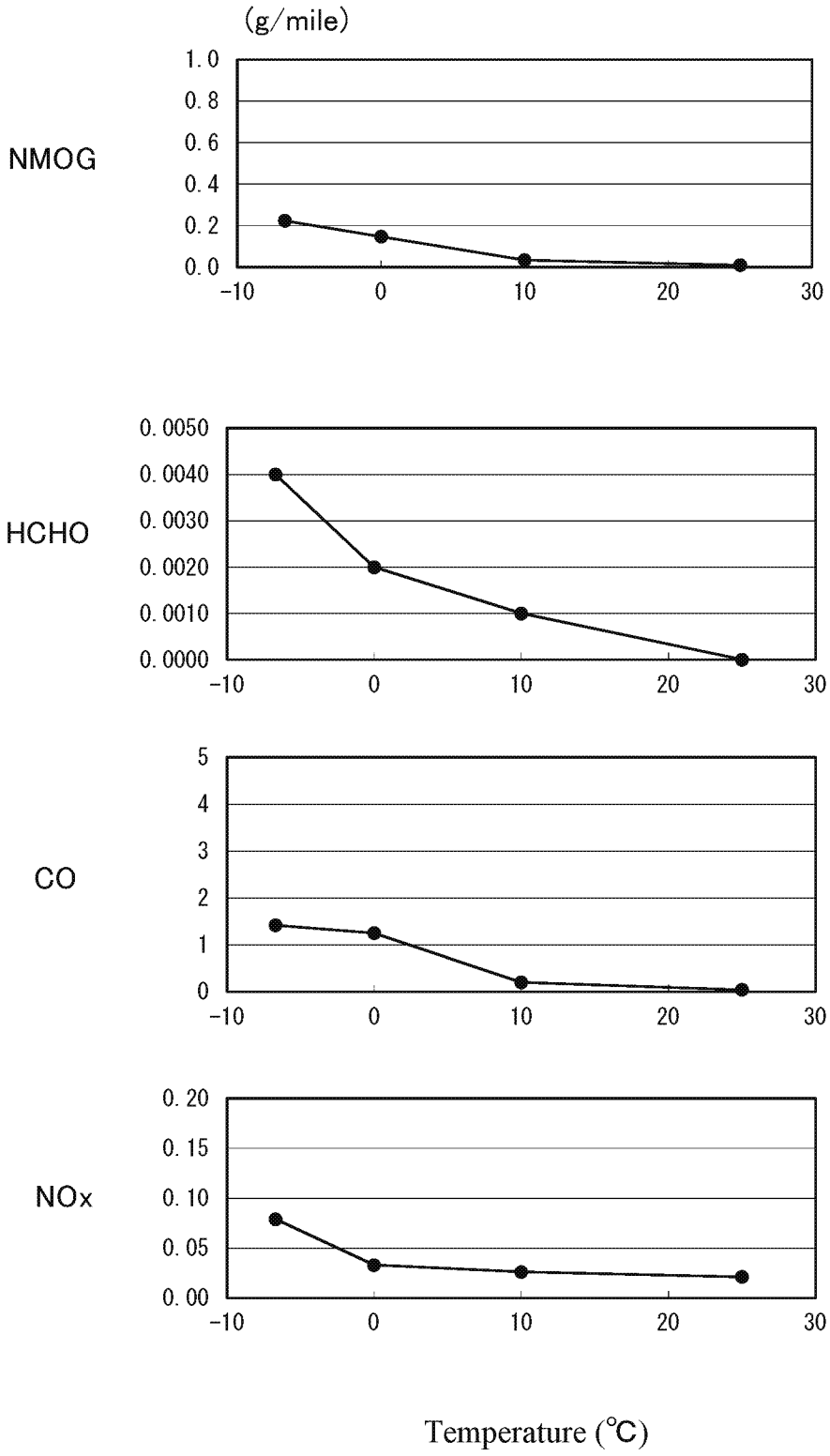
Test Group : FTYXT02.7BEN



ED_004326_00013785-00477

6.04.00 Emission control system continuity at low temperature

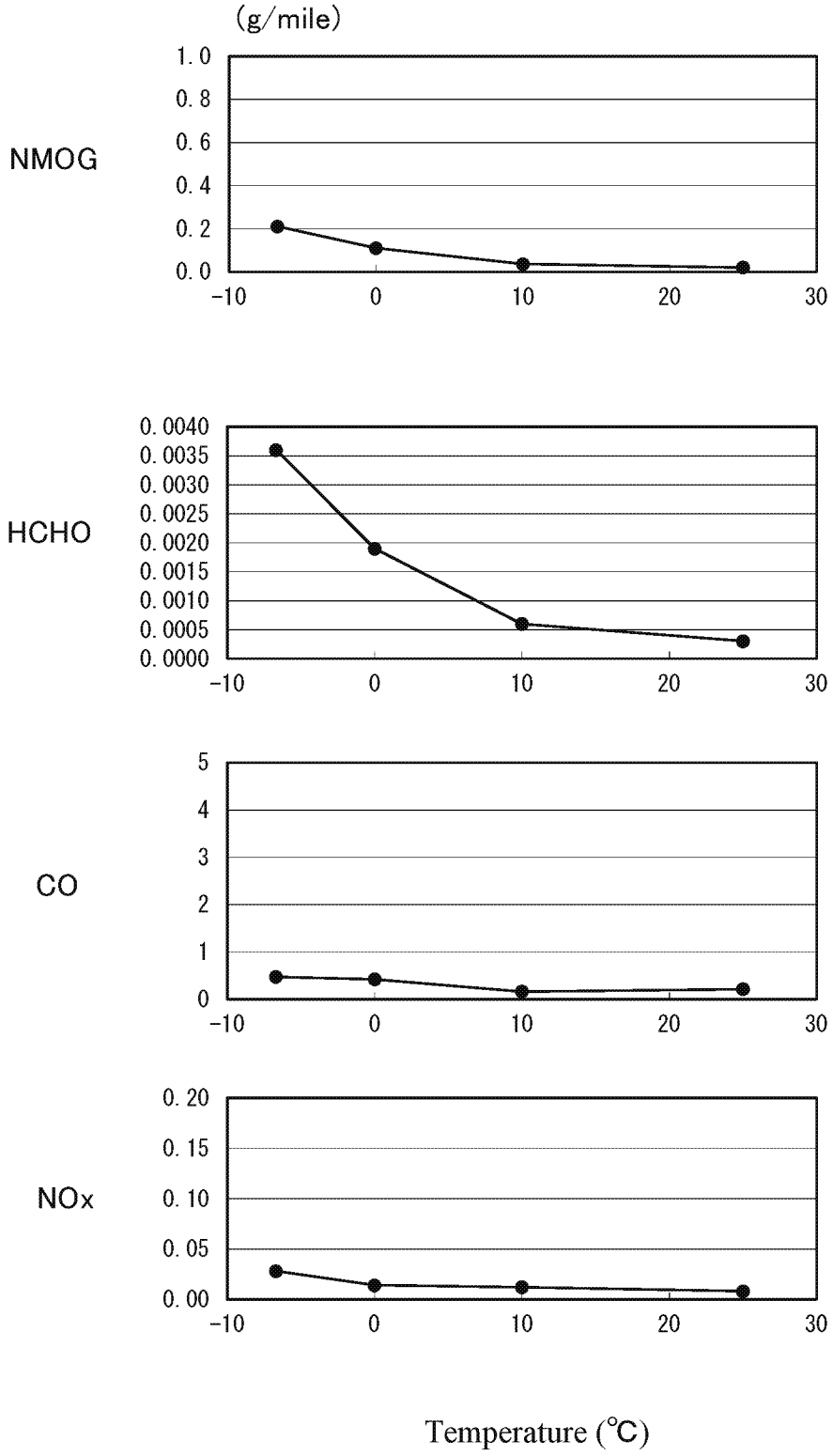
Test Group : FTYXT02.7BEP



ED_004326_00013785-00478

6.04.00 Emission control system continuity at low temperature

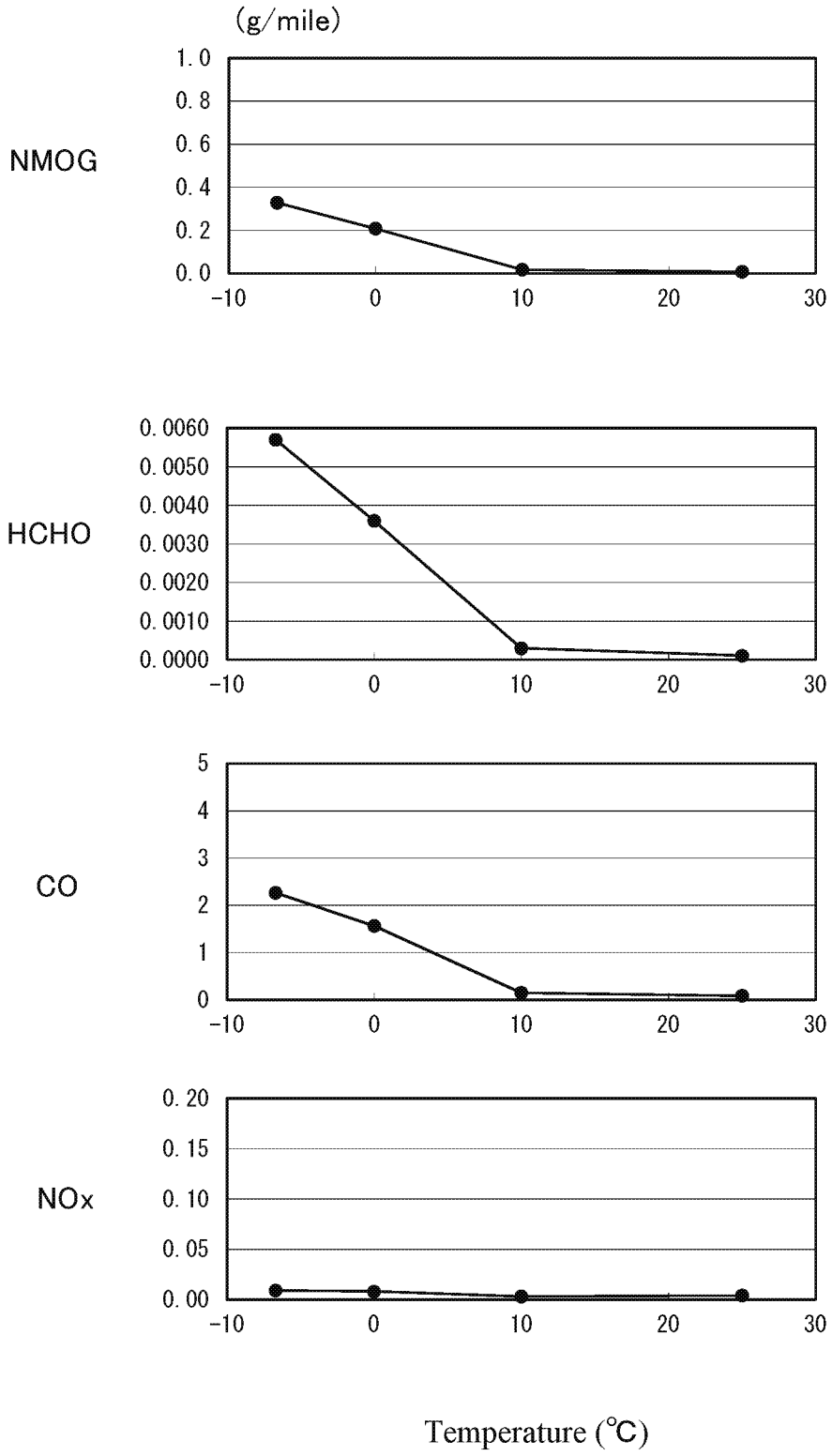
Test Group : FTYXT03.5BER



ED_004326_00013785-00479

6.04.00 Emission control system continuity at low temperature

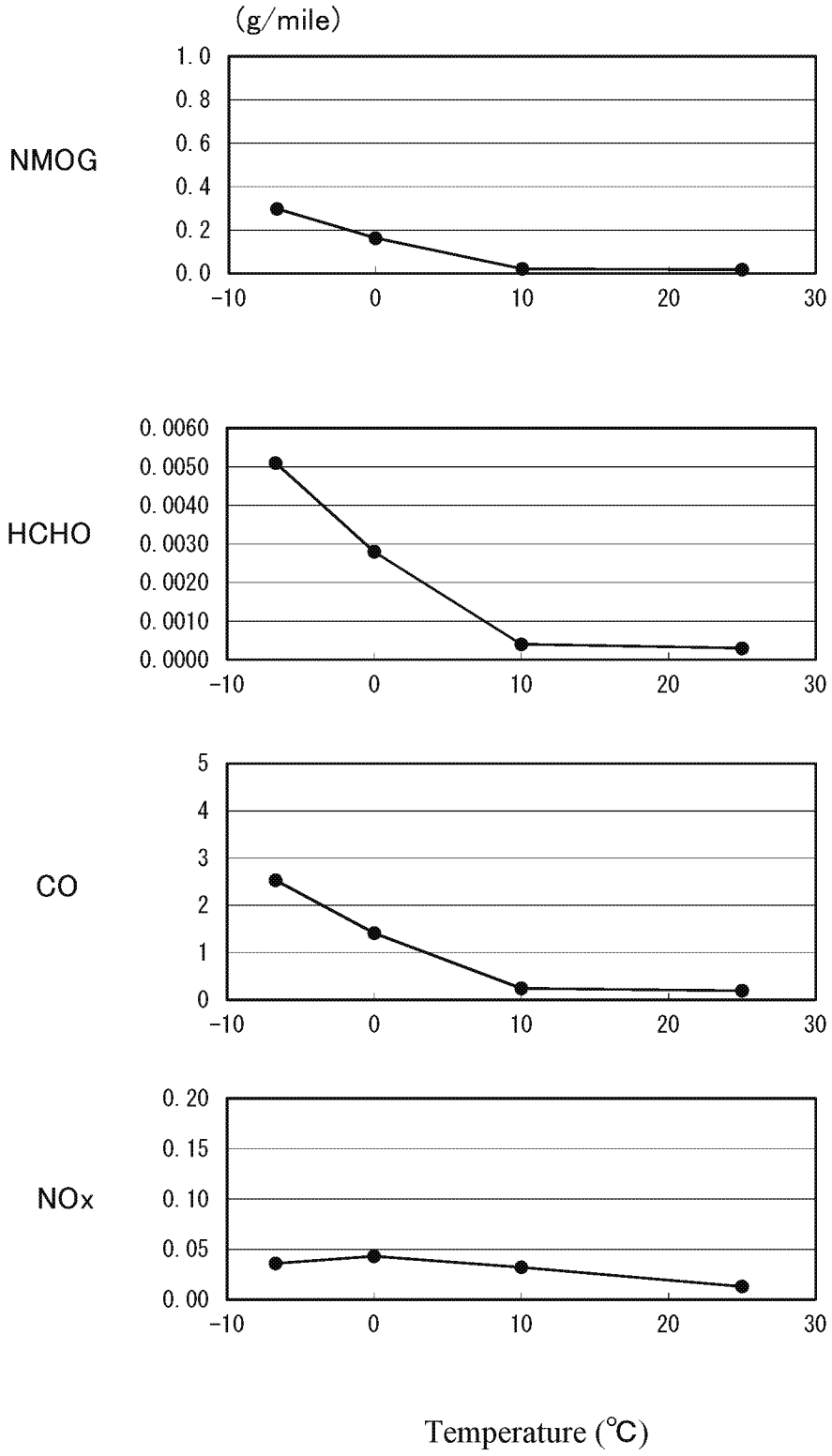
Test Group : FTYXT03.5CC4 / FTYXT03.5CCU



ED_004326_00013785-00480

6.04.00 Emission control system continuity at low temperature

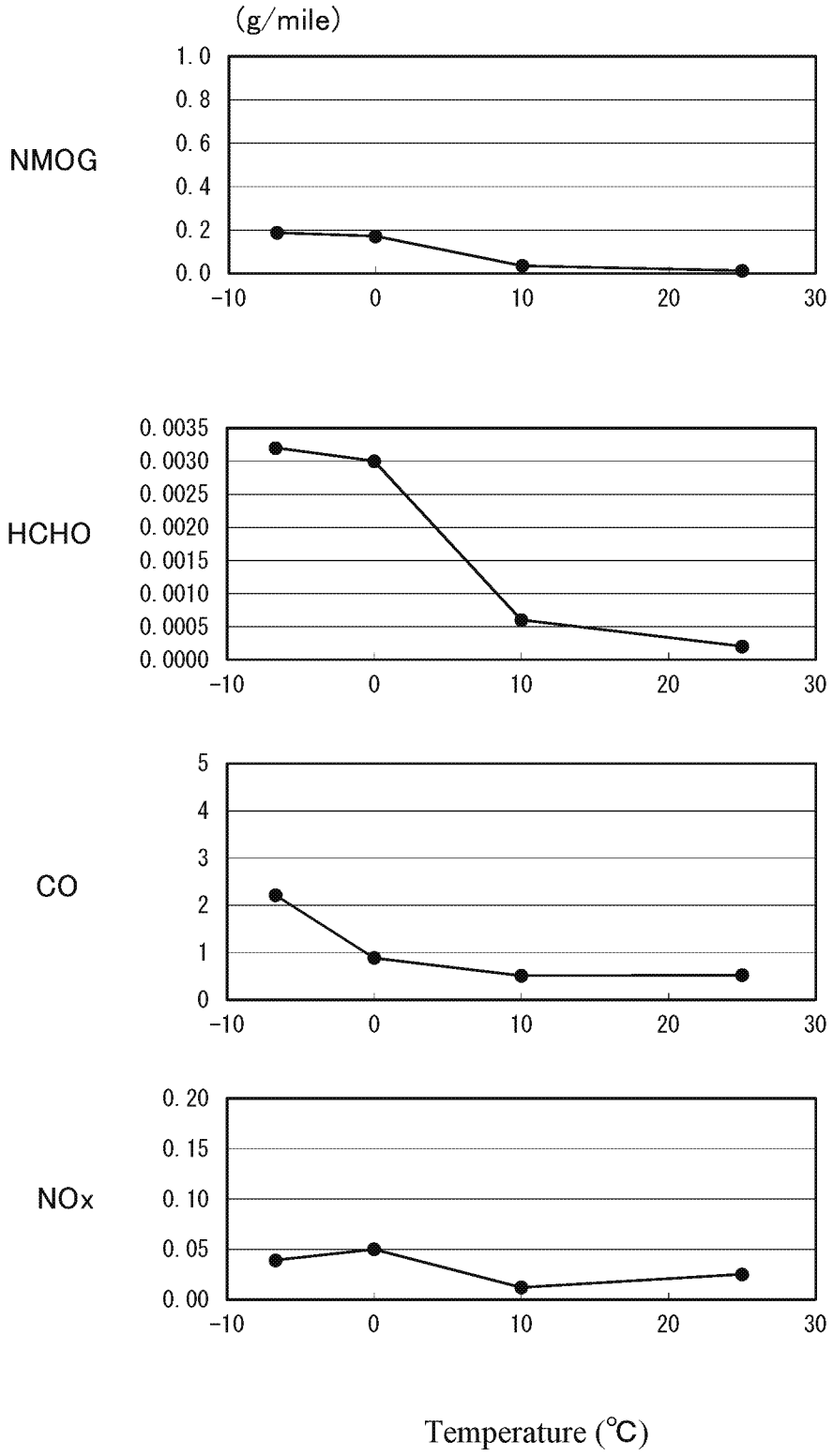
Test Group : FTYXT02.7BER



ED_004326_00013785-00481

6.04.00 Emission control system continuity at low temperature

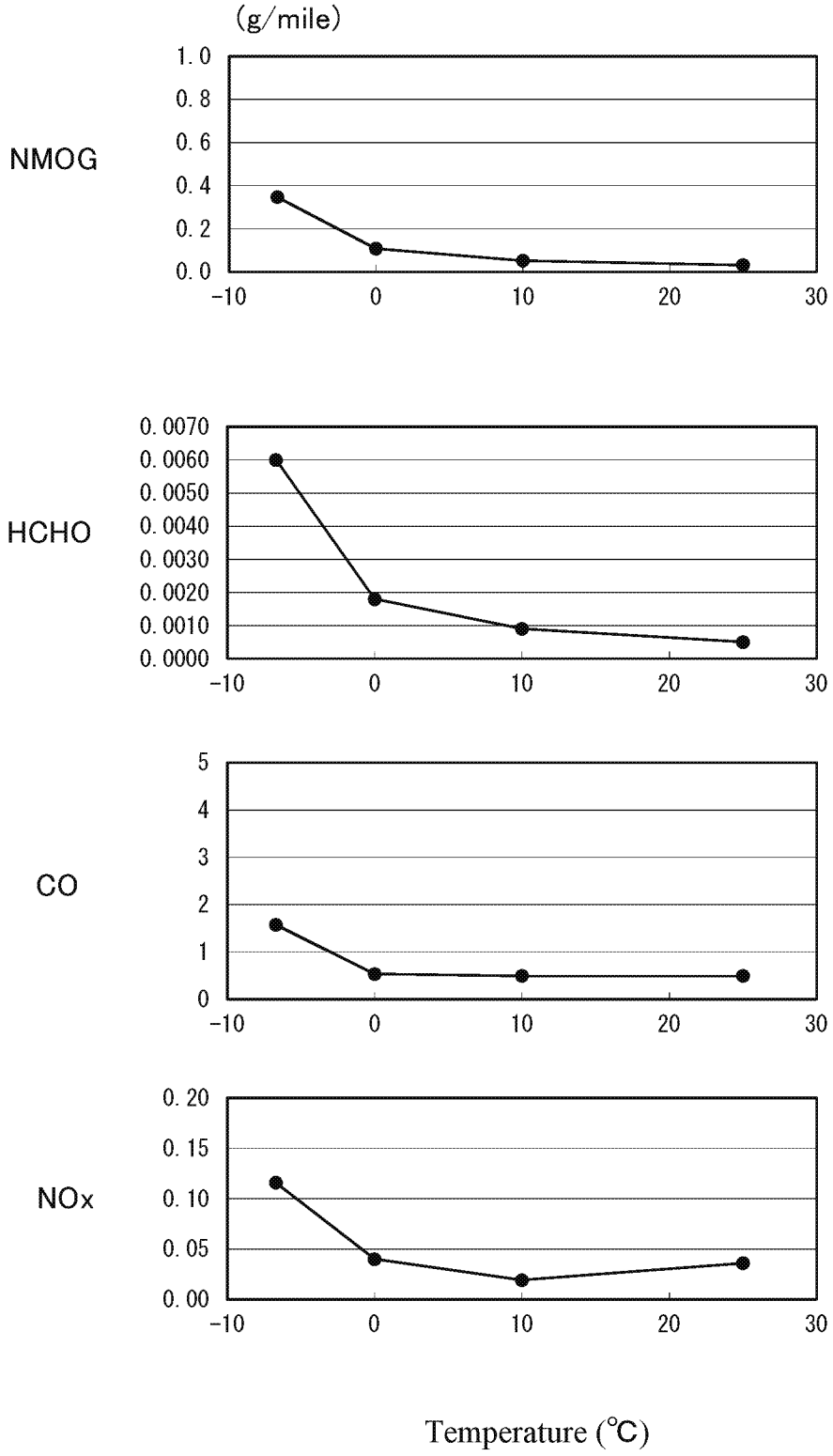
Test Group : FTYXT04.0BEM



ED_004326_00013785-00482

6.04.00 Emission control system continuity at low temperature

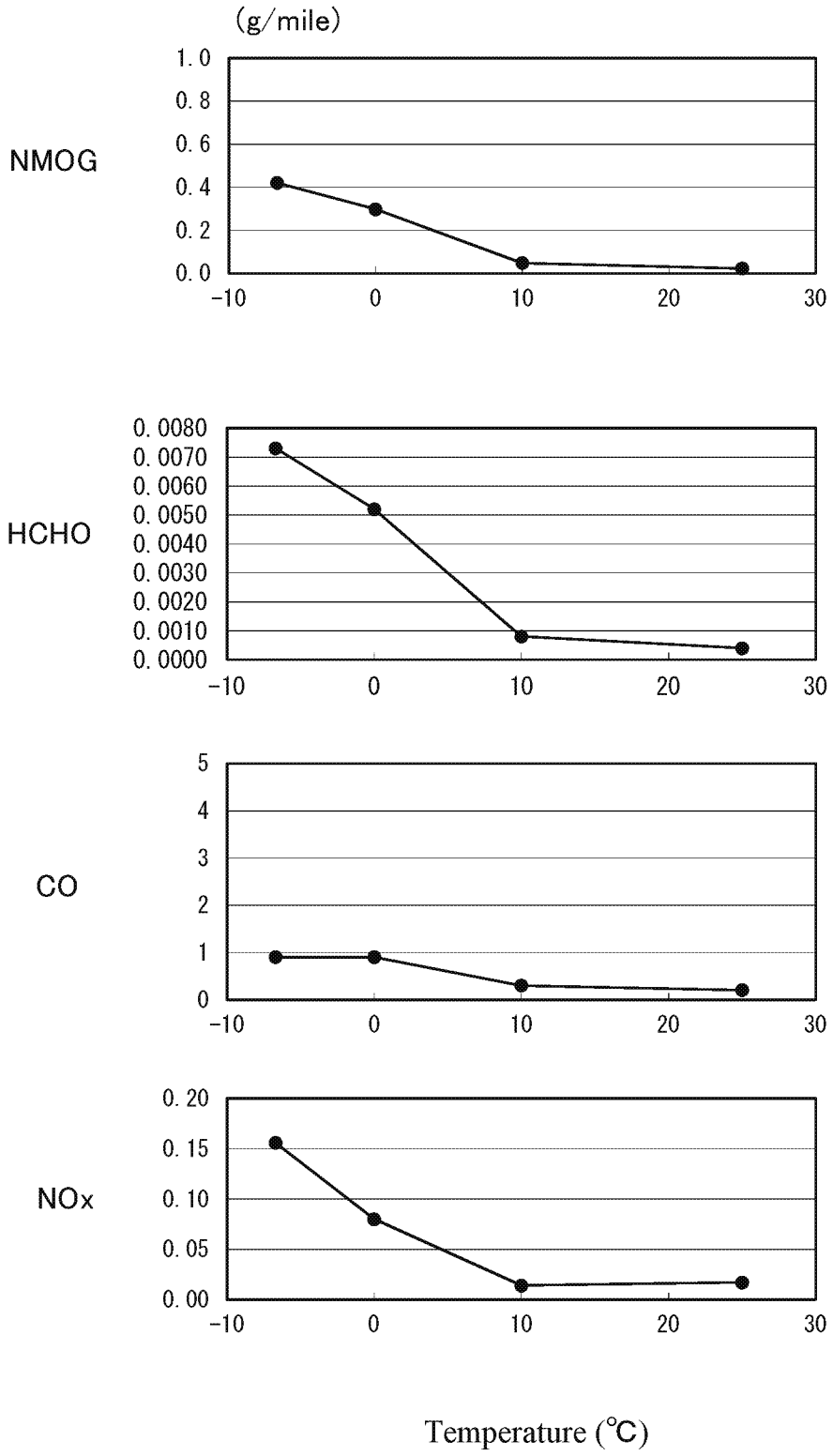
Test Group : FTYXT04.0BES



ED_004326_00013785-00483

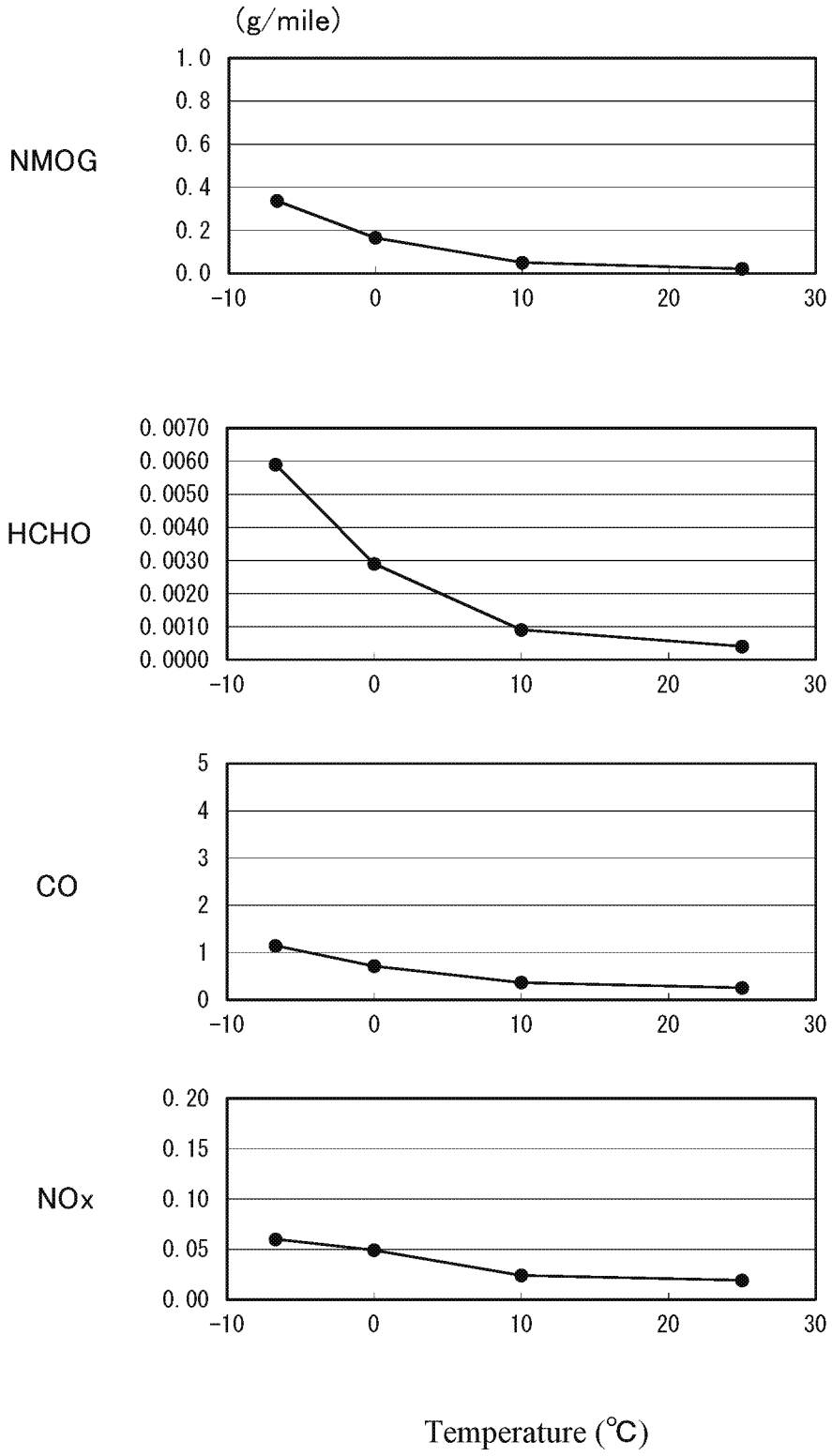
6.04.00 Emission control system continuity at low temperature

Test Group : FTYXT04.6BEW



6.04.00 Emission control system continuity at low temperature

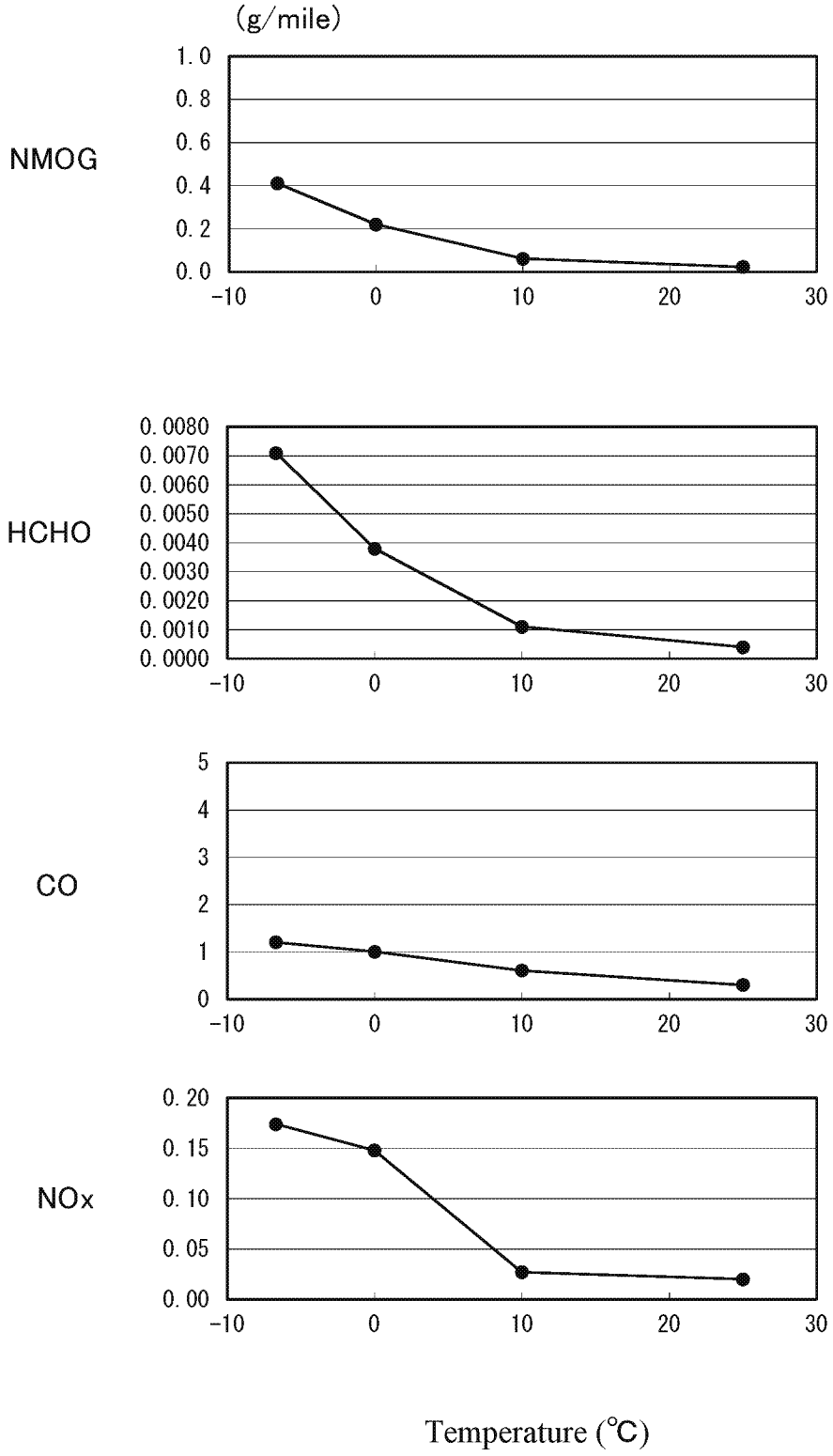
Test Group : FTYXT04.6BEX



ED_004326_00013785-00485

6.04.00 Emission control system continuity at low temperature

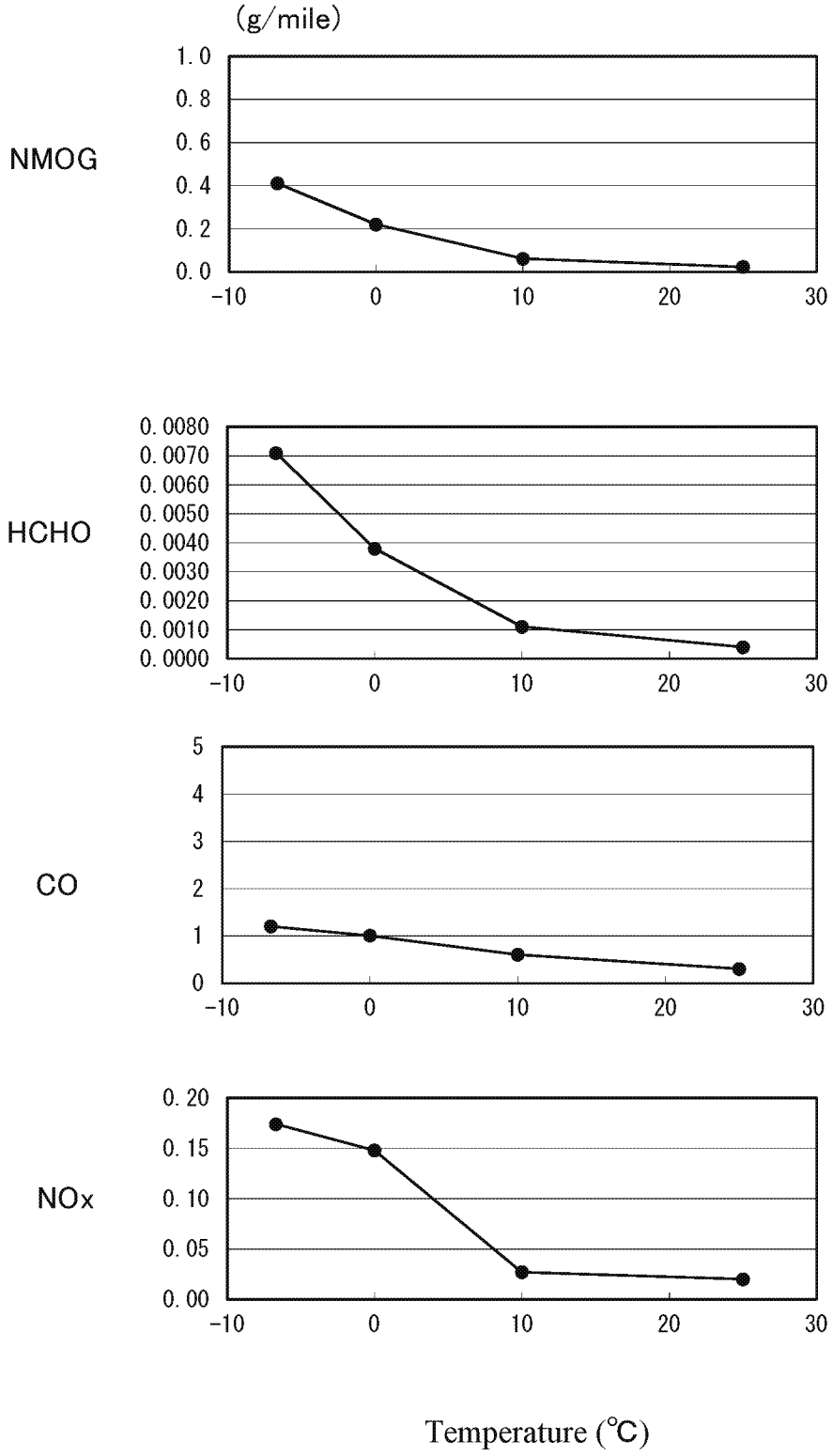
Test Group : FTYXT05.7BEY



ED_004326_00013785-00486

6.04.00 Emission control system continuity at low temperature

Test Group : FTYXT05.7BEW



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Section No.	Title
7.00.00	**EPA requirements**
.01.00	Test ratios for Flexible-Fuel Vehicles

7.00.00 EPA requirements

7.01.00 Test Ratios for Fuel-Flexible Vehicles

In accordance with 40CFR, § 86.1845-04, NMOG(E85) to NMHC(E0) ratio and HCHO(E85) to NMHC(E0) ratio for in-use testing is determined.

7.01.01 NMOG(E85)/NMHC(E0) Ratio

Toyota uses the following NMOG(E85)/NMHC(E0) ratio for in-use testing according to § 86.1845-04(f)(2):

NMOG/NMHC = 0.772

7.01.02 HCHO(E85)/NMHC(E0) Ratio

Toyota uses the following HCHO(E85)/NMHC(E0) ratio for in-use testing according to § 86.1845-04(f)(3):

HCHO/NMHC = 0.0151

ED_004326_00013785-00489