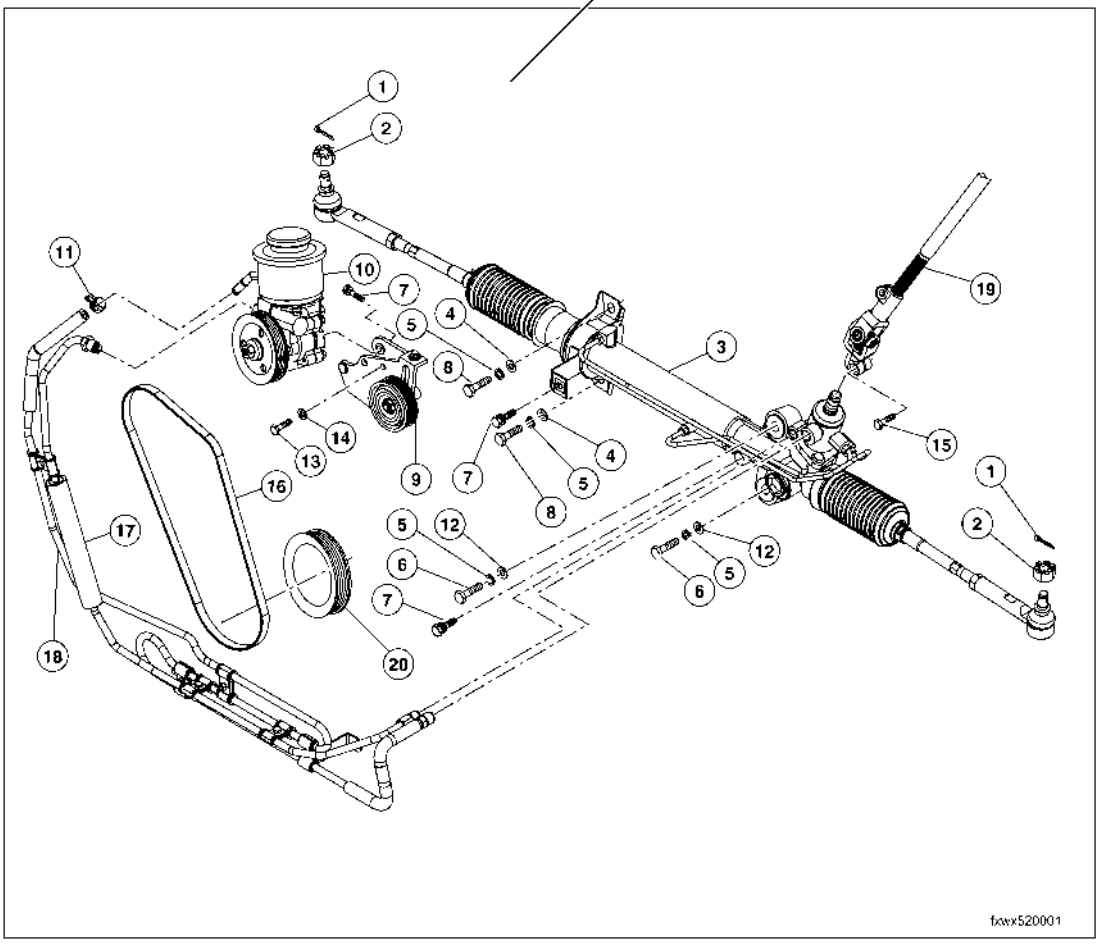
(b) The components' illustration shows the assembly relationship of all parts in the system. A table following the illustration lists names of parts.
Example:

COMPONENTS

GASOLINE VEHICLES



1	Split Pin	11	Clamp
2	Slotted Nut	12	Flat Washer
3	Steering Gear Assy	13	Bolt
4	Flat Washer	14	Washer
5	Spring Washer	15	Bolt
6	Bolt	16	V-Ribbed Belt
7	Bolt	17	High-pressure Line Assy
8	Bolt	18	Low-pressure Line Assy
9	Tensioner With Bracket Assy.	19	Steering Propeller Shaft Assy
10	Power Steering Pump With Fluid Reservior Assy	20	Engine Crankshaft Belt Pulley

Parts List

fxwx010052

HOW TO TROUBLESHOOT

GENERAL INFORMATION

There are many electronic controlled systems in the MPX. In general, electronic controlled system is considered to be very intricate and require a high level of technical knowledge and expert skill to troubleshoot. However, the fact is that if you proceed by inspecting the circuits one by one, troubleshooting of these systems is not complex. If you have adequate understanding of the system and basic knowledge of electricity, the problem can be accurately diagnosed and fixed.

This manual is designed based on the above principle to help service technicians perform accurate and effective troubleshooting.

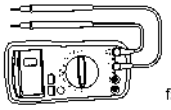
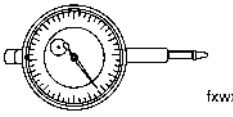
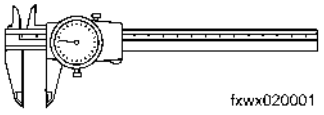
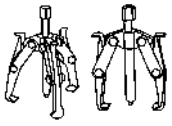
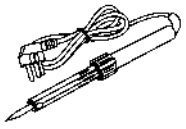
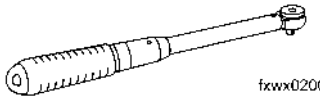
The troubleshooting procedures are described on the following pages.

System	Reference
Anti-lock Brake System	Chapter 04 diagnostics - anti-lock brake system
Audio System	Chapter 04 diagnostics - audio system
Combined Display	Chapter 04 diagnostics - combined display
Engine Control System	Chapter 04 diagnostics - gasoline engine control system Chapter 04 diagnostics - diesel engine control system
Heater And Air Conditioning	Chapter 04 diagnostics - heater and air condition system
Horn	Chapter 04 diagnostics - horn system
Instrument Cluster	Chapter 04 diagnostics - instrument cluster
Lighting	Chapter 04 diagnostics - light system
Outside Mirror	Chapter 04 diagnostics - outside mirrors
Power Door Locks	Chapter 04 diagnostics - power door locks
Power Windows	Chapter 04 diagnostics - power windows
Rear Window Defrost System	Chapter 04 diagnostics - rear window defrost system
Reverse Radar	Chapter 04 diagnostics - reverse radar system
Sliding Roof	Chapter 04 diagnostics - sliding roof system
Supplemental Restrait System	Chapter 04 diagnostics - supplemental restraint system
Wiper And Washer	Chapter 04 diagnostics - wiper and washer

STARTING AND CHARGING

PREPARATION

RECOMMENDED TOOLS

 fxwx020038	Digital Multimeter	GENERATOR
 fxwx020002	Dial Indicator	GENERATOR STARTER
 fxwx020001	Vernier Calipers	STARTER
 fxwx020009	Puller	STARTER
 fxwx020034	Soldering Gun	GENERATOR
 fxwx020003	Snap Ring Pliers	STARTER
 fxwx020008	Torque Wrench	-

EQUIPMENT

Battery charger	-

SSM

Item	Capacity	Specification
Grease	-	-

DTC No.	DTC Definition	Trouble Area
P0268	Injector 3 Short Circuit On Low Side To Battery	• Injector 3 • Injector 3 harness • ECM
P0269	Injector 3 Not-classifyable Error (Depending On Application)	• Injector 3 • Injector 3 harness • ECM
P0267	Injector 3 Short Circuit Low Side To High Side	• Injector 3 • Injector 3 harness • ECM
P0203	Injector 3 Open Load	• Injector 3 • Injector 3 harness • ECM
P0271	Injector 4 Short Circuit On Low Side To Battery	• Injector 4 • Injector 4 harness • ECM
P0272	Injector 4 Not-classifyable Error (Depending On Application)	• Injector 4 • Injector 4 harness • ECM
P0270	Injector 4 Short Circuit Low Side To High Side	• Injector 4 • Injector 4 harness • ECM
P0204	Injector 4 Open Load	• Injector 4 • Injector 4 harness • ECM
P1223	Bank1-specific Errors-injector Short Circuit On High Side To Ground Or Voltage	• Injector • Injector harness • ECM
P1224	Bank1-specific Errors-injector Short Circuit On Low Side To Ground	• Injector • Injector harness • ECM
P0650	Power Stage Fault Status For Mil Short Circuit Battery,short Circuit Ground,no Load Or Excess Temperature	• MIL • MIL harness
P0687	Main Relay Does Not Open In Time	• Main relay • Main relay harness
P0686	Main Relay Opens Too Early	• Main relay • Main relay harness
P0251	Open Load Of Metering Unit Output	• Metering unit • Metering unit harness
P0252	Excess Temperature Of Metering Unit Powerstage	• Metering unit • Metering unit harness
P0254	Short Circuit To Battery Of Metering Unit Output	• Metering unit • Metering unit harness

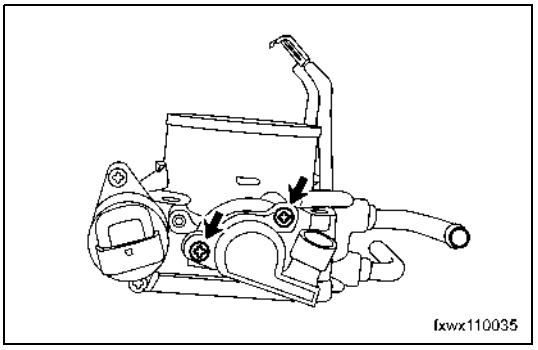
PROBLEM SYMPTOMS TABLE

Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	Reference
Reverse radar system is inoperative at all	1. Fuse	-
	2. Reverse radar controller	Chapter 81 communication system - reverse radar, replacement
	3. Combined display	Chapter 81 communication system - combined display, replacement
	4. Wire harness	-
Self-check function is inoperative	1. Reverse radar sensor	Chapter 81 communication system - reverse radar, replacement
	2. Reverse radar controller	Chapter 81 communication system - reverse radar, replacement
	3. Wire harness	-
Reverse radar system is operative when the shift lever is out of reverse position	1. Reverse radar sensor	Chapter 81 communication system - reverse radar, replacement
	2. Reverse radar controller	Chapter 81 communication system - reverse radar, replacement
	3. Back-up Lamp switch	Chapter 41 transmission - input shaft and reverse idler gear shaft, replacement
	4. Wire harness	-
Reverse radar system is inoperative within specified distance (Back-up lamp is normal)	1. Reverse radar sensor	Chapter 81 communication system - reverse radar, replacement
	2. Reverse radar controller	Chapter 81 communication system - reverse radar, replacement
	3. Wire harness	-
Reverse radar system is operative but there is no obstacle behind the vehicle (Back-up lamp is normal)	1. Reverse radar sensor	Chapter 81 communication system - reverse radar, replacement
	2. Reverse radar controller	Chapter 81 communication system - reverse radar, replacement
	3. Wire harness	-
Buzzer is inoperative or operative incorrectly within specified distance (Combined display is normal)	1. Reverse radar sensor	Chapter 81 communication system - reverse radar, replacement
	2. Reverse radar controller	Chapter 81 communication system - reverse radar, replacement
	3. Wire harness	-

OVERHAUL

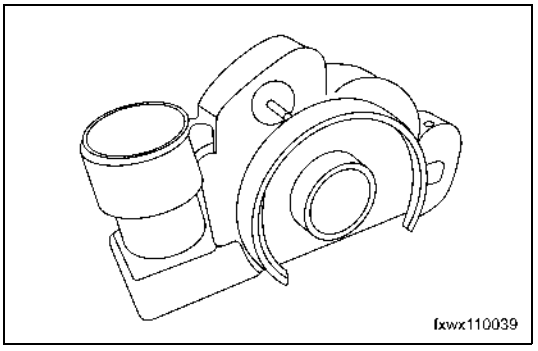
1. TURN IGNITION SWITCH OFF.



2. REMOVE TPS.

(a) Disconnect TPS connector.

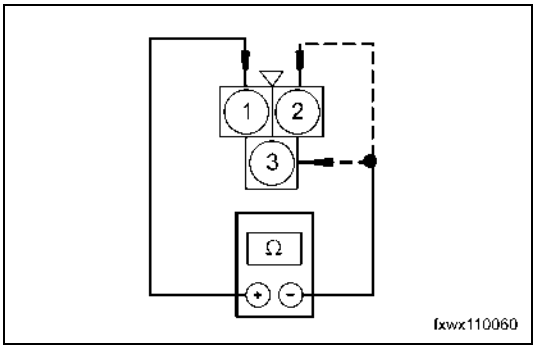
(b) Remove 2 TPS retaining bolts.



3. REMOVE TPS.

NOTE

Clear the surface after removing.



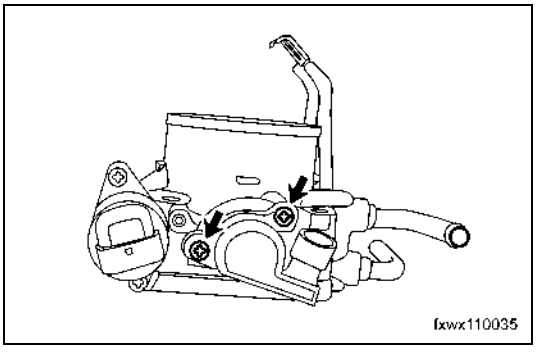
4. CHECK TPS RESISTANCE.

(a) Check resistance between terminal 1 and 2 of TPS.

(b) Check resistance between terminal 1 and 3 of TPS.

Tester Connection	Specified Condition
• Terminal 1 and 2	• Resistance: 3.5 ～ 6.5 Ω (20 ℃)
• Terminal 1 and 3 • Terminal 2 and 3	• Open throttle from idle position to open wide. • The output value is proportional change to the open degree.

(c) If the resistance is out of the range and the value changes unsteadily, replace it.



5. POSITION TPS.

(a) Tighten 2 TPS retaining bolts.
Torque: 3.4 N•m

(b) Connect TPS connector.

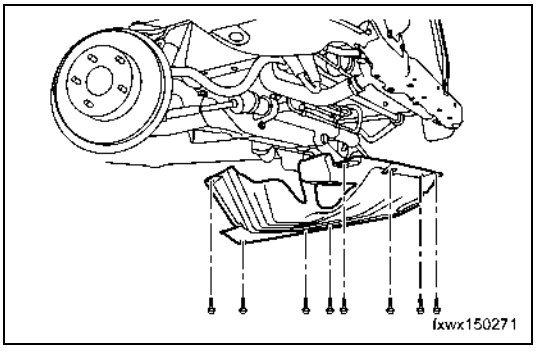
OIL FILTER

REPLACEMENT

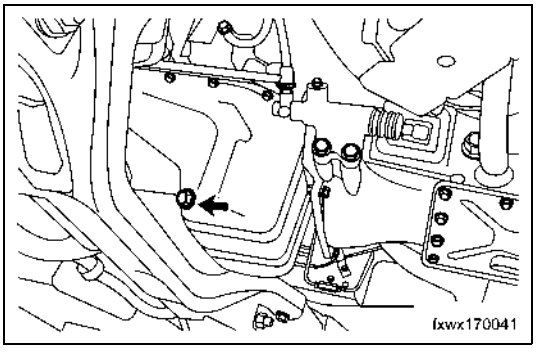
NOTE

Without special circumstances, the oil filter should be replaced with engine oil replacement, which can avoid oil pollution and keep engine operation.

1. **START ENGINE AND ENSURE ENGINE COOLANT TEMPERATURE WITHIN 80 ~ 90 ℃ .**
2. **OPEN OIL FILLER CAP.**
3. **RAISE AND SUPPORT VEHICLE.**



4. **REMOVE LOWER GUARD PLATE RETAINING BOLTS.**

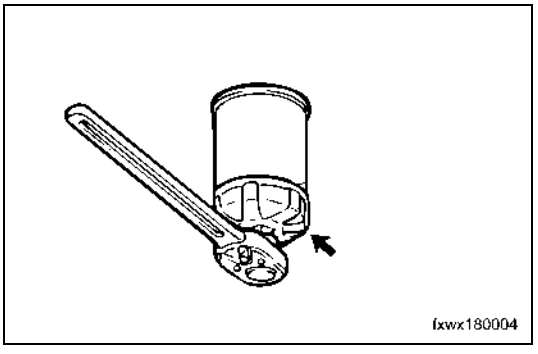


5. **REMOVE OIL DRAIN PLUG.**

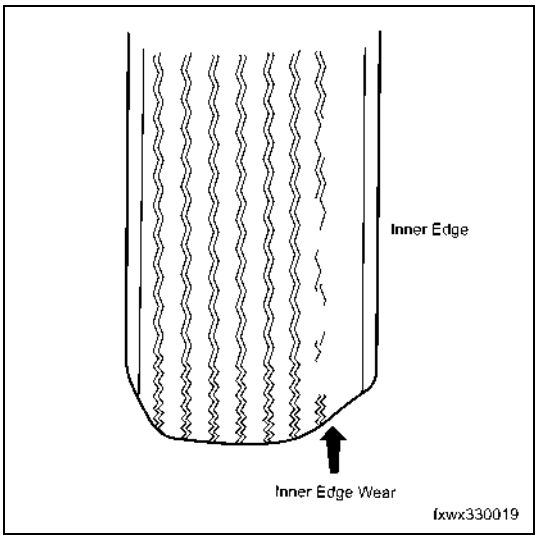
WARNING

Be careful, the engine oil may be hot.

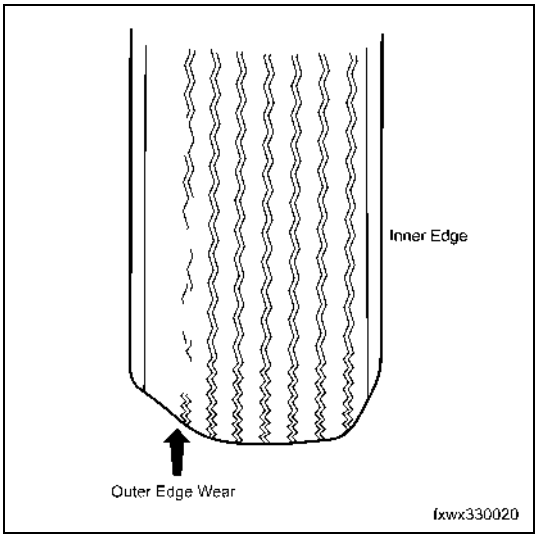
6. **USING A SPECIAL CONTAINER, COLLECT USED OIL, DISPOSAL AS REQUIRED.**



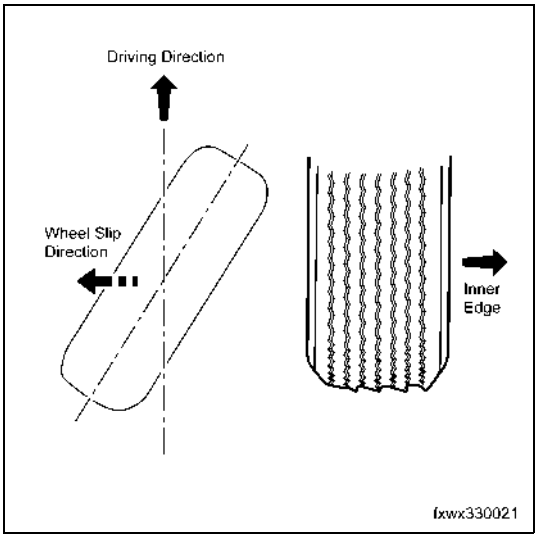
7. **USING SPECIAL TOOL MD-991396 OR TOOLS SOLD ON MARKET, REMOVE OIL FILTER.**
8. **CLEAN INTERFACE OF OIL FILTER AND OIL FILTER BRACKET.**



(c) Visually inspect the tire inner edge (shoulder) wear. The inner Edge (shoulder) wear is usually caused by excessive toe-out and/or excessive negative camber, suspension parts loose. Avoid running at high speed when turning. Adjust and rotate the wheel assy.



(d) Visually inspect the tire outer edge (shoulder) wear. The outer edge (shoulder) wear is usually caused by excessive toe-in and/or excessive positive camber, suspension parts loose. Avoid running at high spped when turning. Adjust and rotate the wheel assy.

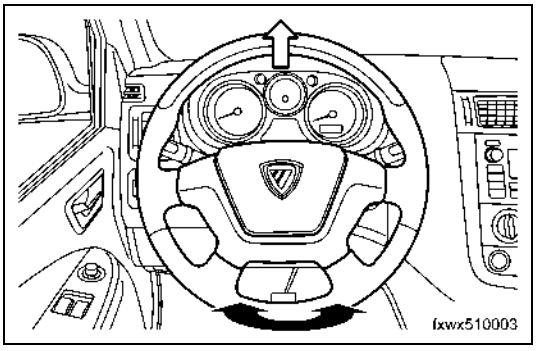


(e) Visually inspect the tire feathering wear that occurs along both inside and outside shoulder ribs. This kind of wear is usually caused by excessive toe-in. Check/adjust the wheel alignment and rotate the wheel assy.

HORN SWITCH ASSY

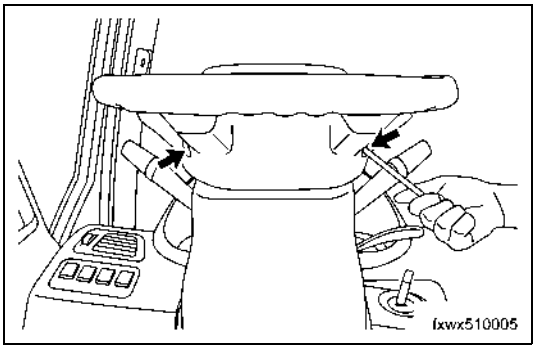
REPLACEMENT

1. **PRECAUTION. (Refer to "Chapter 62 supplemental restraint system - supplemental restraint system, precaution")**
2. **DISCONNECT BATTERY NEGATIVE CABLE. (Refer to "Chapter 20 starting and charging - battery, replacement")**
3. **DISCONNECT BATTERY POSITIVE CABLE. (Refer to "Chapter 20 starting and charging - battery, replacement")**

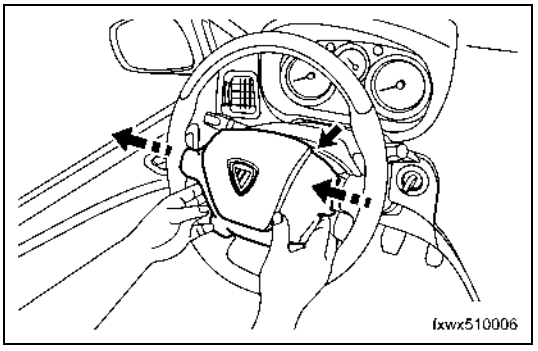


4. REMOVE HORN SWITCH ASSY.

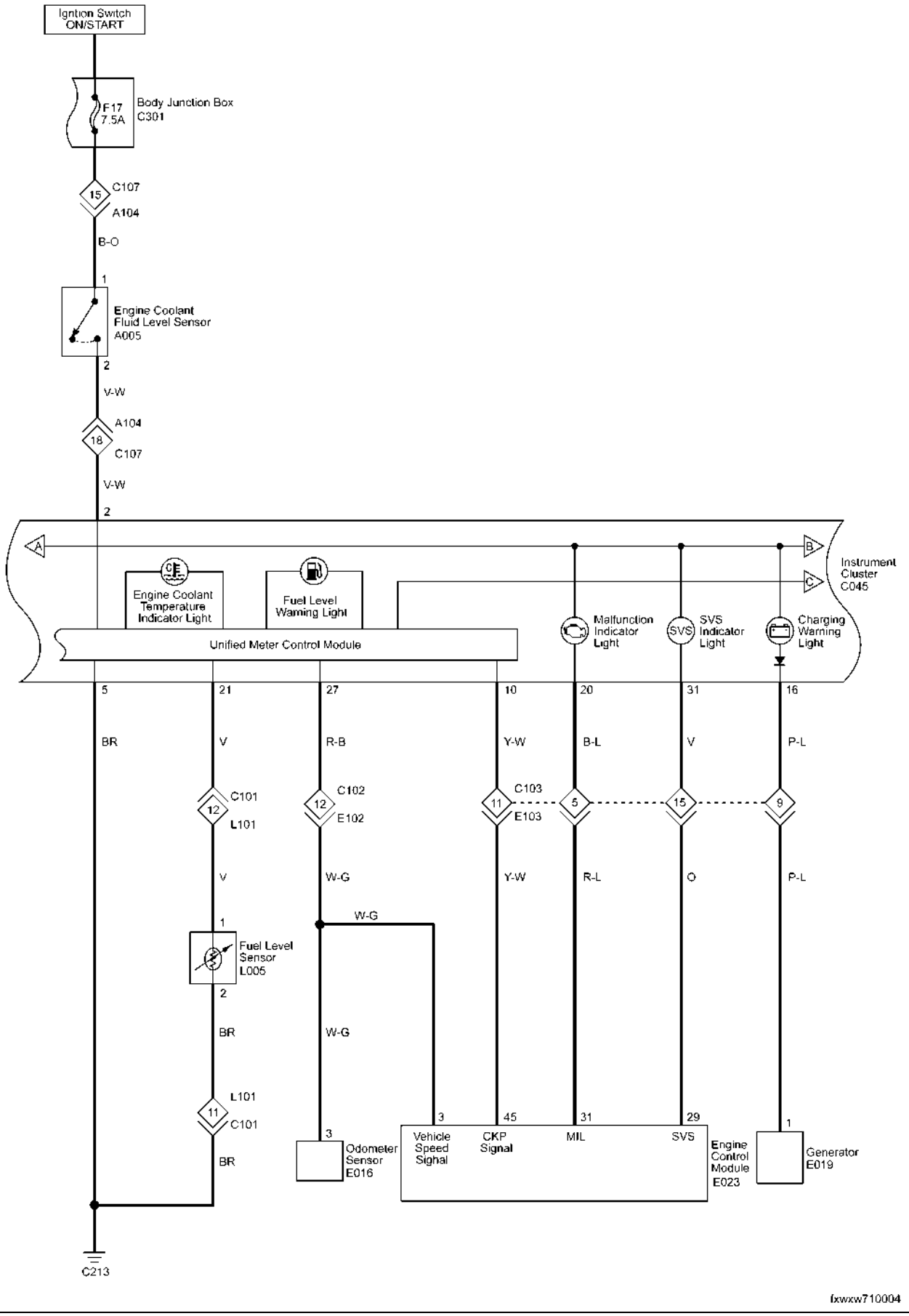
(a) Turn the steering wheel to its straight position and face the tires straight ahead.

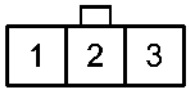


(b) Using a hex spanner, loosen 2 inner hex bolts at the bottom of the steering wheel.



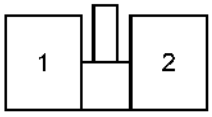
(c) Remove the horn switch assy.


Ignition Switch ON/START
F17 7.5A
Body Junction Box C301
15
C107
A104
B-O
1
Engine Coolant Fluid Level Sensor A005
2
V-W
A104
18
C107
V-W
2
A
B
C
Instrument Cluster C045
Engine Coolant Temperature Indicator Light
Fuel Level Warning Light
Unified Meter Control Module
Malfunction Indicator Light
SVS Indicator Light
Charging Warning Light
5
21
27
10
20
31
16
BR
V
R-B
Y-W
B-L
V
P-L
C101
12
L101
C102
12
E102
C103
11
E103
5
15
9
V
W-G
Y-W
R-L
O
P-L
W-G
1
Fuel Level Sensor L005
2
BR
W-G
L101
11
C101
BR
3
Odometer Sensor E016
3
Vehicle Speed Sighal
45
CKP Signal
31
MIL
29
SVS
Engine Control Module E023
1
Generator E019
C213
fxwxw710004



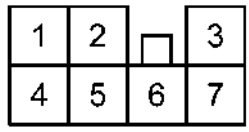
C044 Double Diode

Pin	Color	Function	Qualifier
1	W-R	-	
2	R	-	
3	R-W	-	



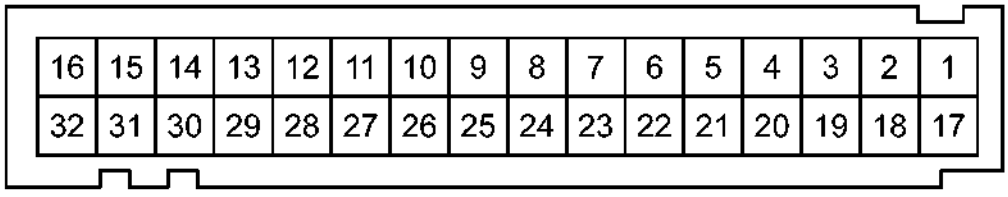
C047 Front Blower Motor

Pin	Color	Function	Qualifier
1	W-R	Front Blower Motor	
2	L-R	Front Heater Relay	



C046 Fresh/Recirculation Door Actuator

Pin	Color	Function	Qualifier
1	-	-	
2	-	-	
3	-	-	
4	-	-	
5	B	F/R Actuator 1	
6	-	-	
7	W	F/R Actuator 2	

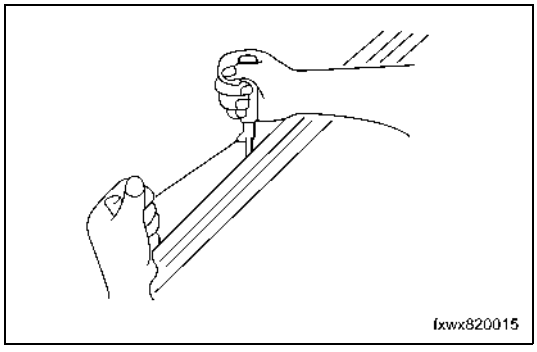


C045 Instrument Cluster

Pin	Color	Function	Qualifier	Pin	Color	Function	Qualifier
1	R	Door Ajar Switch		19	B-W	Seat Belt Switch	
2	V-W	Fluid Level Signal		20	B-L	Malfunction indicator	4G Series
3	BR	Ground		20	R-Y	Malfunction indicator	BJ Series
4	-	-	4G Series	21	V	Fuel Level Sensor	
4	R	Main Relay	BJ Series	22	G-B	Signal Input - Turn Left	
5	BR	Ground		23	Y-G	Temperature Indicator	4G Series
6	LG	Front Fog Lamp		23	Y-B	Temperature Indicator	BJ Series
7	R-Y	Rear Fog Lamp		24	G-Y	Turn Right	
8	-	-	4G Series	25	R-G	High Beam	
8	L-W	Preheat Indicator	BJ Series	26	R-W	Braking	
9	L	Oil Pressure Switch		27	R-B	Vehicle Speed	

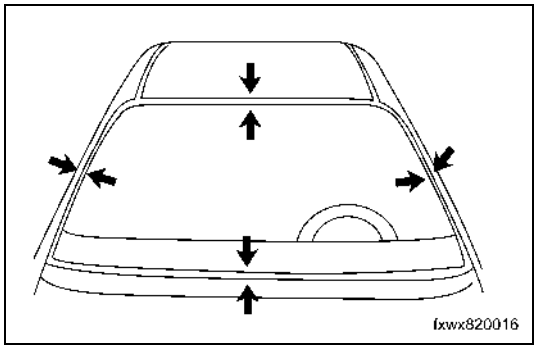
REPLACEMENT

1. **REMOVE ENGINE HOOD. (Refer to "Chapter 87 engine hood and doors - engine hood, replacement")**
2. **REMOVE FRONT WIPER ARM ASSY. (Refer to "Chapter 65 wiper and washer - wiper assy, replacement")**
3. **REMOVE WINDSHIELD LOWER TRIM. (Refer to "Chapter 65 wiper and washer - front wiper link assy, replacement")**
4. **REMOVE REAR VIEW MIRROR ASSY. (Refer to "Chapter 82 windshield - rear view mirror, replacement")**
5. **REMOVE A PILLAR UPPER INNER GUARD BOARD. (Refer to "Chapter 88 exterior and interior trim - side wall guard board, replacement")**



6. **REMOVE WINDSHIELD.**

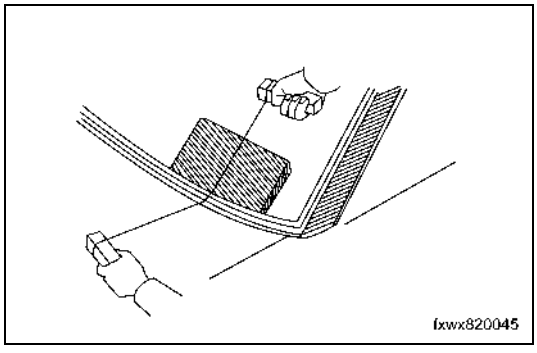
(a) Using a special tool, remove the windshield moulding outside.



(b) Mark the windshield and body position as shown in the illustration.

NOTE

It is no need to mark if the windshield is not resued.



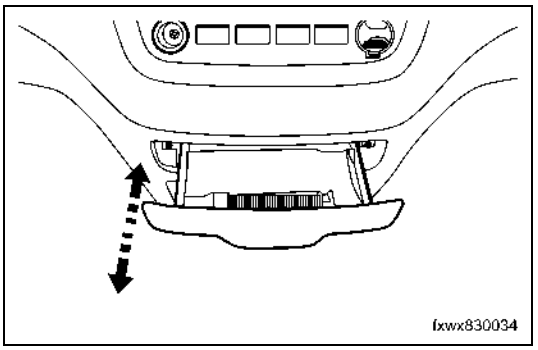
(c) Insert the piano wire between the body and the glass.

(d) Attach wooden blocks to both ends of the piano wire.

(e) Pull the piano wire around the glass and cut off the sealant.

NOTE

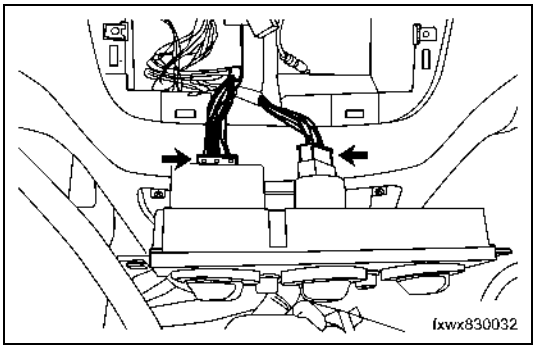
- **To prevent vehicle paint damage, use adhesive tape on painted surfaces during windshield removal.**
- **Place a plastic cover between the piano wire and the instrument panel to prevent the instrument panel from being scuffed when removing the glass.**



36. INSTALL ASHTRAY ASSY.

(a) Press ashtray tab by hand.

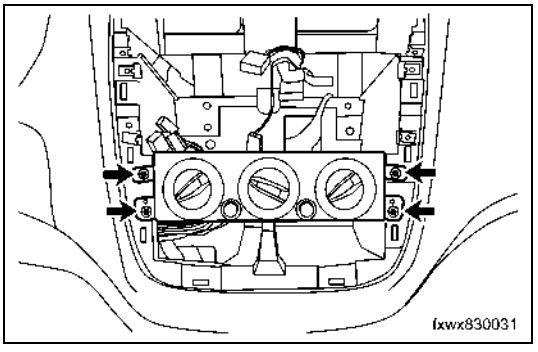
(b) Position the ashtray properly.



37. INSTALL FRONT A/C CONTROLLER ASSY.

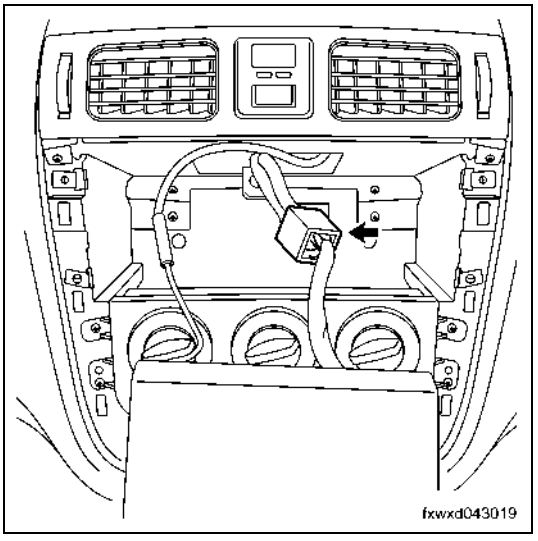
(a) Connect the front A/C controller assy.

- Auto A/C:
  Connect the connectors.
- Manual A/C:
  Connect the cables.



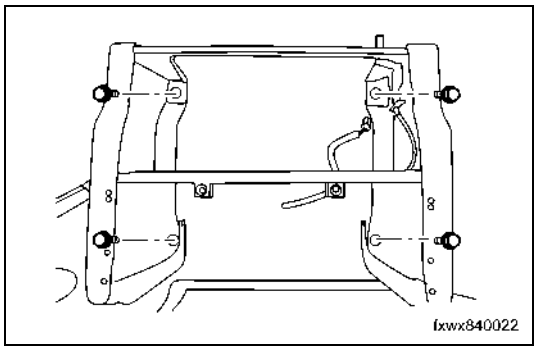
(b) Position the front A/C controller properly.

(c) Tighten 4 retaining screws.

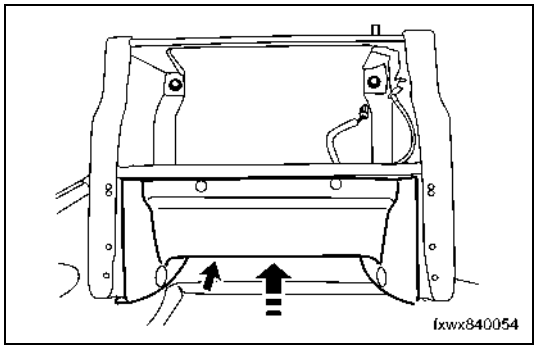


38. INSTALL AUDIO UNIT.

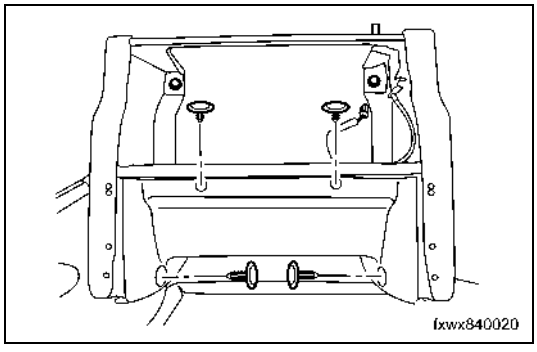
(a) Connect the connector of the audio unit.



(d) Tighten 4 bolts.
Torque: 45 ～ 55 N·m



(e) Position the driver seat base trim properly.



(f) Install 4 clips.

NOTE
Be sure to replace with new clips.

12. INSTALL ASSISTANT DRIVER SEAT BASE WELDING ASSY.

NOTE

- **Install the assistant driver seat base welding assy by the same procedures as the driver seat base welding assy.**
- **Skip step (b) and (c).**

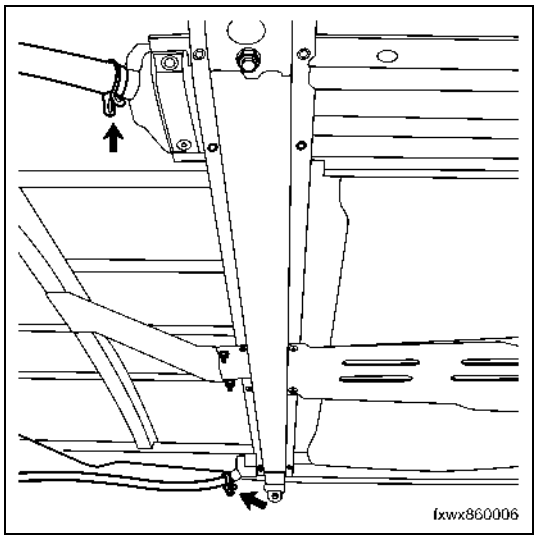
13. INSTALL DRIVER SEAT ASSY.

(a) Position the driver seat assy which is turned over behind the base welding assy.

WARNING
Care must be taken because the driver seat assy is quite heavy.

CAUTION

- **Do not score surfaces of parts around.**
- **Do not move the tracks to prevent malposition.**

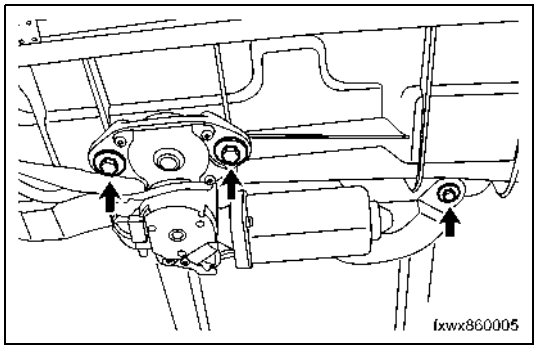


(c) Connect 2 rear drain hoses to the sliding roof housing.

⚠WARNING

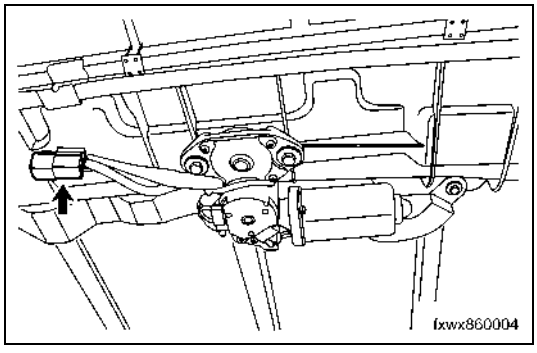
The drain hoses will have interest with the sealability of the sliding roof. Inspect the drain hoses before installing them. Replace with new drain hoses if necessary.

(d) Install the rear evaporator assy. (Refer to “Chapter 61 heater and air conditioning - rear evaporator assy, replacement)



11. INSTALL SLIDING ROOF CONTROL MOTOR.

(a) Install the sliding roof control motor with 3 bolts.



(b) Install the connector of the sliding roof control motor to the sliding roof housing.

12. INSTALL ROOF GUARD BOARD. (Refer to "Chapter 88 exterior and interior trim - roof guard board, replacement")