

## 6. Basic Diagnostic Procedure

### A: BASIC DIAGNOSTIC PROCEDURE FOR ENGINE

#### 6A1 : CHECK ENGINE START FAILURE.

1) Ask the customer when and how the trouble occurred using the interview check list. <Ref. to 2-7 [T6C0].>

2) Start the engine.

**CHECK** : **Does the engine start?**

**YES** : Go to step **6A2**.

**NO** : Inspection using "Diagnostics for Engine Start Failure". <Ref. to 2-7 [T800].>

#### 6A2 : CHECK ILLUMINATION OF CHECK ENGINE MALFUNCTION INDICATOR LAMP (MIL).

**CHECK** : **Does CHECK ENGINE malfunction indicator lamp illuminate?**

**YES** : Go to step **6A3**.

**NO** : Inspection using "9. General Diagnostics Table". <Ref. to 2-7 [T900].>

#### 6A3 : CHECK INDICATION OF DTC ON DISPLAY.

1) Turn ignition switch to OFF.

2) Connect the Subaru Select Monitor or the OBD-II general scan tool to data link connector.

3) Turn ignition switch to ON and the Subaru Select Monitor or OBD-II general scan tool switch to ON.

4) Read DTC on the Subaru Select Monitor or OBD-II general scan tool.

**CHECK** : **Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC?**

**YES** : Go to step **6A4**.

**NO** : Repair the related parts.

NOTE:

If DTC is not shown on display although the MIL illuminates, perform diagnostics of MIL (CHECK ENGINE malfunction indicator lamp) circuit or combination meter. <Ref. to 2-7 [T800].>

#### 6A4 : PERFORM THE DIAGNOSIS.

1) Inspect using "Diagnostics Chart with Trouble Code (DTC)".

NOTE:

- 2200 cc California spec. vehicles: <Ref. to 2-7 [T10A0].>

- Except 2200 cc California spec. vehicles: <Ref. to 2-7 [T11A0].>

NOTE:

Carry out the basic check, only when DTC about automatic transmission is shown on display. <Ref. to 2-7 [T6B0].>

2) Repair the trouble cause.

3) Perform the clear memory mode. <Ref. to 2-7 [T3D0].>

4) Perform the inspection mode. <Ref. to 2-7 [T3E0].>

**CHECK** : **Does the Subaru Select Monitor or OBD-II general scan tool indicate DTC?**

**YES** : Inspect using "Diagnostics Chart with Trouble Code (DTC)".

NOTE:

- 2200 cc California spec. vehicles: <Ref. to 2-7 [T10A0].>

- Except 2200 cc California spec. vehicles: <Ref. to 2-7 [T11A0].>

**NO** : Complete the diagnosis.

### B: BASIC CHECK ITEMS FOR AT

When trouble code about automatic transmission is shown on display, carry out the following basic check. After that, carry out the replacement or repair work.

1) ATF level check <Ref. to 3-2 [W1B1].>

2) Differential gear oil level check <Ref. to 3-2 [W1B2].>

3) ATF leak check <Ref. to 3-2 [W1B3].>

4) Differential gear oil leak check <Ref. to 3-2 [W1B3].>

5) Stall test <Ref. to 3-2 [W7A0].>

6) Line pressure test <Ref. to 3-2 [W9A0].>

7) Transfer clutch pressure test <Ref. to 3-2 [W10A0].>

8) Time lag test <Ref. to 3-2 [W8A0].>

9) Road test <Ref. to 3-2 [W6A0].>

10) Shift characteristics <Ref. to 3-2 [W6A0].>

**C: CHECK LIST FOR INTERVIEW**

**1. CHECK LIST NO. 1**

Check the following items when problem has occurred.

NOTE:

Use copies of this page for interviewing customers.

Customer's name		Engine no.	
Date of sale		Fuel brand	
Date of repair		Odometer reading	km
Vin no.			miles
Weather	<input type="checkbox"/> Fine <input type="checkbox"/> Cloudy <input type="checkbox"/> Rainy <input type="checkbox"/> Snowy <input type="checkbox"/> Various/Others:		
Outdoor temperature	°F (°C)		
	<input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold		
Place	<input type="checkbox"/> Highway <input type="checkbox"/> Suburbs <input type="checkbox"/> Inner city <input type="checkbox"/> Uphill <input type="checkbox"/> Downhill <input type="checkbox"/> Rough road <input type="checkbox"/> Others:		
Engine temperature	<input type="checkbox"/> Cold <input type="checkbox"/> Warming-up <input type="checkbox"/> After warming-up <input type="checkbox"/> Any temperature <input type="checkbox"/> Others:		
Engine speed	rpm		
Vehicle speed	MPH		
Driving conditions	<input type="checkbox"/> Not affected <input type="checkbox"/> At starting <input type="checkbox"/> While idling <input type="checkbox"/> At racing <input type="checkbox"/> While accelerating <input type="checkbox"/> While cruising <input type="checkbox"/> While decelerating <input type="checkbox"/> While turning (RH/LH)		
Headlight	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF	Rear defogger	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF
Blower	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF	Radio	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF
A/C compressor	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF	CD/Cassette	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF
Cooling fan	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF	Car phone	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF
Front wiper	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF	CB	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF
Rear wiper	<input type="checkbox"/> ON/ <input type="checkbox"/> OFF		

**2. CHECK LIST NO. 2**

Check the following items about the vehicle's state when MIL turns on.

NOTE:

Use copies of this page for interviewing customers.

a) Other warning lights or indicators turn on. <input type="checkbox"/> Yes/ <input type="checkbox"/> No
<input type="checkbox"/> Low fuel warning light <input type="checkbox"/> Charge indicator light <input type="checkbox"/> AT diagnostics indicator light <input type="checkbox"/> ABS warning light <input type="checkbox"/> TCS warning light <input type="checkbox"/> Engine oil pressure warning light
b) Fuel level
<ul style="list-style-type: none"> <li>● Lack of gasoline: <input type="checkbox"/> Yes/<input type="checkbox"/> No</li> <li>● Indicator position of fuel gauge:</li> </ul>
c) Intentional connecting or disconnecting of harness connectors or spark plug cords: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>● What:</li> </ul>
d) Intentional connecting or disconnecting of hoses: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>● What:</li> </ul>
e) Installing of parts other than genuine parts: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>● What:</li> <li>● Where:</li> </ul>
f) Occurrence of noise: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>● From where:</li> <li>● What kind:</li> </ul>
g) Occurrence of smell: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
<ul style="list-style-type: none"> <li>● From where:</li> <li>● What kind:</li> </ul>
h) Intrusion of water into engine compartment or passenger compartment: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
i) Troubles occurred
<input type="checkbox"/> Engine does not start. <input type="checkbox"/> Engine stalls during idling. <input type="checkbox"/> Engine stalls while driving. <input type="checkbox"/> Engine speed decreases. <input type="checkbox"/> Engine speed does not decrease. <input type="checkbox"/> Rough idling <input type="checkbox"/> Poor acceleration <input type="checkbox"/> Back fire <input type="checkbox"/> After fire <input type="checkbox"/> No shift <input type="checkbox"/> Excessive shift shock

**MEMO:**