

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".

NOTE:

- 2200 cc model: <Ref. to 2-7 [T900].>
- 2500 cc model: <Ref. to 2-7 [T1000].>

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 "11. General Diagnostics Table". <Ref. to 2-7 [T1100].>

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.

- 2200 cc model: <Ref. to 2-7 [T700].>
- 2500 cc model: <Ref. to 2-7 [T800].>

6A4 : PERFORM THE DIAGNOSIS.

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

NOTE:

- 2200 cc California spec. LHD vehicles: <Ref. to 2-7 [T14A0].>
- 2200 cc California spec. RHD vehicles: <Ref. to 2-7 [T15A0].>
- 2200 cc except California spec. LHD vehicles: <Ref. to 2-7 [T16A0].>
- 2200 cc except California spec. RHD vehicles: <Ref. to 2-7 [T17A0].>
- 2500 cc model: <Ref. to 2-7 [T18A0].>

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. LHD vehicles: <Ref. to 2-7 [T14A0].>
- 2200 cc California spec. RHD vehicles: <Ref. to 2-7 [T15A0].>
- 2200 cc except California spec. LHD vehicles: <Ref. to 2-7 [T16A0].>
- 2200 cc except California spec. RHD vehicles: <Ref. to 2-7 [T17A0].>
- 2500 cc model: <Ref. to 2-7 [T18A0].>

- 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"> ● Lack of gasoline: <input type="checkbox"/> Yes/<input type="checkbox"/> No ● Indicator position of fuel gauge:
c) Intentional connecting or disconnecting of harness connectors or spark plug cords: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
● What:
d) Intentional connecting or disconnecting of hoses: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
● What:
e) Installing of parts other than genuine parts: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
● What:
● Where:
f) Occurrence of noise: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
● From where:
● What kind:
g) Occurrence of smell: <input type="checkbox"/> Yes/ <input type="checkbox"/> No
● From where:
● What kind:
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: