

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 [T700].>

6A4 : PERFORM THE DIAGNOSIS.

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

NOTE:

- MT vehicles: <Ref. to 2-7 [T10A0].>
- AT 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:

- MT vehicles: <Ref. to 2-7 [T10A0].>
- AT 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 [W8A0].>
- 6) Line pressure test <Ref. to 3-2 [W10A0].>
- 7) Transfer clutch pressure test <Ref. to 3-2 [W11A0].>
- 8) Time lag test <Ref. to 3-2 [W9A0].>
- 9) Road test <Ref. to 3-2 [W7A0].>
- 10) Shift characteristics <Ref. to 3-2 [W7A0].>

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 |