MULTI-PURPOSE COOLING SYSTEM TEST KIT

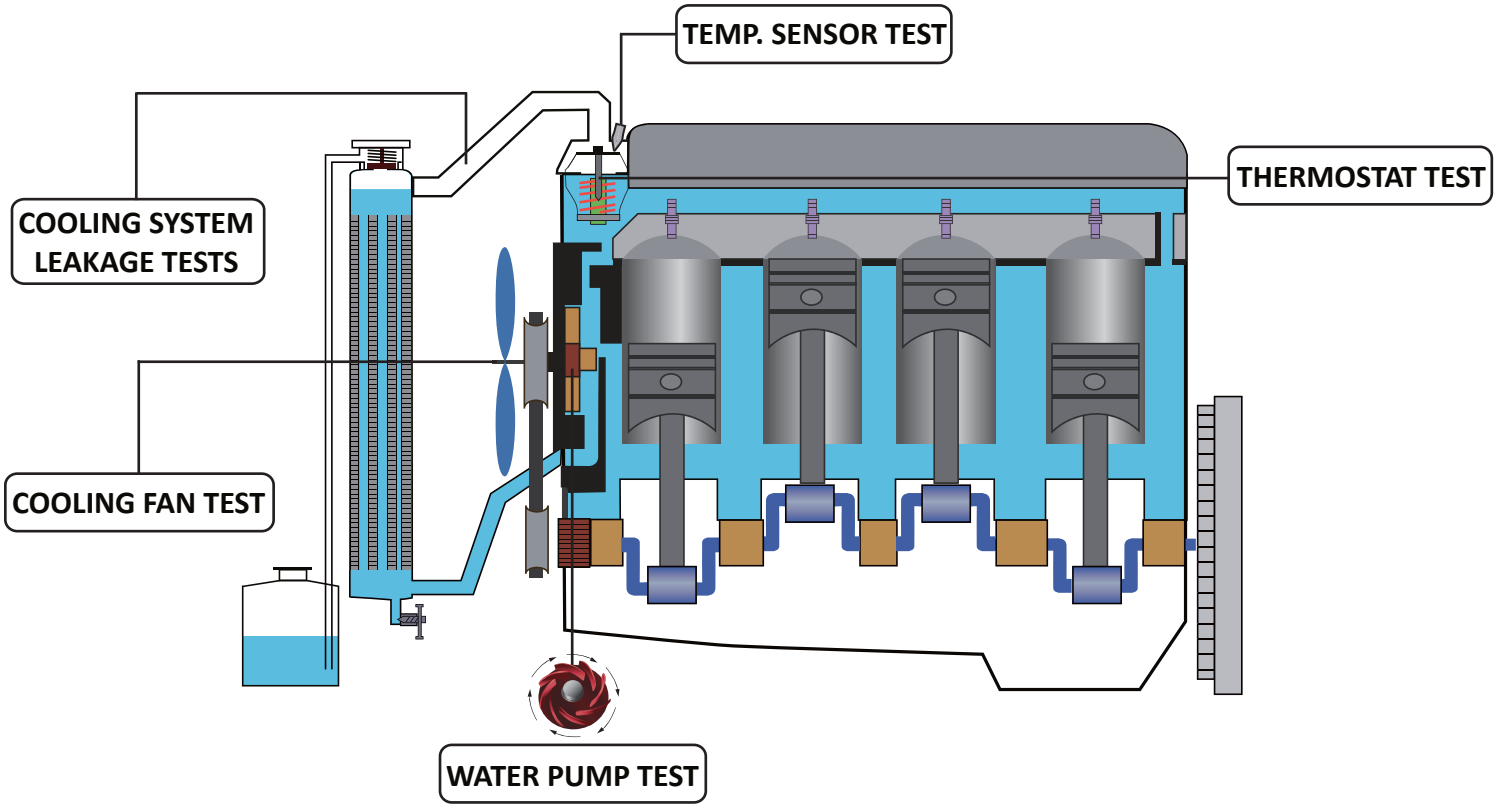
CLICK HERE

SCAN HERE

INSTRUCTION VIDEO

1. FEATURES

- Kit for testing major components in cooling system, without needing to use several different kits
- Test objectives cover system leakage tests, temperature sensor test, thermostat test, cooling fan test and water pump test
- Including step adapters and hose clamps with various sizes, suitable universal application
- Including a high quality displaying device (e.g. digital LCD, glass screen and a gauge), helping mechanics detect potential problems in cooling system
- Targeted tests can be operated individually



2. SAFETY PRECAUTIONS

- Always read carefully the instructions before working
- This tool kit is for testing cooling system components ONLY
- DO NOT use this tool kit on other automotive systems
- DO NOT start engine when doing pressure (leakage) test
- Always be careful of hot coolant when doing pressure test, installing and removing tools
- DO NOT touch cooling fan when it is working
- Always ensure tool installation on car is securely connected before doing tests
- Always release pressure after finishing using pressure pump (No. 1 on next page) and female coupling (No. 6 on next page)
- DO NOT disconnect the digital detector (No. 2 on next page) when coolant is hot
- Always wear eye protection that meets OSHA and ANSI Z87.1 standards
- Always wear gloves when working with this tool kit
- Ensure the working area has adequate lighting
- Keep children and unauthorized persons away from the working area
- Keep working area clean and tidy, dry and free from unrelated materials
- DO NOT allow untrained persons to use this tool kit

3. SPECIFICATION

1. NYLON PRESSURE PUMP (1 pc)

Max. Pressure for hose: 200 psi
Pressure gauge: 0-2.5 kg/cm² (35 psi)

2. DIGITAL DETECTOR (1 pc)

CE certified and water-proof
Screen window: Ø 20.1mm LED: 1W
LCD screen: 24mm × 12mm LCD battery: CR2032 (3 volts)
Pressure gauge: 0-2.5 kg/cm² (35 psi)
Time to auto shut off: 15 mins

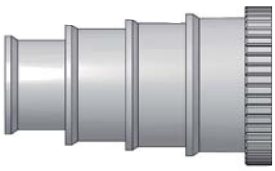
3. COOLANT FLOW PIPE (1 pc)

Material: Braid reinforced silicone tubing
Max. temperature: 180°C Size: 1/2"
Max. Pressure: 3 kg/cm²

4. RUBBER PIPE (4 pcs)

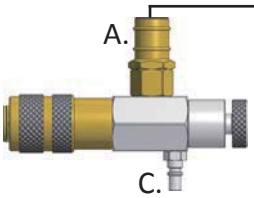
Internal size (unit: mm)
Ø25.4 (Length 80) Ø31.8 (Length 80)
Ø34.9 (Length 100) Ø38.1 (Length 120)

5. STEP ADAPTERS (2 pcs)



Material: Nylon
Size (unit: mm)
Ø27.5 Ø33.7 Ø36.6 Ø39.7
Length: 75.8mm

6. FEMALE COUPLING (1 pc)



DO NOT adjust the pressure on safety release valve (A).

Equipped with
A. Safety release valve preset at 1kg/cm² (14.2psi)
B. Manual release valve
C. Coolant bleeding hose connect

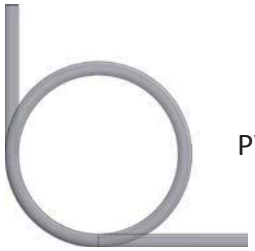
7. HOSE CLAMP DRIVER (1 pc)

Application size: 7mm
Length: 235mm

8. HOSE CLAMPS (8 pcs)

Material: Stainless
Size (unit: mm)
Ø25-Ø40 (×4)
Ø30-Ø45 (×2)
Ø32-Ø50 (×2)

9. COOLANT HOSE (1 pc)



PVC: Ø 6.6 × Ø 3.3 × 600mm

10. RELEASE HOSE (1 pc)

PVC: Ø 13.5 × Ø 9 × 600mm

4. TESTS AND ANALYSES

4.1 INSTALLATION INSTRUCTION

1. Disconnect upper hose (Fig. A) and connect a suitable sized rubber pipe (No. 4) and hose clamps (No. 8) as shown in Fig. B.
2. Connect step adapters (No. 5) to coolant flow pipe (No. 3) and connect to rubber pipe (Fig. C) and upper hose.
3. Use a plier to fasten the connection points (Fig. D and E).
4. Connect the digital detector (No. 2) to the coolant flow pipe (Fig. F).


A.


B.


C.


D.

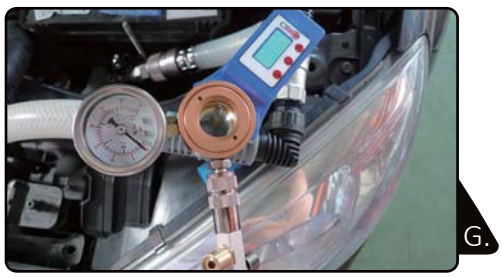

E.


F.

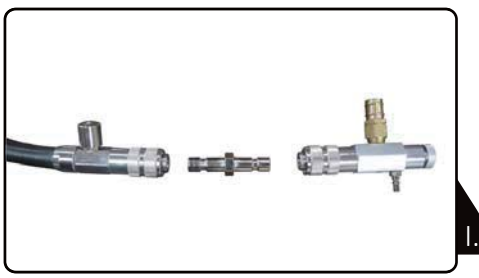
4.2 PRE-OPERATION SELF TESTS

1. Pump the pressure pump (No. 1) and release pressure to see if its functions to hold and release pressure are under good condition.
2. Turn on the digital detector (No. 2) and switch to different modes to check if its functions are under good condition (Fig. G).
3. Turn on and off the valves on coolant flow pipe (No. 3) to see if they are under good condition (as the arrows in Fig. H).
4. ⚠ DO NOT adjust the pressure on safety release valve on female coupling (A on No.6).
5. Connect the pressure pump (No. 1) and female coupling (No. 6) with an adapter provided (Fig. I). Pump pressure to more than 1 kg/cm² (14.2 psi) to see if the safety release valve on female coupling (A on No. 6) can release pressure automatically. Then, rotate the manual release valve on female coupling (B on No. 6) to see if the pressure can be released when rotating the valve.

NOTE:
Please contact your local agent or distributor for changing parts if one (or more) of the above tests fails.


G.


H.


I.

4A LEAKAGE TEST

Step 1 Connect the pressure pump with digital detector (Fig. 1, 2 & 3).
Step 2 Pump the pressure to the range between 10-15 psi (Fig. 2)

Fig. 1

Fig. 2

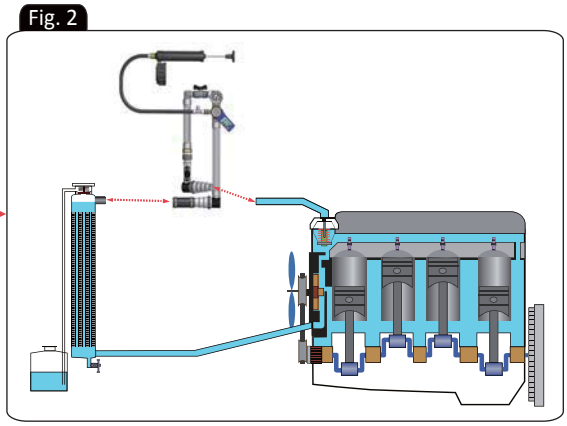


Fig. 3

Vehicle engine	OFF	
Power button (thermometer)	OFF	
LED button	OFF	
Valves	ON	

4A LEAKAGE TEST ANALYSIS

Step 1 Check if the gauge reading stays or falls down.
Step 2 If the gauge reading stays at the same position (Fig. 4), then please conduct Test 4B.
Step 3 If the gauge reading falls down as Fig. 5, check again if all parts are securely connected by pumping pressure.
Step 4 If the leakage still exists, please prepare hose clamp for 4A-1 & 4A-2 tests.

Fig. 4

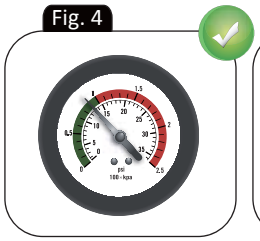
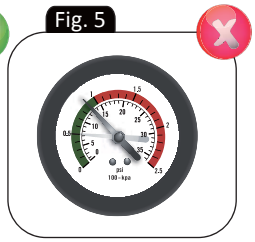


Fig. 5



4A-1 RADIATOR LEAKAGE TEST

Step 5 Keep engine off and connect the digital detector with radiator pipe as Fig. 6 & 7.
Step 6 Disconnect one part of the Coolant Flow Pipe (No. 3, connected with a step adapter already) and turn off the valve. Connect that part to lower hose near the radiator.
Step 7 Pump the pressure to the range of 10-15 psi, and check gauge reading (Fig. 9 & 10).
Step 8 If no leakage, please conduct 4A-2 engine leakage test.

NOTE: When doing radiator leakage test, use a hose clamp to block the coolant passage between the radiator and recovery tank.

Fig. 6

Fig. 7

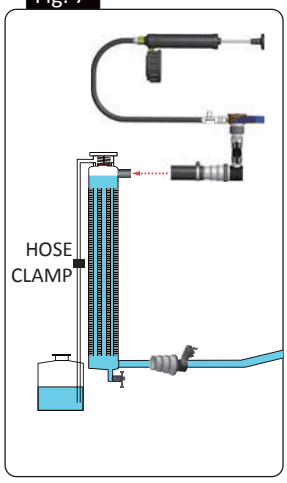


Fig. 8

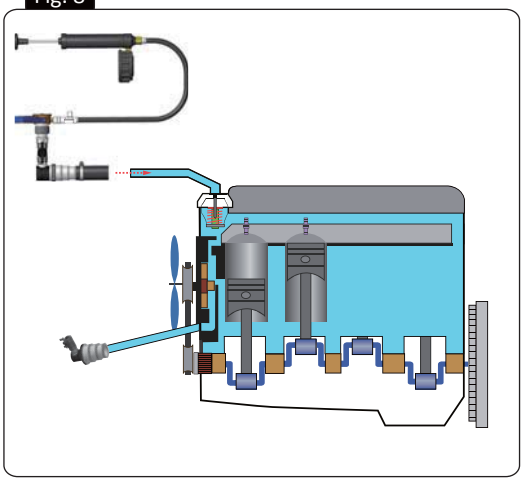


Fig. 9

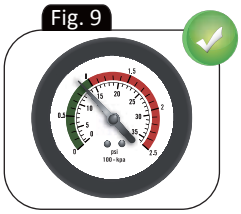
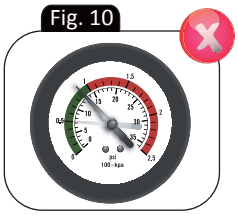


Fig. 10



4A-2 ENGINE LEAKAGE TEST

Step 9 With engine off, connect digital detector with upper pipe to engine side as Fig. 6 & 8 show.
Step 10 Disconnect one part of the Coolant Flow Pipe (No. 3, connected with a step adapter already) and turn off the valve. Connect that part to lower hose near engine.
Step 11 Pump the pressure to 10-15 psi, and check if any leakage occurs (Fig. 9 & 10).

4B TEMPERATURE SENSOR TEST

This test can ONLY be conducted when no leaks exist in cooling system.

Step 1 Connect digital detector with radiator upper pipes (Fig. 11, 12 & 13)

Step 2 Turn on engine and check the temperature reading displayed on LCD.

Fig. 11

Fig. 12

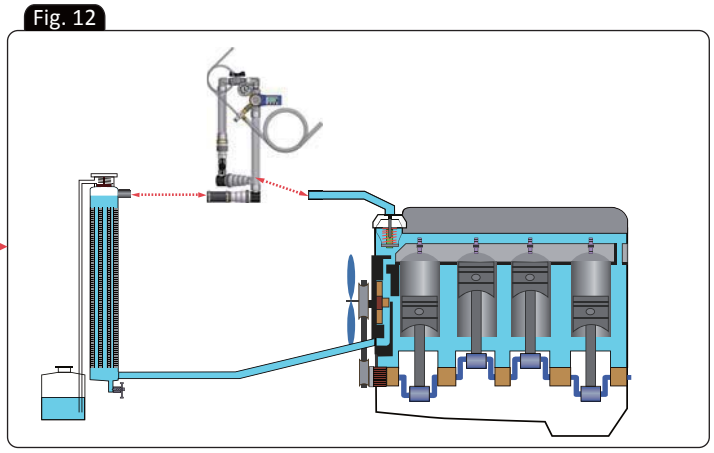


Fig. 13

Vehicle engine	ON	
Power button (thermometer)	ON	
LED button	OFF	
Valves	ON	

4B TEMPERATURE SENSOR TEST ANALYSIS

Unit Conversion	
40˚C	104˚F
58˚C	136˚F
100˚C	212˚F
120˚C	248˚F

Compare the temperature on LCD and on dashboard at the same time.
C on dashboard is generally about 40˚C and H is about 120˚C
E.g. The temperature displayed on LCD is 58˚C as in Fig. 14.
If the temperature displayed on dashboard is as in Fig. 15, then the temperature sensor is working normally.
If the temperature displayed on dashboard is as in Fig. 16, then the temperature sensor can be defective.

Fig. 14

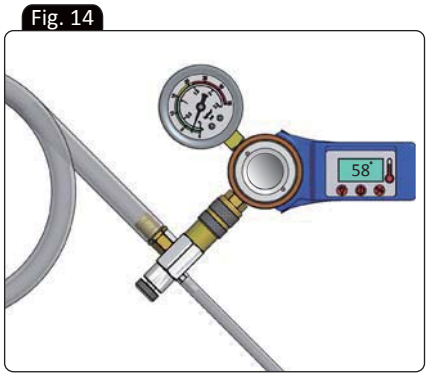


Fig. 15

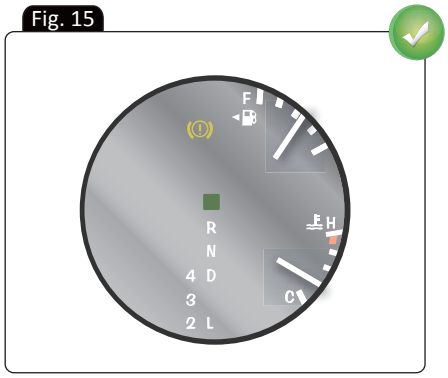
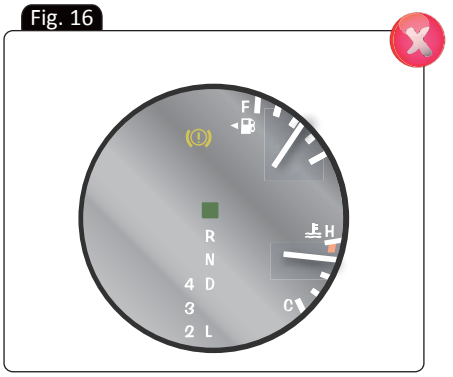


Fig. 16



4C THERMOSTAT TEST

This test can ONLY be conducted when temperature sensor is under good condition

Step 1 Connect the digital detector as in 4B (Fig. 17, 18 & 19)

Fig. 17

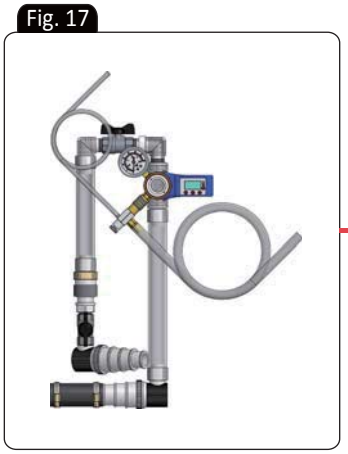


Fig. 18

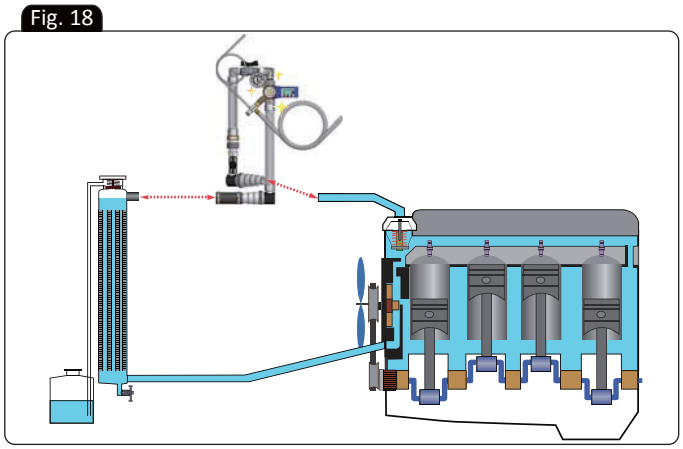


Fig. 19

Vehicle engine	ON	
Power button (thermometer)	ON	
LED button	ON	
Valves	ON	

Step 2

Under normal conditions, thermostat operates as below:

When the engine temperature is lower than proper engine working temperature, thermostat keeps closed (Fig. 20).

When the engine temperature is higher than proper engine working temperature, thermostat opens (Fig. 21).

Fig. 20

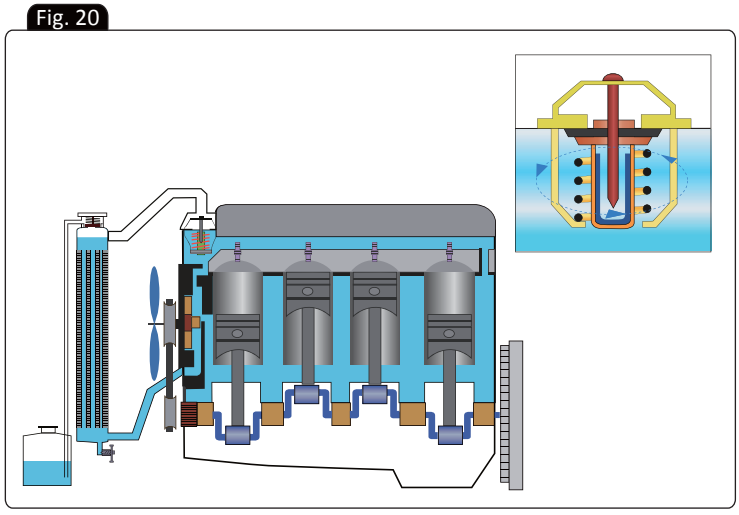
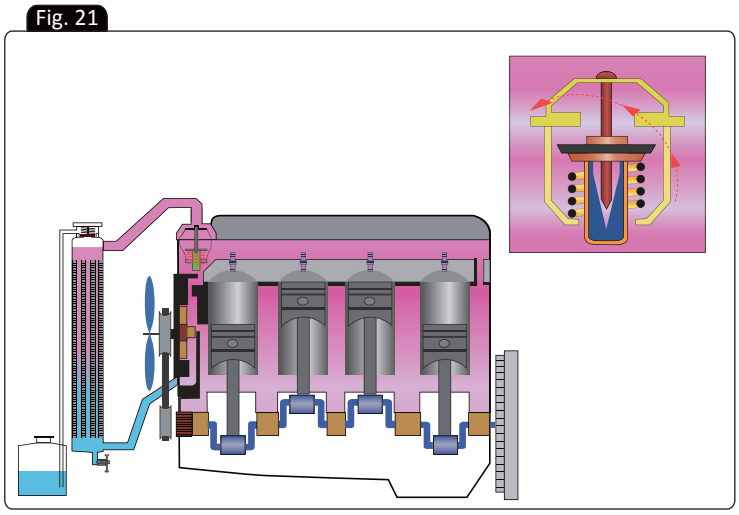


Fig. 21



4C THERMOSTAT TEST ANALYSIS

Refer to auto service manual (Fig. 22) for thermostat opening temperature, and check both the displayed temperature on LCD and coolant flow from detector window.

E.g. Thermostat opening temperature is 85˚C

Fig.23: Thermostat opens at correct temperature as 85˚C and coolant starts to circulates.

Fig.24: Defective thermostat opens early at 60˚C, and coolant starts to circulates (too early).

Fig.25: Defective thermostat does not open even at 95˚C, and coolant does not circulate (too late).

Unit Conversion	
60˚C	140˚F
85˚C	185˚F
95˚C	203˚F
100˚C	212˚F

Fig.22

Fig. 23

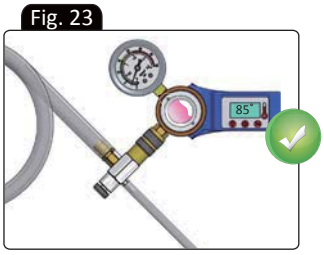


Fig. 24

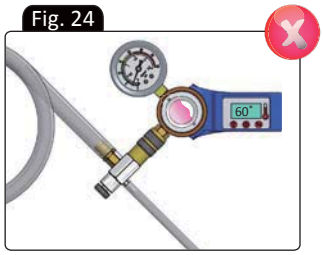
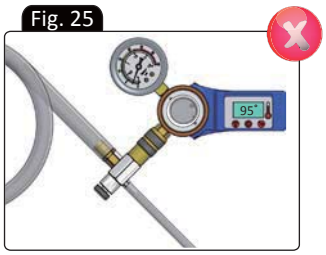


Fig. 25



4D WATER PUMP TEST

This test can ONLY be conducted when thermostat is under good condition

Step 1 Connect the digital detector as in 4C (Fig. 26, 27 & 28)

Fig. 26

Fig. 27

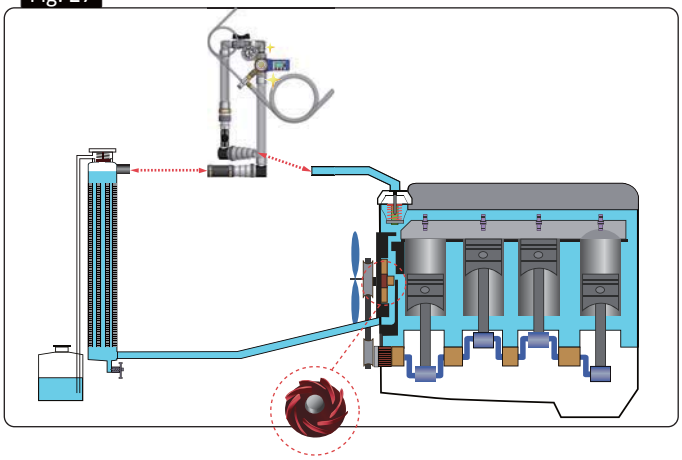


Fig. 28

Vehicle engine	ON	
Power button (thermometer)	ON	
LED button	ON	
Valves	ON	

Step 2

Under normal conditions, water pump operates as below:

When RPM is low, water pump rotates in regular speed (Fig. 29).

When RPM is high, water pump rotates rapidly (Fig. 30).

Fig. 29

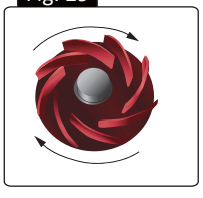
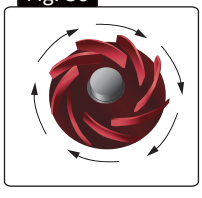


Fig. 30



4D WATER PUMP ANALYSIS

Increase the car RPM as Fig. 31 shows, and check both the pressure gauge and coolant flow.
E.g. When the RPM increases, coolant flow should increase along with increasing pressure.
Fig. 32: Water pump rotates in a good condition and leads to larger coolant flow and increase pressure.
Fig. 33: Defective water pump does not rotate rapidly enough to increase coolant flow.

Fig. 31

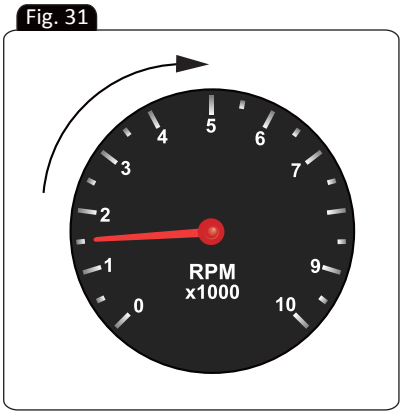


Fig. 32

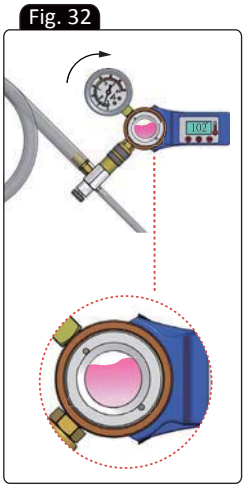
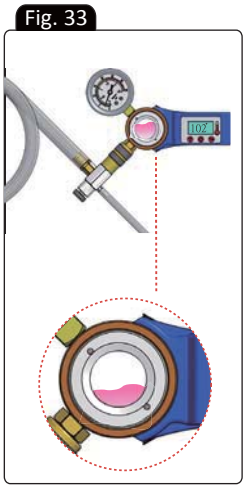


Fig. 33



4E COOLING FAN TEST

This test can ONLY be conducted when thermostat and temperature sensor are under good condition

Step 1 Connect the digital detector as in 4D Water Pump Test (Fig. 26, 27 & 28)

Step 2 When the engine temperature is lower than cooling fan working temperature, cooling fan stays in stillness (Fig. 34). When the engine temperature is higher than cooling fan working temperature, cooling fan rotates (Fig. 35).

Fig. 34

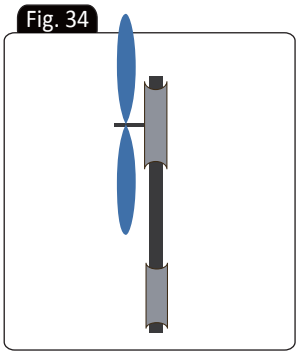
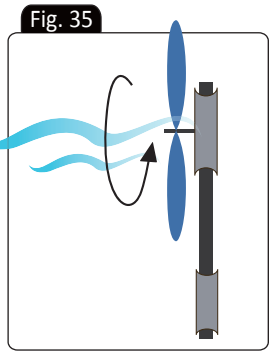


Fig. 35



4E COOLING FAN TEST ANALYSIS

Refer to auto service manual (Fig. 36), and check both the displayed temperature on LCD and cooling fan working condition.
If the engine is hot, wait until engine temperature decreases.
E.g. Cooling fan working temperature is 100˚C.
Fig. 37: Cooling fan is working properly as it rotates at 100˚C.
Fig. 38: Cooling fan can be defective as it stays still at 108˚C.
Fig. 39: Cooling fan can be defective as it rotates as early as at 90˚C.

Unit Conversion	
90˚C	194˚F
100˚C	212˚F
108˚C	226˚F

Fig. 36

Fig. 37

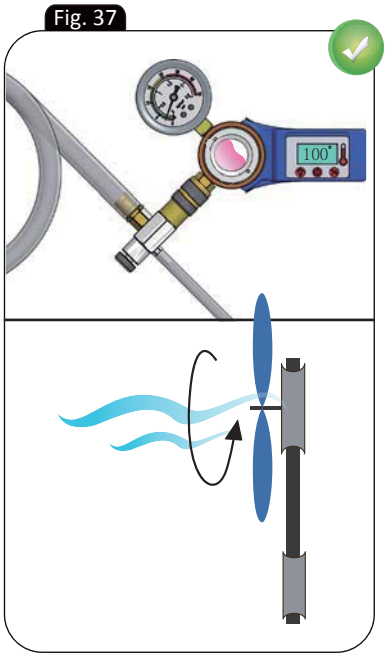


Fig. 38

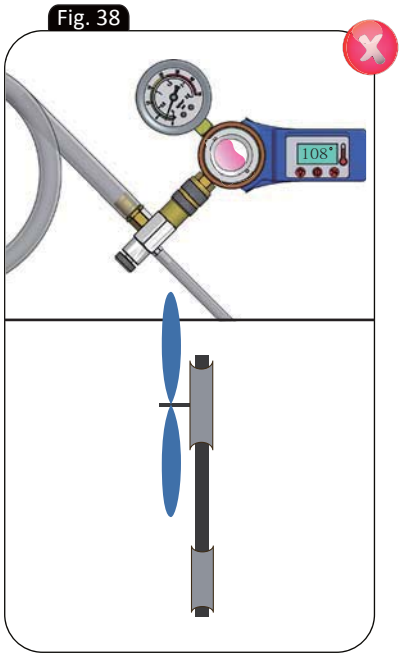
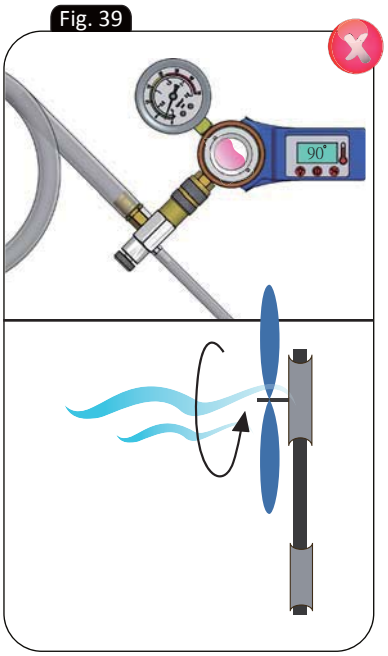


Fig. 39



5. RELATED ITEMS

***Please contact your local agent or distributor if you are interested in the related items**

VACUUM-TYPE COOLING SYSTEM FILLING KIT

FEATURES

- Significantly shortens time for refilling new coolant by creating a vacuum in the cooling system
- No need to undergo the time-consuming air bleeding
- Minimizes the risks of engine overheating

INSTRUCTION

1. Connect the universal adapter to radiator filler neck.
2. Connect shop air and turn on air valve to create vacuum.
3. Submerge coolant hose under the new coolant.
4. Turn on coolant valve to draw coolant into radiator.

COMBUSTION GAS LEAK TESTER KIT

With Vertical Test Chambers

FEATURES

- Test the presence of CO_2 in the cooling system
- Provided with high quality US-made tester fluid.
- Tester fluid can be re-used.
- Rubber adapter fits almost every type of radiator filler neck
- Rubber bulb helps draw air from the radiator into the test chambers

INSTRUCTION

1. Remove about 1/10 of the coolant in the radiator.
2. Fill the blue tester fluid up to the line indicated on the upper test chamber.
3. Connect the vertical test chambers to radiator filler neck.
4. Start the engine and squeeze the rubber bulb to draw air/vapour into the test chambers.

TEST ANALYSIS

1. If the fluid remains blue, it means there is no presence of CO_2 in the cooling system.

2. If the fluid turns green or even yellow, there is high presence of CO_2 in the cooling system.