

TOPTUL®

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Automotive Specialty Tool Kit

Universal Radiator Pressure Tester & Vacuum Type Cooling System Kit

➤ Part No. JGAI2801

Operational Manual

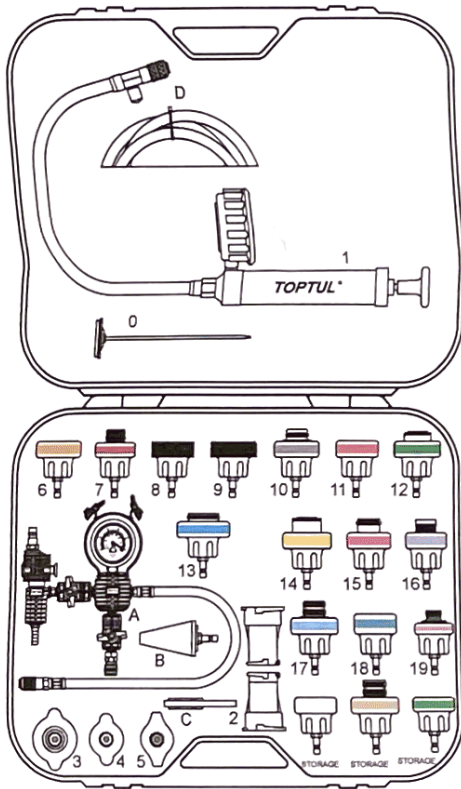


PLEASE READ THE SAFETY INSTRUCTION CAREFULLY BEFORE OPERATES THE TOOLS. ONLY USE THE PRODUCT CORRECTLY AND WITH CARE FOR THE PURPOSE FOR WHICH IT IS INTENDED. FAILURE TO DO SO MAY CAUSE DAMAGE AND/OR PERSONAL INJURY. PLEASE KEEP INSTRUCTIONS SAFETY FOR FUTURE USE.

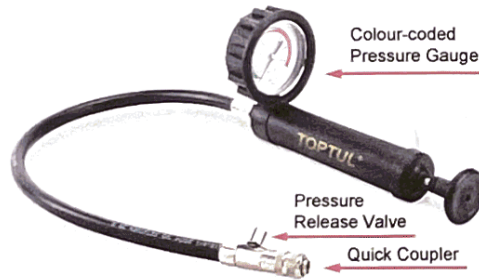
Safety Precaution

- DO NOT start engine before or during the pressure test to avoid getting burnt.
- DO NOT remove the vehicles cooling system cap when engine was hot. Always be ensuring that cooling system is depressurized and cool.
- DO NOT allow untrained person to use this tool kits.
- Always wear protective goggles and gloves when work with this tool.
- Never use this tool for any other application which it was designed.

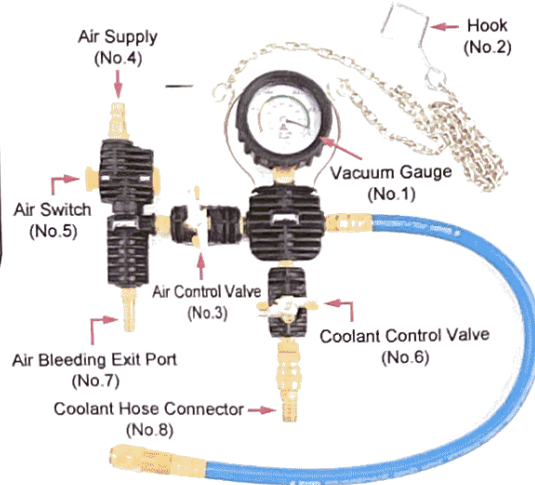
Radiator Pressure Tester & Vacuum Type Cooling System Kit



Hand Pressure Pump W/Testing Gauge



Vacuum Purge & Refill Tool



Kit Content

Part No.	Descriptions & Applications
0	Thermometer, Stainless Steel -50 -150°C (-50 -300°F)
1	Hand Pressure Pump (Nylon 66) & 2-1/2" Diameter Testing Gauge W/Brass Pressure Release Valve and Quick Coupler (0-35 psi, 0-2.5 bar) 21" Durable and Flexible High Pressure 200 PSI Rubber Hose
2(A)	 Connector, Nylon 66 (Black Color) For Radiator Cap Test Adapter NO.3 (R123) and NO.4 (R124)
2(B)	 Connector, Nylon 66 (Blue Color) For Radiator Cap Test Adapter NO.3 (R123) and NO.5 (R125)
3	 Radiator Cap Test Adapter Buick, Chrysler, Chevrolet, Dodge, Jeep, Mercedes-Benz, Oldsmobile, Pontiac
4	 Radiator Cap Test Adapter Acura, Chevrolet, Chrysler, Dodge, Eagle, Ford, Geo, GM, Honda, Hyundai, Infiniti, Isuzu, Kia, Lexus, Mazda, Mercury, Mitsubishi, Mercedes-Benz, Nissan, Subaru, Suzuki, Peugeot, Toyota
5	 Radiator Cap Test Adapter Acura, Chevrolet, Chrysler, Dodge, Eagle, Geo, Honda, Isuzu, Lexus, Mazda, Mitsubishi, Suzuki, Toyota
6	 Radiator Cap Test Adapter, Nylon 66 (Orange Color) Cadillac, Daewoo, Ford, GM, Jaguar, Jeep, Land Rover, Mercedes-Benz, Mercury, Pontiac, Porsche, Saab, Saturn
7	 Radiator Cap Test Adapter, Nylon 66 (Brown Color) Alfa Romeo, Citroën, Fiat, Mini Cooper, Peugeot, Renault, Saab, Sterling, Jeep, Volvo
8	 Radiator Cap Test Adapter, Nylon 66 (White Color) Volkswagen
9	 Radiator Cap Test Adapter, Nylon 66 (Purple Color) Audi, BMW, Porsche, Volkswagen
10	 Radiator Cap Test Adapter, Nylon 66 (Gray Color) BMW
11	 Radiator Cap Test Adapter, Nylon 66 (Red Color) Audi, Volkswagen

Part No.	Descriptions & Applications
12	 Radiator Cap Test Adapter, Nylon 66 (Green Color) Ford, International, Land Rover, Opel, Ssangyong motor
13	 Radiator Cap Test Adapter, Nylon 66 (Blue Color) Chrysler, Mercedes-Benz
14	 Radiator Cap Test Adapter, Nylon 66 (Yellow Color) Ford
15	 Radiator Cap Test Adapter, Nylon 66 (Pink Color) Ford, Mazda
16	 Radiator Cap Test Adapter, Nylon 66 (Purple Color) Mercedes-Benz
17	 Radiator Cap Test Adapter, Nylon 66 (Light blue Color) BMW
18	 Radiator Cap Test Adapter, Nylon 66 (Light green Color) Ford, Volkswagen
19	 Radiator Cap Test Adapter, Nylon 66 (Pink Color) Lexus, Toyota
20	 Radiator Cap Test Adapter, Nylon 66 (White Color) Saab
21	 Radiator Cap Test Adapter, Nylon 66 (Orange Color) Saab, Opel, Fiat, Mazda, Suzuki
22	 Radiator Cap Test Adapter, Nylon 66 (Green Color) BMW, Land Rover
A	Vacuum Purge & Refill Tool (Gauge reading from -76-0 cmHg, -1-0 bar)
B	Universal Rubber Cone-shape Adapter
C	Adapter Handle
D	Coolant Hose & Exhaust Hose

Operating Instruction

► Original Radiator Cap Leakage Test

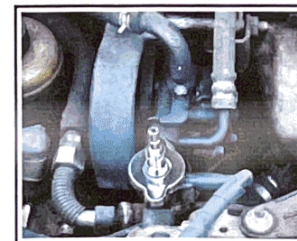
Connect the hand pump and hose to the adapter via the brass quick release adapter. Using the hand pump to pressurize the system to the manufacturer's recommended pressure. Please refer to the manufacturer's service manual for pressure or it may be found on the vehicles cap. The gauge should hold pressure indicating no leakage is occurring in the vehicles cooling system. If the pressure reading drops it can indicate leakage which can occur in hoses, joints, head gasket and other areas such as water pump seals, radiator and etc. When removing the tester, slacken the adapter hand wheel carefully allowing the pressure to reduce slowly.



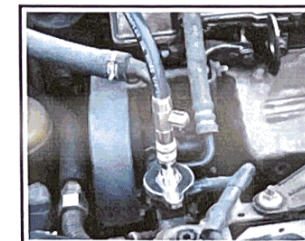
Note: No.2A for Radiator Cap Test Adapter No.3 (R123) and No.4 (R124)
No.2B for Radiator Cap Test Adapter No.3 (R123) and No.5 (R125)

► Cooling System Leakage Test

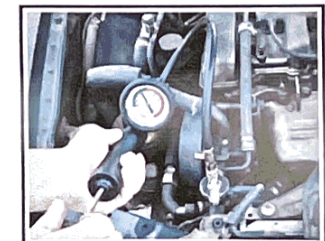
- Carefully remove the original radiator tank pressure cap while the engine is cold. (use a cloth or gloves and arm protection if radiator cap is known to be hot)
- Select the correct and suitable test adapter suiting the connection type onto the radiator and ensure it is securely fitted to the filler neck of the radiator tank.
- Connect the pump to the test adapter through the quick coupling at the hose end.
- Depress the hand pump handle until pressure is reaching in between approximately 10 to 15 psi. Always check the relevant manufacturer's service manual. If the gauge pointer does not move for approximately 1 minute, the whole circuit is perfectly efficient. If the pressure level drops during the testing or the pressure level is below this pressure range, a leakage in the coolant system such as radiator, hose, etc. is most likely to be the source of the problem. If the gauge goes down and no fluid discharges can be located, check whether the engine head gasket is worn or not. (Warning: Do not over pressurize the system, as excessive pressure may cause failure of the radiator, hoses and etc.)
- Once the test is complete, release the air pressure by depressing the quick release value. Disconnect the quick coupling and test adapter assembly and replace the radiator filler cap securely.



Step.1



Step.2



Step.3

▶ Purge The Air In Cooling System

1. Drain coolant from cooling system as possible.
2. Remove the vacuum purge and refill tool from the test kit and hang the tool in any convenient location under the hood with the hook provided.
3. Connect the universal rubber cone-shape adapter or a suitable radiator cap test adapter to the radiator filler neck. (Fig.1 & 2)
4. Turn on the air switch (No.5) and air control valve (No.3), while coolant control valve (No.6) remains off, to create a vacuum in the cooling system. (Fig.3)
5. When the pressure falls into the range between -50 and -60 cmHg (-0.7 and -0.8 bar), turn off the air control valve (No.3) and then air switch (No.5). (Fig.4 & 5)

Note: Before refilling coolant, leave the gauge on the radiator for approximately 10 mins, then check pressure reading on the gauge immediately to ensure any leaking in the cooling system

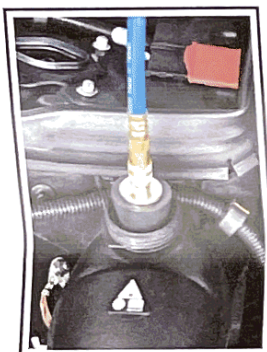


Fig.1



Fig.2

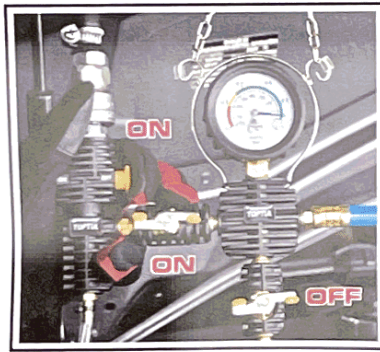


Fig.3

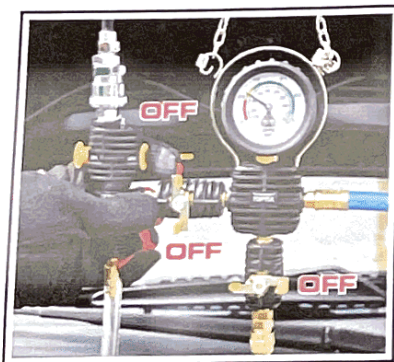


Fig.4

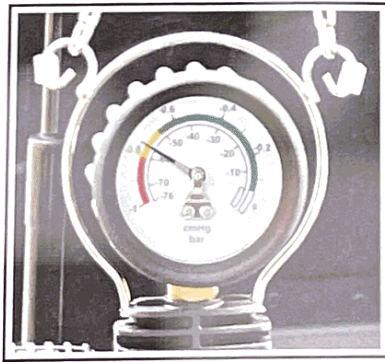


Fig.5

▶ Refill The Coolant In Cooling System

1. Connect the coolant hose to the coolant hose connector (No.8) and put the other end of the hose into new coolant.
2. Turn on air switch (No.5) and air control valve (No.3) then turn on coolant control valve (No.6) to ensure coolant remains hose. (Fig.6)
3. When coolant spilled, turn off coolant control valve (No.6), then air switch (No.5) and air control valve (No.3).
4. Turn on the coolant control valve (No.6), coolant will be introduced into the radiator immediately. (Fig.7)
5. The refilling process is completed when the gauge reads zero.

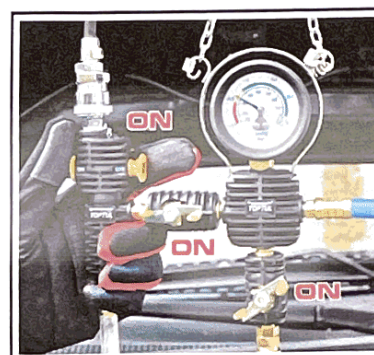


Fig.6

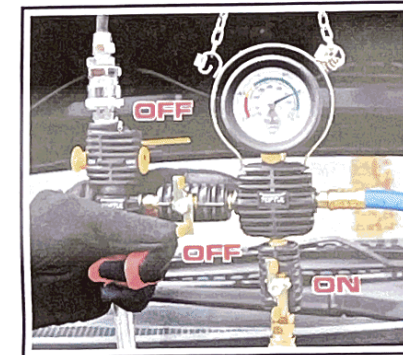


Fig.7

Note:

- Please check the coolant level and refill coolant to ensure its in proper level
- Always ensure the coolant will not remain in vacuum purge & refill kit after using this tool kits

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