

Kamasa-TOOLS[®]

Cooling system
& radiator cap
pressure test

K 185



INTRODUCTION

This tool is designed to perform vacuum leak tests on automobile cooling systems.

SAFETY AND PRECAUTION

- 1 On some older vehicles, cooling circuit components may be weakened by wear and age, the pressure generated by the tool may cause damage.
- 2 Always follow instructions provided by the vehicle manufacturer regarding handling and safety measures.
- 3 Always follow safety instructions relating to the handling and recycling of coolants.
- 4 Due to risk for hot water spray, the pressure cap should not be opened when radiator or coolant system components are warm to the touch.
- 5 Never exceed recommended pressure recommendations.

PRODUCT SPECIFICATION

System pump

Pressure caps No. 1–14

Cap test adapters No. 2–3 and 4–5

Hose clamps and T-shape joint

The adaptors are numbered and fit on the following cars among others:

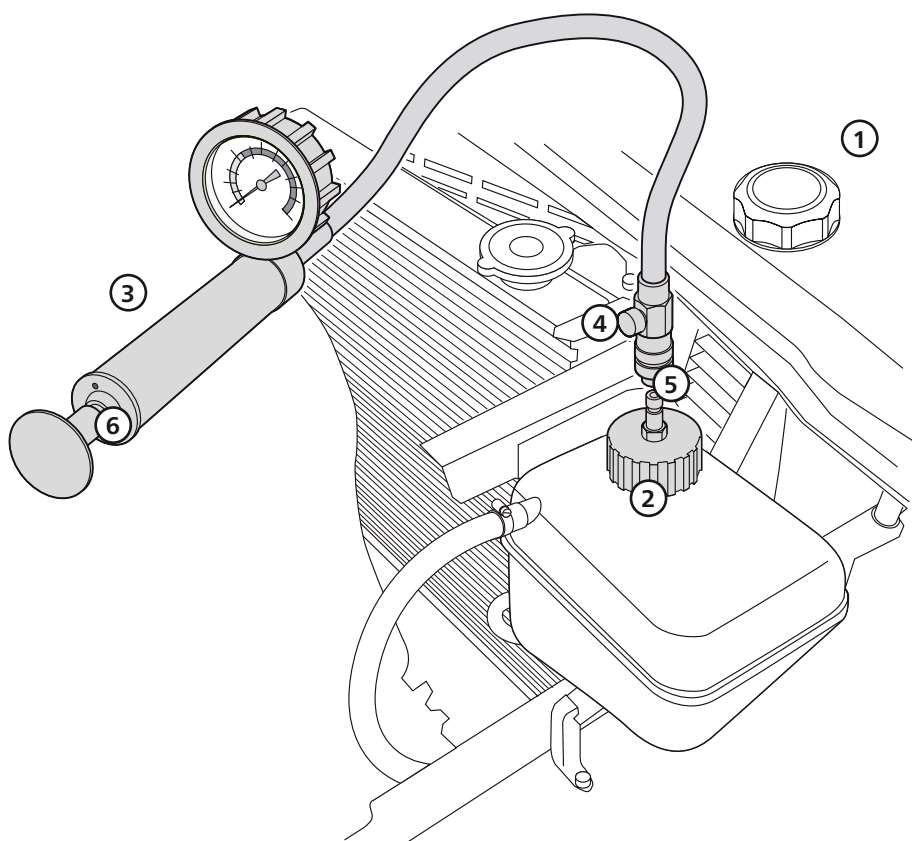
- 1 GM 4-Cylinder (Buick, Chevrolet, Oldsmobile, Pontiac, Cadillac)
- 2 Truck
- 3 Mercedes Benz, Ford, Chrysler, GM, Jeep, Truck, Peugeot
- 4 Dodge, Honda, Isuzu, Lexus, Mazda, Mitsubishi, Suzuki, Toyota, Infiniti, Nissan, GM, Peugeot, Ford, Chrysler
- 5 Toyota, Honda, Mitsubishi, Suzuki, Lexus, Chrysler, Dodge
- 6 Buick, Chevrolet, Ford, Lincoln, Opel, VW, Saab, Mercedes Benz (ML-class), Jaguar, Rover
- 7 Jeep, Renault, Saab, Volvo, Audi, Citroën, Fiat, Peugeot, Alfa Romeo, Peugeot
- 8 VW
- 9 Audi, VW
- 10 BMW
- 11 VW, Audi
- 12 Ford, GM, Rover, Opel, Jaguar, BMW
- 13 Mercedes Benz sedans with threaded neck
- 14 Saab, Opel

OPERATION INSTRUCTIONS

Testing of radiator

Make sure the radiator is cool enough to open the cap. If not, the radiator can be lightly sprayed with cool water to shorten cooling time. When the radiator is cool to the touch and the engine is shut off, loosen the cap (1) on the expansion tank or if the cap is placed directly on the radiator, use a cloth over the cap and turn it anti-clockwise 1/4 turn to the filler neck safety stop. Let the cap remain in position until all pressure subsides.

- 1 Carefully remove the cap from the vehicle. Check the cap pressure as marked on the top of the cap. Compare it to the recommended pressure rating of the original equipment cap for the vehicle.
- 2 Determine which system testing adapter (2) is correct for the system you are testing, then fasten the adapter onto the expansion tank or radiator.
- 3 Connect testing pump (3) with the testing adapter(2). Operate testing pump until the indicator needle of the gauge reaches the recommended pressure level for the vehicle.
- 4 When operating pump, never exceed the tolerated upper pressure limit. In general, 2 bar (30 PSI) is the maximum air pressure for all. Normally, cooling systems are designed for 1bar to 1,4 bar (15 PSI to 20 PSI).
- 5 When the indicator needle reaches the proper pressure level, stop operating pump and watch the performance of the gauges indicator needle.
 - (A) **Needle is steady** - If indicator needle stays at the same pressure for 2 minutes, there are no serious leaks in the system.
 - (B) **Needle drops slowly** - Indicates the presence of the small leaks or seepage.
 - (C) **Needle drops quickly** - Indicates that serious leakage is present.
- 6 After the testing process, press the pressure valve button (4) to release pressure from the gauge, then remove the adapter from the expansion tank or radiator.
- 7 In order to maintain a good function of the tester, operate the pump several times while pressing the pressure valve button to remove moisture and/or coolant remained in the adapter or pump. To lubricate the piston of the pump, a few drops of pneumatic oil in the air holes (6) is recommended.
- 8 Pull back the ring of the quick release (5) to separate the pump from the adapter.



OPERATION INSTRUCTIONS

Testing the pressure cap

To facilitate the test process, it is necessary to determine the pressure cap's type. In this tester set, there are two adaptors with two connections each, No.2 and 3, No.4 and 5. which enables test of four sizes of caps.

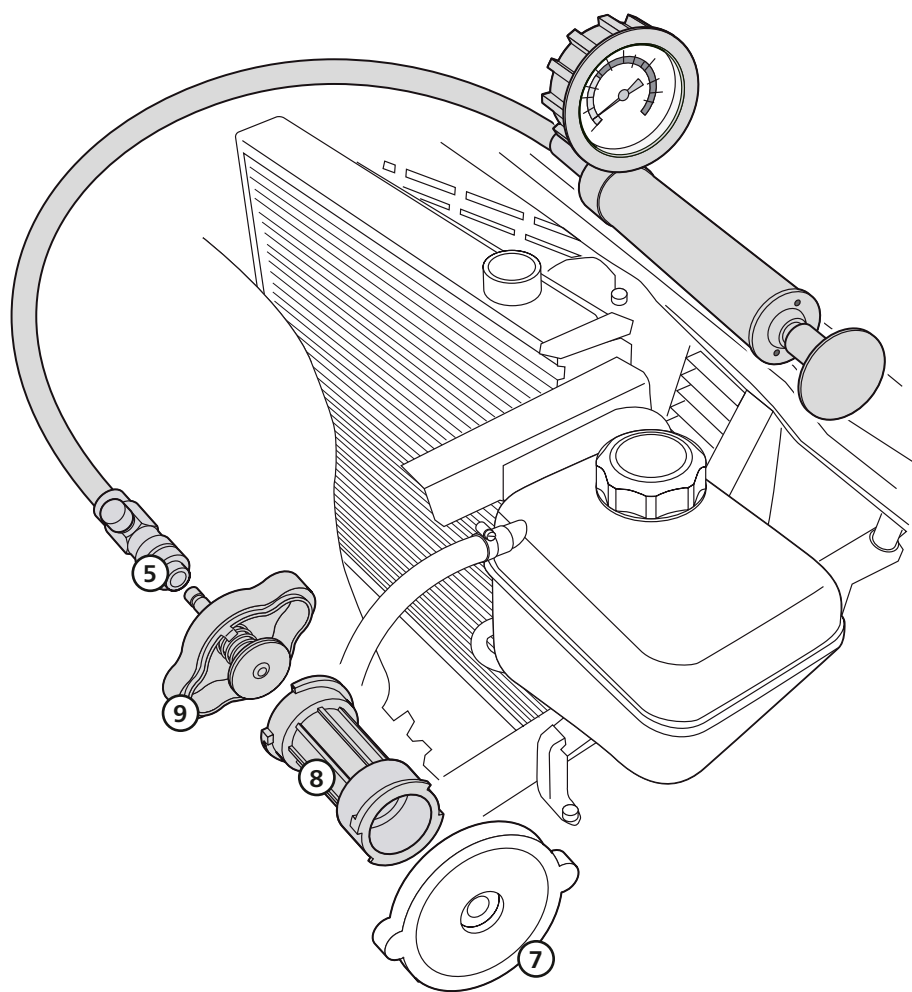
- 1 When cap adapter is determined, connect the pressure cap (7) with adapter (8), then chose corresponding system testing adapter (9) to attach at the other end of the cap adapter.
- 2 Connect testing pump quick release (5) with the system testing adapter, then pump up the pressure to the designed level, in general 1 bar to 1,4 bar (15 PSI to 20 PSI).
- 3 Watch the indicator needle of the pressure gauge, the movement of the needle tells the condition of the tested cap.

Cap adapter No. 2–3

- Size 2 is available for pressure caps of various trucks only. System testing adapter No.3 should be used to fit the other end of the cap adapter.
- Size 3 is available for pressure cap designed by Mercedes Benz, Ford, Chrysler, GM and some trucks, etc. no.2 system testing adapter should be used to connect the other end of the cap adapter.

Cap Adapter No. 4–5

- Size 4 is available for Dodge, Honda, Isuzu, Mazda, Mitsubishi, Toyota, Nissan, Ford, etc. Similarly, when testing the pressure cap of those vehicles, the No.5 system testing adapter should be used to attach the other end of the cap adapter.
- Size 5 is available for Toyota, Honda, Suzuki, Mitsubishi, Chrysler, Dodge, etc. In the same manner, the No.4 system testing adapter is necessary to attach the other end of the cap adapter.



OPERATION INSTRUCTIONS

Testing tools for vehicles which are not covered by the 14 adapters.

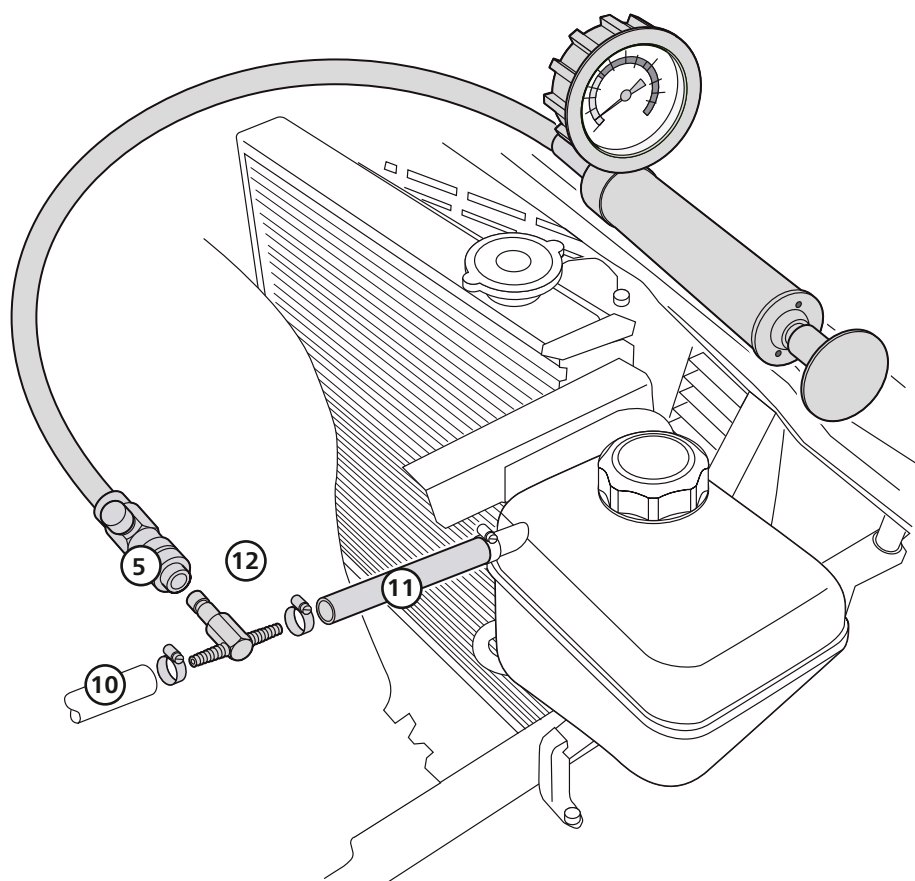
These testing tools are a way of overcoming a situation when the adapters in this set does not fit on a vehicle with rare designation in cooling system. In this case, these tools will ensure that you still can perform a pressure test.

Caution: Do not apply this device as a routine way to test cooling system of a vehicle and always wait for the coolant to be cool enough to touch to avoid possible steam burnt.

Composition:

- T-connection joint. Both ends are designed to fit 8 or 9,5 mm (5/16" or 3/8") hose
- One piece of 8 mm (5/16") hose; one piece of 9,5 mm (3/8") hose
- Two hose clamps

- 1 Disconnect the hose (10) between the expansion tank and radiator.
- 2 Select either 8 mm or 9,5 mm hose (11), from the testing set; and then connect with T-connection joint (12) with proper size hose with clamp.
- 3 Connect T-connection joint (12) to cooling system with original hose (10) at the other end with clamp.
- 4 To ensure the security of the loop, metal clamps should always be used. Apply the pump quick release (5) to the T-joint.
- 5 Operate the pump to add pressure to desired level, 0,7 bar to 1,4 bar (10 PSI to 20 PSI) recommended. The indicator needle will tell you the fact of the cooling system being tested as described in point 5. under "Testing of radiator".



PARTS LIST



Pos.	Stock No.	Attachment type	Attachment Ø	Seal Ø
Cap with bayonet without pressure relief valve				
1	KR 185 1	Bayonet	68	Bottom
2	KR 185 2	Bayonet	68	Center
Cap with bayonet and pressure relief valve				
3	KR 185 3	Bayonet	56	38+27
4	KR 185 4	Bayonet	42	28 long
5	KR 185 5	Bayonet	42	28 short
Attachment with thread				
6	KR 185 6	Inner thread	50	Bottom
7	KR 185 7	Inner thread	44	Bottom
11	KR 185 11	Inner thread	46	Bottom
8	KR 185 8	Outer thread	57	35
9	KR 185 9	Outer thread	50	35
10	KR 185 10	Inner thread	49	38+28
14	KR 185 14	Inner thread	50	28
12	KR 185 12	Inner thread	50	36
13	KR 185 13	Inner thread	60	40
Adapter for testing of cap				
15	KR 185 15	Bayonet	56+68	
16	KR 185 16	Bayonet	42+43	
17	KR 185 17	Hose, clamps and T-shape joints		
18	KR 185 18	System pump		



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