DRAPER EXPERT

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Original Instructions
Version 2
October 2026

COOLING SYSTEM
VACUUM REFILL KIT

09544



UK CA CE

Preface

Read this manual in full before using this product and retain it for future use. **ALWAYS** use the latest version of the manual. Please visit **drapertools.com/manuals** for the latest version.

Product Reference

User Manual for: Cooling System Vacuum Refill Kit

Stock No: 09544

Part No: CAV1

Revisions

Version 1: November 2009
First release

Version 2: October 2026

Understanding the Safety Content of This Manual

WARNING! – Situations or actions that may result in personal injury or death.

CAUTION! – Situations or actions that may result in damage to the product or surroundings.

Important: – Information or instructions of particular importance.

1. Intended Use

This product is designed to quickly and cleanly refill most vehicle engine sealed cooling systems without introducing airlocks.

Any other application beyond the conditions established for use will be considered misuse. Draper Tools accepts no responsibility for improper use of this product.

2. Specification

Stock No.	09544
Part No.	CAV1
Working pressure	80 -90psi
Maximum pressure	90psi
Gauge range	0 to -1 bar (0 to -30inHg)
Adaptor rings	31, 35, 40, 42 & 45mm
Net weight	1.68kg

3. Health and Safety Information

Important: Read all the Health and Safety instructions before attempting to operate, maintain or repair this product. Failure to follow these instructions may result in injury or damage to the user or the product.

- Before attempting to use this product, consult the vehicle manufacturer's service manual to check the correct process to use on the vehicle's radiator/ cooling system.
- **DO NOT** exceed the maximum inlet air pressure of 90psi.
- **ALWAYS** wear appropriate eye protection, ear defenders and gloves.

  Important: If the engine has been running the water in the cooling system will be scaling hot and under pressure.
  - To prevent serious burns or scalding allow the vehicle to cool down before removing the radiator cap.
- Ensure the vehicle's gearbox is in neutral, the handbrake is applied and the wheels are chocked.

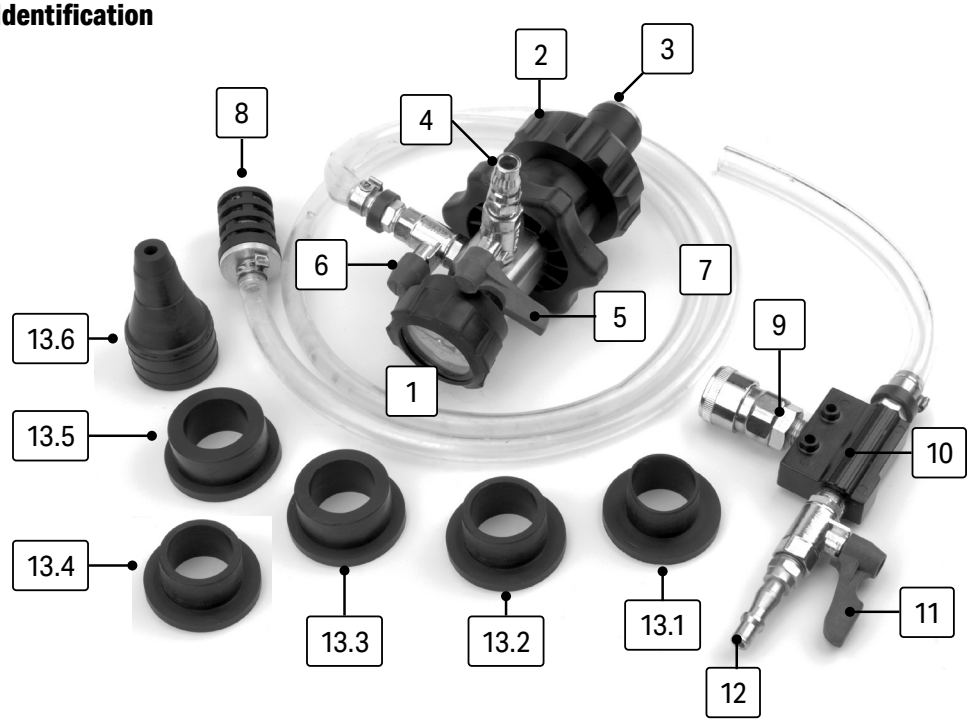
CAUTION! DO NOT attempt to modify the product in any way.

- When the vacuum has been applied it will cause the cooling system hoses to collapse. This can result in any brittle hoses cracking and they may require replacement.

WARNING! Compressed air can cause severe injury.

- **ALWAYS** turn off and disconnect the air supply before making any adjustments or repairs to the product or leaving it unattended.
- **NEVER** direct compressed air towards yourself or others.
- Ensure that compressed air is not blocked by or in contact with any part of your body.
- **ONLY** use clean, dry and regulated compressed air.
- **DO NOT** exceed the maximum stated air pressure.

4. Identification



Gauge Assembly

1	Gauge (0 to -1bar)
2	Wheel
3	End section
4	Male connector
5	Gauge inlet tap
6	Coolant suction tap
7	Coolant suction hose
8	Hose filter

Venturi Suction tube

9	Venturi sleeve
10	Air hose connector
11	Venturi tap
12	Air line coupling screw adaptor

Reservoir Adaptors

13.1	31mm
13.2	35mm
13.3	40mm
13.4	42mm
13.5	45mm
13.6	Universal

5. Assembly

5.1 Connecting to the Expansion Tank

1. Allow the engine to cool down completely before draining the coolant.
2. Drain the coolant completely from the system and refit the drainage bung.

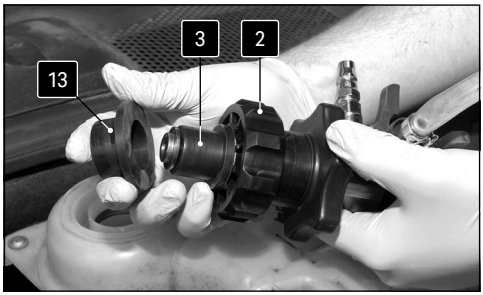


Fig. 1

3. Select and attach the appropriate adaptor (13) over the end section (3) of the gauge assembly.
4. Connect the gauge assembly adaptor to the vehicle's radiator neck or coolant expansion tank.



Fig. 2

5. Turn the wheel (2) clockwise until tight and the end section grips the adaptor firmly along the tank opening.

5.2 Joining the Gauge Assembly to the Venturi Tube

A vacuum is created in the cooling system by removing all the air by forcing high pressure air past the venturi tube.

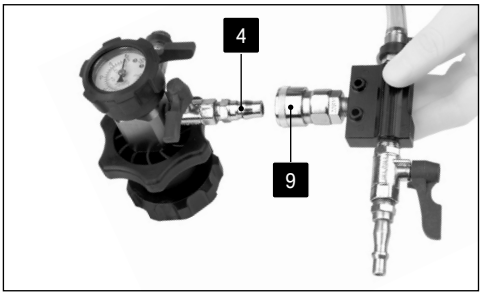


Fig. 3

1. Pull the Venturi sleeve (9) backwards and hold.
2. Push the female connector onto the male connector (4).
3. Release the sleeve and ensure that it slides all the way forward, locking the two connectors together.

6. Operation

Important: Before operating this product, read and understand all the safety instructions listed in this manual.

6.1 Connecting to Air Supply and Creating a Vacuum

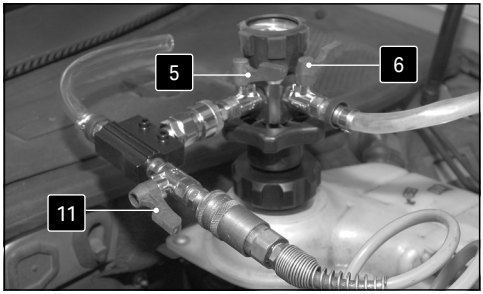


Fig. 4

1. Before connecting to a suitable compressed air supply, close the flow taps correctly on the gauge assembly and venturi.
2. Close all the flow taps by positioning 90° left or right:
   - Close the venturi tap (11)
   - Close the gauge inlet tap (5)
   - Close the coolant suction tap (6)
3. Connect the air line to the air line connector (10) or fit the adaptor (12) supplied if required:
   - Set the air pressure to 80 - 90psi.
   - Open the venturi tap (11) to allow air through the tap.
   - Open the gauge inlet tap (5) to start the vacuum process.
   - Watch the gauge (1) reading – when it reached 19 – 23inHg, close the gauge inlet tap and then the venturi tap.
4. Disconnect the air line.
5. The coolant system should be in a state of vacuum with all the flexible hoses compressed flat.
   - If this does not occur, there is a leak allowing air back into the system.
   - Check the hoses for cracks, splits or other damaged and securely fitted in place before retrying.

6.2 Refill the System with Coolant

When the vacuum is released it will try to suck air back into the system, this suction will be used to refill the fresh coolant mix.

1. Select the recommended coolant and mix ratio as specified by the vehicle's manufacturer.
2. Sink the filter (8) to the bottom of the container and ensure it stays in place.

Note: The filter needs to remain at the bottom of the container to prevent air being drawn into the system and causing air locks and bleeding issues.



Fig. 5

3. Open the coolant suction hose tap (6) to release the vacuum.

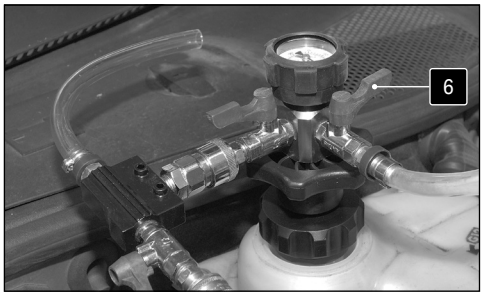


Fig. 6

4. Turn the wheel (2) anticlockwise to release the gauge assembly and then remove the adaptor (13).
5. Top up the expansion tank with water to the level mark. Then replace the radiator cap.

Note: The vehicle's heating system will need to be run and checked to ensure no air is present in the cooling system. With the engine hot and the engine thermostat open the heater system should produce hot air from the vents. Check that the temperature gauge does not exceed the halfway mark.

7. Disposal

At the end of its working life, dispose of the product responsibly and in line with local regulations. Recycle where possible.

8. Warranty

Visit **drapertools.com/warranty** for full details.

9. Symbols


Read the instruction manual


Warning!


Wear face mask and safety glasses


Wear protective gloves



Hose length



Adaptor diameter size

UK Conformity Assessed

European conformity

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