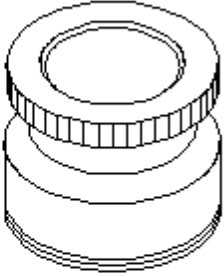
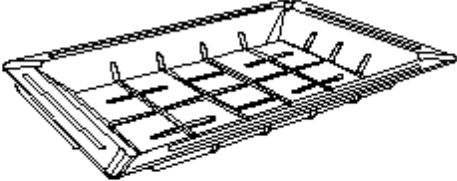
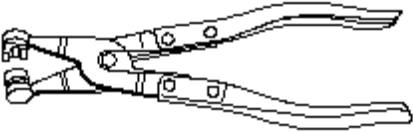
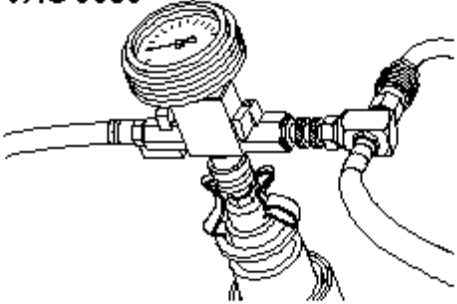
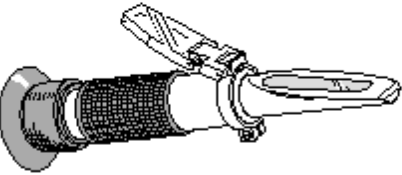


## Draining and filling cooling system

<p><b>V.A.G 1274/8</b></p> 	<p><b>VAS 6208</b></p> 
<p><b>V.A.G 1921</b></p> 	<p><b>VAS 6096</b></p> 
<p><b>T10007</b></p> 	<p>G19-10005</p>

Special tools and workshop equipment required

- t Adapter for cooling system tester -V.A.G 1274/8-
- t Drip tray for workshop hoist -VAS 6208-
- t Hose clip pliers -V.A.G 1921-
- t Cooling system charge unit -VAS 6096-
- t Refractometer -T10007-

## Draining



Note

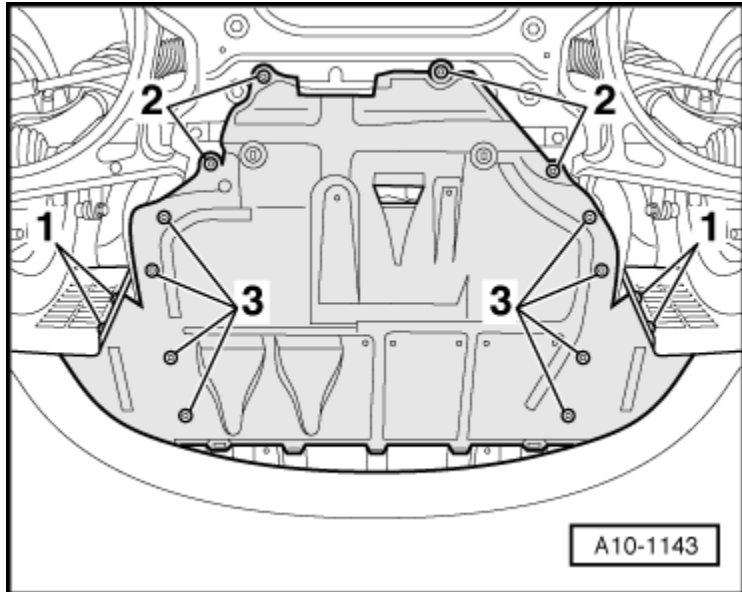
Collect drained coolant in a clean container for re-use or disposal.

**WARNING**

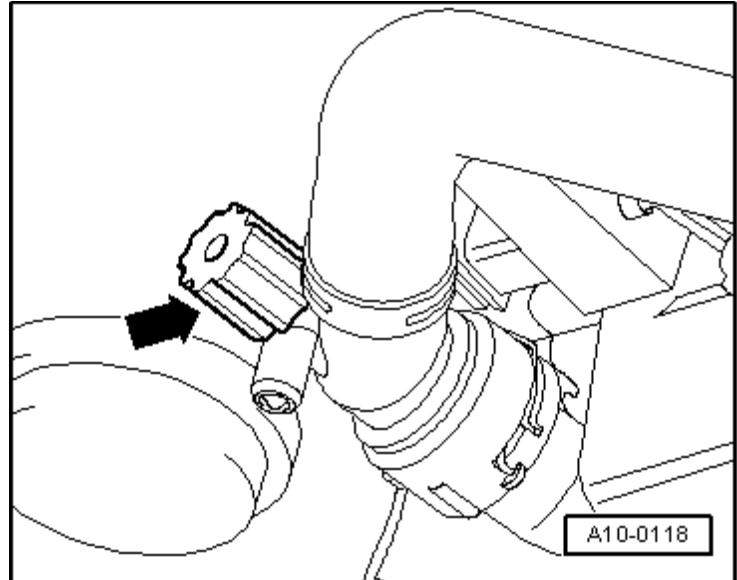
Hot steam or hot coolant can escape when expansion tank is opened; cover filler cap with cloth and open carefully.

- Open filler cap on coolant expansion tank.

- Remove centre noise insulation -1 ... 3-



- Place drip tray for workshop hoist - VAS 6208- under engine.
- Turn drain plug -arrow- on radiator anti-clockwise and drain coolant (attach hose to connection if necessary).



- Disconnect bottom coolant hose from oil cooler -arrow-, and drain off remaining coolant.

### Filling



#### Note

The cooling system is filled all year round with a mixture of water and radiator antifreeze/anti-corrosion agent.

It is important to use only coolant additive Plus -G 012 A8F A1- (also designated as “G12+”) “meeting specification TL VW 774 F”. Other coolant additives could seriously impair in particular the anticorrosion properties. The resulting damage could lead to loss of coolant and consequently to serious engine damage.

t Coolant additive “G12+” may be mixed with additives “G11” and “G12”.

“G12+” and coolant additives marked “Meets specification TL VW 774 F” prevent frost and corrosion damage and stop scale from forming. Such additives t also raise the boiling point of the coolant. For these reasons the cooling system must be filled all year round with the correct antifreeze and anticorrosion additive.

Because of its high boiling point, the coolant improves engine reliability t under heavy loads, particularly in countries with tropical climates.

Frost protection is required down to t about  $-25\text{ }^{\circ}\text{C}$  (in countries with arctic climate: down to about  $-35\text{ }^{\circ}\text{C}$ ).

The coolant concentration must not be reduced by adding water even in t warmer seasons and in warmer countries. The antifreeze concentration must be at least 40 %.

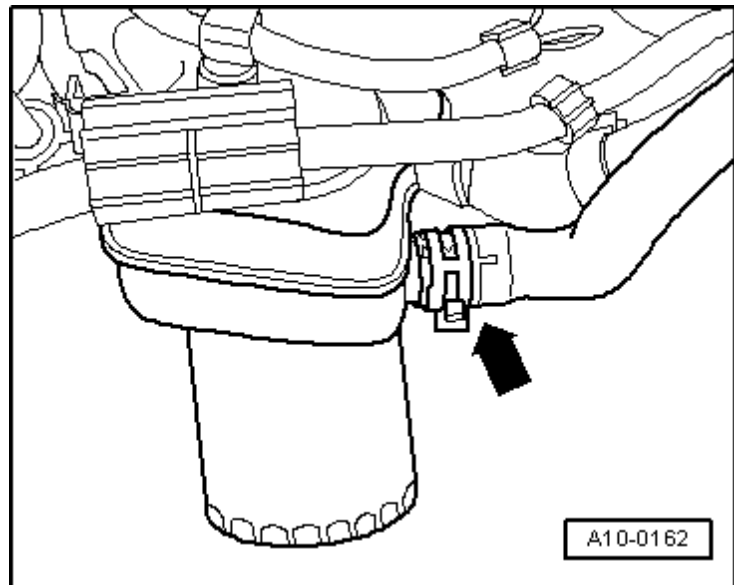
If greater frost protection is required in very cold climates, the amount of “G12+” can be increased, but only up to t 60% (this gives frost protection to about  $-40\text{ }^{\circ}\text{C}$ ). If antifreeze concentration exceeds 60%, frost protection decreases again and cooling efficiency is also impaired.

t Use only clean tap water for mixing coolant.

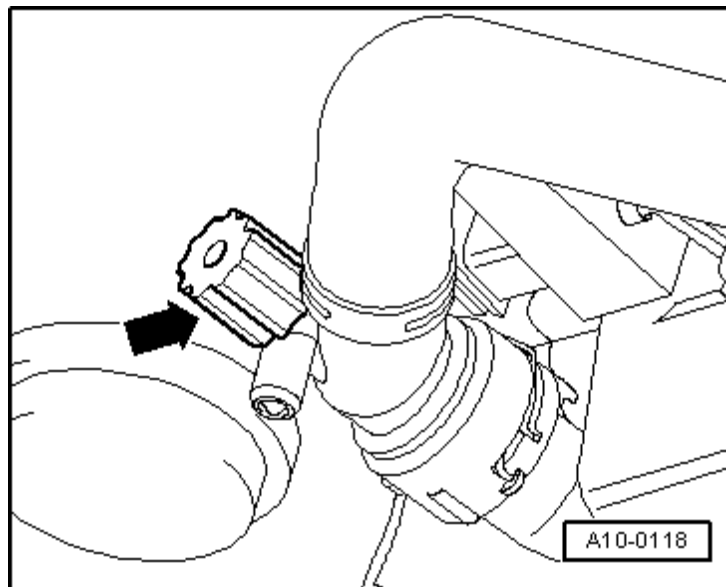
If radiator, heat exchanger, cylinder t head, cylinder head gasket or cylinder block have been renewed, do not re-use old coolant.

t Contaminated or dirty coolant must not be used again.

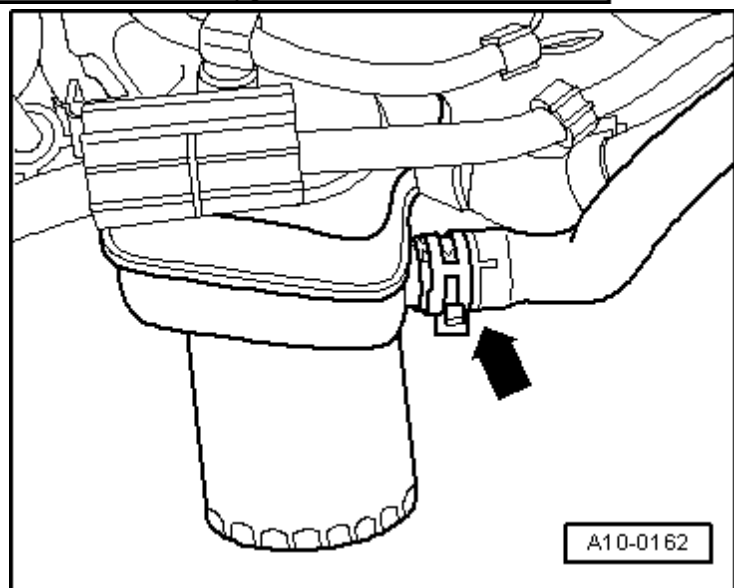
To check frost protection level of t coolant additive “G12+” you must use a refractometer -T10007-.



– Close drain plug -arrow-.

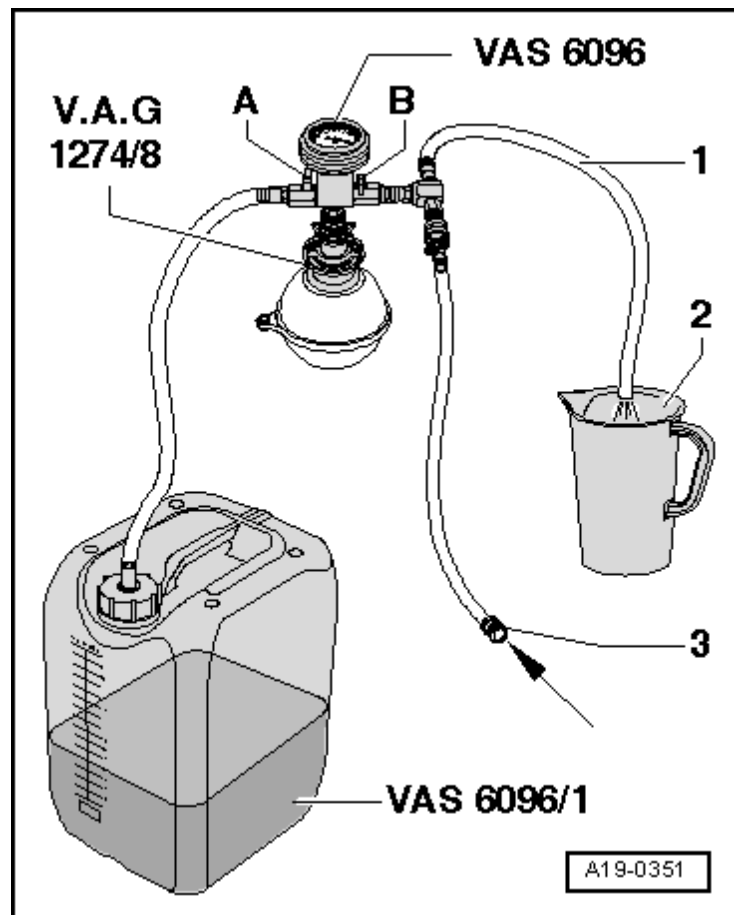


- Connect coolant hose at bottom of oil cooler -arrow-.



- Fill reservoir with at least 7 litres of premixed coolant (according to recommended ratio):
  - 1 "G12+" (40 %) and water (60 %) for frost protection to  $-25^{\circ}\text{C}$ .
  - 1 "G12+" (50 %) and water (50 %) for frost protection to  $-35^{\circ}\text{C}$ .
  - 1 "G12+" (60 %) and water (40 %) for frost protection to  $-40^{\circ}\text{C}$ .
- Screw adapter for cooling system tester -V.A.G 1274/8- onto coolant expansion tank.
- Attach cooling system charge unit -VAS 6096- to adapter -V.A.G 1274/8-.
- Run vent hose -1- into a small container
- 2-. (The vented air draws along a small amount of coolant, which should be collected.)
- Close the two valves -A- and -B- by

- setting lever at right angle to direction of flow.
  - Connect hose -3- to compressed air.
- 1 Pressure: 6 ... 10 bar.



- Open valve -B- by setting lever in direction of flow.

The suction jet pump generates a partial vacuum in the cooling system.

- 1 The needle on the gauge should move into the green zone.

- Also briefly open valve -A- (turn lever in direction of flow) so that hose on charge unit can fill with coolant.

- Close valve -A- again.
- Leave valve -B- open for another 2 minutes.

The suction jet pump will continue generating a vacuum in the cooling system.

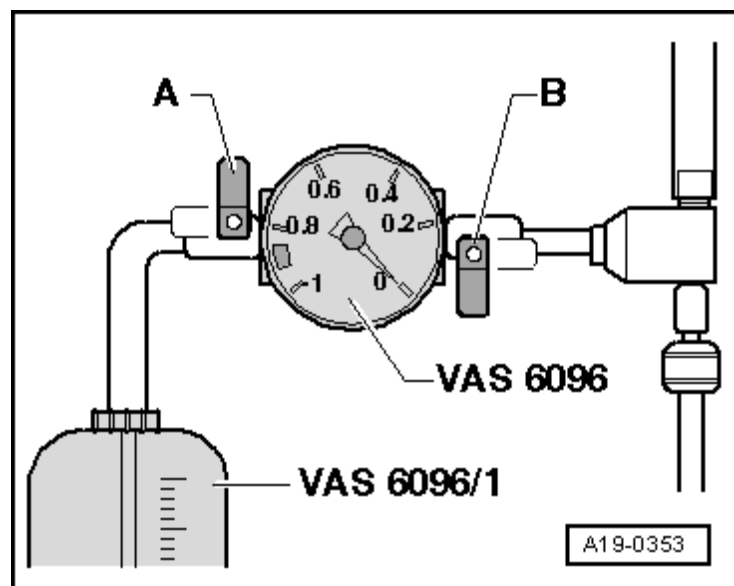
- 1 The needle on the gauge should remain in the green zone.

- Close valve -B-.

The needle on the gauge should stop in the green zone. The vacuum level in the cooling system is then sufficient for subsequent filling.

If the needle does not reach the green zone, repeat the process.

If the vacuum level drops, there is a leak



in the cooling system.

- Detach compressed air hose.
- Open valve -A-

The partial vacuum in the cooling system causes the coolant to be drawn up out of the reservoir; the cooling system is then filled.

- Check the coolant level and top up coolant as far as the “max” mark.

Start engine, run for 2 minutes

- (maximum) at approx. 1500 rpm and top up coolant to overflow hole on expansion tank with engine running.
- Close coolant expansion tank.
- Run engine until radiator fan cuts in.
- Switch off ignition and allow to cool down.



#### WARNING

Hot steam or hot coolant can escape when expansion tank is opened; cover filler cap with cloth and open carefully.

- Check coolant level.

1 The coolant level must be at the “max” marking when the engine is cold.

The coolant level can be above the 1 “max” marking when the engine is warm.

