



MANN+HUMMEL

Coolant Reservoir

MCR

Installation and maintenance instructions

**MANN+
HUMMEL**

Version 06/14_EN

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1 Introduction

These installation and maintenance instructions form part of the scope of delivery. They must remain easily accessible through the entire life cycle of the product.

We reserve the right to change the designs outlined in these installation and maintenance instructions as a result of further technical developments.

Reprinting, translation and any type of reproduction, in whole or as extracts, require written approval from the originator.

Copyright is retained by the originator.

These installation and maintenance instructions are not covered by any amendment service. The latest version at any time can be obtained from the manufacturer.

1.1 Manufacturer and originator

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Internet: www.mann-hummel.com

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1.2 Guarantee and warranty

Information on warranty periods and general terms and conditions are available from the manufacturer or under www.mann-hummel.com.

The guarantee and warranty cease to apply if:

- the product is changed without the manufacturer's approval.
- the installation and maintenance instructions are not adhered to.
- spare parts and accessories other than those supplied or approved by the manufacturer are installed and removed.
- the product is improperly handled.

1.3 Disclaimer

This manual is intended as a guide only; the manufacturer cannot be held responsible for the performance of this product in its final application of which it has no control. The user must satisfy themselves that the product is suitable for the application by their own testing and approval in that application. Therefore the manufacturer cannot be held responsible for equipment failure, damage or personal injury due to the product failure in the application.

1.4 Design outline

1.4.1 Lists

Lists contain bullet points:

- Point 1
- Point 2

1.4.2 Handling instructions

Handling instructions which must be carried out in a defined sequence are numbered consecutively:

1. Check coolant reservoir for damage.
2. Screw together coolant reservoir.

Handling instructions which do not necessarily have to be carried out in a defined sequence are listed with bullet points:

- Fit return hose.
- Fit supply hose.

Additional information is marked with this symbol:

 Further information in table.

1.4.3 Safety notices



A safety notice with the signal word '**WARNING**' indicates a hazard to persons which could result in serious injury or death.



A safety notice with the signal word '**CAUTION**' indicates a hazard to persons which could result in minor to moderate injury.



A safety notice with the signal word '**NOTICE**' indicates possible property damage.

2 Safety

The following points are to be observed when handling coolant reservoirs:

- The sub-chapter 'Basic safety instructions' lists fundamental rules when handling coolant reservoirs.
- The 'Specific safety instructions' sub-chapters provide further safety instructions for the relevant assembly tasks.
- Individual actions listed in the text contain safety instructions which refer to the specific handling requirements.

2.1 Basic safety instructions

- These installation and maintenance instructions must be read in full before the coolant reservoir is fitted.
- These installation and maintenance instructions must be available throughout assembly on site.
- The user must ensure that assembly and maintenance of the coolant reservoir is carried out only by qualified employees, e.g. automotive mechanics or persons with related qualifications. Ensure that the qualified employee has been adequately informed about installation and maintenance through these installation and maintenance instructions.
- If there is visible damage to the coolant reservoir and its components, fitting and operation must not take place.

2.2 Intended use

The coolant reservoir

- must only be used in technically perfect condition in accordance with its designated use and the installation and maintenance instructions and only by safety-conscious persons who are fully aware of the risks involved in its operation.
- must not be changed or adapted without the manufacturer's approval.
- must only be used fully observing the installation and maintenance instructions and adhering to the intervals and conditions for testing and general maintenance work.
- is designed for use with commercially available coolants.
- is suitable for use with screenwash fluid, the user must however ensure that such screenwash material and additives have been approved for polypropylene containers.
- is designed for continuous operation.

2.3 Unintended use

The coolant reservoir

- is not suitable for fuels, solvents, bases or acids.
- is not suitable for use with mineral or synthetic oils or oily substances.
- is not suitable for fluids intended for consumption.
- is not suitable for use as a pressure vessel in heating systems.
- must not be used in any other way than as described in these installation and assembly instructions.
- must not be used if operating conditions (technical data, page 8) cannot be maintained.

2.4 Equipment marking

2.4.1 Notices on device (pressure cap)



Observe installation and maintenance instructions.



Risk of injury

2.4.2 Name plate (example will include)

Manufacturer: MANN+HUMMEL
Model type: MCR15
Series number: 1001508S01
Series number: 2d barcode



3 Technical data

Material	Polypropylene (PP)
Max. pressure	1,2 bar
Max. temperature *	100 °C
Min temperature*	-20 °C
Pressure cap with pressure control valve	Pressure control valve opens at 1 bar
Outlet connection	DIN Standard Ø 22 mm
Return connection	DIN Standard Ø 10 mm
Overflow connection underneath pressure cap	Ø 9,65 mm
Assemble reservoir	M8 nuts
UV resistance	Not UV resistant, cover to protect against long-term UV radiation

*Applications outside the operating temperature range must be approved by the user or by MANN+HUMMEL.

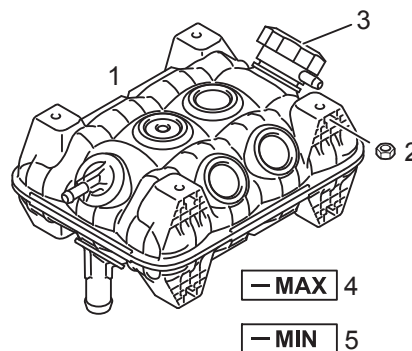
4 Scope of delivery

Check that the scope of delivery is complete and undamaged before assembly. Contact the manufacturer in case of non-compliance.

Coolant reservoir (1), including 8 x M8 nuts (2) and pressure cap (3)

'MAX' label (4)

'MIN' label (5)



5 Assembly

5.1 Specific safety instructions

CAUTION

Contact with coolant can lead to poisoning and chemical burns. Safety information on the coolant manufacturer's data sheet must be strictly adhered to when handling the coolant in question!

- Harmful when swallowed.
- Seek medical advice immediately if swallowed, and retain packaging or label.
- Avoid contact with eyes and skin.
- Do not inhale vapours, ensure adequate ventilation.
- Wear suitable protective clothing and gloves when handling.
- Keep out of reach of children.
- The coolant and its packaging must be disposed of as hazardous waste.

NOTICE

Escape of coolant can cause environmental damage.

- Collect escaping coolant in a suitable vessel.
- Do not allow coolant to enter ground water, sewers or soil. Should this nevertheless occur, inform the relevant authorities.
- Collect spilt or leaked coolant with non-flammable, absorbent material (sand, earth, kieselguhr) and place in containers.
- For major leakage, pump coolant into suitable, correctly labelled containers and dispose of in accordance with official regulations.

5.2 Install coolant reservoir

- i Installation of coolant reservoir (1) is described using a horizontal 3.6 l container. The appearance and arrangement of attachments may vary from the model shown. The assembly steps are identical for all reservoir sizes and installation positions.

NOTICE

The coolant reservoir (1) must be protected against long-term UV radiation. If the installation point is not under the bonnet, a suitable cover is to be used.

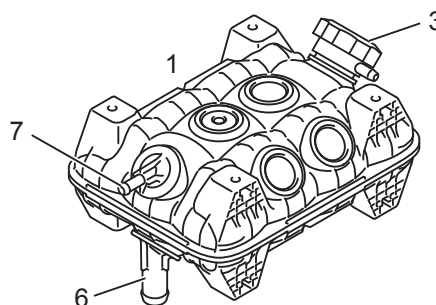
1. Establish suitable installation point. Ensure that the outlet connection (6) and the pressure cap (3) are at the bottom and the return connection (7) is at the top.

NOTICE

Select installation position so that the coolant reservoir (1) is not damaged through contact with other components.

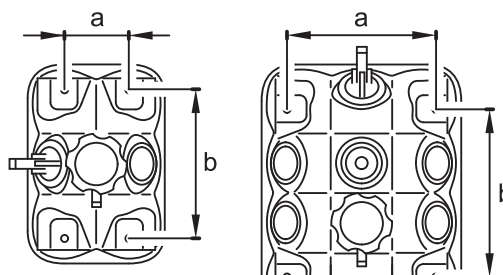
It must also be ensured that the hose lines can be connected without kinks or abrasion.

The coolant reservoir (1) must be protected against long-term UV radiation. If the installation point is not under the bonnet, a suitable cover is to be used.



2. Drill holes (Ø min. 8.2 mm) to install the coolant reservoir. Apply corrosion protection to mounting holes.

- i Hole spacings for the corresponding coolant reservoir from the table below.



1.5 to 3.5 litre

3.6 to 8.0 litre

Hole spacing

Volume of reservoir in ltr	Dimension 'a' in mm	Dimension 'b' in mm
1.5 l	70 mm	160 mm
2.5 l		
3.5 l		
3.6 l	160 mm	182 mm
5.6 l		
8.0 l		

3. Clean the contact surface of the coolant reservoir (1).

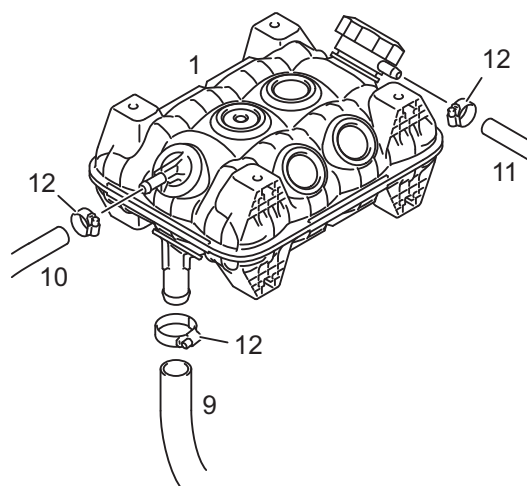
4. Check there are M8 nuts (2) at all fastening points.
5. Screw coolant reservoir (1) with 4 x M8 screws (8) of a suitable length.
Torque: 12 Nm

NOTICE

Select the screw length so that the thread length in the coolant reservoir (1) is max. 14 mm.

6. Fit the feed hose (9), return hose (10) and overflow hose (11) with commercially available hose clips (12) of a suitable size onto the coolant reservoir (1).
The hose line must be positioned in such a way that there are no kinks or abrasion points.

- i See technical data (page 8) for the diameter of the connecting piece.
- i If gripper clamps are not used, attention must be paid to the manufacturers torque settings for hose clips.



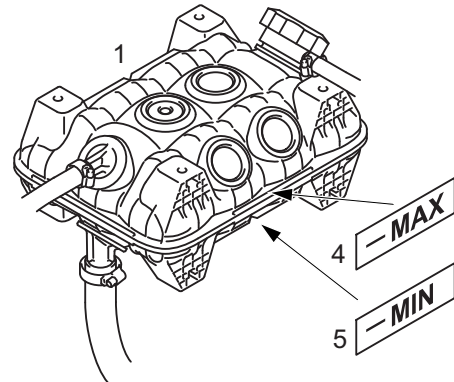
NOTICE

Hose lines must be suitable for use with coolants. If unsuitable hoses are used, leakage in the cooling system may occur.

7. Position and fix 'MAX' (4) and 'MIN' (5) for maximum and minimum coolant levels in the coolant reservoir (1). Ensure that markings are clearly visible and cannot be obscured by other fixtures.



The position of markings for maximum and minimum coolant levels are fixed by the machine manufacturer.

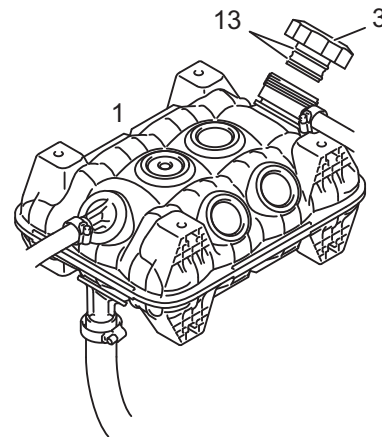


8. Fill and vent the cooling system with coolant as specified by the unit manufacturer.
Fill the coolant reservoir (1) up to the 'MAX' mark and close with the pressure cap (3).

CAUTION

Escape of hot coolant can result in serious burns.

Ensure that both O-rings (13) are present on the pressure cap (3) of the coolant reservoir (1) and that they are undamaged.



NOTICE

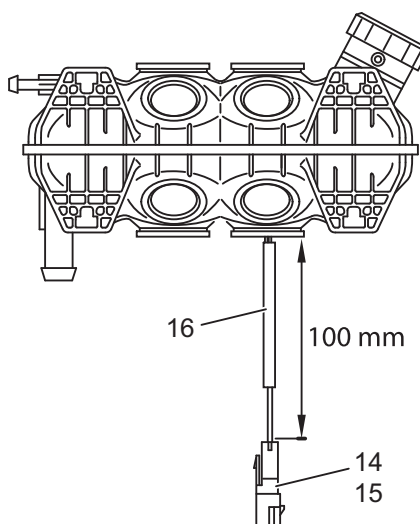
*Filling and venting the cooling system must be carried out in accordance with the unit manufacturer's instructions.
Incorrect filling or venting of the cooling system may cause the unit to overheat.*

5.3 Sensor connection

5.3.1 Electrical specification

Max. Switched Current	0.5 A
Max. Switched Voltage	200 Vdc
Contact Rating	10 W
Max. Initial Contact Resistance	0.10 Ohm
Max. Carry Current	1.2 A
Min. Insulation Resistance	10 ¹⁰ Ohm
Min. Voltage Hold-Off	200 Vdc

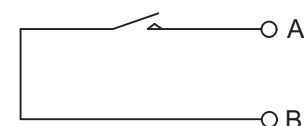
5.3.2 Configuration



(14)	Connector	EPC E5937-001
(15)	Contacts	Tyco 2-1419158-5
(16)	Approximate wire length from reservoir exit	two-core, ca. 100 mm

5.3.3 Connection diagram

- (A) Wire to the gauge
- (B) Wire to the sensor



6 Checking

6.1 Specific safety information



Escaping coolant can result in serious burns.

Pressurised coolant is hot.

Never open the pressure cap of the coolant reservoir when the coolant is hot.

In case of leakage or repair, turn off engine and allow the system to cool down.

6.2 Check function

1. Warm up the engine.
2. Check that connections are sealed.
3. Check there are no kinks or chafe marks on the hose lines.
4. Turn off engine and allow to cool.
5. Check coolant level and top up to required 'MAX' level with coolant if necessary.

7 Maintenance

7.1 Specific safety information

WARNING

*Escaping coolant can result in serious burns.
Pressurised coolant is hot.
Never open the pressure cap of the coolant reservoir when the coolant is hot.*

CAUTION

*Contact with coolant can lead to poisoning and chemical burns.
Safety information on the coolant manufacturer's data sheet must be strictly adhered to when handling the coolant in question!*

- *Harmful when swallowed.*
- *Seek medical advice immediately if swallowed, and retain packaging or label.*
- *Avoid contact with eyes and skin.*
- *Do not inhale vapours, ensure adequate ventilation.*
- *Wear suitable protective clothing and gloves when handling.*
- *Keep out of reach of children.*
- *The coolant and its packaging must be disposed of as hazardous waste.*

NOTICE

Escape of coolant can cause environmental damage.

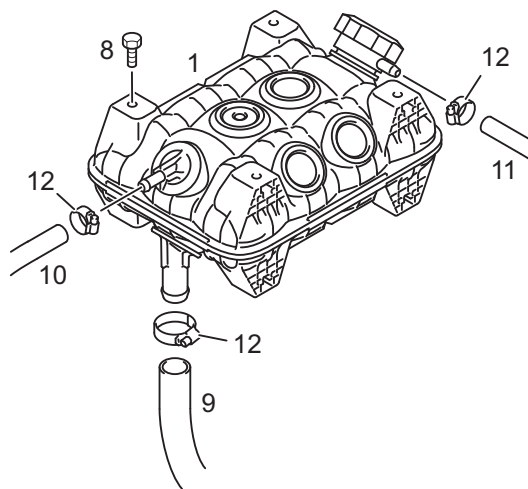
- *Collect escaping coolant in a suitable vessel.*
- *Do not allow coolant to enter ground water, sewers or soil. Should this nevertheless occur, inform the relevant authorities.*
- *Collect spilt or leaked coolant with non-flammable, absorbent material (sand, earth, kieselguhr) and place in containers.*
- *For major leakage, pump coolant into suitable, correctly labelled containers and dispose of in accordance with official regulations.*

7.2 Maintenance work

- Before operating the machine, always check the coolant level and there are no leaks on the coolant reservoir.
Top up with coolant if necessary.
- Replace leaky/damaged components and hose lines.
- Regularly check antifreeze when operating in colder climates.
- Change coolant in accordance with the manufacturer of the application's specifications.

7.3 Replace coolant reservoir

1. Drain coolant as specified by the manufacturer and collect in a suitable container.
2. Remove hose lines (**9, 10, 11**) on the coolant reservoir (**1**) by releasing the hose clips (**12**) and pulling out the hose lines (**9, 10, 11**).
3. Unscrew the 4 retaining screws (**8**) on the coolant reservoir (**1**).
4. Remove coolant reservoir (**1**).
5. Installation: see chapter 5 for assembly (page 8) and chapter 6 for testing (page 14).



8 Disposal

8.1 Specific safety instructions



Contact with coolant can lead to poisoning and chemical burns.
Safety information on the coolant manufacturer's data sheet must be strictly adhered to when handling the coolant in question!

- Harmful when swallowed.
- Seek medical advice immediately if swallowed, and retain packaging or label.
- Avoid contact with eyes and skin.
- Do not inhale vapours, ensure adequate ventilation.
- Wear suitable protective clothing and gloves when handling.
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- For major leakage, pump coolant into suitable, correctly labelled containers and dispose of in accordance with official regulations.

8.2 Coolant disposal

Coolant must be disposed of in accordance with the coolant manufacturer's specifications and applicable regulations.

- Dispose of in accordance with local regulations.
- May not be disposed of together with household waste.
- Do not empty into drains.
- Pass to special waste collector or take to hazardous waste collection centre.

8.3 Coolant reservoir disposal

The coolant reservoir must be disposed of in accordance with applicable regulations.

- Dispose of in accordance with local regulations.
- May not be disposed of together with household waste.
- Do not empty coolant residues into drains.
- Pass to special waste collector or take to hazardous waste collection centre.

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