

INSTRUCTIONS

Instruction manual
for REFCO 2-way manifold R744 transcritical

HVAC/R
Service Products



Instruction manual

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Important

⚠ **Read this manual carefully and familiarise yourself with the specifications and operation of REFCO manifolds prior to use. These instructions provide important information regarding the operation and service of this manifold.**

Purpose and use

The manifolds have been designed especially to measure pressure in refrigeration equipment. For use only by trained technicians.

⚠ The manifold **must not be used** for anything other than refrigeration applications in connection with refrigerants.

⚠ The manifold **must not be used** with pressures higher than 160 bar / 2300 psi.

⚠ The manifold **can not be used** as a pressure regulator, especially not in use with nitrogen N₂.

⚠ The manifold **can not be used** with ammonia (NH₃ / R717).

⚠ Safety goggles and gloves **must be worn** during the use of the manifold.



⚠ REFCO-products are designed and manufactured for use by technically trained air conditioning and refrigeration service engineers only. Due to the high pressures, and the physical and chemical nature of refrigerants and oils used in the systems, incorrect application could result in serious accidents, injuries or death.

Extent of delivery

Details about the variations and contents of the manifold are described in the REFCO catalogue as well as on the web www.refco.ch.

Storage

Manifolds are high precision measuring instruments. After use store the manifold in a protected environment.

Note: Do not store the manifold with refrigerant in the unit or hoses.

The hose connections (screw connections / mounting side) hanging freely from the assembly aid can be screwed to the Y connections when not in use. This protects the threads from dirt and damage.

Technical description

The 2-way manifold is a high precision instrument. Both gauges, high and low pressure can be readjusted to the zero point. The manifold gauges are marked with temperature and pressure scales.

The scales of the suction and pressure gauges only contain temperature values up to the critical point of R744 (CO₂). This point is reached at the critical pressure 73.75 bar (a) with the critical temperature 30.98°C. At higher pressures, the refrigerant is in the transcritical state. Therefore, no temperature can be assigned due to lack of wet steam area.

Changeable needle type valves ensure perfect sealing. Glycerine-oil filled gauges are equipped with a safety pressure relief in case of a pressure build up inside the gauge due to a defect.

Use of manifold

Preparing

Before use ensure that the temperature scales on the manifold gauges match the refrigerants used in the system. Adjust the gauge with the zero adjusting screw to zero. Position of the hand may vary and might not point to zero depending on the atmospheric pressure. Readjusting the gauge might therefore be necessary before each use of the manifold. The zero adjusting screw is positioned either at the top or through the front lens depending on the type of manifold.

Connecting the manifold to a system

- Connect hose from blue valve to system suction pressure side
- Connect the hose from the red valve to the high pressure system
- Connect the hose from the middle connection to the vacuum pump
- Close Both valves (6+7)

Evacuation of a system

- Switch on vacuum pump
- Open both valves (6+7)
- Check negative pressure on low pressure gauge
- When final vacuum reached, close both valves (6+7)

Please note: The evacuation time may vary depending on the size of the system. A minimal time span of 20 minutes must be reserved to evacuate a small to middle sized system.

Filling of a system after evacuation

- Disconnect the hose from the vacuum pump and screw it to the refrigerant cylinder or cylinder.
- Filling process according to the instructions of the plant or compressor manufacturer

⚠ If liquid is filled at less than 5.2 bar, there is a risk of dry ice formation!

- To check the correct capacity, REFCO recommends using the REF-METER-OCTA filling scale.
- After reaching the filling quantity, close the valves of the assembly aid.
- Disconnect all hoses from the system
- Open valves (6+7)

Service of manifold

The charging hoses must be checked and clean of oil residue before each use. A visible control is also necessary to ensure that the hoses and the connection are undamaged and tight.

The seals of a manifold are naturally subject to a mechanical and age-related wear. Therefore, the fitter is regularly on the user to check for leaks.

If the valves are leaking, replace the entire valve core.

⚠ After changing spare parts on the manifold it is absolutely necessary to test the manifold for tightness before the next use.

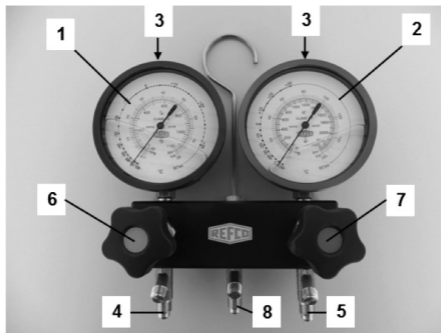
Further accessories and charging hoses for REFCO manifolds can be found in the REFCO catalogue or on the web www.refco.ch.

Guarantee

Your new manifold has been developed according to the latest work physiological and ergonomic aspects and corresponds to the current state of the art. The company REFCO Manufacturing Ltd. was certified according to DIN EN ISO 9001. Constant quality controls and careful workmanship ensure a solid functionality and allow the REFCO guarantee according to the general terms of sale and delivery on the day of delivery. Exceptions to this are obviously negligent treatment and damage caused by wear and tear.

Environment

The assembly aid has been developed for long-term use. In material procurement and production, attention was paid to energy savings and environmental compatibility. REFCO Manufacturing Ltd. is responsible for its products all its life. For this reason, REFCO Manufacturing has been certified according to DIN EN ISO 14001. When decommissioning the device, the user should observe the applicable disposal regulations of his country.



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- 1 Suction gauge blue
- 2 Pressure gauge red
- 3 adjustment
- 4 Low pressure port
- 5 High pressure port
- 6 Suction
- 7 Pressure valve
- 8 Refrigerant connection

Spare Parts for manifolds

- Case complete with insert and lettering
- Gauge low pressure side
- Gauge high pressure side
- Complete valve
- Star handle
- Set of charging hoses (3 pcs.)

- M4-6-14-R744-TC
- R5-220-DS-R744-80BAR
- R5-320-DS-R744-160 BAR
- M2-10-350BAR/2
- M2-6-N-SET
- CCL-72-DN6-R744-TC

- Part No 4687928
- Part No 4687900
- Part No 4687901
- Part No 4687917
- Part No 4687918
- Part No 4687906

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REFCO Manufacturing Ltd.

Industriestrasse 11
6285 Hitzkirch - Switzerland

Telefon +41 41 919 72 82

Telefax +41 41 919 72 83

info@refco.ch

www.refco.ch