

Danfoss CTM 6 Multi Ejector Installation Guide

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Danfoss CTM 6 Multi Ejector



Specifications

• Product Name: Multi Ejector type CTM 6

• Refrigerant: R744 with oil

• Max. Working Pressure: 140 bar / 2031 psi

Max. OPD: 90 bar / 1305 psi
Min. OPD: 0.1 bar / 1.45 psi

Product Usage Instructions

General Installation

Mounting: With coils upwards, the CTM Multi Ejector needs to be fixed to the rack frame using 4 holes in the aluminum block to avoid stress on the connectors.

Brazing

Recommendation for brazing:

- **Nozzle size:** 4-6 mm (5/32 in 15/64 in)
- Materials used for brazing: special h paste, stainless steel alloy (2 mm thick)
- Warning: Do not use filler metals containing Phosphor such as BS: CP 1/ DIN L-Ag 15P or BS: CP 3/ DIN L-Ag P7.

Starting up / Operation: Opening sequence

- 1. Connector A
- 2. Connector C
- 3. Connector E

Follow the opening sequence to avoid too high differential pressure over internal check valves.

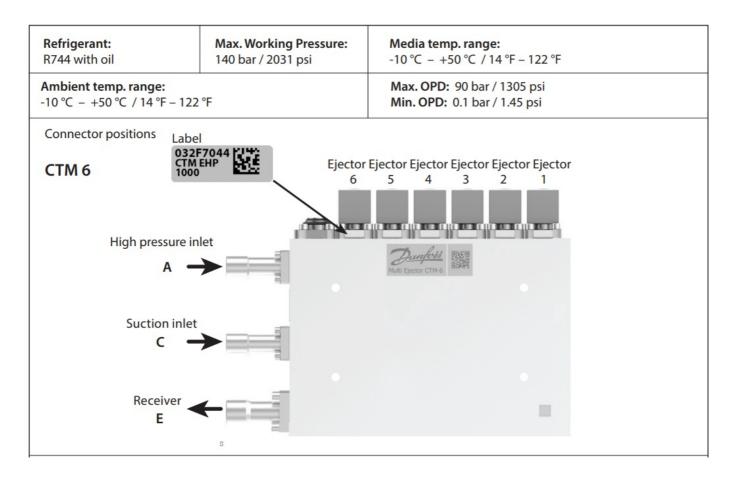
Service: Mounting and service of ejectors:

- Liquid ejectors and then high-pressure ejectors with the highest capacities must be placed closest to the suction connector C.
- Any blank ejector must be placed closest to the suction connector C.

Service on Strainer:

- 1. Remove strainer from valve body using a 5 mm Allen key.
- 2. Clean or replace the strainer and replace O-ring.
- 3. Assemble strainer, oil O-rings, and place the strainer in the valve.
- 4. Mount the strainer with screws.

Connector positions



WARNING! The CTM Multi Ejector valve is approved for use only with Danfoss controller type AK-PC 782A/B, AK-CC55 and AK-SM 8xxA.

DISCLAIMER: Danfoss expressly disclaims, and any responsibility or liability, whether based on contract, breach of warranty, tort, statute or otherwise, shall be excluded, if the CTM Multi Ejector valve is used with any controller other than a Danfoss controller type AK-PC 782A/B, AK-CC55 and AK-SM 8xxA. For further information on AK-PC, please see separate document.



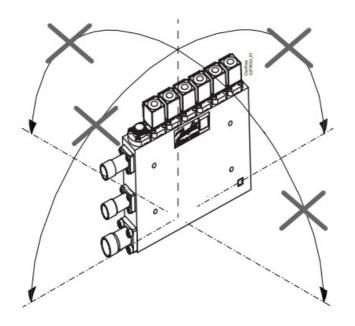
WARNING!

- Do not disassemble/assemble the parts unnecessarily to avoid risk of breaking the O-ring, dirt in the valve etc.
- Avoid high mechanical stress in connection with tube mounting/welding.
- Do not remove connectors during welding/brazing.

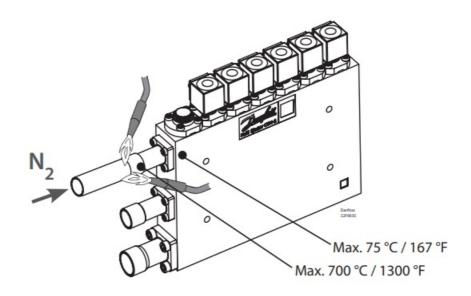
General installation

- Always place the ejector with the coils upwards so the check valve inside can use gravity to close.
- Coils available in 110-120V AC and 230V AC, 50/60Hz.
- It is recomended to place shut-off valves on all 3 connections.
- Evacuating the ejector is recommended to do on the outlet and on the high-pressure side.
- Pressurizing the ejector should be done from the suction side first (Suction inlet C).
- It is recommended to install ejector after suction filter (Suction inlet C).

Mounting: With coils upwards CTM Multi Ejector needs to be fixed to the rack frame using 4 holes in the aluminum block do avoid stress on the connectors



Brazing



Recommendation for brazing

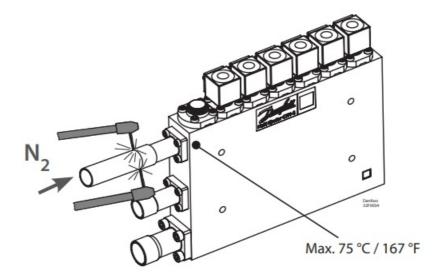
Recommendation: brazing nozzle 4-6 mm (5/32 in - 15/64 in)

Materials used for brazing:

• Flux: Metallic tenacity No. 5 Powder or Braze Tec special h paste.

• Filler: Silver-Flo 55 (BS:AG 14/ DIN L-Ag55 Sn) or Silver-Flo 56 (AWS B Ag-7).

Welding

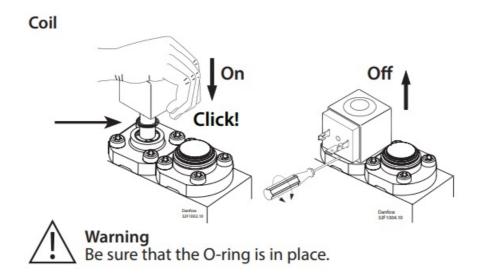


Recommendation for TIG welding

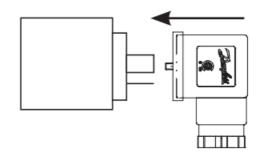
- Power approximately 60 A.
- Use Shield gas charge Argon.
- Material for welding approximately 2 mm thick stainless steel alloy

Warning: Filler metals containing Phosphor i.e. BS: CP 1/ DIN L-Ag 15P or BS: CP 3/ DIN L-Ag P7 must not be used

Coil

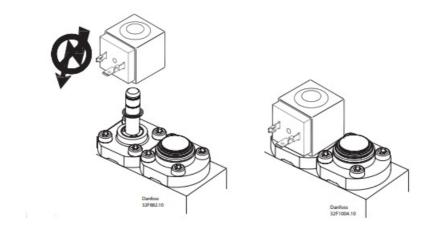


Mounting DIN plug / LED DIN plug.



Warning

Never switch on power to the coil when it is dismounted from the valve. There is a danger the coil may be damaged and a risk of injuries and burns.



Armature tubes are sensitive and have to be protected during the installation:

- · do not damage the armature tubes with strokes or forces
- do not lift or handle the block by lifting the armature tubes etc.
- · avoid pull forces on the wires connected to the coils

Starting up /Operation

Opening sequence:

- 1. connector A
- 2. connector C
- 3. connector E

Follow the opening sequence to avoid too high differential pressure over internal check valves.

Starting up the system: open all connection ball valves slowly (avoiding liquid hammer that can damage the internal check valve (NRV) and build-in strainer). It is mandatory to clean the strainer after 2 days of running the system. O-rings needs to be replaced with the two new ones placed on the strainer top. Removed O-rings to be placed on the strainer top and reused after return to initial shape during next strainer maintenance. Strainer cleanliness is important for proper operation of Multi Ejector and the cleaning shall be repeated if necessary every 2-3 weeks to remove the dirt circulating in the system.

Service

Mounting and service of ejectors

Liquid ejectors* and then high-pressure ejectors with the highest capacities (longest ejectors) must be placed closest to the suction connector C. Any blank ejector must be placed closest to the suction connector C. aplicable only for CTM 6 Combi

A: Inlet connector

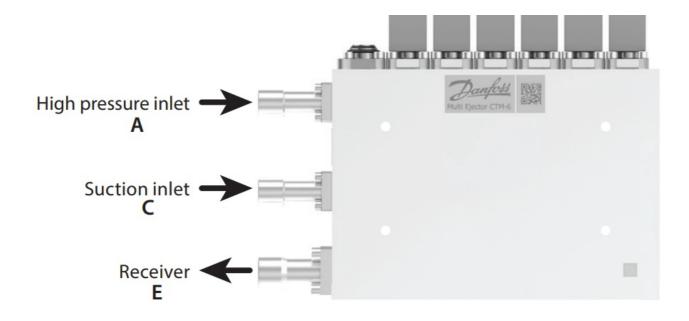
Gas cooler outlet - Inlet connector Combi brazing 7/8 inch ODF - weld 3/4 inch (EN10220)

• C: Suction connector

MT evaporator outlet - Suction connector Combi brazing 7/8inch ODF - weld ¾ inch (EN10220)

• E: Outlet connector

Outlet connector – Receiver Combi brazing 11/8 inch ODF – weld 1 inch (EN10220)



Warning: Do not disassemble/assemble the parts unnecessarily to avoid risk of breaking the O-ring, dirt in the valve etc

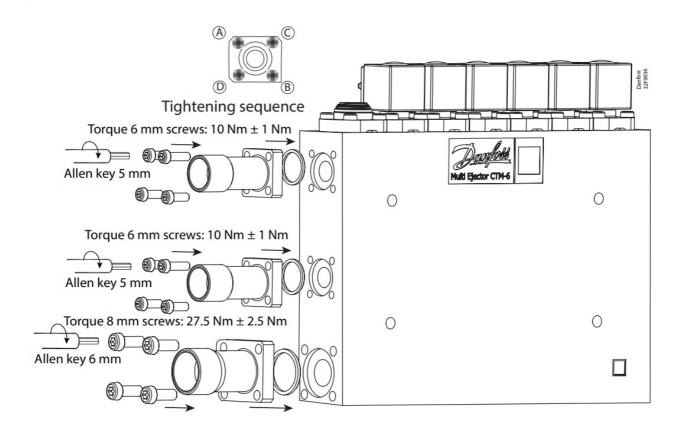
Insulation of Multi Ejector

Requirements for materials used for insulation:

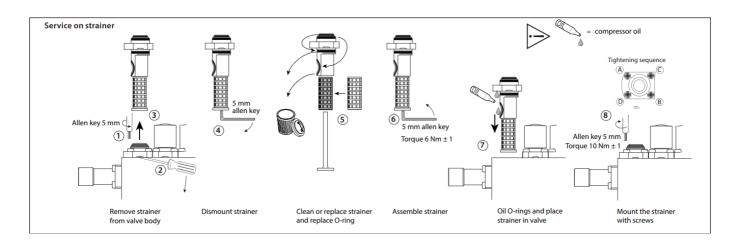
- has to be based on a synthetic rubber base or ex Polyurethane
- water vapor diffusion resistance number μ ≤7000
- thermal conductivity ≤ 0,033 W/(m·K)
- insulations material thickness ≥ 5 mm
- for use at low temperature -10°C or lower
- for use at high temperature +50°C or higher
- glue or adhesive made of Poly chloroprene or it is Silicone type

Do not insulate the coils of Multi Ejector

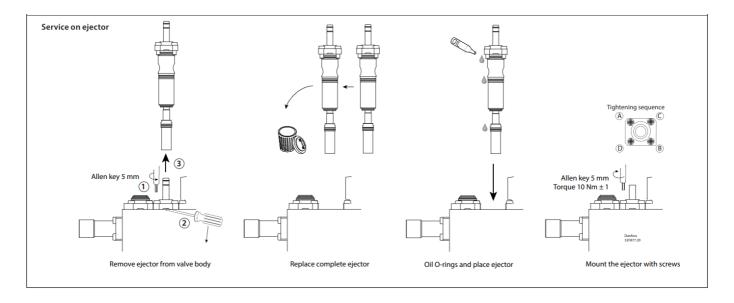
Exchange of connectors



Service on strainer



Service on ejector



FAQ

Q: What controllers are compatible with the CTM Multi Ejector valve?

A: The CTM multi-ejector valve is approved for use only with Danfoss controller types AK-PC 782A/B, AK-CC55, and AK-SM 8xxA.

Q: What is the warning regarding switching on power to the coil?

A: Never switch on power to the coil when it is dismounted from the valve to avoid the risk of damage, injuries, and burns.

Documents / Resources



<u>Danfoss CTM 6 Multi Ejector</u> [pdf] Installation Guide CTM 6, CTM 6 Multi Ejector, Multi Ejector, Ejector

References

• User Manual

Manuals+, Privacy Policy

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