



Technology for Vacuum Systems

Instructions for use



SKF H 25
SKF H 40

Cold trap

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After sales service: Contact your local dealer or call +49 9342 808-193.



➡ Danger! Immediate danger. Death or severe injuries as well as damage to equipment and environment can occur.



⚠ Warning! Possible danger. Severe injuries as well as damage to equipment and environment can occur.



• Caution! Possible danger. Slight injuries as well as damage to equipment and environment can occur.



Note. Disregarding of notes may cause damage to the product.

Safety information!

General information

NOTICE

- ☞ **Read and comply with this manual before installing or operating the equipment.**
 - ☞ Comply with technical data and notes on use and operation.
- If the equipment is damaged, notify the supplier and the carrier in writing within three days; state the item number of the product together with the order number and the supplier's invoice number. Retain all packing material for inspection.
- Do not use the equipment if it is damaged.**

Intended use

NOTICE

Use the cold trap for the intended use only, i. e. for the condensation of vapours in vacuum installations.

- ☞ Suitable coolants: Liquid nitrogen (LN₂) or acetone-dry ice (CO₂) mixtures.

Setting up and installing the cold trap

WARNING

- ☞ Prevent any part of the human body from coming into contact with vacuum or with cryogenic coolant.

CAUTION

- Connect pipes gas tight to the vacuum installation and to the inlet of the vacuum pump.
- Prevent mechanical stress at the connection due to tensile force or vibrations.
- **Attention:** Flexible elements tend to shrink when evacuated.
- Maximum operating pressure: **1.1 bar absolute.**

NOTICE

Fixate the cold trap at a stand mounting.

Check that the system to be evacuated as well as the small flange connections are mechanically stable and that all fittings are secure. Comply with all applicable safety regulations.

Comply with notes on correct vacuum connections, see section "Use and operation".

Comply with all **applicable and relevant safety requirements** (regulations and guidelines), **implement the required actions and adopt suitable safety measures.**

Ambient conditions

NOTICE

Pay attention to the **permissible maximum ambient temperatures** between **+10°C and +40°C** (see "Technical data").

Operating conditions of cold trap SKF H 25 / SKF H 40

WARNING

- ☞ The cold trap SKF H 25 / SKF H 40 is **not suitable** to condensate
- **unstable substances**,
 - **self inflammable** substances,
 - substances which are inflammable without air and
 - **explosive substances**.

Safety during operation

DANGER

- Adopt suitable measures to prevent the release of dangerous, toxic, explosive, corrosive, noxious or polluting fluids when draining condensate.
- Adopt suitable measures to prevent the formation of explosive or flammable mixtures. Oxygen may condensate at the temperature of liquid nitrogen, use inert gas for venting if necessary.

WARNING

- ☞ A great amount of gas can be absorbed on cold surfaces. The gases may expand abruptly in case of warming. This may lead to inadmissible overpressure in the system. Risk of bursting!
Check coolant level in the cold trap during operation at appropriate intervals.

CAUTION

- Check the cold trap for damage. Do not use damaged components.
- Use only **genuine spare parts and accessories**.
Otherwise safety and performance of the equipment might be reduced.
- Comply with all applicable safety measures and requirements when using cryogenic coolants.
Use only transport receptacles intended for coolants.
Wear safety glasses and protective gloves.
- Do not clamp the covers of coolant receptacles. Ensure pressure compensation between coolant receptacle and atmosphere.
- Comply with applicable regulations when disposing of condensates. Take into consideration that the condensate may be polluted.
Take adequate precautions to protect yourself and other people from the effects of dangerous substances (inhaling or skin contact). Wear appropriate safety-clothing and safety glasses.

Check condensate level regularly and drain condensate in time (condensate drain screw).

NOTICE

To the best of our knowledge the cold trap SKF H 25 / SKF H 40 is in compliance with the requirements of the applicable standards and directives.

Technical data

| Cold trap | SKF H 25 / SKF H 40 |
|--|---|
| Connection to vacuum pump | small flange KF DN 25 (SKF H 25) small flange KF DN 40 (SKF H 40) |
| Connection to recipient | small flange KF DN 25 (SKF H 25) small flange KF DN 40 (SKF H 40) |
| Coolant | liquid nitrogen (LN ₂) or acetone-dry ice (CO ₂) mixture |
| Coolant capacity approx. | 1 l |
| Lifetime of coolant (for N ₂ , p < 10 ⁻³ mbar, ambient temperature 20°C) approx. | 12 h |
| Condensate capacity approx. | 0.5 l |
| Maximum permissible range of operation pressure | from vacuum up to 1.1 bar absolute |
| Permissible ambient temperature range | +10°C to +40°C |
| Dimensions (L x W x H) | 166mm x 140mm x 303mm (SKF H 25) 166mm x 140mm x 319mm (SKF H 40) |
| Weight approx. | 3.9 kg (SKF H 25) 4.2 kg (SKF H 40) |

Wetted parts

| Components | Wetted materials |
|------------|------------------|
| Cold trap | stainless steel |
| O-rings | FPM / NBR |

Device parts

| Position | Component |
|----------|---|
| 1 | connection of recipient (small flange KF) |
| 2 | connection of vacuum pump (small flange KF) |
| 3 | condensate drain screw |

SKF H

Use and operation

Installing in a vacuum system



- ➔ Assemble the cold trap at a stand mounting.
- ➔ Connect the cold trap to the vacuum pump and the recipient.
- ⚠ Prevent mechanical stress at the connection due to tensile force or vibrations.
- ➔ Close the condensate drain screw.

During operation

- ➔ Fill coolant into the coolant chamber.
 - ⚠ Check coolant level at appropriate intervals.
 - ➔ Switch on the vacuum pump immediately after filling in the coolant.
 - ⚠ The coolant consumption is increased if the condensate chamber is not evacuated
 - ⚠ The lifetime of the coolant may be restricted due to icing in case of high operating pressures.
 - ➔ Vent the cold trap for de-icing or draining of condensate.
-
- ➔ Drain condensate via the condensate drain screw. Vent the system prior to opening the drain screw!
 - ⚠ Wait until the condensate has liquidised, if necessary.
 - ⚠ Ensure that condensate drain tubing and collecting equipment are chemically resistant against the condensate.
 - ⚠ Remove the cold trap from the vacuum installation to drain the coolant if necessary.

Maintenance and cleaning

- ⚠ The cold trap is maintenance-free.
- ⚠ Clean the cold trap, coolant chamber and the condensate chamber using water or solvent. Ensure compatibility of the wetted parts!
- ⚠ Comply with applicable regulations when disposing of solvents.

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