Please read this manual carefully before installing, commissioning or operating the high-pressure vessel HDB.

1. **INTENDED USE**
   The oil drain vessel HDB is solely designed to collect excess oil in refrigeration systems. The refrigerant/oil mixture can be heated in the vessel to drive off the refrigerant and provide sufficient pressure to drain, which is particularly important for low temperature applications.

2. **SAFETY REQUIREMENTS**
   Any work with refrigeration systems must be carried out by trained personal. All safety regulations concerning prevention of accidents or use of refrigerants must be adhered to.

   Under no circumstances are the indicated temperature- and pressure limitations on the data plate to be exceeded!

   - An internal safety valve or overflow valve DN 20 must be installed to prevent unacceptable pressure increase.
   - When installing a heater element an electrican familiar with the relevant safety regulations must execute all connections. The formation of condensate on the vessel surface must be considered. (Execution of heater element and electrical connections must be at least IP 54). A safety thermostat must be connected.

   Before commissioning make sure all safety equipment has been checked and works properly. Any safety equipment must be retested after disassembly or activation.

   All information for the safe operation and maintenance of this oil drain vessels is based on our experience and is to the best of our knowledge.

3. **TERMS OF WARRANTY**
   To prevent accidents and for the safe operation of the refrigerant plant no modifications or alterations may be carried out to the oil drain vessel without written approval by TH. WITT Kältemaschinenfabrik GmbH.

   Our liability or warranty is excluded, if:
   - The instructions in this manual are not adhered to
   - The oil drain vessel and its equipment was operated incorrectly or the handling was not in accordance with the mentioned procedures
   - The vessel is used for purposes other than that for which it was intended to
   - Safety devices were not used or disconnected
   - There have been modifications made without written approval
   - During installation or operation the safety requirements were not adhered to

4. **SCOPE OF DELIVERY**
   The HDB can be delivered in two executions:
   - **E** = with threaded connection G1/2" for installation of a 200 Watt heater element
   - **G** = with two DN 20 for hot gas connections (minimum order of 5 pcs)

   The standard scope of delivery includes:
   - One oil drainage valve EA 10 GB
   - One quick acting valve SSV 6
   - Two support brackets including required fastening bolts (packed loose)
   - One gasket 10/18x2
5. Techn. Data

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<th>Content [l]</th>
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<th>c [mm]</th>
<th>h1 [mm]</th>
<th>h2 [mm]</th>
<th>h3 [mm]</th>
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</table>

Execution G for hot gas connection has a surface of the heat pipe of:
- HDB 2 to HDB 6 0,1 m²

Admissible pressure range
- 25 bar between +100°C and –10°C
- 18,75 bar between –10°C and –60°C

Test pressure: 38,5 bar

6. DESCRIPTION OF OPERATION

The HDB serves as a collector for refrigeration oil that settles in the surge drum. (Please refer to the drawing on the right).

To drain the oil: Valve 1(EA 40 or EA 50) and 3 (EA 20) must be closed.

The heat input of the surrounding area will increase the pressure in the HDB enabling the oil to be drained through oil drain valve 6 and quick acting valve 7.

To speed up the process a heater element or hot gas can be connected to the oil drain vessel.

After the oil has been drained the stop valves 1 and 3 must be opened.
7. SHIPPING AND STORAGE
All openings (connections, etc.) are covered with yellow protection caps to prevent the intake of moisture or dirt. Storage shall be dry and protected from any dirt or debris.
If storage is required for more than two months or shipping overseas, the oil drain vessel shall be filled with an inert gas charge to prevent corrosion.

Use only the mounting brackets to lift up the pressure vessel.

8. INSTALLATION
The HDB is intended for indoor installation, only.

⚠️ The connection to the surge drum must be at the lowest possible point on the surge drum. Under no circumstances shall the branch connection protrude into the surge drum!

Allow sufficient space for inspection and servicing. Provide easy access to the stop valves and the quick acting valve.

⚠️ Make sure all interconnecting pipework is stress free when installation the HDB.

近百 When a heater element shall be fitted use a heat conductivity paste to improve the heat transfer.

9. COMMISSIONING
Commissioning and start up of the HDB oil drain vessel is not permitted until a safety analysis of the entire refrigeration installation has been carried out.

On completing installation of the oil drain vessel, the refrigerant plant must be pressure tested and documentation relating to the testing kept in a safe place.

Please make sure that
- All piping has been connected according to the drawings
- The required safety devices are installed and tested

10. OPERATION
Refrigerant oil can be drained at regular intervals through stop valve 6 and quick acting valve 7 (see fig. 2).
Before that, the stop valves 1 and 3 need to be closed and the content in the HDB shall be warmed up.

The frequency of oil draining depends on the kind of compressor and refrigerant plant and needs to be determined within the first month by the operating personal.

⚠️ Please make sure before draining any oil that the safety valve/ overflow valve 2 (see fig. 2) is fully functional.

11. SERVICING AND INSPECTION
A visual inspection of the HDB oil drain vessel shall be carried out at regular intervals according to EN 378-2. (This includes visual testing with regard to corrosion)

The testing of the safety valve/overflow valve must be carried out at regular intervals according to the appropriate regulations