It's all about connections

Replacement of Compressor

- 3400 Cooling Module

- **This instruction does not in any way suspend local rules and regulation**

Refrigerant: R410A – 9,9 Kg

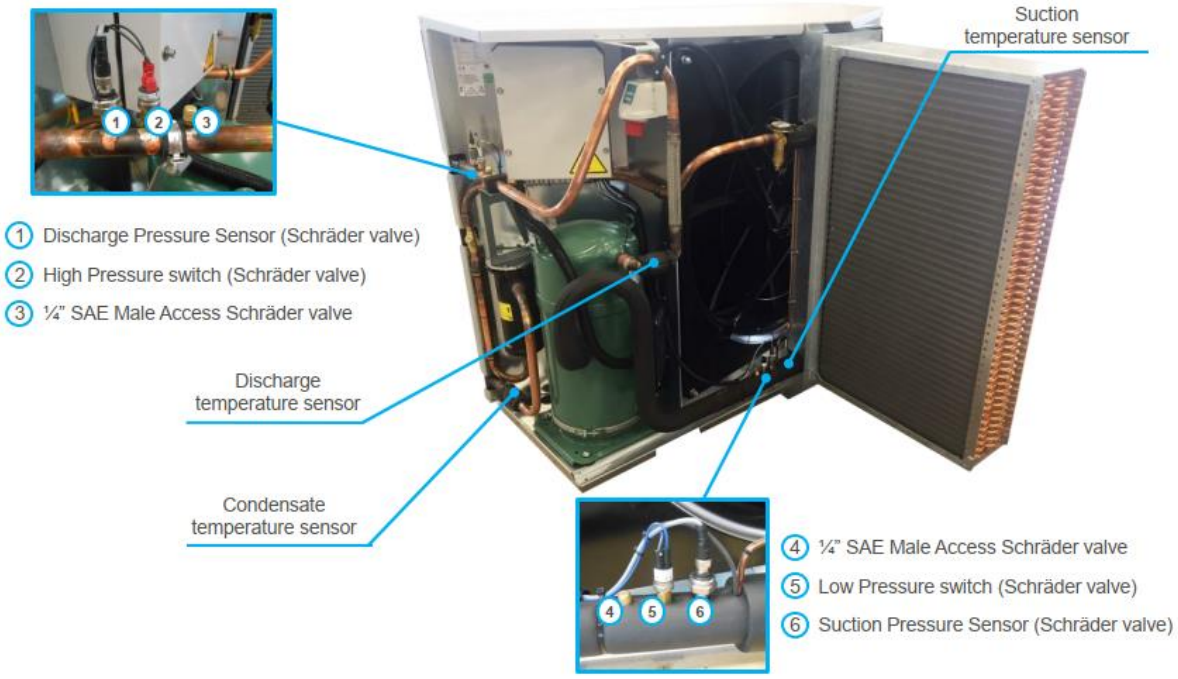
Needed parts

1 pcs. Compressor part no. AM4009

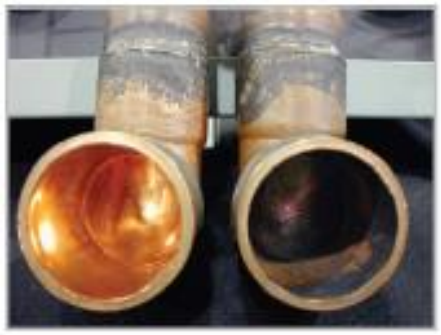
2 pcs. Drier Filter Core part no. AM4036

+ tools & consumables (soldering rods, fittings)

No.	Description
00.	**Compressor failure troubleshooting** Before compressor replacements, the cooling circuit should be troubleshot for the root cause to the compressor breakdown. Main reasons for compressor failure could be: - Refrigerant flood back - Flooded starts - Liquid slugging - Overheating - Lack of lubrication Other causes could be moisture, acids, electrics, dirt (debris, particles, etc.). Therefore, a fully functioning condenser fan, main blower, crank case heater, expansion valve and an evaporator that is kept in a clean state is vital for long term compressor reliability. **Flushing** When evacuating a cooling module from refrigerant and removing the compressor, including the most part of the oil quantity, flushing is not required. Instead, it is highly recommended to install a set of fresh drier filter cores.

01.	Ensure that remaining refrigerant has been recovered from the cooling module, see pictures for service access valve details. Remove cartridges in schräder valves, before connection of service manometer. 
02.	Disconnect cables from compressor.
03.	Remove discharge temperature sensor – keep for re-installation.
04.	Remove wire ties on suction line, separate wires from suction line.
05.	Remove crank case heating element – keep for re-installation.
06.	Remove suction line insulation, keep for re-installation.

07.	Cut discharge and suction copper tubes with a tube-cutter - avoid shavings inside the tubing. See below for recommended location for tube cuts (red arrows). Remove bolts that hold the compressor – keep for re-installation. Lift out the compressor. Braze off the remaining tubes on the compressor – keep for re-installation. 
08.	Mount new compressor. Use new vibration dampers that were delivered with the compressor (see in the electrical connection box). Tighten bolts firmly.
09.	Clean and prepare the copper tubes for re-installation on the compressor. Check for alignment to the existing copper tubes.

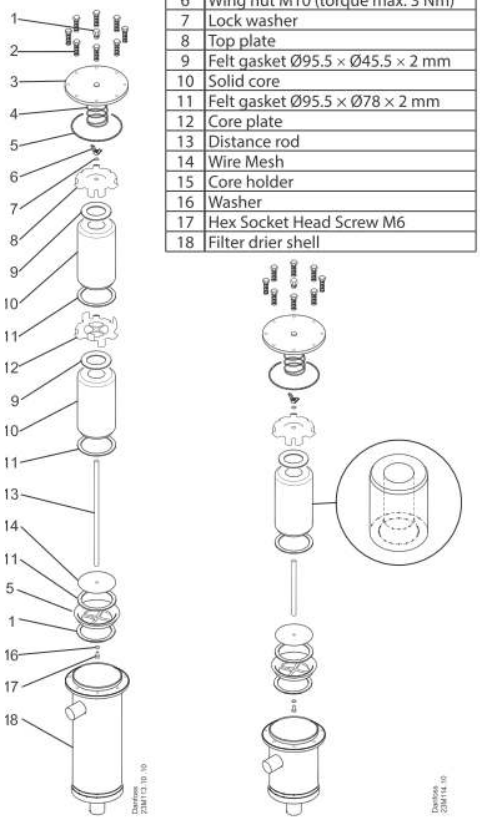
10.	**Brazing procedure:** • Connect nitrogen at the pressure side (top) and set purge gas to approx. 3l/min. • Wrap wet rags on the suction and discharge tube • Copper/Copper joint: Phosphor brazing • Brazing is carried out, with **nitrogen purging.**  **Why purging with dry nitrogen?** Using dry nitrogen purge gas correctly during the brazing process, copper oxidation (dark discoloration) inside the tubes can be avoided. Copper oxide formation can reduce the lifetime of the drier filter and compressor oil significantly. The photo to the right shows examples of tubes, where purge gas was used correct and incorrect.
11.	**Leakage test:** After the brazing: • Mount cartridges in schräder valves • Mount tube supports. • Mount capillary tube on the suction line. • Evacuate the module until the moisture is out • Fill with nitrogen to 10 bars and search for leakages at brazing's and valves. Wait for some hours. • If no leaks, empty the module from nitrogen.

12. **Replace drier core elements:**

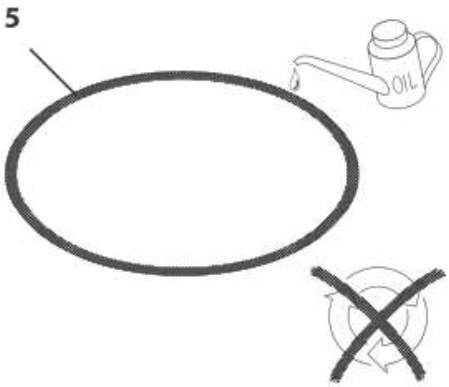
See below illustration for assembly. Do not re-use gasket.

Design

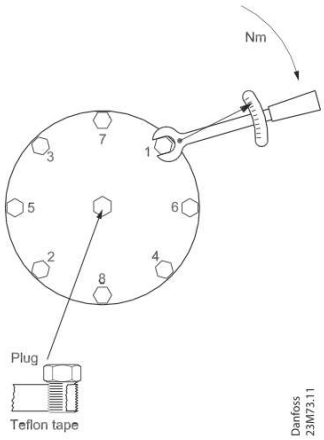
Pos.	Description
1	Plug 1/4 in. NPT
2	Top cover bolts M8 × 35
3	Top cover
4	Spring
5	Top cover gasket Ø121.8 × Ø113.6 × 0.8mm
6	Wing nut M10 (torque max. 3 Nm)
7	Lock washer
8	Top plate
9	Felt gasket Ø95.5 × Ø45.5 × 2 mm
10	Solid core
11	Felt gasket Ø95.5 × Ø78 × 2 mm
12	Core plate
13	Distance rod
14	Wire Mesh
15	Core holder
16	Washer
17	Hex Socket Head Screw M6
18	Filter drier shell



Gasket



How to tighten the bolts



Step 1	 Fingertighten all bolts
Step 2	3 Nm
Step 3	10 Nm
Step 4	20 Nm
Step 5*	35 Nm

* Repeat until complete tightness has been reached.

13.	**Charging refrigerant:** • Evacuate to below 5 mbar (at 20°C). • After this fill the module with 9,9 kg. of R410A.
14.	**Re-install remaining components:** • Suction line insulation. Use **Armaflex 520** adhesive or similar to glue the insulation • Crank case heating element • Discharge temperature sensor • Compressor cables – **OBSERVE CORRECT PHASE SEQUENCE** • Attach the suction temperature cable with cable ties. See below photo for reference