

Assembly line procedure

Compressor storage

Store the compressor not exposed to rain, corrosive or flammable atmosphere between -35°C and 70°C when charged with nitrogen.

Compressor holding charge

Each compressor is shipped with a nominal dry nitrogen holding charge between 0.4 and 0.7 bar and is sealed with elastomer plugs.

- Respect the following sequence:
 - Remove the nitrogen holding charge via the suction schrader valve to avoid an oil mist blow out.

- Remove the suction plug first and the discharge plug afterwards to avoid discharge check valve gets stuck in open position. An opened compressor must not be exposed to air for more than 20 minutes to avoid moisture is captured by the PVE oil.

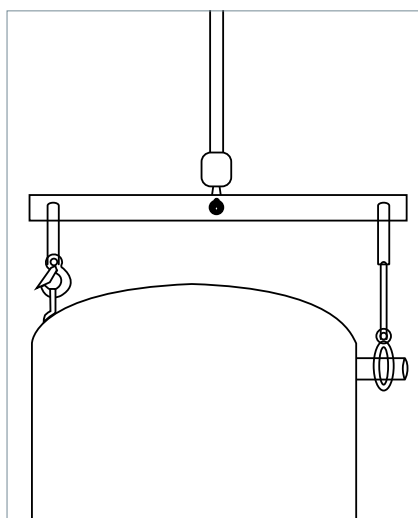
Handling

Compressor handling

LLZ Compressors are provided with a lifting lug. This lug should always be used to lift the compressor.

Once the compressor is installed, the lifting lug should never be used to lift the complete

installation. The compressor must be handled with caution in the vertical position, with a maximum inclination of 15° from vertical.



Piping assembly

Good practices for piping assembly is a pre-requisite to ensure compressor service life.

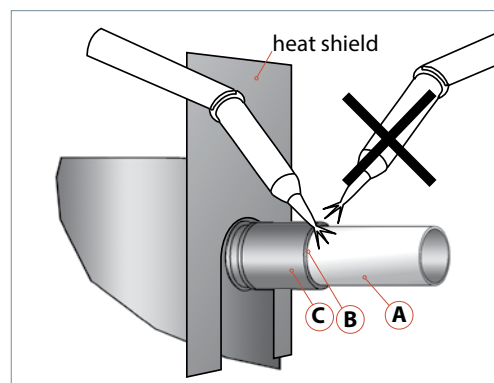
System cleanliness

Circuit contamination possible cause:	Requirement:
Brazing and welding oxides	During brazing, flow nitrogen through the system
Filings and particles from the removal of burrs in pipe-work	Remove any particles and burrs generated by tube cutting and hole drilling
Moisture and air	Use only clean and dehydrated refrigeration grade copper tubing Opened compressor must not be exposed to air more than 20 minutes to avoid moisture captured by POE oil

Brazing procedure:

- Brazing operations must be performed by qualified personnel.
- Make sure that no electrical wiring is connected to the compressor.
- To prevent compressor shell and electrical box overheating, use a heat shield and/or a heat-absorbent compound.
- Clean up connections with degreasing agent
- Flow nitrogen through the compressor.
- Use flux in paste or flux coated brazing rod.

- Use brazing rod with a minimum of 5% silver content.
- It is recommended to use double-tipped torch using acetylene to ensure a uniform heating of connection.
- For discharge connections brazing time should be less than 2 minutes to avoid NRVI damages if any.
- To enhance the resistance to rust, a varnish on the connection is recommended.



R Before eventual un-brazing of the compressor or any system component, the refrigerant charge must be removed.

System pressure test and leak detection

- !** The compressor has been strength tested and leak proof tested (<3g/year) at the factory. For system tests:
- Always use an inert gas such as Nitrogen or Helium.

- Pressurize the system on HP side first then LP side.
- Do not exceed the following pressures:

Maximum compressor test pressures	
Maximum compressor test pressure high side (HP)	31.1 bar (g)
Maximum compressor test pressure low side (LP)	31.1 bar (g)

Assembly line procedure

GENERAL INFORMATION

Vacuum evacuation and moisture removal

Requirements:

- Never use the compressor to evacuate the system.
- Connect a vacuum pump to both the LP and HP sides.
- Evacuate the system to a pressure of 500 $\mu\text{m Hg}$ (0.67 mbar) absolute.

Recommendations:

- Energized heaters improve moisture removal.
- Alternate vacuum phases and break vacuum with Nitrogen to improve moisture removal.

For more detailed information see "Vacuum pump-down and dehydration procedure" TI-026-0302.

PRODUCT INFORMATION

Refrigerant charging



Initial charge:

- For the initial charge, the compressor must not run.
- Charge refrigerant as close as possible to the nominal system charge.
- This initial charging operation must be done in liquid phase between the condenser outlet and the filter drier.

If needed, a complement of charge can be done:

- In liquid phase while compressor is running by slowly throttling liquid in.
- On the low pressure side, as far away as possible from the compressor suction connection.
- Never bypass safety low pressure switch.

For more detailed information see "Recommended refrigerant system charging practice" FRCC.EN.050.

SYSTEM DESIGN

Dielectric strength and insulation resistance tests

The tests are performed on each compressor at the factory between each phase and ground.

- Dielectric strength test is done with a high potential voltage (hi-pot) of $2U_n + 1000\text{V AC}$ at least, and leakage current must be less than 5 mA. Additional tests of this type are not recommended as it may reduce motor lifetime. Nevertheless, if such a test is necessary, it must be performed at a lower voltage.

- Insulation resistance is measured with a 500 V DC megohm tester and must be higher than 1 megohm.

- The presence of refrigerant around the motor windings will result in lower resistance values to ground and higher leakage current readings. Such readings do not indicate a faulty compressor. To prevent this, the system can be first operated briefly to distribute refrigerant.



Do not use a megohm meter nor apply power to the compressor while it is under vacuum as this may cause internal damage.

INTEGRATION INTO SYSTEM

ORDERING INFORMATION