

INSTALLATION INSTRUCTIONS

Several important points are to be observed when setting up, installing and operating the pumps: Pump revolutions (rpm) should be kept as low as possible; the higher the revolutions the greater the danger of cavitation (gas formation).

An input pressure of at least 13.1 ft.-head (4 metres of liquid column) above the pump should be present. In addition, the inlet connection should be as short as possible, without any pressure reducing fittings (e.g. filter, kick-back valves, elbows, etc) and its cross section at least 2x larger than the diameter of the pump suction port.

To avoid heat influx, the intake line should be covered with good insulation material.

The intake line as well as the outlet line should be elastic to decouple the system from mechanical and hydraulic pump vibrations.

The pump should be run cold before the process operation. To do this, a T-piece should be fitted on the pump outlet port to enable the CO₂ to circulate back to the tank during a cold running phase of 30

sec. to 3 min. (depending on the conditions) until the pump head has the same medium temperature as the tank.

The discharge line diameter should be as narrow as possible to avoid parts of gas flowing back into the pump. The pipe diameter at the T-piece should be narrowed to slow the speed of the cooling circulation back to the tank to approximately 66-98 ft./sec (20-30 m/sec).

If the pump (or drive) is completely covered with ice after a long stoppage, it is not to be put into operation until the drive has thawed. Starting the pump where ice or frozen oil are present will cause major damage to the drive. Motor oil of SAE 0W 40 quality is to be used for the pump drive as this oil has better lubricating properties at low temperatures. The unloader valves in the Speck product range do not offer suitable protection for the pumps. Safety valves with special seals must be used.

The attached data sheet gives further information on available pump models for CO₂.

Finally, remember that high pressure operation in a pump system has many advantages. But, if it is used carelessly and without regard to its potential hazard, it can cause serious injury.

IMPORTANT OPERATING CONDITIONS

Failure to comply with any of these conditions invalidates the warranty.

1. Prior to initial operation, add oil to the crankcase so that oil level is between the two lines on the oil dipstick. **DO NOT OVERFILL.**

When pumping CO₂ at temperatures under 18 °F (0 °C) use Oil SAE 0W-40.

For Food Grade applications, use Giant oil (01157).

Crankcase oil should be changed after the first 50 hours of operation, then at regular intervals of 500 hours or less depending on operating conditions.

2. Pump operation must not exceed rated pressure, volume, or RPM. A pressure relief device must be installed in the discharge of the system.

3. Acids, alkalines, or abrasive fluids cannot be pumped unless approval in writing is obtained before operation from Eco₂ Blast.