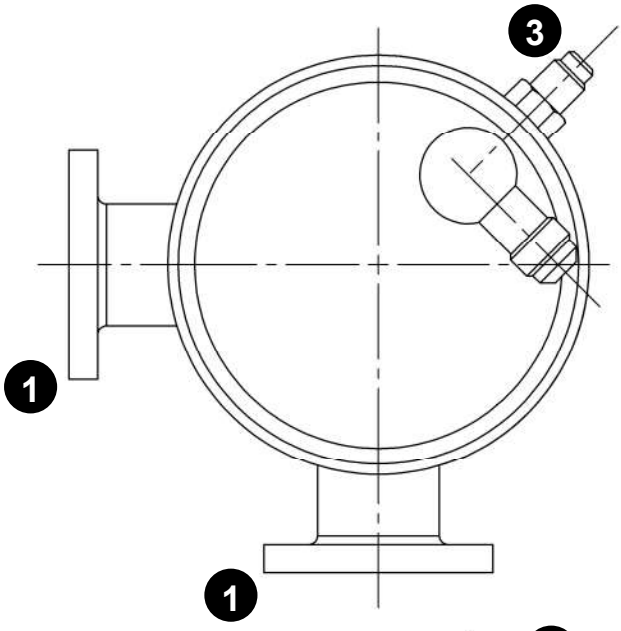
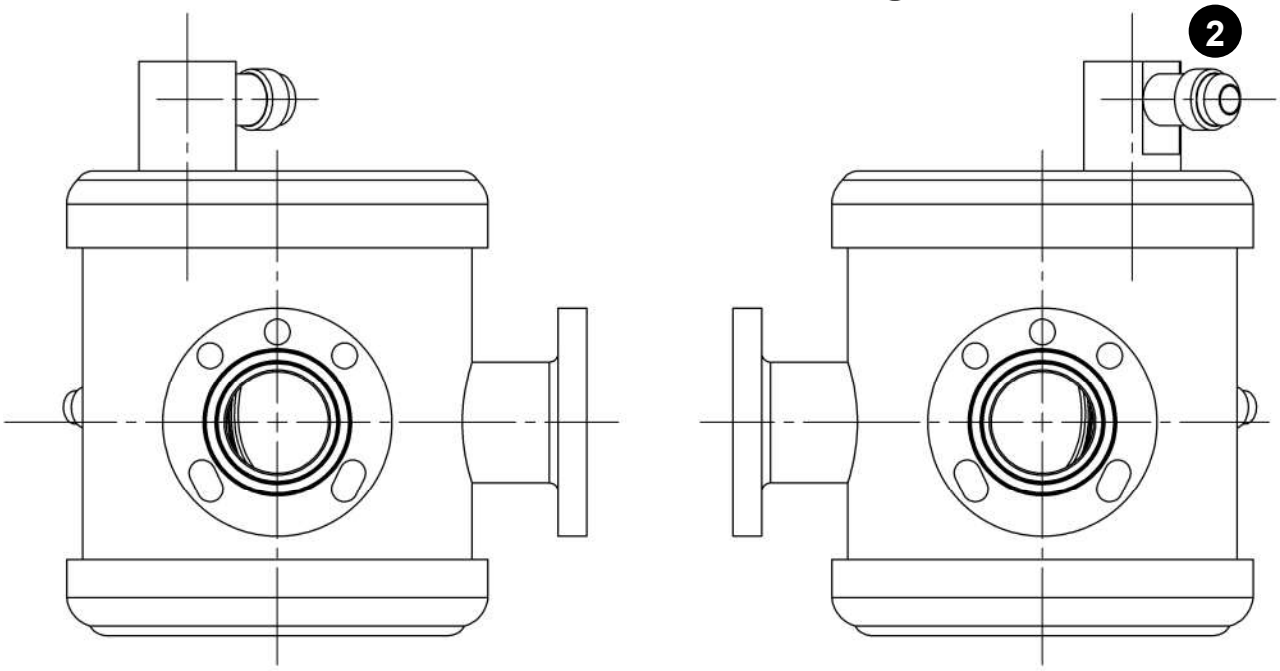
English

Key
1. Flange Connections
2. Oil Inlet Connection
3. Equalisation Connection





Product Description

The function of a Mechanical Oil Level Regulator is to control the oil level in the compressor crankcase, protecting the compressor from damage.

Mechanical oil level regulators are used in Low Pressure Oil Management Systems. They are designed for use with reciprocating compressors and are not recommended for scroll compressors.

All models are suitable for HCFC and HFC refrigerants, along with their associated oils.

Operations & Adaptor Kits

The oil level regulator controls oil levels in the compressor crankcase by means of a float-operated valve. Adjustable regulators include a ratchet adjustment mechanism to raise or lower the oil level set point. The exclusive design eliminates the need to shut down the system in order to adjust the regulator. A number of Henry oil level regulators are fitted with an equalisation connection (S-9130, S-9530E & S-9510E), this enables the oil level between several compressors to be balanced.

Oil level regulator flanges are designed to attach directly to the sight glass housing on the compressor crankcases. Adaptor kits are available for those compressors which have an unusual sight glass configuration, refer to the Henry catalogue for options. The sight glass, having been removed from the compressor, or one supplied with an adaptor kit, bolts to the second regulator flange for visual observation of the oil level.

Note: Failure to leak test after final installation of an oil level regulator could result in a loss of refrigerant.

Vibration

It is the responsibility of each end user to ensure that each oil level regulator installation is not subjected to excessive vibration. In some circumstances, where vibration levels are a concern, the oil level regulator will be given proper support / isolation.

Warnings

1. ONLY suitably qualified or experienced personnel should carry out installation.
2. The system MUST be de-pressurised before attempting any work. FAILURE TO DO SO MAY RESULT IN BODILY INJURY
3. If fitting to an existing installation, first, drain the compressor crankcase so that no oil is visible through the sight glass.
4. Protect hands and face from contacting the oil, which may contain harmful acids.
5. Ensure that, following installation of the oil level regulator, the compressor crankcase is filled to correct level before restart of the system.
6. Do not leave the system unattended until the regulator level control is checked and is working correctly.

Operating Conditions

All regulators are suitable for HCFC, HFC refrigerants and oils that are non-corrosive to brass, steel, stainless steel and neoprene.

Part Number	S-9530	S-9530E	S-9510	S-9510E	S-9510V	S-9130
Oil Level Set	Set at 1/2 Sight Glass		Fixed at 1/2 Sight Glass			Set at 1/2 Sight Glass
Pressure Differential	0.35 – 6.2 Barg		0.35 – 2.1 Barg			0.35 – 6.2 Barg
Flange Connection	3-bolt 1.7/8" PCD & 4-bolt 50mm PCD combination fit					
Oil Supply Connection	3/8" Flare					
Equalisation	No	Yes	No	Yes	No	Yes
Equalisation Connection	n/a	1/4" Flare	n/a	1/4" Flare	n/a	3/8" Flare
Max. Working Pressure	31 Barg					
Max. Working Temperature	130°C					
Min. Working Temperature	0°C					

Installation

1. Before beginning installation, ensure that the compressor sight glass configuration will accept the oil level regulator flange. Adaptor kits are available from Henry Technologies. Refer to the Henry product catalogue for options.

2. Remove oil sight glass, O-ring, and bolts from compressor (note warning number 3). Retain sight glass and bolts for re-assembly. Discard the used O-ring. The removed sight glass will be fitted to the second flanged port on the regulator (see Figure 1).

3. If the compressor has a screwed or non-standard connection, an adaptor kit can be provided. This can be supplied, together with a sight glass for the regulator's second flange port, in an appropriate adaptor kit.

4. If required, fit Henry adaptor kit to sight glass port on compressor.

5. Insert a new O-ring into the groove, of whichever oil regulator flange will be attached to the compressor / adaptor flange. A light lubrication of refrigerant oil on the O-ring will aid sealing (see Figure 2).

6. Assemble oil level regulator to compressor / adaptor flange using existing bolts and sight glass. Tighten to approximately 7 Nm (5 ft-lbs) (Figure 2). **Important: The regulator must be level to ensure a correct oil reading.**

7. For second flange sight glass fitting instructions, refer to the following section.

Sight Glass Installation To Second Flange

1. To assist with installation of the oil level regulator, an adaptor kit is supplied (part 3-033-201-HPT). This kit contains a standard quad ring, 2 off standard O-rings, bolts, and nuts.

2. Insert one standard O-ring into the groove of the oil regulator's second flange. A light lubrication of refrigerant oil on the O-ring will aid sealing. See Figure 3. (Note: insert a quad ring instead of the O-ring for a 3 bolt sight glass with a groove – refer to point 5 below).

3. Determine which sight glass you plan to fit:

    a. The sight glass supplied by Henry Technologies has a smooth face on both sides; it assembles directly on to the second flange. Fit the sight glass with the ridged side of the glass towards the flange. This is the recommended option for a Bitzer 4 bolt sight glass with a non-standard O-ring groove (see Figure 3).

    b. Three or four bolt flanged sight glasses fitted to some compressors may have O-ring grooves on the ridged side of their sight glass. Fit the appropriate O-ring, if supplied in the adaptor kit, into the groove of the sight glass. Again, a light lubrication of refrigerant oil on the O-ring will aid sealing.

4. For grooved 3 bolt sight glasses, position the standard quad ring into the oil regulator flange groove. A light lubrication of refrigerant oil on the quad ring will aid sealing (see Figure 4).

5. Position the sight glass over the quad ring and align the bolt holes.

6. Fit the bolts and nuts provided in the adaptor kit. Tighten to approximately 7 Nm

(5 ft-lbs). See Figure 4.

Final Connections

1. The oil supply line from the reservoir is connected to the regulator inlet oil 3/8" flare. This connection is located on the top of the regulator.

2. If an equalisation connection is necessary, install an oil equalisation line between regulators, using S-9130, S-9530E (adjustable regulator) or S-9510E (fixed level regulator) models.

3. The equalisation connection is a 1/4" flare (3/8" flare on S-9130 model). This connection is located on the side shell of the regulator, below the main 3/8" connection. Otherwise leave this connection sealed. **To avoid injury, do not remove the equalisation seal cap under pressure.**

Setting Of The Adjustable Oil Level Regulators

The adjustable oil level regulator is factory set to match an oil level in the compressor crankcase of approximately 1/2 sight glass at mid pressure. Adjustment between approximately 1/4 and 3/4 sight glass is possible with this unit. The oil level regulator may be adjusted while under system pressure. Setting procedure as follows:

Adjustable oil level regulators are designed to feed oil, at levels between 1/4 and 3/4 sight glass levels at various specified pressure differentials. The regulator may adjust to beyond this range due to the actual oil pressure. Do not operate **ANY** regulator at or below 1/4 sight glass level, when using an adaptor with an inside diameter smaller than the regulator flange port.

1. Remove the brass dust cap from on top of adjusting mechanism.

2. To increase oil level, rotate the adjustment mechanism counter clockwise.

3. To decrease oil level, rotate the adjustment mechanism clockwise.

4. From top level to bottom level set, there are approximately 9 complete turns of the mechanism.

5. For adjustment, use a suitable screwdriver or 1/4" spanner. To avoid damage, do not apply excessive force to the mechanism (Henry Technologies does not recommend the use of power tools for adjustment)

6. After completion of oil level adjustment, replace and secure the brass dust cap.


OIL LEVEL
LOWER - RAISE

1


OIL LEVEL
LOWER - RAISE

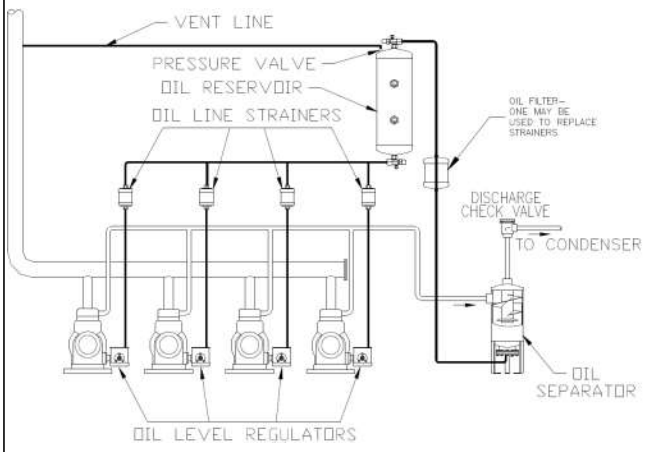
2 - 4


OIL LEVEL
LOWER - RAISE

5


OIL LEVEL
LOWER - RAISE

5



Note:
A positive pressure is required to ensure an adequate oil supply to the regulator. The oil level in all regulators is calibrated at 0.35 Bar positive pressure. We recommend the use of our reservoir pressure valve no. STH-9104 set at 0.35, 1.4 or 2.4 Bar to maintain this positive pressure.

For gravity oil feed systems. (No pressure valve), the oil reservoir must be mounted a minimum of 1.8 metres above the oil level regulator.

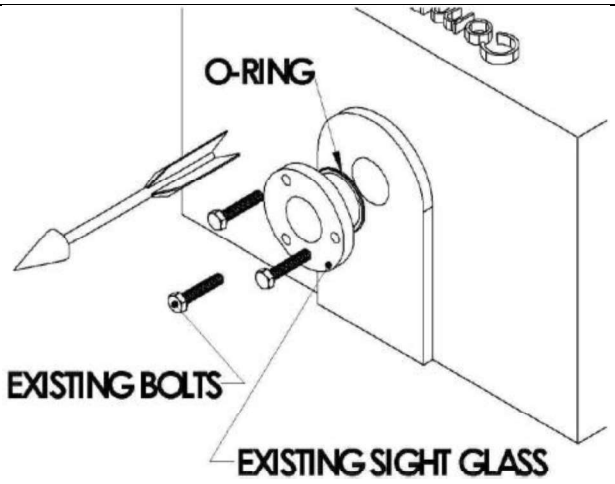


Figure 1: Remove Sight Glass

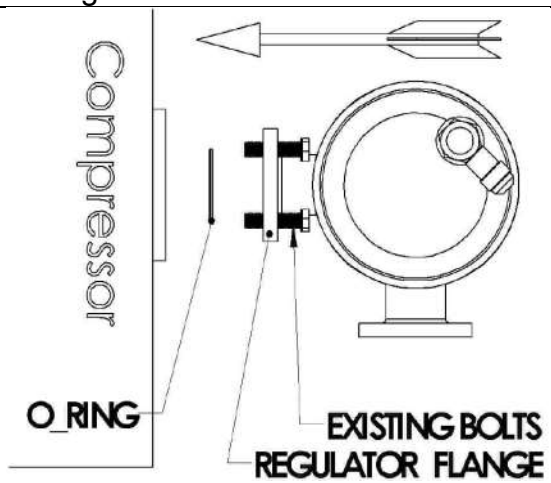


Figure 2: Fit Regulator

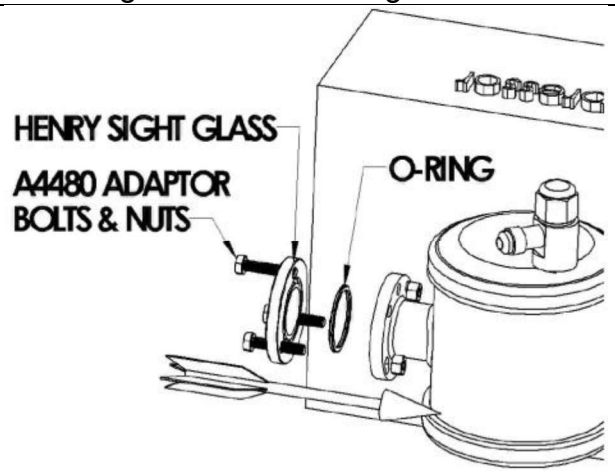


Figure 3: Henry Sight Glass

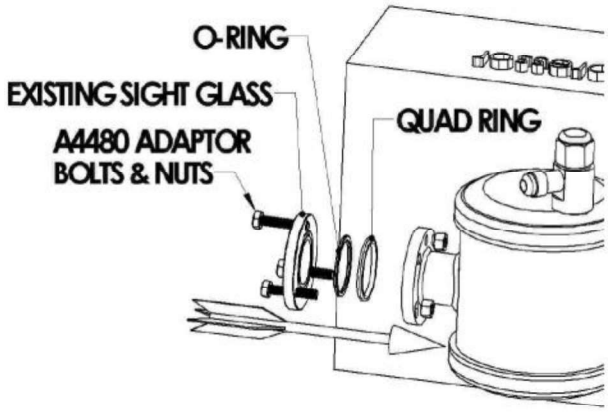


Figure 4: Compressor 3-bolt Sight Glass

Notes

IF IN DOUBT, CONTACT HENRY TECHNOLOGIES

For local contact details, select the “Contact Us” option at;

www.henry-group.net

DECLARATION OF CONFORMITY

To view and download the Declaration of Conformity for your products, visit:
www.henry-group.net/technical/united-kingdom
or scan the QR Code below:

Select **Products Manufactured in China** and use the search facility to locate, open and download your DoC.

Both product Part Number and Date Code should be entered to locate your specific DoC. Alternatively; a single field can be completed to search all DoCs applicable to that Part Number or Date Code.