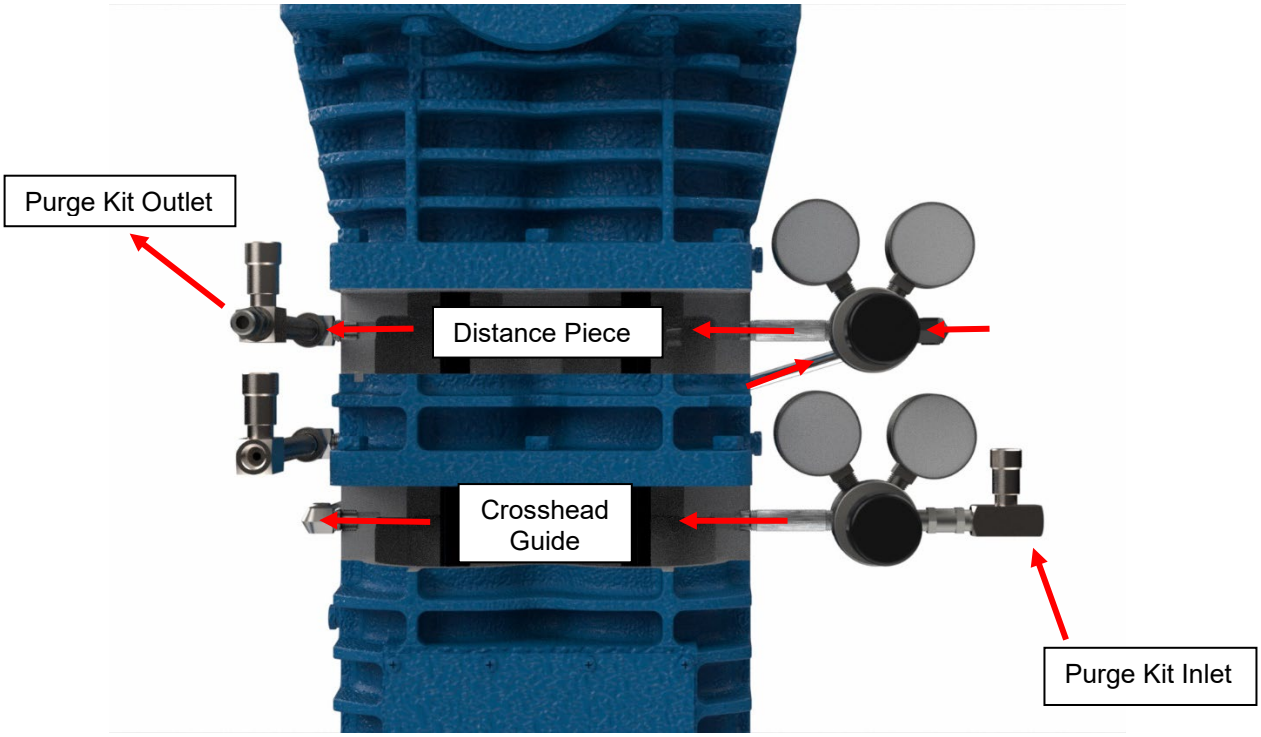
Compressor Purge Kit

Compressor purge kits are used to pressurize or purge the compressors distance piece. The distance piece is designed to act as a process gas leakage control device. The area between the three sets of packing can be plugged, purged, pressurized, or vented using a purge kit or other devices.

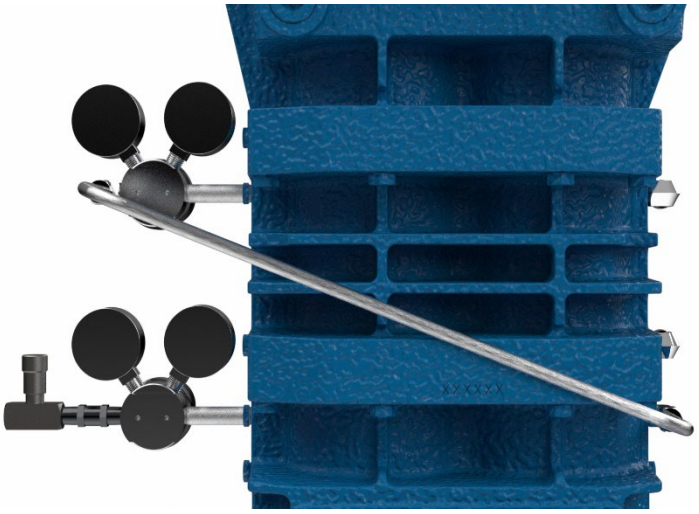
HDL643 Compressor with Purge Kit

Purging
When handling a potential hazardous gas, leakage containment and control become a high priority to ensure safety for operators and the environment. Any process gas that may leak past the first set of packing can be carried away by use of the purge kit and a purge gas. The purge gas is supplied to the kit at a pressure higher than atmospheric pressure. The purge gas will enter the crosshead guide through a regulator and then travel through a second regulator to the distance piece. The gas pressure will be reduced to below suction pressure, and slightly below the crosshead guide pressure. This method mixes the purge gas with the process gas. The gas mixture will exit the distance piece at the purge kit outlet where it can be properly disposed of.

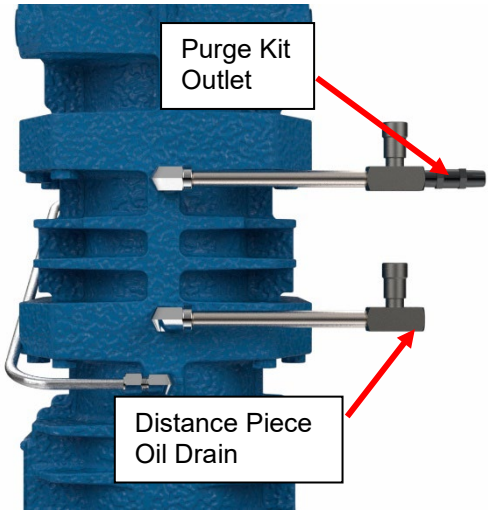
Pressurizing/Padding
The same arrangement can be used when handling hazardous gases to pressurize the distance piece. Pressurizing prevents the process gas from leaking into the crankcase. A small amount of inert gas may leak into the compressor cylinder and crankcase, so a supply of gas will be needed.



Purge Kit Flow Path – Front View



Purge Kit – Rear View



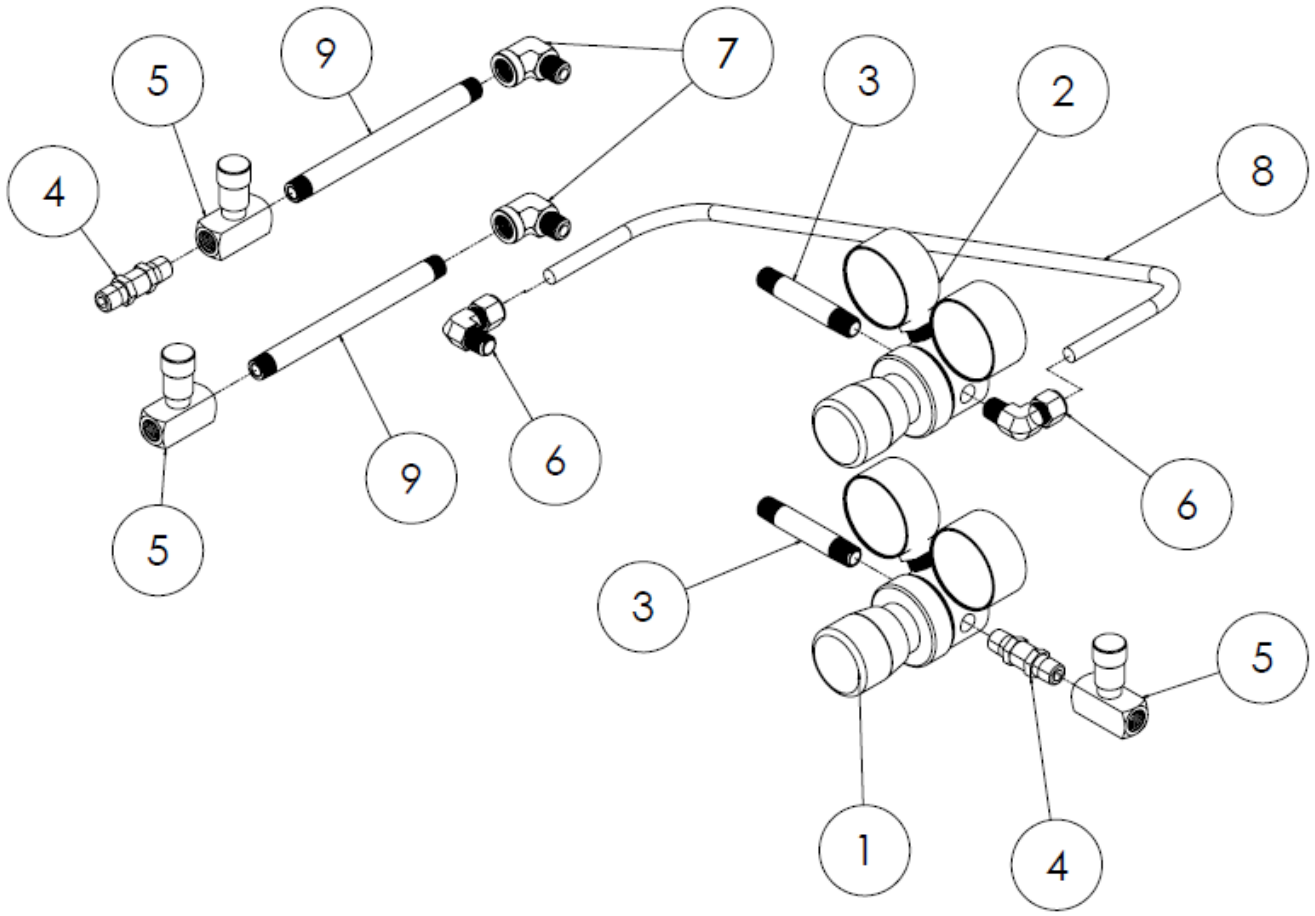
Purge Kit – Side View

(The model shown represents a purge kit for the HDL643 compressor model. Other compressor models may have purge kits with slightly different orientations.)

Purge Kit Installation Procedure

*All connections require pipe thread tape. Reference the figure on following page for item numbers.

1. On the flywheel side of the compressor, remove both ¼" plugs from the distance piece, and the top plug from the crosshead guide.
2. On the oil pump side of the compressor, remove the top plug from the distance piece and the top plug from the crosshead guide.
3. Install the short pipe nipples (Item 3) onto the compressor on purge inlet side (oil pump side of compressor). Torque until tight.
4. Install the upper regulator (Item 2) onto the upper short pipe nipple (Item 3). Fully torque to final vertical position. Lower rated pressure gauge on the regulator should be connected to the short pipe nipple (Item 3). Note: You must install upper regulator (Item 2) before installing lower regulator (Item 1).
5. Install lower regulator (Item1) onto lower short pipe nipple (Item 3) and fully torque into the vertical position. Lower rated pressure gauge on the regulator (Item 1) must be connected to the short pipe nipple (Item 3).
6. Assemble needle valve (Item 5) to the check valve (Item 4) for the purge inlet. Assemble the check valve (Item 4) and needle valve (Item 5) to the lower pressure regulator (Item 1), ensuring that the needle valve (Item 5) and check valve (Item 4) direction of flow arrows found on items point in the purge system direction of flow (into the pressure regulator) when assembling to the lower pressure regulator (Item 1). Needle valve (Item 5) adjustment knob should be vertical.
7. Install tube elbow (Item 6) to the upper pressure regulator (Item 2), torquing until tight and the tube connection is facing toward the back of the regulator horizontally.
8. On the flywheel side of the compressor, install tube elbow (Item 6) in the lowest open port. Ensure that the two tube elbows (Item 6) are horizontal and facing the backside of pressure regulators (Items 1 & 2).
9. On the flywheel side of the compressor, install NPT male to female elbows (Item 7) in two upper ports on the distance piece. The female port on the elbows (Item 7) should face towards the front side of the pressure regulators (Items 1 & 2). Lower elbow (Item 7) will be the distance piece drain port and the upper elbow (Item 7) will be the compressor purge system exit.
10. Assemble the long pipe nipples (Item 9) to the needle valves (Item 5), torquing until tight. Assemble long pipe nipples (Item 9) to NPT elbows (Item 7). Ensure the direction of flow arrows found on the needle valves (Item 5) point away from the compressor. Needle valve (Item 5) adjustment knobs should be vertical.
11. Install the check valve (Item 4) to the needle valve (Item 5) at the purge system outlet (upper piping assembly), torquing until tight. Ensure the direction of flow arrow found on the check valve (Item 4) points away from the compressor.
12. Bend tubing (Item 8) to fit and install the tubing (Item 8) by attaching each end to one of the tube elbows (Item 6).
13. Aerostat test the purge kit at 100 PSI shop air checking for any leaks in the purge kit. If a leak is present, retape the connection and torque, reassembling using the previous instructions.



ITEM NO.	DESCRIPTION	QTY.
1	Pressure Regulator Valve 0-50 PSIG	1
2	Pressure Regulator Valve 0-25 PSIG	1
3	Pipe Nipple, Short, SS	2
4	Check Valve, One Way	2
5	Inlet Valve W/ Knob	3
6	Elbow, NPT to Tube	2
7	Elbow, Male to Female	2
8	Tube, Bulk	1
9	Pipe Nipple, Long, SS	2

Purge or Pressurization Gas
When purging or pressurizing, it is important to use an acceptable gas. The gas chosen must not react in any way with the process gas. An inert gas such as Nitrogen or dry air is typically used. In most cases, purging or pressurizing is employed in order to contain a corrosive or toxic gas. Many such gases are reactive to water. Standard shop air contains some condensed water and oil vapor and is not dry enough to use as a purge gas. Bottled nitrogen is inexpensive and readily available. This is the ideal gas to use in most applications. When purging, only a few standard cubic feet per hour of the purge gas are usually required. Even less gas is used when only pressurizing a distance piece.

Compressor Distance Pieces
See compressor bulletin CB-037 for purging and pressurizing information using specific distance pieces and packing arrangements.