

INSTALLATION AND MAINTENANCE MANUAL

for

MODELS HDL2 AND HDL3 LUBRICATORS

Patent Number 4,598,796

OPERATION

The recommended operating range for these Lubricators is 50 psig (3.5 bar/345 kPa) to 250 psig (17.2 bar/1720 kPa) air pressure. These Lubricators are recommended for use with Ingersoll-Rand No. 50 Oil or diesel fuel.

INSTALLATION

These Lubricators are self-priming and may be installed directly into the air starter housing or may be remotely located. Although these Lubricators are capable of drawing lubricant from a source 4 feet (1.22 m) lower than the point of installation, we recommend installation as close as possible to the oil source with piping arranged so that the Lubricator has a constant supply of oil.

NOTICE

Before initial operation, manually fill the oil supply line.

OIL INLET

The oil inlet is tapped 1/8"-27 NPT. Make certain that the fitting you provide is tightened to 15 to 25 ft-lb (20.3 to 33.9 Nm) torque to assure that the joint and oil supply hose are vacuum tight and free of leaks. Threads of the fitting should be clean and assembled with sealing compound sparingly and evenly applied to the male threads only.

We recommend using the fuel return line as the source of lubricant. However, oil may be supplied from a separate reservoir or the diesel fuel tank. When the diesel fuel tank is the lubricant source, install an HDL1-37 tank filter in the oil supply line at the fuel tank.

NOTICE

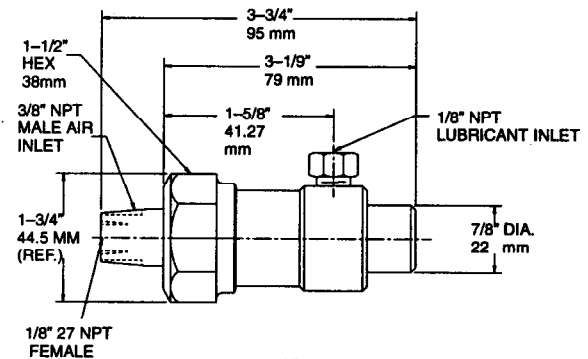
The use of other than genuine Ingersoll-Rand replacement parts may result in decreased performance and increased maintenance and may invalidate all warranties.

Refer All Communications to the Nearest
Ingersoll-Rand Office or Distributor.

© Ingersoll-Rand Company 1994

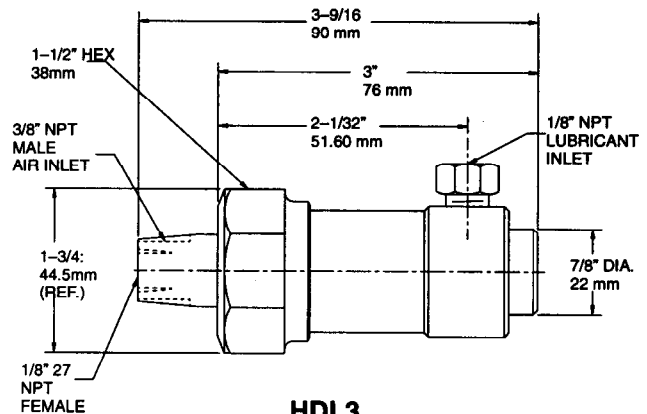
Printed in U.S.A.

Mounting Dimensions



HDL2

(Dwg. TPD995-4)

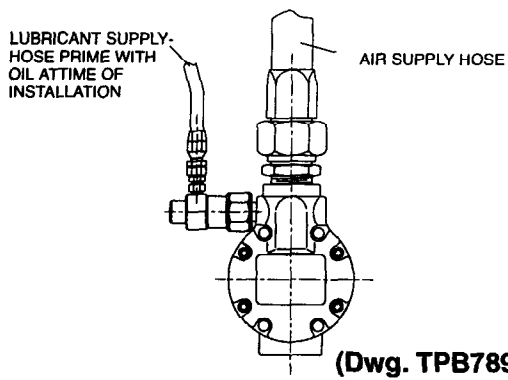


HDL3

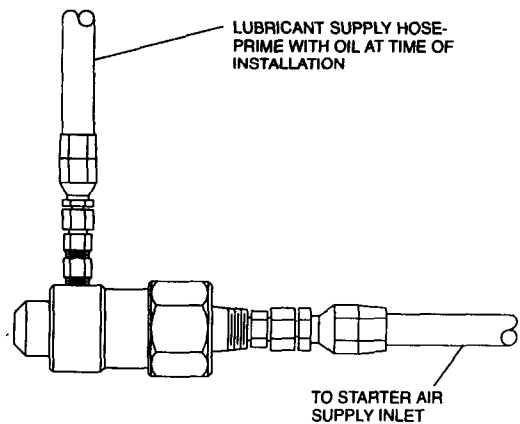
(Dwg. TPD1191-1)

INGERSOLL-RAND®
ENGINE STARTING SYSTEMS

DISASSEMBLY

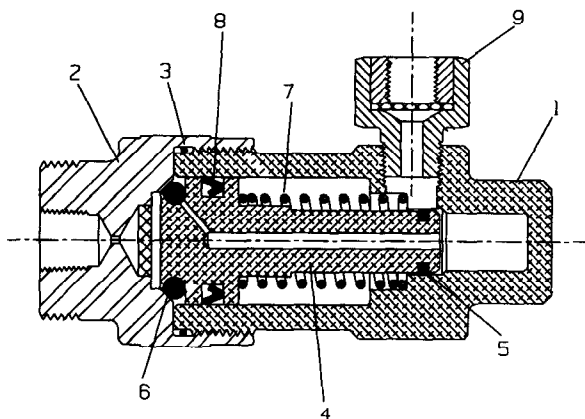


Typical Installation of HDL2 and HDL3 Lubricators



(Dwg. TPC494-3)

Remote Installation of HDL2 and HDL3 Lubricators



(Dwg. TPD999-2)

General Instructions

1. Whenever grasping the Lubricator in a vise, always wrap the Lubricator in non-marring material or use leather-covered or copper-covered vise jaws to protect the surface of the Lubricator and help prevent distortion.
2. We recommend that you install a new set of O-rings whenever a Lubricator is disassembled.

Disassembly of the Lubricator

1. Carefully grasp the large end of the Housing (1) in vise jaws, inlet end facing upward.
2. Using an appropriate wrench on the knurled section of the Air Inlet (2), unscrew and remove the Air Inlet from the Housing.
3. Lift out the Piston (4) and the Piston Spring (7) from the Housing.
4. Remove the Inlet O-ring (3) from the inside of the Air Inlet.
5. Remove the Rear Piston O-ring (6), Piston Seal (8) and Front Piston O-ring (5) from the Piston.
6. Remove the Filter (9) from the Housing.

ASSEMBLY

General Instructions

1. Always clean every part and wipe every part with a thin film of Ingersoll-Rand No. 50 Oil.
2. Apply a film of o-ring lubricant into all O-rings and the Seal before final assembly.

Assembly of the Lubricator

NOTICE

Install the Piston Seal (8), lip end trailing, into the piston seal groove on the Piston (4). See Dwg TPD999-2

1. Install the Front Piston O-ring (5) into the groove at the small diameter end of the Piston.
2. Install the Rear Piston O-ring (6) into the groove at the large diameter end of the Piston.
3. Install the Inlet O-ring (3) into the internal groove of the Air Inlet (2).
4. Slide the Piston Spring (7) over the small diameter end of the Piston until it butts against the shoulder of the Piston.
5. Grasp the Housing (1) in leather-covered vise jaws, threaded end facing upward.
6. Install the Piston, spring end first, into the Housing.
7. Screw the Air Inlet (2) onto the Housing and tighten the Inlet to 40 ft-lb (54.2 N m) torque.
8. Install Filter (9) in Housing and tighten to 10 to 15 ft-lb (13.6 - 20.3 Nm) torque.

LUBRICATOR TESTING

1. Install a clear, unpressurized lubricant supply line to the lubricant supply side of the Lubricator. Submerge the end of the line into a reservoir of Ingersoll-Rand No. 50 Oil or diesel fuel.
2. Apply 50 to 250 psi of air to the air inlet to activate the Piston. Continually apply and discharge air to the air inlet to allow piston action. Each time the Piston is activated, the oil in the lubricant line should move away from the Lubricator. When the inlet air pressure is released, the lubricant should travel back toward the Lubricator with progression after each cycle. The amount of progression will vary depending on lubricant viscosity, fuel line size and temperature. Typically, Ingersoll-Rand No.50 Oil with 1/4" lubricant supply line will pump approximately 1" per cycle at 70 in the HDL2 and 1/2" per cycle at 70 in the HDL3.
3. Apply 50 to 250 psi of air to the lubricant supply side of the Lubricator. Submerge the Lubricator into an oil bath for leak detection. Upon initial testing, some air bubbles may appear due to the Piston's displacing a volume of air through the Air Inlet. After a few seconds, no air leaks should appear from the Lubricator.
4. Apply the air supply to the air inlet side of the Lubricator and repeat step 3.
5. An air leak could be caused by damaged O-rings or Seals from wear or improper installation. Should a leak occur, the Lubricator must be disassembled and repaired or replaced.

PART NUMBER FOR ORDERING



		MODEL HDL2	MODEL HDL3
1	Housing	HDL2-20	HDL3-20
2	Air Inlet	HDL3-21	HDL3-21
◆ 3	Inlet O-ring	HDL2-37	HDL2-37
4	Piston	HDL2-22	HDL3-22
◆ 5	Front Piston O-ring	HDL2-25	HDL3-25
◆ 6	Rear Piston O-ring	HDL2-24	HDL2-24
◆ 7	Piston Spring	HDL1-23	HDL1-23
◆ 8	Piston Seal	HDL1-31	HDL1-31
◆ 9	Filter	HDL2-A47	HDL2-A47
* ◆	Tune-up Kit (includes illustrated parts 3, 5, 6, 7, 8 and 9)	HDL2-TK1	HDL3-TK1

- * Not illustrated.
- ◆ Indicates Tune-up Kit part.

SALES HEADQUARTERS

Ingersoll-Rand Company

Engine Starting Systems

PO Box 1776

Liberty Corner, NJ 07938

201-647-6000