

BENT AXIS PISTON PUMP **XP**



A fixed displacement Bent Axis Piston Pump designed to meet the severe working conditions of Transport Hydraulics.

Features:

- 40° Bent Axis design providing high power/weight ratio, small overall dimensions, optimum efficiency and economic design.
- Displacements from 32-108cc/rev.
- Dual Shaft Seals.
- 7 Piston design.
- ISO 4 Bolt flange for direct mounting to PTO.
- Simple change for direction of rotation.
- Bypass valve available for continuous run applications.
- Does not require bearing support for remote mounting - use LS024.

Pump Specification

CODE	DISPLACEMENT CM ³ / REV	PRESSURE BAR (CONT)	RPM MAX (CONT)	MAX TORQUE ABSORBED AT 350BAR NM	PRESSURE PORT	SUCTION FITTING	WEIGHT KG
XP32-0517640X	32	350	2700	190	3/4"BSP	1 1/2"	11.1
XP41-0517650X	41	350	2500	243	3/4"BSP	2"	11.15
XP50-0517625X	50.3	350	2500	292	3/4"BSP	2"	11.2
XP63-0517635X	63	350	2300	362	3/4"BSP	2"	11.25
XP80-0517610X	80.4	350	2150	460	1"BSP	2 1/2"	14.84
XP108-0517620X	108.3	350	1950	619	1"BSP	2 1/2"	14.95

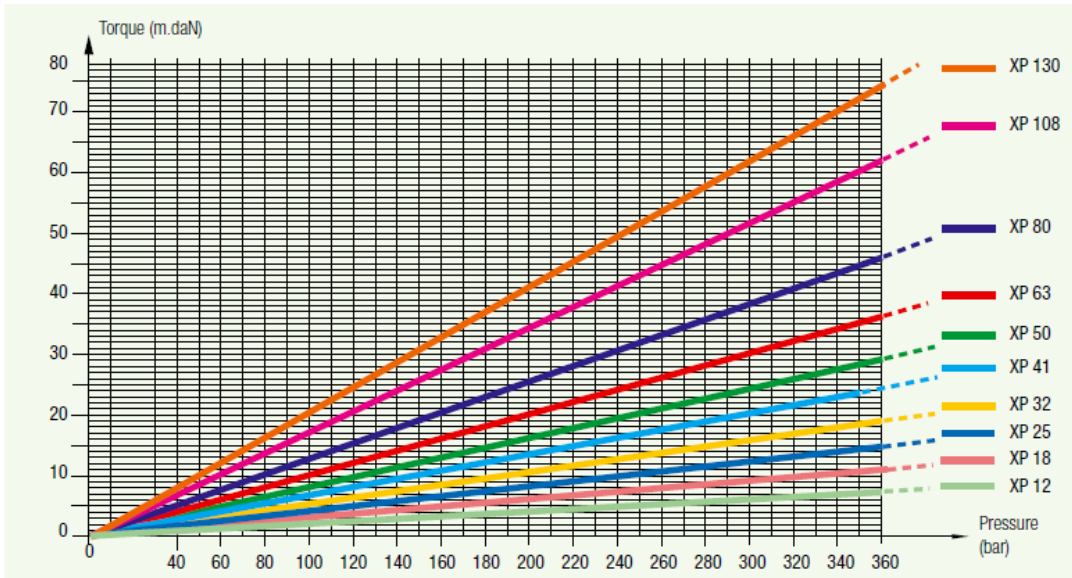
Note 1: Final Part Number X = Direction of Rotation
 X = 1 = CCW Rotation
 X = 2 = CW Rotation

****** Rotation of the pump is **always** determined by looking at the shaft end.

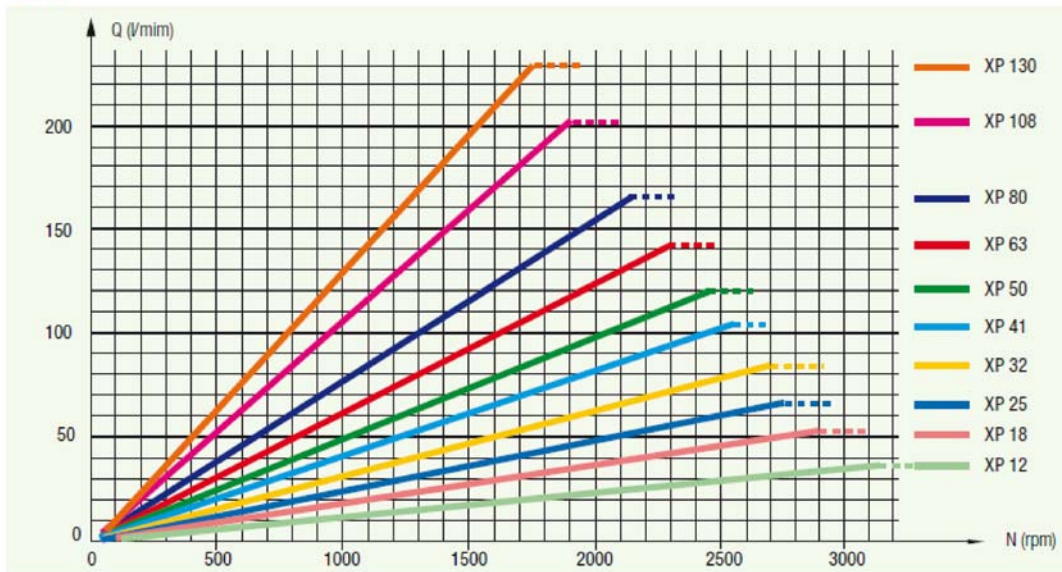
Note 2: All pumps are supplied with a flanged suction fitting of the size designated in the above chart.

Performance XP Series Pumps

Torque absorbed as a function of pump output pressure

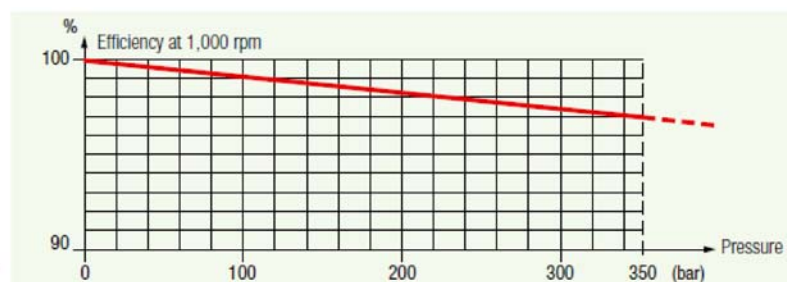


Flow

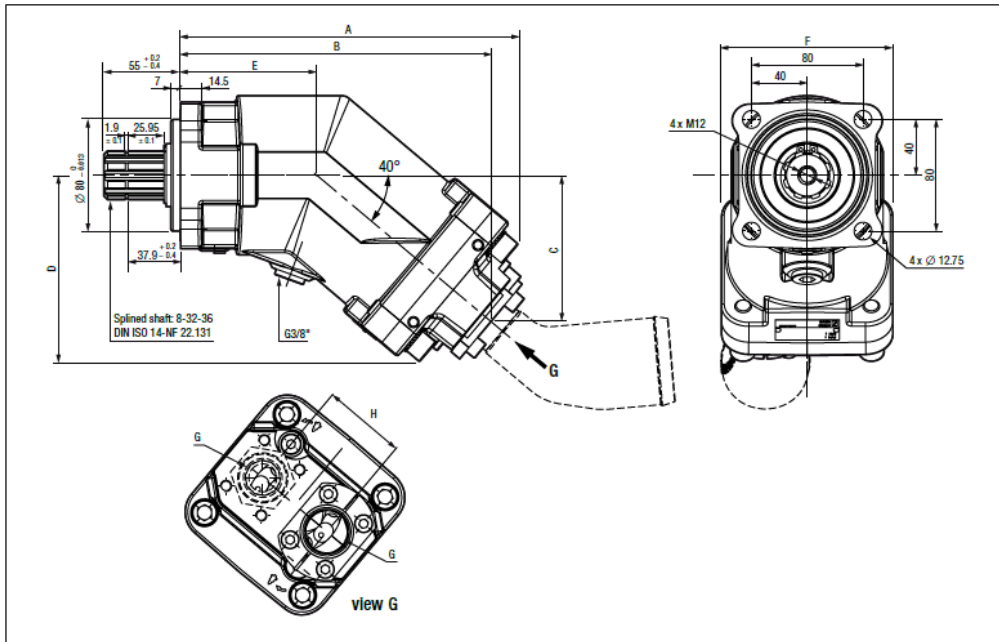


Volumetric efficiency

These graphs are the results of test-work done in the HL R&D laboratory, on a specific test bench, with an ISO 46 fluid at 77°F/25°C (100 cSt), the pump is fitted with an 2" HL inlet fitting, hosing is 13 feet (4 metres) long, and tank situated slightly above pump.



Dimensions XP Series Pumps

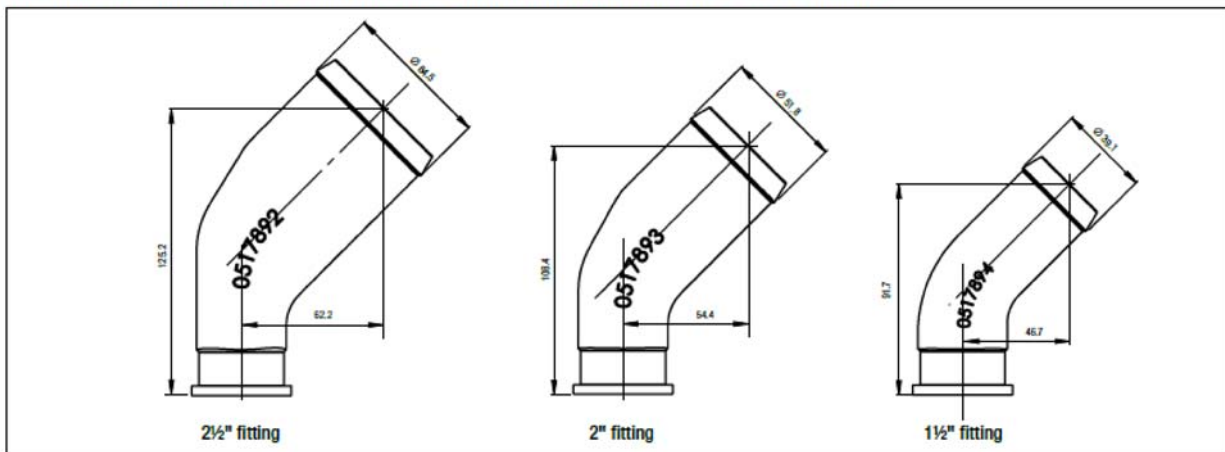


PUMP	A	B	C	D	E	F	G	H
XP32	202.8	184	82.3	109.1	85.7	108	3/4"	54
XP41	202.8	184	82.3	109.1	85.7	108	3/4"	54
XP50	214.4	195.6	92	118.9	85.7	108	3/4"	54
XP63	214.4	195.6	92	118.9	85.7	108	3/4"	54
XP80	241.7	220.9	103.5	133.3	97.4	123	1"	60
XP108	241.7	222.5	104.8	133.3	97.4	123	1"	60

Inlet Fittings for XP Series Pumps

All XP pumps are supplied with their inlet fitting.

***Note: The 1 1/2" fitting is available as a spare - 0517894 - Flanges, Bolts & Seal are NOT INCLUDED.**



Direction of rotation XP Series Pumps

■ How to change the direction of rotation of the pump

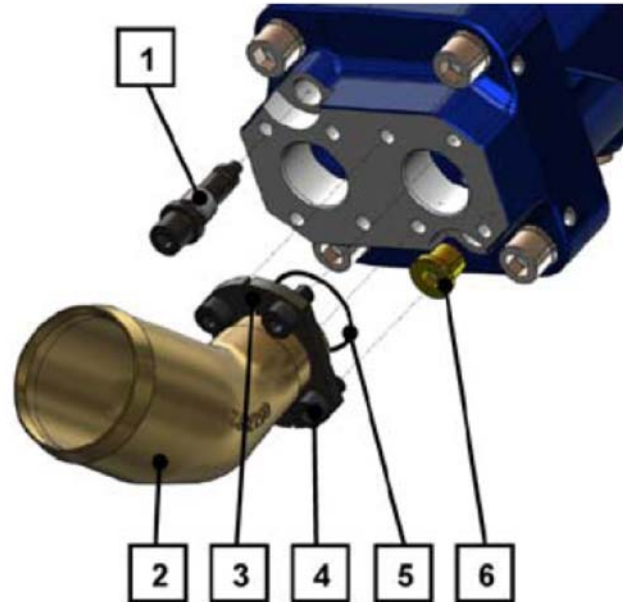
All HYDRO LEDUC XP pumps are supplied for Clockwise rotation (CW) unless otherwise specified on each purchase order.

To check in which direction the pump should rotate on your installation:

- check the direction of rotation of the PTO;
- if the PTO turns clockwise, the pump must rotate counter-clockwise, and vice versa.

To change the direction of rotation of your XP pump:

- remove the inlet fitting (2) and the 2 parts of the split flange (3).
- remove the rotation setting screw (1).
- remove the plug (6).
- put the rotation setting screw (1) where the plug (6) was, and the plug (6) where the rotation setting screw (1) was.
- put seal (5) on the inlet fitting, then the inlet fitting on the side where the plug (6) is, and fix with the split flange. Tighten with the screws (4).



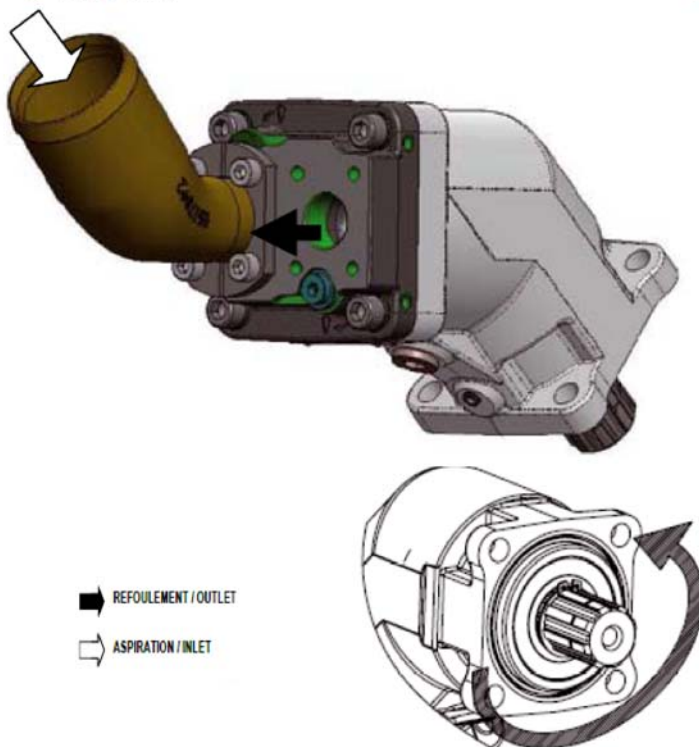
Important note:

Do not rotate pump shaft at all until the rotation setting screw (1) is in place. The rotation setting screw is always on the output (pressure) side.

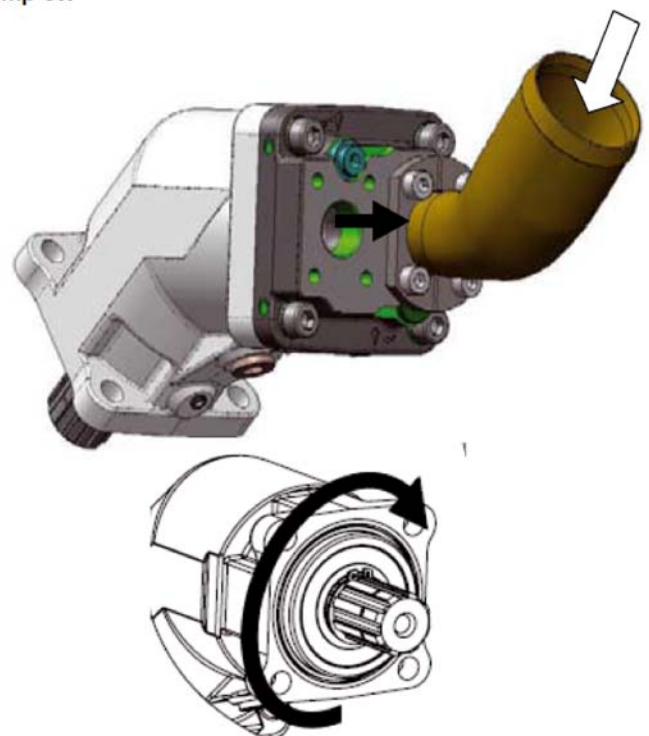
The various parts should be tightened to the following torque values :

Tightening torque of rotation setting screw (1) in m.daN	4
Tightening torque of fixation screws (4) in m.daN	2.5
Tightening torque of plug (6) in m.daN	2.5

■ Pump CCW



■ Pump CW

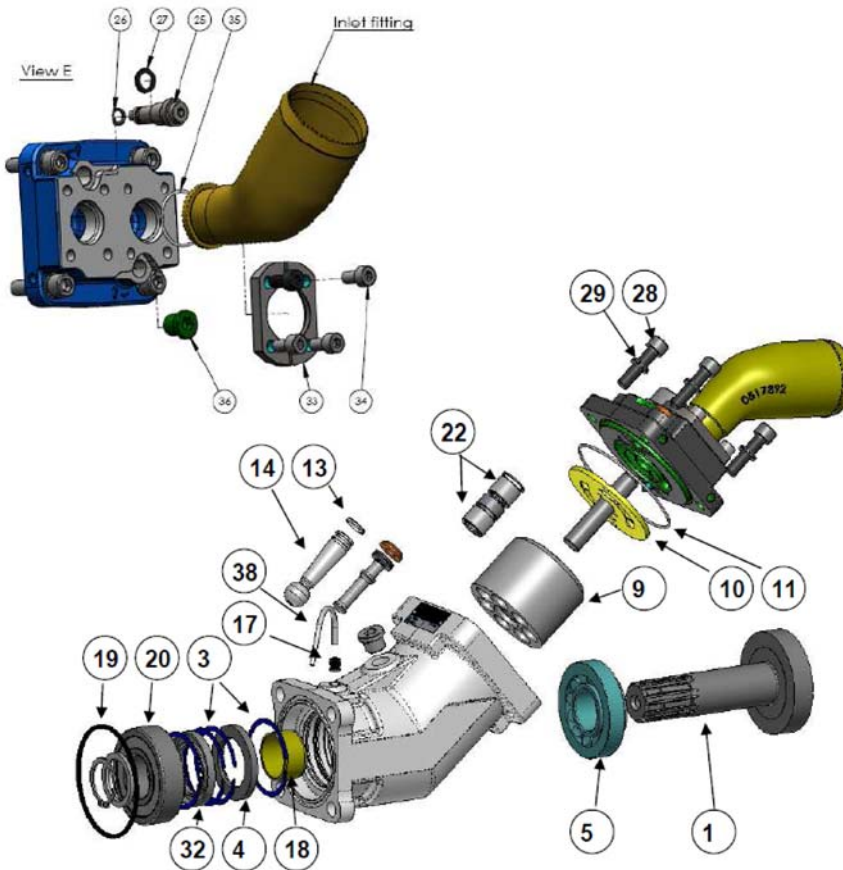


➡ REFOULEMENT / OUTLET

⇐ ASPIRATION / INLET

Repair of Leduc Hydraulic Pump

1: Exploded view / parts list:



Seal Kit - SK-TBA
Repair Kit - RK-TBA

***Note** - When ordering parts designate pump size and part number ie XP63-26 = Oring

Part number	Designation	Qty / pump
1	Shaft	1
3	Spring retaining ring	4
4	Nitrile lip seal	1
5	Conical bearing	1
9	Barrel	1
10	Distribution plate	1
11	O-ring	1
13	Tightness ring	7
14	Piston	7
17	Carstick plug	1
18	Internal ring	1
19	O-ring	1
20	Ball bearing	1
22	Needle bearing	2
25	Indexation screw	1
26	O-ring	1
27	O-ring	1
28	Screw	4
29	Nord Lock washer	4
32	Viton lip seal	1
33	½ flange	2
34	Screw	4
35	O-ring	1
36	Iron plug	1
38	Plastic tube	1

Accessories XP Series Pumps

By-pass valve for XP pumps

For XP pump applications where the pump is driven by a continuous running PTO (PTO which cannot be disengaged), HYDRO LEDUC offers a by-pass valve which is fitted onto the back of the pump. This solution allows the continuous running of the pump :

- without creating problems of fluid overheating ;
- without affecting pump service life ;
- with no modifications necessary to the hydraulic equipment on the truck.

How does it work ?

The by-pass valve is a 24 Volt solenoid valve. When not activated, it enables pump output to link up to pump inlet. When it is activated, the pump operates normally (output flow).

Leduc part number :

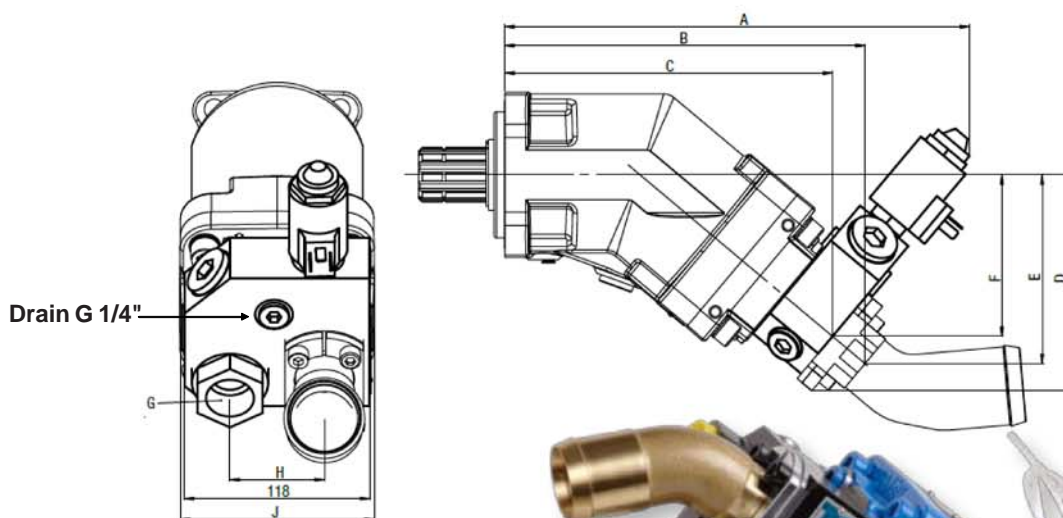
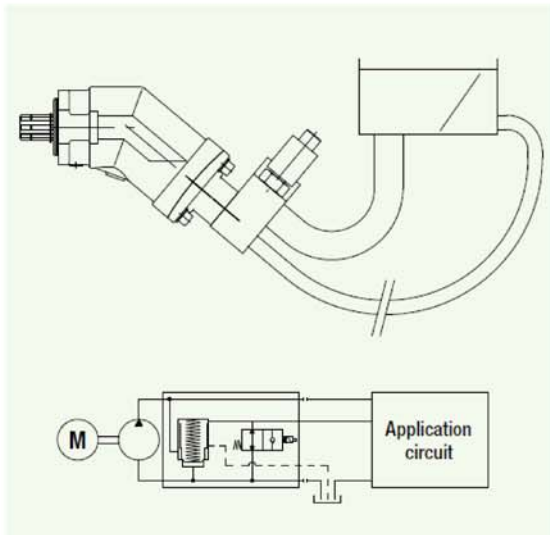
- models XP12 to XP63: BP63 0517931 for 24V
BP63 0521180 for 12V
- models XP80 to XP130: BP80 0517811

** Spare Part Note:

Solenoid & valve stem assemblies
XP63BP & XP80BP will fit later model (Round Solenoid) bypass valves for the X Pump. The bypass valve complete is not interchangeable.

Overhang torque of XP pumps fitted with by-pass valves

Pump model	Weight		Overhang torque	
	without inlet fitting kg	with inlet fitting 2" kg	without inlet fitting N.m	with inlet fitting 2" N.m
XP12	12.8	13.25	16.32	16.90
XP18	12.85	13.3	16.39	16.96
XP25	12.9	13.35	16.44	17.02
XP32	14.7	15.15	18.98	19.56
XP41	14.75	15.2	19.04	19.62
XP50	14.8	15.25	20.05	20.67
XP63	14.85	15.3	20.12	20.73
XP80	18.45	18.9	27.16	27.82
XP108	18.55	19	27.31	27.97
XP130	18.95	19.4	28.16	28.93



Dimensions including by-pass valve

Pump model	A	B	C	D	E	F	G	H	J
XP 12 / 18 / 25	289.35	223.04	202.19	132.20	114.72	97.58	3/4"	54	-
XP 32 / 41	295.5	229	208.3	137.3	120.1	102.7	3/4"	54	-
XP 50 / 63	307.1	240.4	220	147.1	129.7	112.5	3/4"	54	-
XP 80 / 108	334	269	246.7	157.8	143.9	124.8	1"	60	123.5



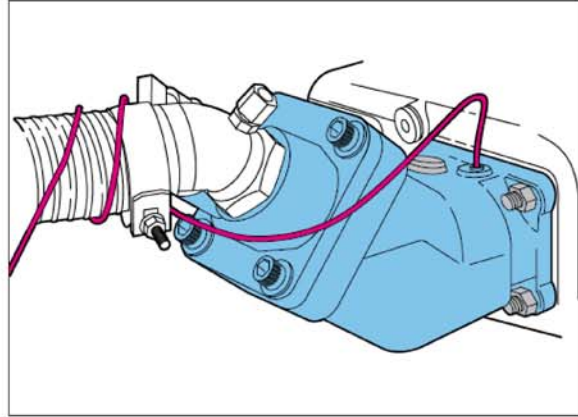
Shaft Sealing XP Series Pumps

HYDRO LEDUC pumps destined for truck hydraulics (XP, PA, PAC and TXV series) are all fitted with reinforced sealing comprising :

- two radial seals : an external seal adapted to the needs of PTOs and gear-boxes; and an internal seal adapted to the needs of hydraulic performance;
- an original protection of the pump shaft seals. This is a flexible transparent tube which avoids any entry of contaminants between the two seals, and guarantees high pressure water jet cleaning of vehicle will not damage the sealing area. It also allows air vent of the chamber between the two seals.



Examples of tube attachment



✓ Recommendations for attaching the protective tube :

- make a siphon with the tube so as to avoid any introduction of :
- dirt from road;
- water or damp from high pressure washing of vehicle;
- put the end of the tube downwards, or in a place sheltered from any projections;
- fix the tube in place using a collar/clip.

✗ Avoid :

- attaching the tube to any parts which may move, this could lead to it being damaged or torn off;
- any pinching or folds in the tube when fixing it in place;
- any obturation of the end of the tube.



HYDRO LEDUC stresses that on non-sealed PTO installations it is the hydraulic pump which ensures the sealing of the vehicle gearbox.

This is why HYDRO LEDUC offers tried and tested solutions approved by vehicle manufacturers.

Note in particular the pump – PTO sealing via a frontal square section ring seal ensuring metal to metal contact between pump and PTO. Do not use paper gasket.



■ The tank :

Generally, hydraulic pumps much prefer a tank above the pump.
Leduc pumps can also operate with oil level beneath the pump, for further information on such installations, please contact our Technical Department.
Correct inlet conditions are between 0.8 to 2 bar absolute pressure.
****SEE BELOW**

The tank should preferably have a separation between inlet side and return. This avoids fluid emulsion and the introduction of air into the hydraulic circuit. Ensure also that the suction is not from the very bottom of the tank, so as to protect the pump from any deposits (particles).

■ Hosing :

Should be dimensioned to ensure flow between 0.5 and 0.8 m/second. Choose as direct a supply line as possible, avoiding sharp bends.

■ Filtration :

HYDRO LEDUC recommends using a very clean tank, filtered during filling and with filter on air vent.

The pump supply line must be cleaned (decontaminated) and the return line should be filtered as follows :

- for relatively simple circuits (e.g. tippers) :
use a 20 micron filter on pump return line.
- for more complex circuits (e.g. cranes) :

Ideal solution :

- high pressure filter between the pump and the crane hydraulic circuit ;
- 10 to 20 micron filter ;
- clogging indicato.

■ The fluid :

Use a mineral hydraulic oil with viscosity between 10 and 400 cSt. It is in this viscosity range that the pumps keep their volumetric characteristics. If you wish to use other fluids, please consult our Technical Department.
Maximum temperature of fluid in the pump should not exceed 100°C.

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Maximum temperature of fluid in the pump should not exceed 100°C.

■ Drive and assembly recommendations :

For PTO mount applications, be careful to respect the tightening recommendations in terms of pump onto PTO and PTO onto vehicle gearbox.
XP pumps are not designed to withstand any axial load on the pump shaft. Check your installation conforms to this requirement.

****MEGA PACIFIC DOES NOT RECOMMEND NEGATIVE HEAD INSTALLATIONS.**

■ Preparation of the pump :

For XP pumps, check the direction of rotation needed, and change it if necessary. See instructions on page 5.

Before start-up, the pumps should be filled with oil. This is essential for XP-pumps.

■ Start-up :

- open the supply valve if there is one ;
- check the valve is in "back to tank" position ;
- partially unscrew the output fitting ;
- start up at low speed, or by successive starts/stops ;
- retighten the output connector as soon as air bubbles have disappeared ;
- let the pump run for one to two minutes, and check that the flow is well established ;
- check the pump is running correctly, with no vibrations nor abnormal noise;
- after several hours of operation, check the tightening torque of the pump fixture to PTO.

■ Maintenance :

Some regular checks are necessary, namely :

- tightening of pump to PTO ;
- cleanliness of fluid ;
- state of filter ;



if you notice traces of oil in the plastic tube, it is essential to check the sealing between PTO and pump.

