

RICE HYDRO, INC.
MANUFACTURER'S OPERATING INSTRUCTIONS
TEST PUMP MODEL DP-Series (3/4/6/8/56-250)

FOR WARRANTY REGISTRATION CALL: 1-800-245-4777

TO ATTACH FLOW METER - CALL FACTORY FOR INSTRUCTIONS

CONNECTING THE PUMP:

1. Check pump oil thru reservoir sight glass, half-way to the top is full. Use 30w non-detergent oil.
2. Check oil level in engine crankcase, use (10W30) as needed.
3. Check oil level in the gear reduction, use (90W) as needed. Oil should be level with side plugs.
4. On units 4/6/8 accumulator head is equipped with a valve stem to adjust air pressure of the accumulator diaphragm, set between 90 to 120 psi.
5. Connect inlet hose assembly provided. The pump **MUST** be either suction fed (such as out of a barrel), or gravity fed (from a watertruck).
A PRESSURIZED LINE CANNOT BE USED TO SUPPLY WATER TO THE PUMP. Never connect this unit to a water source such as a standpipe, hose bib, tap water faucet, etc... ***unless a PRESSURED Tank accessory is added.***
The source of the water should be within 8-10 ft. maximum.
6. Connect the supplied high-pressure outlet hose.

OPERATING THE PUMP:

1. Turn the outlet ballvalve to the open position, and start the engine. The engine RPM is preset at the factory, **DO NOT ADJUST.**
2. The pressure regulator has been preset at the factory. ***To change this setting you must make this adjustment while the water is flowing freely, under no pressure.*** To adjust pressure, first loosen the locknut. Turn the T-handle/Knob clockwise to increase and counterclockwise to decrease the pressure. Place a ballvalve or similar open and close valve at the end of outlet hose, open and close this valve to check pressure setting and re-adjust as necessary. It is also recommended that you open and close the hosebib located under the gauge to bleed excess air from piping and ensure accurate pressure gauge readings. Upon reaching desired pressure setting, tighten locknut and prepare to begin test.
3. With the ballvalve open begin building pressure in test environment. Bleeding air from hosebib under gauge at least once during this process. Once test pressure has been reached, **close the ballvalve and shut off the engine.** An inline checkvalve prevents water pressure from bleeding back into the pump.
4. Once the outlet ballvalve is closed and your test begins, you have now isolated the test pump from your test environment, any loss of pressure is due to leaks or trapped air in the lines.

REMEMBER THESE CAUTIONS:

1. Check all fluid levels prior to operating pump.
2. Use inlet hose supplied, or a suction hose the same size as inlet piping.
3. NEVER connect the inlet of the pump directly to a pressurized source.
4. Protect the pump from freezing, FLUSH with anti-freeze.

RECOMMENDED PERIODIC MAINTENANCE PROCEDURE

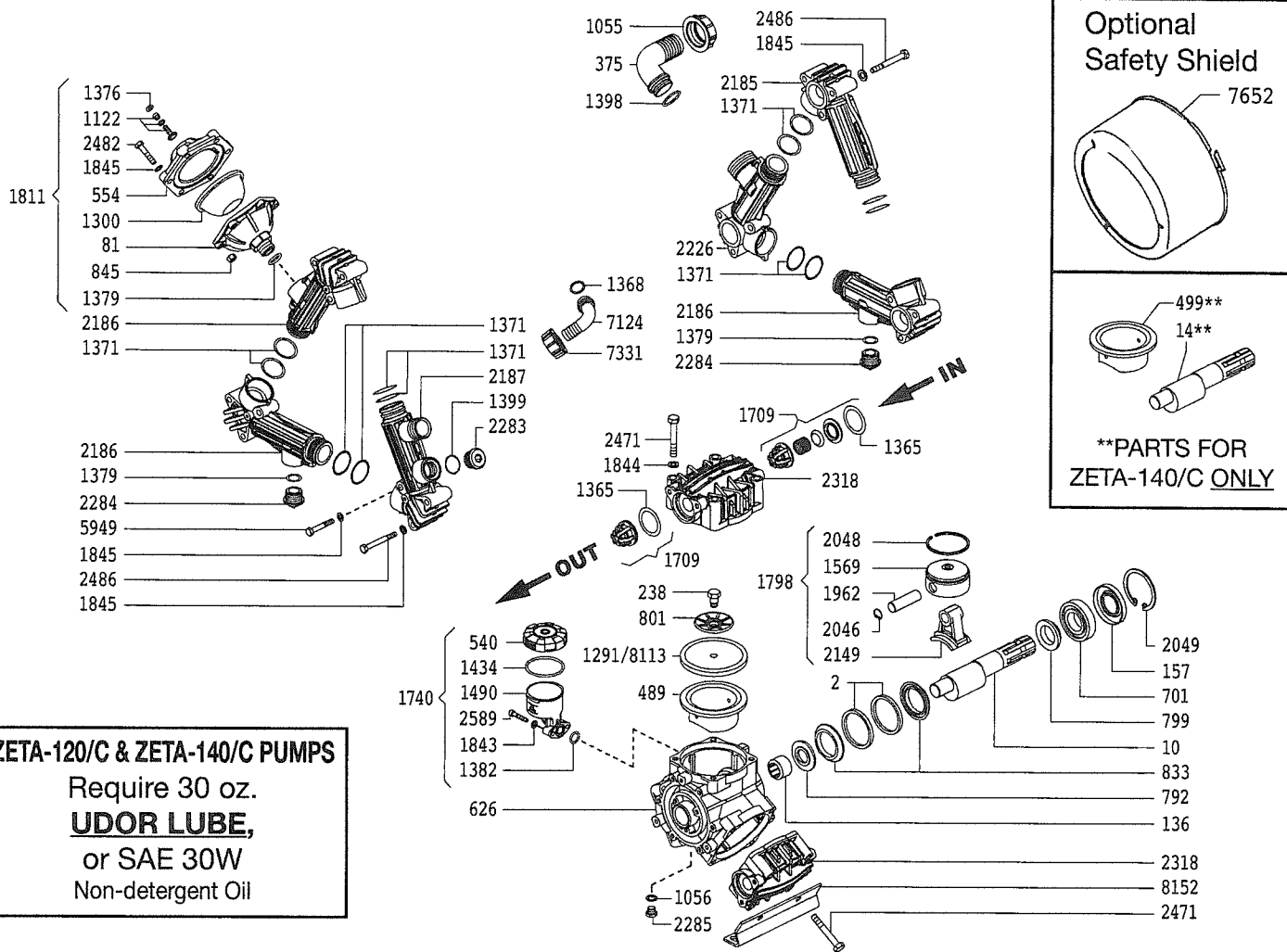
1. Change engine oil after the first 80 hours of operation thereafter every 250 hours of use or every season.
2. Change the oil in the pump body after the first 50 hours of operation thereafter every 250 hours.

TROUBLE SHOOTING FOR DP-SERIES HYDROSTATIC TEST PUMP

IF PUMP FAILS TO BUILD PRESSURE:

1. Look for leaks in water supply hose and connections.
2. Supply hose is too small. Filter may be clogged.
3. Supply hose may be kinked or collapsed. Maximum 9 feet.
4. Pump may be sucking air. Small holes in supply hose are hard to find because air is drawn inward. Replace supply hose. Loose piping or connections.
5. T-Handle/knob on pressure regulator may be set incorrectly.
6. Faulty pressure gauge, replace.
7. Pump is running too slow. Advance throttle on engine to between 3400 - 3600 RPM, NO higher.
8. Pipeline being tested may have leaks, or open valve. Isolate pump and self-test, by placing a ballvalve on the end of the outlet hose.
9. Foreign material may be lodged in a valve, preventing valve from seating properly. Remove cylinder head. Remove valve assemblies, clean and replace.
10. Airlock. With pump running, open and close bleed valves several times to remove air trapped in piping.
11. Diaphragms may be ruptured, oil in crankcase will be milky white. Drain oil from pump and install new diaphragms.
12. No air in accumulator head on models 4/6/8, reset between 90-120 psi.

ZETA-120/C & ZETA-140/C - Exploded View Diagram and Parts List



ZETA-120/C & ZETA-140/C PUMPS
 Require 30 oz.
UDOTR LUBE,
 or SAE 30W
 Non-detergent Oil

REF#	PART#	DESCRIPTION	QTY	REF#	PART#	DESCRIPTION	QTY
2	0001.02	Retainer Ring	2	1490	1203.27	Oil Reservoir	1
10	0002.59	Crank Shaft	1	1569	1205.08	Piston	3
**14	0002.63	Crank Shaft (ZETA-140/C ONLY)	1	1709	6006.08	Valve Assembly	6
81	0003.15	Accumulator	1	1740	6033.01	Oil Reservoir Assembly	1
136	0006.07	Bearing	1	1798	6015.62	Piston Rod Assembly	3
157	0007.05	Seal	1	1811	6031.09	Accumulator Assembly	1
238	0102.03	Diaphragm Bolt	3	1843	1403.07	Washer	2
375	0202.78	Suction Elbow	1	1844	1403.09	Washer	8
489	0206.14	Piston Sleeve	3	1845	1403.10	Washer	24
**499	0206.26	Piston Sleeve (ZETA-140/C ONLY)	3	1962	1502.01	Connecting Rod Pin	3
540	0208.98	Oil Cap	1	2046	1506.02	Snap Ring	6
557	0208.20	Accumulator Head	1	2048	1509.05	Piston Ring	3
626	0209.A6	Crank Case	1	2049	1506.07	Snap Ring	1
701	0214.05	Bearing	1	2149	1519.16	Connecting Rod	3
792	0301.12	Washer	1	2185	1601.36	Suction Manifold	1
799	0301.24	Washer	1	2186	1605.40	Manifold with 3/4" Female Port	3
801	0301.07	Retainer Washer	3	2187	1605.39	Discharge Manifold	1
833	0302.52	Rod Spacer	2	2226	1601.35	Suction Manifold	1
845	0303.01	Nut	6	2283	1603.87	Plug	1
1055	0604.50	Barb Nut	1	2284	1603.36	Plug	2
1056	0605.49	Gasket	1	2285	1603.67	Plug	1
1122	0608.16	Air Valve Assembly	1	2318	1604.E3	Head	3
1291	0903.02	Diaphragm (BUNA-N, Optional)	3	2471	1804.25	Bolt	12
*1300	0903.14	Accumulator Diaphragm	1	2482	1804.09	Bolt	6
*1365	1101.01	O-Ring	6	2486	1804.79	Bolt	12
1368	1101.04	O-Ring	1	2589	1805.31	Bolt	2
1371	1101.L5	O-Ring	12	5949	1804.72	Bolt	6
1376	1101.16	O-Ring	1	7124	0253.05	Discharge Elbow	1
1379	1101.04	O-Ring	1	7331	0604.36	Discharge Nut	1
1382	1101.29	O-Ring	1	7652	1219.25	Safety Shield Optional	1
1398	1101.42	O-Ring	1	*8113	0903.34	Diaphragm (DESMOPAN, Standard)	3
1399	1101.51	O-Ring	1	8152	1202.96	Mounting Rails	2
1434	1101.D1	O-Ring	1				

* Parts Included in Diaphragm Repair Kit - #8700.04. (Also available in Buna-N - #8700.11.)

** Parts for ZETA-140/C only

PARTS BREAKDOWN FOR MODEL DPH8 - ZETA
RICE HYDRO, INC.

PART NUMBER..	DESCRIPTION..	QTY REQ'D	COST EACH
SPEC-00002	RETAINER RING (02-0001.02)	2	
SPEC-00010	CRANKSHAFT (02-0002.59)	1	
SPEC-00081	ACCUMULATOR (02-0003.15)	1	
SPEC-00136	BEARING (02-0006.07)	1	
SPEC-00157	SEAL (02-0007.05)	1	
SPEC-00238	DIAPHRAGM BOLT (02-0102.03)	3	
SPEC-00375	SUCTION ELBOW (02-0202.78)	1	
SPEC-00489	PISTON SLEEVE (02-0206.14)	3	
SPEC-00540	OIL CAP (02-0208.98)	1	KIT ONLY
SPEC-00557	ACCUMULATOR HEAD (02-0208.20)	1	
SPEC-00626	CRANKCASE (02-0209.A6)	1	
SPEC-00701	BEARING (02-0214.05)	1	
SPEC-00792	WASHER (02-0301.12)	1	
SPEC-00799	WASHER (02-0301.24)	1	
SPEC-00801	RETAINER WASHER (02-0301.07)	3	
SPEC-00833	ROD SPACER (02-0302.52)	2	
SPEC-00845	NUT (02-0303.01)	6	
SPEC-01055	BARB NUT (02-0604.50)	1	
SPEC-01056	GASKET (02-0605.49)	1	
SPEC-01122	AIR VALVE ASSEMBLY (02-0608.16)	1	
SPEC-01291	DIAPHRAGM - BUNA (02-0903.02)	3	
SPEC-01300	ACCUMULATOR DIAPHRAGM (02-0903.14)	1	
SPEC-01365	O-RING (02-1101.01)	6	
SPEC-01368	O-RING (02-1101.04)	1	
SPEC-01371	O-RING (02-1101.L5)	12	
SPEC-01376	O-RING (02-1101.16)	1	
SPEC-01379	O-RING (02-1101.04)	1	
SPEC-01382	O-RING (02-1101.29)	1	
SPEC-01398	O-RING (02-1101.42)	1	
SPEC-01399	O-RING (02-1101.51)	1	
SPEC-01434	O-RING (02-1101.D1)	1	
SPEC-01490	OIL RESERVOIR (02-1203.27)	1	KIT ONLY
SPEC-01569	PISTON (02-1205.08)	3	
SPEC-01709	VALVE ASSEMBLY (02-6006.08)	6	
SPEC-01740	OIL RESERVOIR ASSY (02-6033.01)	1	
SPEC-01798	PISTON ROD ASSEMBLY (02-6015.62)	3	
SPEC-01811	ACCUMULATOR ASSEMBLY (02-6031.09)	1	
SPEC-01843	WASHER (02-1403.07)	2	
SPEC-01844	WASHER (02-1403.09)	8	
SPEC-01845	WASHER (02-1403.10)	24	
SPEC-01962	CONNECTING ROD PIN (02-1502.01)	3	
SPEC-02046	SNAP RING (02-1506.02)	6	
SPEC-02048	PISTON RING (02-1509.05)	3	
SPEC-02049	SNAP RING (02-1506.07)	1	
SPEC-02149	CONNECTING ROD (02-1519.16)	3	
SPEC-02185	SUCTION MANIFOLD (02-1601.36)	1	
SPEC-02186	MANIFOLD W/ 3/4 F PORT (02-1605.40)	3	
SPEC-02187	DISCHARGE MANIFOLD (02-1605.39)	1	
SPEC-02226	SUCTION MANIFOLD (02-1601.35)	1	
SPEC-02283	PLUG (02-1603.87)	1	
SPEC-02284	PLUG (02-1603.36)	2	
SPEC-02285	PLUG (02-1603.67)	1	
SPEC-02318	HEAD (02-1604.E3)	3	
SPEC-02471	BOLT (02-1804.25)	12	
SPEC-02482	BOLT (02-1804.09)	6	
SPEC-02486	BOLT (02-1804.79)	12	
SPEC-02589	BOLT (02-1805.31)	2	
SPEC-05949	BOLT (02-1804.72)	6	
SPEC-07124	DISCHARGE ELBOW(02-0253.05)	1	
SPEC-07331	DISCHARGE NUT (02-0604.36)	1	
SPEC-07652	SAFETY SHIELD (02-1219.25)	1	
SPEC-08152	MOUNTING RAILS (02-1202.96)	2	

PARTS BREAKDOWN FOR MODEL DPH8 - ZETA
RICE HYDRO, INC.

BALLVALVE-3/4	3/4" APOLLO BALLVALVE	1
HONDA-GX270HA2	9 HP HONDA W/ GR (DPH8)	1
CHECKVALVE-3/4CON	3/4" CONBRACO CHECKVALVE	1
GAUGE-600	0-600 PSI LIQUID GAUGE	1
PUMP-DIA-32/300	TRIPLE DIAPHRAGM PUMP (DPH8)	1
SPEC-POP-OFF	POP OFF VALVE	1
SPRAY-6815-300-3/4	3/4" PRESSURE RELIEF 300 PSI	1
CARTON-TR6	SHIPPING BOX FOR DP-4	1
HOSE-SUCTION-1&1/2	PUMA COIL HOSE 24"	24
INLET-HOSE-1&1/2-RH	1 1/2" X 9' FOOT WITH STRAINER	1
FILTER-INLET-1&1/2	MESH SUCTION STRAINER	1
HOSE-3/4X8-RH	8' FOOT OUTLET HOSE	1
FITTING-3/4-MPIPE	FITTING FOR HOSE	1
FITTING-3/4-MPX	FITTING FOR HOSE	1
HOSE-3/4X1250xFOOT	HIGH PRESSURE OUTLET HOSE CUSTOMER CAN SPECIFY LENGTH	8
COUPLERPLUG-3/4	MALE PUMP OUTLET PIPING	1
COUPLERBODY-3/4	FEMALE CONNECT TO OUTLET HOSE	1
SPEC-8700.11	DIAPHRAGM REPAIR KIT - BUNA	