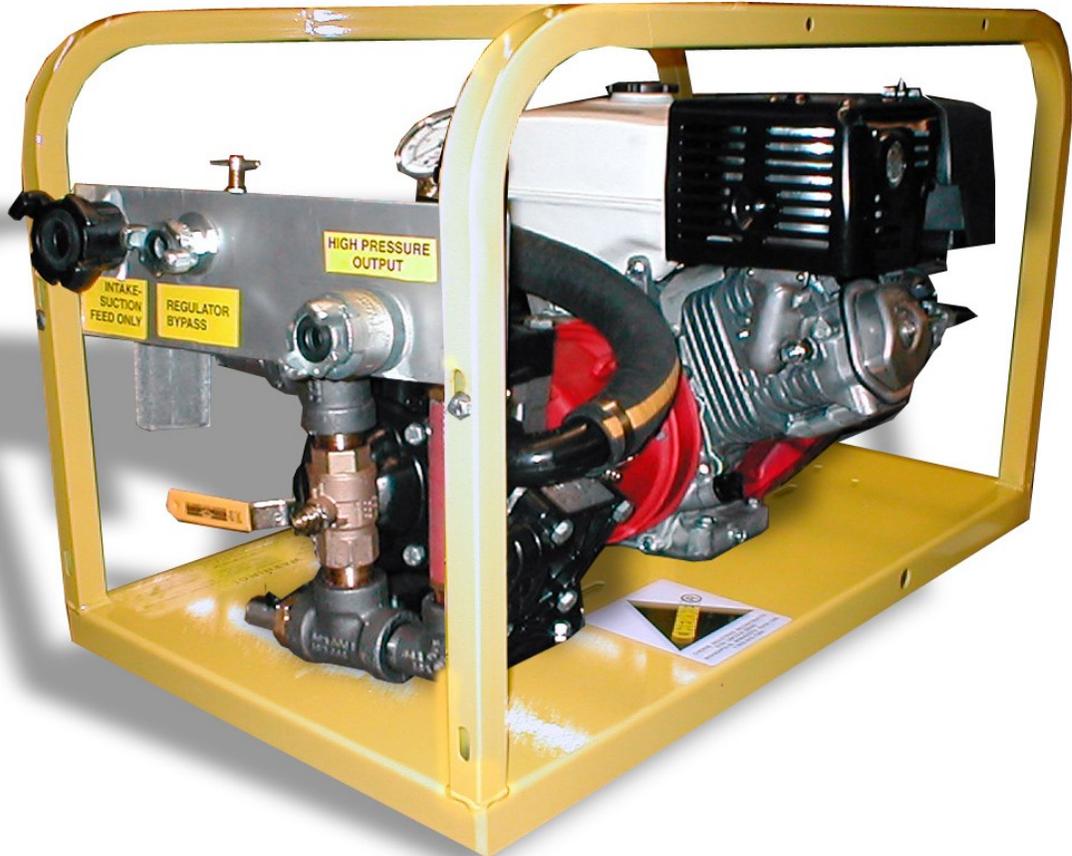


AQUA-LOC HIGH VOLUME HYDROSTATIC TEST PUMP

OPERATION AND MAINTENANCE MANUAL

PART NUMBERS 278-178 (Honda)



ECN #	REV	APRVL	DATE	DESCRIPTION
03-6601	A	TJB	2/3/03	RELEASE
03-6638	B	DS	3/17/03	CHANGE PRV, ADD LIMITER AND ADAPTER
03-6874	C	TJB	12/23/03	CHANGE COUPLING NUMBER

CHERNE INDUSTRIES INCORPORATED
5700 Lincoln Drive
Minneapolis, MN 55436-1695

1-800-THE-PLUG
(1-800-843-7584)
Fax:1-800-843-7585
www.cherneind.com

TABLE OF CONTENTS

Caution	3
Features	4
Component Parts	4
Parts List	5
Pump Set-up and Operation	6
Troubleshooting & Maintenance	7
Warranty	8

!!CAUTION!!

ENGINE IS SHIPPED WITHOUT OIL!

**FILL ENGINE WITH OIL TO LEVEL INDICATED ON
DIPSTICK BEFORE ATTEMPTING TO START ENGINE!**

**FAILURE TO FILL ENGINE WITH OIL BEFORE STARTING
ENGINE WILL RESULT IN ENGINE FAILURE AND VOID THE
WARRANTY!!**

!!CAUTION!!

**TURN FUEL SUPPLY VALVE TO "OFF" POSITION BEFORE
TRANSPORTING UNIT.**

**VIBRATION DURING TRANSPORT MAY CAUSE FUEL TO
DRAIN INTO ENGINE CYLINDER & CRANKCASE. THIS
MAY DAMAGE ENGINE DUE TO IMPROPER LUBRICATION
OR CAUSE DAMAGE TO ENGINE COMPONENTS DUE TO
AN OVERFILLED CRANKCASE OR ENGINE CYLINDER.**

AQUA-LOC FEATURES

- * **11 HORSE POWER GASOLINE ENGINE**
- * **SELF-PRIMING TRIPLE DIAPHRAGM PUMP**
- * **SILICONE FILLED GAUGE** with a stainless steel case and cover.
- * **INLINE STRAINER** with a clear bowl and a viton seal for use with chlorine solutions.
- * **12' LONG 1" ID HIGH PRESSURE OUTPUT HOSE**
- * **10' LONG, 1 ½" ID INTAKE AND ¾" ID BYPASS HOSE ASSEMBLY**
- * **A WHEEL/HANDLE KIT (Optional)** with pneumatic tires makes transporting the unit convenient and simple.

UNPACKING THE AQUA-LOC

Included with the unit are O&M manuals from the pump and engine manufacturers as well as a quart of 30 weight oil.

Please identify and account for each component of your Aqua-Loc after unpacking to make sure nothing has been damaged or is missing.

Hydrostatic Test Pump
High-pressure output hose
Intake and Bypass hose assembly
O& M manual
1 qt. 30 weight oil
Engine manual
Pump manual

PARTS LIST

1	000-043	20	Washer, 5/16 flat
2	000-442	4	Bolt, 5/16-18 x 1
3	000-469	6	Bolt, 5/16-18 x 2
4	000-930	10	Nut, 5/16-18 locknut
5	005-789	1	Label, model and serial number
6	019-887	2	Tack, metal, .187 x .072
7	020-128	2	Hose clamp, 2 1/2"
8	022-778	1	Gauge, 0-600 psi, 1/4" npt (600 PSI)
9	023-168	1	Decal, warning and info
10	023-258	0.25	Tubing, heat shrink, pvc, blue
11	023-268	0.125	Loctite thread sealer
12	026-758	1	Cable, yellow poly, 6.12 lg
13	026-768	1	Crimp, cable
14	030-178	4	Hose clamp, 1 1/2"
15	031-138	1	Drain valve, 1/4" npt (450 PSI)
16	039-098	1	Elbow, 1/4" npt, 45 degree street (1200 PSI)
17	040-098	1	Label, front panel
18	040-448	2	Washer, 1.06 ID x 2.00 OD x .140 THK
19	046-718	1	11 hp Honda GX340K1HAZ
20	046-728	1	Pump-d135
21	046-738	1	Chain coupler 1" bore x 1 3/8 6 spline, #50 chain
22	046-748	1	Pad, motor mounting
23	046-758	1	Strainer, 1 1/2" npt (NPR)
24	046-768	1	Ball valve, 1" npt (600 PSI)
25	046-778	3	Tee, 1" npt (300 PSI)
26	046-788	3	Elbow, 1" npt, 90 degree street (300 PSI)
27	046-798	1	Hose barb, 1 1/2" x 1 1/2" npt (NPR)
28	046-808	3	Hose barb, 1" x 1" npt, 300 PSI
29	046-818	2	Nipple, 1" close (1200 PSI)
30	046-828	2	Reducer, 1" mpt x 1/4" fpt (1200 psi)
31	046-848	1.15 FT	Hose, 1" id, (325 PSI)
32	046-858	1.83 FT	Hose, 1 1/2" id, intake hose (100 PSI)
33	046-878	1	Coupling, 1 1/2" 2 lug x 1 1/2" mpt (NPR)
34	052-878	1	Coupling, 1" 2 lug x 1" mpt, 300 PSI, machined
35	046-918	3	Washer, 1 1/4"
36	046-928	3	Washer, 2 1/8"
37	046-938	1	Tag, instructions
38	046-948	1	Bar code label
39	046-958	1	Manual
40	046-968	1	Base
41	046-978	1	Front panel
42	046-988	1	Carton
43	046-998	1	Hose assembly, intake and bypass
44	047-008	1	Hose, high pressure output
45	047-878	1	Adapter, pump output
46	048-648	1	Relief valve/limiter assembly
47	048-658	1	Washer, 1.38 ID x 2.50 OD x .125 THK, neoprene (big)
48	048-668	1	Washer, 1.06 ID x 2.00 OD x .125 THK, neoprene (small)
49	091-510	1	Oil, quart, 30 weight
50	101-478	1	Coupling, 3/4" 2 lug x 3/4" mpt (NPR)
51	115-363	1	Decal, Cherne

PUMP SET-UP AND OPERATION

Before you begin, make sure the installed line has been adequately flushed and sufficient backfilling has taken place to prevent pipe movement. Refer to AWWA standard for specific guidelines on flushing and backfilling.

NOTE: The instructions in this section are also on the yellow tag attached to the pump. Refer to the appropriate parts lists and drawings on the previous pages for parts identification.

1. Check oil levels in engine and pump sight tube. The gear reduction unit of the engine is lubricated from the engine crankcase. See pump manufacturer's operation and maintenance manual for proper fluid levels.
2. Check charge pressure on the pulsation dampener (see Figure 1). The pressure should be approximately 20% of the maximum test pressure. i.e. 100 PSI should be 20 PSI; 150 PSI-30 PSI; 200 PSI-40 PSI etc.
3. Check fuel level in engine. Fill if necessary. Turn fuel valve to the on position.
4. Connect intake and bypass hose assembly to unit and submerge the other ends in clean water reservoir.
5. Connect high-pressure output hose. Close drain valve if open (see Figure 2).
6. Close the 1" ball valve on the high-pressure output hose. The 1" ball valve on the pump should be open (see Figure 2).
7. Start the engine.
8. Set the test pressure:
 1. Loosen the lock nut on the pressure relief valve (see Figure 2).
 2. Turn valve stem until desired test pressure is reached.
 3. Retighten lock nut.Note: Turning the valve stem clockwise will result in more pressure. Turning the valve stem counter clockwise will result in less pressure.
9. Open the 1" ball valve on the high output pressure hose to fill the line.
10. When the desired pressure in the line has been reached, close the 1" ball valve on the pump to isolate the pressurized line from the pump.
11. Perform test(s). Refer to AWWA standards.

PUMP SHUTDOWN PROCEDURE

1. Close the 1" ball valve on the high pressure output hose (see Figure 2). Shut off engine.
2. Slowly open drain valve (see Figure 2). When gauge on pump reads zero, disconnect all hoses from pump.
3. Open the 1" ball valve on the high pressure output hose to drain the line.
4. If chlorinated water supply was used, flush unit thoroughly with clean water.
5. Turn off fuel valve on engine.
6. Close drain valve (see Figure 2).

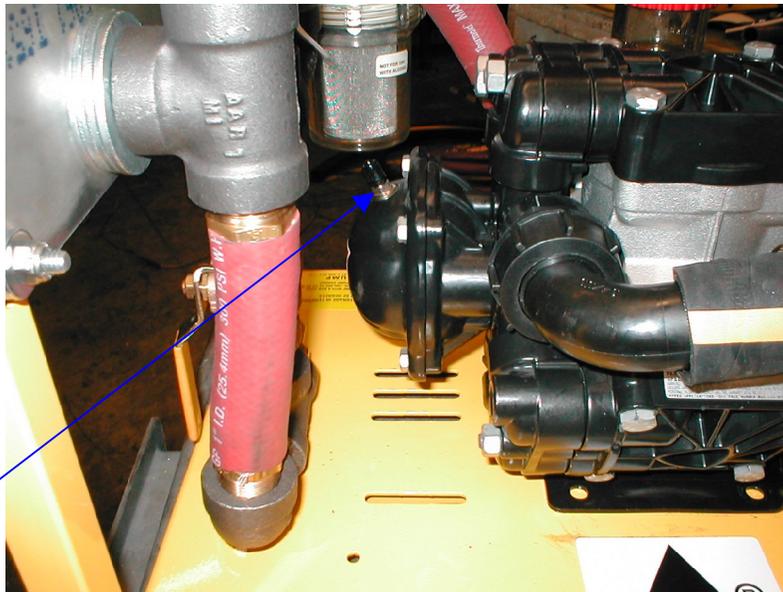


Figure 1 Pulsation Dampener. Remove cap and use tire gauge or other gauge to check pressure. Add or remove pressure as needed.

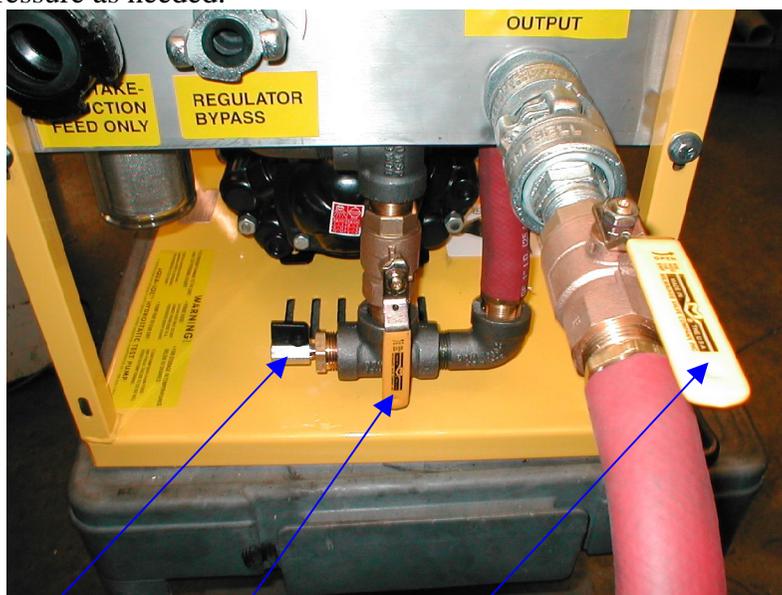


Figure 2 The drain valve, pump ball valve and hose ball valve are all shown in the open position.

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES	SOLUTION
Air bubbles visible in clear strainer bowl.	1. Loose crow's foot fitting connection 2. Intake hose not fully submerged in water reservoir	1. Connect crow's foot fitting; use safety clip to ensure proper fit 2. Check for adequate water level in reservoir; fully submerge hose.
Unable to achieve pre-set output pressure	Air trapped in output plumbing	1. Run unit for 3 seconds with drain valve open 2. Open and close drain valve several times
Engine surges or runs erratic	Choke or throttle linkage spring is disconnected	Connect spring
Engine won't run	Engine's out of gasoline	Fill engine with unleaded gasoline

MAINTENANCE

- Flush pump with a 50:50 mixture of water and non-toxic anti-freeze for winter storage or use in freezing conditions.
- Purge water from pump after each use. This step highlights a key feature of the Aqua-Loc in that the pump is capable of running dry.
- Refer to engine and pump Manufacturer's Operations manuals for specific information on maintaining and troubleshooting their units.

PUMP LUBRICATION MAINTENANCE	
OIL TYPE	CAPACITY/FILL LEVEL
Nondetergent, SAE 30 weight	Halfway up to the clear oil sight tube

LIMITED WARRANTY

Manufacturer warrants all products manufactured by it will be free from defects in material and workmanship for one (1) year following the date of manufacture. If any of the goods are found to be defective, such goods will, at manufacturer's option be replaced or repaired at manufacturer's cost. The parties hereto expressly agree that buyer's sole and exclusive remedy against the manufacturer shall be for the repair or replacement of defective goods as provided herein. (The sole purpose of the stipulated exclusive remedy shall be to provide the buyer with free repair and replacement of defective goods in the manner provided herein. The exclusive remedy shall not be deemed to have failed of its essential purpose so long as the manufacturer is willing and able to repair or replace defective goods in the prescribed manner.) Goods which may be sold by manufacturer but are not manufactured by it are not warranted by manufacturer, but are sold only with the warranties, if any, of the original manufacturers thereof. (This warranty does not cover labor or other costs or expenses to remove or install any defective, repaired or replaced goods.) Manufacturer's warranty does not apply to any goods which have been subjected to misuse, mishandling, misapplication, neglect (including but not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than manufacturer or one of manufacturer's authorized agents.

Any claim by buyer with reference to the goods sold hereunder shall be deemed waived by the buyer unless submitted in writing to manufacturer within the earlier of (1) thirty (30) days following the date buyer discovered or by reasonable inspection should have discovered, any claimed breach of the foregoing warranty, or (2) thirteen (13) months following the date of manufacture. Any cause of action for breach of the foregoing warranty shall be brought within one year from the date the alleged breach was discovered or should have been discovered, whichever comes first.

LIMITATION OF LIABILITY. Manufacturer's liability (whether under the theories of breach of contract or warranty, negligence, or strict liability) for its goods shall be limited to repairing or replacing parts found by the manufacturer to be defective, or at manufacturer's option, to refunding the purchase price of such goods or parts thereof.

DISCLAIMER OF CONSEQUENTIAL DAMAGES. In no event shall manufacturer be liable for consequential damages arising out of or in connection with this agreement, including without limitation breach of any obligation imposed on manufacturer hereunder or in connection herewith. Consequential damages for purposes hereof shall include, without limitation (including death) to any person, or loss of or damage to property (including without limitation property handled or processed by the use of goods). Buyer shall indemnify manufacturer against all liability, cost or expense which may be sustained by manufacturer on account of any such loss, damage or injury.

DEFECTIVE PRODUCTS POLICY. To obtain performance under this warranty, any product suspected of having a manufacturing defect in materials or workmanship at manufacturers request must be returned to CHERNE INDUSTRIES INCORPORATED, freight prepaid, for inspection. A returned goods authorization must be obtained before shipping any product back to CHERNE. Call 1-800-843-7584 and ask for customer service.

CUSTOMER TRANSPORTATION REIMBURSEMENT. Whenever CHERNE repairs or replaces a product at CHERNE'S expense CHERNE will reimburse the distributor by credit memo, the same surface freight amount it cost CHERNE to return the warranty items.

The foregoing warranty is in lieu of all other warranties express or implied, including those of merchantability or fitness for any purpose not expressly set forth herein. No affirmation of manufacturer, by words or action, other than as set forth in this language shall constitute a warranty.