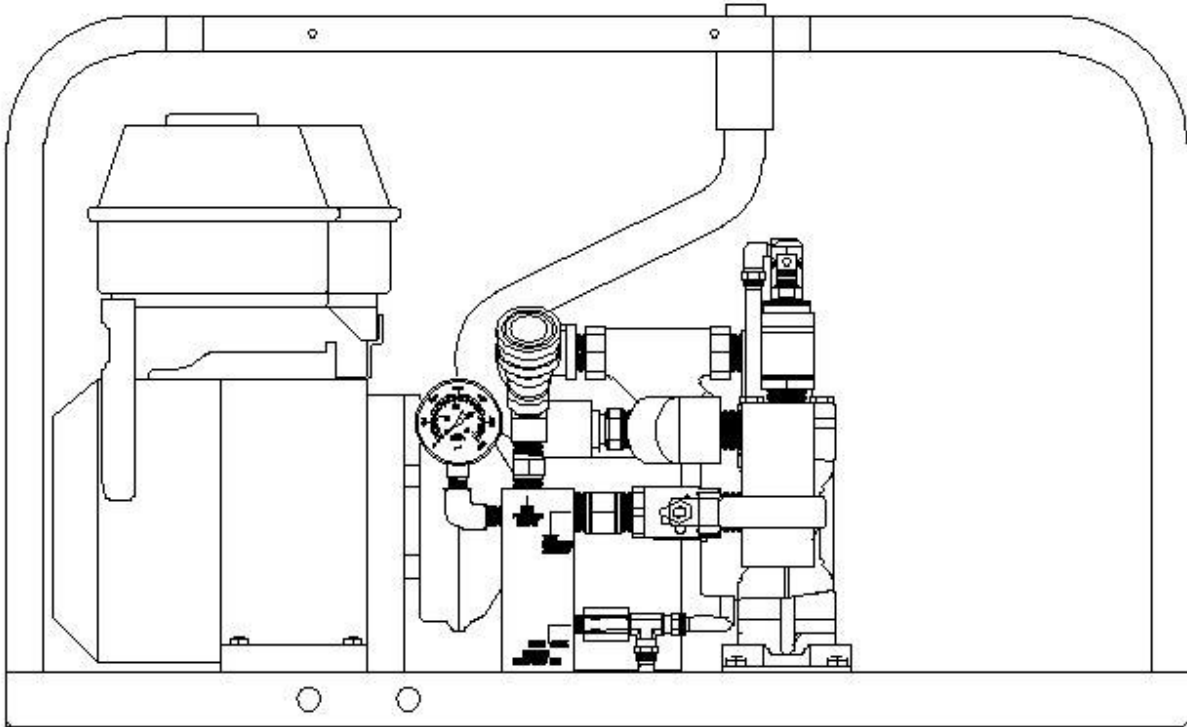


AQUA-LOC[®] HYDROSTATIC TEST PUMP (PISTON STYLE)

OPERATION AND MAINTENANCE MANUAL

PART NUMBER 278-138 (Honda)



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!!CAUTION!!

ENGINE IS SHIPPED WITHOUT OIL!

**FILL ENGINE WITH OIL BY REMOVING OIL FILLER
PLUG AND FILL UNTIL OVERFLOWING BEFORE
ATTEMPTING TO START ENGINE!**

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

**DO NOT RUN PUMP DRY FOR MORE THAN 30 SECONDS. FAILURE
TO COMPLY COULD RESULT IN PREMATURE PUMP 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

- * **5.5 HORSE POWER GASOLINE ENGINE** (Honda)
- * **SELF-PRIMING TWIN PISTON PUMP** with an output capacity of 10.0 gpm/450 PSI. Additional pump features include a lightweight gear reduction unit.
 - **SILICONE FILLED GAUGE** with a stainless steel case.
 - **INLINE STRAINER** with easy access to filter for cleaning.
- * **12' LONG 3/4" ID HIGH PRESSURE OUTPUT HOSE** with hydraulic quick-disconnect and 3/4 NPT swivel adapter fittings.
- * **THERMAL RELIEF VALVE** to automatically protect unit from overheating.
 - **A WHEEL ASSEMBLY Kit (Optional)** with semi-pneumatic tires makes transporting the unit convenient and simple.
 - **Manifolds** are used to reduce number of fittings and possibility of fluid leakage.
 - **Clear Recirculation Hose** to verify water flow through pump.

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 WT oil.

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

1	278-138	1	HYDROSTAIC TEST PUMP
2	039-308	1	OPERATIONS AND MAINTENANCE MANUAL
3	031-198	1	HOSE, DISCHARGE, 12FT
4	091-510	1	OIL, 1 QUART-30WT, BOTTLE WITH CAP
5	N/A	1	HONDA ENGINE MANUAL
6	N/A	1	HYPRO PUMP MANUAL

PARTS LIST
(Honda Engine)

Refer to Drawings on Pages 9-12.

1	039-298	1	ENGINE, HONDA 5.5HP 6:1 GEAR RATIO
2	031-118	1	PUMP, BIG TWIN
3	031-108	1	HOSE, PULSE
4	039-258	1	COUPLING, 1" BORE
5	039-268	1	COUPLING, ¾" BORE
6	039-248	1	URETHANE DISC
7	031-188	1	VALVE, PRESSURE RELIEF, 0-400 PSI
8	031-068	1	COUPLING GUARD
9	031-438	1	STRAINER, ¾"
10	022-778	1	GAUGE, 0-600 PSI
11	031-198	1	HOSE, DISCHARGE, 12FT
12	056-348	1	BASE, PISTON, DIAPHRAGM OR VACUUM PUMP
13	031-598	1	VALVE, THERMAL RELIEF
14	031-208	1	MANIFOLD, PUMP OULET
15	031-218	1	MANIFOLD, COUPLER BLOCK
16	031-228	1	MANIFOLD, PUMP INLET
17	031-238	1	INLET SUPPORT
18	022-828	1	HYDRAULIC QUICK DISCONNECT, ¾"
19	031-248	1	VALVE, BALL, ¾"
20	054-267	1	GARDEN HOSE FITTING
21	030-178	2	HOSE, CLAMP, ¾" – 1 ½"
22	031-258	1	SHOULDER NIPPLE, ¾" STEEL
23	003-344	1	ELBOW, 90 DEGREE, ¼" BRASS
24	021-628	2	ADAPTER, ¾" MPT X HOSE BARB
25	031-268	1	HOSE, CLEAR
26	035-688	1	RUBBER WASHER, ¾"
27	031-278	1	PIPE CAP, ½" BRASS

AQUA-LOC® HYDROSTATIC TEST PUMP

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28	031-138	1	VALVE, DRAIN
29	031-128	1	ELBOW, 90 DEGREE, HYDRAULIC
30	000-507	4	BOLT, 5/16-18 X 1"
31			
32	000-450	4	BOLT, 5/16-18 X 1 1/2"
33	019-887	2	TACK, METAL, 10105
34	000-930	8	NUT, HEX, 5/16-18, SS, SELF LOCKING
35	000-361	8	BOLT, 1/4-20 X 1/2"
36			
37	037-338	6	NUT, HEX, 1/4-20, SELF LOCKING
38	031-288	1	SHOULDER NIPPLE, 3/4", BRASS
39	031-298	1	SHOULDER NIPPLE, 1/2", BRASS
40	003-565	1	NIPPLE, 1/4", BRASS
41	052-272	3	CLOSE NIPPLE, 3/4" STEEL
42	014-796	1.5 FT	TUBING, 3/8 INCH POLYETHYLENE
43	008-308	1	PLUG, 3/4", GALVANIZED
44	039-308	1	O&M MANUAL, HYDROSTATIC TESTPUMP
45	002-607	1	TEE, 1/4" MPT X 3/8" TUBE, M-RUNNING
46	031-728	1	ELBOW, 90 DEGREE, 1/8" MPT X 3/8" PLOY
47	052-264	1	ELBOW, 90 DEGREE, 3/4" GALVANIZED
48	292-656	1	KEY STOCK 3/16" X 1"
49	031-968	1	U-BOLT 2 X 1/4-20X 1.13 WIDE
50	026-758	1	CABLE, 1/16 DIA YLW POLY 6.12" L
51	026-768	1	FERRULE, 1/16", CABLE, NICKEL PLATED
52	031-718	1	TAG, INSTRUCTIONAL, HYDROSTATIC TEST PUMP
53	023-268	.125	LOCTITE-THREAD SEALER, #545, 50ML
54	039-318	1	LABEL, BASE
55	031-748	1	LABEL, INTAKE
56	031-768	1	LABEL 1, INTAKE MANIFOLD

57	031-778	1	LABEL 2, INTAKE MANIFOLD
58	031-788	1	LABEL, OUTPUT MANIFOLD
59	031-808	1	LABEL, COUPLER BLOCK
60	000-027	8	WASHER, ¼" FLAT
61	000-051	4	WASHER, 3/8" FLAT
62	000-043	16	WASHER, 5/16" FLAT
63	091-510	1	Oil, 1 QUART-30WT, BOTTLE WITH CAP
64	N/A	1	HYPRO PUMP MANUAL
65	N/A	1	HONDA ENGINE MANUAL
66	032-218	1	CARTON, HYDROSTATIC TEST PUMP, PISTON STYLE
67	039-328	1	CARTON LABEL, HYDROSTATIC TEST PUMP, PISTON STYLE
68	005-789	1	LABEL, MODEL-SERIAL NUMBER, METAL TAG
70	054-028	2	NIPPLE, CLOSE, ¾" NPT, 1000 PSI MINIMUM
71	054-038	1	ELBOW, 45 DEGREE, ¾" NPT, 3000 PSI
72	054-048	1	CHECK VALVE, ¾ MPT
73	055-568	1	ELBOW, 45 DEGREE STREET, ½ NPT, BRASS

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 gear reduction unit. See maintenance section of this manual for proper fluids and fluid levels.
2. Check fuel level in engine. Turn fuel valve to “on” position.
3. Close drain valve.
4. Hook water supply to intake port.
5. Turn on water supply or submerge supply hose in water reservoir.
6. Back off pressure relief valve for easier starting.
7. Open the 3/4” ball valve by aligning the handle parallel to the base.
8. Start engine. Cold engine: full choke, throttle to half, pull recoil starter. With engine running, move choke to half, move throttle to full and choke to run.
Warm engine: half choke, throttle to half, pull recoil starter. With engine running, move throttle to full and choke to run.
9. Set test pressure. Loosen lock nut on pressure relief valve, turn valve stem until desired test pressure is reached. Tighten lock nut. Note: turning valve stem clockwise increases test pressure, turning valve stem counter-clockwise reduces pump pressure.
10. Hook up discharge hose to high-pressure output (3/4” quick disconnect).
11. **TESTING PROCEDURE**

NOTE: Make sure pipeline has been properly flushed, filled, and purged of all air before continuing.

- A. Allow pump to build required pipeline pressure. Refer to appropriate AWWA standard pressure requirements for the type of pipe being tested.
- B. When required line pressure is reached, shut-off output ball valve to perform pressure test. Leave ball valve open to perform leakage test. Duration of simultaneous tests is at least two (2) hours, unless otherwise specified.

NOTE: Pump is equipped with a thermal relief valve that may relieve after extended running time. Any relieved water will exit under the pump, near the drain valve.

- C. If necessary, operate pump to maintain test pressure for the specified time period (2 hours minimum) while carefully examining all exposed pipe, fittings, valves and hydrants for leakage.

- D. Refer to the appropriate AWWA standard for allowable leakage specifications on the type of pipe being tested.
12. Shut Down procedures
- Shut off engine.
 - Shut off water supply
 - Purge the high-pressure output line and hose by opening drain valve to release pressure. Disconnect discharge hose when pressure gauge reads zero.
 - Disconnect water supply.
 - With drain valve and ball valve open, start engine and run for 10-15 seconds to completely drain system.
 - If chlorinated water supply was used, flush unit.
 - Turn off fuel valve.
 - Close drain valve.

WARNING: Unit must be drained to prevent damage from freezing.

TROUBLE SHOOTING GUIDE

PROBLEM	POSSIBLE CAUSES	SOLUTION
Air bubbles visible in clear intake hose.	<ol style="list-style-type: none"> 1. Loose crow's foot fitting connection 2. Intake hose not fully submerged in water reservoir 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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
Pressure valve indicator oscillates	Water in pulse hose	Bleed pulse hose: Disconnect output and input water supply, open ball and drain valves, and then run engine for 10-15 seconds.
	Pulse hose not elevated	Bleed pulse hose and position Pulse hose as shown on page 12.

MAINTENANCE

- Flush pump with a 50:50 mixture of water and non-toxic anti-freeze for winter storage or use in freezing conditions.
- Refer to engine and pump Manufacturer's Operations manuals for specific information on maintaining and troubleshooting their units.

ENGINE LUBRICATION MAINTENANCE	
OIL TYPE	CAPACITY/FILL LEVEL
Nondetergent, SAE 30 weight	Fill until overflowing

GEAR REDUCTION LUBRICATION MAINTENANCE	
OIL TYPE	CAPACITY/FILL LEVEL
Nondetergent, SAE 30 weight	Fill until overflowing.

PUMP LUBRICATION MAINTENANCE	
GREASE TYPE	CAPACITY/FILL LEVEL
Moly-Lithium No.2 wheel bearing grease	N/A

- Change engine oil after one month or 20 hours of use, then every 6 months or 100 hours.
 Change gear reduction oil after one month or 20 hours of use, then every 6 months or 100 hours.
 Lubricate pump a minimum of every 100 hours.
 Check engine oil each time engine is run.
 Check gear reduction oil each time engine is run.

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.