

# **MICRO-HYDRO GENERATOR**

## **LV750 LOW PRESSURE**

**12/24/48 VOLT**

**750 Watt**

**LOW PRESSURE**

**HYDRO INDUCTION POWER**  
P.O. Box 1936 Redway, CA 95560 (707) 923-3507  
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## WIRING INSTRUCTIONS FOR LOW VOLTAGE UNIT

1. Connect and clamp flexible pipe to nozzle tubes (see diagram). Warming the plastic pipe with warm water or propane torch makes it easier to work with.
2. Connect and fuse Hydro to batteries, using appropriate wire and fuse (see chart). *WARNING: Reverse Polarity will destroy the fuse and/or the rectifier.* If no meter is available to check and wire is not color coded, use a small fuse (<10A) or a short piece of thin wire (single strand of speaker wire) as a fuse, until you are sure you have it right. Red = Positive. Code requires a fuse at both ends of wire.
3. Slowly open gate valve and check that output does not exceed 1200 Watts (Amps x Volts = Watts). The Amp meter should be at least 2" from motor and other wires when reading. It can be removed and placed on line near residence for convenience.
4. Wait to see if pressure is maintained. If not, use smaller nozzle. Maximum power will be produced if running pressure is 2/3 or more of static pressure.
5. Check housing for adequate drainage - do not allow wheel to be flooded.
6. Check hydro about an hour after installation, and then monthly, for excessive heat, noise, or vibration.
7. Check runner annually: there should be no play or noise from the bearing. Output will increase slightly, when bearings are seated.
8. Check motor and rectifier annually for corrosion. Coat every other year with grease or oil to prevent corrosion.
9. Cover any sign of corrosion on the motor, connections or your batteries with a liberal layer of oil or grease.

<b>FLOW THROUGH NOZZLES IN GPM AT VARIOUS HEADS</b>														
<b>Feet</b>	<b>Psi</b>	<b>1/8"</b>	<b>3/16"</b>	<b>1/4"</b>	<b>5/16"</b>	<b>3/8"</b>	<b>7/16"</b>	<b>1/2"</b>	<b>5/8"</b>	<b>3/4"</b>	<b>7/8"</b>	<b>1.0"</b>	<b>RPM for 4" Turbine</b>	
<b>5</b>	<b>2.2</b>	-	-	-	-	6.18	8.4	11	17.1	24.7	33.6	43.9	460	
<b>10</b>	<b>4.3</b>	-	-	3.88	6.05	8.75	11.6	15.6	24.2	35	47.6	62.1	650	
<b>15</b>	<b>6.5</b>	-	2.68	4.76	7.4	10.7	14.6	19	29.7	42.8	58.2	76	800	
<b>20</b>	<b>8.7</b>	1.37	3.09	5.49	8.56	12.4	16.8	22	34.3	49.4	67.3	87.8	925	
<b>30</b>	<b>13</b>	1.68	3.78	6.72	10.5	15.1	20.6	26.9	42	60.5	82.4	107	1140	
<b>40</b>	<b>17</b>	1.94	4.37	7.76	12.1	17.5	23.8	31.1	48.5	69.9	95.1	124	1310	
<b>50</b>	<b>22</b>	2.17	4.88	8.86	13.6	19.5	26.6	34.7	54.3	78.1	106	139	1470	
<b>60</b>	<b>26</b>	2.38	5.35	9.51	14.8	21.4	29.1	38	59.4	85.6	117	152	1600	
<b>80</b>	<b>35</b>	2.75	6.18	11	17.1	24.7	33.6	43.9	68.6	98.8	135	176	1850	
<b>100</b>	<b>43</b>	3.07	6.91	12.3	19.2	27.6	36.6	49.1	76.7	111	150	196	2070	
<b>120</b>	<b>52</b>	3.36	7.56	13.4	21	30.3	41.2	53.8	84.1	121	165	215	2270	
<b>150</b>	<b>65</b>	3.76	8.95	15	23.5	33.8	46	60.1	93.9	135	184	241	2540	
<b>200</b>	<b>87</b>	4.34	9.77	17.4	27.1	39.1	53.2	69.4	109	156	213	278	2930	
<b>250</b>	<b>108</b>	4.86	10.9	19.9	30.3	43.6	59.4	77.6	121	175	238	311	3270	
<b>300</b>	<b>130</b>	5.32	12	21.3	33.2	47.8	65.1	85.1	133	191	261	340	3590	
<b>400</b>	<b>173</b>	6.14	13.8	24.5	38.3	55.2	75.2	98.2	154	221	301	393	4140	
		3/4" NOZZLE HOLDER								TURGO ONLY				

## WIRE LOSS CHART

This 10%, 12V, Wire Chart represents a normal situation for most hydros.

Hydros can have a much larger voltage drop, as they are not 'voltage limited' like solar panels. In some cases, a 50% or larger voltage drop is acceptable as long as the final power output matches your needs. For example, having a 12V hydro 1000 feet away, will result in about 50% loss at 20A, using #2 wire. Meaning, the hydro will be running at 24V, producing 480W, while the battery is at 12V, receiving 240W.

Most systems are designed with a 5 - 30% loss, which is what you would expect to lose in high voltage transformers, etc. This means, you would go 1-3 times the distance suggested in the chart for 12V and 2-6 times for 24V.

Maximum distance one way in feet of various gauges 2 conductor copper wire from hydro to battery. Using one size larger aluminum wire with correct (non-copper) connectors works very well.

<b>AMPS</b>	<b>#14</b>	<b>#12</b>	<b>#10</b>	<b>#8</b>	<b>#6</b>	<b>#4</b>	<b>#2</b>	<b>1/0</b>	<b>2/0</b>	<b>4/0</b>
<b>1</b>	225	350	575	900	1450	2280	3600			
<b>2</b>	112	175	287	450	725	1140	1800	2900	3600	5300
<b>4</b>	50	87	137	225	362	570	900	1450	1800	2900
<b>6</b>	37	60	87	150	237	375	600	965	1215	1900
<b>8</b>	27	42	75	112	177	285	450	725	900	1450
<b>10</b>	22	35	60	90	142	227	362	575	725	1150
<b>15</b>	15	22	35	60	85	150	240	382	480	750
<b>20</b>		17	27	45	72	112	180	287	362	580
<b>25</b>			22	35	57	90	145	230	290	460
<b>30</b>			17	30	47	75	120	192	242	385

**FUSES:**

Use 20A or less fuses with #12 wire, or 30A if using #10 or larger wire.  
 Max fuse for 12V: 60A, 24V: 60A, 48V: 30A, 150V: 15A.

**MAXIMUM OUTPUT:**

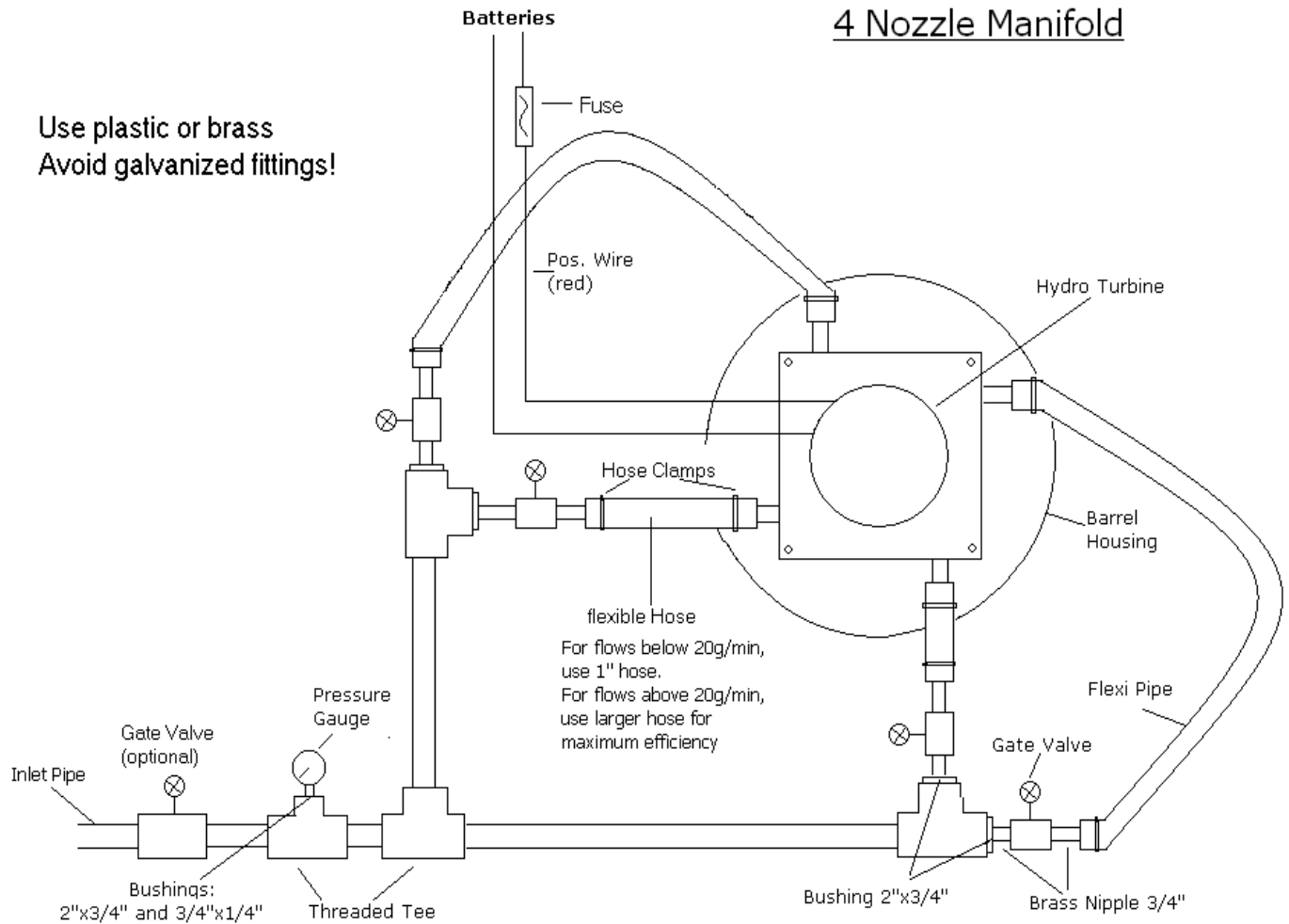
Although the unit is capable of putting out 750W (Volts x Amps = Watts), the motor may get hot below this output at some sites. The maximum output is limited to the heat of the motor. If the motor is too hot to keep your hand on, you should reduce the flow. If the motor is getting hot and you would like more power, this can be achieved with the use of an MPP tracker, available from us. Different trackers are used, depending on the site. Check our website [www.homehydro.com](http://www.homehydro.com).

## **OUTPUT/EFFICIENCY CHART LV750 - LOW PRESSURE MODEL**

Feet	Psi	1/8	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8
20	8.7				12 – 39%	23 – 52%	35 – 58%	48 – 61%	55	70 – 57%
30	13			12 – 33%	30 – 53%	45 – 55%	98 – 61%	85 – 59%	107	125 – 55%
40	17			26 – 48%	50 – 59%	73 – 60%	146 – 59%	130 – 60%	156 – 57%	182 – 54%
50	22		17 – 39%	38 – 48%	68 – 56%	100 – 57%	152 – 57%	177 – 57%	210	250 – 51%
60	26		22 – 39%	50 – 50%	88 – 57%	125 – 56%	208 – 58%	218 – 55%	256 – 51%	302 – 49%
70	30		29 – 40%	60 – 46%	105 – 52%	150 – 52%	247 – 53%	260 – 52%	302	346 – 44%
80	35		36 – 42%	78 – 51%	125 – 52%	175 – 51%	283 – 53%	312 – 51%	332 – 43%	416 – 43%
90	39		41 – 39%	88 – 47%	143 – 49%	208 – 49%	317 – 50%	370 – 52%	383	473 – 41%
100	43		48 – 40%	100 – 47%	163 – 49%	234 – 49%	394 – 48%	419 – 49%	424 – 39%	523 – 39%
110	50	18 – 30%	59 – 43%	115 – 48%	193 – 51%	268 – 49%	362 – 48%	462 – 48%	489 – 40%	
120	52	20 – 28%	60 – 38%	128 – 46%	203 – 46%	289 – 46%	408 – 47%			Watts/ Efficiency

# Suggested Hookup

Use plastic or brass  
Avoid galvanized fittings!



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