

“Innovative Renewable Energy Systems Since 1980”

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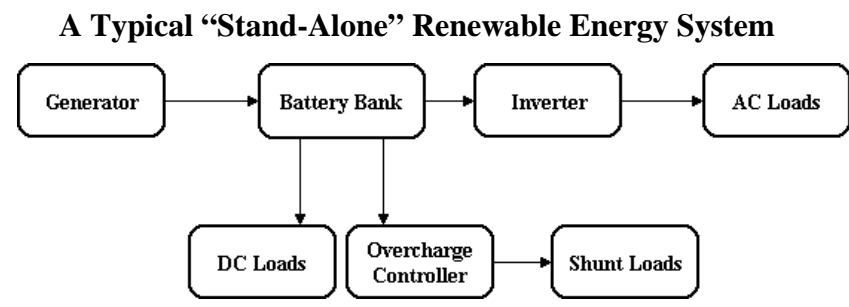


Energy Systems & Design's Easy Tune Stream Engine is a micro hydro electric turbine generator designed for use in battery-based power systems, with electricity generated at a steady rate, and stored in batteries for use at higher rates than is generated. During times of low demand, power is stored. An inverter is used when AC power is required.

Water from a stream is channeled into a pipeline to gain enough head (the vertical distance the water falls) to power the system. The Stream Engine operates at heads of about two meters (6 feet) and upward. The water passes through a nozzle, where it accelerates, strikes the bronze turgo or low flow wheel and turns the generator shaft. Up to four universal nozzles can be installed on one machine, depending on conditions. Each Stream Engine is supplied with a digital multimeter as well as extra nozzles.

Energy Systems & Design 2 Nozzle Stream Engine
Stream Engine Output (Watts Continuous)

Net Head		Flow Rate						
		Liters/sec (Gallons/min)						
		0.67 (10)	1.33 (20)	2.50 (40)	5.00 (75)	6.67 (100)	7.50 (112)	9.50 (150)
Meters	Feet							
3	10	-	20	40	75	100	130	150
6	20	15	40	80	150	200	250	350
15	49	45	100	200	375	500	650	800
30	98	80	200	400	750	1000	*	*
60	197	150	400	800	1500	*	*	*
90	295	200	550	1200	*	*	*	*
120	394	300	700	1500	*	*	*	*
150	492	400	850	1900	*	*	*	*



Stream Engine \$2495 2 nozzle

Energy Systems & Design's Low Head (LH1000) micro hydro electric turbine generator uses the same generator as the Stream Engine; however the water turbine component uses a low-head bronze propeller design. This enables the machine to produce power from heads of 0.5 meters (2 feet) up to three meters (10 feet). At the maximum head, the output is one kilowatt.

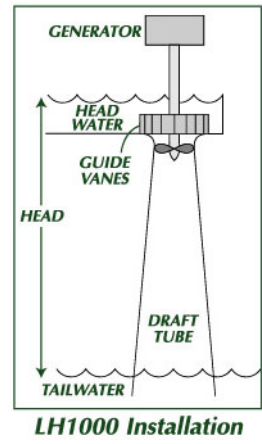


LH1000 Power Output Chart

LH1000 \$2975

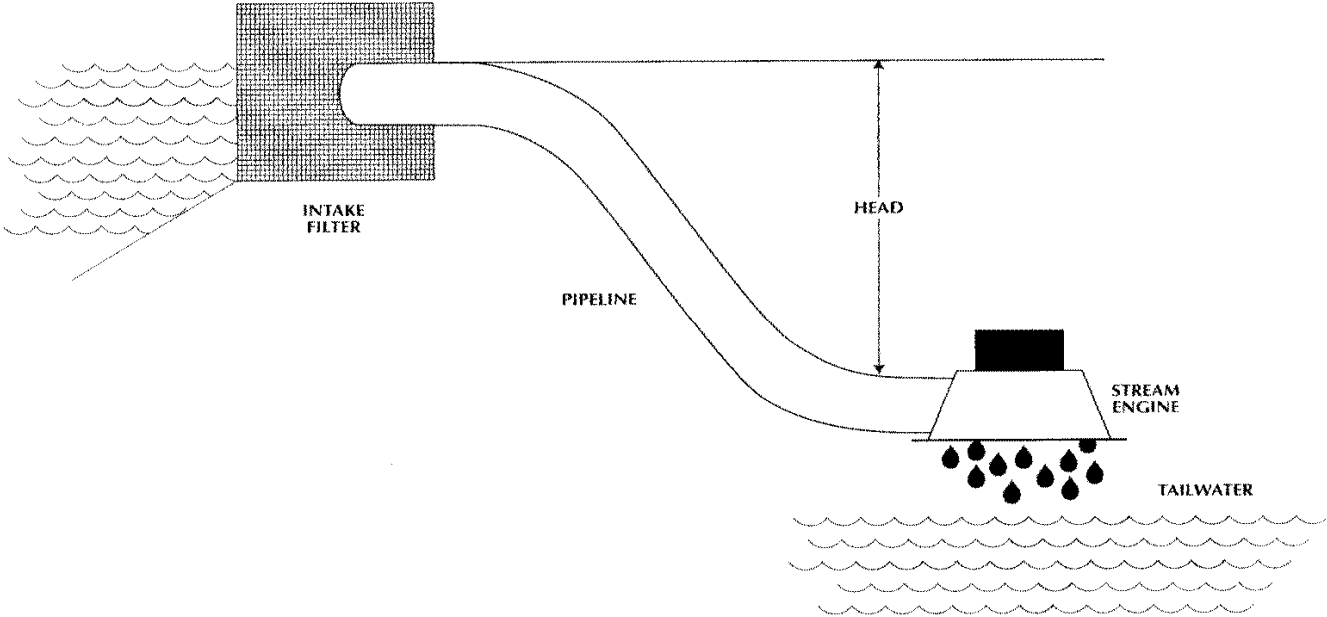
Head (feet)	Flow Volume (GPM)	Watts (approximate)	Pipe Size (minimum)
1	320	25	8"
2	450	70	8"
3	550	150	10"
4	635	250	10"
5	710	350	10"
6	775	465	12"
7	840	585	12"
8	895	715	12"
9	950	850	12"
10	1000	1000	12"

Head in feet can be converted to meters by multiplying feet x .3048



If there is not enough water volume for the available head, the head can be reduced to match the available volume of water. A low volume runner is available that uses half the water giving half the usual power for a given head. The head can be reduced by adjusting the vertical drop for the diversion inlet and/or the length of the draft tube. If the site cannot produce the water volume necessary for the head, the turbine will not have enough water to operate, causing air to be sucked into the machine. This situation will reduce the power output considerably. If the water flow exceeds what is required to operate the machine, consider adding additional turbines.

STREAM ENGINE INSTALLATION



LH1000 INSTALLATION

