



HYDRO TURBINE

ELECTRICITY FROM WATER

Renewable energy is the cost effective solution for the future.

Generate power from 200W – 2.5kW



PowerPal- Low Head is a simple single phase, brushless magnet alternator, which is attached to a turgo turbine for applications with high heads. The electronic load controller stabilizes the voltage to 220V. Once installed there is no running cost and the maintenance is extremely low.

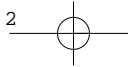
PowerPal T1,T2 and T5 is fitted with a turbine attached to a 1kW or 2kW Induction Generator. The stream flow is diverted through a 15cm diameter pipe to the turbine. Voltage is controlled by the ELC.

Bigger installations can be done with the T8, T16 and Mill Series. Information needed to quote these is the head and available water flow.

CONTACT: Frikkie 073 070 8545 • Jo 082 552 3917

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59 Trump Street West, Selby, Johannesburg 2001



PowerPal Pow Head (200W – 1kW)

TURBINE	MHG-200LH	MHG-500LH	MHG-1000LH
Head(m)	1.5	1.5	1.5
Flow (l/s)	35	70	130
Output (watt)	200	500	1000

PowerPal High Head

TURBINE	MHG-200HH		MHG-500HH				
Head(m)	5	6	7	8	9	10	11
Flow(l/s)	6.3	6.4	7.4	7.9	8.4	8.9	9.1
Output(w)	160	200	275	325	390	460	520

Powerpal T1, T2 and T5 (1kW-2.5kW)

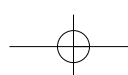
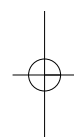
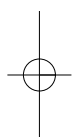
T-1(1kW)					Output(w)
Head(m)	8	9	10	11	
Flow(l/s)	21				660
		22			780
			23		900
				24	1000

T-2 (1.5kW)									Output(w)
Head(m)	14	15	16	17	18	19	20		
Flow(l/s)	18.5	17.3	16.2	15.2	14.4	13.6	12.9		1250
		18.5	17.3	16.3	15.4	14.6	13.9		1361
			18.5	17.4	16.5	15.6	14.8		1452
				18.5	17.5	16.6	15.7		1543
					18.5	17.5	16.6		1633
						18.5	17.6		1724
							18		1750

T-2 (2kW)						Output(w)
Head(m)	16	17	18	19	20	
Flow(l/s)	23	21.6	20.4	19.4	18.4	1750
		23	21.7	20.6	19.6	1918
			23	21.8	20.7	2031
				23	21.8	2134
					23	2250

T- 2(2kW)											Output (w)
Head(m)	24	26	28	30	32	34	36	38	40		
Flow(l/s)	13	12	11.1	10.4	9.7	9.2	8.7	8.2	7.8		1500
		13	12.1	11.3	10.6	9.9	9.4	8.9	8.5		1658
			13	12.1	11.4	10.7	10.1	9.6	9.1		1785
				13	12.2	11.5	10.8	10.3	9.8		1913
					13	12.2	11.6	10.9	10.4		2040
						13	12.3	11.6	11		2168
							13	12.3	11.7		2296
								13	12.3		2423
									13		2500

T-5 (2kW)											Output (w)
Head(m)	11	12	13	14	15	16	17	18	19	20	
Flow(l/s)	28	25.5	23.5	21.8	20.4	19.1	18	17	16.1	15.3	1500
		28	25.8	24	22.4	21	19.8	18.7	17.7	16.8	1648
			28	26	24.3	22.8	21.4	20.2	19.2	18.2	1785
				28	26.1	24.5	23.1	21.8	20.6	19.6	1923
					28	26.3	24.7	23.3	22.1	21	2060
						28	26.4	24.9	23.6	22.4	2197
							28	26.4	25.1	23.8	2335
								28	26.5	25.2	2472
									27	25.7	2500





HIDRO TURBINE

**Elektrisiteit van water.
Hernubare energie is die oplossing vir die toekoms.
Genereer vanaf 200W – 2.5kW**

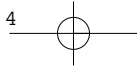


PowerPal -Lae Kop is 'n enkelfase, borsellose magneet wisselaar, wat gekoppel is aan 'n turgo turbine vir aplikasies vir hoë kop hoogtes. Die elektroniese kontroleerder stabiliseer die krag na 220V. Na installering is die onderhouds koste baie laag.

PowerPal T1,T2 en T5 is 'n turbine wat aan 'n 1kW en 2kW wisselaar gekoppel is. Die water stroom word deur 'n 15 sm diameter pyp na die turbine gelei. Die krag word deur die ELC gekontroleer.

Groter installasies kan gedoen word met die T8, T16 en Mill Reeks. Inligting benodig vir die kwotasie is kop hoogte en beskikbare water vloeï.

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Output (watt)	200	500	1000

PowerPal High Head

TURBINE	MHG-200HH		MHG-500HH				
Head(m)	5	6	7	8	9	10	11
Flow(l/s)	6.3	6.4	7.4	7.9	8.4	8.9	9.1
Output(w)	160	200	275	325	390	460	520

Powerpal T1, T2 and T5 (1kW-2.5kW)

T-1(1kW)					Output(w)
Head(m)	8	9	10	11	
Flow(l/s)	21				660
		22			780
			23		900
				24	1000

T-2 (1.5kW)								Output(w)
Head(m)	14	15	16	17	18	19	20	
Flow(l/s)	18.5	17.3	16.2	15.2	14.4	13.6	12.9	1250
		18.5	17.3	16.3	15.4	14.6	13.9	1361
			18.5	17.4	16.5	15.6	14.8	1452
				18.5	17.5	16.6	15.7	1543
					18.5	17.5	16.6	1633
						18.5	17.6	1724
							18	1750

T-2 (2kW)						Output(w)
Head(m)	16	17	18	19	20	
Flow(l/s)	23	21.6	20.4	19.4	18.4	1750
		23	21.7	20.6	19.6	1918
			23	21.8	20.7	2031
				23	21.8	2134
					23	2250

T- 2(2kW)										Output (w)
Head(m)	24	26	28	30	32	34	36	38	40	
Flow(l/s)	13	12	11.1	10.4	9.7	9.2	8.7	8.2	7.8	1500
		13	12.1	11.3	10.6	9.9	9.4	8.9	8.5	1658
			13	12.1	11.4	10.7	10.1	9.6	9.1	1785
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					13	12.2	11.6	10.9	10.4	2040
						13	12.3	11.6	11	2168
							13	12.3	11.7	2296
								13	12.3	2423
									13	2500

T-5 (2kW)											Output (w)
Head(m)	11	12	13	14	15	16	17	18	19	20	
Flow(l/s)	28	25.5	23.5	21.8	20.4	19.1	18	17	16.1	15.3	1500
		28	25.8	24	22.4	21	19.8	18.7	17.7	16.8	1648
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