



PowerSpout Parts List



**Please check that all your parts are enclosed
before beginning installation**

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PowerSpout Installation Manual
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Revisions history

- 1.1 Minor text and picture revisions Jan 2011
- 1.2 Minor text revisions Feb 2011



PowerSpout Contact details

Web: www.powerspout.com

If you cannot find the answers to your questions about our product, renewable energy systems, or your site's potential in this document or on our website at powerspout.com, please visit powerspout.com/faq and submit a question. We will answer this as quickly as possible, and you will be notified by email when this occurs.

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PowerSpout parts list

Part Number	Description	Material	Qty	Chk
Sub 01	Main casing assembly			
PS001	Main casing 470w x 400h x 340d mm	LDPE	1	
PS002	Casing end cap 350 diameter x100mm	LDPE	1	
PS003	Casing end cap sealing strip 1.2mx12mmx3mm	Foam Neoprene	1	
PS004	Casing end cap fixings 12g x 1" self tapper	Stainless Steel	6	
PS005	Bulk Head 445w x 382h x 4mm thick	Aluminium	1	
PS006	Bulk head sealing strip 1.5m x 15mm x 6mm	Foam Neoprene	1	
PS007	Bulk head fixings 12g x 1" self tapper	Stainless Steel	14	
PS008	Front glazing 335w x 300h x 3mm thick	PET	1	
PS009	Front glazing sealing strip 1.2m x 15mm x 6mm	Foam Neoprene	1	
PS010	Front glazing fixings 10g x 13mm	Stainless Steel	6	
PS011	Front glazing toggle latch	Stainless Steel	6	
PS012	Front glazing extra sealing screws 12g x 1" self tapper	Stainless Steel	6	
PS013	Hex head fix down tech screws 65mm long	Galvanised steel	4	
Sub 02	Shaft and bearing assembly			
PS020	Bearing block D76 x 113mm	Aluminium	1	
PS021	Bearing trim green D81 x 56mm long	PP	2	
PS022	Front bearing 6205 OD52 ID25mm	Steel	1	
PS023	Rear bearing 6005 OD47 ID25mm	Steel	1	
PS024	Shaft D25 x 276mm long	Stainless Steel	1	
PS025	Shaft retaining nut 32AF x 5mm thick	Steel	1	
PS026	1/4 BSW x 30mm fixings	Stainless Steel	4	
Sub 03	Seal slinger assembly			
PS030	Slinger housing top-hat D85 x 50mm long	PP	1	
PS031	Slingers OD42 x ID24 x 2mm thick	Rubber	2	
PS032	Slinger to bulk head seal	Rubber	1	
PS033	Slinger galvanised steel washer	Steel	1	
PS034	1/4 BSW x 30mm fixings and nylon seal washers	Stainless Steel/nylon	4	
Sub 04	Pelton rotor fixing components			
PS040	M12 x 50 Pelton Rotor fixing bolt	Stainless Steel	1	
PS041	Pelton alignment washer OD30 ID12 x1.5mm	Stainless Steel	4	
PS042	Pelton front clamp washer OD38xID12x1.8mm	Stainless Steel	2	
PS043	M12 Pelton rotor front spring washer	Stainless Steel	1	

Part Number	Description	Material	Qty	Chk
Sub 05	Pelton rotor assembly			
PS050	Pelton Spoon	GF30 Nylon	20	
PS051	Pelton Hub	GF30 Nylon	2	
PS052	M5 x 20 Pelton pan head fixings	Stainless Steel	20	
PS053	M5 Pelton nuts	Stainless Steel	20	
Sub 6	Smart Drive generator assembly			
PS060	Smart Drive stator D250 x 60mm	GF30PP, copper, steel	1	
PS061	Smart Drive rotor D275 x 68mm	GF30PP, ferrite, steel	1	
PS062	Smart Drive backing plate	PP	1	
PS063	Smart Drive extractor knob	GF30PP	1	
PS064	Optimization washers (BE only)	PP	6	
PS065	Smart Drive galvanised steel washer	Steel	2	
Sub 7	Jet assembly - 2 off			
PS070	Jet holder sleeve 2" BSP x 35mm long	uPVC	2	
PS071	Jet holder end cap 2" BSP x 35mm	GF30 Nylon	2	
PS072	Plastic jets D53 x 68mm (8 spares)	PP	10	
PS073	Ball valve 2" BSP or NPT	PVC	2	
PS074	2" 50mm pipe fitting (or pipe fitting adaptor supplied if purchased)	GF30 Nylon	2	
PS075	Pressure gauge 1/4 BSP fitting	Steel/Brass	1	
PS076	Jet 'O' ring seal	Rubber	2	
Sub 8	Electrical component assembly			
PS080	100 amp 3-phase rectifier	Electrical	1	
PS081	M6 x10 rectifier fixings	Stainless Steel	2	
PS082	2m of 32 amp cable	copper	1	
PS083	32 amp plug and socket	various plastic	1	
PS084	Cable entry gland	various plastic	1	
PS085	Silicon thermal paste	Silicon	1	
Sub 9	External lubrication assembly			
PS090	68 1/4 x 1/8 compression male connector	Brass	2	
PS091	BU24L 1/4 bulkhead union	Brass	1	
PS092	Back nut for bulk head union	Brass	1	
PS093	Nylon 11 1/4 black line tube 125mm long	Nylon	1	
PS094	Grease nipple	Steel	1	
Sub 10	ME or GE upgrade optional			
PS100	ME or GE voltage limiting circuit board (limit at 100,120,140, 250 or 450 VDC)	Electrical	1	
PS101	Circuit board fixings	Stainless Steel	3	
PS102	Water element to suit correct version 120 VDC 1500W for ME 100/120/140 240 VDC 1500W for ME 250 or GE 400	Copper metals	1	
PS103	Flat nut for element	Brass	1	
PS104	Wire to connect element to board	Copper/PVC	1	
Sub 11	Optional extras			
PS110	Amp box, range to suit client BE version only	Plastic	1	
PS111	PowerSpout tool kit	Various plastic/metal	1	
PS112	PVC 100m 65 NB high pressure manifold	PVC	1	

Part Number	Description	Material	Qty	Chk
PS113	Jet cap and 5 brass jets for low flow. Please note this is no longer needed as a new jet design can go as small as 2mm jets	GF30 Nylon/Brass	1	
PS114	DC clamp meter	Various	1	

Identifying the parts of your Power Spout

Please note NZ customers will have their PowerSpout delivered fully assembled. All export turbines have been fully assembled and checked prior to packing for export.



Sub 01 - Main casing assembly

Main components

			
PS001 Main Casing	PS002 Casing end cap	PS005 Bulk head	PS008 Front glazing
The main case components arrive pre-assembled ready for final attachment.			

Sub 02 – Shaft and bearing assembly
Sub 03 – Seal slinger assembly
Sub 04 – Pelton rotor fixing components

Sub 05 - Pelton rotor assembly

	
PS020 - PS026 – Sub 02 PS030 - PS034 – Sub 03 PS040 - PS043 – Sub 04	PS050-PS053
The above assembly contains 27 components and 16 different parts and is packed as shown above. The 8 x stainless steel fixings (4 each end) need to be removed so it can be installed into your PowerSpout. Note that 4 of these fixings have nylon washers that are for the wet side of the turbine	The Pelton rotor is supplied fully assembled.

Sub 06 - Smart Drive generator assembly



Rear view

You may have up to 6 wires on your unit.



Front view

Smart Drive stator PS060

Wiring type selected to suit your site data

Note the code 80-7S-2P –delta denotes the generator type supplied in this example.



Rear view



Front view

Smart Drive rotor PS061

Sub 07 - Jet assembly - 2 off



PS070-PS074 – 1 unit without a pressure gauge
 PS070-PS075 – 1 unit with a pressure gauge
 (gauge supplied to suit your maximum water head).

The thread in the valves are 2" BSP.

Fittings obtained in the USA will have 2" National Pipe Tapered threads (NPT threads). A PowerSpout sent to these destinations will have a ball valve with a 2" BSP thread on one side and 2" NPT thread on the other side. These clients connect to our turbine and the pipeline by buying a suitable fitting locally. If you live outside the USA but your country uses NPT threads you must advise when ordering

Sub 09 - External lubrication assembly



PS091 – PS094
Grease lubrication system

Sub 10 - ME (MPPT enabled) or GE (Grid enabled) upgrade - optional

For installers hooking this equipment to MPPT regulators or grid tied inverters then the following components need to be installed.



PS100 ME or GE voltage limiting plastic coated circuit board

You must state whether you require 100, 120, 140, 250, or 450 VDC when ordering these boards.
Voltage limit (Vclamp) is written on each board (see picture above right)

PS102-PS103 Water element
PS1004 wire links the two components together.

120 VDC 1500W for ME 100/120/140
240 VDC 1500W for ME 250 or GE 400



Sub 11 - Optional extras: Amp Box

PS110 Amp box – 1kg.
 Connects at hydro or battery end of cable to display generation amps.
 Supplied with 2 sets of 32 amp plug connectors.
 BE version only.



Sub 11 - Optional extras: PowerSpout Tool Kit

PS111 Power Spout tool kit – 1kg
 This useful tool kit comes with all the tools needed to assembly your PowerSpout. The case also has room for your service log book, and most tools needed to work on your PowerSpout.



- Contents:
- Knife for jet sizing
 - Taper gauge for jet sizing
 - Small adjustable spanner
 - 8,10,11,12 mm socket drives
 - Pencil
 - General screw driver bits
 - Plumbing thread sealing tape
 - Spare bearing set
 - Large Jet spanner
 - Optimization packing washers
 - Log book – print from our web site www.powerspout.com

Sub 11 - Optional extras: High pressure manifold

PS 112 PVC 100m 65NB high pressure manifold
 Packed weight is 5kg.

This manifold connects the 2 jets together using 65 NB pipe (3" OD) high pressure PVC pipe rated for a maximum head of 100m (150 psi).
 The manifold is supplied glued and ready to go for NZ customers and in 4 parts ready for final gluing together for all other customers.

Made from 11 PVC components it comprises:

- 2 x 450mm lengths of pipe
- 1 x pipe joiner
- 1 x RHS lower jet assembly pre-glued
- 1 x LHS upper jet assemble pre-glued

A fitting can be supplied to connect your pipe line for an extra charge



Manifold boxed for overseas customers



Manifold assembled on turbine

Sub 11 - Optional extras: Brass Jet Kit

PS113 Brass Jet kit - for jet sizes less than 6mm

Jets sizes are drilled to suit the customer needs or blank jets can be provided. Our standard plastic jets can only work to down to 6mm, below this size this kit should be used.

Please note this item is no longer needed as we have modified our injection mold to make jet inserts from 2mm upwards, these you can easily cut on site

Sub 11 - Optional extras: DC clamp meter

PS114 DC clamp meter

Nobody living off the grid on a battery based inverter system should be without a DC clamp meter.

It has both 40 and 400 amp DC scales plus all the normal features of a multi-meter

Full specifications at <http://www.ageta.hu/pdf/UT203204.pdf>