SunCentric

The SunCentric uses solar-electric power to pump as much as 50,000 gallons (200 m³) per day from shallow water sources. Applications include irrigation, live stock, domestic water, pond management, water tr eatment, solar water heating, hydronic space heating and fire protection. These pumps have been in worldwide use since 1989. They can be used without batteries. Maximum suction lift is 10 vertical feet (3 m).

PV Array-Direct Application
l A PV-direct system uses water storage instead of batteries. This is the simplest and most durable system for most applications.
l A pump controller (linear current booster) is not required.
l A solar tracker (optional) will help to maintain optimum flow through the entire solar day.
l Storage of 3-7 days' water demand is recommended.
l Optimum for circulation of solar-heated water.

Battery Application
l A battery system is best where there is need for constant pressure or pressure on demand, or where a tank is not feasible, or where a battery system is required for other power applications.
l Batteries can be charged by any power source.

Selecting a Pump
l Select the appropriate chart of "PV Array-Direct Applications" or "Battery Applications".
l Total dynamic head = vertical distance from surface of the water source to the discharge or top of storage tank + pipe friction losses.
l Use the solid line grid for English units. Use broken line grid for metric units.
l Locate the coordinates for the required head and flow.
l Find the pump curve that is nearest to that point.
l If there is more than one curve to chose from, compare the power requirements. If PV-direct, the curve that goes higher will work better during low sun intensity.
l For PV-Direct systems, array size (watts) is critical. Do not undersize the array. Oversizing will improve performance in low sunlight conditions.
l Multiple pumps can be used to provide greater flow.

Suction Capacity
l Suction limit is 10 vertical feet (3 m) at sea level–subtract 1 foot for every 1,000 ft. elevation (1 m per km).
l For best reliability, minimize or eliminate suction lift by placing the pump low and close to the water source. This will minimize the possibility of cavitation which causes excessive wear and loss of performance.
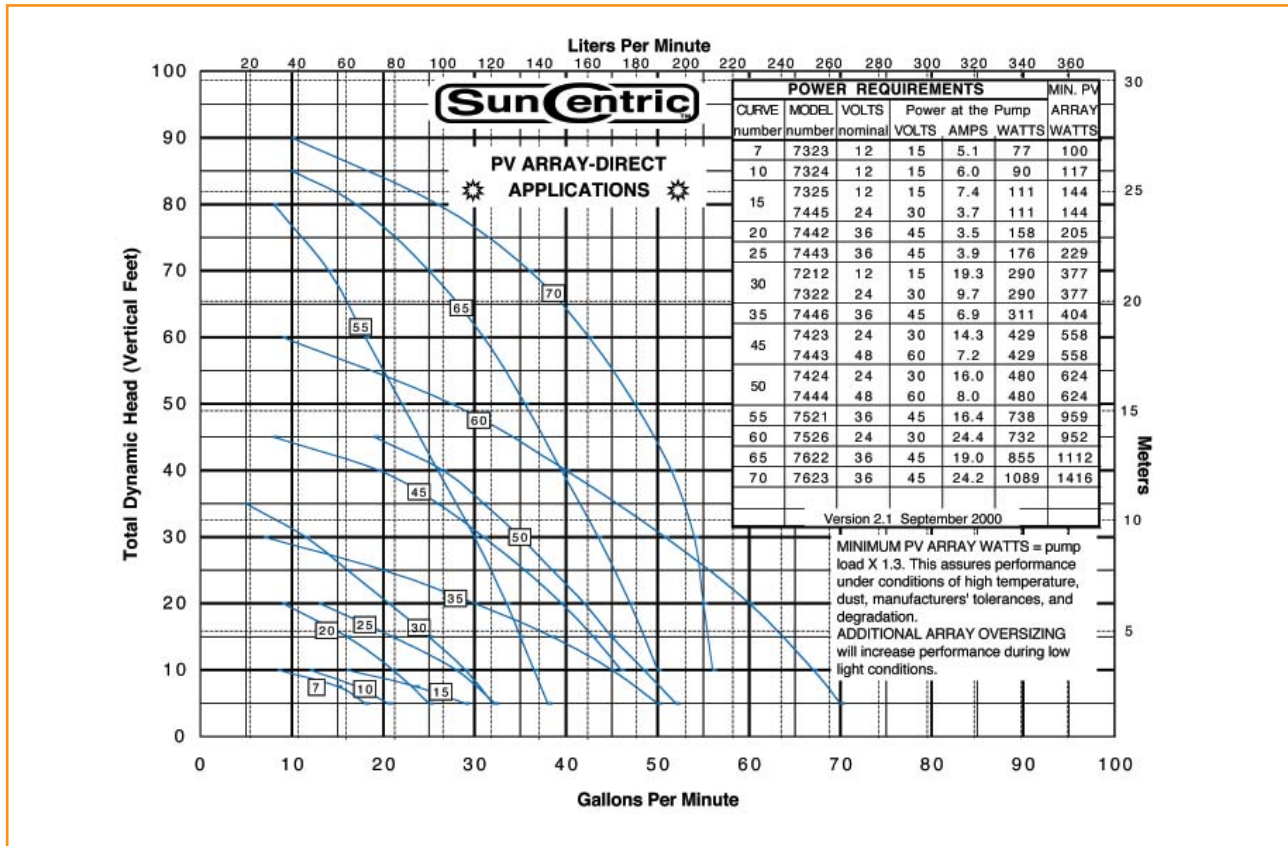
Pump Installation
l Pump must be sheltered from rain and direct sunlight.
l Horizontal position: place outlet at the top. It can be rotated to face horizontally or vertically upward.
l Vertical position: place motor on top.

Wire and Pipe Requirements
l Intake pipe: pipe should be as direct and short as possible. Avoid any high point that can trap an air pocket.
l Refer to a pipe sizing chart (included with the pump instructions). Pipe may need to be larger than the pump ports. Undersized pipe will greatly decrease pump performance.
l Size the wire for less than 3 % voltage drop. Undersized wire will greatly decrease pump performance. Refer to a low voltage wire sizing chart (available from Conergy, Inc.).

Overcurrent Protection
l Fuse or circuit breaker is required.
l Ampere rating = amps at the pump + 15-25 %
l Minimum DC voltage rating = volts at the pump X 2. (Type FRN fuses are rated 125 V DC)

SOLAR PUMPS

SunCentric

PV ARRAY-DIRECT APPLICATIONS

(Chart: Total Dynamic Head (Vertical Feet) / Meters vs. Gallons Per Minute / Liters Per Minute — curves 7, 10, 15, 20, 25, 30, 35, 45, 50, 55, 60, 65, 70)

CURVE number	MODEL number	VOLTS nominal	Power at the Pump VOLTS	AMPS	WATTS	MIN. PV ARRAY WATTS
7	7323	12	15	5.1	77	100
10	7324	12	15	6.0	90	117
15	7325	12	15	7.4	111	144
15	7445	24	30	3.7	111	144
20	7442	36	45	3.5	158	205
25	7443	36	45	3.9	176	229
30	7212	12	15	19.3	290	377
30	7322	24	30	9.7	290	377
35	7446	36	45	6.9	311	404
45	7423	24	30	14.3	429	558
45	7443	48	60	7.2	429	558
50	7424	24	30	16.0	480	624
50	7444	48	60	8.0	480	624
55	7521	36	45	16.4	738	959
60	7526	24	30	24.4	732	952
65	7622	36	45	19.0	855	1112
70	7623	36	45	24.2	1089	1416

Version 2.1 September 2000

MINIMUM PV ARRAY WATTS = pump load X 1.3. This assures performance under conditions of high temperature, dust, manufacturers' tolerances, and degradation. ADDITIONAL ARRAY OVERSIZING will increase performance during low light conditions.

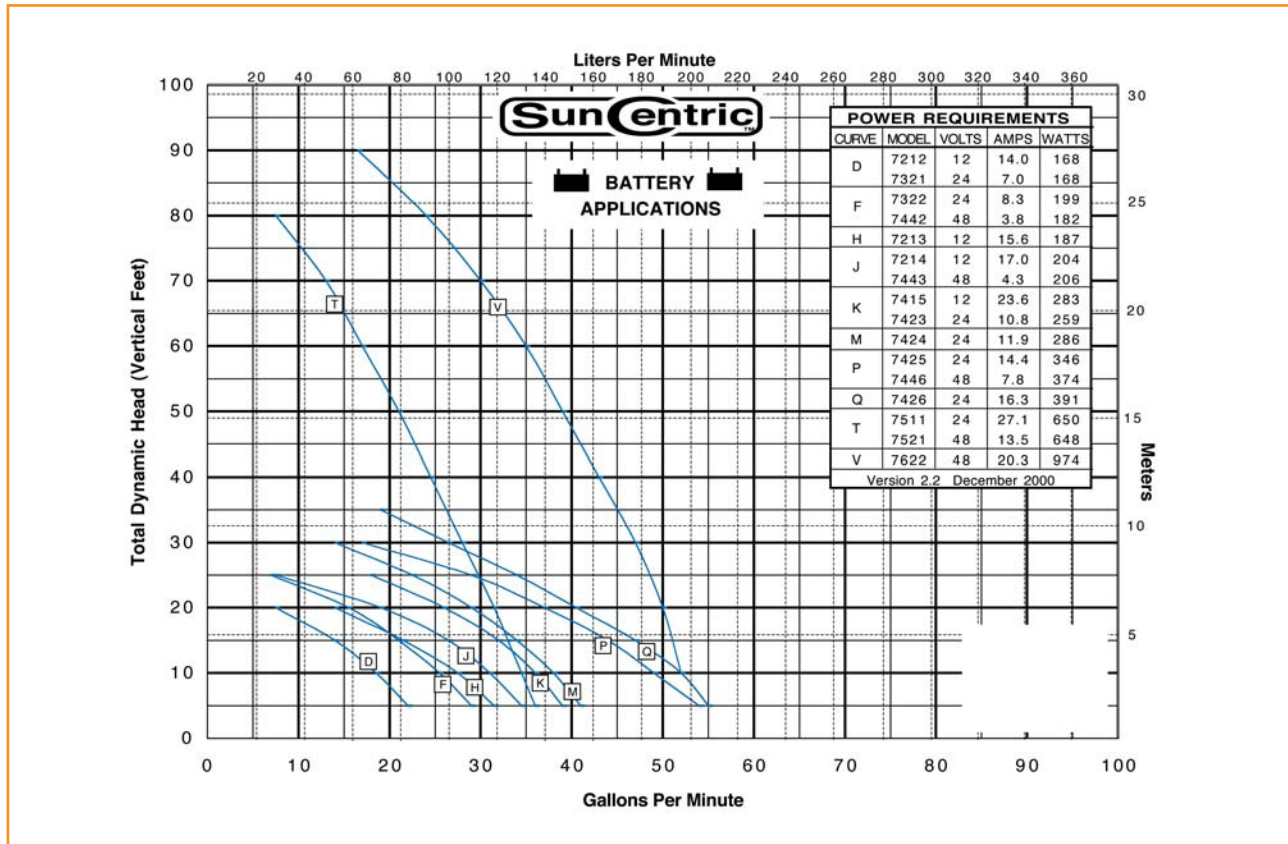## Maintenance

| No routine maintenance required.
| Pump can be repaired in the field using ordinary tools and skills, without removing the pipes.
| Instruction manual shows illustrated repair details.
| Motor brushes: typical brush life peak hours = working voltage x 800/3rd digit of model number.
  EXAMPLE: PV Direct curve #60 is Model 7526 working at 30 V. Typical brush life = 30 x 800/2 = 12,000 peak hours. This represents about 5-8 years of service.
| Shaft seal has a very long life under normal conditions. Purchase spare seals if water is loaded with abrasive silt or if pump can possibly run dry.
| For best reliability, minimize or eliminate suction lift by placing the pump low and close to the water source. This will minimize the possibility of cavitation which causes excessive wear and loss of performance.

Materials

| Pump body: cast iron, ASTM A48-76
| Impeller: glass filled polycarbonate
| Seal: carbon/ceramic, industry standard
| Temperature limit: 140°F (60°C)

Liters Per Minute — **Total Dynamic Head (Vertical Feet)** vs **Gallons Per Minute**

SunCentric™ — BATTERY APPLICATIONS

CURVE	MODEL	VOLTS	AMPS	WATTS
D	7212	12	14.0	168
	7321	24	7.0	168
F	7322	24	8.3	199
	7442	48	3.8	182
H	7213	12	15.6	187
J	7214	12	17.0	204
	7443	48	4.3	206
K	7415	12	23.6	283
	7423	24	10.8	259
M	7424	24	11.9	286
P	7425	24	14.4	346
	7446	48	7.8	374
Q	7426	24	16.3	391
T	7511	24	27.1	650
	7521	48	13.5	648
V	7622	48	20.3	974

Version 2.2   December 2000

High Temperature Option
l Temperature limit: 240 °F (115 °C)
l Impeller: brass
l Brass impeller reduces flow by about 15 % (same watts)
l Order standard pump + High Temp Option

Accessories
l Foot Valve (for pump placed higher than water source)
l Float switches: please inquire
l Basket Strainer: swimming pool type, fits on pump inlet, catches debris and allows easy cleanout; 1 1/4" in/out, Item #DSP-11046

Spare Parts
l Seal & Gasket Kit: specify model number, and if high temperature
l Motor Brush Kits: specify model number

Warranty
Two years against defects in materials and workmanship

SunCentric

Dankoff Solar

SOLAR PUMPS

Technical data SunCentric

Pump Model Number X = third digit				Dimensions Length in.	Height in.	Ship wt lbs	Page size Inlet NPT	Outlet NPT
72x1	72x2	72x3	72x4	15.5	9.1	49	1 1/4"	1"
			72x5	17	10.5	54	1 1/2"	1 1/4"
			72x6	17	10.5	54	2"	1 1/2"
73x1	73x2	73x3	73x4	17	9.1	50	1 1/4"	1"
			73x5	18	10.5	55	1 1/2"	1 1/4"
			73x6	18	10.5	55	2"	1 1/2"
74x1	74x2	74x3	74x4	17	9.1	58	1 1/4"	1"
			74x5	18.5	10.5	63	1 1/2"	1 1/4"
			74x6	18.5	10.5	63	2"	1 1/2"
75x1	75x2	75x3	75x4	18	9.1	60	1 1/4"	1"
			75x5	19.5	10.5	65	1 1/2"	1 1/4"
			75x6	19.5	10.5	65	2"	1 1/2"
76x1	76x2	76x3	76x4	19	9.1	65	1 1/4"	1"
			76x5	20.5	10.5	70	1 1/2"	1 1/4"
			76x6	20.5	10.5	70	2"	1 1/2"

Available from:

For further information: www.innovativesolar.com
Subject to technical changes
(866) 856-9819