Dankoff Solar Force Piston Pump

Dankoff Solar Force Piston Pump draws water from a shallow well, spring, pond, river or tank. It can push water uphill and over long distances for home, village, irrigation or livestock uses. It can use power directly from a photovoltaic array or from storage batteries to fill a storage tank or to pressurize water.

Ultra-Efficient
Uses less power than any other pump in its range

Economical
Reduces power system cost by 25-75 % compared to centrifugal or AC pumps

Solar-Direct Application
Starts pumping in low light conditions

Pressurizing Application
DC version is most efficient. AC version uses a low-surge permanent magnet motor that greatly reduces starting surge, inverter size, and wire size requirements (when compared to conventional AC pumps).

Rugged and Reliable
Proven design with a 20-year life expectancy, simple to maintain with common tools (5-10 yr. maintenance interval)

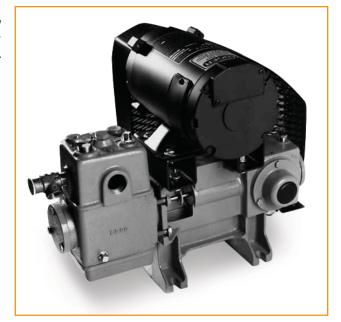### Good Tolerance for Dirt and Dry Run

Mechanical Drive
Allows engine or hand-lever backup

Illustrated Instruction Manual
Makes it easy for anyone to install and service, with no previous experience

Construction
- Cast iron body
- Brass cylinder and valve seats
- Leather cup piston seals
- Neoprene valve seals
- Oil-bath crankcase
- Gear (timing) belt drive on PV models
- Standard V-belt on B models
- Pressure relief valve
- Permanent Magnet DC Motor
- Surge tank included (not in photo)

Voltages Available
- 12, 24, 48 V DC
  Note: PV-Direct full working voltage is typically 20 % higher than nominal (example: 29 V for a 24 V system)
- 115 V or 230 V AC, 50-60 Hz

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Suction Capacity

25 vertical feet (7.6 m) at sea level. Subtract 1 foot for every 1000 ft. elevation (1 m for every 1,000 m). Suction capacity may be further limited by intake pipe friction.

Intake piping should be minimum 1" (3010, 3020 models) or minimum 1 $^1/_4$" (3040). For best reliability, place the pump as close to the water source as possible.

System Requirements

l Solar-Direct Systems: Chart indicates power (w) required at the pump. The rated power of the PV array must exceed this number by 20 % or more. A pump controller (linear current booster) is required for the pump to start and run in varying light conditions. A solar tracker may be used to increase daily yield (40-55 % in summer).

l Pressurizing Systems: battery power system, pressure switch, and pressure tank of minimum 60 gallon (230 l) size (captive-air tank, available locally)

Fittings

l Intake: 1 $^1/_4$" female pipe thread
l Outlet: 1" female pipe thread

Dimensions

l 22 x 13 x 16" high (56 x 33 x 41 cm)
l With Surge Tank (not shown in photo), total height 26" (60 cm)
l Weight, max. 80 lbs (36 kg)
   Shipped in 2 or 3 boxes

Warranty

2 years against defects in materials and workmanship

Reading the Chart

Total Lift = vertical Distance from surface of the water source to the pipe outlet or top of storage tank
Model Designation:
V=voltage, B=battery model, PV=PV array-direct model

Technical data Conergy Solar Force Piston Pump

Total Vertical Lift				Model # 3010 -V- B			Model # 3020 -V- B or PV			Model # 3040 -V- B or PV		
							V = Voltage • Specify 12, 24, 48, 115, 230 AC					
Feet	Meters	PSI	KG/sq.cm	GPM	Lpm	Watts	GPM	Lpm	Watts	GPM	Lpm	Watts
20	6.1	8.7	0.61	5.9	22.3	77	5.2	19.7	110	9.3	35.2	168
40	12.2	17.4	1.22	5.6	21.3	104	5.2	19.7	132	9.3	35.2	207
60	18.3	26	1.83	5.3	20.2	123	5.1	19.3	154	9.2	34.9	252
80	24.4	35	2.44	5.0	19.7	152	5.1	19.3	182	9.2	34.9	286
100	30.5	43	3.05	5.1	09.2	171	5.0	18.9	202	9.1	34.5	322
120	36.6	52	3.66	4.9	19.2	200	5.0	18.9	224	9.1	34.5	364
140	42.7	60	4.27	4.9	18.7	226	5.0	18.9	252	9.1	34.5	403
160	48.8	70	4.88				4.9	18.6	269			
180	54.9	78	5.49				4.9	18.6	280			
200	61.0	87	6.10				4.8	18.2	308			
220	67.1	96	6.71				4.7	17.8	314			

Available from:

l Specifications vary ±10 %
l PV Models are measured at 14, 28, or 56 V (array-direct)

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

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