



# LSY SERIES

AC Solar Stainless Steel Centrifugal Monoblock Pumps



*Infinite Solar Pumping Energy*



**SOLAR PUMP**

## Introduction

Existence of human life in rural India depends largely on the availability of clean water to people, livestock and crops. Farmers in rural India can only become prosperous if there is availability of clean water for their farms, homes and livestock. In many parts of India there is a shortage of reliable power for homes and irrigation of fields where **Lubi LSY** series of **AC Solar Stainless steel Pumping systems** can make a remarkable contribution.

The LSY Solar Pumping system offered by Lubi is a state of the art high technology product designed to provide a green and energy efficient solution for a reliable water supply where there is no access of clean water and electricity.

The LSY Solar Pumping system comprises of the following equipment.

- AC Solar Stainless Steel centrifugal water pump
- Solar photovoltaic panels with mounting structure
- Automatic MPPT controller for the solar pump
- Cables and accessories.

## Applications

- Flood irrigation of small fields
- Drip irrigation for farms
- Cattle watering
- Water supply for small villages, schools, hospitals and homes.
- Pressure boiler feeding
- Pure water treating system
- Pharmaceutical and food stuff
- Industrial washing and sprinkler system



## Features & Benefits

- Highly durable Stainless Steel construction of pump end.
- Highly energy efficient centrifugal water pump with energy efficient inverter duty motor.
- High efficiency solar photovoltaic panels with a service life of minimum 20 years.
- Robust design Galvanized steel mounting structure for long life.
- High technology automatic controller with dynamic MPPT (Maximum Power Point Tracking) control method.
- The controller offers complete protection against under and over voltage and dry run protection for the pump.
- Highly efficient controller with a conversion efficiency of 98%.
- The controller is tropicalized to operate satisfactorily with an ambient temperature of up to 50°C
- Virtually no maintenance cost.
- Environmentally friendly air and noise pollution free solution.

### Range of Performance

- Maximum flow : 780 m<sup>3</sup>/day
- Maximum head : 57 metres.
- Rating : up to 30 HP

### Operating Conditions

- Ambient temperature : +50°C
- Liquid temperature range : 0°C to +80°C
- Water pH : 6.5 - 8
- Sand content : 25 g/m<sup>3</sup>

### Type Keys

#### LSY

#### Type range

LSY = Solar centrifugal monoblock pump series

#### A015

#### Motor type

A015 = 1.5 hp (1.10 kW) AC  
 A020 = 2.0 hp (1.50 kW) AC  
 A030 = 3.0 hp (2.20 kW) AC  
 A050 = 5.0 hp (3.70 kW) AC  
 A075 = 7.5 hp (5.50 kW) AC  
 A100 = 10 hp (7.50 kW) AC  
 A125 = 12.5 hp (12.00 kW) AC  
 A150 = 15 hp (11.0 kW) AC  
 A200 = 20 hp (15.0 kW) AC  
 A250 = 25 hp (18.5 kW) AC  
 A300 = 30 hp (22.5 kW) AC

#### A1

#### Pump type

A1  
 A2  
 A3  
 B1  
 B2  
 B3  
 C1  
 C2  
 C3  
 D1  
 D2  
 D3

#### 1.6k

#### Total solar panel Watt

1.6k = 1620 Watt solar panel  
 1.8k = 1800 Watt solar panel  
 3k = 3000 Watt solar panel  
 4.8k = 4800 Watt solar panel  
 7k = 7000 Watt solar panel  
 9k = 9000 Watt solar panel  
 12k = 12000 Watt solar panel  
 14k = 14200 Watt solar panel  
 19k = 19000 Watt solar panel  
 24k = 24000 Watt solar panel  
 28k = 28000 Watt solar panel

### Minimum Cost of Ownership

Very often investment decisions for pumps are based only on the purchase cost of the pump. This initial purchase cost is a fraction of owning and operating a pump over its entire life span. The initial cost for diesel engine driven pumps is just 5% of the total life cycle cost with operation (energy) and maintenance cost contributing to 85% and 10% respectively.

Solar water pumping systems when compared to diesel engine driven pump sets are much higher in the initial purchase cost but over the life cycle of the solar pumping system they provide significant financial savings in terms of operation (energy) and maintenance costs. Typically when solar pumps are compared with diesel engine pumps they offer a breakeven in costs within 4 to 8 years depending on site conditions, installations cost, and model specification. After the breakeven, the solar pumping systems provide significant cost savings to the owners.

We have made a life cycle cost comparison of one of our 2 hp solar pumping system with a popular 5 hp diesel engine driven pump to show the savings that our solar pumping systems bring to our customers.

### Technical Data

Model	Pump power		Solar panel	Flow range	Head range	Suction size		Discharge size	
	HP	kW	Total Watt	m <sup>3</sup> /day	Mtrs.	mm	Inch	mm	Inch
LSY-A015-A1-1.6K	1.5	1.1	1600	124-154	16-13	50	2	32	1-1/4
LSY-A020-A2-1.8K	2.0	1.5	1800	119-154	23-19	50	2	32	1-1/4
LSY-A030-A2-3K	3.0	2.2	3000	103-154	31-27	50	2	32	1-1/4
LSY-A040-A3-4K	4.0	3.0	4000	100-154	37-32	50	2	32	1-1/4
LSY-A050-A3-4.8K	5.0	3.7	4800	75-154	50-44	50	2	32	1-1/4
LSY-A020-B1-1.8K	2.0	1.50	1800	260-315	11-8	65	2-1/2	40	1-1/2
LSY-A030-B1-3K	3.0	2.20	3000	248-323	18-13	65	2-1/2	40	1-1/2
LSY-A040-B2-4K	4.0	3.00	4000	234-323	23-19	65	2-1/2	40	1-1/2
LSY-A050-B2-4.8K	5.0	3.7	4800	218-323	31-26	65	2-1/2	40	1-1/2
LSY-A075-B3-7K	7.5	5.50	7000	215-323	40-33	65	2-1/2	40	1-1/2
LSY-A100-B3-9K	10.0	7.50	9000	185-323	50-43	65	2-1/2	40	1-1/2
LSY-A040-C1-4K	4.0	3.0	4000	480-554	12-9	65	2 1/2	50	2
LSY-A050-C1-4.8K	5.0	3.7	4800	460-554	17-14	65	2 1/2	50	2
LSY-A075-C2-7K	7.5	5.5	7000	450-554	23-19	65	2 1/2	50	2
LSY-A100-C2-9K	10.0	7.5	9000	430-554	31-26	65	2 1/2	50	2
LSY-A125-C3-12K	12.5	9.2	12000	450-554	40-33	65	2 1/2	50	2
LSY-A150-C3-14K	15.0	11.0	14000	400-554	48-41	65	2 1/2	50	2
LSY-A050-D1-4.8K	5.0	3.7	4800	710-800	9-6	80	3	65	2-1/2
LSY-A075-D1-7K	7.5	5.5	7000	877-800	10-8	80	3	65	2-1/2
LSY-A100-D1-9K	10.0	7.5	9000	790-923	16-11	80	3	65	2-1/2
LSY-A125-D2-12K	12.5	9.2	12000	780-923	22-16	80	3	65	2-1/2
LSY-A150-D2-14K	15.0	11.0	14000	760-923	27-21	80	3	65	2-1/2
LSY-A200-D3-19K	20.0	15.0	19000	750-923	37-29	80	3	65	2-1/2
LSY-A250-D3-24K	25.0	18.5	24000	700-923	45-37	80	3	65	2-1/2
LSY-A300-D3-28K	30.0	22.0	28000	655-923	52-44	80	3	65	2-1/2

## Tracking System

Trackers allow Photovoltaic panels to follow the sun from sunrise to sunset. Tracking increases power production from PV modules by 30% or more, depending on tracker configuration

Fixed Mount structures are less expensive and tolerate higher wind loading. By fixing the modules due south/north, less water is pumped than a tracking system which orients the modules towards the sun as it arcs across the southern/northern sky. Tracking mount structures keep the modules at a 90 degree angle to the sun all day long. This provides more power to the pump over a longer period of the day, which produces 20 to 40 percent more water daily in the summer time.

Trackers offer a great advantage when pumping water. Our auto/manual trackers are known for their excellent reliability, robustness and long life, it has both seasonal tilt as well as azimuth rotation provision from east to west during day. Our trackers come with Galvanized coating and are highly recommended in all but the windiest locations. High winds can pull the array off the correct sun angle and will negatively affect power production if winds are consistent.

### Manual Tracking



### Advantages

- No any electronics for tracking.
- Generates 48% more power than static mounting structures.
- Less expensive & robust.
- Better wind load capacity.
- Require less space.

### Applications

- Solar water pumping where better output is required.
- Home/Village electrification.
- Power plants.

### Disadvantages

- Less performance.
- Not suitable for remote areas because manpower is required.

## Solar Module



## Fully Automatic 150MW Manufacturing Line



## Lubi Electronics

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