

# SHUTTLE BLOCK PUMPS - SL Series

## WORKING PRINCIPLE:

The E-SL (Shuttle Block) pump employs a unique pumping principle - a combination of Rotary and Piston pump. Two double acting pistons in their respective slots at right angles to each other, accomplish this, while the rotor turns without the need for any valving. The Shuttle block pump is a self priming rotary pump. There are only three pumping elements - Rotor, Piston and Shuttle. Rotor is keyed to a single shaft and runs concentric in pump casing. It has a rectangular slot across its face. The channel-shaped piston reciprocates within this slot. A rectangular block, shuttle, fits liquid tight in piston slot and reciprocates. The rotary action of rotor combined with the eccentrically mounted shuttle creates reciprocating motion among the pumping elements.

## MAIN APPLICATIONS:

- Loading, unloading, transfer, circulation and process pumping of a very wide range of products typically as thin as diesel oil to extremely high viscous substances
- Unloading of tank lorries and rail car
- Loading of rail cars, tank lorries and barrel filling

## LIQUIDS:

- Pump can handle highly viscous liquids or thin volatile material



**SHUTTLE BLOCK PUMP**

## PRODUCT SPECIFICATIONS AND FEATURES:

Rotors	Cast Iron
Casing	Cast Iron
Cover	Cast Iron
Piston	Carbon Steel
Shaft	SS410
Seal	Gland Packing / Mechanical seal
Capacity	220 - 970 lpm
Outlet Pressure	Up to 6 bar
Viscosity	3 - 5000 cSt
Temperature	Up to 140°C
Speed	Up to 1450 rpm
Drive	Direct / V-belt
Rotation	Anti-clockwise facing pump drive shaft

## VALUE PROPOSITIONS:

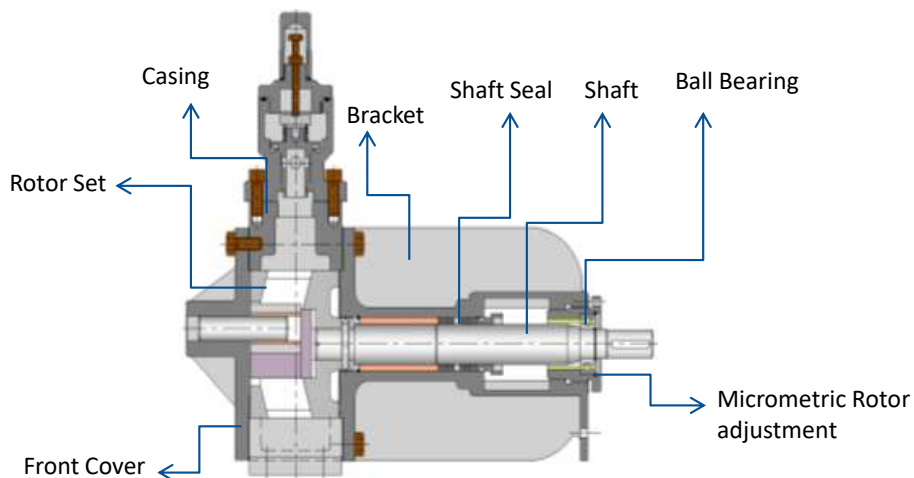
- Handle highly viscous liquids
- Low noise and vibrations
- Smooth, pulsation-free flow
- Front pull out design, rotor removal without dismantling the pump and motor
- High reliability and excellent service life
- High volumetric efficiency, low power requirements
- Long stuffing box construction with external bearing reduces leakages to minimum

## MARKET SEGMENTS:

- Oil & Gas
- Food Processing
- Petrochemical
- Chemical

**CONSTRUCTION:**

There are three pumping elements - Rotor, Piston and Shuttle. Rotor is keyed to a single shaft and runs concentric in pump casing. It has a rectangular slot across its face. The channel-shaped piston reciprocates within this slot. A rectangular block, shuttle, fits liquid tight in piston slot and reciprocates. The reciprocating action of piston in rotor and shuttle in piston is due to an eccentric pin fixed on the pump cover and engaging the shuttle bore as the rotor turns in the pump casing.



**PERFORMANCE DATA:**

Pump Model	Speed (rpm)	Capacity / Power	Pressure (bar)				Suction & Discharge
			0	2	4	6	
R-50-SL	1000	Capacity (lpm)	240	235	230	220	2" ANSI, B16.5, 125#
		Power (kW)	1.3	1.8	2.7	3.5	
R-100-SL	720	Capacity (lpm)	452	444	431	415	3" ANSI, B16.5, 125#
		Power (kW)	1.8	2.4	4.9	6.2	
R-200-SL	400	Capacity (lpm)	970	940	918	851	4" ANSI, B16.5, 150#
		Power (kW)	4.85	8.31	13.02	18.00	

Testing medium: Lube Oil Viscosity: 50 cSt

\* For special requirements, contact CIRCOR Sales Team

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