

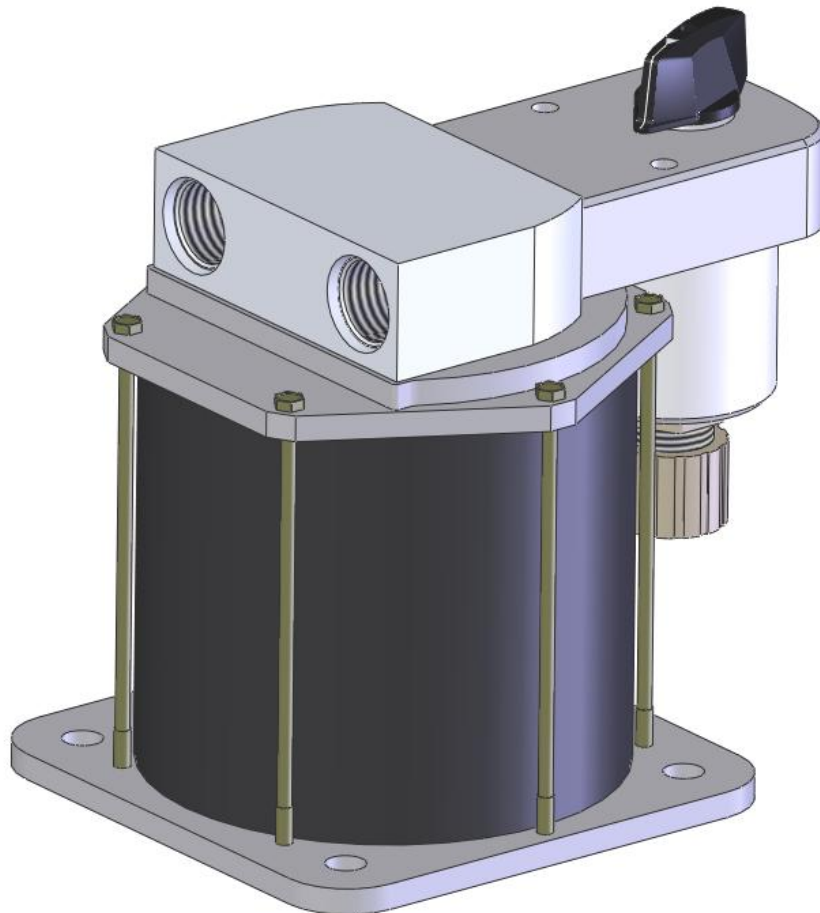
DAISY Oil Pump

Owner's Manual

The Art of the Pump

For Part Numbers

6460 - 6512 - 6630 - 6640



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that work for you.**

DAISY Oil Pump

Owners Manual

The Art of the Pump

Thank you for buying a Daisy oil pump. You will find a Daisy to be a carefully made and cleverly designed oil pump that you can rely on to operate indefinitely without maintenance or spare parts.

Please see that the packing slip describes the product you ordered. Examine the package as received. Any evidence of shipping damage must be taken up with the carrier.

Features:

- Complete assembly of motor and pump that won't leak
- Requires no scheduled maintenance
- 3-phase motor available in 240 or 480 volt models (See Part Number Key)
- Flow up to 2000 liters/hr (9 gpm)
- Pressure up to 4 bar (60psi) rise
- Continuous duty
- Preloaded rolling contact bearings
- Internally cooled and cannot overheat, when there is some external flow
- Reversible – Switch any two lead wires
- Performs equally well turning in either direction
- Can deliver oil of almost any viscosity

Applications:

- Draining and filling engine sumps and reservoirs
- Prelubing diesel engines for long life between costly overhauls
- Transferring oil – back and forth and at different elevations
- Finishing and polishing of stored diesel fuel and other oil
- Ink jet carpet printing
- Filling and bottling plants and production lines
- Silent oil cooling of X-ray equipment in hospitals
- Pumping hydraulic oil through heat exchangers for cooling
- Pumping through filters for cleaning

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Part Number Key

	60 Hz 200-240	60 Hz 400-480
	50 Hz 170-200	50 Hz 350-400
No Switch	P/N 6512	P/N 6630
w/ Switch	P/N 6460	P/N 6640

Description

The Daisy oil pump is a completely sealed, positive displacement motor/pump unit **for pumping non-corrosive fluids**. It is reversible and has no shaft seal. It will deliver up to 2000 liters/hr (9 gpm) 24/7. Pressure rise through the pump is internally limited to approx. 4 Bar (60 psi) over a wide range of viscosities. (See Engineer's Corner below)

The Daisy is a floating-vane type pump produced in two configurations. See Fig.1 and Fig. 2 below. Both are reversible but P/N 6460 has a built-in rotary reversing switch which is useful for bi-directional applications such as draining and refilling of engine oil sumps and various other containers. P/N 6512 relies on user-supplied switching as required.

For smooth starts put valves at the ports and close the discharge valve before starting the pump. The pump can run at zero flow for a short time. Then with the pump running, slowly open the valve to get the flow required.

The Daisy uses a unique tripod mount based on the standard NEMA bracket hole locations. It is packaged for shipping attached to a temporary board that illustrates the use of washers both under and over the three mounting holes to isolate the unit from any irregularities that might exist in the mounting surface. The Daisy can be mounted in any orientation, horizontal or vertical, except inverted.

Unlike Varna specialty prelube pumps the reversible Daisy pump does not include a check valve. This allows for greater versatility among applications.

WARNING: Although the Daisy motor enclosure is completely sealed, it is not designed for extreme pressure. 100 psi is the maximum allowable inlet pressure. Cascading two Daisies in series to get increased pressure is acceptable, but connecting a Daisy inlet to an existing pressure system could result in serious damage and/or personal injury. Consult Varna for such applications.

About Pump Pressure

The full displacement of the pump while running is 2000 liters/hr (9 gpm). Rather than add the complications of a relief valve, if less flow is required by the application, the motor shaft can slide axially and bypass any excess flow. The rolling contact bearings are preloaded against each other by a spring. The pump end of the shaft is responsive to pump pressure. When that pressure reaches the "cracking pressure" it exceeds the force of the preload spring and allows the shaft to move. This bypasses flow as required to limit the pressure rise through the pump. Although the Daisy is a self-priming pump its performance above the cracking pressure is like that of a centrifugal pump.

About Pump Flow

Daisy pump flow is variable as described above. It can run at partial flow indefinitely. Like a centrifugal pump, it does not hurt the pump to run at zero flow. But since the motor is cooled by allowing a small part of the flow to pass through the motor and return to the pump before moving on, running at zero flow will eventually overheat the motor.

About Cavitation

If the inlet of **any** pump is open to atmospheric pressure, then the restriction of the inlet plumbing upstream of the pump and not the pump itself will determine the amount of flow that gets to the pump. **Sea-level atmospheric pressure is all that is available to push fluid into the pump.** If the volumetric flow of the pump, is more than the plumbing will allow, then the rest of the pump volume is in the form of empty space. The volume of **this space is cavitation.**

When these cavitation voids reach the pressure side of the pump the cavitation volume disappears instantly and completely. Fluid rushes in to fill the vacuum and comes smack against any obstruction or wall, releasing energy like a hammer. There is nothing to cushion or decelerate it. **The result can be system damage** as well as noise and vibration.

Contact Varna with application data if cavitation could be an issue in your application. Varna has the resources to analyze and offer corrective measures to prevent or alleviate cavitation.

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