

Type VD

OIL PUMP WITH PRESSURE REGULATING



Type VD

**100% TESTED
TWO YEARS WARRANTY**

The DELTA fuel unit is an efficient modern oil burner pump with compact design and since its mounting flange, hub and shaft sizes are manufactured to international standard (DIN 24220, EN 225), it can be fitted to every oil burner designed to the same standard.

The DELTA VD unit has the following features:

- high suction power
- suitable for a one or two pipe system
- self priming
- balanced pressure regulator/cut-off valve giving constant pressure and effective cut-off
- special shaft seal
- silent operation
- low power absorption
- easily fitted and adjustment
- provided with pressure and vacuum gauge ports

APPLICATION

The DELTA fuel unit type VD is designed for pumping oil in pressure jet oil burners and transfer pump application. It must not be used to pump water or acid.

OPERATION

The VD type is a "unit", which consists of a pump, filter and pressure regulator/cut-off valve housed within one casting. The pumping action is obtained from two spur gears which are in mesh; one of which is connected to the driving shaft. The central pump casting is drilled to provide the various oil ways, and therefore carries the supply, return and nozzle ports. Pressure and vacuum gauge ports are also provided.

The VD unit is available in two pipe and one pipe version. Both versions are self priming. On starting, the rotating gears expel the air from the suction chamber, through a vent groove in the piston to the return line in two pipe version, and through the nozzle line in one pipe version. On initial commissioning, it is possible to bleed the air more quickly, through the pressure gauge. Because a vacuum now exists oil, due to atmospheric pressure, enters the suction chamber through the filter.

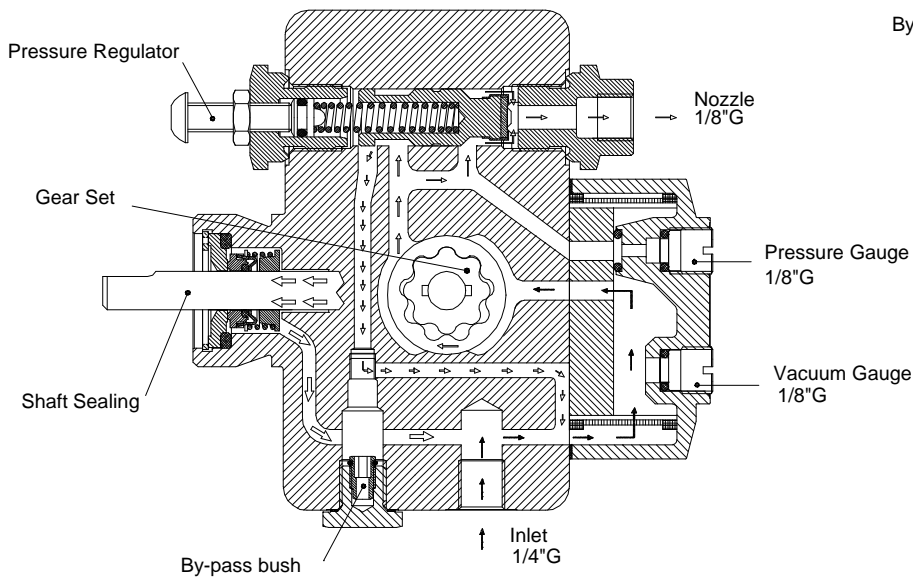
From the suction side the gears pass the oil to the pressure chamber, where it comes up against the head of the piston and due to the build up of pressure, forced the piston back against the pressure regulating spring. The outlet to the nozzle port, which so far has been sealed by the seat on the head of the piston, is now open and allows oil to flow through to the nozzle while the excessive oil discharges to the return side (or in by-pass in one pipe version). It will be realized of course that the spring tension, which is varied by the regulator screw, regulates the pressure of oil required.

On shut down, the oil pressure of course immediately drops and in this instance the spring which hitherto has been under compression, pushes the piston forward onto its seat, so cutting off the flow of oil to the nozzle outlet.

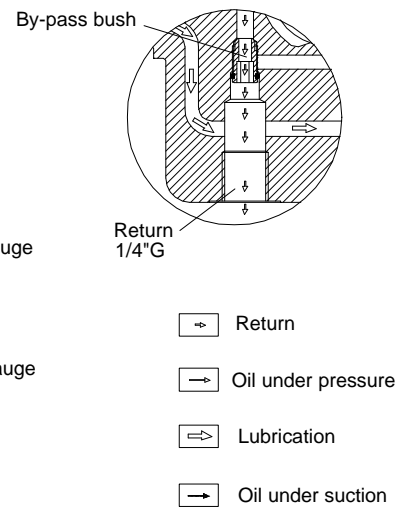
In oil burner designs employing a magnetic valve in the oil line circuit, the cut-off seat on the piston head is unnecessary and in these cases a "monotube" type piston must be used in the pump. This type of piston is not fitted with a nozzle cut-off seat and its function is as a pressure regulator and safety valve, for instance for expansion of pre-heated oil.

OPERATION

ONE PIPE SYSTEM



TWO PIPE SYSTEM



ONE PIPE - TWO PIPE CONVERSION

1. Remove 1/4"G plug from return port.
2. Unscrew by-pass bush into the plug.
3. Insert and screw by-pass bush in return port.

TWO PIPE - ONE PIPE CONVERSION

4. Unscrew by-pass bush from return port
5. Insert and screw 1/4"G plug in return port.

PUMP IDENTIFICATION

VD
1
R
L
2
4
U

Pump type

Nozzle capacity

(see graphs)

Rotation (seen from shaft end)

R = clockwise

L = counter clockwise

Nozzle line (seen from cover)

R = right

L = left

Pipes system

1 = one pipe

2 = two pipe

Pressure ranges

3 = 2 ÷ 10 bar (30 ÷ 145 psi)

4 = 4 ÷ 15 bar (58 ÷ 215 psi)

5 = 8 ÷ 20 bar (115 ÷ 285 psi)

6 = 10 ÷ 25 bar (142 ÷ 355 psi)

Special versions

U = cover type U with filter inox 65 cm²
(10 Sq.In.) cloth 110μ (standard on V5)
without pressure and vacuum gauge (except V5)

L = cover type L with filter nylon 9 cm²
(1,4 Sq.In.) cloth 150μ (only VD1)

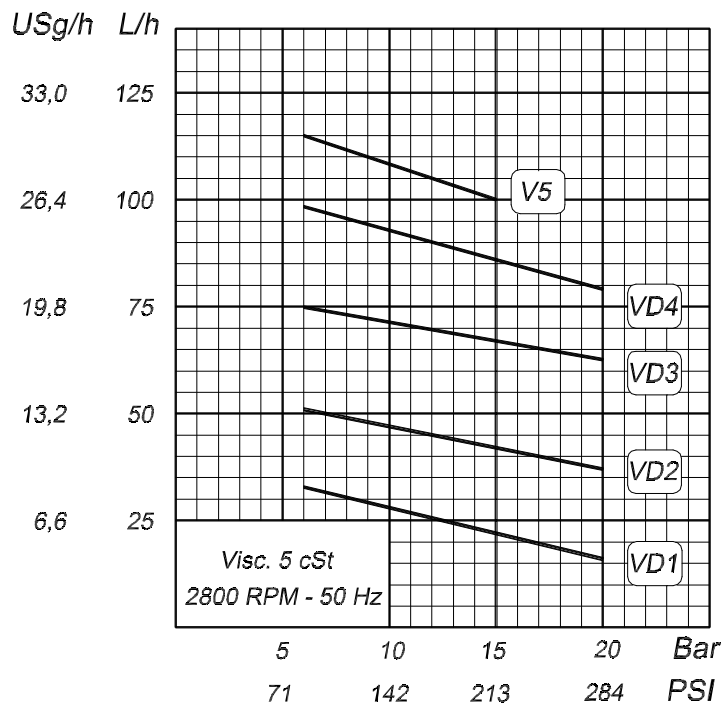
P = auxiliary pressure port

K = nozzle port type K (4mm shorter)

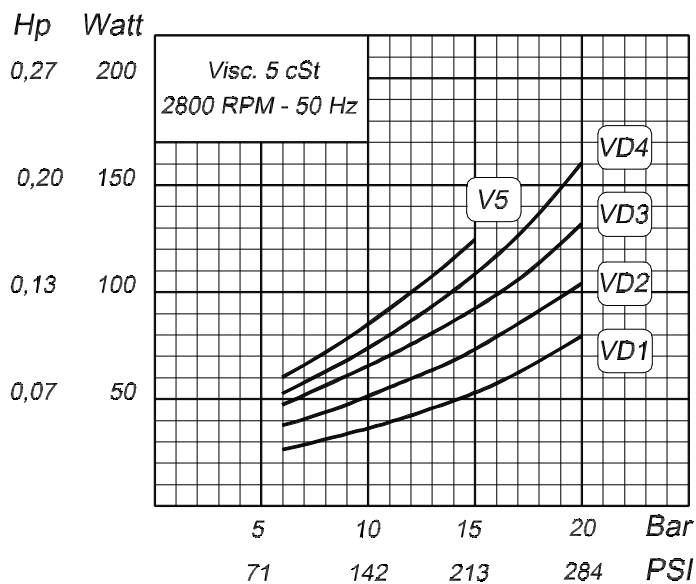
TECHNICAL CHARACTERISTICS

Oil viscosity	2 ÷ 50 cSt (1,1 ÷ 6,5°E)
Oil temperature	60°C (140°F) max
Power absorption	See graphs
Nozzle capacity	See graphs
Suction line vacuum	0,5 bar (14,8 in Hg) max
Suction line pressure	0,7 bar (10 psi) max
Return line pressure	1,5 bar (21 psi) max
Rotation speed	3500 rpm max
Standard filter	Nylon cloth 150μ, 20 cm ² (3,1 Sq.In.)
Dimensions	Hub dia. 32, shaft dia. 8 (DIN 24220) Optional: flange hub dia. 54, 7/16" shaft
Connections	Inlet - return port: G 1/4" Nozzle port: G 1/8" Pressure - vacuum gauge: G 1/8"
Weight	gr. 950

NOZZLE CAPACITY

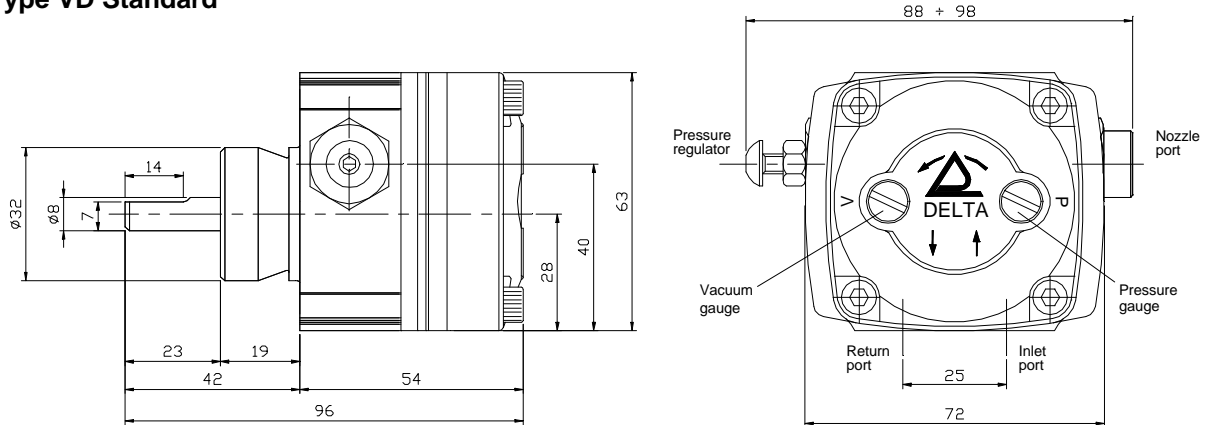


POWER ABSORPTION

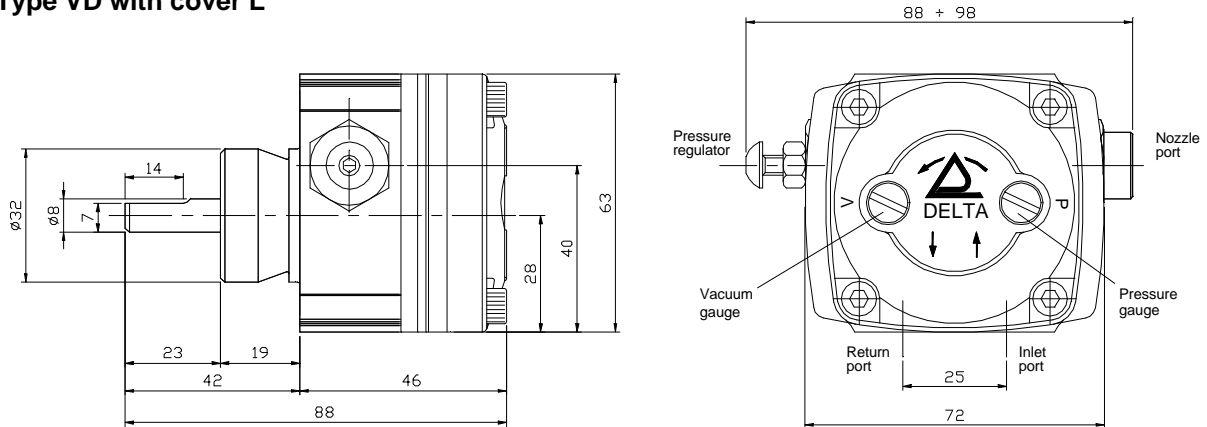


OVERALL DIMENSIONS

Type VD Standard



Type VD with cover L



Type V5 with cover U Auxiliary pressure gauge and flange

