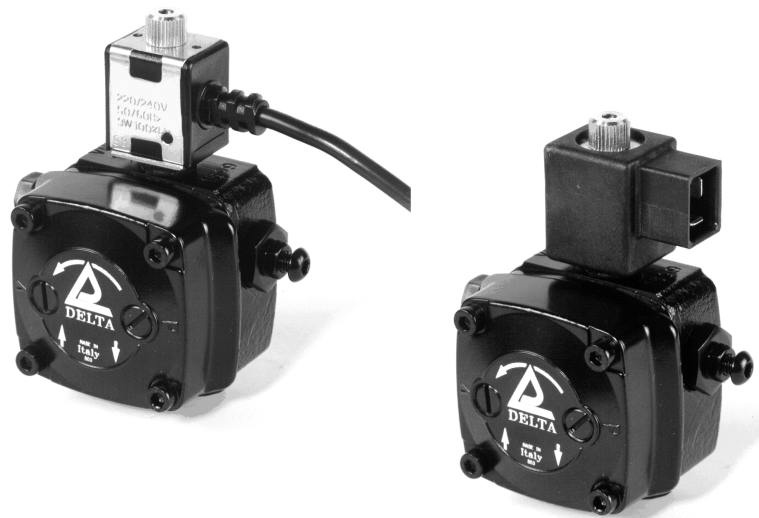


VMK

**Oil burners fuel unit
with 2 stages operation**



VMK1 – M81 VMK1 – F84

Oil burners fuel unit with 2 stages operation Type VMK

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.

Features

- High suction power.
- Suitable for a one or two pipe systems.
- Self priming.
- Balanced pressure regulator valve giving constant pressure.
- Special shaft seal.
- Two stages operation.
- Silent operation.
- Low power absorption.
- Easily fitted and adjustment.
- Provided with pressure and vacuum gauge ports.

Applications

The DELTA fuel unit type VMK is designed for pumping oil in high pressure oil burners with two stages operation.

WARNING

It must not be used to pump water or acid.

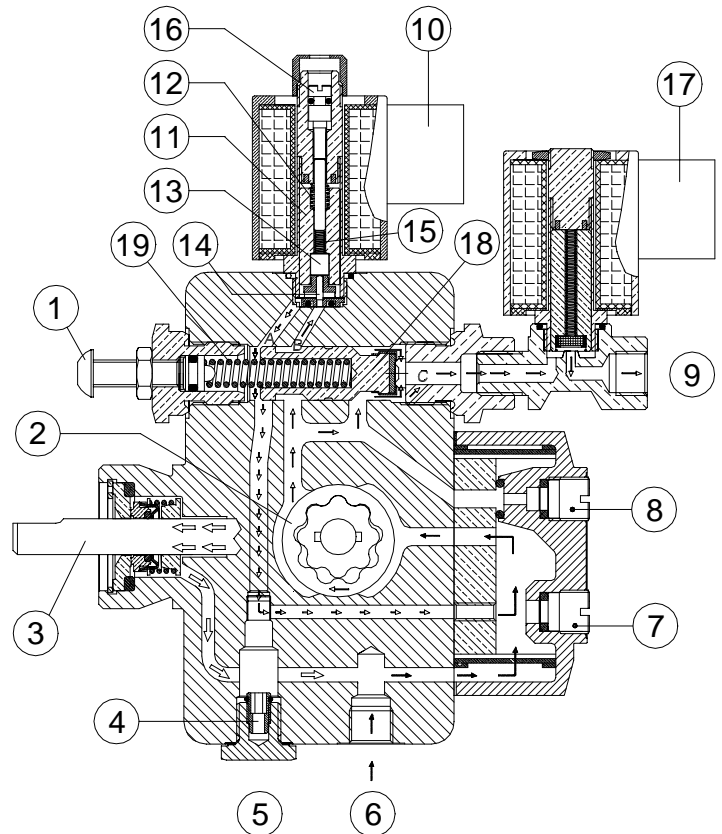
Operation

The VMK pump type must ensure two stages operation. It is equipped with two independent pressure regulation sets. Low pressure only on burner starting and high pressure for working.

Burners with a VMK pump require the installation of a second solenoid valve on the nozzle line.

Starting:

Valve (17) is closed. Valve (10), connected to transformer in paralleling, is energized. The core unit (11) rises moving cylinder (13) and unblocking seal (14). The build up of pressure compresses spring (15) and raising seal (14) puts in line drillings (A) and (B) allowing oil discharge. The starting pressure is adjusted by screw (16) to low pressure. Solenoid valve (17) is energized but the oil, now at the first stage pressure, cannot overcome the resistance of the main piston (18). As this is regulated to a higher pressure, it therefore remains closed. The oil reaches the nozzle by means of the bypass (C) on the delivery line. Excess oil, meanwhile, continues to discharge through duct (B) into the return line.



Working:

When the lighting stage is finished, both the transformer and (10) solenoid valve are de-energized. Spring (12) pushes unit (11) and closes seal (14). This cuts out discharge duct (A) and (B) and the oil pressure is increased until it overcomes the resistance of the second stage regulator spring (19). The main piston (18) opens and normal operating conditions are reached. The working pressure is adjusted by (1) screw (high pressure).

In VMK unit both two pipe and one pipe models are self-priming. On initial commissioning it is possible to bleed the air more quickly through the pressure gauge port.

CAUTION

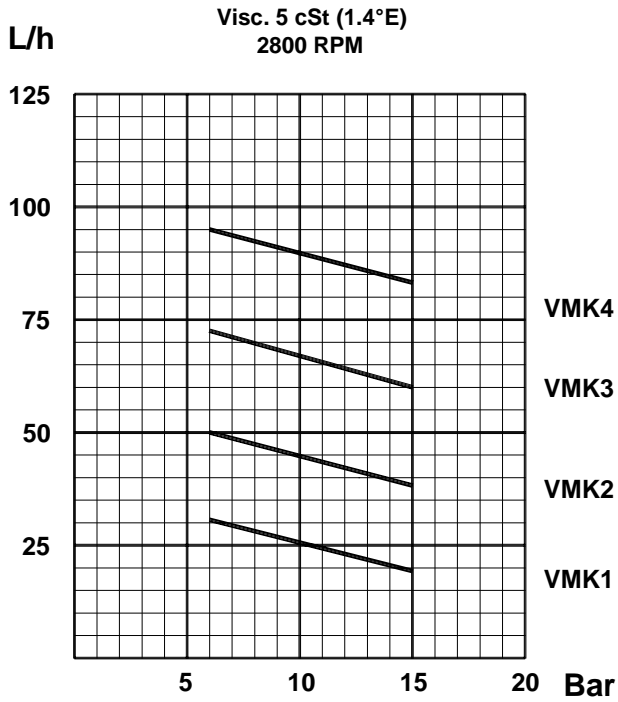
Fitted solenoid valve (10) does not perform the cut-off. An external solenoid valve (17) must be installed on nozzle line.

Pump identification	VMK	1	R	L	2	P	F
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 pipes							
Special versions U = cover type U with filter inox 65 cm ² mesh 110µ without pressure and vacuum gauge L = cover type L with filter nylon 9 cm ² mesh 150µ (only VMK1) P = auxiliary pressure port K = nozzle port type K (4mm shorter)							
Coil type F = F84 coil with connector plug M = M8 coil with flexible metal conduit							

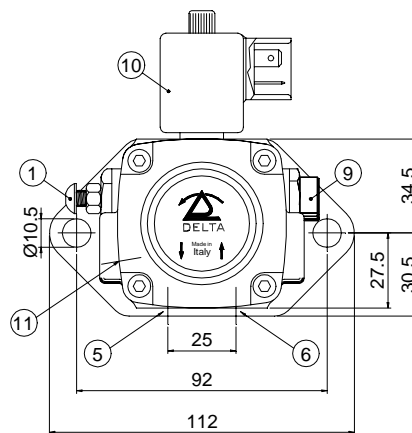
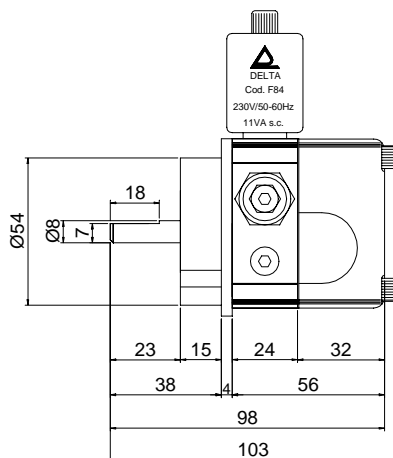
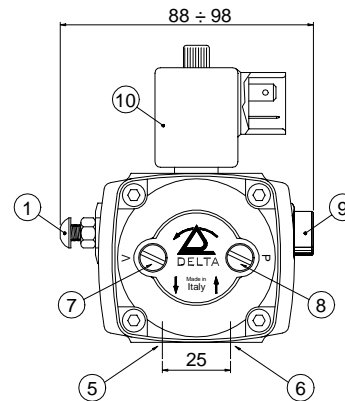
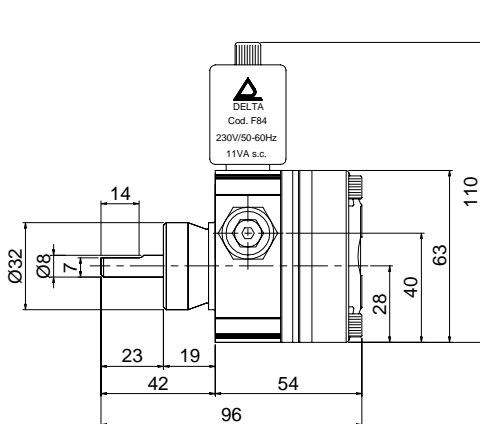
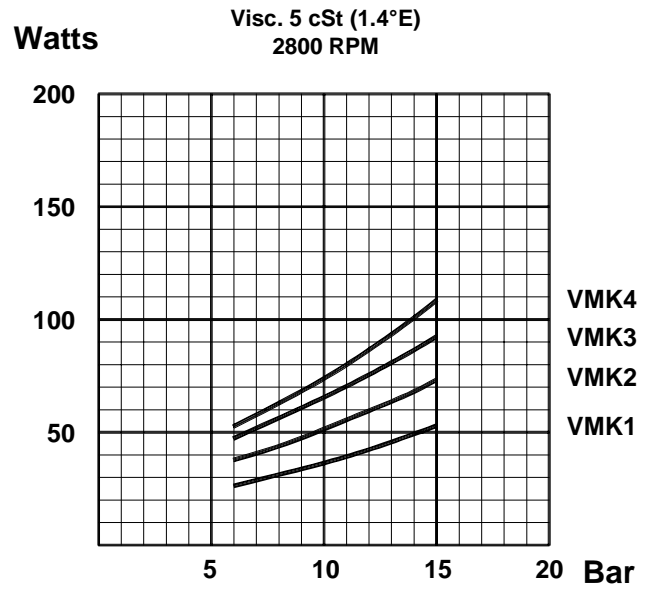
Technical specifications

Oil viscosity	2 ÷ 50 cSt			
Oil temperature	60°C max			
Power consumption	See graphs			
Nozzle capacity	See graphs			
Suction line vacuum	0,5 bar max			
Suction line pressure	0,7 bar max			
Return line pressure	1,5 bar max			
1st stage pressure range	4 ÷ 11 bar			
2nd stage pressure range	4 ÷ 15 bar			
Rotation speed	3500 rpm max			
Standard filter	Nylon, mesh 150µ, 20cm ²			
Dimensions	Hub ø32, shaft ø8 (DIN 24220) Optional : flange hub ø54, shaft da 7/16"			
Connections	Inlet – return : G ¼" Nozzle port : G1/8" Pressure – vacuum gauge : G1/8"			
Weight	gr. 1100			
Coil specifications	F84	380V 50-60Hz 110V 50-60Hz 24V 95Hz 12V DC L = 300 mm L = 500 mm L = 1000 mm	230V 50-60Hz 24V 50-60Hz 24V DC L = 400 mm L = 700 mm L = 1600 mm	M8 230V 50-60Hz L = 700 mm 230V 50-60Hz L = 260 mm 110V 60Hz L = 700 mm 24V 50Hz L = 300 mm 24V 50Hz L = 700 mm 24V 50Hz L = 700 mm 24V DC L = 700 mm

Nozzle capacity



Power consumption



- | | |
|----------------------------|----------------------------|
| 1 High pressure regulation | 8 Pressure gauge |
| 5 Return | 9 Nozzle port |
| 6 Suction | 10 Solenoid valve |
| 7 Vacuum gauge | 11 Auxiliary pressure port |

By-pass installation

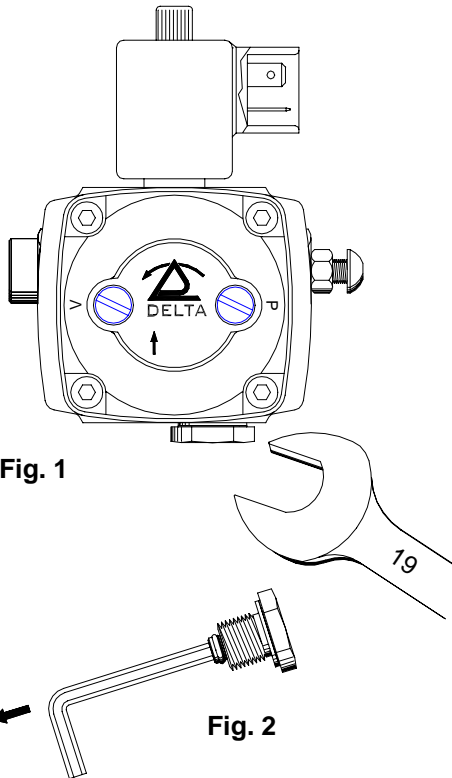


Fig. 1

Fig. 2

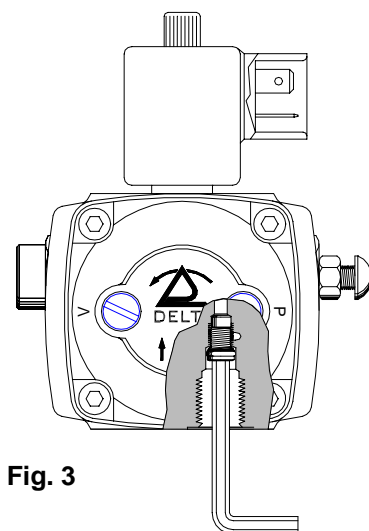


Fig. 3

To convert the DELTA fuel unit from the single pipe version to the two pipe version, do the following:

- a) Using a 19 mm wrench, remove the 1/4" plug from return port (Fig. 1).
- b) Located inside the return plug is the by-pass plug. Remove it with a 4 mm Allen wrench (Fig.2).
- c) Insert and screw the by-pass plug in the return port (Fig. 3).

CAUTION: In the single pipe version, the air is bled through the nozzle line, after the solenoid valve opening.

To convert the DELTA fuel unit from the two pipe version to the single pipe version, do the following:

- d) Using a 4 mm Allen wrench, unscrew the by-pass plug from the return port (Fig. 3).
- e) Insert and screw a 1/4" plug into the return port (Fig. 1).

CAUTION: In the two pipe version the air is bled through the return port. After conversion, the air must be bled manually, through the pressure gauge.



CAUTION: Make sure that the by-pass plug is not used in a single pipe installation, because the fuel unit will not function properly and damage to the pump and burner motor could result.

Warranty conditions

Elettromeccanica Delta S.p.a. warrants its products to be free from defects in material and workmanship for a period of 2 years from the date of manufacture, stamped into the product; when installed properly and adequately maintained by a qualified technician, and operated under normal use/conditions, consistent with published DELTA data.

Elettromeccanica Delta S.p.a. will not honor any warranty for products that show evidence of:

- Water contamination.
- Oil contamination due to inadequate filtration.
- Misapplication, misuse and abuse.
- Neglect or products with missing or damaged parts.
- Use of PTFE tape in the piping system.

Products believed to be defective may be returned to Elettromeccanica Delta S.p.a. or place of purchase. All goods returned must have a identification tag with description of the checked fault and be returned freight prepaid.

Returned products will be examined and tested, and those found to be defective, in the opinion of manufacturer, and qualifying under DELTA warranty conditions, will at the option of manufacturer, be repaired or replaced. Products found to be defective but not qualifying under DELTA warranty conditions, will at the customers option, be scrapped or returned to the customer at his expense. Products found not to be defective will be returned to the customer freight collect and a testing fee may be applied.

In no event shall Elettromeccanica Delta S.p.a. be responsible for any incidental or consequential damages of any kind due to misuse of its products, nor will it accept any liability in excess of the purchase price of the product.

Elettromeccanica Delta S.p.a. reserves the right to update or make technical changes without prior notice.

Executed according to EN rules in force



Certified Quality System - IM 01.0073-S

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