

SOLENOID TWO STEP PUMP

This SUNTEC **OT2** oil pump features 2 mode pressure operation and incorporates a blocking solenoid valve with in-line cut-off function. Switching between low and high modes is assured by a 2nd integral solenoid valve.

COMPATIBILITY

- Fuel oil #2 and lighter, special "V" models for B6-B20, (blends from 6% up to 20% biodiesel, per ASTM D396) and for Kerosene use, please contact SUNTEC.
- Two firing rates (with a single nozzle line).
- One or two-pipe system.

PUMP OPERATING PRINCIPLE

The gear set draws oil from the tank through the built-in filter and transfers it to the nozzle line via the cut-off solenoid valve. Pressure regulation is assured by two spool valves, one for each pressure mode.

Switching between low and high pressure is assured by a "normally open" by-pass solenoid valve. When this solenoid is non-activated, a by-pass channel is open, allowing the normal functioning of the low pressure regulating valve which sets the nozzle pressure. When this solenoid is activated, the by-pass channel is closed, thus pressure will build up on both sides of the low pressure regulating valve eliminating its effect, and the high pressure regulating valve now determines the nozzle pressure.

Cut-off

The blocking solenoid valve of the nozzle line is of the "normally closed" type. This design ensures extremely fast response and the switching can be selected according to the burner operating sequence and is independent of motor speed.

When this solenoid valve is :

- non-activated, the valve is closed and all oil pressurised by the gear set passes through the regulators to suction or to the return line, depending upon pipe arrangement.
- activated, oil passes to the nozzle line at the pressure set by the pressure regulating valves.

In two pipe, the by-pass plug must be fitted in the return port, which ensures that the oil dumped by the regulating valves is returned to the tank and the suction line flow is equal to the gear set capacity. Bleeding in two pipe operation is automatic (it is assured by a bleed flat on the piston of the low pressure regulator), but it may be accelerated by loosening the bleeder valve (or opening a pressure port) until the air is evacuated from the system.

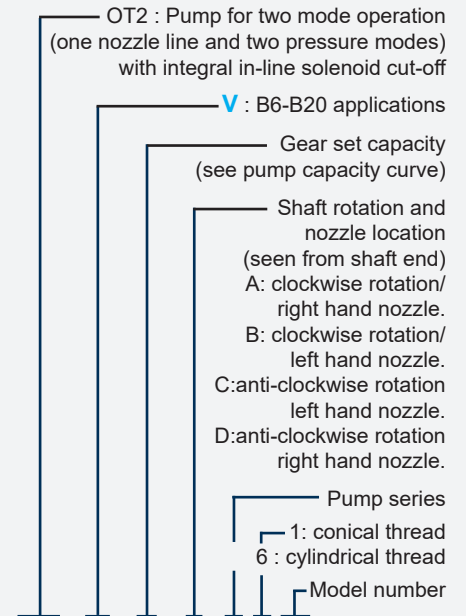
In one pipe, the by-pass plug must be removed, and the return plugged. Oil which is not required at the nozzle is returned directly to the gear inlet via the pressure regulating valves, and the suction line flow is equal to the nozzle flow. The bleeder valve must be loosened (or a pressure port must be opened) to bleed the system.

OT2

OT2 - US - Ed. 1 - December 2021

PUMP IDENTIFICATION

(Not all model combinations are available Consult your Suntec representative)



OT2 V 45 A 9 1 xx 1 P 06

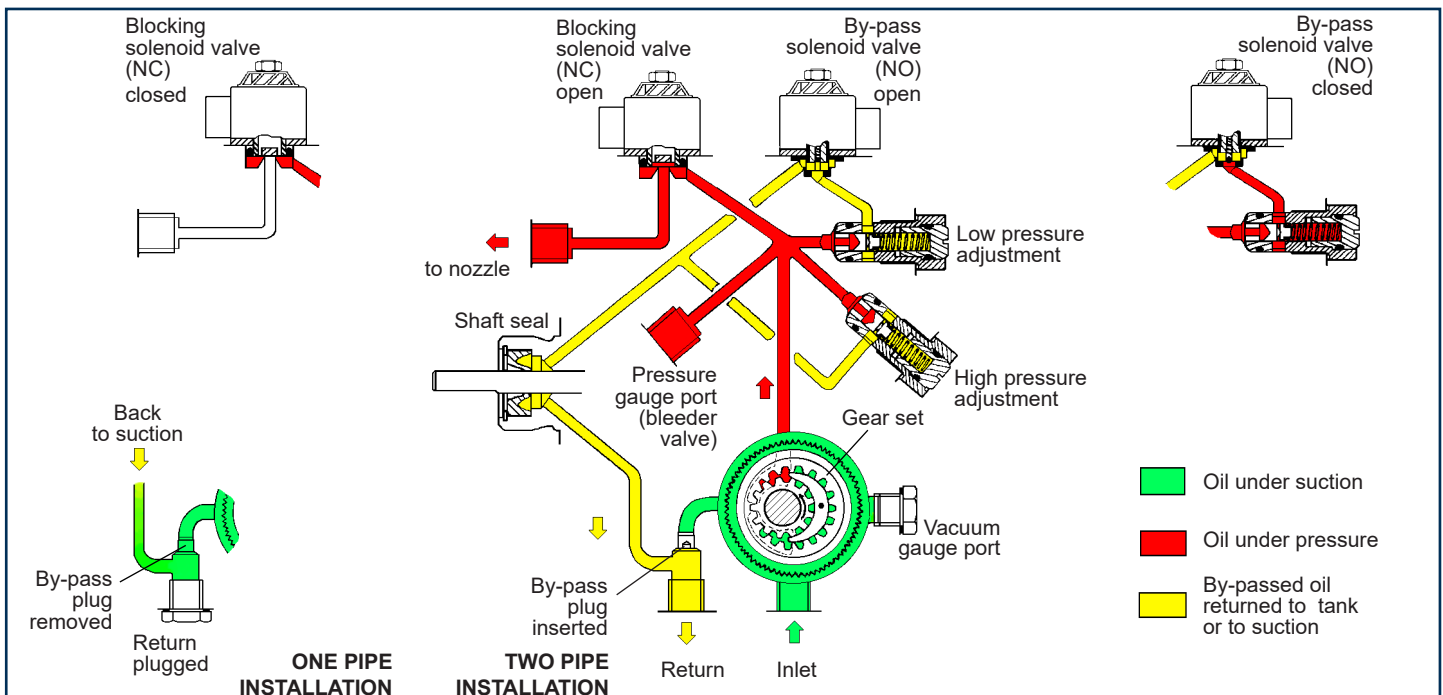
Revision number

Installation

P : by-pass plug inserted in return port for two-pipe operation
M : without by-pass plug, return plugged, for one-pipe operation


Solenoid valve voltage

02 : 24 V AC
06 : 110-120 V AC
05 : 220-240 V AC



TECHNICAL DATA

General

Mounting	Flange mounting	
Connection threads		
Inlet and return	1/4 NPTF	
Nozzle outlet	1/8 NPTF	
Pressure gauge port	1/8 NPTF	
Vacuum gauge	1/4 NPTF	
Valve function	Pressure regulation	
Strainer	Open area :	0,93 in ²
	Opening size :	5.90 mil
Shaft	5/16 " dia.	
By-pass plug	Inserted in return port for 2 pipe system; to be removed with a 5/32" Allen key for 1 pipe system.	
Weight	3.44 IBs	
Certification		
	B6-B20: US only	

Hydraulic data

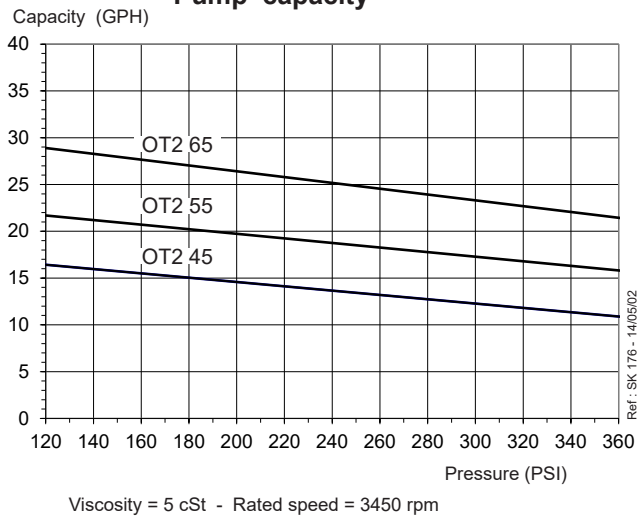
Nozzle pressure range @ 5 cSt	Low mode : 120 - 210 psi High mode : 175 - 360 psi
Factory setting* @ 5 cSt	Low mode : 130 psi High mode : 320 psi
<i>* other ranges (and factory settings) available on request, refer to the specified range of the particular fuel unit.</i>	
Operating viscosity	2 -12 cSt (for Kerosene use, please contact SUNTEC)
Oil temperature	32 - 140°F in the pump
Ambient temperature	32 - 140°F
Suction height	Single pipe : 6" Hg max. vacuum, Two-pipe : 12" Hg max. vacuum, to prevent air separation from oil
Inlet and return pressures	10 psi max. <i>NFPA limits inlet pressure to 3 psi max</i>
Rated speed	3600 rpm max.

Solenoid valve characteristics

Frequency	50/60 Hz
Consumption	9 W
Maximum pressure	360 psi

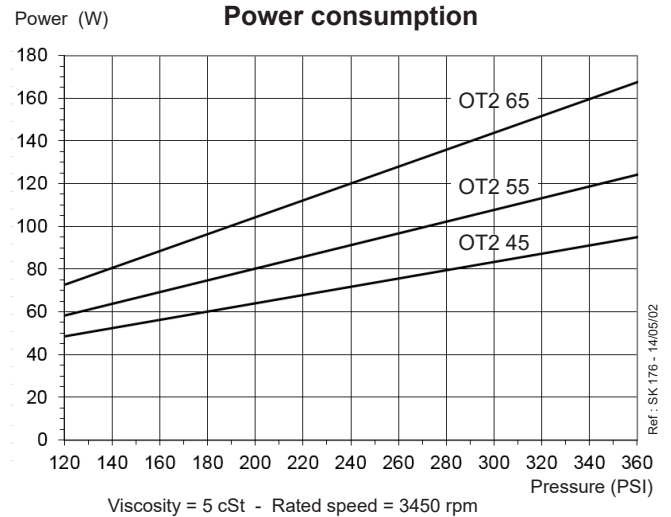
Although pressure adjustment may permit to develop pressure beyond maximum pressure of solenoid valve, pressure should not be adjusted above this value

Pump capacity



Data shown take into account a wear margin.
Do not oversize the pump when selecting the gear capacity to ensure the optimum operation of the (NO) solenoid valve (switching low/high mode).

Power consumption



PUMP DIMENSIONS

Example shows "A" rotation and nozzle outlet

