OIL PUMP TYPE AP2
GEAR SIZES 45-55-65-75-95

AP2

AP2 - 11 - Ed 6 - June 2000

This is a general specification leaflet; for specific applications not covered herein, contact Suntec.

The SUNTEC **AP2** oil pump features 2 mode pressure operation without cut-off function. Switching between low and high modes is assured by a integral solenoid valve.

APPLICATIONS

- Light oil.
- Two firing rates (with a sole nozzle line).
- One or two-pipe system.
- System with in-line solenoid valve for cut-off.

PUMP OPERATING PRINCIPLE

The gear set draws oil from the tank through the built-in filter and transfers it to the nozzle line. 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 functionning of the low pressure 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 valve eliminating its effect, and the high pressure valve now determines the nozzle pressure.

In two pipe operation, 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 pistons), but it may be accelerated by opening a pressure port.

In one pipe operation, 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. A pressure port must be opened to bleed the system.

PUMP IDENTIFICATION

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

AP : Pump for two mode operation (one nozzle line and two pressure modes) without cut-off

2 : Standard model

Gear set capacity (see pump capacity curves)

Shaft rotation and nozzle location (seen from shaft end)
- A : clockwise rotation right hand nozzle.
- B : clockwise rotation left hand nozzle.
- C : anti clockwise rotation left hand nozzle.
- D : anti clockwise rotation right hand nozzle.

Pump series

5 : hub Ø 32 mm

Model number

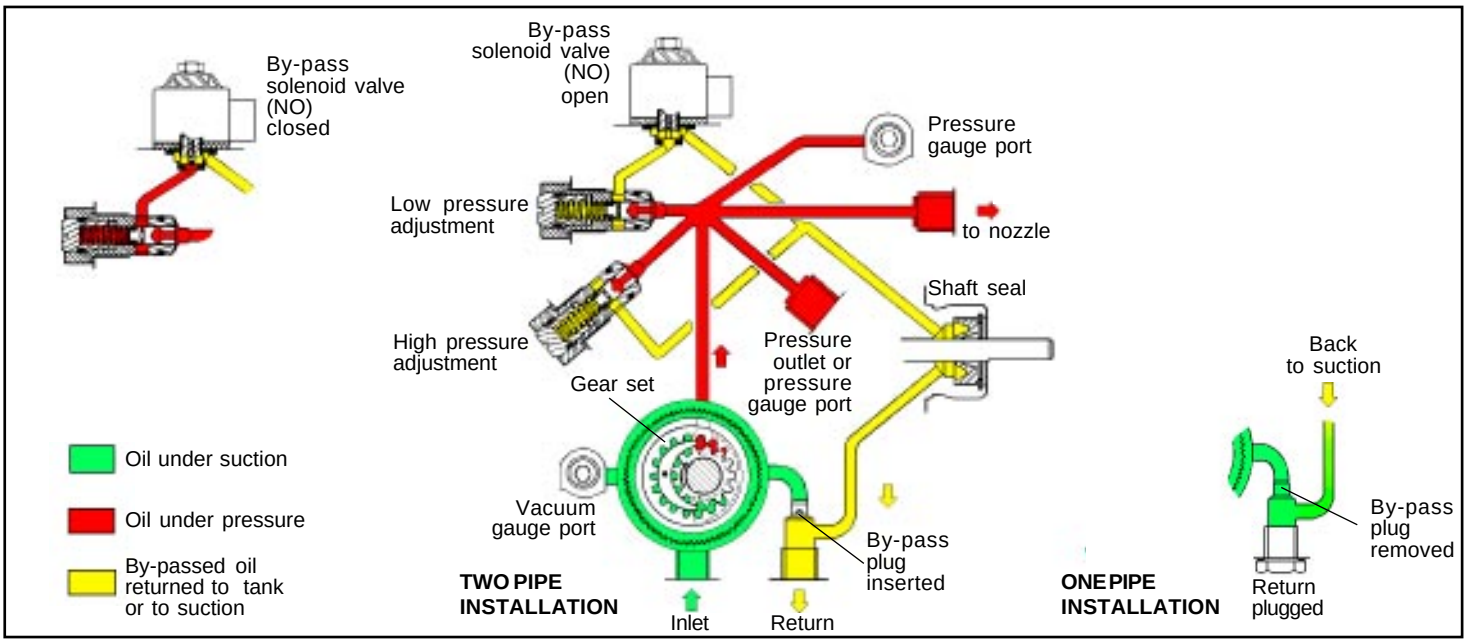
AP	2	45	C	9	5	xx	1	P	05	60

Revision number

Installation
- P : by-pass plug installed for two-pipe operation
- M : without by-pass plug, return plugged, for one-pipe operation

Solenoid coil voltage
- 01 : 110-120 V ; 50/60 Hz
- 02 : 24 V ; 50/60 Hz
- 05 : 220 - 240 V ; 50/60 Hz

Connector cable length
- 00 : no cable
- 35 : 35 cm - 45 : 45 cm
- 60 : 60 cm - 10 : 1 m



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TECHNICAL DATA

General

Mounting	Hub mounting according to EN 225
Connection threads	cylindrical according to ISO 228/1
Inlet and return	G 1/4
Nozzle outlet	G 1/8
Pressure gauge port	G 1/8
Vacuum gauge port	G 1/8
Valve function	Pressure regulation - no cut-off
Strainer	open area : 14 cm^2 (AP2 45/55/65) 20 cm^2 (AP2 75/95) opening size :150 µm
Shaft	Ø 8 mm according to EN 225
By-pass plug	inserted in return port for two-pipe system ; to be removed from return port with a 4 mm Allen key for one pipe system.
Weight	1,3 kg

Hydraulic Data

	Nozzle pressure range*	Delivery pressure settings*
Low mode :	8 -15 bars	9 bars
High mode :	12 - 25 bars	22 bars

** AP2 75/95 : pressure obtained with a 10,5 GPH nozzle*
(other ranges available on request, refer to the specified range of the particular fuel unit)

Operating viscosity	2 - 12 cSt
Oil temperature	0 - 60°C in the pump
Inlet pressure	2 bars max.
Return pressure	2 bars max.
Suction height	0,45 bars max. vacuum to prevent air separation from oil
Rated speed	3600 rpm max.
Torque (@ 45 rpm)	0,10 N.m (AP2 45/55) - 0,12 N.m (AP2 65) 0,14 N.m (AP2 75) - 0,20 N.m (AP2 95)

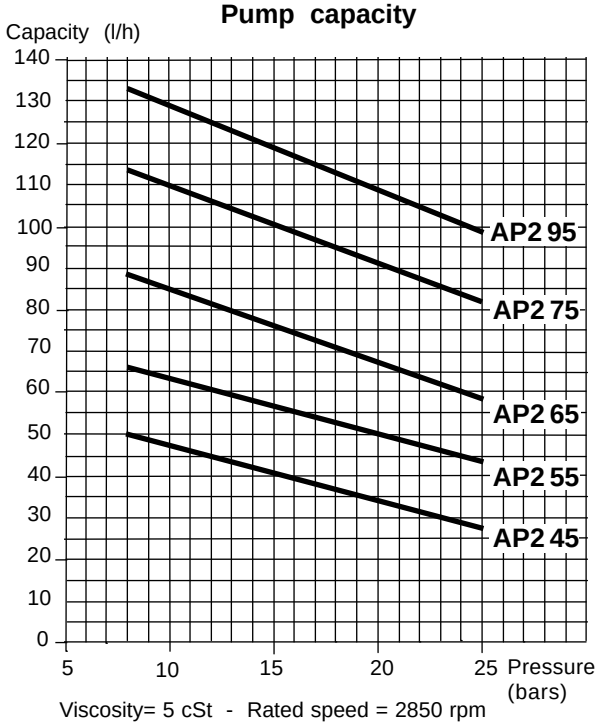
Solenoid valve characteristics

Voltage	220 - 240 or 110 - 120 or 24 V; 50/60 Hz
Consumption	9 V.A (@ voltage = 220 or 110 or 24 V)
Ambient temperature	0 - 60°C
Maximum pressure	25 bars
Protection class	IP 41 according to IEC 529, when used with SUNTEC connector cable

Connector characteristics

Encapsulation material	PVC
Cable type	H03 VV-F
Cross section area	0,5 mm^2 per conductor
Wire end terminals	in accordance with DIN 46228 D1-7Ms

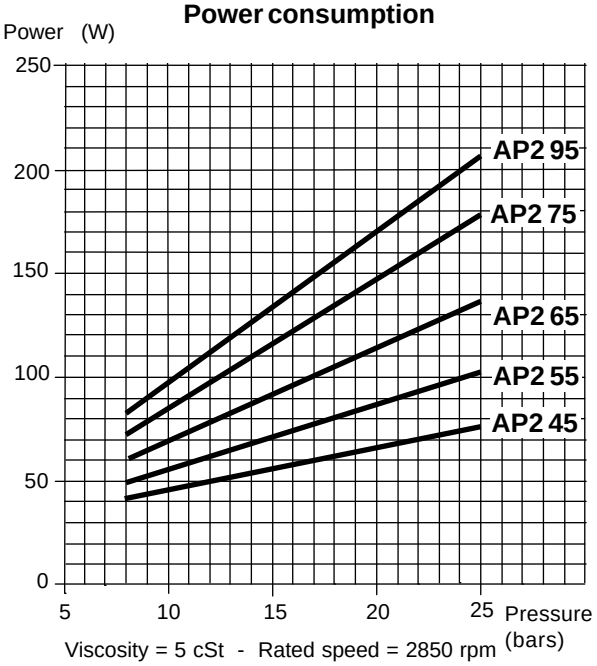
Pump capacity



Viscosity= 5 cSt - Rated speed = 2850 rpm

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).

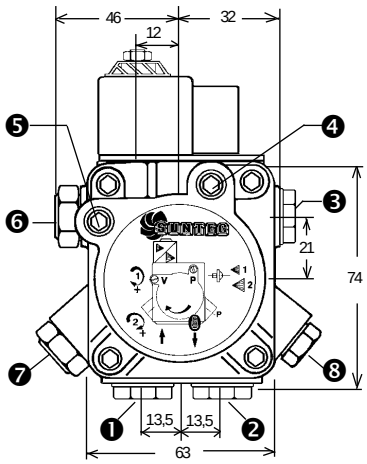
Power consumption

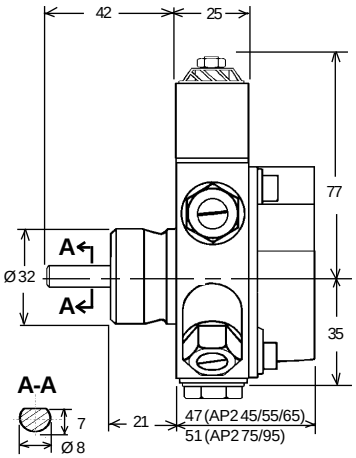


Viscosity = 5 cSt - Rated speed = 2850 rpm

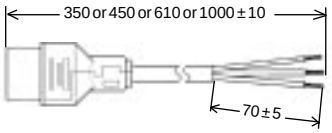
DIMENSIONS

PUMP *(Example shows "C" rotation and nozzle outlet)*





CONNECTOR



1. Suction
2. Return and internal by-pass plug
3. Nozzle outlet
4. Pressure gauge port
5. Vacuum gauge port
6. Low pressure adjustment
7. High pressure adjustment
8. Pressure outlet or pressure gauge port