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 an integral solenoid valve.

COMPATIBILITY

- Domestic oil, HVO, B30 (biofuel blend with the addition of 30% FAME, as defined in DIN SPEC 51603-6), kerosene.
- 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 functioning 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.
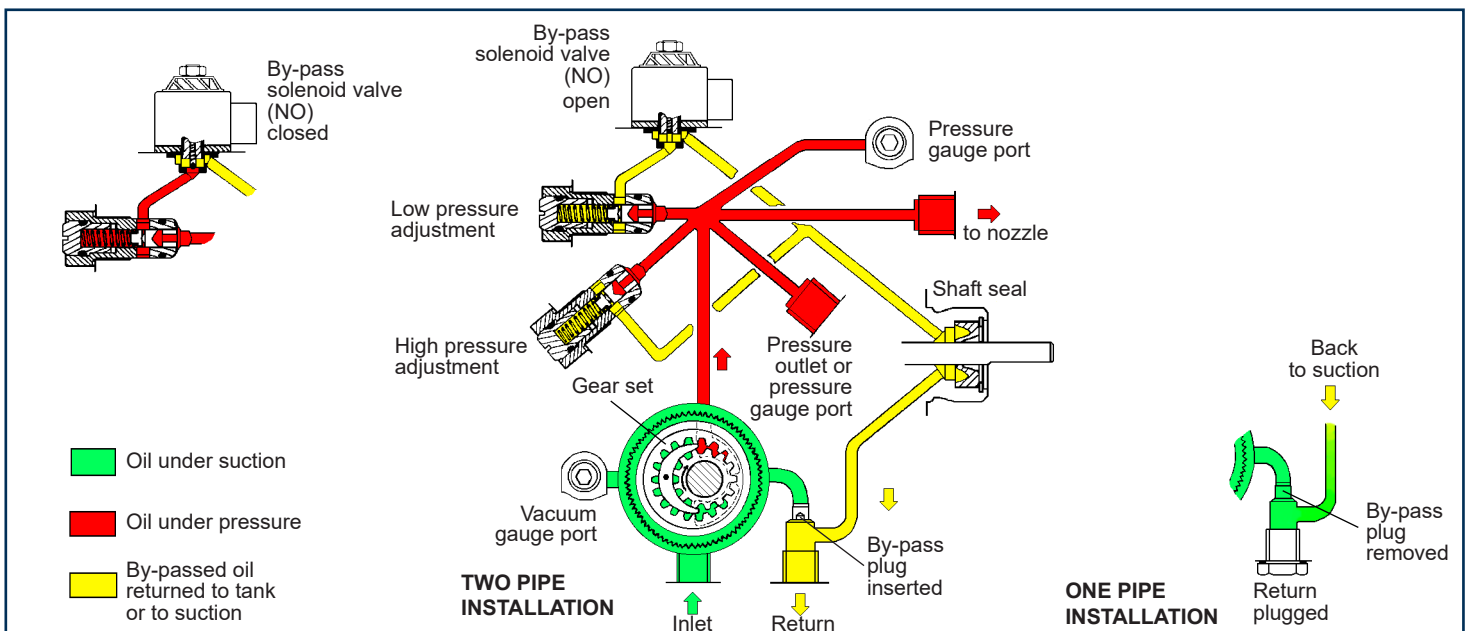
In two pipe operation, the by-pass plug must be fitted in the return port, which ensures that the oil dumped by the regulating valves is returned to the tank and the suction line flow is equal to the gear set capacity. Bleeding in two pipe operation is automatic (it is assured by a bleed flat on the 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

V : B30 applications

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.

K : Kerosene applications

Pump series

5 : hub Ø 32 mm

Model number

AP 2 V 45 C K 9 5 xx 4 P 07 00

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
05/07 : 220 - 240 V AC ; 50/60 Hz
06 : 110-120 V AC ; 50/60 Hz
02 : 24 V AC ; 50/60 Hz

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

By-pass solenoid valve (NO) closed

By-pass solenoid valve (NO) open

Low pressure adjustment

High pressure adjustment

Gear set

Vacuum gauge port

Pressure gauge port

to nozzle

Shaft seal

Pressure outlet or pressure gauge port

By-pass plug inserted

TWO PIPE INSTALLATION

Inlet

Return

Oil under suction

Oil under pressure

By-passed oil returned to tank or to suction

Back to suction

By-pass plug removed

Return plugged

ONE PIPE INSTALLATION

TECHNICAL DATA

General

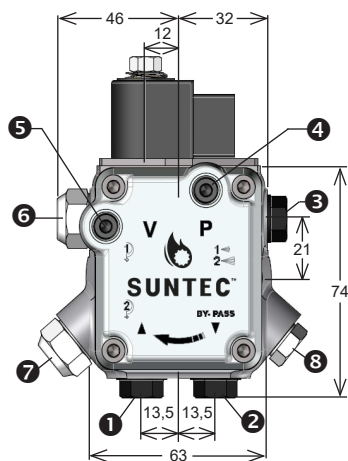|	
Mounting	Hub mounting according to EN 225
Connection threads	cylindrical according to ISO 228/1
Inlet and return	G 1/4
Nozzle outlet	G 1/8
Pressure gauge port	G 1/8
Vacuum gauge port	G 1/8
Valve function	Pressure regulation - no cut-off
Strainer	open area : 6 cm² (AP2 45/45K, 55/55K, 65/65K)
	20 cm² (AP2 75/75K, 95/95K)
	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

Gear size	45K/55K/65K/75K/95K	45/55/65/75/95
Nozzle pressure range*	@ 1,8 cSt	@ 5 cSt
Low mode :	8 -15 bars	8 -15 bars
High mode :	12 - 15 bars	12 - 25 bars

* AP2 75/95 : pressure obtained with a 12 GPH nozzle.
(other ranges available on request, refer to the specified range of the particular fuel unit).

Delivery pressure settings @ 5 cSt	Low mode : 9 bars
	High mode : 22 bars
Operating viscosity	1,25 - 12 mm²/s (cSt) for AP2 45K/55K/65K/75K/95K
	2 - 12 mm²/s (cSt) for AP2 45/55/65/75/95
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 45/45 K, 55/55K) - 0,12 N.m (AP2 65/65K)
	0,14 N.m (AP2 75/75K) - 0,20 N.m (AP2 95/95K)

Solenoid valve characteristics

Voltage	220-240 or 110-120 or 24 V; 50/60 Hz
Consumption	9 W max.
Coil Code*	Ambient temperature
06/02/05	0 - 60 °C
07	0 - 80 °C

* Refer to "Pump identification - solenoid coil voltage".

Maximum pressure	25 bars
Protection class	IP 54 according to EN 60529, when used with SUNTEC connector cable.

Pump capacity

Viscosity = ——— 5 cSt - Rated speed = 2850 rpm
           - - - 1,8 cSt

Ref : SK 145 - 14/05/02; SK 248 - 14/05/02

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
           - - - 1,8 cSt
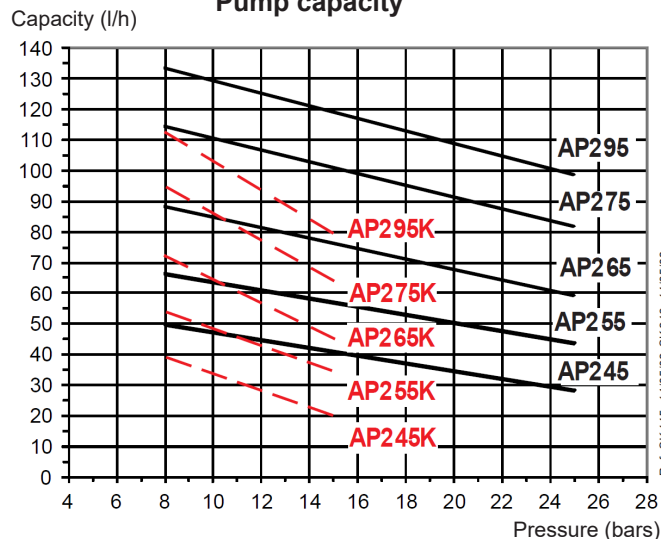
Ref : SK 145 - 14/05/02; SK 248 - 14/05/02

DIMENSIONS

Examples show "C" rotation and nozzle outlet.

❶ Suction

❷ Return and internal by-pass plug
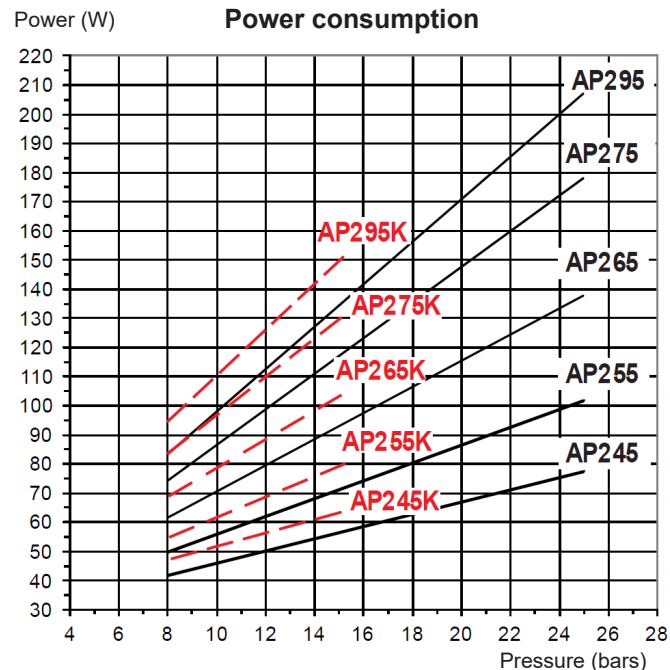
❸ Nozzle outlet

❹ Pressure gauge port

❺ Vacuum gauge port

❻ Low pressure adjustment

❼ High pressure adjustment

❽ Pressure outlet or pressure gauge port

We reserve the right to change specifications without prior notice.

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