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

AP2

AP2 - 11 - Ed 11 - January 2018

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.

APPLICATIONS

- Light oil, B10 heating oil/biofuel blend (as defined in DIN V51603-6) and 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 : B10 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

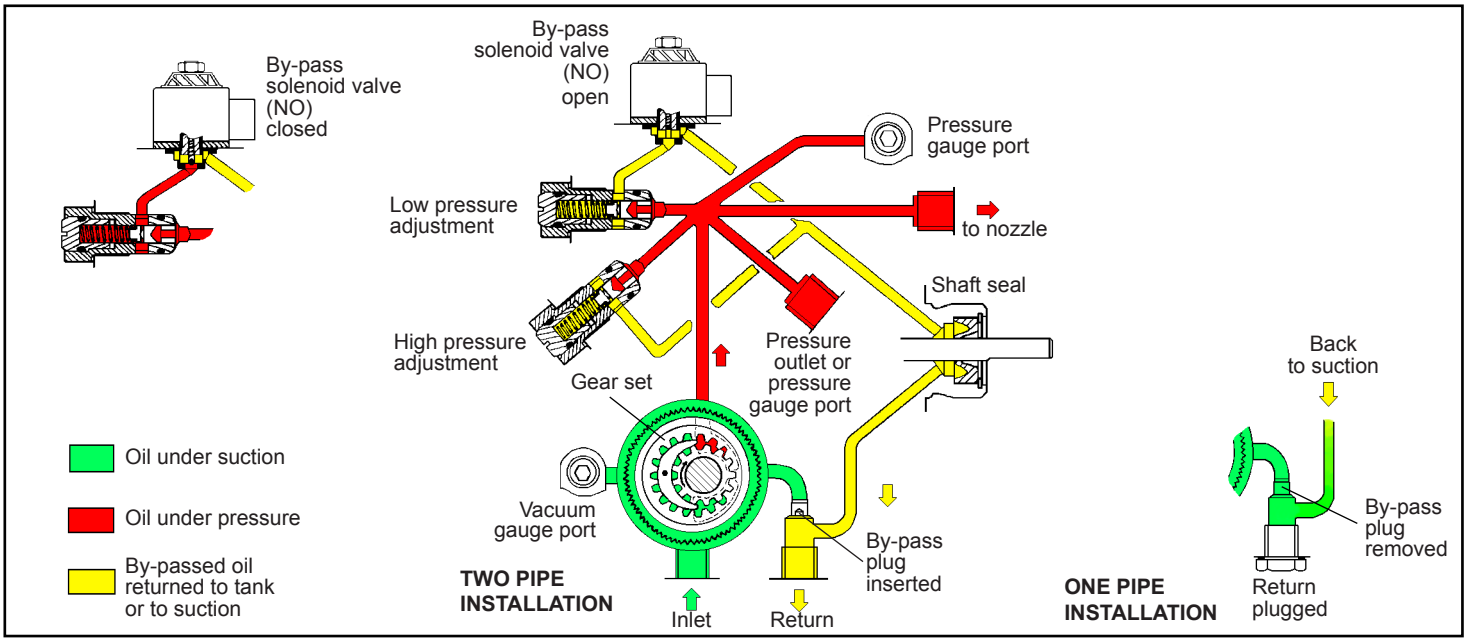
AP	2	V	45	C	K	9	5	xx	4	P	07	00

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
06 : 110-120 V ; 50/60 Hz
02 : 24 V ; 50/60 Hz
05/07 : 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 : 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)

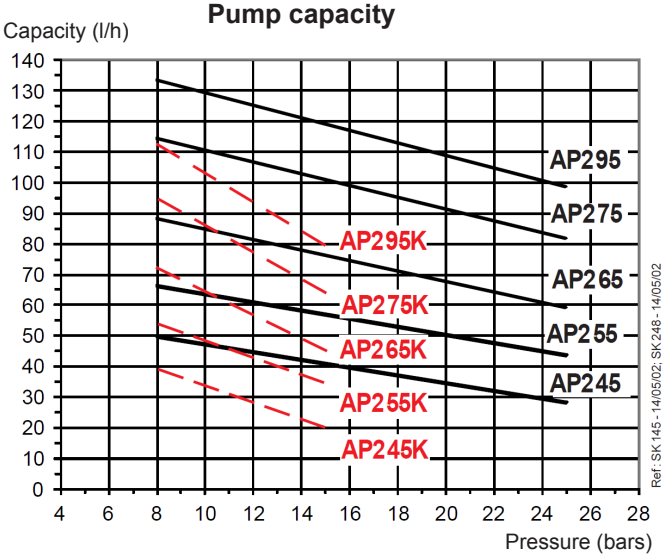
Solenoid valve characteristics

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.

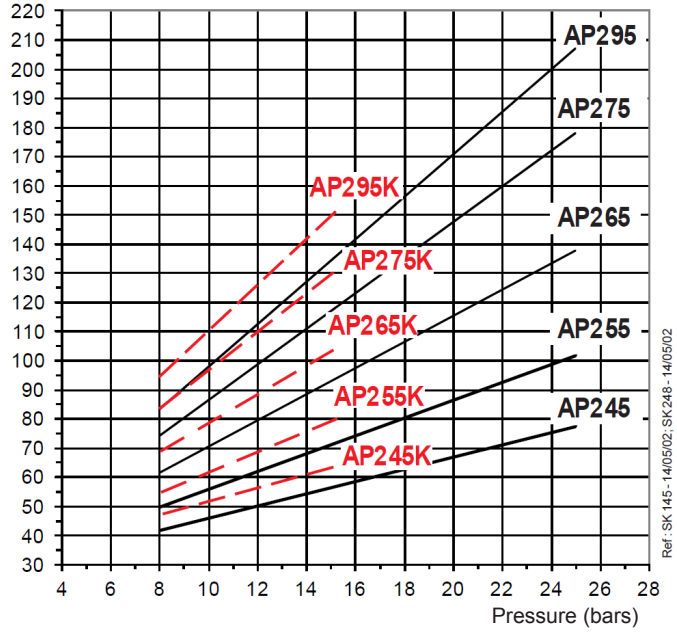
Pump capacity



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

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

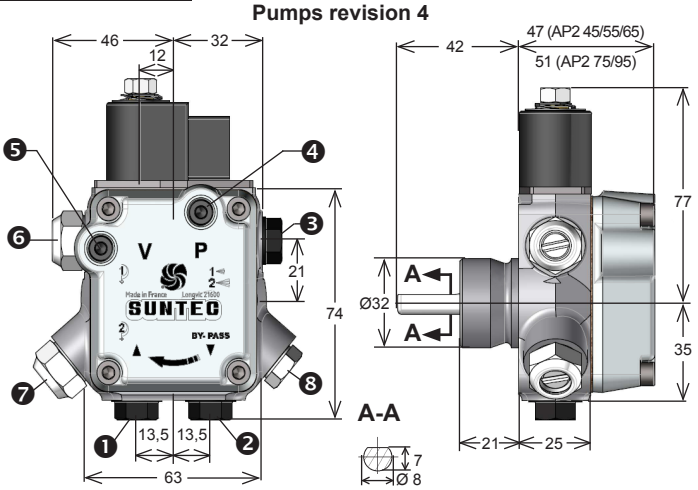


Viscosity = ——— 5 cSt - Rated speed = 2850 rpm
— — 1,8 cSt

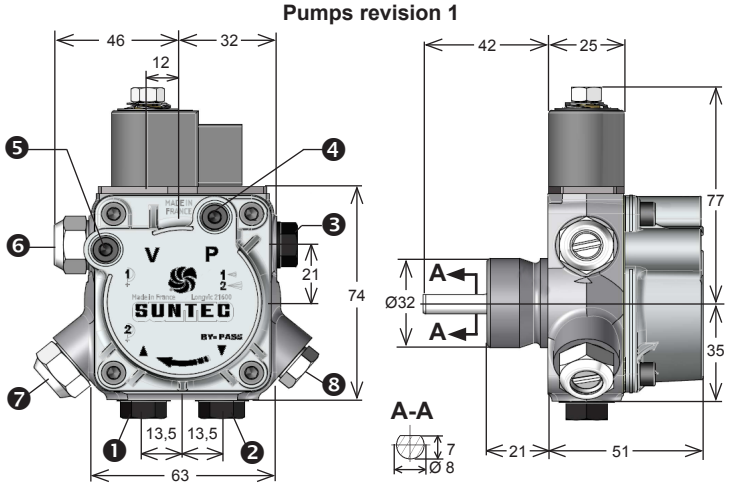
DIMENSIONS

Examples show "C" rotation and nozzle outlet.

Pumps revision 4



Pumps revision 1



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