PUMP TYPE AL

AL

AL - 11 - Ed 20 - April 2024

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

The SUNTEC **AL** oil pump incorporates a blocking solenoid valve with in-line cut-off function.

COMPATIBILITY

- Domestic oil, HVO, B100 (biofuel blend with the addition up to 100% FAME, as defined in DIN SPEC 51603-6 and EN 14214), kerosene.
- 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. A pressure regulating valve is used to dump all oil which is not required at the nozzle.
In two-pipe operation, the by-pass plug must be fitted in the return port, which ensures that the oil dumped by the regulating valve is returned to the tank and the suction line flow is equal to the gear set capacity.
In one-pipe operation, the oil which does not go through the nozzle line is returned directly to the gear inlet and the suction line flow is equal to the nozzle flow. In that case, the by-pass plug must be removed from the return port, and the return port sealed by steel plug and washer.

Bleed

Bleeding in two-pipe operation is automatic (except for AL 20) : it is assured by a bleed flat on the piston.
For AL 20 in two pipe operation, and for all models in one-pipe configuration the plug of a pressure gauge port must be loosened until the air is evacuated from the system.

Cut-off

The solenoid valve of the AL pump is of the "normally closed" type and is situated in the nozzle line. 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 the solenoid is non-activated, the valve is closed and all oil pressurized by the gear set passes through the regulator to the suction or return line, depending upon pipe arrangement.
As soon as the solenoid is activated, oil passes to the nozzle line at the pressure set by the pressure regulating valve.

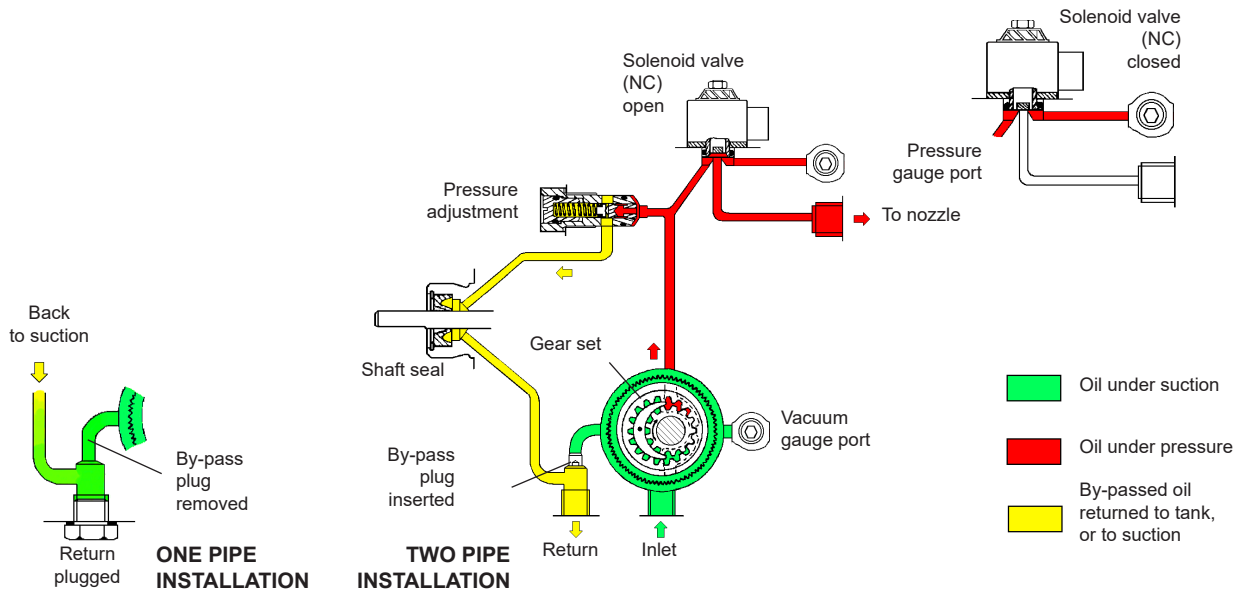
PUMP IDENTIFICATION

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

AL : pressure regulation and blocking solenoid valve with in-line cut-off function
V : B100 applications
Gear set capacity (see pump capacity curve)
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
4 : hub Ø 54 mm
6/5 : hub Ø 32 mm
Model number

AL V 35 C K 9 5 xx 6 P 07 00

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
05/07 : 220-240 V AC ; 50/60 Hz
06 : 110-120 V AC ; 50/60 Hz
02 : 24 V AC ; 50/60 Hz
03 : 24 V DC
08 : 12 V DC
Connector cable length
00 : no cable
35 : 35 cm cable - 45 : 45 cm cable
60 : 60 cm cable - 10 : 1 m cable



TECHNICAL DATA

General

Mounting	Hub mounting according to EN 225. (Flange mounting available on AL 75/75K/95/95K models)
Connection threads	cylindrical according to ISO 228/1.
Inlet and return	G 1/4 (with facilities for conical sealing on revision 6 models)
Nozzle outlet	G 1/8
Pressure gauge port	G 1/8
Vacuum gauge port	G 1/8
Valve function	Pressure regulation.
Strainer	open area : 6 cm² (AL 20/35/35K/55/55K/65/65K) 20 cm² (AL 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 with a 4 mm Allen key for one pipe system.
Weight	1,1- 1,3 kg (depending on the model).

Hydraulic Data

Gear size	Nozzle pressure range*	Factory setting
20/35/55/65/75	4-18, 8-15 or 4-25 bars@ 5 cSt	9 or 12 bars
95	4-18 or 10-20 bars @ 5 cSt	12 bars
35K/55K/65K/75K/95K	8-15 bars @ 1,8 cSt	12 bars

** other ranges available on request, refer to the specified range of the particular fuel unit.*

Operating viscosity	2 - 12 mm²/s (cSt) for AL 20/35/55/65/75/95 1,25 - 12 mm²/s (cSt) for AL 35K/55K/65K/75K/95K
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)	0,09 N.m (AL20) 0,10 N.m (AL 35/35K/55/55K) - 0,12 N.m (AL 65/65K) 0,14 N.m (AL 75/75K) - 0,20 N.m (AL 95/95K)

Solenoid valve characteristics

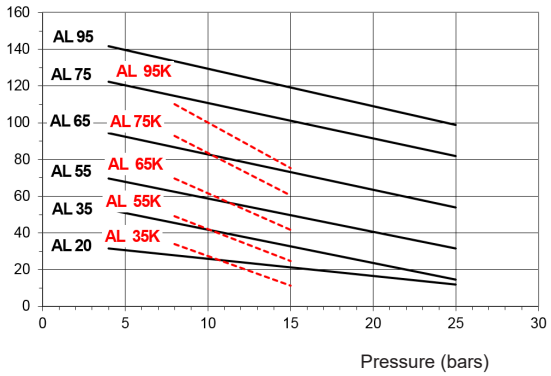
Voltage	220-240 or 110-120 or 24 V; 50/60 Hz
Consumption	9 W max.
Coil Code*	Ambient temperature
06/02/05	0 - 60 °C
07	0 - 80 °C

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

Maximum pressure	25 bars
Certified	TÜV Nr stamped on pump cover.
Protection class	IP 54 according to EN 60529, when used with SUNTEC connector cable.

Pump capacity

Capacity (L/h)

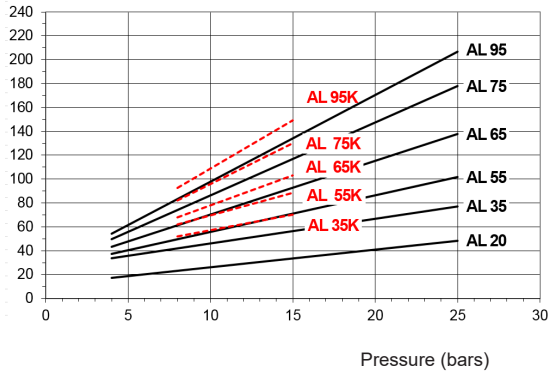


Viscosity = 5 cSt - Rated speed = 2850 rpm
1,8 cSt

Data shown take into account a wear margin.
Do not oversize the pump when selecting the gear capacity.

Power consumption

Power (W)

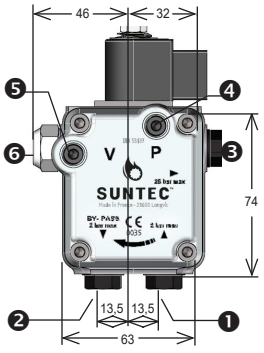


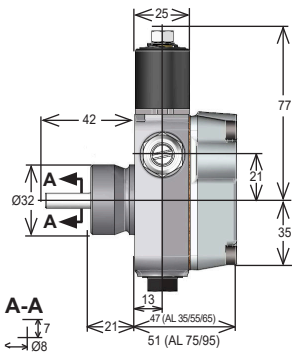
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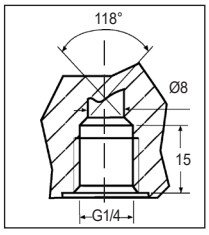
PUMP DIMENSIONS *(in mm)*

Examples show "C" rotation and nozzle outlet.

Pumps revision 4,6 - Hub mounting

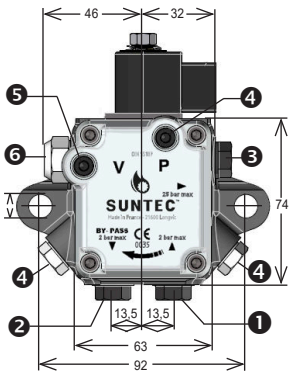


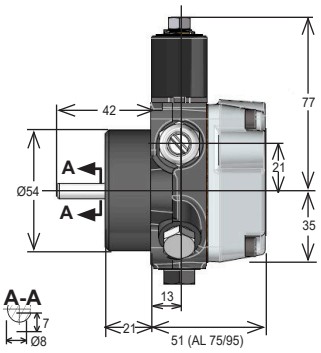




Inlet ❶ and Return ❷ with direct sealing for revision 6 models (sealing with washers can also be used)

Pumps revision 4 - Flange mounting





❶ Suction

❷ Return and internal by-pass plug

❸ Nozzle outlet

❹ Pressure gauge port

❺ Vacuum gauge port

❻ Pressure adjustment