



# Variable displacement axial piston pumps SVP series

for open circuit - flow sharing control valve

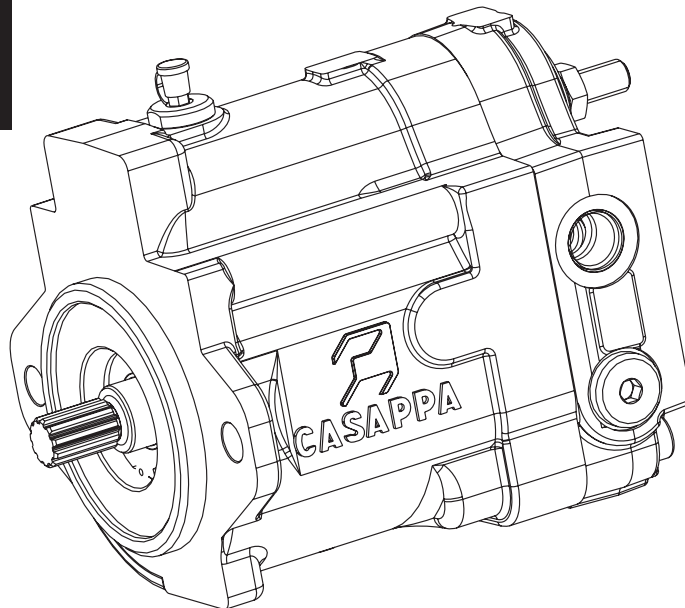
<b>APPLICATION</b>	Medium pressure
<b>SECTOR</b>	Mobil hydraulic

## DISPLACEMENTS

From 0.95 in<sup>3</sup>/rev  
(15,6 cm<sup>3</sup>/rev)  
To 1.83 in<sup>3</sup>/rev  
(30 cm<sup>3</sup>/rev)

## MAX. SPEED

2600 min<sup>-1</sup>



- Compact design
- Torque limiter
- Low noise emission
- Energy savings
- Long service life

Variable displacement axial piston pump swash plate design. The pump has been designed specifically for *mini excavators* where compactness and ease of installation are critical. The automatic overall torque limiter allows you to optimize the performance of the machine while saving energy.

Edition: 01/03.2006



## FEATURES

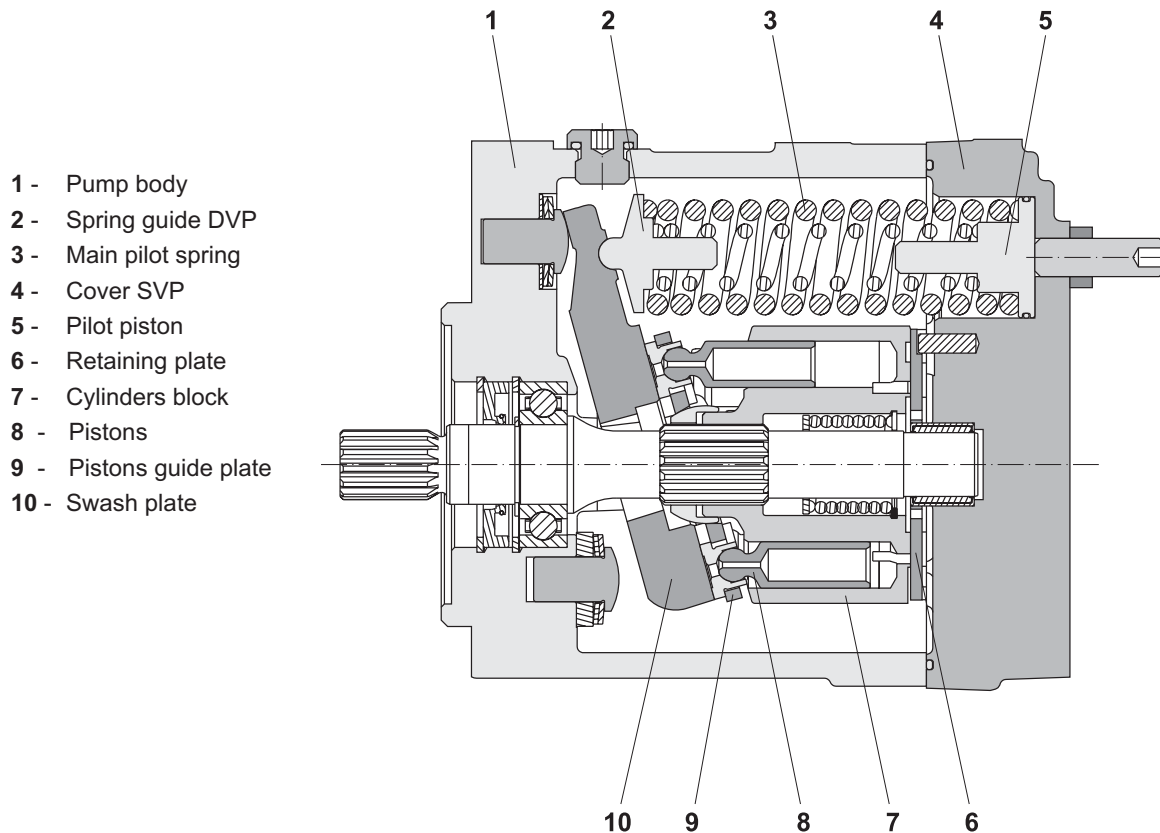
Technical data (with HL or HLP mineral oil based hydraulic fluid to DIN 51524)

Direction of rotation (defined looking at the drive shaft)		Clockwise	
Inlet pressure	in Hg (bar abs.)	min	21 (0,7)
	psi (bar abs.)	max	44 (3)
Max. speed $n_{max}$	$[min^{-1}]$	@ $V_{max}$	2600
Control type		Constant torque control	
Setting torque range	lbf in (Nm)	from 345 (39) to 1062 (120)	
Drain line		Internal	
Fill capacity	US gallon (l)	0.2 (0,9)	
Mass (without oil)	lbs [kg]	36.16 (16,4)	
Seals		N= Buna	V= Viton
Operating temperature	°F (°C)	min.	-13 (-25)
		max. continuous	176 (80)
		max. peak	212 (100)
			14 (-10)
			230 (110)
			257 (125)

Pump type			SVP								
Max. displacement (standard)	$in^3/rev$ $(cm^3/rev)$	$V_{max}$	1.83 (30)	1.71 (28)	1.53 (25)	1.34 (22)	1.22 (20)	1.10 (18)	1.04 (17)	0.98 (16)	0.95 (15,6)
		$V_{min}$	0.33 (5,4)								
Max. outlet pressure	psi (bar)	continuous	3045 (210)								
		intermittent	3335 (230)								
		peak	3625 (250)								
Max. delivery (theor.)	US gpm (l/min)	@ $V_{max} - n_{max}$	20.6 (78)	19.2 (72,8)	17.2 (65)	15.1 (57,2)	13.7 (52)	12.4 (46,8)	11.7 (44,2)	11.0 (41,6)	10.7 (40,6)

(●) In working cycle

For different working conditions, please consult our sales department.



01/03.2006

**GENERAL INFORMATIONS**

**HYDRAULIC FLUID**

The operation data refers to the use of the pump with HL or HLP type mineral oil conforming to DIN 51524. For the use of ecological fluids, HF fluid or HWBF fluid, please consult our sales department. The system should be designed to prevent aeration of the hydraulic fluid.

**FLUID VISCOSITY**

The fluid viscosity range for optimal use of SVP pump is between 77 and 163 SSU (15 and 35 cSt).

Functional limit conditions are:

4546 SSU (1000 cSt) at start up at -13 °F (-25 °C) with stright and short inlet line

58 SSU (10 cSt) at maximum temperature of 194 °F (90 °C)

**FILTRATION**

To ensure the optimal working and the maximum life to the pump, the hydraulic fluid must have and maintain a fluid contamination within the values shown in the table below.

Working pressure psi (bar)	$\Delta p < 2030$ (140)	$2030 < \Delta p < 3045$ (140) (210)	$\Delta p > 3045$ (210)
Contamination class NAS 1638	9	8	7
Contamination class ISO 4406	20/18/15	19/17/14	18/16/13
Achieved with filter $\beta_{10(c)} \geq 75$	10 $\mu m$	10 $\mu m$	10 $\mu m$

Casappa recommends to use its own production filters:



**INSTALLATION**

Check that the maximum coupling eccentricity stays within 0.0098 in (0,25 mm) to reduce shaft loads due to misalignment. It is advised to use a flexible coupling suitable to absorb eventual rotational shock. The direction of rotation of the pump must agree with the prime mover rotation. Before installation, the case of the pump must be filled with fluid.

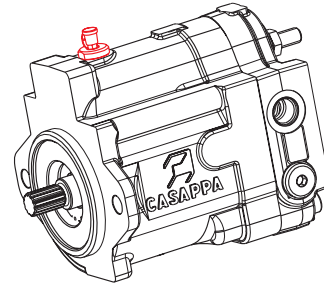
**STARTING UP**

Check that all connections are secure and that the entire system is completely clean. Add oil to the tank always using a filter. Bleed the air from the circuit to help the filing. Turn on the system for a few moments at minimum speed, then bleed the circuit again and check the level of oil in the tank. Gradually increase the pressure and speed of rotation up to the pre-set operating levels, which must stay within the stated limits as specified in the catalogue.

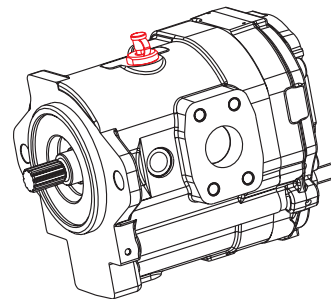
**MOUNTING POSITIONS AND BREATHER PLUG**

Standard pump is available with the breather plug in standard position. For the other mounting positions please consult our sales department.

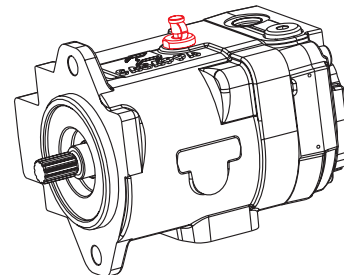
**STANDARD POSITION**



**REAR POSITION**



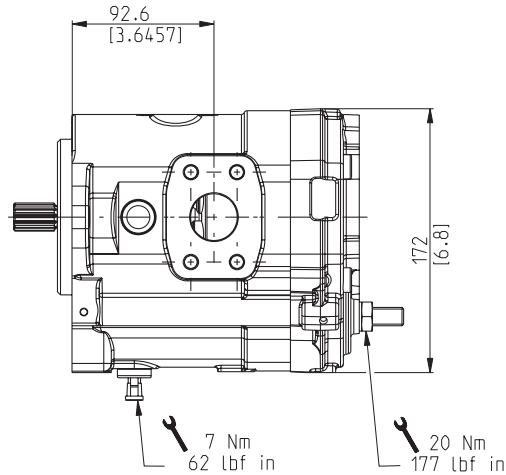
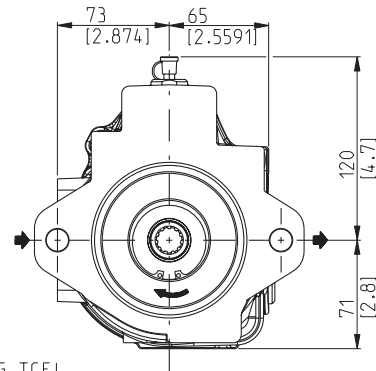
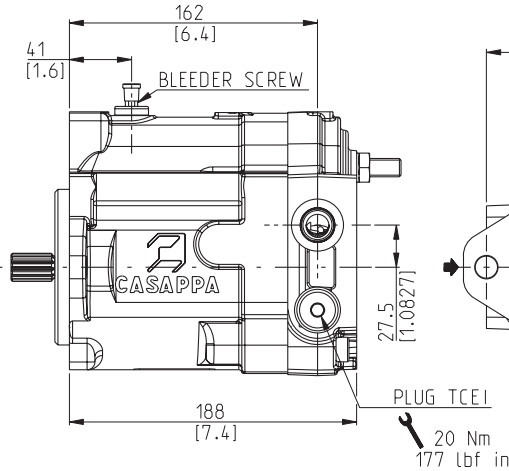
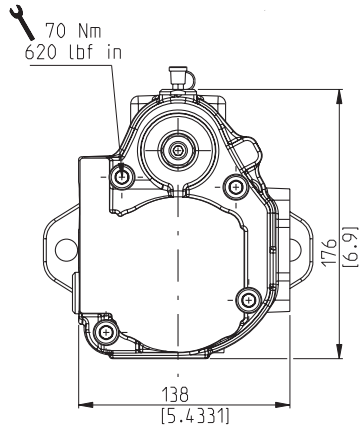
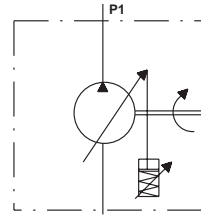
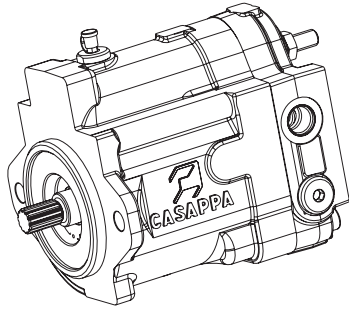
**SIDE POSITION**



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**DIMENSIONS**

**SVP**



DCAT\_047\_002

The drawing shows the version with side ports.  
 The version with rear ports is available on request.  
 For more information please consult our sales department.

**HOW TO ORDER**

Please consult our sales department.

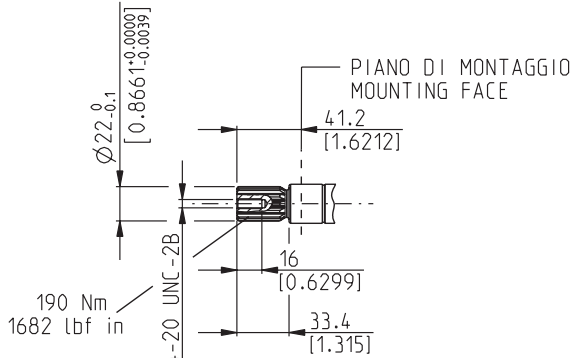
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**DRIVE SHAFTS / MOUNTING FLANGES**

**SAE "B" SPLINE**

**04**

Mounting face refer to flange code **S5**



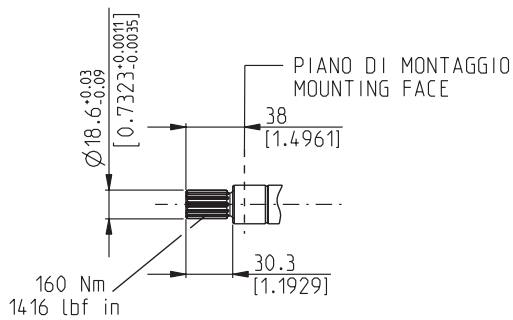
DCAT\_039\_004\_47552010

Ext. Involute Spline ANSI B92.1  
with major diameter modified  
13 teeth - 16/32 Pitch - 30 deg  
Flat root - Side fit - Class 5

**SPLINE**

**C1**

Mounting face refer to flange code **S5**



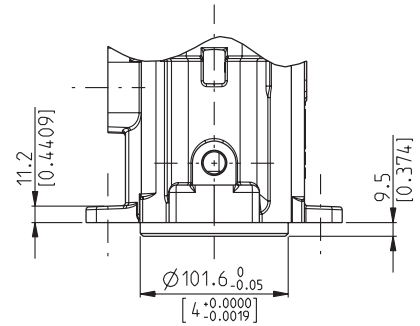
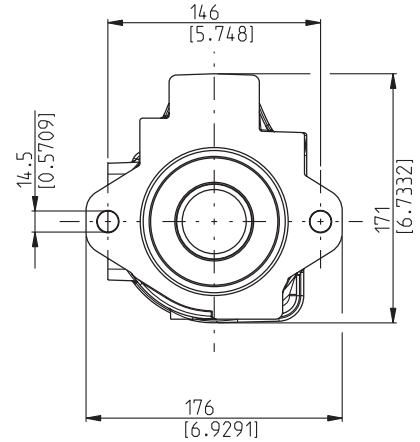
DCAT\_039\_006\_47552030

Ext. Involute Spline ANSI B92.1  
with major diameter modified  
11 teeth - 16/32 Pitch - 30 deg  
Flat root - Side fit - Class 5

**SAE "B" 2 HOLES**

**S5**

Conforms to SAE J744



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**PORTS SIZES**

**SVP**



Tightening torque for low pressure side port




Tightening torque for high pressure side port (values obtained at 350 bar)

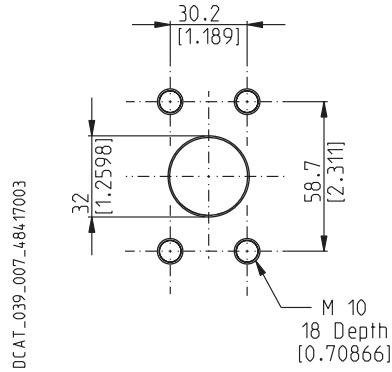
**INLET PORT (side ports version)**

**SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI**

**SSM**

Metric thread ISO 60° conforms to ISO/R 262

CODE	Nominal size	 Nm (lbf in)
<b>MD</b>	1" 1/4	20 <sup>+1</sup> (177 ÷ 186)




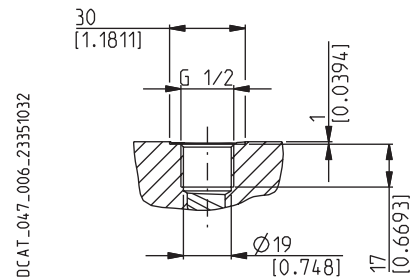
**OUTLET PORT**

**GAS STRAIGHT THREAD PORTS (BSPP)**

**BSPP**

British standard pipe parallel (55°) conforms to UNI - ISO 228


CODE	Nominal size	 Nm (lbf in)
<b>GD</b>	1/2"	50 <sup>+2,5</sup> (443 ÷ 465)

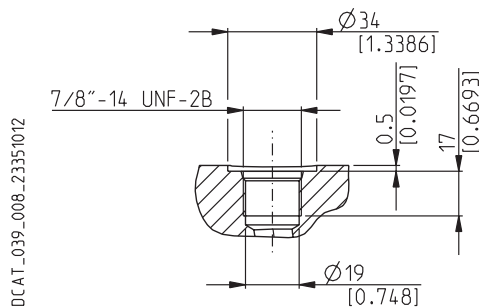


**SAE STRAIGHT THREAD PORTS J514 (ODT)**

**ODT**

American straight thread UNC-UNF 60° conforms to ANSI B 1.1

CODE	Nominal size	 Nm (lbf in)
<b>OC</b>	5/8"	70 <sup>+5</sup> (620 ÷ 664)



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**PORTS SIZES**

**SVP**



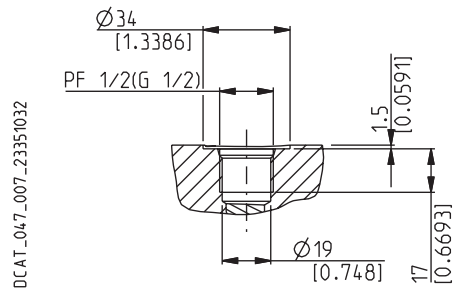
Tightening torque for high pressure side port (values obtained at 350 bar)

**OUTLET PORT**

**STRAIGHT THREAD PORTS JIS B2351** **JIS**

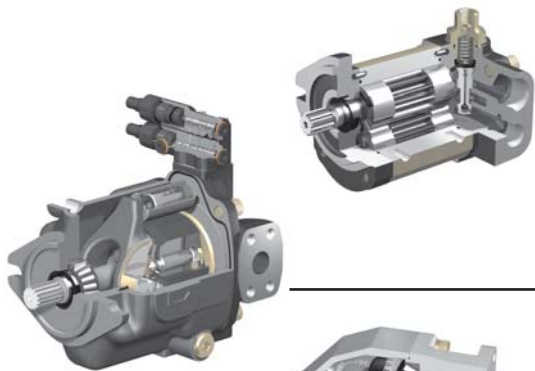
British standard pipe parallel (55°) conforms to UNI - ISO 228

CODE	Nominal size	
		Nm (lbf in)
<b>JD</b>	1/2"	50 <sup>+2,5</sup> (443 ÷ 465)



01/03.2006

# Casappa: Fluid Power Design at 360°



**WHISPER**

Gear pumps.  
High performance, low noise.

**PLATA**

Variable displacement axial piston pumps,  
for open circuit.



**STRADA**

Fixed displacement bent axis piston pumps,  
for truck applications.



**MAGNUM**

Cast iron gear pumps and  
motors of three part construction.



**FORMULA**

Cast iron gear pumps,  
for truck applications.



**KAPPA**

Cast iron gear pumps and  
motors of two part construction.



**POLARIS**

Gear pumps and  
motors in aluminium.



**UpEasy**

Double acting hydraulic hand pumps  
with or without reservoir.



**IKRON**  
Fluid Filtration

Filters : suction filters, return filters, in line filters spin-on  
type, for medium and high pressure filters.

 **CASAPPA**  
FLUID POWER DESIGN

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