

VARIABLE
DISPLACEMENT
AXIAL PISTON
PUMPS

SVP SERIES

GENERAL INFORMATIONS

Variable displacement axial piston pump swash plate design for open circuit-flow sharing control valve. 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.

DISPLACEMENTS

From 15,6 cm³/rev (0.95 in³/rev)
To 30 cm³/rev (1.83 in³/rev)

MAX SPEED

2600 min⁻¹

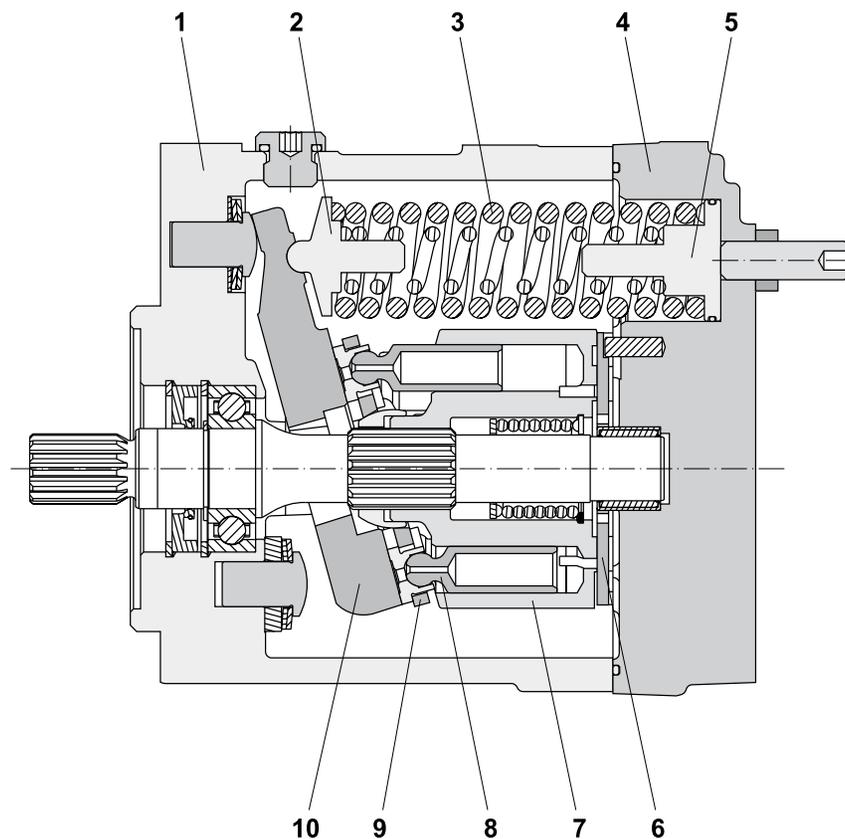
APPLICATION

Medium pressure

SECTOR

Mobil hydraulic

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



1	Pump body
2	Spring guide DVP
3	Main pilot spring
4	Cover SVP
5	Pilot piston
6	Retaining plate
7	Cylinders block
8	Pistons
9	Pistons guide plate
10	Swash plate

02/02.2013



Modification from former edition.

TECHNICAL DATA

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

Replaces: 01/03.2006

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

Pump type

SVP

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

(●) In working cycle

For different working conditions, please consult our sales department.

● 02/02.2013

GENERAL INFORMATIONS / INSTRUCTIONS

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 15 and 35 cSt (77 and 163 SSU).

Functional limit conditions are:

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

10 cSt (58 SSU) at maximum temperature of 110 °C (230 °F) ○

FILTRATION

To ensure the optimal performance 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 bar (psi)	$\Delta p < 140$ (2030)	$140 < \Delta p < 210$ (2030) (3045)	$\Delta p > 3210$ (3045)
Contamination class NAS 1638	9	8	7
Contamination class ISO 4406:1999	20/18/15	19/17/14	18/16/13
Achieved with filter $Bx_{(c)} \geq 75$ according to ISO 16889	10 μm	10 μm	10 μm

Casappa recommends to use its own production filters:



INSTALLATION

Check that the maximum coupling eccentricity stays within 0,25 mm (0.0098 in) 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.

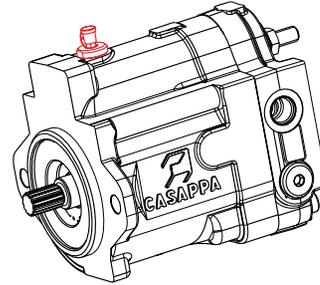
STARTING UP

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.

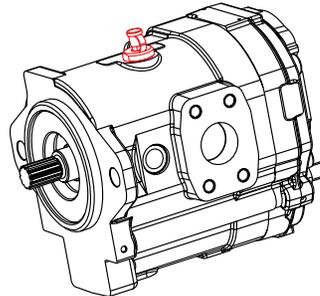
MOUNTING POSITIONS AND BREATHER PLUG

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

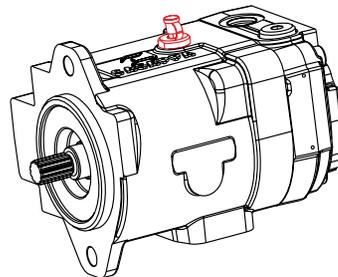
STANDARD POSITION



REAR POSITION



SIDE POSITION

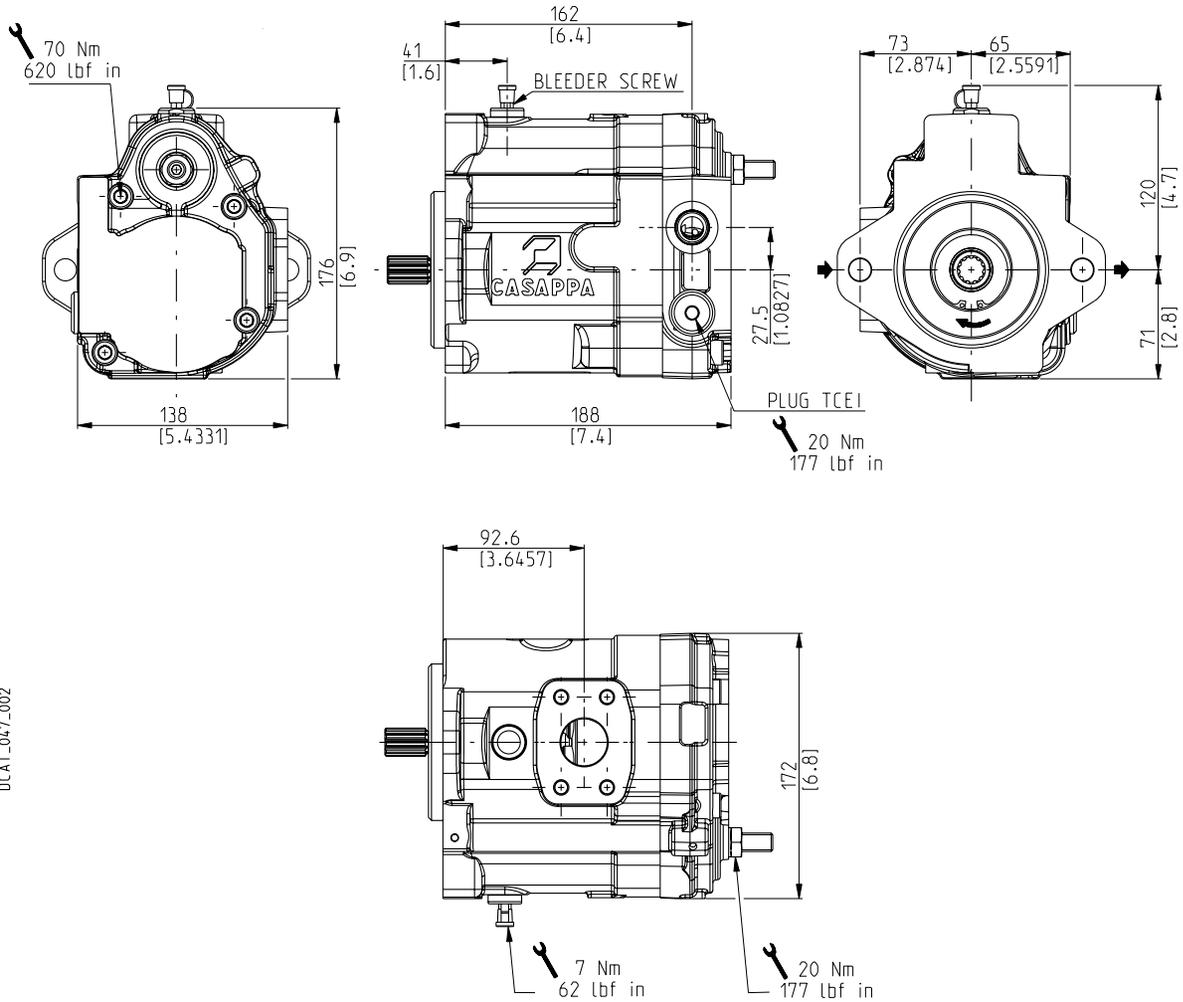
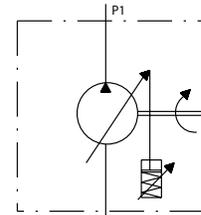
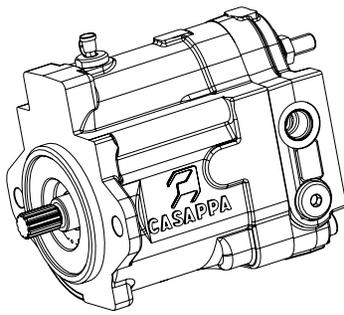


Replaces: 01/03.2006

○ 02/02.2013

DIMENSIONS

SVP



DCAT_047_002

01/03.2006

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.

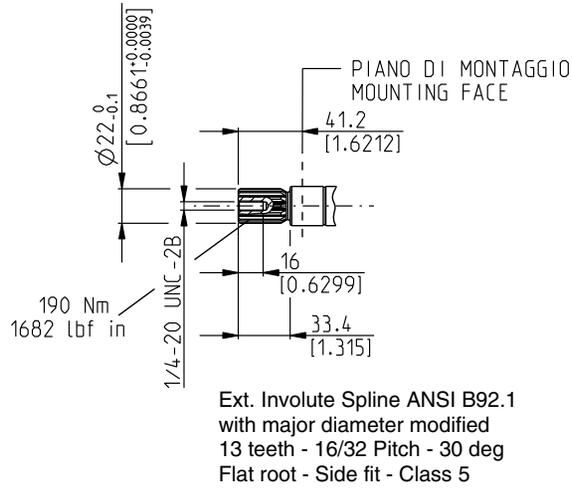
DRIVE SHAFTS / MOUNTING FLANGES

SAE "B" SPLINE

04

Mounting face refer to flange code **S5**

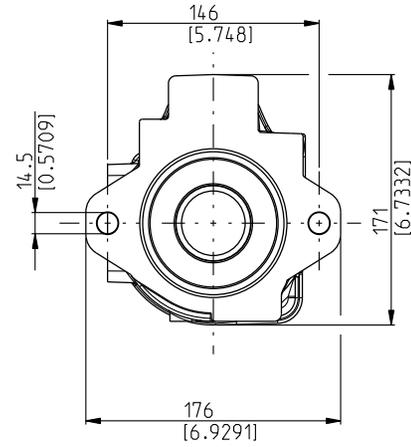
DCAT_039_004_47552010



SAE "B" 2 HOLES

S5

Conforms to SAE J744

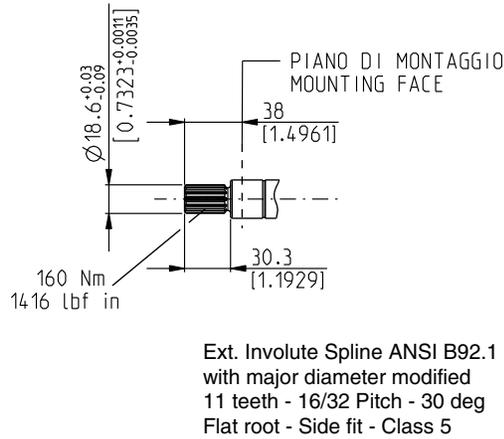


SPLINE

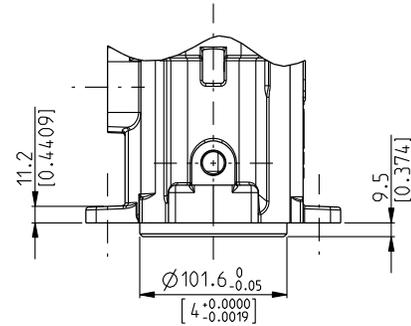
C1

Mounting face refere to flange code **S5**

DCAT_039_006_47552030



DCAT_039_003_48417003



01/03.2006

PORTS SIZE

SVP

 Tightening torque for low pressure side port.

 Tightening torque for high pressure side port [values obtained at 350 bar (5075 psi)]

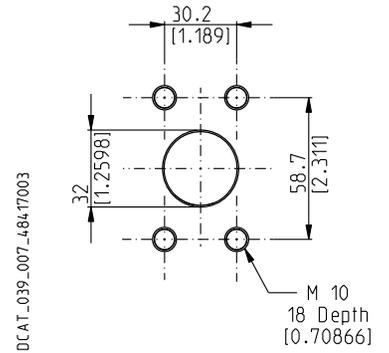
INLET PORT (side port version)

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)
MD	1" 1/4	20 ⁺¹ (177 ÷ 186)



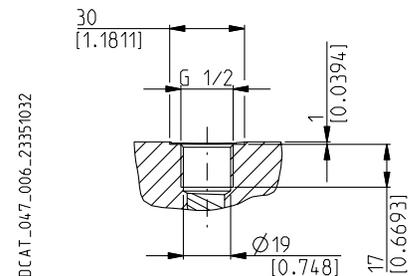
OUTLET PORT

GAS STRAIGHT THREAD PORTS

BSPP

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

CODE	Nominal size	 Nm (lbf in)
GD	1/2"	50 ^{+2.5} (443 ÷ 465)

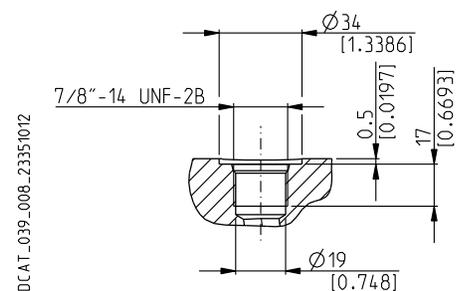


SAE STRAIGHT THREAD PORTS J514 (ODT)

ODT

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

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

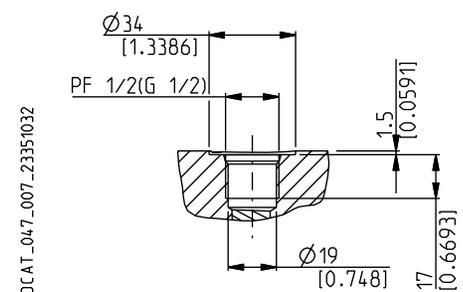


STRAIGHT THREAD PORTS JIS B2351

JIS

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

CODE	Nominal size	 Nm (lbf in)
JD	1/2"	50 ^{+2.5} (443 ÷ 465)



Our policy is one of continuous improvement in product. Specification of items may, therefore, be changed without notice.

01/03.2006

SVP 02 T A

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