PLATA®

Replaces: DVP 01 T E

Modification from former edition

Variable displacement axial piston pump DVP series

for open circuit

DISPLACEMENTS

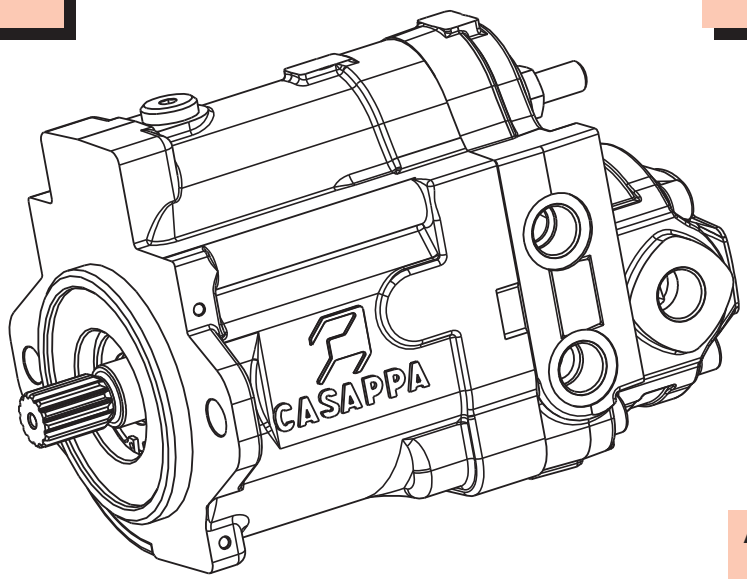
Piston units

From	0.48 in^3/rev (7,8 cm^3/rev)
To	0.85 in^3/rev (14 cm^3/rev)

DISPLACEMENTS

Gear units

From	0.30 in^3/rev (4,95 cm^3/rev)
To	1.29 in^3/rev (21,14 cm^3/rev)



MAX SPEED

2600 min^{-1}

APPLICATION

Medium pressure

SECTOR

Mobile

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

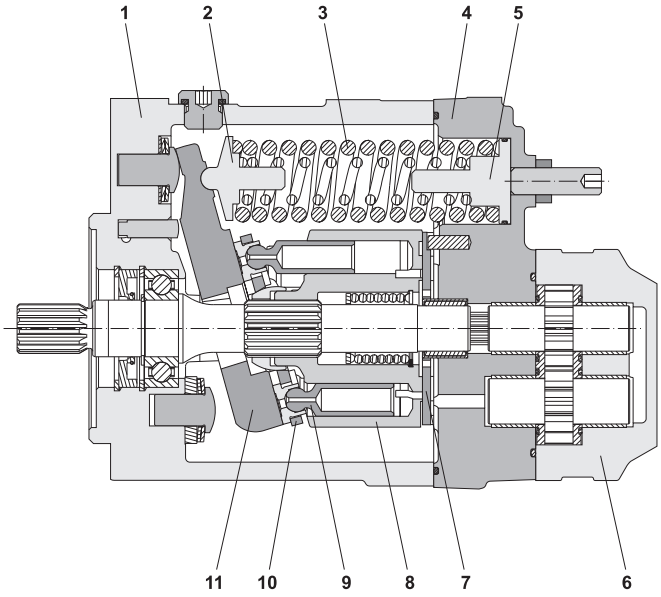
This variable displacement piston pump has ***dual flows*** and an additional piggybacked gear pump for auxiliary service, open center circuits. The pump has been designed specifically for ***mini excavators*** where compactness and ease of installation are critical. The automatic overall torque limiter allows you to optimize the performance of the machine while saving energy. An additional gear unit to supply joystick functions is also available.

Edition: 01/11.2007

CASAPPA®

FLUID POWER DESIGN

GENERAL INFORMATIONS / INSTRUCTIONS



1 - Pump body DVP
2 - Spring guide DVP
3 - Main pilot spring DVP
4 - Cover DVP
5 - Pilot piston DVP
6 - Pump body Kappa 20
7 - Retaining plate
8 - Cylinders block
9 - Pistons
10 - Pistons guide plate
11 - Swash plate

DIRECTION OF ROTATION

Clockwise defined looking at the drive shaft.

HYDRAULIC FLUID

Mineral oil based hydraulic fluid HL or HLP type 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 DVP pump is between 77 and 163 SSU (15 and 35 cSt).
Functional limit conditions are:
max.: 4546 SSU (1000 cSt) at start up at -13 °F (-25 °C) with straight and short inlet line.
min.: 58 SSU (10 cSt) at maximum temperature of 212 °F (100 °C)

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 psi (bar)	Δp<2030 (140)	2030<Δp<3045 (140) (210)	Δp>3045 (210)
Contamination class NAS 1638	9	8	7
Contamination class ISO 4406:1999	20/18/15	19/17/14	18/16/13
Achieved with filter $ß_{10\,(c)} \geq 75$ according to ISO 16889	10 µm	10 µm	10 µm

Casappa recommends to use its own production filters:

IKRON Fluid Filtration

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.

01/11.2007

TECHNICAL DATA

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

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]		from 43 (19,5) to 45.2 (20,5)	
Seals			N= Buna	V= Viton
Operating temperature	°F (°C)	min.	-13 (-25)	-13 (-25)
		max. cont.	176 (80)	230 (110)
		max. peak	212 (100)	257 (125)

Piston units type			DVP								
Max. displacement (standard)	in^3/rev (cm^3/rev)	V_{max}	0.91 (15)	0.85 (14)	0.76 (12,5)	0.67 (11)	0.61 (10)	0.55 (9)	0.52 (8,5)	0.49 (8)	0.48 (7,8)
Min. displacement (standard) (•)		V_{min}	0.24 (4) - 0.22 (3,6) - 0.18 (3) - 0.16 (2,7)								
Max. outlet pressure	psi (bar)	cont.	3045 (210)								
		int.	3335 (230)								
		peak	3625 (250)								
Max. delivery (theor.)	US gpm (l/min)	@ V_{max} - n_{max}	10.3 (39)	9.6 (36,4)	8.6 (32,5)	7.6 (28,6)	6.9 (26)	6.2 (23,4)	5.84 (22,1)	5.50 (20,8)	5.34 (20,2)

KAPPA gear units			20•4	20•6,3	20•8	20•11,2	20•14	20•16	20•20
Displacement	in^3/rev (cm^3/rev)	V	0.30 (4,95)	0.40 (6,61)	0.50 (8,26)	0.69 (11,23)	0.89 (14,53)	1.03 (16,85)	1.29 (21,14)
Max. outlet pressure	psi (bar)	cont.	4133 (285)	4133 (285)	4133 (285)	3988 (275)	3843 (265)	3770 (260)	3045 (210)
		int.	4350 (300)	4350 (300)	4350 (300)	4205 (290)	4205 (290)	4205 (290)	3335 (230)
		peak	4785 (330)	4785 (330)	4785 (330)	4640 (320)	4640 (320)	4640 (320)	3625 (250)
Max. delivery (theor.)	US gpm (l/min)	@ V - n_{max}	3.38 (12,8)	4.52 (17,1)	5.65 (21,4)	7.7 (29,2)	10.0 (37,7)	11.6 (43,8)	14.5 (54,9)

POLARIS gear units			20•4
Displacement	in^3/rev (cm^3/rev)	V	0.30 (4,95)
Max. outlet pressure	psi (bar)	cont.	435 (30)

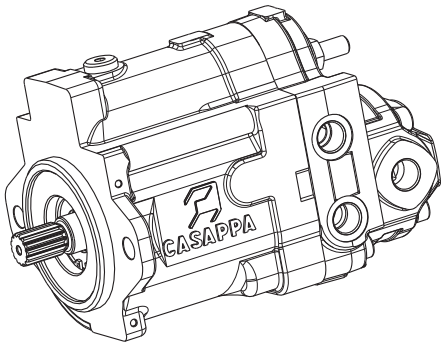
(•) In working cycle
cont. = continuous
int. = Intermittent

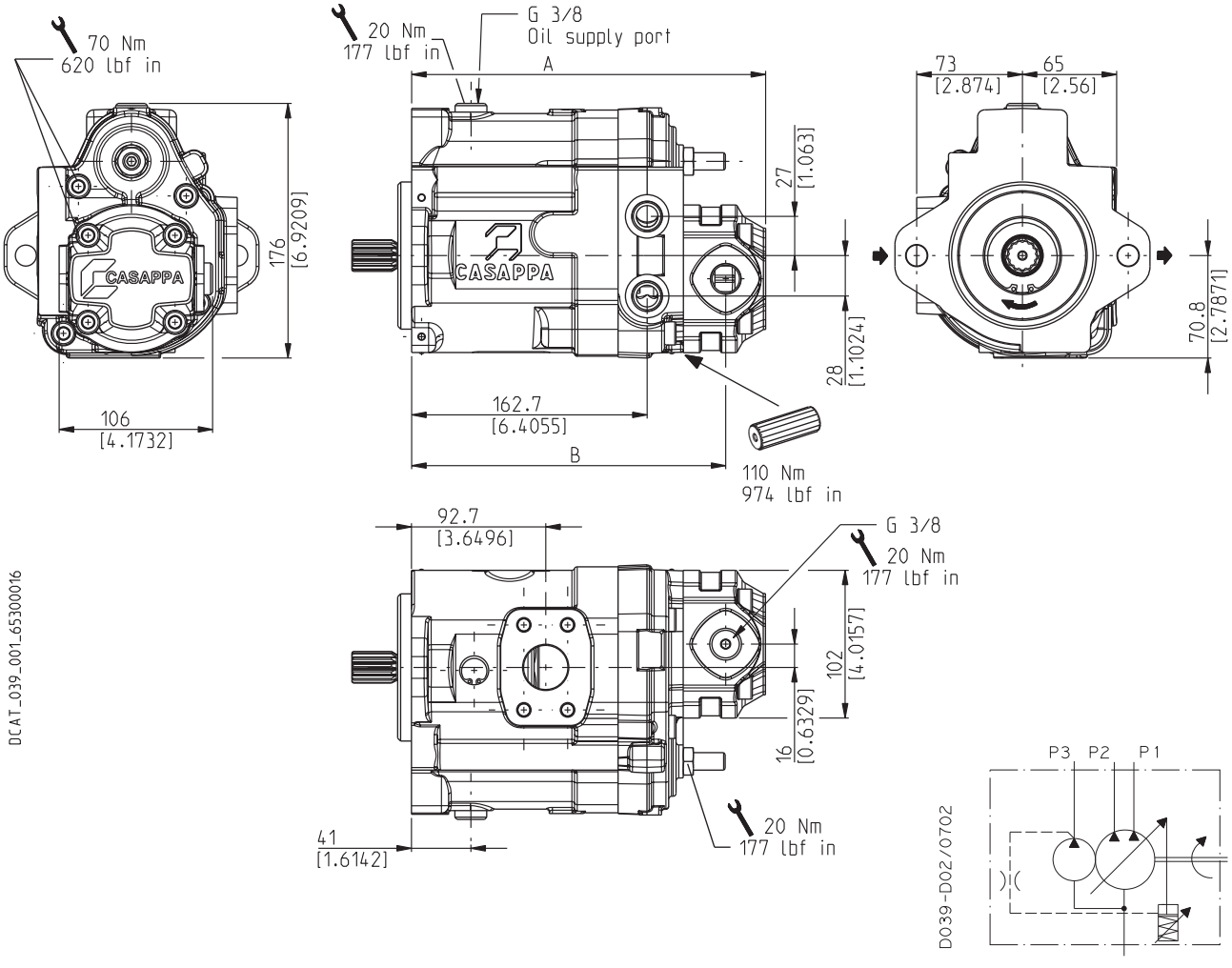
For different working conditions, please consult our sales department.

01/11.2007

DIMENSIONS

DVP





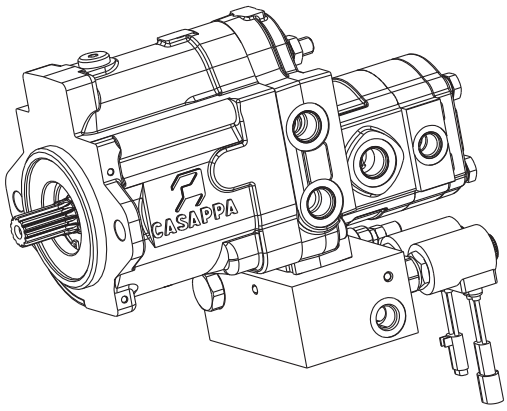
DVP piston units	KAPPA gear units							Dimensions	
	20•4	20•6,3	20•8	20•11,2	20•14	20•16	20•20		
7,8 - 8 - 8,5 8,5 - 9 - 10	240,2 (9.4567)	242,7 (8.3740)	245,2 (9.6535)	248,7 (9.7913)	252,7 (9.9488)	258,2 (10.1654)	264,7 (10.4213)	mm (inch)	A
11 - 12,5 14 - 15	212,7 (8.3740)	215,2 (8.4724)	217,7 (8.5709)	221,2 (8.7087)	219,7 (8.6496)	225,2 (8.8661)	231,7 (9.1220)	mm (inch)	B

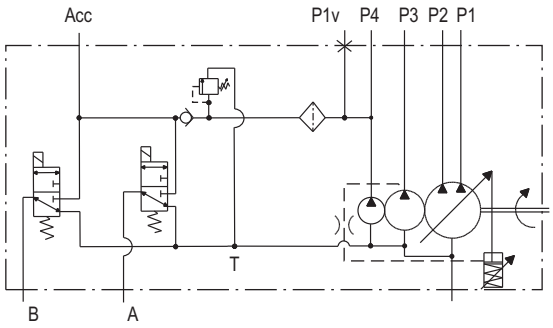
To order please consult our sales department.

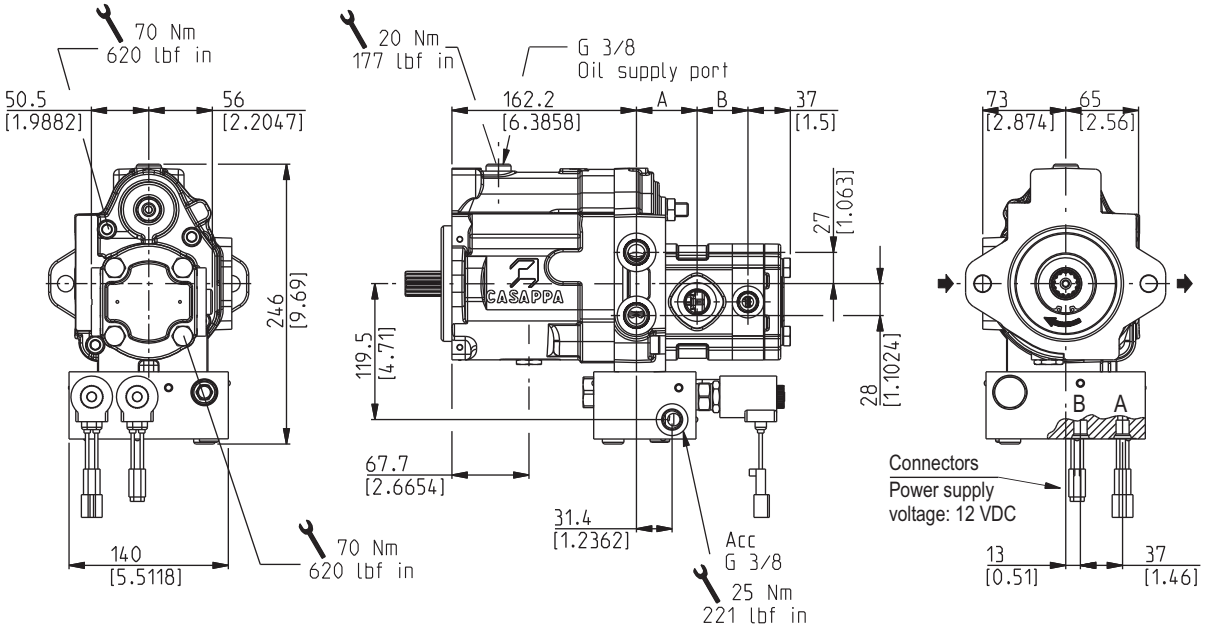
01/11.2007

DIMENSIONS (valve option)

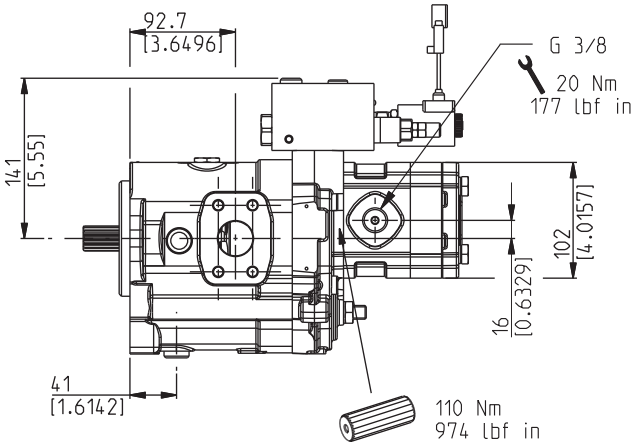
DVP







DCAT_039_021



01/11.2007

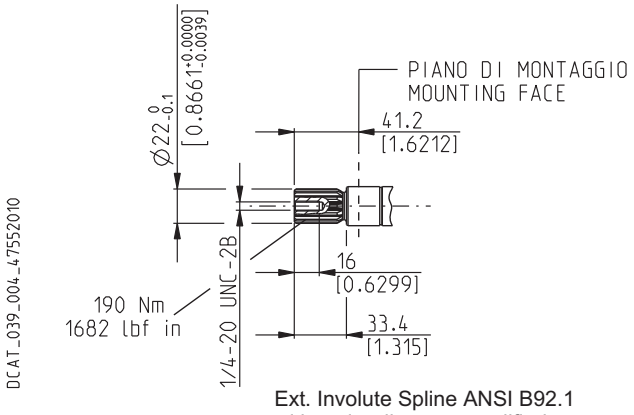
DVP piston units	KAPPA 20 gear units	POLARIS 20 gear units	Dimensions		
7,8 - 8 - 8,5 9 - 10 - 11 12,5 - 14 - 15	20•8	20•4	46,1 (1.8150)	mm (inch)	A
			40,2 (1.5827)	mm (inch)	B

To order and more informations please consult our sales department.

SHAFTS / MOUNTING FLANGES

SAE “B” SPLINE — 04

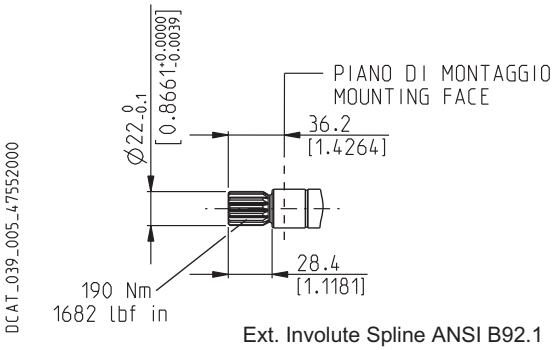
Available with flange code **S5**



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

SPLINE — F8

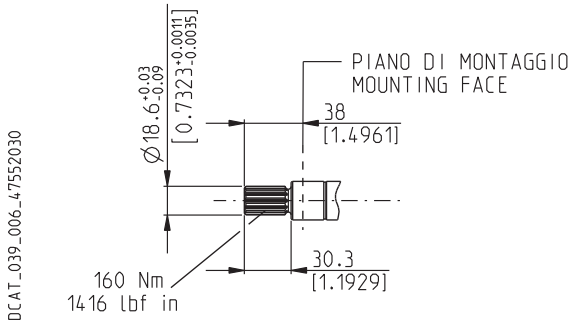
Available with flange code **S5**



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

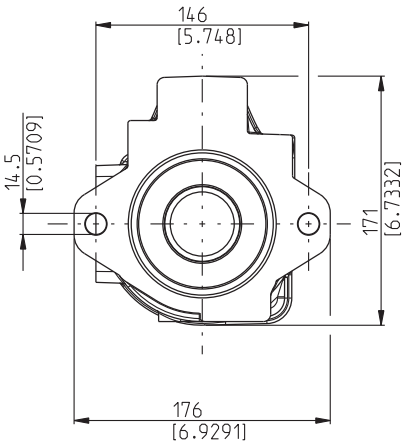
Available with flange code **S5**

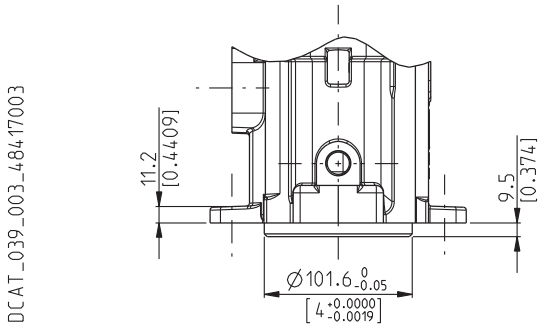


Ext. Involute Spline ANSI B92.1
with major diameter modified
11 teeth - 16/32 Pitch - 30 deg
Flat root - Side fit - Class 5

SAE “B” 2 HOLES — S5

SAE J744 Jul88





01/11.2007

PORTS SIZES

Tightening torque for low pressure side port.

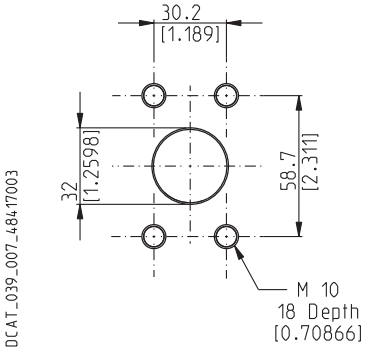
Tightening torque for high pressure side port (values obtained at 350 bar)

INLET PORT

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI — SSM

Metric thread ISO 60° conforms to ISO/R 262

CODE	Nominal size	Pump type	Nm (lbf in)
MD	1" 1/4	DVP	20^{+1} (177 ÷ 186)



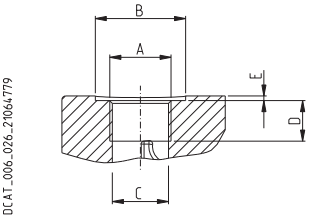
OUTLET PORT

GAS STRAIGHT THREAD PORTS — BSPP

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

CODE	Nominal size	Pump type	A	∅ B	∅ C	D	E	
			mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	Nm (lbf in)
GC	3/8"	PL20	G 3/8	30 (1.1811)	15 (0.5906)	14 (0.5512)	2 (0.0787)	25^{+1} (221 ÷ 230)
GD	1/2"	DVP	G 1/2	30 (1.1811)	19 (0.7480)	17 (0.6693)	1 (0.0394)	$50^{+2,5}$ (443 ÷ 465)
		KP20		—		20 (0.7874)	—	$50^{+2,5}$ (443 ÷ 465)

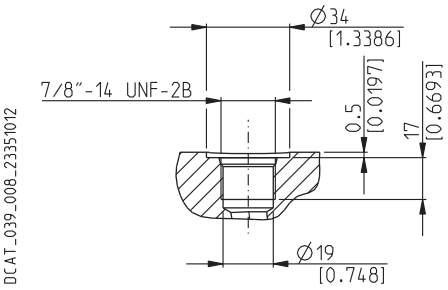
DVP outlet port



SAE STRAIGHT THREAD PORTS J514 — ODT

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

CODE	Nominal size	Pump type	Nm (lbf in)
OC	5/8"	DVP KP20	70^{+5} (620 ÷ 664)

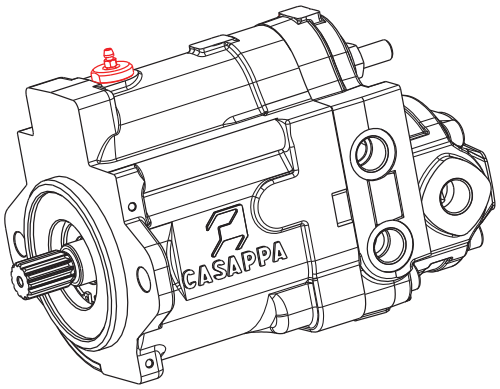


01/11.2007

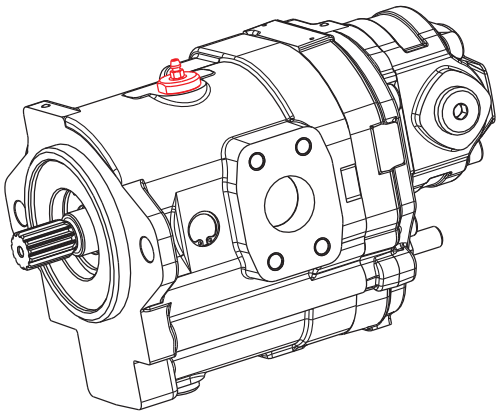
BREATHER PLUG AND MOUNTING POSITIONS (ONLY ON REQUEST)

Breather plug is available only on request.
For more information please consult our sales department.

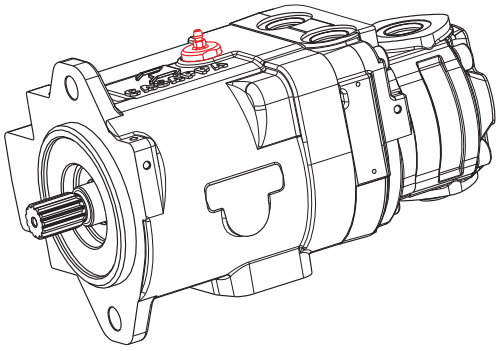
STANDARD POSITION



REAR POSITION



SIDE POSITION

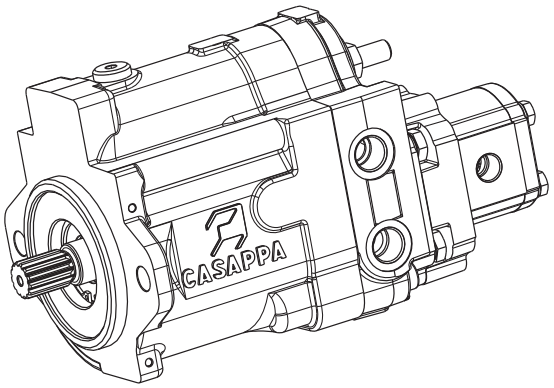


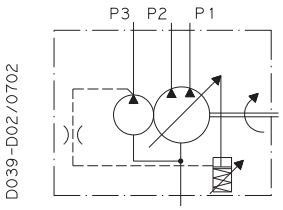
01/11.2007

AVAILABITY OF COMBINATION

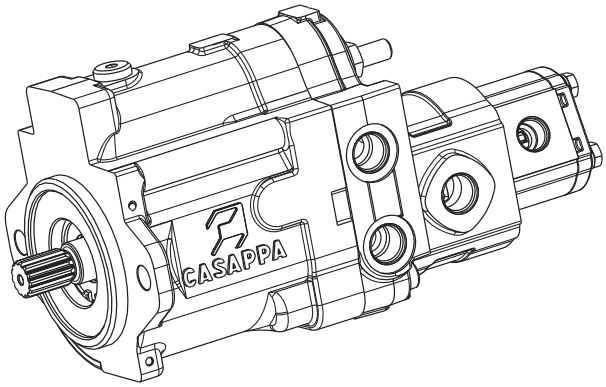
The pump is standard with common inlet.
For more information please consult our sales department.

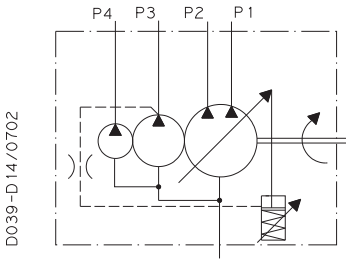
DVP + PLP10





DVP + KP20 + PLP10





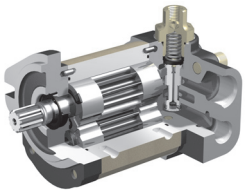
01/11.2007

NOTES

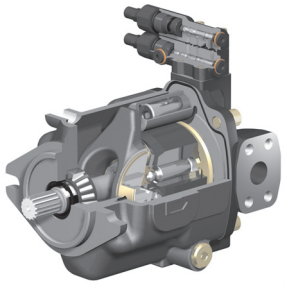
01/11.2007

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

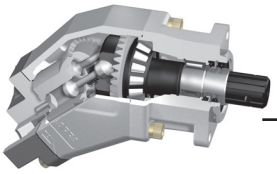
Casappa:
Fluid Power Design
at 360°



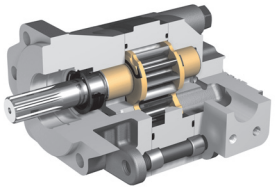
WHISPER® — Gear pumps.
High performace, low noise.



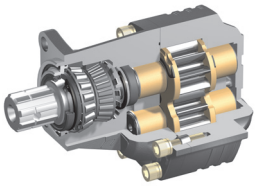
PLATA® — Variable displacement axial piston pumps,
for open circuit.



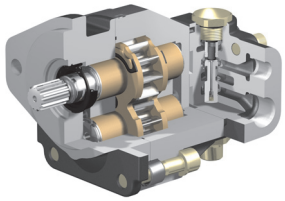
STRADA® — Fixed displacement bent axis piston pumps,
for truck applications.



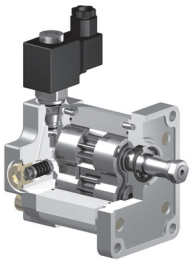
MAGNUM® — Cast iron gear pumps and
motors of three part construction.



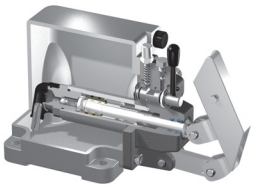
FORMULA® — Cast iron gear pumps,
for truck applications.



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

CASAPPA S.p.A. - Parma - Italy - Tel.: + 39 0521 304111 - Fax: + 39 0521 804600
CASAPPA Corp. *- Batavia, IL 60510 U.S.A. - Phone: 630 761-0041 - Fax: 630 761-0048*
CASAPPA GmbH - Plüderhausen - Germany - Tel.: + 49 (0)7181 989830 - Fax: + 49 (0)7181 989831
CASAPPA SARL *- La Rochelle - France - Tel.: + 33 (0)5 46372433 - Fax: + 33 (0)5 46423907*
www.casappa.com
e-mail: info@casappa.com