



Variable displacement axial piston pumps DVP series for open circuit.

APPLICATION	Medium pressure
SECTOR	Mobil hydraulic

DISPLACEMENTS

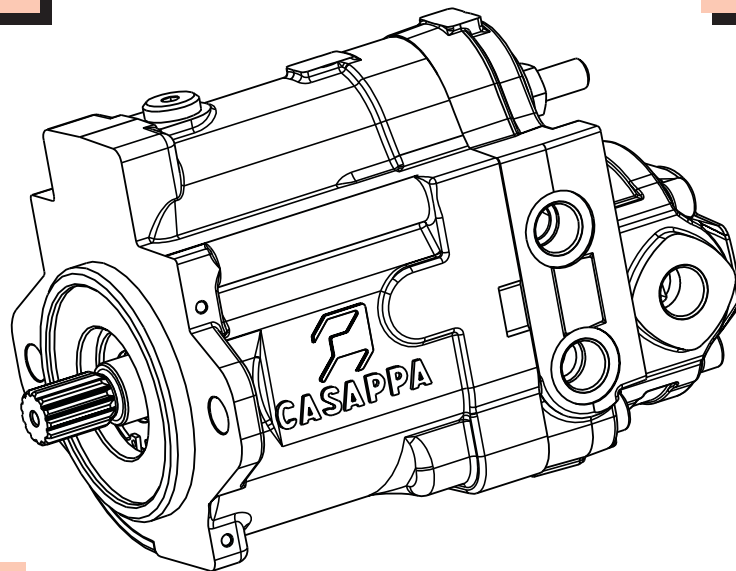
Piston units

From 7,8 cm³/rev
To 14 cm³/rev

DISPLACEMENTS

Gear units

From 4,95 cm³/rev
To 21,14 cm³/rev



MAX. SPEED

2600 min⁻¹

- 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.

FEATURES

Direction of rotation (defined looking at the drive shaft)		Clockwise	
Max. inlet pressure	[bar abs.]	min	0,7
		max	3
Max. speed n_{max}	[min ⁻¹]	@ V_{max}	2600
Control type		Constant torque control	
Setting torque range	[Nm]	from 39 to 120	
Drain line		Internal	
Fill capacity	[l]	0,9	
Mass (without oil)	[kg]	from 19,5 to 20,5	
Seals		N= Buna - V= Viton	
Operating temperature	[°C]	N= Buna	-25 ÷ +90
		V= Viton	-10 ÷ +90

Piston units type		DVP								
Max. displacement (standard)	V_{max} [cm ³ /rev]	14	12,5	11	10	9	8,5	8	7,8	
Min. displacement (Standard) (●)	V_{min}	4 - 3,6 - 3 - 2,7								
Max. outlet pressure	[bar]	cont.	210							
		int.	230							
		peak	250							
Max. delivery (theor.) (for each outlet port)	[l/min] @ $V_{max} - n_{max}$	36,4	32,5	28,6	26	23,4	22,1	20,8	20,2	

KAPPA gear units		20•4	20•6,3	20•8	20•11,2	20•14	20•16	20•20	
Max. displacement (standard) V_{max}	[cm ³ /rev]	4,95	6,61	8,26	11,23	14,53	16,85	21,14	
Max. outlet pressure	[bar]	cont.	285	285	285	275	265	260	210
		int.	300	300	300	290	290	290	230
		peak	330	330	330	320	320	320	250
Max. delivery (theor.)	[l/min] @ $V_{max} - n_{max}$	12,8	17,1	21,4	29,2	37,7	43,8	54,9	

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

For different working conditions, please consult our sales department.

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 DVP pump is between 15 and 35 mm²/s (cSt).
 Limit functional conditions are:
 1000 mm²/s at start up at -25 °C with stright and short inlet line
 10 mm²/s at maximum temperature of 90 °C.

FILTRATION

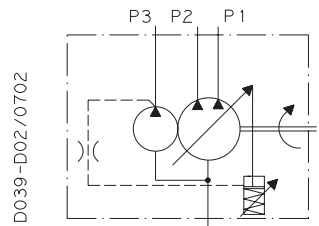
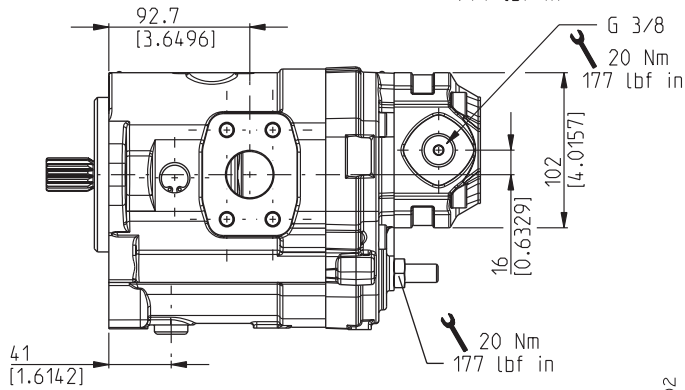
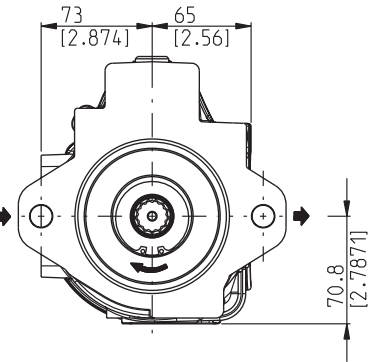
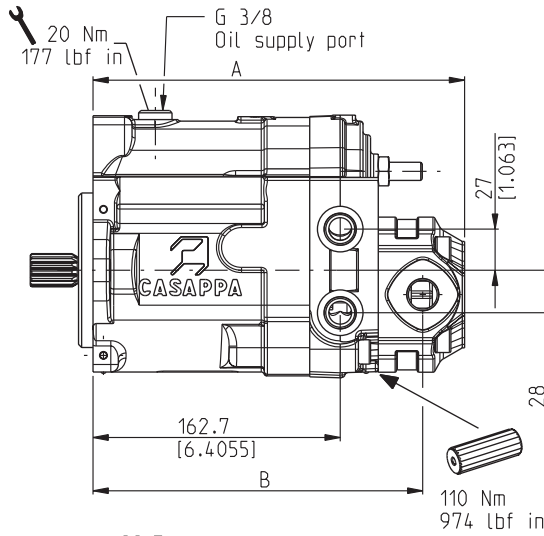
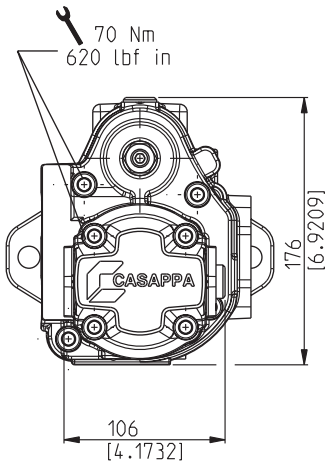
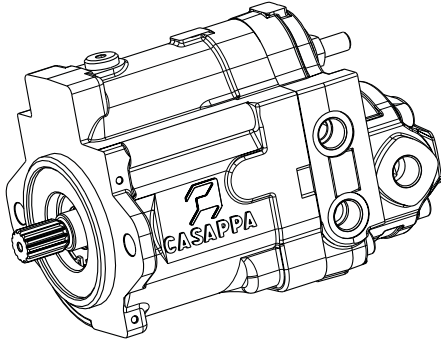
For a maximum pump life, we recommend the use of filtration systems suitable to contain the hydraulic fluid contamination in the class 18/16/13 conforming to ISO 4406 or with cleanliness grade 7 conforming to class NAS 1638 (achieved with filter $\beta_x=75 - 10 \mu m$). Satisfactory operation is obtained also with contamination class 20/18/15 conforming to ISO 4406 or with cleanliness grade 9 conforming to class NAS 1638 (achieved with filter $\beta_x=75 - 10 \mu m$).
 Casappa recommends to use its own production filters:



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DIMENSIONS

DVP



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D039-D02/0702

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		KAPPA gear units								
DVP piston units		20•4	20•6,3	20•8	20•11,2	20•14	20•16	20•20	Dimensions	
7,8 - 8		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
8,5 - 9										
10 - 11		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
12,5 - 14										

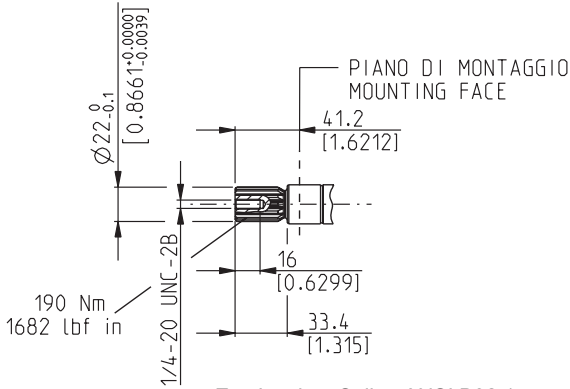
SHAFTS / MOUNTING FLANGES

SAE "B" SPLINE

04

Available with flange code S5

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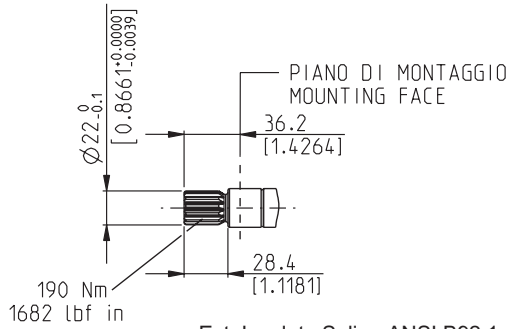
Ext. Involute Spline ANSI B92.1 with major diameter modified 13 teeth - 16/32 Pitch - 30 deg Flat root - Side fit - Class 5

SPLINE

F8

Available with flange code S5

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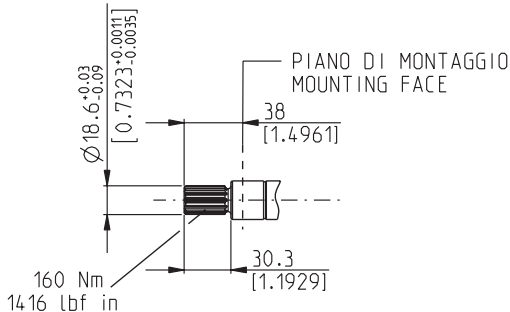
Ext. Involute Spline ANSI B92.1 with major diameter modified 13 teeth - 16/32 Pitch - 30 deg Flat root - Side fit - Class 5

SPLINE

C1

Available with flange code S5

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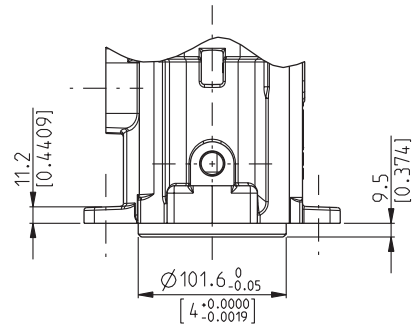
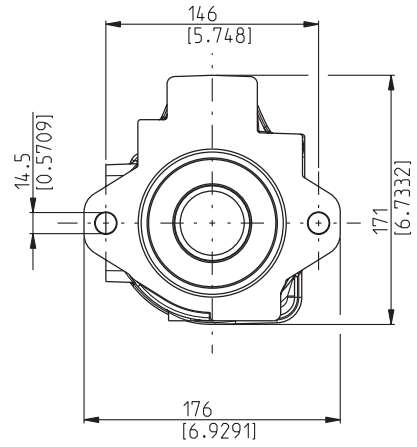


Ext. Involute Spline ANSI B92.1 with major diameter modified 11 teeth - 16/32 Pitch - 30 deg Flat root - Side fit - Class 5

SAE "B" 2 HOLES

S5

SAE J744 Jul88

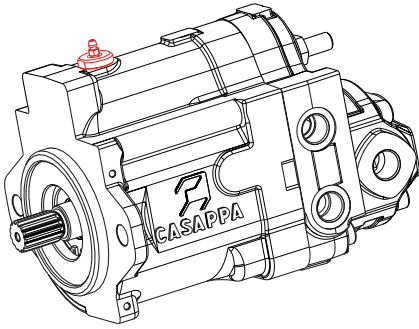


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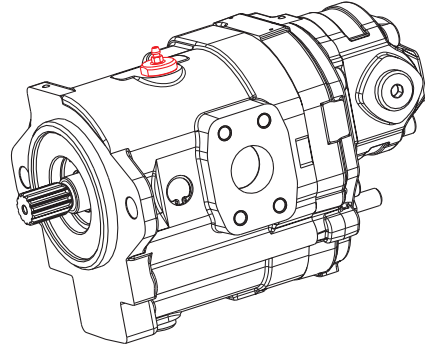
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BREATHER PLUG AND MOUNTING POSITIONS (ONLY ON REQUEST)

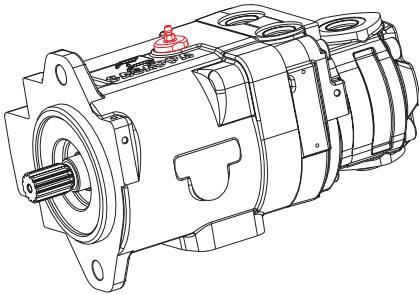
STANDARD POSITION



REAR POSITION



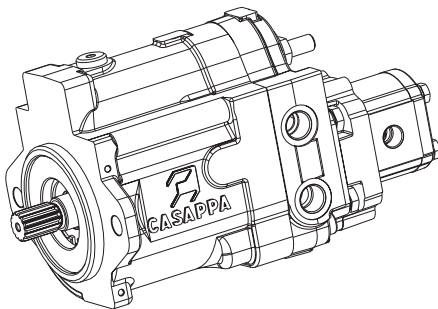
SIDE POSITION



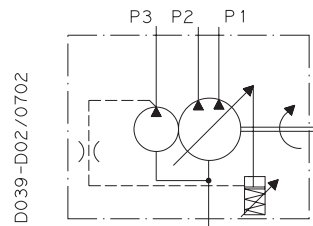
Breather plug is available only on request.
For more information please consult our sales department.

AVAILABILITY OF COMBINATION

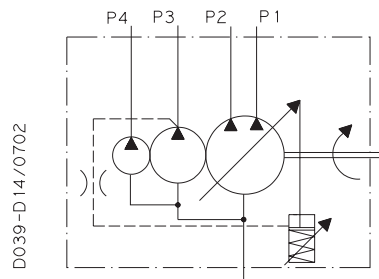
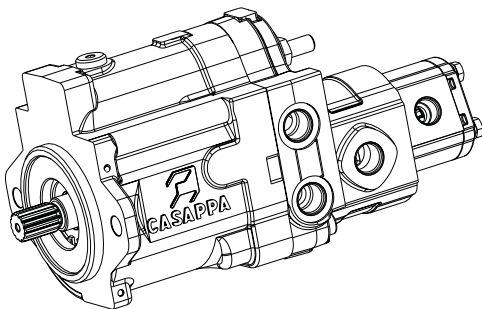
DVP + PLP10



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



DVP + KP20 + PLP10



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PORTS SIZES

DVP



Tightening torque for low pressure side port.



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

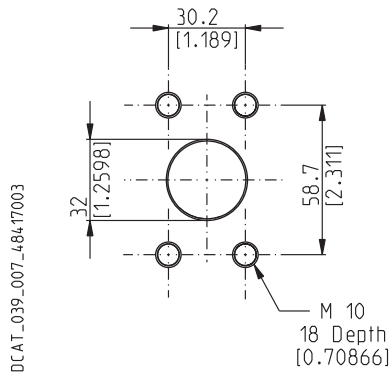
INLET PORT

SAE FLANGED PORTS J518 - Standard pressure series 3000 PSI

MD

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

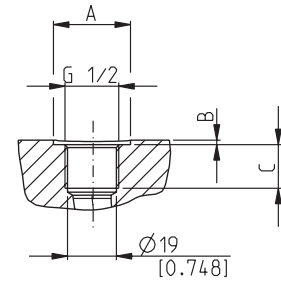
GAS STRAIGHT THREAD PORTS (BSPP)

GD

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

CODE	Nominal size	Pump type	∅ A	B	C	
			mm (in)	mm (in)	mm (in)	Nm (lbf in)
GD	1/2"	DVP	30 (1.1811)	1 (0.0394)	17 (0.6693)	50 ^{+2,5} (443 ÷ 465)
		KP20	—	—	20 (0.7874)	50 ^{+2,5} (443 ÷ 465)

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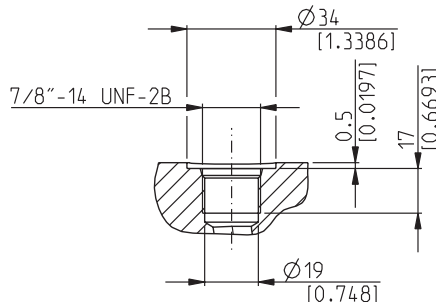
SAE STRAIGHT THREAD PORTS J514 (ODT)

OC

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

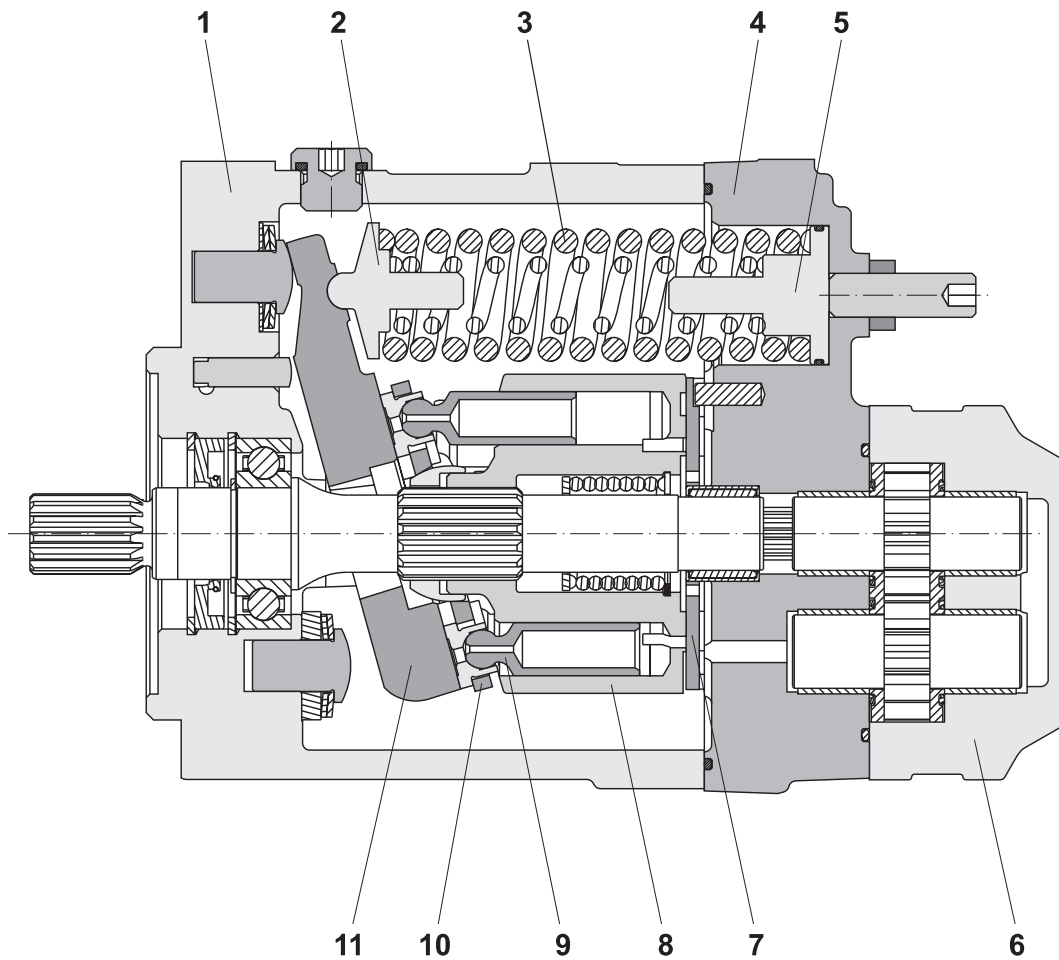
CODE	Nominal size	
		Nm (lbf in)
OC	5/8"	70 ⁺⁵ (620 ÷ 664)

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GENERAL INFORMATIONS



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

INSTALLATION

Check that the maximum coupling eccentricity stays within 0,25 mm to reduce shaft loads due to misalignment. It is advised to use a flexible coupling suitable to absorb eventual water hammer. 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.

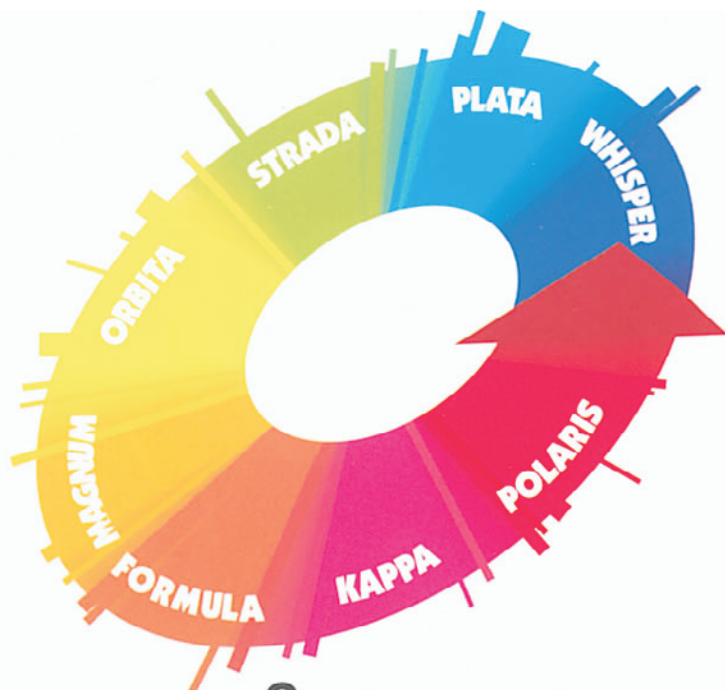
STARTING UP

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 filling. 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.

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HOW TO ORDER

Please consult our sales department.



Casappa: Fluid Power Design at 360°

		WHISPER	Gear pumps and motors. High performance, low noise.
		PLATA	Variable displacement axial piston pumps, for open circuit.
		STRADA	Fixed displacement bent axis piston pumps, for truck applications.
		ORBITA	High torque low speed motors.
		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 aluminum.

 **CASAPPA®**

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