HYMATEC GMBH
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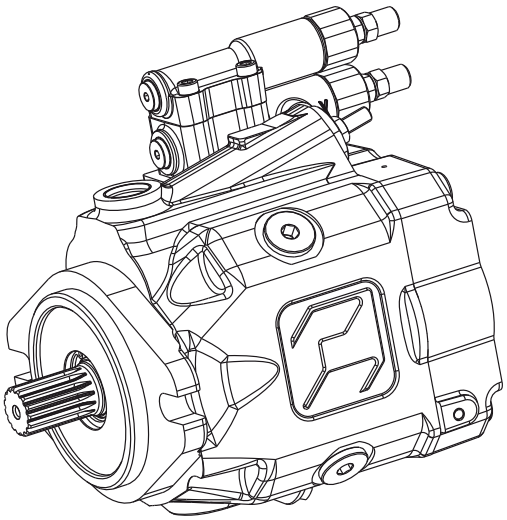
MVP

Variable displacement axial piston pumps,

for open circuit

DISPLACEMENTS

From	2.75 in^3/rev (45 cm^3/rev)
To	5.12 in^3/rev (84 cm^3/rev)



MAX SPEED

3000 min^{-1}

PRESSURE

Max. continuous	4060 psi (280 bar)
Max. intermittent	4568 psi (315 bar)
Max. peak	5075 psi (350 bar)

- Compact design
- Longer service life
- Low noise emission
- Max. and min. displacement limiter
- Drive shaft bearing suitable for radial and axial loads.

APPLICATION

Medium, high pressure

SECTOR

Mobile / Industrial

Variable displacement axial piston pumps swash plate design ideally suited for medium and high pressure open circuit applications. The compact design allows to be mounted directly on engine motors.

CASAPPA
FLUID POWER DESIGN

060-180

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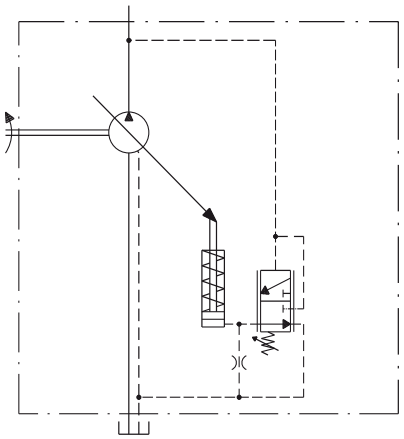
PRESSURE COMPENSATOR — RP

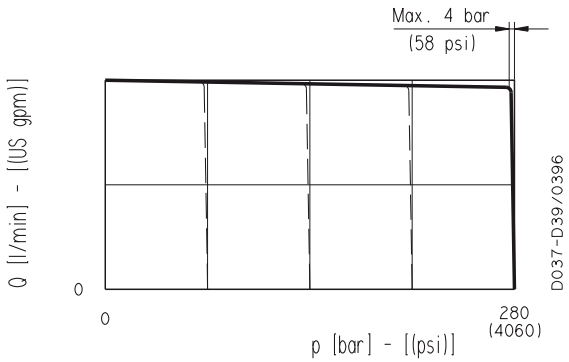
Regulates the pump displacement automatically to equal the flow requirement of the system while maintaining the pre-adjusted pressure.



Compensator type	Pump type	Pressure setting range	Standard setting
		psi (bar)	psi (bar)
RP0	MVP 48•45	290 ÷ 5075 (20 ÷ 350)	4060 (280)
	MVP 48•53		3625 (250)
	MVP 60•60		4060 (280)
	MVP 60•72		4060 (280)
	MVP 60•84		3625 (250)

OPERATING CURVES

Curves have been obtained at the speed of 1500 min^{-1} and oil temperature 122 °F (50 °C).



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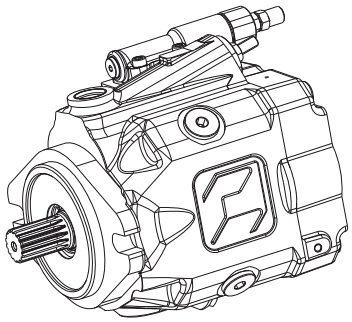
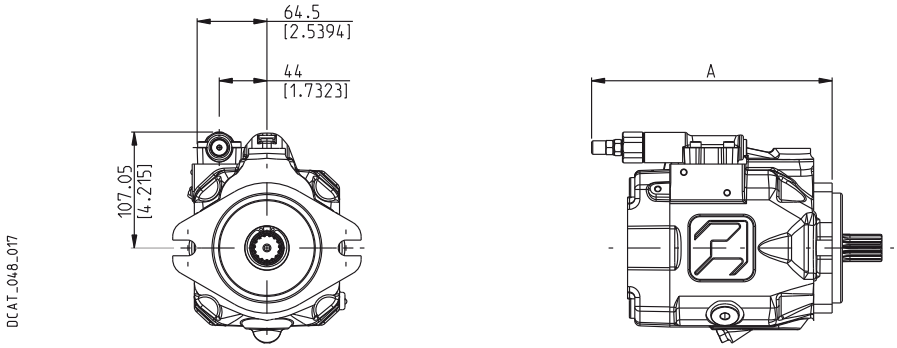
CASAPPA

MOUNTING POSITIONS AND DIMENSIONS (pressure compensator) — RP



Position for clockwise and anti-clockwise rotation



Pump type	Mounting flange	A
		mm (in)
MVP 48	S5	222 (8.7402)
MVP 60	S5	227 (8.9370)
	S8	231 (9.0945)

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CASAPPA

FLOW COMPENSATOR (Load-sensing) — LS

Regulates the pump displacement to maintain a constant (load independent) pressure drop across a flow metering device. In the standard version the flow compensator is combined with pressure compensator.

Flow compensator type	Pressure compensator	Differential pressure setting range	Standard setting
		psi (bar)	psi (bar)
LS0	RP0	145 ÷ 580 (10 ÷ 40)	203 (14)
LS2 (◆)	RP0		
LS3 (●)	RP0		

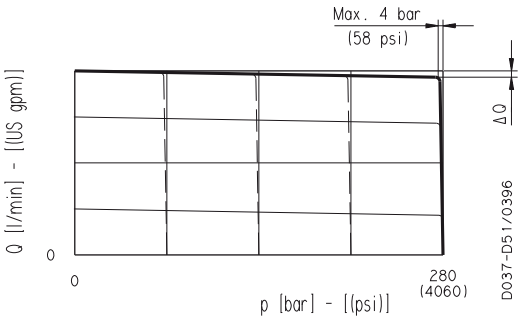
(◆): For remote control Y is plugged.
(●): For internal control and remote pressure control.

Pilot flow ≈ 0.34 ÷ 0.40 US gpm (1,3 ÷ 1,5 l/min)

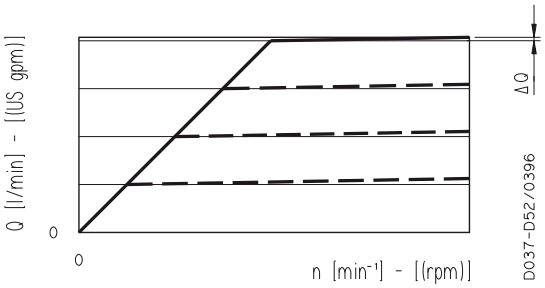
In standard setting conditions 203 psi (14 bar) the stand-by pressure is $218^{\pm 29}$ psi ($15^{\pm 2}$ bar).

OPERATING CURVES

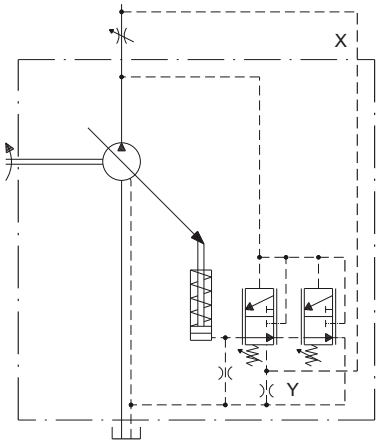
Curves have been obtained at the speed of 1500 min^{-1} and oil temperature 122 °F (50 °C).



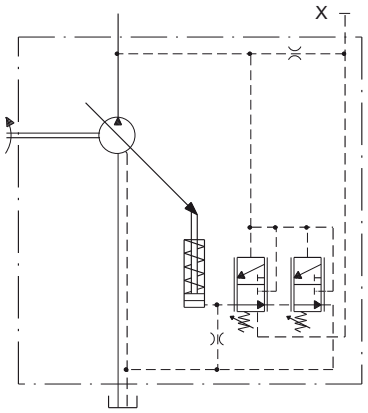
Curve at variable speed



LS0 - LS2 Hydraulic circuits



LS3 Hydraulic circuits



TECHNICAL DATA

Pump type	ΔQ_{max} US gpm (l/min)
MVP 48	0.45 (1,7)
MVP 60	0.66 (2,5)

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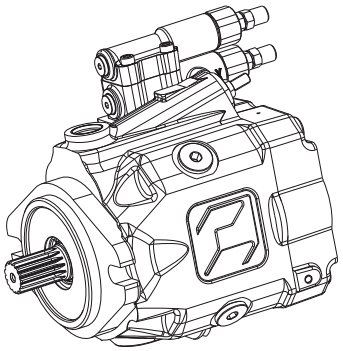
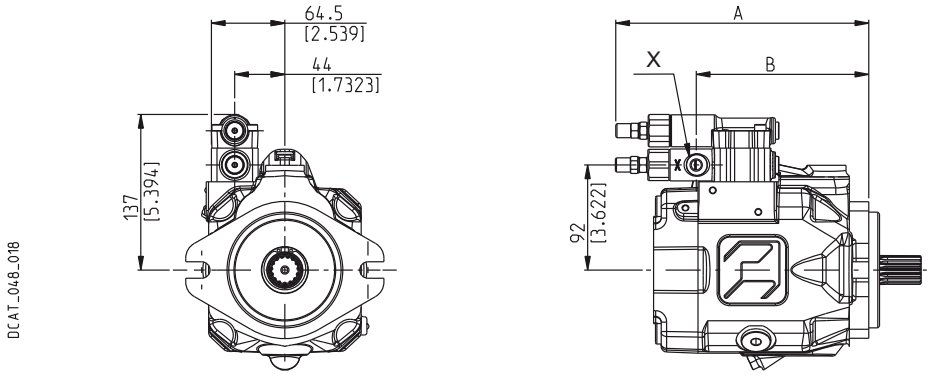
MOUNTING POSITIONS AND DIMENSIONS (flow compensator) — LS



Position for clockwise and anti-clockwise rotation



Pump type	Mounting flange	A	B
		mm (in)	mm (in)
MVP 48	S5	222 (8.7402)	151,5 (5.9646)
MVP 60	S5	227 (8.9370)	157 (6.1811)
	S8	231 (9.0945)	161 (6.3386)

X: Load sensing port. Dimensions at page 16

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TORQUE LIMITER — RN

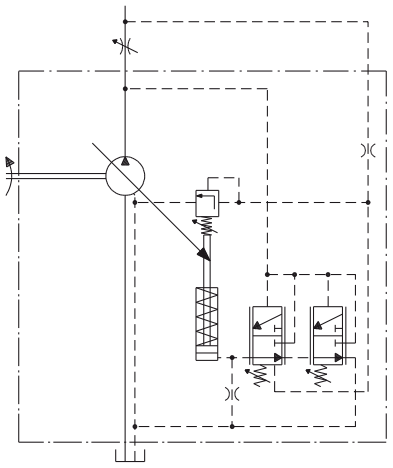
Regulates the pump displacement according to the system pressure, to maintain the pre-adjusted torque value and protect the prime mover from overload. To have the best torque limiter regulation, the pre-adjusted absorbed torque has to be higher than the value shown in the following table.

Pump type		MVP 48	MVP 60
Min. torque	lbf in (Nm)	602 (68)	956 (108)
Min. power (at 1500 min^{-1})	HP (kW)	14.3 (10,7)	22.8 (17)

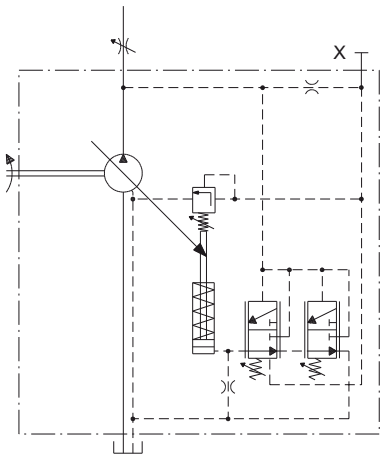
For lower torque setting values, the regulator limits the maximum working pressure to a value lower than the standard setting for the pressure regulator [4060 psi (280 bar)].

When ordering the torque limiter please specify the requested value of torque [eg. 620 lbf in (70 Nm)] or the requested power [eg. 13.4 HP (10 kW) at 1500 min^{-1}].

RN0 - Standard

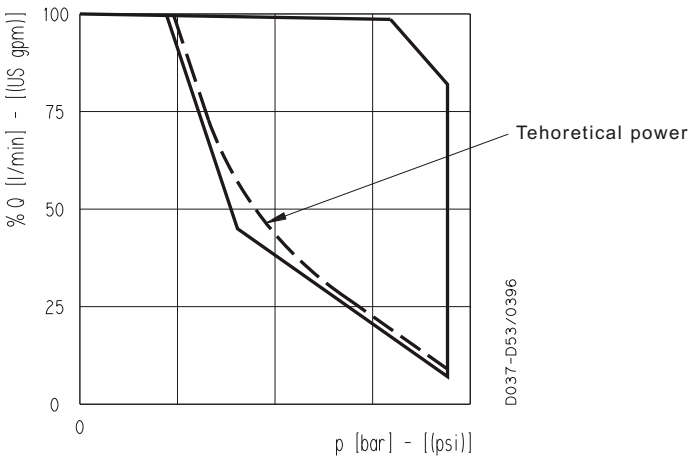


RN1 - Internal pilot



OPERATING CURVES

This curve has been obtained at the speed of 1500 min^{-1} and oil temperature 122 °F (50 °C).



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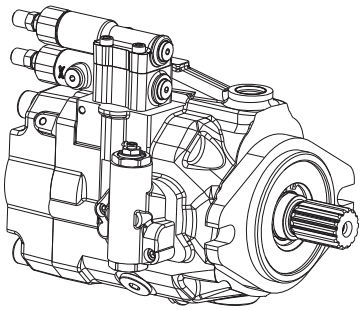
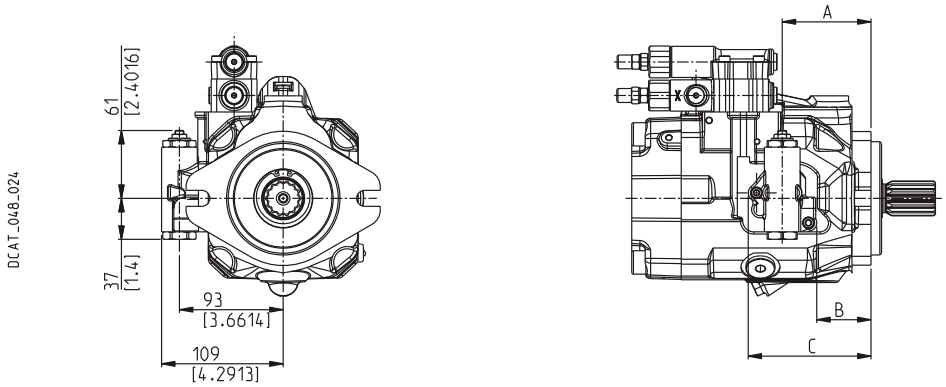
CASAPPA

MOUNTING POSITIONS AND DIMENSIONS (torque limiter) — RN



Position for clockwise and anti-clockwise rotation



Pump type	Mounting flange	A	B	C
		mm (in)	mm (in)	mm (in)
MVP 48	S5	68,9 (2.7126)	37,95 (1.4921)	103,4 (4.0709)
MVP 60	S5	79,5 (3.1299)	48,5 (1.9094)	114 (4.4882)
	S8			

X: Load sensing port. Dimensions at page 16

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CASAPPA

HOW TO ORDER SINGLE PUMPS

1	2		3	4		5	6		7		8		9	10
Pump type	Rotation	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Seals	–	Regulators	–	Additional options	Fluid
MVP 48•45	D	–	04	S5	–	P	ME/MC	–	N	–	RP0	–	E	...

1 Pump type (max displacement)		CODE
in^3/rev	cm^3/rev	
2.75	45	MVP 48•45
3.23	53	MVP 48•53
3.66	60	MVP 60•60
4.39	72	MVP 60•72
5.12	84	MVP 60•84

2 Rotation	CODE
Anti-clockwise	S
Clockwise	D

3 Drive shaft	CODE
SAE “B” spline (13 teeth)	04
SAE “BB” spline (15teeth)	05
SAE “C” spline (14 teeth)	06

4 Mounting flange	CODE
SAE “B” 2 holes	S5
SAE “C” 4 holes	S8

5 Ports position	CODE
Rear	P

6 Inlet/outlet ports			CODE
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	2"	ME/MC
MVP 60	2"	1"	MF/MC
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	SE/SC
MVP 60	2"	1"	SF/SC
SAE STRAIGHT THREAD PORTS (ODT)			
Pump type	Nominal size Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	OH/OF
MVP 60	1"1/2	1"	OH/OF

CODE	7 Seals
N	Buna (standard)
V	Viton

CODE	8 Regulators
RP0	Pressure compensator - setting range 290 - 5075 psi (20 - 350 bar) (a)
LS0	Flow compensator (b)
LS2	Flow compensator for remote control (b)
LS3	Flow compensator for internal control (b)
RN0	Torque limiter - standard
RN1	Torque limiter - internal pilot

CODE	9 Additional options (c)
	Without additional options (no code)
E	Max. displacement limiter (d)
F	Min. displacement limiter (d)
G	Min. and max. displacement limiter (d)

CODE	10 Fluid
	Mineral oil (no code)
H	HF fire resistant fluid (e)

a) For standard setting see page 18.

b) Differential pressure standard setting 203 psi (14 bar) - Setting range 145 - 580 psi (10 - 40 bar).

c) For additional options, please consult our sales department.

d) Max. up to 50% of the displacement.

e) For HF fire resistant fluid please consult our sales department.

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CASAPPA

HOW TO ORDER DOUBLE PUMPS

1	2		3	4		5	6		7		8		9	10	
Pump type	Rota-tion	–	Drive shaft	Mounting flange	–	Ports position	Ports IN/OUT	–	Seals	–	Regula-tors	–	Addition. options	Fluid	–
MVP 48•53	D	–	05	S5	–	L	ME/MC	–	N	–	LS0	–	G	...	/

Front section

KP 20.6,3 (#)	–	L	**/GD

Rear section

1 Pump type (max displacement)		CODE
in^3/rev	cm^3/rev	
2.75	45	MVP 48•45
3.23	53	MVP 48•53
3.66	60	MVP 60•60
4.39	72	MVP 60•72
5.12	84	MVP 60•84

2 Rotation	CODE
Anti-clockwise	S
Clockwise	D

3 Drive shaft	CODE
SAE “B” spline (13 teeth)	04
SAE “BB” spline (15teeth)	05
SAE “C” spline (14 teeth)	06

4 Mounting flange	CODE
SAE “B” 2 holes	S5
SAE “C” 4 holes	S8

5 Ports position	CODE
Side	L

6 Inlet/outlet ports			CODE
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	2"	ME/MC
MVP 60	2"	1"	MF/MC
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	SE/SC
MVP 60	2"	1"	SF/SC
SAE STRAIGHT THREAD PORTS (ODT)			
Pump type	Nominal size Inlet IN SAE 3000	Outlet OUT SAE 3000	
MVP 48	1"1/2	1"	OH/OF
MVP 60	1"1/2	1"	OH/OF

#: KP 20 Gear pumps:
Displacements: see page 11 and page 14
Ports: see page 16 and page 17
For more informations, please see the respective technical catalogue.

CODE	7 Seals
N	Buna (standard)
V	Viton

CODE	8 Regulators
RP0	Pressure compensator - setting range 290 - 5075 psi (20 - 350 bar) (a)
LS0	Flow compensator (b)
LS2	Flow compensator for remote control (b)
LS3	Flow compensator for internal control (b)
RN0	Torque limiter - standard
RN1	Torque limiter - internal pilot

CODE	9 Additional options (c)
	Without additional options (no code)
E	Max. displacement limiter (d)
F	Min. displacement limiter (d)
G	Min. and max. displacement limiter (d)

CODE	10 Fluid
	Mineral oil (no code)
H	HF fire resistant fluid (e)

a) For standard setting see page 18.

b) Differential pressure standard setting 203 psi (14 bar) - Setting range 145 - 580 psi (10 - 40 bar).

c) For additional options, please consult our sales department.

d) Max. up to 50% of the displacement.

e) For HF fire resistant fluid please consult our sales department.

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