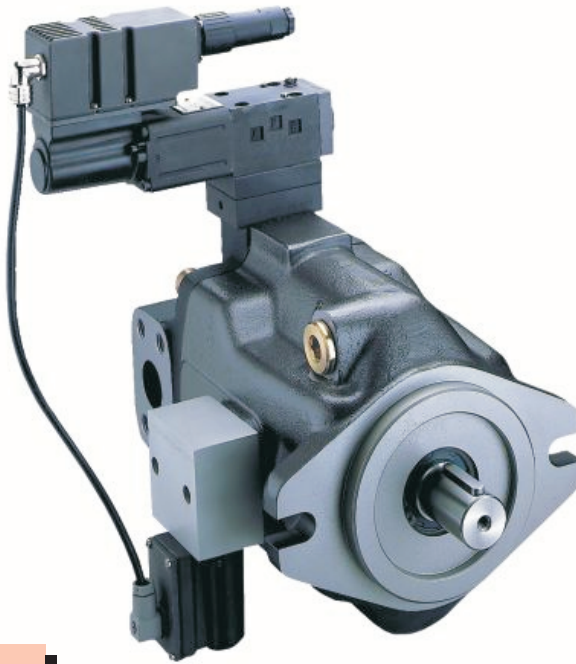




# Variable displacement axial piston pumps, for open circuit.

Replaces: 04/10.99



## DISPLACEMENTS

From	29 cm <sup>3</sup> /rev
To	73 cm <sup>3</sup> /rev

## MAX. SPEED

3000 min<sup>-1</sup>

## PRESSURE

Max. continuous	280 bar
Max. intermittent	315 bar
Max. peak	350 bar

## APPLICATION

Medium, high pressure

## SECTOR

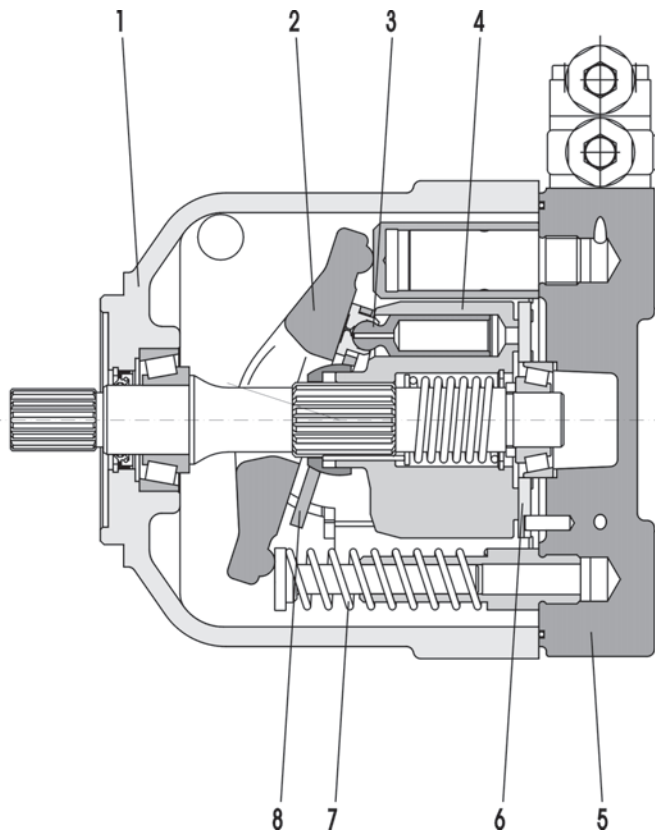
Mobil / Industrial

Edition: 04/04.2000

- Energy savings.
- Low noise emission.
- Operational flexibility.
- Short response time.
- Drive shaft bearing suitable for radial and axial loads.

PLATA pumps meet these requirements in every way. The variable displacement axial piston pump is the optimal solution for open circuit applications. PLATA pumps are available with a wide range of control options. The pump is designed for both radial and axial loads, and supports full torque transmission in multiple body configurations.

**GENERAL INFORMATIONS / INSTRUCTIONS**



- 1 - Pump body
- 2 - Swash plate
- 3 - Piston
- 4 - Cylinders block
- 5 - Cover
- 6 - Retaining plate
- 7 - Counterbalancing spring
- 8 - Piston guide plate

**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. For applications with axial and radial loads exceeding published standards, consult our sales department. 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. Before start-up and during the operation, check that the pump is full of hydraulic oil for at least 3/4 of the volume.

**LINES**

The lines must have a major diameter which is at least as large as the diameter of pump ports, and must be perfectly sealed. To keep the oil velocity low and increase atmospheric pressure at the pump inlet, the suction lines should be as short as possible. Sources of hydraulic resistance such as elbow, throttling, gate valves, ect. should also be kept to a minimum. A length of flexible tubing is recommended to reduce the transmission of vibrations. Before connecting the lines, remove any plugs and make sure that the lines are perfectly clean. Check that the drain line is dimensioned in a way to guarantee a case pressure lower than 1,5 bar absolute. The drain line must be connected directly (no filter, no valves, no oil cooler) to the tank and must terminate below the oil level. Check that the dimensions of the suction line guarantees a pressure equal or superior to 0,8 bar. Inlet pressure inferior to 0,8 bar could cause an increase of noise emission, decreasing pump performance and a reduction of its life expectancy.

**MOUNTING POSITION**

The pump can be mounted in a horizontal or vertical (shaft upwards) position, provided that the location of the drain port assures the required filling of the case. The pump can be located above the oil level if the absolute pressure at the inlet port stays within the stated limits. To reduce noise emission, we recommend that the pump be mounted below the oil level, and avoid suction lines with sharp restrictions.

**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.

Replaces: 04/10.99

04/04.00

**TECHNICAL DATA**

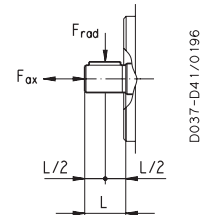
**Technical data** (with HL or HLP mineral oil based hydraulic fluid to DIN 51524)

Pump type		LVP 30	LVP 48	LVP 75	
Max. displacement (theor.) $V_{max}$	[cm <sup>3</sup> /rev]	29	46	73	
Max. inlet pressure	[bar abs.]	min.	0,8		
		max.	25		
Max. outlet pressure	[bar]	cont.	280		
		int.	315		
		peak	350		
Max. drain line pressure	[bar abs.]	1,5			
Max. speed $n_{max}$	[min <sup>-1</sup> ]	@ $V_{max}$ (1)	3000	2600	2200
Max. delivery (theor.)	[l/min]	@ $n_{max}$	87	119,6	160,6
		@ 1500 min <sup>-1</sup>	43,5	69	109,5
Max. power (theor.) ( $\Delta p = 280$ bar)	[kW]	@ $n_{max}$	39,8	54,7	73,5
		@ 1500 min <sup>-1</sup>	19,9	31,6	50,1
Max. torque (theor.)	[Nm]	$\Delta p = 280$ bar	129,3	205,1	325,5
		$\Delta p = 100$ bar	46,2	73,2	116,2
Moment of inertia	[kgm <sup>2</sup> ]		0,0020	0,0030	0,0080
Max. permissible loading on drive shaft	[N]	$F_{ax}$	1000	1500	2000
		$F_{rad}$	1500	1500	3000
Fill capacity	[l]		0,7	0,9	1,5
Mass (without oil)	[kg]		18	24	33
Seals		N= Buna - V= Viton			
Operating temperature	[°C]	with Buna seals	-25 ÷ +90		
		with Viton seals	-10 ÷ +90		

cont. = continuous  
int. = intermittent  
(1) = with an inlet pressure of 1 bar abs.  
For different working conditions, please consult our sales department.

$F_{ax}$  = Axial force  
 $F_{rad}$  = Radial force

**External load position**



**Technical data restrictions** (with fire resistant fluid)

Hydraulic fluid		Max. pressure [bar]			Max. speed [min <sup>-1</sup> ]			Operating temperature	Seals	Life bearing
Type	Fluid composition	cont.	int.	peak	LVP 30	LVP 48	LVP 75	[°C]		
<b>HFC</b>	Water - glycol (35 ÷ 55 % of water)	170	185	200	2100	2000	1700	0 ÷ +90	N - V	75 %
<b>HFD</b>	Phosphate ester	200	220	240	2100	2000	1700	-10 ÷ +50	V	90 %

**DIRECTION OF ROTATION**

Clockwise or anti-clockwise defined looking at the drive shaft.

<b>Q</b>	[l/min]	Delivery
<b>M</b>	[Nm]	Torque
<b>P</b>	[kW]	Power
<b>V</b>	[cm <sup>3</sup> /rev]	Displacement
<b>n</b>	[min <sup>-1</sup> ]	Speed
<b><math>\Delta p</math></b>	[bar]	Pressure
$\eta_v = \eta_v(V, \Delta p, n)$		Volumetric efficiency
$\eta_m = \eta_m(V, \Delta p, n)$		Mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m$		Overall efficiency

**FLUID VISCOSITY**

The fluid viscosity range for optimal use of PLATA pump is between 15 and 35 mm<sup>2</sup>/s (cSt). Limit functional conditions are:  
1500 mm<sup>2</sup>/s at start up at -25 °C  
10mm<sup>2</sup>/s at maximum temperature of 90 °C.

**FILTERS**

For a maximum pump life, we recommend the use of filtration systems suitable to contain the hydraulic fluid contamination in the class 16/13 conforming to ISO 4406. Satisfactory operation is obtained also with contamination class 19/15 conforming to ISO 4406 or with cleanliness grade 9 conforming to class NAS 1638.

$$Q = V \cdot \eta_v \cdot n \cdot 10^{-3} \quad [\text{l/min}]$$

$$M = \frac{\Delta p \cdot V}{62,83 \cdot \eta_m} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n}{600 \cdot 1000 \cdot \eta_t} \quad [\text{kW}]$$

Replaces: 10.97

04/10.99

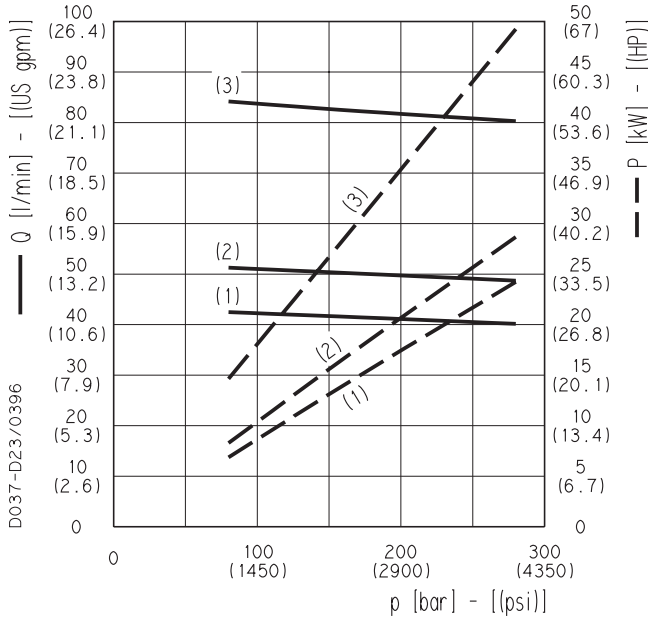
**OPERATING CURVES / TECHNICAL DATA**

**Delivery / power (max. displacement)**

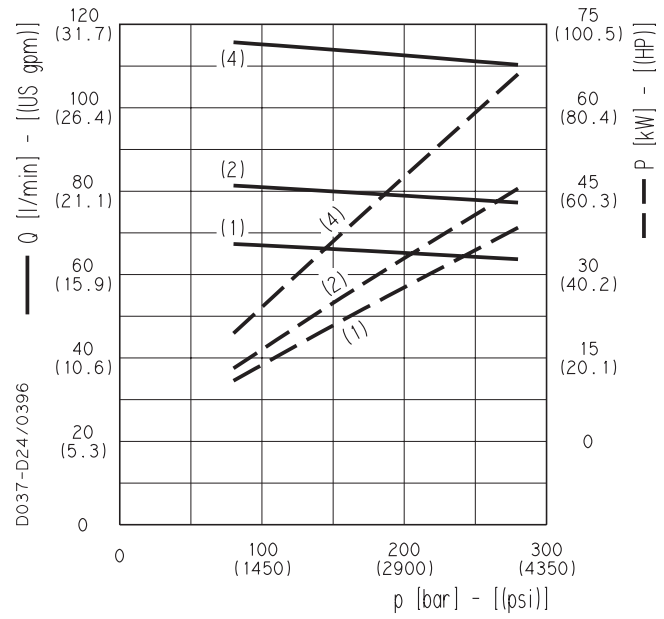
Each curve has been obtained at 50 °C, using oil with viscosity 36 mm<sup>2</sup>/s at 40 °C and at these speed:

- (1) a 1500 min<sup>-1</sup>      (3) a 3000 min<sup>-1</sup>      (5) a 2200 min<sup>-1</sup>
- (2) a 1800 min<sup>-1</sup>      (4) a 2600 min<sup>-1</sup>

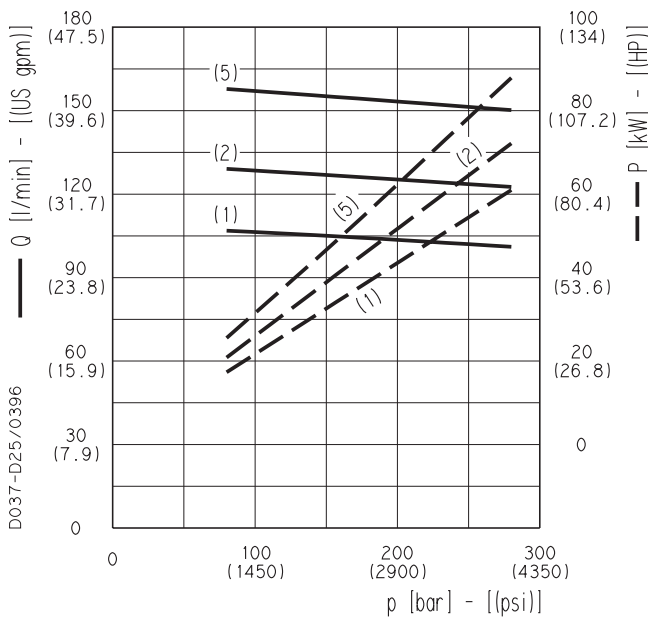
**LVP 30**



**LVP 48**



**LVP 75**



**DETERMINATION OF INLET PRESSURE AND FLOW REDUCTION FOR SPEED INCREASING**

Inlet pressure [bar abs.]	Displacement %					Speed increasing %
	65	70	80	90	100	
0,8	120	115	105	97	90	Speed increasing %
0,9	120	120	110	103	95	
1,0	120	120	115	107	100	
1,2	120	120	120	113	106	
1,4	120	120	120	120	112	
1,6	120	120	120	120	117	
2,0	120	120	120	120	120	

**Example 1**

Speed increasing: 120 %  
Inlet pressure: 1,4 bar abs.  
Displacement: 80 %

**Example 2**

Speed increasing: 113 %  
Inlet pressure: 1,2 bar abs.  
Displacement: 90 %

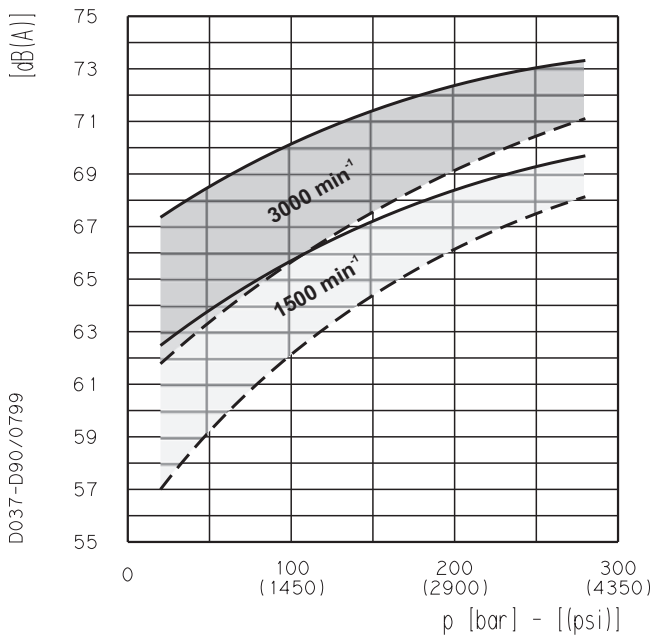
04/10.99

**NOISE LEVEL CURVES**

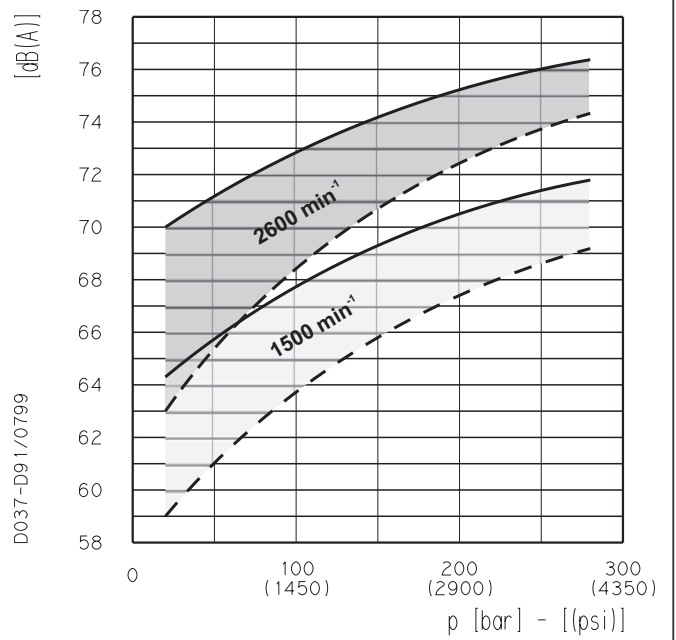
—  $Q_{max}$   
 - - -  $Q_{min}$

For each curve the sound pressure has been measured in a semi-anechoic chamber at 50 °C, using oil with viscosity 46 mm<sup>2</sup>/s at 40 °C.  
 Distance from microphone to pump = 1m  
 Measuring error = ± 2 dB (A)

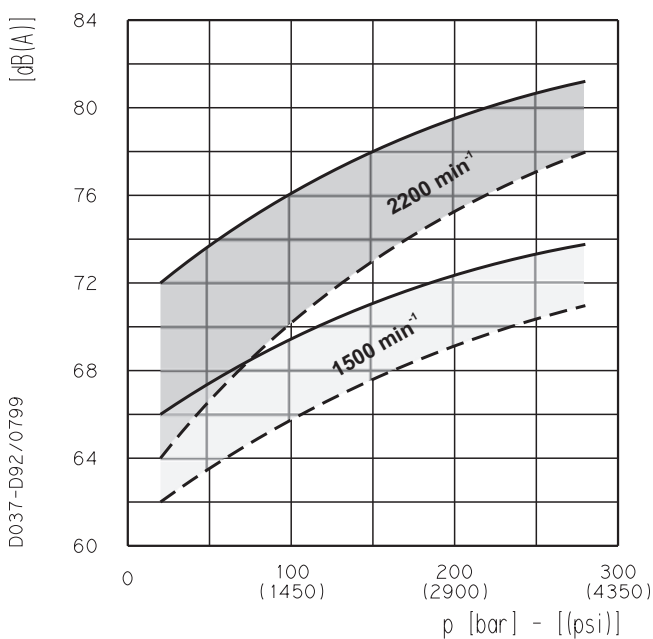
**LVP 30**



**LVP 48**



**LVP 75**

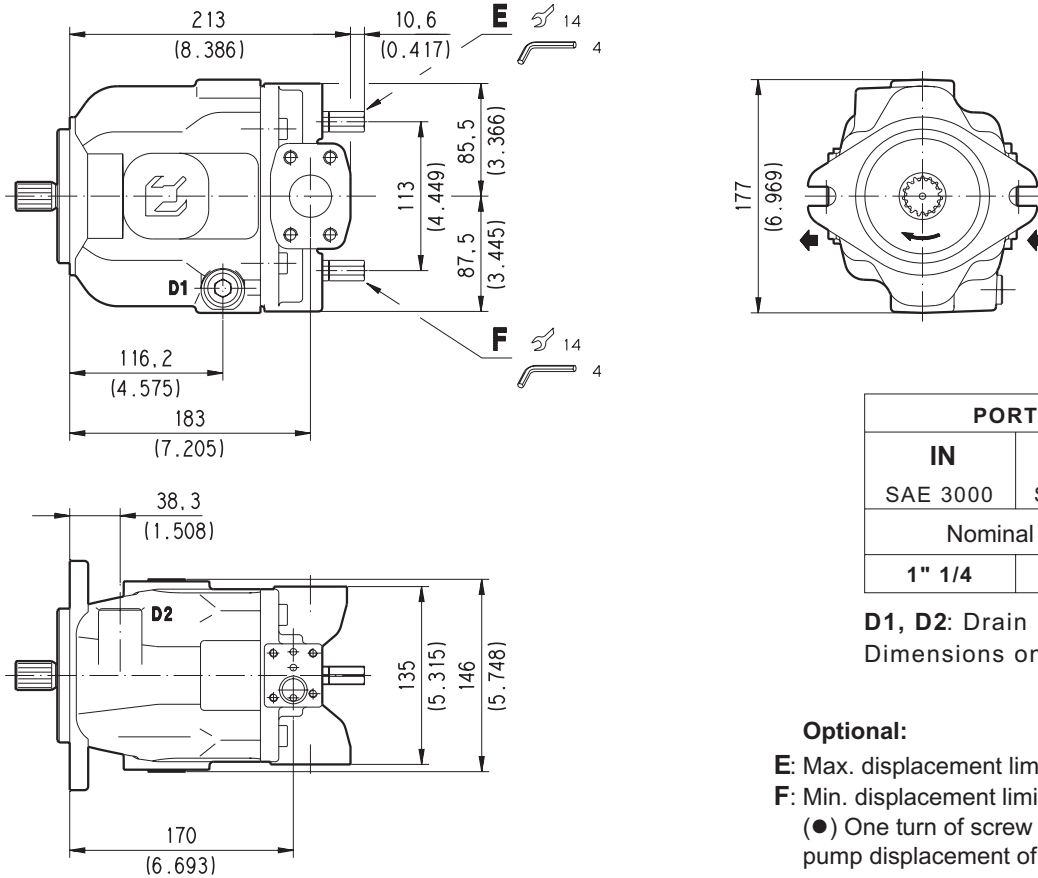


04/10.99

D037-D92/0799

VERSION WITH SIDE PORTS - DIMENSIONS

LVP 30

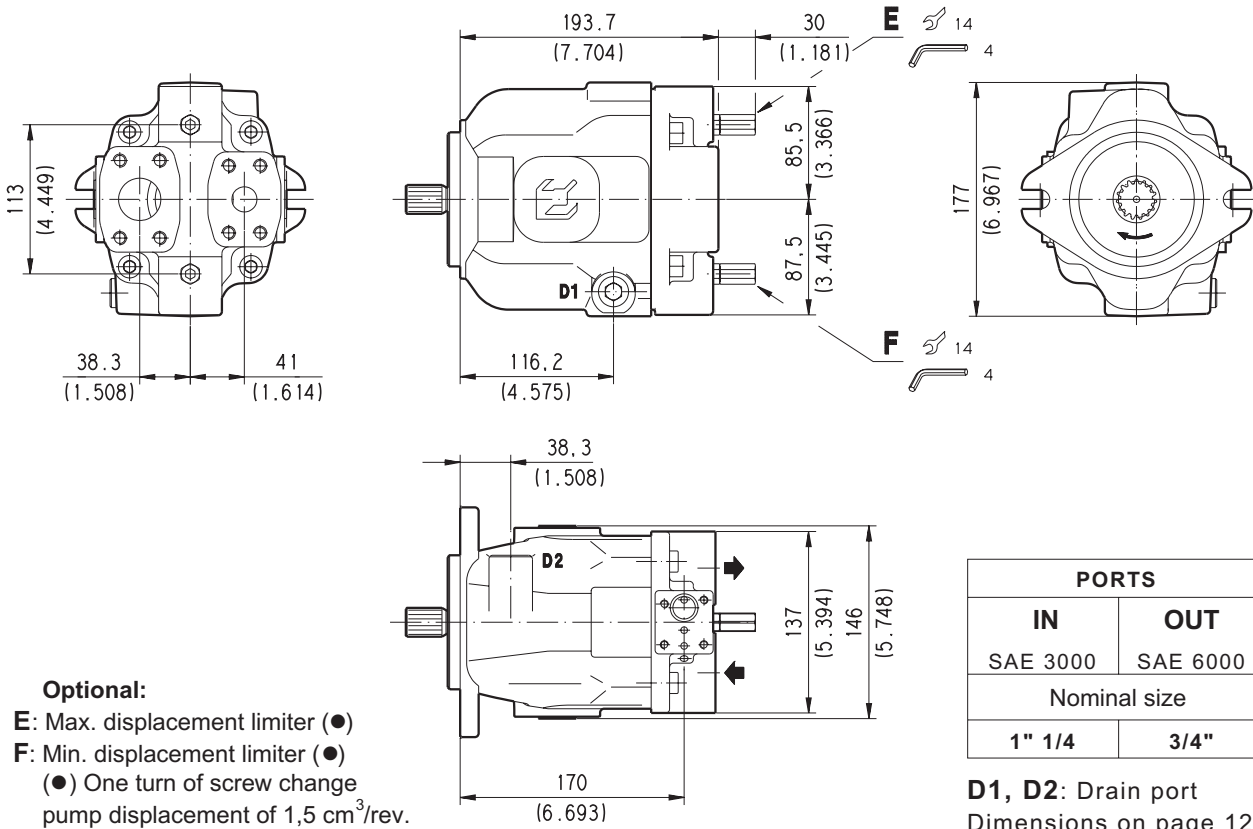


D037-D78/1099

Replaces: 10.97

VERSION WITH REAR PORTS - DIMENSIONS

LVP 30



D037-D79/1099

04/10.99

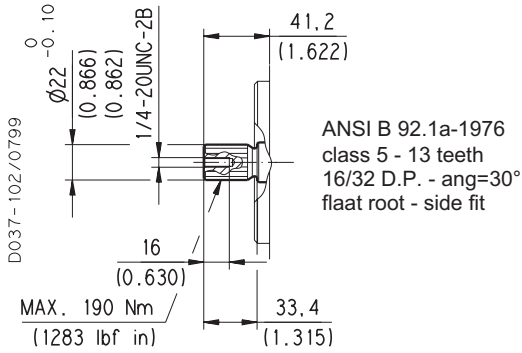
SHAFTS / MOUNTING FLANGES

LVP 30

SAE "B" SPLINE

04

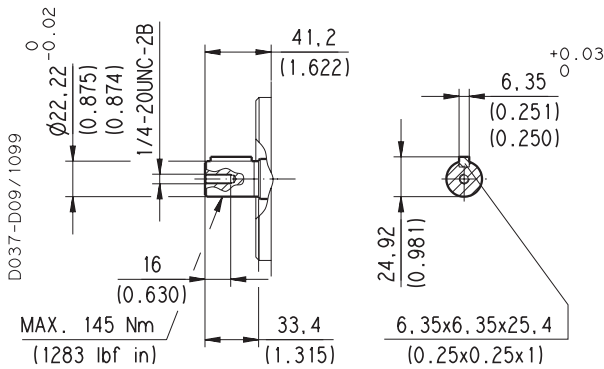
Available with flange code S5



SAE "B" STRAIGHT

32

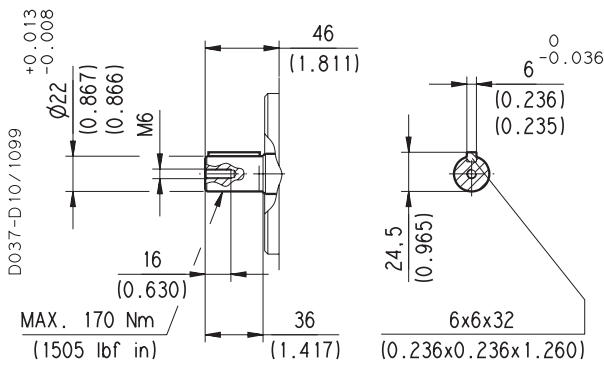
Available with flange code S5



STRAIGHT Ø 22

68

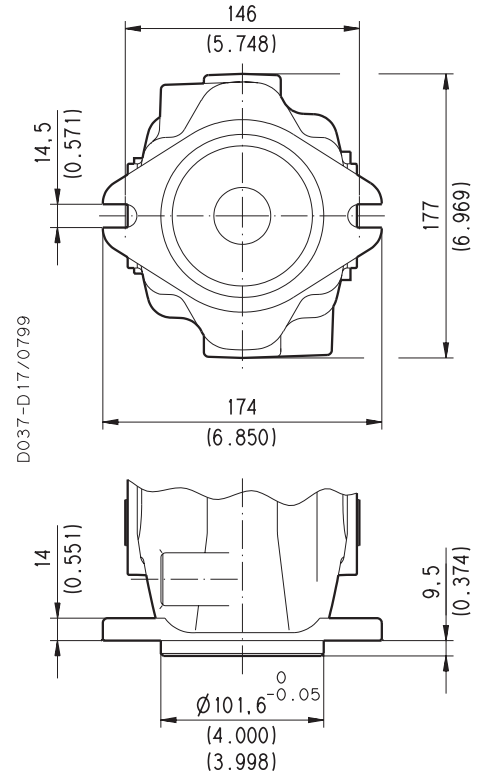
Available with flange code Z1



SAE "B" 2 HOLES

S5

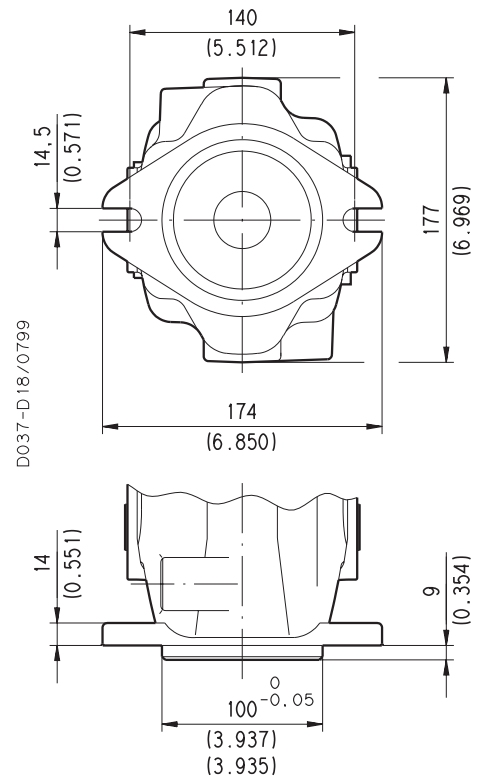
SAE J744 Jul88



ISO Ø 100

Z1

ISO 3019/2 Feb88

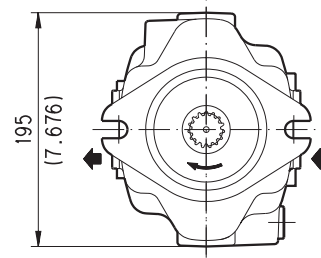
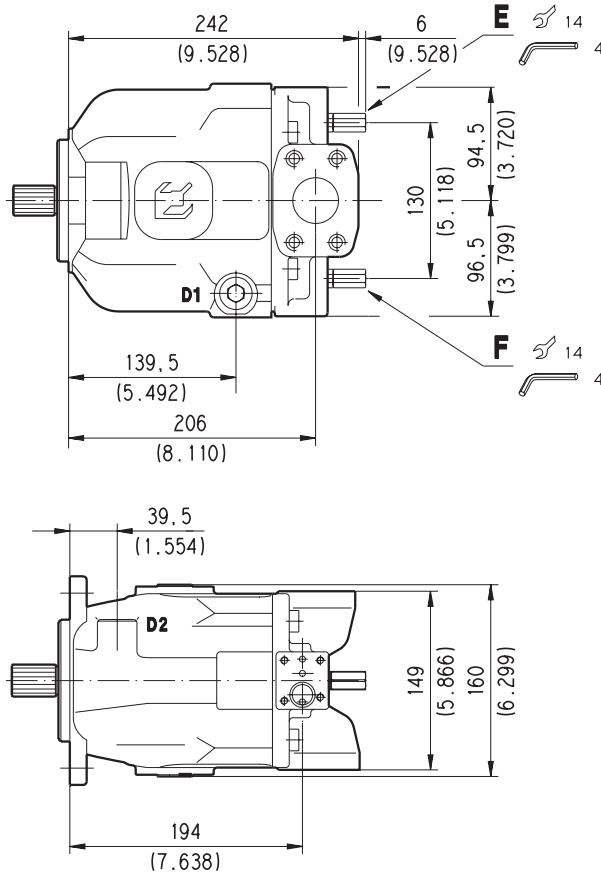


Replaces: 04/10.99

04/04.00

VERSION WITH SIDE PORTS - DIMENSIONS

LVP 48



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
1" 1/2	1"

D1, D2: Drain port  
Dimensions on page 12

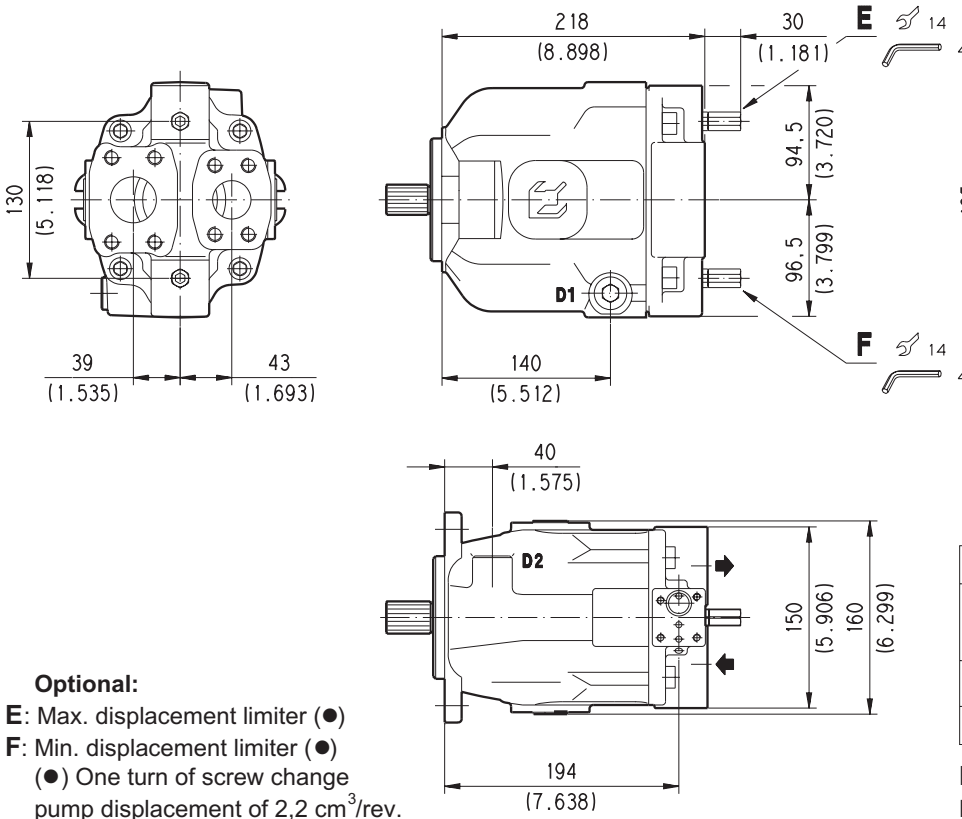
**Optional:**  
**E:** Max. displacement limiter (●)  
**F:** Min. displacement limiter (●)  
 (●) One turn of screw change pump displacement of 2,2 cm<sup>3</sup>/rev.

D037-D80/1099

Replaces: 10.97

VERSION WITH REAR PORTS - DIMENSIONS

LVP 48



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
1" 1/2	1"

D1, D2: Drain port  
Dimensions on page 12

**Optional:**  
**E:** Max. displacement limiter (●)  
**F:** Min. displacement limiter (●)  
 (●) One turn of screw change pump displacement of 2,2 cm<sup>3</sup>/rev.

D037-D81/1099

04/10.99



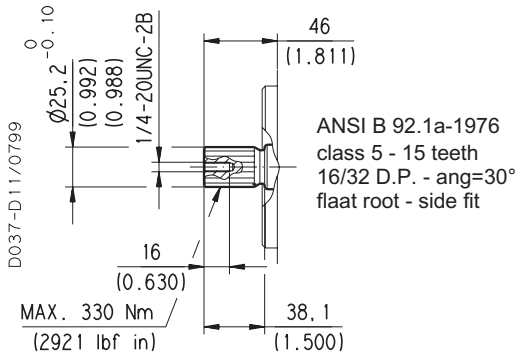
SHAFTS / MOUNTING FLANGES

LVP 48

SAE "BB" SPLINE

05

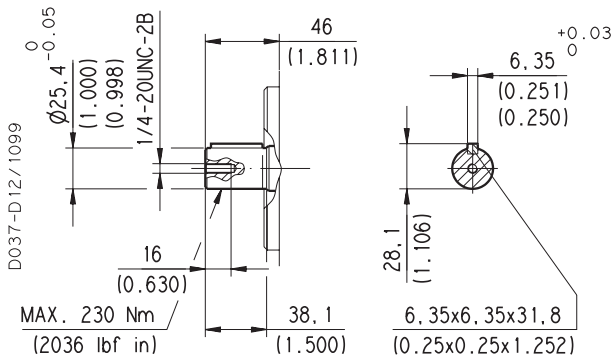
Available with flange code S5



SAE "BB" STRAIGHT

33

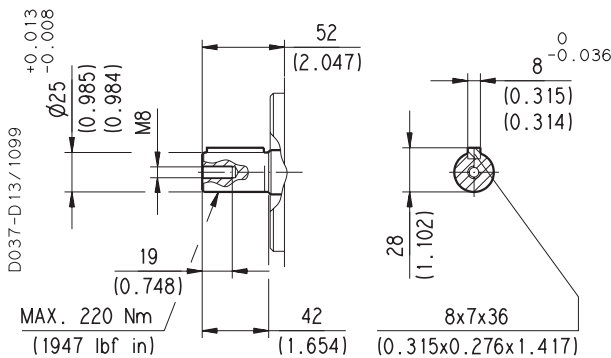
Available with flange code S5



STRAIGHT Ø 25

69

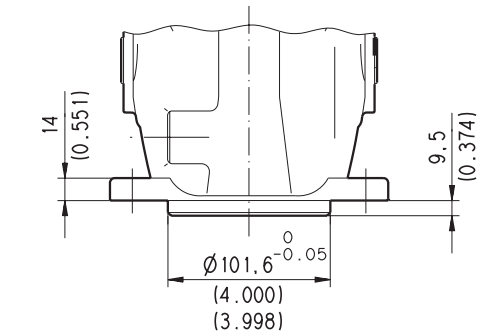
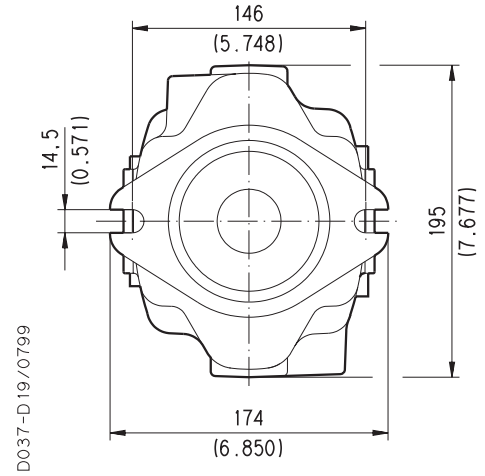
Available with flange code Z1



SAE "B" 2 HOLES

S5

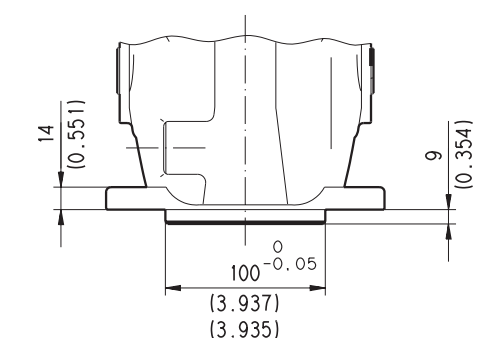
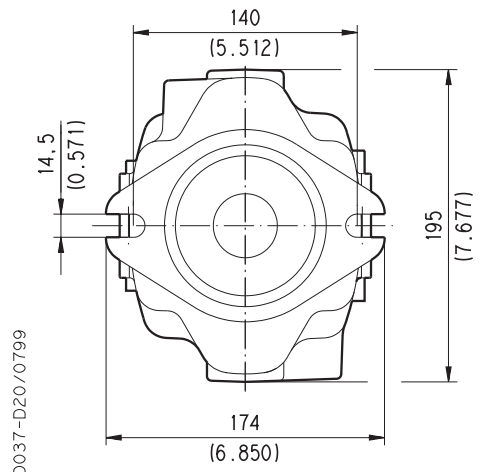
SAE J744 Jul88



ISO Ø 100

Z1

ISO 3019/2 Feb88

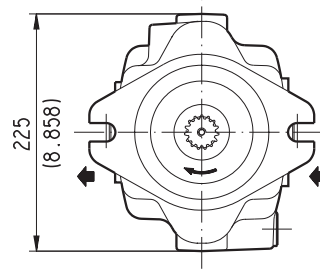
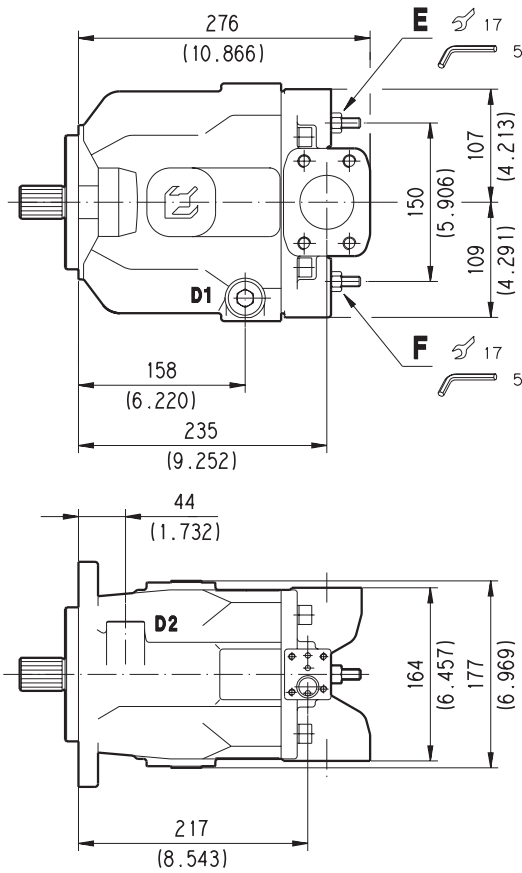


Replaces: 04/10.99

04/04.00

VERSION WITH SIDE PORTS - DIMENSIONS

LVP 75



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
2"	1" 1/4

D1, D2: Drain port  
Dimensions on page 12

Optional:

E: Max. displacement limiter (●)

F: Min. displacement limiter (●)

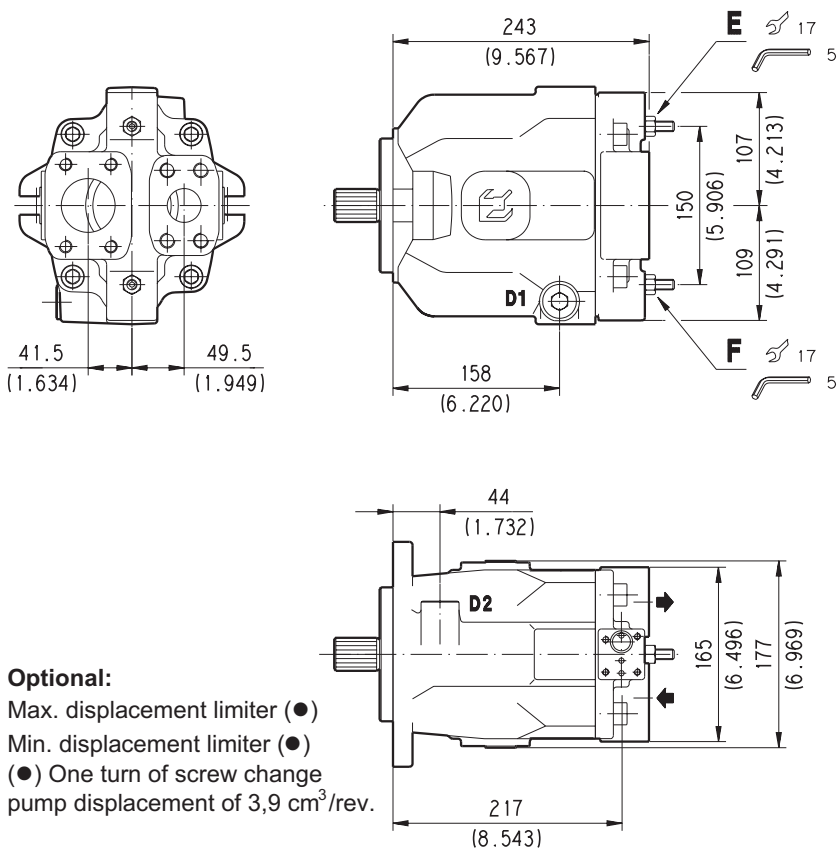
(●) One turn of screw change pump displacement of 3,9 cm<sup>3</sup>/rev.

D037-D82/1099

Replaces: 10.97

VERSION WITH REAR PORTS - DIMENSIONS

LVP 75



PORTS	
IN	OUT
SAE 3000	SAE 6000
Nominal size	
2"	1" 1/4

D1, D2: Drain port  
Dimensions on page 12

Optional:  
E: Max. displacement limiter (●)  
F: Min. displacement limiter (●)  
(●) One turn of screw change pump displacement of 3,9 cm<sup>3</sup>/rev.

D037-D83/1099

04/10.99

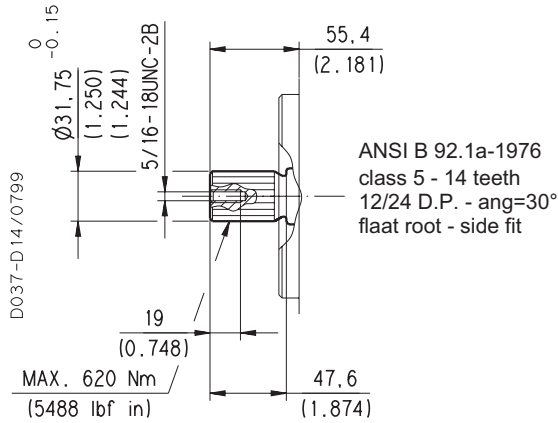
SHAFTS / MOUNTING FLANGES

LVP 75

SAE "C" SPLINE

06

Available with flange code S7

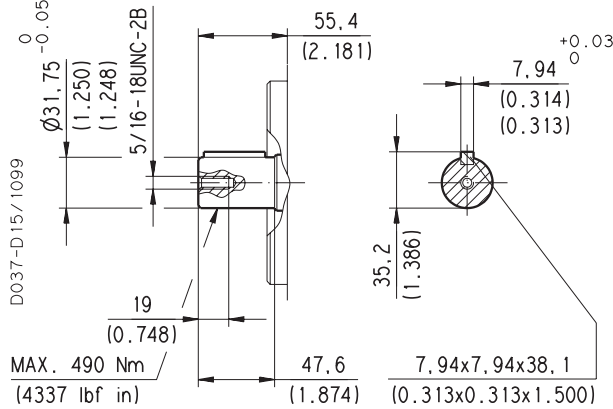


Replaces: 04/10.99

SAE "C" STRAIGHT

34

Available with flange code S7

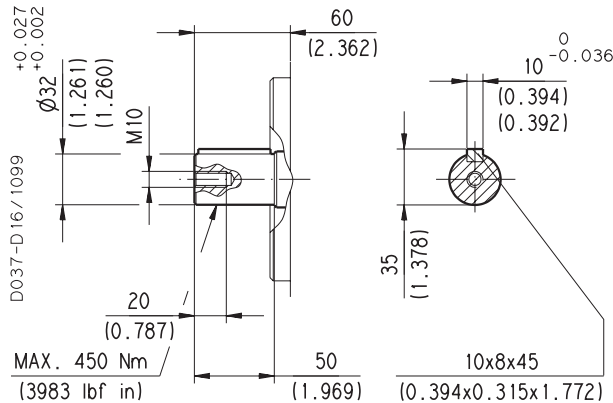


04/04.00

STRAIGHT Ø 32

70

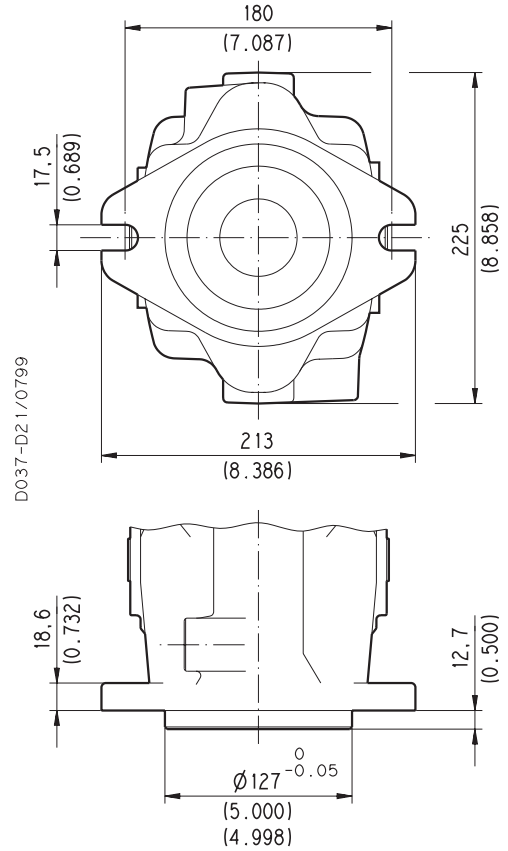
Available with flange code Z2



SAE "C" 2 HOLES

S7

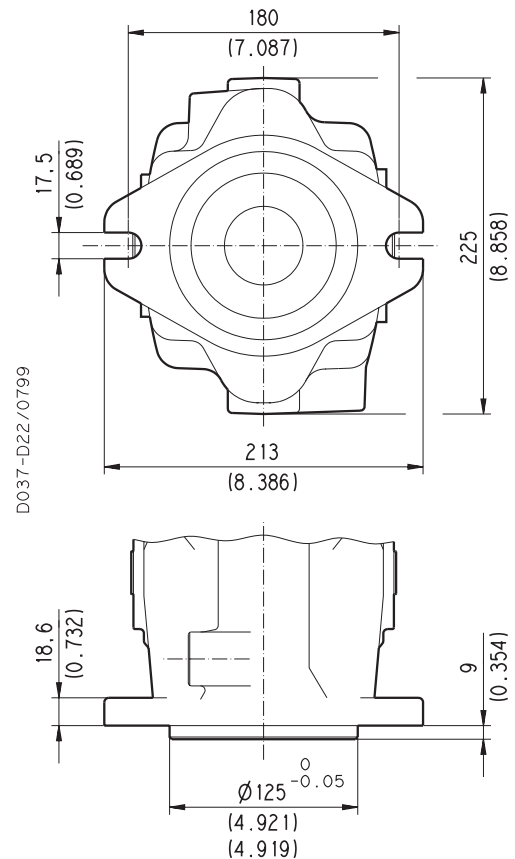
SAE J744 Jul88



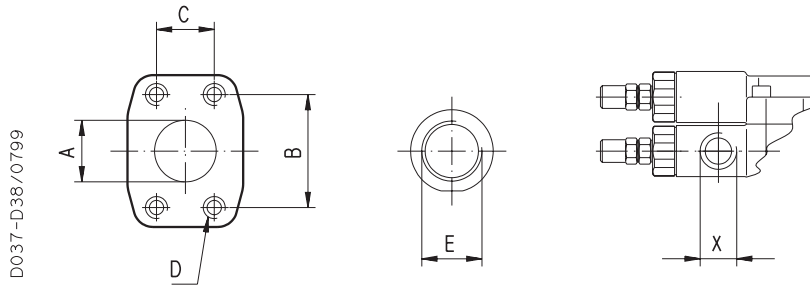
ISO Ø 125

Z2

ISO 3019/2 Feb88



**PORT DIMENSIONS**



Replaces: 10.97

INLET PORT - IN (SAE 3000)						DRAIN PORT D1	LOAD SENSING PORT
SAE FLANGED PORTS METRIC THREAD (SSM)						BRITISH STANDARD BSPP	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
<b>MD</b>	<b>1" 1/4</b>	32 (1.260)	58,7 (2.311)	30,2 (1.189)	M 10 28 (1.102)	G 1/2	G 1/8
<b>ME</b>	<b>1" 1/2</b>	38,1 (1.500)	69,9 (2.752)	35,7 (1.406)	M 12 26 (1.024)		
<b>MF</b>	<b>2"</b>	50,8 (2.000)	77,8 (3.063)	42,9 (1.689)	M 12 25 (0.984)	G 3/4	
SAE FLANGED PORTS UNC THREAD (SSS)						SAE STRAIGHT THREAD (ODT)	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
<b>SD</b>	<b>1" 1/4</b>	32 (1.260)	58,7 (2.311)	30,2 (1.189)	7/16-14 UNC-2B 28 (1.102)	3/4-16 UNF-2B	7/16-20 UNF-2B
<b>SE</b>	<b>1" 1/2</b>	38,1 (1.500)	69,9 (2.752)	35,7 (1.406)	1/2-13 UNC-2B 26 (1.024)	7/8-14 UNF-2B	
<b>SF</b>	<b>2"</b>	50,8 (2.000)	77,8 (3.063)	42,9 (1.689)	1/2-13 UNC-2B 25 (0.984)		

OUTLET PORT - OUT (SAE 6000)						DRAIN PORT D2	LOAD SENSING PORT
SAE FLANGED PORTS METRIC THREAD (SSM)						BRITISH STANDARD BSPP	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
<b>QB</b>	<b>3/4"</b>	19 (0.748)	50,8 (2.000)	23,8 (0.937)	M 10 24 (0.945)	G 1/2	G 1/8
<b>QC</b>	<b>1"</b>	25,4 (1.000)	57,2 (2.252)	27,8 (1.094)	M 10 24 (0.945)		
<b>QD</b>	<b>1" 1/4</b>	32 (1.260)	66,7 (2.626)	31,8 (1.252)	M 14 23 (0.906)	G 3/4	
SAE FLANGED PORTS UNC THREAD (SSS)						SAE STRAIGHT THREAD (ODT)	
CODE	Nominal size	A	B	C	D	E	X
		mm (in)	mm (in)	mm (in)	Thread Depth mm (in)	Thread	Thread
<b>VB</b>	<b>3/4"</b>	19 (0.748)	50,8 (2.000)	23,8 (0.937)	3/8-16 UNC-2B 24 (0.945)	3/4-16 UNF-2B	7/16-20 UNF-2B
<b>VC</b>	<b>1"</b>	25,4 (1.000)	57,2 (2.252)	27,8 (1.094)	7/16-14 UNC-2B 20 (0.787)	7/8-14 UNF-2B	
<b>VD</b>	<b>1" 1/4</b>	32 (1.260)	66,7 (2.626)	31,8 (1.252)	1/2-13 UNC-2B 23 (0.906)		

04/10.99

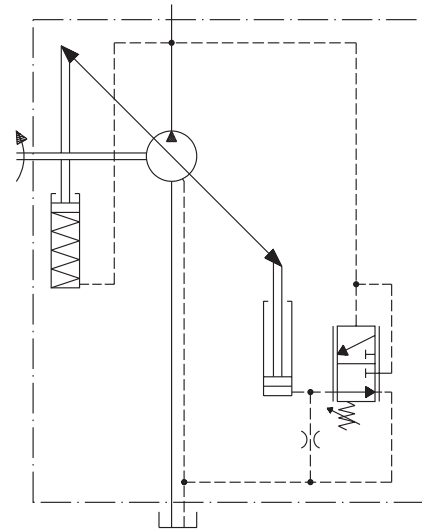
**PRESSURE COMPENSATOR**

**RP**

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

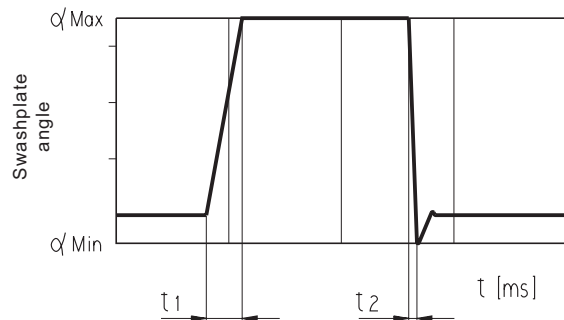
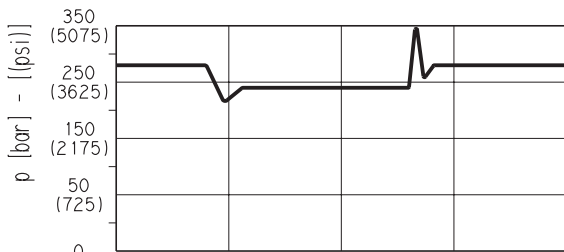
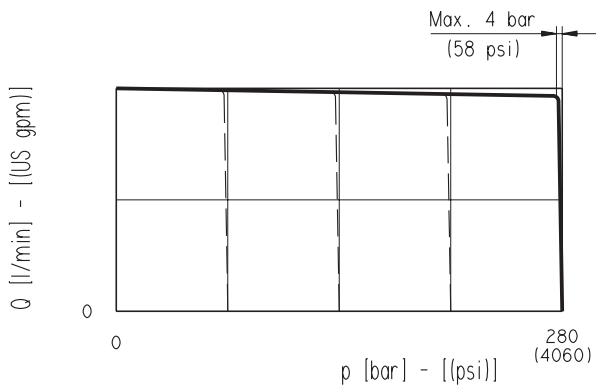
Compensator type	Pressure setting range	Standard setting
	bar	bar
<b>RP0</b>	20 ÷ 350	280

For remote control please consult our sales department.



**OPERATING CURVES**

Curves have been obtained at the speed of 1500 min<sup>-1</sup> and oil temperature 50 °C.



**RESPONSE TIME**

Pump type	t <sub>1</sub>	t <sub>2</sub>
	ms	ms
<b>LVP 30</b>	31	19
<b>LVP 48</b>	44	20
<b>LVP 75</b>	50	25

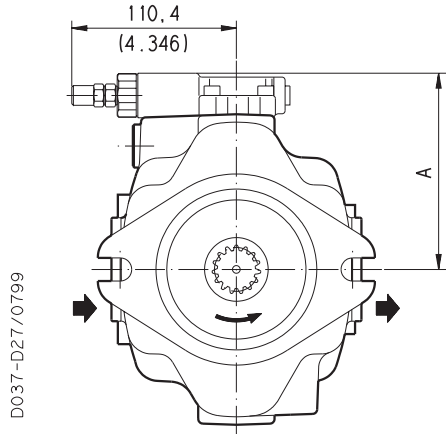
04/10.99

**MOUNTING POSITIONS AND DIMENSIONS (pressure compensator)**

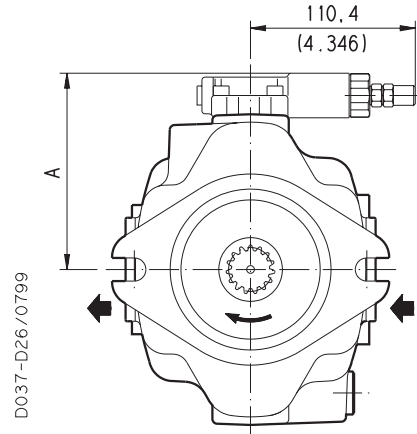
**RP**

**Side ports**

**Anti-clockwise rotation**

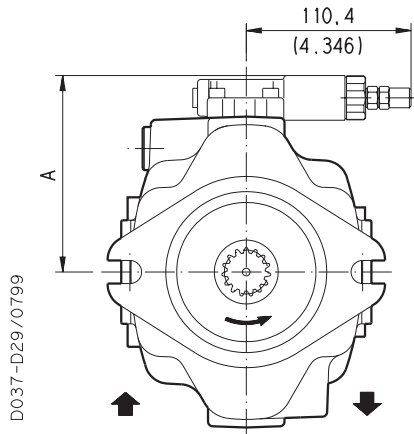


**Clockwise rotation**

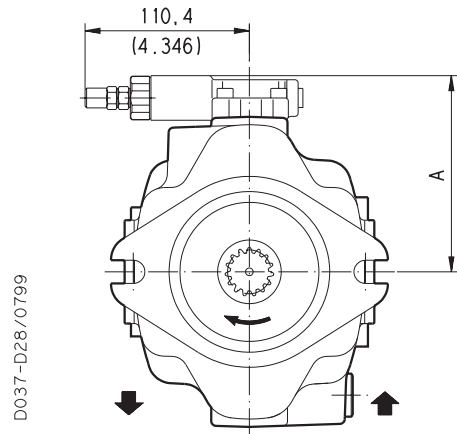


**Rear ports**

**Anti-clockwise rotation**



**Clockwise rotation**



Pump type	<b>A</b>
	mm (in)
<b>LVP 30</b>	114 (4.488)
<b>LVP 48</b>	123 (4.843)
<b>LVP 75</b>	136 (5.354)

**NOTES:** For different mounting positions, please consult our sales department.

Replaces: 10.97

04/10.99

FLOW COMPENSATOR (Load-sensing)

LS

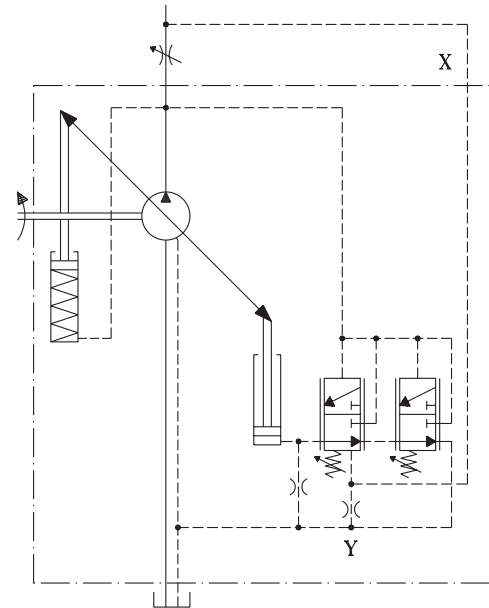
Regulates the pump displacement to maintain a constant (load independent) pressure drop across a flow metering device. In the standard version the flow compensator is combined with pressure compensator.

Flow compensator type	Pressure compensator	Differential pressure setting range	Standard setting
		bar	bar
LS0	RP0	10 ÷ 40	14
LS2 *	RP0	10 ÷ 40	14
LS3 •	RP0	10 ÷ 40	14

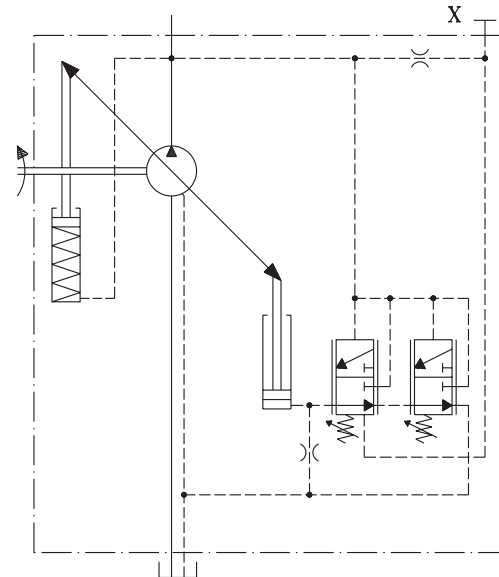
- \* : For remote control Y is plugged.
  - : For internal control and remote pressure control.
- Pilot flow  $\approx 1,3 \div 1,5$  [l/min]

In standard setting conditions (14 bar) the stand-by pressure is  $16^{\pm 2}$  bar.

LS0 - LS2 Hydraulic circuits

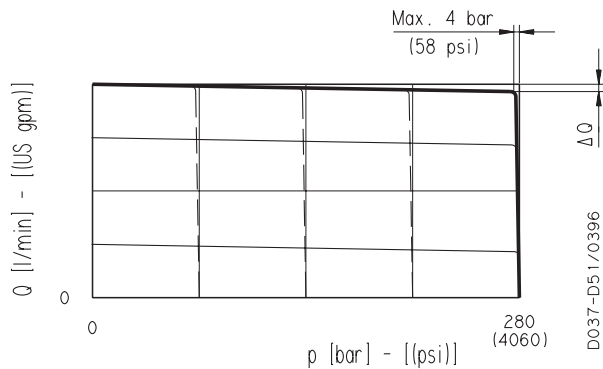


LS3 Hydraulic circuits

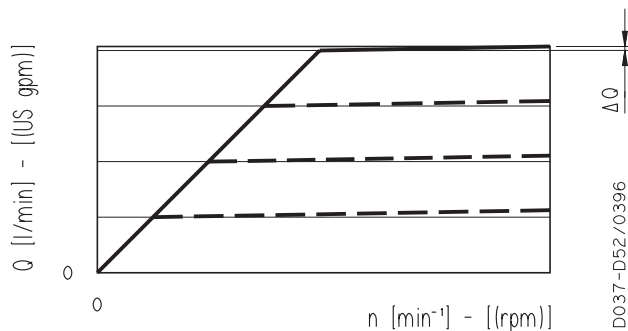


OPERATING CURVES

This curve has been obtained at the speed of  $1500 \text{ min}^{-1}$  and oil temperature  $50^\circ\text{C}$ .



Curve at variable speed



TECHNICAL DATA

Pump type	$\Delta Q_{\text{max}}$
	l/min
LVP 30	0,9
LVP 48	1,7
LVP 75	2,5

Replaces: 10.97

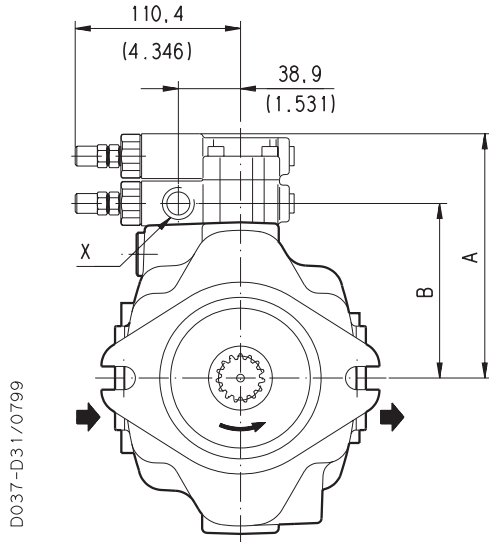
04/10.99

**MOUNTING POSITIONS AND DIMENSIONS (flow compensator)**

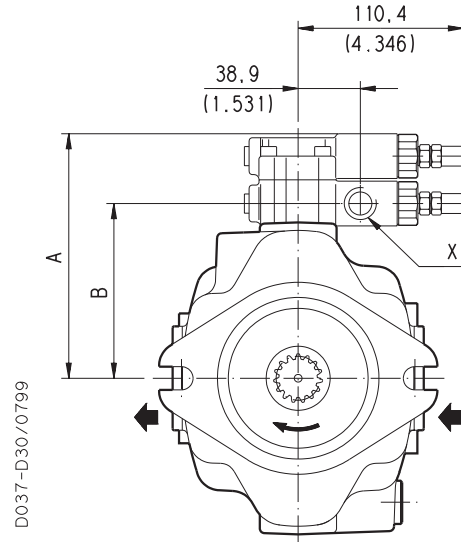
**LS**

**Side ports**

**Anti-clockwise rotation**

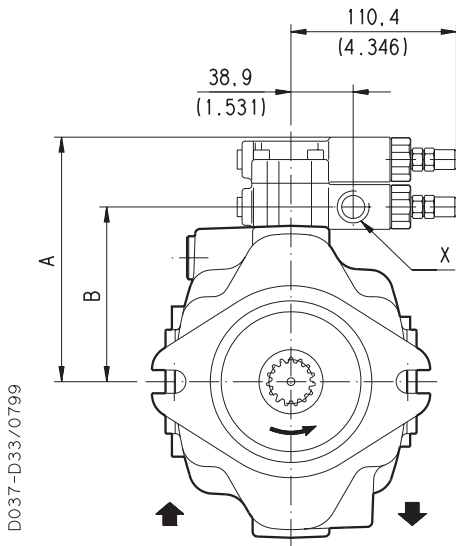


**Clockwise rotation**

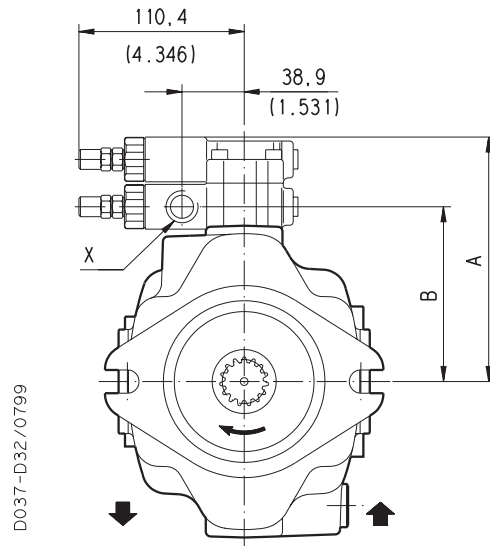


**Rear ports**

**Anti-clockwise rotation**



**Clockwise rotation**



Pump type	A	B
	mm (in)	mm (in)
<b>LVP 30</b>	144 (5.669)	100 (3.937)
<b>LVP 48</b>	153 (6.024)	109 (4.291)
<b>LVP 75</b>	165 (6.496)	122 (4.803)

X: Load sensing port. Dimension on page 12

**NOTES:** For different mounting positions, please consult our sales department.

Replaces: 10.97

04/10.99



**TORQUE LIMITER**

**RN**

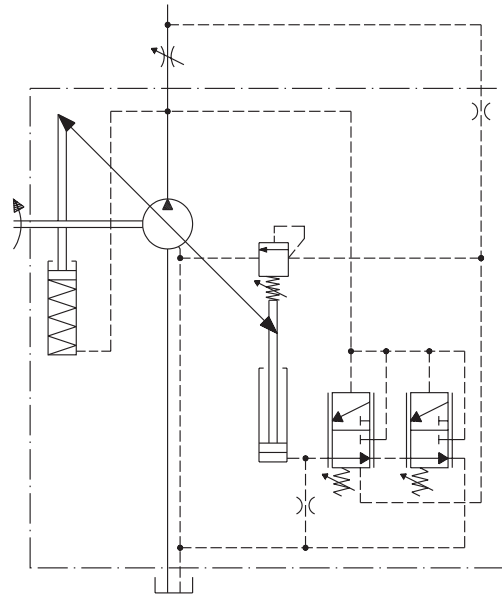
Replaces: 10.97

Regulates the pump displacement according to the system pressure, to maintain the pre-adjusted torque value and protect the prime mover from overload.

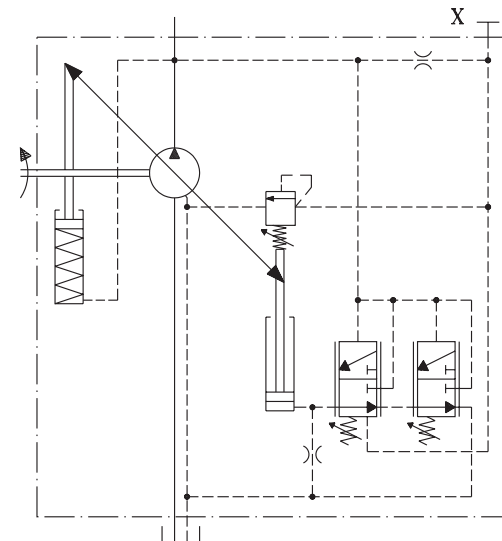
To have the best torque limiter regulation, the minimum working pressure should be at least 80 bar.

In the order of the torque limiter please specify the requested value of power:  
(eg. 10 kW at 1500 min<sup>-1</sup>)

**RN0 - Standard**

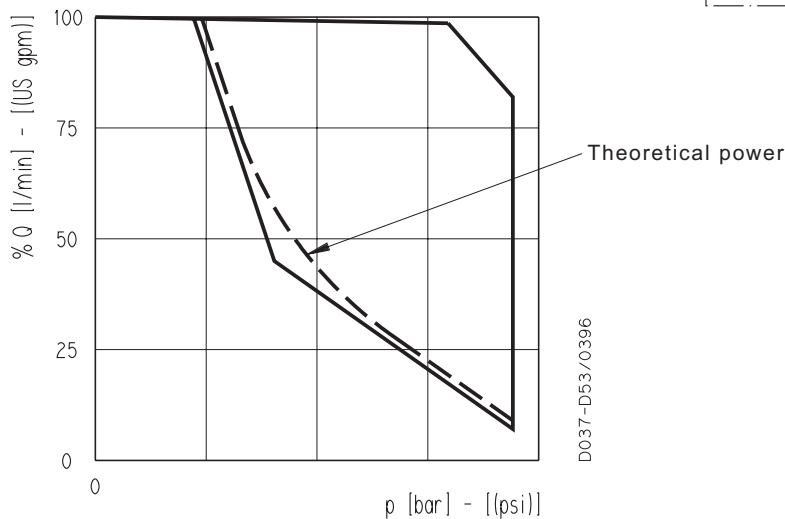


**RN1 - Internal pilot**



**OPERATING CURVES**

This curve has been obtained at the speed of 1500 min<sup>-1</sup> and oil temperature 50 °C.



04/10.99

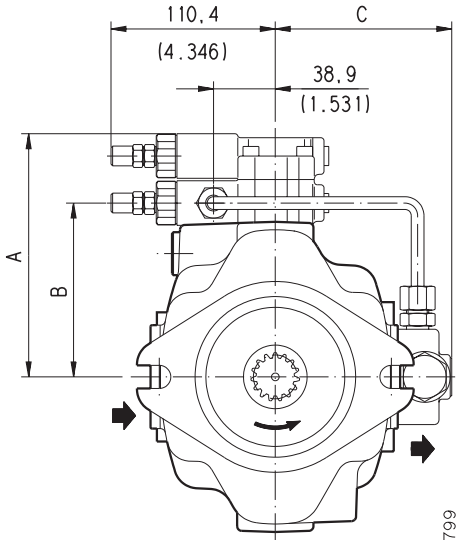
D037-D53/0396

**MOUNTING POSITIONS AND DIMENSIONS (torque limiter)**

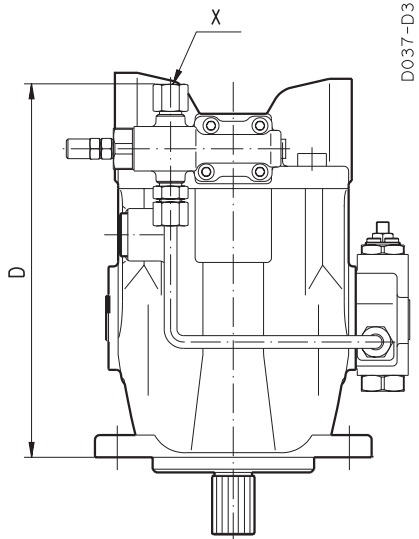
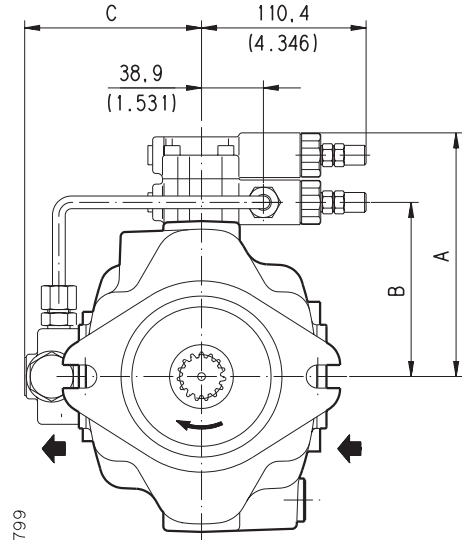
**RN**

**Side ports**

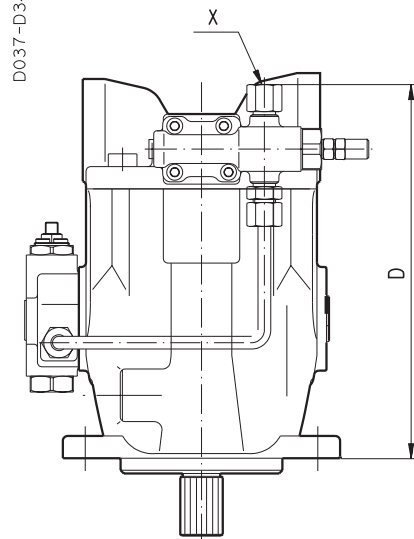
**Anti-clockwise rotation**



**Clockwise rotation**



D037-D35/0799



D037-D34/0799

Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
<b>LVP 30</b>	144 (5.669)	100 (3.937)	104 (4.094)	211 (8.307)
<b>LVP 48</b>	153 (6.024)	109 (4.291)	111 (4.370)	235 (9.252)
<b>LVP 75</b>	165 (6.496)	122 (4.803)	120 (4.724)	258 (10.157)

**X:** Load sensing port. Dimension on page 12

**NOTES:** For different mounting positions, please consult our sales department.

Replaces: 10.97

04/10.99

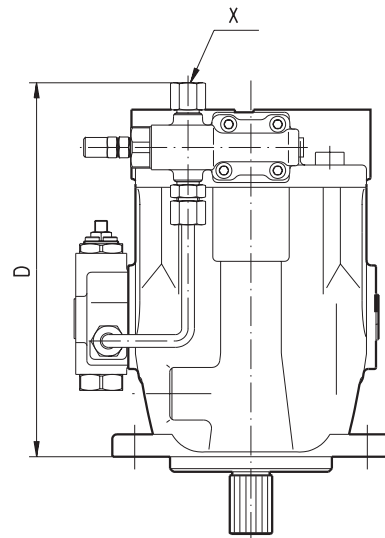
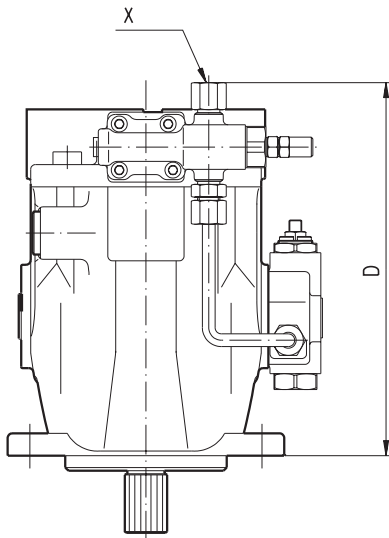
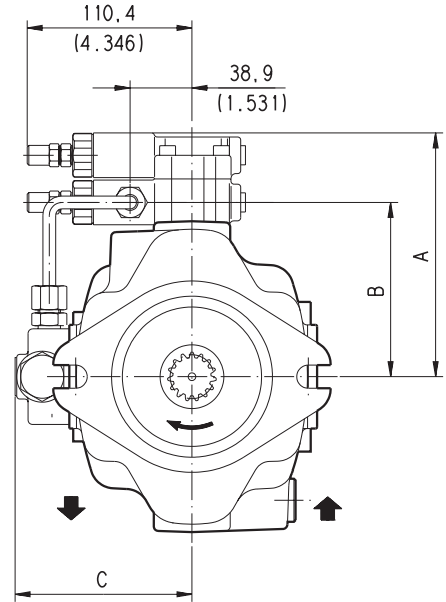
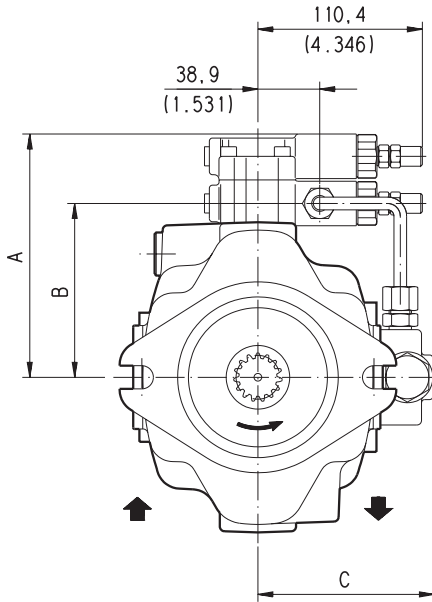
**MOUNTING POSITIONS AND DIMENSIONS (torque limiter)**

**RN**

**Rear ports**

**Anti-clockwise rotation**

**Clockwise rotation**



D037-D37/0799

D037-D36/0799

Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
<b>LVP 30</b>	144 (5.669)	100 (3.937)	104 (4.094)	211 (8.307)
<b>LVP 48</b>	153 (6.024)	109 (4.291)	111 (4.370)	235 (9.252)
<b>LVP 75</b>	165 (6.496)	122 (4.803)	120 (4.724)	258 (10.157)

**X:** Load sensing port. Dimension on page 12

**NOTES:** For different mounting positions, please consult our sales department.

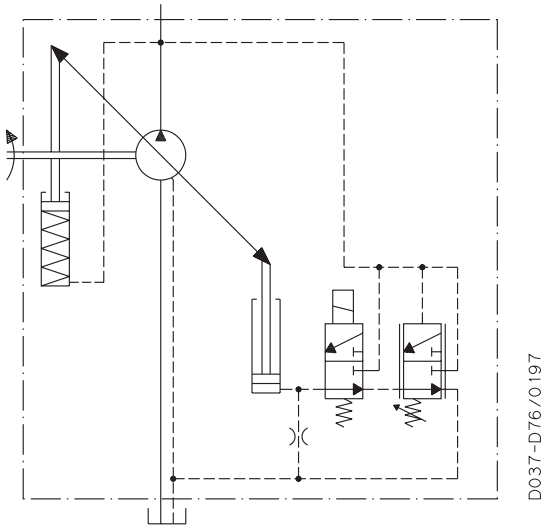
Replaces: 10.97

04/10.99

UNLOADING VALVE

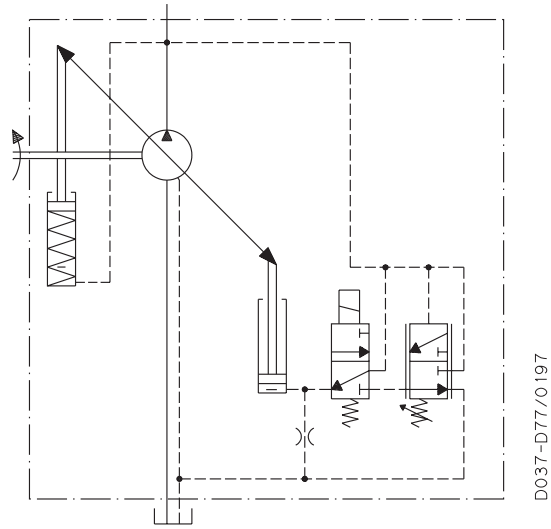
U ..

NC (normally closed)



With the valve NC type (normally closed), energizing the solenoid valve the displacement is reset and the pump is unloaded.

NA (normally open)



With the valve NA type (normally open), energizing the solenoid valve the pump is sent to the maximum displacement.

Notes

Unloading valve can be supplied only with pressure compensator RP..

Voltages value availability

Regulator type	Arrangement	Volt
U1	NC	12 V D.C.
U2	NC	24 V D.C.
U3	NC	24 V A.C.
U4	NC	110 V A.C.
U5	NC	220 V A.C.
U6	NA	12 V D.C.
U7	NA	24 V D.C.
U8	NA	24 V A.C.
U9	NA	110 V A.C.
U10	NA	220 V A.C.

Replaces: 10.97

04/10.99

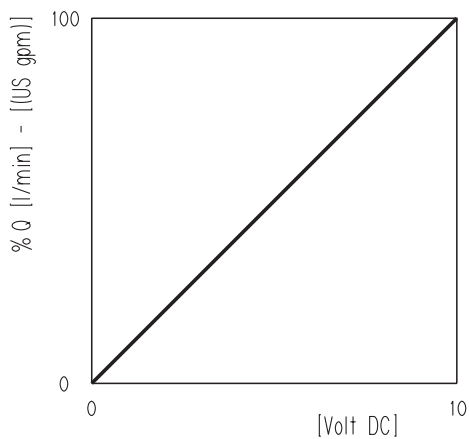
ELECTROHYDRAULIC SERVOCONTROLS

S...

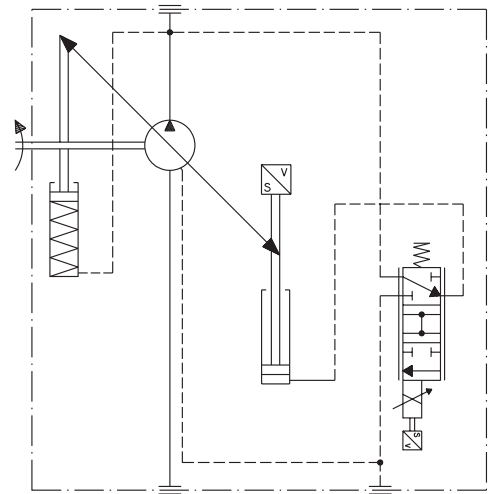
In this line of servocontrols, the displacement variation is regulated by a proportional system in double closed loop with a feedback transducer on the swash plate and a feedback transducer on the proportional valve: in this way high performances and high dynamics can be reached. The regulated displacement have a linear relation with the electronic control signal 0 ÷ 10 Volt DC (see diagram below). The electronic driver can be separated, Eurocard type or integral on the pump.

- S** Proportional flow servocontrol.
- SE** Proportional flow servocontrol with integral electronics, single 7-pins connector for electric supply and reference signals.
- SER** As above with sequence module RES to grant a minimum piloting pressure (18 bar) when the actual pressure of the system can fall under that value. This version can be used for the combined control of pressure and flow coupled with an electronic regulator in Eurocard format and with a pressure transducer which can be integral or separated.

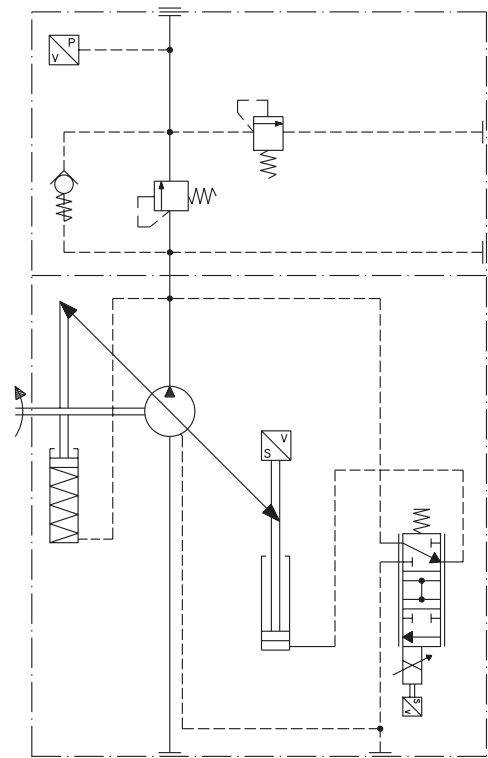
**Note:** The minimum pressure to grant a correct functioning of the servocontrol in S and SE versions cannot be under 18 bar. Pumps with servocontrols type S and SE must be protected for safety with an external relief valve against pressure peaks. This is not necessary for version SER because the sequence module RES includes the maximum pressure protection.



S - SE Hydraulic circuits



SER Hydraulic circuits



04/10.99

**Technical data** (only for pumps with servocontrols type S and SE)

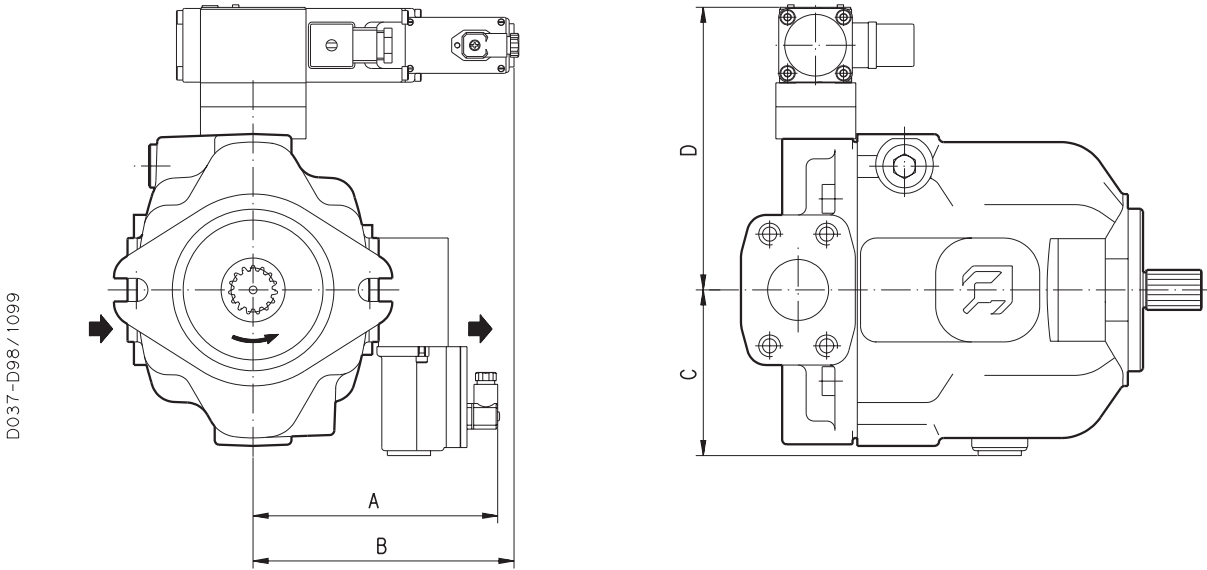
Coil resistance R at 20 °C	3 ÷ 3,3 Ω for standard 12 Volt (DC) coil
Relative duty factor	Countinuous rating (ED= 100 %)
Max. solenoid current	2,6 A for standard 12 Volt (DC) coil
Max. power	35 W

For different mounting positions, please consult our sales department.

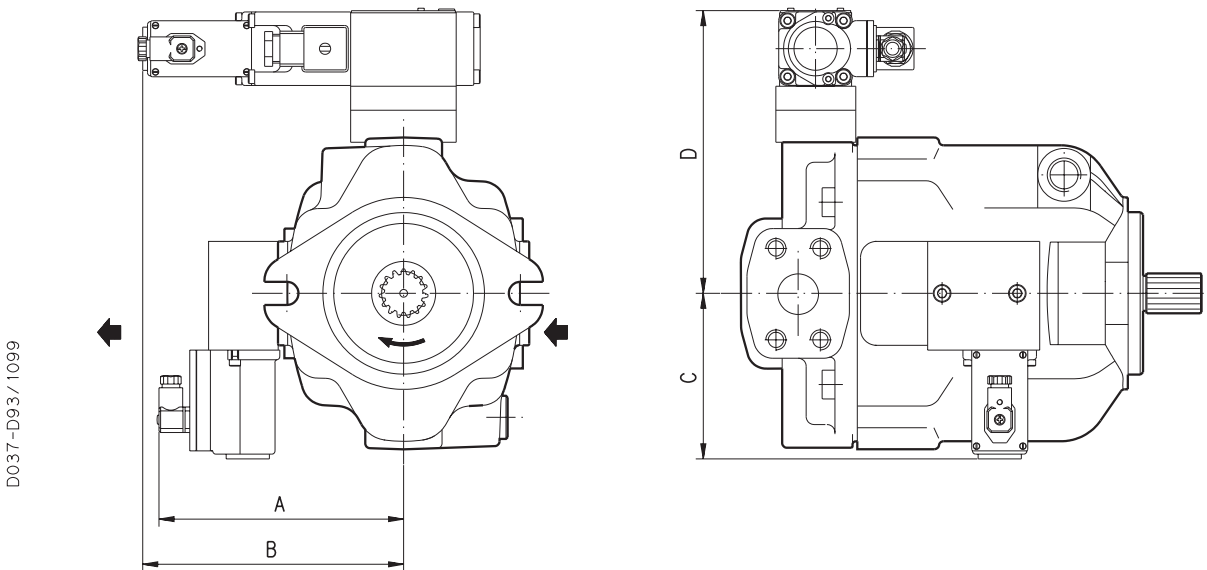
**MOUNTING POSITIONS AND DIMENSIONS (electrohydraulic servocontrols)**

**S**

**Anti-clockwise rotation (side ports)**



**Clockwise rotation (side ports)**



Pump type	A	B	C	D
	mm (in)	mm (in)		mm (in)
<b>LVP 30</b>	146,3 (5.760)	163 (6.417)	103,5 (4.075)	167,8 (6.606)
<b>LVP 48</b>	153 (6.024)			176,8 (6.961)
<b>LVP 75</b>	161,5 (6.358)			189,3 (7.453)

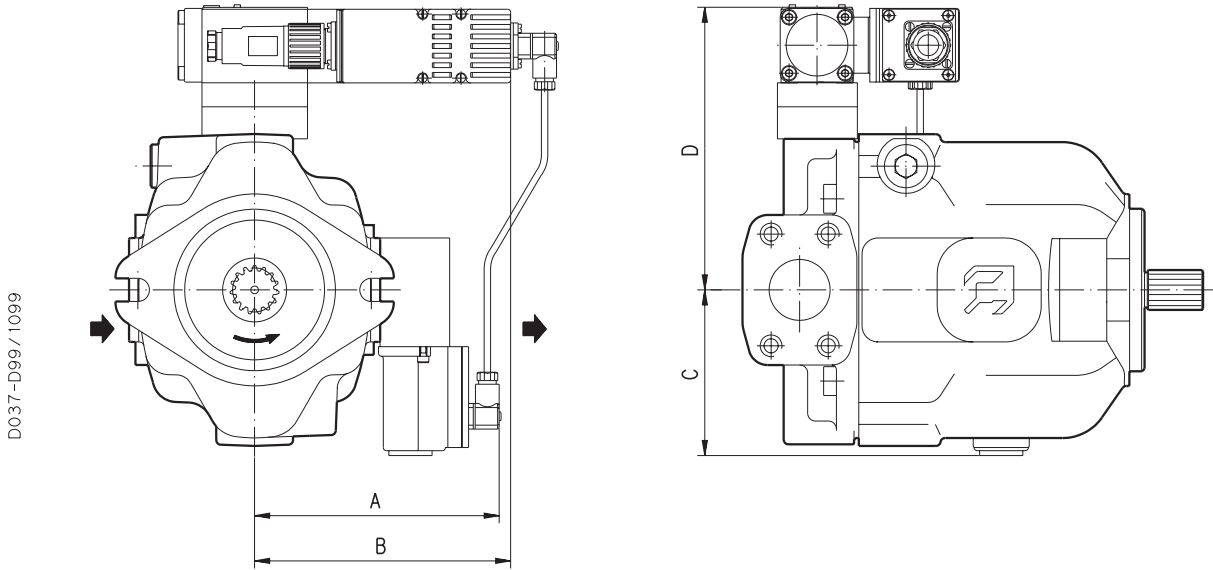
**NOTES:** For different mounting positions, please consult our sales department.

04/10.99

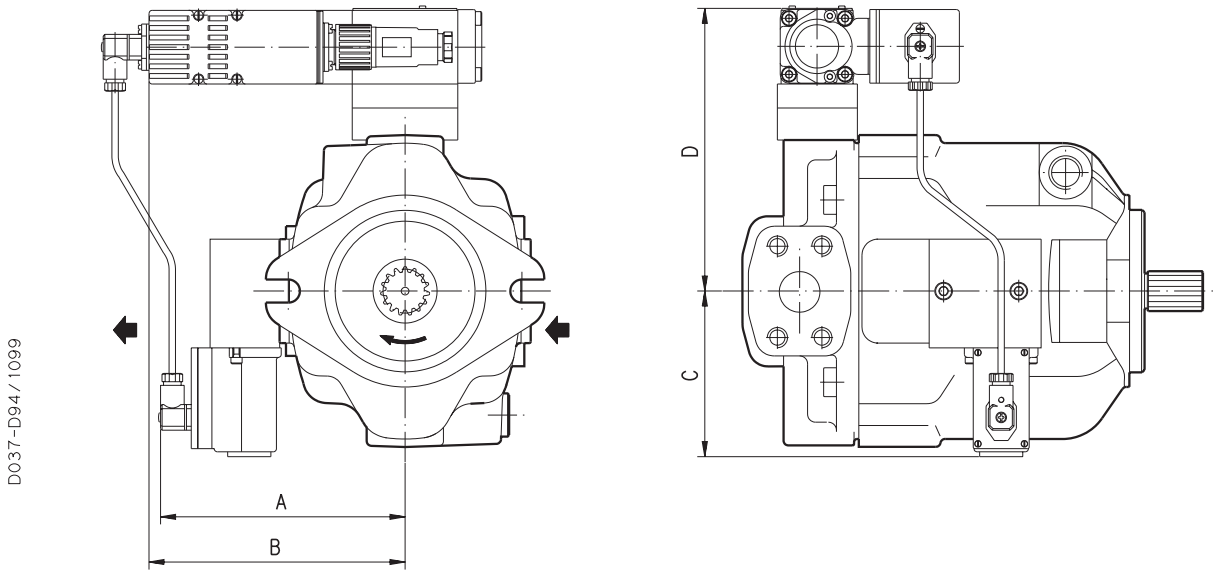
**MOUNTING POSITIONS AND DIMENSIONS (electrohydraulic servocontrols)**

**SE**

**Anti-clockwise rotation (side ports)**



**Clockwise rotation (side ports)**



04/10.99

Pump type	A	B	C	D
	mm (in)	mm (in)	mm (in)	mm (in)
<b>LVP 30</b>	146,3 (5.760)	160 (6.299)	103,5 (4.075)	167,8 (6.606)
<b>LVP 48</b>	153 (6.024)			176,8 (6.961)
<b>LVP 75</b>	161,5 (6.358)			189,3 (7.453)

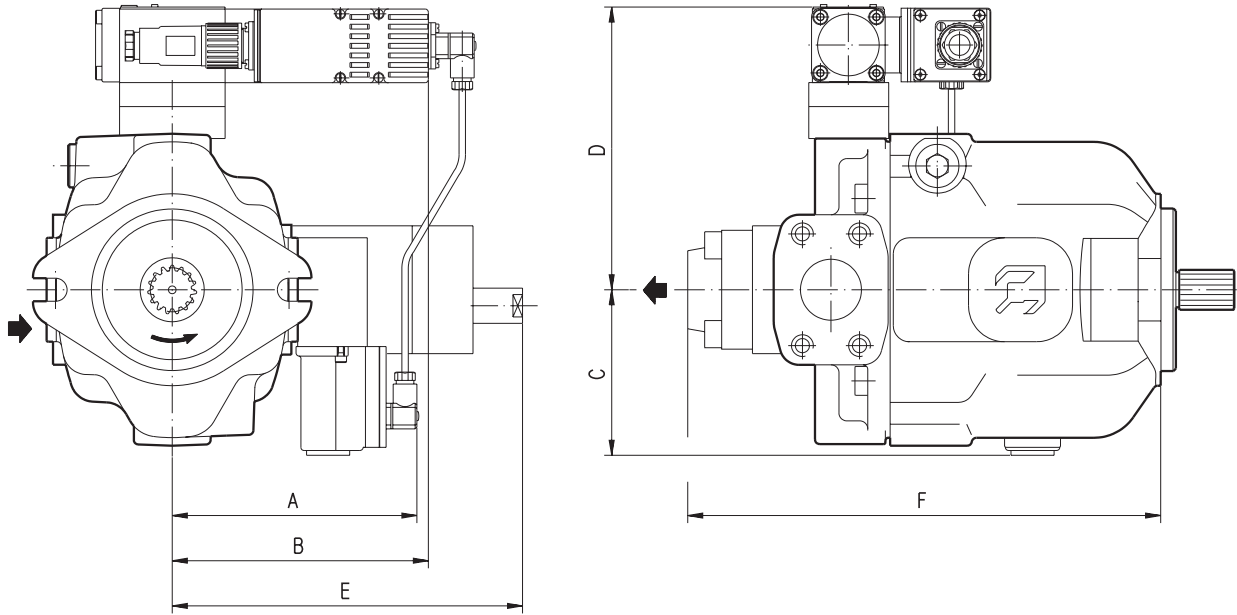
**NOTES:** For different mounting positions, please consult our sales department.

**MOUNTING POSITIONS AND DIMENSIONS (electrohydraulic servocontrols)**

**SER**

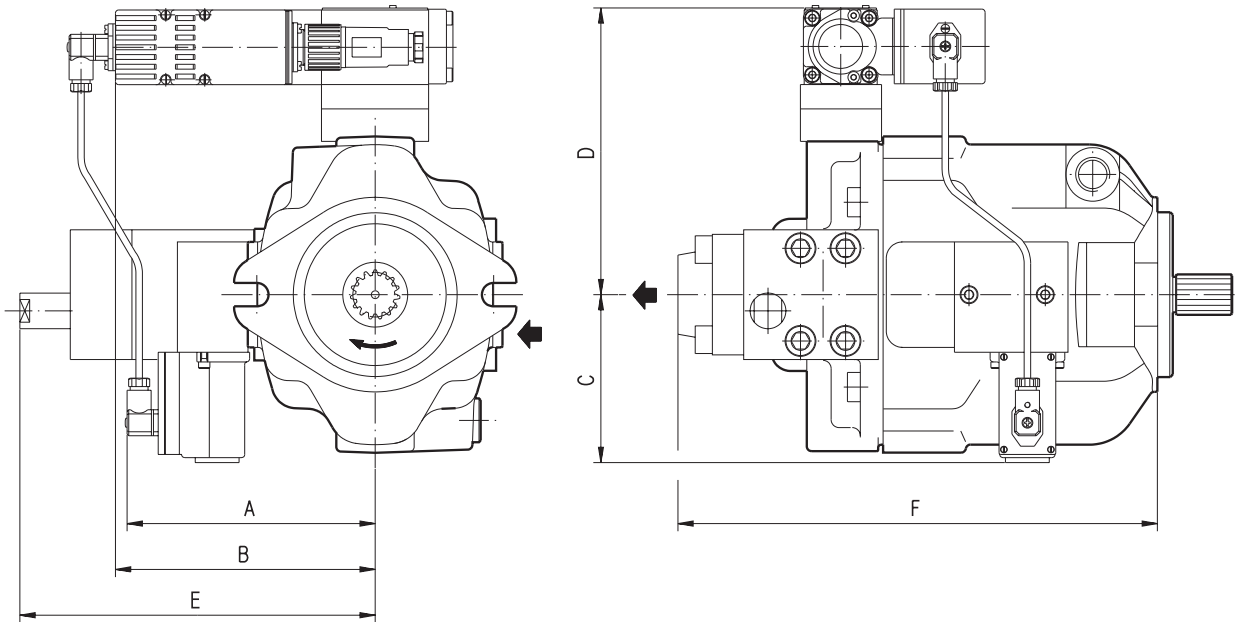
**Anti-clockwise rotation (side ports)**

D037-100/1099



**Clockwise rotation (side ports)**

D037-D95/1099



Pump type	A	B	C	D	E
	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)
<b>LVP 30</b>	146,3 (5.760)	160 (6.299)	103,5 (4.075)	167,8 (6.606)	199,5 (7.854)
<b>LVP 48</b>	153 (6.024)			176,8 (6.961)	219 (8.622)
<b>LVP 75</b>	161,5 (6.358)			189,3 (7.453)	226 (8.898)

**NOTES:** For different mounting positions, please consult our sales department.

04/10.99



**MULTIPLE PUMPS**

**Through drive**

PLATA 3000 through drive axial piston pumps offer the flexibility to obtain different groups able to supply several hydraulic systems. The operating characteristics of each assembled pumps are the same as the corresponding single pumps according to the following conditions:

- 1) Do not exceed the maximum transmissible torque.
- 2) The maximum rotational speed is that of the lowest rated speed of the single unit incorporated.

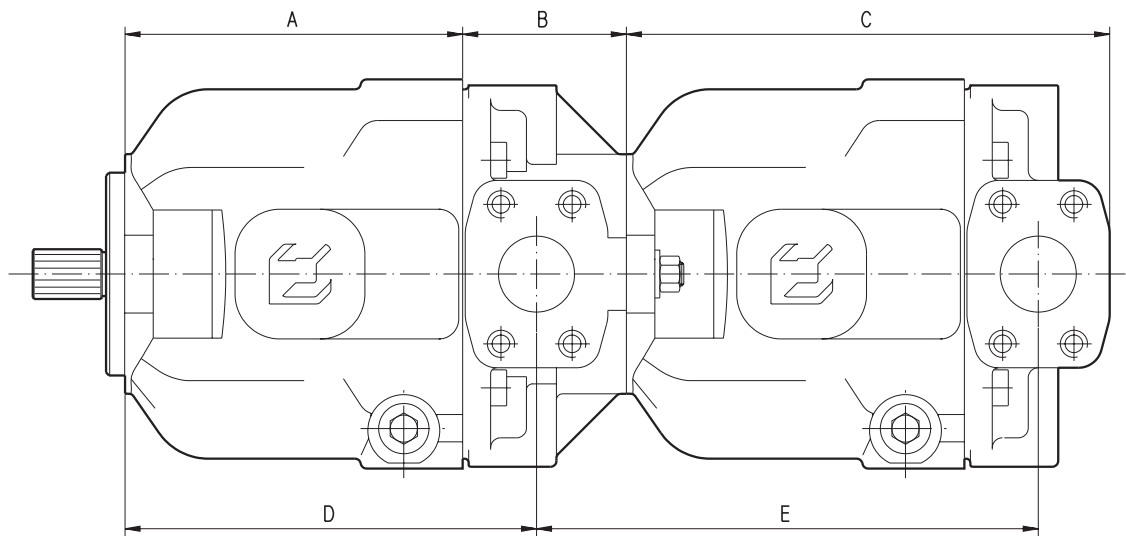
Replaces: 10.97

<b>M</b>	[Nm]	Torque
<b>V</b>	[cm <sup>3</sup> /rev]	Displacement
<b>Δp</b>	[bar]	Pressure
$\eta_m = \eta_m(V, \Delta p, n)$		Mechanical efficiency

$$M = \frac{\Delta p \cdot V}{62,83 \cdot \eta_m} \quad [\text{Nm}]$$

Notes: The torque absorbed from the shaft of the first pump results from the sum of the torques due to all single stages. The achieved value must not exceed the maximum torque limit given for the shaft of the first pump.

D037-D07/0799



04/10.99

Pump type	A	B		C	D	E	
	mm (in)	mm (in)	Flanged for	Code	mm (in)	mm (in)	
<b>LVP 30</b>	145 (5.709)	77 (3.031)	SAE A	AS1	213 (8.386)	183 (7.205)	222 (8.740)
			SAE B	AS5			
<b>LVP 48</b>	169 (6.654)	82 (3.228)	SAE A	AS1	242 (9.528)	206 (8.110)	251 (9.882)
			SAE B	AS5			
<b>LVP 75</b>	192 (7.559)	99 (3.898)	SAE A	AS1	276 (10.866)	235 (9.252)	291 (11.445)
			SAE B	AS5			296 (11.654)
		104 (4.094)	SAE C	AS7			

Overall dimensions: the same as the single pumps.  
Ports dimensions on page 12. - Screws are supplied with the first pump.

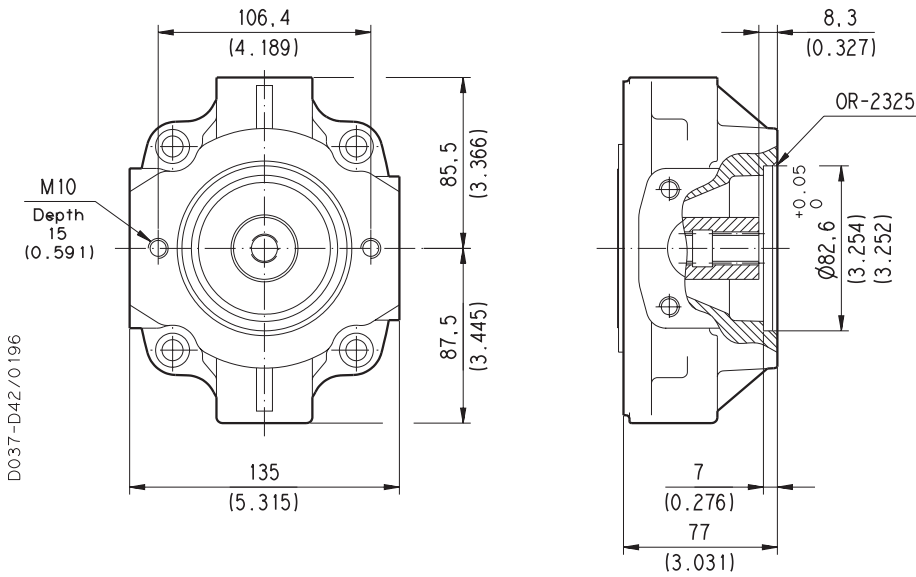
**INTERMEDIATE FLANGES**

**LVP 30**

**SAE "A" 2 HOLES**

**AS1**

SAE J744 Jul88



D037-D42/0196

Replaces: 04/10.99

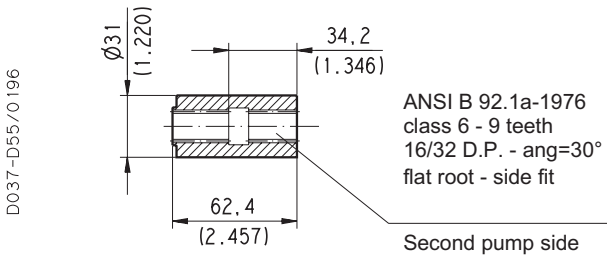
**COUPLINGS**

**LVP 30**

**SAE "A" SPLINE**

**03**

Available with flange code **AS1**



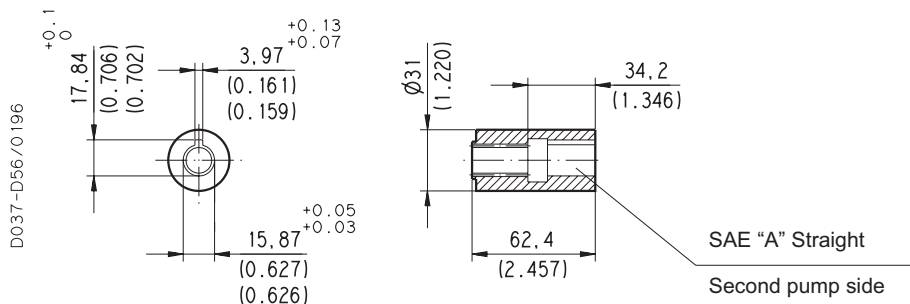
D037-D55/0196

**MAX 100 Nm (885 lbf in)**

**SAE "A" STRAIGHT**

**31**

Available with flange code **AS1**



D037-D56/0196

**MAX 60 Nm (531 lbf in)**

04/04.00

INTERMEDIATE FLANGES

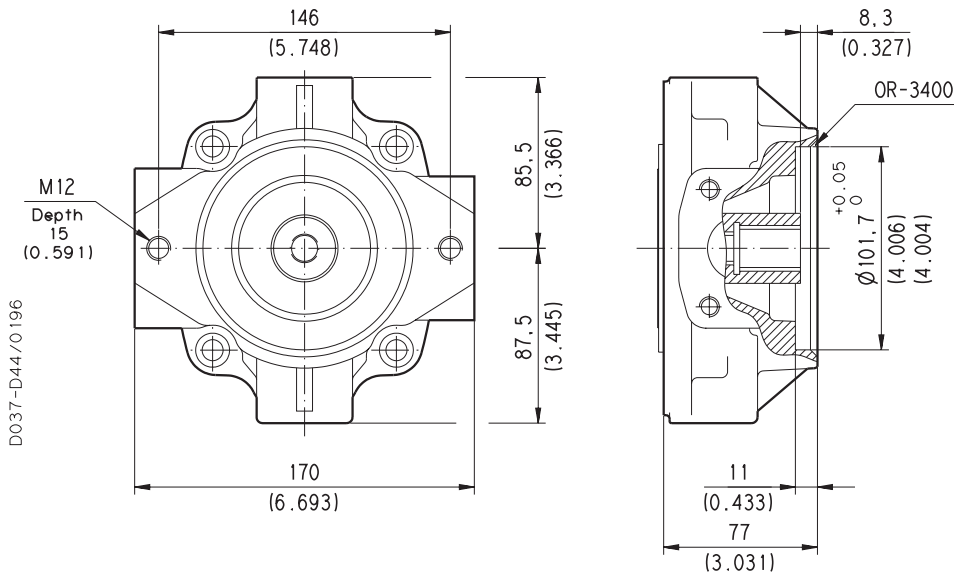
LVP 30

SAE "B" 2 HOLES

AS5

SAE J744 Jul88

Replaces: 04/10.99



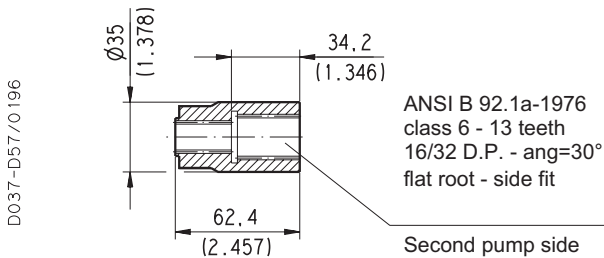
COUPLINGS

LVP 30

SAE "B" SPLINE

04

Available with flange code AS5

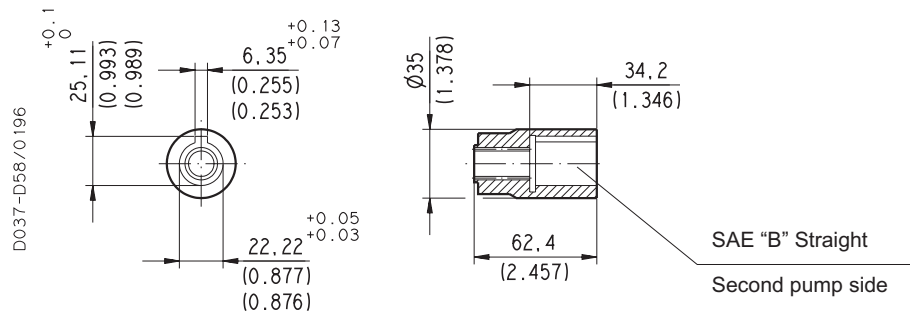


MAX 135 Nm (1195 lbf in)

SAE "B" STRAIGHT

32

Available with flange code AS5



MAX 145 Nm (1283 lbf in)

04/04.00

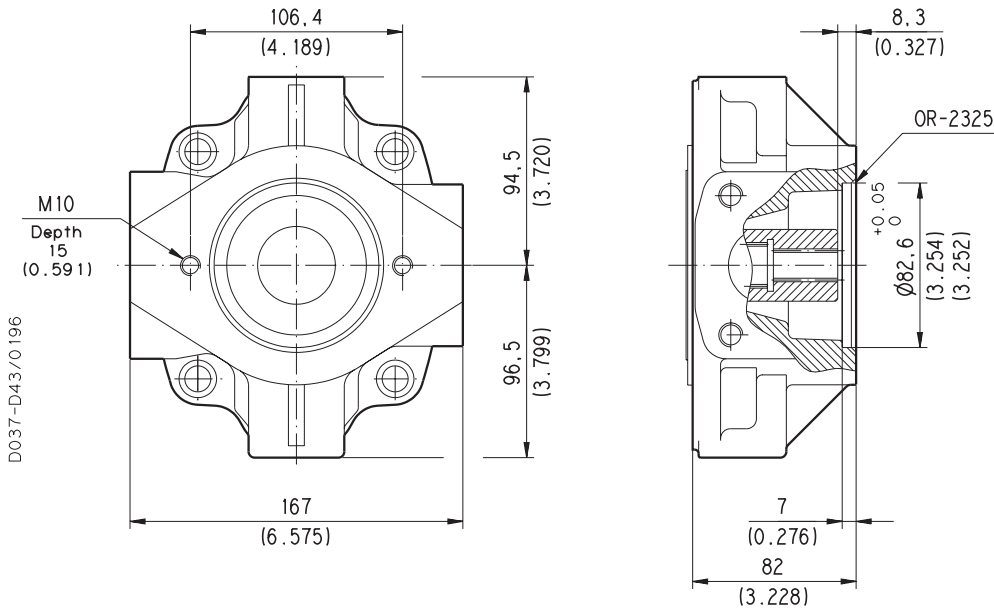
INTERMEDIATE FLANGES

LVP 48

SAE "A" 2 HOLES

AS1

SAE J744 Jul88



Replaces: 04/10.99

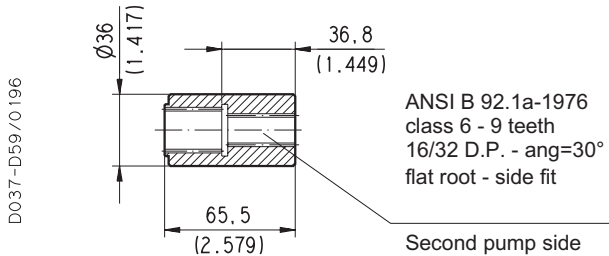
COUPLINGS

LVP 48

SAE "A" SPLINE

03

Available with flange code AS1

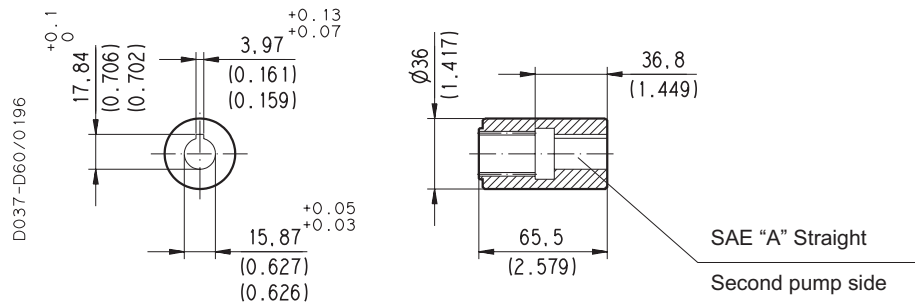


MAX 135 Nm (1195 lbf in)

SAE "A" STRAIGHT

31

Available with flange code AS1



MAX 60 Nm (531 lbf in)

04/04.00

**INTERMEDIATE FLANGES**

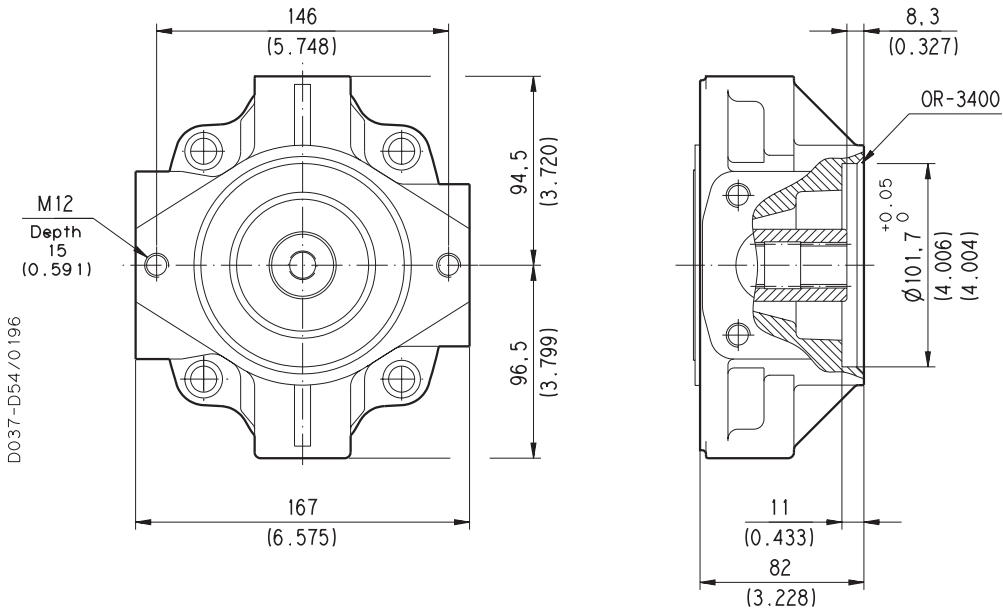
**LVP 48**

**SAE "B" 2 HOLES**

**AS5**

SAE J744 Jul88

Replaces: 04/10.99



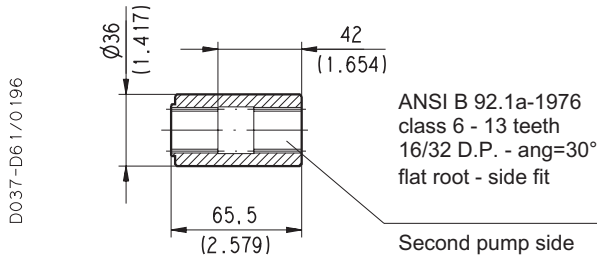
**COUPLINGS**

**LVP 48**

**SAE "B" SPLINE**

**04**

Available with flange code **AS5**

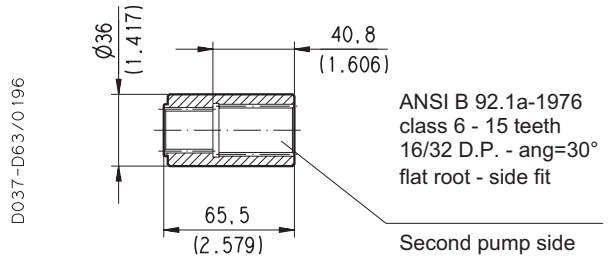


**MAX 250 Nm (2213 lbf in)**

**SAE "BB" SPLINE**

**05**

Available with flange code **AS5**

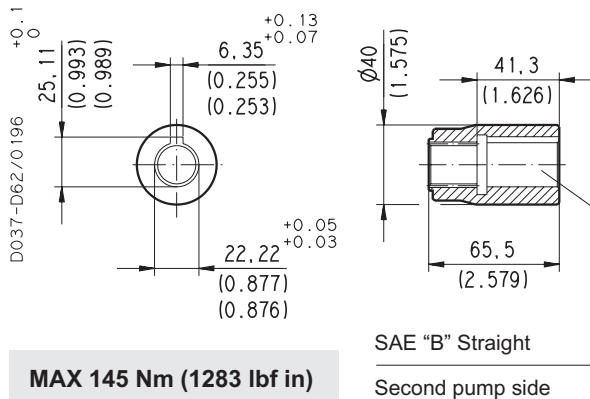


**MAX 250 Nm (2213 lbf in)**

**SAE "B" STRAIGHT**

**32**

Available with flange code **AS5**

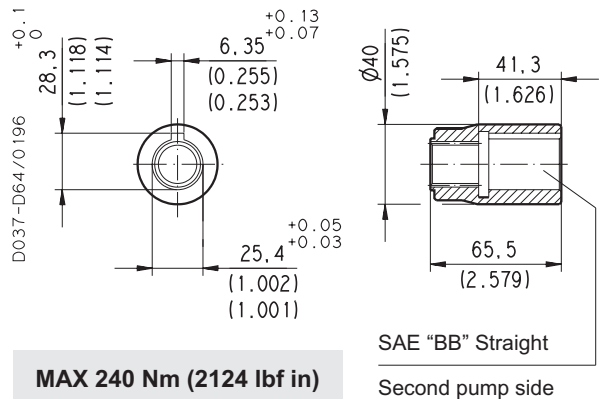


**MAX 145 Nm (1283 lbf in)**

**SAE "BB" STRAIGHT**

**33**

Available with flange code **AS5**



**MAX 240 Nm (2124 lbf in)**

04/04.00

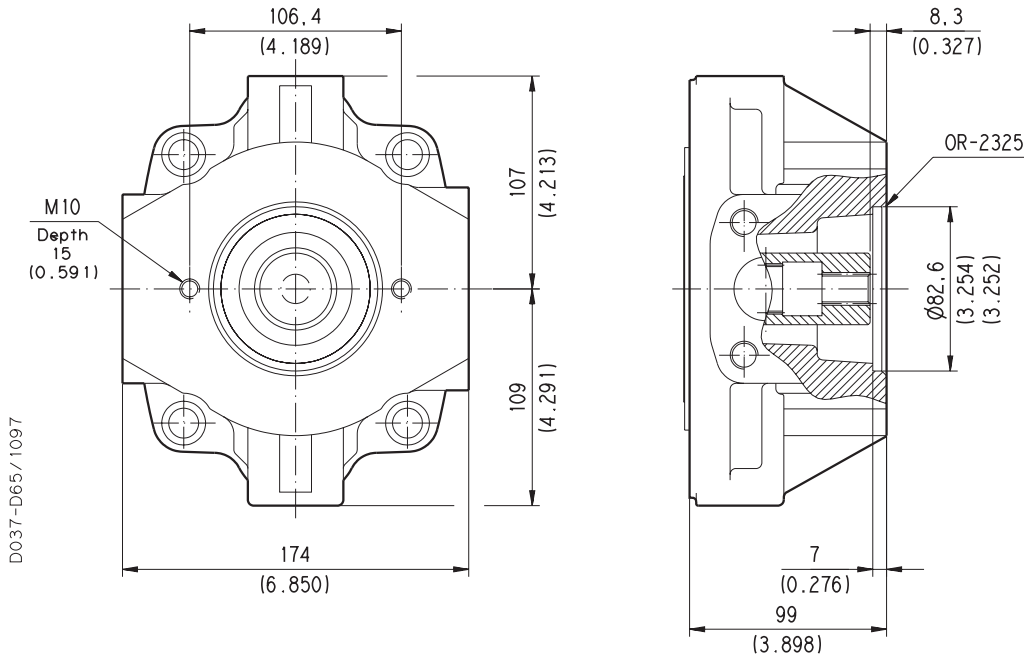
INTERMEDIATE FLANGES

LVP 75

SAE "A" 2 HOLES

AS1

SAE J744 Jul88



Replaces: 04/10.99

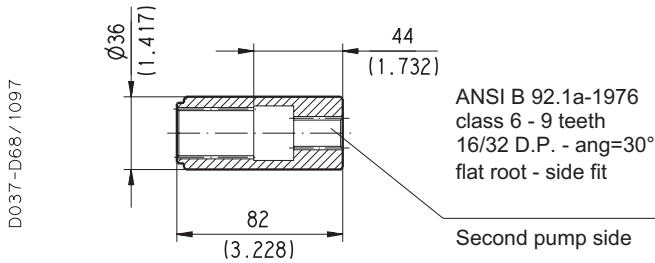
COUPLINGS

LVP 75

SAE "A" SPLINE

03

Available with flange code AS1

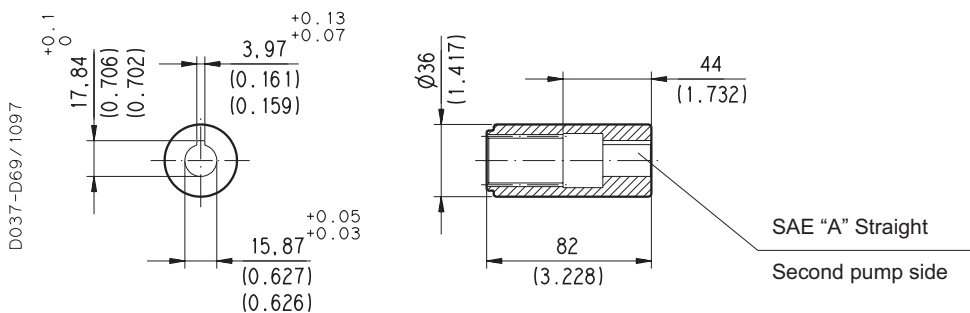


MAX 135 Nm (1195 lbf in)

SAE "A" STRAIGHT

31

Available with flange code AS1



MAX 60 Nm (531 lbf in)

04/04.00

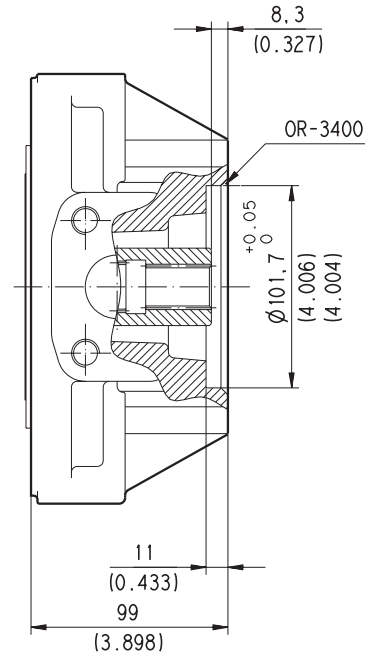
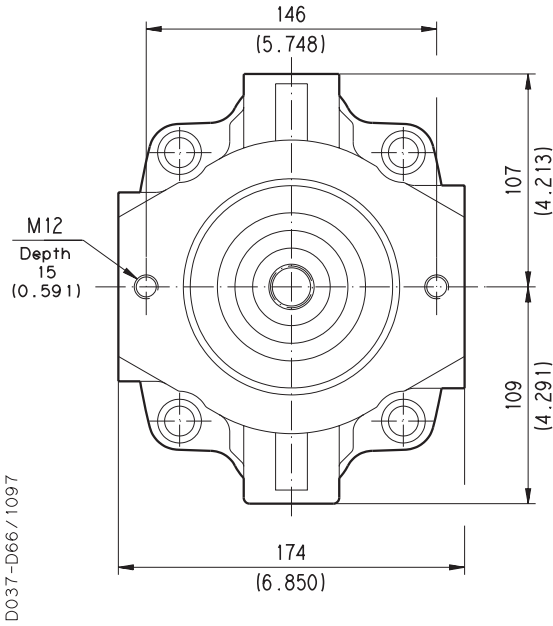
INTERMEDIATE FLANGES

LVP 75

SAE "B" 2 HOLES

AS5

SAE J744 Jul88



Replaces: 04/10.99

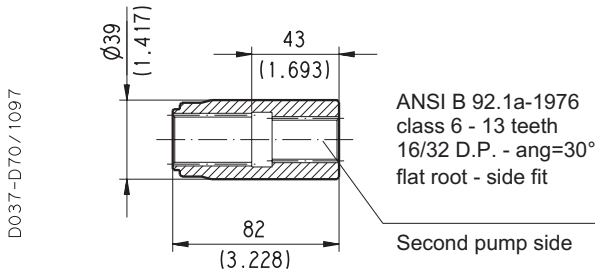
COUPLINGS

LVP 75

SAE "B" SPLINE

04

Available with flange code AS5



ANSI B 92.1a-1976 class 6 - 13 teeth 16/32 D.P. - ang=30° flat root - side fit

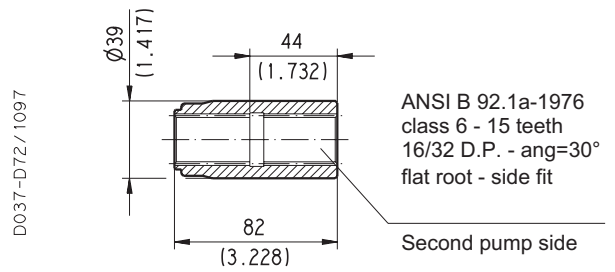
Second pump side

MAX 330 Nm (2921 lbf in)

SAE "BB" SPLINE

05

Available with flange code AS5



ANSI B 92.1a-1976 class 6 - 15 teeth 16/32 D.P. - ang=30° flat root - side fit

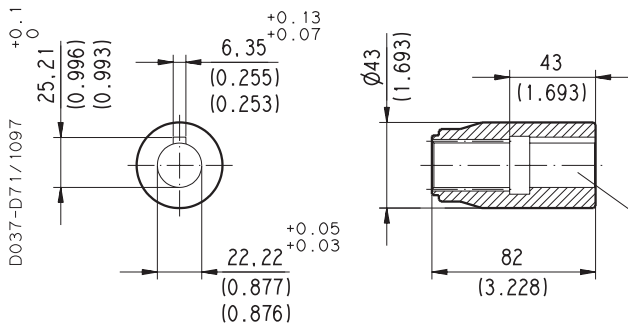
Second pump side

MAX 400 Nm (3540 lbf in)

SAE "B" STRAIGHT

32

Available with flange code AS5



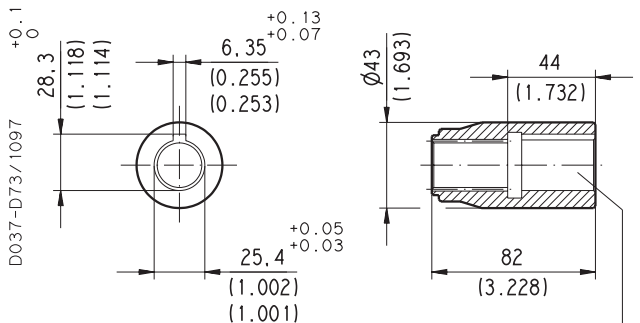
SAE "B" Straight Second pump side

MAX 145 Nm (1283 lbf in)

SAE "BB" STRAIGHT

33

Available with flange code AS5



SAE "BB" Straight Second pump side

MAX 240 Nm (2124 lbf in)

04/04.00

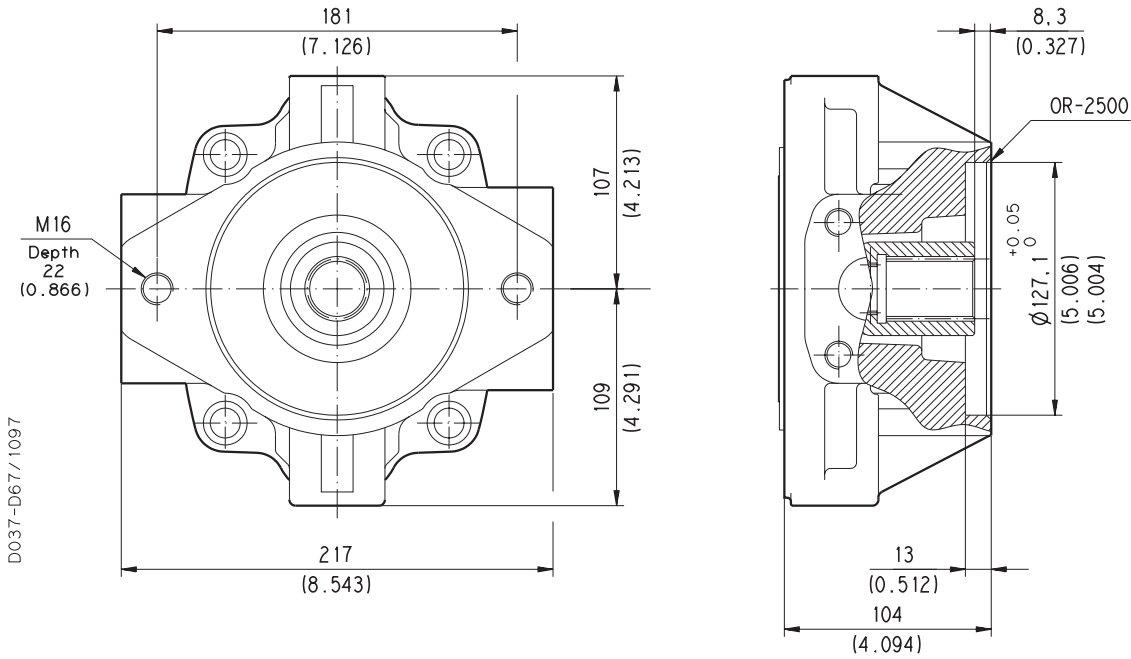
INTERMEDIATE FLANGES

LVP 75

SAE "C" 2 HOLES

AS7

SAE J744 Jul88



Replaces: 04/10.99

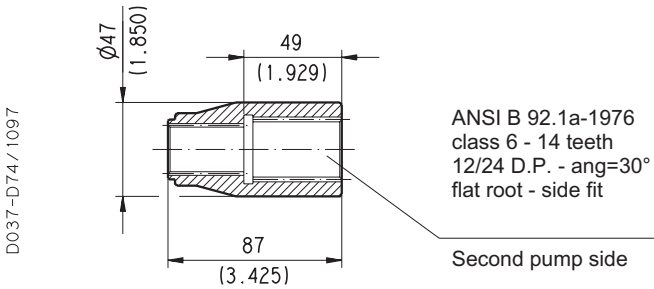
COUPLINGS

LVP 75

SAE "C" SPLINE

06

Available with flange code AS7

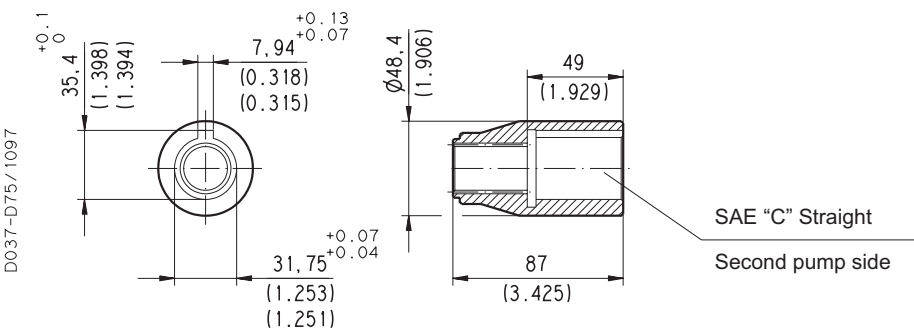


MAX 440 Nm (3894 lbf in)

SAE "C" STRAIGHT

34

Available with flange code AS7



MAX 495 Nm (4381 lbf in)

04/04.00



**HOW TO ORDER SINGLE PUMPS**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
Pump type	Rotation	Drive shaft	Mounting flange	Ports position	Ports IN/OUT	Seals	Regulators	Additional options	Fluid
LVP 30	S	04	S5	L	MD/QB	N	RP0	E	...

Replaces: 10.97

1 Pump type (max displacement)		CODE
in <sup>3</sup> /rev	cm <sup>3</sup> /rev	
1.74	29	LVP 30
2.76	46	LVP 48
4.38	73	LVP 75

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "B" straight		32
straight Ø 22		68
SAE "BB" spline (15teeth)		05
SAE "BB" straight		33
Straight Ø 25		69
SAE "C" spline (14 teeth)		06
SAE "C" straight		34
Straight Ø 32		70

4 Mounting flange		CODE
SAE "B" 2 holes		S5
ISO Ø 100		Z1
SAE "C" 2 holes		S7
ISO Ø 125		Z2

5 Ports position		CODE
Side		L
Rear		P

6 Inlet/outlet ports		CODE	
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	MD/QB
LVP 48	1"1/2	1"	ME/QC
LVP 75	2"	1"1/4	MF/QD
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	SD/VB
LVP 48	1"1/2	1"	SE/VC
LVP 75	2"	1"1/4	SF/VD

04/10.99

CODE	Seals	7
N	Buna (standard)	
V	Viton	

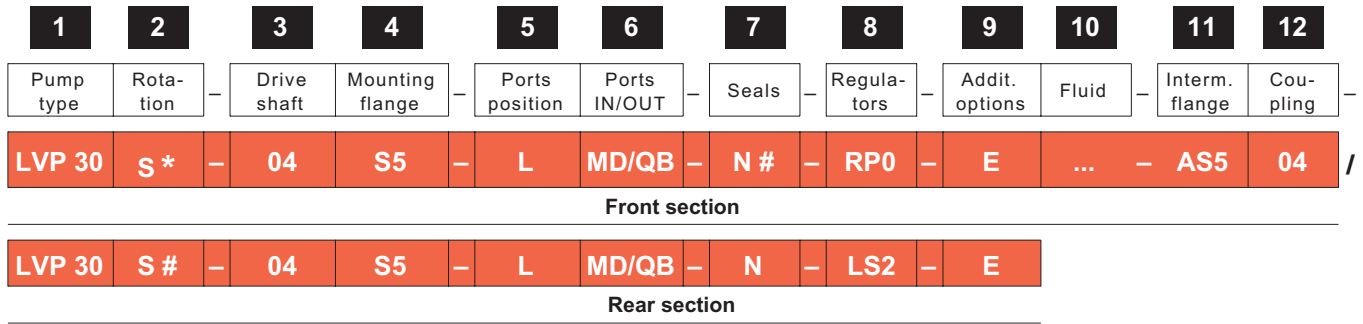
CODE	Regulators	8
RP0	Pressure compensator setting range 20 - 350 bar (a)	
LS0	Flow compensator (b)	
LS2	Flow compensator for remote control (b)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	
S	Proportional flow servocontrol (c)	
SE	Proportional flow servocontrol with integral electronics (c)	
SER	Proportional flow servocontrol with integral electronics and seq. module RES (c)	

CODE	Additional options (d)	9
U..	Unloading valve (e)	
E	Max. displacement limiter (f)	
F	Min. displacement limiter (f)	
G	Min. and max. displacement limiter (f)	

CODE	Fluid	10
...	Mineral oil (no CODE)	
H	HF fluid (please consult our sales department)	

- a) Standard setting 280 bar.
- b) Differential pressure standard setting 14 bar (setting range 10 - 40 bar).
- c) For more informations, please consult our sales department.
- d) For additional options, please consult our sales department.
- e) For voltages availability please see page 20.
- f) Max. up to 50% of the displacement.

**HOW TO ORDER MULTIPLE PUMPS**



1 Pump type (cilindr. max)		CODE
in <sup>3</sup> /rev	cm <sup>3</sup> /rev	
1.74	29	LVP 30
2.76	46	LVP 48
4.38	73	LVP 75

2 Rotation		CODE
Anti-clockwise		S
Clockwise		D

3 Drive shaft		CODE
SAE "B" spline (13 teeth)		04
SAE "B" straight		32
straight Ø 22		68
SAE "BB" spline (15 teeth)		05
SAE "BB" straight		33
Straight Ø 25		69
SAE "C" spline (14 teeth)		06
SAE "C" straight		34
Straight Ø 32		70

4 Mounting flange		CODE
SAE "B" 2 holes		S5
ISO Ø 100		Z1
SAE "C" 2 holes		S7
ISO Ø 125		Z2

5 Ports position		CODE
Side		L
Rear (a)		P

6 Inlet/outlet ports		CODE	
SAE FLANGED PORTS METRIC THREAD (SSM)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	MD/QB
LVP 48	1"1/2	1"	ME/QC
LVP 75	2"	1"1/4	MF/QD
SAE FLANGED PORTS UNC THREAD (SSS)			
Pump type	Nominal size		
	Inlet IN	Outlet OUT	
	SAE 3000	SAE 6000	
LVP 30	1"1/4	3/4"	SD/VB
LVP 48	1"1/2	1"	SE/VC
LVP 75	2"	1"1/4	SF/VD

CODE	Seals	7
N	Buna (standard)	
V	Viton	

CODE	Regulators	8
RP0	Pressure compensator setting range 20 - 350 bar (b)	
LS0	Flow compensator (c)	
LS2	Flow compensator for remote control (c)	
LS3	Flow compensator for internal control (b)	
RN0	Torque limiter - standard	
RN1	Torque limiter - internal pilot	
S	Proportional flow servocontrol (d)	
SE	Proportional flow servocontrol with integral electronics (d)	
SER	Proportional flow servocontrol with integral electronics and seq. module RES (d)	

CODE	Additional options (e)	9
U..	Unloading valve (f)	
E	Max. displacement limiter (g-h)	
F	Min. displacement limiter (g-h)	
G	Min. and max. displacement limiter (g-h)	

CODE	Fluid	10
...	Mineral oil (no CODE)	
H	HF fluid (please consult our sales department)	

CODE	Intermediate flange	11
AS1	SAE "A" 2 holes	
AS5	SAE "B" 2 holes	
AS7	SAE "C" 2 holes	

CODE	Coupling	12
03	SAE "A" spline (9 teeth)	
31	SAE "A" straight	
04	SAE "B" spline (13 teeth)	
32	SAE "B" straight	
05	SAE "BB" spline (15 teeth)	
33	SAE "BB" straight	
06	SAE "C" spline (14 teeth)	
34	SAE "C" straight	

\* For assembled multiple pumps, the rotation code letter is added at the end of the complete ordering code.  
 # Omit code only if ordering assembled multiple pumps.  
 a) Not available for front sections.  
 b) Standard setting 280 bar.

c) Differential pressure standard setting 14 bar (setting range 10 - 40 bar).  
 d) For more informations, please consult our sales department.  
 e) For additional options, please consult our sales department.  
 f) For voltages availability please see page 20.  
 g) Max. up to 50% of the displacement.  
 h) LVP30 with flange AS5 and LVP75 with flange AS7 are not available.

Replaces: 10.97

04/10.1999

**ORDER EXAMPLE**

**SINGLE PUMPS**

Replaces: 04/10.99

Standard pump

**LVP 30 S-04 S5-L MD/QB-N-LS2**

Pump with special features

**LVP 30 S-04 S5-L MD/QB-N-LS2-E H**

**ASSEMBLED MULTIPLE PUMPS**

Standard double pump

**LVP 30-04 S5-L MD/QB-RP0-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S**

Double pump with special features

**LVP 75-06 S7-L MF/QD-RP0-E H-AS5 04 / 30-04 S5-L MD/QB-N-LS2 S**

Double Plata pump with different series pumps

**LVP 30-04 S5-L MD/QB-RP0-E-AS1 03 / PLP20.4-03 S1-L EA/EA-N S**

**INDIVIDUAL SECTIONS**

Front section

**LVP 30 S-04 S5-L MD/QB-N-RP0-AS5 04**

Rear section

**LVP 30 S-04 S5-L MD/QB-N-LS2**

04/04.00



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