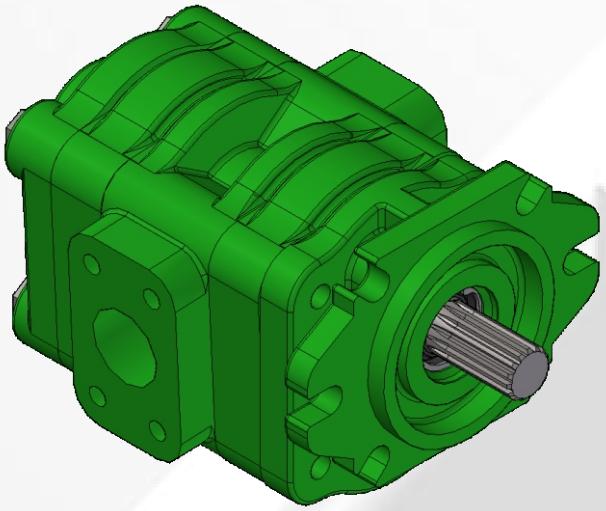
GEAR PUMPS, MOTORS AND FLOW DIVIDERS

“H” SERIES GROUP 3

Technical catalogue



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COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
=ISO 9001/2000=

salami™

INDEX

E0.12.0108.02.01

GENERAL

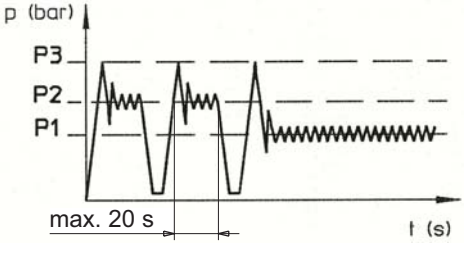
H series gear pumps and motors in spheroidal cast-iron are available in 8 different displacements from 21 cm3/rev. to 90 cm3/rev. (from 1.25 cu.in./rev. to 5.49 cu.in./rev.).
All pumps are available as multiple units of the same series.
With all sizes of pumps and motors there are options of shafts, flanges and ports as per SAE standards.

H series gear pumps and motors offer:
- High volumetric efficiency by innovative design and accurate control of machining tolerances
- Axial compesation is achieved by the use of floating bushes that allow high volumetric efficienty throughout the pressure range.
- DU bearings ensure high pressure capability
- 12 teeth integral one-piece gear and shaft
- Spheroidal cast-iron body
- Double shafts seals
- Nitrile seals as standard and viton seals in high temperature applications.
  All pumps and motors are tested after assembly and run in to ensure the high standard required by **SALAMI** engineers.

WORKING CONDITIONS

THE VALUES OF PRESSURE ARE ABSOLUTE	
- Pump inlet pressure	0,7 to 2,5 bar *10* to *36 psi*
- Return pipe line continuos pressure for motors	MAX 2,5 bar - *36 psi*
- Return pipe line intermit. pressure for motors	MAX 6 bar for 20 sec - *85 psi*
- Return pipe line peak pressure for motors	MAX 15 bar - *215 psi*
- Minimum operating fluid viscosity	12 mm^2 / sec
- Max starting viscosity	800 mm^2 / sec
- Suggested fluid viscosity range	17 - 65 mm^2 / sec
- Fluid operating temperature range	-15 to +85 °C
- Hydraulic fluid	mineral oil

Definition of pressures



P1 = Continuos operating pressure
P2 = Intermittent operating pressure (1/3 of working time)
P3 = Peak pressure

FIRE RESISTENT FLUID

TYPE	Description	Max pressure	Max speed (r.p.m)	Temperature
HFB	Water in oil emulsion with 40% water	125 bar (1800 psi)	2500	+1° C +65° C
HFC	Water glycol	125 bar (1800 psi)	1500	-20° C +65° C
HFD	Phosphate esters	150 bar (2175 psi)	1750	-10° C +80° C
HFA	Oil emulsion in water 5 - 15 % of oil	70 bar (1000 psi)	1500	+2° C +55° C

DRIVE SHAFT

Radial and axial loads on the shafts must be avoided since they reduce the life of the unit. Pumps driven by power take - off on engines must always be connected by placing an "Oldham" coupling or coupling having convex toothed hub.
This is to ensure that inevitable misalignment during assembly is reduced to minimum.

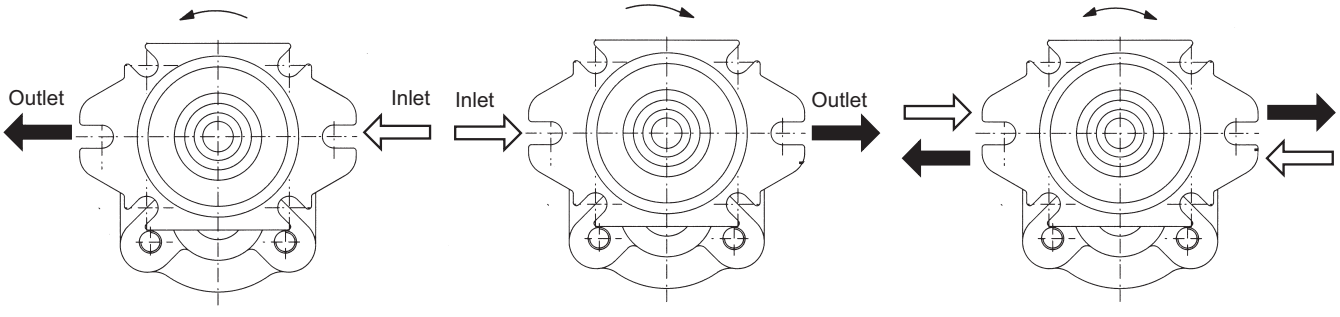
HYDRAULIC PIPE LINE

To ensure favourable suction conditions it is important to keep pressure drop in inlet line to a minimum (see WORKING CONDITIONS).
To calculate hydraulic pipe size for a machine, the designer ca use as an approximate guide the following figures:

from 1 to 2 m/sec. on suction line from 6 to 10 m/sec. on pressure line	from 3,28 to 6,36 ft/sec. on suction line from 19,7 to 32,8 ft/sec. on pressure line

The lowest speed in pipes is recomended when the temperature difference is high and/or for continuos duty. The highest value is recommended when the temperature difference is low and/or for intermittent duty.

PUMP ROTATION DIRECTION VIEWED AT THE DRIVE SHAFT



Anti - clockwise rotation | Clockwise rotation | Reversible rotation

FILTRATION INDEX RECOMMENDED

Working pressure	**> 200 bar / *2900 psi***	**< 200 bar / *2900 psi***
Contamination class NAS 1638	9	10
Contamination class ISO 4406	18/15	19/16
Achieved with filter $ß_x$ =75	15 µm	25 µm

TIGHTENING TORQUE

OUR BOLTS AND TIE-RODS HAVE ALWAYS HEATING TREATMENT OF BLACK BURNISHING

PUMP TYPE		BOLT TYPE		TORQUE Nm	FOR SCREWS ZINC PLATED REDUCE TIGHTENING TORQUE OF 10%
SIZE	SERIE	DIAMETER	CLASS		
1	B SINGLE	M 8 x1.25	8.8	20.5 - 25.5	
1	B MULTIPLE	M 8 x1.25	8.8	20.5 - 25.5	
2	B SINGLE	M 10x1.5	8.8	47-51	
2	B MULTIPLE	M 10x1.5	10.9	50-55	
2.5	B SINGLE	M 12	8.8	70-75	
2.5	B MULTIPLE	M 12	10.9	75-80	
3	B	M 10	HEX. BOLT **10.9** HEX. SOCKET H.C.B. **12.9**	47-51	
3.5	C	M 12	8.8	74-85	
3	H	M 14	10.9	BOLT 180 150-160 TIE ROD	

COMMON FORMULAS

C = Input torque $= \dfrac{q \cdot \Delta p}{62.8 \cdot \eta_m}$ (Nm)

P = Input power $= \dfrac{q \cdot n \cdot \Delta p \; 10^{-3}}{600 \; \eta_m}$ (kW)

Q = Outlet flow $= \dfrac{q \cdot n \cdot \eta_v}{1000}$ (l/min)

LEGENDA

Δp = Working pressure (bar)

q = Displacement (cm^3/rev)

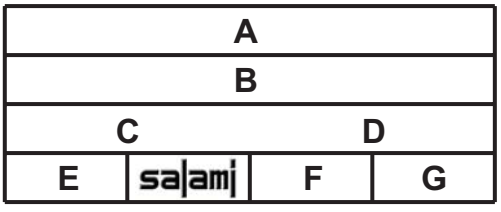
n = Speed (min^{-1})

η_m = Mechanical eff. (0.92)

η_v = Volumetric eff. (0.95)

Description of the product identification label

Based on the firm certification ISO 9001 - UNI EN 29001, section 4.8 (identification and tracebility of the product), we have adopted a new identification label starting from the 1st march 1995. Pls, see following example:



A = Product short descritpion (VD8A/FDD/U4G).

B = Customer part number.

C = Salami part number (6235 0025 0).

D = Production batch (for Salami management)

E = Rotation sense (only for pumps).

F = Manufacturing date (see data sheet here below)

G = Progressive number of assembling.

Only for pumps 2PB and 2PZ (except triple 2PB) the identification product is marked on the top of the pump body as shown here below:

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
JANUARY	0A	1A	2A	3A	4A	5A	6A	7A	8M	9M	0M	1M	2M	3M	4M	5M
FEBRUARY	0B	1B	2B	3B	4B	5B	6B	7B	8N	9N	0N	1N	2N	3N	4N	5N
MARCH	0C	1C	2C	3C	4C	5C	6C	7C	8P	9P	0P	1P	2P	3P	4P	5P
APRIL	0D	1D	2D	3D	4D	5D	6D	7D	8Q	9Q	0Q	1Q	2Q	3Q	4Q	5Q
MAY	0E	1E	2E	3E	4E	5E	6E	7E	8R	9R	0R	1R	2R	3R	4R	5R
JUNE	0F	1F	2F	3F	4F	5F	6F	7F	8S	9S	0S	1S	2S	3S	4S	5S
JULY	0G	1G	2G	3G	4G	5G	6G	7G	8T	9T	0T	1T	2T	3T	4T	5T
AUGUST	0H	1H	2H	3H	4H	5H	6H	7H	8U	9U	0U	1U	2U	3U	4U	5U
SEPTEMBER	0I	1I	2I	3I	4I	5I	6I	7I	8V	9V	0V	1V	2V	3V	4V	5V
OCTOBER	0J	1J	2J	3J	4J	5J	6J	7J	8Z	9Z	0Z	1Z	2Z	3Z	4Z	5Z
NOVEMBER	0K	1K	2K	3K	4K	5K	6K	7K	8X	9X	0X	1X	2X	3X	4X	5X
DECEMBER	0L	1L	2L	3L	4L	5L	6L	7L	8Y	9Y	0Y	1Y	2Y	3Y	4Y	5Y

Rotation changing instructions

Before starting, be sure that the pump is cleaned externally as well as the working area to avoid that particles dangerous for pump working can find their way into the pump.
Pump represented is a clockwise rotation pump.
To obtain an anti_clockwise rotation read carefully the following instructions.

Picture "A"

1 - Loosen and fully unscrew the clamp bolts.
2 - Lay the pump on the working area in order to have the mounting flange turned upside.
3 - Coat the shaft extension with grease to avoid damaging the shaft seal.
4 - Remove the flange and lay it on the working area;
verify that the seal is correctly located in the body seat.

Picture "B"

1 - Mark the position of the thrust plate, relative to the body.
2 - Remove the thrust plate and the driving gear taking care to avoid driven gear axial shifts.

Picture "C"

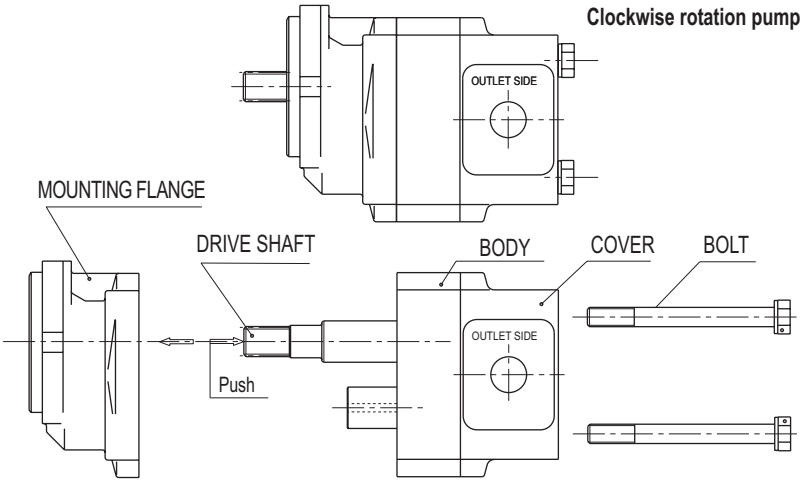
1 - Draw out the driven gear from its housing, taking care to avoid rear cover axial shifts.
2 - Re-locate the driven gear in the position previously occupied by the driving gear.

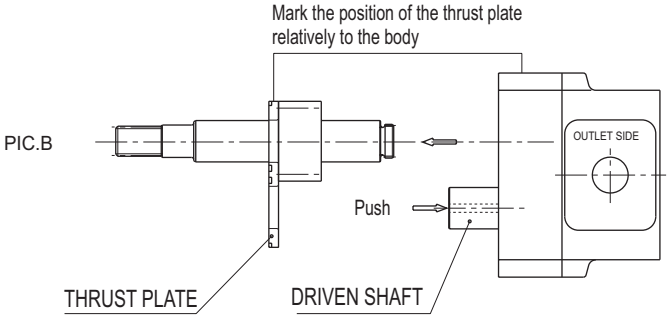
Picture "D"

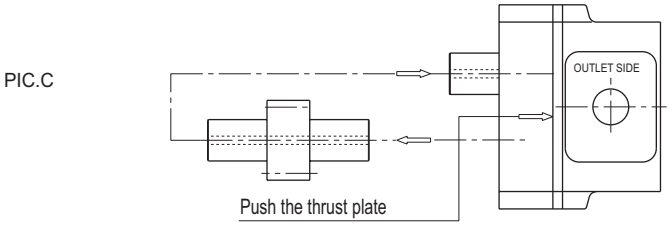
1 - Re-locate the driving gear in the position previously occupied by the driven gear.
2 - Replace the thrust plate taking care that:
- respect the marking you have done previously relative to the body
- surface containing the seal is visible
- seal and its protection are correctly located

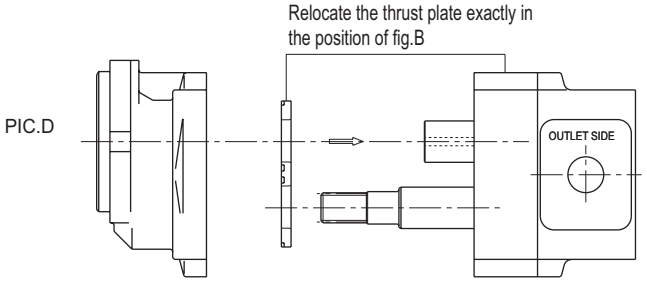
Picture "E"

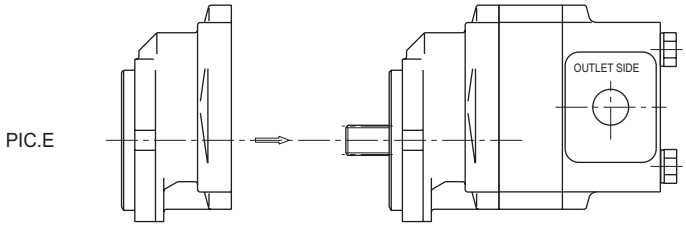
4 - Clean body and mounting flange refaced surfaces.
5 - Verify that the two plugs are located in the body.
6 - Refit the mounting flange, turned 180° from its original position.
7 - Replace the clamp bolts and tighten crosswise evenly to a torque of 150 - 160 Nm.
5 - Check that the shaft rotates freely.
6 - Mark on the flange the new direction of rotation.



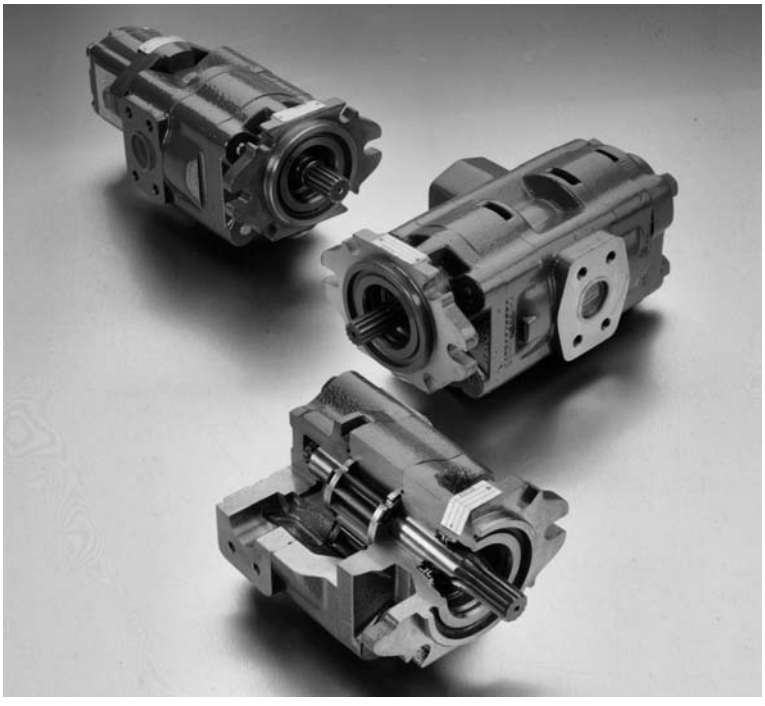




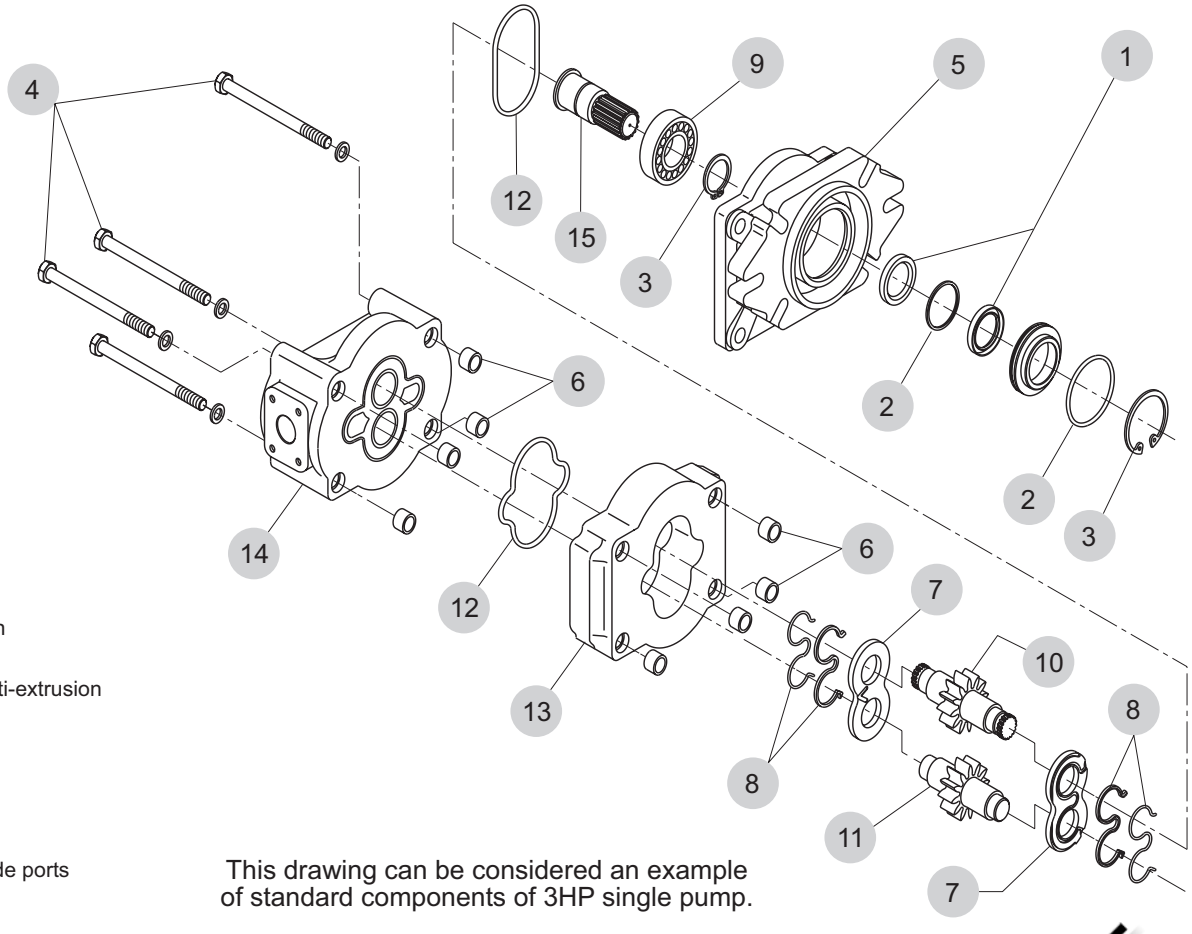




IMPORTANT: TO AVOID A PERFORMANCE LOSS DO NOT CHANGE MOTOR ROTATION



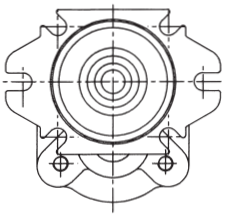
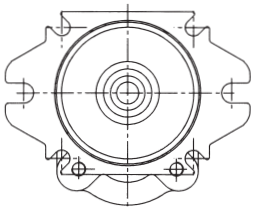
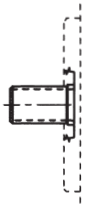
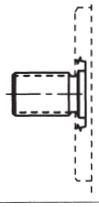
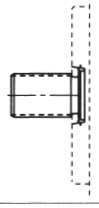
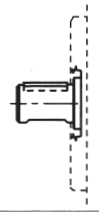
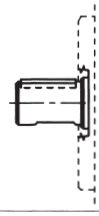
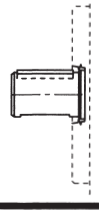
SINGLE GEAR PUMP/MOTOR IN DETAIL



1 - Shaft seals
2 - Washer
3 - Stop ring
4 - Bolts
5 - Flange
6 - Reference pin
7 - Thrust plate
8 - Seals and anti-extrusion
9 - Bearing
10 - Drive gear
11 - Driven gear
12 - Body seals
13 - Body
14 - Cover with side ports
15 - End of shaft

This drawing can be considered an example of standard components of 3HP single pump.

COMBINATION WITH TYPES OF FLANGES AND DRIVES SHAFTS AVAILABLE

	S3	R8
3HP/M		
 ***55***	55 S3	
 ***56***	56 S3	
 ***57***		57 R8
 ***87***	87 S3	
 ***88***	88 S3	
 ***89***		89 R8

Displacements up to 5.49 cu.in./rev
Pressure up to 4700 psi

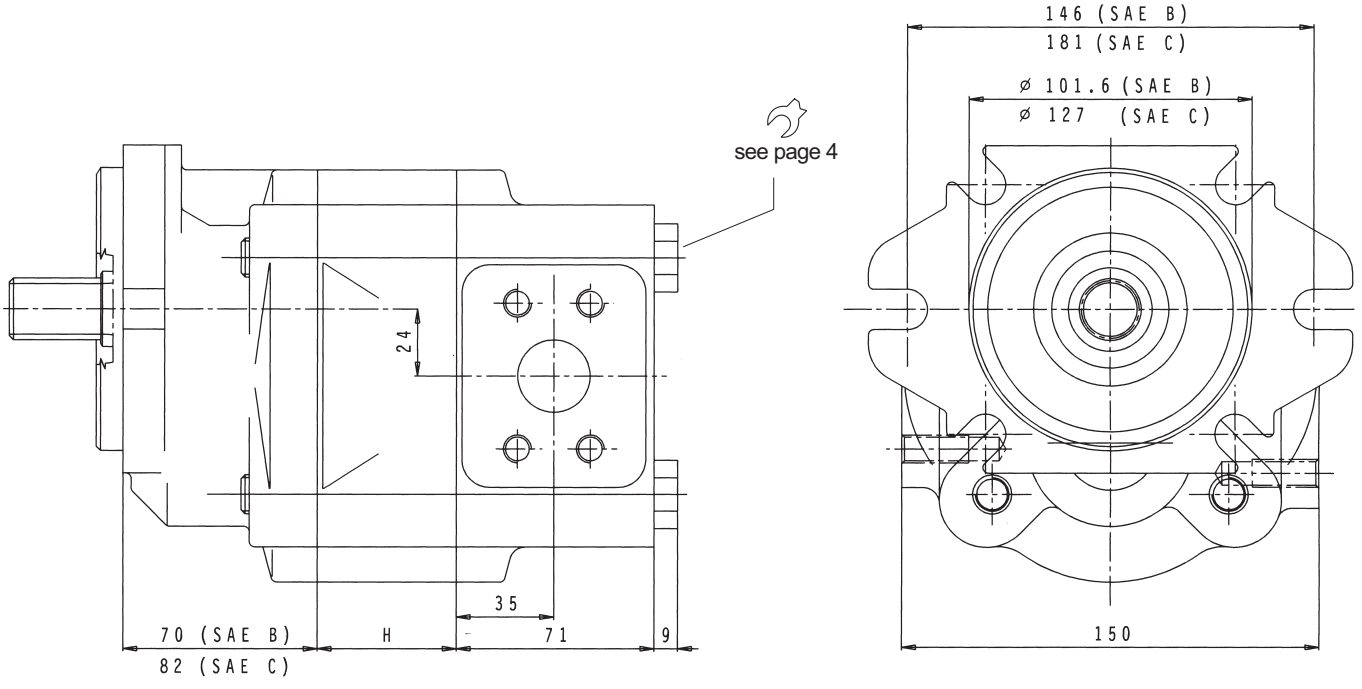
GEAR PUMPS AND MOTORS

Displacements up to 90 cm^3/rev
Pressure up to 325 bar

ASSEMBLING DIMENSIONS AND VALUES OF PRESSURE AND SPEED

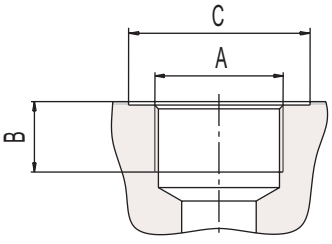
TYPE			21*	32	38	46	55	63	71	80	90*
Displacement		cm^3/rev. *cu.in./rev.*	23.5 *1.43*	33.4 *2.04*	39 *2.38*	46 *2.81*	55 *3.36*	63.8 *3.89*	72.9 *4.45*	82 *5.00*	90 *5.49*
Dimension H		mm *in.*	23.5 *1.43*	33.4 *2.04*	39 *2.38*	46 *2.81*	55 *3.36*	63.8 *3.89*	72.9 *4.45*	82 *5.00*	90 *5.49*
Working pressure		bar *psi*	280 *4000*			250 *3600*		230 *3300*	210 *3000*	175 *2530*	160 *2300*
Intermittent pressure	p2	bar *psi*	300 *4300*			280 *4000*		250 *3600*	230 *3300*	200 *2900*	180 *2600*
Peak pressure	p3	bar *psi*	325 *4700*			300 *4300*		275 *3950*	250 *3600*	220 *3140*	200 *2900*
Max speed at	p2	rpm	3000				2750		2250	2000	1800
Min. speed at	p1	rpm	450				350		300		300
Weight		kg *lbs*	14 *30.86*	16.2 *35.72*	16.5 *36.38*	17.2 *37.93*	18 *39.69*	18.6 *41.01*	19.3 *42.56*	20.1 *44.32*	21 *46.31*

***Displacement 21 available only with drive shafts codes 55 - 56**
***Available for quantity, please contact our sales department.**

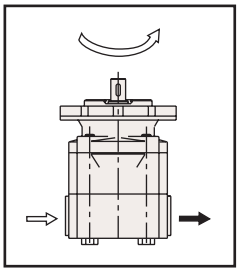


THREADED SIDE PORTS

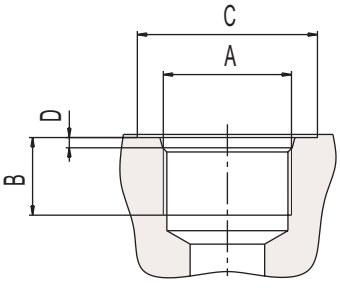
code G



TYPE	INLET			OUTLET		
	A	B	C	A	B	C
From 21 to 55	G 1”1/4	20 (0.79”)	56 (2.20”)	G 1”	18 (0.71”)	56 (2.20”)
From 63 to 90	G 1”1/2	20 (0.79”)	60 (2.36”)	G 1”1/4	20 (0.79”)	60 (2.36”)



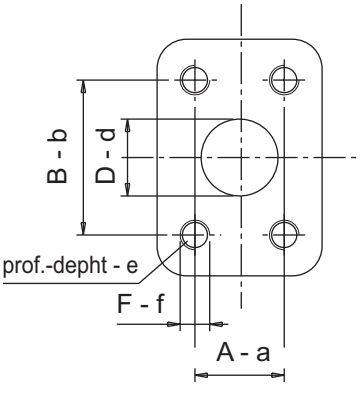
code R



TYPE	INLET				OUTLET			
	A	B	C	D	A	B	C	D
From 21 to 55	1”5/16 UN (SAE 16)	19 (0.75”)	44 (1.73”)	3.3 (0.13”)	1”3/16 UN (SAE 14)	19 (0.75”)	41 (1.61”)	3.3 (0.13”)
From 63 to 90	1”5/8 UN (SAE 20)		46 (1.81”)		1”5/16 UN (SAE 16)		44 (1.73”)	

FLANGED SIDE PORTS

code W

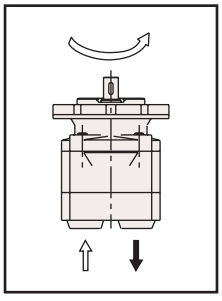


TYPE	INLET					OUTLET				
	Φ D	A	B	F	e	ϕ d	a	b	f	e
From 21 to 55	32 (1”1/4)	30.2 (1.19”)	58.7 (2.31”)	M10	22.4 (0.88”)	26 (1”)	26.2 (1.03”)	52.4 (2.06”)	M10	22.4 (0.88”)
From 63 to 90	38 (1”1/2)	35.7 (1.41”)	69.8 (2.75”)	M12	24 (0.94”)	32 (1”1/4)	30.2 (1.19”)	58.7 (2.31”)		

code S

TYPE	INLET					OUTLET				
	Φ D	A	B	F	e	ϕ d	a	b	f	e
From 21 to 55	32 (1”1/4)	30.2 (1.19”)	58.7 (2.31”)	7/16-14 UNC	22.4 (0.88”)	26 (1”)	26.2 (1.03”)	52.4 (2.06”)	3/8-16 UNC	22.4 (0.88”)
From 63 to 90	38 (1”1/2)	35.7 (1.41”)	69.8 (2.75”)	1/2-13 UNC	24 (0.94”)	32 (1”1/4)	30.2 (1.19”)	58.7 (2.31”)	7/16-14 UNC	

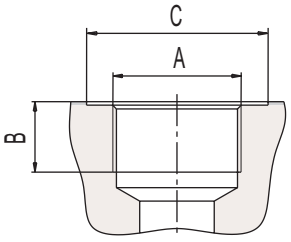
THREADED REAR PORTS



TYPE		INLET			OUTLET		
		A	B	C	A	B	C
Motors From 21 to 90	Pumps From 21 to 90	G 1”1/4	20 (0.79”)	56 (2.20”)	G 1”	18 (0.71”)	44 (1.73”)

To obtain a motor with the same rotation of the pump, reverse inlet/outlet ports.

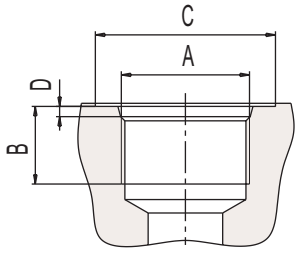
code G **3**



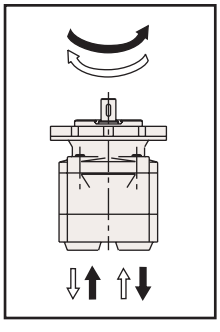
TYPE		INLET				OUTLET			
		A	B	C	D	A	B	C	D
Motors From 21 to 90	Pumps From 21 to 90	1”5/16 UN (SAE 16)	19 (0.75”)	44 (1.73”)	3.3 (0.13”)	1”3/16 UN (SAE 14)	19 (0.75”)	41 (1.61”)	3.3 (0.13”)

To obtain a motor with the same rotation of the pump, reverse inlet/outlet ports.

code R **3**

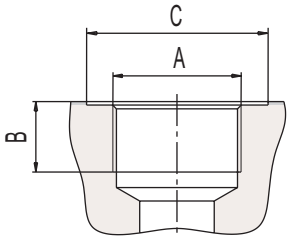


BIDIRECTIONAL GEAR PUMPS AND MOTORS - THREADED REAR PORTS



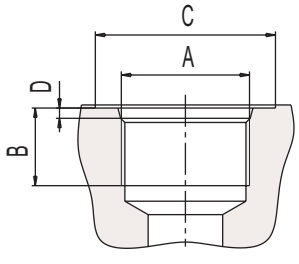
TYPE		INLET/OUTLET		
		A	B	C
MOTORS	From 21 to 90	G 1”	18 (0.71”)	56 (2.20”)
PUMPS	From 21 to 90	G 1”1/4	20 (0.79”)	60 (2.36”)

code G **3**



TYPE		INLET/OUTLET			
		A	B	C	D
MOTORS	From 21 to 90	1”5/16 UN (SAE 16)	19 (0.75”)	44 (1.73”)	3.3 (0.13”)
PUMPS	From 21 to 90	1”5/8 UN (SAE 20)	19 (0.75”)	46 (1.81”)	3.3 (0.13”)

code R **3**

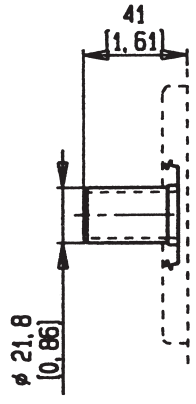


DRIVE SHAFTS

As you can see on pages 13 and 14 (MOUNTING FLANGES), some of those shafts are monolithic constructions, while others are composed by two pieces.
In another case the same shaft can be monolithic or composed by two pieces depending on flange type.

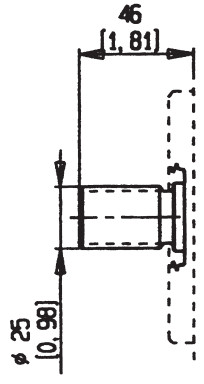
Monolithic construction:
max torque 320 Nm

Composed by two pieces:
max torque 300 Nm



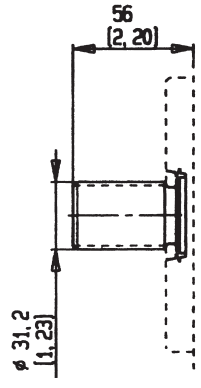
code 55 SAE B Splined 13T-16/32 DP

Monolithic construction:
max torque 480 Nm



code 56 SAE BB Splined 15T-16/32 DP

Available only
composed by two pieces:
max torque 220 Nm

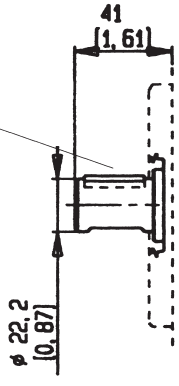


code 57 SAE C Splined 14T-12/24 DP

Key (6.35 x 6.35 x 17.7)

Monolithic construction:
max torque 220 Nm

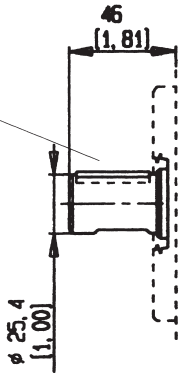
Composed by two pieces:
max torque 220 Nm



code 87 SAE B Parallel

Key (6.35 x 6.35 x 25.4)

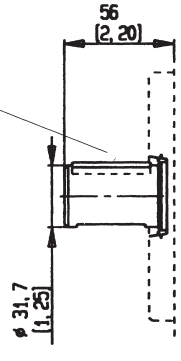
Monolithic construction:
max torque 320 Nm



code 88 SAE BB Parallel

Key (7.94 x 7.94 x 39.7)

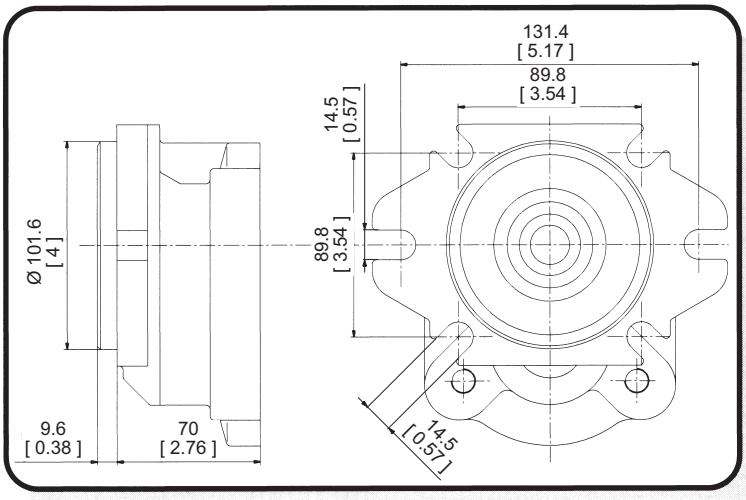
Available only
composed by two pieces:
max torque 300 Nm



code 89 SAE C Parallel

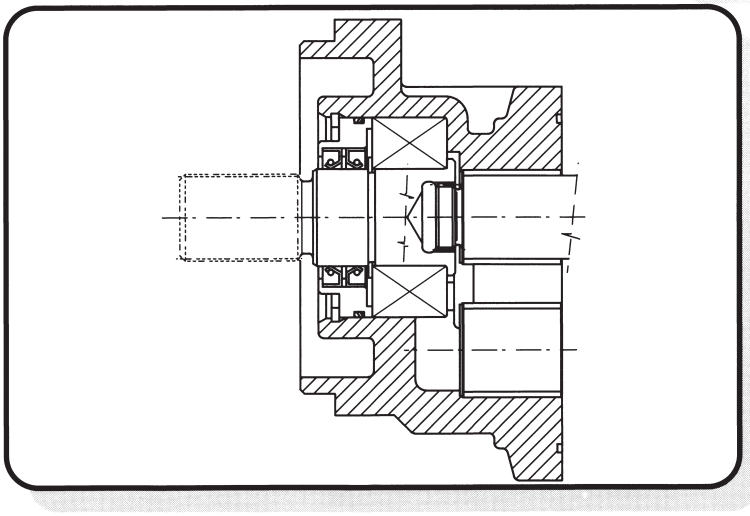
MOUNTING FLANGES

SAE B



code S3

SAE B Mounting Flange
For shafts code 55 - 56 - 87 - 88

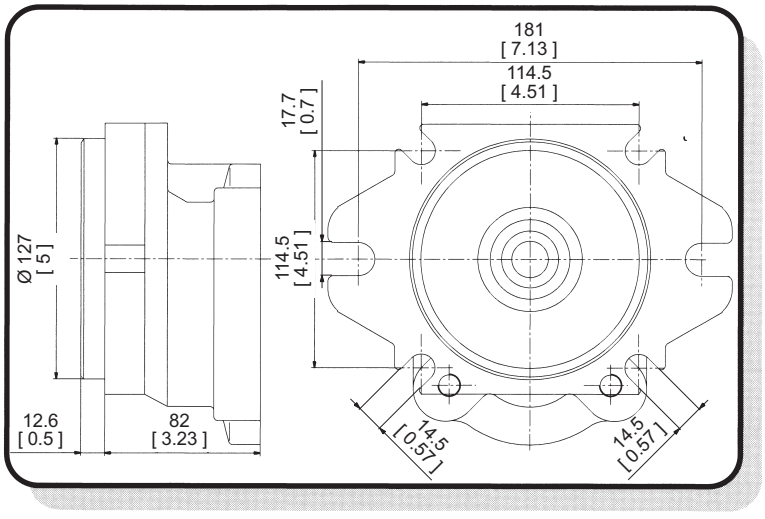


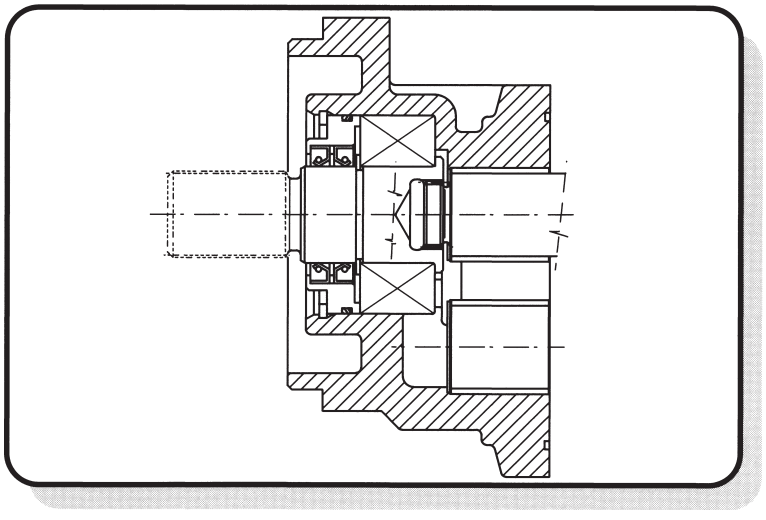
code R7

SAE B Mounting Flange with bearing
for radial and axial loads.
For shafts code 55 - 87

MOUNTING FLANGES

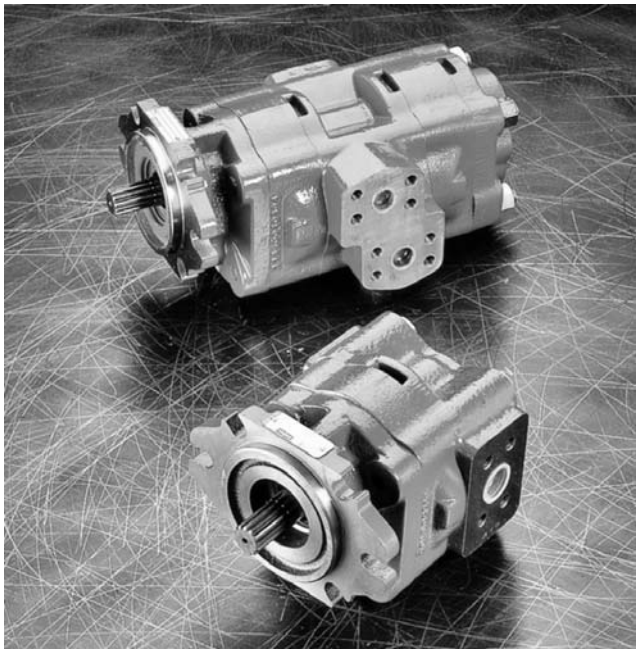
SAE C



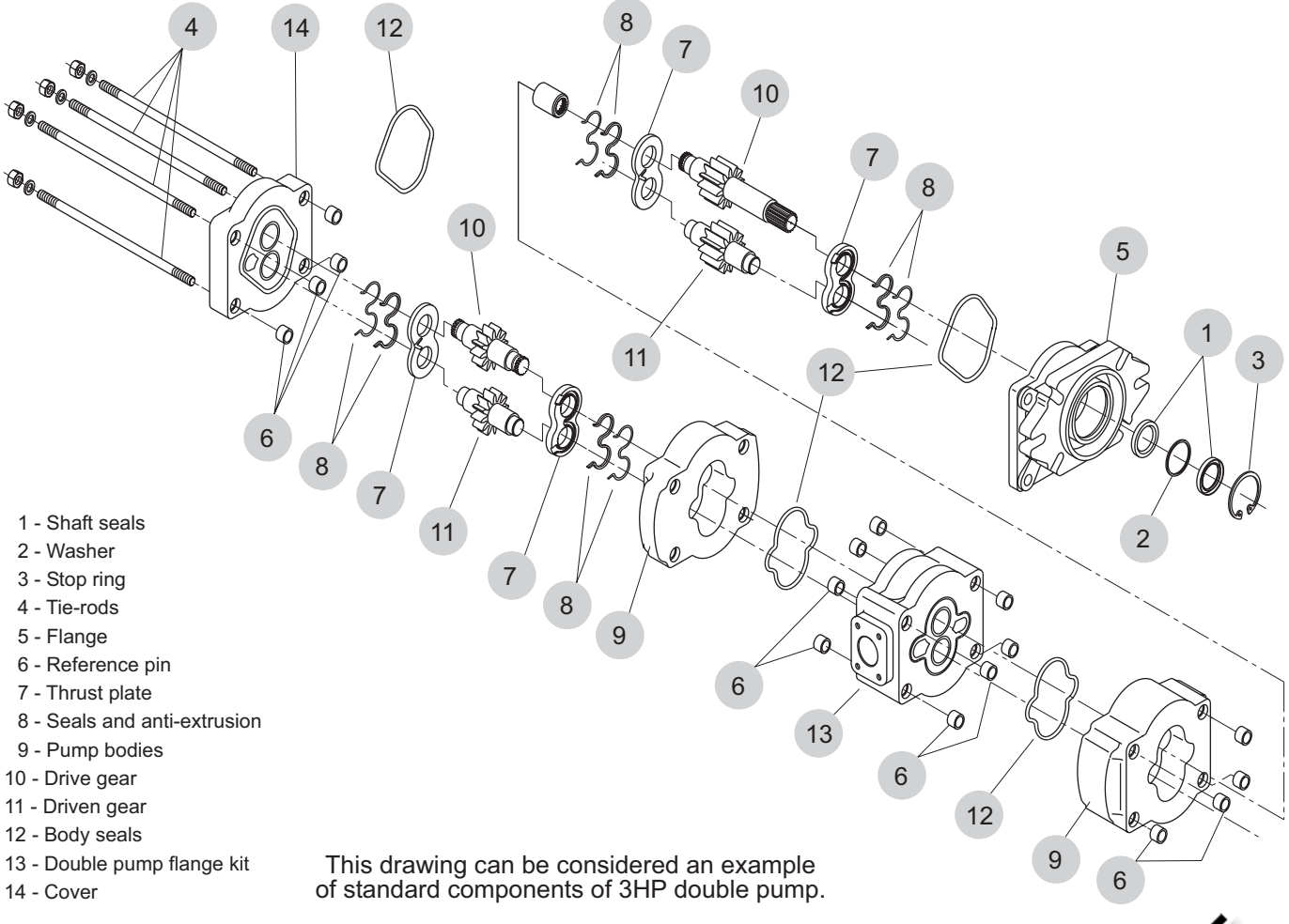


code R8

SAE C Mounting Flange.
Available only with bearing **for radial and axial loads.**
For shafts code 57 - 89



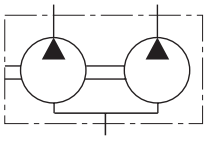
DOUBLE GEAR PUMP WITH COMMON INLET IN DETAIL



1 - Shaft seals
2 - Washer
3 - Stop ring
4 - Tie-rods
5 - Flange
6 - Reference pin
7 - Thrust plate
8 - Seals and anti-extrusion
9 - Pump bodies
10 - Drive gear
11 - Driven gear
12 - Body seals
13 - Double pump flange kit
14 - Cover

This drawing can be considered an example of standard components of 3HP double pump.

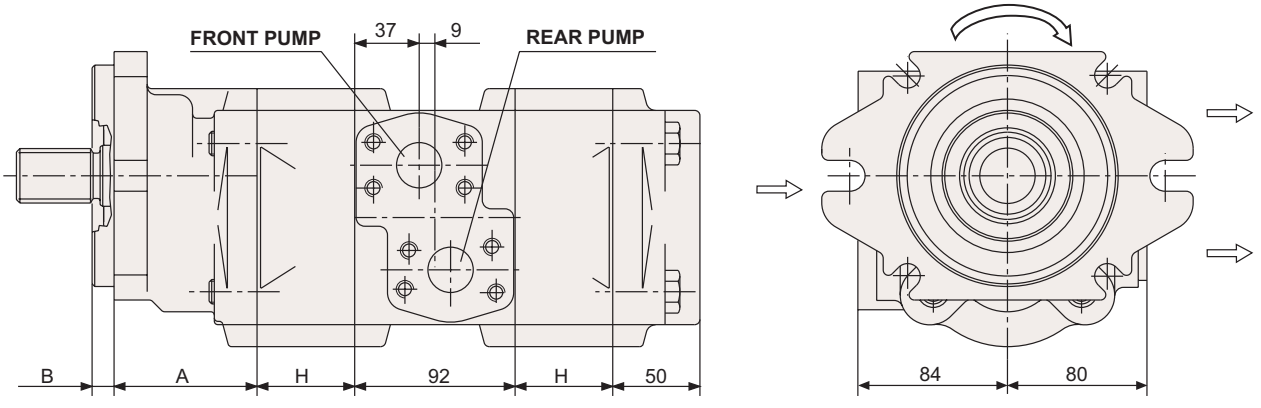
ASSEMBLING DIMENSIONS



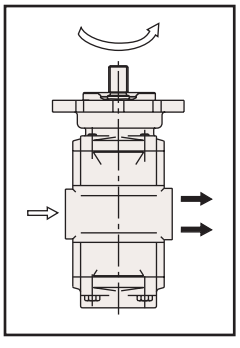
DOUBLE GEAR PUMPS COMMON SUCTION

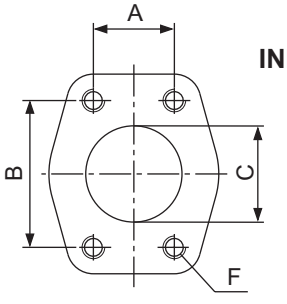
TYPE		21*	32	38	46	55	63	71	80	90**
Displacement *Displacement*	cm3/rev *cu.in/rev*	22.6 *1.38*	33.4 *2.04*	39 *2.38*	46 *2.81*	55 *3.36*	63.8 *3.89*	72.9 *4.45*	82 *5.00*	90 *5.49*
Dimension B (for SAE B flange) *Dimension B (for SAE B flange)*	mm *in*	9.6 *0.38*								
Dimension B (for SAE C flange) *Dimension B (for SAE C flange)*	mm *in*	12.6 *0.50*								
Dimension A (for SAE B flange) *Dimension A (for SAE B flange)*	mm *in*	70 *2.76*								
Dimension A (for SAE C flange) *Dimension A (for SAE C flange)*	mm *in*	82 *3.23*								
Dimension H *Dimension H*	mm *in*	29 *1.14*	36 *1.42*	40 *1.57*	45 *1.77*	51 *2.01*	56 *2.20*	62 *2.44*	68 *2.68*	75 *2.95*

* For second stage only
** Please contact our sales department

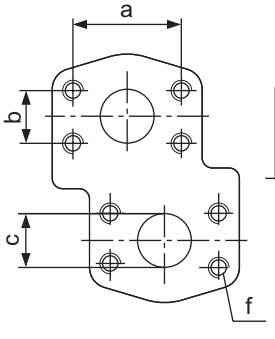


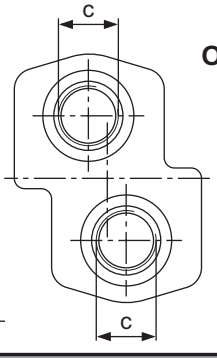
AVAILABLE PORTS





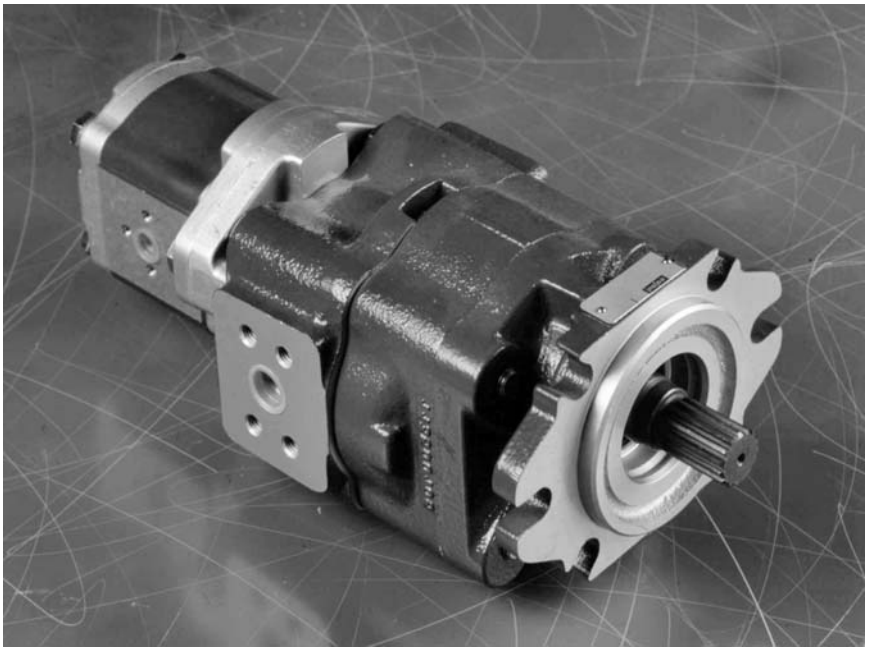
INLET





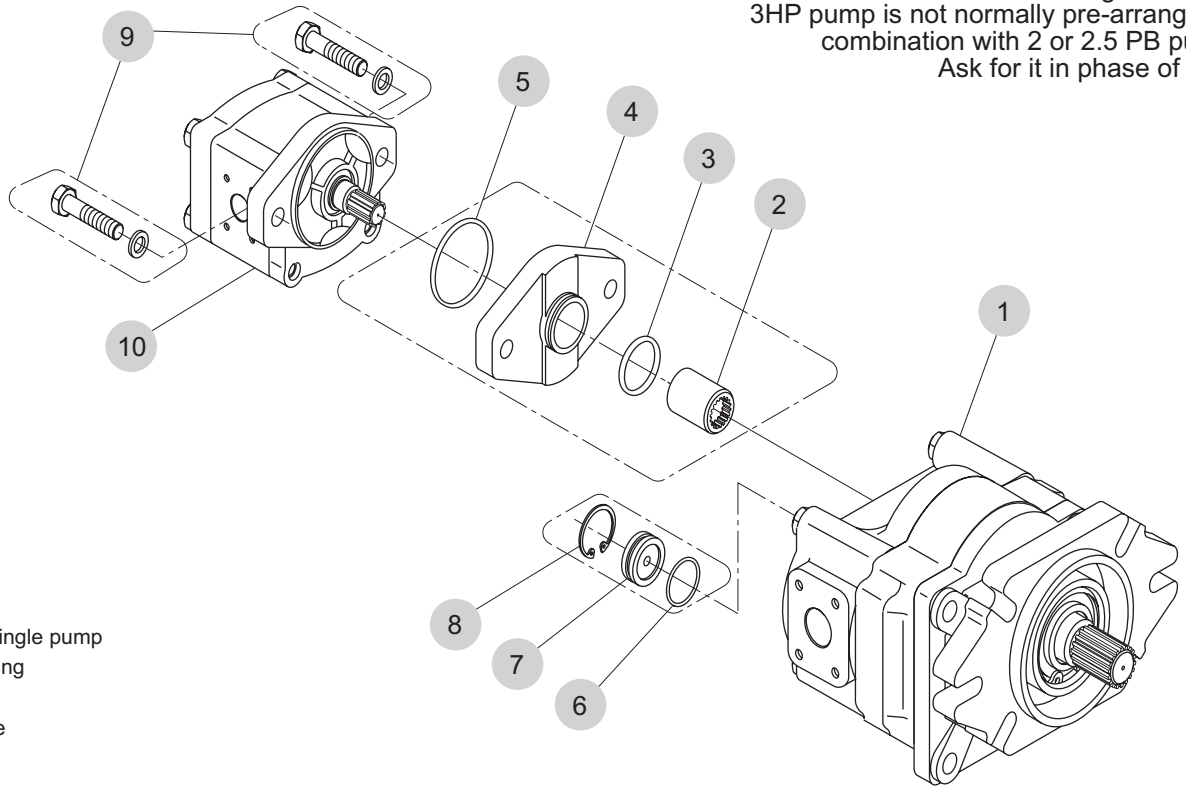
OUTLETS

INLET					OUTLET FRONT AND REAR PUMP					COMMERCIAL CODE
NOMINAL SIZE	F	A	B	C	NOMINAL SIZE	f	a	b	c	
2”	M12	42.8 *1.69*	77.7 *3.06*	51 *2.01*	FLANGE 1” SAE 16 1”5/16 UN	M10 -	26.1 *1.03*	52.3 *2.06*	26 *1.02*	YG YK
2”	1/2 - 13 *UNC*	42.8 *1.69*	77.7 *3.06*	51 *2.01*	FLANGE 1” G 1" SAE 16 1”5/16 UN	3/8 - 16 UNC - -	26.1 *1.03* - -	52.3 *2.06* - -	26 *1.02* 26 *1.02* 26 *1.02*	YC YH YK
2”1/2	1/2 - 13 *UNC*	50.8 *2*	88.9 *3.5*	63.5 *2.5*	FLANGE 1” SAE 16 1”5/16 UN	3/8 - 16 UNC -	26.1 *1.03* -	52.3 *2.06* -	26 *1.02* 26 *1.02*	YW YZ



3HP PUMP COMBINATION WITH 2PB OR 2.5PB PUMP

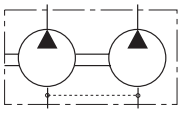
IMPORTANT:
the rear cover of the standard single or double 3HP pump is not normally pre-arranged for combination with 2 or 2.5 PB pumps.
Ask for it in phase of order.



1 - 3HP single pump
2 - Coupling
3 - O-ring
4 - Flange
5 - O-ring
6 - O-ring
7 - Plug
8 - Stop ring
9 - Assembling screws
10 - Gear pump "B" series, group 2

This drawing shows the standard components to get combination with 3HP and 2PB.

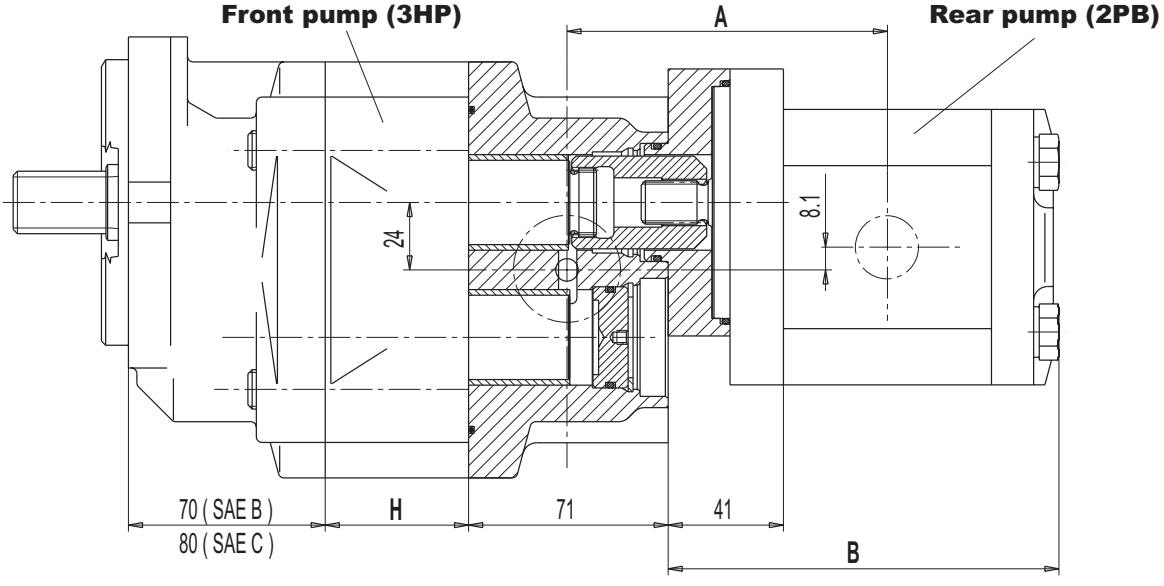
3HP PUMP COMBINATION WITH 2PB PUMP



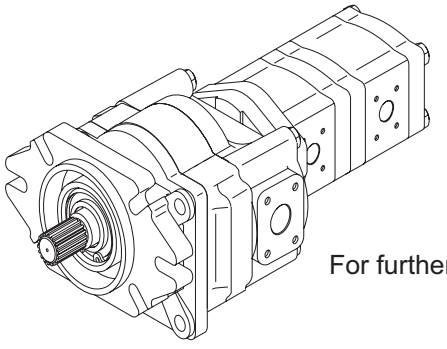
MULTIPLE GEAR PUMPS SEPARATED SUCTIONS

3HP TYPE		21	32	38	46	55	63	71	80	90**
Displacement	$cm^3/rev.$	23.5	33.4	39	46	55	63.8	72.9	82	90
Displacement	*cu.in./rev.*	*1.43*	*2.04*	*2.38*	*2.81*	*3.36*	*3.89*	*4.45*	*5.00*	*5.49*
Dimension H	mm	23.5	36	40	45	51	56	62	68	75
Dimension H	*in*	*1.43*	*1.42*	*1.57*	*1.77*	*2.01*	*2.20*	*2.44*	*2.68*	*2.95*

** Please contact our sales department



2PB TYPE		4.5	6.2	8.3	11.3	13.8	16	19	22.5	26
Displacement	$cm^3/rev.$	4.6	6.5	8.2	11.5	13.8	16.6	19.4	22.9	25.8
	cu.in./rev.	*0.27*	*0.37*	*0.50*	*0.68*	*0.84*	*0.97*	*1.15*	*1.37*	*1.58*
Dimension A	mm	100.5			108.7		114	117.2	119.9	122.8
	in	*3.96*			*4.28*		*4.49*	*4.61*	*4.72*	*4.83*
Dimension B	mm	109.6		115.3	126		136.5	142.9	148.3	154.1
	in	*4.31*		*4.54*	*4.96*		*5.37*	*5.63*	*5.84*	*6.07*



As shown in the picture, 2PB pump can have plus than one stage too, and they can have some types of valve in the rear cover.

First 2PB rear pump mounting flange: SAE A (code S2)

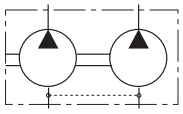
First 2PB rear pump shaft: SAE A 9T - 16 / 32 DP (code 52)

For further informations about 2PB gear pumps, please refer to Salami technical catalog

Gear pumps and motors "B" series

group 2

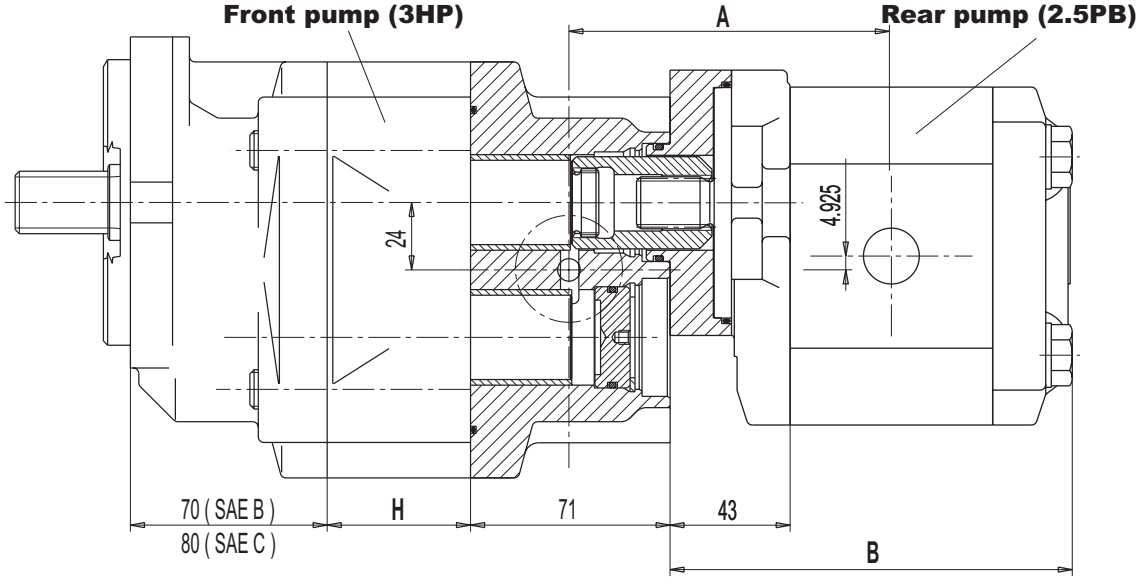
3HP PUMP COMBINATION WITH 2.5PB PUMP



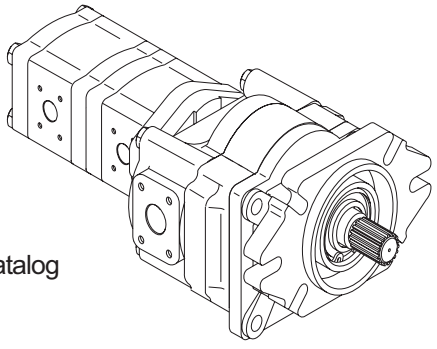
MULTIPLE GEAR PUMPS SEPARATED SUCTIONS

3HP TYPE		21	32	38	46	55	63	71	80	90**
Displacement	cm^3/rev.	23.5	33.4	39	46	55	63.8	72.9	82	90
Displacement	*cu.in./rev.*	*1.43*	*2.04*	*2.38*	*2.81*	*3.36*	*3.89*	*4.45*	*5.00*	*5.49*
Dimension H	mm	23.5	36	40	45	51	56	62	68	75
Dimension H	*in*	*1.43*	*1.42*	*1.57*	*1.77*	*2.01*	*2.20*	*2.44*	*2.68*	*2.89*

** Please contact our sales department



2.5 PB TYPE		16	19	22	25	28	32	38	44
Displacement	cm^3/rev.	16	19.3	22.2	25.2	27.6	32.4	38.1	44.2
	cu.in./rev.	*0.97*	*1.17*	*1.35*	*1.53*	*1.68*	*1.97*	*2.32*	*2.69*
Dimension A	mm	110.5	112.2	114	115.2	121.5	124.2	127.2	130.5
	in	*4.35*	*4.42*	*4.49*	*4.53*	*4.78*	*4.89*	*5.01*	*5.14*
Dimension B	mm	171	174.4	178	180.4	193	198.4	204.4	211
	in	*6.73*	*6.86*	*7.01*	*7.10*	*7.60*	*7.81*	*8.05*	*8.31*



As shown in the picture, 2.5PB pump can have plus than one stage too,

and they can have some types of valve in the rear cover.

First 2.5PB rear pump mounting flange: SAE A (code S2)

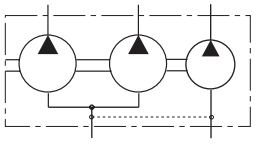
First 2.5PB rear pump shaft: SAE A 11T - 16 / 32 DP (code 54)

For further informations about 2.5PB gear pumps, please refer to Salami technical catalog

Gear pumps and motors "B" series

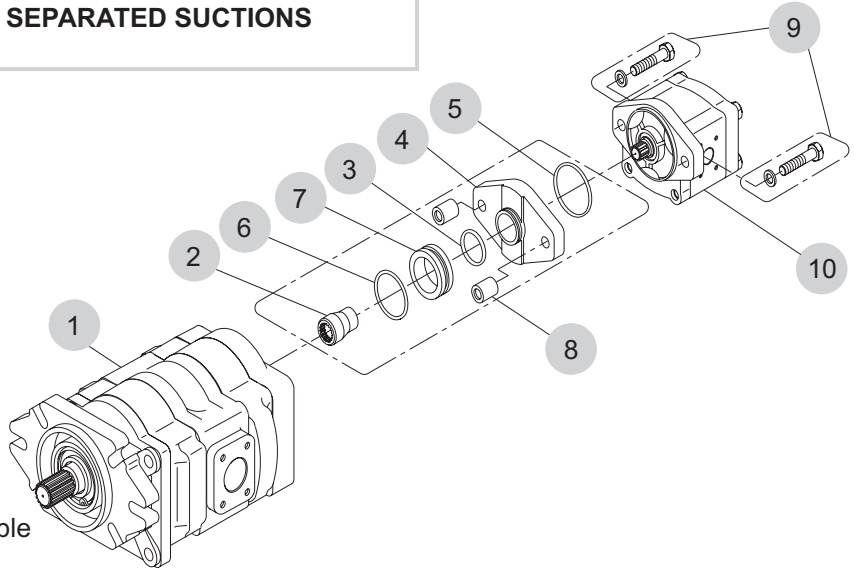
group 2.5

3HP DOUBLE PUMP COMBINATION WITH 2PB PUMP

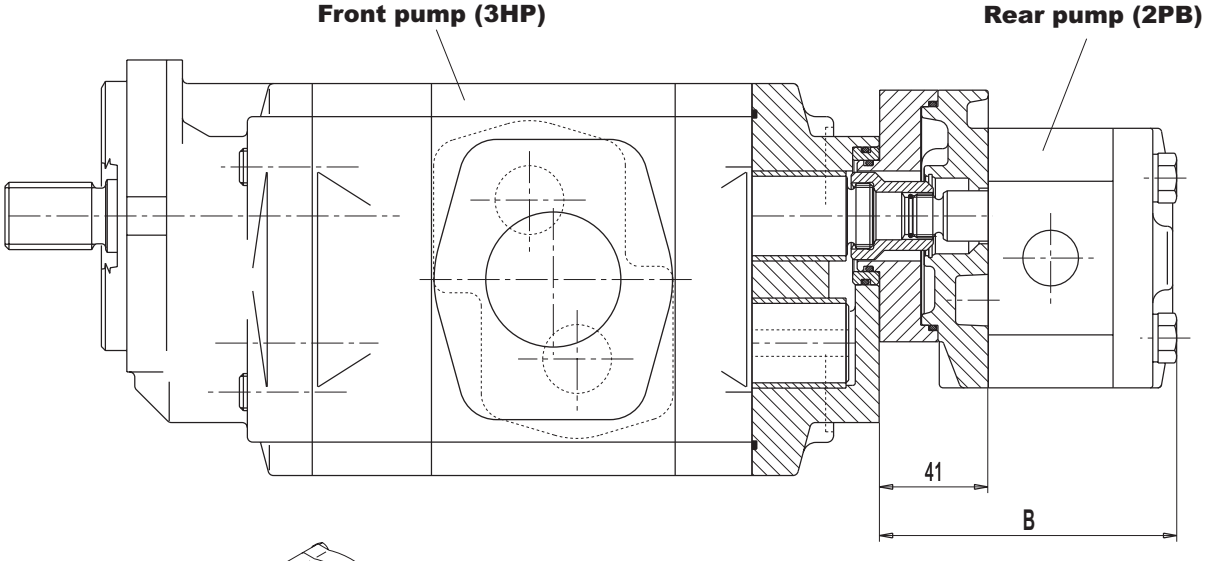


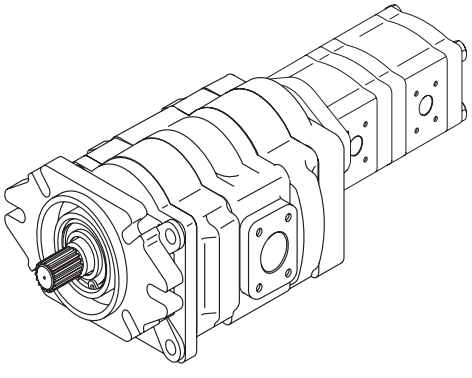
MULTIPLE GEAR PUMPS
3HP DOUBLE PUMP WITH COMMON SUCTION
2PB WITH SEPARATED SUCTIONS

1 - 3HP double pump with common suction
2 - Coupling
3 - O-ring
4 - Flange
5 - O-ring
6 - O-ring
7 - Centering collar
8 - Spacer
9 - Assembling screws
10 - Gear pump "B" series, group 2
with inlet and outlet ports



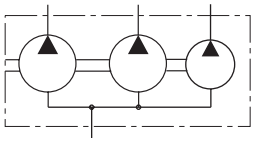
IMPORTANT:
the rear cover of the standard single or double 3HP pump is not normally pre-arranged for combination with 2 or 2.5 PB pumps.
Ask for it in phase of order.



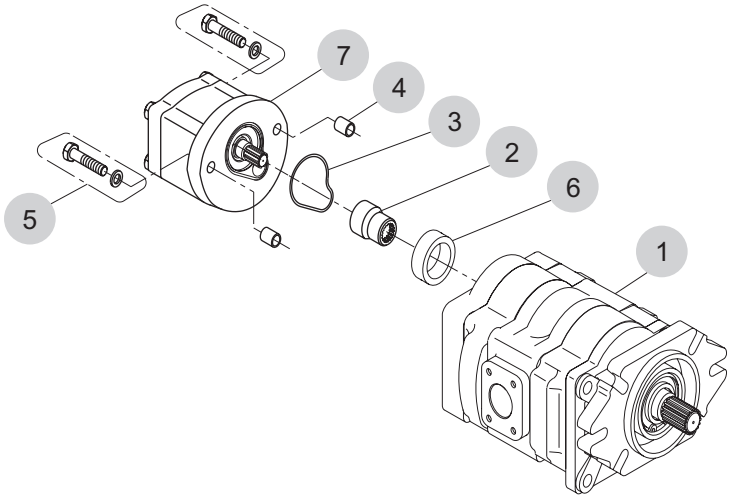


As shown in the picture, 2PB pump can have plus than one stage too,
and they can have some types of valve in the rear cover.
First 2PB rear pump mounting flange: SAE A (code S2)
First 2PB rear pump shaft: DIN 5482 splined (code 61AS)
For 3HP double pump displacements and dimensions, please see page 16
For "B" dimension and further informations about 2PB gear pumps,
please refer to Salami technical catalog: **Gear pumps and motors "B" series - group 2**

3PH DOUBLE PUMP COMBINATION WITH 2PB PUMP - COMMON SUCTION

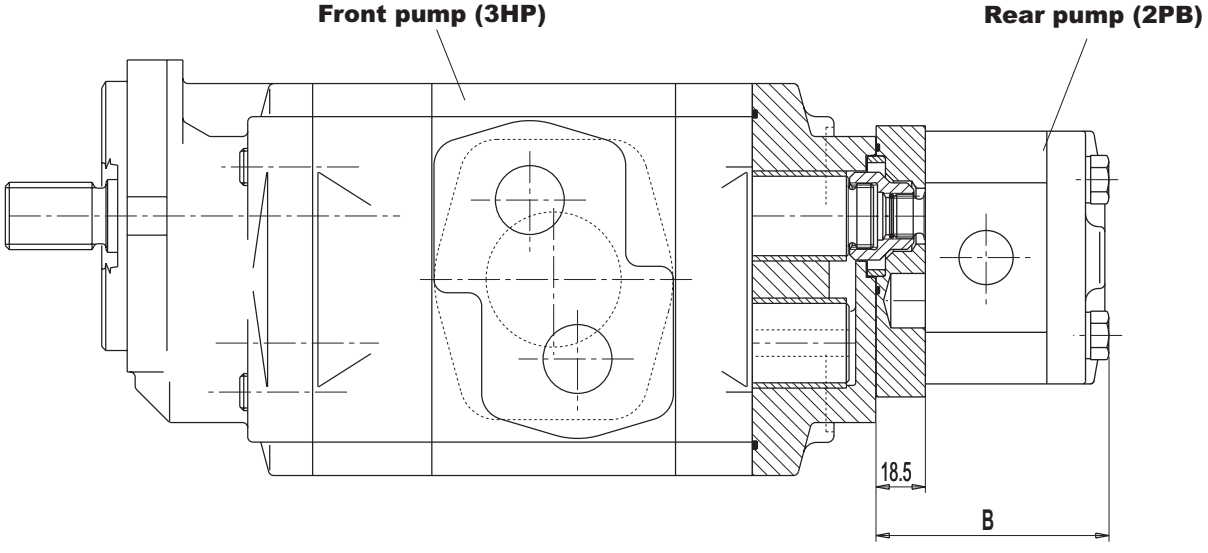


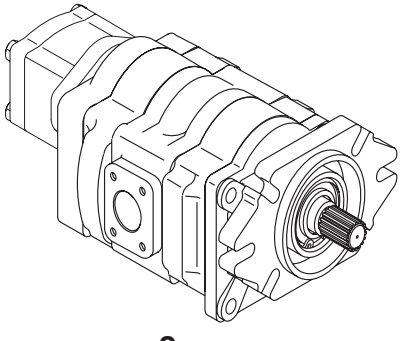
MULTIPLE GEAR PUMPS
3HP DOUBLE PUMP WITH 2PB PUMP
COMMON SUCTION
COMMERCIAL CODE "UA"



1 - 3HP double pump with common suction
2 - Coupling
3 - O-ring
4 - Spacer
5 - Assembling screws
6 - Centering collar
7 - Gear pump "B" series, group 2
only with outlet port

IMPORTANT:
the rear cover of the standard single or double 3HP pump is not normally pre-arranged for combination with 2 or 2.5 PB pumps.
Ask for it in phase of order.





As shown in the picture, 2PB pump can have only one stage ,

and they can have some types of valve in the rear cover.

2PB rear pump mounting a special flange for common suction

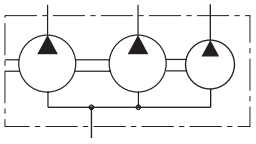
2PB rear pump shaft: DIN 5482 splined (code 61)

For 3HP double pump displacements and dimensions, please see page 16

For "B" dimension and further informations about 2PB gear pumps,

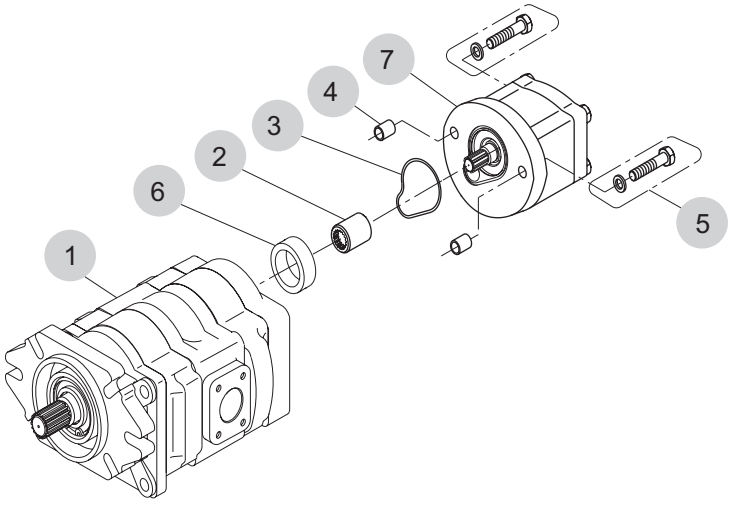
please refer to Salami technical catalog: **Gear pumps and motors "B" series - group 2**

3HP DOUBLE PUMP COMBINATION WITH 2.5PB PUMP - COMMON SUCTION

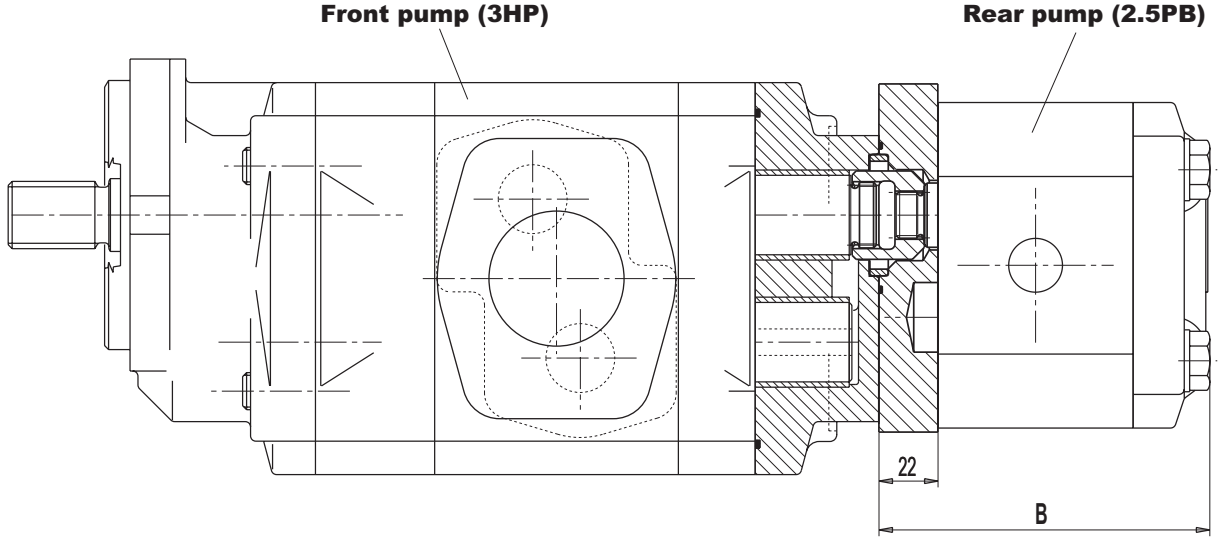


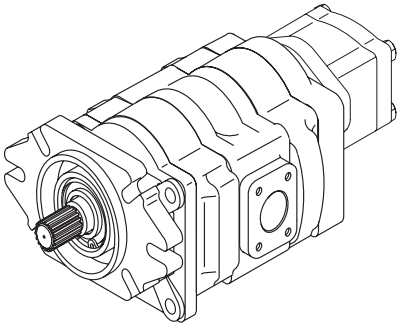
MULTIPLE GEAR PUMPS
3HP DOUBLE PUMP WITH 2.5PB PUMP
COMMON SUCTION
COMMERCIAL CODE "UA"

1 - 3HP double pump with common suction
2 - Coupling
3 - O-ring
4 - Spacer
5 - Assembling screws
6 - Centering collar
7 - Gear pump "B" series, group 2.5
only with outlet port



IMPORTANT:
the rear cover of the standard single or double 3HP pump is not normally pre-arranged for combination with 2 or 2.5 PB pumps.
Ask for it in phase of order.

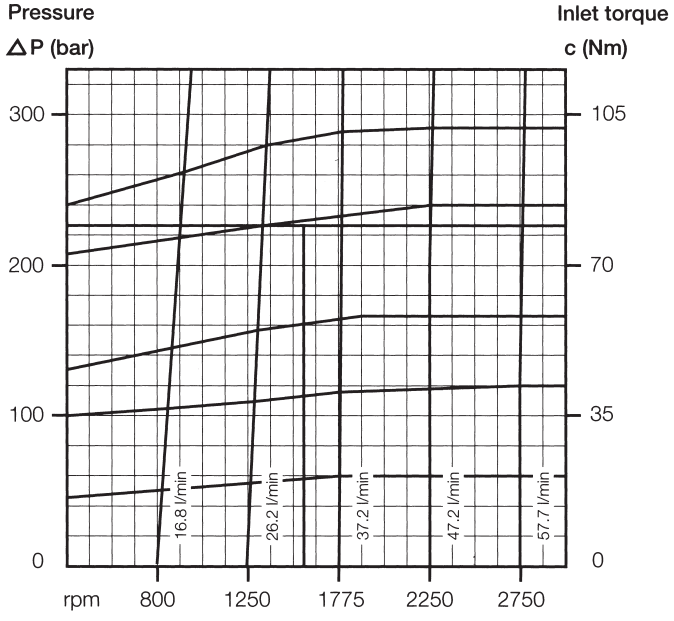




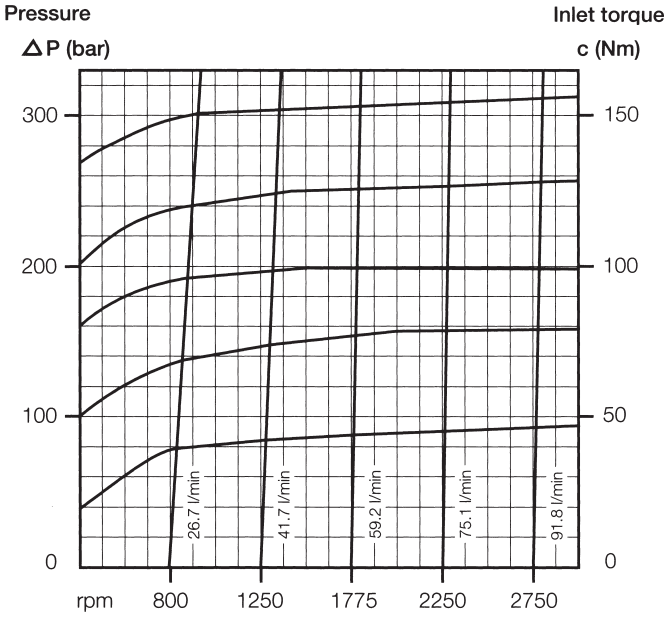
As shown in the picture, 2.5PB pump can have only one stage ,
and they can have some types of valve in the rear cover.
2.5PB rear pump mounting a special flange for common suction
2.5PB rear pump shaft: DIN 5480 splined (code 64)
For 3HP double pump displacements and dimensions, please see page 16
For "B" dimension and further informations about 2.5PB gear pumps,
please refer to Salami technical catalog: **Gear pumps and motors "B" series - group 2.5**

Performance curves carried out with oil viscosity at 16 cSt and oil temperature at 60°C

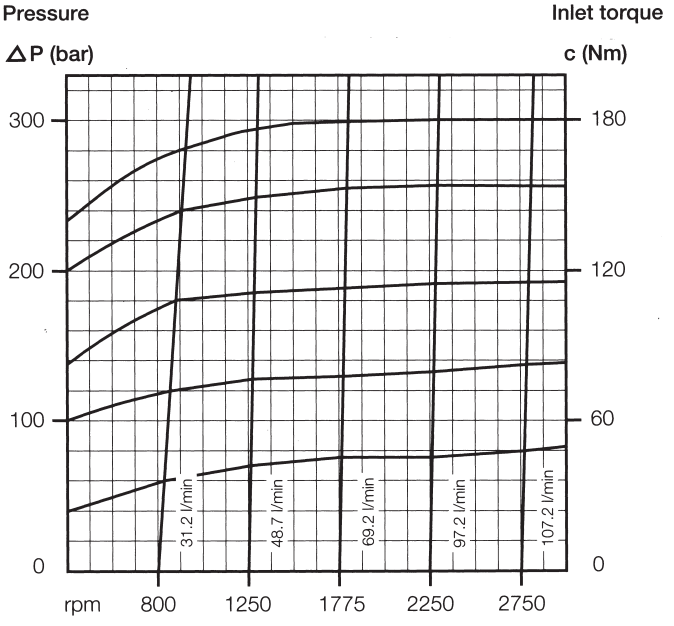
PUMP PERFORMANCE CURVES



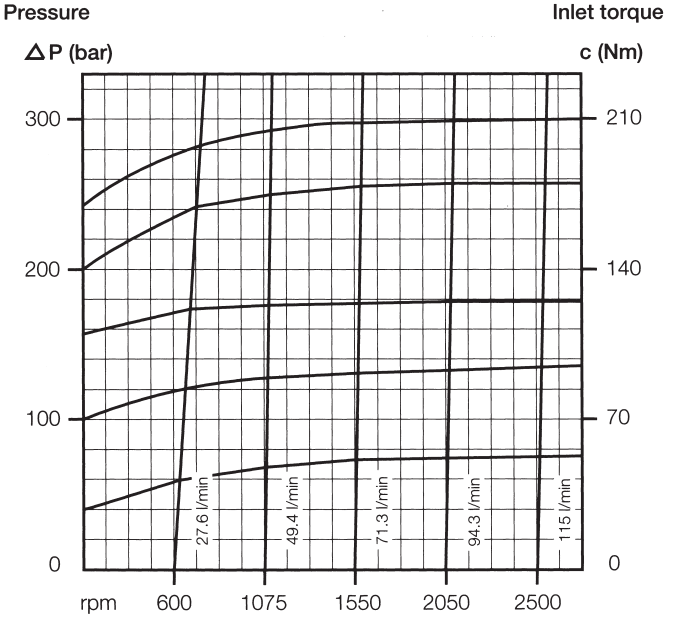
3HP 21



3HP 32



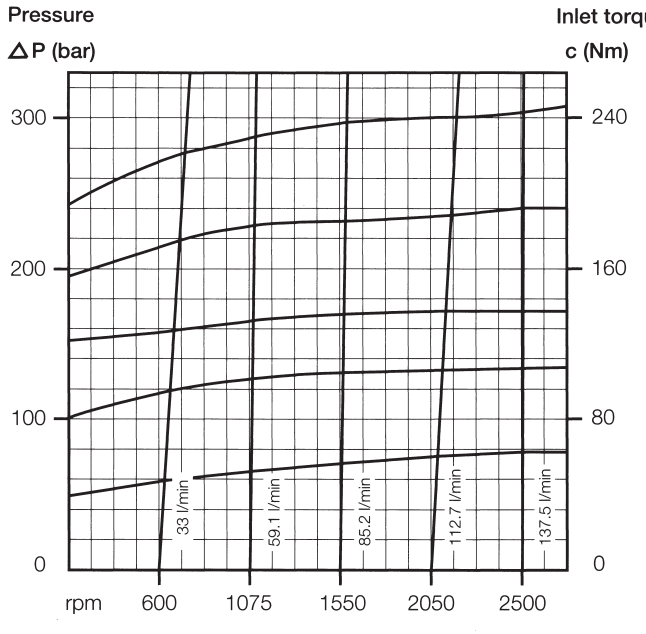
3HP 38



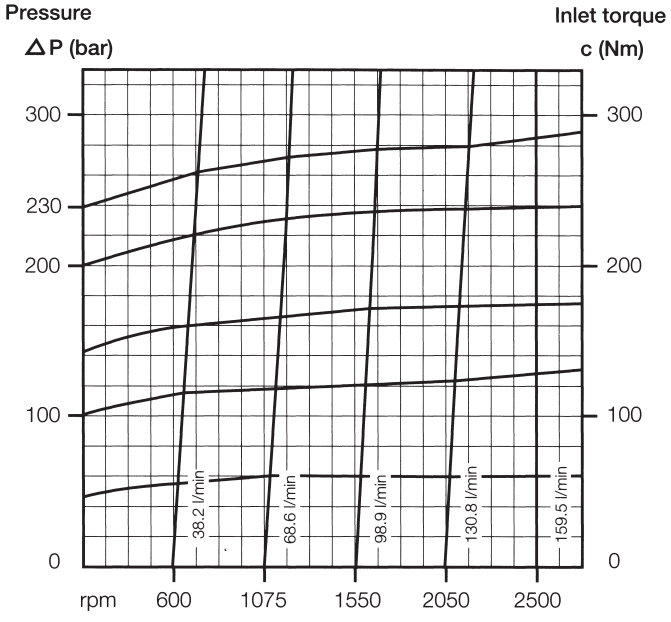
3HP 46

Performance curves carried out with oil viscosity at 16 cSt and oil temperature at 60°C

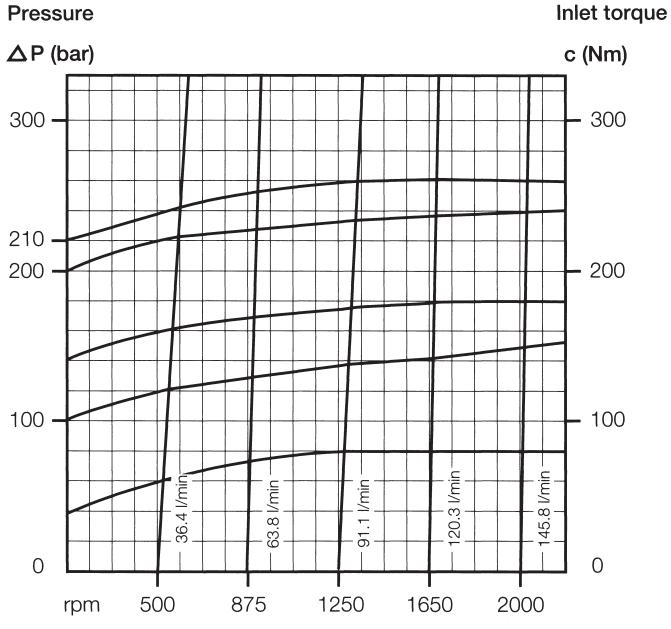
PUMP PERFORMANCE CURVES



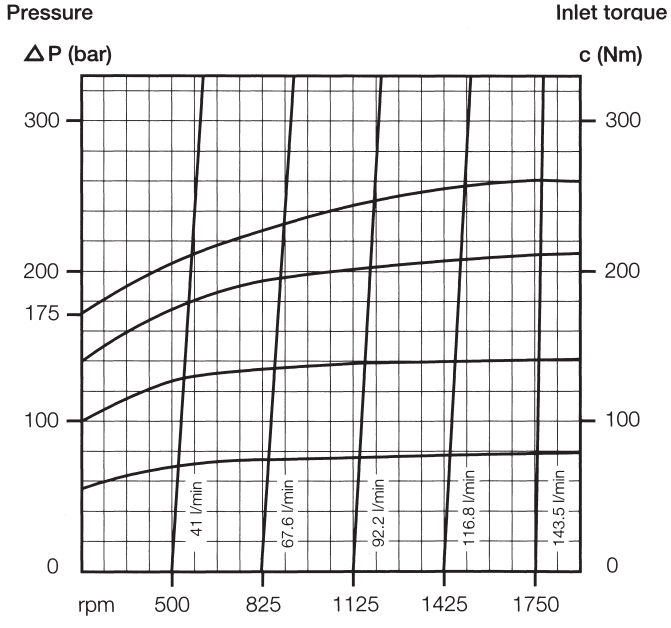
3HP 55



3HP 63



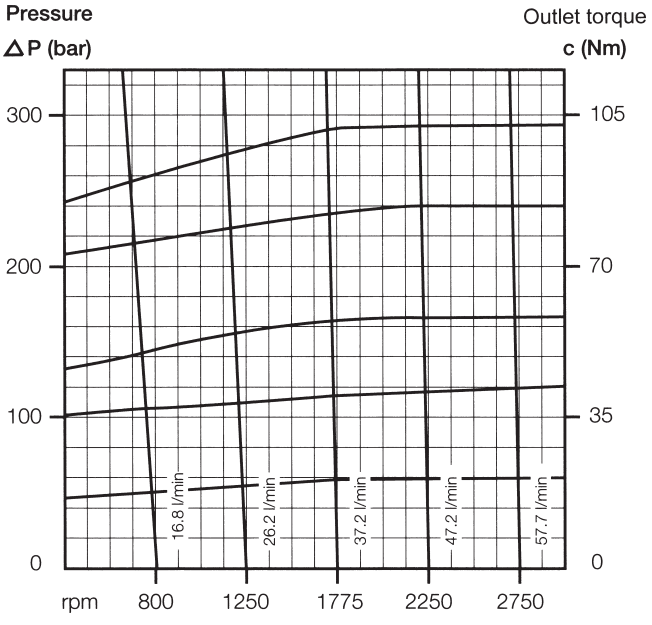
3HP 71



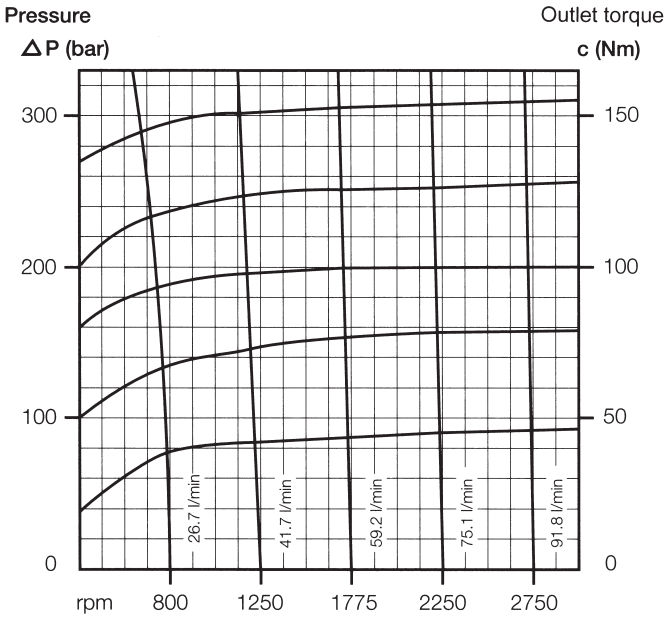
3HP 80

Performance curves carried out with oil viscosity at 16 cSt and oil temperature at 60°C

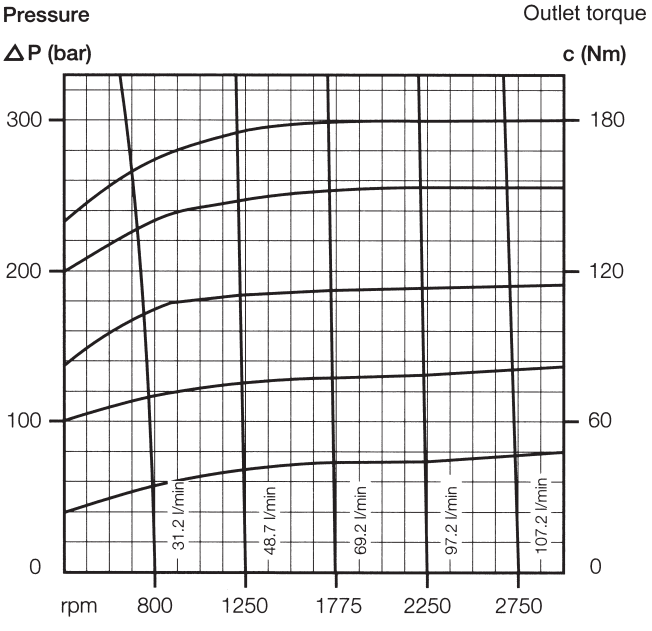
MOTOR PERFORMANCE CURVES



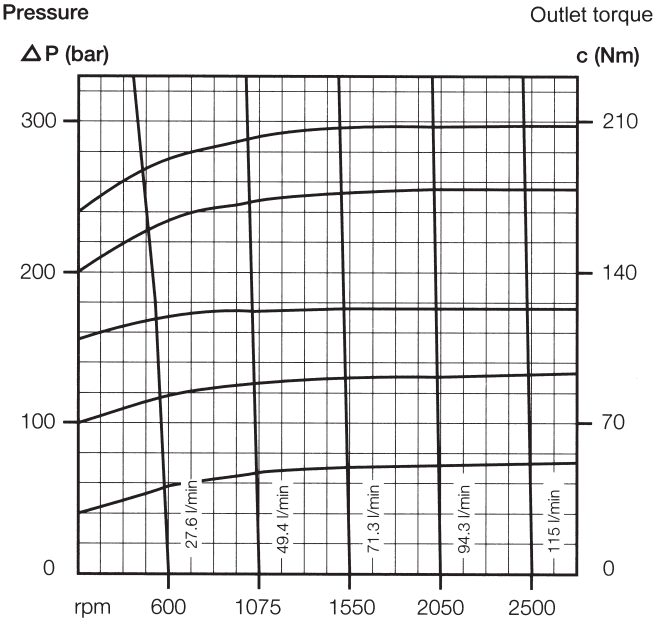
3HM 21



3HM 32



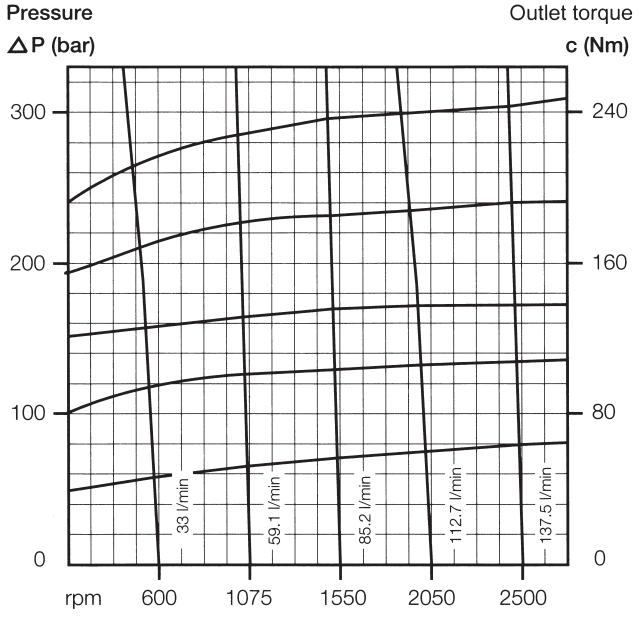
3HM 38



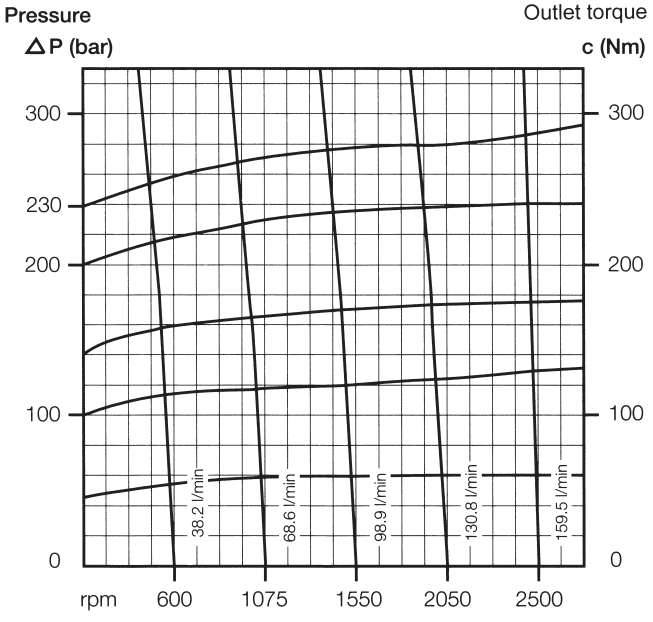
3HM 46

Performance curves carried out with oil viscosity at 16 cSt and oil temperature at 60°C

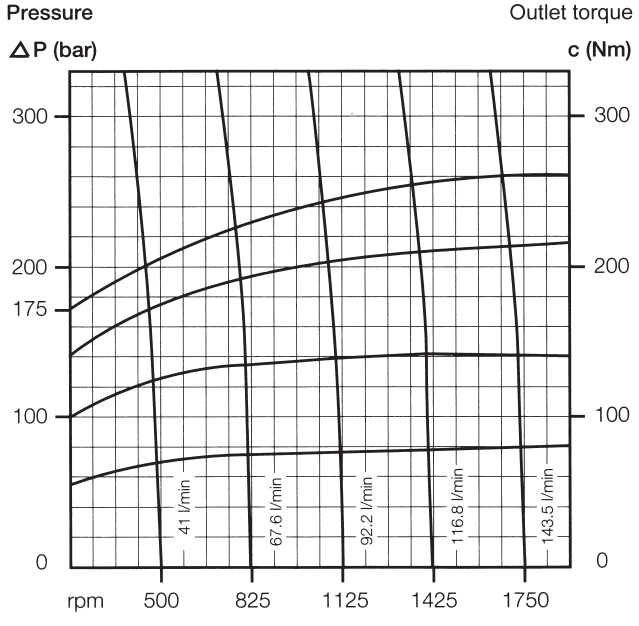
MOTOR PERFORMANCE CURVES



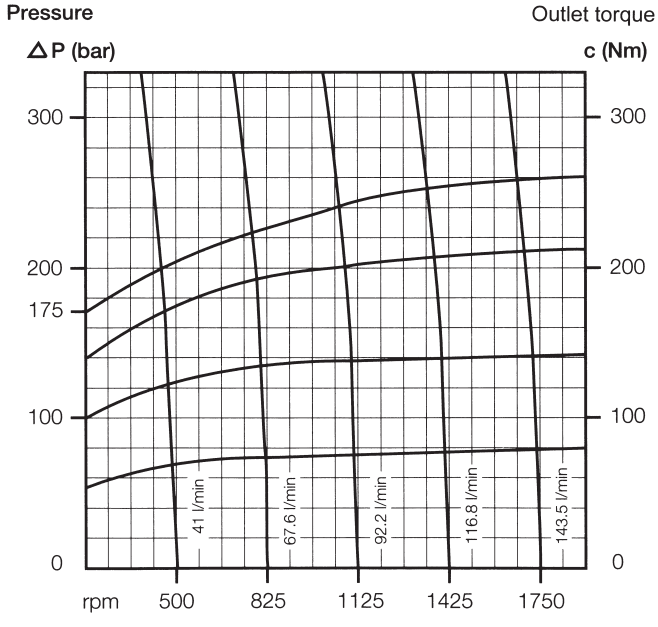
3HM 55



3HM 63



3HM 71



3HM 80

How to order

SINGLE PUMPS/MOTORS

3	H	P	55	D	–	S	55	S3	–	V		– ..../....

DIMENSION

SERIE

FUNCTION	CODE
Pump	*P*
Motor	*M*

TYPE	DISPLACEMENT (page 9)	
21	23.5 cm^3 / rev.	*1.43 cu.in./ rev.*
32	33.4 cm^3 / rev.	*2.04 cu.in./ rev.*
38	39 cm^3 / rev.	*2.38 cu.in./ rev.*
46	46 cm^3 / rev.	*2.81 cu.in./ rev.*
55	55 cm^3 / rev.	*3.36 cu.in./ rev.*
63	63.8 cm^3 / rev.	*3.89 cu.in./ rev.*
71	72.9 cm^3 / rev.	*4.45 cu.in./ rev.*
80	82 cm^3 / rev.	*5.00 cu.in./ rev.*
90	90 cm^3 / rev.	*5.49 cu.in./ rev.*

ROTATION	CODE
Clockwise	*D*
Anti-clockwise	*S*
Reversible	*R*

PORTS (pages 10 - 11)	CODE
SAE flanged ports (UNC thread)	*S*
SAE flanged ports (Metric thread)	*W*
GAS threaded ports (BSPP)	*G*
SAE threaded ports (ODT)	*R*

DRIVE SHAFTS (page 12)	CODE
SAE B splined 13 T	*55*
SAE BB splined 15 T	*56*
SAE C splined 14 T	*57*
SAE B parallel	*87*
SAE BB parallel	*88*
SAE C parallel	*89*

FURTHER DETAILS	CODE
None *standard*	
Pre-arranged for 2PB rear pump (page 18)	*2*
Pre-arranged for 2.5PB rear pump (page 19)	*2.5*

PORTS POSITION (pages 10 - 11)	CODE
Lateral ports *standard*	
Rear ports	*3*

SEAL	CODE
Buna *standard*	
Viton	*V*

MOUNTING FLANGES (pages 13 - 14)	CODE
SAE B	
SAE B 2 - 4 bolts	*S3*
SAE B 2 - 4 bolts with bearing (radial axial loads)	*R7*
SAE C	
SAE C 2 - 4 bolts with bearing (radial axial loads)	*R8*

Available for series quantities

Example to order a 3HP single pump with viton seal
and pre - arranged for 2.5PB rear pump:
3HP 38S - R 87 R7 - V - 2

DOUBLE PUMPS WITH COMMON INLET

3HP **55** / **38** **D** – **YG** **55** **S3** – **V** – ..../....

TYPE	DISPLACEMENT (page 16)	
21	22 cm^3 / rev.	*1.34 cu.in./ rev.*
32	33.4 cm^3 / rev.	*2.04 cu.in./ rev.*
38	39 cm^3 / rev.	*2.38 cu.in./ rev.*
46	46 cm^3 / rev.	*2.81 cu.in./ rev.*
55	55 cm^3 / rev.	*3.36 cu.in./ rev.*
63	63.8 cm^3 / rev.	*3.89 cu.in./ rev.*
71	72.9 cm^3 / rev.	*4.45 cu.in./ rev.*
80	82 cm^3 / rev.	*5.00 cu.in./ rev.*
90	90 cm^3 / rev.	*5.49 cu.in./ rev.*

ROTATION	CODE
Clockwise	*D*
Anti-clockwise	*S*
Reversible	*R*

INLET / OUTLET PORTS (page 16)	CODE
Refer to page 16	**YG**
Refer to page 16	**YH**
Refer to page 16	**YC**
Refer to page 16	**YK**
Refer to page 16	**YW**
Refer to page 16	**YZ**

DRIVE SHAFTS (page 12)	CODE
SAE B splined 13 T	*55*
SAE BB splined 15 T	*56*
SAE C splined 14 T	*57*
SAE B parallel	*87*
SAE BB parallel	*88*
SAE C parallel	*89*

FURTHER DETAILS	CODE
None *standard*	
Pre-arranged for 2PB rear pump (page 20) with separated suctions	*2*
Pre-arranged for 2PB rear pump (page 21) with common suction	*2UA*
Pre-arranged for 2.5PB rear pump (page 22) with common suction	*2.5UA*

SEAL	CODE
Buna *standard*	
Viton	*V*

MOUNTING FLANGES (pages 13 - 14)	CODE
SAE B	
SAE B 2 - 4 bolts	*S3*
SAE B 2 - 4 bolts with bearing (radial axial loads)	*R7*
SAE C	
SAE C 2 - 4 bolts with bearing (radial axial loads)	*R8*

Available for series quantities

Example to order a 3HP double pump with common inlet with viton seal and pre - arranged for 2PB rear pump:
3HP 71/55D - YW 57 R7 - V - 2

How to order

3HP PUMP COMBINATION WITH 2PB OR 2.5PB PUMPS

3HP ----------/ 2PB | 16 | D | – | R

Single pump "H" series type can be assembled in combination with:
gear pumps "B" series - group 2 (**code 2**)
gear pumps "B" series - group 2.5 (**code 2.5**)
the suctions are always separated
3HP with your own suction
2-2.5 PB with your own suction
In this cases 2PB and 2.5PB can have plus than one stage too, and its can have some types of valves in the cover too.

Double pump "H" series type can be assembled in combination with:
gear pumps "B" series - group 2 (**code 2**)
3HP double pump with your own common suction
2PB pump with your own suction
In this case 2PB can have plus than one stage too, and it can have some types of valves in the cover too.

Double pump "H" series type can be assembled in combination with:
gear pumps "B" series - group 2 (**code 2UA**)
gear pumps "B" series - group 2.5 (**code 2.5UA**)
3HP/2PB with common suction
3HP/2.5PB with common suction
In this case 2PB and 2.5PB can have one stage only, and it can have some types of valves in the cover.

PORTS	CODE
Flanged ports european standard	*P*
SAE Threaded ports (ODT)	*R*

ROTATION	CODE
Clockwise	*D*
Anti-clockwise	*S*

TYPE	DISPLACEMENT	
4.5	4.6 cm^3 / rev.	*0.27 cu.in./ rev.*
6.2	6.5 cm^3 / rev.	*0.37 cu.in./ rev.*
8.3	8.2 cm^3 / rev.	*0.50 cu.in./ rev.*
11.3	11.5 cm^3 / rev.	*0.68 cu.in./ rev.*
13.8	13.8 cm^3 / rev.	*0.84 cu.in./ rev.*
16	16.6 cm^3 / rev.	*0.97 cu.in./ rev.*
19	19.4 cm^3 / rev.	*1.15 cu.in./ rev.*
22.5	22.9 cm^3 / rev.	*1.37 cu.in./ rev.*
26	25.8 cm^3 / rev.	*1.58 cu.in./ rev.*

This form is only an example how to create the commercial code of the multiple pumps, for all the informations about 2PB and 2.5PB pumps, please see our technical catalogues:

GEAR PUMPS AND MOTORS "B" SERIES
GROUP 2
GROUP 2.5

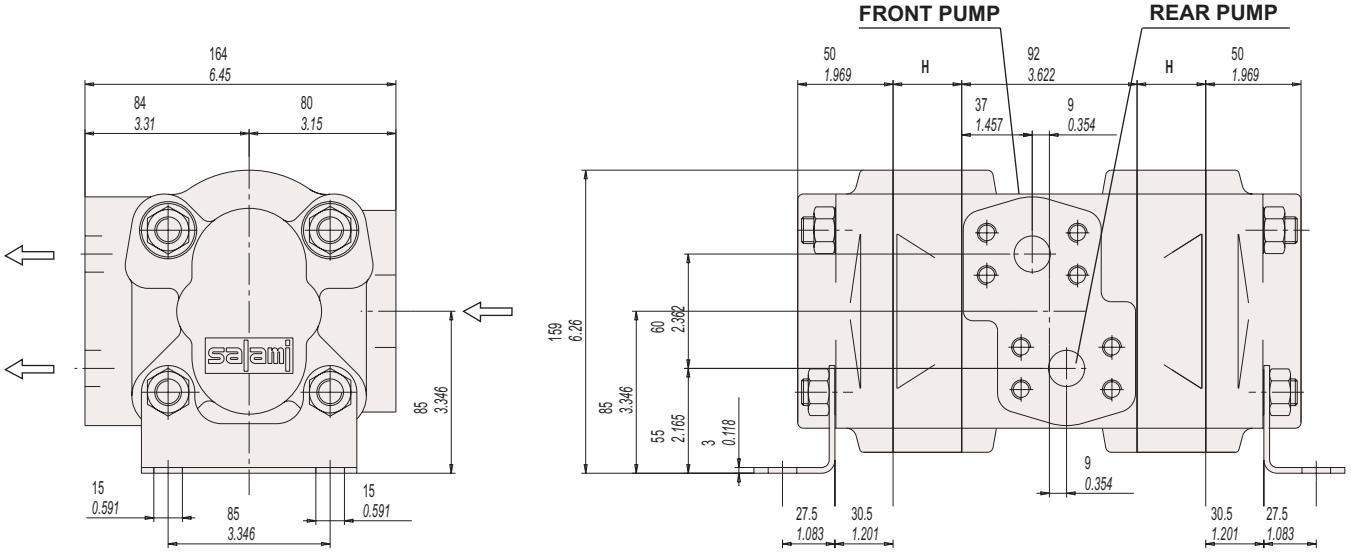
FLOW DIVIDERS

ASSEMBLING DIMENSIONS

TYPE		21*	32	38	46	55	63	71	80	90**
Displacement	**cm3/rev**	**22.6**	**33.4**	**39**	**46**	**55**	**63.8**	**72.9**	**82**	**90**
Displacement	***cu.in/rev***	***1.38***	***2.04***	***2.38***	***2.81***	***3.36***	***3.89***	***4.45***	***5.00***	***5.49***
Dimension H	**mm**	**29**	**36**	**40**	**45**	**51**	**56**	**62**	**68**	**75**
Dimension H	***in***	***1.14***	***1.42***	***1.57***	***1.77***	***2.01***	***2.20***	***2.44***	***2.68***	***2.95***

* For second stage only

** Please contact our sales department



For ports type and dimensions available please refer you to page 16

HOW TO ORDER "H" SERIES FLOW DIVIDERS

3HD 55 / 55 – YG

TYPES	DISPLACEMENT	
21	22 cm3/rev	1.34 cu.in./rev
32	33.4 cm3/rev	2.04 cu.in./rev
38	39 cm3/rev	2.38 cu.in./rev
46	46 cm3/rev	2.81 cu.in./rev
55	55 cm3/rev	3.36 cu.in./rev
63	63.8 cm3/rev	3.89 cu.in./rev
71	72.9 cm3/rev	4.45 cu.in./rev
80	82 cm3/rev	5.00 cu.in./rev
90	90 cm3/rev	5.49 cu.in./rev

CODE	INLET / OUTLET PORTS
YG	Refer to page 16
YH	Refer to page 16
YC	Refer to page 16
YK	Refer to page 16
YW	Refer to page 16
YZ	Refer to page 16

Available for series quantity

Example of ordering code:

3HD 71 / 71 - YG

WARRANTY

- We warrant products sold by us to be free from defects in material and workmanship.

- Our sole obligation to buyer under this warranty is the repair or replacement, at our option, of any products or parts thereof which, under normal use and proper maintenance, have proven defective in material or workmanship, this warranty does not cover ordinary wear and tear, abuse, misuse, averloading, alteration.

- No claims under this warranty will be valid unless buyer notifies SALAMI in writing within a reasonable time of the buyer's discovery of such defects,but in no event later than twelve (12) mounths from date of shipment to buyer.

- Our obligation under this warranty shall not include any transportation charges or cost of installation, replacement, field repair, or other charges related to returning products to us; or any liability for directs, indirects or consequential damage or delay.If requested by us, products or parts for which a warranty claim is made are to be returned transportation prepaid to our factory. The risk of loss of any products or parts thereof returned to SALAMI will be on buyer.

- No employee or representative is authorized to change any warranty in any way or grant any other warranty unless such change is made in writing and signed by an officer of SALAMI.

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