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## **Main Features**

- ◆ *Cast iron and alloy covers*
- ◆ *High pressure option: up to 300 bar  
max. continuous pressure ( 4350 psi )*
  
- ◆ *Axial compensation achieved using  
pressure balanced bushing blocks.*
- ◆ *High volumetric efficiency: average  
95%*
- ◆ *Wide range of capacities :*  
*0.8 -1.1-1.6-2.1-2.6-3.2-3.7-4.2-4.8-5.5  
6.2-7.8-8.8 -10.5 cm<sup>3</sup>/rev*
- ◆ *Extruded aluminium body*
- ◆ *Gear tooth profile accurately projected  
providing low noise operation.*
- ◆ *A wide variety of shafts, flanges and  
ports are available to meet specific  
application requirements.*
- ◆ *High-temperature seals available.*
  
- ◆ *Single rotational pumps and motors.*
- ◆ *Bi-rotational pumps and motors.*
- ◆ *Multiple pumps availability: tandem  
pumps are possible both in aluminium  
series and with other cast iron series  
produced by Ronzio Oleodinamica*

## **CONDITIONS OF USE FOR PUMPS AND MOTORS “Z1”**

*Avoid radial and axial loads on the pump shaft during the use.*

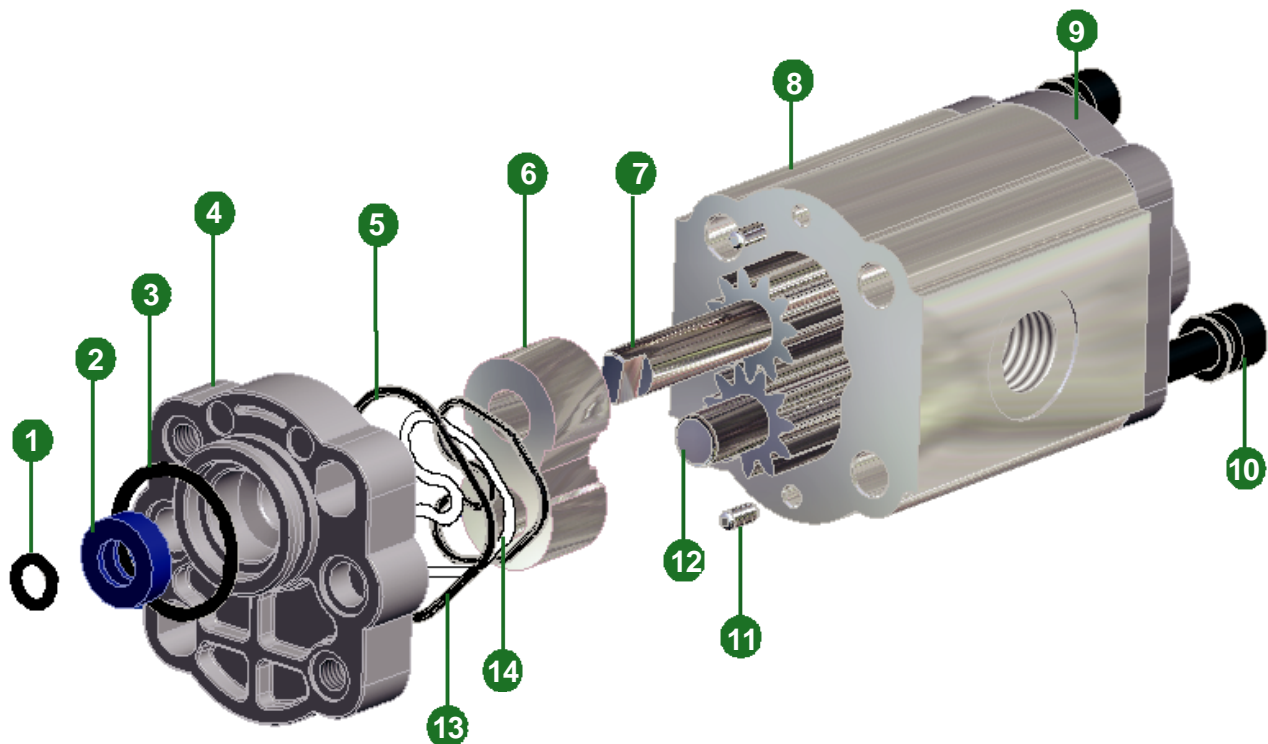
*The pump must be in line with the P.T.O. to compensate misalignment errors, use flexible or “Oldham” coupling.*

*We recommend to read the specifications in this catalogue very carefully. This will help you in getting the best, in terms of working conditions and life, from Ronzio gear pumps.*

**USE CONDITIONS**

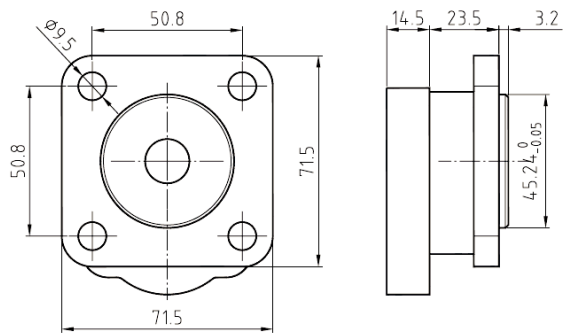
<b>Fluidi idraulici</b>	<p>Oli idraulici a base minerale ( DIN 51524 )</p> <p>Per utilizzo di fluidi non infiammabili come acqua e glicole , emulsione di olio in acqua, o esteri fosforici, contattare il nostro ufficio tecnico o commerciale</p>		
<b>Hydraulic fluids</b>	<p><i>Mineral oil ( DIN 51524 )</i></p> <p><i>For use with fire resistant fluids like water glycol, water- oil emulsion and phosphate-esters, contact our technical or commercial office.</i></p>		
<b>Pressione in aspirazione Inlet pressure</b>	<p>0.7 - 3 bar ( Assoluti / Absolute ) 10 - 44 psi ( Assoluti / Absolute )</p>		
<b>Velocità olio nella linea di aspirazione Oil speed on suction line</b>	<p>0.5 ÷ 1.5 m/s</p>		
<b>Velocità olio nella linea di mandata Oil speed on pressure line</b>	<p>6 ÷ 10 m/s</p>		
<b>Temperatura olio Oil temperature</b>	<p>-10°C ÷ 80°C</p>		
<b>Viscosità olio Oil viscosity</b>	<p>20 ÷ 120 mm<sup>2</sup> / s ( Cst )</p>		
<b>Massima viscosità olio all'avvio Max starting viscosity</b>	<p>700 mm<sup>2</sup> / s ( Cst )</p>		
<b>Filtraggio olio Oil filtration</b>	<b>Pressione Pressure</b>	<b>&lt; 200 bar</b>	<b>&gt; 200 bar</b>
	Classe di contaminazione NAS 1638 <i>Contamination class NAS 1638</i>	10	9
	Classe di contaminazione ISO 4406 <i>Contamination class ISO 4406</i>	19/16	18/15
	Rapporto β <sub>x</sub> ≥ 75 Ratio β <sub>x</sub> ≥ 75	25µm	10µm

**COMPONENTI**  
***PARTS***



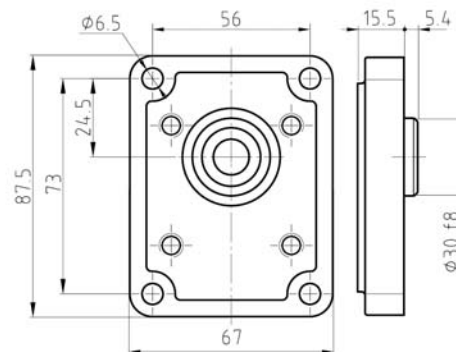
<b>Rif.</b>	<b>Descrizione</b>	<b>Description</b>	<b>Qt.</b>
1	OR Mandata	Outlet seal	1
2	Anello di tenuta	<i>Rotary shaft seal</i>	1
3	OR Flangia	<i>Flange seal</i>	1
4	Flangia	<i>Front flange</i>	1
5	Guarnizione sotto-coperchio	<i>Under cover seal</i>	2
6	Rasamento	<i>Bushing block</i>	2
7	Ingranaggio conduttore	<i>Drive gear</i>	1
8	Corpo	<i>Housing</i>	1
9	Coperchio	<i>Cover</i>	1
10	Vite	<i>Bolt</i>	2
11	Spina cilindrica	<i>Pin</i>	4
12	Ingranaggio condotto	<i>Idle gear</i>	1
13	Guarnizione di compensazione	<i>Compensation seal</i>	2
14	Antiestrusore	<i>Seal against extruding</i>	2

**FLANGE**  
**FLANGES**



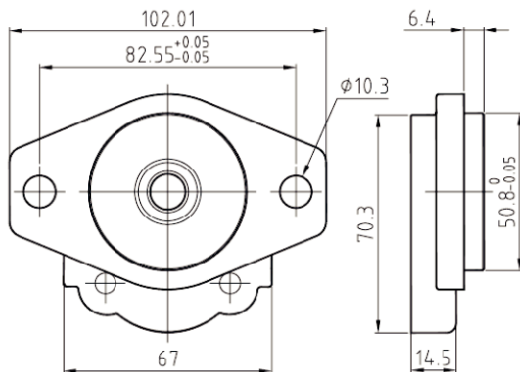
<b>CODICE</b> <b>CODE</b>	<b>D</b>	<b>G</b>	<b>7</b>
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NOTA : Materiale Ghisa  
NOTE : Material cast iron



<b>CODICE</b> <b>CODE</b>	<b>E</b>	<b>G</b>	<b>2</b>
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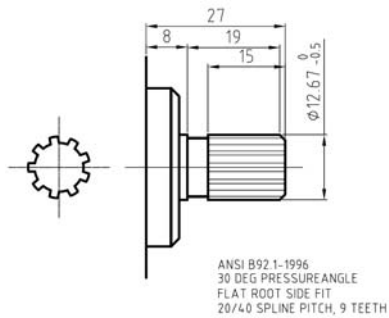
NOTA : Materiale Ghisa  
NOTE : Material cast iron



<b>CODICE</b> <b>CODE</b>	<b>C</b>	<b>G</b>	<b>6</b>
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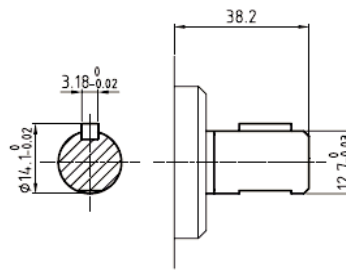
NOTA : Materiale Ghisa  
NOTE : Material cast iron

# ALBERI SHAFTS



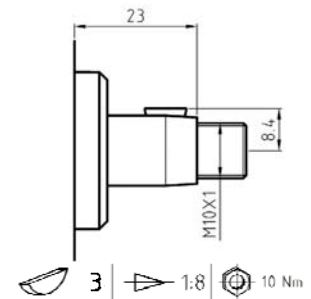
Coppia max 45 Nm  
Max torque 45 Nm

CODICE / CODE	Q		
PER FLANGIA / FOR FLANGE	C	G	6



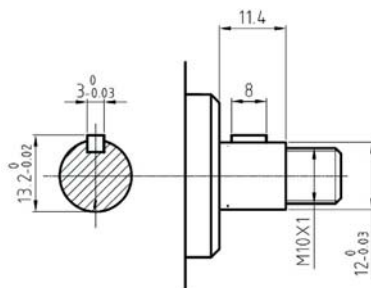
Coppia max 35 Nm  
Max torque 35 Nm

CODICE / CODE	P		
PER FLANGIA / FOR FLANGE	D	G	7



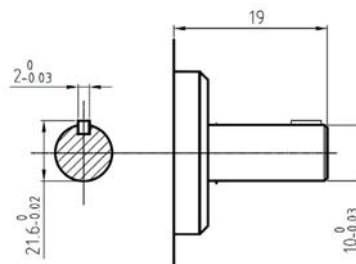
Coppia max 60 Nm  
Max torque 60 Nm

CODICE / CODE	S		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4
	E	G	2



Coppia max 16 Nm  
Max torque 16 Nm

CODICE / CODE	R		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4



Coppia max 12 Nm  
Max torque 12 Nm

CODICE / CODE	L		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4

## CARATTERISTICHE PRINCIPALI MAIN CHARACTERISTICS

### FLANGIA E COPERCHI IN ALLUMINIO / ALLOY COVER AND FLANGE

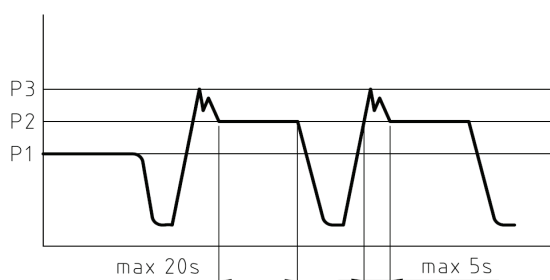
Tipo Type		08	11	16	21	26	32	37	42	48	55	62	78	88	105
Cilindrata Capacity	Cm <sup>3</sup> / giro Cm <sup>3</sup> / rev	0.80	1.08	1.59	2.09	2.59	3.15	3.68	4.19	4.79	5.49	6.2	7.81	8.82	10.5
P1 Pressione max continua Max working pressure	Bar	240	240	240	240	230	210	210	190	180	170	150	130	120	100
P2 Pressione intermittente intermittent pressure	Bar	260	260	250	250	250	240	230	210	200	180	160	140	130	120
P3 Pressione max di picco Max peak pressure	Bar	280	280	280	280	280	270	260	240	230	210	190	170	160	130
Velocità max per pressione P1 Max speed for P1 pressure	Giri / min Rpm	6000	6000	6000	6000	5500	4500	4000	3800	3500	3500	3000	3000	3000	3000
Velocità max a vuoto Max speed without load	Giri / min Rpm	8000	8000	8000	8000	8000	7000	6000	5500	5000	4500	4500	4000	4000	4000
Velocità min. per pressione P1 Min speed for P1 pressure	Giri / min Rpm	1100	1100	950	800	700	600	500	450	400	400	400	400	400	400

### FLANGIA E COPERCHI IN GHISA / CAST IRON COVER AND FLANGE

Tipo Type		08	11	16	21	26	32	37	42	48	55	62	78	88	105
Cilindrata Capacity	Cm <sup>3</sup> / giro Cm <sup>3</sup> / rev	0.80	1.08	1.59	2.09	2.59	3.15	3.68	4.19	4.79	5.49	6.2	7.81	8.82	10.5
P1 Pressione max continua Max working pressure	Bar	300	300	300	300	280	280	260	250	250	230	220	190	160	140
P2 Pressione intermittente Intermittent pressure	Bar	320	320	320	320	310	290	270	260	260	240	240	190	180	160
P3 Pressione max di picco Max peak pressure	Bar	350	350	350	350	350	310	290	270	270	260	250	210	190	180
Velocità max per pressione P1 Max speed for P1 pressure	Giri / min Rpm	8000	8000	8000	7000	5500	4500	4500	4000	3600	3600	3500	3000	3000	3000
Velocità max a vuoto Max speed without load	Giri / min Rpm	8000	8000	8000	8000	8000	7000	6000	5500	5000	4500	4500	4000	4000	4000
Velocità min. per pressione P1 Min speed for P1 pressure	Giri / min Rpm	1100	1100	1000	900	800	700	600	500	400	400	400	400	400	400

Per pompe o motori bidirezionali , diminuire la pressione del 15%  
With bidirectional pumps or motors , pressure is reduced by 15%

## FORMULE PER DIMENSIONAMENTO



PER POMPE  
FOR PUMP

$$Q = \frac{V * \eta_v * n}{1000}$$

$$M = \frac{p * V}{62.8 * \eta_m}$$

$$P = \frac{p * Q}{600 * \eta_t}$$

PER MOTORI  
FOR MOTOR

$$Q = \frac{V * n}{1000 * \eta_v}$$

$$M = \frac{p * V * \eta_m}{62.8}$$

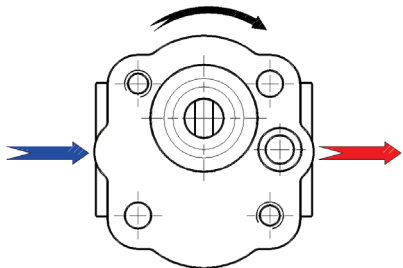
$$P = \frac{p * Q * \eta_t}{600}$$

V [cm<sup>3</sup>]  
Q [l/min]  
p [bar]  
M [Nm]  
n [min<sup>-1</sup>]  
P [Kw]

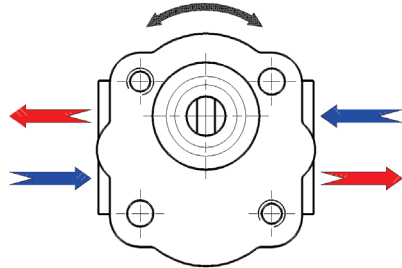
$\eta_v$  = EFF vol.  $\geq 95$   
 $\eta_m$  = EFF mecc.  $\sim 0.85$

$\eta_t$  =  $\eta_v * \eta_m$ .  $\sim 0.8$

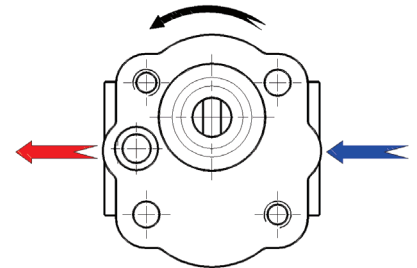
## SENSO DI ROTAZIONE ROTATION



Rotazione destra <i>Clockwise rotation</i>	Codice Code	<b>D</b>
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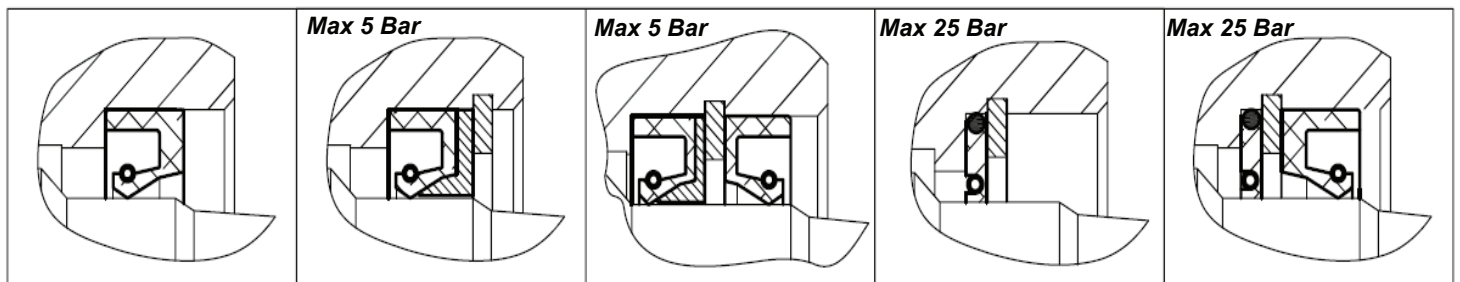
Rotazione bidirezionale drenaggio esterno <i>Bidirectional rotation with external drain</i>	Codice Code	<b>R*</b>
Rotazione bidirezionale drenaggio interno <i>Bidirectional rotation with internal drain</i>	Codice Code	<b>Y</b>



Rotazione sinistra <i>Anti-Clockwise rot.</i>	Codice Code	<b>S</b>
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Il senso di rotazione, è indicato con una freccia sul corpo della pompa.  
*Rotation, is indicated by an arrow on the body of the pump.*

## GUARNIZIONI PER ALBERI SHAFT SEAL



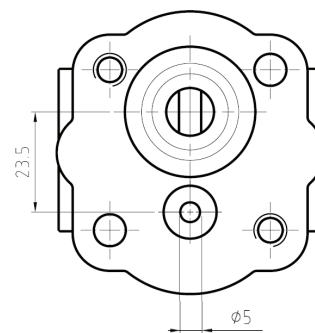
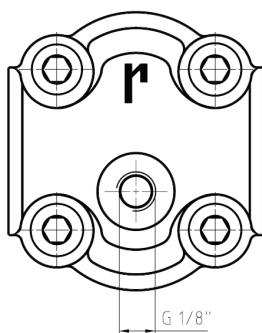
Codice Code	<b>N</b>	<b>NBR</b>
	<b>V</b>	<b>VITON</b>

Codice Code	<b>R*</b>	<b>NBR</b>
	<b>RV</b>	<b>VITON</b>

Codice Code	<b>N2</b>	<b>NBR</b>
	<b>V2</b>	<b>VITON</b>

Codice Code	<b>B</b>	<b>//</b>
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Codice Code	<b>BN</b>	<b>NBR</b>
	<b>BV</b>	<b>VITON</b>

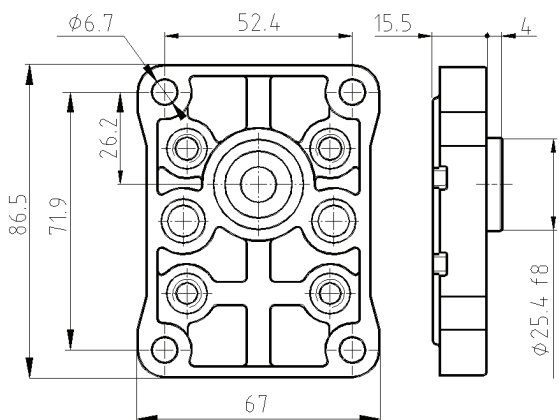


Drenaggio posteriore per pompe o motori reversibili <i>Rear drain for bidirectional pumps or motors</i>	<b>R*</b>
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Drenaggio anteriore per pompe o motori reversibili <i>Front drain for pumps or motors</i>	<b>R1</b>
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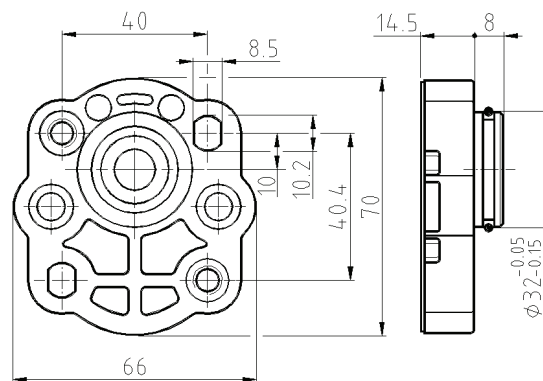
\* il codice "R" comprende rotazione bidirezionale, paraolio rinforzato 5 bar e drenaggio posteriore  
*Code "R" includes bidirectional rotation, reinforced shaft seal 5 bar and rear drain*

# FLANGE FLANGES



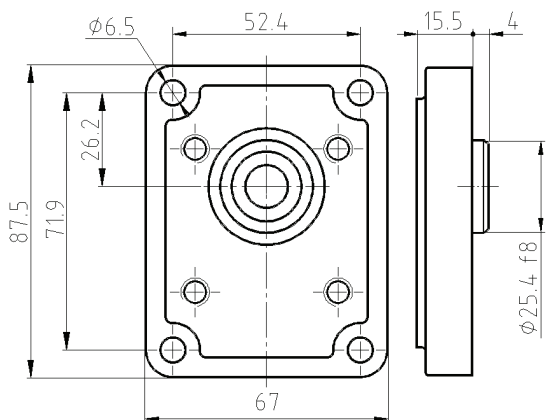
<b>CODICE CODE</b>	<b>A</b>	<b>0</b>	<b>4</b>
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NOTA : Materiale Alluminio  
NOTE : Material Alloy



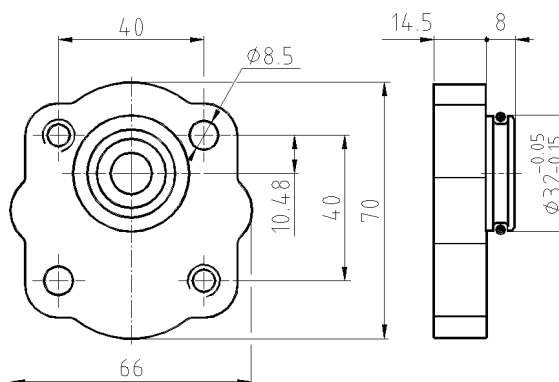
<b>CODICE CODE</b>	<b>B</b>	<b>0</b>	<b>1</b>
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NOTA : Materiale Alluminio  
NOTE : Material Alloy



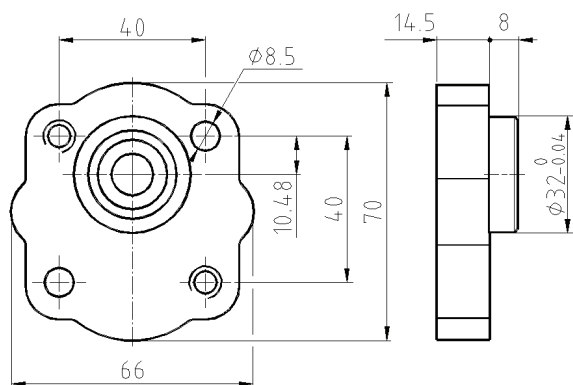
<b>CODICE CODE</b>	<b>A</b>	<b>G</b>	<b>4</b>
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NOTA : Materiale Ghisa  
NOTE : Material cast iron



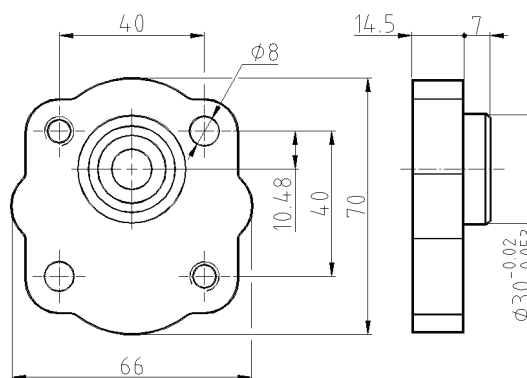
<b>CODICE CODE</b>	<b>B</b>	<b>G</b>	<b>1</b>
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NOTA : Materiale Ghisa  
NOTE : Material cast iron



<b>CODICE CODE</b>	<b>B</b>	<b>G</b>	<b>5</b>
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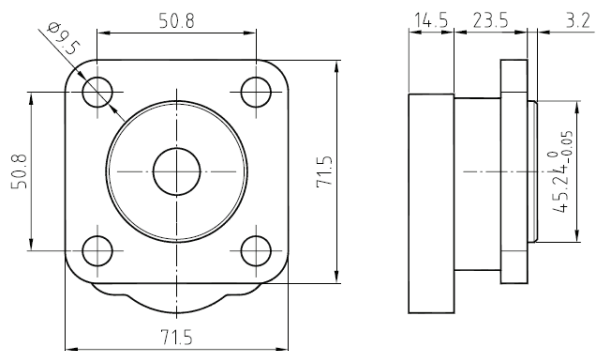
NOTA : Materiale Ghisa  
NOTE : Material cast iron



<b>CODICE CODE</b>	<b>B</b>	<b>G</b>	<b>2</b>
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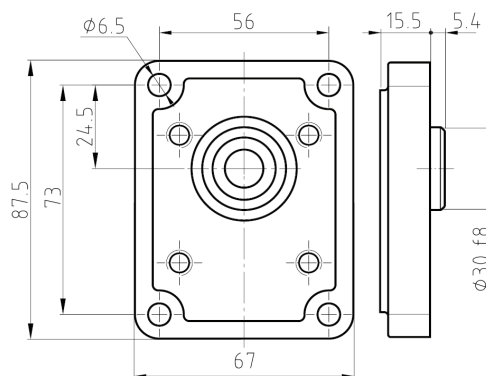
NOTA : Materiale Ghisa  
NOTE : Material cast iron

**FLANGE**  
**FLANGES**



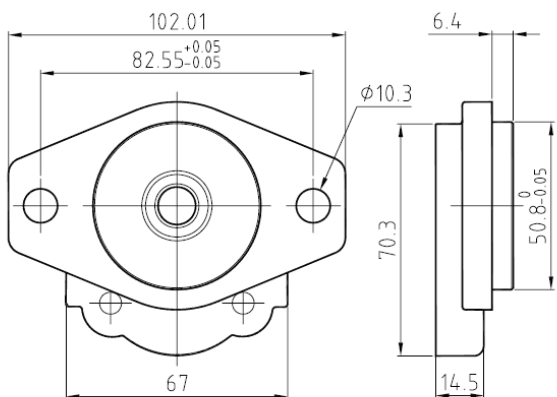
<b>CODICE</b> <b>CODE</b>	<b>D</b>	<b>G</b>	<b>7</b>
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NOTA : Materiale Ghisa  
NOTE : *Material cast iron*



<b>CODICE</b> <b>CODE</b>	<b>E</b>	<b>G</b>	<b>2</b>
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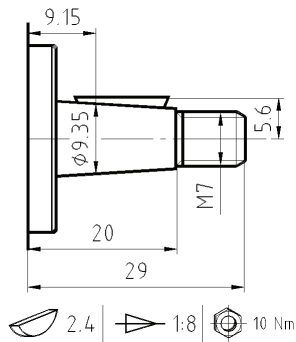
NOTA : Materiale Ghisa  
NOTE : *Material cast iron*



<b>CODICE</b> <b>CODE</b>	<b>C</b>	<b>G</b>	<b>6</b>
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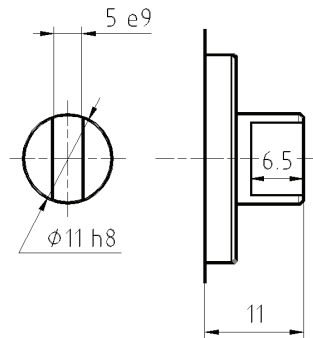
NOTA : Materiale Ghisa  
NOTE : *Material cast iron*

# ALBERI SHAFTS



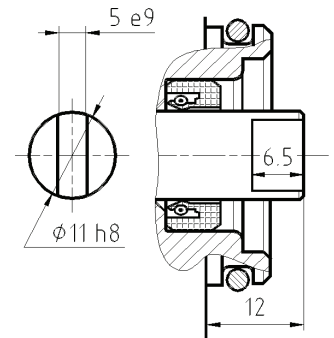
Coppia max 36 Nm  
Max torque 36 Nm

CODICE / CODE	C		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4



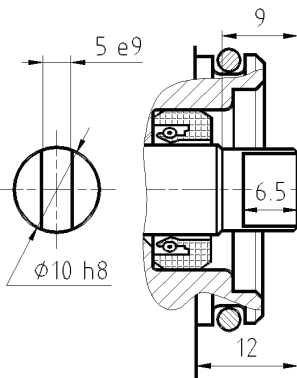
Coppia max 24 Nm  
Max torque 24 Nm

CODICE / CODE	F		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4



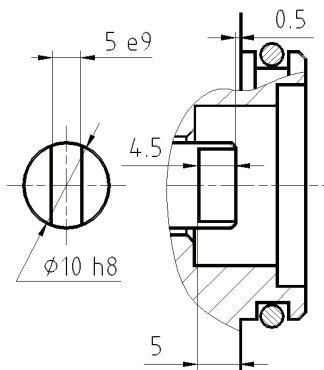
Coppia max 24 Nm  
Max torque 24 Nm

CODICE / CODE	F		
PER FLANGIA / FOR FLANGE	B	G	1
	B	0	1



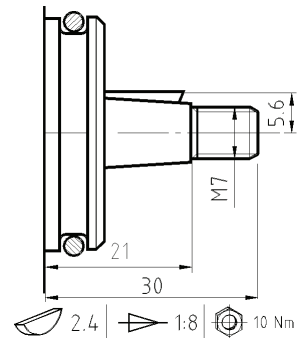
Coppia max 18 Nm  
Max torque 18 Nm

CODICE / CODE	M		
PER FLANGIA / FOR FLANGE	B	G	1
	B	0	1



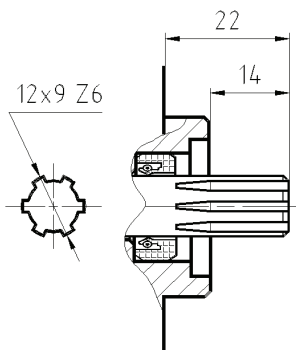
Coppia max 18 Nm  
Max torque 18 Nm

CODICE / CODE	G		
PER FLANGIA / FOR FLANGE	B	G	1
	B	0	1



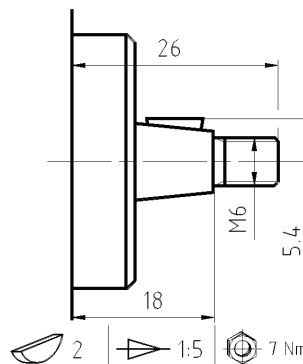
Coppia max 36 Nm  
Max torque 36 Nm

CODICE / CODE	C		
PER FLANGIA / FOR FLANGE	B	G	1
	B	0	1



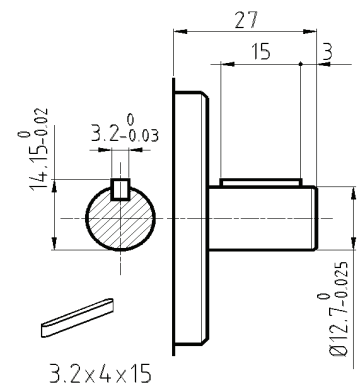
Coppia max 38 Nm  
Max torque 38 Nm

CODICE / CODE	D		
PER FLANGIA / FOR FLANGE	B	G	5
	B	0	5



Coppia max 30 Nm  
Max torque 30 Nm

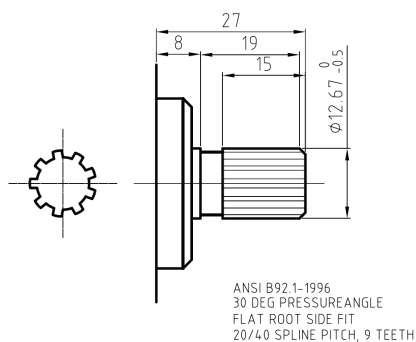
CODICE / CODE	B		
PER FLANGIA / FOR FLANGE	B	G	5
	B	0	5



Coppia max 28 Nm  
Max torque 28 Nm

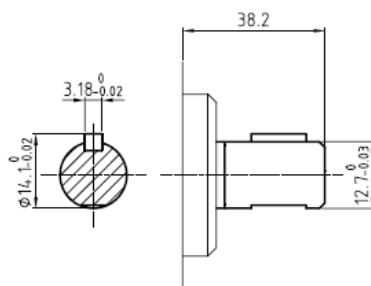
CODICE / CODE	N		
PER FLANGIA / FOR FLANGE	C	G	6

# ALBERI SHAFTS



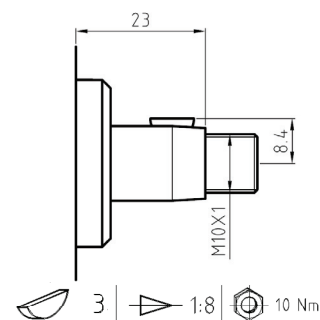
**Coppia max 45 Nm**  
**Max torque 45 Nm**

CODICE / CODE	Q		
PER FLANGIA / FOR FLANGE	C	G	6



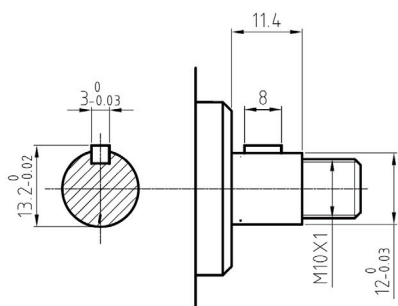
**Coppia max 35 Nm**  
**Max torque 35 Nm**

CODICE / CODE	P		
PER FLANGIA / FOR FLANGE	D	G	7



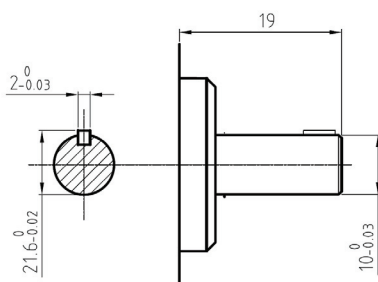
**Coppia max 60 Nm**  
**Max torque 60 Nm**

CODICE / CODE	S		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4
	E	G	2



**Coppia max 16 Nm**  
**Max torque 16 Nm**

CODICE / CODE	R		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4

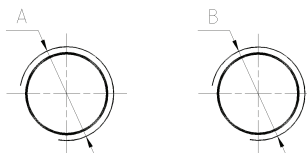


**Coppia max 12 Nm**  
**Max torque 12 Nm**

CODICE / CODE	L		
PER FLANGIA / FOR FLANGE	A	G	4
	A	0	4

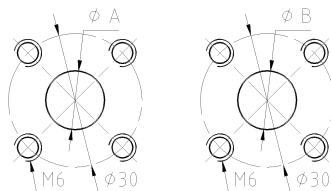
## BOCCHIE DI ASPIRAZIONE E MANDATA INLET AND OUTLET PORTS

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA LATERALE <i>SIDE OUTLET</i>
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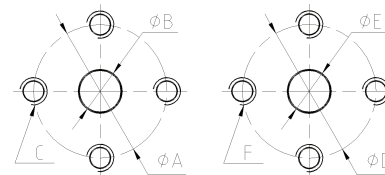
A	B	Codice Code
G 1/2	G 3/8	00
G 3/8	G 3/8	01
G 1/4	G 1/4	06
M18x1.5	M14x1.5	09
9/16-18 UNF	9/16-18 UNF	54

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA LATERALE <i>SIDE OUTLET</i>
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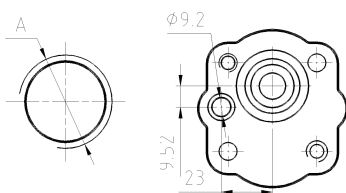
A	B	Codice Code
13	8	13
12	8	16
10	10	17
12	12	42

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA LATERALE <i>SIDE OUTLET</i>
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A	B	C	D	E	F	Codice Code
12	30	M6	12	30	M6	14
10	26	M5	10	26	M5	28

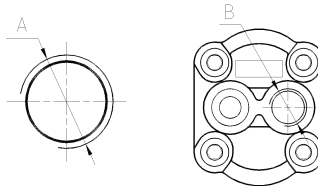
ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA ANTERIORE <i>FRONT OUTLET</i>
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LA FIGURA MOSTRA  
UNA POMPA SINISTRA

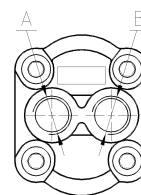
A	Codice Code
G 3/8	05
G 1/4	08

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA POSTERIORE <i>REAR OUTLET</i>
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A	B	Codice Code
G 3/8	G 3/8	03
G 3/8	G 1/4	04

ASPIRAZIONE POSTERIORE <i>REAR INLET</i>	MANDATA POSTERIORE <i>REAR OUTLET</i>
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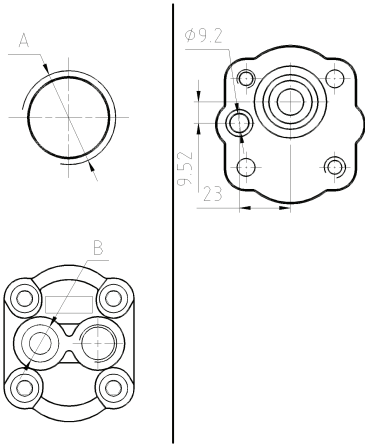


A	B	Codice Code
G 3/8	G 3/8	19
G 3/8	G 1/4	20

# BOCCHIE DI ASPIRAZIONE E MANDATA

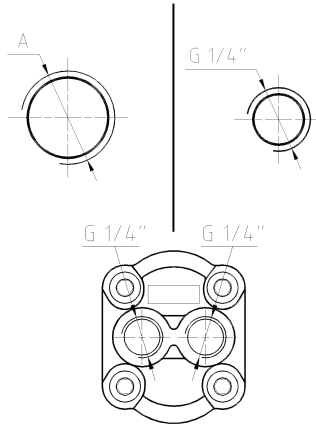
## INLET AND OUTLET PORTS

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA ANTERIORE <i>FRONT OUTLET</i>
ASPIRAZIONE POSTERIORE <i>REAR INLET</i>	



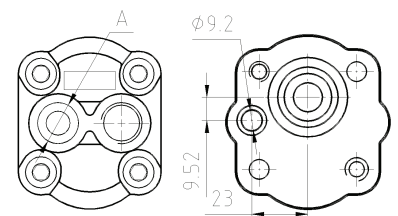
A	B	Codice Code
G 1/4	G 3/8	23
G 1/4	G 1/4	25

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA LATERALE <i>SIDE OUTLET</i>
ASPIRAZIONE POSTERIORE <i>REAR INLET</i>	MANDATA POSTERIORE <i>REAR OUTLET</i>



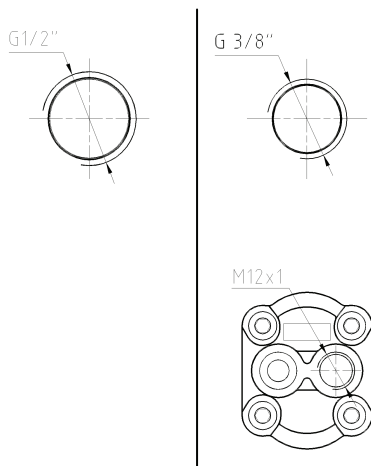
A	Codice Code
G 3/8	22
G 1/4	31

ASPIRAZIONE POSTERIORE <i>REAR INLET</i>	MANDATA ANTERIORE <i>FRONT OUTLET</i>
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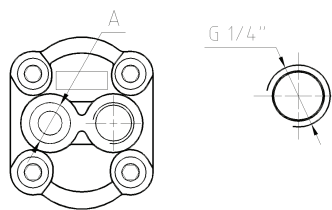
A	Codice Code
G 1/4	24
G 3/8	30

ASPIRAZIONE LATERALE <i>SIDE INLET</i>	MANDATA LATERALE <i>SIDE OUTLET</i>
	MANDATA POSTERIORE <i>REAR OUTLET</i>



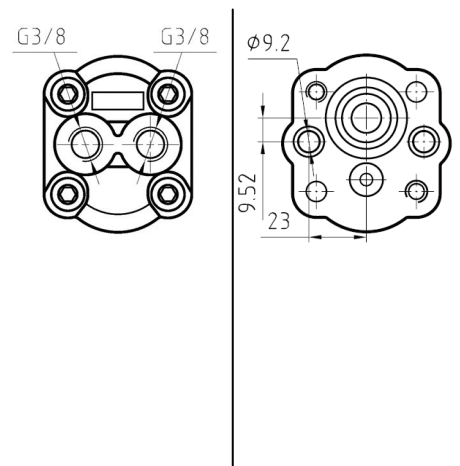
Codice Code	26
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ASPIRAZIONE POSTERIORE <i>REAR INLET</i>	MANDATA LATERALE <i>SIDE OUTLET</i>
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A	Codice Code
G 1/4	40
G 3/8	43

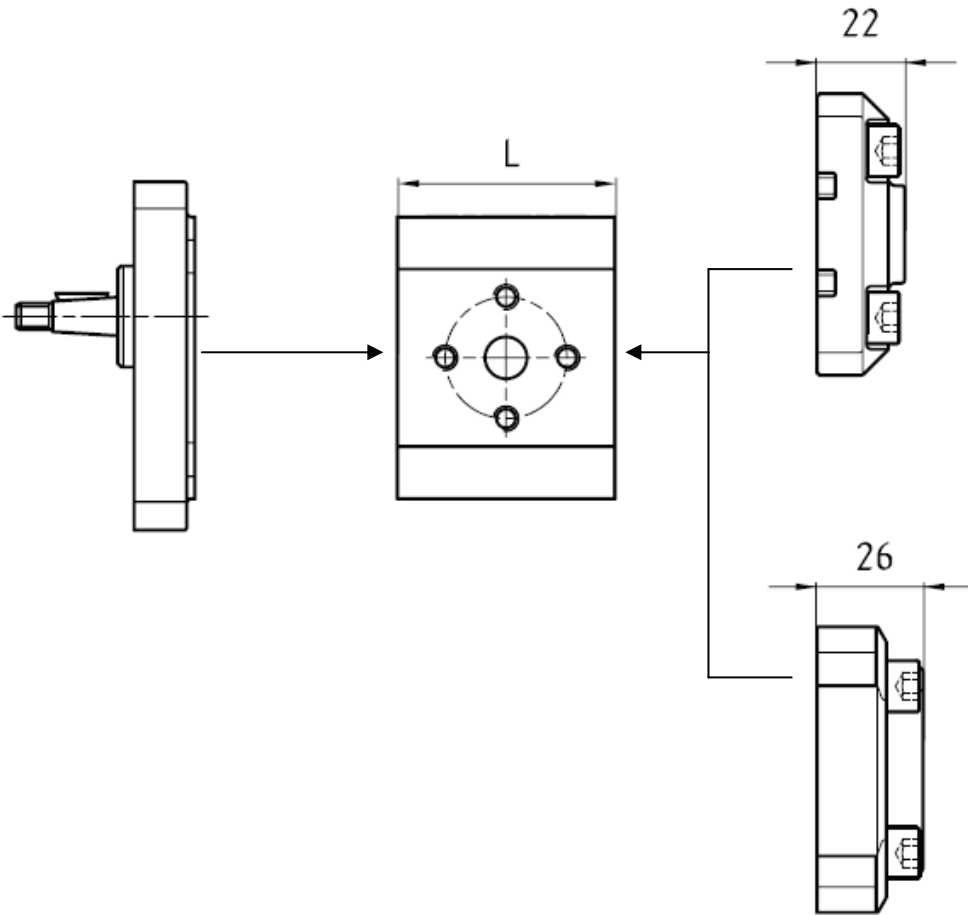
ASPIRAZIONE POSTERIORE <i>REAR INLET</i>	ASPIRAZIONE ANTERIORE <i>FRONT INLET</i>
MANDATA POSTERIORE <i>REAR OUTLET</i>	MANDATA ANTERIORE <i>FRONT OUTLET</i>



Codice Code	60
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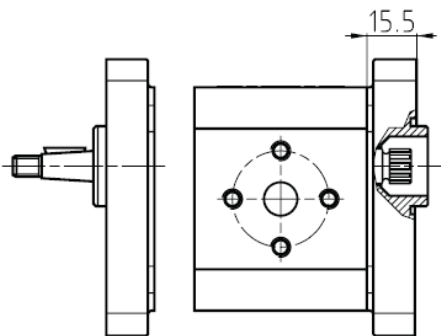
**DIMENSIONI D'INGOMBRO**  
**OVERALL DIMENSIONS**

COPERCHIO IN ALLUMINIO  
ALLOY COVER

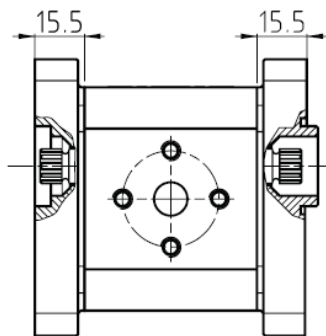


COPERCHIO IN GHISA  
CAST IRON COVER

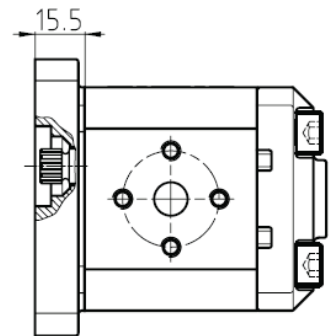
TIPO TYPE	L
08	31,8
11	38,3
16	40,3
21	42,3
26	44,3
32	46,5
37	48,6
42	50,6
48	53
55	55,8
62	58,6
78	65
88	69
105	82,3



**POMPA ANTERIORE**  
**FRONT PUMP**



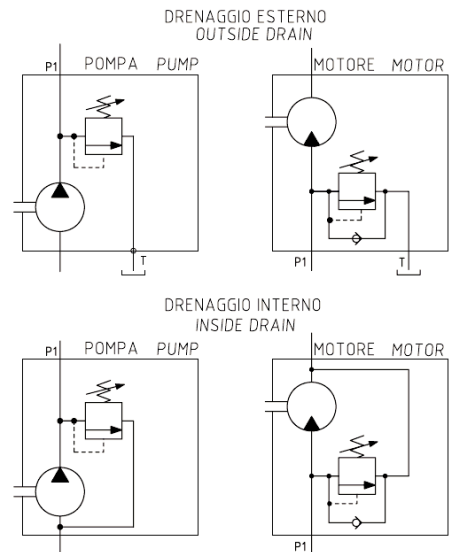
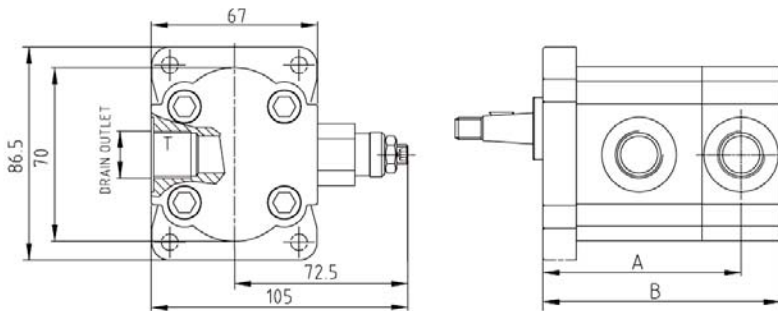
**POMPA INTERMEDIA**  
**MIDDLE PUMP**



**POMPA POSTERIORE**  
**REAR PUMP**

## VALVOLA DI MASSIMA PRESSIONE RELIEF VALVES

### VALVOLA A TARATURA REGOLABILE "VR" VALVE WITH ADJUSTABLE CALIBRATION "VR"



TYPE	8	11	16	21	26	32	37	42	48	55	62	78	88	105
A	72	73	75	77	79	81	83	85	87	90	93	99	103	116
B	87	88	90	92	94	96	98	100	102	105	108	114	118	131

### VALVOLA A TARATURA FISSA "VF" VALVE WITH FIXED CALIBRATION "VF"

