

# MOTORI AD INGRANAGGI

## GEAR MOTORS



Pag.	Page
------	------

<b>CARATTERISTICHE</b> <b>FEATURES</b>		C-2
<b>CONDIZIONI D'IMPIEGO</b> <b>USE CONDITIONS</b>		C-2
<b>INFORMAZIONI TECNICHE</b> <b>TECHNICAL INFORMATION</b>		C-3
<b>GAMMA DI PRODOTTO</b> <b>PRODUCT RANGE</b>		C-4
<b>MOTORI GRUPPO</b> <b>MOTORS GROUP</b>	<b>2</b>	C-6
<b>MOTORI GRUPPO</b> <b>MOTORS GROUP</b>	<b>3</b>	C-15

## CARATTERISTICHE

Motori ad ingranaggi esterni dal gruppo 2 al gruppo 3 suddivisi in 17 cilindrate da 4 a 61,1cc, fino a 270 bar di pressione massima di esercizio e velocità massima fino a 4000 giri/min., con bilanciamento idrostatico a ripresa del gioco assiale.

Disponibili in versione unidirezionale o reversibile (utilizzabili anche in serie).

Ogni motore può essere assemblato con totale intercambiabilità sia con flange standard (europea tedesca, SAE) sia con quelle speciali e con alberi conici, cilindrici e scanalati. E' possibile inoltre montare coperchi per due velocità e con valvola limitatrice di pressione.

I motori sono disponibili nelle esecuzioni unidirezionale e reversibile

## FEATURES

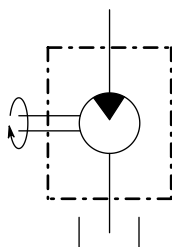
Motors with external gears from group 2 to group 3, divided into 17 displacements from 4 to 61,1cc, up to 270 bar of max working pressure and maximum speed up to 4000 rpm, with hydrostatic balance to reduce the axial slack.

Gear motors are available in unidirectional and reversible versions (reversible motors can be used same in serie circuit).

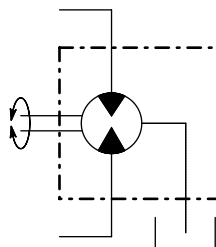
Each motor can be assembled with standard flanges (European, German or SAE) or with special ones (ZF, Perkins and Renault), with conic, cylindrical or splined shaft. Furthermore it is possible to assemble covers with two speed function and with pressure relief valve.

The motors are available in unidirectional D - S and reversible R version.

Motore unidirezionale (D-S)  
Unidirectional motor (D-S)



Motore reversibile (R)  
Reversible motor (R)



## CONDIZIONI D'IMPIEGO

- Temperatura d'impiego 20°C ÷ 65°C
- Temperatura limite -15 °C ÷ 80°C
- Pressione ammessa in aspirazione min. 0.7 max. 3 bar (assoluti)
- Viscosità raccomandata 15 ÷ 92 mm<sup>2</sup> /s
- Viscosità limite d'avviamento 3000 mm<sup>2</sup> /s
- Filtraggio 26/23 ISO DIS 4406 fino a 150 bar  
23/20 ISO DIS 4406 per pressioni superiori

## USE CONDITIONS

- Temperature 20°C ÷ 65°C
- Max. temperature - 15 °C ÷ 80°C
- Suction allowed pressure min. 0.7 max. 3 bar (absolute)
- Recommended viscosity 15 ÷ 92 mm<sup>2</sup> /s
- Start max. viscosity 3000 mm<sup>2</sup> /s
- Filtering 26/23 150 ISO DIS 4406 until 2175 psi  
23/20 ISO DIS 4406 for higher pressure



**INFORMAZIONI TECNICHE**

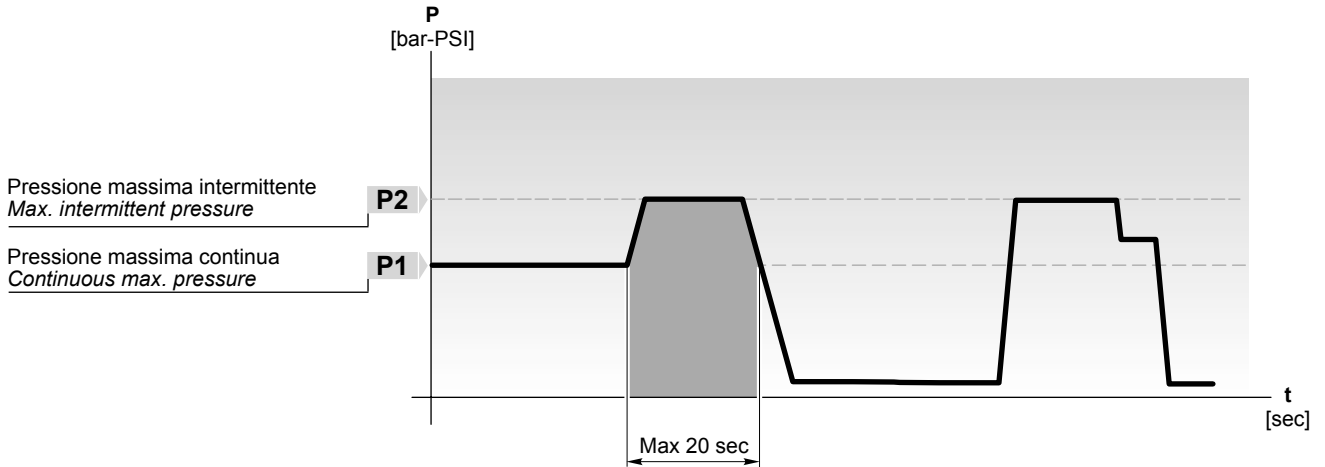
**TECHNICAL INFORMATION**

**Definizione delle pressioni**

I motori possono essere sottoposti alle pressioni P1, P2 indicate nelle tabelle delle prestazioni. Il grafico seguente ne illustra le definizioni e l'applicabilità rispettando i limiti delle velocità di rotazione riportati.

**Definition of pressures**

The motors can be subjected to the pressures P1, P2 indicated in the performance tables. The following diagram illustrates the definitions and applicability of these, compared to the rotation speed limits included.



**Misure idrauliche  
Hydraulic measures**

<b>Q</b>	Portata Flow	[l/min - Gal/min]
<b>M</b>	Coppia Torque	[Nm - lbf.in]
<b>P</b>	Potenza Power	[kW - HP]
<b>V</b>	Cilindrata Displacement	[cm <sup>3</sup> /rev - in <sup>3</sup> /rev]
<b>N</b>	Velocità Speed	[min <sup>-1</sup> - rpm]
<b>Δp</b>	Pressione Pressure	[bar - PSI]
<b>η<sub>v</sub></b>	Rendimento volumetrico Volumetric efficiency	
<b>η<sub>m</sub></b>	Rendimento meccanico Mechanical efficiency	
<b>η<sub>t</sub></b>	Rendimento totale Overall efficiency	

**Formule utili  
Useful formulas**

$$Q = \frac{V \text{ [cm}^3\text{/rev]} \times n \times n \times 10^3}{\eta_v} \text{ l/min}$$

$$M = \frac{\Delta p \text{ [bar]} \times V \text{ [cm}^3\text{/rev]} \times \eta_m}{62.83} \text{ Nm}$$

$$P = \frac{\Delta p \text{ [bar]} \times V \text{ [cm}^3\text{/rev]} \times n \times \eta_t}{600 \times 1000} \text{ kW}$$

**Fattore di conversione  
Conversion factors**

- 1 l/min = 0.2641 US Gal/min
- 1 Nm = 8.851 lbf.in
- 1 N = 0.2248 lbs
- 1 kW = 1.34 HP
- 1 cm<sup>3</sup>/giro = 0.061 in<sup>3</sup>/rev
- 1 bar = 14,5 PSI
- 1 mm = 0,0394 in
- 1 kg = 2.205 lb

**GAMMA DI PRODOTTO**

**PRODUCT RANGE**

**MOTORI GRUPPO  
MOTORS GROUP**

**2**

**D** = Rotazione destra / *Clockwise rotation*  
**S** = Rotazione sinistra / *Anticlockwise rotation*  
**R** = Reversibile / *Reversible*

**Standard**

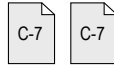
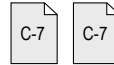
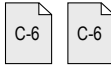
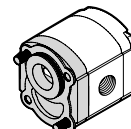
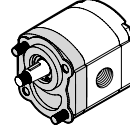
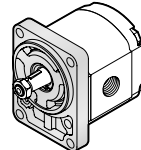
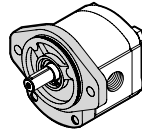
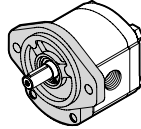
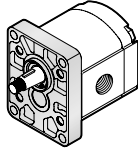
**SAE A**

**SAE A-OR**

**B80 C**

**B50 C**

**E52 C**



Grandezza Size	Cilindrata Displacement [cm <sup>3</sup> /rev] (in <sup>3</sup> /rev)	Pressione max. d'esercizio Max. working pressure				Velocità max. Max. speed [g/min] (rpm)	Portata max. Max. flow [lt/min] (Gal/min)	Velocità min. Min. speed [g/min] (rpm)	Portata min. Min. flow [lt/min] (Gal/min)
		P1 [bar] / (PSI)		P2 [bar] / (PSI)					
		S - D	R	S - D	R				
<b>2SM_4</b>	<b>4</b> (0.24)	230 (3335)	230 (3335)	270 (3915)	230 (3335)	4000	16 (4.23)	500	1.9 (0.50)
	<b>6</b> (0.37)	230 (3335)	230 (3335)	270 (3915)	230 (3335)				
<b>2SM_6</b>	<b>6</b> (0.37)	230 (3335)	230 (3335)	270 (3915)	230 (3335)	4000	29.7 (7.85)	500	2.85 (0.75)
	<b>8.5</b> (0.52)	230 (3335)	230 (3335)	270 (3915)	230 (3335)				
<b>2SM_8</b>	<b>8.5</b> (0.52)	230 (3335)	230 (3335)	270 (3915)	230 (3335)	3500	38.5 (10.17)	500	4.03 (1.06)
	<b>11</b> (0.67)	230 (3335)	230 (3335)	270 (3915)	230 (3335)				
<b>2SM_11</b>	<b>11</b> (0.67)	230 (3335)	230 (3335)	270 (3915)	230 (3335)	3500	49 (12.95)	500	5.22 (1.38)
	<b>14</b> (0.85)	230 (3335)	230 (3335)	270 (3915)	230 (3335)				
<b>2SM_14</b>	<b>14</b> (0.85)	230 (3335)	200 (2900)	240 (3480)	200 (2900)	3500	57.7 (15.24)	500	6.65 (1.76)
	<b>16.5</b> (1.01)	230 (3335)	200 (2900)	240 (3480)	200 (2900)				
<b>2SM_16</b>	<b>16.5</b> (1.01)	210 (3045)	185 (2683)	220 (3190)	185 (2683)	3300	64.3 (16.99)	500	7.83 (2.07)
	<b>19.5</b> (1.19)	190 (2755)	170 (2465)	200 (2900)	170 (2465)				
<b>2SM_19</b>	<b>19.5</b> (1.19)	190 (2755)	170 (2465)	200 (2900)	170 (2465)	2800	63 (16.64)	500	9.26 (2.45)
	<b>22.5</b> (1.37)	170 (2465)	150 (2175)	180 (2610)	155 (2248)				
<b>2SM_22</b>	<b>22.5</b> (1.37)	170 (2465)	150 (2175)	180 (2610)	155 (2248)	2500	65 (17.17)	500	10.68 (2.82)
	<b>26</b> (1.59)	170 (2465)	150 (2175)	180 (2610)	155 (2248)				
<b>2SM_26</b>	<b>26</b> (1.59)	170 (2465)	150 (2175)	180 (2610)	155 (2248)	2500	65 (17.17)	500	12.35 (3.26)

\* (Valori rilevati in fase di collaudo a 1500 giri/min / Value collected during the testing at 1500 rpm)

Esempio di ordinazione in codice / Example of ordering code

**2SM A 14 D (K) - 10 G (VT)**

<b>2SM</b>	Tipo motore / <i>Motor type</i>	vedi tabella / <i>see table</i>
<b>A</b>	Flangia e coperchio / <i>Flange and cover</i>	<b>A</b> = Alluminio / <i>Aluminium</i> <b>G</b> = Ghisa / <i>Cast iron</i>
<b>14</b>	Cilindrata / <i>Displacement</i>	vedi tabella / <i>see table</i>
<b>D</b>	Rotazione destra / <i>Clockwise rotation</i>	<b>D</b> = Rotazione destra / <i>Clockwise rotation</i> <b>S</b> = Rotazione sinistra / <i>Anticlockwise rotation</i> <b>R</b> = Reversibile / <i>Reversible</i>
— <sup>(1)</sup>	Tipo flangia / <i>Flange type</i>	
<b>(K)</b>	Anello di rinforzo per alta pressione sullo scarico - max. 30 bar <i>Seal for high pressure on the tank return line - max. 30 bar</i>	(a richiesta / <i>optional</i> )
—		
<b>10</b>	Tipo albero / <i>Shaft type</i>	<b>10 - 11 - 12 - 13 - 14 - 15 - 16 - 17</b>
<b>G</b>	Tipo connessioni / <i>Connections type</i>	<b>G - N - T - U - F - M - W</b>
<b>(VT)</b>	Opzioni / <i>Optional</i>	<b>(VT)</b> Guarnizione in Viton (a richiesta) <i>Viton seals (optional)</i> <b>VLP-I (N) - VLP-E (N)</b> Valvola limitatrice di pressione (pag. C-14) <i>Pressure relief valve (page C-14)</i>

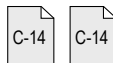
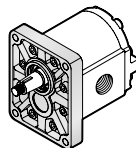
<sup>(1)</sup> Non è necessario indicare la flangia STANDARD / *It is not necessary indicate STANDARD flange*

## GAMMA DI PRODOTTO

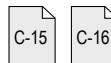
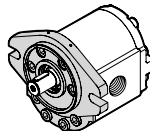
## PRODUCT RANGE

**MOTORI GRUPPO**  
**MOTORS GROUP**
**3**
**D** = Rotazione destra / *Clockwise rotation*  
**S** = Rotazione sinistra / *Anticlockwise rotation*  
**R** = Reversibile / *Reversible*

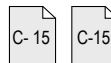
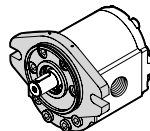
Standard



SAE B



SAE B-OR



Grandezza Size	Cilindrata Displacement  [cm <sup>3</sup> /rev] (in <sup>3</sup> /rev)	Pressione max. d'esercizio Max. working pressure				Velocità max. Max. speed  [g/min] (rpm)	Portata max. Max. flow  [lt/min] (Gal/min)	Velocità min. Min. speed  [g/min] (rpm)	Portata min. Min. flow  [lt/min] (Gal/min)
		P1 [bar] / (PSI)		P2 [bar] / (PSI)					
		S - D	R	S - D	R				
<b>3SM_19</b>	<b>19</b> (1.16)	250 (3625)	215 (3118)	270 (3915)	220 (3190)	3500	66.5 (17.57)	700	12.64 (3.34)
<b>3SM_22</b>	<b>22.3</b> (1.36)	240 (3480)	205 (2973)	260 (3770)	220 (3190)	3500	78 (20.61)	700	14.83 (3.92)
<b>3SM_29</b>	<b>29.3</b> (1.79)	220 (3190)	190 (2755)	240 (3480)	205 (2973)	3300	96.7 (25.55)	700	19.48 (5.15)
<b>3SM_33</b>	<b>32.9</b> (2.01)	220 (3190)	190 (2755)	240 (3480)	205 (2973)	3300	108.6 (28.69)	700	21.88 (5.78)
<b>3SM_36</b>	<b>36.4</b> (2.22)	210 (3045)	180 (2610)	230 (3335)	205 (2973)	3300	120.1 (31.73)	700	24.21 (6.40)
<b>3SM_44</b>	<b>43.5</b> (2.65)	200 (2900)	170 (2465)	220 (3190)	185 (2683)	3000	130.5 (34.48)	700	28.93 (7.64)
<b>3SM_52</b>	<b>51.7</b> (3.15)	200 (2900)	170 (2465)	220 (3190)	180 (2610)	3000	155.1 (40.98)	700	34.38 (9.08)
<b>3SM_62</b>	<b>61.1</b> (3.73)	180 (2610)	160 (2320)	190 (2755)	160 (2320)	2500	152.7 (40.34)	700	40.63 (10.73)

\* (Valori rilevati in fase di collaudo a 1500 giri/min / Value collected during the testing at 1500 rpm)

Esempio di ordinazione in codice / Example of ordering code

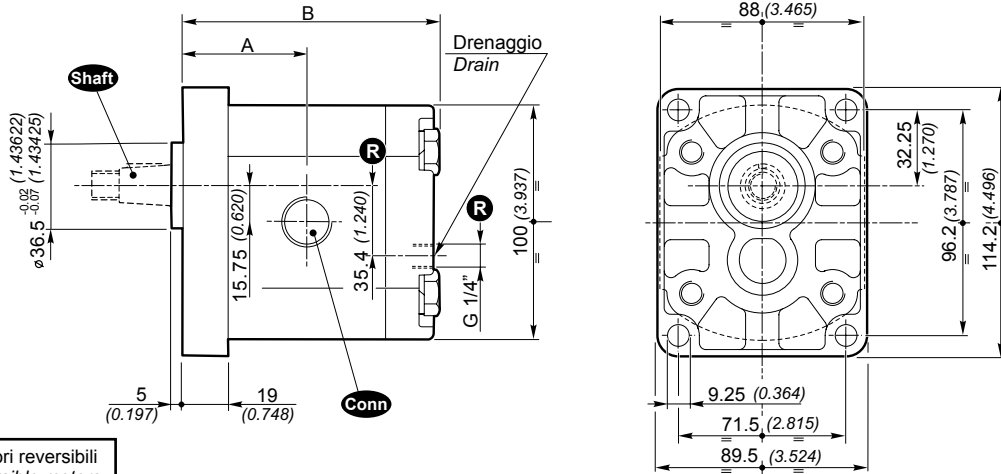
<b>3SM</b>	<b>A</b>	<b>22</b>	<b>D</b>	<b>(K)</b>	<b>-</b>	<b>10</b>	<b>G</b>	<b>(VT)</b>
------------	----------	-----------	----------	------------	----------	-----------	----------	-------------

<b>3SM</b>	Tipo motore / <i>Motor type</i>	vedi tabella / <i>see table</i>
<b>A</b>	Flangia e coperchio / <i>Flange and cover</i>	<b>A</b> = Alluminio / <i>Aluminium</i> <b>G</b> = Ghisa / <i>Cast iron</i>
<b>14</b>	Cilindrata / <i>Displacement</i>	vedi tabella / <i>see table</i>
<b>D</b>	Rotazione destra / <i>Clockwise rotation</i>	<b>D</b> = Rotazione destra / <i>Clockwise rotation</i> <b>S</b> = Rotazione sinistra / <i>Anticlockwise rotation</i> <b>R</b> = Reversibile / <i>Reversible</i>
— <sup>(1)</sup>	Tipo flangia / <i>Flange type</i>	
<b>(K)</b>	Anello di rinforzo per alta pressione sullo scarico - max. 30 bar <i>Seal for high pressure on the tank return line - max. 30 bar</i>	(a richiesta / <i>optional</i> )
—		
<b>10</b>	Tipo albero / <i>Shaft type</i>	<b>10 - 13 - 14</b>
<b>G</b>	Tipo connessioni / <i>Connections type</i>	<b>G - N - W - F - T</b>
<b>(VT)</b>	Opzioni / <i>Optional</i>	<b>(VT)</b> Guarnizione in Viton (a richiesta) <i>Viton seals (optional)</i>

<sup>(1)</sup> Non è necessario indicare la flangia STANDARD / *It is not necessary indicate STANDARD flange*

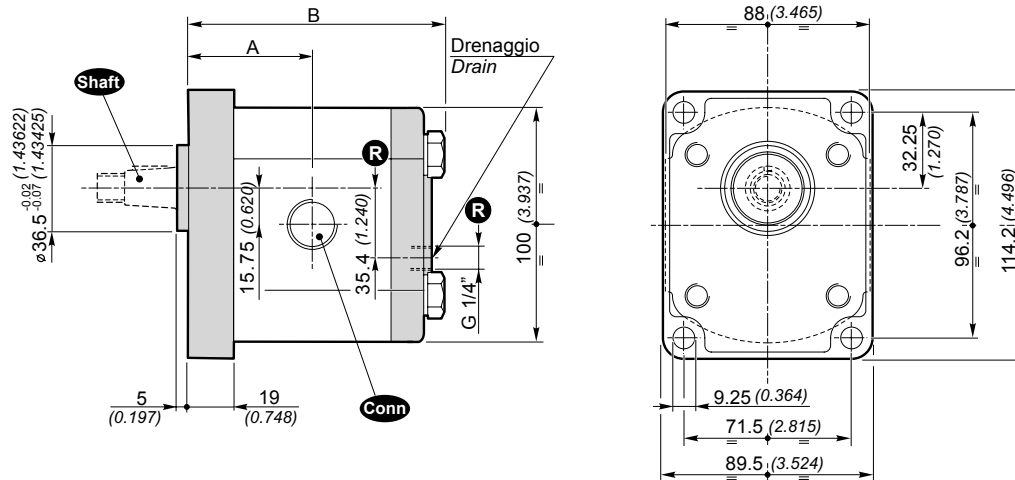
Dimensioni / Dimensions

Flangia e coperchio in Alluminio / Flange and cover in Aluminium



**R** Solo per motori reversibili  
Only for reversible motors

Flangia e coperchio in Ghisa / Flange and cover in Cast iron



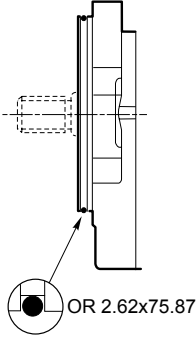
STND (Alluminio / Aluminium)

STND (Ghisa / Cast iron)

Grandezza Size	Cilindrata Displacement [cm <sup>3</sup> /rev] [in <sup>3</sup> /rev]	Dimensioni Dimensions		Massa Mass [Kg] [lbs]	Shaft	Conn	Dimensioni Dimensions		Massa Mass [Kg] [lbs]	Shaft	Conn
		A [mm] [inch]	B [mm] [inch]				A [mm] [inch]	B [mm] [inch]			
2SM_4	4 (0.24)	44.4 (1.748)	93 (3.661)	2.30 (5.1)	10 11 12 13 14 15 16	G N T M U W F	44.4 (1.748)	93 (3.661)	3.40 (7.5)	10 11 12 13 14 15 16	G N T M U W F
2SM_6	6 (0.37)	46 (1.811)	96.3 (3.791)	2.45 (5.4)			46 (1.811)	96.3 (3.791)	3.60 (7.8)		
2SM_8	8.5 (0.52)	48.1 (1.894)	100.5 (3.957)	2.60 (5.7)			48.1 (1.894)	100.5 (3.957)	3.70 (8.2)		
2SM_11	11 (0.67)	50.2 (1.976)	104.6 (4.118)	2.70 (6.0)			50.2 (1.976)	104.6 (4.118)	3.80 (8.4)		
2SM_14	14 (0.85)	52.7 (2.075)	109.6 (4.315)	2.80 (6.2)			52.7 (2.075)	109.6 (4.315)	3.90 (8.6)		
2SM_16	16.5 (1.01)	54.8 (2.157)	113.8 (4.480)	2.95 (6.5)			54.8 (2.157)	113.8 (4.480)	4.05 (8.9)		
2SM_19	19.5 (1.19)	57.3 (2.256)	118.8 (4.677)	3.10 (6.8)			57.3 (2.256)	118.8 (4.677)	4.20 (9.3)		
2SM_22	22.5 (1.37)	59.8 (2.354)	123.8 (4.874)	3.25 (7.2)			59.8 (2.354)	123.8 (4.874)	4.35 (9.6)		
2SM_26	26 (1.59)	62.7 (2.469)	129.6 (5.102)	3.40 (7.5)			62.7 (2.469)	129.6 (5.102)	4.50 (9.9)		

Dimensioni / Dimensions

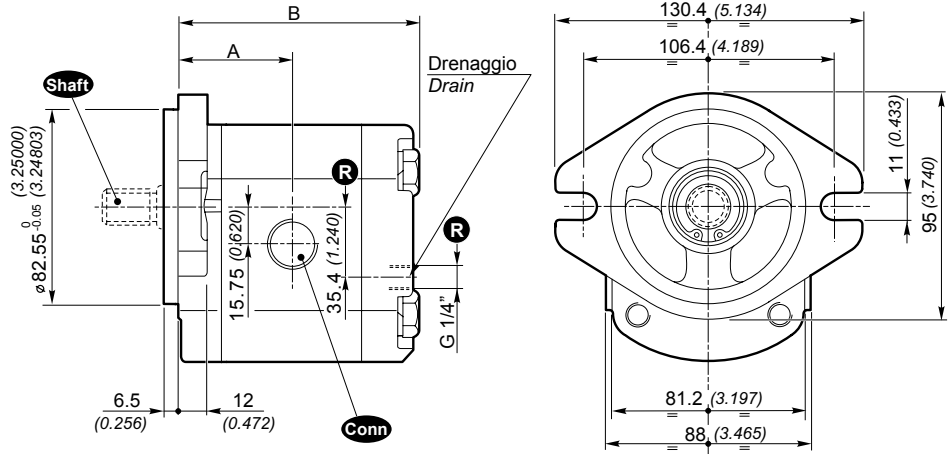
SAE A-OR



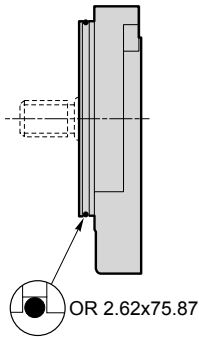
**R** Solo per motori reversibili  
Only for reversible motors

SAE A

Flangia e coperchio in Alluminio / Flange and cover in Aluminium

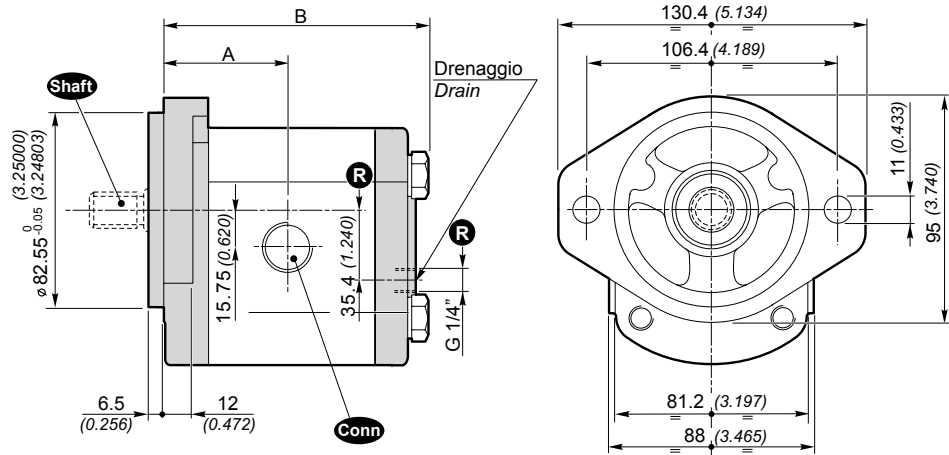


SAE A-OR



SAE A

Flangia e coperchio in Ghisa / Flange and cover in Caston iron



SAE A, SAE A-OR (All. / Aluminium)

SAE A, SAE A-OR (Ghisa / Cast iron)

Grandezza Size	Cilindrata Displacement	Dimensioni Dimensions		Massa Mass	Shaft	Conn	Dimensioni Dimensions		Massa Mass	Shaft	Conn
		A	B				A	B			
	[cm <sup>3</sup> /rev] [in <sup>3</sup> /rev]	[mm] [inch]	[mm] [inch]	[Kg] [lbs]			[mm] [inch]	[mm] [inch]	[Kg] [lbs]		
2SM_4	4 (0.24)	44.4 (1.748)	93 (3.661)	2.30 (5.1)			44.4 (1.748)	93 (3.661)	3.40 (7.5)		
2SM_6	6 (0.37)	46 (1.811)	96.3 (3.791)	2.45 (5.4)			46 (1.811)	96.3 (3.791)	3.55 (7.8)		
2SM_8	8.5 (0.52)	48.1 (1.894)	100.5 (3.957)	2.60 (5.7)	10	G	48.1 (1.894)	100.5 (3.957)	3.70 (8.2)	10	G
2SM_11	11 (0.67)	50.2 (1.976)	104.6 (4.118)	2.70 (6.0)	11	N	50.2 (1.976)	104.6 (4.118)	3.80 (8.4)	11	N
					12	T				12	T
2SM_14	14 (0.85)	52.7 (2.075)	109.6 (4.315)	2.80 (6.2)	13	M	52.7 (2.075)	109.6 (4.315)	3.90 (8.6)	13	M
					14	U				14	U
2SM_16	16.5 (1.01)	54.8 (2.157)	113.8 (4.480)	2.95 (6.5)	15	W	54.8 (2.157)	113.8 (4.480)	4.05 (8.9)	15	W
					16	F				16	F
2SM_19	19.5 (1.19)	57.3 (2.256)	118.8 (4.677)	3.10 (6.8)			57.3 (2.256)	118.8 (4.677)	4.20 (9.3)		
2SM_22	22.5 (1.37)	59.8 (2.354)	123.8 (4.874)	3.25 (7.2)			59.8 (2.354)	123.8 (4.874)	4.35 (9.6)		
2SM_26	26 (1.59)	62.7 (2.469)	129.6 (5.102)	3.40 (7.5)			62.7 (2.469)	129.6 (5.102)	4.50 (9.9)		

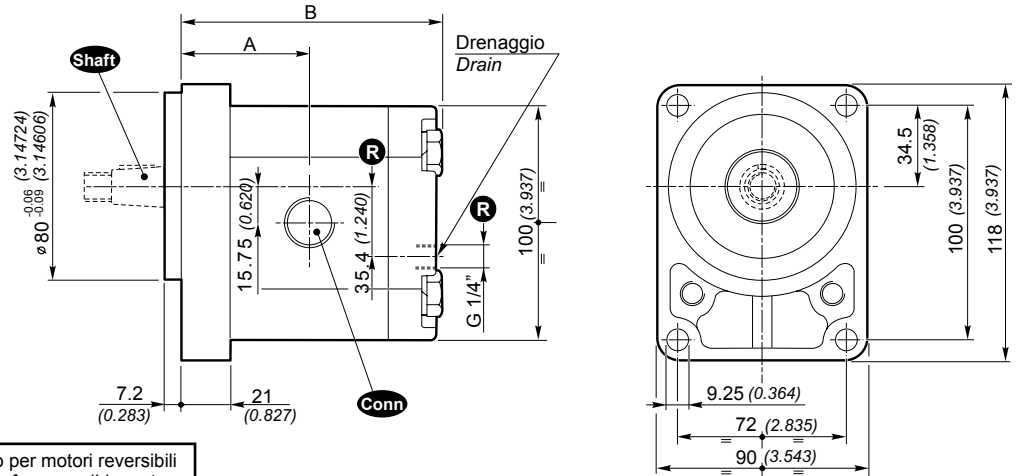


MOTORI GRUPPO  
MOTORS GROUP

2

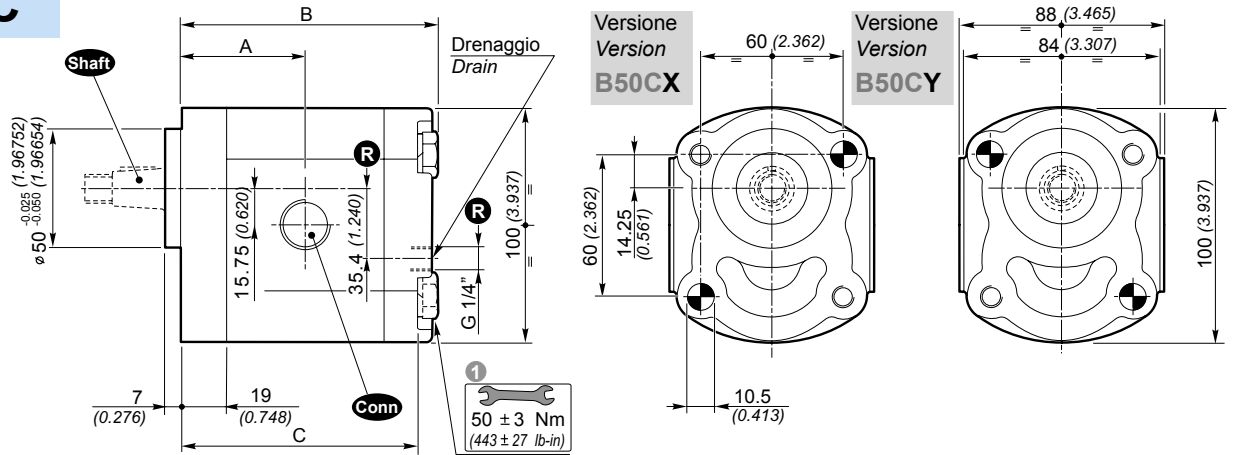
Dimensioni / Dimensions

B80C



**R** Solo per motori reversibili  
Only for reversible motors

B50C



Versione  
Version  
B50CX

Versione  
Version  
B50CY

1  
50 ± 3 Nm  
(443 ± 27 lb-in)

1 Coppia di serraggio viti: 50 ± 3 Nm. Utilizzare viti classe 10.9 - 12.9 UNI EN 20898/1.  
Il fissaggio della pompa può essere affettuato con 2 viti prigioniere in materiale classe 10.9 - 12.9 preserrate a 40 ± 3 Nm.  
Fissare la pompa mediante dadi autobloccanti con coppia di serraggio 50 ± 3 Nm.  
Il Kit di viti per il fissaggio della pompa è da ordinare separatamente.  
Codice di ordinazione del Kit di fissaggio:

1 Tightening torque of screws: 443 ± 27 lb-in. Use screws type 10.9 - 12.9 UNI EN 20898/1.  
The assembling of the pump should be effected with 2 screw studs type 10.9 - 12.9 pre-tighten at 354 ± 27 lb-in.  
Fix the pump by self-locking nuts with tightening torque 443 ± 27 lb-in.  
The screws kit for the pump assembling should be ordered separately.  
Ordering code of fixing Kit:

0029W + Lunghezza L (vedi tabella)  
+ Length L (see table)

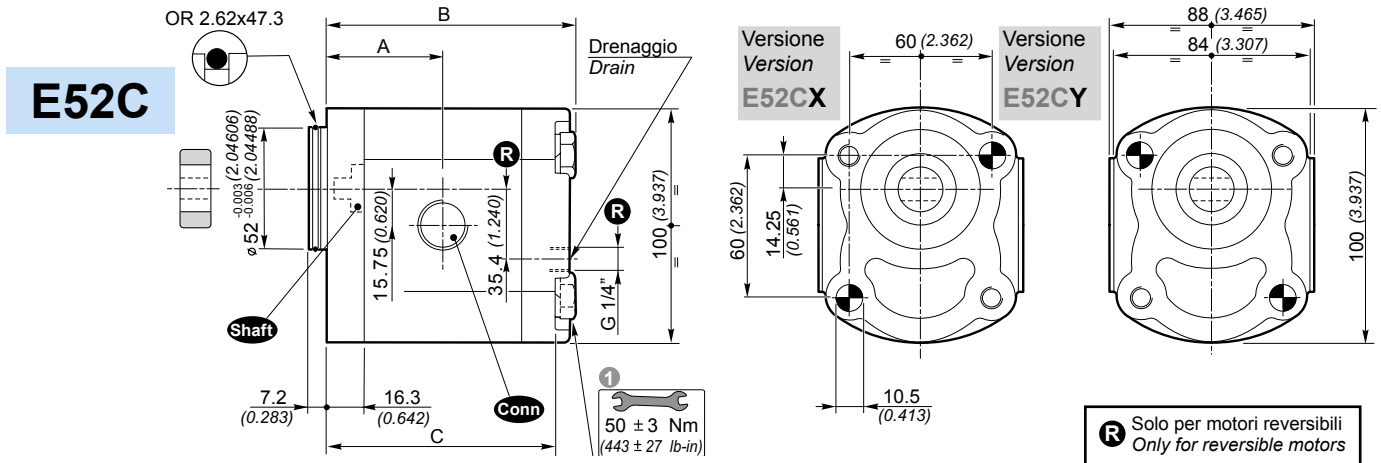
Grandezza Size	Cilindrata Displacement [cm <sup>3</sup> /rev] [in <sup>3</sup> /rev]	B80C				B50C				Massa Mass [Kg] [lbs]	Shaft	Conn		
		Dimensioni / Dimensions		Shaft	Conn	Dimensioni / Dimensions							Shaft	Conn
		A [mm] [inch]	B [mm] [inch]			A [mm] [inch]	B [mm] [inch]	C [mm] [inch]	L 1 [mm] [inch]					
2SM A4	4 (0.24)	46.4 (1.827)	95 (3.740)	2.30 (5.1)	10	G N T	44.4 (1.748)	93 (3.661)	84 (3.307)	105 (4.134)	2.30 (5.1)	10	G N T	
2SM A6	6 (0.37)	48 (1.890)	98.3 (3.870)	2.45 (5.4)			46 (1.811)	96.3 (3.791)	87.3 (3.437)	105 (4.134)	2.45 (5.4)			
2SM A8	8.5 (0.52)	50.1 (1.972)	102.5 (4.035)	2.60 (5.7)			48.1 (1.894)	100.5 (3.957)	91.5 (3.602)	110 (4.331)	2.60 (5.7)			
2SM A11	11 (0.67)	52.2 (2.055)	106.6 (4.197)	2.70 (6.0)			50.2 (1.976)	104.6 (4.118)	95.6 (3.764)	115 (4.528)	2.70 (6.0)			
2SM A14	14 (0.85)	54.7 (2.154)	111.6 (4.394)	2.80 (6.2)			52.7 (2.075)	109.6 (4.315)	100.6 (3.961)	120 (4.724)	2.80 (6.2)			
2SM A16	16.5 (1.01)	56.8 (2.236)	115.8 (4.559)	2.95 (6.5)			54.8 (2.157)	113.8 (4.480)	104.8 (4.126)	125 (4.921)	2.95 (6.5)			
2SM A19	19.5 (1.19)	59.3 (2.335)	120.8 (4.756)	3.10 (6.8)			57.3 (2.256)	118.8 (4.677)	109.8 (4.323)	130 (5.118)	3.10 (6.8)			
2SM A22	22.5 (1.37)	61.8 (2.433)	125.8 (4.953)	3.25 (7.2)			59.8 (2.354)	123.8 (4.874)	114.8 (4.520)	135 (5.315)	3.25 (7.2)			
2SM A26	26 (1.59)	64.7 (2.547)	131.6 (5.181)	3.40 (7.5)			62.7 (2.469)	129.6 (5.102)	120.6 (4.748)	140 (5.512)	3.40 (7.5)			



MOTORI GRUPPO  
MOTORS GROUP

2

Dimensioni / Dimensions



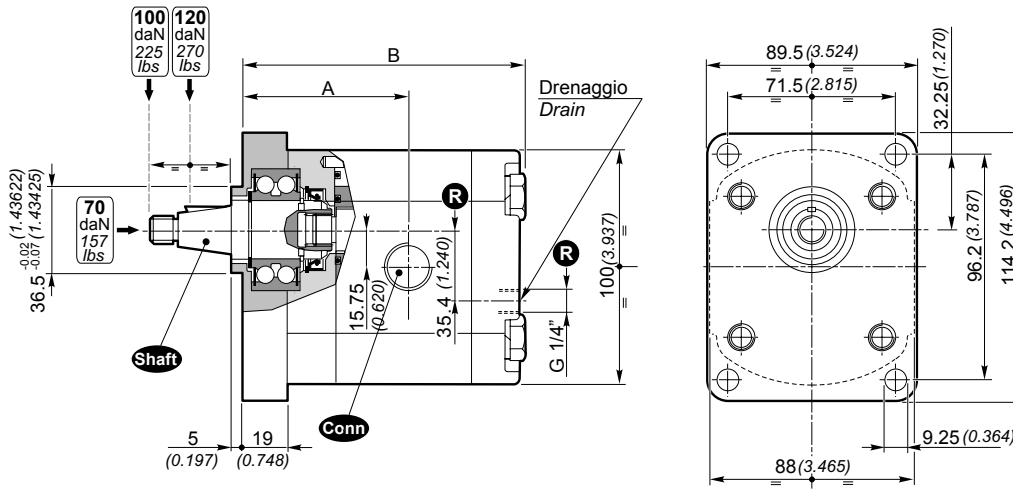
1 Coppia di serraggio viti: 50 ± 3 Nm. Utilizzare viti classe 10.9 - 12.9 UNI EN 20898/1.  
Il fissaggio della pompa può essere affettuato con 2 viti prigioniere in materiale classe 10.9 - 12.9 preserrate a 40 ± 3 Nm.  
Fissare la pompa mediante dadi autobloccanti con coppia di serraggio 50 ± 3 Nm.  
Il Kit di viti per il fissaggio della pompa è da ordinare separatamente.  
Codice di ordinazione del Kit di fissaggio:

1 Tightening torque of screws: 443 ± 27 lb-in. Use screws type 10.9 - 12.9 UNI EN 20898/1.  
The assembling of the pump should be effected with 2 screw studs type 10.9 - 12.9 pre-tighten at 354 ± 27 lb-in.  
Fix the pump by self-locking nuts with tightening torque 443 ± 27 lb-in.  
The screws kit for the fixing of the pump should be ordered separately.  
Ordering code of fixing Kit:

0029W + Lunghezza L (vedi tabella)  
+ Length L (see table)

E52C										
Grandezza Size	Cilindrata Displacement [cm <sup>3</sup> /rev] (in <sup>3</sup> /rev)	Dimensioni / Dimensions				Massa Mass [Kg] (lbs)	Shaft	Conn		
		A [mm] (inch)	B [mm] (inch)	C [mm] (inch)	L 1 [mm] (inch)					
2SM A4	4 (0.24)	41.7 (1.642)	90.3 (3.555)	81.3 (3.201)	100 (3.937)	2.30 (5.1)	17	G N T M U W F		
2SM A6	6 (0.37)	43.3 (1.705)	93.6 (3.685)	84.6 (3.331)	105 (4.134)	2.45 (5.4)				
2SM A8	8.5 (0.52)	45.4 (1.787)	97.8 (3.850)	88.8 (3.496)	110 (4.331)	2.60 (5.7)				
2SM A11	11 (0.67)	47.5 (1.870)	101.9 (4.012)	92.9 (3.657)	115 (4.528)	2.70 (6.0)				
2SM A14	14 (0.85)	50 (1.969)	106.9 (4.209)	97.9 (3.854)	120 (4.724)	2.80 (6.2)				
2SM A16	16.5 (1.01)	52.1 (2.051)	111.1 (4.374)	102.1 (4.020)	120 (4.724)	2.95 (6.5)				
2SM A19	19.5 (1.19)	54.6 (2.150)	116.1 (4.571)	107.1 (4.217)	125 (4.921)	3.10 (6.8)				
2SM A22	22.5 (1.37)	57.1 (2.248)	121.1 (4.768)	112.1 (4.413)	130 (5.118)	3.25 (7.2)			C-11	C-12
2SM A26	26 (1.59)	60 (2.362)	126.9 (4.996)	117.9 (4.642)	140 (5.512)	3.40 (7.5)				

Dimensioni / Dimensions

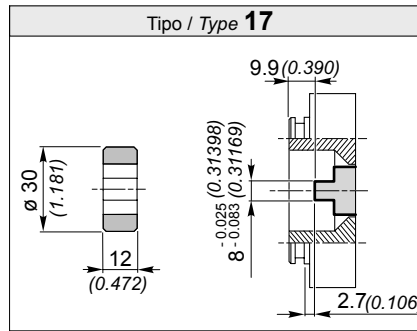
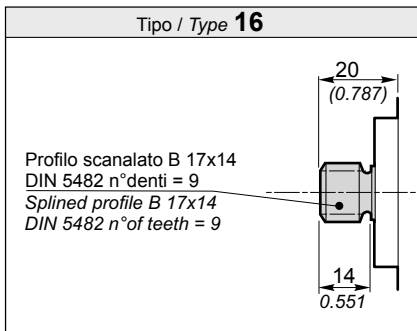
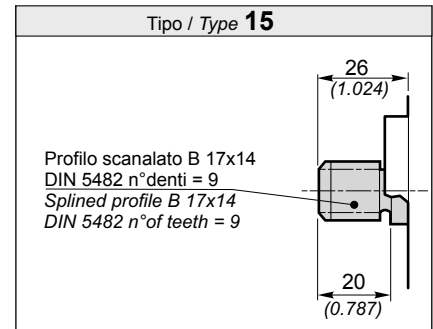
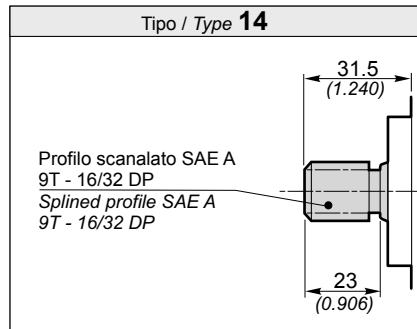
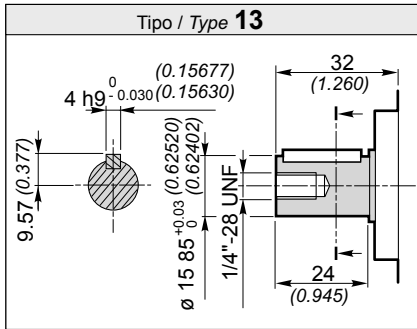
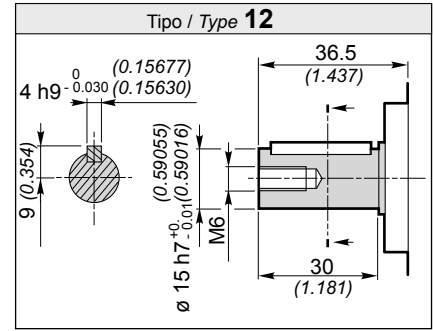
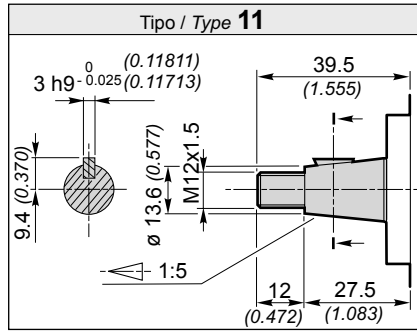
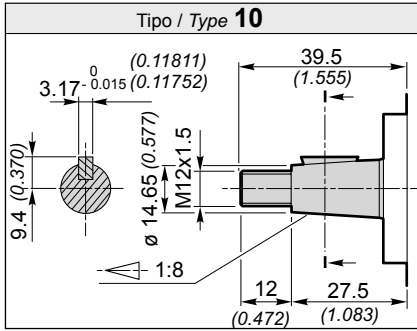


**R** Solo per motori reversibili  
Only for reversible motors

Versione da utilizzare in presenza di carichi assiali e/o radiali  
Version to use with axial and/or radial loads

SUPP.STND

Grandezza Size	Cilindrata Displacement [cm <sup>3</sup> /rev] [in <sup>3</sup> /rev]	Dimensioni / Dimensions		Massa Mass [Kg] [lbs]	Shaft	Conn
		A [mm] [inch]	B [mm] [inch]			
2SM A4	4 (0.24)	61.4 (2.417)	110 (4.331)	2.80 (6.2)	10	G N T M U W F
2SM A6	6 (0.37)	63 (2.417)	113.3 (4.331)	2.88 (6.4)		
2SM A8	8.5 (0.52)	65.1 (2.480)	117.5 (4.461)	3.00 (6.6)		
2SM A11	11 (0.67)	67.2 (2.563)	121.6 (4.626)	3.12 (6.9)		
2SM A14	14 (0.85)	69.7 (2.646)	126.6 (4.787)	3.27 (7.2)		
2SM A16	16.5 (1.01)	71.8 (2.744)	130.8 (4.984)	3.39 (7.5)		
2SM A19	19.5 (1.19)	74.3 (2.827)	135.8 (5.150)	3.53 (7.8)		
2SM A22	22.5 (1.37)	76.8 (2.925)	140.8 (5.346)	3.67 (8.1)		
2SM A26	26 (1.59)	79.7 (3.024)	148.8 (5.543)	3.84 (8.5)		



**G**

Scarico  
Outlet

Mandata  
Delivery

Grand./ Size	4 ÷ 8	
C	G 1/2"	

Grand./ Size	11 ÷ 26	
C	G 3/4"	

**N**

Scarico  
Outlet

Mandata  
Delivery

Grand./ Size	4 ÷ 8		
C	D	d	
13 (0.512)	30 (1.181)	M6	

Grand./ Size	11 ÷ 26		
C	D	d	
19 (0.748)	40 (1.575)	M8	

**T**

Scarico  
Outlet

Mandata  
Delivery

**M**

Scarico  
Outlet

Mandata  
Delivery

Grand./ Size	11 ÷ 26	
C	D	
19 (0.748)	40 (1.575)	

**U**

Scarico  
Outlet

Mandata  
Delivery

Grand./ Size	4 ÷ 8	
C	7/8 14UNF	

Grand./ Size	11 ÷ 26	
C	1" 1/16 12UN	

**W**

Scarico  
Outlet

Mandata  
Delivery

**F**

Scarico  
Outlet

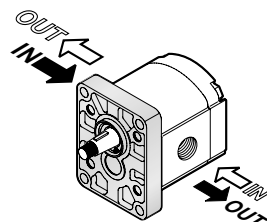
Mandata  
Delivery

Grand./ Size	4 ÷ 11		
C	D	E	
20 (0.787)	38 (1.496)	17.4 (0.685)	

Grand./ Size	14 ÷ 26		
C	D	E	
26 (1.024)	22.4 (0.882)	47.6 (1.874)	

Il segno sul corpo indica il lato scarico per i motori.  
The sign on the body identify the **outlet side** for the motors.

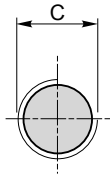
Posizione delle connessioni / Connections positions



Rotazione / Rotation	
D	S

**G**

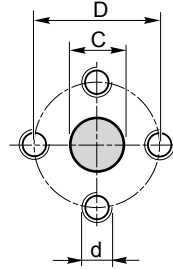
Mandata / Scarico  
Delivery / Outlet



Grand./ Size	
4 ÷ 8	
C	
G 1/2"	
Grand./ Size	
11 ÷ 26	
C	
G 3/4"	

**N**

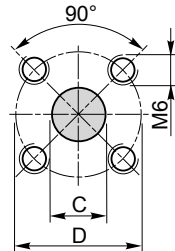
Mandata / Scarico  
Delivery / Outlet



Grand./ Size		
4 ÷ 8		
C	D	d
13 (0.512)	30 (1.181)	M6
Grand./ Size		
11 ÷ 26		
C	D	d
19 (0.748)	40 (1.575)	M8

**T**

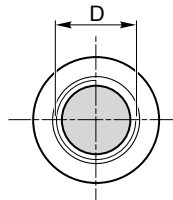
Mandata / Scarico  
Delivery / Outlet



Grand./ Size	
4 ÷ 8	
C	D
15 (0.591)	35 (1.378)
Grand./ Size	
11 ÷ 26	
C	D
20 (0.787)	40 (1.575)

**U**

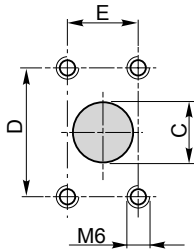
Mandata / Scarico  
Delivery / Outlet



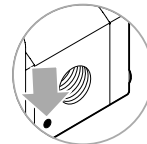
Grand./ Size	
4 ÷ 8	
D	
7/8 14UNF	
Grand./ Size	
11 ÷ 26	
D	
1" 1/16 12UN	

**F**

Mandata / Scarico  
Delivery / Outlet

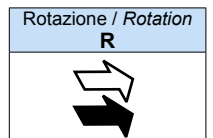
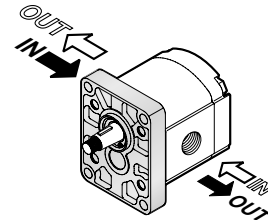


Grand./ Size		
4 ÷ 11		
C	D	E
20 (0.787)	38 (1.496)	17.4 (0.685)
Grand./ Size		
14 ÷ 26		
C	D	E
26 (1.024)	22.4 (0.882)	47.6 (1.874)



Il segno sul corpo indica il lato mandata / scarico per i motori.  
The sign on the body identify the **delivery / outlet side** for the motors.

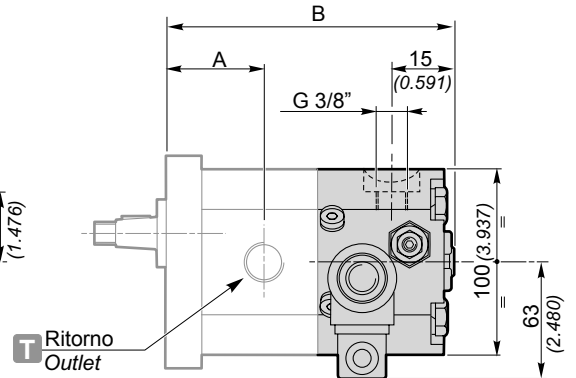
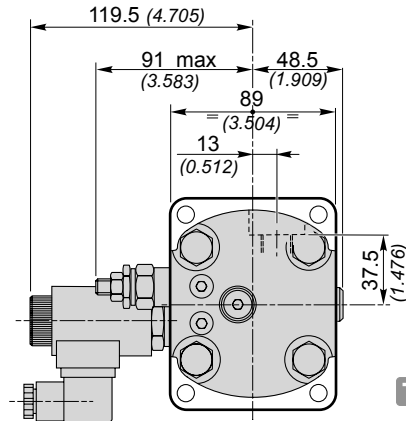
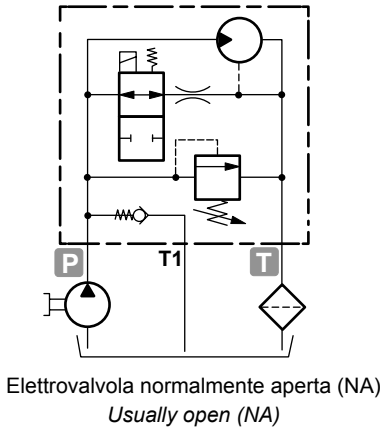
Posizione delle connessioni / Connections positions



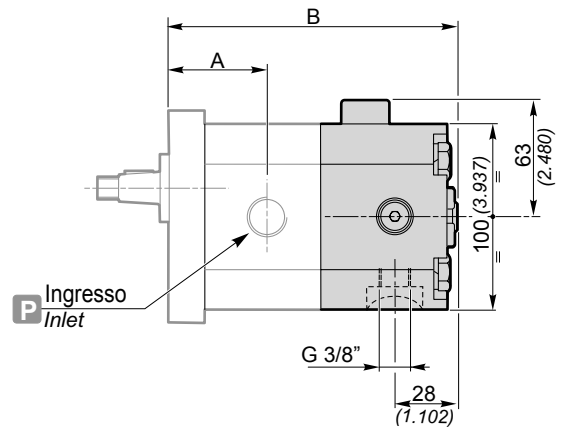
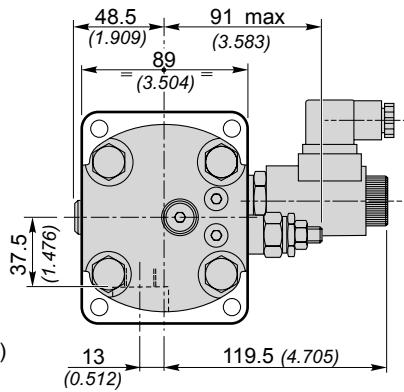
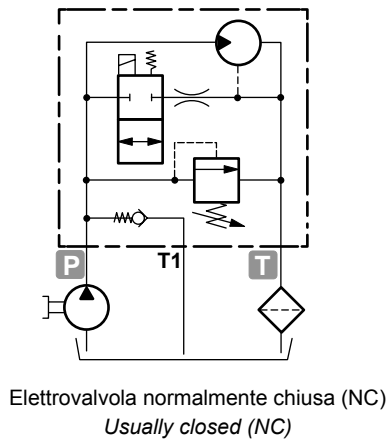
VLP (N)

Motore unidirezionale a due velocità con valvola limitatrice di pressione  
Pressure relief valve for two speed motors

Configurazione per rotazione destra  
Configuration for clockwise rotation



Configurazione per rotazione sinistra  
Configuration for anticlockwise rotation



	2SM A4	2SM A6	2SM A8	2SM A11	2SM A14	2SM A16	2SM A19	2SM A22	2SM A26
A	44.4 (1.748)	46 (1.811)	48.1 (1.894)	50.2 (1.976)	52.7 (2.075)	54.8 (2.157)	57.3 (2.256)	59.8 (2.354)	62.7 (2.469)
B	142.3 (5.602)	145.6 (5.732)	149.8 (5.898)	153.9 (6.059)	158.9 (6.256)	163.1 (6.421)	168.1 (6.618)	173.1 (6.815)	182 (7.165)

Esempio di ordinazione in codice / Example of ordering code

2SM	A14	D	NA	(24VDC)	VLP	(N)	SAE A	-	10	G
-----	-----	---	----	---------	-----	-----	-------	---	----	---

NA	NA = Normalmente aperta / Usually open NC = Normalmente chiusa / Usually closed	NA = Normalmente aperta NC = Normalmente chiusa
24VDC	Tensione magnete / Electromagnete voltage	12 - 24 - 48 V. DC 24 - 48 - 110 - 220 V. AC (50 Hz)
VLP	Coperchio con VLP Cover with VLP	
(N)	Tipo di molla / Spring type	B - N - R (vedi tabella / See table)

N.B.  
Solo per motori con flangia e coperchio in Alluminio  
Only motors with flange and cover in Aluminium

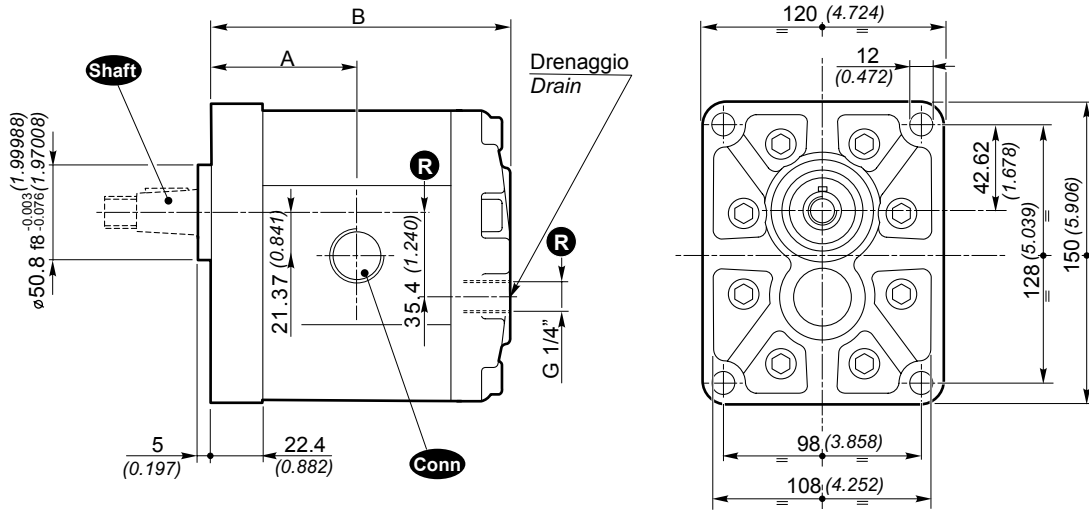
		Tipo di molla / Spring type		
		B	N	R
		molla bianca white spring	molla nera black spring	molla rossa red spring
Campi di taratura* Calibration fields*	[bar] (psi)	10 ÷ 100 (145 ÷ 1450)	30 ÷ 280 (435 ÷ 4060)	80 ÷ 380 (1160 ÷ 5510)

\* In caso di omissione del valore di taratura, esso sarà inteso standard (molla nera con taratura 150 bar).

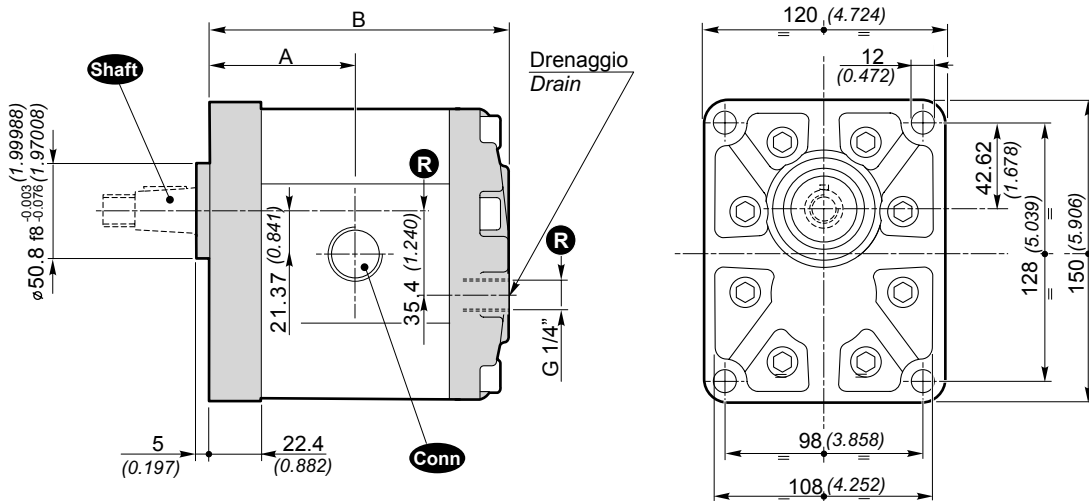
\* Without setting request, it will be considered standard (black spring: 2175 psi).

Dimensioni / Dimensions

Flangia e coperchio in Alluminio / Flange and cover in Aluminium



Flangia e coperchio in Ghisa / Flange and cover in Caston iron



**R** Solo per motori reversibili  
Only for reversible motors

STND (Alluminio / Aluminium)

STND (Ghisa / Cast iron)

Grandezza Size	Cilindrata Displacement	Dimensioni / Dimensions			Massa Mass	Shaft	Conn	Dimensioni / Dimensions			Massa Mass	Shaft	Conn
		A	B					A	B				
	[cm <sup>3</sup> /rev] [in <sup>3</sup> /rev]	[mm] [inch]	[mm] [inch]	[Kg] [lbs]			[mm] [inch]	[mm] [inch]	[Kg] [lbs]				
3SM 19	19 (1.16)	62.4 (2.457)	128.3 (5.051)	5.23 (11.5)	10 13 14	G N T W F	62.4 (2.457)	128.3 (5.051)	7.53 (16.6)	10 13 14	G N T W F		
3SM 22	22.3 (1.36)	63.9 (2.516)	131.3 (5.169)	5.36 (11.8)			63.9 (2.516)	131.3 (5.169)	7.66 (16.9)				
3SM 29	29.3 (1.79)	66.9 (2.634)	137.3 (5.406)	5.64 (12.4)			66.9 (2.634)	137.3 (5.406)	7.94 (17.5)				
3SM 33	32.9 (2.01)	68.4 (2.693)	140.3 (5.524)	5.78 (12.7)			68.4 (2.693)	140.3 (5.524)	8.08 (17.8)				
3SM 36	36.4 (2.22)	69.9 (2.752)	143.3 (5.642)	5.91 (13.0)			69.9 (2.752)	143.3 (5.642)	8.21 (18.1)				
3SM 44	43.5 (2.65)	72.9 (2.870)	149.3 (5.878)	6.19 (13.7)			72.9 (2.870)	149.3 (5.878)	8.49 (18.7)				
3SM 52	51.7 (3.15)	76.4 (3.008)	156.3 (6.154)	6.50 (14.3)			C-16	C-16	76.4 (3.008)			156.3 (6.154)	8.80 (19.4)
3SM 62	61.1 (3.73)	80.4 (3.165)	164.3 (6.469)	6.87 (15.1)			80.4 (3.165)	164.3 (6.469)	9.17 (20.2)				

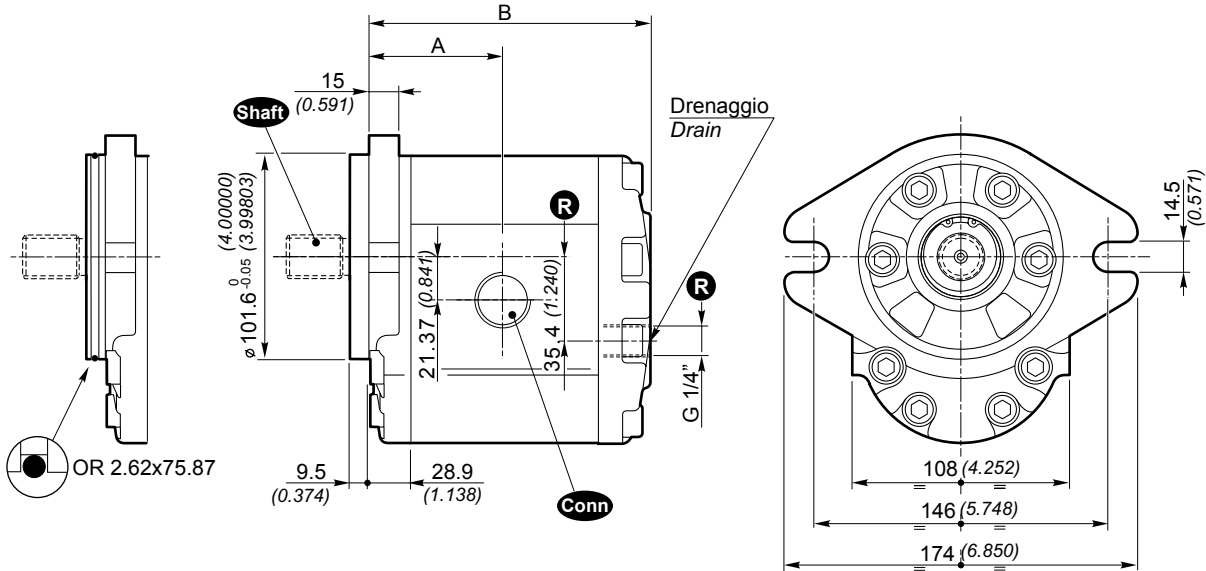


Dimensioni / Dimensions

SAE B-OR

SAE B

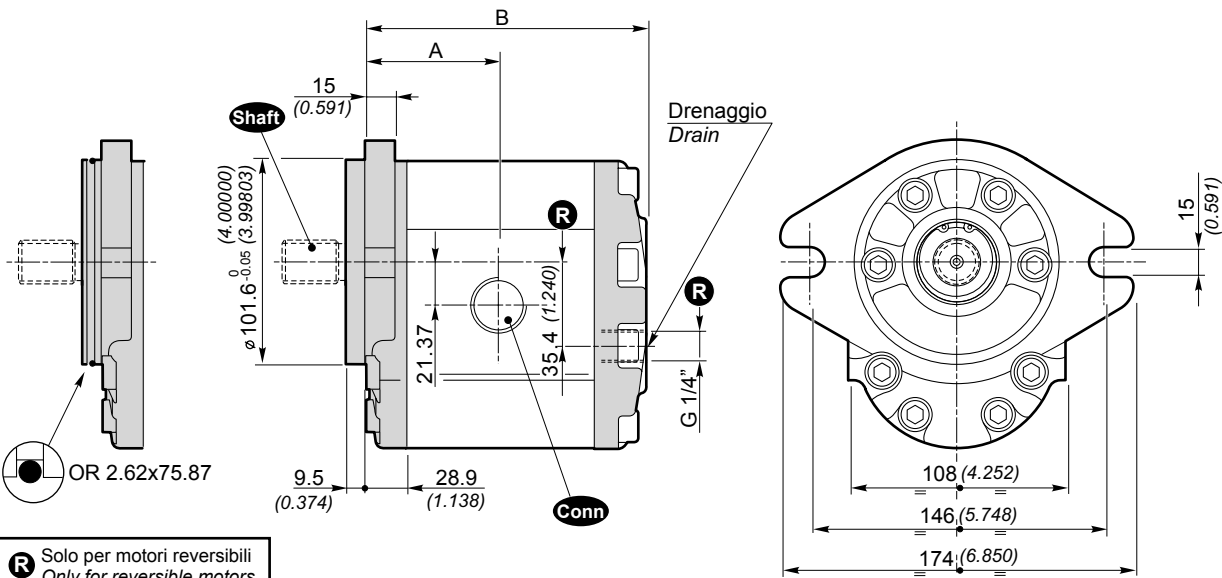
Flangia e coperchio in Alluminio / Flange and cover in Aluminium



SAE B-OR

SAE B

Flangia e coperchio in Ghisa / Flange and cover in Cast iron

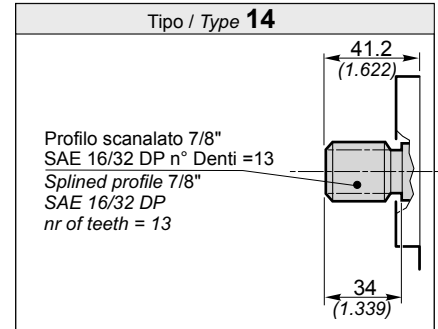
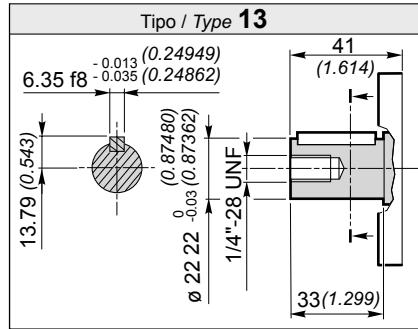
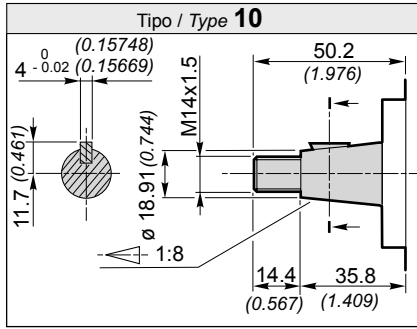


**R** Solo per motori reversibili  
Only for reversible motors

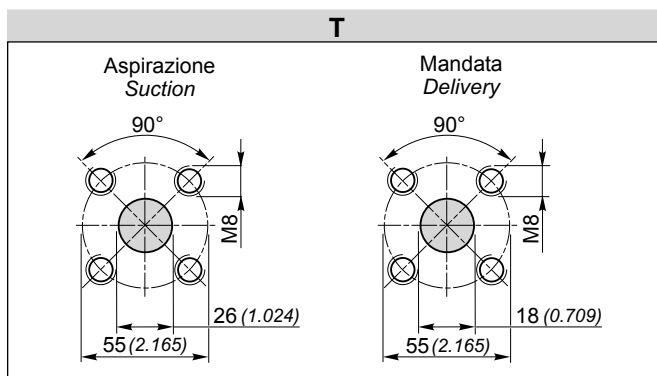
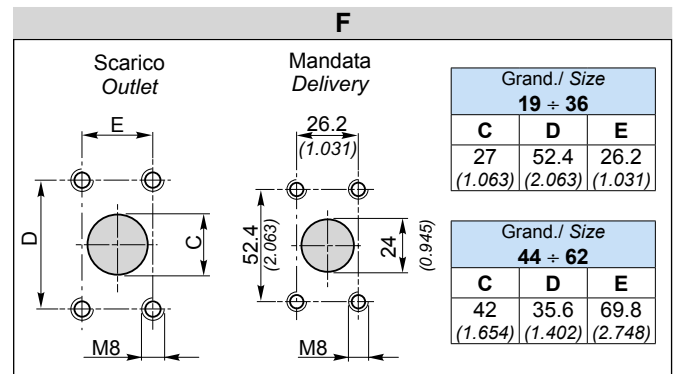
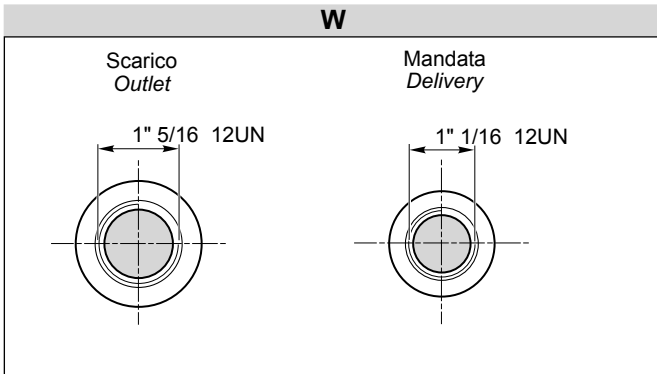
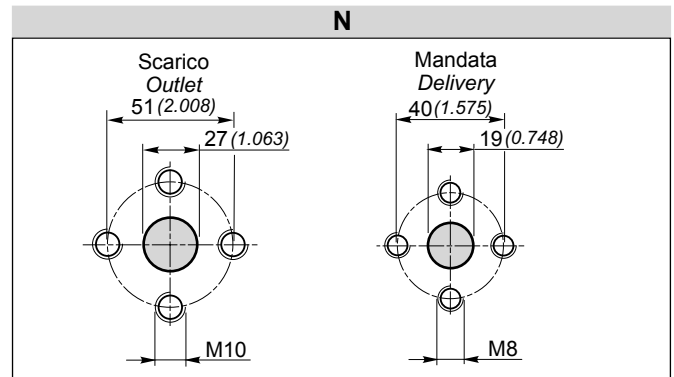
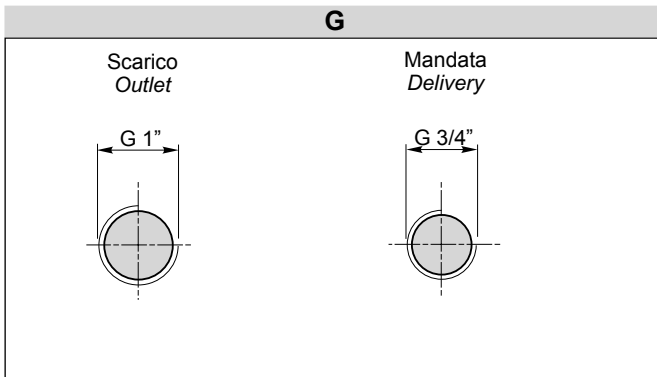
SAE B, SAE B-OR (All. / Aluminium)

SAE B, SAE B-OR (Ghisa / Cast iron)

Grandezza Size	Cilindrata Displacement [cm <sup>3</sup> /rev] [in <sup>3</sup> /rev]	Dimensioni / Dimensions		Massa Mass [Kg] [lbs]	Shaft	Conn	Dimensioni / Dimensions		Massa Mass [Kg] [lbs]	Shaft	Conn
		A [mm] [inch]	B [mm] [inch]				A [mm] [inch]	B [mm] [inch]			
3SM 19	19 (1.16)	59.4 (2.339)	125.3 (4.933)	5.23 (11.5)	10 13 14	G N T W F	59.4 (2.339)	125.3 (4.933)	7.59 (16.7)	10 13 14	G N T W F
3SM 22	22.3 (1.36)	60.9 (2.398)	128.3 (5.051)	5.36 (11.8)			60.9 (2.398)	128.3 (5.051)	7.72 (17.0)		
3SM 29	29.3 (1.79)	63.9 (2.516)	134.3 (5.287)	5.64 (12.4)			63.9 (2.516)	134.3 (5.287)	8.00 (17.6)		
3SM 33	32.9 (2.01)	65.4 (2.575)	137.3 (5.406)	5.78 (12.7)			65.4 (2.575)	137.3 (5.406)	8.14 (18.0)		
3SM 36	36.4 (2.22)	66.9 (2.634)	140.3 (5.524)	5.91 (13.0)			66.9 (2.634)	140.3 (5.524)	8.27 (18.2)		
3SM 44	43.5 (2.65)	69.9 (2.752)	146.3 (5.760)	6.19 (13.7)			69.9 (2.752)	146.3 (5.760)	8.55 (18.9)		
3SM 52	51.7 (3.15)	73.4 (2.890)	153.3 (6.035)	6.50 (14.3)	C-16	C-16	73.4 (2.890)	153.3 (6.035)	8.86 (19.5)	C-16	C-16
3SM 62	61.1 (3.73)	77.4 (3.047)	161.3 (6.350)	6.87 (15.1)			77.4 (3.047)	161.3 (6.350)	9.23 (20.4)		

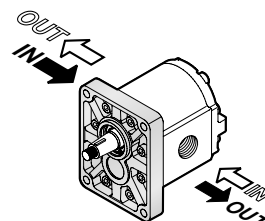


CONNESSIONI per motori D-S  
CONNECTIONS for D-S motors



Il segno sul corpo indica il lato scarico per i motori.  
The sign on the body identify the **outlet side** for the motors.

Posizione delle connessioni / Connections positions



Rotazione / Rotation	
D	S

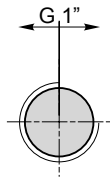
**POMPE GRUPPO  
PUMPS GROUP**

**3**

**CONNESSIONI per motori R  
CONNECTIONS for R motors**

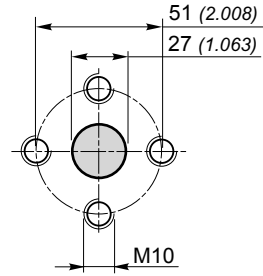
**G**

Scarico - Mandata  
Outlet - Delivery



**N**

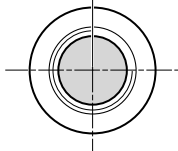
Scarico - Mandata  
Outlet - Delivery



**W**

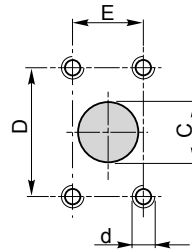
Scarico  
Outlet

1" 5/16 12UN



**F**

Scarico  
Outlet

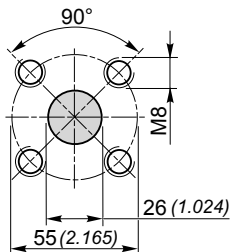


Grand./ Size 19 ÷ 36			
C	D	E	d
27 (1.063)	52.4 (2.063)	26.2 (1.031)	M8

Grand./ Size 44 ÷ 62			
C	D	E	d
32 (1.260)	58.7 (2.311)	30.2 (1.189)	M10

**T**

Scarico - Mandata  
Outlet - Delivery



Posizione delle connessioni / Connections positions

