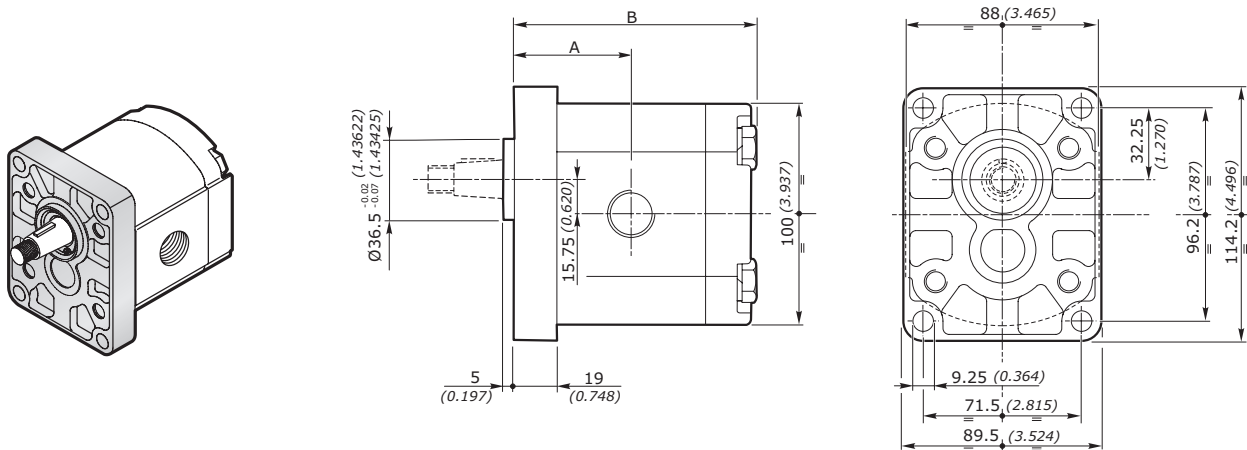


**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**FLANGIA EUROPEA EUR EUROPEAN FLANGE**
**FLANGIA E COPERCHIO IN ALLUMINIO - FLANGE AND COVER IN ALUMINIUM**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3					
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	44.4	1.748	93.0	3.661	2.30	5.07
<b>2SP 060</b>	46.0	1.811	96.3	3.791	2.45	5.40
<b>2SP 080</b>	48.1	1.894	100.5	3.957	2.60	5.73
<b>2SP 110</b>	50.2	1.976	104.6	4.118	2.70	5.95
<b>2SP 140</b>	52.7	2.075	109.6	4.315	2.80	6.17
<b>2SP 160</b>	54.8	2.157	113.8	4.480	2.95	6.51
<b>2SP 190</b>	57.3	2.256	118.8	4.677	3.10	6.84
<b>2SP 220</b>	59.8	2.354	123.8	4.874	3.25	7.17
<b>2SP 260</b>	62.7	2.469	129.6	5.102	3.40	7.50
<b>2SP 310</b>	66.9	2.636	138.0	5.437	3.61	7.96

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

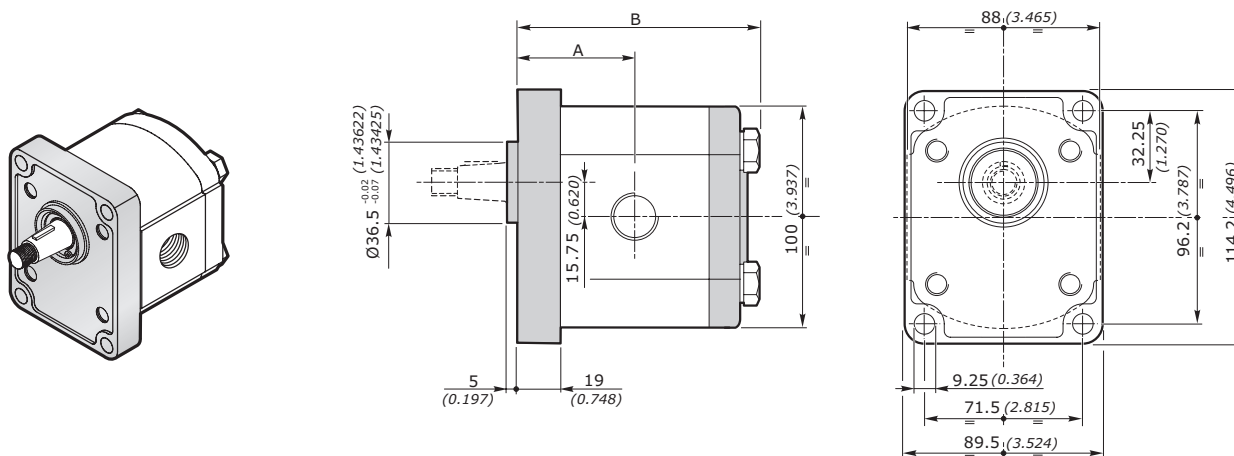
**FLANGIA EUROPEA EUR EUROPEAN FLANGE**

**FLANGIA E COPERCHIO IN GHISA - FLANGE AND COVER IN CAST IRON**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3					
	cm³/giro	in³/rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm
<b>2SP 040</b>	4	0.24	260	3770	280	4060	300	4350	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	260	3770	280	4060	300	4350	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	260	3770	280	4060	300	4350	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	260	3770	280	4060	300	4350	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	260	3770	280	4060	300	4350	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	240	3480	250	3625	260	3770	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	220	3190	230	3335	240	3480	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	200	2900	210	3045	220	3190	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	180	2610	190	2755	200	2900	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	140	2030	150	2175	160	2320	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**

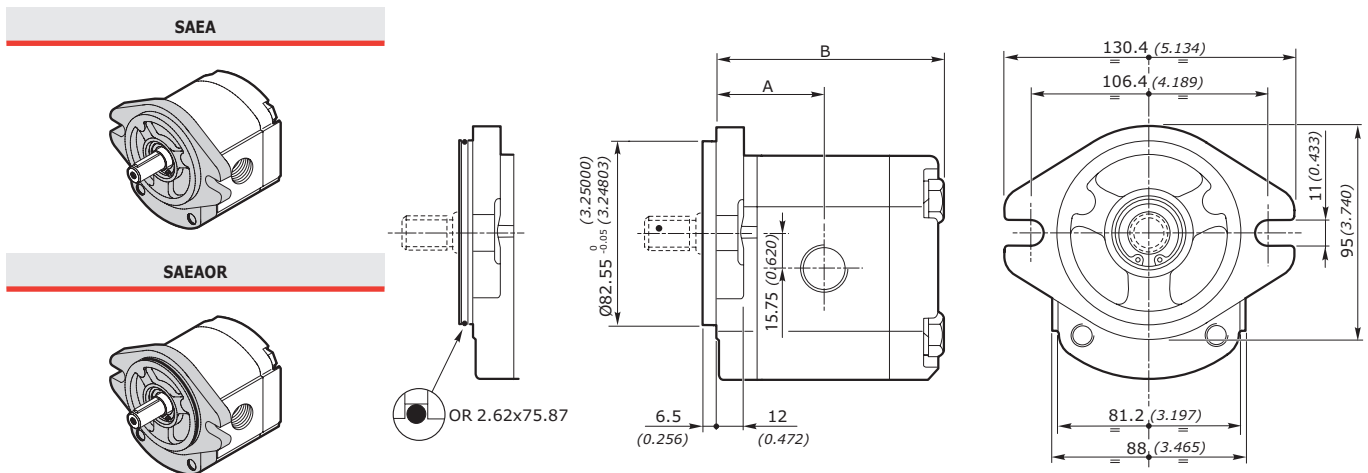


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	44.4	1.748	93.0	3.661	3.40	7.50
<b>2SP 060</b>	46.0	1.811	96.3	3.791	3.55	7.83
<b>2SP 080</b>	48.1	1.894	100.5	3.957	3.70	8.16
<b>2SP 110</b>	50.2	1.976	104.6	4.118	3.80	8.38
<b>2SP 140</b>	52.7	2.075	109.6	4.315	3.90	8.60
<b>2SP 160</b>	54.8	2.157	113.8	4.480	4.05	8.93
<b>2SP 190</b>	57.3	2.256	118.8	4.677	4.20	9.26
<b>2SP 220</b>	59.8	2.354	123.8	4.874	4.35	9.59
<b>2SP 260</b>	62.7	2.469	129.6	5.102	4.50	9.92
<b>2SP 310</b>	66.9	2.636	138.0	5.437	4.71	7.96

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**FLANGIA SAE SAEA-SAEAOR SAE FLANGE**
**FLANGIA E COPERCHIO IN ALLUMINIO - FLANGE AND COVER IN ALUMINIUM**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
	cm <sup>3</sup> /giro in <sup>3</sup> /rev	bar	P1		P2		P3			l/min	Gal/min	
			psi	bar	psi	bar	psi	giri/min - rpm	giri/min - rpm			
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	44.4	1.748	93.0	3.661	2.30	5.07
<b>2SP 060</b>	46.0	1.811	96.3	3.791	2.45	5.40
<b>2SP 080</b>	48.1	1.894	100.5	3.957	2.60	5.73
<b>2SP 110</b>	50.2	1.976	104.6	4.118	2.70	5.95
<b>2SP 140</b>	52.7	2.075	109.6	4.315	2.80	6.17
<b>2SP 160</b>	54.8	2.157	113.8	4.480	2.95	6.51
<b>2SP 190</b>	57.3	2.256	118.8	4.677	3.10	6.84
<b>2SP 220</b>	59.8	2.354	123.8	4.874	3.25	7.17
<b>2SP 260</b>	62.7	2.469	129.6	5.102	3.40	7.50
<b>2SP 310</b>	66.9	2.636	138.0	5.437	3.61	7.96

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

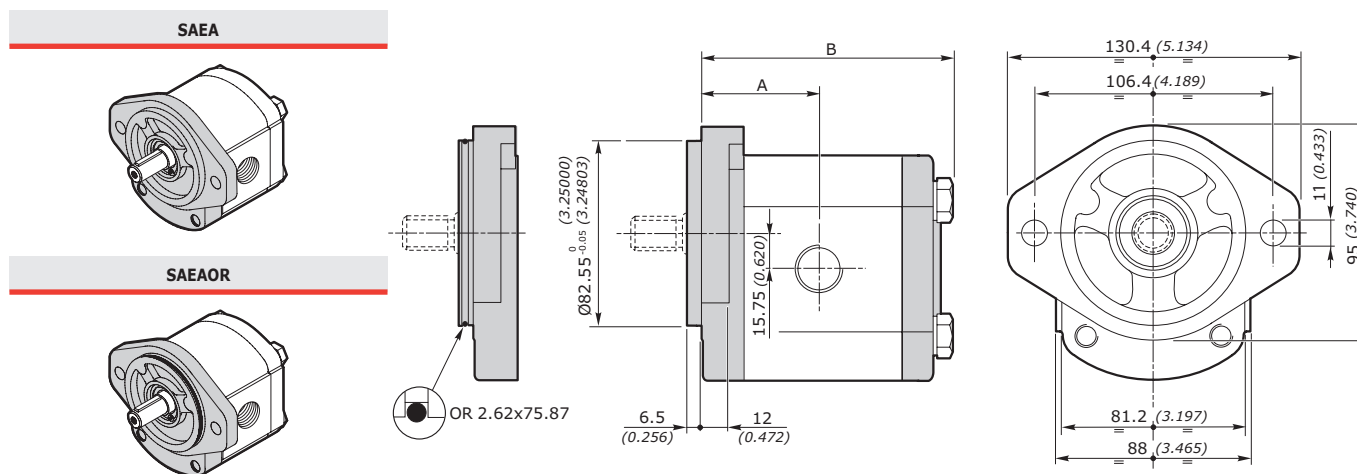
**FLANGIA SAE** **SAEA-SAEAOR** **SAE FLANGE**

**FLANGIA E COPERCHIO IN GHISA - FLANGE AND COVER IN CAST IRON**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3					
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm
<b>2SP 040</b>	4	0.24	260	3770	280	4060	300	4350	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	260	3770	280	4060	300	4350	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	260	3770	280	4060	300	4350	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	260	3770	280	4060	300	4350	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	260	3770	280	4060	300	4350	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	240	3480	250	3625	260	3770	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	220	3190	230	3335	240	3480	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	200	2900	210	3045	220	3190	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	180	2610	190	2755	200	2900	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	140	2030	150	2175	160	2320	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**

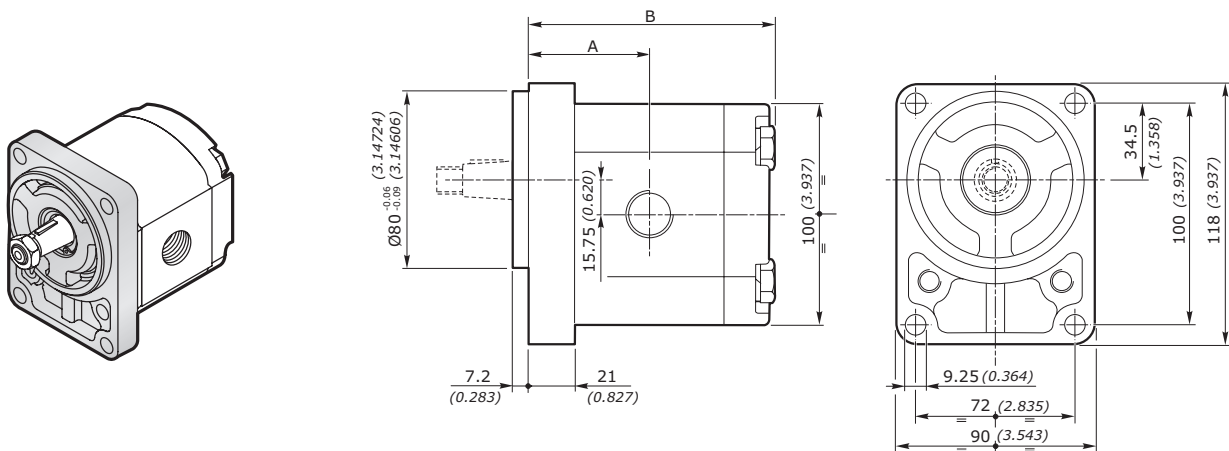


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	44.4	1.748	93.0	3.661	3.40	7.50
<b>2SP 060</b>	46.0	1.811	96.3	3.791	3.55	7.83
<b>2SP 080</b>	48.1	1.894	100.5	3.957	3.70	8.16
<b>2SP 110</b>	50.2	1.976	104.6	4.118	3.80	8.38
<b>2SP 140</b>	52.7	2.075	109.6	4.315	3.90	8.60
<b>2SP 160</b>	54.8	2.157	113.8	4.480	4.05	8.93
<b>2SP 190</b>	57.3	2.256	118.8	4.677	4.20	9.26
<b>2SP 220</b>	59.8	2.354	123.8	4.874	4.35	9.59
<b>2SP 260</b>	62.7	2.469	129.6	5.102	4.50	9.92
<b>2SP 310</b>	66.9	2.636	138.0	5.437	4.71	7.96

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**FLANGIA TEDESCA B80C GERMAN FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED		PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED	
			P1		P2		P3							
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm		
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500		
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500		
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500		
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500		
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500		
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500		
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500		
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500		
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500		
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500		

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dept.

**DIMENSIONI • DIMENSIONS**


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	46.4	1.827	95.0	3.740	2.30	5.07
<b>2SP 060</b>	48.0	1.890	98.3	3.870	2.45	5.40
<b>2SP 080</b>	50.1	1.972	102.5	4.035	2.60	5.73
<b>2SP 110</b>	52.2	2.055	106.6	4.197	2.70	5.95
<b>2SP 140</b>	54.7	2.154	111.6	4.394	2.80	6.17
<b>2SP 160</b>	56.8	2.236	115.8	4.559	2.95	6.51
<b>2SP 190</b>	59.3	2.335	120.8	4.756	3.10	6.84
<b>2SP 220</b>	61.8	2.433	125.8	4.953	3.25	7.17
<b>2SP 260</b>	64.7	2.547	131.6	5.181	3.40	7.50
<b>2SP 310</b>	68.9	2.715	140.0	5.516	3.61	7.96

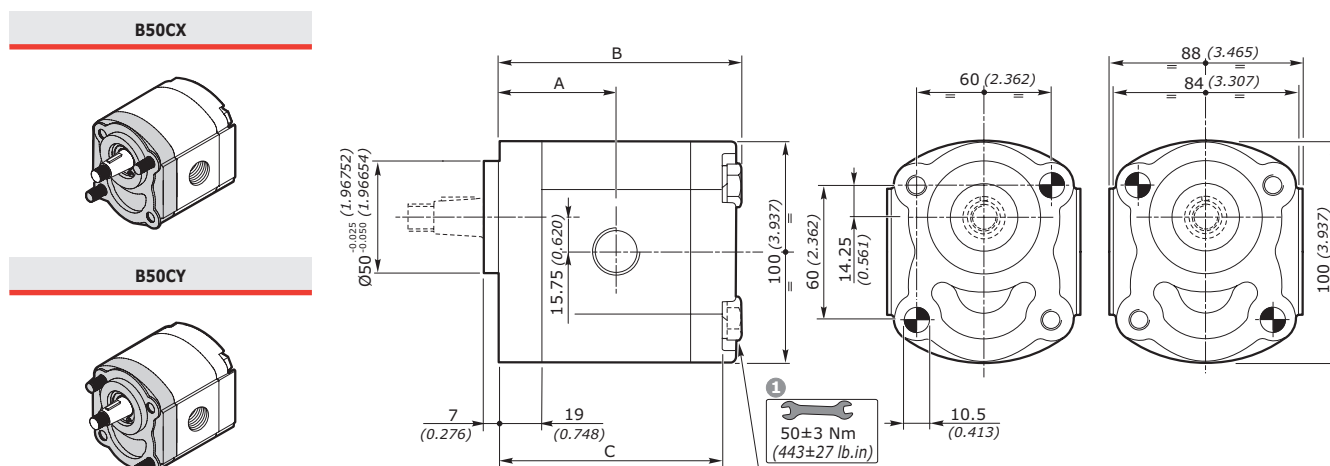
**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**FLANGIA B50C FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED		PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED	
	cm³/giro	in³/rev	P1		P2		P3		giri/min - rpm	l/min	Gal/min	giri/min - rpm		
			bar	psi	bar	psi	bar	psi						
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500		
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500		
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500		
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500		
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500		
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500		
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500		
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500		
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500		
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500		

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**



**1**  
Coppia di serraggio viti:  $50 \pm 3\text{Nm}$  (viti classe 10.9-12.9 UNI EN 20898/1)  
Il kit viti per il fissaggio della pompa è da ordinare separatamente.  
Codice di ordinazione: **0029W** (+ lunghezza **L** - vedi tabella)  
Il fissaggio della pompa può essere effettuato con 2 viti prigioniere classe 10.9-12.9 UNI EN 20898/1 preserrate:  $40 \pm 3\text{Nm}$ . Fissare la pompa mediante dadi autobloccanti con coppia di serraggio:  $50 \pm 3\text{Nm}$

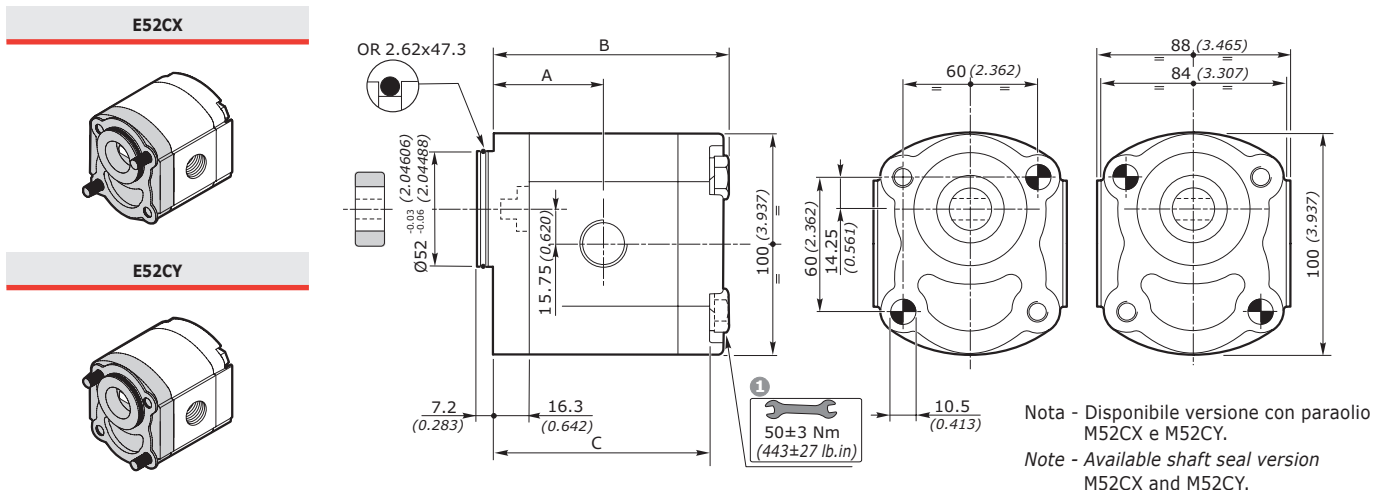
**1**  
Screw tightening torque:  $443 \pm 27\text{lb.in}$  (screws 10.9-12.9 UNI EN 20898/1).  
The screw kit for the pump assembly should be ordered separately.  
Ordering code: **0029W** (+ length **L** - see table)  
The pump assembling should be made with 2 screws stud type 10.9-12.9 UNI EN 20898/1 pre-tighten  $354 \pm 27\text{lb.in}$ . Fix the pump by self-locking nuts with tightening torque:  $443 \pm 27\text{lb.in}$

GRUPPO - GROUP 2	A		B		C		L <b>1</b>		MASSA - MASS	
	mm	inch	mm	inch	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	44.4	1.748	93.0	3.661	84.0	3.307	105	4.134	2.30	5.07
<b>2SP 060</b>	46.0	1.811	96.3	3.791	87.3	3.437	105	4.134	2.45	5.40
<b>2SP 080</b>	48.1	1.894	100.5	3.957	91.5	3.602	110	4.331	2.60	5.73
<b>2SP 110</b>	50.2	1.976	104.6	4.118	95.6	3.764	115	4.528	2.70	5.95
<b>2SP 140</b>	52.7	2.075	109.6	4.315	100.6	3.961	120	4.724	2.80	6.17
<b>2SP 160</b>	54.8	2.157	113.8	4.480	104.8	4.126	125	4.921	2.95	6.51
<b>2SP 190</b>	57.3	2.256	118.8	4.677	109.8	4.323	130	5.118	3.10	6.84
<b>2SP 220</b>	59.8	2.354	123.8	4.874	114.8	4.520	135	5.315	3.25	7.17
<b>2SP 260</b>	62.7	2.469	129.6	5.102	120.6	4.748	140	5.512	3.40	7.50
<b>2SP 310</b>	66.9	2.636	138.0	5.437	129.0	5.083	150	5.910	3.61	7.96

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**FLANGIA E52C FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3					
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dept.

**DIMENSIONI • DIMENSIONS**


GRUPPO - GROUP 2	A		B		C		L <sup>1</sup>		MASSA - MASS	
	mm	inch	mm	inch	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	41.7	1.642	90.3	3.555	81.3	3.201	100	3.937	2.30	5.07
<b>2SP 060</b>	43.3	1.705	93.6	3.685	84.6	3.331	105	4.134	2.45	5.40
<b>2SP 080</b>	45.4	1.787	97.8	3.850	88.8	3.496	110	4.331	2.60	5.73
<b>2SP 110</b>	47.5	1.870	101.9	4.012	92.9	3.657	115	4.528	2.70	5.95
<b>2SP 140</b>	50.0	1.969	106.9	4.209	97.9	3.854	120	4.724	2.80	6.17
<b>2SP 160</b>	52.1	2.051	111.1	4.374	102.1	4.020	120	4.724	2.95	6.51
<b>2SP 190</b>	54.6	2.150	116.1	4.571	107.1	4.217	125	4.921	3.10	6.84
<b>2SP 220</b>	57.1	2.248	121.1	4.768	112.1	4.413	130	5.118	3.25	7.17
<b>2SP 260</b>	60.0	2.362	126.9	4.996	117.9	4.642	140	5.512	3.40	7.50
<b>2SP 310</b>	64.2	2.529	135.3	5.331	126.3	4.988	145	5.713	3.61	7.96

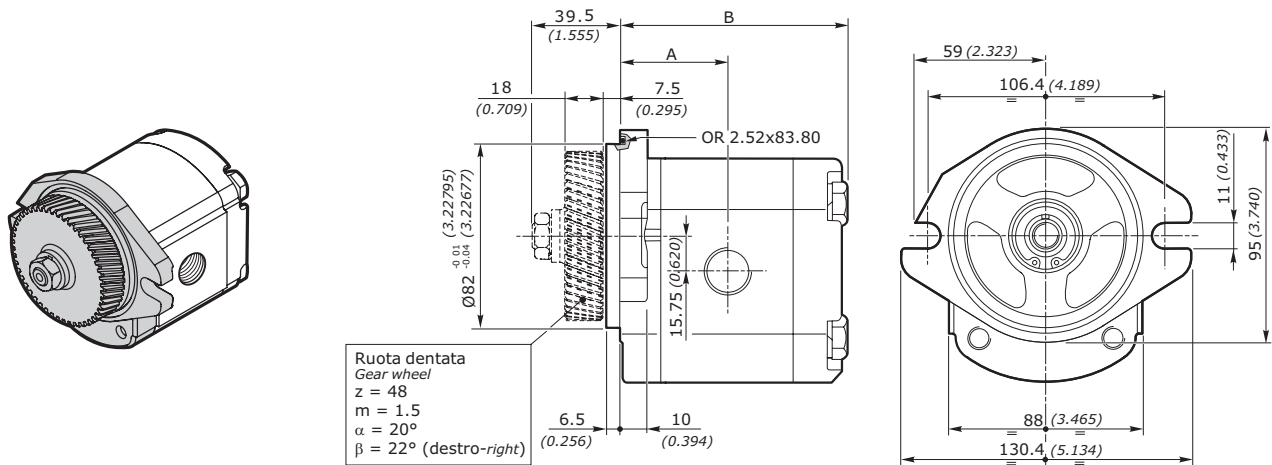
**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**FLANGIA PERKINS P400D PERKINS FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED		PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3						
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm	
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500	
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500	
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500	
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500	
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500	
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500	
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500	
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500	
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500	
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500	

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**



GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	44.4	1.748	93.0	3.661	2.30	5.07
<b>2SP 060</b>	46.0	1.811	96.3	3.791	2.45	5.40
<b>2SP 080</b>	48.1	1.894	100.5	3.957	2.60	5.73
<b>2SP 110</b>	50.2	1.976	104.6	4.118	2.70	5.95
<b>2SP 140</b>	52.7	2.075	109.6	4.315	2.80	6.17
<b>2SP 160</b>	54.8	2.157	113.8	4.480	2.95	6.51
<b>2SP 190</b>	57.3	2.256	118.8	4.677	3.10	6.84
<b>2SP 220</b>	59.8	2.354	123.8	4.874	3.25	7.17
<b>2SP 260</b>	62.7	2.469	129.6	5.102	3.40	7.50
<b>2SP 310</b>	66.9	2.636	138.0	5.437	3.61	7.96



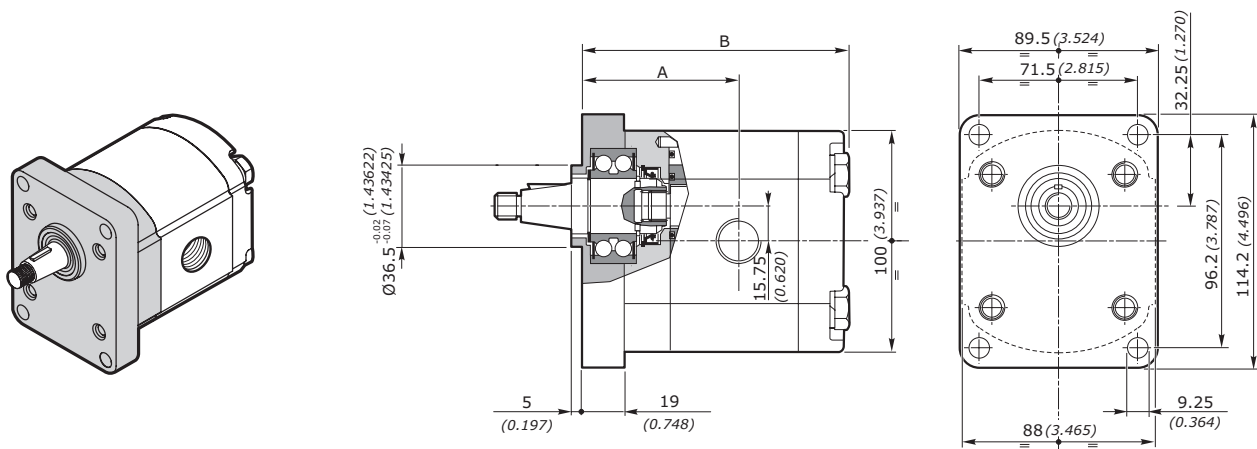
**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

 VERSIONE DA UTILIZZARE IN PRESENZA DI CARICHI ASSIALI E/O RADIALI  
 VERSION TO BE USED WITH AXIAL AND/OR RADIAL LOADS

**FLANGIA SUPEUR FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3					
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm
2SP 040	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
2SP 060	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
2SP 080	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
2SP 110	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
2SP 140	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
2SP 160	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
2SP 190	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
2SP 220	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
2SP 260	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
2SP 310	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

 Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**

 La flangia SUPEUR è sempre allestita con anello di rinforzo.  
 SUPEUR flange is always equipped with sealing ring

GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
2SP 040	64.4	2.535	113.0	4.449	2.80	6.17
2SP 060	66.0	2.598	116.3	4.579	2.95	6.50
2SP 080	68.1	2.681	120.5	4.744	3.10	6.84
2SP 110	70.2	2.764	124.6	4.906	3.20	7.06
2SP 140	72.7	2.863	129.6	5.102	3.30	7.28
2SP 160	74.8	2.945	133.8	5.268	3.45	7.61
2SP 190	77.3	3.043	138.8	5.465	3.60	7.94
2SP 220	79.8	3.142	143.8	5.661	3.75	8.27
2SP 260	82.7	3.256	149.6	5.890	3.90	8.60
2SP 310	86.9	3.424	158.0	6.225	4.11	9.06

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

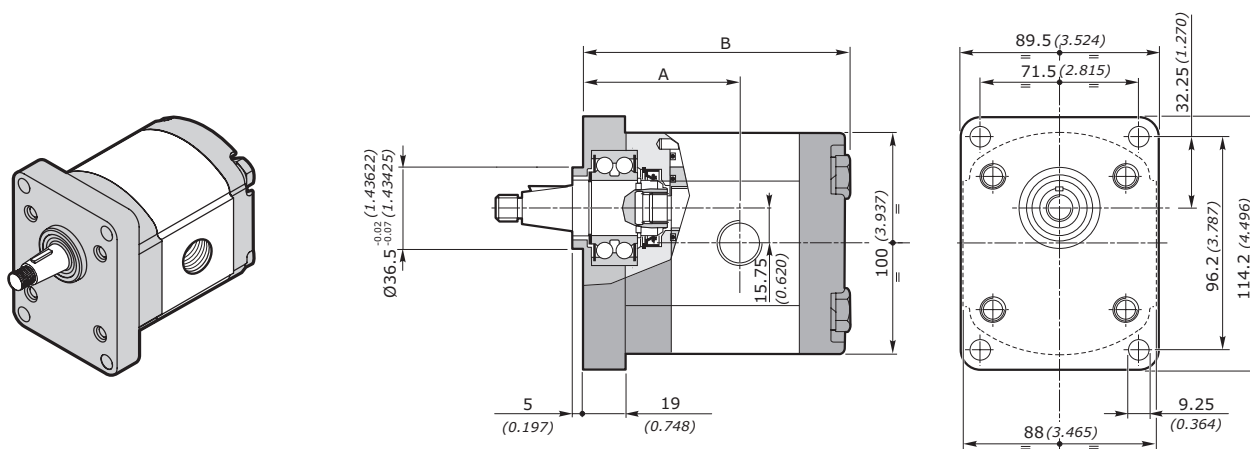
**FLANGIA SUPEUR FLANGE**

**FLANGIA E COPERCHIO IN GHISA - FLANGE AND COVER IN CAST IRON**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	P1		P2		P3			l/min	Gal/min	
			bar	psi	bar	psi	bar	psi	giri/min - rpm			giri/min - rpm
<b>2SP 040</b>	4	0.24	260	3770	280	4060	300	4350	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	260	3770	280	4060	300	4350	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	260	3770	280	4060	300	4350	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	260	3770	280	4060	300	4350	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	260	3770	280	4060	300	4350	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	240	3480	250	3625	260	3770	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	220	3190	230	3335	240	3480	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	200	2900	210	3045	220	3190	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	180	2610	190	2755	200	2900	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	140	2030	150	2175	160	2320	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**



La flangia SUPEUR è sempre allestita con anello di rinforzo.  
 SUPEUR flange is always equipped with sealing ring

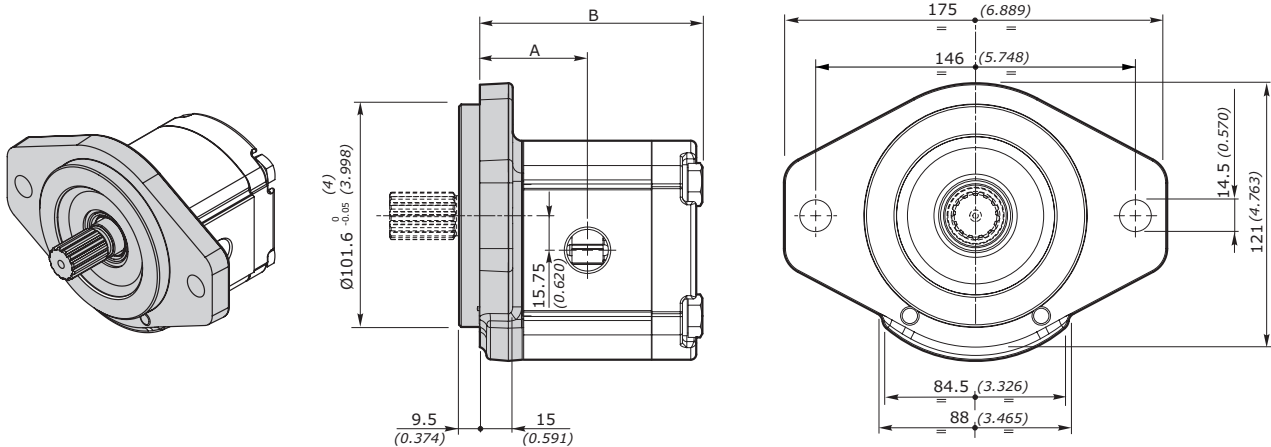
GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	64.4	2.535	113.0	4.449	3.467	7.643
<b>2SP 060</b>	66.0	2.598	116.3	4.579	3.617	7.974
<b>2SP 080</b>	68.1	2.681	120.5	4.744	3.767	8.304
<b>2SP 110</b>	70.2	2.764	124.6	4.906	3.867	8.525
<b>2SP 140</b>	72.7	2.863	129.6	5.102	3.967	8.745
<b>2SP 160</b>	74.8	2.945	133.8	5.268	4.117	9.076
<b>2SP 190</b>	77.3	3.043	138.8	5.465	4.267	9.407
<b>2SP 220</b>	79.8	3.142	143.8	5.661	4.417	9.737
<b>2SP 260</b>	82.7	3.256	149.6	5.890	4.567	10.068
<b>2SP 310</b>	86.9	3.424	158.0	6.225	4.777	10.531

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**FLANGIA SAE SAEB\* SAEB FLANGE**
**FLANGIA E COPERCHIO IN GHISA - FLANGE AND COVER IN CAST IRON**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
	cm <sup>3</sup> /giro in <sup>3</sup> /rev	bar	P1		P2		P3			l/min	Gal/min	
			psi	bar	psi	bar	psi	bar	giri/min - rpm			giri/min - rpm
<b>2SP 040</b>	4	0.24	260	3770	280	4060	300	4350	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	260	3770	280	4060	300	4350	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	260	3770	280	4060	300	4350	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	260	3770	280	4060	300	4350	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	260	3770	280	4060	300	4350	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	240	3480	250	3625	260	3770	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	220	3190	230	3335	240	3480	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	200	2900	210	3045	220	3190	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	180	2610	190	2755	200	2900	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	140	2030	150	2175	160	2320	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

\* Contattare il servizio commerciale. / Available soon. Please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**


\* Configurabile come 1<sup>a</sup> pompa in tandem; elementi interni non intercambiabili  
 Configuration as 1<sup>st</sup> tandem pump; internal elements are not interchangeable

GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	45.4	1.787	94	3.701	4.90	10.80
<b>2SP 060</b>	47.0	1.850	97.3	3.831	5.05	11.13
<b>2SP 080</b>	49.1	1.933	101.5	3.996	5.20	11.46
<b>2SP 110</b>	51.2	2.016	105.6	4.157	5.30	11.68
<b>2SP 140</b>	53.7	2.114	110.6	4.354	5.40	11.90
<b>2SP 160</b>	55.8	2.197	114.8	4.520	5.55	12.24
<b>2SP 190</b>	58.3	2.295	119.8	4.717	5.70	12.57
<b>2SP 220</b>	60.8	2.394	124.8	4.913	5.85	12.90
<b>2SP 260</b>	63.7	2.508	130.6	5.142	6.00	13.23
<b>2SP 310</b>	67.9	2.673	139	5.472	6.20	13.67

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

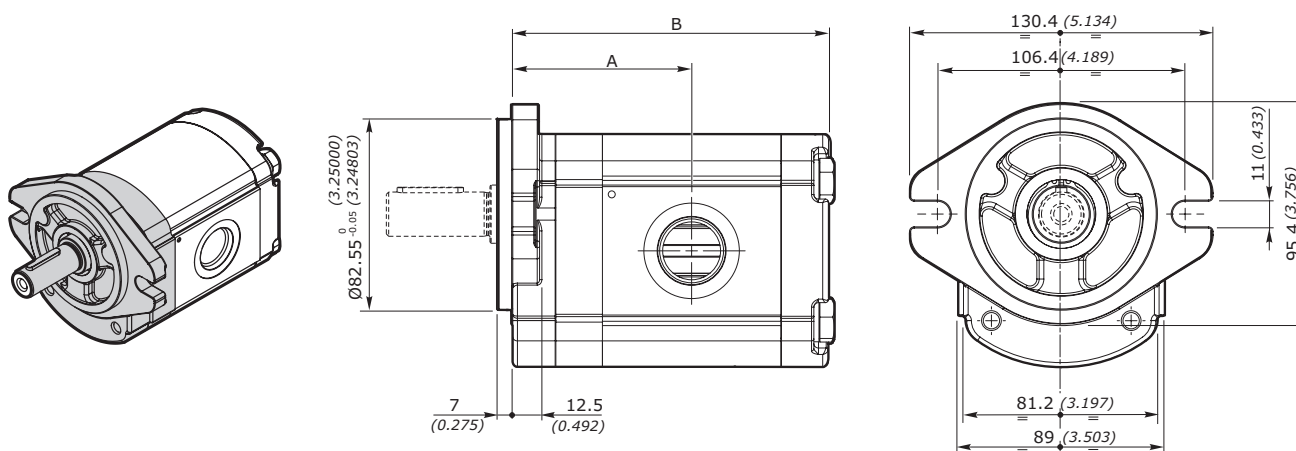
**FLANGIA SUPSAE FLANGE**

**FLANGIA E COPERCHIO IN ALLUMINIO - FLANGE AND COVER IN ALUMINIUM**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
			P1		P2		P3					
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	bar	psi	bar	psi	bar	psi	giri/min - rpm	l/min	Gal/min	giri/min - rpm
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**

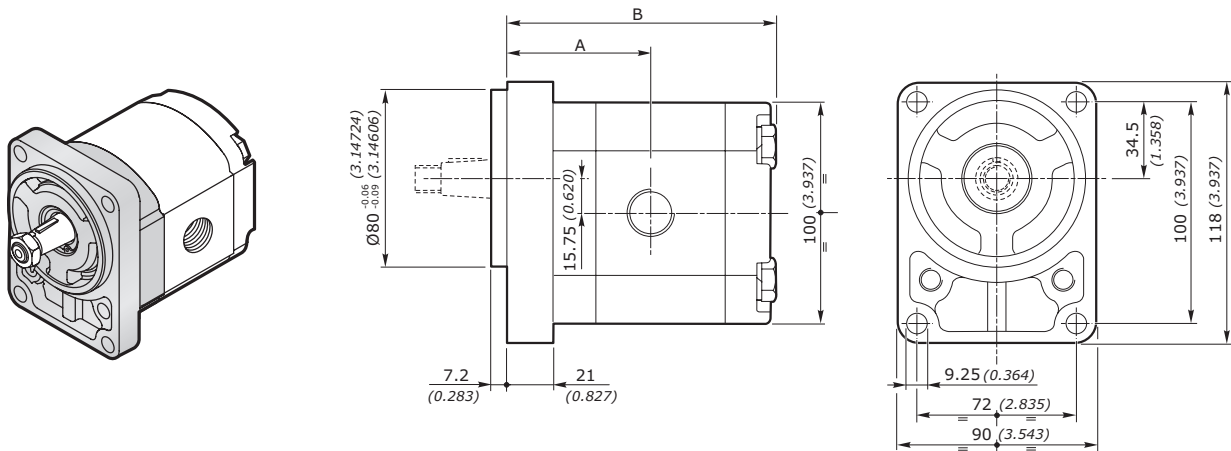


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	64.4	2.535	113.0	4.448	2.80	6.172
<b>2SP 060</b>	66.0	2.598	116.3	4.578	2.95	6.503
<b>2SP 080</b>	68.1	2.681	120.5	4.744	3.10	6.834
<b>2SP 110</b>	70.2	2.763	124.6	4.905	3.20	7.054
<b>2SP 140</b>	72.7	2.862	129.6	5.102	3.30	7.275
<b>2SP 160</b>	74.8	2.944	133.8	5.267	3.45	7.605
<b>2SP 190</b>	77.3	3.043	138.8	5.464	3.60	7.936
<b>2SP 220</b>	79.8	3.141	143.8	5.661	3.75	8.267
<b>2SP 260</b>	82.7	3.255	149.6	5.889	3.90	8.598
<b>2SP 310</b>	86.9	3.421	138.0	6.220	4.10	9.038

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**FLANGIA SUPB80C FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
	cm <sup>3</sup> /giro	in <sup>3</sup> /rev	P1		P2		P3			l/min	Gal/min	
			bar	psi	bar	psi	bar	psi	giri/min - rpm			giri/min - rpm
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
 Note - for higher pressure values please contact our Sales Dpt.

**DIMENSIONI • DIMENSIONS**


GRUPPO - GROUP 2	A		B		MASSA - MASS	
	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	66.4	2.614	115.0	4.527	2.763	6.09
<b>2SP 060</b>	68	2.677	118.3	4.657	2.913	6.42
<b>2SP 080</b>	70.1	2.760	122,5	4.823	3.063	6.75
<b>2SP 110</b>	72.2	2.842	126.6	4.984	3.163	6.97
<b>2SP 140</b>	74.7	2.941	131.6	5.181	3.263	7.20
<b>2SP 160</b>	76.8	3.023	135.8	5.346	3.413	7.52
<b>2SP 190</b>	79.3	3.122	140.8	5.543	3.563	7.85
<b>2SP 220</b>	81.8	3.220	145.8	5.740	3.713	8.18
<b>2SP 260</b>	84.7	3.334	151.6	5.968	3.863	8.52
<b>2SP 310</b>	88.9	3.500	160.0	6.299	4.073	8.98

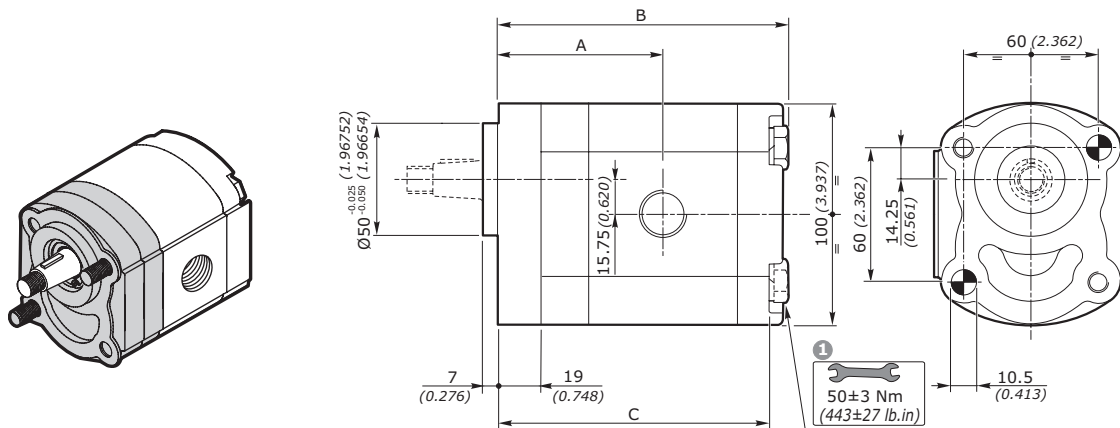
**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**FLANGIA SUPB50CX FLANGE**

GRUPPO GROUP 2SP	CILINDRATA DISPLACEMENT		PRESSIONE MAX - MAX PRESSURE						VELOCITÀ MAX MAX SPEED	PORTATA MAX MAX FLOW		VELOCITÀ MIN MIN SPEED
	cm³/giro	in³/rev	P1		P2		P3			l/min	Gal/min	
			bar	psi	bar	psi	bar	psi				
<b>2SP 040</b>	4	0.24	250	3625	270	3915	290	4205	4000	16	4.23	500
<b>2SP 060</b>	6	0.37	250	3625	270	3915	290	4205	4000	24	6.34	500
<b>2SP 080</b>	8.5	0.52	250	3625	270	3915	290	4205	3500	29.7	7.85	500
<b>2SP 110</b>	11	0.67	250	3625	270	3915	290	4205	3500	38.5	10.17	500
<b>2SP 140</b>	14	0.85	250	3625	270	3915	290	4205	3500	49	12.95	500
<b>2SP 160</b>	16.5	1.01	230	3335	240	3480	250	3625	3500	57.7	15.24	500
<b>2SP 190</b>	19.5	1.19	210	3045	220	3190	230	3335	3300	64.3	16.99	500
<b>2SP 220</b>	22.5	1.37	190	2755	200	2900	210	3045	2800	63	16.64	500
<b>2SP 260</b>	26	1.59	170	2465	180	2610	190	2755	2500	65	17.17	500
<b>2SP 310</b>	31.5	1.92	130	1885	140	2030	150	2175	2200	69	18.22	500

Nota - Per valori di pressione superiori a quelli indicati contattare il Servizio Commerciale.  
Note - for higher pressure values please contact our Sales Dept.

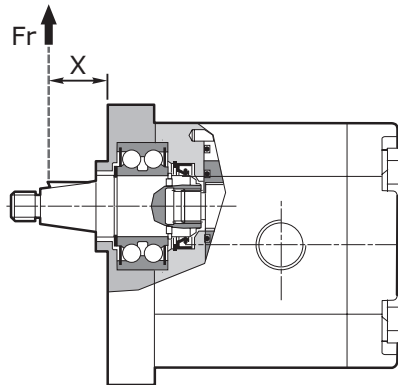
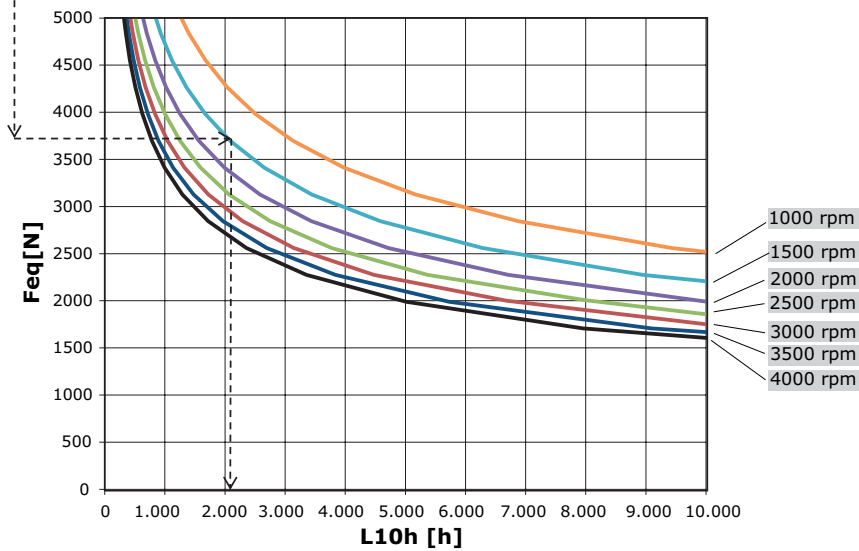
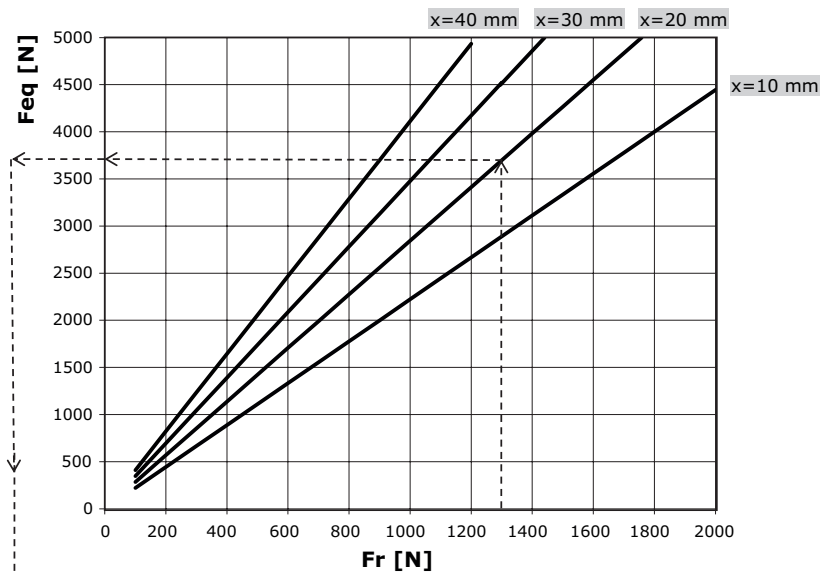
**DIMENSIONI • DIMENSIONS**



**1**  
Coppia di serraggio viti:  $50 \pm 3\text{Nm}$  (viti classe 10.9-12.9 UNI EN 20898/1)  
Il kit viti per il fissaggio della pompa è da ordinare separatamente.  
Codice di ordinazione: **0029W** (+ lunghezza **L** - vedi tabella)  
Il fissaggio della pompa può essere effettuato con 2 viti prigioniere classe 10.9-12.9 UNI EN 20898/1 preserrate:  $40 \pm 3\text{Nm}$ . Fissare la pompa mediante dadi autobloccanti con coppia di serraggio:  $50 \pm 3\text{Nm}$

**1**  
Screw tightening torque:  $443 \pm 27\text{lb-in}$  (screws 10.9-12.9 UNI EN 20898/1).  
The screw kit for the pump assembly should be ordered separately.  
Ordering code: **0029W** (+ length **L** - see table)  
The pump assembling should be made with 2 screws stud type 10.9-12.9 UNI EN 20898/1 pre-tighten  $354 \pm 27\text{lb-in}$ . Fix the pump by self-locking nuts with tightening torque:  $443 \pm 27\text{lb-in}$

GRUPPO - GROUP 2	A		B		C		L <b>1</b>		MASSA - MASS	
	mm	inch	mm	inch	mm	inch	mm	inch	kg	lbs
<b>2SP 040</b>	64.4	2.535	113.0	4.448	104.0	4.094	125	4.921	2.76	6.08
<b>2SP 060</b>	66.0	2.598	116.3	4.578	107.3	4.224	125	4.921	2.91	6.41
<b>2SP 080</b>	68.1	2.681	120.5	4.744	111.5	4.390	130	5.118	3.06	6.75
<b>2SP 110</b>	70.2	2.763	124.6	4.905	115.6	4.551	135	5.314	3.16	6.97
<b>2SP 140</b>	72.7	2.862	129.6	5.102	120.6	4.748	140	5.512	3.26	7.19
<b>2SP 160</b>	74.8	2.944	133.8	5.267	124.8	4.913	145	5.709	3.41	7.52
<b>2SP 190</b>	77.3	3.043	138.8	5.464	129.8	5.110	150	5.905	3.56	7.85
<b>2SP 220</b>	79.8	3.141	143.8	5.661	134.8	5.307	155	6.102	3.71	8.18
<b>2SP 260</b>	82.7	3.256	149.6	5.890	140.6	5.535	160	6.299	3.86	8.51
<b>2SP 310</b>	86.9	3.421	158.0	6.220	149.0	5.866	170	6.692	4.07	8.97

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**CARICO DINAMICO EQUIVALENTE • EQUIVALENT DYNAMIC LOAD**

**DIAGRAMMA CUSCINETTI • DIAGRAM BEARING EXPECTED LIFE**


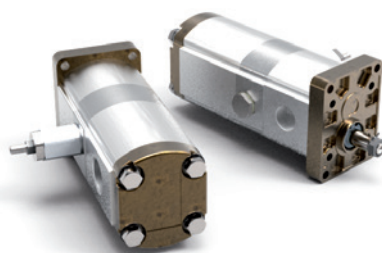
In caso di carichi combinati applicati all'albero (radiale + assiale) contattare il nostro Ufficio Tecnico.  
 In case of both radial and axial loads applied to the shaft please contact our technical department.

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**CODICE ORDINAZIONE • ORDER CODE**

**2SP - G - 140 - D - EUR - B - N - 10 - 0 - G**

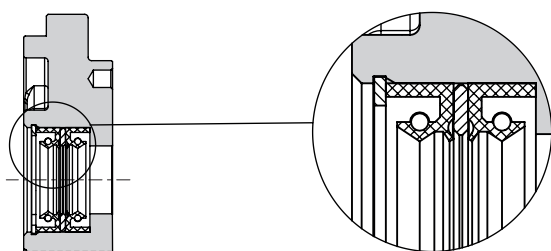
SIGLA - CODE	TIPO - TYPE	DESCRIZIONE - DESCRIPTION	PAGINA - PAGE
<b>2SP</b>	Tipo pompa <i>Pump type</i>	Pompa singola gruppo 2 <i>Single pump group 2</i>	5
<b>G</b>	Materiale flangia e coperchio <i>Flange and cover material</i>	<b>A</b> = alluminio / <i>aluminium</i> <b>G</b> = Ghisa / <i>Cast iron</i>	50
<b>140</b>	Cilindrata <i>Displacement</i>	Cilindrata = 14 cm <sup>3</sup> /giro <i>Displacement = 0.85 in<sup>3</sup>/rev</i>	5
<b>D</b>	Senso di rotazione <i>Rotation wise</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>	8
<b>EUR</b>	Tipo Flangia <i>Flange type</i>	Flangia standard <i>Standard flange</i>	50
<b>B</b>	Tipo anello di tenuta <i>Seal ring type</i>	Vedi tabella compatibilità <i>See compatibility table</i>	51
<b>N</b>	Tipo guarnizione <i>Gasket type</i>	<b>N</b> = NBR <b>V</b> = Viton	50
<b>10</b>	Tipo Albero <i>Shaft type</i>	Vedi tabella compatibilità <i>See compatibility table</i>	52
<b>0</b>	Posizione connessione <i>Connection position</i>	Vedi tabella compatibilità <i>See compatibility table</i>	57
<b>G</b>	Tipo connessione <i>Connection type</i>	Vedi tabella compatibilità <i>See compatibility table</i>	58



**VERSIONI CON DOPPIO PARAOLIO • DOUBLE SHAFT SEAL VERSION**

Disponibili versioni con doppio paraolio per EUR, SAEA, SAEAOR e B50C.

Available versions with double shaft seal for EUR, SAEA, SAEAOR and B50C.



esempio • example:

**2SP - A - 160 - S - SAEA2 - B - N - 14 - N**

**SAEA2**= Doppio paraolio / *Double Shaft Seal*

Nota - La versione con paraolio è fornita con anelli a bassa pressione o alta pressione tipo K (vedi pag.51).

Note - The version with shaft seal is supplied with K rings type with low pressure or high pressure (see page 51).



**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**TIPOLOGIA FLANGIA • FLANGE TYPE**

2SP	EUR	SAEA	SAEAOR	B80C	B50C	E52C
A alluminio aluminium	◇	◇	◇	◇	◇	◇
G ghisa cast iron	◇	◇	◇	non disponibile not available	non disponibile not available	non disponibile not available

2SP	P400D	SUPEUR	SAEB*	SUPSAE	SUPB80C	SUPB50CX
A alluminio aluminium	◇	◇	non disponibile not available	◇	◇	◇
G ghisa cast iron	non disponibile not available	◇	◇	non disponibile not available	non disponibile not available	non disponibile not available

\* Contattare il servizio commerciale. / Available soon. Please contact our Sales Dpt.

**COMBINAZIONE FLANGIA - ANELLO DI TENUTA - GUARNIZIONE • FLANGE - SEAL RING - GASKET COMBINATION**

2SP	EUR	SAEA	SAEAOR	B80C	B50C	E52C	
	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	
	<b>B H K</b>	<b>B H K</b>	<b>B H K</b>	<b>B H K</b>	<b>B H K</b>	<b>A</b>	
NBR N	◇	◇	◇	◇	◇	◇	
Viton V	●	●	●	●	●	●	

2SP	P400D	SUPEUR	SAEB*	SUPSAE	SUPB80C	SUPB50CX	
	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	 Anello-Seal ring	
	<b>B H K</b>	<b>B K</b>	<b>H</b>				
NBR N	◇	◇	◇	◇	◇	◇	
Viton V	●	●	●	●	●	●	

\* Contattare il servizio commerciale. / Available soon. Please contact our Sales Dpt.

esempio • example: **2SP - A - 140 - D - EUR - B - N - 10 - 0 - G**

**EUR** = Flangia europea / European flange

**B** = Anello tenuta fino a 3 bar / Seal ring up to 3 bar

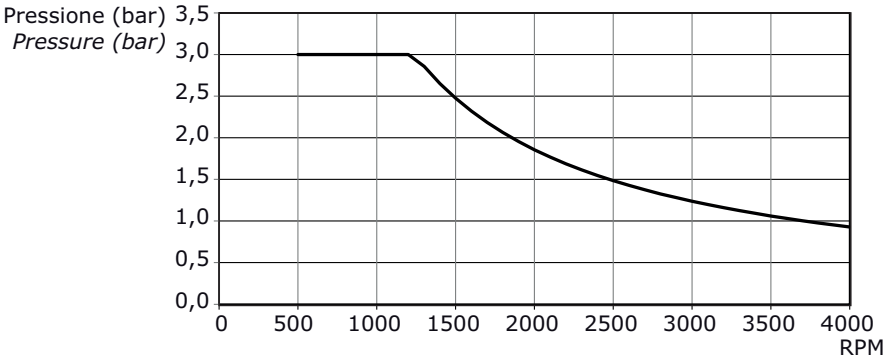
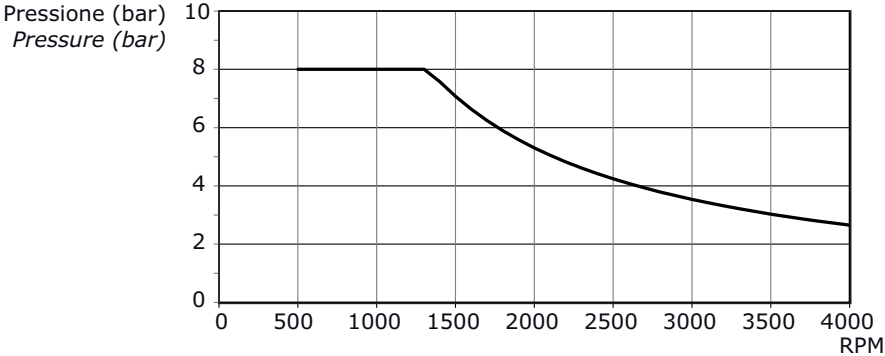
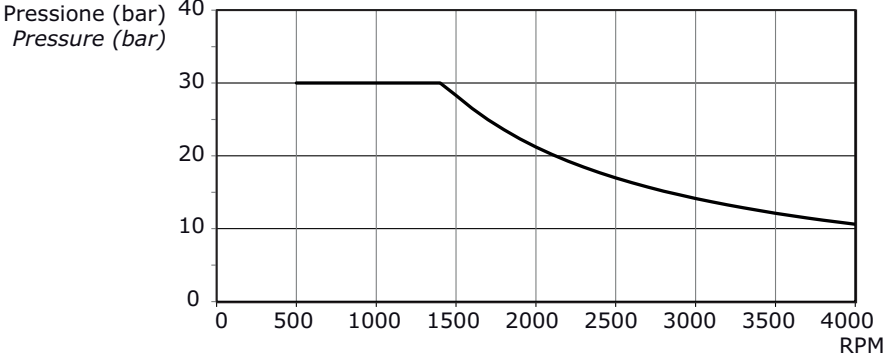
**N** = Guarnizione in NBR / NBR o-ring

◇ = Combinazione standard - Standard combination













● = Combinazione disponibile - Available combination

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**ANELLO DI TENUTA • SEAL RING**

SIGLA - CODE	TIPO - TYPE	DIAGRAMMA - DIAGRAM																				
<b>A</b>	Flangia senza anello di tenuta Flange without seal ring	/																				
<b>B</b>	Anello di tenuta fino a <b>3 bar</b> Sealing ring up to <b>3 bar</b>	 <table border="1"> <caption>Data for Seal Ring B</caption> <thead> <tr> <th>RPM</th> <th>Pressure (bar)</th> </tr> </thead> <tbody> <tr><td>500</td><td>3.0</td></tr> <tr><td>1000</td><td>3.0</td></tr> <tr><td>1250</td><td>3.0</td></tr> <tr><td>1500</td><td>2.5</td></tr> <tr><td>2000</td><td>1.8</td></tr> <tr><td>2500</td><td>1.4</td></tr> <tr><td>3000</td><td>1.2</td></tr> <tr><td>3500</td><td>1.0</td></tr> <tr><td>4000</td><td>0.8</td></tr> </tbody> </table>	RPM	Pressure (bar)	500	3.0	1000	3.0	1250	3.0	1500	2.5	2000	1.8	2500	1.4	3000	1.2	3500	1.0	4000	0.8
RPM	Pressure (bar)																					
500	3.0																					
1000	3.0																					
1250	3.0																					
1500	2.5																					
2000	1.8																					
2500	1.4																					
3000	1.2																					
3500	1.0																					
4000	0.8																					
<b>H</b>	Anello di tenuta fino a <b>8 bar</b> Sealing ring up to <b>8 bar</b>	 <table border="1"> <caption>Data for Seal Ring H</caption> <thead> <tr> <th>RPM</th> <th>Pressure (bar)</th> </tr> </thead> <tbody> <tr><td>500</td><td>8.0</td></tr> <tr><td>1000</td><td>8.0</td></tr> <tr><td>1250</td><td>8.0</td></tr> <tr><td>1500</td><td>7.0</td></tr> <tr><td>2000</td><td>5.5</td></tr> <tr><td>2500</td><td>4.5</td></tr> <tr><td>3000</td><td>3.8</td></tr> <tr><td>3500</td><td>3.2</td></tr> <tr><td>4000</td><td>2.5</td></tr> </tbody> </table>	RPM	Pressure (bar)	500	8.0	1000	8.0	1250	8.0	1500	7.0	2000	5.5	2500	4.5	3000	3.8	3500	3.2	4000	2.5
RPM	Pressure (bar)																					
500	8.0																					
1000	8.0																					
1250	8.0																					
1500	7.0																					
2000	5.5																					
2500	4.5																					
3000	3.8																					
3500	3.2																					
4000	2.5																					
<b>K</b>	Anello di tenuta fino a <b>30 bar</b> Sealing ring up to <b>30 bar</b>	 <table border="1"> <caption>Data for Seal Ring K</caption> <thead> <tr> <th>RPM</th> <th>Pressure (bar)</th> </tr> </thead> <tbody> <tr><td>500</td><td>30.0</td></tr> <tr><td>1000</td><td>30.0</td></tr> <tr><td>1250</td><td>30.0</td></tr> <tr><td>1500</td><td>25.0</td></tr> <tr><td>2000</td><td>18.0</td></tr> <tr><td>2500</td><td>14.0</td></tr> <tr><td>3000</td><td>12.0</td></tr> <tr><td>3500</td><td>10.5</td></tr> <tr><td>4000</td><td>10.0</td></tr> </tbody> </table>	RPM	Pressure (bar)	500	30.0	1000	30.0	1250	30.0	1500	25.0	2000	18.0	2500	14.0	3000	12.0	3500	10.5	4000	10.0
RPM	Pressure (bar)																					
500	30.0																					
1000	30.0																					
1250	30.0																					
1500	25.0																					
2000	18.0																					
2500	14.0																					
3000	12.0																					
3500	10.5																					
4000	10.0																					

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**COMBINAZIONE ALBERO - FLANGIA • SHAFT - FLANGE COMBINATION**

2SP	EUR	SAEA	SAEAOR	B80C	B50C	E52C	P400D	SUPEUR	SAEB*	SUPSAE	SUPB80C	SUPB50CX
												
<b>10</b> Conico 1:8 Tapered 1:8	◆	●	●	●	◆		◆	◆	●	◆		
<b>11</b> Conico 1:5 Tapered 1:5	●	●	●	◆	●			●	●		◆	◆
<b>12</b> Cilindrico EUR EUR Parallel shaft	◆	●	●	◆	◆				●			
<b>13</b> Cilindr. SAEA SAEA parallel shaft	●	◆	◆	●	●				●			
<b>14</b> Scanalato SAEA 9T SAEA 9T splined	●	◆	◆	●	●				●			
<b>15</b> Scanalato DIN5482 9T (26/24) DIN5482 9T splined (26/24)	●	●	●	◆	●				●			
<b>16</b> Scanalato DIN5482 9T (20) DIN5482 9T splined (20)	●	●	●	◆	●			●	●			
<b>17</b> Fresato a dente frontale Dihedral claw						◆						
<b>30</b> Scanalato SAE SAE splined										●		
<b>31</b> Cilindrico SAE SAE Parallel shaft										●		
<b>40</b> Scanalato SAE 10T (52) SAE 10T splined (52)	●	●	●						●			
<b>41</b> Scanalato SAE 10T (37.5) SAE 10T splined (37.5)	●	●	●						●			
<b>42</b> Scanalato SAEA 11T (55.6) SAEA 11T splined (55.6)	●	●	●						●			
<b>43</b> Scanalato SAEA 11T (31.5) SAEA 11T splined (31.5)	●	●	●						●			
<b>44</b> Scanalato SAEA 11T (13.5) SAEA 11T splined (13.5)						●						
<b>45</b> Scanalato SAEB 13T (41.2) SAEB 13T splined (41.2)									◆			
<b>46</b> Cilindrico SAEB SAEB Parallel shaft										●		
<b>47</b> Cilindrico Parallel shaft											●	

◆ = Combinazione standard - Standard combination

● = Combinazione disponibile - Available combination

\* Contattare il servizio commerciale. / Available soon. Please contact our Sales Dpt.

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**2SP**

DIMENSIONI ALBERO - SHAFT DIMENSIONS

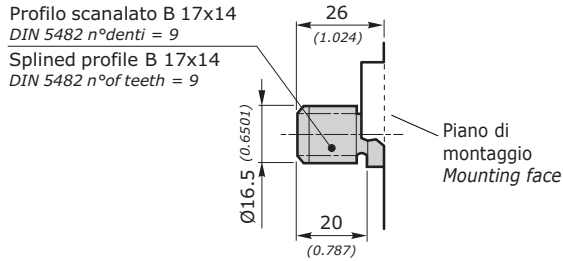
<p><b>10</b>                      Conico 1:8                      Tapered 1:8</p> <p>Coppia 140 Nm                      Torque 104 ft-lbs</p>	<p>Disponibile per - available for: <b>EUR- SAEA- SAEAOR- B50C- P400D- SUPEUR</b></p>	<p>Disponibile per - available for: <b>B80C</b></p>
<p><b>11</b>                      Conico 1:5                      Tapered 1:5</p> <p>Coppia 140 Nm                      Torque 104 ft-lbs</p>	<p>Disponibile per - available for: <b>EUR- SAEA- SAEAOR- B50C</b></p>	<p>Disponibile per - available for: <b>B80C</b></p>
<p><b>12</b>                      Cilindrico EUR                      EUR Parallel                      shaft</p> <p>Coppia 80 Nm                      Torque 59 ft-lbs</p>	<p>Disponibile per - available for: <b>EUR- SAEA- SAEAOR- B50C</b></p>	<p>Disponibile per - available for: <b>B80C</b></p>
<p><b>13</b>                      Cilindrico SAEA                      SAEA Parallel                      shaft</p> <p>Coppia 90 Nm                      Torque 67 ft-lbs</p>	<p>Disponibile per - available for: <b>EUR- SAEA- SAEAOR- B50C</b></p>	<p>Disponibile per - available for: <b>B80C</b></p>
<p><b>14</b>                      Scanalato                      SAEA 9T                      SAEA 9T                      splined</p> <p>Coppia 100 Nm                      Torque 74 ft-lbs</p>	<p>Disponibile per - available for: <b>EUR- SAEA- SAEAOR- B50C</b></p>	<p>Disponibile per - available for: <b>B80C</b></p>

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**2SP**

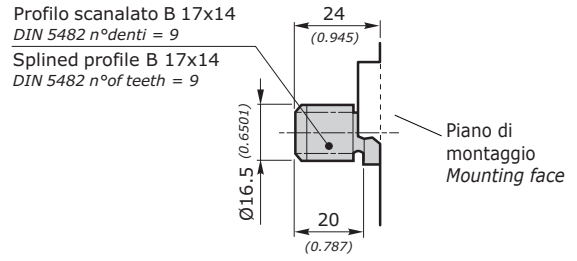
## DIMENSIONI ALBERO - SHAFT DIMENSIONS

**15**  
 Scanalato  
 DIN5482 B 17x14  
 DIN5482 9T  
 splined (26/24)

Coppia 100 Nm  
 Torque 74 ft-lbs



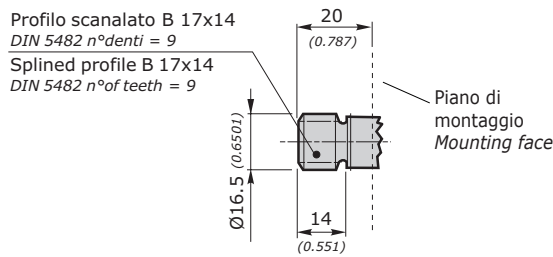
Disponibile per - available for: **EUR - SAEA - SAEAOR - B50C**



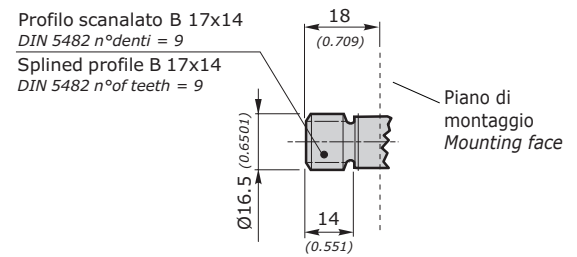
Disponibile per - available for: **B80C**

**16**  
 Scanalato  
 DIN5482  
 B 17x14  
 DIN5482 9T  
 splined (20)

Coppia 100 Nm  
 Torque 74 ft-lbs



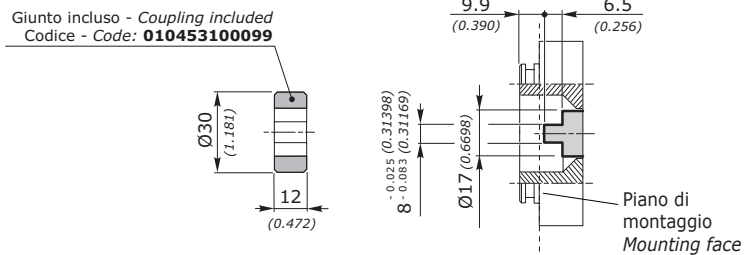
Disponibile per - available for: **EUR - SAEA - SAEAOR - B50C**



Disponibile per - available for: **B80C**

**17**  
 Fresato a dent  
 frontale  
 Dihedral claw

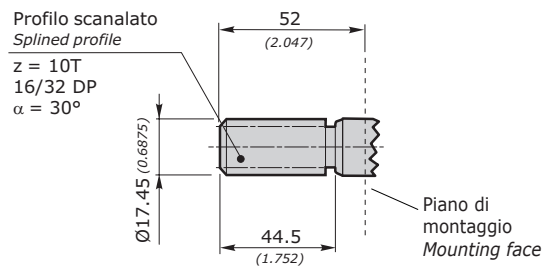
Coppia 80 Nm  
 Torque 59 ft-lbs



Disponibile per - available for: **E52C**

**40**  
 Scanalato SAE  
 10T (52)  
 SAE 10T  
 splined (52)

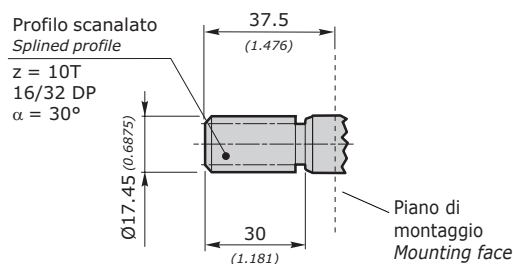
Coppia 130 Nm  
 Torque 96 ft-lbs



Disponibile per - available for: **SAEA - SAEAOR**

**41**  
 Scanalato SAE  
 10T (37.5)  
 SAE 10T  
 splined (37.5)

Coppia 130 Nm  
 Torque 96 ft-lbs



Disponibile per - available for: **SAEA - SAEAOR**

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

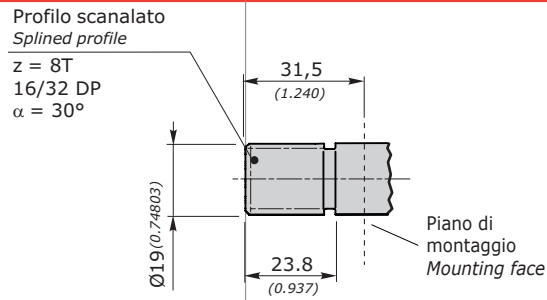
<b>2SP</b>	<b>DIMENSIONI ALBERO - SHAFT DIMENSIONS</b>
<p><b>42</b> Scanalato SAEA 11T (55.6) SAEA 11T splined (55.6)</p> <p>Coppia 150 Nm Torque 111 ft-lbs</p>	<p>Profilo scanalato Splined profile z = 11T 16/32 DP α = 30°</p> <p>Disponibile per - available for: <b>SAEA - SAEAOR</b></p>
<p><b>43</b> Scanalato SAEA 11T (31.5) SAEA 11T splined (31.5)</p> <p>Coppia 150 Nm Torque 111 ft-lbs</p>	<p>Profilo scanalato Splined profile z = 11T 16/32 DP α = 30°</p> <p>Disponibile per - available for: <b>SAEA - SAEAOR</b></p>
<p><b>44</b> Scanalato SAEA 11T (13.5) SAEA 11T splined (13.5)</p> <p>Coppia 150 Nm Torque 111 ft-lbs</p>	<p>Profilo scanalato Splined profile z = 11T 16/32 DP α = 30°</p> <p>Disponibile per - available for: <b>E52C</b></p>
<p><b>45</b> Scanalato SAEB 13T (41.2) SAEB 13T splined (41.2)</p> <p>Coppia 280 Nm Torque 207 ft-lbs</p>	<p>Profilo scanalato Splined profile z = 13T 16/32 DP α = 30°</p> <p>Disponibile per - available for: <b>SAEB</b></p>
<p><b>46*</b> Cilindrico Parallel shaft</p> <p>Coppia 110 Nm Torque 81 ft-lbs</p> <p><small>* Solo per versione con cuscinetto. Available only for version with bearing</small></p>	<p>Disponibile per - available for: <b>SUPEUR - SUPSAE</b></p>

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**2SP**

## DIMENSIONI ALBERO - SHAFT DIMENSIONS

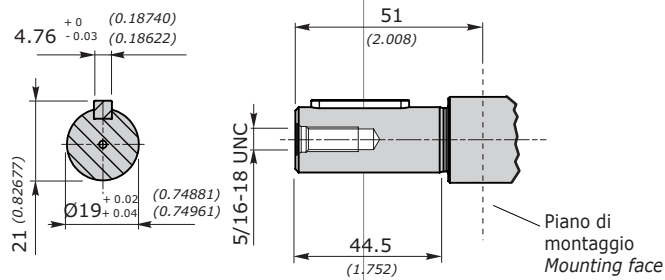
**30**  
 Scanalato SAE  
 11T  
 SAE 11T  
 splined

Coppia 150 Nm  
 Torque 111 ft-lbs


 Disponibile per - available for: **SUPSAE**

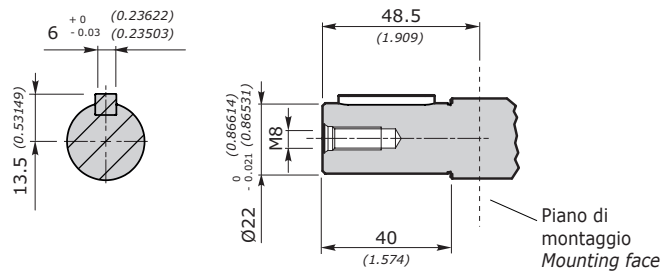
**31**  
 Cilindrico SAE  
 SAE Parallel  
 shaft

Coppia 90 Nm  
 Torque 67 ft-lbs


 Disponibile per - available for: **SUPSAE**

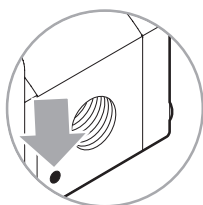
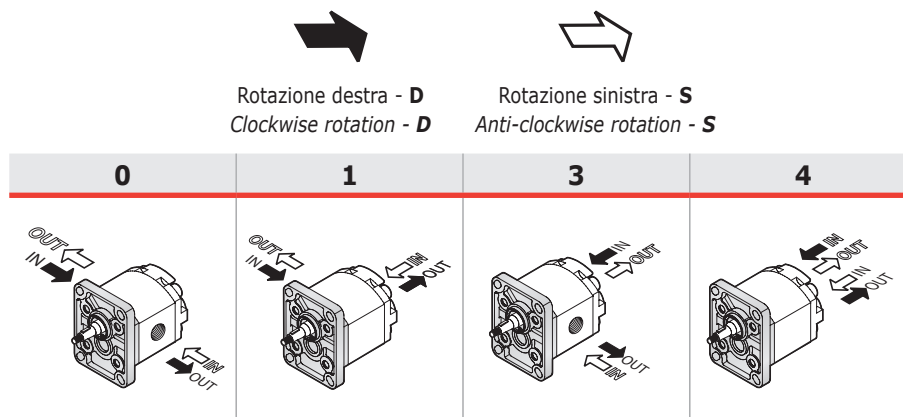
**47**  
 Cilindrico Ø 22  
 Ø 22 Parallel  
 shaft

Coppia 110 Nm  
 Torque 81 ft-lbs


 Disponibile per - available for: **SUPB80C**

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

**POSIZIONE CONNESSIONE • CONNECTION POSITION**



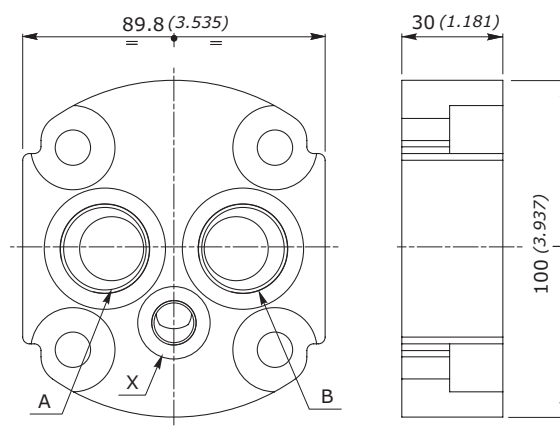
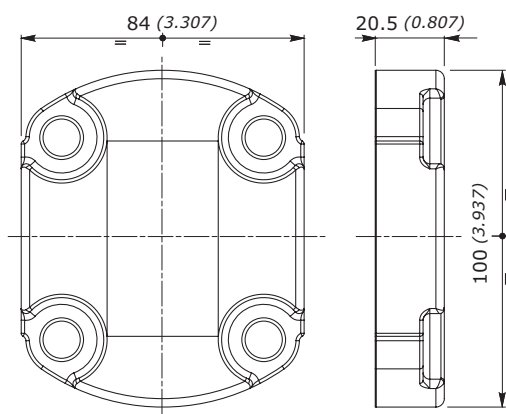
Il segno del corpo indica il lato aspirazione per le pompe  
 The sign on the body identifies the suction side for the pumps

**IN = ASPIRAZIONE - SUCTION**  
**OUT = MANDATA - DELIVERY**

**COPERCHIO STANDARD • STANDARD COVER**

Per posizione **0**  
 For position **0**

Per posizioni **1, 3, 4**  
 For position **1, 3, 4**



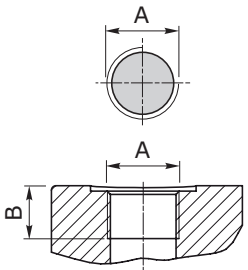
CONNESSIONI / CONNECTION			
	A	B	X
<b>GAS</b>	G 3/4	G 3/4	G 1/4
<b>SAE</b>	SAE 12	SAE 12	SAE 6

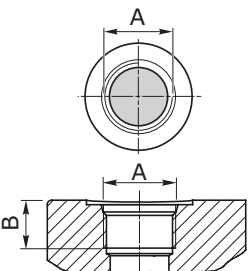


**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**TIPO CONNESSIONE • CONNECTION TYPE**

Le connessioni rappresentate corrispondono alle versioni standard; per connessioni differenti, contattare il nostro Ufficio Commerciale. *The connection types shown correspond to standard configuration; for different applications contact our Commercial Dept.*

<b>2SP</b>		POSIZIONE CONNESSIONE - CONNECTION POSITION			
		<b>0</b>	<b>1</b>	<b>3</b>	<b>4</b>
GAS	<b>G</b>	◇	◇	◇	◇
UNF	<b>U</b>	◇	◇	◇	◇
FLANGIATE FLANGED	<b>T</b>	◇			
	<b>N</b>	◇			
	<b>M</b>	◇			
	<b>F</b>	◇			

<b>GAS</b>	UNI ISO 228/1	SIGLA CODE	CIL. DISPL.	ASPIRAZIONE - SUCTION IN			MANDATA - DELIVERY OUT		
				<b>A</b>	<b>B</b>	↻	<b>A</b>	<b>B</b>	↻
		<b>G</b>	40	G 1/2"	16 [mm] 0.630 [inch]	50 [Nm] 443 [in.lbs]	G 1/2"	16 [mm] 0.630 [inch]	50 [Nm] 443 [in.lbs]
			60						
			80						
			110	G 3/4"	17 [mm] 0.670 [inch]	60 [Nm] 531 [in.lbs]			
			140						
			160						
			190						
			220						
			260						
			310						

<b>UNF</b>	ANSI/ASME B1.1	SIGLA CODE	CIL. DISPL.	ASPIRAZIONE SUCTION IN			MANDATA DELIVERY OUT					
				<b>A</b>	<b>B</b>	↻	<b>A</b>	<b>B</b>	↻			
		<b>U</b>	40	SAE 10 7/8"-14 UNF	17 [mm] 0.670 [inch]	55 [Nm] 487 [in.lbs]	SAE 10 7/8"-14 UNF	17 [mm] 0.670 [inch]	55 [Nm] 487 [in.lbs]			
			60									
			80									
			110	SAE 12 1"1/16-12 UN	20 [mm] 0.788 [inch]	60 [Nm] 531 [in.lbs]						
			140									
			160									
			190									
			220									
			260									
			310									
			40	SAE 16 1"5/16-12 UN	20 [mm] 0.788 [inch]	70 [Nm] 620 [in.lbs]				SAE 12 1"1/16-12 UN	20 [mm] 0.788 [inch]	60 [Nm] 531 [in.lbs]
			60									
			80									
			110									
			140									
			160									
190												
220												
260												
310												

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**

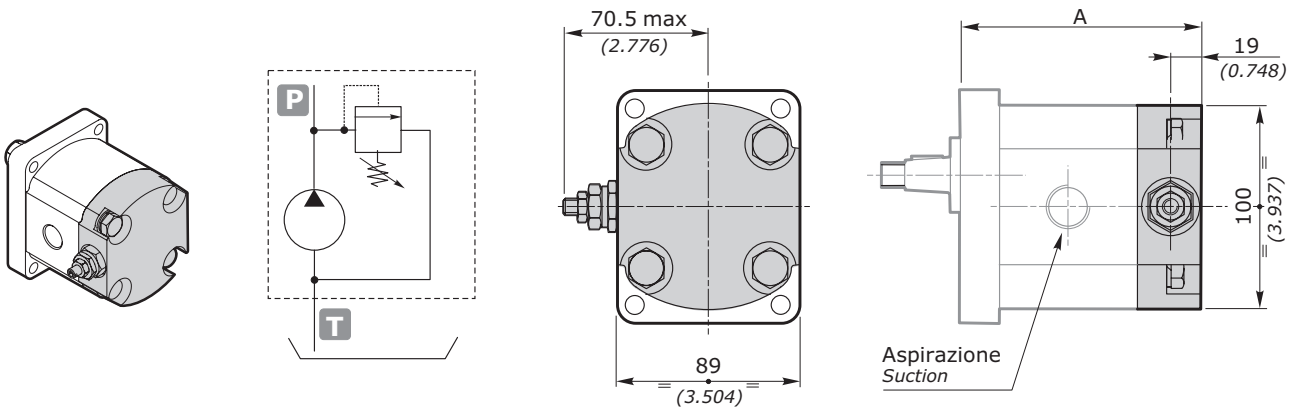
FLANGIATE FLANGED	ISO/R 262	SIGLA CODE	CIL. DISPL.	ASPIRAZIONE SUCTION IN					MANDATA DELIVERY OUT							
				A	B	C	D	↻	A	B	C	D	↻			
		<b>T</b>	40													
			60													
			80													
			110													
			140	20	40		15	8	15	35		15	8			
			160	[mm]	[mm]	M6	[mm]	[Nm]	[mm]	[mm]	M6	[mm]	[Nm]			
			190	0.787	1.575		0.591	71	0.591	1.378		0.591	71			
			220	[inch]	[inch]		[inch]	[in.lbs]	[inch]	[inch]		[inch]	[in.lbs]			
			260													
			310													
		<b>N</b>	40	13	30		15	8								
			60	[mm]	[mm]	M6	[mm]	[Nm]								
			80	0.512	1.181		0.591	71								
			110													
			140						13	30		15	8			
			160	19	40		14	15	0.512	1.181	M6	0.591	71			
			190	[mm]	[mm]	M8	[mm]	[Nm]	[inch]	[inch]		[inch]	[in.lbs]			
			220	0.748	1.575		0.552	133								
			260	[inch]	[inch]		[inch]	[in.lbs]								
			310													
		<b>M</b>	40	non disponibile not available					non disponibile not available							
			60	non disponibile not available					non disponibile not available							
			80	non disponibile not available					non disponibile not available							
			110													
			140													
			160	19	40		14	15	19	40		14	15			
			190	[mm]	[mm]	M8	[mm]	[Nm]	[mm]	[mm]	M8	[mm]	[Nm]			
			220	0.748	1.575		0.552	133	0.748	1.575		0.552	133			
			260	[inch]	[inch]		[inch]	[in.lbs]	[inch]	[inch]		[inch]	[in.lbs]			
			310													

FLANGIATE FLANGED	ISO/R 262	SIGLA CODE	CIL. DISPL.	ASPIRAZIONE SUCTION IN					MANDATA DELIVERY OUT						
				A	B	C	D	E	↻	A	B	C	D	E	↻
		<b>F*</b>	40	20	17,4	38		15	8						
			60	[mm]	[mm]	[mm]	M6	[mm]	[Nm]						
			80	0.787	0.685	1.496		0.591	71						
			110												
			140							15	17,4	38		15	8
			160							[mm]	[mm]	[mm]	M6	[mm]	[Nm]
			190	26	22.4	47.6		15	8	0.591	0.685	1.496		0.591	71
			220	[mm]	[mm]	[mm]	M6	[mm]	[Nm]	[inch]	[inch]	[inch]		[inch]	[in.lbs]
			260	1.024	0.882	1.874		0.591	71						
			310	[inch]	[inch]	[inch]		[inch]	[in.lbs]						

\*: Le flange non corrispondono a norma SAEJ518. Flange a norma disponibili a richiesta, contattare il Servizio Commerciale.

\*: Flanges F do not correspond to SAEJ518. Flanges SAEJ518 available on request, please contact our Sales Dpt.

**POMPE AD INGRANAGGI GRUPPO 2SP**  
**GEAR PUMPS GROUP 2SP**
**OPZIONI • OPTIONS**
**VLPI**

 VALVOLA LIMITATRICE DI PRESSIONE A SCARICO INTERNO  
 PRESSURE RELIEF VALVE WITH INTERNAL EXHAUST


GRUPPO GROUP 2	EUR-SAEA-B50C		A B80C		E52C	
	mm	inch	mm	inch	mm	inch
<b>2SP 040</b>	104.8	4.126	106.8	4.205	102.1	4.020
<b>2SP 060</b>	108.1	4.256	110.1	4.335	105.4	4.150
<b>2SP 080</b>	112.3	4.421	114.3	4.500	109.6	4.315
<b>2SP 110</b>	116.4	4.583	118.4	4.661	113.7	4.476
<b>2SP 140</b>	121.4	4.780	123.4	4.858	118.7	4.673
<b>2SP 160</b>	125.6	4.945	127.6	5.024	122.9	4.839
<b>2SP 190</b>	130.6	5.142	132.6	5.220	127.9	5.035
<b>2SP 220</b>	135.6	5.339	137.6	5.417	132.9	5.232
<b>2SP 260</b>	141.4	5.567	143.4	5.646	138.7	5.461
<b>2SP 310</b>	149.8	5.902	151.8	5.981	147.1	5.796

La valvola limitatrice di pressione si applica sostituendo il coperchio posteriore. Il corpo VLP è disponibile in alluminio. E' rappresentata una pompa con rotazione sinistra.

**L'apertura della valvola limitatrice di pressione deve avvenire per tempi non superiori ai 10 secondi ogni minuto, per evitare il surriscaldamento della pompa.**

*The pressure relief valve can be applied by substituting the rear cover. VLP cover is available in aluminum. The showed pump is with anticlockwise rotation.*

**The opening of the pressure relief valve should be carried out for times not over 10" each minute, to avoid the pump overheating.**

esempio • example: **2SP - A - 140 - D - EUR - B - N - 10 - 0 - G - VLPI (N 120)**

**VLPI** = Coperchio con VPL a scarico interno / Cover with VPL with internal exhaust

**N** = Tipo molla - vedi tabella / Spring type - see table

**120** = Taratura - vedi tabella / Setting - see table

TIPO - TYPE	CAMPI DI TARATURE - CALIBRATION FIELDS					
	molla bianca - white spring	B	molla nera - black spring	N	molla rossa - red spring	R
bar	30 ÷ 80		81 ÷ 200		201 ÷ 350	
psi	435 ÷ 1160		1175 ÷ 2900		2915 ÷ 5075	
STANDARD	70 bar (1015 psi)		150 bar (2175 psi)		250 bar (3625 psi)	

NOTA: In caso di omissione del valore di taratura, esso sarà inteso standard (vedi tabella).

NOTE: Without setting request, it will be considered standard (see table).