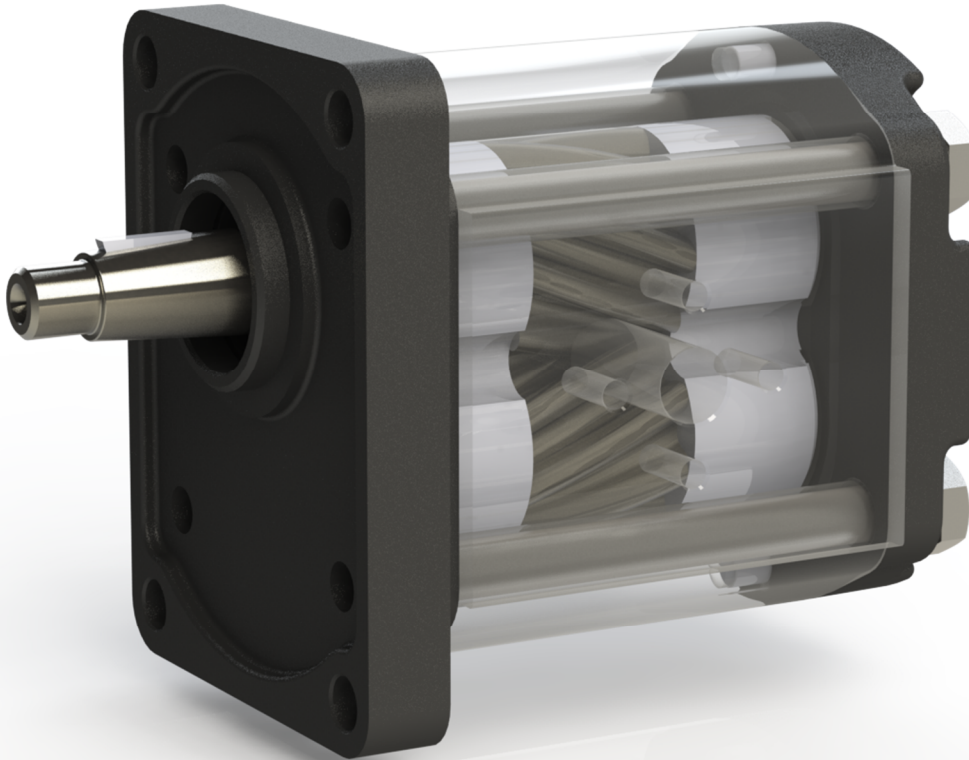


LOW NOISE - LOW PULSATIONS **PUMP**

Q
series



Made in Italy



Q pumps are available in capacities 11,14,17 and 20 cc/rev and they are perfectly interchangeable with Ronzio standard products.

New tooth profile and dual flank technology are studied and improved in order to reduce oil pulsations, deleting the main origin of noise in a gear pump.

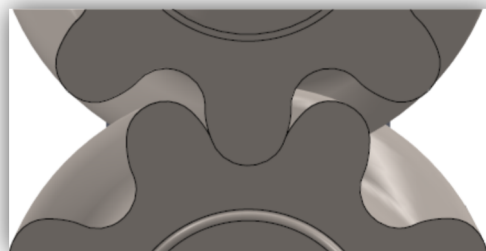
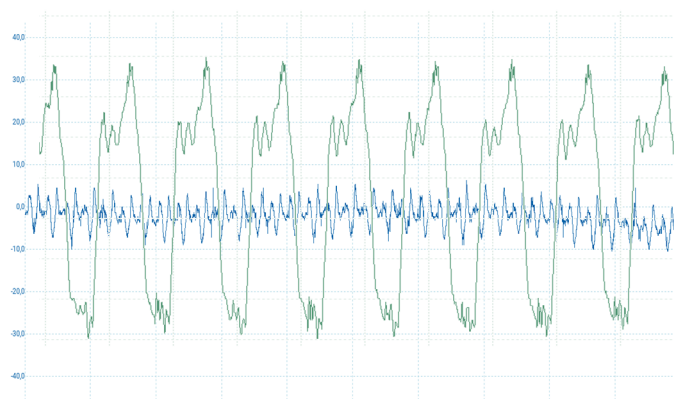


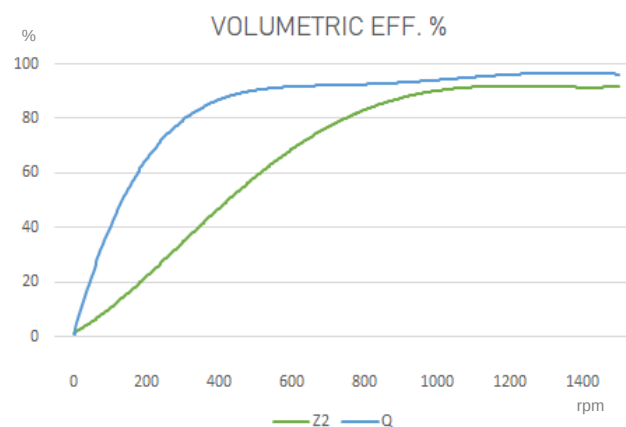
Diagram shows the difference in pulsation (psi) from a standard Ronzio product (green) and the new **Q** series (blue).

Our new pump is capable to reduce pressure ripple lower than $\pm 3\%$ of working pressure

Curves recorded @ 1500 rpm, 170 bar.



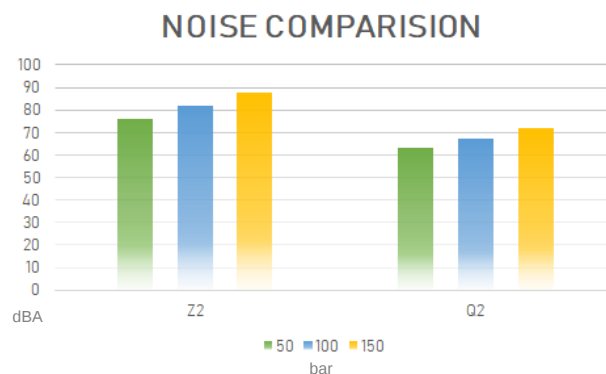
The new technology of the pump minimizes the internal leakage, maximizing the volumetric efficiency under all conditions. This makes the **Q** pump suitable for working operations with low speed and high pressure. Comparing the performances with our standard pumps, **Q** series can be used in a wider range of applications, especially with speed controlled electric motor



With **Q** series, the flow characteristic not only reduces the noise emission of the pump, but makes the hydraulic system quieter due to the reduced vibrations of all components, eliminating the need of expensive noise reduction devices.

This graph show the noise level comparison between Q series and our standard production.

Test made in the same condition @ 1500rpm



CARATTERISTICHE PRINCIPALI

MAIN FEATURES

- Coperchi in ghisa per elevate prestazioni.
- Possibilità di funzionare ad alte pressioni: fino a 280 bar di pressione massima in funzionamento continuo.
- Compensazione assiale per il recupero dei giochi
- Alto rendimento volumetrico: 95-97% medio.
- Cilindrate: 11-14-17-20 cm³/giro.
- Corpo in alluminio estruso.
- Progetto innovativo del profilo del dente per avere una bassa rumorosità.
- Flange, alberi e connessioni compatibili con i principali standard del mercato.
- Disponibilità di guarnizioni per alte temperature.
- Pompe e motori unidirezionali.
- Cast iron covers for high performances.
- High pressure option: up to 280 bar max. continuous pressure (4060 psi).
- Axial compensation achieved using pressure balanced bushing blocks.
- High volumetric efficiency: average 95-97%.
- Capacities: 11-14-17-20 cm³/rev.
- Extruded aluminium body.
- Gear tooth profile accurately projected providing low noise operation.
- Flanges and ports are available to meet specific application requirements.
- High-temperature seals available.
- Single rotational pumps and motors.

Fluidi idraulici Hydraulic fluids

Oli idraulici a base minerale (DIN 51524).
Per utilizzo di fluidi non infiammabili come acqua e glicole, emulsione di olio in acqua o esteri fosforici, contattare il nostro ufficio tecnico o commerciale.
Mineral oil (DIN 51524).
For use with fire resistant fluids like water glycol, water-oil emulsion and phosphate-esters, contact our technical or commercial office.

Pressione in aspirazione Inlet pressure

0.7 - 3 bar (Assoluti / Absolute)
10 - 44 psi (Assoluti / Absolute)

Velocità olio nella linea di aspirazione Oil speed on suction line

0.5 ÷ 1.5 m/s

Velocità olio nella linea di mandata Oil speed on pressure line

6 ÷ 10 m/s

Temperatura olio Oil temperature

-10°C ÷ 80°C

Viscosità olio Oil viscosity

20 ÷ 120 mm²/s (Cst)

Massima viscosità olio all'avvio Max starting viscosity

700 mm²/s (Cst)

Filtraggio olio Oil filtration

Pressione (bar) Pressure (bar)	< 140	140 > 210	>210
Classe di contaminazione NAS 1638 Contamination class NAS 1638	10	9	8
Classe di contaminazione ISO 4406:1999 Contamination class ISO 4406:1999	21/19/16	20/18/15	19/17/14
Rapporto $\beta_{10} \square 75$ - ISO16889 Ratio $\beta_{10} \square 75$ - ISO16889	//	10 μ m	10 μ m
Rapporto $\beta_{25} \square 200$ - ISO16889 Ratio $\beta_{25} \square 200$ - ISO16889	25 μ m	//	//

INFORMAZIONI TECNICHE

TECHNICAL DATA

Tipo Type		11	14	17	20
Cilindrata Capacity	Cm ³ / giro Cm ³ / rev	11.2	14.5	17.3	20.3
P1 Pressione max continua Max working pressure	Bar	280	270	260	230
P2 Pressione intermittente intermittent pressure	Bar	310	300	270	240
P3 Pressione max di picco Max peak pressure	Bar	330	330	320	280
Velocità max per pressione P1 Max speed for P1 pressure	Giri / min Rpm	3300	2700	2500	2500
Velocità max a vuoto Max speed without load	Giri / min Rpm	4000	3300	3000	3000
Velocità min. per pressione P1 Min speed for P1 pressure	Giri / min Rpm	450	400	350	300

FORMULE PER IL DIMENSIONAMENTO

HYDRAULICS FORMULAS

Fluid speed in a pipe [m/s]

$$v = Q / 6 \times A$$

Q = flow rate [l/min]
A = inside area of pipe [cm²]

Output flow [l/min]

$$Q = (V \times n \times \eta_{vol}) / 1000$$

V = displacement [cm³/rev]
n = rotation speed [rpm]
 η_{vol} = pump volumetric efficiency (0.96)

Input torque [Nm]

$$M = (V \times \Delta P) / (62.8 \times \eta_{hm})$$

V = displacement [cm³/rev]
 ΔP = pressure differential [bar]
 η_{hm} = mechanical efficiency (0.85)

Input power [kW]

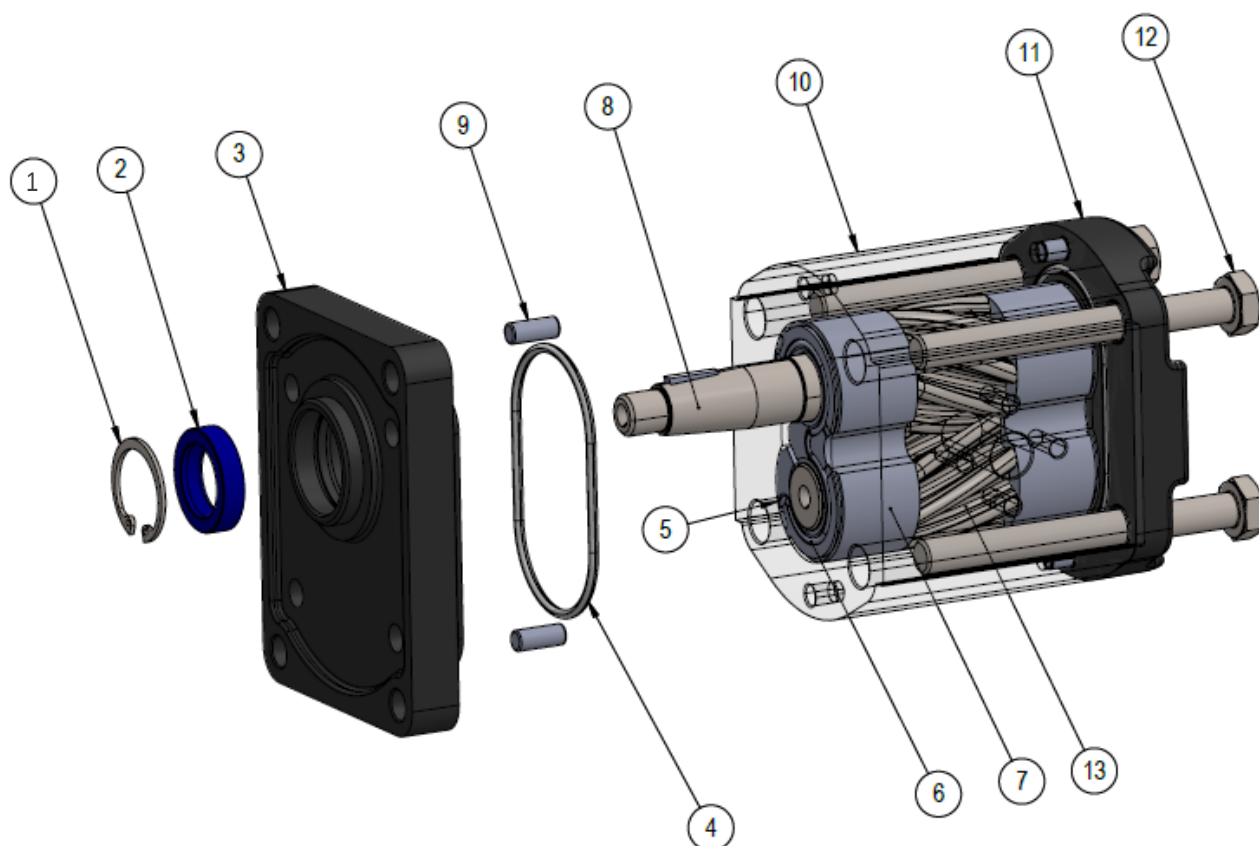
$$P = (Q \times \Delta P) / (600 \times \eta_{tot})$$

Q = flow [l/min]
 ΔP = pressure differential [bar]
 η_{tot} = total efficiency ($\eta_{hm} \times \eta_{vol}$)

Nell'utilizzo della pompa senza supporto evitare carichi radiali e assiali sull'albero.
Il giunto di trascinamento deve compensare eventuali errori di allineamento.
Per un corretto funzionamento e una lunga durata della pompa, osservare i valori riportati nel presente catalogo.

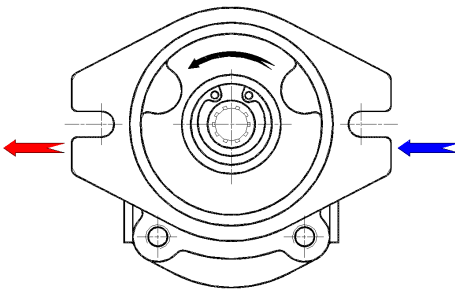
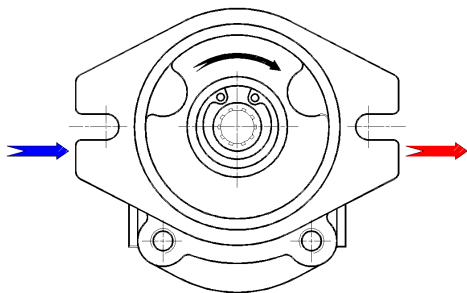
*Avoid radial and axial loads on the shaft without support on the pump during the use.
We recommend to read the specifications in this catalogue very carefully. This will help you in getting the best, in terms of working conditions and life, from Ronzio gear pumps.*

COMPONENTI PARTS



Rif.	Descrizione	Description	Qt.
1	Anello elastico	Snap ring	1
2	Anello di tenuta	Rotary shaft seal	1
3	Flangia	Front flange	1
4	Guarnizione sotto-coperchio	Under cover seal	2
5	Antiestrusore	B-K seals	2
6	Guarnizione di compensazione	Compensation seal	2
7	Rasamento	Bushing block	2
8	Ingranaggio conduttore	Drive gear	1
9	Spina cilindrica	Pin	4
10	Corpo	Housing	1
11	Coperchio	Rear cover	1
12	Vite	Bolt	4
13	Ingranaggio condotto	Idle gear	1

SENSO DI ROTAZIONE
ROTATION

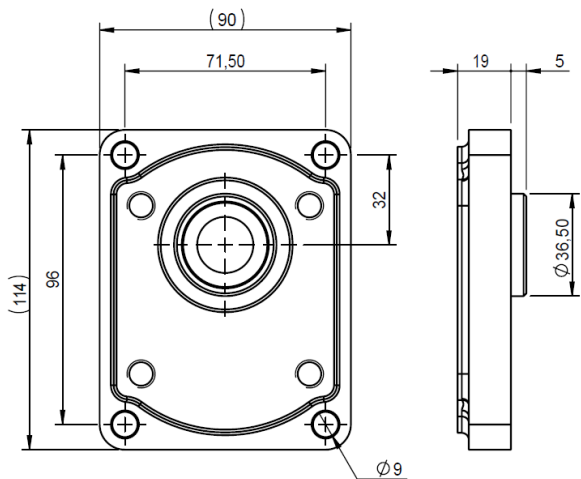


Rotazione destra Clockwise rotation	Codice Code	D
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Rotazione sinistra Counter-clockwise rotation	Codice Code	S
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FLANGE
FLANGES

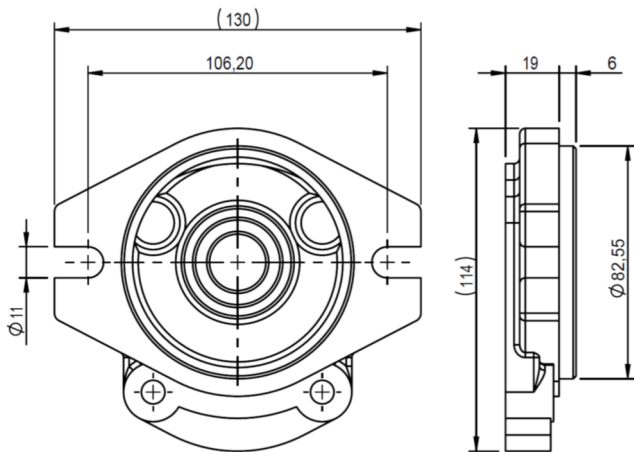
STANDARD EUROPEO / EUROPEAN STANDARD



CODICE CODE	A0
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NOTA: Materiale Ghisa
NOTE: Material Cast iron

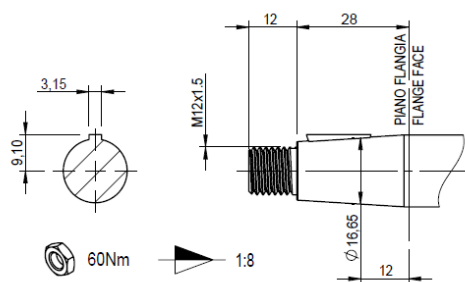
SAE A 2 FORI / SAE A 2 BOLTS



CODICE CODE	C4
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NOTA: Materiale Ghisa
NOTE: Material Cast iron

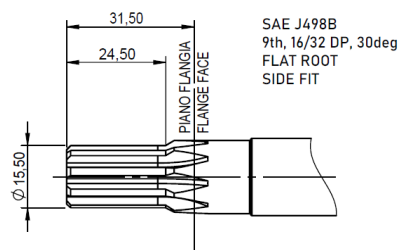
STANDARD EUROPEO / EUROPEAN STANDARD



CODICE / CODE	C
PER FLANGIA / FOR FLANGE	A 0

Coppia max 150 Nm
Max torque 150 Nm

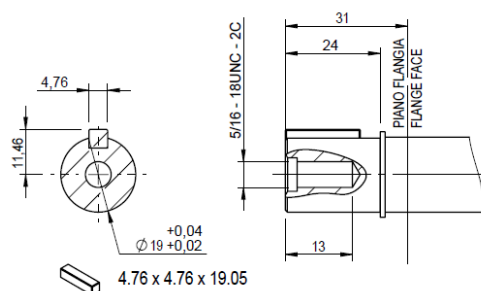
SAE SCANALATO / SPLINED SAE



CODICE / CODE	U
PER FLANGIA / FOR FLANGE	C 4

Coppia max 130 Nm
Max torque 130 Nm

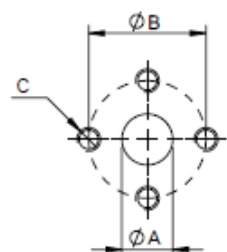
SAE CILINDRICO / SAE STRAIGHT



CODICE / CODE	N
PER FLANGIA / FOR FLANGE	C 4

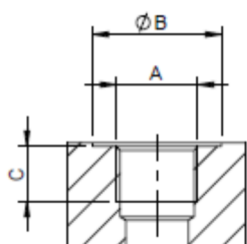
Coppia max 110 Nm
Max torque 110 Nm

PORTE PORTS



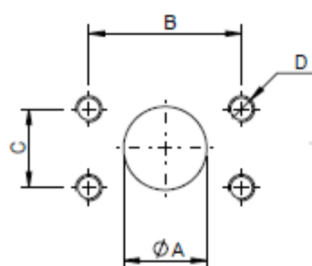
EUROPEAN FLANGED

CODICE CODE	INLET			OUTLET		
	ØA	ØB	C	ØA	ØB	C
32	13	30	M6x12	13	30	M6x12
33	20	40	M6x12	13	30	M6x12
43	20	40	M6x12	20	40	M6x12



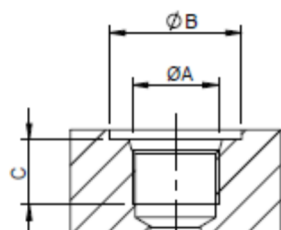
BSPP

CODICE CODE	INLET			OUTLET		
	A	ØB	C	A	ØB	C
34	1/2"	33x1	14	1/2"	33x1	14
35	3/4"	39x1	16	1/2"	33x1	14
41	3/4"	39x1	16	3/4"	39x1	16
42	1"	49x1	18	3/4"	39x1	16



SAE 3000 PSI FLANGED J518

CODICE CODE	INLET				OUTLET			
	ØA	B	C	D	ØA	B	C	D
23	19	47.6	22.2	M10x20	13	38.1	17.5	M8x16
24	19	47.6	22.2	M10x20	19	47.6	22.2	M10x20
25	25	58.7	30.2	M10x20	19	47.6	22.2	M10x20

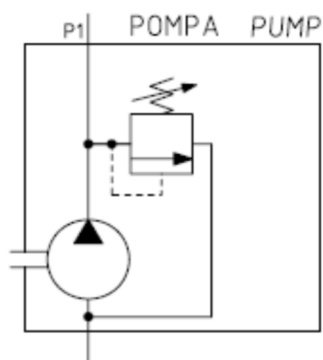


SAE THREAD J514

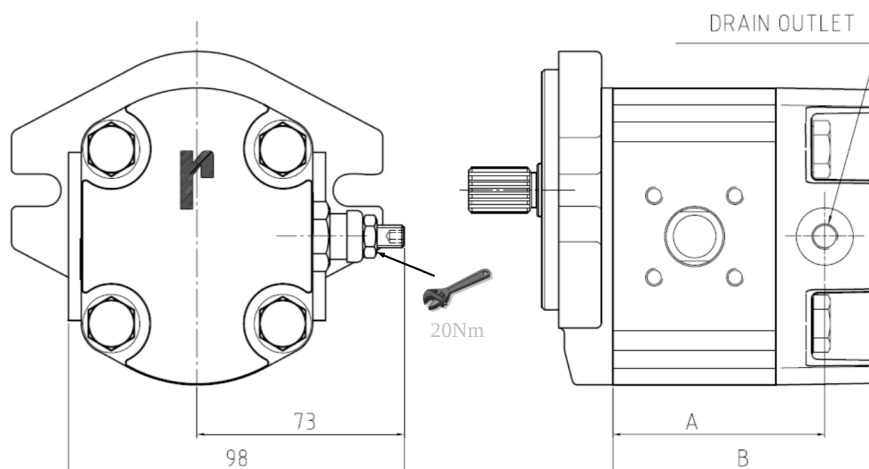
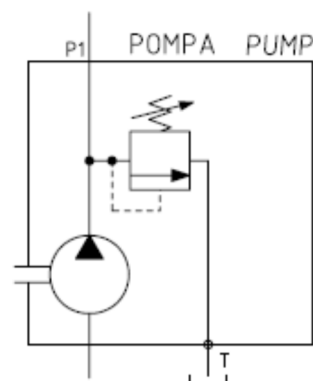
CODICE CODE	INLET			OUTLET		
	A	ØB	C	A	ØB	C
37	7/8"-14UNF	34x1	16	7/8"-14UNF	34x1	16
38	1"-1/16-12UN	41x1	20	7/8"-14UNF	34x1	16
39	1"-1/16-12UN	41x1	20	1"-1/16-12UN	41x1	20

VALVOLA DI MASSIMA PRESSURE RELIEF VALVE

DRENAGGIO INTERNO / INTERNAL DRAIN



DRENAGGIO ESTERNO / EXTERNAL DRAIN



TYPE	11	14	17	20
A	105	110	114	119
B	85.5	90.5	94.5	99.5

Come ordinare/Ordering code

VRE: Valvola taratura regolabile, drenaggio esterno / Valve with adjustable calibration, external drain
 VRI: Valvola taratura regolabile, drenaggio interno / Valve with adjustable calibration, internal drain

		1	2	3		4	5	6	7	8	9	10
0	2	Q	A	G	11	E	0	34	S	N	-	-

1	TIPO UNITÁ / UNIT TYPE	CODICE / CODE
	PUMP	Q

2-5	FLANGIA / FLANGE (PAG. 7)	CODICE / CODE
	EUROPA / EUROPEAN	A - 0
	AMERICANA / AMERICAN	C - 4

3	CILINDRATA / CAPACITY cm ³	CODICE / CODE
	11	11
	14	14
	17	17
	20	20

4	ALBERO / SHAFT (PAG. 8)	CODICE / CODE
	CONICO 1:8 / TAPERED 1:8	C
	CILINDRICO Ø 19 / STRAIGHT Ø 19	N
	ANSI 921 9 TH 16/32 FLAT ROOT	U

6	BOCCHIE / PORTS (PAG.9)	CODICE / CODE
	EUROPEAN FLANGED	32 - 33 - 43
	SAE 3000 PSI FLANGED J518	23 - 24 - 25
	BSP	34 - 35 - 41 - 42
	SAE THREAD J514	37 - 38 - 39

7	ROTAZIONE / ROTATION	CODICE / CODE
	DESTRO / RIGHT	D
	SINISTRO / LEFT	S

8	GUARNIZIONI / SEALS	CODICE / CODE
	STANDARD	N
	FKM	V
	HNBR	H

9	VALVOLA DI MASSIMA / RELIEF VALVE	CODICE / CODE
	SENZA / WITHOUT	-
	DRENAGGIO INTERNO / INTERNAL DRAIN	VRI
	DRENAGGIO ESTERNO / EXTERNAL DRAIN	VRE

10	VALVE SETTINGS	CODICE / CODE
	50 - 75 - 100 - 125 - 150 - 200 - 250 - 300 - 330	

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