
**POMPE-MOTORI-DIVISORI DI FLUSSO
AD INGRANAGGI SERIE L**

***GEARS PUMPS-MOTORS
AND FLOW DIVIDERS SERIES L***

**ZAHNRADPUMPEN, -MOTOREN
UND MENGENTEILER BAUREIHE L**

GPL009



INDICE
INDEX
INHALTSVERZEICHNIS

INTRODUZIONE <i>INTRODUCTION</i> EINLEITUNG	3
ISTRUZIONI GENERALI DI IMPIEGO <i>OPERATING INSTRUCTIONS</i> ALLGEMEINE GEBRAUCHSANWEISUNGEN	4
PROGRAMMA DI PRODUZIONE <i>PRODUCTION RANGE</i> LIEFERPROGRAMM	7
HPL..0	8
HPL..1	12
HPL..2	20
HPL..3	28
HPL..4	36
HPLP..	42
HPLDF..	48
POMPE E MOTORI CON VALVOLE INTEGRATE <i>INTEGRATED VALVES FOR PUMP AND MOTOR</i> PUMPEN UND MOTOREN MIT EINGEBAUTEN VENTILEN	56
POMPE HIGH-LOW <i>HIGH-LOW PUMPS</i> ZAHNRADPUMPE MIT HIGH-LOW	58
SUPPORTI <i>SPINDLES</i> VORSATZLAGER	60
HPLPT.. + ASS.KIT	68
RACCORDI E GUARNIZIONI <i>ELBOW AND SEALS</i> VERBINDUNGEN UND DICHTUNGEN	74
GIUNTI E SEMIGIUNTI PER SUPPORTI <i>HUBS AND HALF HUBS FOR SPLINDES</i> KUPPLUNGEN UND HALBKUPPLUNGEN FÜR VORSATZLAGER	76

Tra le unità idrostatiche le pompe e motori ad ingranaggi sono tra le più prodotte ed utilizzate: la robustezza della concezione, il favorevole rapporto prezzo/prestazioni, la semplicità di installazione, la possibilità di soluzioni personalizzate, l'integrazione con componenti di controllo (valvole) sono alcuni dei punti caratterizzanti questi prodotti.

L'offerta HP Hydraulic si innesta su una pluridecennale e consolidata tradizione di sviluppo e produzione di unità ad ingranaggi con spirito innovativo nel design e nei processi produttivi.

Questo permette di offrire una gamma di pompe ad ingranaggi con corpo in alluminio suddivisa in modo ottimale in gruppi e cilindrate (da 0,17 a 90 cc/giro) con la possibilità di varianti ad hoc e con prestazioni che permettono ogni tipo d'impiego.

Gear pumps and motors are among the most popularly produced and utilized hydrostatic units. Some of their many characteristics are: robust design, profitable price/performance ratio, easy installation, suitability for customized solutions, possible integration with control devices (valves).

HP Hydraulic offers decades of well consolidated experience in the development and production of gear units with a constant approach towards innovation of design and of manufacturing process.

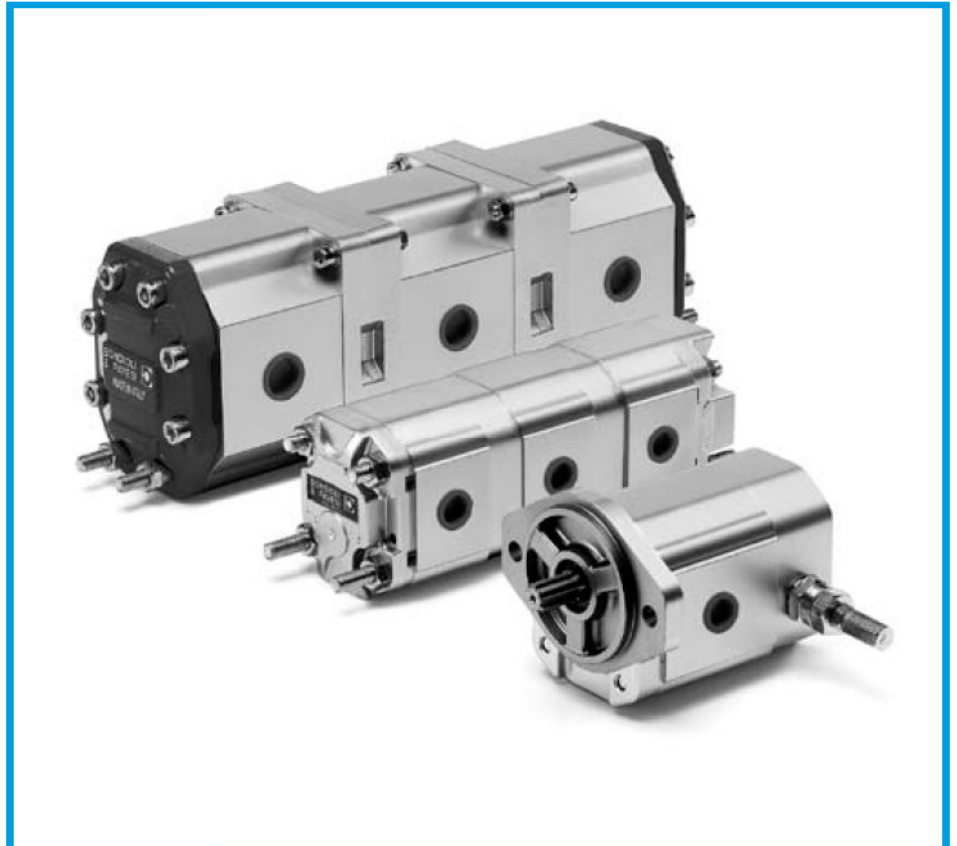
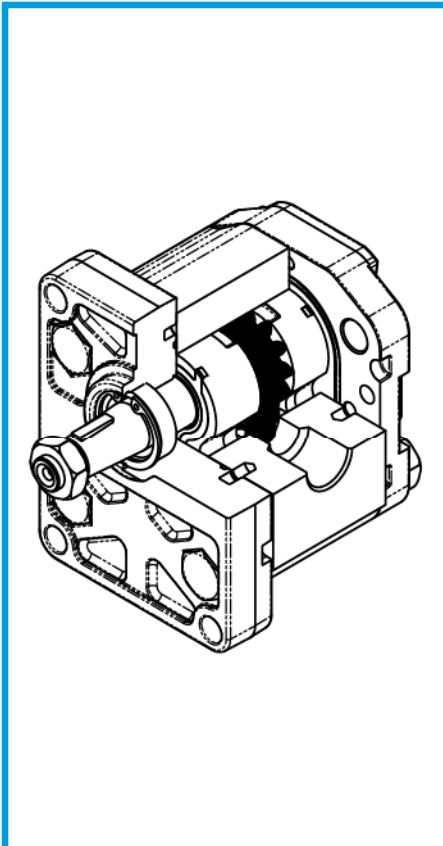
This same experience enables us today to offer a gear pumps range with aluminium body, grouped according to their capacity (from 0,17 to 90 cc/rev.), whose main features can be devised and varied to best respond to customer's requirements and whose performance permits use in any kind of application.

Zahnradpumpen und -motoren gehören zu den meistgebauten und gängigsten hydrostatischen Maschinen:

Die robuste Bauweise, das günstige Preis-/Leistungsverhältnis, der einfache Einbau, die Möglichkeit individueller Lösungen, die Kombination mit Steuerungskomponenten (Ventile) sind nur einige der Vorzüge, durch die sich diese Produkte auszeichnen.

Das Angebot von HP Hydraulic beruht auf einer jahrzehntelangen und bewährten Tradition in Entwicklung und Produktion von Zahnradereinheiten mit stark innovativem Gehalt in Design und Produktionsprozessen.

Dadurch sind wir in der Lage, ein Programm von Zahnradpumpen mit Aluminiumgehäuse für jede Anwendung anzubieten, das optimal in Baugruppen und Hubvolumen (von 0,17 bis 90 ccm/U) sowie speziell entwickelte, kundenspezifische Varianten gliedert ist.



ISTRUZIONI GENERALI DI IMPIEGO
OPERATING INSTRUCTIONS
ALLGEMEINE GEBRAUCHSANWEISUNGEN

Le pompe HP Hydraulic della serie L sono prodotte in cinque differenti gruppi dimensionali 0,1,2, 3, 4, all'interno dei quali vengono ottenute le differenti cilindrate.

Una gamma completa di flangie, estremità d'albero e la possibilità di ottenere pompe multiple e/o con valvole integrate nel coperchio posteriore completano la gamma di produzione.

FLUIDO IDRAULICO

Le pompe sono in grado di funzionare con svariati tipi di oli idraulici tra essi:

Fluidi idraulici HLP (DIN 51224 parte2)

Fluidi idraulici HLPV(DIN 51224 parte3)

Oli lubrificanti per motori API CD (SAE J183).

Per fluidi diversi da quelli citati si prega di consultare il ns servizio tecnico.

TEMPERATURA DI FUNZIONAMENTO

- Minima -20° C
- Massima continua 85° C
- Di picco (intermittente) 100° C

VISCOSITÀ

- Minima 10 mm²/s
- Massima (partenza a freddo) 1400 mm²/s
- Campo di viscosità raccomandato 12-90 mm²/s

GRADO DI FILTRAZIONE

Le classi di contaminazione consigliate in funzione della pressione di esercizio sono riportate nella tabella seguente.

HP Hydraulic series L pumps are supplied in five groups, different in size (0,1,2,3,4,). Various capacities will be determined within each group.

The series of products is even further completed with a full range of flanges, shaft ends, and available multiple pumps with or without valves integrated into the back cover.

FLUID

Pumps can operate with many types of hydraulic oil some of them are:

HLP Hydraulic fluids (DIN 51224 part 2)

HLPV Hydraulic fluids (DIN 51224 part 3)

API CD Engine Lubricating oils (SAE J183)

Please contact our Engineering Department if different fluids from those above listed are requested.

OPERATING

The Temperature range limits of a pump (standard version) are tabulated and summarized below.

- *Temperature Minimum -20° C*
- *Maximum continuous 85° C*
- *Peak (intermitting) 100° C*

VISCOSITY

- *Minimum 10 mm²/s*
- *Maximum (cold-starting up) 1400 mm²/s*
- *Recommended viscosity range 12-90 mm²/s*

FILTERING RATIO

The suggested contamination classes based on continuous pressure are listed below.

Die Pumpen HP Hydraulic Baureihe L sind in fünf verschiedenen Baugrößen erhältlich – nämlich 0, 1, 2 3, 4 – innerhalb derer die verschiedenen Hubvolumen lieferbar sind. Das Produktionsprogramm wird ergänzt durch ein komplettes Angebot von Flanschen und Wellen, und durch die Möglichkeit, Mehrfachpumpen und/oder Pumpen mit Zusatzventilen im Enddeckel auszustatten.

HYDRAULIKMEDIUM

Die Pumpen können mit verschiedenen Hydraulikölen betrieben werden.

Unter anderem können folgende Öle verwendet werden:

Hydrauliköl HLP (DIN 51224 Teil 2)

Hydrauliköl HLPV(DIN 51224 Teil 3)

Motoröle API CD (SAE J183)

Für andere Öle als oben angegeben ist eine Rücksprache mit unserem technischen Kundendienst unerlässlich.

TEMPERATUR

- Mindestwert -20° C
- Dauerhöchsttemperatur 85° C
- Spitzentemperatur (intermittierend) 100° C

VISKOSITÄT

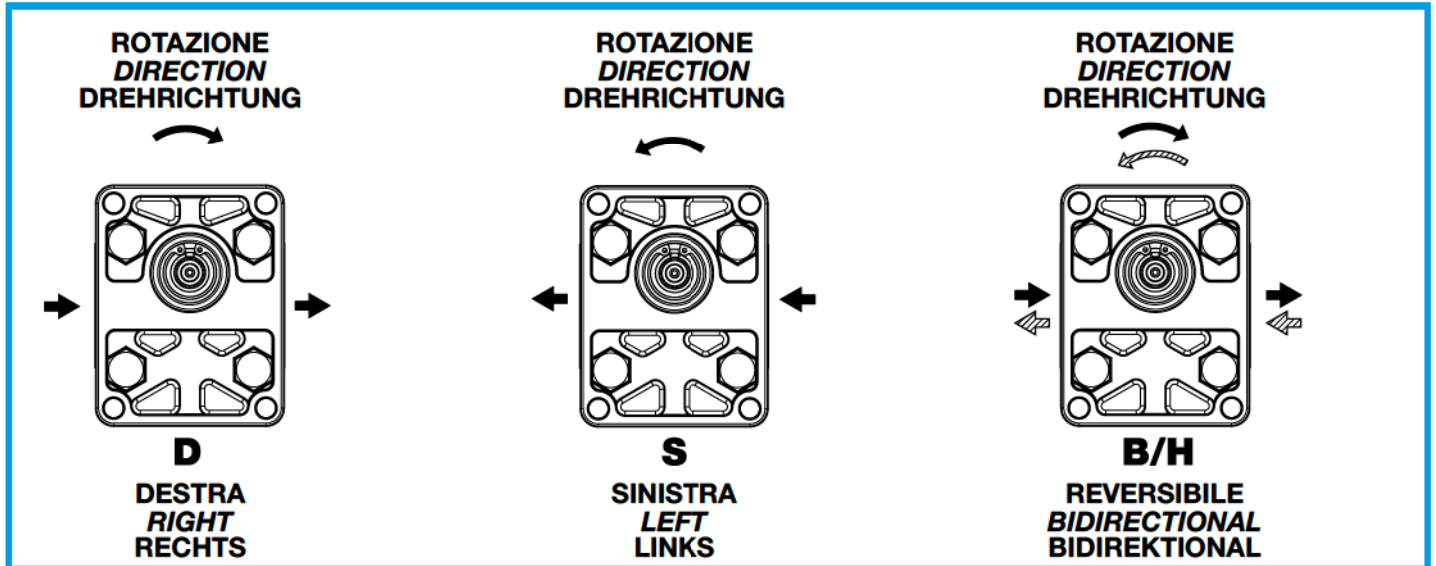
- Mindestwert 10 mm²/s
- Höchstwert (Kaltstart) 1400 mm²/s
- Empfohlener Viskositätsbereich 12-90 mm²/s

FILTRATIONSGRAD

Die je nach Betriebsdruck empfohlenen Reinheitsklassen sind in der nachstehenden Tabelle aufgeführt.

Pressione di esercizio Continuous pressure Betriebsdruck	>150 bar	<150 bar
Classe di contaminazione ISO4406 Contamination class ISO4406 Reinheitsklasse ISO4406	18/15	19/16
Classe di contaminazione NAS 1638 Contamination class NAS 1638 Reinheitsklasse NAS 1638	9	10

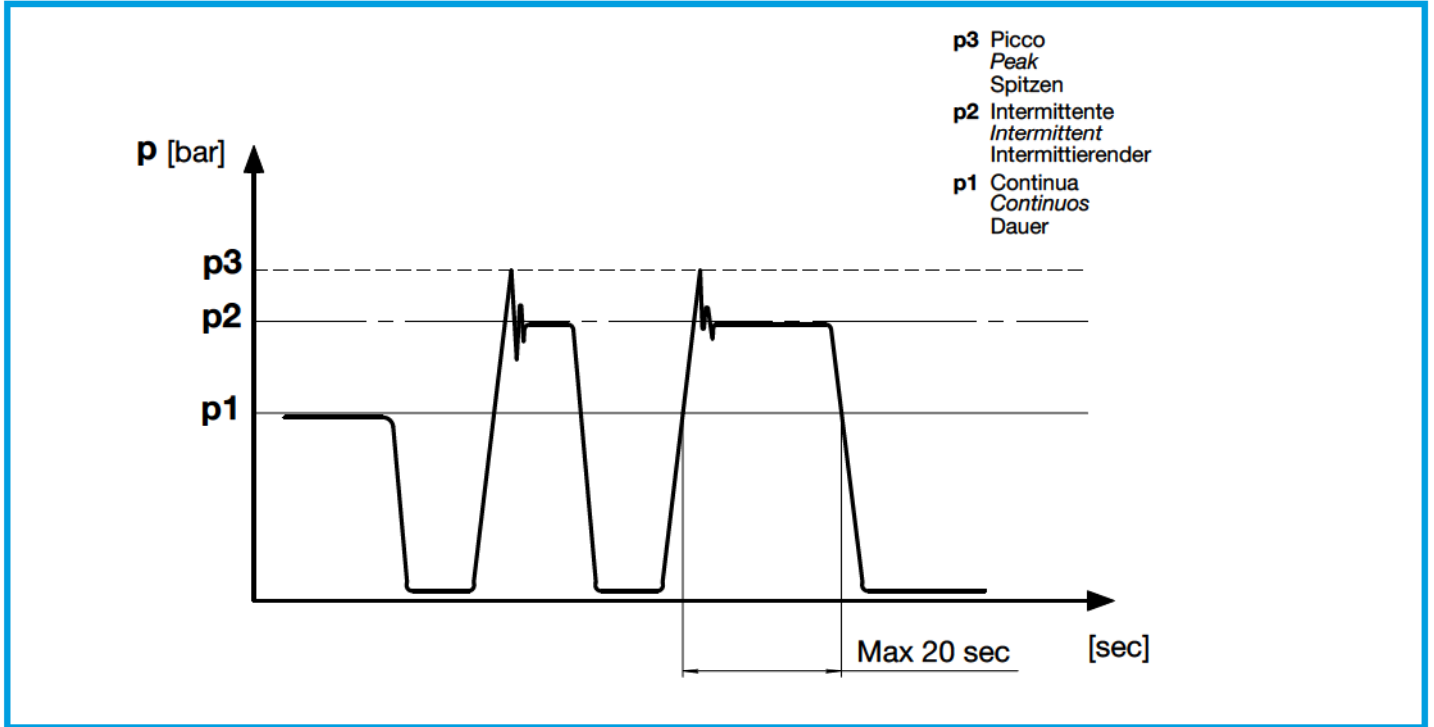
DEFINIZIONE DEL VERSO DI ROTAZIONE GUARDANDO L'ALBERO DI TRASCINAMENTO
DEFINITION OF ROTATION LOOKING AT THE DRIVE SHAFT
BESTIMMUNG DER DREHRICHTUNG MIT BLICK AUF DIE ANTRIEBSWELLE



FORMULE INERENTI A POMPE E MOTORI
FORMULAS FOR PUMPS AND MOTORS
FORMELN FÜR PUMPEN UND MOTOREN

POMPA PUMP PUMPE			MOTORE MOTOR MOTOR		
$Q = c \cdot \eta_v \cdot n \cdot 10^{-3}$	[l/min]		$Q = \frac{c \cdot n \cdot 10^{-3}}{\eta_v}$	[l/min]	
$M = \frac{\Delta p \cdot c}{62,83 \cdot \eta_m}$	[Nm]		$M = \frac{\Delta p \cdot c \cdot \eta_m}{62,83}$	[Nm]	
$P = \frac{\Delta p \cdot c \cdot n}{600 \cdot 1000 \cdot \eta_t}$	[kW]		$P = \frac{\Delta p \cdot c \cdot n \cdot \eta_t}{600 \cdot 1000}$	[kW]	
Q [l/min]	Portata Flow rate Durchfluß	c [cm ³ /giro]	Cilindrata Displacement Fördervolumen	η_v	Rendimento volumetrico Volumetric efficiency Volumetrisch Leistungsfähigkeit
M [Nm]	Coppia Torque Drehmoment	n [min ⁻¹]	nr. giri Speed Drehzahl	η_m	Rendimento meccanico Mechanical efficiency Mechanisch Leistungsfähigkeit
P [kW]	Potenza Power Leistung	Δp [bar]	Pressione Pressure Druck	η_t = η_v · η_m	Rendimento totale Overall efficiency Gesamt Leistungsfähigkeit

DEFINIZIONE DELLE PRESSIONI
PRESSURE DEFINITION
DRUCKBESTIMMUNGEN

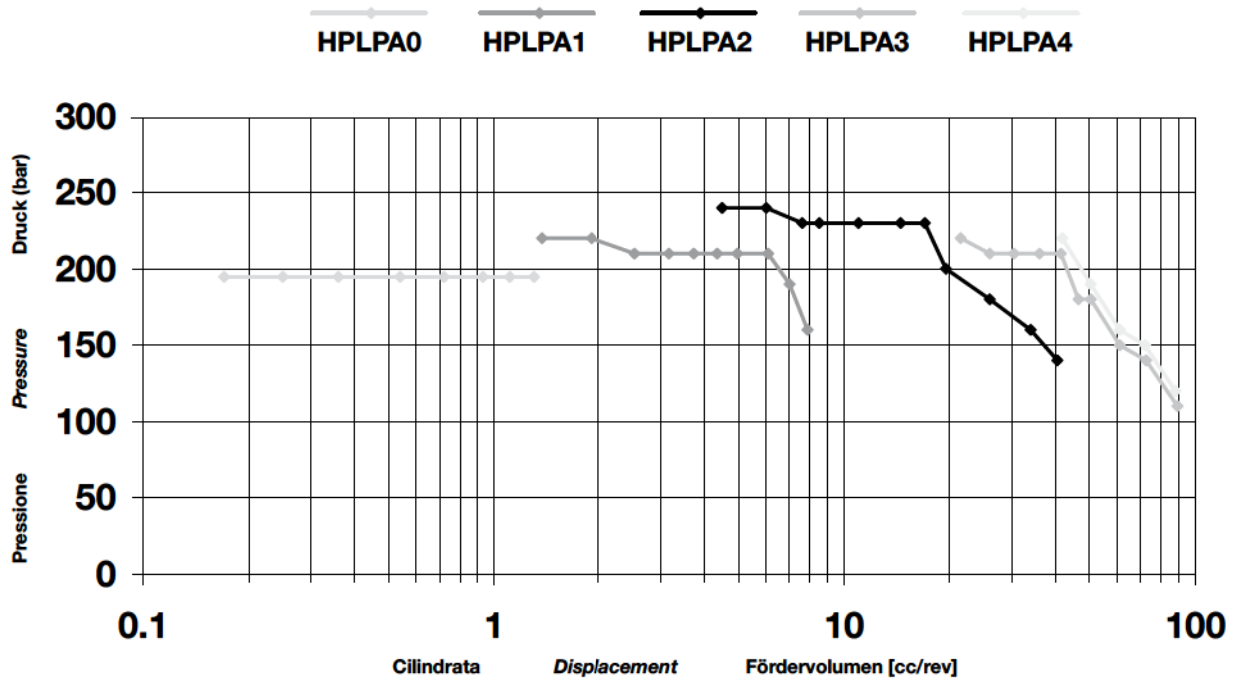


COPPIE DI SERRAGGIO VITI
SCREW TIGHTENING TORQUE
SCHRAUBENANZUGSMOMENT

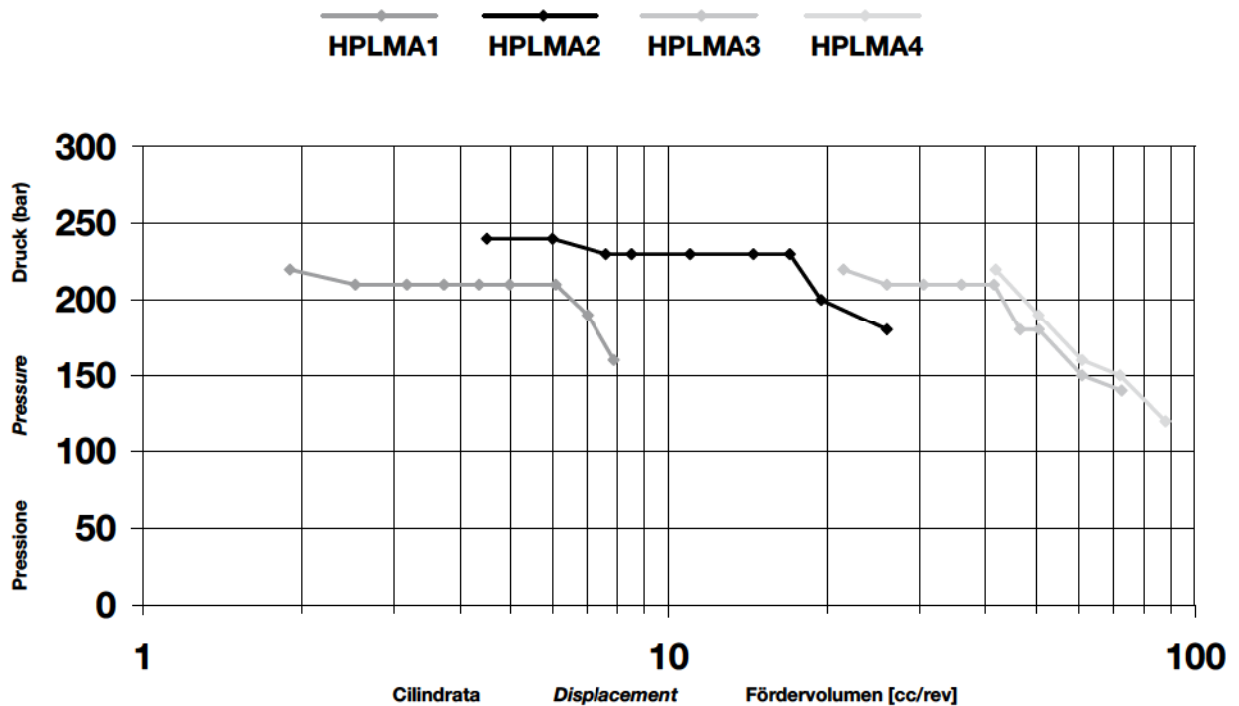
Codice Code Code	Tipo vite Screw type Schraube Typ	Coppia min Min Torque Min Drehmomen [Nm]	Coppia max Max Torque Max Drehmoment [Nm]
HPL..0	M5	5	5.5
HPL..1	M8	20	25
HPL..2	M10	43	45
HPL..3	M10	48	50
HPL..4	M10	48	50



**POMPE
 PUMPS
 PUMPEN**



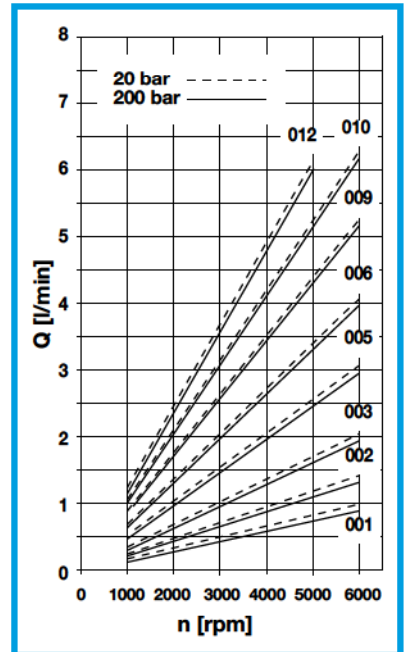
**MOTORI
 MOTORS
 MOTOREN**



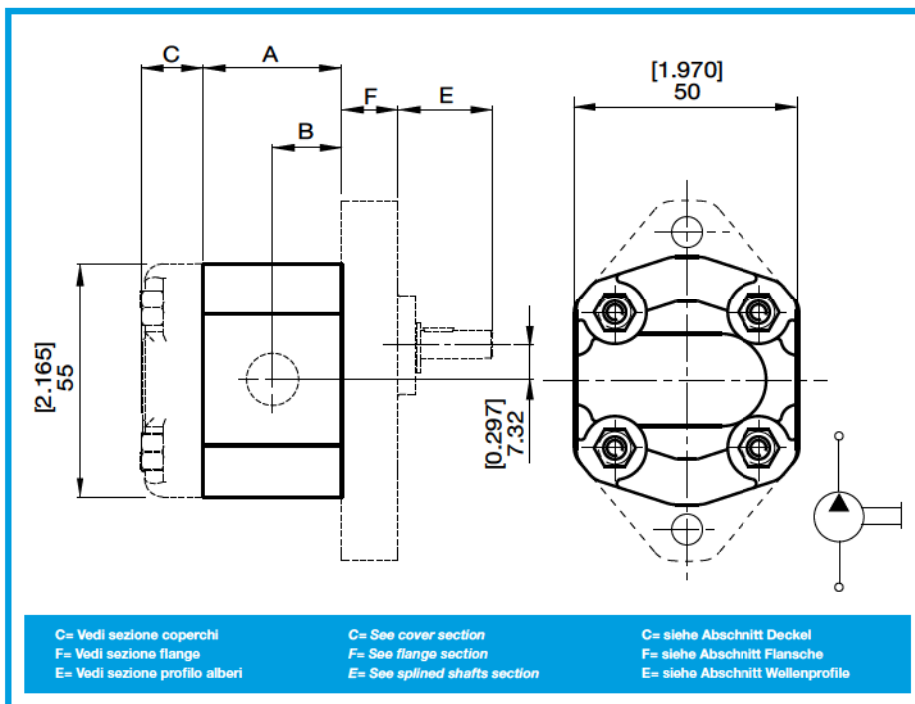
DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN		VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT	
		cm ³	in ³	bar	psi	bar	psi	bar	psi	MAX	MIN	kg	lbs
										min ⁻¹	min ⁻¹		
0	01	0,19	0,01	190	2756	210	3046	230	3336	6000	1000	0,39	0,86
	02	0,26	0,02	190	2756	210	3046	230	3336			0,39	0,86
	03	0,38	0,02	190	2756	210	3046	230	3336			0,40	0,88
	05	0,51	0,03	190	2756	210	3046	230	3336			0,40	0,88
	06	0,64	0,04	190	2756	210	3046	230	3336			0,41	0,90
	09	0,88	0,06	190	2756	210	3046	230	3336			0,42	0,93
	10	1,00	0,07	190	2756	210	3046	230	3336			0,43	0,95
	12	1,25	0,08	190	2756	210	3046	230	3336	5000	0,44	0,97	

DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN



POMPE AD INGRANAGGI GEAR PUMPS ZAHNRADPUMPEN



DIMENSIONI SIZE ABMESSUNGEN

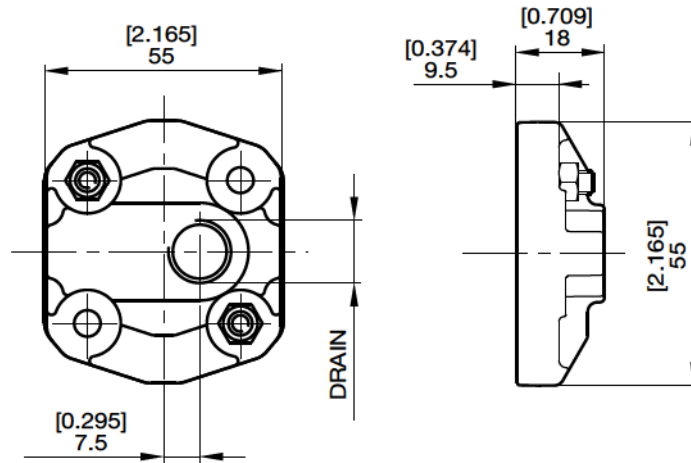
GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
0	01	24,0	0,945	12,0	0,472
	02	25,0	0,984	12,5	0,492
	03	27,0	1,063	13,0	0,512
	05	29,0	1,142	14,5	0,571
	06	31,0	1,220	15,5	0,610
	09	36,0	1,417	18,0	0,709
	10	37,0	1,457	18,5	0,728
12	39,0	1,535	19,5	0,768	



**COPERCHI
COVERS
DECKEL**

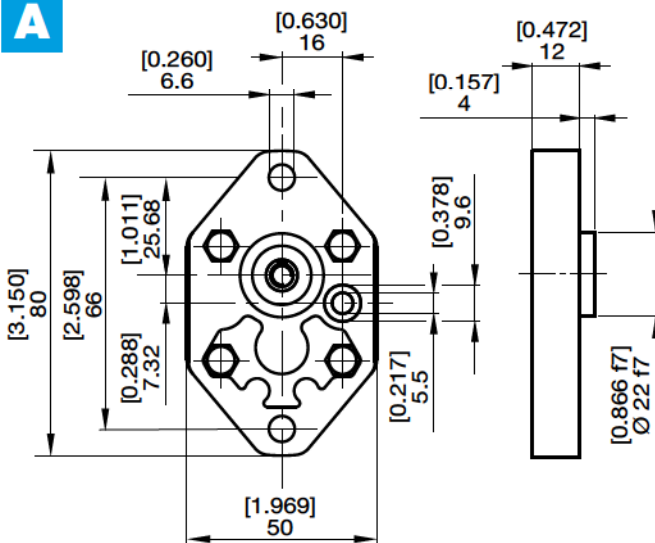
HPG..0

ST

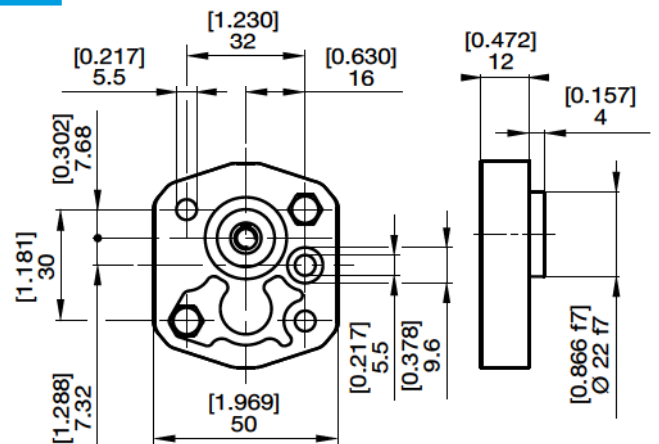


**FLANGE
FLANGES
FLANSCHEN**

A

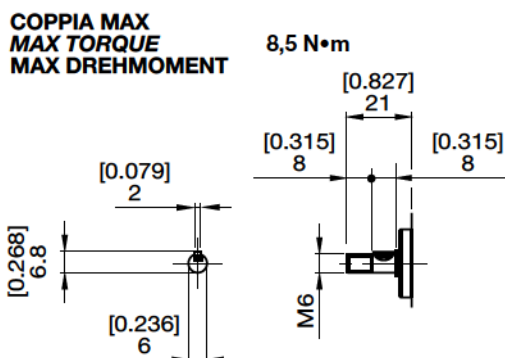


B

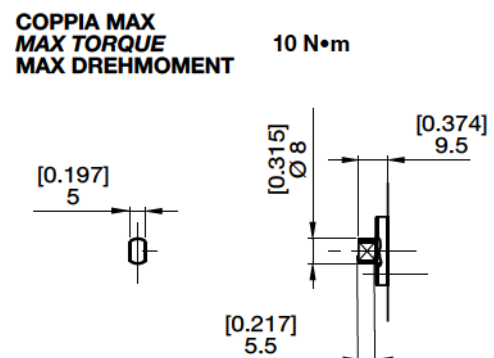


**PROFILO ALBERI
SPLINE SHAFTS
WELLENPROFILE**

A



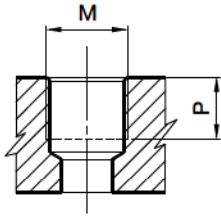
B



**BOCCHIE
PORTS
ANSCHLÜSSE**

HPL..0

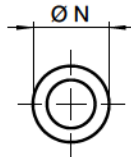
G LATERALE
LATERAL
SEITLICH
T POSTERIORE
REAR
HINTEN



TIPO TYPE TYP	M	P	
		mm	in
* G1	1/8" GAS BSPP	8	0,31
G2	1/4" GAS BSPP	9	0,35
T2	1/4" GAS BSPP	12	0,47

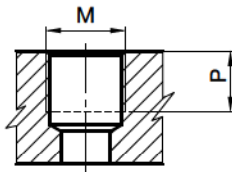
* Drenaggio * Drain Port * Lecköl

H ANTERIORE
FRONT
VORNE



TIPO TYPE TYP	FRONTALE SEAL FRONTAL	N	
		mm	in
H0	OR 8,73 x 1,78	9,6	0,38

M LATERALE
LATERAL
SEITLICH



TIPO TYPE TYP	M	P	
		mm	in
M0	M10x1	9	0,35

**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

FLANGE
FLANGE
FLANSCH

ESTREMITÀ ALBERO
SHAFT PROFIL
WELLENENDE

A



B



A



B



BOCCHIE
PORTS
ANSCHLÜSSE

M



G



T



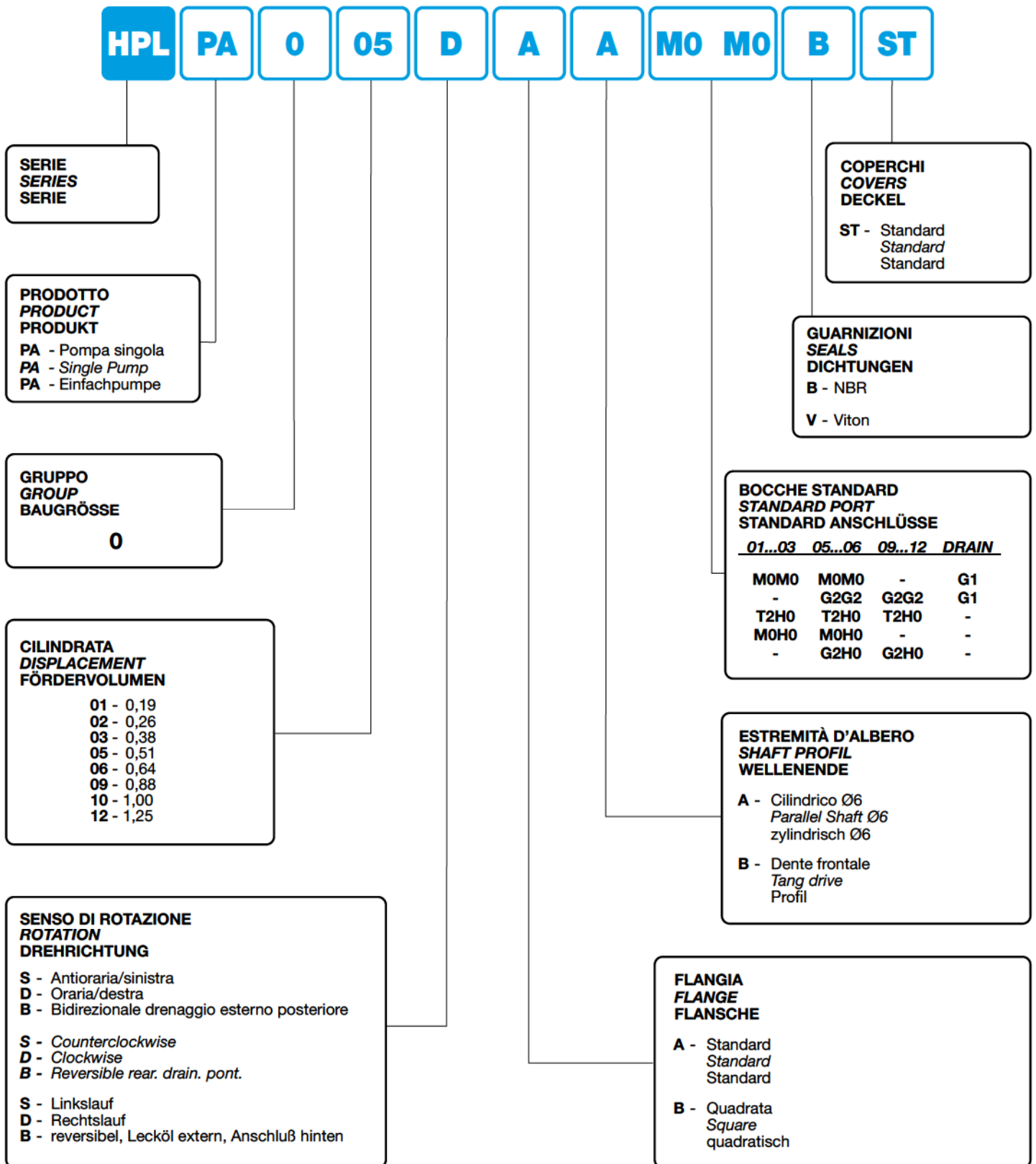
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ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPG..0



HPL ..1

POMPE E MOTORI AD INGRANAGGI GEAR PUMPS AND MOTORS ZAHNRADPUMPEN UND -MOTOREN

HPL PA1

POMPE AD INGRANAGGI GEAR PUMPS ZAHNRADPUMPEN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

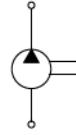
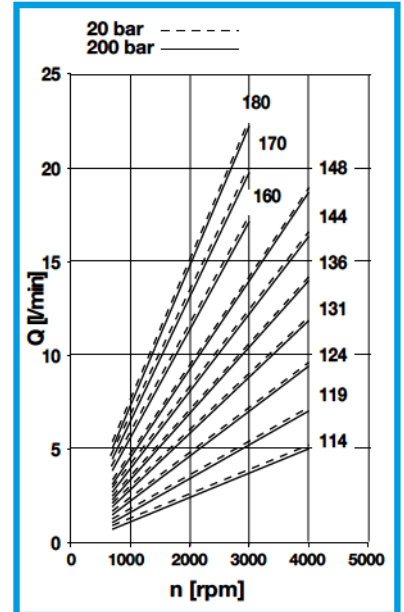


DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN	VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT		
		cm ³	in ³	bar	psi	bar	psi		bar	psi	MAX	MIN	kg
										min ⁻¹	min ⁻¹		
1	14	1,37	0,08	220	3191	260	3771	280	4061	4000	700	0,90	1,98
	19	1,90	0,12	220	3191	260	3771	280	4061			0,95	2,09
	24	2,53	0,15	210	3046	250	3626	260	3771			0,95	2,09
	31	3,17	0,19	210	3046	250	3626	260	3771			0,95	2,09
	36	3,73	0,23	210	3046	250	3626	260	3771			1,05	2,31
	44	4,35	0,27	210	3046	250	3626	260	3771			1,05	2,31
	48	4,97	0,30	210	3046	250	3626	260	3771			1,05	2,31
	60	6,08	0,37	210	3046	250	3626	260	3771			1,20	2,65
	70	7,00	0,43	190	2756	210	3046	230	3336			1,20	2,65
	80	7,87	0,48	160	2321	180	2611	200	2901			1,20	2,65



HPL MA1

MOTORI AD INGRANAGGI GEAR MOTORS ZAHNRADMOTOREN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

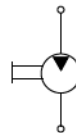
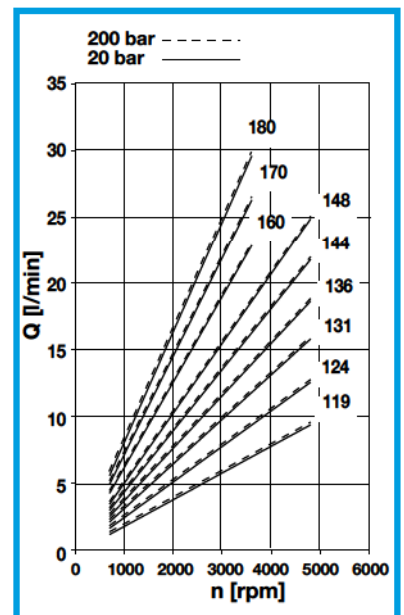


DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN

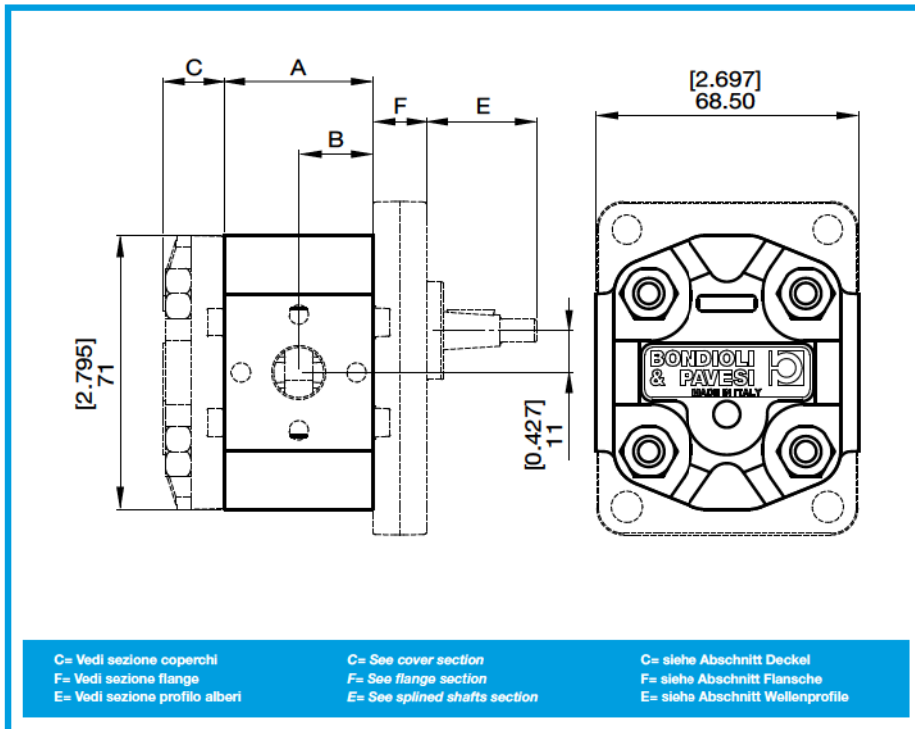
GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN	VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT		
		cm ³	in ³	bar	psi	bar	psi		bar	psi	MAX	MIN	kg
										min ⁻¹	min ⁻¹		
1	19	1,90	0,12	220	3191	260	3771	280	4061	4800	700	0,95	2,09
	24	2,53	0,15	210	3046	250	3626	260	3771			0,95	2,09
	31	3,17	0,19	210	3046	250	3626	260	3771			0,95	2,09
	36	3,73	0,23	210	3046	250	3626	260	3771			1,05	2,31
	44	4,35	0,27	210	3046	250	3626	260	3771			1,05	2,31
	48	4,97	0,30	210	3046	250	3626	260	3771			1,05	2,31
	60	6,08	0,37	210	3046	250	3626	260	3771			1,20	2,65
	70	7,00	0,43	190	2756	210	3046	230	3336			1,20	2,65
	80	7,87	0,48	160	2321	180	2611	200	2901			1,20	2,65





POMPE E MOTORI AD INGRANAGGI
GEAR PUMPS AND MOTORS
ZAHNRADPUMPEN UND -MOTOREN

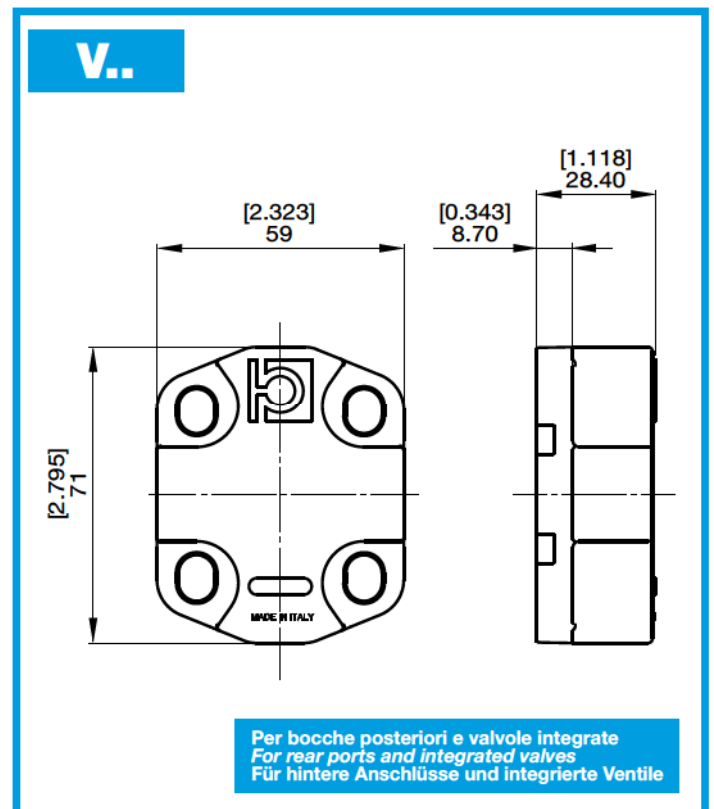
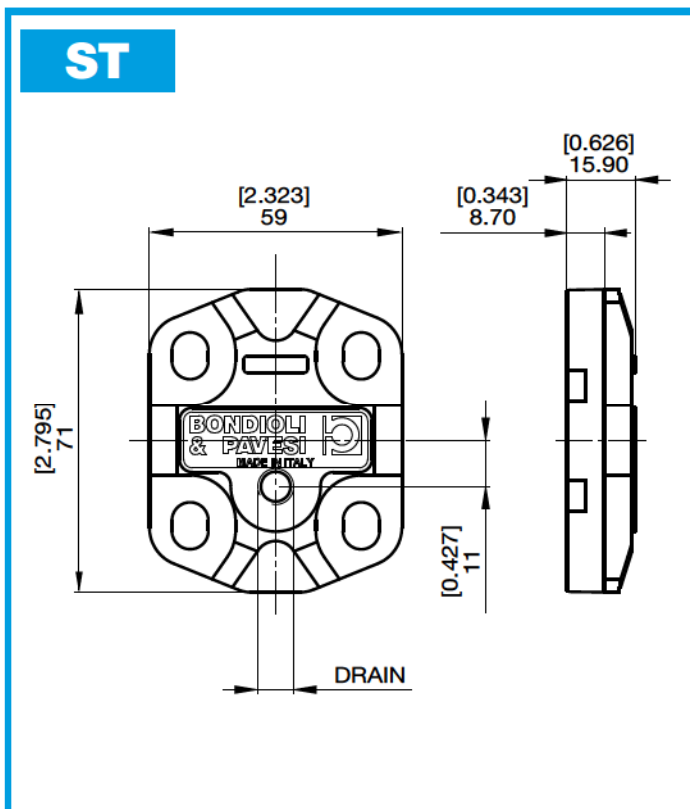
HPL..1



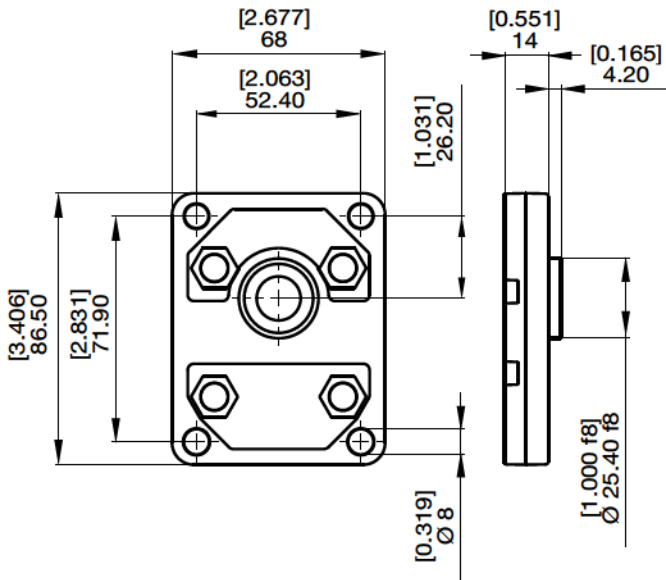
DIMENSIONI
SIZE
ABMESSUNGEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
1	14	38,70	1,524	19,4	0,762
	19	38,70	1,524	19,4	0,762
	24	38,70	1,524	19,4	0,762
	31	38,70	1,524	19,4	0,762
	36	45,35	1,785	22,7	0,893
	44	45,35	1,785	22,7	0,893
	48	45,35	1,785	22,7	0,893
	60	56,05	2,207	28,0	1,103
	70	56,05	2,207	28,0	1,103
	80	56,05	2,207	28,0	1,103

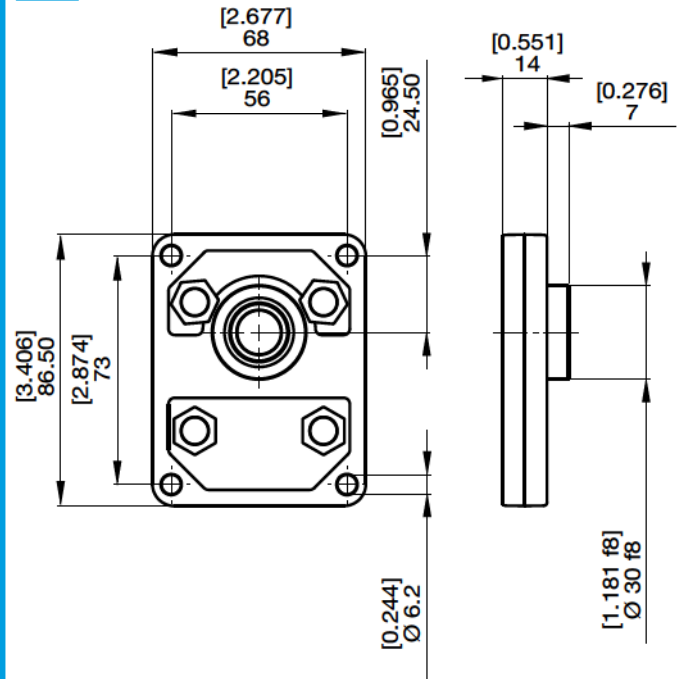
COPERCHI
COVERS
DECKEL



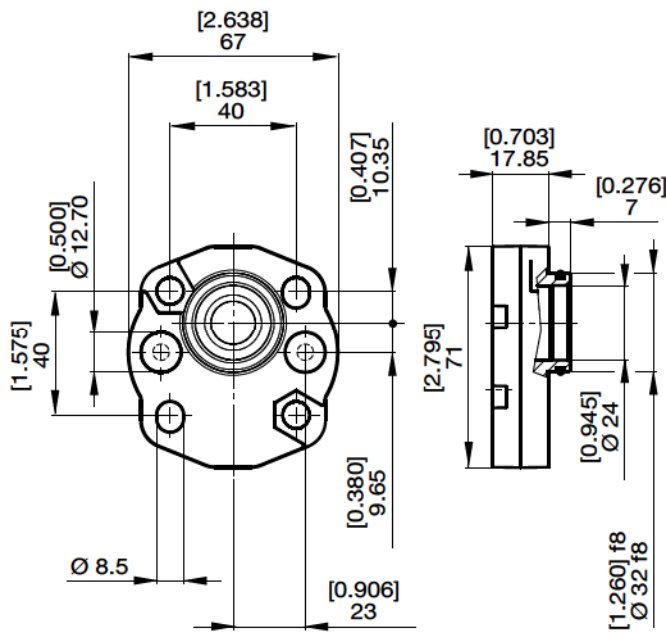
D



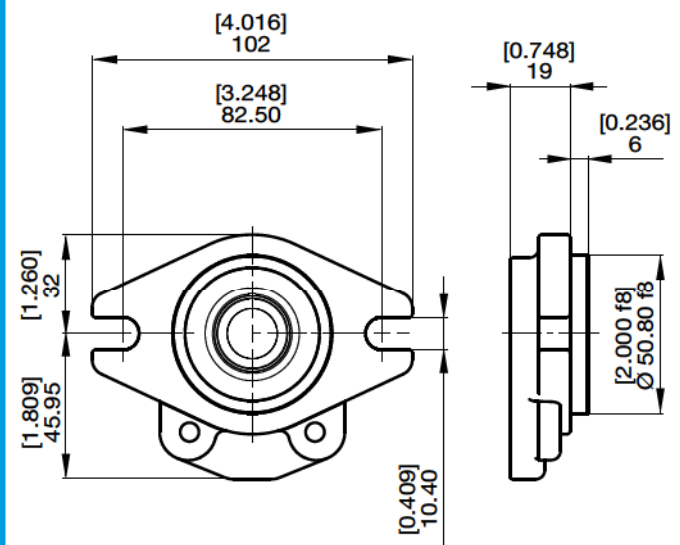
E



G



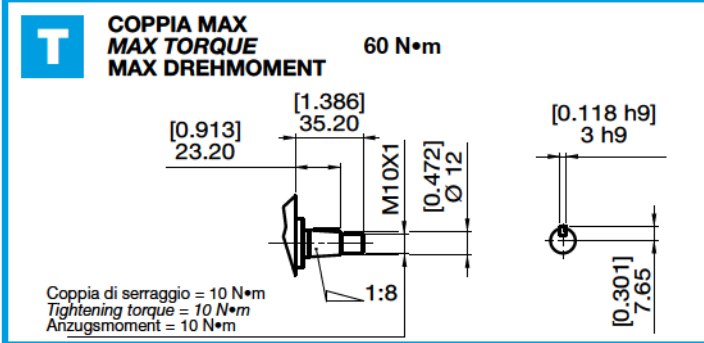
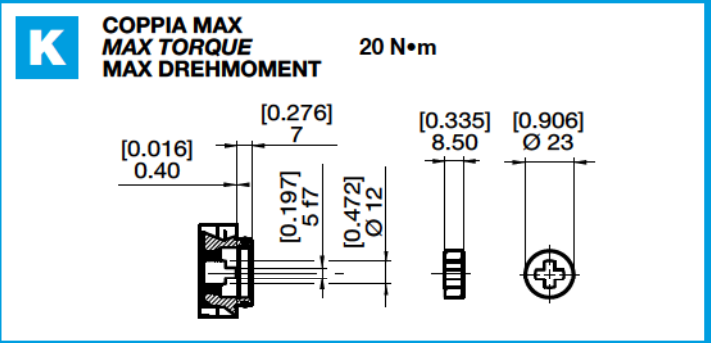
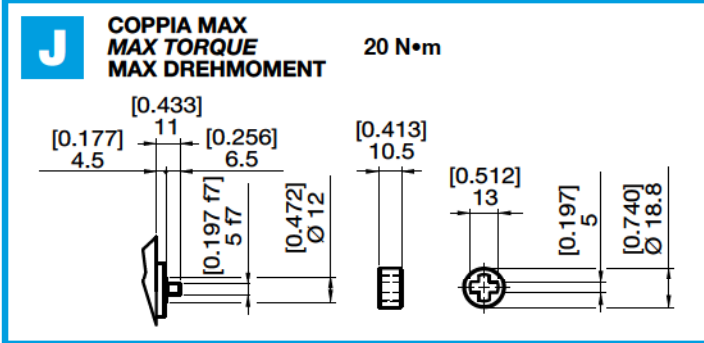
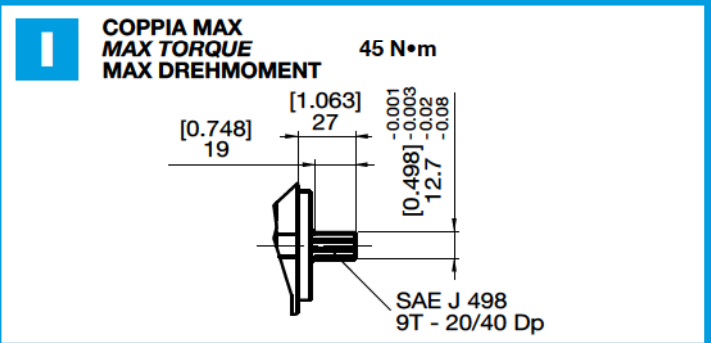
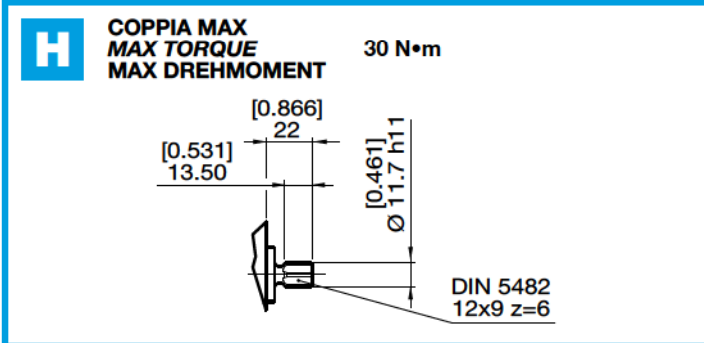
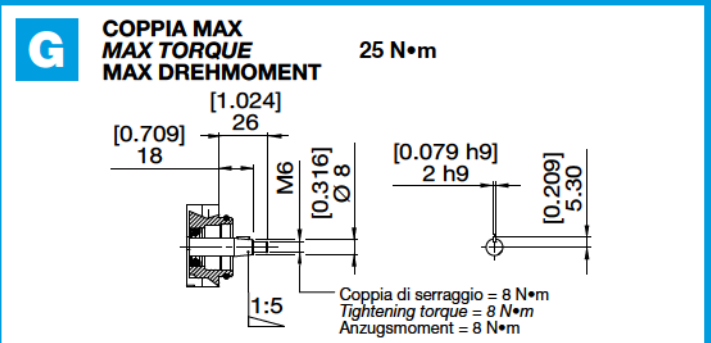
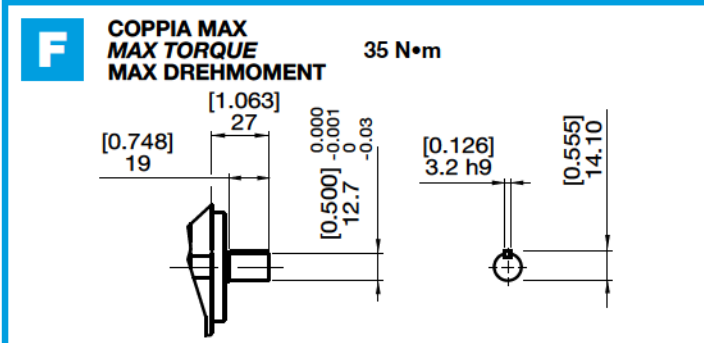
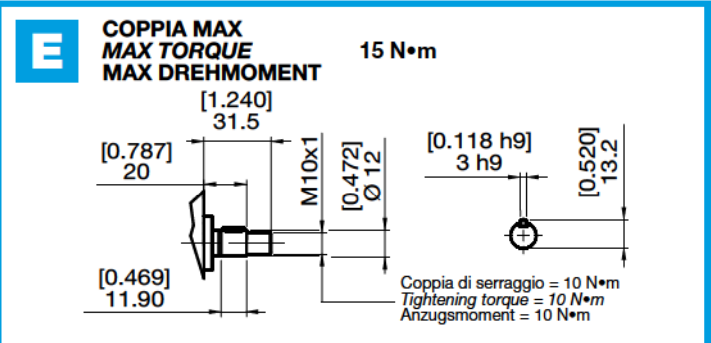
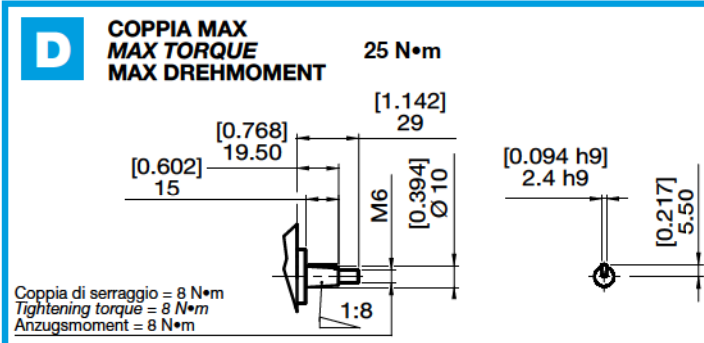
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**PROFILO ALBERI
SPLINE SHAFTS
WELLENPROFILE**

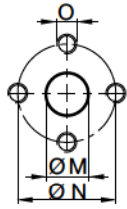
HPL..1



**BOCCHIE
PORTS
ANSCHLÜSSE**

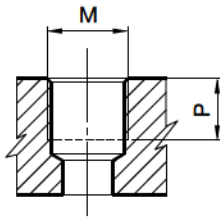
HPL..1

E LATERALE
LATERAL
SEITLICH



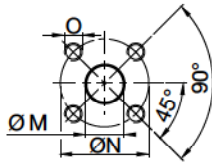
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
E2	13	0,51	26	1,02	M5
E3	13	0,51	30	1,18	M6

G LATERALE
LATERAL
SEITLICH
T POSTERIORE
REAR
HINTEN



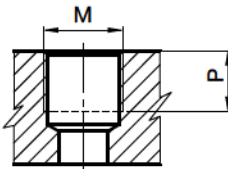
TIPO TYPE TYP	M	P	
		mm	in
* G2	1/4" GAS BSPP	12	0,47
G3	3/8" GAS BSPP	12	0,47
G4	1/2" GAS BSPP	14,5	0,57
T3	3/8" GAS BSPP	12	0,47
T4	1/2" GAS BSPP	14,5	0,57

X LATERALE
LATERAL
SEITLICH



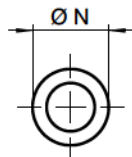
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
X3	13	0,51	30	1,18	M6

M LATERALE
LATERAL
SEITLICH



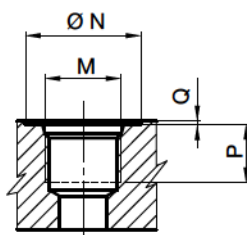
TIPO TYPE TYP	M	P	
		mm	in
* M1	M12x1,5	12	0,47
M2	M14x1,5	12	0,47
M4	M18x1,5	16	0,63

H ANTERIORE
FRONT
VORNE



TIPO TYPE TYP	FRONTALE SEAL FRONTAL	N	
		mm	in
H1	OR 9,25 x 1,78	12,7	0,50

U LATERALE
LATERAL
SEITLICH
C POSTERIORE
REAR
HINTEN



TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M
		mm	in	mm	in	mm	in	
* U2	1/4"	21	0,83	12	0,47	0,3	0,01	7/16-20 UNF
U3	3/8"	25	0,98	13	0,51	0,3	0,01	9/16-18 UNF
U4	1/2"	30	1,18	15	0,59	0,3	0,01	3/4-16 UNF
C3	3/8"	25	0,98	13	0,51	0,3	0,01	9/16-18 UNF
C4	1/2"	30	1,18	15	0,59	0,3	0,01	3/4-16 UNF

* Drenaggio

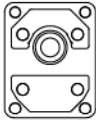
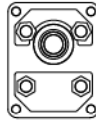









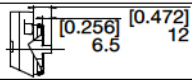










* Drain Port

* Lecköl



**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

HPL..1

		FLANGE FLANGE FLANSCH			
		D 	E 	G 	J 
ESTREMITÀ ALBERO SHAFT PROFIL WELLENENDE					
D 		■	■		
E 		■	■		
F 					■
G 				■	
H 		■			
I 					■
J 		■			
K 				■	
T 		■	■		
BOCCHIE PORTS ANSCHLÜSSE					
E 		■	■		
G 		■	■	■	■
X 		■	■		
M 				■	
T 				■	
H 				■	
U 					■
C 					■

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPL..1

HPL PA 1 36 D D E E3 E3 B ST ..

SERIE
SERIES
SERIE

SET VALVOLE
VALVE SETTING
VENTILEINSTELLUNG
(bar)

PRODOTTO
PRODUCT
PRODUKT

MA - Motore
PA - Pompa singola
PT - Pompa predisposta

MA - Motor
PA - Pump
PT - Adapted Pump

MA - Motor
PA - Pumpe
PT - Vorbereitete Pumpe

COPERCHI - COVERS - DECKEL

ST - Standard
V. - Con valvole
 (Vedi sez. valvole)
With valves
 (See valves section)
 Mit Ventilen
 (siehe Abschnitt Ventile)

GUARNIZIONI - SEALS - DICHTUNGEN

B - NBR **V** - Viton
R - NBR alte pres. (25 bar) **W** - Viton alte pres. (25 bar)
For high pres. (25 bar) For high pres. (25 bar)
 Hochdruck (25 bar) Hochdruck (25 bar)

GRUPPO
GROUP
BAUGRÖSSE

1

BOCCHIE STD - STANDARD PORT - STANDARD ANSCHLÜSSE
CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

1.4.....4.8			6.....8			1.4.....4.8			6.....8		
Pompe - Pumpe	Pumpen IN/OUT	DRAIN	Pompe - Pumpe	Pumpen IN/OUT	DRAIN	Pompe - Pumpe	Pumpen IN/OUT	DRAIN	Pompe - Pumpe	Pumpen IN/OUT	DRAIN
E3 E3	E3 E3	M1	U3 U3	U4 U4	U2						
G3 G3	G4 G4	G2	T3 H1	T3 H1	-						
X3 X3	X3 X3	M1	T3 T3	T4 T3	G2						
M4 M2	M4 M2	M1	C3 C3	C4 C3	U2						

MOTORI - MOTORS - MOTOREN OUT/IN

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

14 - 1,37
 19 - 1,90
 24 - 2,53
 31 - 3,17
 36 - 3,73
 44 - 4,35
 48 - 4,97
 60 - 6,08
 70 - 7,00
 80 - 7,87

ESTREMITÀ D'ALBERO
SHAFT PROFIL
WELLENENDE

D - Conico (1:8)
E - Cilindrico europeo
F - Cilindrico SAE "AA"
G - Conico (1:5)
H - Scanalato 12x9
I - Scanalato SAE "AA"
J - Dente frontale sporgente
K - Dente frontale
T* - Conico high torque (1:8)

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
D - Oraria/destra
H - Bidirezionale drenaggio interno
B - Bidirezionale drenaggio esterno posteriore

S - Counterclockwise
D - Clockwise
H - Reversible ind drain.
B - Reversible rear. drain. pont.

S - Linkslauf
D - Rechtslauf
H - reversibel, Lecköl intern, Anschluß seitlich
B - reversibel, Lecköl extern, Anschluß hinten

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

D - Europea D 25,4
E - Europea D 30
G - Tedesca con OR
J - SAE AA

D - European standard
E - European Ø 30
G - German with OR
J - SAE AA

D - EU-Norm.D 25,4
E - EU-Norm.D 30
G - DIN-Norm.(mit O.R. Dichtung)
J - SAE AA

D - Tapered (1:8)
E - European parallel shaft
F - SAE "AA" parallel shaft
G - Tapered (1:5)
H - Splined 12x9
I - SAE "AA" splined
J - Front tooth
K - Tang drive
T* - Tapered high torque (1:8)

D - Kegel (1:8)
E - zylindrisch (E-norm)
F - zylindrisch SAE "AA"
G - Kegel (1:5)
H - Keilwelle 12x9
I - Keilwelle SAE "AA"
J - Vorstehendes Kreuzprofil
K - Kreuzprofil
T* - verstärkter Kegel (1:8)

* Per le cilindrate disponibili rivolgersi all'ufficio tecnico - Contact technical office for available displacements - Für die erhältlichen Fördervolumina sich an die technische Abteilung wenden

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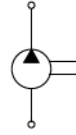
HPL ..2

POMPE E MOTORI AD INGRANAGGI GEAR PUMPS AND MOTORS ZAHNRADPUMPEN UND -MOTOREN

HPL PA2

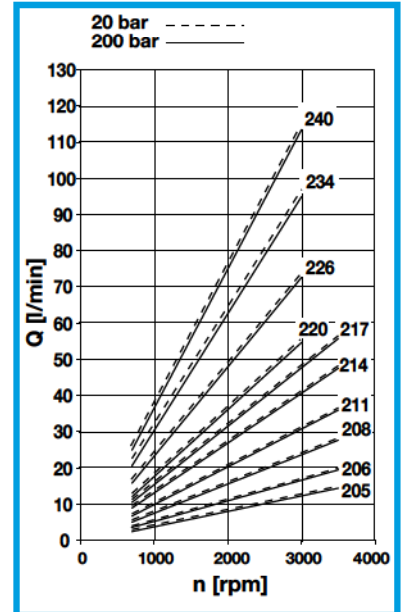
POMPE AD INGRANAGGI GEAR PUMPS ZAHNRADPUMPEN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE



GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN	VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT		
		cm ³	in ³	bar	psi	bar	psi		bar	psi	MAX	MIN	kg
										min ⁻¹	min ⁻¹		
2	05	4,50	0,27	240	3481	260	3771	300	4351	3500	700	2,30	5,07
	06	6,00	0,37	240	3481	260	3771	300	4351			2,40	5,29
	08	8,50	0,52	230	3336	250	3626	280	4061			2,40	5,29
	11	11,00	0,67	230	3336	250	3626	280	4061			2,40	5,29
	14	14,50	0,88	230	3336	250	3626	280	4061			2,80	6,17
	17	17,00	1,04	230	3336	250	3626	280	4061			2,80	6,17
	20	19,50	1,19	200	2901	220	3191	250	3626			2,80	6,17
	26	26,00	1,59	180	2611	190	2756	210	3046			3,10	6,83
	34	34,00	2,07	160	2321	170	2466	190	2756			3,40	7,50
	40	40,50	2,47	140	2031	160	2321	180	2611			3,60	7,94

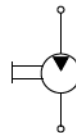
DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN



HPL MA2

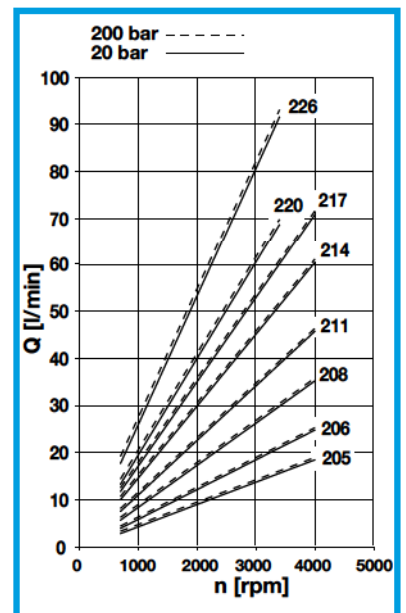
MOTORI AD INGRANAGGI GEAR MOTORS ZAHNRADMOTOREN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE



GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN	VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT		
		cm ³	in ³	bar	psi	bar	psi		bar	psi	MAX	MIN	kg
										min ⁻¹	min ⁻¹		
2	05	4,50	0,27	240	3481	260	3771	300	4351	4000	700	2,30	5,07
	06	6,00	0,37	240	3481	260	3771	300	4351			2,40	5,29
	08	8,50	0,52	230	3336	250	3626	280	4061			2,40	5,29
	11	11,00	0,67	230	3336	250	3626	280	4061			2,40	5,29
	14	14,50	0,88	230	3336	250	3626	280	4061			2,80	6,17
	17	17,00	1,04	230	3336	250	3626	280	4061			2,80	6,17
	20	19,50	1,19	200	2901	220	3191	250	3626			2,80	6,17
	26	26,00	1,59	180	2611	190	2756	210	3046			3,10	6,83

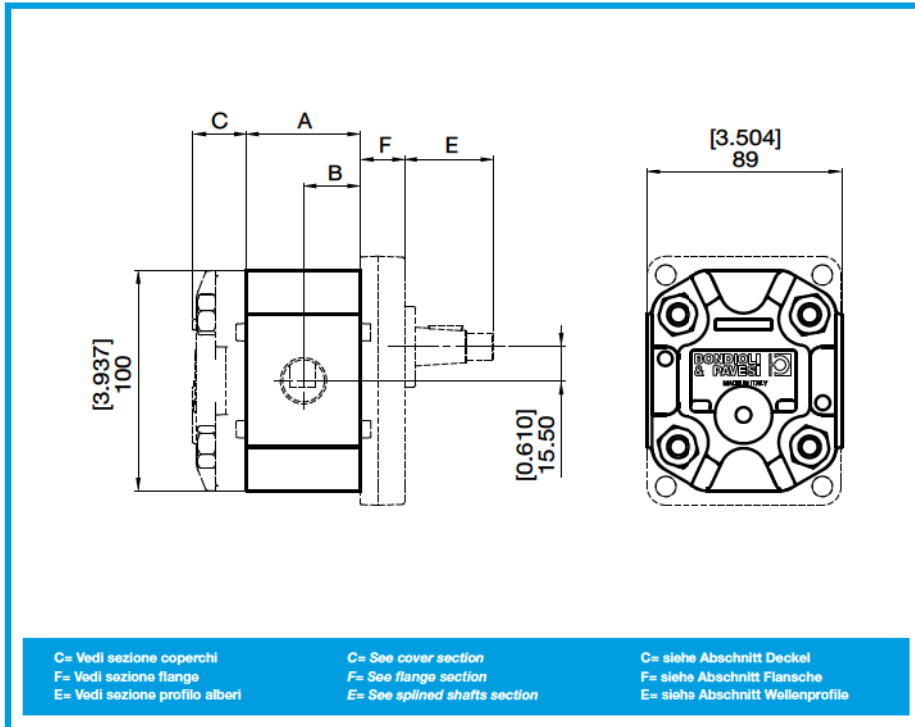
DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN





POMPE E MOTORI AD INGRANAGGI
GEAR PUMPS AND MOTORS
ZAHNRADPUMPEN UND -MOTOREN

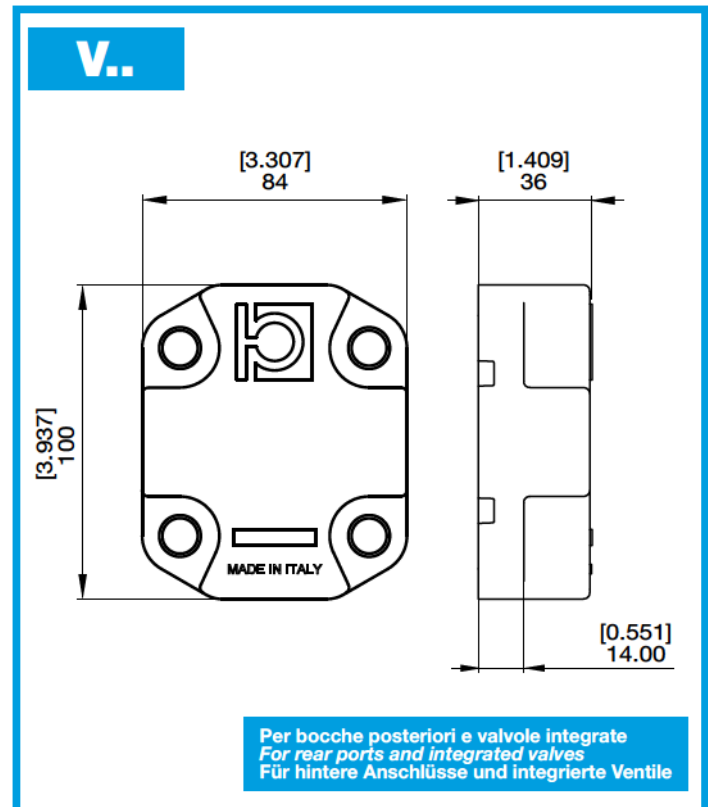
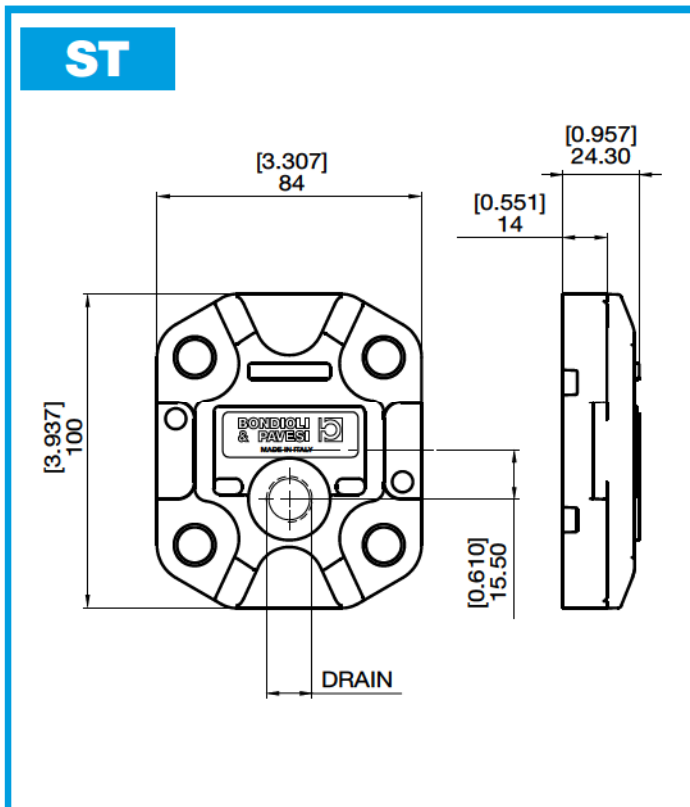
HPL..2

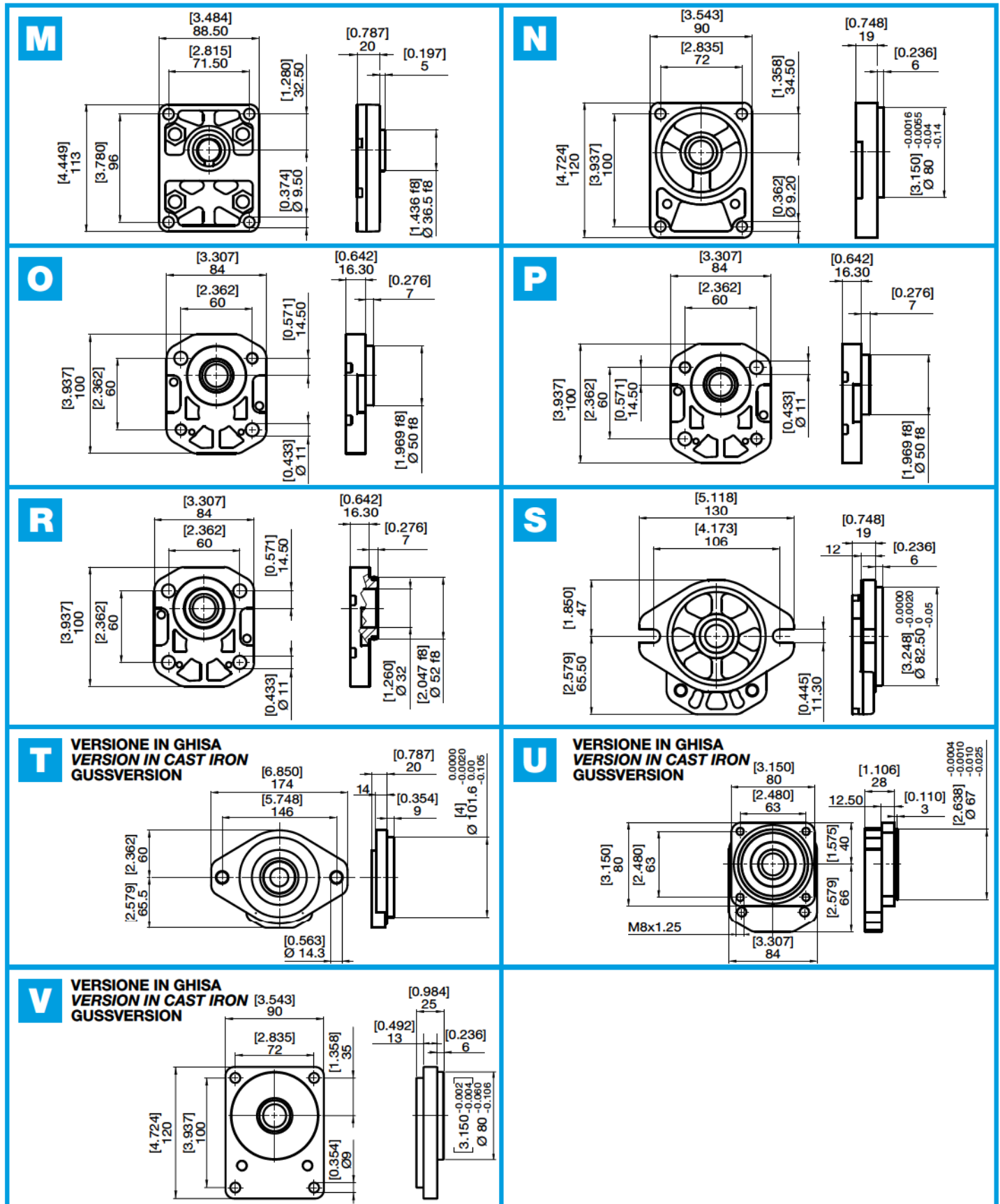


DIMENSIONI
SIZE
ABMESSUNGEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
2	05	49,15	1,935	24,6	0,968
	06	51,85	2,041	25,9	1,021
	08	56,35	2,219	28,2	1,109
	11	60,85	2,396	30,4	1,198
	14	67,25	2,648	33,6	1,324
	17	71,75	2,825	35,9	1,412
	20	76,25	3,002	38,1	1,501
	26	88,55	3,486	44,3	1,743
	34	102,55	4,037	51,3	2,019
	40	115,07	4,530	57,5	2,265

COPERCHI
COVERS
DECKEL







**PROFILO ALBERI
SPLINE SHAFTS
WELLENPROFILE**

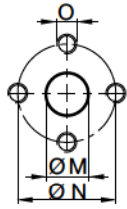
HPL..2

<p>L COPPIA MAX MAX TORQUE MAX DREHMOMENT 140 N•m</p> <p>Coppia di serraggio = 50 N•m Tightening torque = 50 N•m Anzugsmoment = 50 N•m</p>	<p>M COPPIA MAX MAX TORQUE MAX DREHMOMENT 120 N•m</p> <p>Coppia di serraggio = 50 N•m Tightening torque = 50 N•m Anzugsmoment = 50 N•m</p>
<p>N COPPIA MAX MAX TORQUE MAX DREHMOMENT 65 N•m</p>	<p>P COPPIA MAX MAX TORQUE MAX DREHMOMENT 70 N•m</p>
<p>U COPPIA MAX MAX TORQUE MAX DREHMOMENT 110 N•m</p>	<p>V COPPIA MAX MAX TORQUE MAX DREHMOMENT 90 N•m</p>
<p>X COPPIA MAX MAX TORQUE MAX DREHMOMENT 160 N•m</p>	<p>Y COPPIA MAX MAX TORQUE MAX DREHMOMENT 310 N•m</p>
<p>Z COPPIA MAX MAX TORQUE MAX DREHMOMENT 70 N•m</p>	

**BOCCHIE
PORTS
ANSCHLÜSSE**

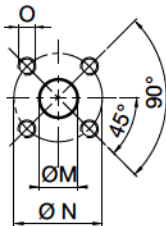
HPL..2

E LATERALE
LATERAL
SEITLICH



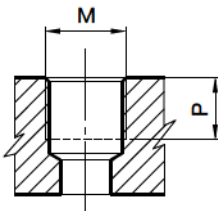
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
E3	13	0,51	30	1,18	M6
E5	20	0,79	40	1,57	M8

X LATERALE
LATERAL
SEITLICH



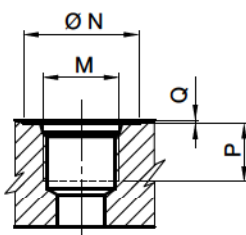
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
X4	15	0,59	35	1,38	M6
X5	15	0,59	40	1,57	M6
X6	20	0,79	40	1,57	M6

G LATERALE
LATERAL
SEITLICH
T POSTERIORE
REAR
HINTEN



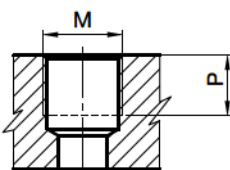
TIPO TYPE TYP	M	P	
		mm	in
*G3	3/8" GAS BSPP	12	0,47
G4	1/2" GAS BSPP	16	0,63
G6	3/4" GAS BSPP	19	0,75
T4	1/2" GAS BSPP	16	0,63
T4	3/4" GAS BSPP	19	0,75

U LATERALE
LATERAL
SEITLICH
C POSTERIORE
REAR
HINTEN



TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M
		mm	in	mm	in	mm	in	
*U3	3/8"	25	0,98	13	0,51	0,3	0,01	9/16-18 UNF
U5	5/8"	34	1,34	17	0,67	0,3	0,01	7/8-14 UNF
U6	3/4"	41	1,61	19	0,75	0,3	0,01	1-1/16-12 UNF
C5	5/8"	34	1,34	17	0,67	0,3	0,01	7/8-14 UNF
C6	3/4"	41	1,61	19	0,75	0,3	0,01	1-1/16-12 UNF

M



TIPO TYPE TYP	M	P	
		mm	in
*M2	M14x1,5	12	0,47

* Drenaggio

* Drain Port

* Lecköl



**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

HPL..2

ESTREMITÀ ALBERO SHAFT PROFIL WELLENENDE	FLANGE FLANGE FLANSCH							
	M	N V	O P	R	S	T	U	
L	■							
M		■	1.602 40.70					
N	■							
P					■			
U	■	0.925 23.50	1.031 26.20					
V					■			
X					■			
Y						■		
Z				■			0.394 10	
BOCCHIE PORTS ANSCHLÜSSE								
E	■							
G	■				■	■	■	
X		■	■	■				
U					■	■		
C					■	■		
T	■	■	■	■	■	■	■	

HPL PA 2 11 D M L G4 G4 B ST ..

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKT

MA - Motore
PA - Pompa singola
PT - Pompa predisposta

MA - Motor
PA - Pump
PT - Adapted Pump

MA - Motor
PA - Pumpe
PT - Vorbereitete Pumpe

GRUPPO
GROUP
BAUGRÖSSE

2

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

05 - 4,50
06 - 6,00
08 - 8,50
11 - 11,00
14 - 14,50
17 - 17,00
20 - 19,50
26 - 26,00
34 - 34,00
40 - 40,50

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
D - Oraria/destra
H - Bidirezionale drenaggio interno
B - Bidirezionale drenaggio esterno posteriore

S - Counterclockwise
D - Clockwise
H - Reversible ind drain.
B - Reversible rear. drain. pont.

S - Linkslauf
D - Rechtslauf
H - reversibel, Lecköl intern, Anschluß seitlich
B - reversibel, Lecköl extern, Anschluß hinten

SET VALVOLE
VALVE SETTING
VENTILEINSTELLUNG
(bar)

COPERCHI - COVERS - DECKEL

ST - Standard
V.. - Con valvole
(Vedi sez. valvole)
With valves
(See valves section)
Mit Ventilen
(siehe Abschnitt Ventile)

GUARNIZIONI - SEALS - DICHTUNGEN

B - NBR V - Viton
R - NBR alte pres. (25 bar) W- Viton alte pres. (25 bar)
For high pres. (25 bar) For high pres. (25 bar)
Hochdruck (25 bar) Hochdruck (25 bar)

BOCCHIE STD - STANDARD PORT - STANDARD ANSCHLÜSSE
CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

5.....8		11	14.....20		26.....40		DRAIN					
Pompe	- Pomps	- Pumpen	IN/OUT	Pompe	- Pomps	- Pumpen	IN/OUT	Pompe	- Pomps	- Pumpen	IN/OUT	DRAIN
E3	E3			E5	E3			E5	E5			M2
G4	G4			G6	G4			G6	G6			G3
X5	X4	X6	X4	X6	X4			X6	X5			M2
U6	U5			U6	U5			U6	U5			U3
C6	C5			C6	C5			C6	C5			U3
T6	T4			T6	T4			T6	T4			G3

MOTORI - MOTORS - MOTOREN OUT/IN
MOTORI BIDIR. IN=OUT - REVERS. MOTORS IN=OUT -
BIDIREK.MOTOREN IN=OUT

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

M - Europea
N - Tedesca
O - Tedesca D 50 2 fori DX
P - Tedesca D 50 2 fori SX
R - Europea D 52
S - SAE A 2 fori
T - SAE B 2 fori
U - Perkins
V - Tedesca in ghisa
M - European
N - German
O - German D 50 2 holes right
P - German D 50 2 holes left
R - German D 52
S - SAE A 2 holes
T - SAE B 2 holes
U - Perkins
V - German cast iron
M - EU-Norm
N - DIN-Norm
O - DIN-Norm D 50 Bohrungen rechts
P - DIN-Norm D 50 Bohrungen links
R - DIN-Norm D 52
S - SAE A 2 Bohrungen
T - SAE B 2 Bohrungen
U - Perkins
V - Din gussversion

ESTREMITÀ D'ALBERO
SHAFT PROFIL
WELLENENDE

L - Conico (1:8)
M - Conico (1:5)
N - Cilindrico D15 europeo
P - Cilindrico SAE "A"
U - Scanalato DIN 5482
V - Scanalato SAE "A" 9T
X - Scanalato SAE "A" 11T
Y* - Scanalato SAE "B" 13T
Z - Dente frontale
L - Tapered (1:8)
M - Tapered (1:5)
N - D15 European parallel shaft
P - SAE "A" parallel shaft
U - DIN 5482 splined
V - SAE "A" 9T splined
X - SAE "A" 11T splined
Y* - SAE "B" 13T splined
Z - Tang drive
L - Kegel (1:8)
M - Kegel (1:5)
N - zylindrisch D15 (E-norm)
P - zylindrisch SAE "A"
U - Keilwelle DIN 5482
V - Keilwelle SAE "A" 9T
X - Keilwelle SAE "A" 11T
Y* - Keilwelle SAE "B" 13T
Z - Kreuzprofil

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HPL ..3

POMPE E MOTORI AD INGRANAGGI GEAR PUMPS AND MOTORS ZAHNRADPUMPEN UND -MOTOREN

HPL PA3

POMPE AD INGRANAGGI GEAR PUMPS ZAHNRADPUMPEN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

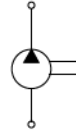
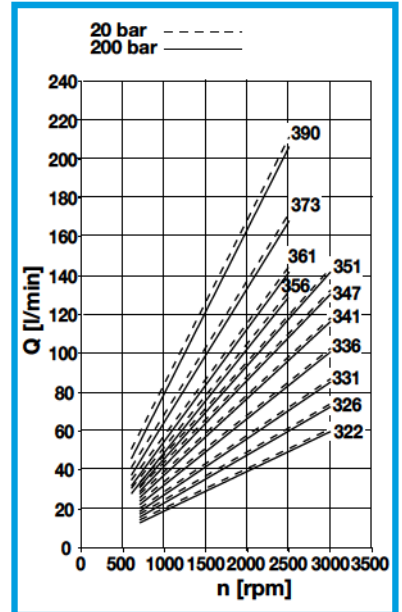


DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN	VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT		
		cm ³	in ³	bar	psi	bar	psi		bar	psi	MAX	MIN	kg
										min ⁻¹	min ⁻¹		
3	22	21,50	1,31	220	3191	250	3626	310	4496	3000	700	6,20	13,67
	26	26,00	1,59	210	3046	250	3626	300	4351			6,20	13,67
	31	30,50	1,86	210	3046	250	3626	280	4061			6,20	13,67
	36	36,00	2,20	210	3046	250	3626	280	4061			6,50	14,33
	41	41,50	2,53	210	3046	250	3626	280	4061			7,20	15,87
	47	46,50	2,84	180	2611	210	3046	270	3916			7,20	15,87
	51	50,50	3,08	180	2611	210	3046	270	3916	7,20	15,87		
	56	56,00	3,42	170	2466	200	2901	230	3336	7,40	16,31		
	61	61,00	3,72	150	2176	180	2611	200	2901	7,60	16,76		
	73	72,50	4,42	140	2031	150	2176	180	2611	8,00	17,64		
90	89,00	5,43	110	1595	120	1740	170	2466	8,60	18,96			



HPL MA3

MOTORI AD INGRANAGGI GEAR MOTORS ZAHNRADMOTOREN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

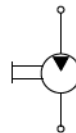
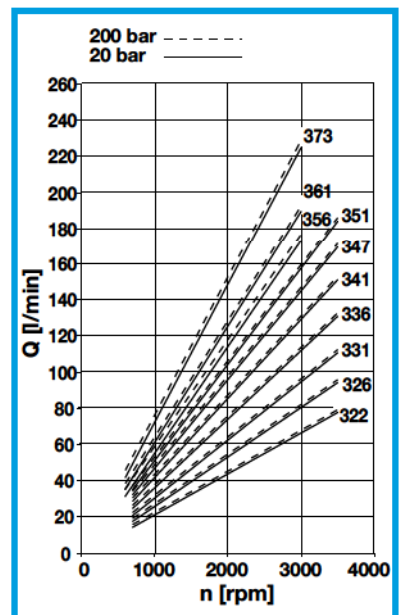


DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN	VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT		
		cm ³	in ³	bar	psi	bar	psi		bar	psi	MAX	MIN	kg
										min ⁻¹	min ⁻¹		
3	22	21,50	1,31	220	3191	250	3626	310	4496	3500	700	6,20	13,67
	26	26,00	1,59	210	3046	250	3626	300	4351			6,20	13,67
	31	30,50	1,86	210	3046	250	3626	280	4061			6,20	13,67
	36	36,00	2,20	210	3046	250	3626	280	4061			6,50	14,33
	41	41,50	2,53	210	3046	250	3626	280	4061			7,20	15,87
	47	46,50	2,84	180	2611	210	3046	270	3916			7,20	15,87
	51	50,50	3,08	180	2611	210	3046	270	3916	7,20	15,87		
	56	56,00	3,42	170	2466	200	2901	230	3336	7,40	16,31		
	61	61,00	3,72	150	2176	180	2611	200	2901	7,60	16,76		
	73	72,50	4,42	140	2031	150	2176	180	2611	8,00	17,64		





POMPE E MOTORI AD INGRANAGGI
GEAR PUMPS AND MOTORS
ZAHNRADPUMPEN UND -MOTOREN

HPL..3

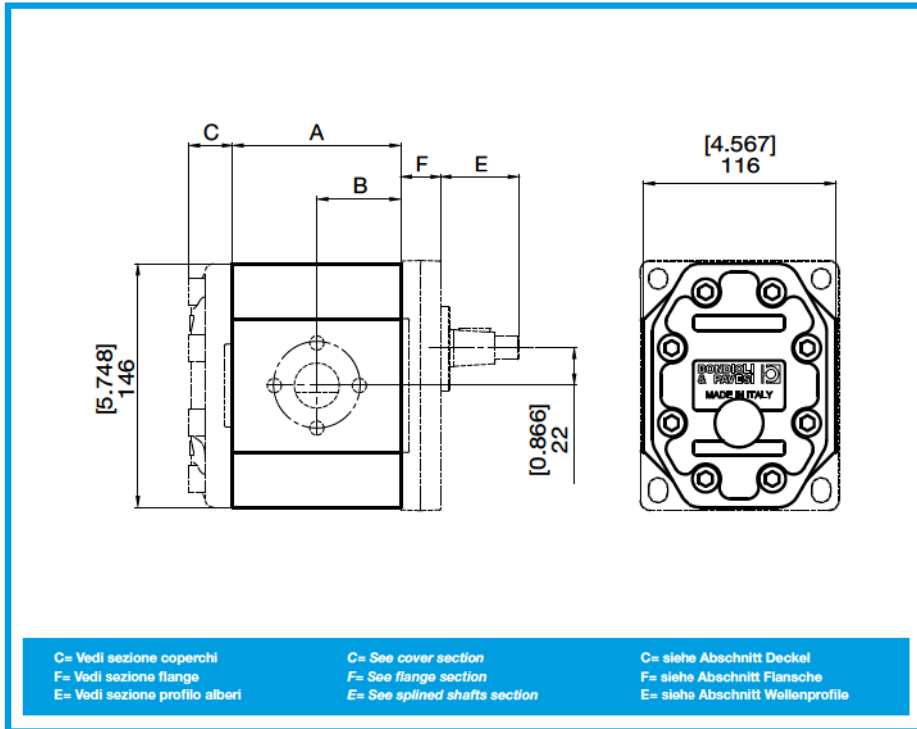
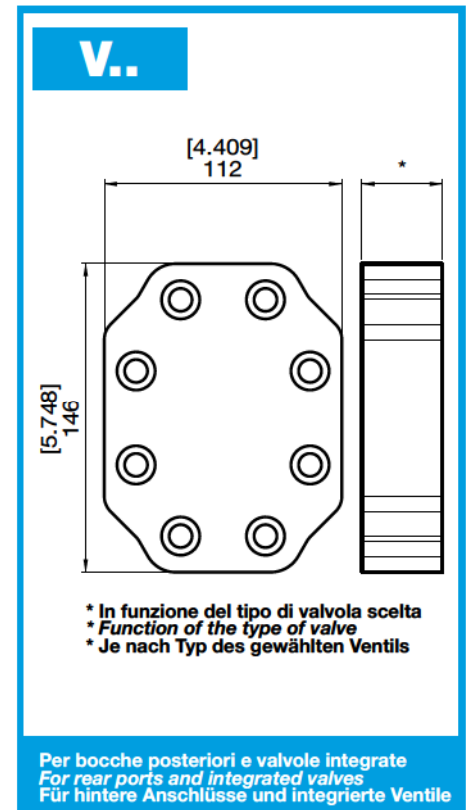
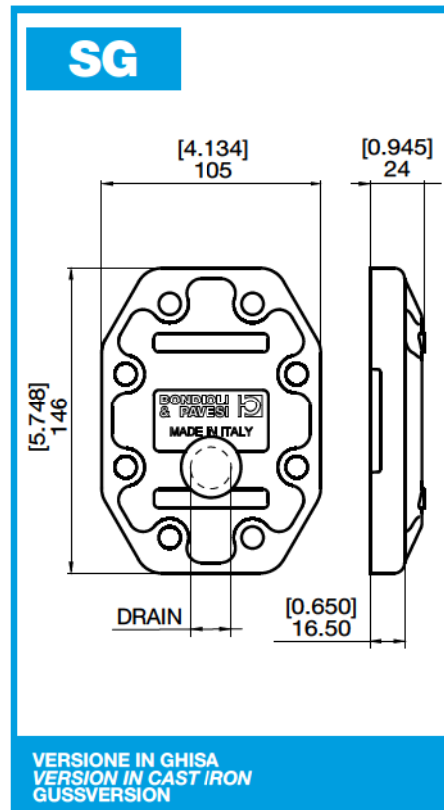
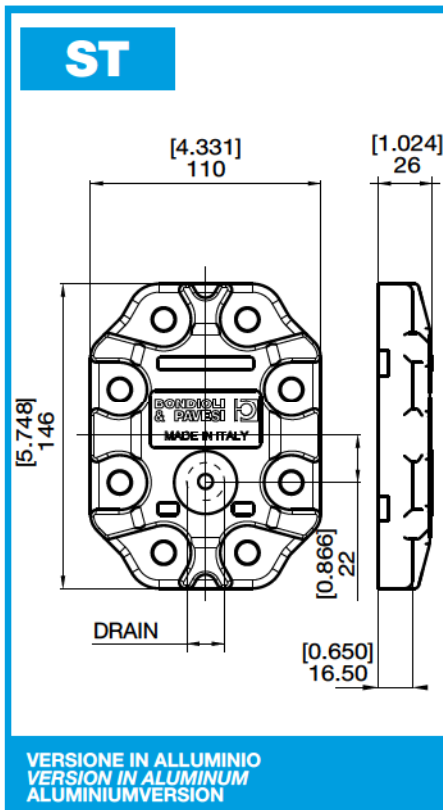


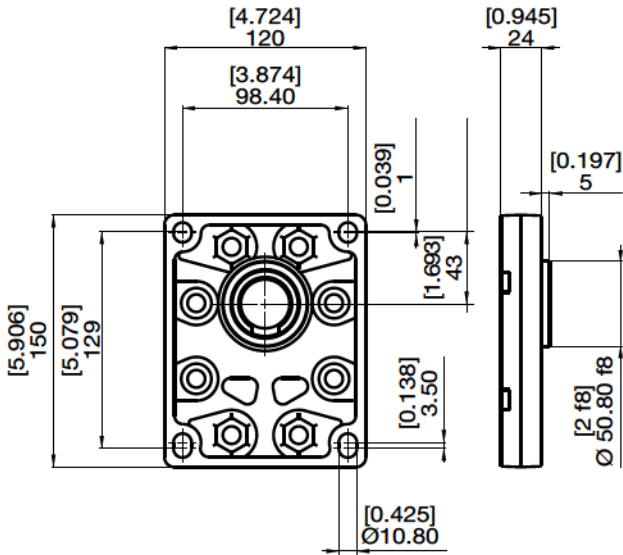
DIAGRAMMA PORTATE
DIAGRAMS
KENNLINIEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
3	22	81,07	3,192	40,5	1,594
	26	84,07	3,310	42,0	1,654
	31	87,07	3,428	43,5	1,714
	36	91,07	3,585	45,5	1,793
	41	95,07	3,743	47,5	1,870
	47	98,07	3,861	49,0	1,929
	51	101,07	3,979	50,5	1,990
	56	104,57	4,117	52,3	2,059
	61	108,57	4,274	54,3	2,137
	73	116,07	4,570	58,0	2,285
90	127,07	5,003	63,5	2,501	

COPERCHI
COVERS
DECKEL

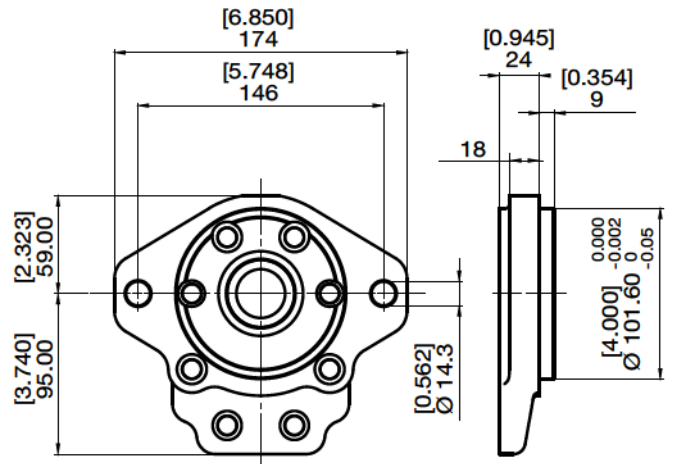


W



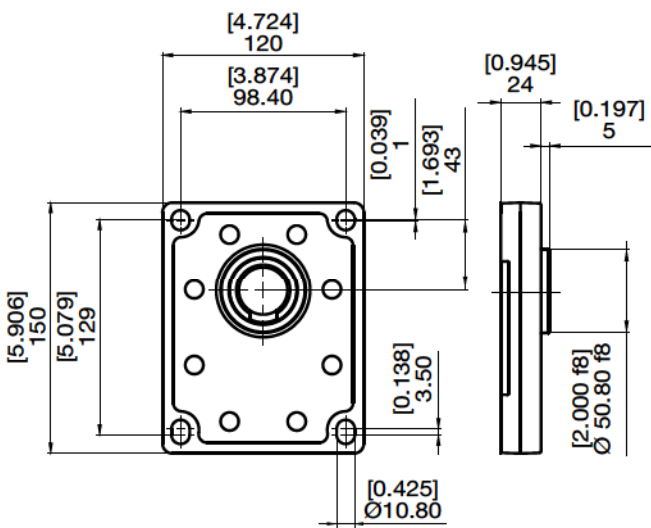
VERSIONE IN ALLUMINIO
VERSION IN ALUMINUM
ALUMINIUMVERSION

Z



VERSIONE IN ALLUMINIO
VERSION IN ALUMINUM
ALUMINIUMVERSION

Y



VERSIONE IN GHISA
VERSION IN CAST IRON
GUSSVERSION

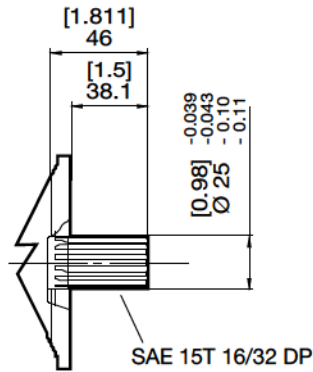


**PROFILO ALBERI
SPLINE SHAFTS
WELLENPROFILE**

HPL..3

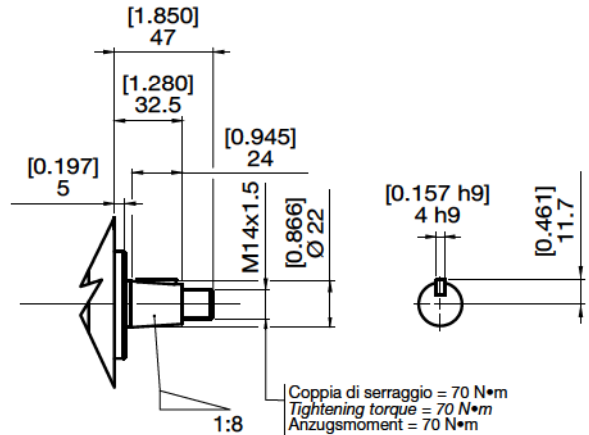
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**COPPIA MAX
MAX TORQUE
MAX DREHMOMENT** 460 N•m



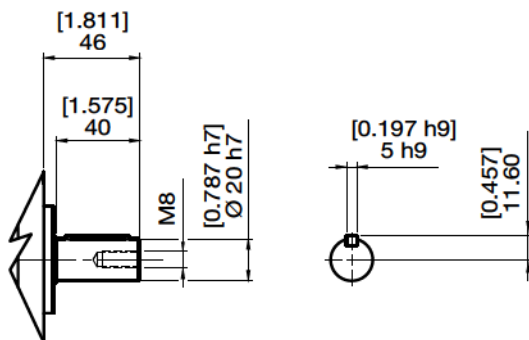
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**COPPIA MAX
MAX TORQUE
MAX DREHMOMENT** 240 N•m



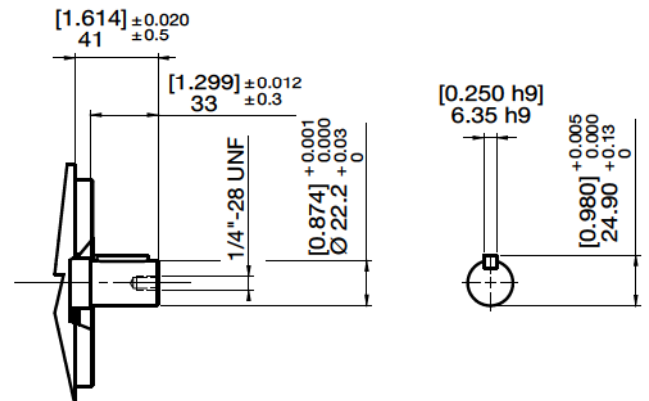
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**COPPIA MAX
MAX TORQUE
MAX DREHMOMENT** 190 N•m



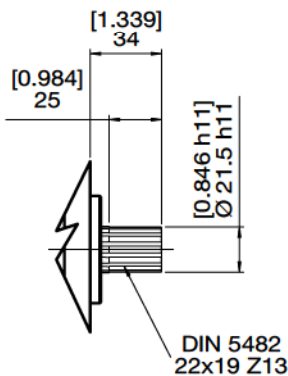
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**COPPIA MAX
MAX TORQUE
MAX DREHMOMENT** 210 N•m



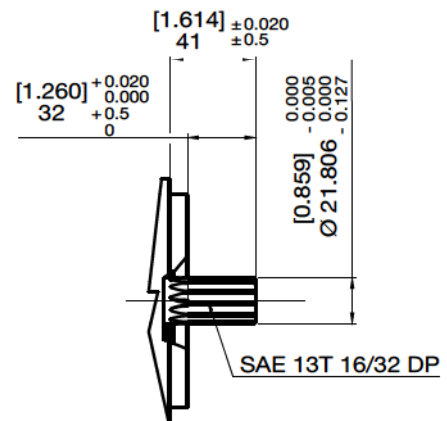
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**COPPIA MAX
MAX TORQUE
MAX DREHMOMENT** 250 N•m



9

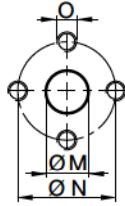
**COPPIA MAX
MAX TORQUE
MAX DREHMOMENT** 310 N•m



**BOCCHIE
PORTS
ANSCHLÜSSE**

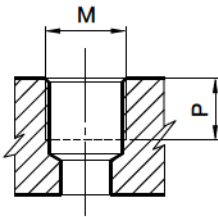
HPL..3

E LATERALE
LATERAL
SEITLICH



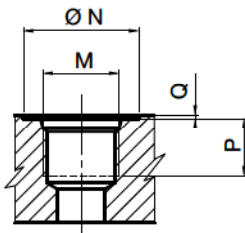
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
E5	20	0,79	40	1,57	M8
E7	27	1,06	51	2,01	M10
E8	34	1,34	62	2,44	M10

G LATERALE
LATERAL
SEITLICH



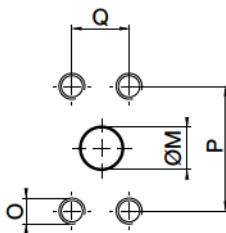
TIPO TYPE TYP	M	P	
		mm	in
*G3	3/8" GAS BSPP	12	0,47
G6	3/4" GAS BSPP	19	0,75
G7	1" GAS BSPP	21	0,83
G8	1 1/4" GAS BSPP	21	0,83

U LATERALE
LATERAL
SEITLICH



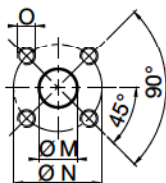
TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M
		mm	in	mm	in	mm	in	
U6	3/4"	41	1,61	20	0,79	0,3	0,01	1-1/16"-12 UNF
U7	1"	49	1,93	20	0,79	0,3	0,01	1-5/16"-12 UNF
U8	1 1/4"	58	2,28	20	0,79	0,3	0,01	1-5/8"-12 UNF

N LATERALE
LATERAL
SEITLICH



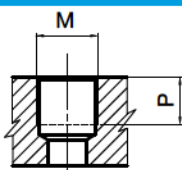
TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M
		mm	in	mm	in	mm	in	
N6	3/4"	20	0,79	47,6	1,87	22,2	0,87	3/8"-16UNC-2B
N7	1"	27	1,06	52,4	2,60	26,2	1,03	3/8"-16UNC-2B
N8	1 1/4"	34	1,34	58,7	2,31	30,2	1,19	7/16"-14UNC-2B

X LATERALE
LATERAL
SEITLICH



TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
X7	19	0,75	55	2,17	M8
X8	27	1,06	55	2,17	M8

M



TIPO TYPE TYP	M	P	
		mm	in
*M3	M16x1,5	12	0,47

* Drenaggio

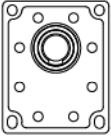
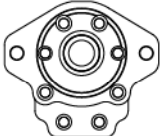
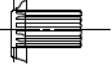
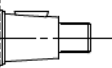









* Drain Port

* Lecköl



**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

HPL..3

ESTREMITÀ ALBERO SHAFT PROFIL WELLENENDE	FLANGE FLANGE FLANSCH	
	W Y 	Z 
1 		<input checked="" type="checkbox"/>
2 	<input checked="" type="checkbox"/>	
4 	<input checked="" type="checkbox"/>	
6 		<input checked="" type="checkbox"/>
7 	<input checked="" type="checkbox"/>	
9 		<input checked="" type="checkbox"/>
BOCCHIE PORTS ANSCHLÜSSE		
E 	<input checked="" type="checkbox"/>	
G 	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
U 		<input checked="" type="checkbox"/>
N 		<input checked="" type="checkbox"/>
X 	<input checked="" type="checkbox"/>	

HPL PA 3 36 D W 2 E7 E5 B ST ..

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKT

MA - Motore
PA - Pompa singola
PT - Pompa predisposta

MA - Motor
PA - Pump
PT - Adapted Pump

MA - Motor
PA - Pumpe
PT - Vorbereitete Pumpe

GRUPPO
GROUP
BAUGRÖSSE

3

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

22 - 21,50
26 - 26,00
31 - 30,50
36 - 36,00
41 - 41,50
47 - 46,50
51 - 50,50
56 - 56,00
61 - 61,00
73 - 72,50
90 - 89,00

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
D - Oraria/destra
H - Bidirezionale drenaggio interno
B - Bidirezionale drenaggio esterno posteriore

S - Counterclockwise
D - Clockwise
H - Reversible ind drain.
B - Reversible rear. drain. pont.

S - Linkslauf
D - Rechtslauf
H - reversibel, Lecköl intern, Anschluß seitlich
B - reversibel, Lecköl extern, Anschluß hinten

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

W - Europea D 50,8
Z - SAE B 2 fori
Y - Europea D 50,8 ghisa

W - European D 50,8
Z - SAE B 2 holes
Y - European D 50,8 cast iron

W - EU-Norm D 50,8
Z - SAE B 2 Bohrungen
Y - EU-Norm D 50,8 Guß

SET VALVOLE
VALVE SETTING
VENTILEINSTELLUNG
(bar)

COPERCHI - COVERS - DECKEL

ST - Standard
SG - Versione in ghisa
Version in cast iron
Gussversion
V.. - Con valvole
(Vedi sez. valvole)
With valves
(See valves section)
Mit Ventilen
(siehe Abschnitt Ventile)

GUARNIZIONI
SEALS
DICHTUNGEN

B - NBR
R - NBR alte pres. (25 bar)
For high pres. (25 bar)
Hochdruck (25 bar)
V - Viton
W - Viton alte pres. (25 bar)
For high pres. (25 bar)
Hochdruck (25 bar)

BOCCHIE STD - STANDARD PORT - STANDARD ANSCHLÜSSE
CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

22.....31	36.....61	73.....90	
Pompe - Pumps - Pumpen IN/OUT	Pompe - Pumps - Pumpen IN/OUT	Pompe - Pumps - Pumpen IN/OUT	DRAIN
E5 E5	E7 E5	E8 E7	M3
G6 G6	G7 G6	G8 G7	G3
U7 U6	U8 U7	U8 U7	M3
N7 N6	N7 N6	N7 N6	M3
X8 X7	X8 X7	X8 X7	M3

MOTORI - MOTORS - MOTOREN OUT/IN
MOTORI BIDIR. IN=OUT - REVERS. MOTORS IN=OUT -
BIDIREK.MOTOREN IN=OUT

ESTREMITÀ D'ALBERO
SHAFT PROFIL
WELLENENDE

1 - Scanalato SAE "BB" 15T
2 - Conico (1:8)
4 - Cilindrico europeo
6 - Cilindrico SAE "B"
7 - Scanalato DIN 5482
9 - Scanalato SAE "B" 13T
1 - SAE "BB" 15T splined
2 - Tapered (1:8)
4 - European parallel shaft
6 - SAE "B" parallel shaft
7 - DIN 5482 splined
9 - SAE "B" 13T splined
1 - Keiwelle SAE "BB" 15T
2 - Kegel (1:8)
4 - Kegel EU-Norm
6 - zylindrisch SAE "B"
7 - Keilwelle DIN 5482
9 - Keilwelle SAE "B" 13T

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HPL ..4

POMPE E MOTORI AD INGRANAGGI GEAR PUMPS AND MOTORS ZAHNRADPUMPEN UND -MOTOREN

HPL PA4

POMPE AD INGRANAGGI GEAR PUMPS ZAHNRADPUMPEN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

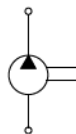
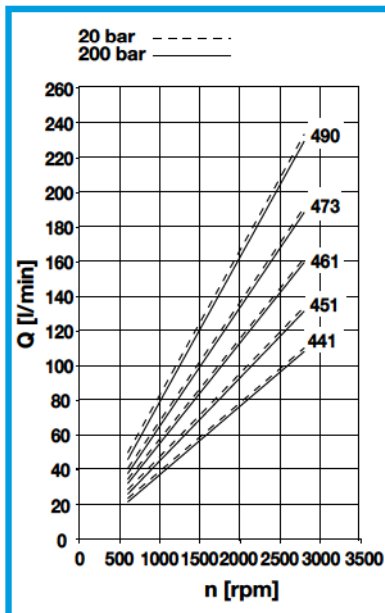


DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN		VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT	
		cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs
4	41	41,80	2,55	220	3191	250	3626	300	4351	2800	600	9,20	20,28
	51	50,40	3,08	190	2756	210	3046	280	4061			9,20	20,28
	61	61,00	3,72	160	2321	180	2611	200	2901			9,60	21,16
	73	72,00	4,39	150	2176	160	2321	180	2611			9,60	21,16
	90	87,80	5,36	120	1740	130	1885	170	2466			9,60	21,16



HPL MA4

MOTORI AD INGRANAGGI GEAR MOTORS ZAHNRADMOTOREN

DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

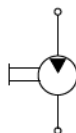
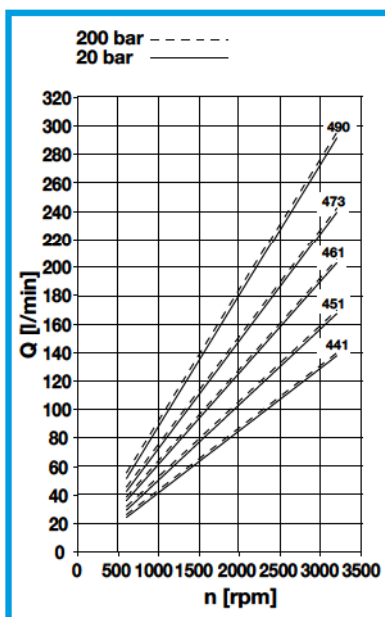


DIAGRAMMA PORTATE DIAGRAMS KENNLINIEN

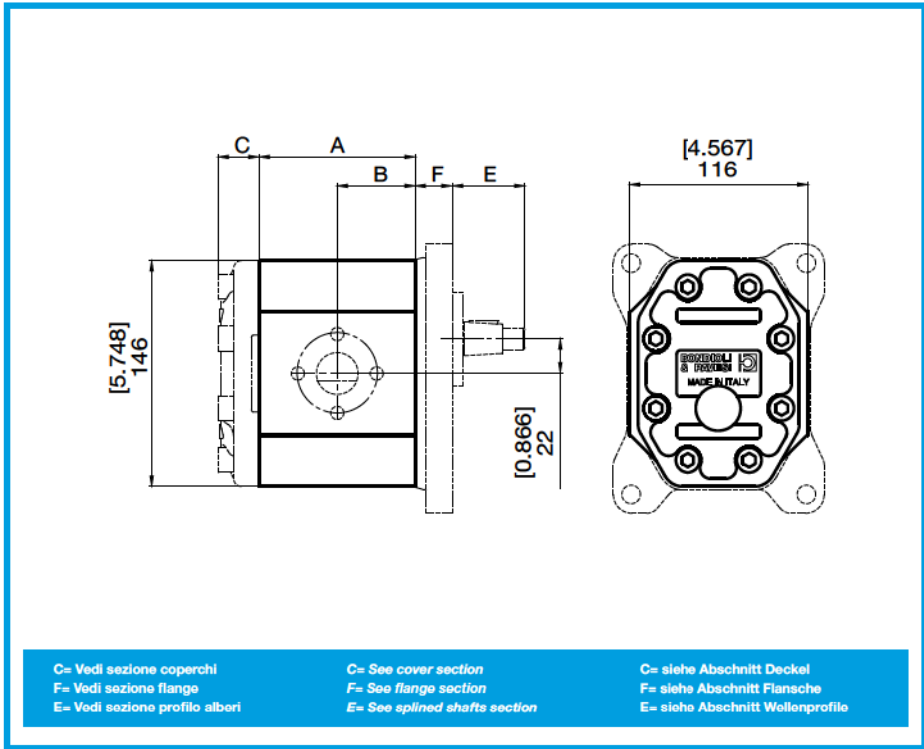
GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN		VELOCITÀ DI ROTAZIONE SPEED DREHZAHL		MASSA WEIGHT GEWICHT	
		cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs
4	41	41,80	2,55	220	3191	250	3626	300	4351	2800	600	9,20	20,28
	51	50,40	3,08	190	2756	210	3046	280	4061			9,20	20,28
	61	61,00	3,72	160	2321	180	2611	200	2901			9,60	21,16
	73	72,00	4,39	150	2176	160	2321	180	2611			9,60	21,16
	90	87,80	5,36	120	1740	130	1885	170	2466			9,60	21,16





POMPE E MOTORI AD INGRANAGGI
GEAR PUMPS AND MOTORS
ZAHNRADPUMPEN UND -MOTOREN

HPL..4

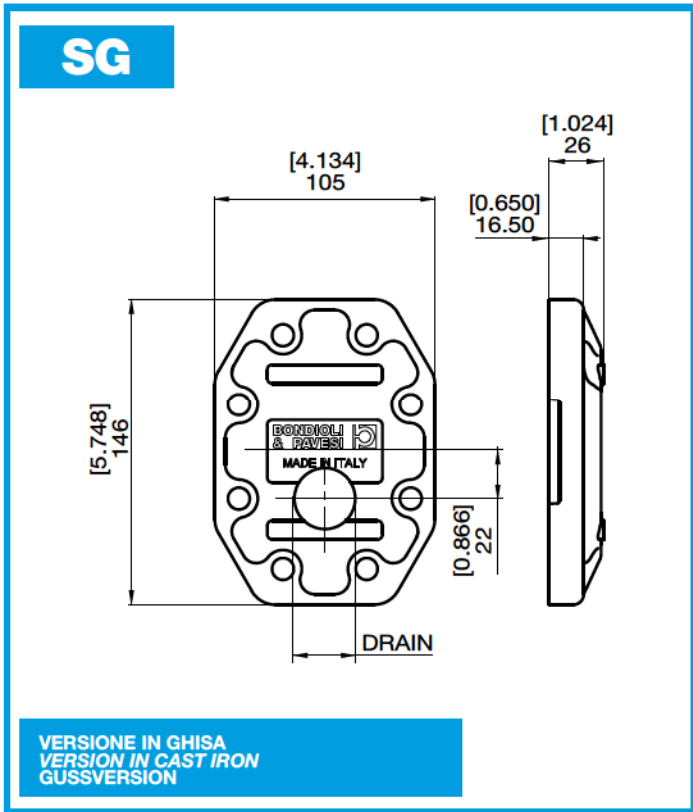


DIMENSIONI
SIZE
ABMESSUNGEN

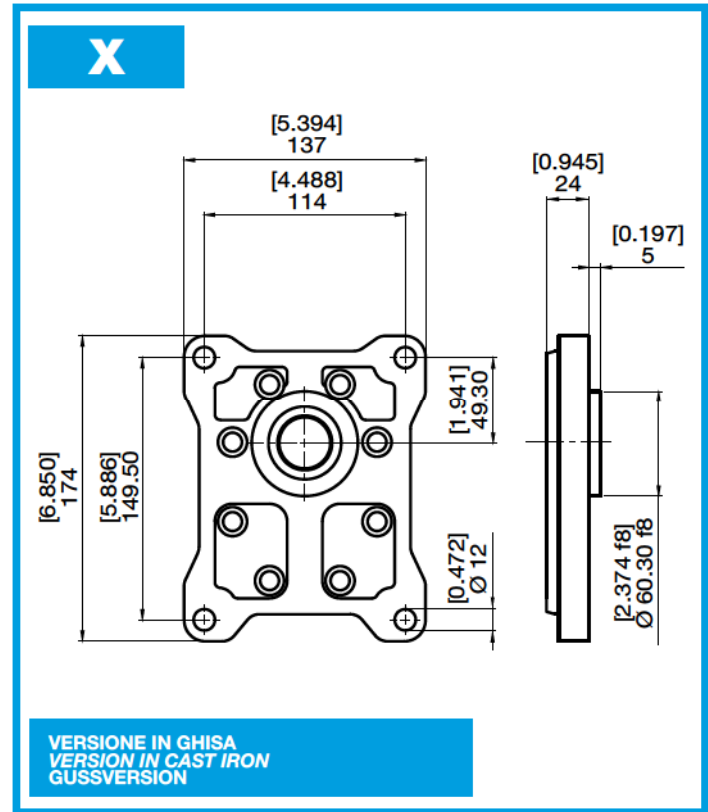
GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
4	41	101,07	3,979	50,5	1,990
	51	101,07	3,979	50,5	1,990
	61	108,57	4,274	54,3	2,137
	73	116,07	4,570	58,0	2,285
	90	127,07	5,003	63,5	2,501

C= Vedi sezione coperchi C= See cover section C= siehe Abschnitt Deckel
 F= Vedi sezione flange F= See flange section F= siehe Abschnitt Flansche
 E= Vedi sezione profilo alberi E= See splined shafts section E= siehe Abschnitt Wellenprofile

COPERCHI
COVERS
DECKEL

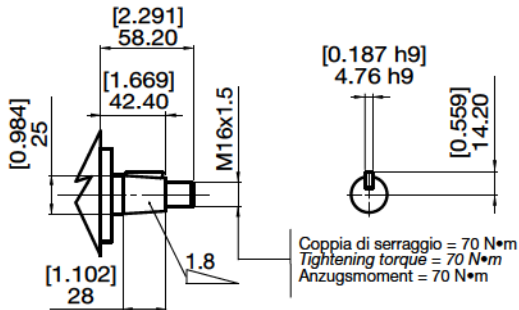


FLANGE
FLANGES
FLANSCH



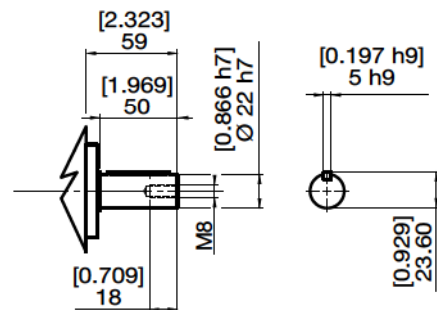
3 COPPIA MAX
MAX TORQUE
MAX DREHMOMENT

350 N•m



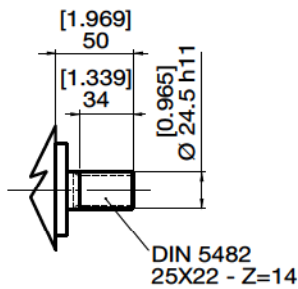
5 COPPIA MAX
MAX TORQUE
MAX DREHMOMENT

210 N•m



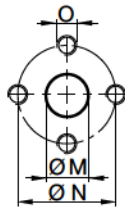
8 COPPIA MAX
MAX TORQUE
MAX DREHMOMENT

350 N•m



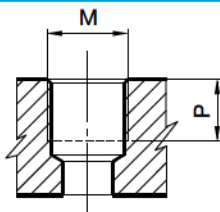
BOCCHIE
PORTS
ANSCHLÜSSE

E LATERALE
LATERAL
SEITLICH



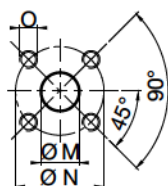
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
E7	27	1,06	51	2,01	M10
E8	34	1,34	62	2,44	M10

G LATERALE
LATERAL
SEITLICH



TIPO TYPE TYP	M	P	
		mm	in
*G3	3/8" GAS BSPP	12	0,47
G7	1" GAS BSPP	21	0,83
G8	1 1/4" GAS BSPP	21	0,83

X LATERALE
LATERAL
SEITLICH



TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
X7	19	0,75	55	2,17	M8
X8	27	1,06	55	2,17	M8

* Drenaggio

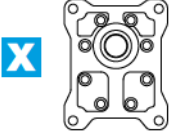
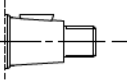

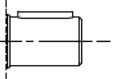









* Drain Port

* Lecköl

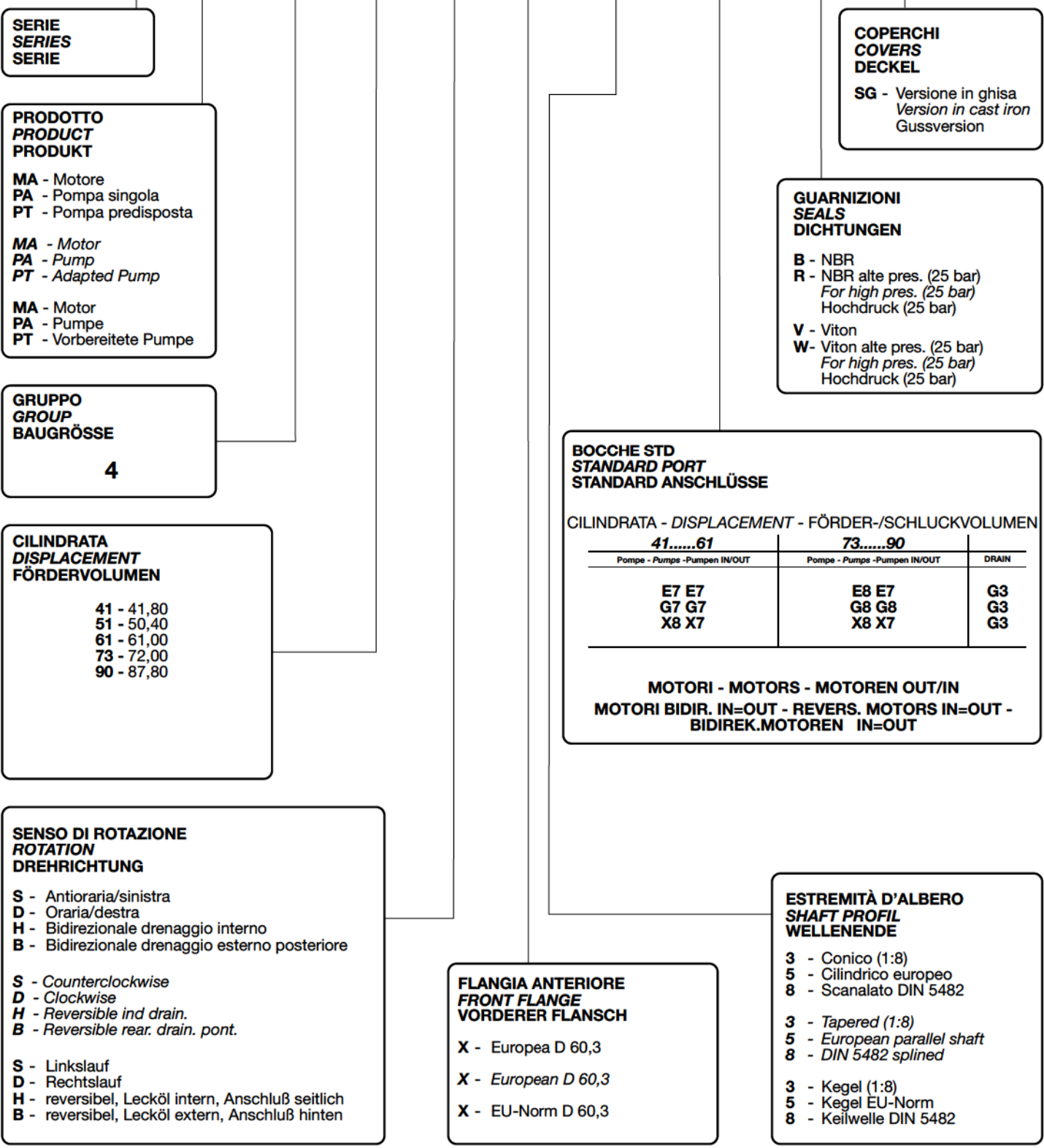


**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

HPL..4

ESTREMITÀ ALBERO SHAFT PROFIL WELLENENDE	FLANGE FLANGE FLANSCH 
3 	
5 	
8 	
BOCCHIE PORTS ANSCHLÜSSE	
E 	
G 	
X 	

HPL PA 4 61 D X 3 E7 E7 B SG



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POMPE MULTIPLE MULTIPLE GEAR PUMPS MEHRFACHPUMPEN

Le pompe multiple sono combinazioni di più pompe (solitamente fino a quattro) trascinate da un unico albero.

Il trascinamento tra le diverse sezioni della pompa multipla avviene con l'interposizione di un apposito giunto e solitamente ciascuna pompa ha aspirazione e mandata indipendente dalle altre.

CARATTERISTICHE DI FUNZIONAMENTO

Per le singole unità valgono i valori riportati a catalogo: occorre tuttavia prestare attenzione ad alcune limitazioni.

PRESSIONE MASSIMA COPPIA MASSIMA

Le pressioni massime sono limitate dalla coppia massima che l'albero di trascinamento / o i giunti di trascinamento possono trasmettere, considerando che: l'albero di trascinamento deve trasferire la coppia necessaria al trascinamento di tutte le sezioni: i valori massimi di coppia trasmissibile da ciascun tipo di estremità d'albero sono riportati nella sezione relativa alle estremità d'albero il giunto di trascinamento deve trasferire la coppia necessaria al trascinamento delle sezioni alle sue spalle i valori massimi di coppia trasmissibile sono riassunti nella tabella sottostante:

A multiple pump is a system resulting by coupling more than one pump (up to four) together and driving them by the same shaft.

The interposal of a joint permits the different multiple pump sections to drive one another. Commonly each pump maintains its own independent inlet and outlet side.

OPERATING CONDITIONS

All data contained in the manual should be referred to for each single unity; still, some restrictions must be taken into account.

MAXIMUM PRESSURE MAXIMUM TORQUE

Maximum pressures are limited by the maximum torque an input shaft or input joint can transmit, considering that:

The inlet shaft must transmit the necessary torque for driving all sections: for the maximum transmitted torque associated to each shaft end type, see the section dedicated to shaft ends.

The inlet joint must transmit the necessary torque for driving the sections located at its back: maximum transmitted torques are tabulated and summarized below:

Die Mehrfachpumpen sind Kombinationen mehrerer Pumpen (in der Regel bis zu vier), die von derselben Welle angetrieben werden.

Der Durchtrieb zwischen den verschiedenen Stufen der Mehrfachpumpe erfolgt durch den Einbau eines Tandemsatzes. Die Pumpenstufen normalerweise sind Saug- und Druckseite jeder Pumpe unabhängig.

BETRIEBSEIGENSCHAFTEN

Für die einzelnen Einheiten gelten die im Katalog aufgeführten Werte, dennoch sind einige Einschränkungen zu beachten.

HÖCHSTDRUCK- HÖCHSTDREHMOMENT

Die Höchstdrücke werden durch das Höchstdrehmoment eingeschränkt, das die Mitnehmerwelle übertragen kann, wobei Folgendes zu beachten ist:

Die Mitnehmerwelle muss das für den Durchtrieb aller Pumpenstufen erforderliche Drehmoment übertragen können: Die Höchstdrehmomente, die von jedem Profil übertragen werden können, sind im Absatz Wellenprofile angegeben.

Die Mitnehmerwelle muss das für den Durchtrieb der dahinter liegenden Pumpenstufen erforderliche Drehmoment übertragen können. Die Höchstwerte der übertragbaren Drehmomente sind in der folgenden Tabelle zusammengefasst:

GIUNTO DI ACCOPPIAMENTO COUPLING JOINT WELLENKUPPLUNG	COPPIA MASSIMA TRASMISSIBILE MAXIMUM TRANSMITTED TORQUE MAX. ÜBERTRAGBARES DREHMOMENT
HPLP•3 + HPLP•3	200 N•m
HPLP•3 + HPLP•2 HPLP•2 + HPLP•2	100 N•m
HPLP•3 + HPLP•1 HPLP•2 + HPLP•1 HPLP•1 + HPLP•1	30 N•m

VELOCITÀ MASSIMA

La velocità massima di una pompa multipla è limitata al valore minimo delle velocità massime delle singole sezioni.

MAXIMUM SPEED

The multiple pump maximum speed is represented by the minimum value among the maximum speeds of all sections.

HÖCHSTDREHZAHL

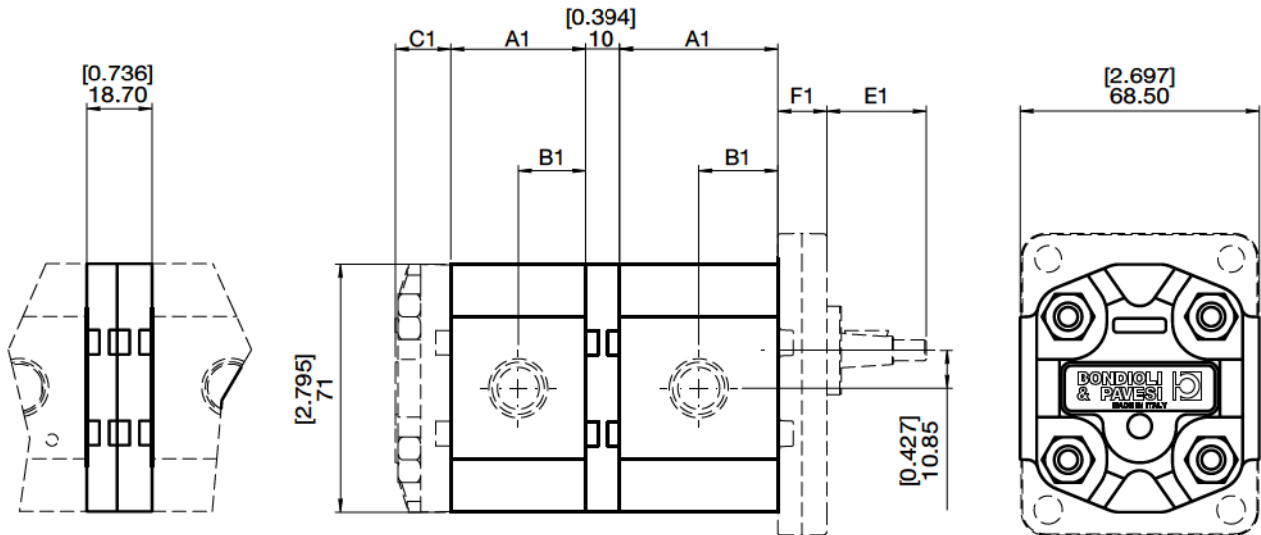
Die Höchstdrehzahl einer Mehrfachpumpe entspricht der niedrigsten Drehzahl aller montierten Pumpen.

PER LE DIMENSIONI
DELLE SINGOLE SEZIONI
VEDERE IL GRUPPO DI RIFERIMENTO

FOR DIMENSION OF EACH SECTION
REFER TO THE GROUP
DIMENSION TABLE

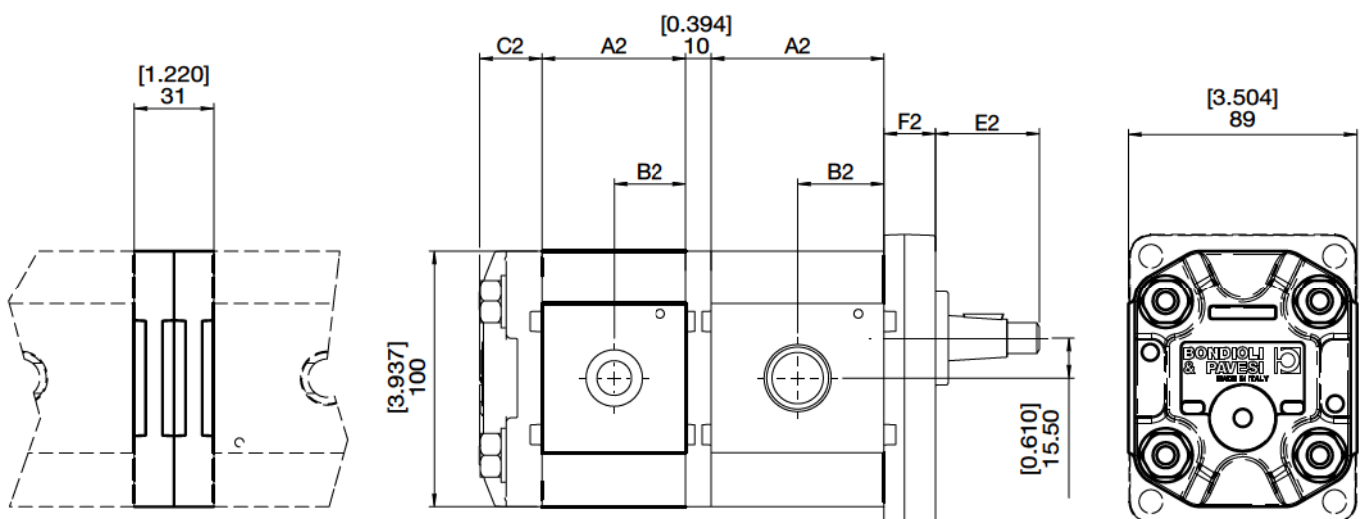
JEDE SEKTION BITTE NACH DER
GRUPPENTABELLE AUSLEGEN

HPLP•1+HPLP•1



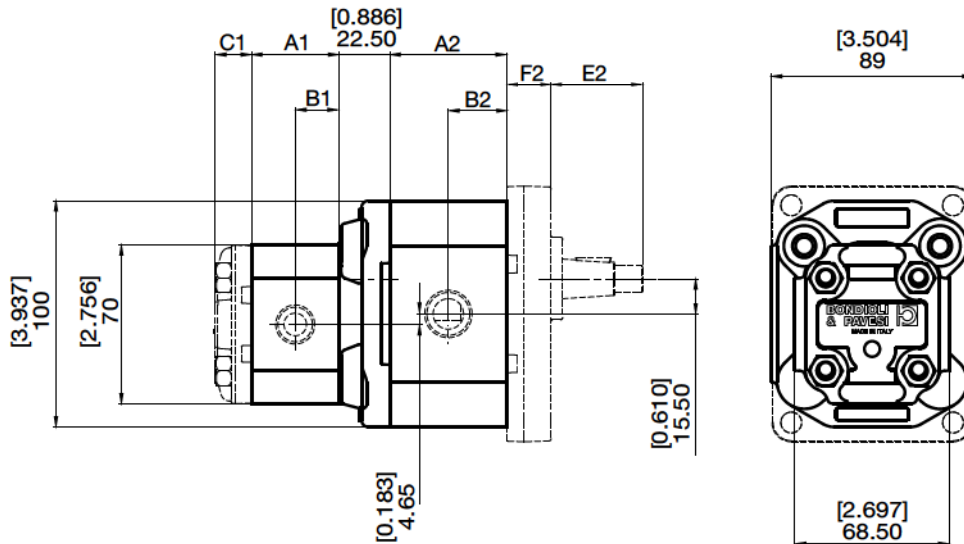
Stadi separati
 Separate tanks
 Unterschiedliche Behälter

HPLP•2+HPLP•2



Stadi separati
 Separate tanks
 Unterschiedliche Behälter

HPLP•2+HPLP•1

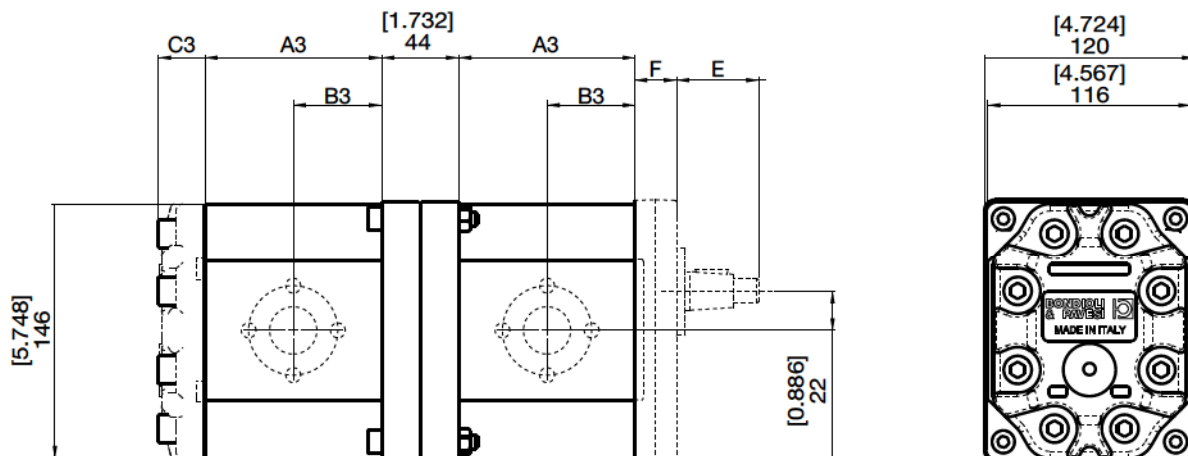


Per stadi separati le
 dimensioni di ingombro
 non variano

Separate tanks use
 same dimensions

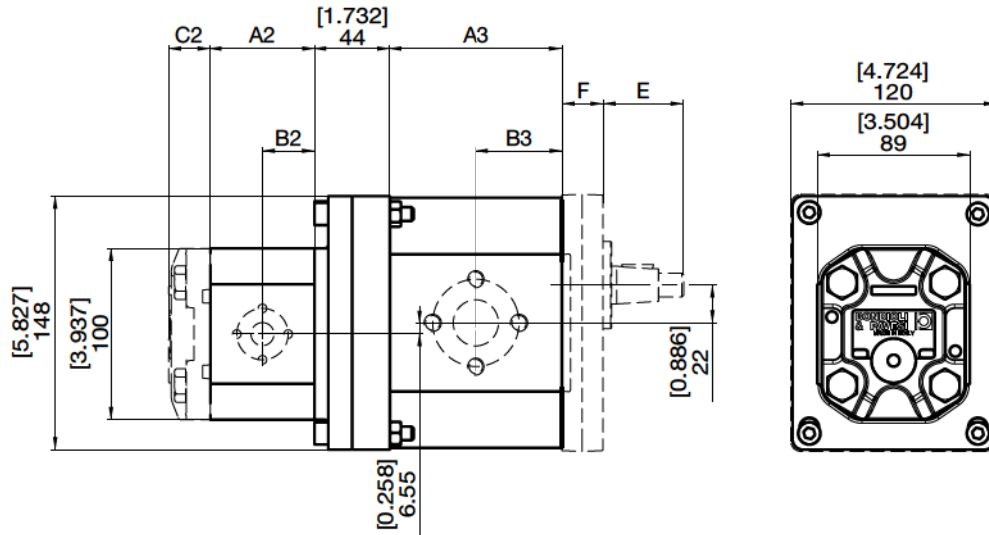
Unterschiedliche Behälter
 verwenden die
 gleichen Masse

HPLP•3+HPLP•3

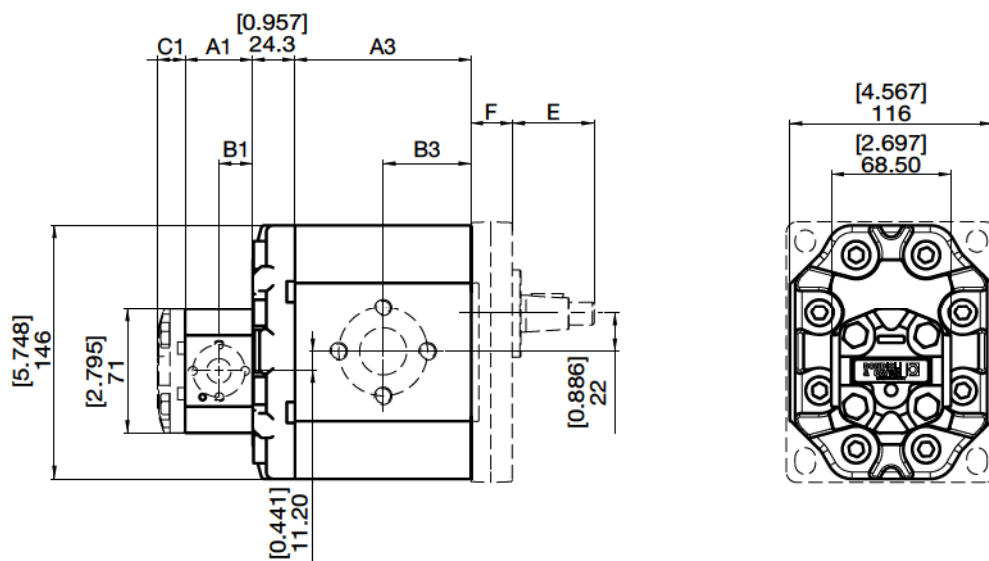




HPLP•3+HPLP•2

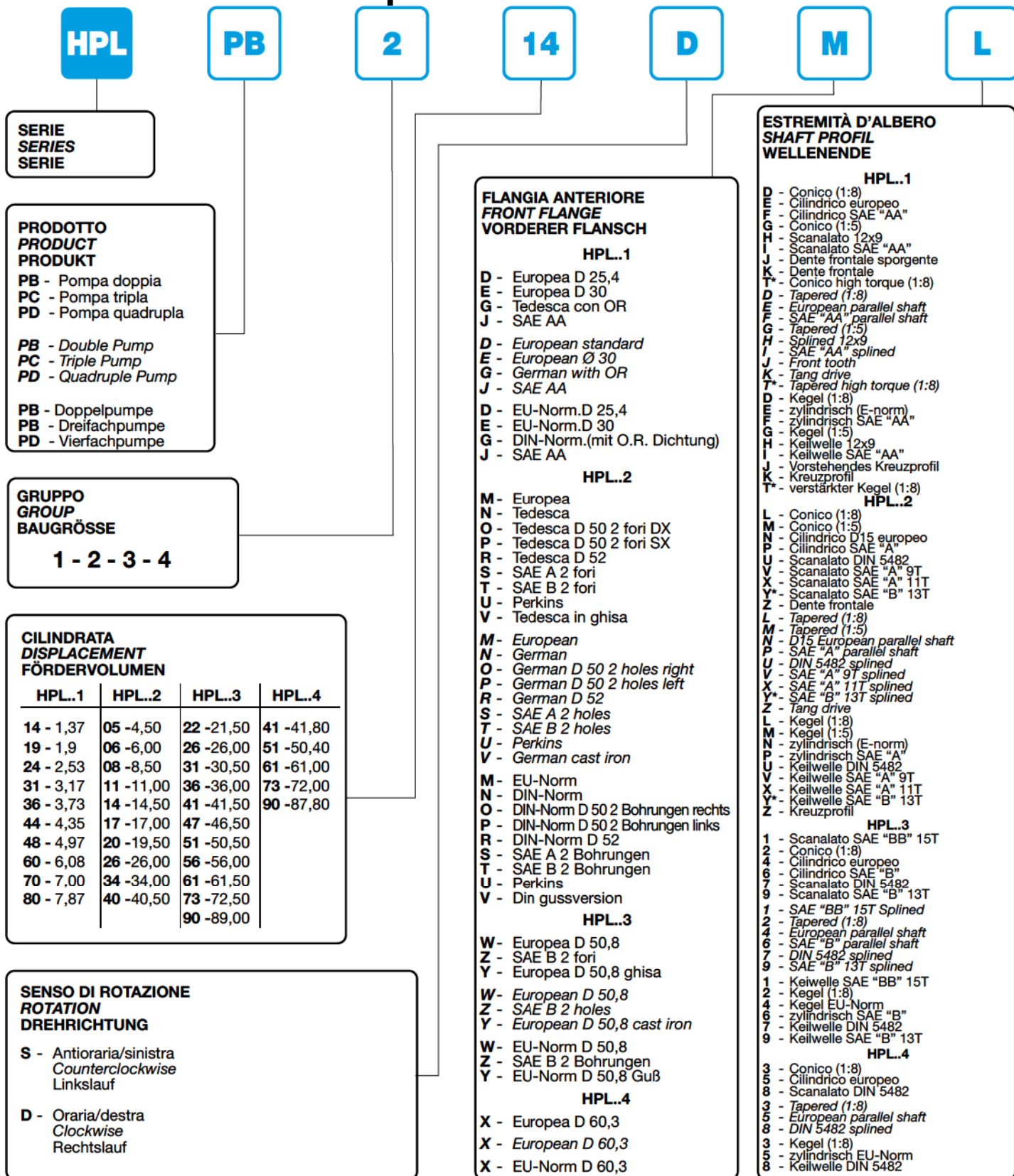


HPLP•3+HPLP•1



ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

1° STADIO (Descrizione dello Stadio - Stage's Description - Stufen-Benennung)



SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKT
PB - Pompa doppia
PC - Pompa tripla
PD - Pompa quadrupla

PB - Double Pump
PC - Triple Pump
PD - Quadruple Pump

PB - Doppelpumpe
PC - Dreifachpumpe
PD - Vierfachpumpe

GRUPPO
GROUP
BAUGRÖSSE

1 - 2 - 3 - 4

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

HPL..1	HPL..2	HPL..3	HPL..4
14 - 1,37	05 -4,50	22 -21,50	41 -41,80
19 - 1,9	06 -6,00	26 -26,00	51 -50,40
24 - 2,53	08 -8,50	31 -30,50	61 -61,00
31 - 3,17	11 -11,00	36 -36,00	73 -72,00
36 - 3,73	14 -14,50	41 -41,50	90 -87,80
44 - 4,35	17 -17,00	47 -46,50	
48 - 4,97	20 -19,50	51 -50,50	
60 - 6,08	26 -26,00	56 -56,00	
70 - 7,00	34 -34,00	61 -61,50	
80 - 7,87	40 -40,50	73 -72,50	
		90 -89,00	

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
Counterclockwise
 Linkslauf

D - Oraria/destra
Clockwise
 Rechtslauf

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

HPL..1
D - Europea D 25,4
E - Europea D 30
G - Tedesca con OR
J - SAE AA

D - European standard
E - European Ø 30
G - German with OR
J - SAE AA

D - EU-Norm.D 25,4
E - EU-Norm.D 30
G - DIN-Norm.(mit O.R. Dichtung)
J - SAE AA

HPL..2
M - Europea
N - Tedesca
O - Tedesca D 50 2 fori DX
P - Tedesca D 50 2 fori SX
R - Tedesca D 52
S - SAE A 2 fori
T - SAE B 2 fori
U - Perkins
V - Tedesca in ghisa

M - European
N - German
O - German D 50 2 holes right
P - German D 50 2 holes left
R - German D 52
S - SAE A 2 holes
T - SAE B 2 holes
U - Perkins
V - German cast iron

HPL..3
W - Europea D 50,8
Z - SAE B 2 fori
Y - Europea D 50,8 ghisa

W - European D 50,8
Z - SAE B 2 holes
Y - European D 50,8 cast iron

W - EU-Norm D 50,8
Z - SAE B 2 Bohrungen
Y - EU-Norm D 50,8 Guß

HPL..4
X - Europea D 60,3
X - European D 60,3
X - EU-Norm D 60,3

ESTREMITÀ D'ALBERO
SHAFT PROFIL
WELLENENDE

HPL..1
D - Conico (1:8)
E - Cilindrico europeo
F - Cilindrico SAE "AA"
G - Conico (1:5)
H - Scanalato 12x9
I - Scanalato SAE "AA"
J - Dente frontale sporgente
K - Dente frontale
T* - Conico high torque (1:8)
D - Tapered (1:8)
F - European parallel shaft
E - SAE "AA" parallel shaft
G - Tapered (1:5)
H - Splined 12x9
I - SAE "AA" splined
J - Front tooth
K - Tang drive
T* - Tapered high torque (1:8)
D - Kegel (1:8)
E - zylindrisch (E-norm)
F - zylindrisch SAE "AA"
G - Kegel (1:5)
H - Keilwelle 12x9
I - Keilwelle SAE "AA"
J - Vorstehendes Kreuzprofil
K - Kreuzprofil
T* - verstärkter Kegel (1:8)

HPL..2
L - Conico (1:8)
M - Conico (1:5)
N - Cilindrico D15 europeo
P - Cilindrico SAE "A"
U - Scanalato DIN 5482
V - Scanalato SAE "A" 9T
X - Scanalato SAE "A" 11T
Y* - Scanalato SAE "B" 13T
Z - Dente frontale
L - Tapered (1:8)
M - Tapered (1:5)
N - D15 European parallel shaft
P - SAE "A" parallel shaft
U - DIN 5482 splined
V - SAE "A" 9T splined
X - SAE "A" 11T splined
Y* - SAE "B" 13T splined
Z - Tang drive
L - Kegel (1:8)
M - Kegel (1:5)
N - zylindrisch (E-norm)
P - zylindrisch SAE "A"
U - Keilwelle DIN 5482
V - Keilwelle SAE "A" 9T
X - Keilwelle SAE "A" 11T
Y* - Keilwelle SAE "B" 13T
Z - Kreuzprofil

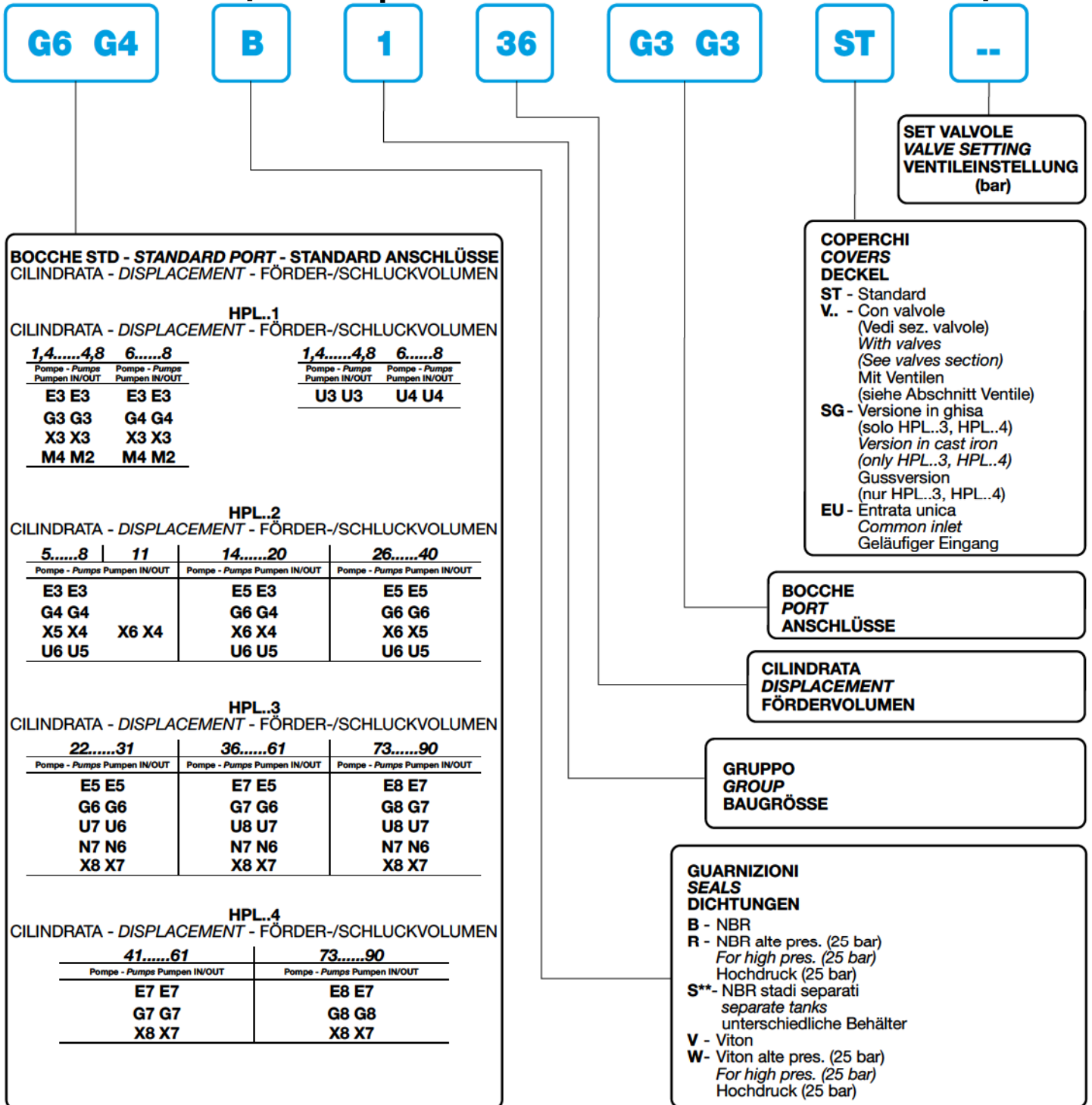
HPL..3
1 - Scanalato SAE "BB" 15T
2 - Conico (1:8)
4 - Cilindrico europeo
6 - Cilindrico SAE "B"
7 - Scanalato DIN 5482
9 - Scanalato SAE "B" 13T
1 - SAE "BB" 15T Splined
2 - Tapered (1:8)
4 - European parallel shaft
6 - SAE "B" parallel shaft
7 - DIN 5482 splined
9 - SAE "B" 13T splined
1 - Keilwelle SAE "BB" 15T
2 - Kegel (1:8)
4 - Kegel EU-Norm
6 - zylindrisch SAE "B"
7 - Keilwelle DIN 5482
9 - Keilwelle SAE "B" 13T

HPL..4
3 - Conico (1:8)
5 - Cilindrico europeo
8 - Scanalato DIN 5482
3 - Tapered (1:8)
5 - European parallel shaft
8 - DIN 5482 splined
3 - Kegel (1:8)
5 - zylindrisch EU-Norm
8 - Keilwelle DIN 5482

* Per le cilindrate disponibili rivolgersi all'ufficio tecnico- Contact technical office for available displacements - Für die erhältlichen Fördervolumina sich an die technische Abteilung wenden



STADI SUCCESSIVI - STAGE'S FOLLOWING - FOLGESTUFEN
(Descrizione dello Stadio - Stage's Description - Stufen Benennung)



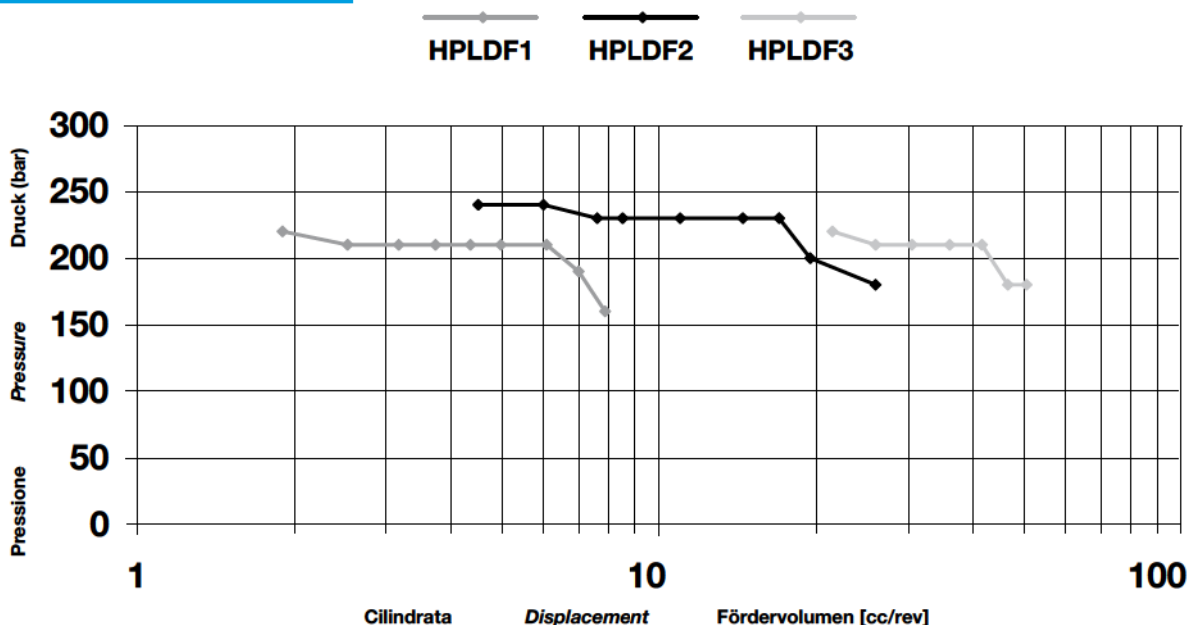
PER OGNI STADIO AGGIUNTO
RIPETERE LA DESCRIZIONE

DESCRIPTION TO BE REPETED
FOR EVERY ADDED SECTION

FÜR JEDE STUFE BITTE DIE
BESCHREIBUNG WIEDERHOLEN.

** Non disponibile per il Gruppo 3- ** Not available for Group 3 - ** Nicht vorhanden für Gruppe 3

PROGRAMMA DI PRODUZIONE PRODUCTION RANGE MENGENTEILER

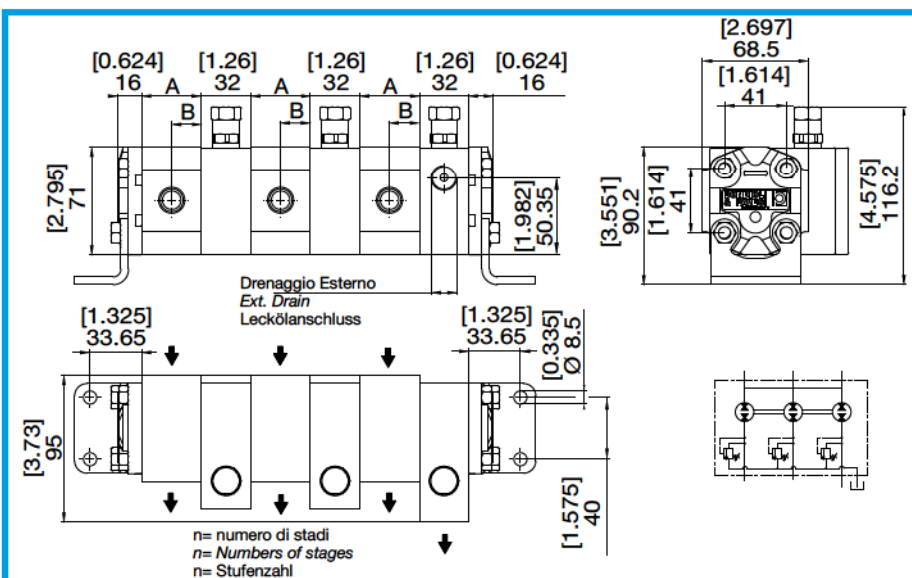
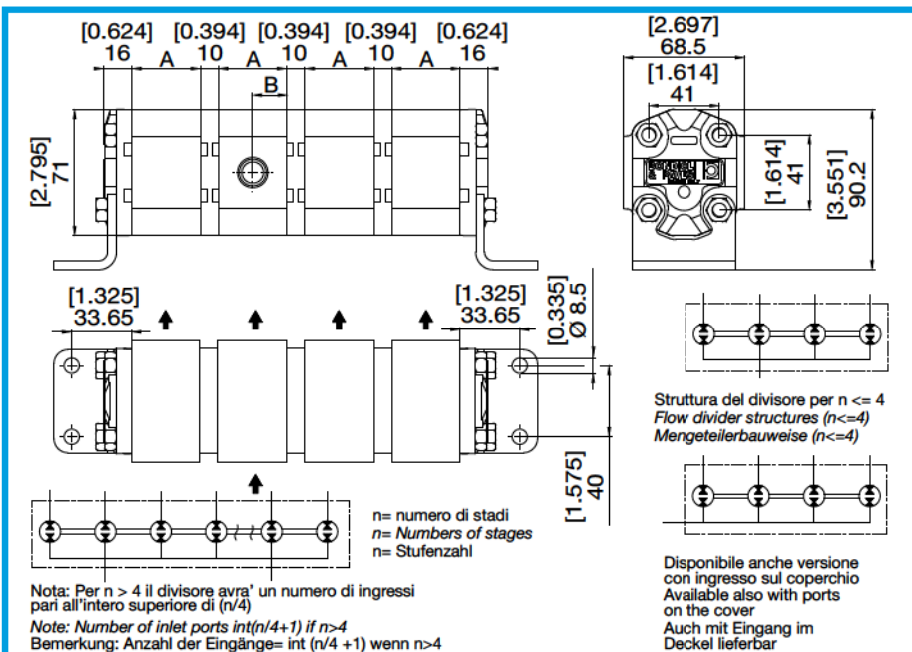
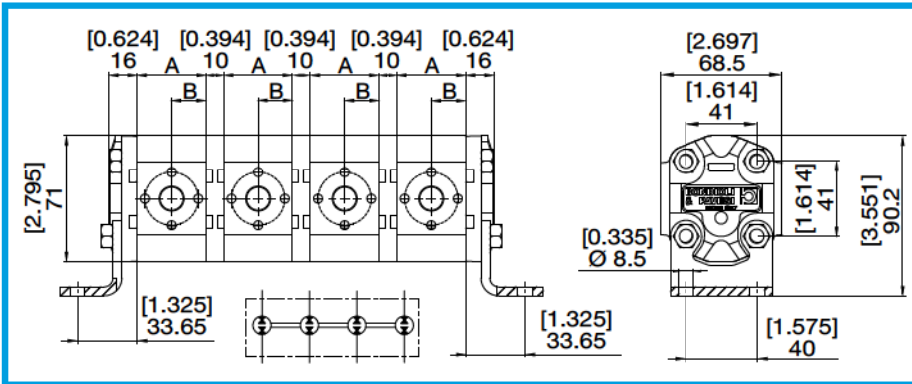


DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		PRESSIONE PRESSURE DRUCK				ΔP MAX TRA LE SEZIONI ΔP MAX OUTLET BETWEEN SECTIONS ΔP ZWISCHEN DEN STUFEN		VELOCITÀ DI ROTAZIONE SPEED DREHZAHL	
		cm ³	in ³	bar	psi	bar	psi	bar	psi	MIN min ⁻¹	MAX min ⁻¹
1	19	1,90	0,12	220	3191	260	3771	190	2756	4800	700
	24	2,53	0,15	210	3046	250	3626	180	2611		
	31	3,17	0,19	210	3046	250	3626	180	2611		
	36	3,73	0,23	210	3046	250	3626	180	2611		
	44	4,35	0,27	210	3046	250	3626	180	2611	3600	
	48	4,97	0,30	210	3046	250	3626	180	2611		
	60	6,08	0,37	210	3046	250	3626	180	2611		
	70	7,00	0,43	190	2756	210	3046	160	2321		
80	7,87	0,48	160	2321	180	2611	130	1885			
2	05	4,50	0,27	240	3481	260	3771	210	3046	4000	700
	06	6,00	0,37	240	3481	260	3771	210	3046		
	08	8,50	0,52	230	3336	250	3626	200	2901		
	11	11,00	0,67	230	3336	250	3626	200	2901		
	14	14,50	0,88	230	3336	250	3626	200	2901	3400	
	17	17,00	1,04	230	3336	250	3626	200	2901		
	20	19,50	1,19	200	2901	220	3191	170	2466		
26	26,00	1,59	180	2611	190	2756	150	2176			
3	22	21,50	1,31	220	3191	250	3626	190	2756	3500	700
	26	26,00	1,59	210	3046	250	3626	180	2611		
	31	30,50	1,86	210	3046	250	3626	180	2611		
	36	36,00	2,20	210	3046	250	3626	180	2611		
	41	41,50	2,53	210	3046	250	3626	180	2611		
	47	46,50	2,84	180	2611	210	3046	150	2176		
51	50,50	3,08	180	2611	210	3076	150	2176			



HPLDF.1

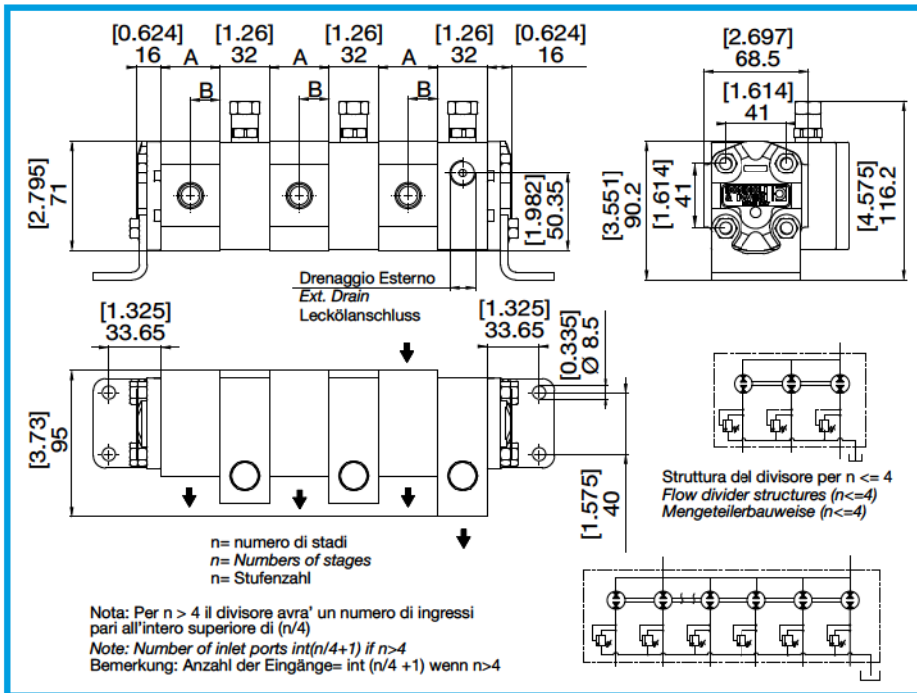


**DIMENSIONI
SIZE
ABMESSUNGEN**

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
1	19	38,7	1,524	19,4	0,762
	24	38,7	1,524	19,4	0,762
	31	38,7	1,524	19,4	0,762
	36	45,35	1,785	22,7	0,893
	44	45,35	1,785	22,7	0,893
	48	45,35	1,785	22,7	0,893
	60	56,05	2,207	28,0	1,103
	70	56,05	2,207	28,0	1,103
	80	56,05	2,207	28,0	1,103

DIVISORI DI FLUSSO
FLOW DIVIDERS
MENGENTEILER

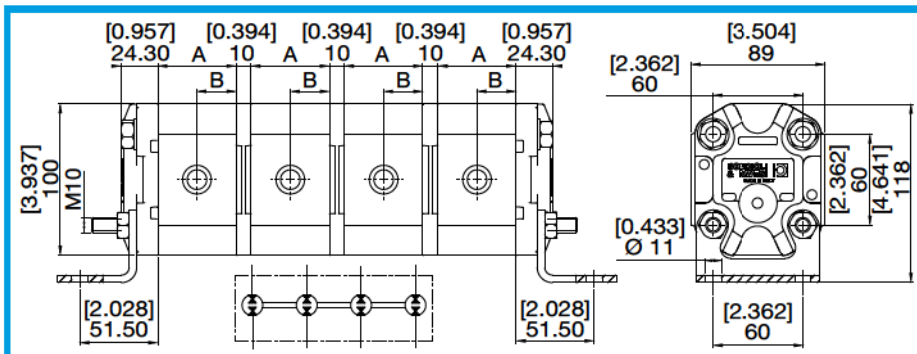
HPLDF..



HPLDF.1

DIMENSIONI
SIZE
ABMESSUNGEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
1	19	38,7	1,524	19,4	0,762
	24	38,7	1,524	19,4	0,762
	31	38,7	1,524	19,4	0,762
	36	45,35	1,785	22,7	0,893
	44	45,35	1,785	22,7	0,893
	48	45,35	1,785	22,7	0,893
	60	56,05	2,207	28,0	1,103
	70	56,05	2,207	28,0	1,103
	80	56,05	2,207	28,0	1,103



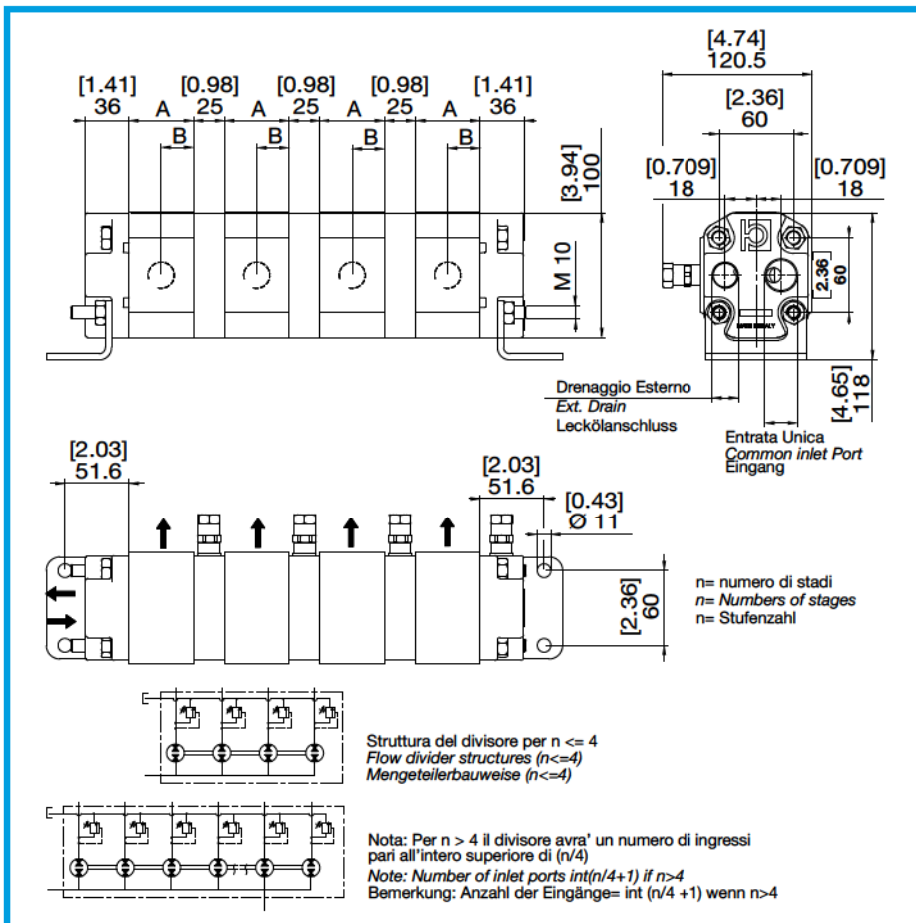
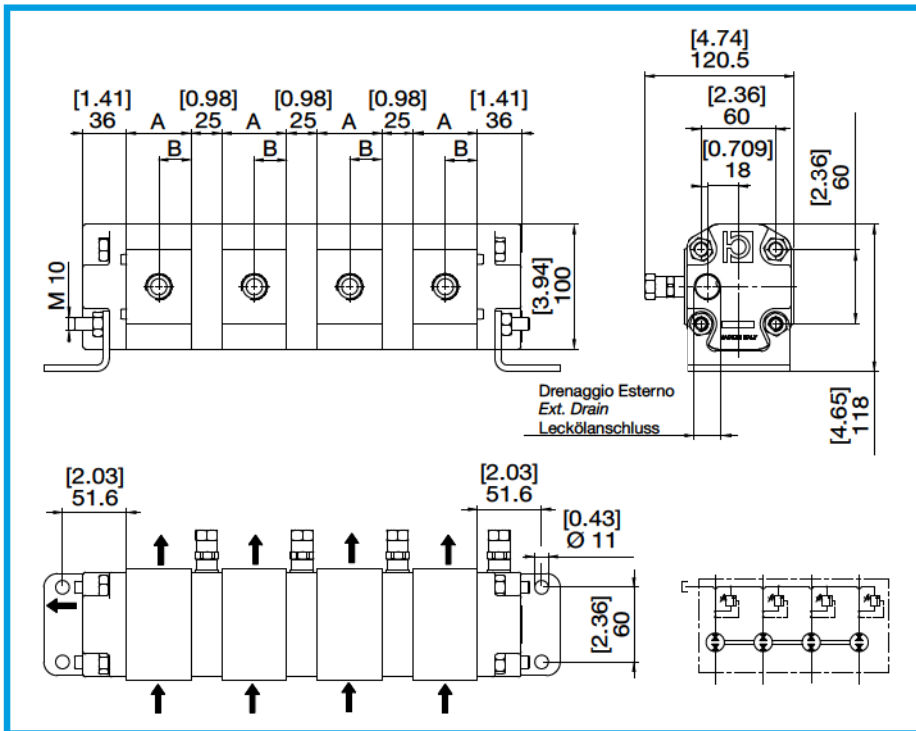
HPLDF.2

DIMENSIONI
SIZE
ABMESSUNGEN

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
2	05	49,15	1,935	24,6	0,968
	06	51,85	2,041	25,9	1,021
	08	56,35	2,219	28,2	1,109
	11	60,85	2,396	30,4	1,198
	14	67,25	2,648	33,6	1,324
	17	71,75	2,825	35,9	1,412
	20	76,25	3,002	38,1	1,501
	26	88,55	3,486	44,3	1,743



HPLDF.2

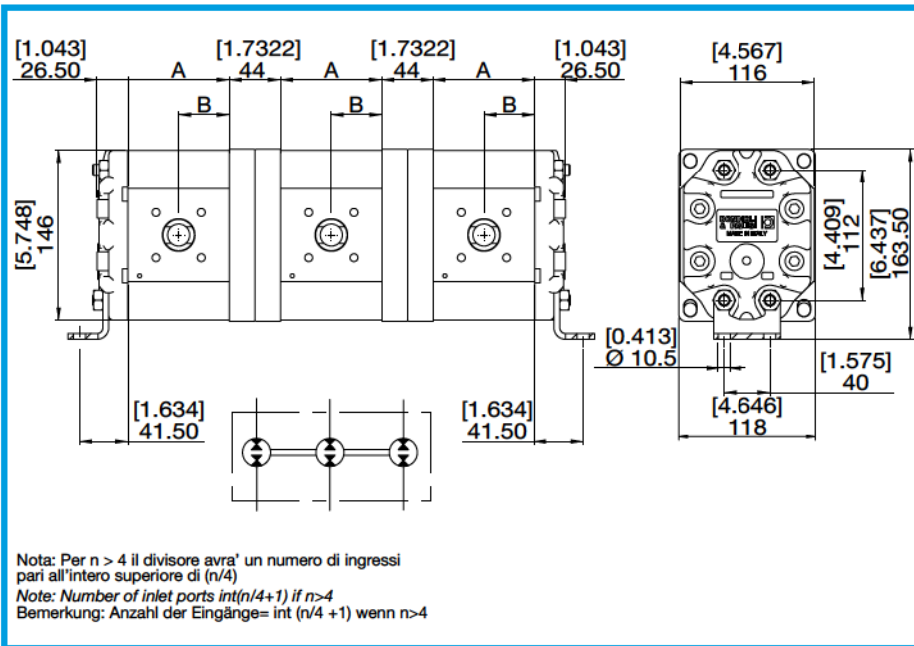


**DIMENSIONI
SIZE
ABMESSUNGEN**

GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
2	05	49,15	1,935	24,6	0,968
	06	51,85	2,041	25,9	1,021
	08	56,35	2,219	28,2	1,109
	11	60,85	2,396	30,4	1,198
	14	67,25	2,648	33,6	1,324
	17	71,75	2,825	35,9	1,412
	20	76,25	3,002	38,1	1,501
	26	88,55	3,486	44,3	1,743

DIVISORI DI FLUSSO
FLOW DIVIDERS
MENGENTEILER

HPLDF..



HPLDF.3

DIMENSIONI
SIZE
ABMESSUNGEN

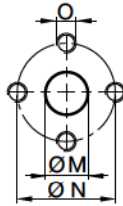
GRUPPO GROUP BAUREIHE	TIPO TYPE TYP	A		B	
		mm	in	mm	in
3	22	81,07	3,192	40,5	1,594
	26	84,07	3,310	42,0	1,654
	31	87,07	3,428	43,5	1,714
	36	91,07	3,585	45,5	1,793
	41	95,07	3,743	47,5	1,870
	47	98,07	3,861	49,0	1,929
51	101,07	3,979	50,5	1,990	



**BOCCHIE
PORTS
ANSCHLÜSSE**

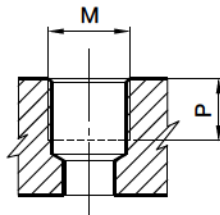
HPLDF..

E LATERALE
LATERAL
SEITLICH



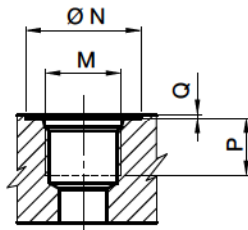
TIPO TYPE TYP	M		N		O
	mm	in	mm	in	
E3	13	0,51	30	1,18	M6
E5	20	0,79	40	1,57	M8
E7	27	1,34	51	2,01	M10

G LATERALE
LATERAL
SEITLICH
T POSTERIORE
REAR
HINTEN



TIPO TYPE TYP	M	P	
		mm	in
G3	3/8" GAS BSPP	12	0,47
G4	1/2" GAS BSPP	16	0,63
G6	3/4" GAS BSPP	19	0,75
G7	1" GAS BSPP	21	0,83
T4	1/2" GAS BSPP	16	0,63
T6	3/4" GAS BSPP	19	0,75

U LATERALE
LATERAL
SEITLICH
C POSTERIORE
REAR
HINTEN



TIPO TYPE TYP	TIPO TYPE TYP	N		P		Q		M
		mm	in	mm	in	mm	in	
U3	3/8"	25	0,98	13	0,3	0,3	0,01	9/16"-18 UNF
U4	1/2"	30	1,18	15	0,3	0,3	0,01	3/4"-16 UNF
U5	5/8"	34	1,34	17	0,67	0,3	0,01	7/8"-14 UNF
U6	3/4"	41	1,61	19	0,75	0,3	0,01	1-1/16"-12 UNF
U7	1"	49	1,93	19	0,75	0,3	0,01	1-5/16"-12 UNF
C5	5/8"	34	1,34	17	0,67	0,3	0,01	7/8"-14 UNF
C6	3/4"	41	1,61	19	0,75	0,3	0,01	1-1/16"-12 UNF

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPLDF..

HPL **DF** **2** **2** **11** **G4 G4** **B** **ST** **--**

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKT

DF - Divisori di flusso
Flow dividers
 Mengenteiler

2 - 3 - 4 - 5 - 6
 N° degli Stadi
 N° Stage
 N° Stufen

GRUPPO
GROUP
BAUGRÖSSE

1 - 2 - 3

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

HPLDF.1	HPLDF.2	HPLDF.3
19 - 1,90	05 - 4,50	22 - 21,50
24 - 2,53	06 - 6,00	26 - 26,00
31 - 3,17	08 - 8,50	31 - 30,50
36 - 3,73	11 - 11,00	36 - 36,00
44 - 4,35	14 - 14,50	41 - 41,50
48 - 4,97	17 - 17,00	47 - 46,50
60 - 6,08	20 - 19,50	51 - 50,50
70 - 7,00	26 - 26,00	
80 - 7,87		

SET VALVOLE
VALVE SETTING
VENTILEINSTELLUNG
 (bar)

COPERCHI - COVERS - DECKEL

ST - Standard
SG - Versione in ghisa (solo HPLDF.3)
Version in cast iron (only HPLDF.3)
 Gussversion (nur HPLDF.3)
VE - Con valvole (Vedi sez. valvole)
With valves (See valves section)
 Mit Ventilen (siehe Ventile Abschnitt)

GUARNIZIONI
SEALS
DICHTUNGEN

B - NBR

V - Viton

BOCCHIE STD - STANDARD PORT - STANDARD ANSCHLÜSSE

HPLDF.1

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

1,9.....4,8			6.....8		
IN/OUT		DRAIN	IN/OUT		DRAIN
E3 E3		G3	E3 E3		G3
G3 G3		G3	G4 G4		G3
U3 U3		U3	U4 U4		U3

ASPIRAZIONE UNICA COPERCHIO - COVER COMMON INLET - EINGANG DECKEL

T4 G3		G3	T4 G4		G3
C5 U3		U3	U5 U4		U3

ASPIRAZIONE UNICA CORPO - BODY COMMON INLET - EINGANG GEHÄUSE

G4 G3		G3	G6 G4		G3
U4 U3		U3	U5 U4		U3

HPLDF.2

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

5.....11		14.....20		26	
IN/OUT	DRAIN	IN/OUT	DRAIN	IN/OUT	DRAIN
E3 E3	G4	E5 E5	G4	E5 E5	G4
G4 G4	G4	G6 G6	G4	G6 G6	G4
U5 U5	U4	U6 U6	U4	U6 U6	U4

ASPIRAZIONE UNICA COPERCHIO - COVER COMMON INLET - EINGANG DECKEL

T6 G4	G4	T6 G4	G4	T6 G4	G4
C6 U5	U4	C6 U5	U4	C6 U5	U4

ASPIRAZIONE UNICA CORPO - BODY COMMON INLET - EINGANG GEHÄUSE

G6 G4	G4	G6 G4	G4	G7 G6	G4
U6 U4	U4	U6 U5	U4	U7 U6	U4

HPLDF.3

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

22.....31		36.....51	
IN/OUT		IN/OUT	
E5 E5		E7 E7	
G6 G6		G7 G7	
U6 U6		U7 U7	

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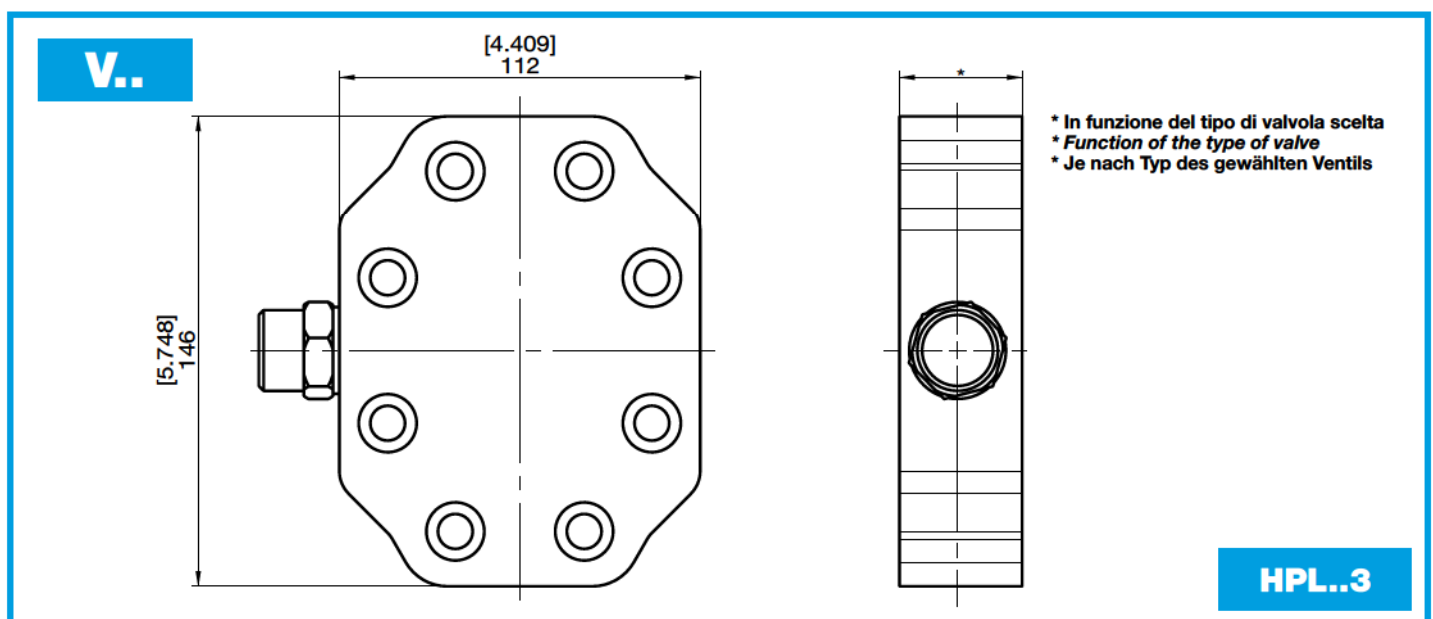
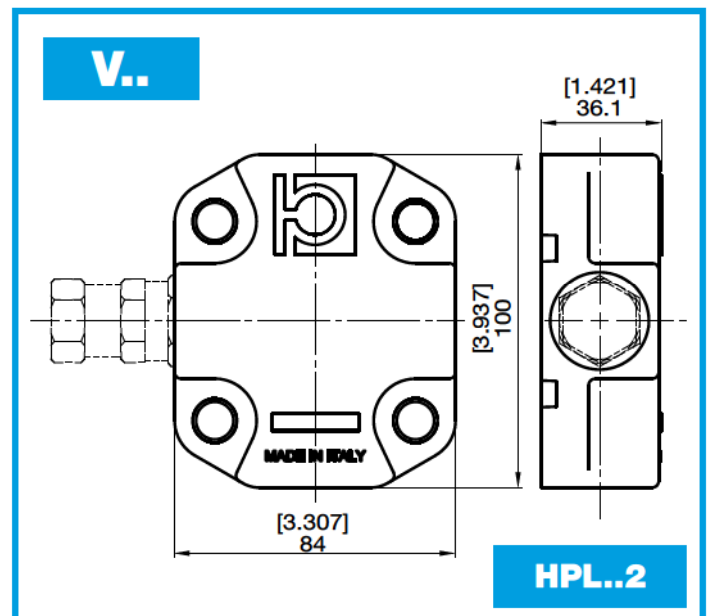
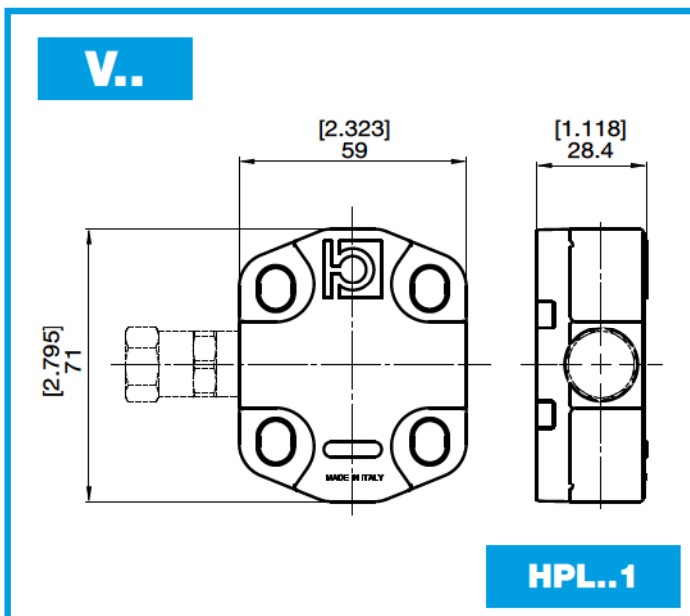
**POMPE E MOTORI CON VALVOLE INTEGRATE
INTEGRATED VALVES FOR PUMP AND MOTORS
PUMPEN UND MOTOREN MIT INTEGRIERTEN VENTILEN**

Con lo scopo di integrare più funzioni in un unico componente il circuito idraulico e quindi per ridurre anche la circuitistica d'impianto è possibile incorporare nel coperchio della pompa e/o del motore alcuni tipi di valvole di controllo della portata (valvole prioritarie) e della pressione oltre a valvole di non ritorno. Per ottenere informazioni più accurate della gamma di personalizzazioni si prega di contattare il nostro servizio tecnico-commerciale.

To integrate many functions into a single component of the hydraulic circuit and to limit the installation circuitry, it is possible to have some types of flow control valves (priority valves), pressure control valves, and check valves incorporated into the pump/motor cover.

For further information about the series of customized solutions, please contact our Technical and Commercial Department.

Um mehrere Funktionen in einem einzigen Bauteil des Hydraulikkreislaufs zusammenzufassen und, um die Anzahl der Bauteile zu reduzieren, können in den Deckel der Pumpe und/oder des Motors einige Ventiltypen zur Regelung von Durchfluss (Prioritätsventile) und Druck sowie Rückschlagventile integriert werden. Für nähere Informationen über die Möglichkeiten der Anpassung an Ihre Bedürfnisse wenden Sie sich bitte an unseren technischen Kundendienst und Vertrieb.





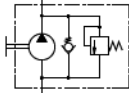
**VALVOLE
VALVES
VENTILE**

VA



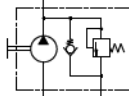
**VALVOLA UNIDIREZIONALE
ANTI-CAVITATION CHECK VALVE
RÜCKSCHLAGVENTIL**

VB



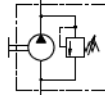
**VALVOLA DI MASSIMA PRESSIONE A TARATURA FISSA DRENAGGIO INTERNO
ANTI-CAVITATION CHECK VALVE AND RELIEF VALVE WITH INTERNAL DRAIN
FESTEINGESTELLTES DRUCKBEGRENZUNGSVENTIL MIT INTERNEM LECKÖL**

VC



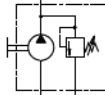
**VALVOLA DI MASSIMA PRESSIONE A TARATURA FISSA DRENAGGIO ESTERNO
ANTI-CAVITATION CHECK VALVE AND RELIEF VALVE WITH EXTERNAL DRAIN
FESTEINGESTELLTES DRUCKBEGRENZUNGSVENTIL MIT EXTERNEM LECKÖL**

VD



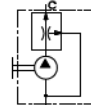
**VALVOLA DI MASSIMA PRESSIONE DIRETTA REGOLABILE A DRENAGGIO INTERNO
PRESSURE RELIEF VALVE WITH INTERNAL DRAIN
EINSTELLBARES DRUCKBEGRENZUNGSVENTIL MIT INTERNEM LECKÖL**

VE



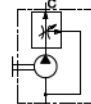
**VALVOLA DI MASSIMA PRESSIONE DIRETTA REGOLABILE A DRENAGGIO ESTERNO
PRESSURE RELIEF VALVE WITH EXTERNAL DRAIN
EINSTELLBARES DRUCKBEGRENZUNGSVENTIL MIT EXTERNEM LECKÖL**

VF



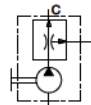
**VALVOLA REGOLATRICE DI FLUSSO COMPENSATA A TARATURA FISSA CON RICIRCOLO PORTATA RESIDUA
FIXED PRIORITY FLOW DIVIDER, 2-WAY
FESTEINGESTELLTES DRUCKKOMPENSIERTES STROMREGELVENTIL MIT RESTÖLUMLAUF**

VG



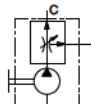
**VALVOLA REGOLATRICE DI FLUSSO COMPENSATA CON RICIRCOLO PORTATA RESIDUA
ADJUSTABLE PRIORITY FLOW DIVIDER, 2-WAY
EINSTELLBARES DRUCKKOMPENSIERTES STROMREGELVENTIL MIT RESTÖLUMLAUF**

VH



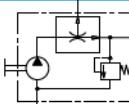
**VALVOLA REGOLATRICE DI FLUSSO COMPENSATA A TARATURA FISSA
FIXED PRIORITY FLOW DIVIDER, 3-WAY
FESTEINGESTELLTES 3-WEGE-STROM-REGELVENTIL MIT DRUCKKOMPENSATION**

VI



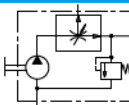
**VALVOLA REGOLATRICE DI FLUSSO COMPENSATA
ADJUSTABLE PRIORITY FLOW DIVIDER, 3-WAY
FESTEINGESTELLTES 3-WEGE-STROM-REGELVENTIL MIT DRUCKKOMPENSATION**

VJ



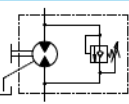
**VALVOLA REGOLATRICE DI FLUSSO COMPENSATA A TARATURA FISSA CON CONTROLLO DI PRESSIONE SU PORTATA COSTANTE
FIXED PRIORITY FLOW DIVIDER, 3-WAY WITH RELIEF ON PRIORITY FLOW
FESTEINGESTELLTES KOMPENSIERTES STROMREGELVENTIL MIT DRUCKBEGRENZUNGSVENTIL**

VK



**VALVOLA REGOLATRICE DI FLUSSO COMPENSATA CON CONTROLLO DI PRESSIONE SU PORTATA COSTANTE
ADJUSTABLE PRIORITY FLOW DIVIDER, 3-WAY WITH RELIEF ON PRIORITY FLOW
FESTEINGESTELLTES KOMPENSIERTES STROMREGELVENTIL MIT DRUCKBEGRENZUNGSVENTIL**

VT



**VALVOLA DI MASSIMA PRESSIONE DIRETTA REGOLABILE A DRENAGGIO INTERNO CON VALVOLA ANTICAVITAZIONE
PRESSURE RELIEF VALVE WITH INTERNAL DRAIN WITH ANTI-CAVITATION CHECK VALVE
EINSTELLBARES DRUCKBEGRENZUNGSVENTIL MIT INTERNEM LECKÖL MIT RÜCKSCHLAGVENTIL**

POMPE HIGH-LOW
HIGH-LOW PUMPS
ZAHNRADPUMPE HIGH-LOW

La pompa ad ingranaggi con logica HIGH-LOW è una pompa tandem con stadi a cilindrate uguali o diverse ed un blocchetto valvolato per permettere l'esclusione della pompa posteriore. Questa pompa viene utilizzata quando il motore elettrico o termico ha potenza limitata.

PRINCIPIO DI FUNZIONAMENTO: quando è richiesta elevata portata e bassa pressione le due pompe funzionano contemporaneamente, quando è richiesta elevata pressione e bassa portata la pompa posteriore viene esclusa rimandando la propria portata in aspirazione con dissipazione di potenza pressoché nulla. Questo permette di sfruttare tutta la potenza erogata del motore sulla prima pompa. La taratura della valvola nella configurazione standard è di 40 bar.

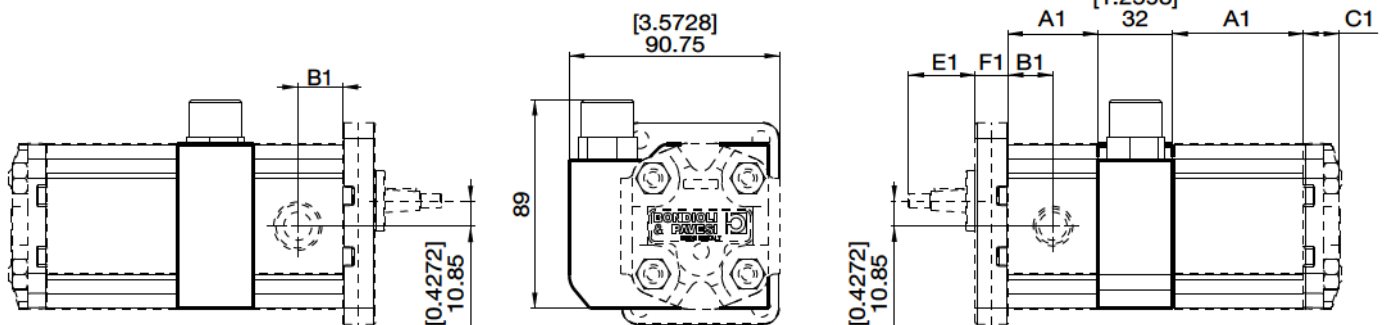
The HIGH-LOW pump is a tandem pump with equal or dissimilar displacements and a section with valves to allow the unloading of the rear pump. This pump is applied when the main electric or engine motor has limited power.

WORKING: when high flow and low pressure is required the flow of both sections is combined at the outlet port, but when high pressure and low flow is required the rear pump is unloaded into the inlet port with negligible adsorbed power. This enables the use of all the power supplied by the motor to the first pump. The valve setting in the standard version is 40 bar.

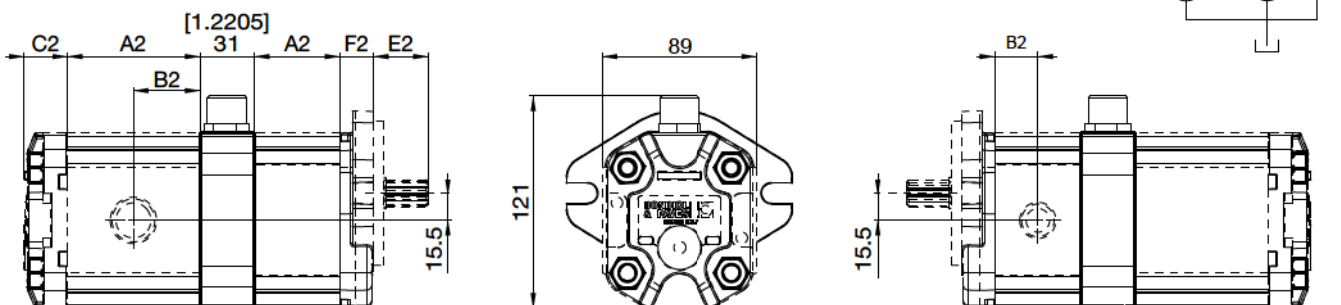
Die Zahnradpumpe mit HIGH-LOW-Logik ist eine Tandempumpe mit 2 gleichen oder unterschiedlichen Fördervolumina und einem integrierten Ventilblock, um die hintere Pumpe abzuschalten. Diese Lösung wird verwendet, wenn der antreibende Elektro- oder Verbrennungsmotor eine begrenzte Leistung hat.

FUNKTIONSPRINZIP: Wenn besonders große Fördermengen bei niedrigem Druck benötigt werden, arbeiten beide Pumpen gleichzeitig. Bei hohem Druckbedarf und niedriger Fördermenge wird die hintere Pumpe abgeschaltet, indem deren Fördermenge in die Ansaugung der ersten Pumpe geleitet wird. Der Leistungsverlust ist dabei vernachlässigbar. Auf diese Weise kommt die gesamte verfügbare Motorleistung der ersten Pumpe zugute. Standardmäßig ist das Ventil auf 40 bar eingestellt.

HPLPH1

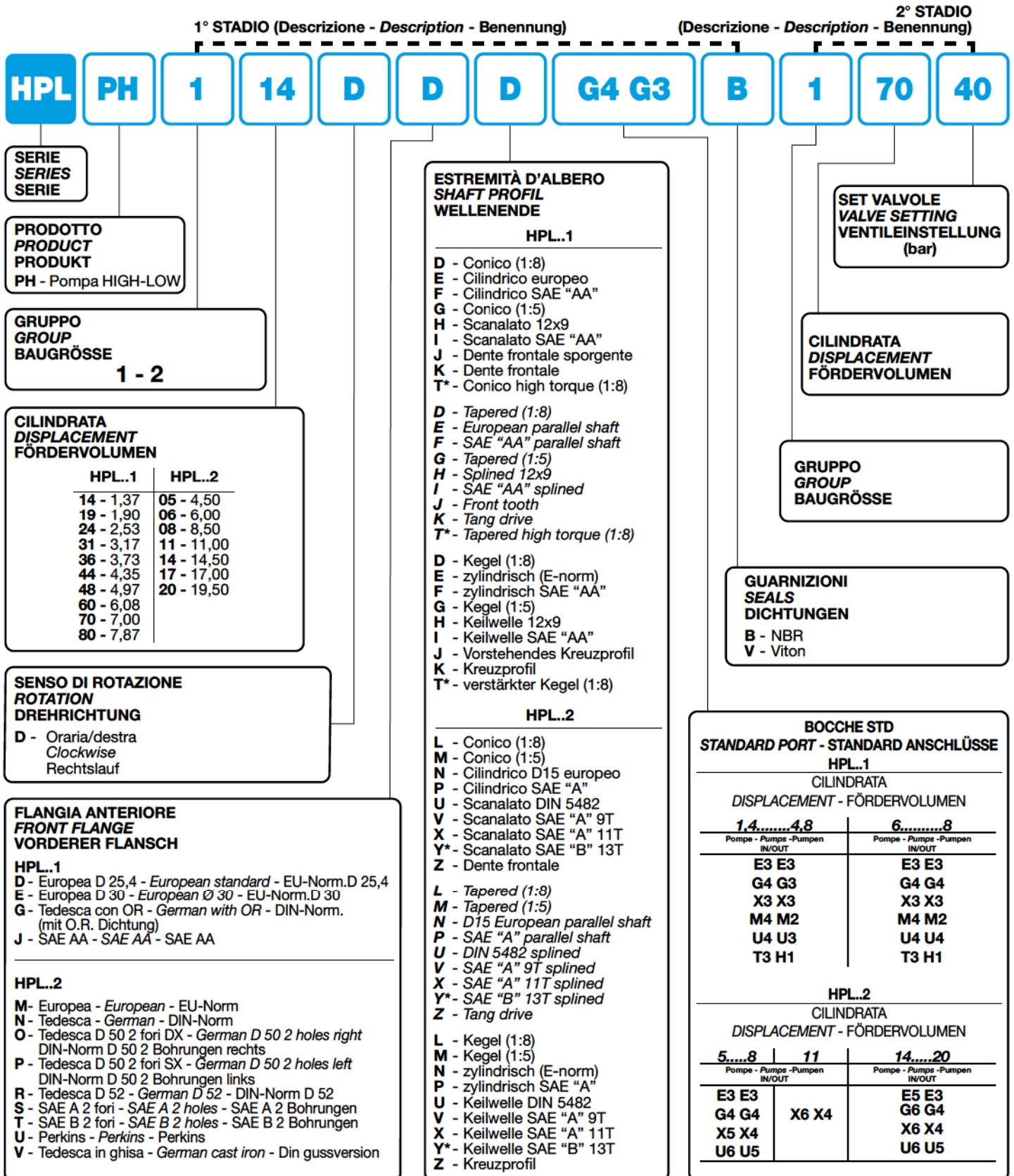


HPLPH2





ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLEANLEITUNG



* Per le cilindrate disponibili rivolgersi all'ufficio tecnico - Contact technical office for available displacements - Für die erhältlichen Fördervolumina sich an die technische Abteilung wenden

**SUPPORTI
SPLINDES
VORSATZLAGER**

Per l'utilizzo delle pompe e dei motori in presenza di carichi assiali e/o radiali (trascinamento per mezzo di cinghie o catene e ruote dentate a ingranaggi dritti o elicoidali). In funzione dell'entità dei carichi esterni sono disponibili diversi tipi di supporti. I diagrammi sottoriportati guidano nella appropriata scelta del supporto. Fornibile separatamente (Cod. HPL5...) o montati sulla Pompa/Motore.

Bearings are suited for using pumps and motors in event of axial and/or radial loads (driving is carried out by means of belts or chains and sprocket wheels with straight-tooth/spiral gear). Different types of supports are available based on the different types of external load. Refer to the following diagrams to select the proper type of support. Available separately (Cod. HPL5...) or mounted on the units.

Vorsatzlager werden verwendet, wenn auf die Pumpen/Motoren Axial- und/oder Radiallasten einwirken. Dabei erfolgt die Kraftübertragung über Riemen- oder Kettenantriebe mit geraden oder schräggestellten Zahnradern. Je nach Ausmaß der externen Lasten sind verschiedene Lagertypen verfügbar. Die untenstehenden Diagramme dienen als Leitfaden für die richtige Auswahl des Lagers.

HPL5921C1R

Z14 25X22 DIN 5482

HPL5921C2R

Z14 25X22 DIN 5482

HPL...1 FLANGIA STANDARD EUROPEA CENTRAGGIO Ø 50,8
EUROPEAN FRONT FLANGE Ø 50,8
VORSATZLAGER EU-NORM Ø 50,8

HPL5922B1R

A32X28 DIN 5482

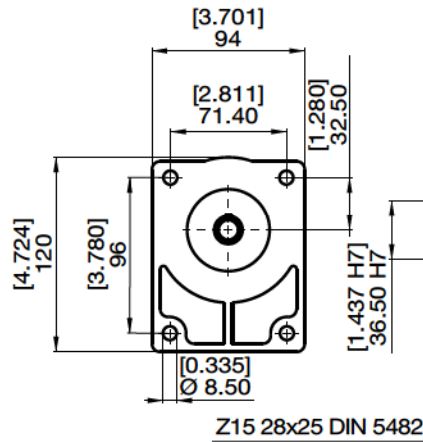
HPL5922B3R

A 28X25 DIN 5482

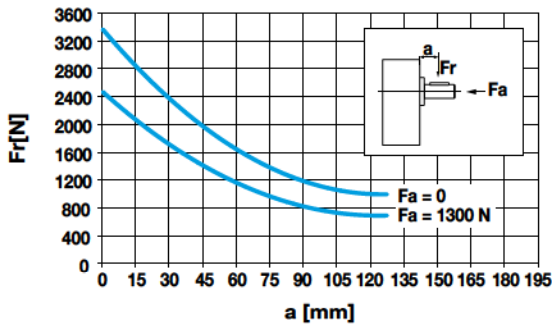
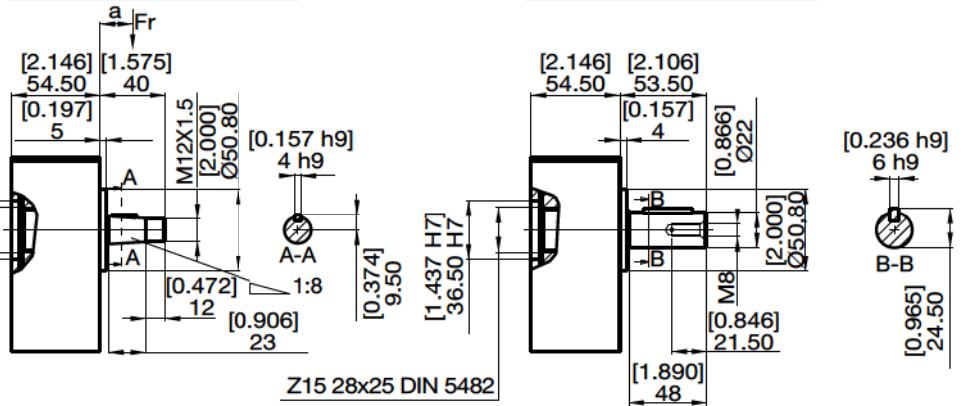
HPL...2 FLANGIA STANDARD TEDESCA CENTRAGGIO Ø 80
GERMAN FRONT FLANGE Ø 80
VORSATZLAGER EU-NORM Ø 80



HPL5922C3R



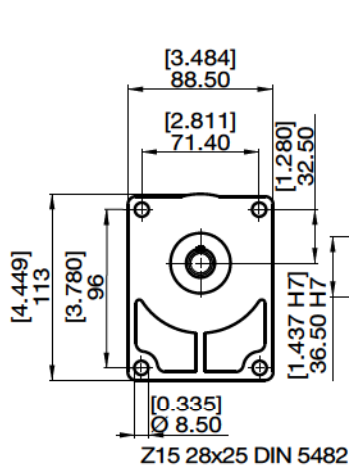
HPL5922C4R



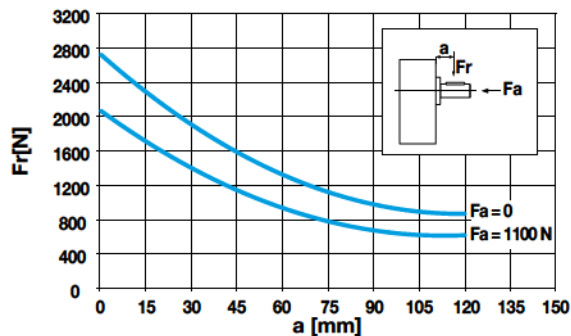
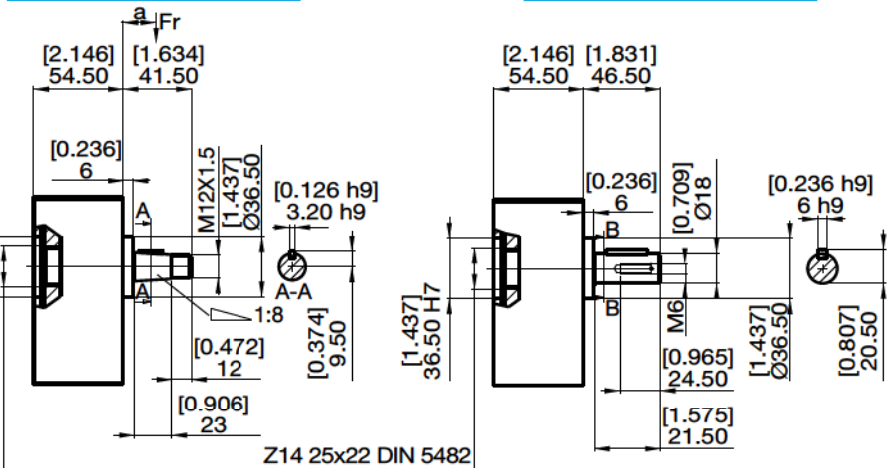
HPL...2

FLANGIA STANDARD EUROPEA CENTRAGGIO Ø 50,8
EUROPEAN FRONT FLANGE Ø 50,8
VORSATZLAGER EU-NORM Ø 50,8

HPL5922C5R



HPL5922C6R

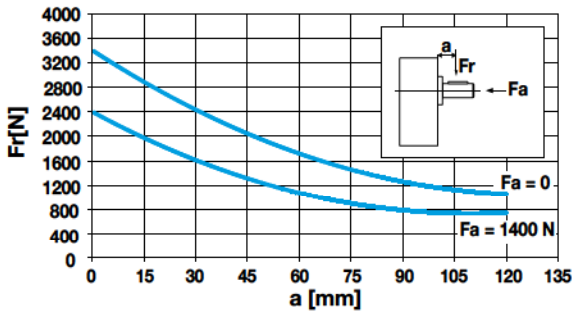
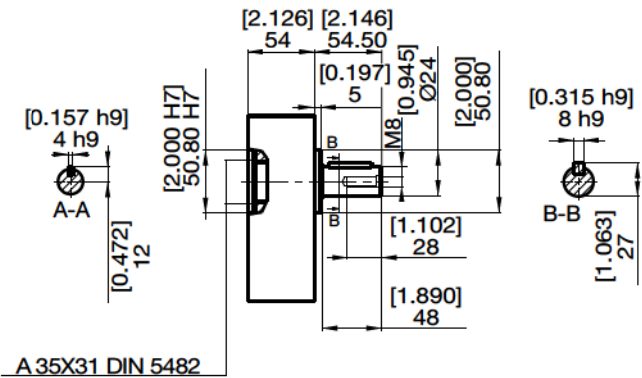
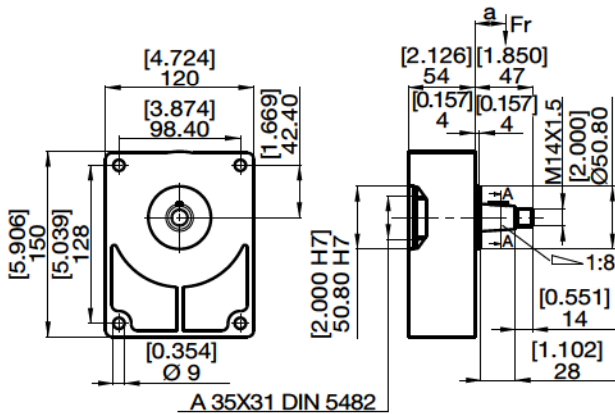


HPL...2

FLANGIA STANDARD EUROPEA CENTRAGGIO Ø 36,5
EUROPEAN FRONT FLANGE Ø 36,5
VORSATZLAGER EU-NORM Ø 36,5

HPL5923C7R

HPL5923C8R

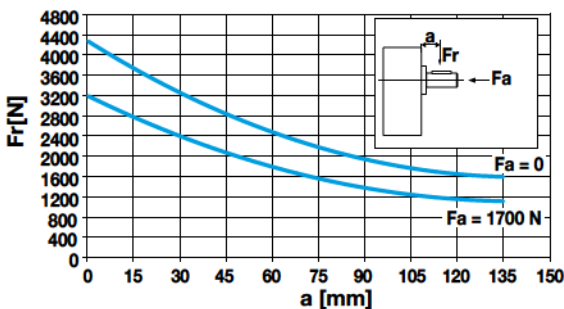
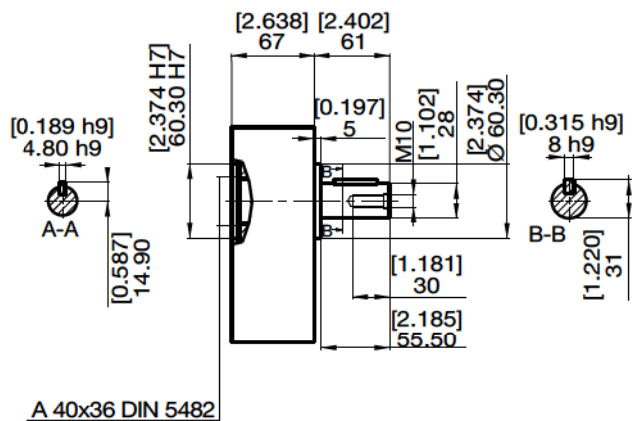
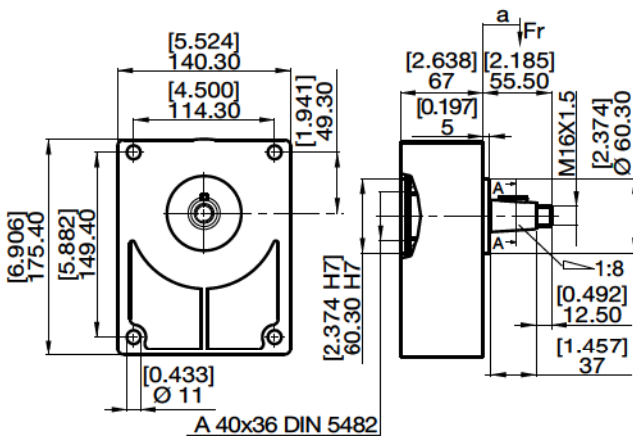


HPL...3

FLANGIA STANDARD EUROPEA CENTRAGGIO Ø 50,8
EUROPEAN FRONT FLANGE Ø 50,8
VORSATZLAGER EU-NORM Ø 50,8

HPL5924C9R

HPL5924C0R

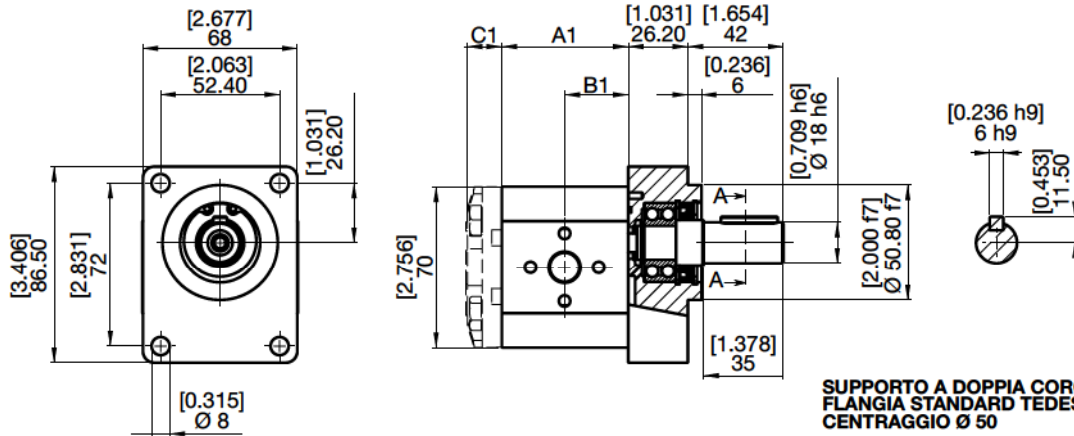


HPL...4

FLANGIA STANDARD EUROPEA CENTRAGGIO Ø 60,3
EUROPEAN FRONT FLANGE Ø 60,3
VORSATZLAGER EU-NORM Ø 60,3



I4



**SUPPORTO A DOPPIA CORONA DI SFERE
FLANGIA STANDARD TEDESCA
CENTRAGGIO Ø 50**

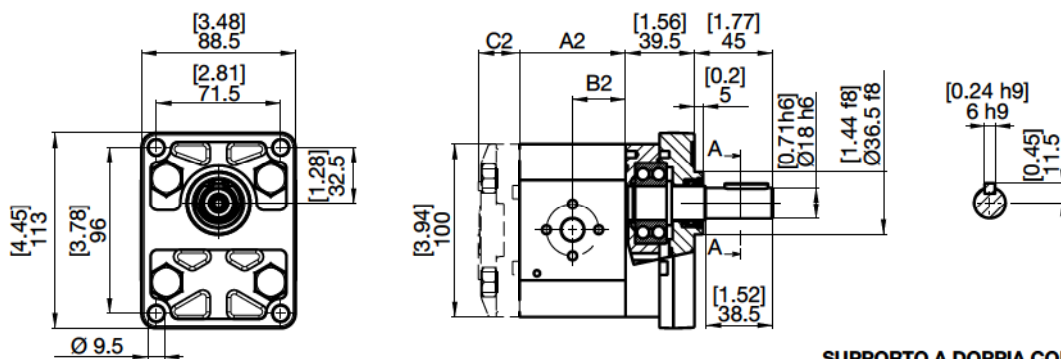
HPL...1

**BEARING SUPPORT
GERMAN FRONT FLANGE Ø 50**

**VORSATZLAGER MIT KUGELLAGER
DIN-NORM Ø 50**

**ESTREMITA' D'ALBERO: CILINDRICO
SHAFT AVAILABLE: PARALLEL VERSION
LIEFERBARE WELLENENDEN: ZYLINDRISCH**

I1



**SUPPORTO A DOPPIA CORONA DI SFERE
FLANGIA STANDARD EUROPEA
CENTRAGGIO Ø 36,50**

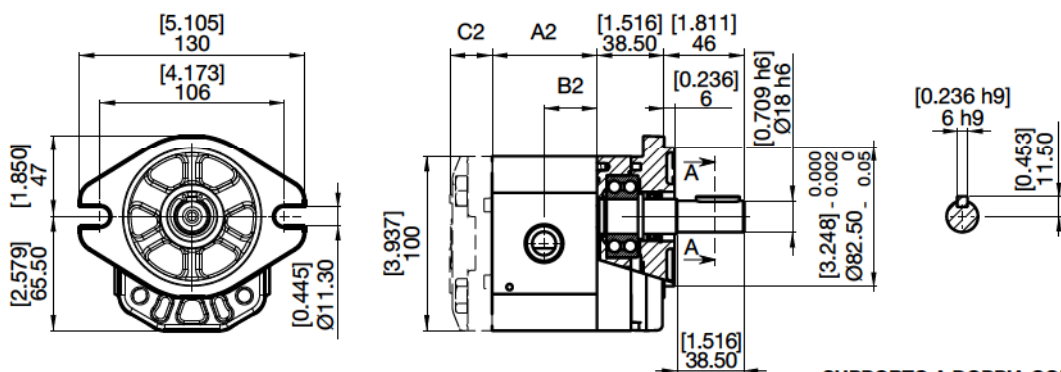
HPL...2

**BEARING SUPPORT
EUROPEAN FRONT FLANGE Ø 36,50**

**VORSATZLAGER MIT KUGELLAGER
EU-NORM Ø 36,50**

**ESTREMITA' D'ALBERO: CILINDRICO
SHAFT AVAILABLE: PARALLEL VERSION
LIEFERBARE WELLENENDEN: ZYLINDRISCH**

I3



**SUPPORTO A DOPPIA CORONA DI SFERE
FLANGIA STANDARD SAE A
CENTRAGGIO Ø 82,50**

HPL...2

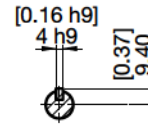
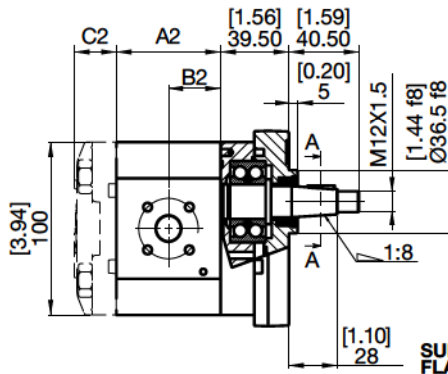
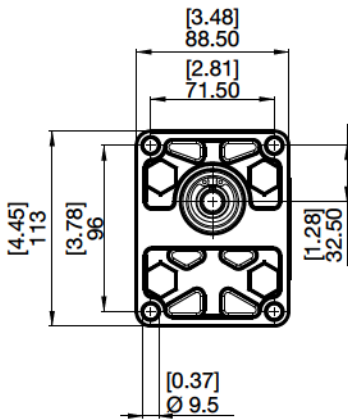
**BEARING SUPPORT
SAE A FRONT FLANGE Ø 82,50**

**VORSATZLAGER MIT KUGELLAGER
SAE A Ø 82,50**

**ESTREMITA' D'ALBERO: CILINDRICO
SHAFT AVAILABLE: PARALLEL VERSION
LIEFERBARE WELLENENDEN: ZYLINDRISCH**

**SUPPORTI INTEGRATI *
INTEGRATED SUPPORT *
INTEGRIERTES LAGER ***

17



**SUPPORTO A DOPPIA CORONA DI SFERE
FLANGIA STANDARD EUROPEA
CENTRAGGIO Ø 36,50**

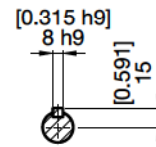
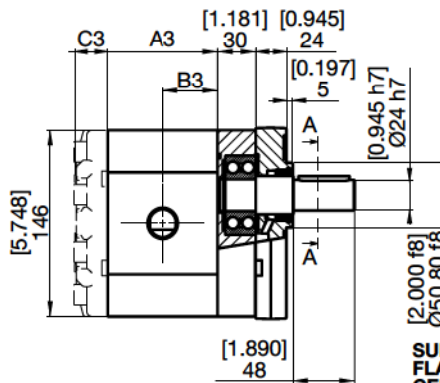
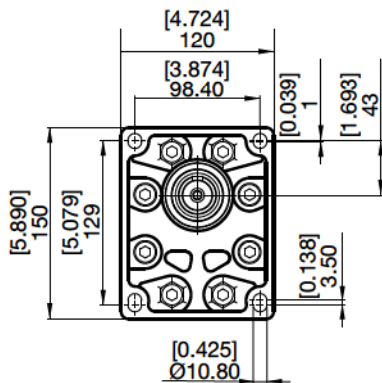
HPL...2

**BEARING SUPPORT
EUROPEAN FRONT FLANGE Ø 36,-50**

**VORSATZLAGER MIT KUGELLAGER
EU-NORM Ø 36,50**

**ESTREMITA' D'ALBERO: CONICO (1:8)
SHAFT AVAILABLE: TAPERED VERSION (1:8)
LIEFERBARE WELLENENDEN: KEGEL (1:8)**

16



**SUPPORTO A DOPPIA CORONA DI SFERE
FLANGIA STANDARD EUROPEA
CENTRAGGIO Ø 50,80**

HPL...3

**BEARING SUPPORT
EUROPEAN FRONT FLANGE Ø 50,80**

**VORSATZLAGER MIT KUGELLAGER
EU-NORM Ø 50,80**

**ESTREMITA' D'ALBERO: CILINDRICO
SHAFT AVAILABLE: PARALLEL VERSION
LIEFERBARE WELLENENDEN: ZYLINDRISCH**

* NON FORNIBILI SEPARATAMENTE - NOT SUPPLY SEPARATELY - SEPARAT NICHT LIEFERBAR

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ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPL

PA

2

11

D

C5

SERIE
 SERIES
 SERIE

PRODOTTO
 PRODUCT
 PRODUKT

MA - Motore
 PA - Pompa singola
 PB - Pompa doppia
 PC - Pompa tripla

MA - Motor
 PA - Pump
 PB - Double Pump
 PC - Triple Pump

MA - Motor
 PA - Pump
 PB - Doppelpumpe
 PC - Dreifachpumpe

GRUPPO
 GROUP
 BAUGRÖSSE

1 - 2 - 3 - 4

CILINDRATA
 DISPLACEMENT
 FÖRDERVOLUMEN

HPL..1	HPL..2	HPL..3	HPL..4
14 - 1,37	05 -4,50	22 -21,50	41 -41,80
19 - 1,90	06 -6,00	26 -26,00	51 -50,40
24 - 2,53	08 -8,50	31 -30,50	61 -61,00
31 - 3,17	11 -11,00	36 -36,00	73 -72,00
36 - 3,73	14 -14,50	41 -41,50	90 -87,80
44 - 4,35	17 -17,00	47 -46,50	
48 - 4,97	20 -19,50	51 -50,50	
60 - 6,08	26 -26,00	56 -56,00	
70 - 7,00	34 -34,00	61 -61,50	
80 - 7,87	40 -40,50	73 -72,50	
		90 -89,00	

SENSO DI ROTAZIONE
 ROTATION
 DREHRICHTUNG

S - Antioraria/sinistra
 D - Oraria/destra
 H - Bidirezionale drenaggio interno
 B - Bidirezionale drenaggio esterno posteriore

S - Counterclockwise
 D - Clockwise
 H - Reversible ind drain.
 B - Reversible rear. drain. pont.

S - Linkslauf
 D - Rechtslauf
 H - reversibel, Lecköl intern, Anschluß seitlich
 B - reversibel, Lecköl extern, Anschluß hinten

TIPO DI SUPPORTO
 SPINDLE TYPE
 VORSATZLAGER

HPL..1

C1 - Conico (1:8) Ø 50,8
 C2 - Cilindrico Ø 50,8
 I4 - Integrato Cilindrico Ø 50,8

C1 - Tapered (1:8) Ø 50,8
 C2 - Parallel shaft Ø 50,8
 I4 - Integrated Parallel shaft Ø 50,8

C1 - Kegel (1:8) Ø 50,8
 C2 - Zylindrisch Ø 50,8
 I4 - integriertes Lager
 Zylindrisch Ø 50,8

HPL..2

C3 - Conico (1:8) Ø 50,8
 C4 - Cilindrico Ø 50,8
 C5 - Conico (1:8) Ø 36,5
 C6 - Cilindrico Ø 36,5
 I1 - Integrato cilindrico Ø 36,5
 I3 - Integrato cilindrico Ø 82,5 SAE
 I7 - Integrato conico (1:8) Ø 36,5
 B1 - Conico (1:5) Ø 80
 B3 - Cilindrico Ø 80

C3 - Tapered (1:8) Ø 50,8
 C4 - Parallel shaft Ø 50,8
 C5 - Tapered (1:8) Ø 36,5
 C6 - Parallel shaft Ø 36,5
 I1 - Integrated Parallel shaft Ø 36,5
 I3 - Integrated Parallel shaft Ø 82,5 SAE
 I7 - Integrated Tapered (1:8) Ø 36,5
 B1 - Tapered (1:5) Ø 80
 B3 - Parallel shaft Ø 80

C3 - Kegel (1:8) Ø 50,8
 C4 - Zylindrisch Ø 50,8
 C5 - Kegel (1:8) Ø 36,5
 C6 - Zylindrisch Ø 36,5
 I1 - integriertes Lager
 Zylindrisch Ø 36,5
 I3 - integriertes Lager
 Zylindrisch Ø 82,5 SAE
 I7 - Kegel Zylindrisch (1:8) Ø 36,5
 B1 - Kegel (1:5) Ø 80
 B3 - Zylindrisch Ø 80

HPL..3

C7 - Conico (1:8) Ø 50,8
 C8 - Cilindrico Ø 50,8
 I6 - Integrato cilindrico Ø 50,8

C7 - Tapered (1:8) Ø 50,8
 C8 - Parallel shaft Ø 50,8
 I6 - Integrated Parallel shaft Ø 50,8

C7 - Kegel (1:8) Ø 50,8
 C8 - zylindrisch Ø 50,8
 I6 - integriertes Lager
 Zylindrisch Ø 50,8

HPL..4

C9 - Conico (1:8) Ø 60,3
 C0 - Cilindrico Ø 60,3
 C9 - Tapered (1:8) Ø 60,3
 C0 - Parallel shaft Ø 60,3

C9 - Kegel (1:8) Ø 60,3
 C0 - zylindrisch Ø 60,3



POMPE E MOTORI COMPLETI DI SUPPORTO
PUMP OR MOTOR WITH BEARING SUPPORT
PUMPEN UND MOTOREN MIT VORSATZLAGER

G4 G4

B

ST

--

SET VALVOLE
VALVE SETTING
VENTILEINSTELLUNG
(bar)

BOCCHIE STD - STANDARD PORT - STANDARD ANSCHLÜSSE
CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

HPL..1

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

1,4.....4,8		6.....8		1,4.....4,8		6.....8	
Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	DRAIN	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	DRAIN	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT
E3 E3	E3 E3	M1	U3 U3	U4 U4	U2		
G3 G3	G4 G4	G2	T3 H1	T3 H1	-		
X3 X3	X3 X3	M1	T3 T3	T4 T3	G2		
M4 M2	M4 M2	M1	C3 C3	C4 C3	U2		

MOTORI - MOTORS - MOTOREN OUT/IN

MOTORI BIDIR. IN=OUT - REVERS. MOTORS IN=OUT -
BIDIREK.MOTOREN IN=OUT

HPL..2

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

5.....8		11		14.....20		26.....40		DRAIN	
Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT
E3 E3		E5 E3		E5 E5				M2	
G4 G4		G6 G4		G6 G6				G3	
X5 X4	X6 X4	X6 X4		X6 X5				M2	
U6 U5		U6 U5		U6 U5				U3	
C6 C5		C6 C5		C6 C5				U3	
T6 T4		T6 T4		T6 T4				G3	

MOTORI - MOTORS - MOTOREN OUT/IN

MOTORI BIDIR. IN=OUT - REVERS. MOTORS IN=OUT -
BIDIREK.MOTOREN IN=OUT

HPL..3

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

22.....31		36.....61		73.....90		DRAIN	
Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT
E5 E5		E7 E5		E8 E7			M3
G6 G6		G7 G6		G8 G7			G3
U7 U6		U8 U7		U8 U7			M3
N7 N6		N7 N6		N7 N6			M3
X8 X7		X8 X7		X8 X7			M3

MOTORI - MOTORS - MOTOREN OUT/IN

MOTORI BIDIR. IN=OUT - REVERS. MOTORS IN=OUT -
BIDIREK.MOTOREN IN=OUT

HPL..4

CILINDRATA - DISPLACEMENT - FÖRDER-/SCHLUCKVOLUMEN

41.....61		73.....90		DRAIN	
Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT	Pompe - Pumps -Pumpen IN/OUT
E7 E7		E8 E7			G3
G7 G7		G8 G8			G3
X8 X7		X8 X7			G3

MOTORI - MOTORS - MOTOREN OUT/IN

MOTORI BIDIR. IN=OUT - REVERS. MOTORS IN=OUT -
BIDIREK.MOTOREN IN=OUT

COPERCHI
COVERS
DECKEL

ST - Standard
V. - Con valvole
(Vedi sez. valvole)
With valves
(See valves section)
Mit Ventilen
(siehe Abschnitt Ventile)
SG - Versione in ghisa
(solo HPL..3, HPL..4)
Version in cast iron
(only HPL..3, HPL..4)
Gussversion
(nur HPL..3, HPL..4)

GUARNIZIONI
SEALS
DICHTUNGEN

B - NBR
R - NBR alte pres. (25 bar)
For high pres. (25 bar)
Hochdruck (25 bar)
V - Viton
W - Viton alte pres. (25 bar)
For high pres. (25 bar)
Hochdruck (25 bar)

**KIT ASSEMBLAGGIO POMPE PT
ASSEMBLY KIT (PT PUMPS ONLY)
TANDEM-SATZ (NUR PT-PUMPEN)**

Le pompe PT sono pompe singole, che possono essere assemblate rapidamente e facilmente con l'impiego DEGLI APPOSITI KIT.

- **HPLKA11STR** per l'assemblaggio di pompe Gruppo 1.
- **HPLKA21STR** per l'assemblaggio di pompe Gruppo 2 e 1.
- **HPLKA21AMR** per l'assemblaggio di pompe Gruppo 2 e 1 SAE.
- **HPLKA21DER** per l'assemblaggio di pompe Gruppo 2 e 1 versione tedesca.
- **HPLKA22STR** per l'assemblaggio di pompe Gruppo 2.
- **HPLKA33SLR** per l'assemblaggio di pompe Gruppo 3.
- **HPLKA32SLR** per l'assemblaggio di pompe Gruppo 3 e 2
- **HPLKA31SLR** per l'assemblaggio di pompe Gruppo 3 e 1

Le fasi schematiche delle operazioni sono riportate di seguito.

PT pumps are single pumps that can be quickly and easily assembled using THE DEDICATED ASSEMBLY KIT.

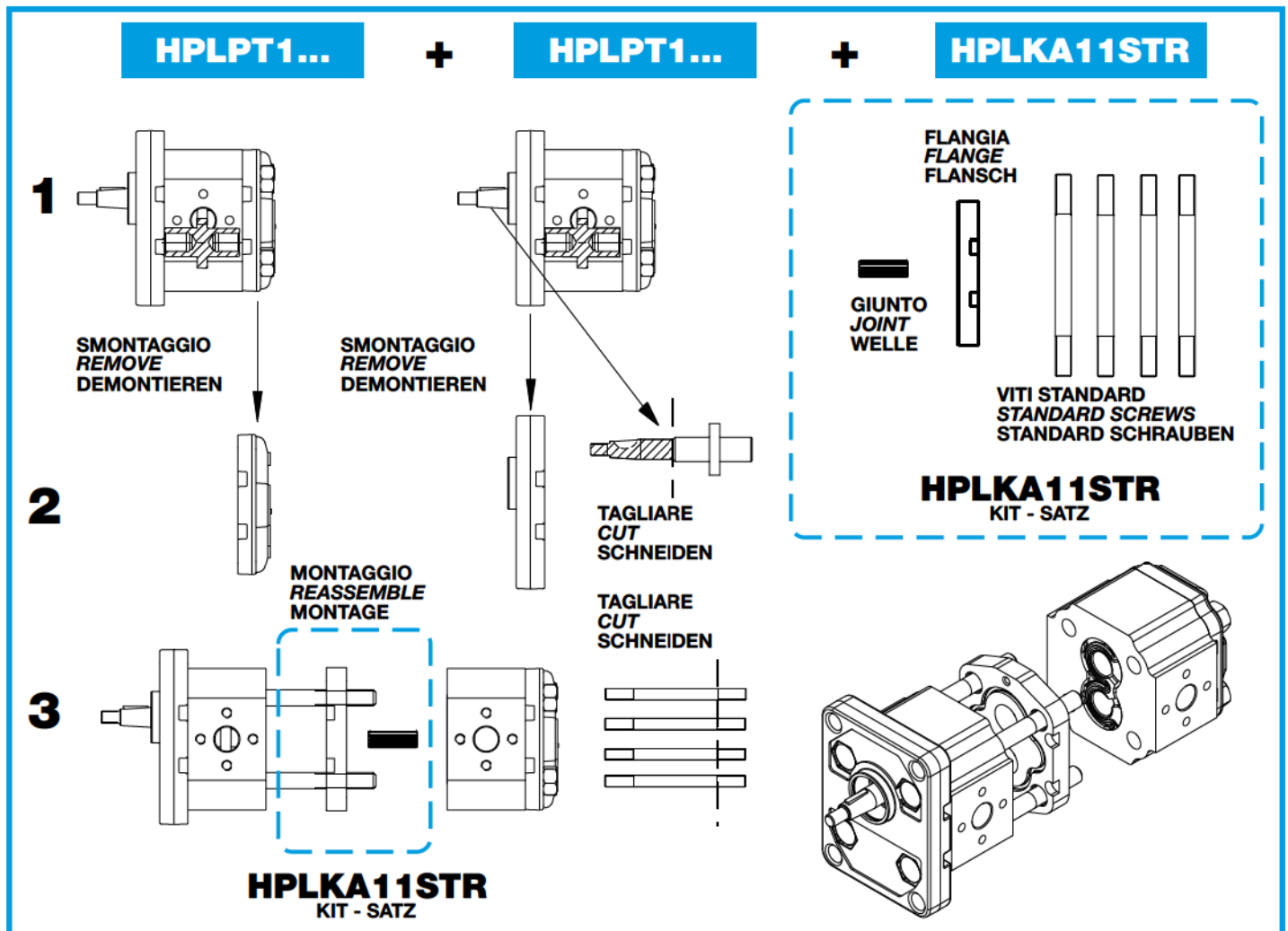
- **HPLKA11STR** Group 1 assembly
- **HPLKA21STR** Group 2 and 1 assembly
- **HPLKA21AMR** Group 2 and 1 SAE assembly
- **HPLKA21DER** Group 2 and 1 German version
- **HPLKA22STR** Group 2 assembly
- **HPLKA33SLR** Group 3 assembly
- **HPLKA32SLR** Group 3 and 1 assembly
- **HPLKA31SLR** Group 3 and 1 assembly

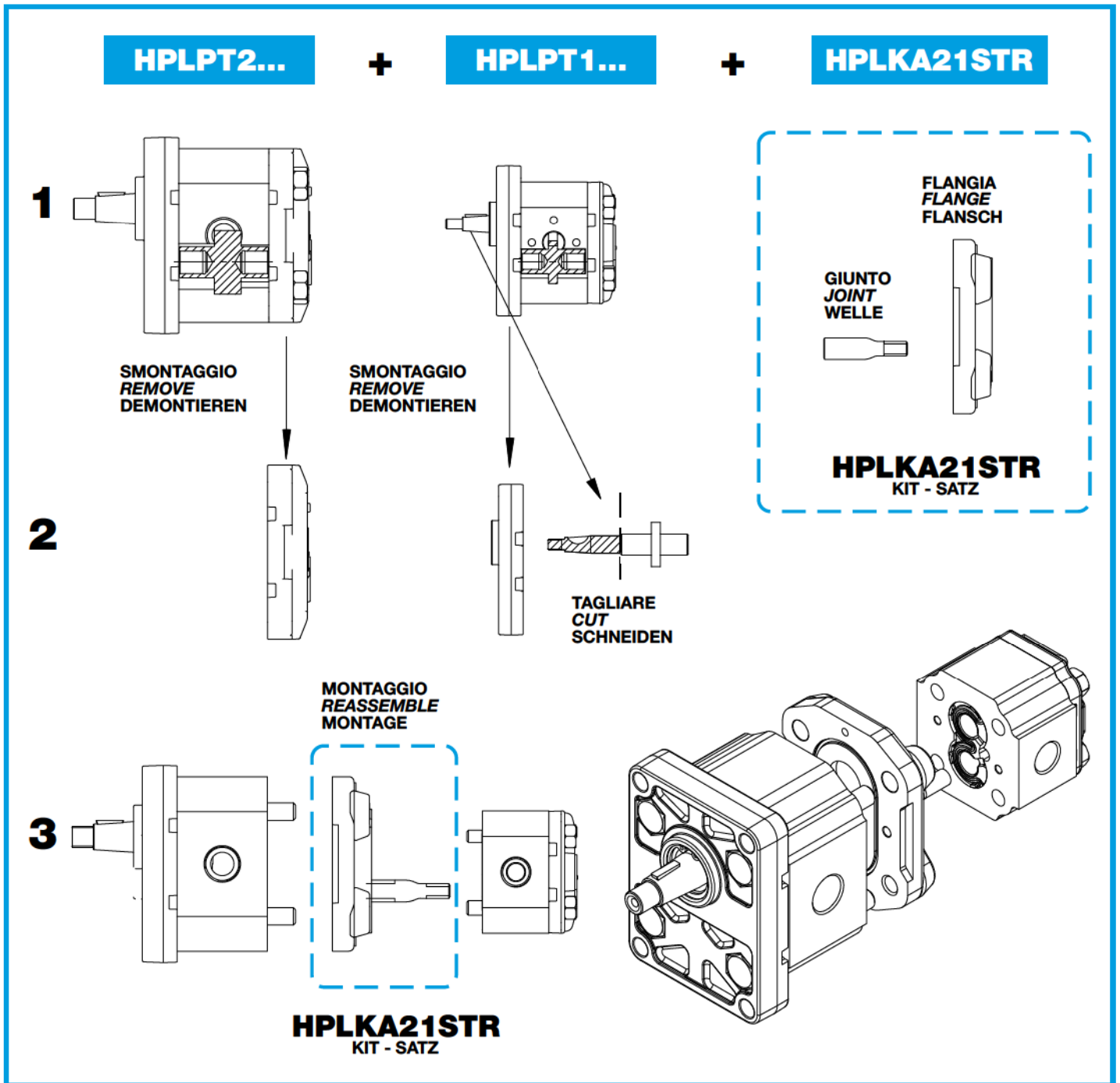
Assembly steps are following described.

Die PT-Pumpen sind Einfachpumpen, die schnell zu Mehrfachpumpen umgebaut werden können, unter Verwendung der dazugehörigen Tandem-Sätze.

- **HPLKA11STR** Für den Zusammenbau der Pumpen Gruppe 1.
- **HPLKA21STR** Für den Zusammenbau der Pumpen Gruppe 2 und 1.
- **HPLKA21AMR** Für den Zusammenbau der SAE-Pumpen Gruppe 2 und 1.
- **HPLKA21DER** Für den Zusammenbau der Gruppe 2 und 1 Din-Version.
- **HPLKA22STR** Für den Zusammenbau der Pumpen Gruppe 2.
- **HPLKA33SLR** Für den Zusammenbau der Pumpen Gruppe 3
- **HPLKA32SLR** Für den Zusammenbau der Pumpen Gruppe 3 und 2
- **HPLKA31SLR** Für den Zusammenbau der Pumpen Gruppe 3 und 1

Untenstehend die schematisch dargestellten Montagevorgänge.





VERSIONE SAE
SAE VERSION
SAE-VERSION



VERSIONE TEDESCA
GERMAN VERSION
DIN-VERSION



**KIT ASSEMBLAGGIO POMPE PT
ASSEMBLY KIT (PT PUMPS ONLY)
TANDEM-SATZ (NUR PT-PUMPEN)**

HPLPT2...

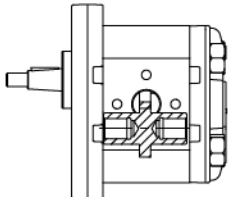
+

HPLPT2...

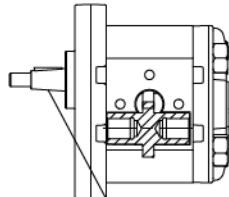
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HPLKA22STR

1

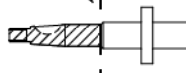


SMONTAGGIO
REMOVE
DEMONTIEREN



SMONTAGGIO
REMOVE
DEMONTIEREN

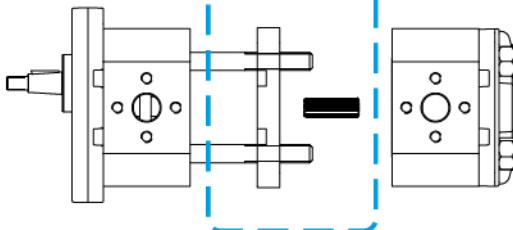
2



TAGLIARE
CUT
SCHNEIDEN

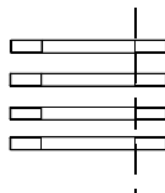
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MONTAGGIO
REASSEMBLE
MONTAGE



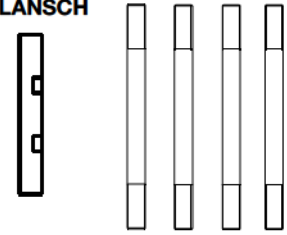
HPLKA22STR
KIT - SATZ

TAGLIARE
CUT
SCHNEIDEN



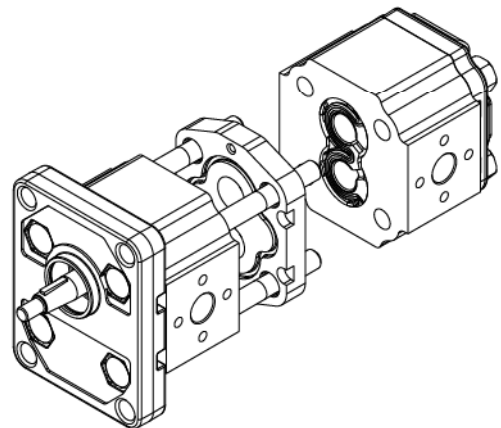
FLANGIA
FLANGE
FLANSCH

GIUNTO
JOINT
WELLE



VITI STANDARD
STANDARD SCREWS
STANDARD SCHRAUBEN

HPLKA22STR
KIT - SATZ





**KIT ASSEMBLAGGIO POMPE PT
ASSEMBLY KIT (PT PUMPS ONLY)
TANDEM-SATZ (NUR PT-PUMPEN)**

HPLPT3...

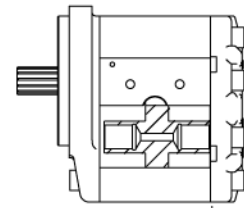
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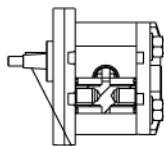
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HPLKA31SLR

1



SMONTAGGIO
REMOVE
DEMONTIEREN

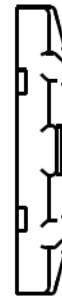


SMONTAGGIO
REMOVE
DEMONTIEREN

NR.2 VITI M10
NR.2 M10 SCREWS
NR.2 M10 SCHRAUBEN



GIUNTO
JOINT
WELLE



FLANGIA
FLANGE
FLANSCH

HPLKA31SLR
KIT - SATZ

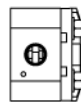
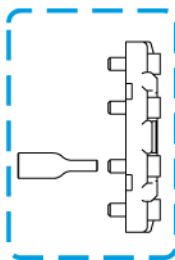
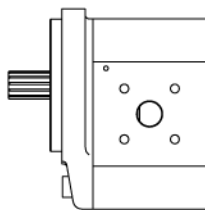
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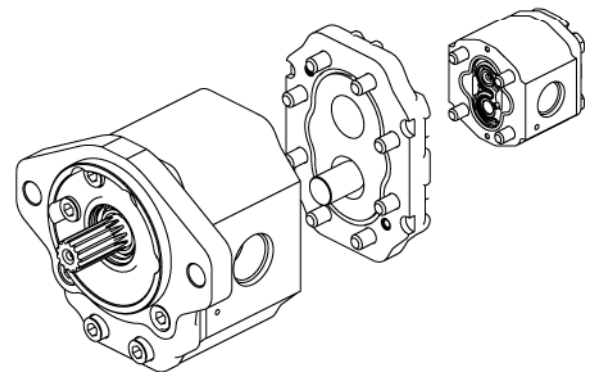
TAGLIARE
CUT
SCHNEIDEN

3

MONTAGGIO
REASSEMBLE
MONTAGE



HPLKA31SLR
KIT - SATZ



**KIT ASSEMBLAGGIO POMPE PT
ASSEMBLY KIT (PT PUMPS ONLY)
TANDEM-SATZ (NUR PT-PUMPEN)**

HPLPT3...

+

HPLPT3...

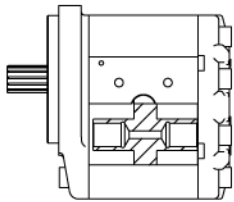
HPLPT2...

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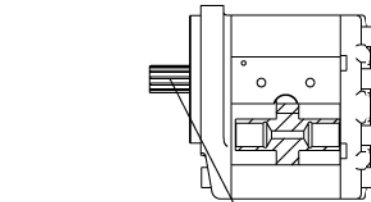
HPLKA33SLR

(HPLKA32SLR)

1

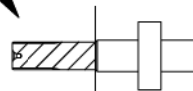
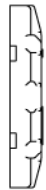


**SMONTAGGIO
REMOVE
DEMONTIEREN**

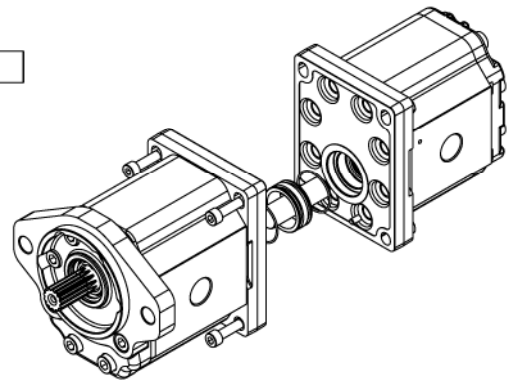
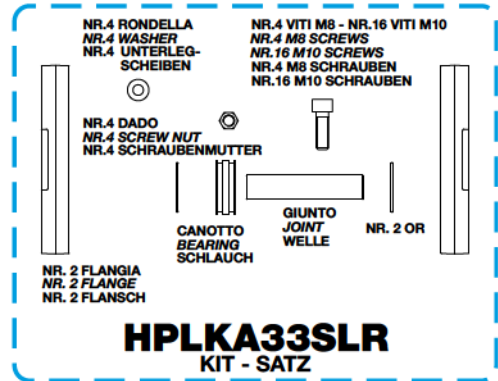


**SMONTAGGIO
REMOVE
DEMONTIEREN**

2

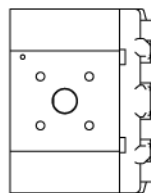
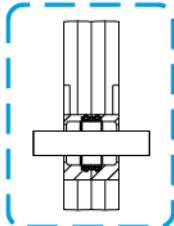
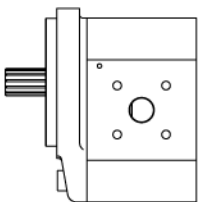


**TAGLIARE
CUT
SCHNEIDEN**

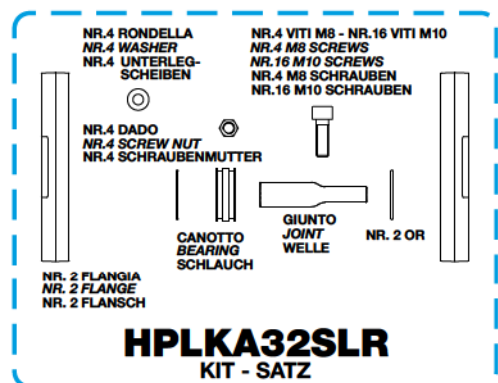
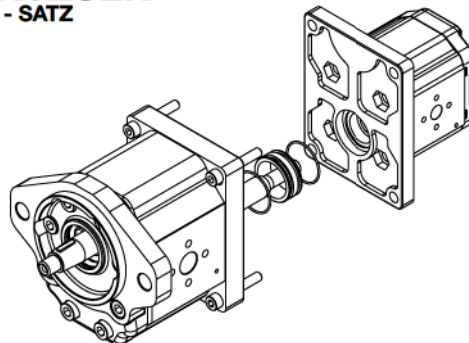


3

**MONTAGGIO
REASSEMBLE
MONTAGE**

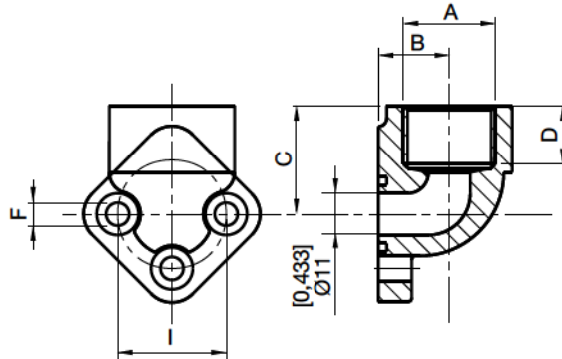


**HPLKA33SLR
HPLKA32SLR
KIT - SATZ**

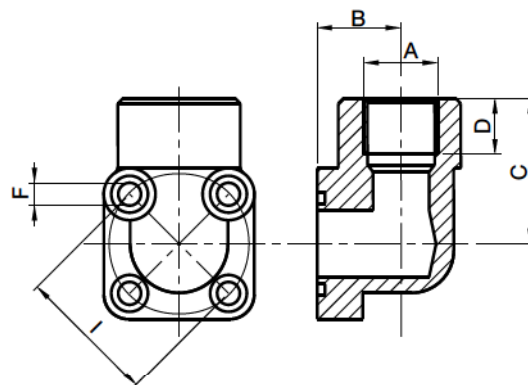


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RACCORDI A GOMITO
UNION ELBOW
WINKELVERBINDUNGEN



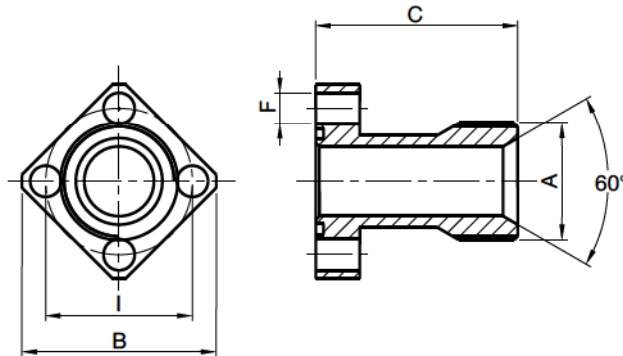
TIPO TYPE TYP	DESCRIZIONE DESCRIPTION BEZEICHNUNG	A		B		C		D		I		F	
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
HPL5767E0G31R	GR.RG 26x12 G3/8"	3/8"	16,0	0,63	26	1,02	14	0,56	26	1,02	5,50	0,22	
HPL5767E0G41R	GR.RG 26x12 G1/2"	1/2"	16,0	0,63	26	1,02	14	0,56	26	1,02	5,50	0,22	
HPL5767E3G31R	GR.RG 30x13.5 G3/8"	3/8"	17,5	0,69	26	1,02	14	0,56	30	1,18	6,50	0,26	
HPL5767E3G41R	GR.RG 30x13.5 G1/2"	1/2"	17,5	0,69	26	1,02	14	0,56	30	1,18	6,50	0,26	
HPL5767E4G61R	GR.RG 40x20 G3/4"	3/4"	21,0	0,82	36	1,42	16	0,60	40	1,58	8,50	0,33	
HPL5767E7G71R	GR.RG 51x27 G1"	1"	27,0	1,06	43	1,70	21	0,80	51	2,00	10,5	4,13	
HPL5767E8G81R	GR.RG 62x34 G1 1/4"	1 1/4"	34,5	1,36	55	2,17	27	1,06	62	2,45	10,5	4,13	
HPL5767E4G41R	GR.RG 40x20 G1/2"	1/2"	21,0	0,83	36	1,42	16	0,63	40	1,58	8,50	0,33	
HPL5767E0M41R	GR.RG 26x12 M18x1.5	18X1.5	17,5	0,69	26	1,02	14	0,56	26	1,02	5,50	0,22	
HPL5767E3M41R	GR.RG 30x13.5 M18x1.5	18X1.5	17,5	0,69	26	1,02	14	0,56	30	1,18	6,50	0,26	



TIPO TYPE TYP	DESCRIZIONE DESCRIPTION BEZEICHNUNG	A		B		C		D		I		F	
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
HPL5767X3G31R	GR.R.GB 30x13 3/8"	3/8"	18	0,70	40,0	1,58	16	0,63	30	1,18	6,5	0,22	
HPL5767X3G41R	GR.R.GB 30x13 1/2"	1/2"	18	0,70	40,0	1,58	16	0,63	30	1,18	6,5	0,22	
HPL5767X4G31R	GR.R.GB 35x13 3/8"	3/8"	18	0,70	40,0	1,58	16	0,63	35	1,38	6,5	0,22	
HPL5767X4G41R	GR.R.GB 35x13 1/2"	1/2"	18	0,70	40,0	1,58	16	0,63	35	1,38	6,5	0,22	
HPL5767X6G61R	GR.R.GB 40x19 3/4"	3/4"	24	0,95	41,5	1,63	16	0,63	40	1,58	6,5	0,22	
HPL5767X6G41R	GR.R.GB 40x19 1/2"	1/2"	24	0,95	41,5	1,63	16	0,63	40	1,58	6,5	0,22	
HPL5767X3M41R	GR.R.GB 30x13 M18x1.5	18X1.5	18	0,70	40,0	1,58	16	0,63	30	1,18	6,5	0,22	



**RACCORDI DIRITTI
STRAIGHT UNION
GERADE VERBINDUNGEN**



TIPO TYPE TYP	DESCRIZIONE DESCRIPTION BEZEICHNUNG	A	B		C		I		F	
			mm	in	mm	in	mm	in	mm	in
HPL5767E3G42R	GR.RD 30x13.5 (1/2")	1/2"	46	1,81	35	1,38	30	1,18	6,5	0,26
HPL5767E5G42R	GR.RD 40x20 (3/4")	3/4"	53	2,09	40	1,58	40	1,58	8,5	0,33
HPL5767E7G42R	GR.RD 51x27 (1")	1"	73	2,88	55	2,17	51	2,00	10,5	4,13
HPL5767E8G42R	GR.RD 62x34 (1 1/4")	1 1/4"	86	3,39	70	2,76	62	2,45	10,5	4,13
HPL5767E0M42R	GR.RD 26x12 M18x1.5	18X1.5	46	1,81	35	1,38	26	1,81	6,5	0,26

NOTA: I raccordi vengono forniti completi di viti, rondelle e guarnizioni OR. **NOTE:** Connectors are supplied complete with bolts, washers and O-rings. **BEMERKUNG:** Die Verbindungen werden komplett mit Schrauben, U-Scheiben und O-Ringen geliefert.

**KIT GUARNIZIONI
SEALS KIT
DICHTUNGSSÄTZE**

TIPO TYPE TYP	DESCRIZIONE	DESCRIPTION	BEZEICHNUNG
HPL48670PAUNB00R05	GRUPPO 05 POMPA NBR	GROUP 05 NBR PUMP/MOTOR	BAUGRÖSSE 5 NBR PUMPE UND MOTOR
HPL48671PAUNB00R05	GRUPPO 1 POMPA NBR	GROUP 1 PUMP NBR	BAUGRÖSSE 1 NBR PUMPE
HPL48671PAUNV00R05	GRUPPO 1 POMPA VITON	GROUP 1 PUMP VITON	BAUGRÖSSE 1 VITON PUMPE
HPL48671PAUNB01R05	GRUPPO 1 BOSCH POMPA NBR	GROUP 1 BOSCH NBR	BAUGRÖSSE 1 BOSCH NBR PUMPE
HPL48671MARVB01R05	GRUPPO 1 BOSCH MOTORE BID.	GROUP 1 BOSCH MOTOR NBR	BAUGRÖSSE 1 BOSCH NBR MOTOR
HPL48671MARVB00R05	GRUPPO 1 MOTORE BID. NBR	GROUP 1 MOTOR NBR	BAUGRÖSSE 1 NBR MOTOR
HPL48671MARVV00R05	GRUPPO 1 MOTORE BID. VITON	GROUP 1 MOTOR VITON	BAUGRÖSSE 1 VITON MOTOR
HPL48672PAUNB00R05	GRUPPO 2 POMPA/MOTORE NBR	GROUP 2 PUMP/MOTOR NBR	BAUGRÖSSE 2 PUMPE UND MOTOR NBR
HPL48672PAUNB01R05	GRUPPO 2 ALTE PRESS.POMPA/	GROUP 2 HIGH PRESS PUMP/MOTOR NBR	BAUGRÖSSE 2 HOCHDRUCK NBR PUMPE UND MOTOR
HPL48672PAUNV00R05	GRUPPO 2 POMPA/MOTORE VITON	GROUP 2 PUMP/MOTOR VITON	BAUGRÖSSE 2 PUMPE UND MOTOR
HPL48673PAUNB00R05	GRUPPO 3/4 POMPA NBR	GROUP 3/4 PUMP NBR	BAUGRÖSSE 3/4 NBR PUMPE
HPL48673MARVB00R05	GRUPPO 3/4 MOTORE NBR	GROUP 3/4 MOTOR NBR	BAUGRÖSSE 3/4 NBR MOTOR
HPL48673PAUNV00R05	GRUPPO 3/4 POMPA VITON	GROUP 3/4 PUMP VITON	AUGRÖSSE 3/4 VITON PUMPE

**GIUNTI E SEMIGIUNTI PER SUPPORTI
HUBS AND HALF HUBS FOR SPLINDES
KUPPLUNGEN UND HALBKUPPLUNGEN FÜR VORSATZLAGER**

TIPO TYPE TYP	DESCRIZIONE	DESCRIPTION	BEZEICHNUNG
HPL21000007010R05	GR.1 SEMIG.(25X22 Z=14) TC C1-C2	<i>GR.1 HALF HUB (25X22 Z=14) TC C1-C2</i>	GR.1 HALBKUP (25X22 Z=14) TC C1-C2
HPL00020045140R05	GR.1 GIUNTO PER ALBERO K	<i>GR.1 HUB FOR SHAFT K</i>	GR.1 KUPPLUNG FÜR WELLE K
HPL21000008010R05	GR.2 SEMIG.(28X25 Z=15) TC C3-C4	<i>GR.2 HALF HUB (28X25 Z=15) TC C3-C4</i>	GR.2 HALBKUP (28X25 Z=15) TC C3-C4
HPL21000010010R05	GR.2 SEMIG.(32X28 Z=17) TC B1	<i>GR.2 HALF HUB (32X28 Z=17) TC B1</i>	GR.2 HALBKUP (32X28 Z=17) TC B1
HPL21000002010R05	GR.2 SEMIG.(25X22 Z=14) TC C5-C6	<i>GR.2 HALF HUB (25X22 Z=14) TC C5-C6</i>	GR.2 HALBKUP (25X22 Z=14) TC C5-C6
HPL00020045240R05	GR.2 GIUNTO PER ALBERO Z	<i>GR.2 HUB FOR SHAFT Z</i>	GR.2 KUPPLUNG FÜR WELLE Z
HPL21000003010R05	GR.3 SEMIG.(35X31 Z=18) TC C7-C8	<i>GR.3 HALF HUB (35X31 Z=18) TC C7-C8</i>	GR.3 HALBKUP (35X31 Z=18) TC C7-C8
HPL21000004010R05	GR.4 SEMIG.(40X36 Z=20) TC C9-C0	<i>GR.4 HALF HUB (40X36 Z=20) TC C9-C0</i>	GR.4 HALBKUP (40X36 Z=20) TC C9-C0