POMPE E MOTORI AD INGRANAGGI SERIE G
GEARS PUMPS AND MOTORS SERIES G
ZAHNRADPUMPEN,-MOTOREN BAUREIHE G

GPG 008

BONDIOLI & PAVESI
HP Hydraulic

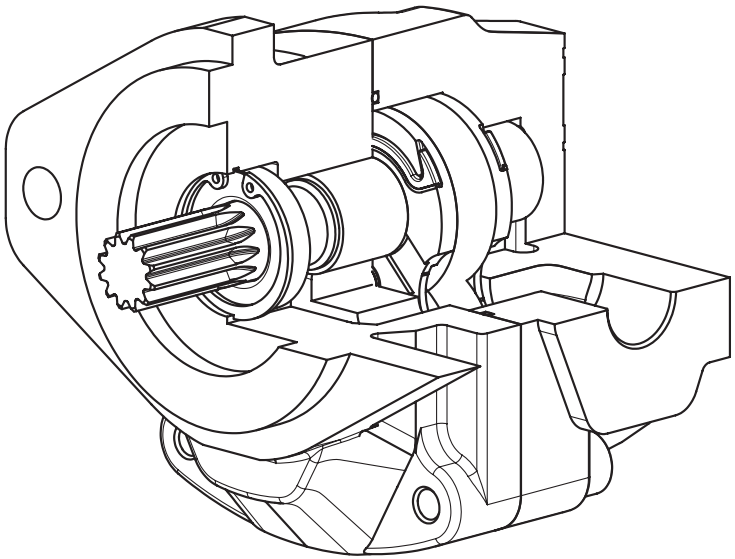
INDICE
INDEX
INHALTSVERZEICHNIS

INTRODUZIONE *INTRODUCTION* EINLEITUNG	3
ISTRUZIONI GENERALI DI IMPIEGO *OPERATING INSTRUCTIONS* ALLGEMEINE GEBRAUCHSANWEISUNGEN	4
PROGRAMMA DI PRODUZIONE *PRODUCTION RANGE* LIEFERPROGRAMM	5
HPG..3	6
HPG..4	12
POMPE MULTIPLE *MULTIPLE GEAR PUMPS* MEHRFACHPUMPEN	18
POMPE CON VALVOLE INTEGRATE *INTEGRATED VALVES FOR PUMPS* PUMPEN MIT EINGEBAUTEN VENTILEN	24
RACCORDI *ELBOW* WINKELVERBINDUNGEN	25

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 ghisa 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 cast iron body, grouped according to their capacity, 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 Zahnradeinheiten mit stark innovativem Gehalt in Design und Produktionsprozessen.
Dadurch sind wir in der Lage, ein Programm von Zahnradpumpen mit Gussgehäuse für jede Anwendung anzubieten, das optimal in Baugruppen und Hubvolumen sowie speziell entwickelte, kundenspezifische Varianten gegliedert ist.



Le pompe HP Hydraulic della serie G sono prodotte nel gruppo dimensionale 3, all'interno del quale vengono ottenute le differenti cilindrate.

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 nostro servizio tecnico.

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

VISCOSITÀ
- Minima 10 mm^2/s
- Massima (partenza a freddo)1400 mm^2/s
- Campo di viscosità raccomandato12-90 mm^2/s

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

HP Hydraulic series G pumps are supplied in size group 3. Various capacities will be determined within this 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 mm^2/s*
- *Maximum (cold-staring up) 1400 mm^2/s*
- *Recommended viscosity range 12-90 mm^2/s*

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

Die Pumpen HP Hydraulic Baureihe G sind in Baugröße 3 lieferbar, die in verschiedene Hubvolumen gegliedert ist.
Die Baureihe wird durch ein Programm von Flanschen und Wellen komplettiert. Außerdem können Mehrfachpumpen mit und ohne Ventile im Deckel geliefert werden.

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.

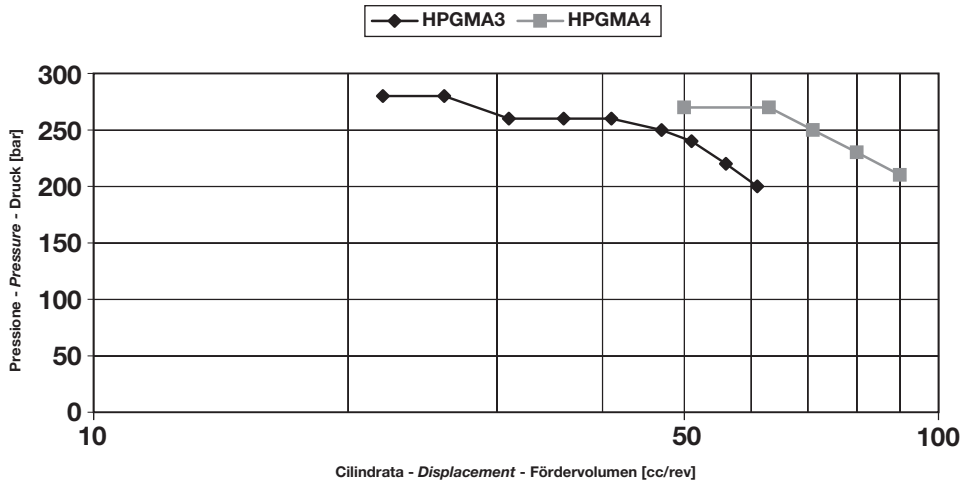
TEMPERATUR
- Mindestwert -20°C
- Dauerhöchsttemperatur 85°C
- Spitzentemperatur (intermittierend) 100°C

VISKOSITÄT
- Mindestwert 10 mm^2/s
- Höchstwert (Kaltstart) 1400 mm^2/s
- Empfohlener Viskositätsbereich 12-90 mm^2/s

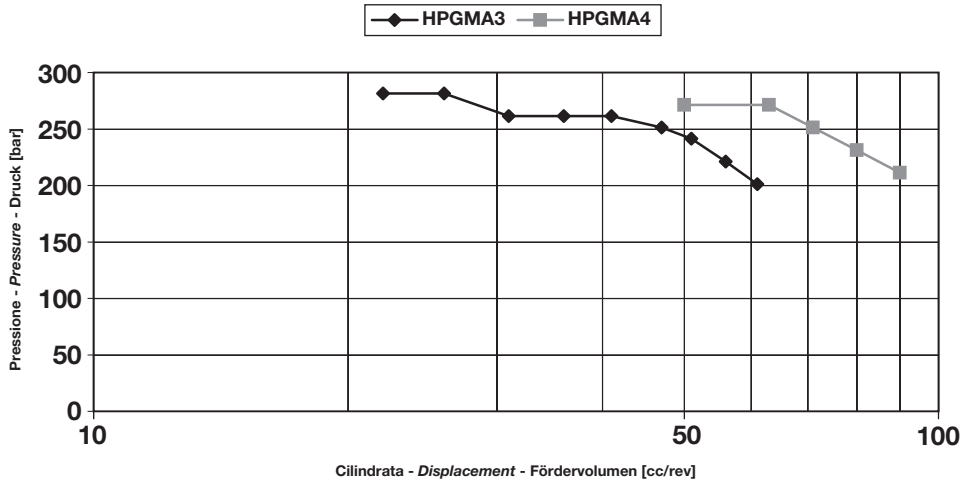
FILTRATIONSGRAD
Die je nach Betriebsdruck empfohlenen Reinheitsklassen sind in der nachstehenden Tabelle aufgeführt.

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

POMPE - *PUMPS* - PUMPEN



MOTORI - *MOTORS* - MOTOREN



HPG .A3

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

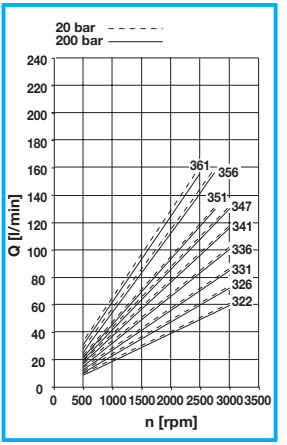
HPG PA3

POMPE AD INGRANAGGI
GEAR PUMPS
ZAHNRADPUMPEN

DATI TECNICI • *TECHNICAL DATA* • TECHNISCHE MERKMALE

GRUPPO *GROUP* BAUREIHE	TIPO *TYPE* TYP	CILINDRATA TEORICA *NOMINAL DISPLACEMENT* FÖRDERVOLUMEN (TM)		PRESSIONE- *PRESSURE* - DRUCK						VELOCITÀ DI ROTAZIONE *SPEED* DREHZAHL		MASSA *WEIGHT* GEWICHT	
				CONTINUA *CONTINUOS* DAUER		INTERMITTENTE *INTERMITTENT* INTERMITTIERENDER		PICCO *PEAK* SPITZEN		MAX	MIN		
		cm³	in³	bar	psi	bar	psi	bar	psi	min⁻¹	min⁻¹	Kg	lbs
3	22	21,50	1,31	280	4061	300	4351	310	4496	3000	500	12,00	26,46
	26	26,00	1,59	280	4061	300	4351	310	4496			12,25	27,00
	31	30,50	1,86	260	3771	280	4061	300	4351			12,50	27,56
	36	36,00	2,20	260	3771	280	3916	300	4351			12,80	28,22
	41	41,50	2,53	260	3771	270	3916	280	4061			13,20	29,10
	47	46,50	2,84	250	3626	270	3916	280	4061			13,50	29,76
	51	50,50	3,08	240	3481	250	3626	270	3916	2750		13,90	30,64
	56	56,00	3,42	220	3191	230	3336	250	3626			14,30	31,52
	61	61,00	3,72	200	2901	210	3046	220	3191	2500		14,50	31,97

DIAGRAMMA PORTATE *DIAGRAMS* • KENNLINIEN



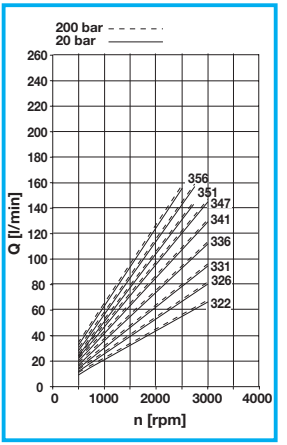
HPG MA3

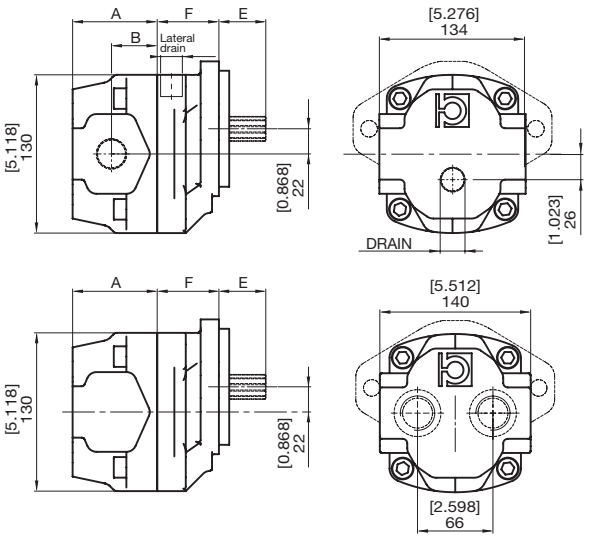
MOTORI AD INGRANAGGI
GEAR MOTORS
ZAHNRADMOTOREN

DATI TECNICI • *TECHNICAL DATA* • TECHNISCHE MERKMALE

GRUPPO *GROUP* BAUREIHE	TIPO *TYPE* TYP	CILINDRATA TEORICA *NOMINAL DISPLACEMENT* FÖRDERVOLUMEN (TM)		PRESSIONE- *PRESSURE* - DRUCK						VELOCITÀ DI ROTAZIONE *SPEED* DREHZAHL		MASSA *WEIGHT* GEWICHT	
				CONTINUA *CONTINUOS* DAUER		INTERMITTENTE *INTERMITTENT* INTERMITTIERENDER		PICCO *PEAK* SPITZEN		MAX	MIN		
		cm³	in³	bar	psi	bar	psi	bar	psi	min⁻¹	min⁻¹	Kg	lbs
3	22	21,50	1,31	280	4061	300	4351	310	4496	3000	500	12,00	26,46
	26	26,00	1,59	280	4061	300	4351	310	4496			12,25	27,00
	31	30,50	1,86	260	3771	280	4061	300	4351			12,50	27,56
	36	36,00	2,20	260	3771	280	3916	300	4351			12,80	28,22
	41	41,50	2,53	260	3771	270	3916	280	4061			13,20	29,10
	47	46,50	2,84	250	3626	270	3916	280	4061			13,50	29,76
	51	50,50	3,08	240	3481	250	3626	270	3916	2750		13,90	30,64
	56	56,00	3,42	220	3191	230	3336	250	3626			14,30	31,52
	61	61,00	3,72	200	2901	210	3046	220	3191	2500		14,50	31,97

DIAGRAMMA PORTATE *DIAGRAMS* • KENNLINIEN





F= Vedi sezione flange
E= Vedi sezione profilo alberi

F= See flange section
E= See splined shafts section

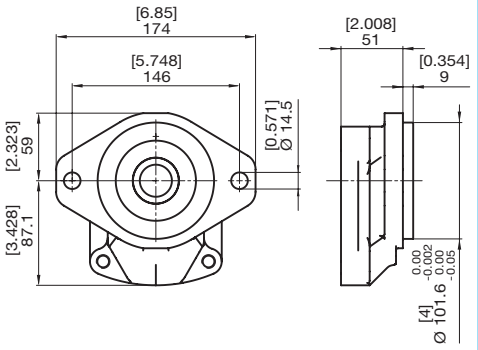
F= siehe Abschnitt Flansche
E= siehe Abschnitt Wellenprofile

DIMENSIONE • *SIZE*
ABMESSUNGEN

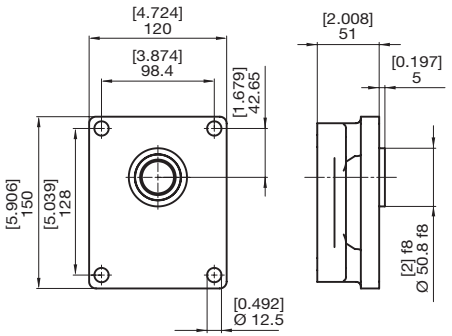
GRUPPO *GROUP* BAUREIHE	TIPO *TYPE* TYP	A		B	
		mm	in	mm	in
3	22	74	2,91	40	1,57
	26	77	3,03	43	1,69
	31	80	3,15	46	1,81
	36	84	3,31	50	1,97
	41	88,5	3,48	54,5	2,15
	47	91,5	3,60	57,5	2,26
	51	94,5	3,72	60,5	2,38
	56	98	3,86	64	2,52
	61	101	3,98	66	2,60

FLANGE
FLANGES
FLANSCHE

2



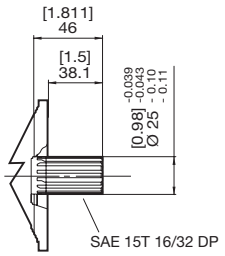
3



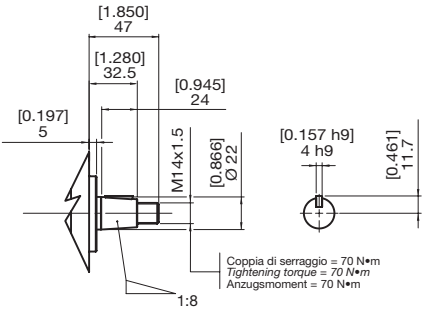
PROFILO ALBERI
SPLINE SHAFTS
WELLENPROFILE

HPG..3

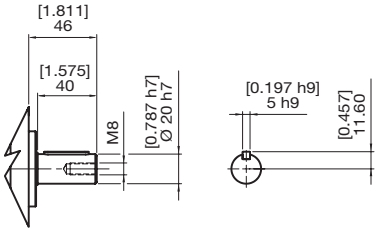
1 COPPIA MAX / *MAX TORQUE* / MAX DREHMOMENT 460 N•m



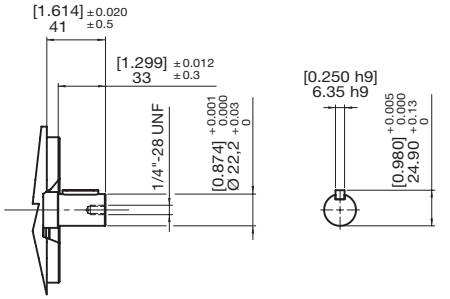
2 COPPIA MAX / *MAX TORQUE* / MAX DREHMOMENT 240 N•m



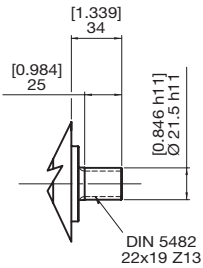
4 COPPIA MAX / *MAX TORQUE* / MAX DREHMOMENT 190 N•m



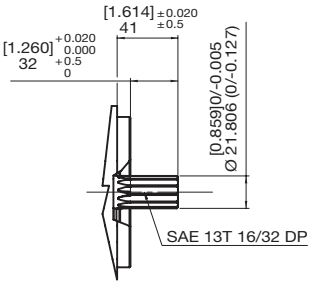
6 COPPIA MAX / *MAX TORQUE* / MAX DREHMOMENT 210 N•m



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



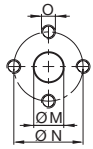
9 COPPIA MAX / *MAX TORQUE* / MAX DREHMOMENT 310 N•m



BOCCHE
PORTS
ANSCHLÜSSE

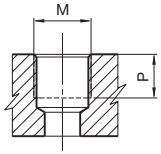
HPG..3

E — LATERALE / *LATERAL* / SEITLICH



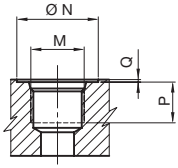
TIPO *TYPE* TYPE	M mm	M in	N mm	N in	O
E5	20	0,79	40	1,57	M8
E7	27	1,06	51	2,01	M10

G — LATERALE / *LATERAL* / SEITLICH
T — POSTERIORE / *REAR* / HINTEN



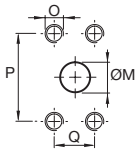
TIPO *TYPE* TYPE	M	P mm	P in
***G3**	3/8”	12	0,47
G6	3/4”	19	0,75
G7	1”	21	0,83
G8	1 1/4”	21	0,83
T6	3/4”	19	0,75
T7	1”	21	0,83
T8	1 1/4”	21	0,83

U — LATERALE / *LATERAL* / SEITLICH
C — POSTERIORE / *REAR* / HINTEN



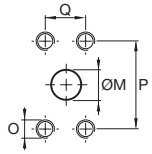
TIPO *TYPE* TYPE	DIMENSIONE *SIZE* GRÖSSE	N mm	N in	P mm	P in	Q mm	Q in	M
***U3**	3/8”	25	0,98	13	0,51	0,3	0,01	9/16”-18 UNF
U6	3/4”	41	1,61	20	0,79	0,3	0,01	1-1/16”-12 UNF
U7	1”	49	1,93	20	0,79	0,3	0,01	1-5/16”-12 UNF
U8	1 1/4”	58	2,28	20	0,79	0,3	0,01	1-5/8”-12 UNF
C6	3/4”	41	1,61	20	0,79	0,3	0,01	1-1/16”-12 UNF
C7	1”	49	1,93	20	0,79	0,3	0,01	1-5/16”-12 UNF
C8	1 1/4”	58	2,28	20	0,79	0,3	0,01	1-5/8”-12 UNF

N — LATERALE / *LATERAL* / SEITLICH



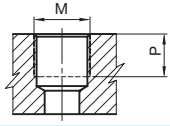
TIPO *TYPE* TYPE	DIMENSIONE *SIZE* GRÖSSE	M mm	M in	P mm	P in	Q mm	Q in	O
N6	3/4”	20	0,79	47,6	1,87	22,2	0,87	3/8”-16UNC-2B
N7	1”	27	1,06	52,4	2,6	26,2	1,03	3/8”-16UNC-2B
N8	1 1/4”	34	1,34	58,7	2,31	30,2	1,19	7/16”-14UNC-2B

F — LATERALE / *LATERAL* / SEITLICH



TIPO *TYPE* TYPE	DIMENSIONE *SIZE* GRÖSSE	M mm	M in	P mm	P in	Q mm	Q in	O
F6	3/4”	19,0	0,79	47,6	1,87	22,2	0,87	M10
F7	1”	25,4	1,06	52,4	2,60	26,2	1,03	M10
F8	1 1/4”	30,5	1,34	58,7	2,31	30,2	1,19	M10

M — LATERALE / *LATERAL* / SEITLICH

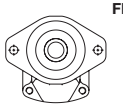
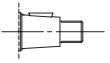


TIPO *TYPE* TYPE	M	P mm	P in
***M3**	M16x1,5	14	0,55

* Drenaggio - *Drain Port* - Lecköl

COMBINAZIONI
COMBINATIONS
KOMBINATIONEN

HPG..3

ESTREMITÀ ALBERO *SHAFT PROFIL* WELLENENDE	FLANGE • *FLANGE* • FLANSCHE 2 	3
1	■	
2 		■
4		■
6	■	
7		■
9	■	
BOCCHE *PORTS* ANSCHLÜSSE		
E		■
G T	■	■
U C	■	
N F	■	

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPG..3

HPG	PA	3	36	S	2	9	G7 G6	B	ST	--

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKTE

MA - Motore
PA - Pompa singola

MA *- Motor*
PA *- Pump*

MA - Motor
PA - 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

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
Counterclockwise
Linkslauf

D - Oraria/destra
Clockwise
Rechtslauf

H - Bidirezionale drenaggio interno
Reversible int. drain
reversibel, Lecköl intern, Anschluß seitlich

B - Bidirezionale drenaggio esterno posteriore
Reversible rear. drain. pont.
reversibel, Lecköl extern, Anschluß hinten

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

2 - SAE B 2 fori
3 - Europea D 50,8

2 *- SAE B 2 holes*
3 *- European D 50,8*

2 - SAE B 2 Bohrungen
3 - EU-Norm D 50,8

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)
DL - Drenaggio laterale (motori)
Lateral drain (motors)
Seitlich Lecköl (motor)

GUARNIZIONI - *SEALS* - DICHTUNGEN

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

BOCCHE STD - *STANDARD PORT* - STANDARD ANSCHLÜSSE
CILINDRATA - *DISPLACEMENT* - FÖRDER-/SCHLUCKVOLUMEN

22.....36 Pompe - *Pumps* -Pumpen IN/OUT	***41.....61*** Pompe - *Pumps* -Pumpen IN/OUT	DRAIN
E7 E5	E7 E7	M3
G7 G6	G8 G7	G3
U7 U6	U8 U7	U3
N7 N6	N8 N7	U3
F7 F6	F8 F7	U3
T7 T6	T8 T7	G3
C7 C6	C8 C7	U3

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

HPG .A4

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

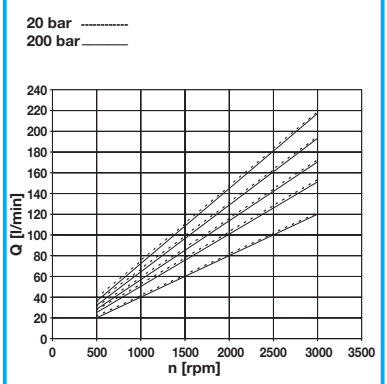
HPG PA4

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)		PRESSIONE- *PRESSURE* - DRUCK						VELOCITÀ DI ROTAZIONE *SPEED* DREHZAHL	
				CONTINUA *CONTINUOS* DAUER		INTERMITTENTE *INTERMITTENT* INTERMITTIERENDER		PICCO *PEAK* SPITZEN		MAX	MIN
		cm³	in³	bar	psi	bar	psi	bar	psi	min⁻¹	min⁻¹
4	**50**	50,00	3,05	270	3916	280	4061	310	4496	3000	500
	63	63,00	3,84	270	3916	280	4061	310	4496	3000	500
	71	71,0	4,33	250	3626	280	4061	300	4351	3000	500
	80	80,50	4,88	230	3336	280	4061	300	4351	3000	500
	90	90,50	5,49	210	3046	260	3771	280	4061	2700	500



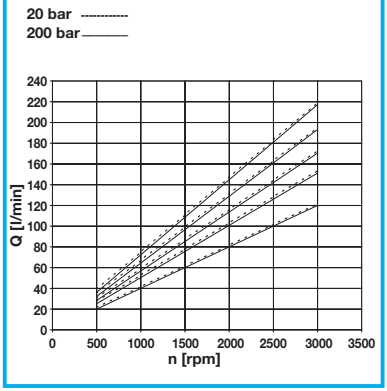
HPG MA4

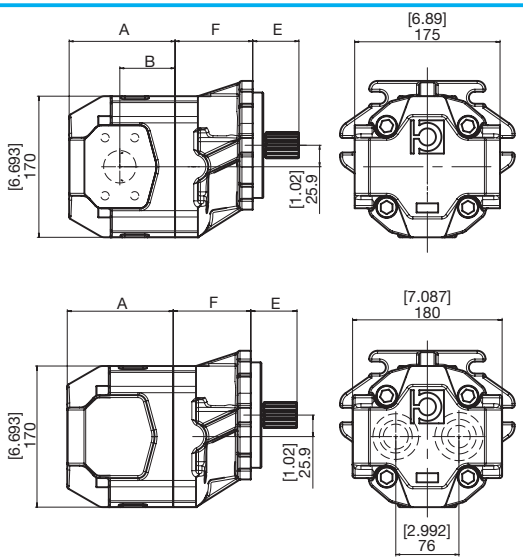
MOTORI AD INGRANAGGI
GEAR MOTORS
ZAHNRADMOTOREN

DATI TECNICI • *TECHNICAL DATA* • TECHNISCHE MERKMALE

DIAGRAMMA PORTATE
***DIAGRAMS* • KENNLINIEN**

GRUPPO *GROUP* BAUREIHE	TIPO *TYPE* TYP	CILINDRATA TEORICA *NOMINAL DISPLACEMENT* FÖRDERVOLUMEN (TM)		PRESSIONE- *PRESSURE* - DRUCK						VELOCITÀ DI ROTAZIONE *SPEED* DREHZAHL	
				CONTINUA *CONTINUOS* DAUER		INTERMITTENTE *INTERMITTENT* INTERMITTIERENDER		PICCO *PEAK* SPITZEN		MAX	MIN
		cm³	in³	bar	psi	bar	psi	bar	psi	min⁻¹	min⁻¹
4	**50**	50,00	3,05	270	3916	280	4061	310	4496	3000	500
	63	63,00	3,84	270	3916	280	4061	310	4496	3000	500
	71	71,0	4,33	250	3626	280	4061	300	4351	3000	500
	80	80,50	4,88	230	3336	280	4061	300	4351	3000	500
	90	90,50	5,52	210	3046	260	3771	280	4061	2700	500





F= Vedi sezione flange
E= Vedi sezione profilo alberi

F= See flange section
E= See splined shafts section

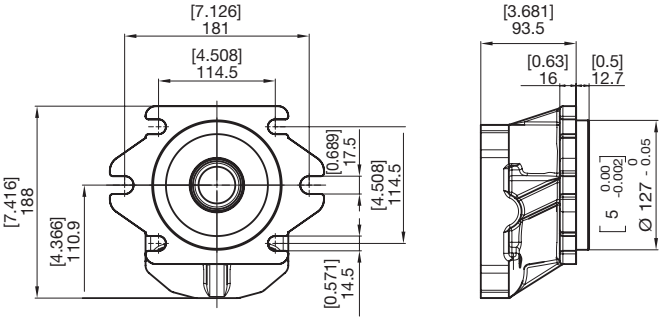
F= siehe Abschnitt Flansche
E= siehe Abschnitt Wellenprofile

DIMENSIONE • *SIZE*
ABMESSUNGEN

GRUPPO *GROUP* BAUREIHE	TIPO *TYPE* TYP	A		B	
		mm	in	mm	in
4	50	109,5	4,31	48,5	1,91
	63	116,5	4,59	55,5	2,19
	71	122,0	4,80	61,0	2,40
	80	127,5	5,02	66,5	2,62
	90	133,5	5,26	72,5	2,85

FLANGE
FLANGES
FLANSCHE

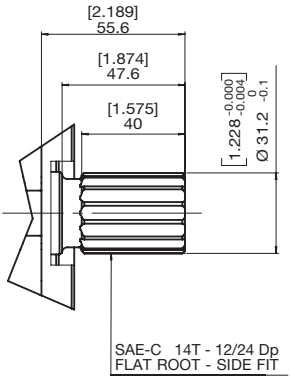
5



PROFILO ALBERI
SPLINE SHAFTS
WELLENPROFILE

HPG..4

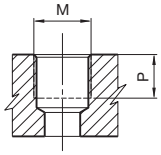
S **COPPIA MAX**
MAX TORQUE
MAX DREHMOMENT **900 N•m**



BOCCHE
PORTS
ANSCHLÜSSE

G LATERALE *LATERAL* SEITLICH

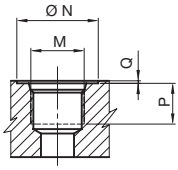
T POSTERIORE *REAR* HINTEN



TIPO *TYPE* TYPE	M	P mm	P in
G7	1”	21	0,47
G8	1 1/4”	21	0,83
G9	1 1/2”	25	0,83
T6	3/4”	19	0,98
G0	2”	32	0,75
T7	1”	21	1,26
T8	1 1/4”	21	0,83

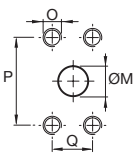
U LATERALE *LATERAL* SEITLICH

C POSTERIORE *REAR* HINTEN



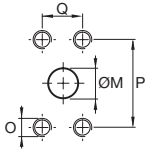
TIPO *TYPE* TYPE	DIMENSIONE *SIZE* GRÖSSE	N mm	N in	P mm	P in	Q mm	Q in	M
U7	1”	49	1,93	20	0,79	0,3	0,01	1-5/16”-12 UNF
U8	1 1/4”	58	2,28	20	0,79	0,3	0,01	1-5/8”-12 UNF
U9	1 1/2”	65	2,56	20	0,79	0,3	0,01	1-7/8”-12 UNF
C7	1”	49	1,93	20	0,79	0,3	0,01	1-5/16”-12 UNF
C8	1 1/4”	58	2,28	20	0,79	0,3	0,01	1-5/8”-12 UNF

N LATERALE *LATERAL* SEITLICH



TIPO *TYPE* TYPE	DIMENSIONE *SIZE* GRÖSSE	M mm	M in	P mm	P in	Q mm	Q in	O
N7	1”	27,0	1,06	52,4	2,6	26,2	1,03	3/8”-16UNC-2B
N8	1 1/4”	34,0	1,34	58,7	2,31	30,2	1,19	7/16”-14UNC-2B
N9	1 1/2”	39,3	1,55	69,8	2,74	35,7	1,40	1/2”-13UNC-2B
N0	2”	51,0	2,00	77,8	3,06	42,9	1,69	1/2”-13UNC-2B

F LATERALE *LATERAL* SEITLICH



TIPO *TYPE* TYPE	DIMENSIONE *SIZE* GRÖSSE	M mm	M in	P mm	P in	Q mm	Q in	O
F7	1”	25,4	1,06	52,4	2,60	26,2	1,03	M10
F8	1 1/4”	30,5	1,34	58,7	2,31	30,2	1,19	M10
F9	1 1/2”	39,3	1,55	69,8	2,74	35,7	1,40	M12
F0	2”	51,0	2,00	77,8	3,06	42,9	1,69	M12

ESTREMITÀ ALBERO *SHAFT PROFIL* WELLENENDE	FLANGE • *FLANGE* • FLANSCHE 5
S	■
BOCCHE *PORTS* ANSCHLÜSSE	
G T	■
U C	■
N F	■

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPG..4

HPG	PA	4	90	S	5	S	F0 F9	B	ST	..

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKTE

MA - Motore
PA - Pompa singola

MA *- Motor*
PA *- Pump*

MA - Motor
PA - Pumpe

GRUPPO
GROUP
BAUGRÖSSE

4

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

50 - 50,00
63 - 63,00
71 - 71,00
80 - 80,50
90 - 90,50

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
Counterclockwise
Linkslauf

D - Oraria/destra
Clockwise
Rechtslauf

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

5 - SAE C 2/4 FORI

5 *- SAE C 2/4 HOLES*

5 - SAE C 2/4 BOHRUNGEN

ESTREMITÀ D'ALBERO
SHAFT PROFIL
WELLENENDE

S - SCANALATO SAE C 14T

S *- SAE C 14T SPLINED*

S - KEIWELLE SAE C 14T

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

BOCCHE STD - *STANDARD PORT* - STANDARD ANSCHLÜSSE
CILINDRATA - *DISPLACEMENT* - FÖRDER-/SCHLUCKVOLUMEN

50.....80 Pompe - *Pumps* -Pumpen IN/OUT	*90* Pompe - *Pumps* -Pumpen IN/OUT
G9 G8	**G0 G9**
U8 U7	**U9 U8**
N9 N8	**N0 N9**
F9 F8	**F0 F9**
T8 T7	**T8 T7**
C8 C7	**C8 C7**

MOTORI - *MOTORS* - MOTOREN OUT/IN

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 le sezioni sono tra di loro separate. 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 (kept separated) 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 einer Mitnehmerkupplung. Die Pumpenstufen sind voneinander getrennt und 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 bzw. die Mitnehmerkupplungen übertragen können, wobei Folgendes zu beachten ist:
Die Mitnehmerwelle muss das für den Durchtrieb aller Pumpenstufen erforderliche Drehmoment übertragen: Die Höchstdrehmomente, die von jedem Profil übertragen werden können, sind im Kapitel der Wellenprofile angegeben.
Die Mitnehmerkupplung muss das für den Durchtrieb der dahinter liegenden Pumpenstufen erforderliche Drehmoment übertragen. Die Höchstwerte der übertragbaren Drehmomente sind in der nachstehenden Tabelle zusammengefasst:

GIUNTO DI ACCOPPIAMENTO ***COUPLING JOINT*** **WELLENKUPPLUNG**	**COPPIA MASSIMA TRASMISSIBILE** ***MAXIMUM TRASMITTED TORQUE*** **MAX. ÜBERTRAGBARES DREHMOMENT**
HPGP•4 + HPGP•4	**450 N•m**
HPGP•4 + HPLP•3	**200 N•m**
HPGP•3 + HPGP•3	**200 N•m**
HPGP•3 + HPLP•2	**100 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.

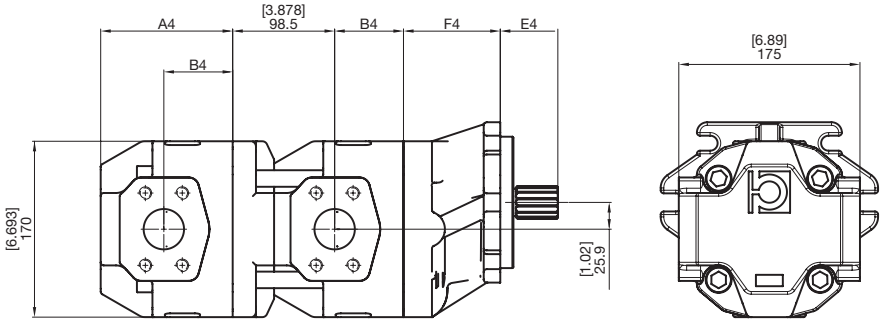
HÖCHSTDREHZAHL
Die Höchstdrehzahl einer Mehrfachpumpe entspricht der niedrigsten Drehzahl aller montierten Pumpen.

PER LE DIMENSIONI DELLE SINGOLE SEZIONI VEDERE IL GRUPPO DI RIFERIMENTO

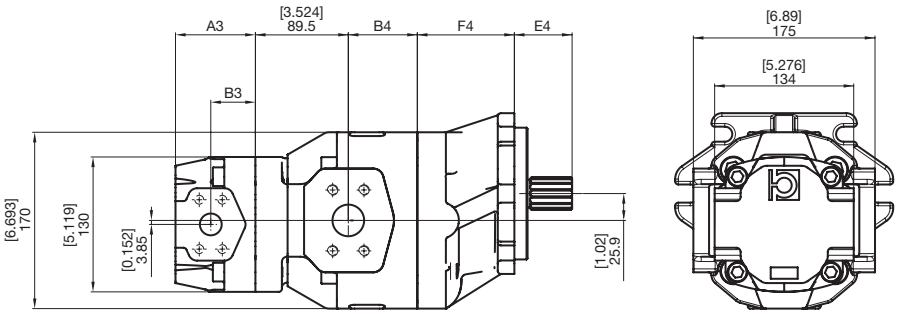
FOR DIMENSION OF EACH SECTION REFER TO THE GROUP DIMENSION TABLE

DIE ABMESSUNGEN DER EINZELNEN PUMPEN ENTNEHMEN SIE BITTE DER ENTSPRECHENDEN TABELLE.

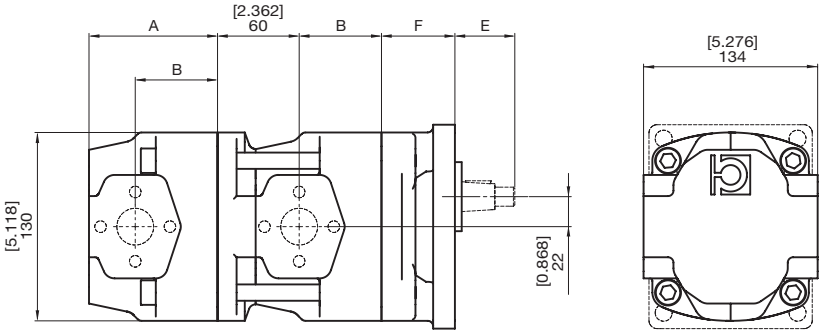
HPGP•4+HPGP•4



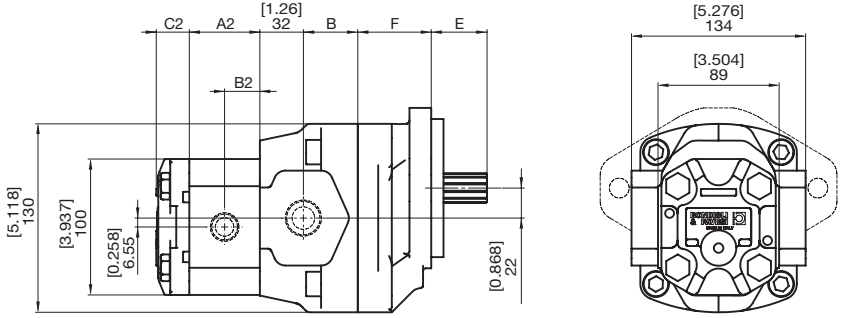
HPGP•4+HPGP•3



HPGP•3+HPGP•3



HPGP•3+HPLP•2



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ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

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

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKTE

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

4 - 3

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

HPG..4	HPG..3	HPL..2
50 - 50,00	**22** - 21,50	**05** - 4,50
63 - 63,00	**26** - 26,00	**06** - 6,00
71 - 71,00	**31** - 30,50	**08** - 8,50
80 - 80,50	**36** - 36,00	**11** - 11,00
90 - 90,50	**41** - 41,50	**14** - 14,50
	47 - 46,50	**17** - 17,00
	51 - 50,50	**20** - 19,50
	56 - 56,00	**26** - 26,00
	61 - 61,00	**34** - 34,00
		40 - 40,50

SENSO DI ROTAZIONE
ROTATION
DREHRICHTUNG

S - Antioraria/sinistra
Counterclockwise
Linkslauf

D - Oraria/destra
Clockwise
Rechtslauf

FLANGIA ANTERIORE
FRONT FLANGE
VORDERER FLANSCH

HPG..4
5 - SAE C 2/4 fori

5 *- SAE C 2/4 holes*

5 - SAE C 2/4 Bohrugen

HPG..3
2 - SAE B 2 fori
3 - Europea D 50,8

2 *- European standard*
3 *- European D 50,8*

2 - SAE B 2 Bohrugen
3 - EU-Norm D 50,8

ESTREMITÀ D'ALBERO
SHAFT PROFIL **- WELLENENDE**

HPG..4
S - Scanalato SAE C 14T

S *- SAE C 14T splined*

S - Keiwelle SAE C 14T

HPG..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 - 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

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

G7 G6	B	2	11	G4 G4	ST	--

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)
EU - Entrata unica
Common inlet
Eingang

BOCCHE
PORT
ANSCHLÜSSE

CILINDRATA
DISPLACEMENT
FÖRDERVOLUMEN

GRUPPO
GROUP
BAUGRÖSSE

GUARNIZIONI
SEALS
DICHTUNGEN

B - NBR
R - NBR — alte pres. (25 bar) / *high pres. (25 bar)* / Hochdruck (25 bar)

V - Viton
W - Viton — alte pres. (25 bar) / *For high pres. (25 bar)* / Hochdruck (25 bar)

BOCCHE STD - *STANDARD PORT* - STANDARD ANSCHLÜSSE
CILINDRATA - *DISPLACEMENT* - FÖRDER-/SCHLUCKVOLUMEN

HPG..4
CILINDRATA - *DISPLACEMENT* - FÖRDER-/SCHLUCKVOLUMEN

50.....80	*90*
Pompe - *Pumps* -Pumpen IN/OUT	Pompe - *Pumps* -Pumpen IN/OUT
G9 G8	G0 G9
U8 U7	U9 U8
N9 N8	N0 N9
F9 F8	F0 F9

HPG..3
CILINDRATA - *DISPLACEMENT* - FÖRDER-/SCHLUCKVOLUMEN

22.....36	*41.....56*
Pompe - *Pumps* -Pumpen IN/OUT	Pompe - *Pumps* -Pumpen IN/OUT
E7 E5	E7 E7
G7 G6	G8 G7
U7 U6	U8 U7
N7 N6	N8 N7
F7 F6	F8 F7

HPL..2
CILINDRATA - *DISPLACEMENT* - FÖRDER-/SCHLUCKVOLUMEN

5.....8	*11*	*14.....20*	*26.....40*
Pompe - *Pumps* -Pumpen IN/OUT		Pompe - *Pumps* -Pumpen IN/OUT	Pompe - *Pumps* -Pumpen IN/OUT
E3 E3		E5 E3	E5 E5
G4 G4		G6 G4	G6 G6
X5 X4	X6 X4	X6 X4	X6 X5
U6 U5		U6 U5	U6 U5

PER OGNI STADIO AGGIUNTO RIPETERE LA DESCRIZIONE

DESCRIPTION TO BE REPETED FOR EVERY ADDED SECTION

FÜR JEDE STUFE BITTE DIE BESCHREIBUNG WIEDERHOLEN.

ACCESSORI
ACCESSORIES
ZUBEHÖR

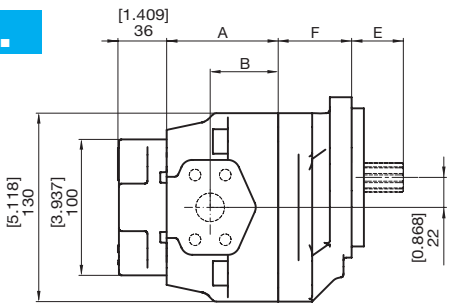
POMPE E MOTORI CON VALVOLE INTEGRATE
INTEGRATED VALVES FOR PUMP AND MOTORS
PUMPEN UND MOTOREN MIT INTEGRIERTEN VENTILEN

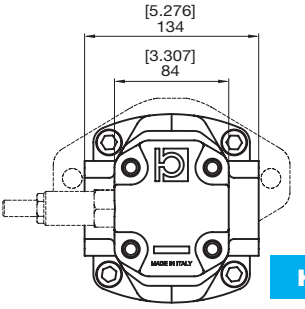
Con lo scopo di integrare più funzioni in un unico componente il circuito idraulico e quindi per ridurre anche la circuitistica d'impianto è possibile incorporare nel coperchio della pompa alcuni tipi di valvole di controllo pressione oltre a valvole di non ritorno.
Per ottenere informazioni più accurate della gamma di personalizzazioni si prega di contattare il ns 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, pressure control valves, and check valves incorporated into the pump 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 zusammenzu und, um die Anzahl der Bauteile zu reduzieren, können in den Deckel der Pumpe einige Ventiltypen zur Regelung von Druck sowie Rückschlagventile integriert werden. Für nähere Informationen über die Möglichkeiten der individuellen Auslegung wenden Sie sich bitte an unseren technischen Kundendienst und Vertrieb.

V..





HPG..3

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

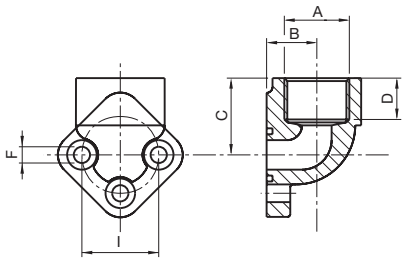
VE

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

VW

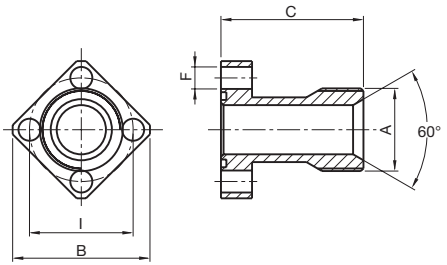
DOPPIA VALVOLA ANTICAVITAZIONE
DOUBLE ANTI-CAVITATION VALVE
DOPPEL NACHSAUGVENTIL

RACCORDI A GOMITO
UNION ELBOW
WINKELVERBINDUNGEN



TIPO *TYPE* TYP	DESCRIZIONE *DESCRIPTION* BENENNUNG	A	B		C		D		I		F	
			mm	in	mm	in	mm	in	mm	in	mm	in
HPL5767E3G31R	GR.RG 30x13.5 G3/8"	3/8"	17,5	0,69	26	1,02	14	0,56	30	1,18	6,5	0,26
HPL5767E3G41R	GR.RG 30x13.5 G1/2"	1/2"	17,5	0,69	26	1,02	14	0,56	30	1,18	6,5	0,26
HPL5767E4G61R	GR.RG 40x20 G3/4"	3/4"	21	0,82	36	1,42	16	0,60	40	1,58	8,5	0,33
HPL5767E7G71R	GR.RG 51x27 G1"	1"	27	1,06	43	1,70	21	0,80	51	2,00	10,5	0,41
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	0,41
HPL5767E4G41R	GR.RG 40x20 G1/2"	1/2"	21	0,83	36	1,42	16	0,63	40	1,58	8,5	0,33
HPL5767E3M41R	GR.RG 30x13.5 M18x1.5	18X1.5	17,5	0,69	26	1,02	14	0,56	30	1,18	6,5	0,26

RACCORDI DIRITTI
STRAIGHT UNION
GERADE VERBINDUNGEN



TIPO *TYPE* TYP	DESCRIZIONE *DESCRIPTION* BENENNUNG	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	0,41
HPL5767E8G42R	GR.RD 62x34 (1 1/4")	1 1/4"	86	3,39	70	2,76	62	2,45	10,5	0,41

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.

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