



**POMPE E MOTORI A PISTONI ASSIALI
AD ASSE INCLINATO**

***BENT AXIS AXIAL PISTON
PUMPS AND MOTORS***

AXIALKOLBENPUMPEN-MOTOREN

**HP BA
60**

398SBA0013A01

HP BA 60

MOTORI IDRAULICI A CILINDRATA VARIABILE AD ASSE INCLINATO VARIABLE-DISPLACEMENT AXIAL PISTON MOTORS AXIALKOLBENVERSTELLMOTOREN

Il sistema è stato progettato in modo da ottenere un elevato angolo di inclinazione dei pompanti rispetto all'asse dell'albero uscente. Rispetto a motori a piatto inclinato che raggiungono i 18° l'angolo di inclinazione nella versione Bent Axis raggiunge i 25°.

Tale geometria permette:

- elevata coppia di spunto
- elevato range di variazione della cilindrata
- elevata efficienza volumetrica e meccanica
- elevata velocità massima
- elevate pressioni massime

Il motore in oggetto è provvisto di valvola di scambio di serie con strozzatore di diametro di 1.7 mm. La variazione della cilindrata da massima a minima avviene tramite pilotaggio idraulico ad alta o a bassa pressione oppure tramite comando elettrico in funzione delle richieste del cliente. Questa configurazione permette un ampio range di variazione della cilindrata fino ad un minimo del 30% rispetto alla massima. Nella versione a comando elettrico l'elettrovalvola ha un range di funzionamento in corrente di $\pm 10\%$ del valore nominale.

The system has been designed in order to obtain a high angle of inclination of the pumps with respect to the axle of the outgoing shaft.

With respect to motors with a tilted plate which reach 18°, the angle of inclination in the Bent Axis version reaches 25°.

This geometry allows:

- high static torque
- high range of displacement variation
- high volumetric and mechanical efficiency
- high maximum reachable speed
- high maximum pressures

This motor is equipped with a standard exchange valve with choke diameter 1.7 mm.

Displacement is varied from maximum to minimum by means of a high or low pressure hydraulic control or by an electric control, as requested by the customer.

This configuration allows an ample range of variation of displacement down to a minimum of 30% with respect to the maximum.

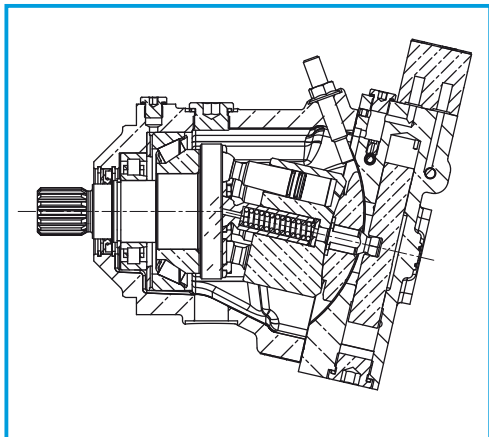
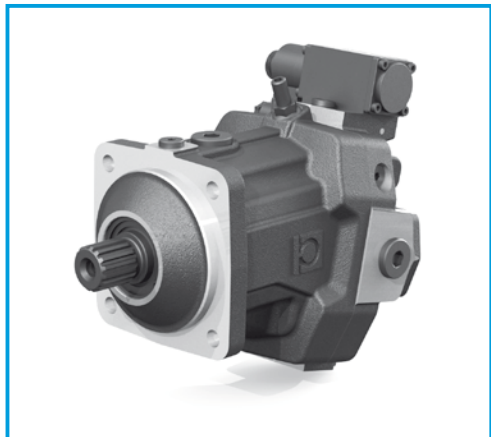
Die Schrägachsenmotoren wurden so konstruiert, daß sie einen größeren Schwenkwinkel von 25° ermöglichen als bei den Schrägscheibeneinheiten mit 18°. Dies ermöglicht:

- Höheres Anlaufmoment
- Großer Stellbereich des Schluckvolumens
- Gute mechanisch hydraulische und volumetrische Wirkungsgrade
- Hohe Enddrehzahl
- Hohe Betriebsdrücke

Die Motoren sind mit einem Spülventil mit Ausspeisedüse $\varnothing 1,7\text{mm}$ bestückt.

Die Verstellung des Schluckvolumens der Motoren geschieht durch hydraulische Vorsteuerung, entweder durch Hoch- oder Niederdruck oder durch elektrische Ansteuerung je nach Kundenwunsch. Dies erlaubt einen großen Stellbereich von V_{max} bis 30% von V_{max} .

HP BA 60

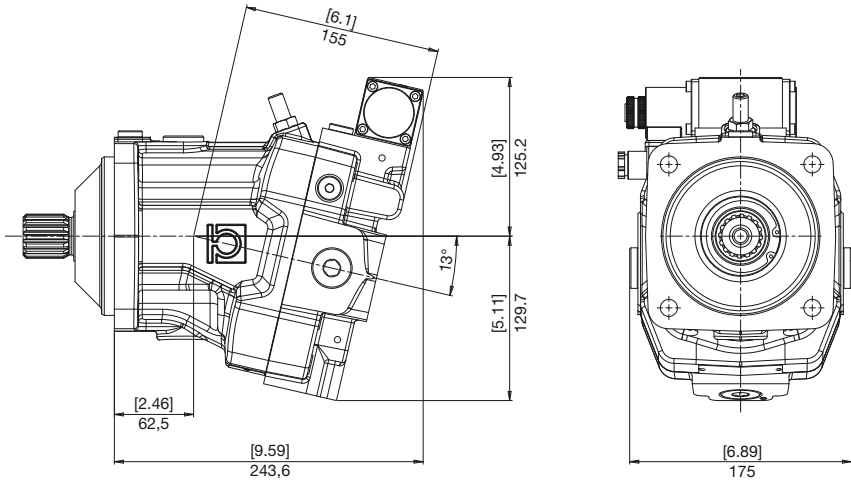


DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

GRUPPO GROUP BAUREIHE	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN (TM)		OSCILLANTE SWASHPLATE SCHWENKWINKEL	CONTINUA CONTINUOUS DAUER		INTERMITTENTE INTERMITTENT INTERMITTIERENDER		PICCO PEAK SPITZEN		VELOCITÀ DI ROTAZIONE SPEED DREHZAHL			MASSA WEIGHT GEWICHT	
	cm ³	in ³		°	bar	psi	bar	psi	bar	psi	MAX (max V)	MAX (min V)	MIN	kg
HP BA	60	3,66	25	380	5510	400	5800	450	6525	4400	5500	500	28	62

**DIMENSIONI
SIZE
ABMESSUNGEN**

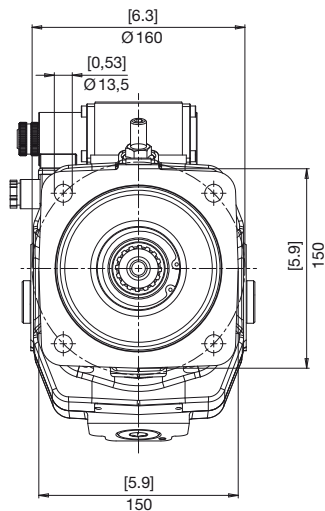
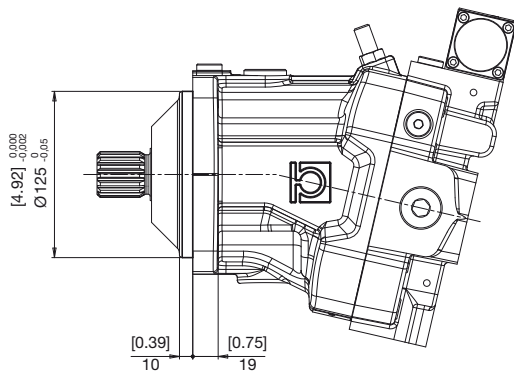
HP BA 60



**FLANGE
FLANGES
FLANSCH**

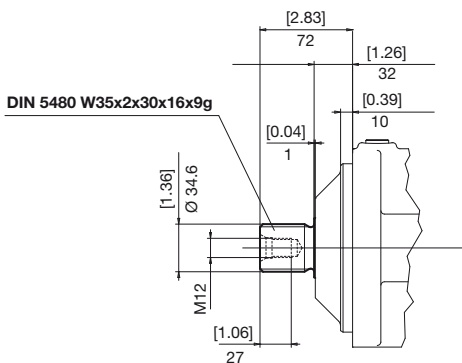
HP BA 60

I ISO 4 FORI
ISO 4 HOLES
ISO 4 BOHRUNGEN

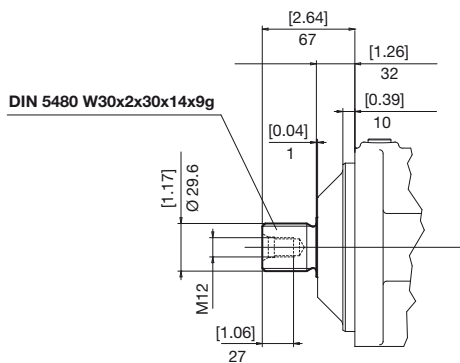


**ESTREMITÀ ALBERI
SPLINE SHAFTS
WELLENPROFILE**

C COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 860 N•m



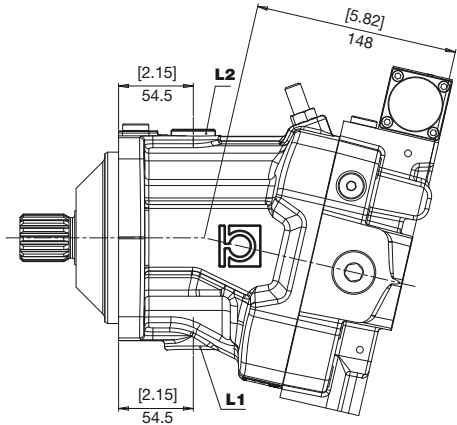
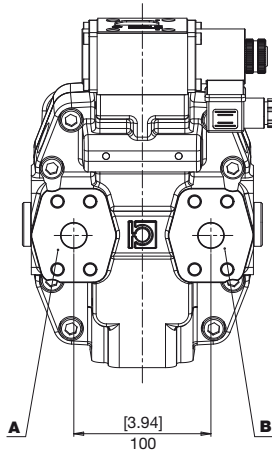
1 COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 590 N•m



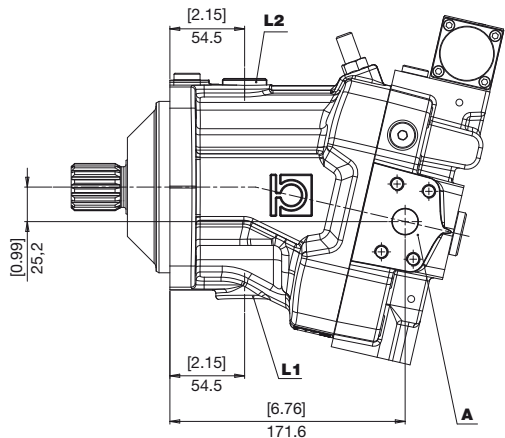
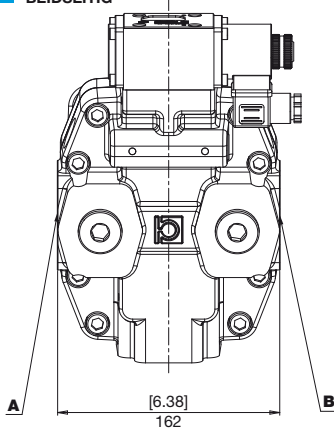
POSIZIONE BOCHE
POSITION OF PORTS
ANSCHLUSSPOSITION

HP BA 60

P POSTERIORI
 REAR
 HINTEN

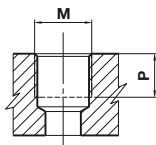


L LATERALI CONTRAPPOSTE
 OPPOSITE SIDEWAYS
 BEIDSEITIG

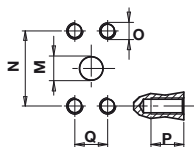


**BOCCHIE
PORTS
ANSCHLÜSSE**

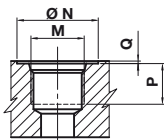
HP BA 60



TIPO TYPE TYP	M	Nm		P	
		mm	in	mm	in
G2	Port ISO 1179-1 - G1/4	17	8	0,31	
G6	Port ISO 1179-1 - G3/4	90	19	0,75	
G7	Port ISO 1179-1 - G1	160	19	0,75	



TIPO TYPE TYP	M		N		P		Q		O	
	mm	in	mm	in	mm	in	mm	in	mm	Nm
N7	25	1	57,15	2,25	27,76	1,09	20	0,79	M12	70



TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M	
		mm	in	mm	in	mm	in	mm	Nm
U2	1/4"	20	0,79	12	0,47	0,3	0,01	Port ISO 11926-1-7/16-20	17
U6	3/4"	41	1,61	20	0,79	0,3	0,01	Port ISO 11926-1-1 1/16-12	90
U7	1"	49	1,93	18	0,70	0,3	0,01	Port ISO 11926-1-1 5/16-12	160

**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

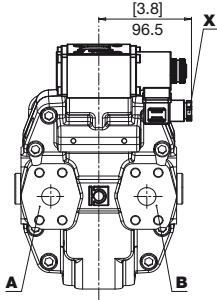
TIPO TYPE TYP	A - B INGRESSO/USCITA INLET/ OUTLET EINGANG/AUSGANG	L1 - L2 DRENAGGIO DRAIN LECKÖLANSCHLUSS	a - b - x PILOTAGGIO PILOT STEUERDRUCK
G	G7	G6	G2
U	U7	U6	U2
N	N7	G6	G2
M	N7	U6	U2

**COMANDI
CONTROLS
STEUERUNGEN**

HP BA 60

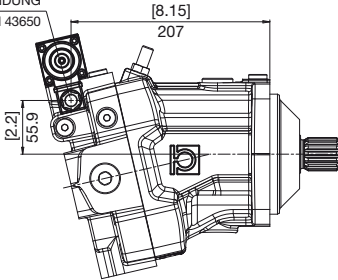
E F
12 V 24 V

**ELETRICO A 2 POSIZIONI
ELECTRICAL, 2-POSITION
ELEKTRISCH, 2 STELLUNGEN**



CONNETTORE
CONNECTOR
VERBINDUNG

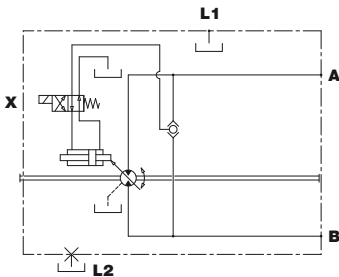
DIN 43650



INGRESSO INLET EINGANG	ROTAZIONE DIRECTION DREHRICHTUNG
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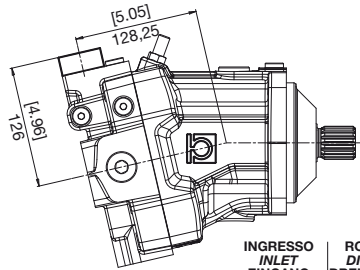
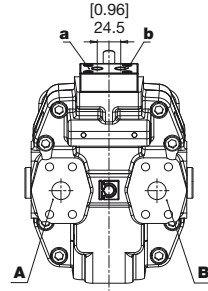
A	SINISTRA LEFT LINKS
B	DESTRA RIGHT RECHTS

X Elettrovalvola
Solenoid Valve
Magnetventil



H

**IDRAULICO DIRETTO A 2 POSIZIONI
DIRECT HYDRAULIC, 2-POSITION
HYDRAULISCH DIREKT, 2 STELLUNGEN**

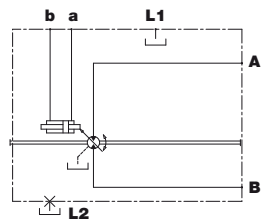
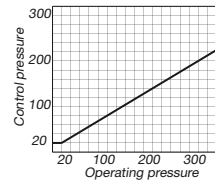


INGRESSO INLET EINGANG	ROTAZIONE DIRECTION DREHRICHTUNG
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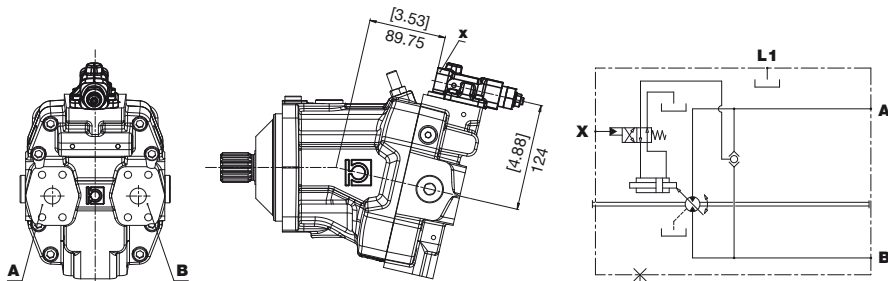
A	SINISTRA LEFT LINKS
B	DESTRA RIGHT RECHTS

a (cm² min) Comando idraulico diretto
Direct hydraulic control

b (cm² max) Hydraulische Direktsteuerung

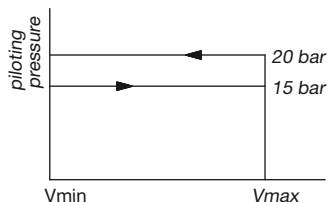


K IDRAULICO A 2 POSIZIONI A BASSA PRESSIONE
HYDRAULIC, 2-POSITION - LOW PRESSURE
HYDRAULISCH, 2 STELLUNGEN - NIEDERDRUCK



INGRESSO INLET EINGANG	ROTAZIONE DIRECTION DREHRICHTUNG
A	SINISTRA LEFT LINKS
B	DESTRA RIGHT RECHTS

X	Pilotaggio Pilot Steuerdruck
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Normalmente il motore é in cilindrata massima. Applicando una pressione esterna sul pilotaggio si ottiene la variazione di cilindrata alla minima.

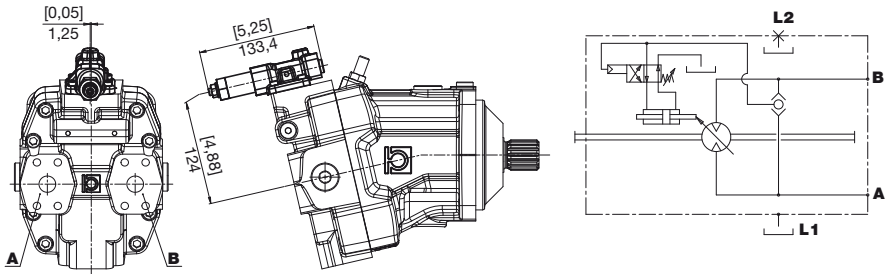
Per una corretta variazione della cilindrata attenersi ai valori di pressione di pilotaggio riportati nel diagramma.

The motor is usually at maximum displacement. By applying external pressure on pilot "X" the displacement is changed to a minimum.

To correctly change displacement, follow the pilot pressure values as shown in the chart.

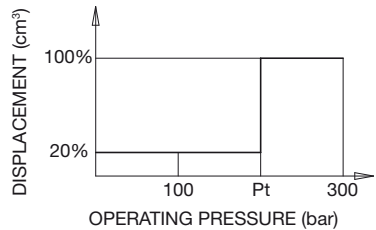
Normalerweise hat der Motor das maximale Schluckvolumen. Durch Anwendung eines äußeren Drucks auf den Steuerdruck erzielt man die Verstellung auf das Mindest-Sluckvolumen. Zur korrekten Änderung des Schluckvolumens wird empfohlen, die im Diagramm dargestellten Steuerdruckwerte zu beachten.

A IDRAULICO AUTOMATICO (ON/OFF)
HYDRAULIC AUTOMATIC (ON/OFF)
HYDRAULISCH AUTOMATISCHE (ON/OFF)



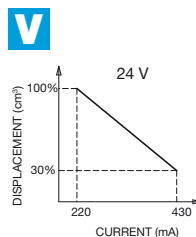
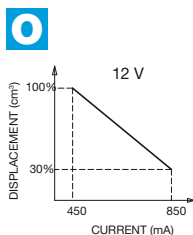
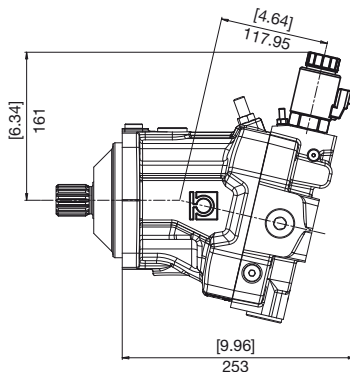
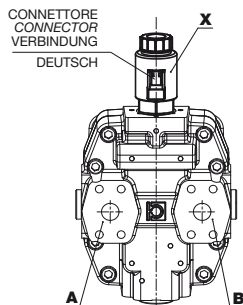
INGRESSO INLET EINGANG	ROTAZIONE DIRECTION DREHRICHTUNG
A	SINISTRA LEFT LINKS
B	DESTRA RIGHT RECHTS

Pt Pressione di taratura
(secondo specifica cliente)
Relief pressure
(according to client specification)
Kalibrierdrucks
(Kunden Spezifische)



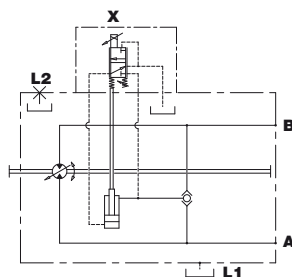
O **V**
12 V 24 V

ELETTRICO PROPORZIONALE RETROAZIONATO
ELECTRICAL PROPORTIONAL FEEDBACK CONTROL
ELEKTRISCH PROPORZIONALSTEUERUNG, RÜCKGEFÜHRT



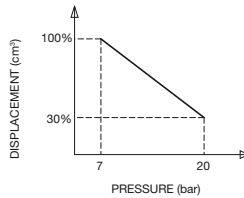
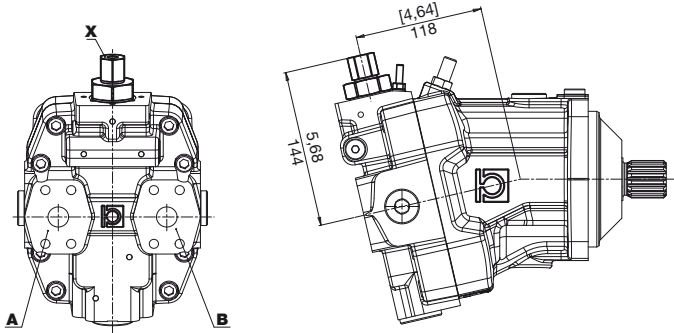
INGRESSO INLET EINGANG	ROTAZIONE DIRECTION DREHRICHTUNG
A	SINISTRA LEFT LINKS
B	DESTRA RIGHT RECHTS

X Elettrovalvola
Solenoid Valve
Magnetventil



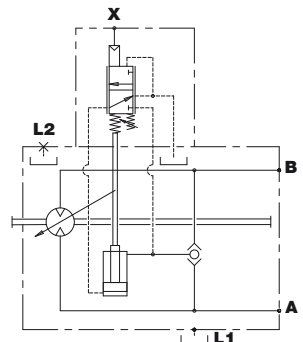


IDRAULICO PROPORZIONALE
HYDRAULIC PROPORZIONAL
HYDRAULISCH PROPORZIONAL

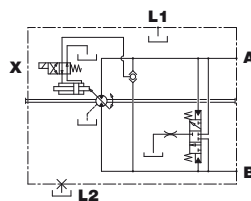
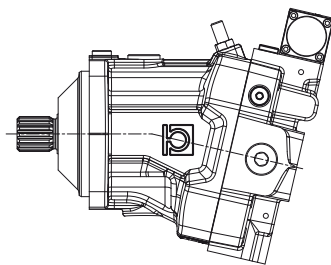
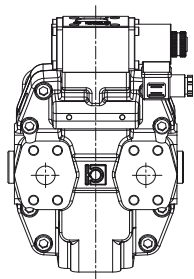


INGRESSO INLET EINGANG	ROTAZIONE DIRECTION DREHRICHTUNG
A	SINISTRA LEFT LINKS
B	DESTRA RIGHT RECHTS

X Pilotaggio
Pilot
Steuerdruck



V VALVOLA DI FLUSSAGGIO (5 - 7 l/min)
FLUSHING AND BOOST VALVE (5- 7 l/min)
SPUL- UND SPEISEDRUCKVENTIL (5 - 7 l/min)





ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HP BA 60

HP

BA

060

25

I

B

G

P

E

V

...

PRODOTTO
PRODUCT
PRODUKT

BA - Motori a cilindrata variabile
BA - *Variable-displacement motors*
BA - Schrägachsen-Verstellmotor

CILINDRATA STANDARD
STANDARD DISPLACEMENT
FÖRDERVOLUMEN STANDARD
060

CILINDRATA MINIMA
MIN. DISPLACEMENT
MIN. SCHLUCKVOLUMEN

FLANGIA
FLANGE
FLANSCH

I - ISO 4 fori
I - ISO 4 holes
I - ISO 4 Bohrungen

ESTREMITÀ ALBERO
SHAFT PROFIL
WELLENENDE

C - DIN 5480
W35x2x30x16x9g
1 - DIN 5480
W30x2x30x14x9g

BOCCE
PORTS
ANSCHLÜSSE

Vedi tabella
See chart
Siehe Tabelle

ESECUZIONI SPECIALI
SPECIAL VERSIONS
SONDERBAUARTEN

ACCESSORI
ACCESSORIES
ZUBEHÖR

V - valvola di flussaggio
V - *flushing and boost valve*
V - Spül- und speisedruckventil

COMANDI
CONTROLS
STEUERUNGE

A - Idrraulico automatico (ON/OFF)
E - Elettrico (12 V) a 2 posizioni
F - Elettrico (24 V) a 2 posizioni
G - Idrraulico proporzionale
H - Idrraulico diretto a 2 posizioni
K - Idrraulico a 2 posizioni a bassa pressione
O - Elettrico proporzionale retroazionato 12 V
V - Elettrico proporzionale retroazionato 24 V

A - *hydraulic automatic (ON/OFF)*
E - *12 V electrical, 2-position*
F - *24 V electrical, 2-position*
G - *Hydraulic proportional*
H - *Direct hydraulic, 2-position*
K - *Hydraulic, 2-position - low pressure*
O - *Electrical proportional feedback control 12V*
V - *Electrical proportional feedback control 24V*

A - *Hydraulisch Automatische (ON/OFF)*
E - *Elektrisch (12 V), 2 Stellungen*
F - *Elektrisch (24 V), 2 Stellungen*
G - *Hydraulisch proportional*
H - *Hydraulisch direkt, 2 Stellungen*
K - *Hydraulisch, 2 Stellungen, niederdruck*
O - *Elektrisch proportionalsteuerung, rückgeführt 12 V*
V - *Elektrisch proportionalsteuerung, rückgeführt 24 V*

POSIZIONE BOCCE
POSITION OF PORTS
ANSCHLUSSPOSITION

L - Laterali contrapposte
P - Posteriori
L - *Opposite sideways*
P - *Rear*
L - *Beidseitig*
P - *Hinten*