SERVOCOMANDI
SERVO CONTROLS
SERVOSTEUERUNGEN

UNITÀ DI ALIMENTAZIONE
FEEDING UNIT
VERSORGUNGS EINHEIT

SC007

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INHALTSVERZEICHNIS

I servocomandi sono dispositivi di pilotaggio per il comando remoto di pompe a cilindrata variabile (trasmissioni idrostatiche) e valvole di controllo direzionale della portata.

Servocontrols are control devices for the remote control of variable-displacement pumps (hydrostatic transmissions) and flow rate directional control valves.

Servosteuerungen sind Vorrichtungen für die Fernsteuerung von Verstellpumpen (Hydrostaten) und Richtungsventilen.

L'utilizzo preciso e adeguato a ogni tipo di applicazione sono assicurati da una elevata sensibilità, una molteplicità di curve di regolazione e una bassa forza di azionamento.

The precise and adequate use of all types of applications is ensured by high sensitivity, numerous adjustment curves and a low operating force.

Die Präzision und die Eignung für jede Art von Anwendung werden durch eine hohe Ansprechempfindlichkeit, eine Vielzahl von Regelkurven und Leichtgängigkeit gewährleistet.

L'offerta HP Hydraulic si innesta su una consolidata tradizione di sviluppo e produzione con spirito innovativo nel design nei processi produttivi.
Questo permette di offrire una gamma completa di comandi in grado di soddisfare un ampio spettro di esigenze degli utilizzatori finali.

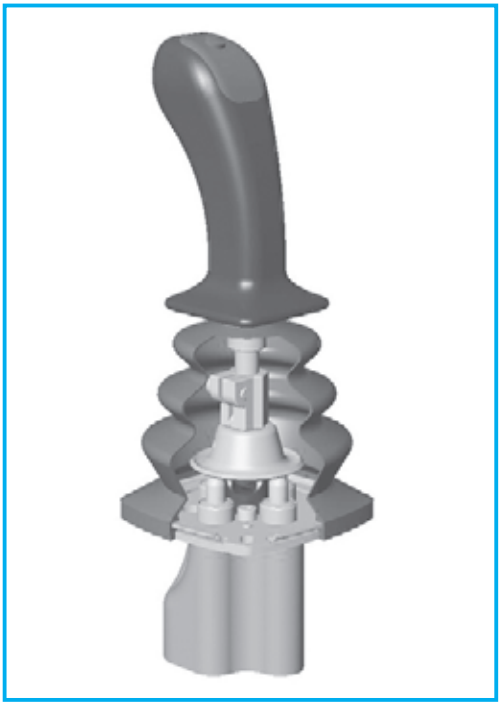
The HP Hydraulic range of products is part of a consolidated tradition of development and production with innovative spirit of design in production processes. This permits offering a complete range of controls able to cater for the many different needs of end users.

Das Angebot von HP Hydraulic beruht auf einer bewährten Tradition in Entwicklung und Produktion mit stark innovativem Gehalt in Design und Produktionsprozessen. Dies ermöglicht das Angebot einer kompletten Palette an Steuerungen, die ein großes Spektrum kundenspezifischer Anforderungen erfüllen.

Il corpo in ghisa abbinato all'elevata qualità degli acciai impiegati unitamente ai più idonei trattamenti termici, collocano questa nuova gamma di comandi idraulici ai vertici prestazionali in termini di robustezza, affidabilità, ergonomicità, e dolcezza di comando.

The cast-iron body together with the top quality of the steels used and most suitable heat treatments make this new range of hydraulic controls a forerunner in terms of sturdiness, reliability, ergonomics and smooth control.

Das Guss-Gehäuse und die hohe Qualität der verwendeten Stähle, sowie deren Wärmebehandlungen machen diese neuen hydraulischen Steuerungen zu leistungsstarken Produkten der Spitzenklasse in Bezug auf robuste Bauweise, Zuverlässigkeit, Ergonomie und Leichtgängigkeit der Steuerung.



SERVOCOMANDI ED UNITÁ DI ALIMENTAZIONE - ISTRUZIONI GENERALI DI IMPIEGO
SERVOCONTROLS AND FEEDING UNITS - OPERATING INSTRUCTIONS
SERVOSTEUERUNGEN UND VERSORGUNGS EINMEIT - ALLGEMEINE GEBRAUCHSANWEISUNGEN

I servocomandi idraulici sono **dispositivi di comando e non è possibile impiegarli con funzione di sicurezza.**
La funzione di **"sicurezza"** deve essere realizzata con opportuni dispositivi. L'utilizzo del comando deve essere consentito esclusivamente a personale addestrato al suo uso e a quello della apparecchiatura comandata.

*Hydraulic servo controls are **control devices** and **cannot be used for safety functions.***
***Safety functions** must be assigned to the appropriate devices.*
The controls must be used only by personnel who have received an adequate training on the controls and the machinery being operated.

Die hydraulischen Servosteuerungen sind **Steuervorrichtungen** und **können nicht mit Sicherheitsfunktion angewandt werden.**
Die **"Sicherheits"**-Funktion ist mit zweckdienlichen Vorrichtungen zu bewerkstelligen. Der Gebrauch der Steuerung darf nur diesbezüglich angelerntem Personal und den Bedienern des gesteuerten Geräts erlaubt werden.

I servocomandi idraulici HP Hydraulic della serie C coprono una ampia gamma di gruppi (a leva, a pedale, a camma, a volantino) permettono in tal modo un ampio spettro di applicazioni e utilizzi

The C series HP Hydraulic servo controls covers a broad range of units (lever, pedal, cam, handwheel) for a wide assortment of different applications and uses.

Die hydraulischen Servosteuerungen von HP Hydraulic der Baureihe C decken ein großes Spektrum an Aggregaten (Hand-/Fußbedienungen, mit Nocken, mit Handrad) und gestatten daher einen breit gefächerten Anwendungs-und Einsatzbereich.

FLUIDO IDRAULICO
Oli idraulici:
Fluidi idraulici HLP (DIN 51524 parte2)
Oli lubrificanti per motori API CD (SAE)
Fluidi idraulici HLPV(DIN 51524 parte3)
J183).
Per fluidi diversi da quelli citati si prega di consultare il ns servizio tecnico.

HYDRAULIC FLUID
Hydraulic fluids:
HLP hydraulic fluid (DIN 51224 part2)
Lubrication motor oils API CD (SAE
HLPV hydraulic fluids (DIN 51224 part3)
J183)
For fluids different to those shown, please refer to our technical service

HYDRAULIK MEDIUM
Hydrauliköle HLP (DIN 51224 Teil 2)
Motoröle API CD (SAE Hydrauliköle HLPV (DIN 51224 Teil 3)
J183).
Für andere Medien als oben angegeben ist eine Rücksprache mit unserem technischen Kundendienst erforderlich

Pressioni di esercizio:
• massima pressione di alimentazione 100 bar
• massima pressione regolata 65 bar
• massima contropressione allo scarico 3 bar
Portate:
• minima 5 l/min
• massima 15 l/min
• massimo trafilimento a 30 bar 5 cm^3/min
• massima isteresi 0.8 bar

Operating pressure:
• *max supply pressure 100 bar*
• *max regulated pressure 65 bar*
• *max counter pressure at drainage 3 bar*
Flow rates:
• *min 5l/min*
• *max 15l/min*
• *max reduction unit leak at 30 bar 5 cm^3/min*
• *max hysterisis 0.8 bar*

Betriebsdrücke:
• max. Versorgungsdruck 100 bar
• max. gesteuerter Druck 65 bar
• max. Gegendruck am Auslass 3 bar
Durchsätze:
• Mindestdurchsatz 5 l/Min.
• Höchstdurchsatz 15 l/Min.
• max. Austritt für Druckminderventil bei 30 bar 5 cm^3 /Min
• max. Hysterese 0,8 bar

TEMPERATURE DI FUNZIONAMENTO
• Minima -20°C
• Massima continua 90°C
• Di picco (intermittente) 100°C

OPERATING TEMPERATURE
• *Min -20°C*
• *Max continuous 90°C*
• *Peak (intermittent) 100°C*

BETRIEBSTEMPERATUREN
• Mindesttemperatur -20°C
• Dauerhöchsttemperatur 90°C
• Höchsttemperatur (intermittierend) 100°C

VISCOSITÀ
• Minima 10 mm^2/s
• Massima 400 mm^2/s
• Campo di viscosità raccomandato15-100 mm^2/s

VISCOSITY
• *Min 10 mm^2/s*
• *Max 400 mm^2/s*
• *Recommended viscosity range 15-100 mm^2/s*

VISKOSITÄT
• Min. Viskosität 10 mm^2/s
• Max. Viskosität 400 mm^2/s
• Empfohlener Viskositätsbereich 15-100 mm^2/s

GRADO DI CONTAMINAZIONE
ISO 4406 o NAS 1638

DEGREE OF CONTAMINATION
ISO 4406 or NAS 1638

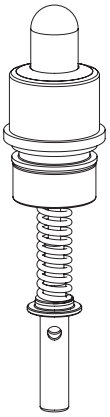
REINHEITSKLASSE
ISO 4406 oder NAS 1638

PROTEZIONE
I servocomandi non sono stagni. Devono essere utilizzati in ambiente chiuso e protetto da umidità e polvere. Per i tipi di materiali impiegati non sono adatti all'impiego in ambiente marino.

PROTECTIONS
Servo controls are not sealed. They must be used in a closed environment, and protected from water and dust. Due to their material composition, the controls are not intended for offshore use.

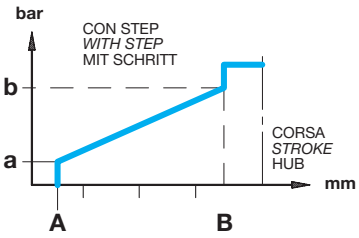
SCHUTZ
Die Servosteuerungen sind nicht wasserdicht. Sie sind nur zum Gebrauch in geschlossenen Räumen mit Schutz gegen Feuchtigkeit und Staub geeignet. Aufgrund der Art der verwendeten Werkstoffe sind sie nicht zum Gebrauch auf der See geeignet.

CURVE DI REGOLAZIONE RAMPA SINGOLA
SINGLE SLOPE PRESSURE CURVES
EIN-RAMPEN-REGELKURVEN



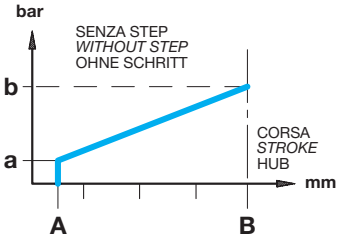
S ..

P ..

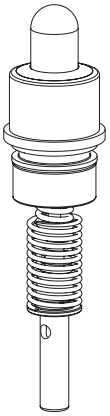


L ..

R ..



CURVE DI REGOLAZIONE DOPPIA RAMPA
DUAL SLOPE PRESSURE CURVES
ZWEI-RAMPEN-REGELKURVEN



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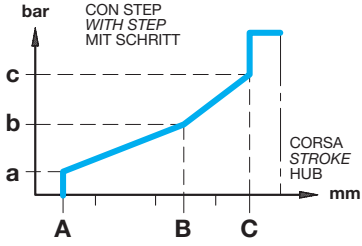
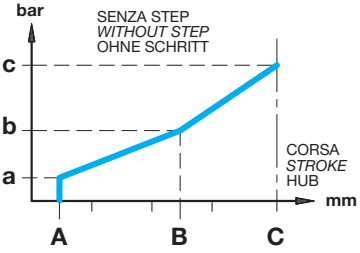


G ..



HPCJ

SERVOCOMANDO A DUE ASSI (AZIONAMENTO A LEVA)
DOUBLE AXIS SERVO CONTROL (LEVER MECHANISM)
SERVOSTEUERUNG MIT HANDBEDIENUNG

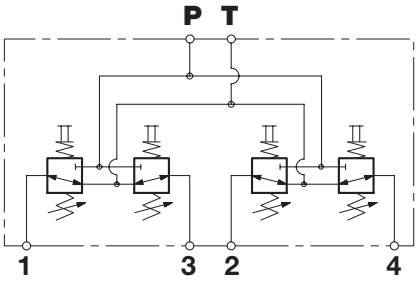
CURVE DI REGOLAZIONE • *ADJUSTMENT CURVES* REGELKURVEN

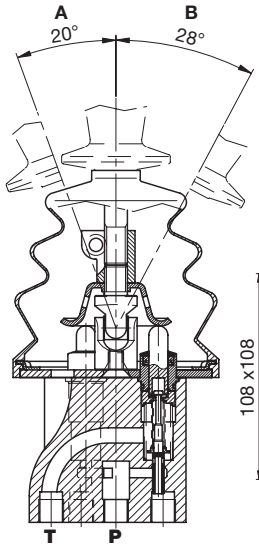
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK a		b	
	bar	psi	bar	psi
S00	2	29	16	232
S01	5	73	20	290
S02	6,5	94	24,5	355
S04	3,2	46	17,2	249
S08	5	73	16	232
S11	4	58	15	218
S12	1,5	22	7	102
S13	5	73	28	406

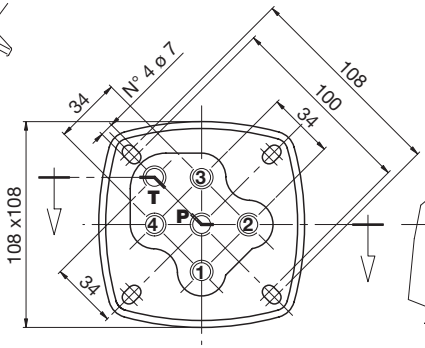
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK a		b	
	bar	psi	bar	psi
L00	2	29	18	261
L01	5	73	22	319
L02	6,5	94	26,5	384
L04	3,2	46	19	276
L08	5	73	18	261
L11	4	58	15	218
L12	1,5	22	9	131
L13	5	73	30	435

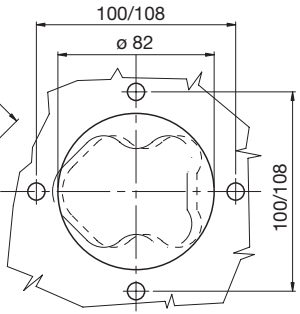
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK a		b		c		CORSA *STROKE* HUB A	B	C
	bar	psi	bar	psi	bar	psi	mm	mm	mm
M60	5	73	12	174	21	306	1,2	5,4	7,8

TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK a		b		c		CORSA *STROKE* HUB A	B	C
	bar	psi	bar	psi	bar	psi	mm	mm	mm
G60	5	73	12	174	23	334	1,2	5,4	8,3









FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG

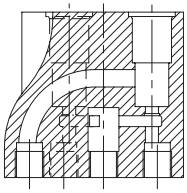
A ANGOLO DELLA LEVA CON UN SOLO ATTUATORE AZIONATO
B ANGOLO DELLA LEVA CON DUE ATTUATORI AZIONATI

A *LEVER DEFLECTION WHEN ACTUATING ONLY ONE ACTUATOR*
B *LEVER DEFLECTION WHEN SIMULTANEOUSLY ACTUATING TWO ACTUATORS*

A HEBELSCHWENKBEREICH BEI EIN VERBRAUCHER
B HEBELSCHWENKBEREICH BEI ZWEI GLEICHZEITIG BETÄTIGTEN VERBRAUCHERN

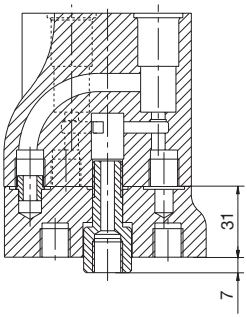
MODELLI
MODELS
MODELLE

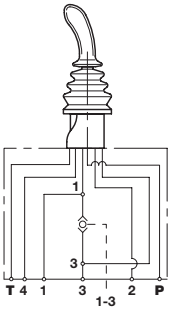
0



0 = LEVA CENTRALE
CENTRAL LEVER
MITTLERER HEBEL

1
2
3
4



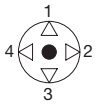


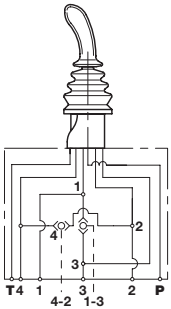
1

LEVA CENTRALE
+ 1 SEGNALE DI PRESSIONE

CENTRAL LEVER
+ 1 PRESSURE SIGNAL

MITTLERER HEBEL
+ 1 DRUCKSIGNAL



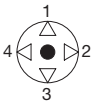


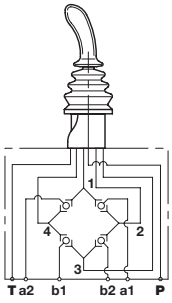
2

LEVA CENTRALE
+ 2 SEGNALI DI PRESSIONE

CENTRAL LEVER
+ 2 PRESSURE SIGNALS

MITTLERER HEBEL
+ 2 DRUCKSIGNALE



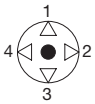


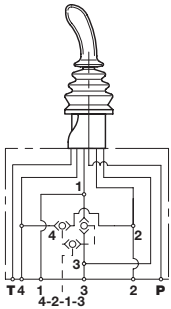
3

LEVA CENTRALE
+ CONTROROTAZIONE

CENTRAL LEVER
+ COUNTER ROTATION

MITTLERER HEBEL
+ GEGENDREHUNG



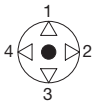


4

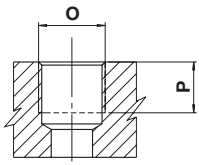
LEVA CENTRALE
+ SEGNALE SINGOLO DA 4 POSIZIONI

CENTRAL LEVER
+ SINGLE 4-POSITION SIGNAL

MITTLERER HEBEL
+ EINZELSIGNAL MIT 4 POSITIONEN



BOCCHE
PORTS
ANSCHLÜSSE

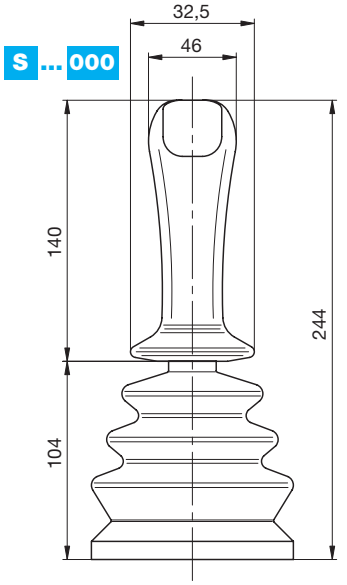


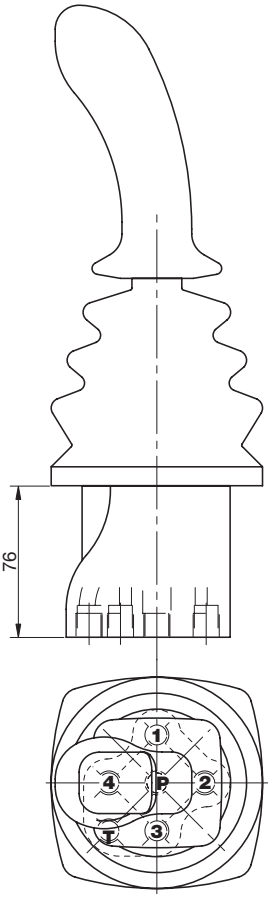
TIPO *TYPE* TYP	O	P mm	P in
G2	1/4"	13	0,47
U3	9/16-18 UNF	13	0,47

IMPUGNATURA ANATOMICA
ANATOMIC GRIP
ANATOMISCHER GRIFF

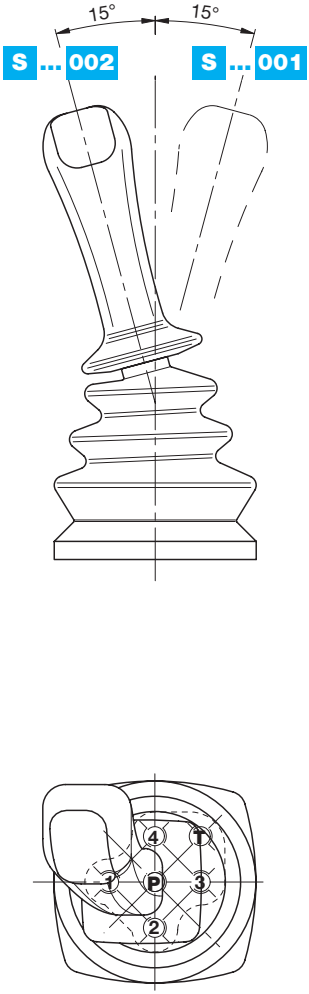
S

S ... 000



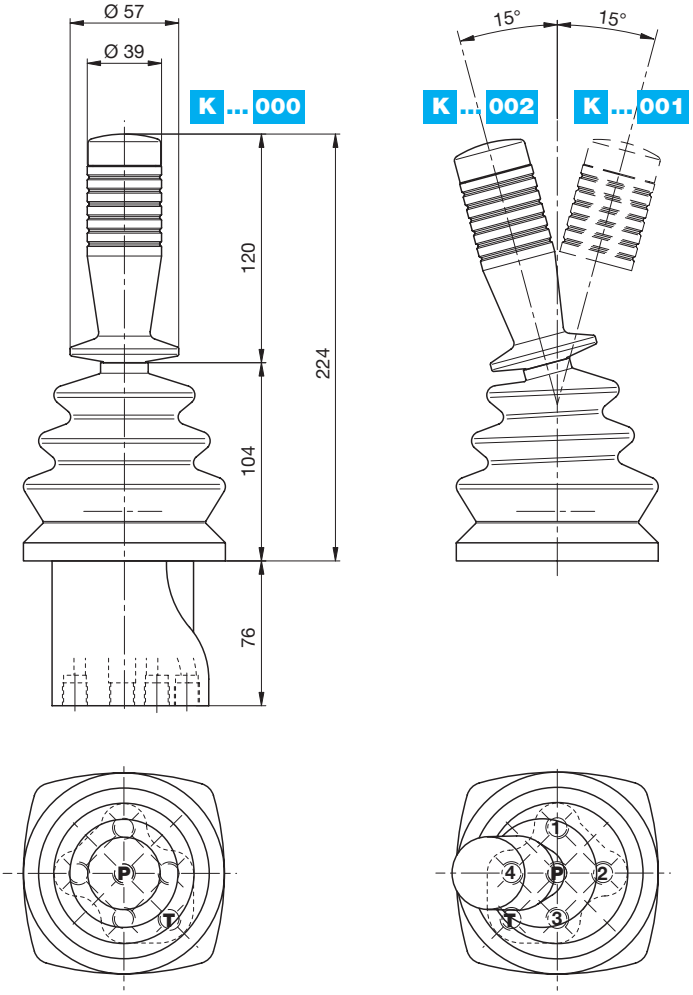


S ... 002 **S ... 001**



IMPUGNATURA CILINDRICA
CYLINDER GRIP
ZYLINDRISCHER GRIFF

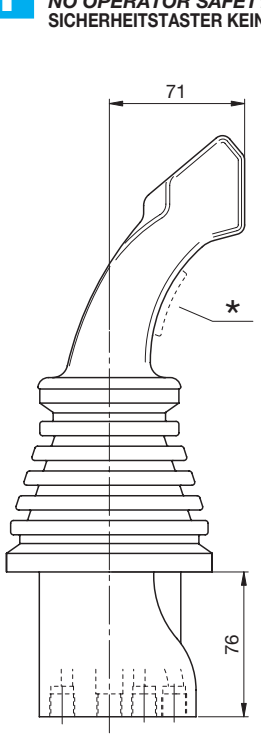
K



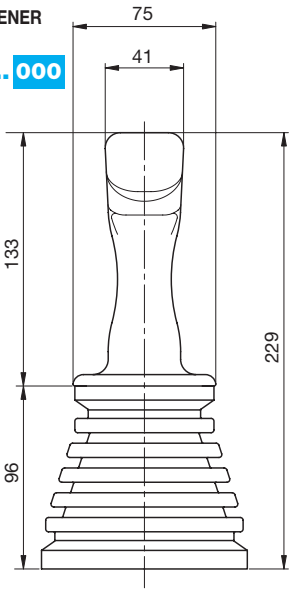
IMPUGNATURA ERGONOMICA
ERGONOMIC GRIP
ERGONOMISCH GRIFF

E

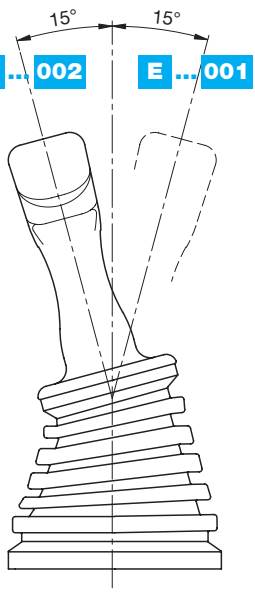
***F** **PULSANTE UOMO PRESENTE**
NO OPERATOR SAFETY
SICHERHEITSTASTER KEIN BEDIENER

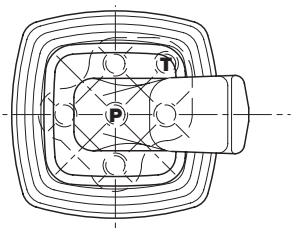


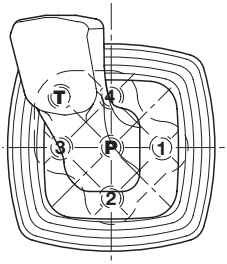
E ... 000



E ... 002 **E ... 001**



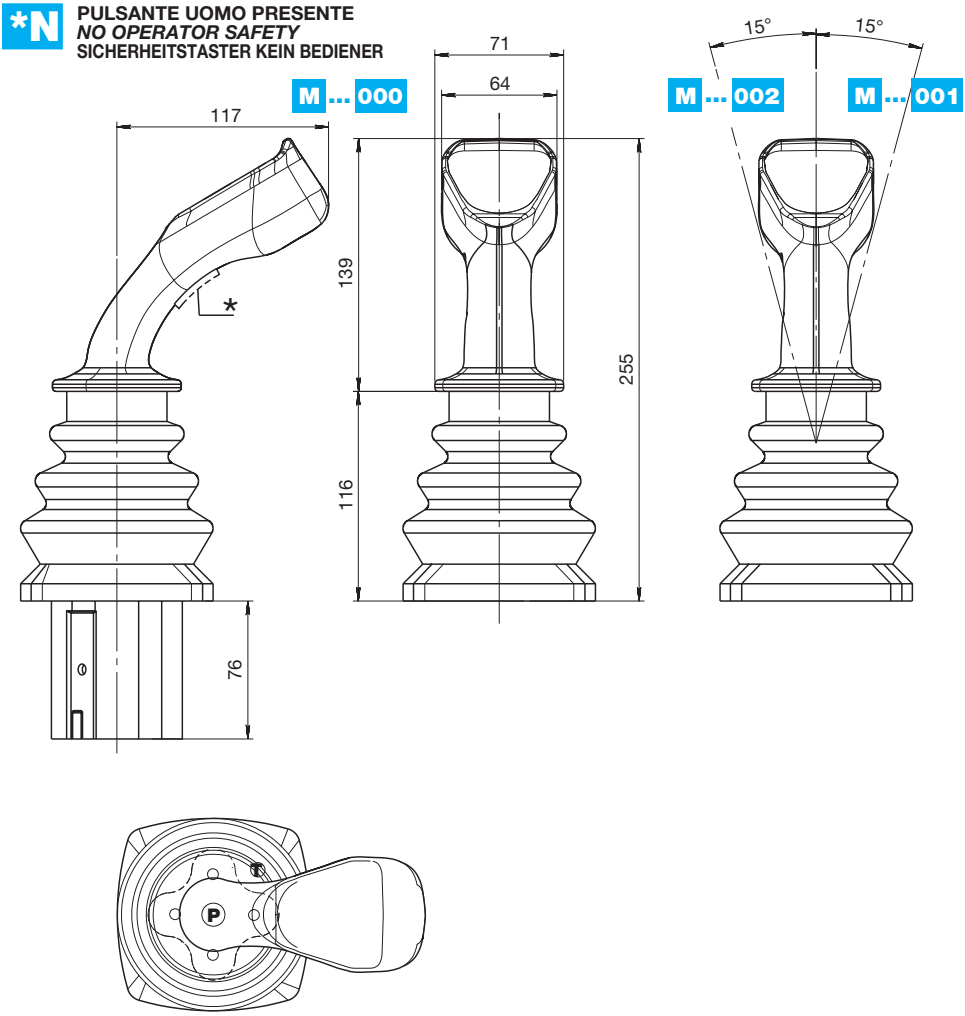




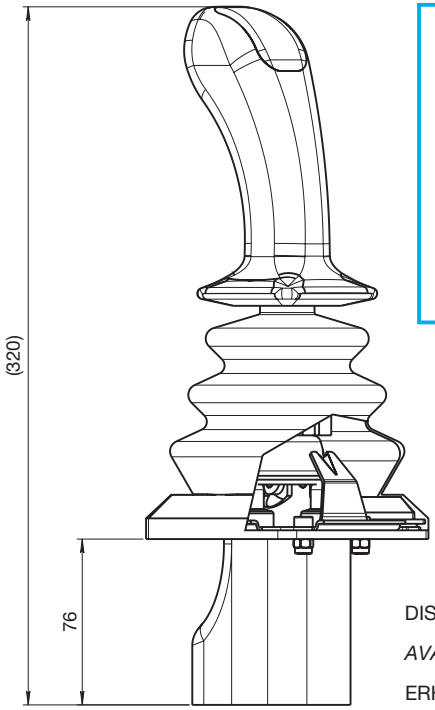
IMPUGNATURA MULTIFUNZIONE
MULTIFUNCTION GRIP
MULTIFUNKTIONS GRIFF

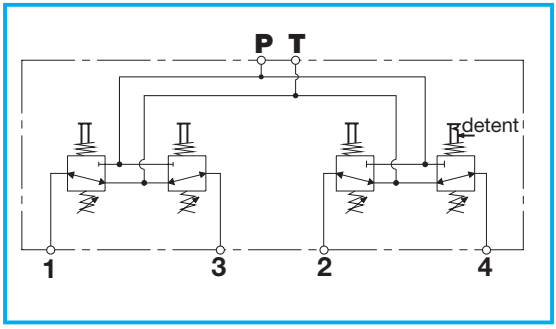
M

***N** **PULSANTE UOMO PRESENTE**
NO OPERATOR SAFETY
SICHERHEITSTASTER KEIN BEDIENER



BLOCCO MECCANICO
MECHANICAL DETENT
MECHANISCHE ARRETIERUNG

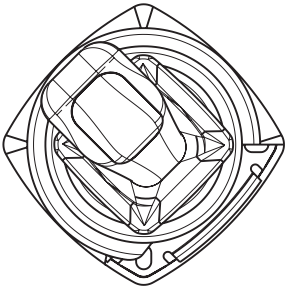




DISPONIBILE CON TUTTE LE VERSIONI DI MANOPOLE

AVAILABLE ON ALL VERSIONS OF GRIPS

ERHÄLTLICH IN ALLEN HANDGRIFFVERSIONEN

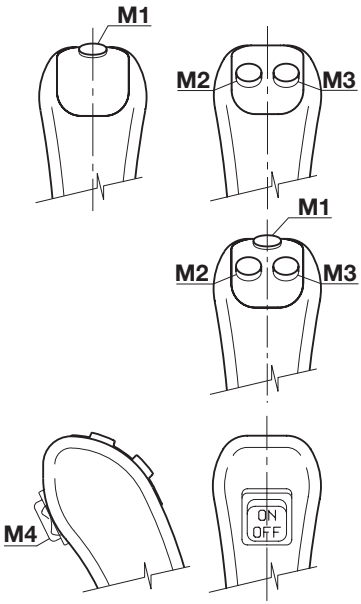


NORMALMENTE INSERITO IN POSIZIONE DI MARCIA AVANTI, POSIZIONE 4

MECHANICAL DETENT, NORMALLY IN PORT 4 AHEAD

NORMALERWEISE IM VORWÄRTSGANG, POSITION 4

S



PULSANTI ELETTRICI : M1/M4
ELECTRIC SWITCHES: M1/M4
ELEKTRISCHE TASTER: M1/M4

0 . NESSUN PULSANTE SUPERIORE
NO TOP BUTTON
KEIN OBERER TASTER

1 . 1 PULSANTE SUPERIORE M1
1 TOP BUTTON M1
1 OBERER TASTER M1

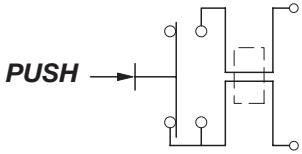
2 . 2 PULSANTI SUPERIORI M2+M3
2 TOP BUTTONS M2+M3
2 OBERE TASTER M2+M3

3 . 3 PULSANTI SUPERIORI M1+M2+M3
3 TOP BUTTONS M1-M2-M3
3 OBERE TASTER M1+M2+M3

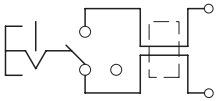
. **0** NESSUN PULSANTE M4
NO M4 BUTTON
KEIN TASTER M4

. **1** 1 PULSANTE FRONTALE M4
A BILANCIERE CON RITORNO A MOLLA
1 FRONT BUTTON M4 WITH ROCKING LEVER WITH SPRING RETURN-TO-CENTRE
1 FRONTSEITIGER KIPPSCHALTER M4
MIT FEDERRÜCKLAUF IN MITTLERER STELLUNG

. **2** 1 INTERRUTTORE ON/OFF
1 ON/OFF SWITCH
1 ON/OFF-SCHALTER



MICRO
M1-M2-M3

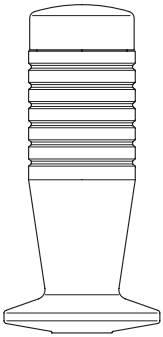


MICRO
M4

CAPACITÁ MICRO: DC 12V x 2A
MICRO CAPACITY: DC 12V x 2A
MIKROKAPAZITÄT: DC 12V x 2A

COMANDI ELETTRICI
ELECTRIC CONTROLS
ELEKTROSTEUERUNGEN

K



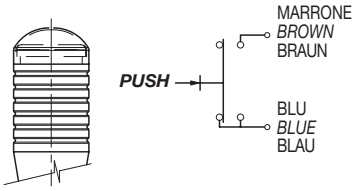
00 NESSUN PULSANTE
NO BUTTON
KEIN KNOPF

01 PULSANTE SINGOLO
SINGLE BUTTON
EINZELNER KNOPF

02 PULSANTE BASCULANTE
TOGGLE BUTTON
WIPPSCHALTER

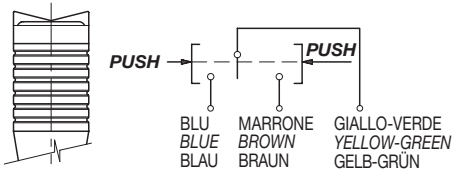
SINGOLO PULSANTE ELETTRICO
SINGLE ELECTRIC BUTTON
EINZELNER ELEKTRISCHER TASTER

K ... 01 ...



PULSANTE ELETTRICO BASCULANTE
TOGGLE ELECTRIC BUTTON
ELEKTRISCHER KIPPSCHALTER

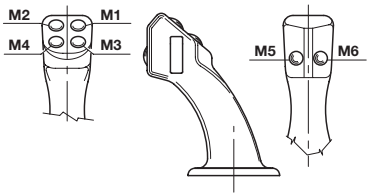
K ... 02 ...



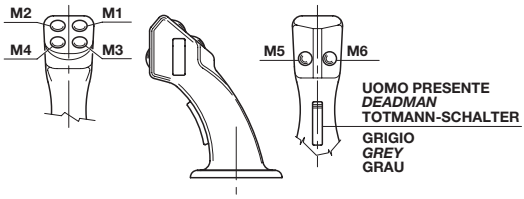
CAPACITÁ MICRO: DC 12V x 8A
MICRO CAPACITY: DC 12V x 8A
MIKROKAPAZITÄT: DC 12V x 8A

COMANDI ELETTRICI
ELECTRIC CONTROLS
ELEKTROSTEUERUNGEN

E



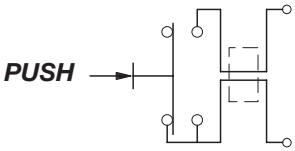
F



PULSANTI ELETTRICI : M1/M6
ELECTRIC SWITCHES: M1/M6
ELEKTRISCHER TASTER: M1/M6

- **0** NESSUN PULSANTE SUPERIORE
  NO TOP BUTTON
  KEIN OBERER TASTER
- **1** 1 PULSANTE SUPERIORE M1
  1 TOP BUTTON M1
  1 OBERER TASTER M1
- **2** 2 PULSANTI SUPERIORI M1+M2
  2 TOP BUTTONS M1+M2
  2 OBERE TASTER M1+M2
- **3** 3 PULSANTI SUPERIORI M1+M2+M3
  3 TOP BUTTONS M1-M2-M3
  3 OBERE TASTER M1+M2+M3
- **4** 4 PULSANTI SUPERIORI M1+M2+M3+M4
  4 TOP BUTTONS M1-M2-M3+M4
  4 OBERE TASTER M1+M2+M3+M4

- **0** NESSUN PULSANTE FRONTALE
  NO FRONT BUTTON
  KEIN VORDERER TASTER
- **1** 1 PULSANTE FRONTALE M5
  1 FRONT BUTTON M5
  1 VORDERER TASTER M5
- **2** 2 PULSANTI FRONTALI M5+M6
  2 FRONT BUTTONS M5+M6
  2 VORDERER TASTERE M5+M6
- **3** 1 PULSANTE FRONTALE M6
  1 FRONT BUTTON M6
  1 VORDERER TASTER M6

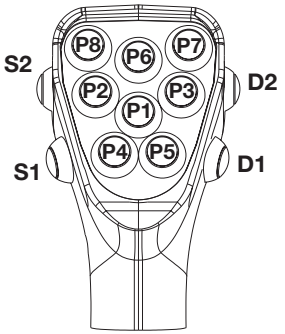


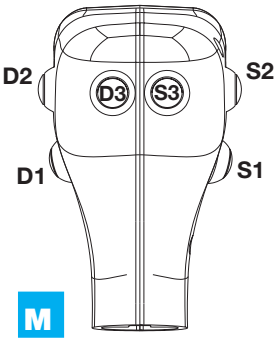
CAPACITÁ MICRO: DC 12V x 2A
MICRO CAPACITY: DC 12V x 2A
MIKROKAPAZITÄT: DC 12V x 2A

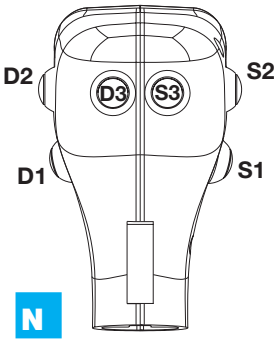
HPCJ

SERVOCOMANDO A DUE ASSI (AZIONAMENTO A LEVA)
DOUBLE AXIS SERVO CONTROL (LEVER MECHANISM)
SERVOSTEUERUNG MIT HANDBEDIENUNG

COMANDI ELETTRICI
ELECTRIC CONTROLS
ELEKTROSTEUERUNGEN







PULSANTI ELETTRICI
ELECTRIC SWITCHES
ELEKTRISCHER TASTER

- **0** NESSUN PULSANTE / *NO BUTTON* / KEIN TASTER
- **2** P2 + P3
- **4** P2+P3+P4+P5
- **6** P2+P3+P4+P5+P7+P8
- **8** P1+P2+P3+P4+P5+P6+P7+P8

- **0** NESSUN PULSANTE / *NO BUTTON* / KEIN TASTER
- **1** D1
- **2** S1
- **3** D1+D2
- **4** S1+S2
- **5** D1+S1
- **6** D1+D2+S1+S2
- **7** D1+S1+D3+S3
- **6** D3+S3
- **7** D1+D2+D3+S1+S2+S3

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPC	J	0	G2	1	K	S	S01	00	000

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKTE

J - 2 assi
2-axis
2 Achsen

MODELLI
MODELS
MODELLE

0 = Leva centrale
1 = Leva centrale + 1 segnale di press.
2 = Leva centrale + 2 segnale di press.
3 = Leva centrale + controrotazione
4 = Leva centrale + segnale sing. da 4 pos.

0 = *Central lever*
1 = *Central lever + 1 press. signal*
2 = *Central lever + 2 press. signals*
3 = *Central lever + counter rotation*
4 = *Central lever + single 4-pos. signal*

0 = Mittlerer Hebel
1 = Mittlerer Hebel + 1 Drucksignal
2 = Mittlerer Hebel +2 Drucksignale
3 = Mittlerer Hebel +Gegendrehung
4 = Mittlerer Hebel + Einzelsignal mit 4 Stellungen

BOCCHE STANDARD
STANDARD PORT
STANDARD ANSCHLÜSSE

G2 = 1/4" gas-BSPP
U3 = SAE 9/16"-18UNF

GUARNIZIONI
SEALS
DICHTUNGEN

1 - NBR
2 - Viton

VERSIONI SPECIALI
SPECIAL VERSIONS
SONDERAUSFÜHRUNGEN

000 = Nessuna esec. spec.
001 = Leva inclinata a DX 15°
002 = Leva inclinata a SX 15°
029 = Detent pos. 4

000 = *No spec. execution*
001 = *Lever tilted to right 15°*
002 = *Lever tilted to left 15°*
029 = Mechanical Detent port. 4

000 = Keine Sonderausführung
001 = Um 15° nach rechts geneigter Hebel
002 = Um 15° nach links geneigter Hebel
029 = Arretierung Pos. 4

COMANDI ELETTRICI
ELECTRIC CONTROLS
ELEKTROSTEUERUNGEN

Vedere tabella pag. 12/13
See table pag. 12/13
Siehe Tabelle Seite 12/13

CURVE
CURVES
KURVEN

Vedere tabella pag. 6
See table pag. 6
Siehe Tabelle Seite 6

POSIZIONATORE
POSITIONER
RASTER

S = Standard con ritorno a molla
Standard with spring-back
Rückstellungsfeder

A = Frizionato AV./IND.
Clutch Controlled AV./IND.
Rückstellungsfeder geklemmt, VOR/ZURÜCK

IMPUGNATURE
HANDLES
GRIFFE

0 = Senza impugnatura
K = Impugnatura cilindrica
S = Impugnatura anatomica
E = Impugnatura ergonomica
F = Impugnatura ergonomica uomo presente
M = Impugnatura multifunzione
N = Impugnatura multifunzione uomo presente

0 = *Without grip*
K = *Cylinder grip*
S = *Anatomic grip*
E = *Ergonomic grip*
F = *Ergonomic grip totman*
M = Multifunction grip
N = Multifunction grip totman

0 = Ohne Griff
K = Zylindrischer Griff
S = Anatomischer Griff
S = Ergonomisch Griff
F = Ergonomischer Griff Totmannschaltung
M = Multifunktions Griff
N = Multifunktions Griff Totmannschaltung

HPCS

SERVOCOMANDO MODULARE A UN ASSE (AZIONAMENTO A LEVA)
DOUBLE AXIS SERVO CONTROL (LEVER MECHANISM)
SERVOSTEUERUNG MIT HANDBEDIENUNG

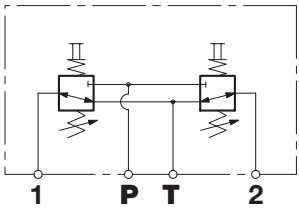
CURVE DI REGOLAZIONE • *ADJUSTMENT CURVES* REGELKURVEN

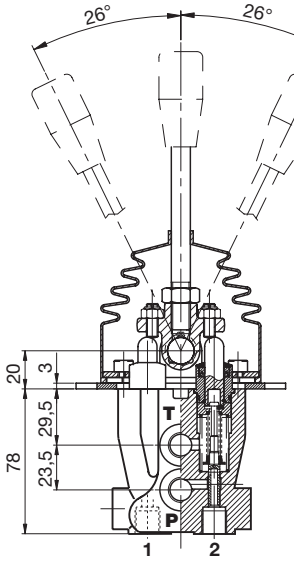
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK			
	a		b	
	bar	psi	bar	psi
S00	2	29	16	232
S01	5	73	20	290
S02	6,5	94	24,5	355
S04	3,2	46	17,2	249
S08	5	73	16	232
S11	4	58	15	218
S12	1,5	22	7	102
S13	5	73	28	406

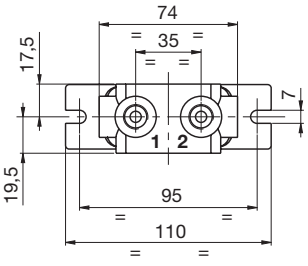
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK			
	a		b	
	bar	psi	bar	psi
L00	2	29	18	261
L01	5	73	22	319
L02	6,5	94	26,5	384
L04	3,2	46	19	276
L08	5	73	18	261
L11	4	58	15	218
L12	1,5	22	9	130
L13	5	73	30	435

TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK						CORSA *STROKE* HUB		
	a		b		c		A	B	C
	bar	psi	bar	psi	bar	psi	mm	mm	mm
M60	5	73	12	174	21	305	1,2	5,4	7,8

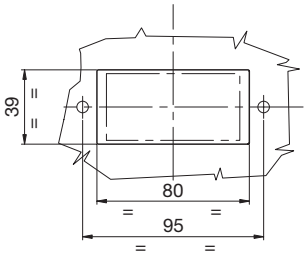
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK						CORSA *STROKE* HUB		
	a		b		c		A	B	C
	bar	psi	bar	psi	bar	psi	mm	mm	mm
G60	5	73	12	174	23	334	1,2	5,4	8,3





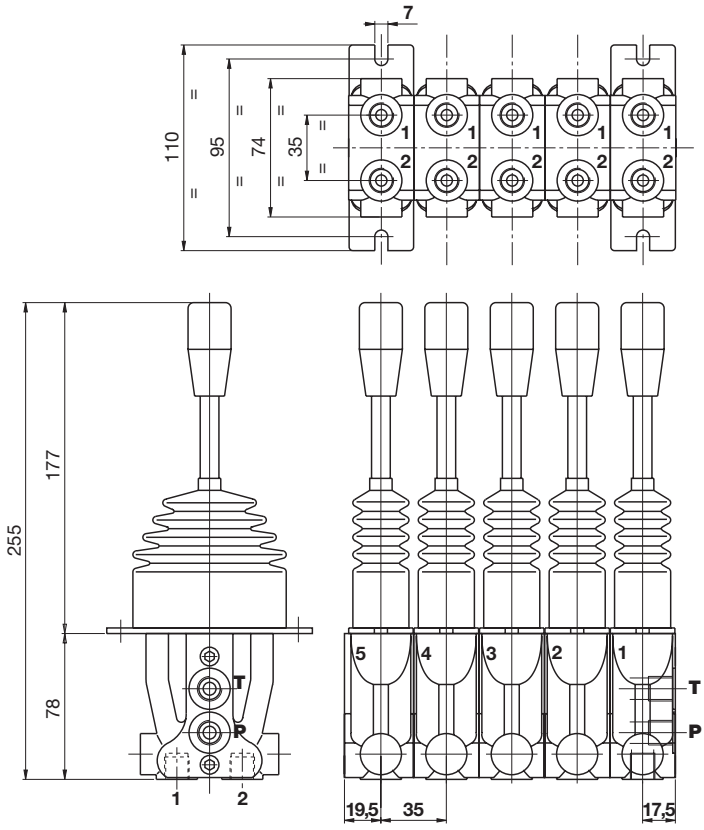


FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG



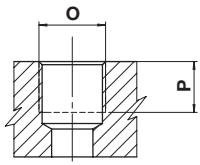
MODELLI
MODELS
MODELLE

DA 2 A 12 SEZIONI
FROM 2 TO 12 SECTIONS
VON 2 BIS 12 SEKTIONEN



1	N° 1	Sezione *Section* Sektion
2	N° 2	Sezioni *Sections* Sektion
3	N° 3	Sezioni *sections* Sektion
4	N° 4	Sezioni *sections* Sektion
5	N° 5	Sezioni *Sections* Sektion
6	N° 6	Sezioni *Sections* Sektion
7	N° 7	Sezioni *Sections* Sektion
8	N° 8	Sezioni *Sections* Sektion
9	N° 9	Sezioni *Sections* Sektion
A	N° 10	Sezioni *Sections* Sektion
B	N° 11	Sezioni *Sections* Sektion
C	N° 12	Sezioni *Sections* Sektion

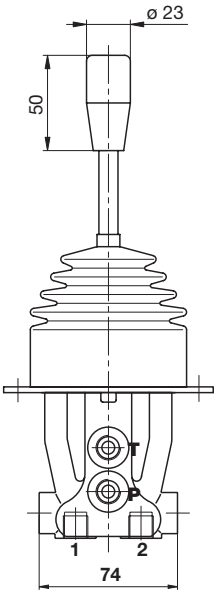
BOCCHE
PORTS
ANSCHLÜSSE



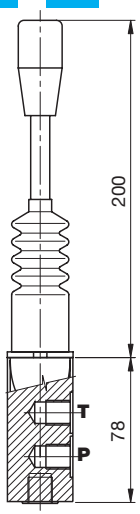
TIPO *TYPE* TYP	O	P	
		mm	in
G2	1/4"	13	0,47
U3	9/16-18 UNF	13	0,47

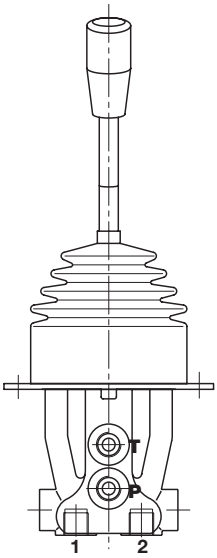
IMPUGNATURA STANDARD
STANDARD GRIPS
GRIFFE

G

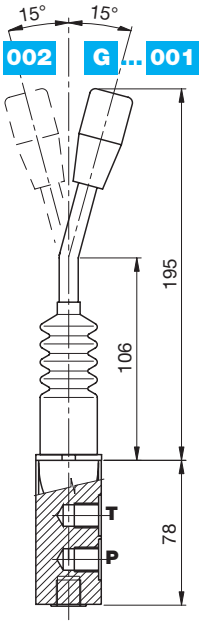


G ... 000



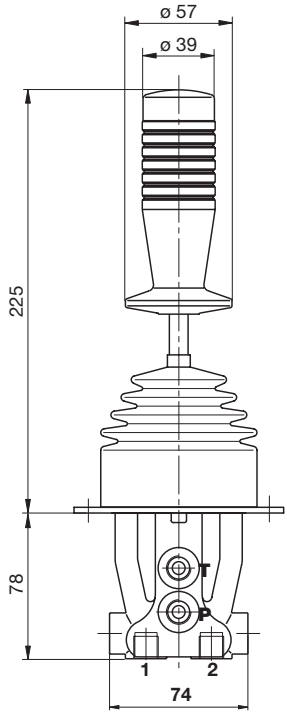


G ... 002 **G ... 001**

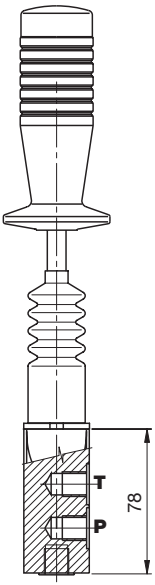


IMPUGNATURA CILINDRICA
CYLINDER GRIP
ZYLINDRISCHER GRIFF

K

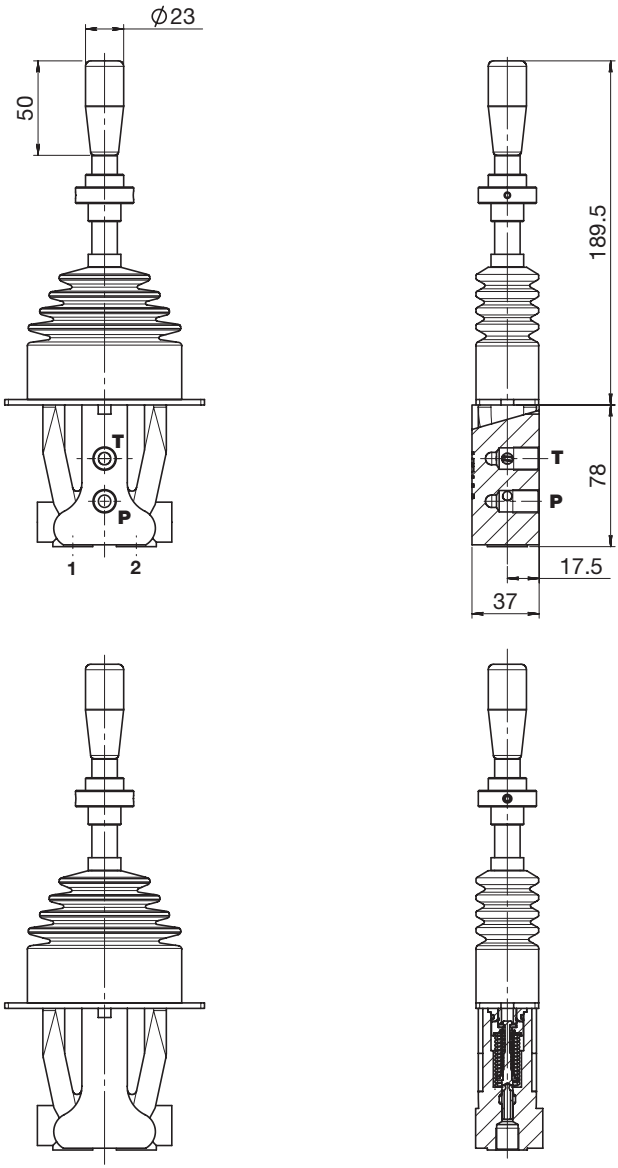


K ... 000

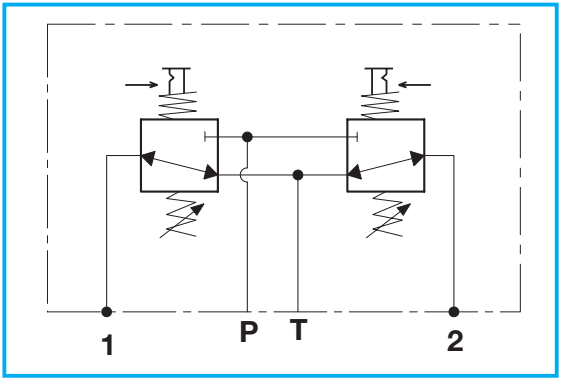


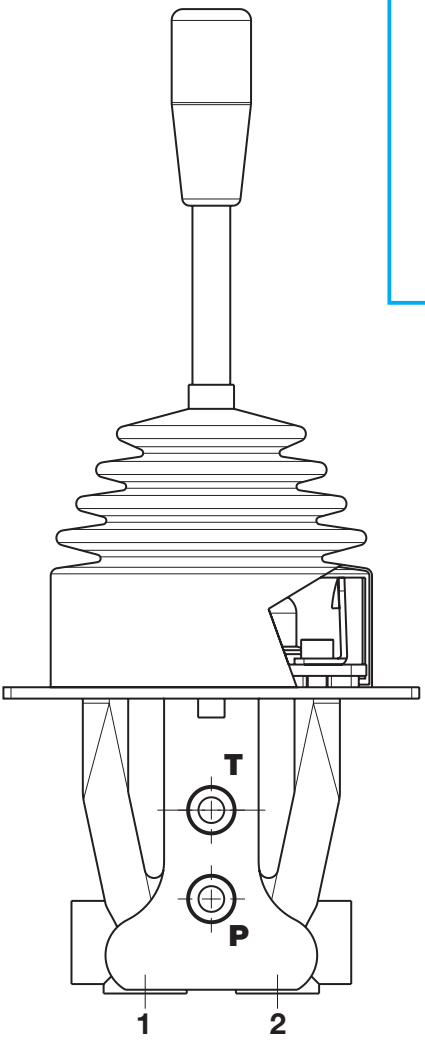
BLOCCO IN CENTRO
CENTRAL
ARRETIERUNG IN MITTELSTELLUNG

C



MANIPOLATORE CON BLOCCO MECCANICO
JOYSTICK, MECHANICAL INTERLOCK
JOYSTICK MIT MECHANISCHER ARRETIERUNG





DISPONIBILE IN TUTTE LE VERSIONI

AVAILABLE WITH ALL VERSIONS

ERHÄLTLICH IN ALLEN AUSFÜHRUNGEN

HPCS

SERVOCOMANDO MODULARE A 2 UTILIZZI
2-OPERATION MODULAR SERVO CONTROL
MODULARE SERVOSTEUERUNG FÜR 2 VERBRAUCHER

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPC	S	1	G2	1	G	S	S00	00	000

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKTE

S - 1 asse
1-axis
1 Achse

MODELLI
MODELS
MODELLE

1 = N° 1 sezione - *1 section* - 1. Sektion
2 = N° 2 sezioni - *2 sections* - 2. Sektion
3 = N° 3 sezioni - *3 sections* - 3. Sektion
4 = N° 4 sezioni - *4 sections* - 4. Sektion
5 = N° 5 sezioni - *5 sections* - 5. Sektion
6 = N° 6 sezioni - *6 sections* - 6. Sektion
7 = N° 7 sezioni - *7 sections* - 7. Sektion
8 = N° 8 sezioni - *8 sections* - 8. Sektion
9 = N° 9 sezioni - *9 sections* - 9. Sektion
A = N° 10 sezioni - *10 sections* - 10. Sektion
B = N° 11 sezioni - *11 sections* - 11. Sektion
C = N° 12 sezioni - *12 sections* - 12. Sektion

BOCCHE STANDARD
STANDARD PORT
STANDARD ANSCHLÜSSE

G2 = 1/4" gas-BSPP
U3 = SAE 9/16"-18UNF

GUARNIZIONI
SEALS
DICHTUNGEN

1 - NBR
2 - Viton

IMPUGNATURE
HANDLES
GRIFFEN

O = Senza leva
Without lever
Ohne Leber

G = Pomello cilindrico
Knob cylinder
Zylindrischer Knauf

K = Impugnatura cilindrica
Cylinder grip
Zylindrischer Griff

VERSIONI SPECIALI
SPECIAL VERSIONS
SONDERAUSFÜHRUNGEN

000 = Nessuna esec. spec.
001 = Leva inclinata a DX 15°
002 = Leva inclinata a SX 15°
012 = Micro di zero
022 = Versione con forcella rinforzata
029 = Versione con detent nei due utilizzi
030 = Versione con detent utilizzo 2 a dx di P

000 = *No spec. execution*
001 = *Lever tilted to right 15°*
002 = *Lever tilted to left 15°*
012 = *Neutral switch*
022 = *Version heavy-duty yoke*
029 = *Version with mechanical detent for both ports*
030 = *Version with detent port 2 right of positioner*
000 = Keine Sonderausführung
001 = Um 15° nach rechts geneigter Hebel
002 = Um 15° nach links geneigter Hebel
012 = Neutral switch
022 = Ausführung mit verstärkter Gabel
029 = Ausführung mit Arretierung für zwei Verbraucher
030 = Ausführung mit Arretierung 2 Verbraucher rechts des Rasters

COMANDI ELETTRICI
ELECTRIC CONTROLS
ELEKTRISCHE STEUERUNGEN

00 = Nessun comando elettrico
00 = *No power control*
00 = Keine elektrische Steuerung

CURVE Vedere tabella pag. 18
CURVES *See table pag. 18*
KURVEN Siehe Tabelle Seite 18

POSIZIONATORE
POSITIONER
RASTER

S = Ritorno a molla
Spring-back
Rückstellungsfeder
A = Frizionato - *Clutch-controlled*
Rückstellungsfeder geklemmt
B = Blocco in centro con ritorno a molla
Central, with spring-back
Federarretierung in Mittelstellung
C = Blocco in centro frizionato
Central, clutch-controlled
Sicherung in der Mittelstellung

LA VERSIONE CON DETENT PUÒ ESSERE FORNITA CON TUTTI I TIPI DI POSIZIONATORE
ALL TYPES OF POSITIONER CAN BE SUPPLIED WITH DETENT VERSION
DIE AUSFÜHRUNG MIT ARRETIERUNG KANN MIT ALLEN RASTERTYPEN GELIEFERT WERDEN

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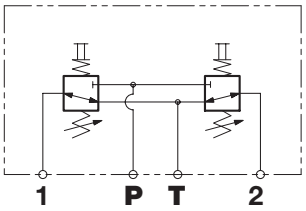
HPCF

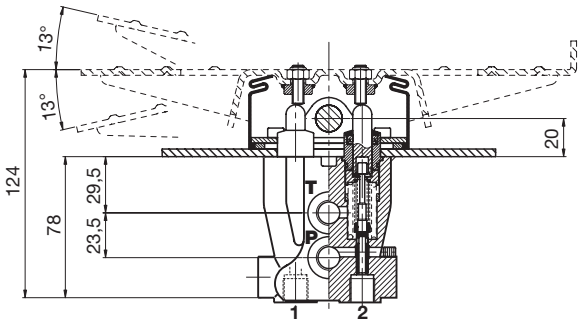
SERVOCOMANDO A UN ASSE (AZIONAMENTO A PEDALE)
SERVO CONTROL WITH PEDAL MECHANISM
SERVOSTEUERUNG MIT FUSSPEDAL

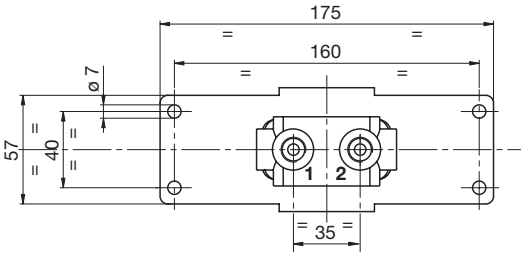
CURVE DI REGOLAZIONE • *ADJUSTMENT CURVES* REGELKURVEN

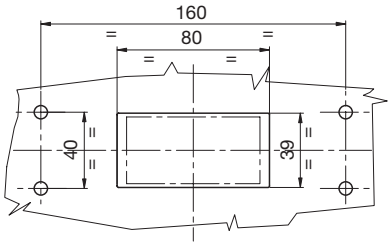
TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK			
	a		b	
	bar	psi	bar	psi
P00	2	29	16	232
P01	3	43	18	261

TIPO *TYPE* TYP	PRESSIONE *PRESSURE* DRUCK			
	a		b	
	bar	psi	bar	psi
R00	2	29	18	261
R01	3	44	20	290





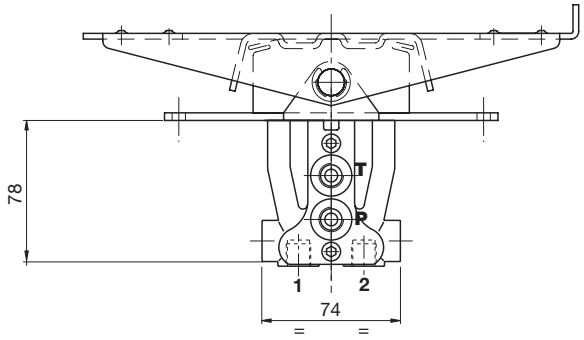




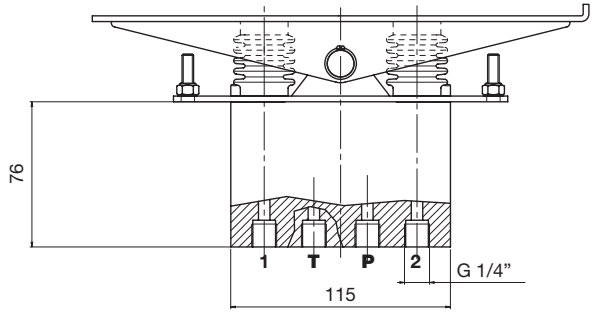
FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG

MODELLI
MODELS
MODELLE

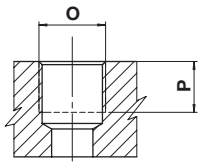
0 STANDARD
STANDARD
STANDARD



1 PASSO LUNGO (SOLO PER PEDALI 1 - 4)
LONG STEP (PEDALS 1 - 4 ONLY)
GROSSER WEG (NUR FÜR PEDALEN 1 - 4)



BOCCHE
PORTS
ANSCHLÜSSE



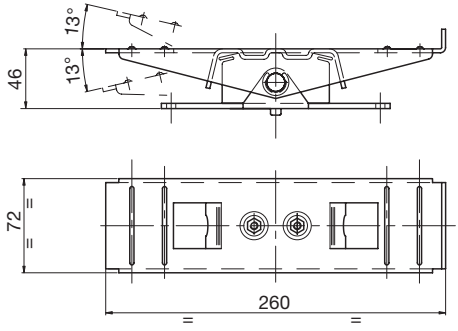
TIPO *TYPE* TYP	O	P mm	P in
G2	1/4”	13	0,47
U3	9/16-18 UNF	13	0,47

HPCF

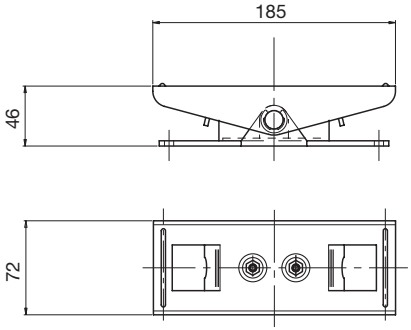
SERVOCOMANDO CON AZIONAMENTO A PEDALE
SERVO CONTROL WITH PEDAL MECHANISM
SERVOSTEUERUNG MIT FUSSPEDAL

PEDALI
PEDALS
PEDALE

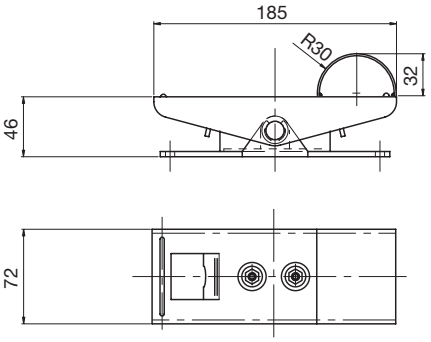
HPCF ... 1



HPCF ... 2

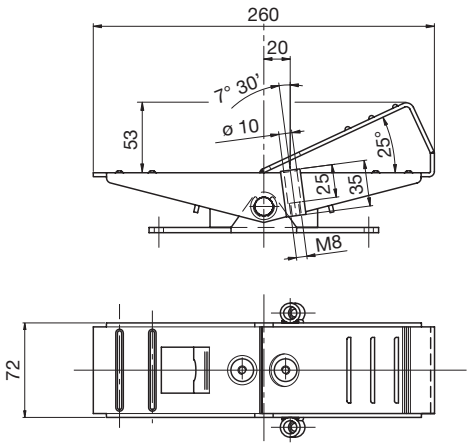


HPCF ... 3

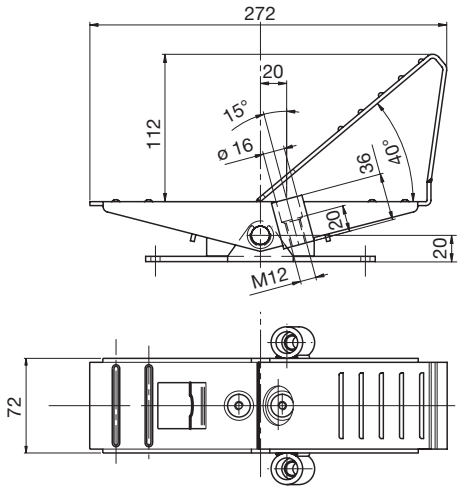


PEDALI
PEDALS
PEDALE

HPCF ... 4



HPCF ... 5

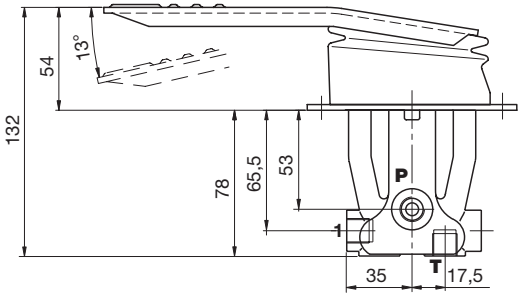


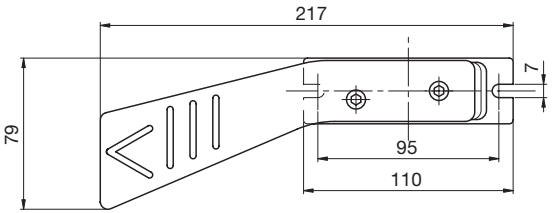
HPCF

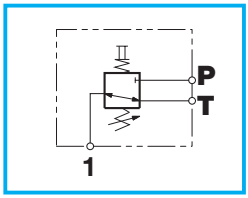
SERVOCOMANDO CON AZIONAMENTO A PEDALE
SERVO CONTROL WITH PEDAL MECHANISM
SERVOSTEUERUNG MIT FUSSPEDAL

PEDALI
PEDALS
PEDALE

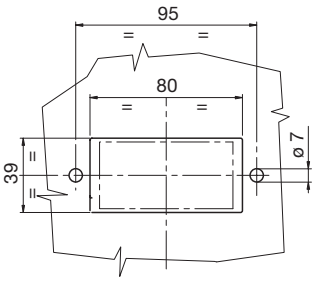
HPCF ... 6



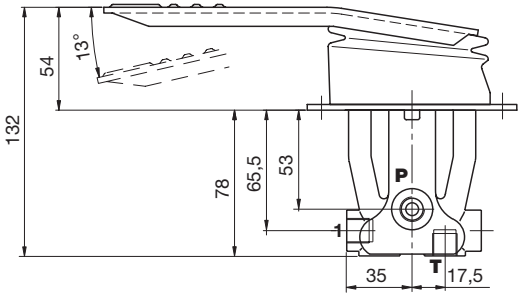


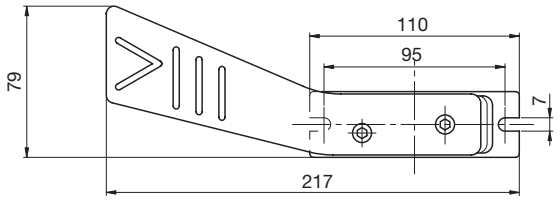


FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG

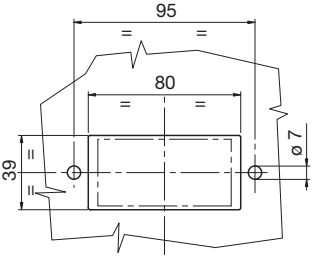


HPCF ... 7

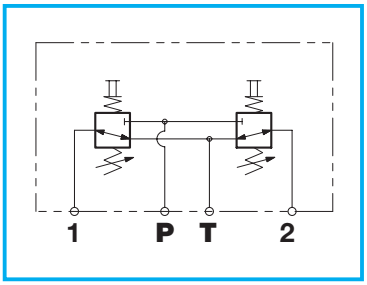


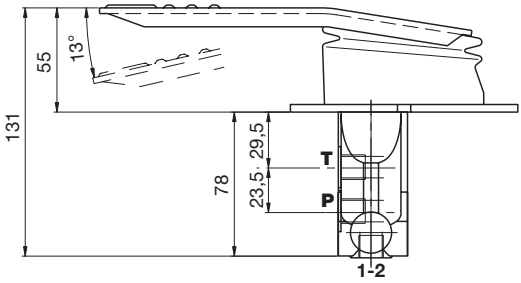


FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG

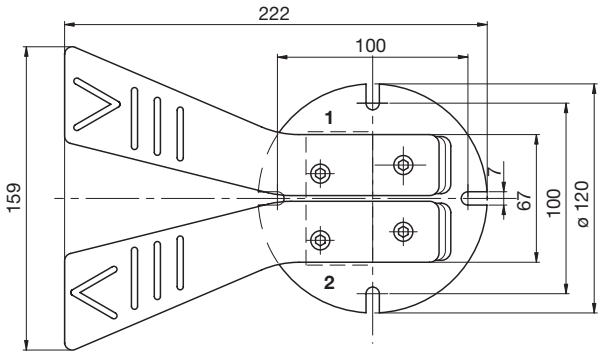


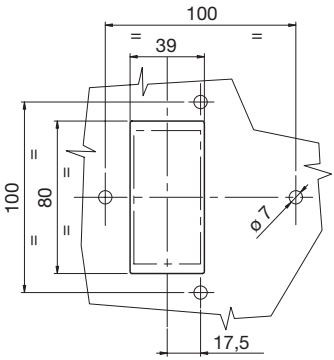
HPCF ... 8





FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG



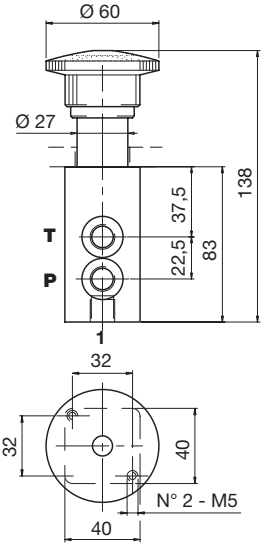


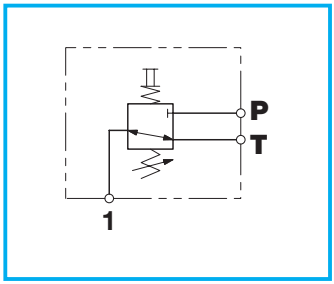
HPCF

SERVOCOMANDO CON AZIONAMENTO A PEDALE
SERVO CONTROL WITH PEDAL MECHANISM
SERVOSTEUERUNG MIT FUSSPEDAL

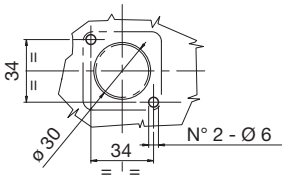
PEDALI
PEDALS
PEDALE

HPCF ... 9

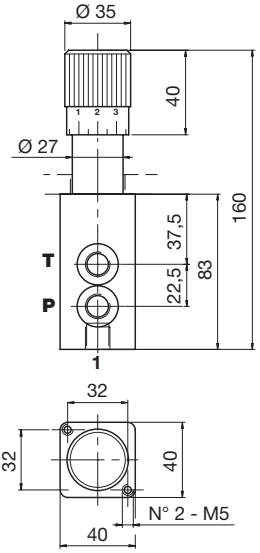


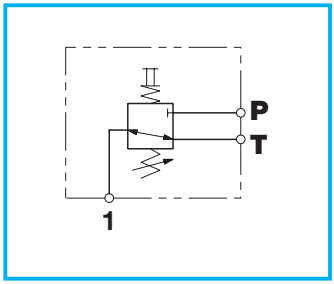


FORATURA DI MONTAGGIO
MOUNTING BORE
MONTAGEBOHRUNG

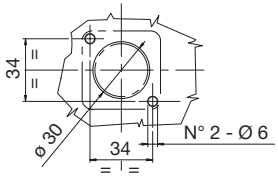


HPCF ... R



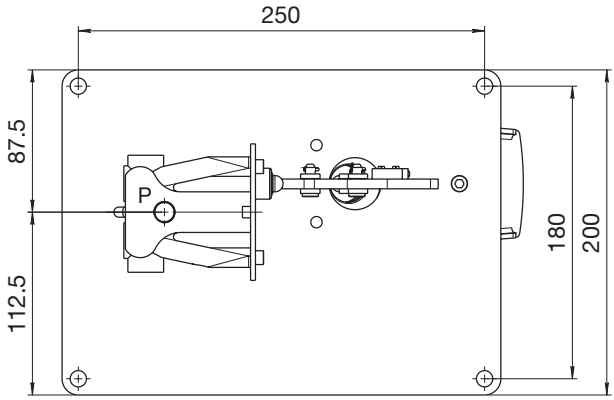


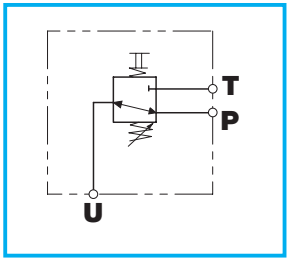
FORATURA DI MONTAGGIO
MOUNTING BORE
AUSBOHRUNG

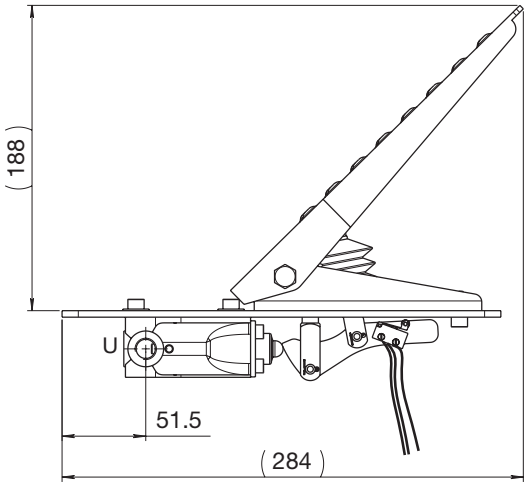


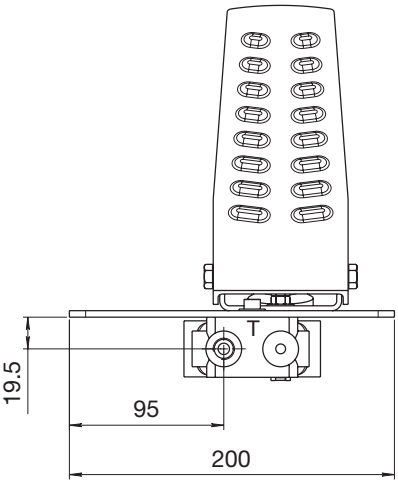
PEDALE LUNGO CON AZIONAMENTO A LEVA
LONG PEDAL, LEVER
LANGES PEDAL MIT HEBELBETÄTIGUNG

HPCF ... V









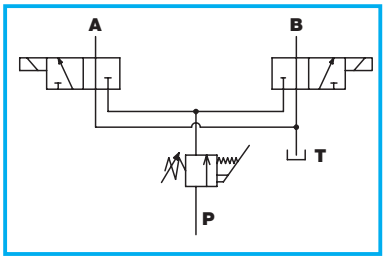
Disponibile a richiesta la versione positiva
Positive version on request
Auf Wunsch ist die positive Ausführung erhältlich

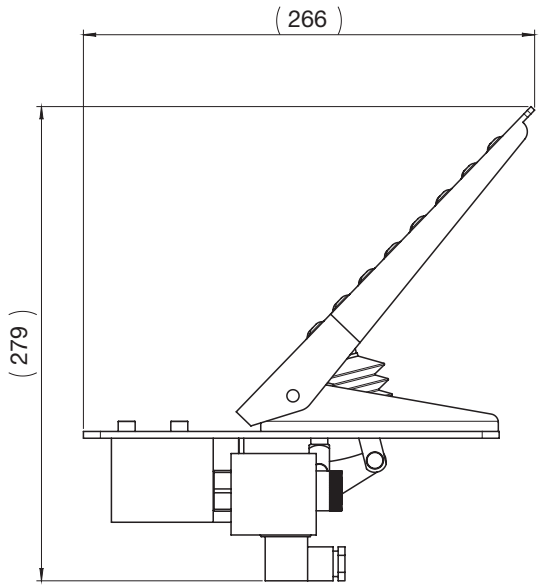
HPCF

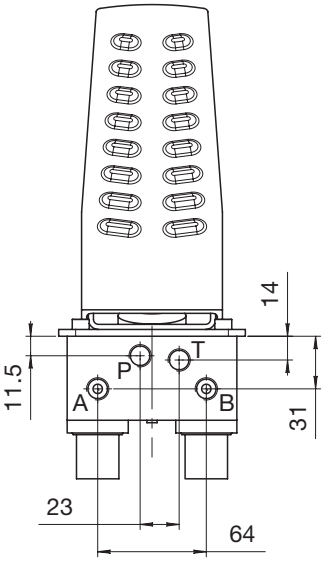
SERVOCOMANDO CON AZIONAMENTO A PEDALE
SERVO CONTROL WITH PEDAL MECHANISM
SERVOSTEUERUNG MIT FUSSPEDAL

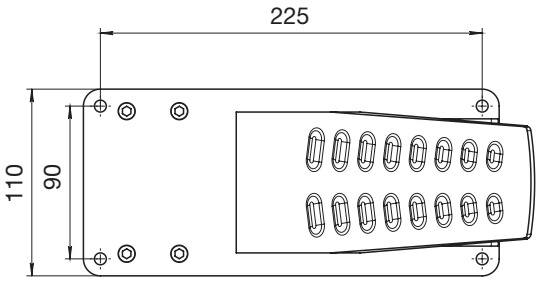
PEDALIERA CON ELETTROVAVOLE SELETTRICI
PEDAL WITH DIRECTIONAL ELECTROVALVES
PEDAL MIT ELEKTRISCH GESTEUERTEN WAHLVENTILEN

HPCF ... 01









ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

SERIE
SERIES
SERIE

PRODOTTO
PRODUCT
PRODUKTE

F - Pedale
Pedal
Pedal

MODELLI
MODELS
MODELLE

0 = Standard
1 = Passo lungo (solo per pedale 1-4)
Long step (pedal 1-4 only)
Grosser Weg (nur für pedal 1-4)

BOCCHE STANDARD
STANDARD PORT
STANDARD ANSCHLÜSSE

G2 = 1/4" gas-BSPP
U3 = SAE 9/16"-18UNF

GUARNIZIONI
SEALS
DICHTUNGEN

1 - NBR
2 - Viton

VERSIONI SPECIALI
SPECIAL VERSIONS
SONDERAUSFÜHRUNGEN

018 = Micro di 0 (solo per tipi 6,7,8)
024 = Pedale negativo con micro tipo V
018 = *Neutral switch (only for types 6,7,8)*
024 = *Negative pedal with type V switch*
018 = Nullpunkt-Mikroschalter (nur für Typen 6,7,8)
024 = Negatives Pedal mit Mikroschalter Typ V

COMANDI ELETTRICI
ELECTRIC CONTROLS
ELEKTRISCHE STEUERUNGEN

00 = Nessun comando elettrico
00 = *No power control*
00 = Keine elektrische Steurung
01 = Con elettrovavole selettrici
01 = *With directional electrovalves*
01 = Mit elektrisch gesteuerten wahlventilen

CURVE
CURVES
KURVEN

Vedere tabella pag. 24
See table pag. 24
Siehe Tabelle Seite 24

POSIZIONATORE
POSITIONER
POSITIONIEREN

S = Ritorno a molla
Spring-back
Federrücklauf

TIPI DI PEDALI
PEDAL TYPE
PEDAL TYP

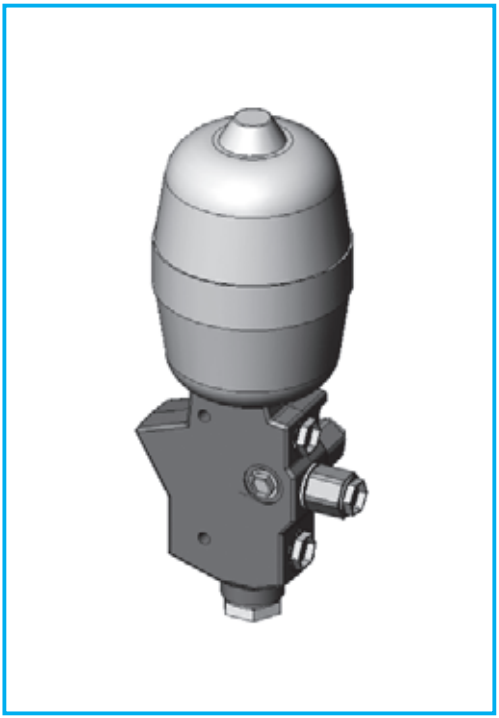
0 = Senza pedale	***0*** = *Without pedal*	**0** = Ohne Pedal
1 = Pedale basculante normale	***1*** = *Standard toggle pedal*	**1** = Normales Kipppedal
2 = Pedale corto normale	***2*** = *Standard short pedal*	**2** = Normales kurzes Pedal
3 = Pedale corto bombato	***3*** = *Convex short pedal*	**3** = Gewölbtes kurzes Pedal
4 = Pedale con zeppa	***4*** = *Pedal with shim*	**4** = Kurzes Keilpedal
5 = Pedale con zeppa alta	***5*** = *Pedal with high shim*	**5** = Pedal mit angwinkeltem Keil
6 = Pedale singolo destro	***6*** = *Single right pedal*	**6** = Einzelnes Pedal rechts
7 = Pedale singolo sinistro	***7*** = *Single left pedal*	**7** = Einzelnes Pedal links
8 = Doppio pedale	***8*** = *Double pedal*	**8** = Doppelpedal
9 = Pedale a pulsante	***9*** = *Button pedal*	**9** = Tasterpedal
R = Regolatore di pressione	***R*** = *Pression regulator*	**R** = Pression regulator
V = Pedale singolo a leva lungo	***V*** = *Single long toggle lever pedal*	**V** = Langes pedal mit hebelbetätigung

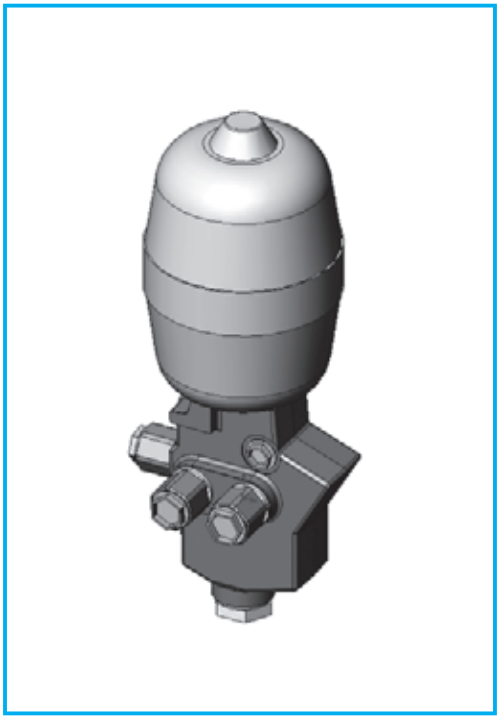
HPU

UNITÁ DI ALIMENTAZIONE
FEEDING UNIT
VERSORGUNGS EINMEIT

L'unità di alimentazione preleva una parte di olio dal circuito principale e alimenta con una pressione regolata i servocomandi, senza la necessità di una pompa dedicata.
Essa costituisce un dispositivo di sicurezza, che rende disponibile una certa potenza per azionare i servocomandi quando la macchina è spenta.
Oltre al modello base sono disponibili configurazioni con elettrovalvole per interrompere l'alimentazione verso gli utilizzi e configurazioni con valvola unloading ed elettrovalvole per permettere il caricamento dell'accumulatore all'avviamento, qualora la pressione di precarica scenda sotto i 13 bar.
Nella versione senza accumulatore, l'unità di alimentazione può essere utilizzata come pura valvola riduttrice di pressione.

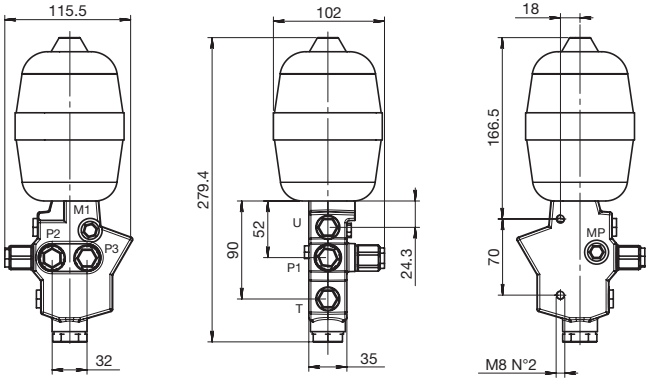
The power supply units takes a portion of the oil contained in the circuit to feed servocontrols under a constant pressure. No special pump is required.
The power supply unit acts as a safety device, that supplies the necessary power to feed servocontrols when the machine is not operating.
Three versions are available:
- Standard
- With solenoid operated valves to interrupt power to ports
- With unloading valve and solenoid operated valves to permit accumulator loading during startup (with a pre-loading pressure lower than 13 bar).
The power supply unit can act as pressure reducing valve on versions without accumulator.





HPUO

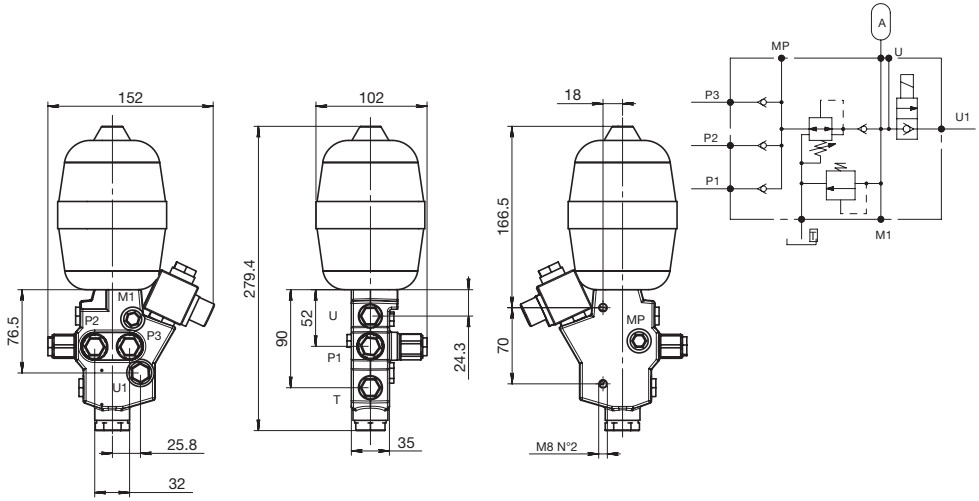
UNITÁ DI ALIMENTAZIONE BASE
STANDARD POWER SUPPLY UNIT



MP, M1 = G 1/8"

HPUA/C

UNITÁ DI ALIMENTAZIONE CON UNA ELETTROVALVOLA (DUE O TRE VIE)
POWER SUPPLY UNIT WITH ONE SOLENOID OPERATED VALVE (2-WAY OR 3-WAY)



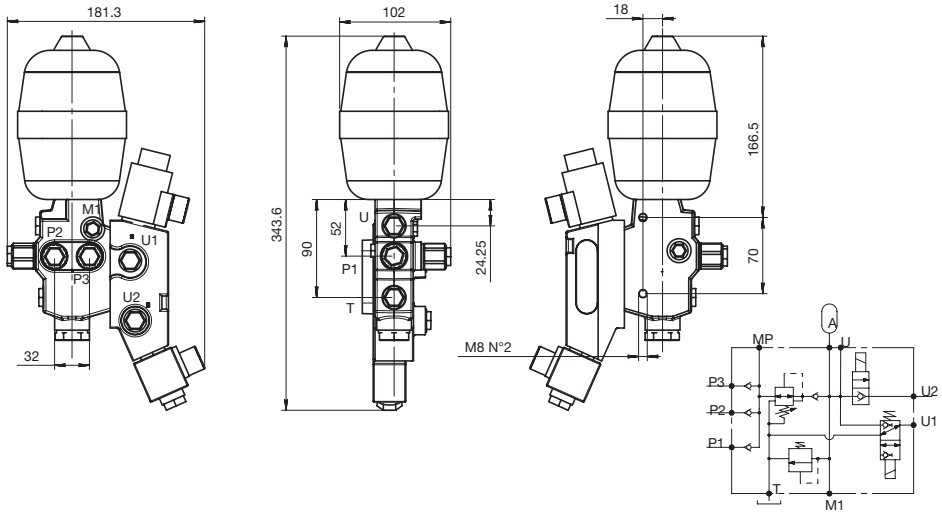
MP, M1 = G 1/8"

HPU

UNITÁ DI ALIMENTAZIONE
FEEDING UNIT
VERSORGUNGS EINMEIT

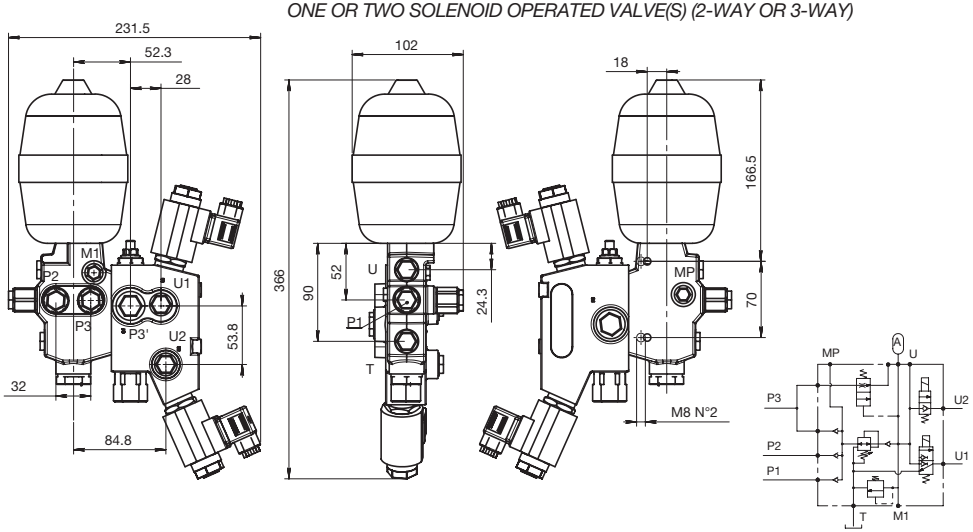
HPUB/D/E

UNITÁ DI ALIMENTAZIONE CON DUE ELETTROVALVOLE (DUE O TRE VIE)
STANDARD POWER SUPPLY UNIT



HPUF/H/G/I

UNITÁ DI ALIMENTAZIONE CON VALVOLA UNLOADING
E UNA O DUE ELETTROVALVOLE (DUE O TRE VIE)
POWER SUPPLY UNIT WITH UNLOADING +
ONE OR TWO SOLENOID OPERATED VALVE(S) (2-WAY OR 3-WAY)



BONDIOLI & PAVESI
HP Hydraulic

ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
BESTELLANLEITUNG

HPU	0	0	0	G2	2	X	35	030	000

SERIE
SERIES
SERIE

MODELLI
MODELS

0 = Senza elettrovalvole (modello base)
A = Con una elettrovalvola 2 vie
B = Con due elettrovalvole 2 vie
C = Con una elettrovalvola 3 vie
D = Con due elettrovalvole 3 vie
E = Con una elettrovalvola 2 vie e una a 3 vie
F = Con unloading + 1 elettrovalvola a 2 vie
G = Con unloading + 2 elettrovalvole a 2 vie
H = Con unloading + 1 elettrovalvola a 3 vie
I = Con unloading + 2 elettrovalvole a 3 vie

***0** = No solenoid operated valve (standard version)*
***A** = One solenoid operated valve, 2-way*
***B** = Two solenoid operated valves, 2-way*
***C** = One solenoid operated valve, 3-way*
***D** = Two solenoid operated valves, 3-way*
***E** = 2-Way solenoid operated valve + 3-way solenoid operated valve*
***F** = Unloading valve + one solenoid operated valve, 2-way*
***G** = Unloading valve + two solenoid operated valves, 2-way*
***H** = Unloading valve + one solenoid operated valve, 3-way*
***I** = Unloading valve + two solenoid operated valves, 3-way*

0 = ohne elektrisch gesteuertes Ventil (Standardausführung)
A = Mit einem elektrisch gesteuerten 2-Wege-Ventil
B = Mit zwei elektrisch gesteuerten 2-Wege-Ventilen
C = Mit einem elektrisch gesteuerten 3-Wege-Ventil
D = Mit zwei elektrisch gesteuerten 3-Wege-Ventilen
E = Mit einem elektrisch gesteuerten 2-Wege-Ventil + einem elektrisch gesteuerten 3-Wege-Ventil
F = Mit Entlastungsventil + ein elektrisch gesteuertes 2-Wege-Ventil
G = Mit Entlastungsventil + 2 elektrisch gesteuerte 2-Wege-Ventile
H = Mit Entlastungsventil + 1elektrisch gesteuertes 3-Wege-Ventil
I = Mit Enlastungsventil + 2 elektrisch gesteuerte 3-Wege-Ventile

TIPO DI ELETTROVALVOLA
NUMBER OF INLETS
TYP DES ELEKTRISCH GESTEUERTEN VENTILS

0 = Senza elettrovalvola (mod. base)
No solenoid operated valve (mod. standard)
Ohne elektrisch gesteuertes Ventil (Standardausf.)

A = Normalmente aperta
Normally open
Stromlos offen

C = Normalmente chiusa
Normally closed
Stromlos geschlossen

TENSIONE DI ALIMENTAZIONE ELETTROVALVOLA
SOLENOID VALVE INPUT POWER
VERSORGUNGSSPANNUNG ELEKTRISCH GESTEUERTES VENTIL

0 = Senza elettrovalvole (modello base)
No solenoid operated valve (standard version)
Ohne elektrisch gesteuertes Ventil (Standardausführung)

1 = 12 Volt cc
2 = 24 Volt cc

BOCCHE STANDARD
STANDARD PORT
STANDARDANSCHLÜSSE

G2 = 1/4" gas-BSPP
U3 = SAE 9/16"-18UNF

NUMERO DI INGRESSI
NUMBER OF INLETS
ANZAHL DER EINGÄNGE

1 = 1 Ingresso alta pressione
1 inlet, high pressure
1 Eingang Hochdruck

2 = 2 Ingressi alta pressione
2 inlets, high pressure
2 Eingänge Hochdruck

3 = 3 Ingressi alta pressione
3 inlets, high pressure
3 Eingänge Hochdruck

PRESE DI PRESSIONE
PRESSURE INTAKE
DRUCKANSCHLÜSSE

0 = Senza presa di pressione
No pressure intake
Ohne Druckanschluss

X = Presa sull'alta pressione
High pressure intake
Hochdruckanschluss

Y = Presa sulla pressione ridotta
Reduced pressure intake
Anschluss reduzierter Druck

Z = Presa su entrambe
Both intakes
Beide Anschlüsse

CAPACITÁ ACCUMULATORE
ACCUMULATOR CAPACITY
AKKUMULATORKAPAZITÄT

00 = Senza accumulatore
No accumulator
Ohne Akkumulator

35 = 0,35 l

75 = 0,75 l

TARATURA VALVOLA
VALVE SETTING
VENTILEINSTELLUNG
25/60 BAR

APPLICAZIONI SPECIALI
SPECIAL FITTINGS
SONDERAUSFÜHRUNGEN
000= Nessuna applicazione
No fittings
Keine Sonderausführungen

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