

**POMPE A PISTONI ASSIALI PER CIRCUITO  
CHIUSO A CILINDRATA VARIABILE**

***VARIABLE DISPLACEMENT  
CLOSED CIRCUIT AXIAL PISTON PUMPS***

**AXIALKOLBENVERSTELLPUMPEN  
FÜR DEN GESCHLOSSENEN KREISLAUF**

**HP P2**

398SCP0073A00

# HP P2

## POMPE A PISTONI ASSIALI A CILINDRATA VARIABILE VARIABLE DISPLACEMENT AXIAL PISTON PUMPS AXIALKOLBENVERSTELLPUMPEN

Le pompe a pistoni assiali serie HP P2 sono state concepite per operare in circuito chiuso.

I vari sistemi di comando disponibili le rendono facilmente adattabili alle esigenze applicative sia per il settore industriale che per quello del mobile in generale. La pompa HP P2 viene normalmente fornita con oscillante su bronzina a sostentamento idrostatico.

A richiesta è fornibile su cuscinetti a rulli. Lo sviluppo di gruppi rotanti appositamente concepiti, unito ad uno studio accurato delle sezioni di passaggio dell'olio, consentono a queste pompe di raggiungere elevate velocità di rotazione, come quelle consentite dai moderni motori diesel, garantendo una elevata affidabilità per pressioni di funzionamento fino a 250 bar continui. (350 bar di picco) Le pompe possono essere composte in versione tandem, utilizzando le opportune predisposizioni disponibili a richiesta.

*HP P2 series axial piston pumps have been designed to work in a closed circuit. Control systems actually available are making easy to use these pumps in any application for industrial and mobile field. Typically the pump HP P2 is equipped with bronze bearings for hydrostatic suspension of the swash plate. Alternatively there are roller bearings for the swash plate suspension available on request.*

*Development of rotating groups, especially designed, united to an accurate study of oil passage sections, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure until 250 bar and working peak pressure until 350 bar.*

*It is possible to couple tandem versions, by means of coupling flanges optionally available.*

Die Axialkolbenpumpen der Serie HP P2 wurden für den Betrieb im geschlossenen Kreislauf konzipiert.

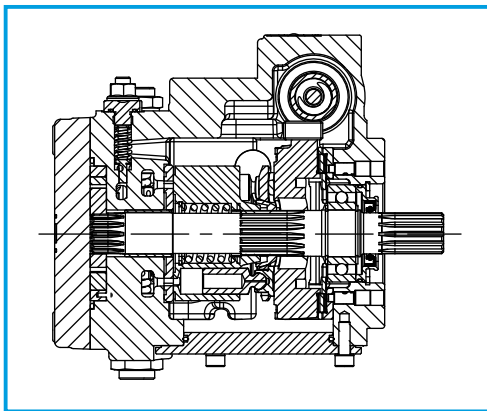
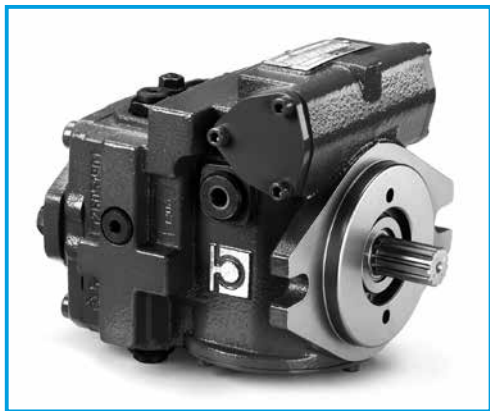
Die lieferbaren unterschiedlichen Steuerungssysteme eignen sich sowohl für stationäre als auch für mobile Anwendungen im Allgemeinen.

Die Pumpe HP P2 wird normalerweise mit hydrostatischen Bronze-Gleitlagern für die Schwunckscheibenverstellung ausgestattet. Auf Anfrage kann die Pumpe aber auch mit einer Rollenlagerung ausgestattet werden.

Speziell entwickelte Zylinderblöcke mit optimalen Saugverhältnissen erlauben den Einsatz bei hohen Pumpendrehzahlen, wie von modernen Antriebsaggregaten gefordert. Dabei ist ein kontinuierlicher Arbeitsdruck von bis zu 250 Bar (Spitzenwert 350 Bar) gewährleistet.

Die Pumpen können in der Tandemversion geliefert werden, wobei die auf Wunsch erhältlichen Flanschverbindungen angewendet werden.

# HP P2 14.19.23



### DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

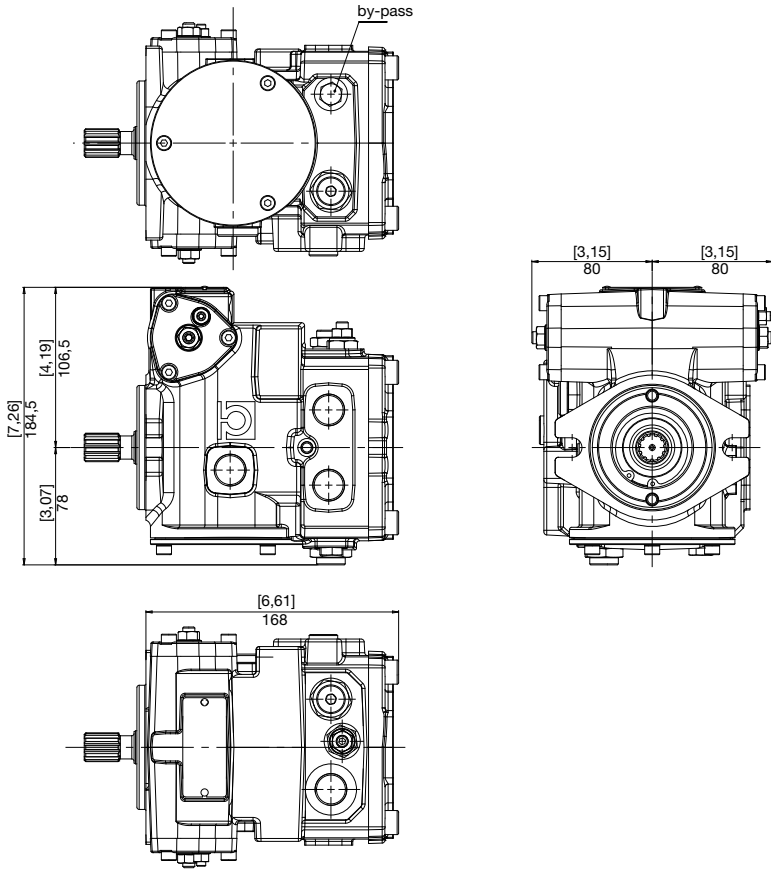
GRUPPO GROUP BAUREIHE	CILINDRATA TEORICA NOMINAL DISPLACEMENT FORDERVOLUMEN (TM)		OSCILLANTE SWASHPLATE SCHWENKWINKEL °	CONTINUA CONTINUOUS DAUER		PRESSIONE PRESSURE DRUCK		PICCO PEAK SPITZEN		VELOCITÀ DI ROTAZIONE SPEED DREHZAHN MAX MIN		MASSA WEIGHT GEWICHT	
	cm <sup>3</sup>	in <sup>3</sup>		bar	psi	bar	psi	bar	psi	min <sup>-1</sup>	min <sup>-1</sup>	kg	lbs
HP P2	14	0,85	14,5	250	3625	280	4060	350	5075	4000	500	15	33
	19	1,16	19	250	3625	280	4060	350	5075	3600	500	16	35,3
	23	1,40	18	250	3625	280	4060	350	5075	3200	500	16	35,3

### POMPA DI ALIMENTAZIONE BOOST PUMP SPEISEPUMPE

TIPO TYPE TYP	CILINDRATA POMPA DI ALIMENTAZIONE BOOST PUMP DISPLACEMENT FORDERVOLUMEN SPEISEPUMPE		PRESSIONE PRESSURE DRUCK
	cm <sup>3</sup>	in <sup>3</sup>	bar
HP P2	6	0,36	22
			psi
			319

**DIMENSIONI  
 SIZES  
 ABMESSUNGENE**

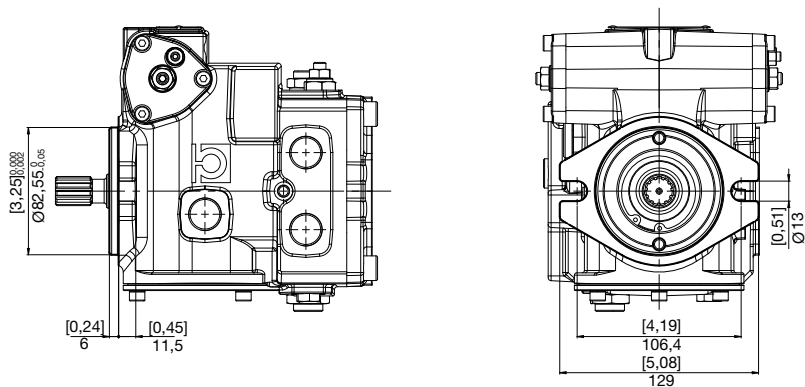
**HP P2**



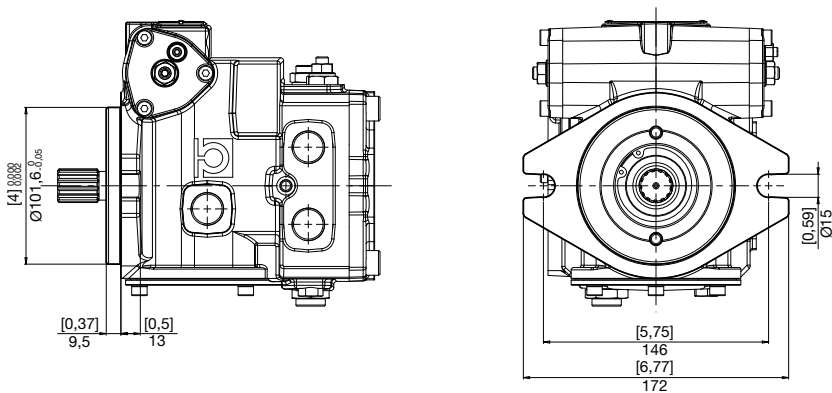
FLANGE  
 FLANGES  
 FLANSCHEN

HP P2

**A** SAE A  
 SAE A  
 SAE A



**B** SAE B  
 SAE B  
 SAE B

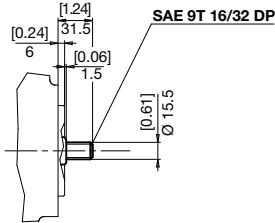




**ESTREMITÀ ALBERI**  
**SPLINE SHAFTS**  
**WELLENPROFILE**

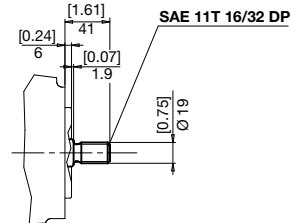
**HP P2**

**V** COPPIA MAX  
MAX TORQUE  
MAX DREHMOMENT 120 N•m



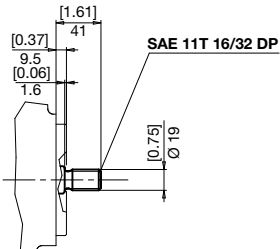
SU FLANGIA SAE A  
ON SAE A FLANGES  
AUF FLANSCH SAE A

**X** COPPIA MAX  
MAX TORQUE  
MAX DREHMOMENT 160 N•m



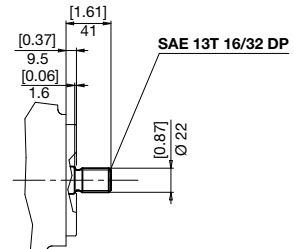
SU FLANGIA SAE A  
ON SAE A FLANGES  
AUF FLANSCH SAE A

**X** COPPIA MAX  
MAX TORQUE  
MAX DREHMOMENT 160 N•m

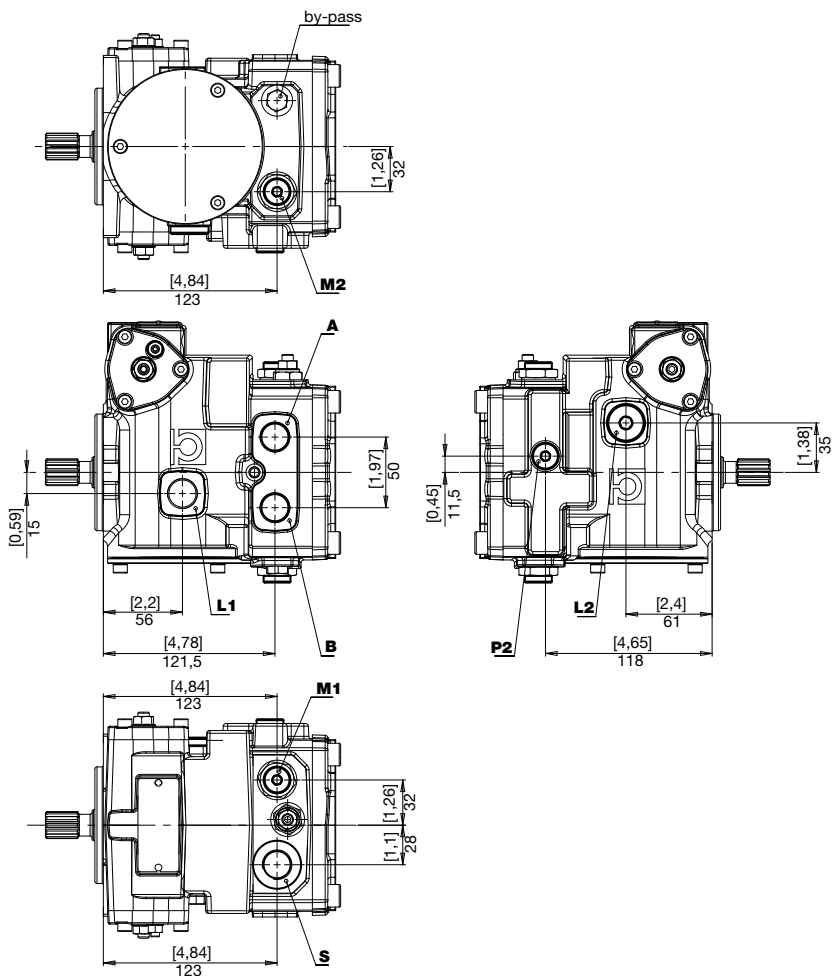


SU FLANGIA SAE B  
ON SAE B FLANGES  
AUF FLANSCH SAE B

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



SU FLANGIA SAE B  
ON SAE B FLANGES  
AUF FLANSCH SAE B



<b>A</b>	Utilizzo Use	<b>P2</b>	Presa pressione Pressure intake Druckanschluss
<b>B</b>	Verbraucher		

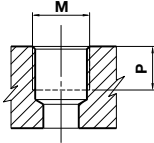
<b>L1</b>	Drenaggio Drain	<b>M1</b>	Presa manometro Manometer intake
<b>L2</b>	Leckölanschluss	<b>M2</b>	Manometeranschluss

<b>S</b>	Aspirazione Feeding pump inlet Ansaugöffnung
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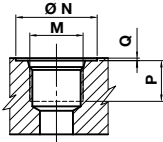


**BOCCHIE  
PORTS  
ANSCHLÜSSE**

**HP P2**



TIPO TYPE TYP	M		P	
	Nm	mm	mm	in
<b>G1</b>	Port ISO 1179-1 - G 1/8	8	8	0,31
<b>G2</b>	Port ISO 1179-1 - G 1/4	17	9	0,35
<b>G4</b>	Port ISO 1179-1 - G 1/2	70	16	0,63



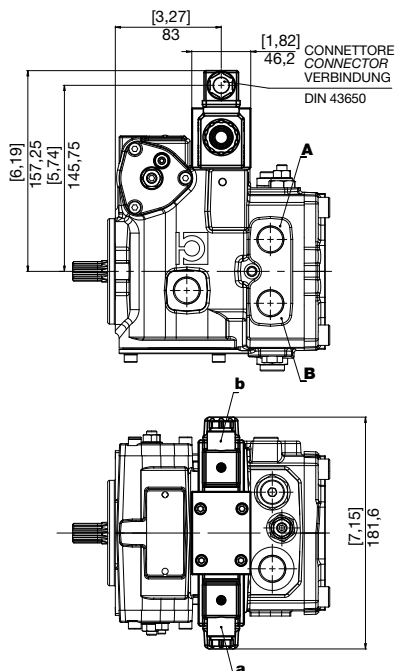
TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M	
		mm	in	mm	in	mm	in	Port ISO	Nm
<b>U2</b>	1/4"	20	0,79	12	0,47	0,3	0,01	Port ISO 11926-1-7/16-20	17
<b>U5</b>	5/8"	34	1,34	17	0,67	0,3	0,01	Port ISO 11926-1-7/8-14	70

**COMBINAZIONI  
COMBINATIONS  
KOMBINATIONEN**

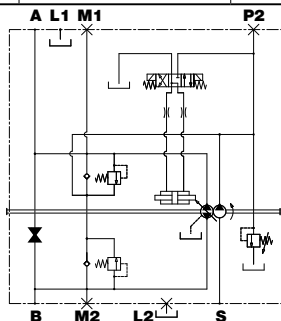
TIPO TYPE TYP	S ASPIRAZIONE INLET ANSAUGÖFFNUNG	A-B MANDATA OUTLET AUSGANG	L1 - L2 DRENAGGIO DRAIN LECKÖLANSCHLUSS	a - b PILOTAGGIO PILOT STEUERDRUCK	M1 - M2 PRESA MANOMETRO MANOMETER INTAKE MANOMETERANSCHLUSS
<b>G</b>	G4	G4	G4	G1	G2
<b>U</b>	U5	U5	U5	U2	U2

**E F**  
12 V 24 V

ELETTRICO ON/OFF CENTRO CHIUSO  
ELECTRICAL ON/OFF, CLOSED CENTER  
ELEKTRISCH ON/OFF, GESCHLOSSENES VENTIL

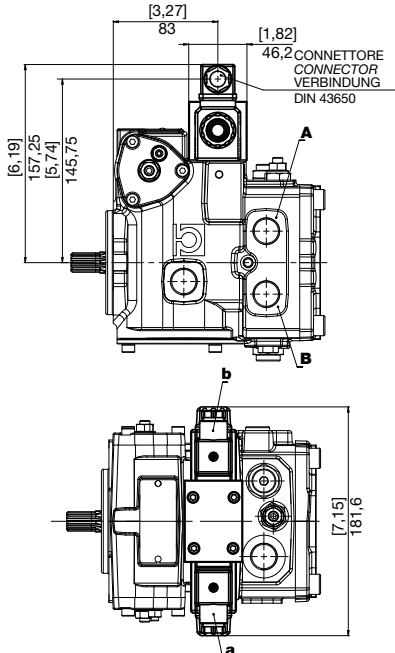


ROTAZIONE DIRECTION DREHRICHTUNG	SOLENOIDE IN TENSIONE EXCITED SOLENOID SOLENOID UNTER SPANNUNG	MANDATA OUTPUT AUSGANG
DESTRA RIGHT RECHTS	a	A
	b	B
SINISTRA LEFT LINKS	a	B
	b	A

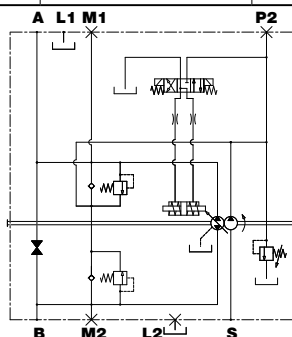


**N Q**  
12 V 24 V

ELETTRICO ON/OFF CENTRO APERTO  
ELECTRICAL ON/OFF, OPEN CENTER  
ELEKTRISCH ON/OFF, GEÖFFNETES VENTIL

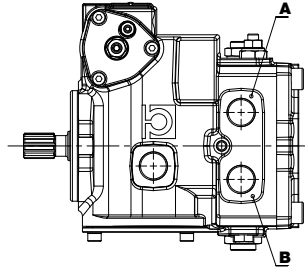
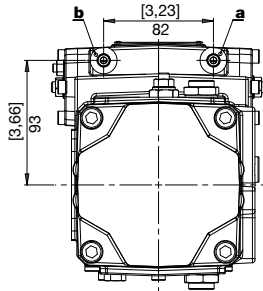


ROTAZIONE DIRECTION DREHRICHTUNG	SOLENOIDE IN TENSIONE EXCITED SOLENOID SOLENOID UNTER SPANNUNG	MANDATA OUTPUT AUSGANG
DESTRA RIGHT RECHTS	a	A
	b	B
SINISTRA LEFT LINKS	a	B
	b	A

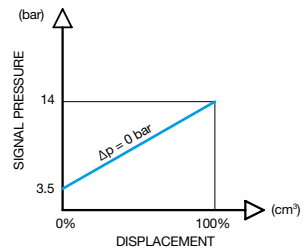
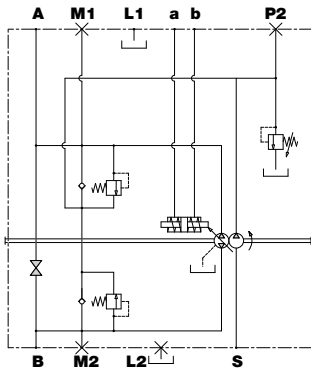




**K** IDRAULICO A DISTANZA  
REMOTE HYDRAULIC  
HYDRAULISCHE FERNSTEUERUNG



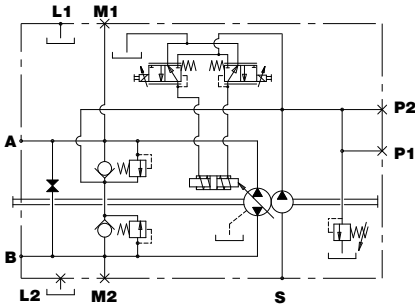
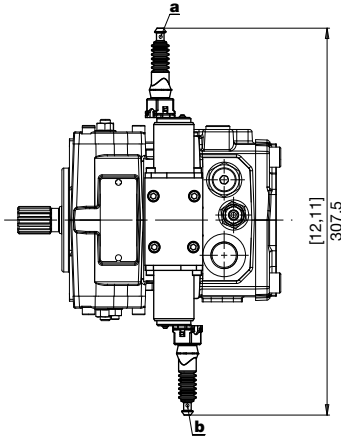
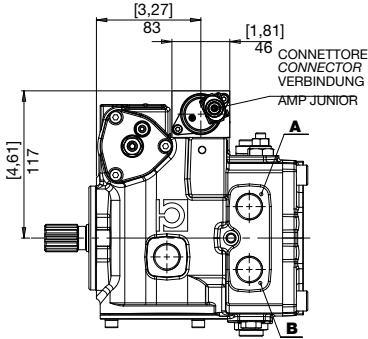
ROTAZIONE DIRECTION DREHRICHTUNG	PILOTAGGIO PILOT PRESSURE STEUERDRUCK	MANDATA OUTPUT AUSGANG
DESTRA RIGHT RECHTS	a	A
SINISTRA LEFT LINKS	b	B
	a	B
	b	A



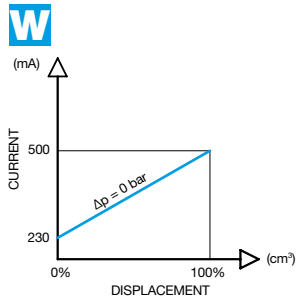
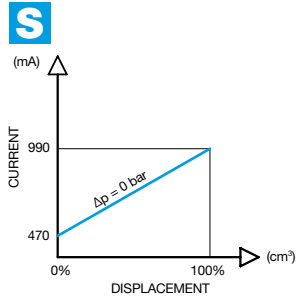
**S W**  
12 V 24 V

ELETRICO PROPORZIONALE DIRETTO  
ELECTRICAL PROPORTIONAL CONTROL  
ELEKTRISCH PROPORZIONALSTEUERUNG

**S W**



Tensione nominale Rated voltage Nennspannung	12	24	V
Corrente min (I1) Min. current Mindeststrom	300	180	mA
Corrente max (I2) Max. current Maximaler Strom	1500	850	mA
Frequenza PWM PWM Frequency Frequenz PWM	100	100	Hz

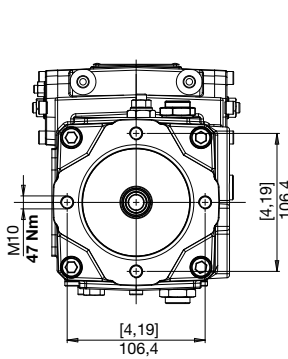


ROTAZIONE DIRECTION DREHRICHTUNG	SOLENOIDE IN TENSIONE EXCITED SOLENOID SOLENOID UNTER SPANNUNG	MANDATA OUTPUT AUSGANG
DESTRA RIGHT RECHTS	a	A
	b	B
SINISTRA LEFT LINKS	a	B
	b	A

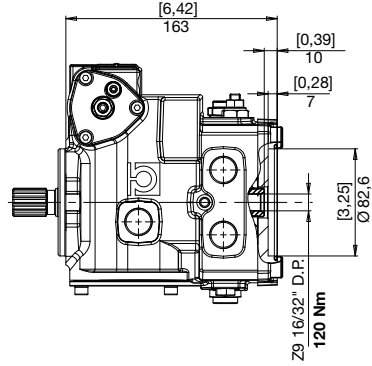
**PREDISPOSIZIONI**  
**VERSION**  
**BAUART**

**HP P2**

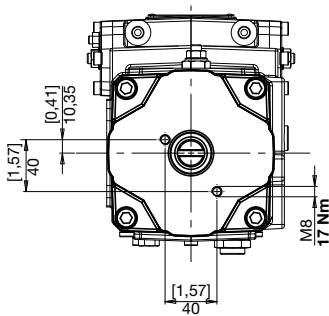
**2** SAE A CON POMPA SOVRALIMENTAZIONE  
SAE A WITH BOOST PUMP  
SAE A MIT SPEISEPUMPE



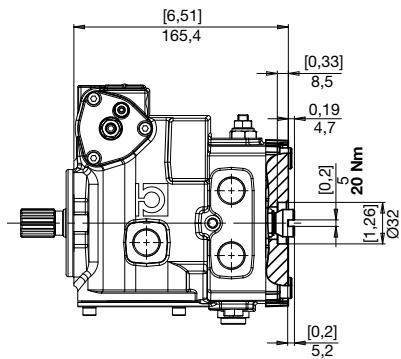
**5** SAE A SENZA POMPA SOVRALIMENTAZIONE  
SAE A WITHOUT BOOST PUMP  
SAE A OHNE SPEISEPUMPE



**8** POMPA INGR. GR 1 CON POMPA SOVRALIMENTAZIONE  
GEAR PUMP GR 1 WITH BOOST PUMP  
ZAHNRADPUMPE GR 1 MIT SPEISEPUMPE



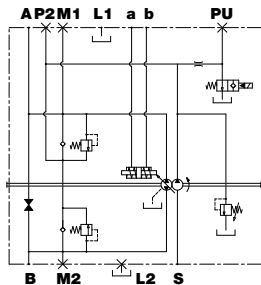
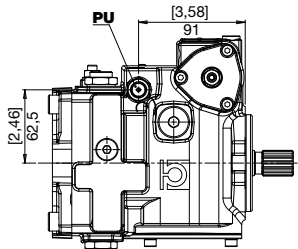
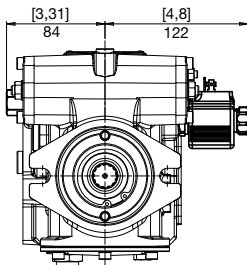
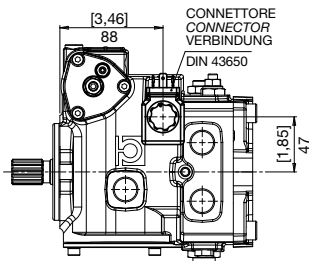
**9** POMPA INGR. GR 1 SENZA POMPA SOVRALIMENTAZIONE  
GEAR PUMP GR 1 WITHOUT BOOST PUMP  
ZAHNRADPUMPE GR 1 OHNE SPEISEPUMPE



**ACCESSORI  
ACCESSORIES  
ZUBEHÖR**

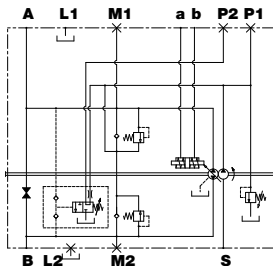
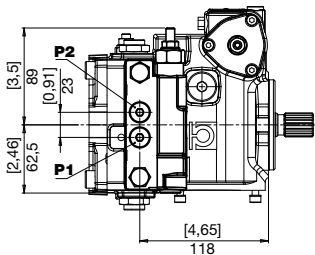
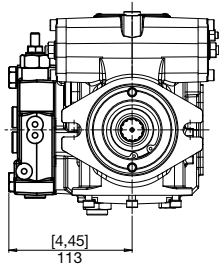
**E** SICUREZZA OPERATORE ASSENTE  
NO OPERATOR SAFETY  
SICHERUNG KEIN ARBEITER

12 V

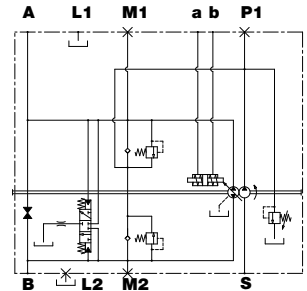
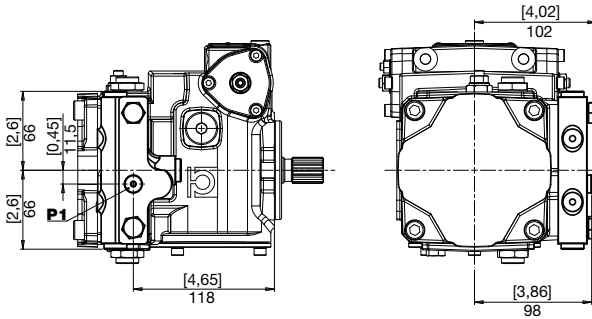


**PU** Presa pressione sblocco freno (1/4" Gas)  
Brake opening pressure (1/4" Gas)  
Bremsen Öffnung Druck (1/4" Gas)

**J** TAGLIO DI PRESSIONE (SOLO PER VERSIONE A RULLI)  
CUTOFF (ONLY FOR ROLLER VERSION)  
DRUCKABSCHNEIDUNG (NUR FÜR ROLLER VERSION)

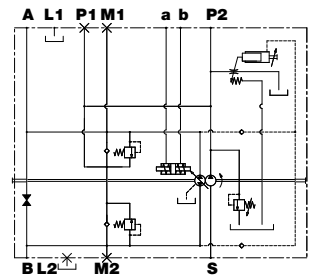
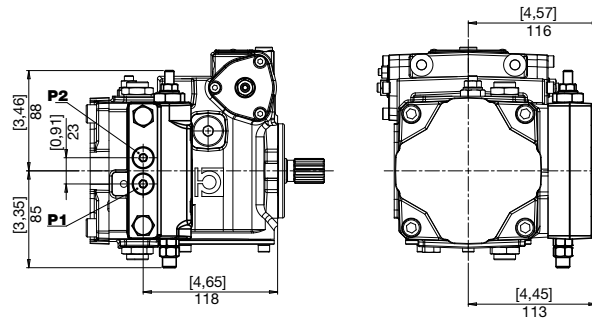


**V** VALVOLA DI FLUSSAGGIO (1.5 ± 0.5 l/min)  
FLUSHING AND BOOST VALVE (1.5 ± 0.5 l/min)  
SPUL-UND SPEISEDROKVENTIL (1.5 ± 0.5 l/min)

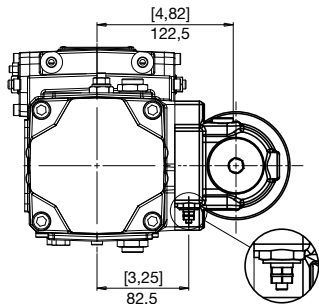


**P1** Presa pressione (1/8" Gas)  
Pressure intake (1/8" Gas)  
Druckanschluss (1/8" Gas)

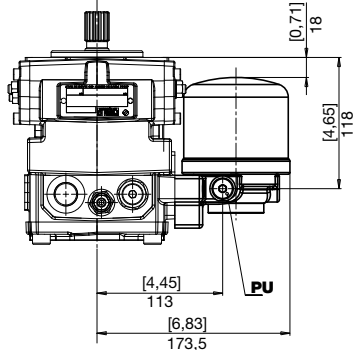
**W** LIMITATORE DI POTENZA (SOLO PER VERSIONE A RULLI)  
POWER LIMITER (ONLY FOR ROLLER VERSION)  
LEISTUNGSBEGRENZER (NUR FÜR ROLLER VERSION)



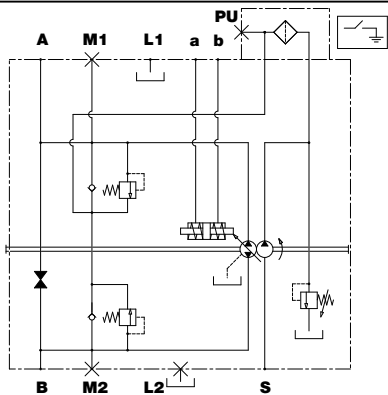
**X** FILTRO CON INDICATORE DI INTASAMENTO ELETTRICO  
FILTER WITH ELECTRIC CLOGGING INDICATOR  
FILTER MIT ELEKTRISCHEM VERSTOPFUNGSANZEIGER



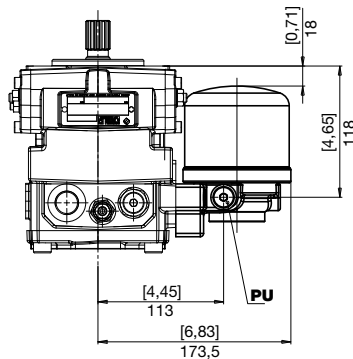
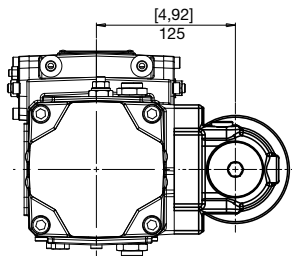
INDICATORE DIFFERENZIALE ELETTRICO 30VDC - 0,2 A max  
ELECTRIC DIFFERENTIAL INDICATOR 30VDC - 0,2 A max  
ELEKTRISCHER DIFFERENZDRUCKANZEIGER 30VDC - 0,2 A max



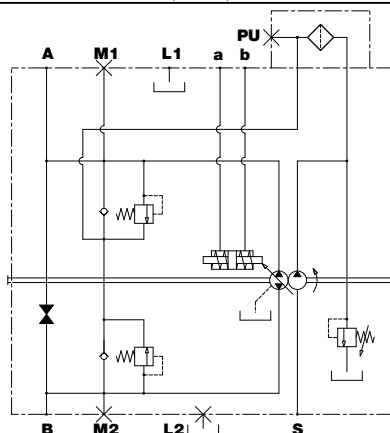
**PU** Presa olio filtrato (1/4" Gas)  
Filtered oil intake (1/4" Gas)  
Anschluss filtriertes Öl (1/4" Gas)



**Y** FILTRO SENZA INDICATORE DI INTASAMENTO  
FILTER WITHOUT ELECTRIC CLOGGING INDICATOR  
FILTER OHNE ELEKTRISCHEN VERSTOPFUNGSANZEIGER



**PU** Presa olio filtrato (1/4" Gas)  
Filtered oil intake (1/4" Gas)  
Anschluss filtriertes Öl (1/4" Gas)





**ISTRUZIONI PER L'ORDINAZIONE**  
**ORDERING INSTRUCTIONS**  
**BESTELLANLEITUNG**

**HP P2**



**ESECUZIONI SPECIALI**  
**SPECIAL VERSIONS**  
**SONDERBAUARTEN**

**ACCESSORI**  
**ACCESSORIES**  
**ZUBEHÖR**

- O** - nessuna opzione
  - E** - sicurezza "operatore assente"
  - J** - taglio di pressione
  - S** - accessori multipli esecuzioni speciali
  - V** - valvola di flussaggio
  - W** - limitatore di potenza
  - X** - filtro con indicatore di intasamento
  - Y** - filtro senza indicatore di intasamento
  - O** - no accessories
  - E** - "no operator" safety
  - J** - cut-off
  - S** - multiple accessories special versions
  - V** - flushing and boost valve
  - W** - power limiter
  - X** - filter with electric clogging indicator
  - Y** - filter without electric clogging indicator
  - O** - ohne Zubehör
  - E** - Sicherung "kein Bediener"
  - J** - Druckabschneidung
  - S** - Zubehörkombinationen Sonderbauten
  - V** - Spül- und speisendruckventil
  - W** - Leistungsbegrenzer
  - X** - Filter mit Verstopfungsanzeiger
  - Y** - Filter ohne Verstopfungsanzeiger
- Per la combinazione di più accessori consultare l'ufficio tecnico  
For further details on accessories combinations, please contact our Technical Department  
Für weitere Zubehörkombinationen wenden Sie sich bitte an die Technische Abteilung

**PRODOTTO**  
**PRODUCT**  
**PRODUKT**  
**P2** - Pompa a pistoni assiali per circuito chiuso  
**P2** - Closed circuit axial piston pump  
**P2** - Axialkolbenpumpen für den geschlossenen Kreislauf

**CILINDRATA**  
**DISPLACEMENT**  
**FÖRDERVOLUMEN**  
**014 - 019 - 023**

**SENSO DI ROTAZIONE**  
**ROTATION**  
**DREHRICHTUNG**  
**R** - Destra **L** - Sinistra  
*Right Left*  
**Rechts Links**

**ESTREMITÀ D'ALBERO**  
**SHAFT PROFIL**  
**WELLENENDE**  
**V** - SAE 9T 16/32 DP  
**X** - SAE 11T 16/32 DP  
**9** - SAE 13T 16/32 DP  
**O** - Per stadio P2  
*For pump P2*  
*Für Stufe P2*

**FLANGIA**  
**FLANGE**  
**FLANSCH**  
**A** - SAE A  
**B** - SAE B

**BOCCHE**  
**PORTS**  
**ANSCHLÜSSE**  
**G** - Gas  
**U** - UNF

**COMANDO**  
**CONTROL**  
**STEUERUNG**  
**E** - elettrico on/off centro chiuso (12 V)  
**F** - elettrico on/off centro chiuso (24 V)  
**K** - idraulico a distanza  
**N** - elettrico on/off centro aperto (12 V)  
**Q** - elettrico on/off centro aperto (24 V)  
**S** - elettronico proporzionale (12 V)  
**W** - elettronico proporzionale (24 V)  
**E** - 12 V electrical on/off, closed center  
**F** - 24 V electrical on/off, closed center  
**K** - remote hydraulic  
**N** - 12 V electrical on/off, open center  
**Q** - 24 V electrical on/off, open center  
**S** - 12 V electronic proportional  
**W** - 24 V electronic proportional  
**E** - elektrisch on/off, Ventil geschlossen (12 V)  
**F** - elektrisch on/off, Ventil geschlossen (24 V)  
**K** - hydraulisch ferngesteuert  
**N** - elektrisch on/off, geöffnetes Ventil (12 V)  
**Q** - elektrisch on/off, geöffnetes Ventil (24 V)  
**S** - elektronisch proportional (12 V)  
**W** - elektronisch proportional (24 V)

**TARATURA VALVOLE**  
**VALVE SETTING**  
**VENTILE**  
**B** - 150 bar  
**D** - 180 bar  
**E** - 210 bar  
**F** - 230 bar  
**G** - 250 bar  
**I** - 280 bar  
**L** - 300 bar  
**O** - 350 bar

**PREDISPOSIZIONI**  
**VERSION**  
**BAUART**  
**O** - nessuna predisposizione senza pompa sovralimentazione  
**1** - nessuna predisposizione con pompa sovralimentazione  
**2** - predisposizione SAE A con pompa sovralimentazione  
**5** - predisposizione SAE A senza pompa sovralimentazione  
**T** - predisposizione per pompa P2 senza pompa sovralimentazione  
**V** - predisposizione per pompa P2 con pompa sovrimentazione  
**8** - predisposizione per pompa ingranaggi G1 con pompa sovrimentazione  
**9** - predisposizione per pompa ingranaggi G1 senza pompa sovrimentazione  
**O** - no special fittings without boost pump  
**1** - no special fittings with boost pump  
**2** - SAE A mounting boost pump  
**5** - SAE A mounting without boost pump  
**T** - fitting for P2 pump without boost pump  
**V** - fitting for P2 pump with boost pump  
**8** - fitting for G1 gear pump with boost pump  
**9** - fitting for G1 gear pump without boost pump  
**O** - ohne Anschlussflansch, ohne Speisepumpe  
**1** - ohne Anschlussflansch mit Speisepumpe  
**2** - SAE A Anschlussflansch mit Speisepumpe  
**5** - SAE A - Anschlussflansch ohne Speisepumpe  
**T** - Anschlussflansch für P2-Pumpe ohne Speisepumpe  
**V** - Anschlussflansch für P2-Pumpe mit Speisepumpe  
**8** - Anschlussflansch für G1-Zahnradpumpe mit Speisepumpe  
**9** - Anschlussflansch für G1-Zahnradpumpe ohne Speisepumpe

**POMPE MULTIPLE  
MULTIPLE PUMPS  
MEHRFACHPUMPEN**

**POMPA DOPPIA CON 2 POMPE DI SOVRALIMENTAZIONE  
DOUBLE PUMP WITH 2 BOOST PUMPS  
TANDEMPUMPE MIT 2 SPEISEPUMPEN**

Il codice di ordinazione di una pompa multipla si ottiene sommando, come mostrato in esempio, i codici delle singole pompe (stadi) ricavati seguendo le regole di ordinazione delle pompe singole.

*You build the ordering code of a multiple pump by summing the order code of the individual pumps, see our example.*

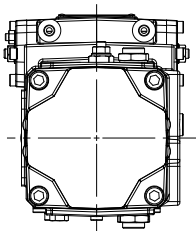
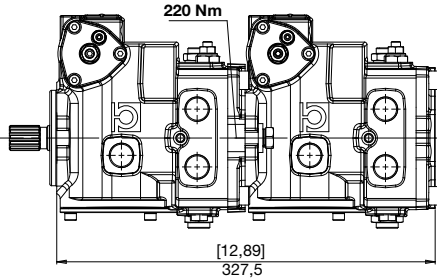
Der Bestellschlüssel einer Mehrfachpumpe ergibt sich durch Summieren der Einzel-Bestellschlüssel, siehe Beispiel

1° STADIO STAGE STUFE

HP P2 014 R A V G K E V 0 000

2° STADIO STAGE STUFE

HP P2 014 R A 0 G K E 1 0 000

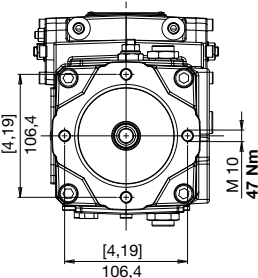
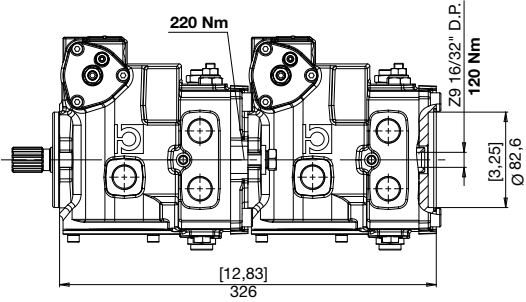



1° STADIO STAGE STUFE

HP P2 014 R A V G K E V 0 000

2° STADIO STAGE STUFE

HP P2 014 R A 0 G K E 2 0 000

SAE A