



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

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

**AXIALKOLBENVERSTELLPUMPEN
FÜR DEN GESCHLOSSENEN KREISLAUF**

HM PLB

398SCP0013A01

HM PLB

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

Le pompe a pistoni assiali serie HM PLB 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.

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 230 bar di picco.

Le pompe possono essere composte in versione tandem, utilizzando le opportune predisposizioni disponibili a richiesta.

Axial piston pumps series HM PLB have been designed to operate in a closed circuit.

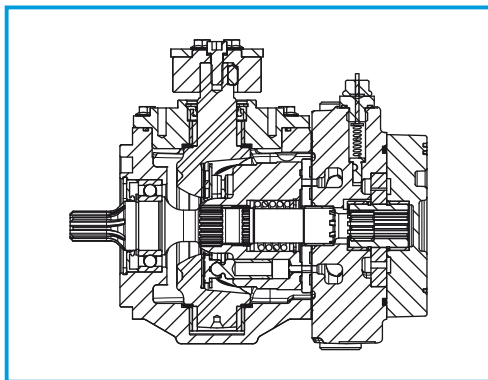
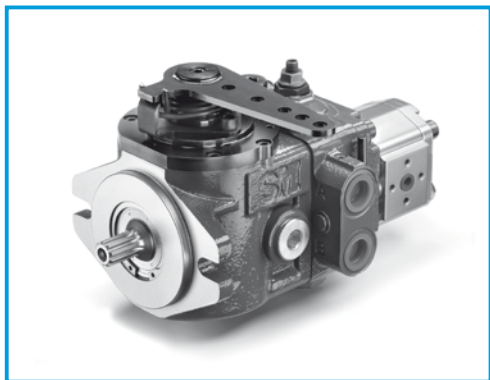
The available control systems make it easy to use these pumps in any application for industrial and mobile fields.

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 peak pressure up to 230 bar. It is possible to couple tandem versions, by means of coupling flanges optionally available.

Die Axialkolbenpumpen der Serie HM PLB wurden für den Betrieb im geschlossenen Kreislauf konzipiert.

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

Speziell entwickelte Zylinderblöcke mit optimalen Saugverhältnissen ermöglichen, wie von modernen Antriebsaggregaten gefordert, den Einsatz bei hohen Pumpendrehzahlen, wobei ein kontinuierlicher Arbeitsdruck mit einem Spitzenwert von 230 Bar gewährleistet ist. Unter Anwendung der auf Anfrage erhältlichen Anbauflansche können die Pumpen in der Tandemversion geliefert werden.



DATI TECNICI TECHNICAL DATA TECHNISCHE MERKMALE

GRUPPO GROUP BAUREIHE	CILINDRATA TEORICA NOMINAL DISPLACEMENT FÖRDERVOLUMEN		PRESSIONE PRESSURE DRUCK				VELOCITÀ DI ROTAZIONE SPEED DREHZAHL			MASSA WEIGHT GEWICHT		
	cm ³	in ³	CONTINUA CONTINUOUS DAUER		INTERMITTENTE INTERMITTENT INTERMITTIERENDER		PICCO PEAK SPITZEN		MAX	MIN	kg	lbs
			bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹		
HM PLB	7	0,43	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	8	0,49	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	9	0,55	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	10	0,61	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	11	0,67	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	12	0,73	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	13	0,80	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	14	0,85	210	3045	230	3335	250	3625	3600	500	8,5	18,7
	16	0,98	210	3045	230	3335	250	3625	3600	500	8,5	18,7
18	1,10	210	3045	230	3335	250	3625	3600	500	8,5	18,7	

PRESSIONE CONTINUA: pressione media del normale range di pressioni di funzionamento
PRESSIONE INTERMITTENTE: pressione che può essere mantenuta per periodi brevi (circa il 10% del ciclo di lavoro)

PRESSIONE DI PICCO: pressione massima permessa regolata dalle valvole di max. 1-2% del ciclo di lavoro)

CONTINUOUS PRESSURE: average pressure of the normal operating pressure range

INTERMITTENT PRESSURE: pressure that can be maintained for short periods (for about 10% of the work cycle)

PEAK PRESSURE: maximum allowable pressure regulated by maximum relief valves (max 1-2% of the work cycle)

KONTINUIERLICHER DRUCK: durchschnittlicher Druck der normalen Betriebsdruckreihe

INTERMITTIERENDER DRUCK: Druck, der für kurze Zeitabschnitte beibehalten werden kann (etwa 10% des Betriebszyklus)

SPITZENDRUCK: zugelassener Höchstdruck, von den Hochdruckventilen geregelt (max. 1-2% des Betriebszyklus)



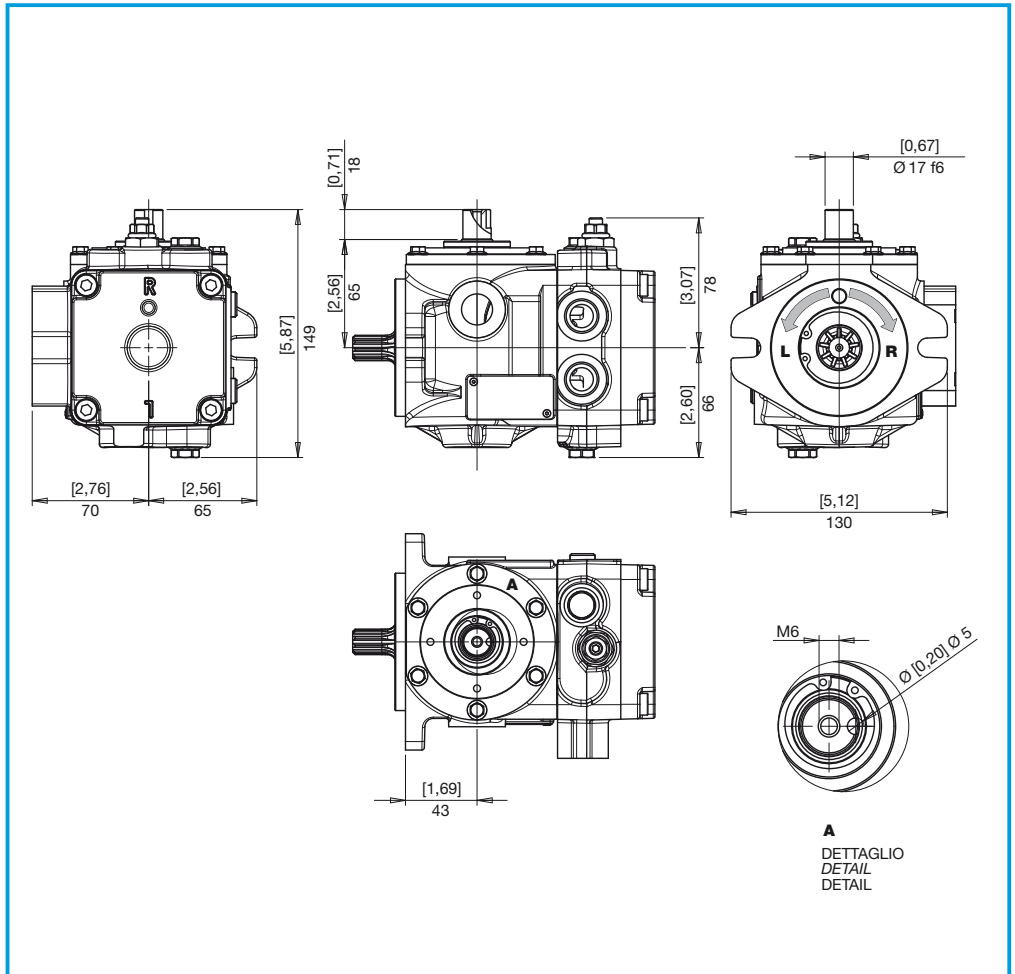
**POMPA DI ALIMENTAZIONE
BOOST PUMP
SPEISEPUMPE**

HM PLB	CILINDRATA DISPLACEMENT FORDERVOLUMEN		PRESSIONE PRESSURE DRUCK	
	cm ³	in ³	bar	psi
POMPA SINGOLA SINGLE PUMP PUMPE	5	0.30	12	174
POMPE TANDEM (una sovralimentazione) TANDEM PUMPS (one boost pump) MEHRFACHPUMPEN (eine Speisepumpe)	8	0.48	12	174
POMPE TANDEM (due sovralimentazioni) TANDEM PUMPS (two boost pumps) MEHRFACHPUMPEN (zwei Speisepumpen)	5+5	0.30+0.30	12	174

**MOMENTO POLARE DI INERZIA
INERTIAL MASS
TRÄGHEITSMOMENT**

approx. $4,3 \times 10^{-4}$ Kg m²

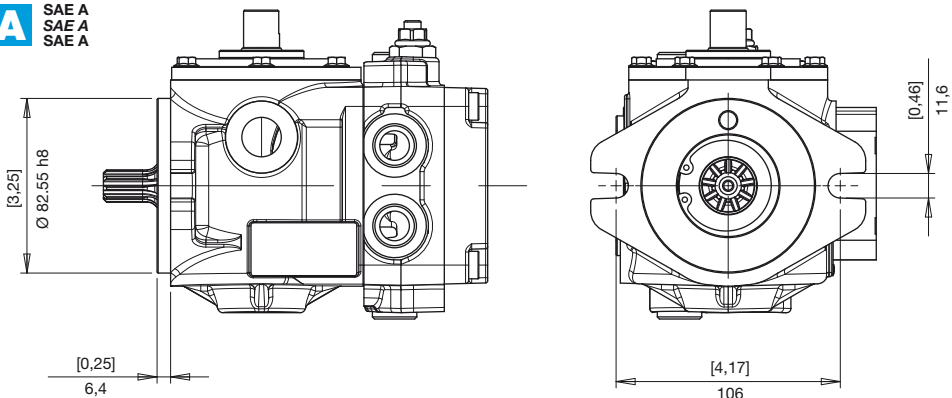
**DIMENSIONI
SIZE
ABMESSUNGEN**



FLANGE
FLANGES
FLANSCH

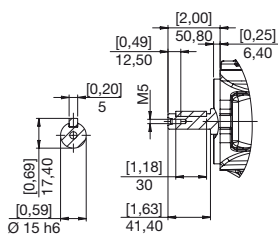
HM PLB

A SAE A
SAE A
SAE A

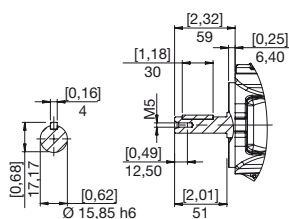


ESTREMITÀ ALBERI
SPLINE SHAFTS
WELLENPROFILE

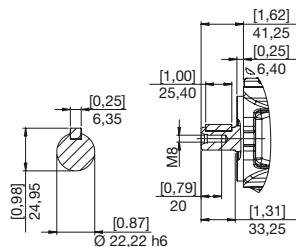
A COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 140 N•m



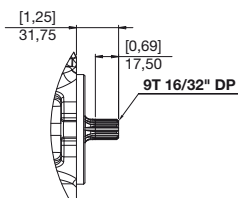
P COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 80 N•m



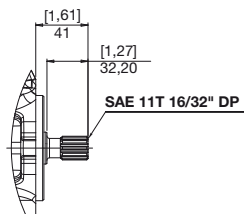
J COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 220 N•m



V COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 120 N•m



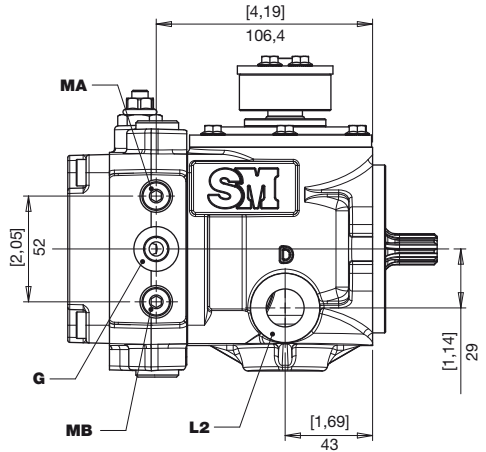
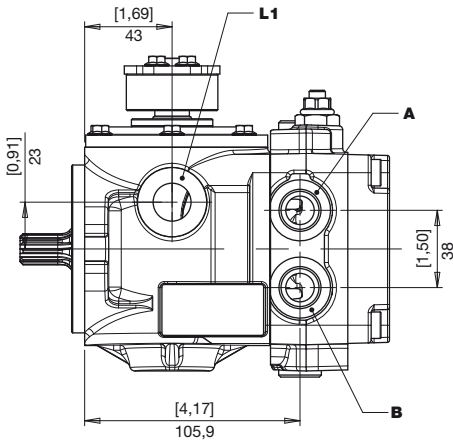
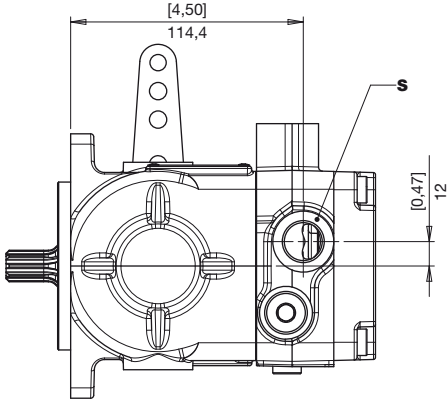
X COPPIA MAX
MAX TORQUE
MAX DREHMOMENT 170 N•m





**BOCCHIE
PORTS
ANSCHLÜSSE**

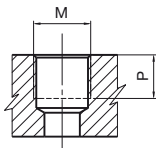
HM PLB



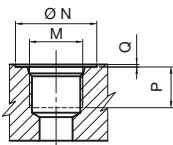
A	Utilizzi Use Verbraucher	G	Pres a bassa pressione Test port boost pressure Messanschluß Speisedruck
L1	Drenaggi Drain	MA	Pres a alta pressione Test port high pressure
L2	Leckölanschluß	MB	Messanschluß Hochdruck
S	Aspirazione Feeding pump inlet Sauganschluß Speisepumpe		

**BOCCHE
PORTS
ANSCHLÜSSE**

HM PLB



TIPO TYPE TYP	M		P	
	Nm	mm	mm	in
G1	1/8" GAS BSPP	8	8	0,31
G2	1/4" GAS BSPP	17	9	0,35
G4	1/2" GAS BSPP	70	14,5	0,57



TIPO TYPE TYP	DIMENSIONE SIZE GRÖSSE	N		P		Q		M	
		mm	in	mm	in	mm	in		Nm
U2	1/4"	20	0,79	12	0,47	0,3	0,01	7/16-20 UNF	17
U5	5/8"	34	1,34	18	0,71	0,3	0,01	3/4-16 UNF	70

**COMBINAZIONI
COMBINATIONS
KOMBINATIONEN**

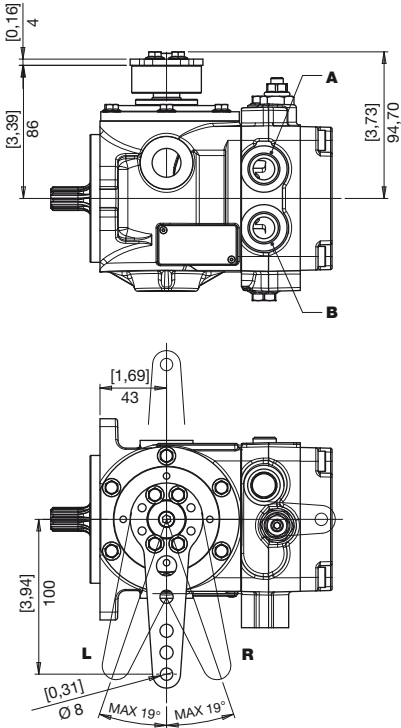
TIPO TYPE TYP	S ASPIRAZIONE INLET SAUGSEITE	A - B MANDATA OUTLET AUSGANG	L1 - L2 DRENAGGI DRAIN LECKÖLANSCHLUSS	PRESE PRESSIONE PRESSURE INTAKE DRUCKANSCHLÜSSE	
				MA-MB	G
G	G4	G4	G4	G1	G2
U	U5	U5	U5	G1	U2



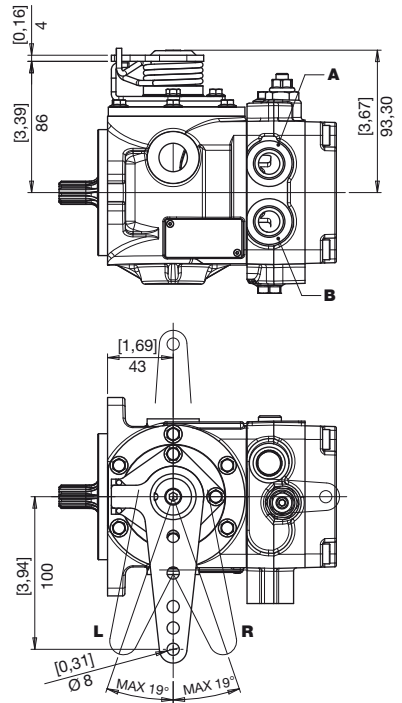
**COMANDI
CONTROLS
STEUERUNGEN**

HM PLB

L MANUALE SENZA AZZERATORE
MANUAL WITHOUT ZEROING
MANUELL OHNE NULLSTELLUNG

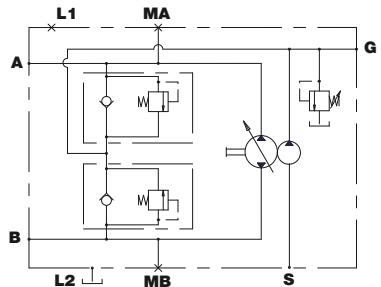


M MANUALE CON AZZERATORE
MANUAL WITH ZEROING
MANUELL MIT NULLSTELLUNG

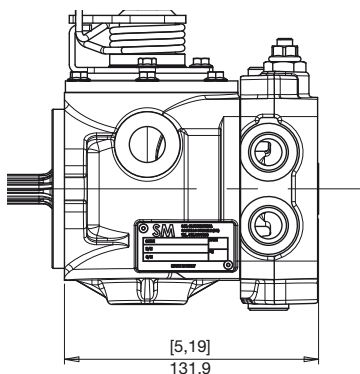


L M

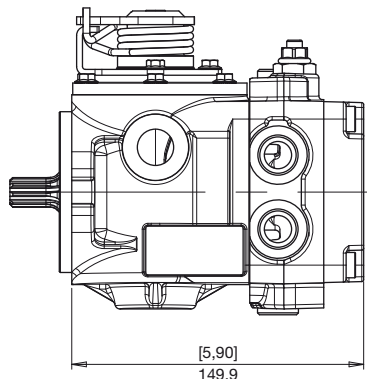
ROTAZIONE DIRECTION DREHRICHTUNG	POSIZIONE LEVA LEVER POSITION HEBELSTELLUNG	MANDATA OUTPUT AUSGANG	ASPIRAZIONE SUCTION SAUGSEITE
DESTRA RIGHT RECHTS	R	A	B
	L	B	A
SINISTRA LEFT LINKS	R	B	A
	L	A	B



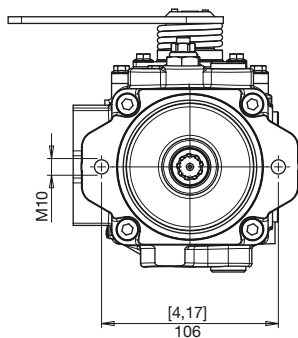
0 NESSUNA PREDISPOSIZIONE SENZA POMPA SOVRALIMENTAZIONE
 NO AUXILIARY MOUNT WITHOUT CHARGE PUMP
 OHNE ANSCHLUSSFLANSCH, OHNE SPEISEPUMPE



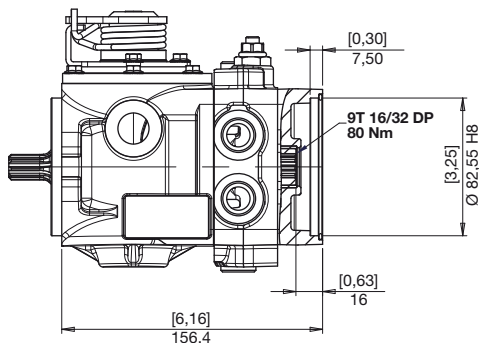
1 NESSUNA PREDISPOSIZIONE CON POMPA SOVRALIMENTAZIONE
 NO AUXILIARY MOUNT WITH CHARGE PUMP
 OHNE ANSCHLUSSFLANSCH MIT SPEISEPUMPE



2 SAE A CON POMPA SOVRALIMENTAZIONE
 SAE A WITH CHARGE PUMP
 SAE A MIT SPEISEPUMPE



5 SAE A SENZA POMPA SOVRALIMENTAZIONE
 SAE A WITHOUT CHARGE PUMP
 SAE A OHNE SPEISEPUMPE



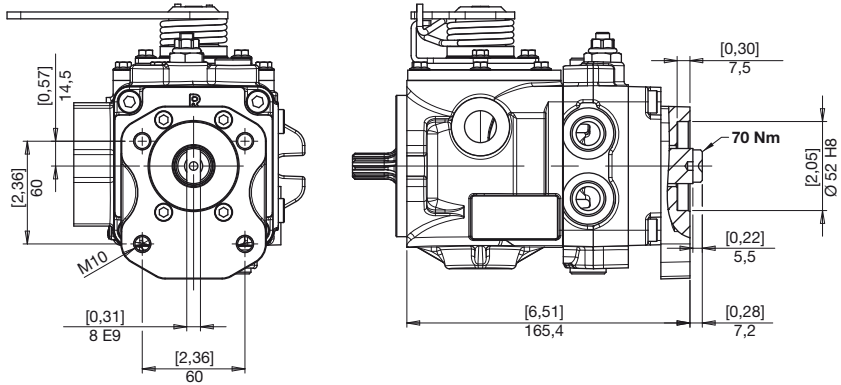
Su richiesta è possibile avere la flangia ruotata di 90°
 On request it is possible to have the flange rotated by 90°
 Auf Wunsch kann der Flansch eine um 90° gedrehte Stellung einnehmen.



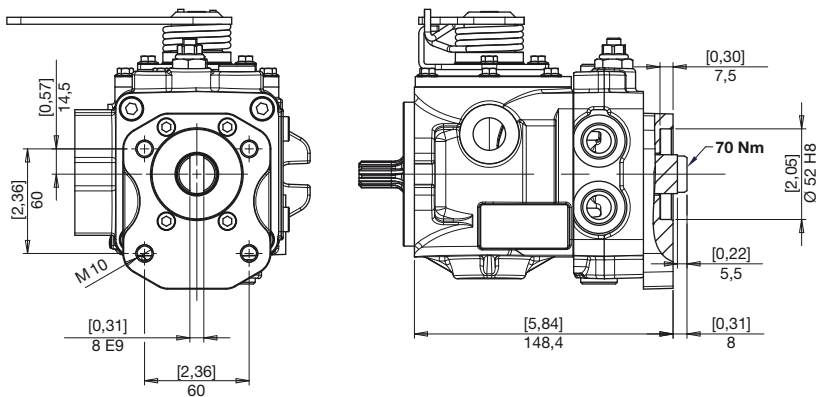
PREDISPOSIZIONI
VERSION
BAUART

HM PLB

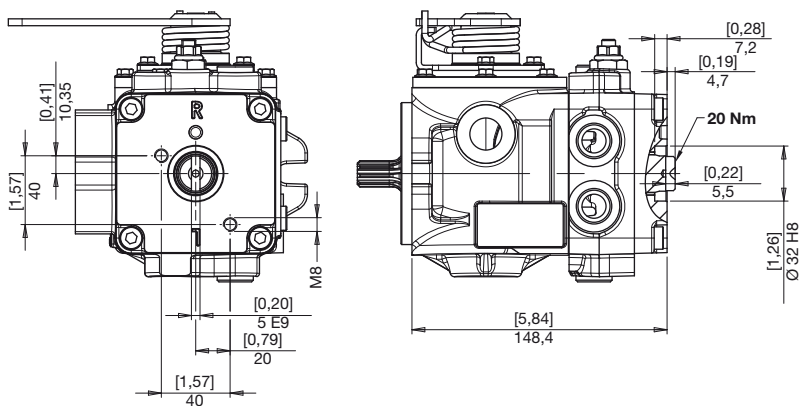
4 POMPA INGRANAGGI GRUPPO 2 FLANGIA TEDESCA D 52 CON POMPA SOVRALIMENTAZIONE
GROUP 2 GEAR PUMP GERMAN FLANGE D 52 WITH CHARGE PUMP
BAUREIHE 2 ZAHNRADPUMPE DIN NORM FLANSCH D 52 MIT SPEISEPUMPE



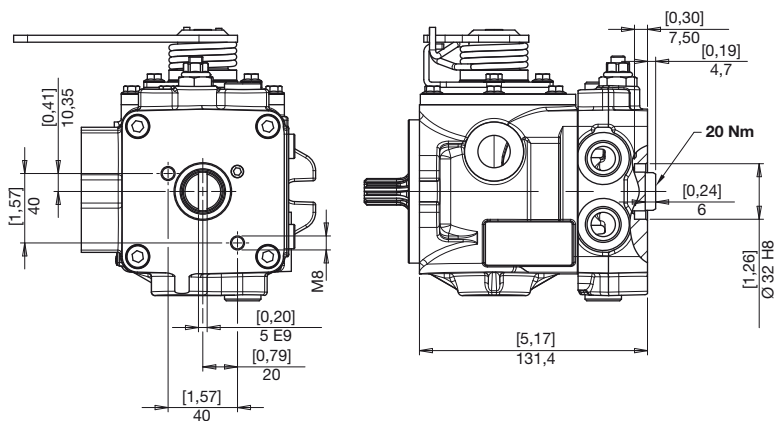
7 POMPA INGRANAGGI GRUPPO 2 FLANGIA TEDESCA D 52 SENZA POMPA SOVRALIMENTAZIONE
GROUP 2 GEAR PUMP GERMAN FLANGE D 52 WITHOUT CHARGE PUMP
BAUREIHE 2 ZAHNRADPUMPE DIN NORM FLANSCH D 52 OHNE SPEISEPUMPE



8 POMPA INGRANAGGI GRUPPO 1 CON POMPA SOVRALIMENTAZIONE
GROUP 1 GEAR PUMP WITH CHARGE PUMP
BAUREIHE 1 ZAHNRADPUMPE MIT SPEISEPUMPE



9 POMPA INGRANAGGI GRUPPO 1 SENZA POMPA SOVRALIMENTAZIONE
GROUP 1 GEAR PUMP WITHOUT CHARGE PUMP
BAUREIHE 1 ZAHNRADPUMPE OHNE SPEISEPUMPE

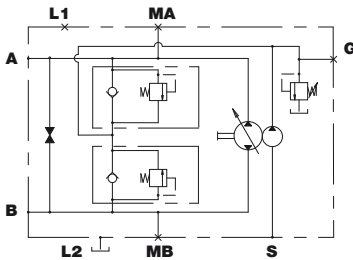
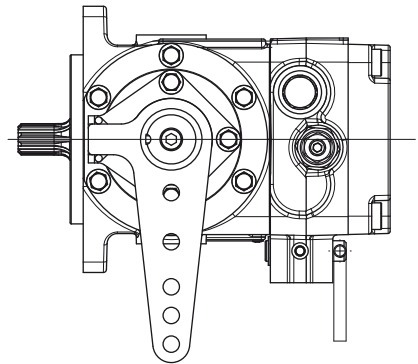
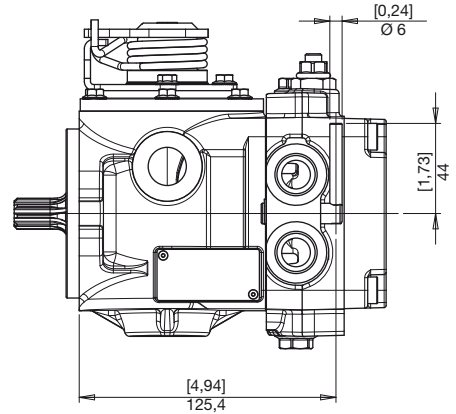
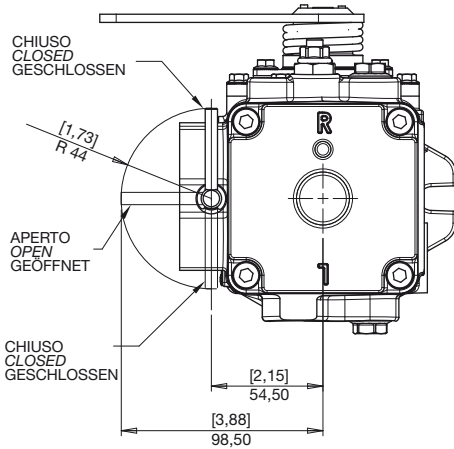




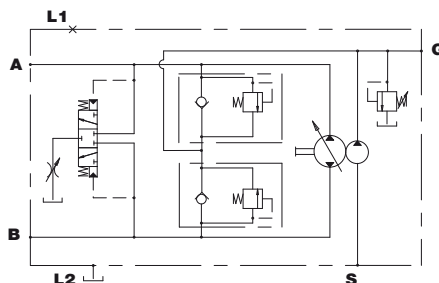
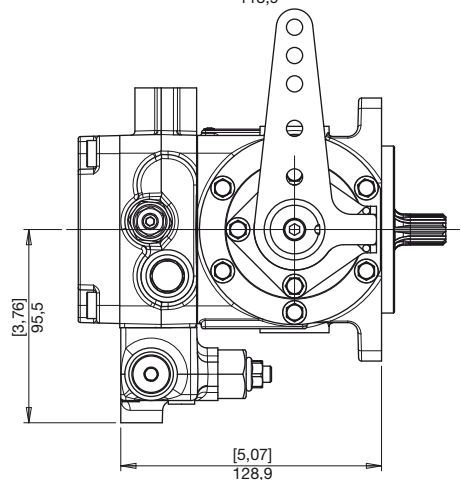
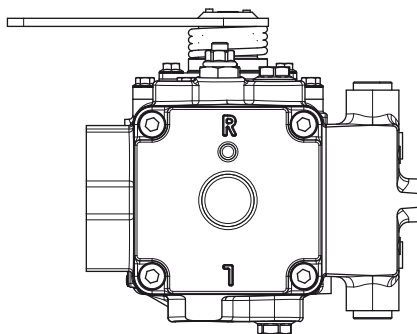
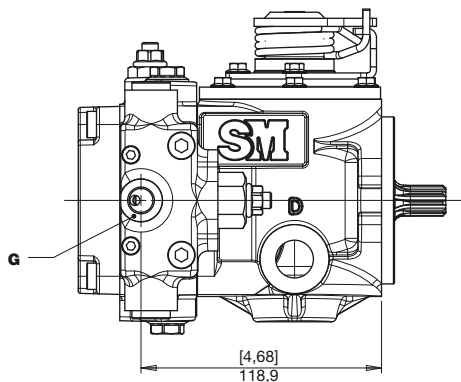
**ACCESSORI
ACCESSORIES
ZUBEHÖR**

HM PLB

B BY-PASS
BY-PASS
BY-PASS



M VALVOLA DI FLUSSAGGIO
FLUSHING AND BOOST VALVE
SPUL- UND SPEISEDROKVENTIL

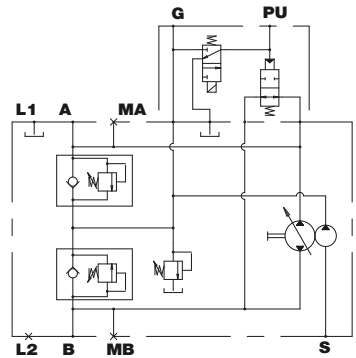
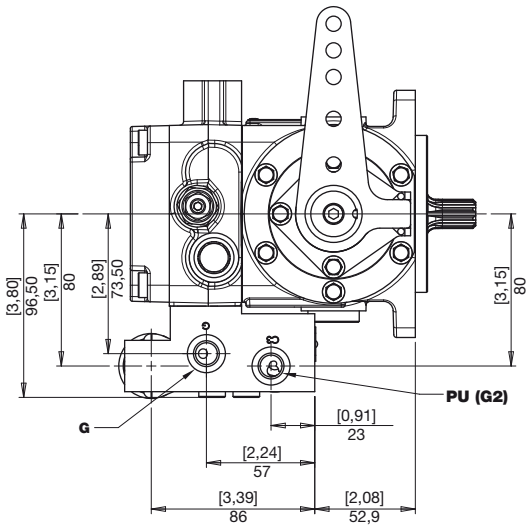
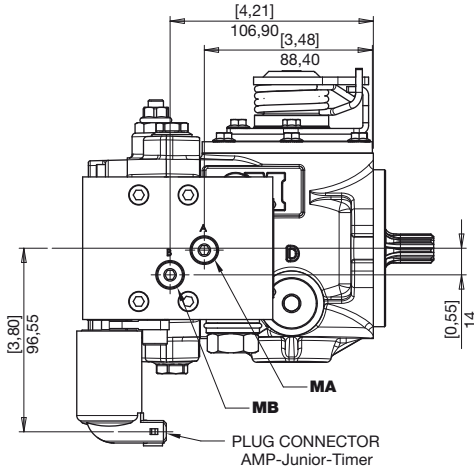


ROTAZIONE DIRECTION DREHRICHTUNG	POSIZIONE LEVA LEVER POSITION HEBELSTELLUNG	MANDATA OUTPUT AUSGANG	ASPIRAZIONE SUCTION SAUGSEITE
DESTRA RIGHT RECHTS	R	A	B
SINISTRA LEFT LINKS	L	B	A
	L	A	B

È possibile richiedere la leva in posizioni diverse, ad intervalli di 90°
Different lever position available 90° step
Die Hebelposition kann in Schritten von 90° gedreht werden

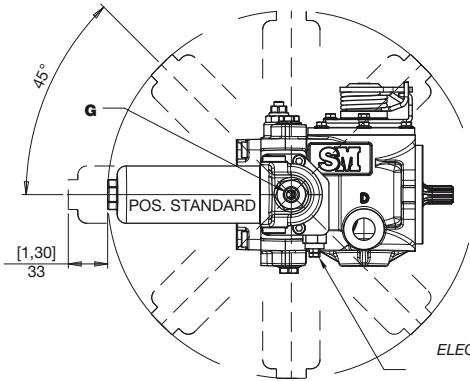


W VALVOLA BY-PASS + SBLOCCO FRENO
BY-PASS VALVE + BRAKE RELEASE
BY-PASS VENTIL + BREMSE LÖSEN

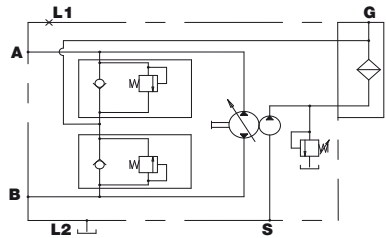
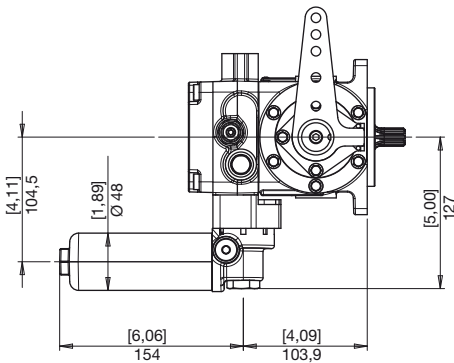


PU Pilotaggio sblocco freno (G2)
Brake opening pressure (G2)
Bremse öffnung druck (G2)

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



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



G Presa olio filtrato
Filtered oil intake
Anschluss filteriertes Öl

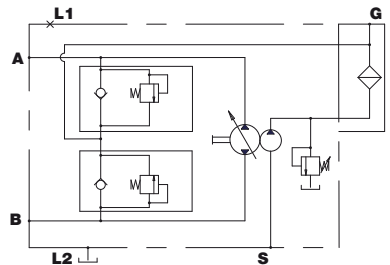
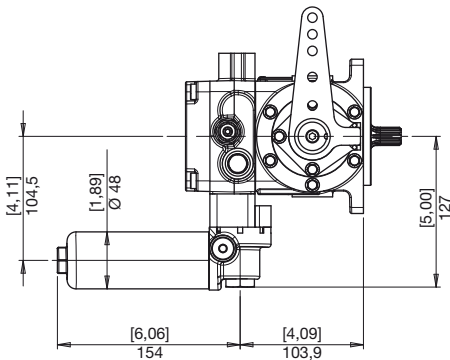
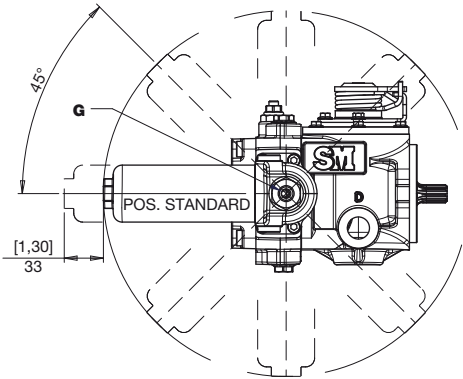
G 1/4" BSPP
7/16-20 UNF

È possibile richiedere il filtro ruotato ad intervalli di 45°
You can ask the filter rotated at intervals of 45°
Sie können den Filter bei 45°-Schritten gedreht gelten

Su richiesta vengono forniti i tappi valvole con prese alta pressione G1/8" BSPP
On request we supply relief valve plugs with pressure intake G1/8" BSPP
Auf Wunsch werden die Ventile mit Kappen aus Hochdruck-G1/8" BSPP vorgesehen

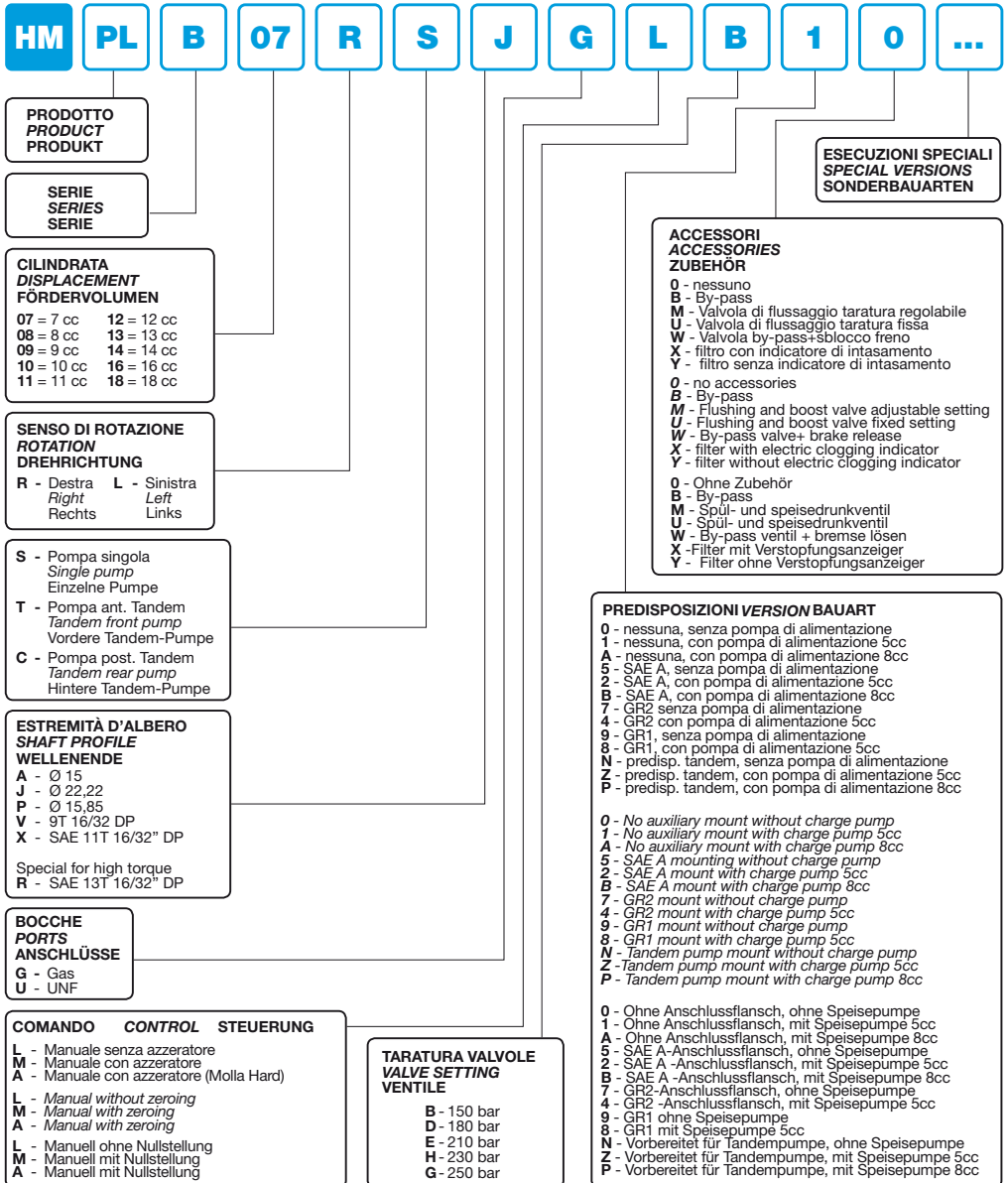


Y **FILTRO SENZA INDICATORE DI INTASAMENTO
FILTER WITHOUT ELECTRIC CLOGGING INDICATOR
FILTER OHNE ELEKTRISCHEN VERSTOPFUNGSANZEIGER**



G	Preso olio filtrato Filtered oil intake Anschluss filteriertes Öl	G 1/4" BSPP 7/16-20 UNF
	MA MB	Preso alta pressione Test port high pressure Messanschluß Hochdruck

È possibile richiedere il filtro ruotato ad intervalli di 45°
You can ask the filter rotated at intervals of 45°
Sie können den Filter bei 45° -Schritten gedreht gelten



**POMPA DOPPIA CON 1 POMPA DI SOVRALIMENTAZIONE
DOUBLE PUMP WITH 1 BOOST PUMP
TANDEMPUMPE MIT 1 SPEISEPUMPE**

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

HM PL B OS R T X G M E P O

2° STADIO STAGE STUFE

HM PL B OS R C V G M E B O

1° STADIO STAGE STUFE

HM PL B OS R T X G M E P O

2° STADIO STAGE STUFE

HM PL B OS R C V G M E B 5

SAE A

Nelle pompe tandem con una pompa di sovralimentazione è obbligatorio installare nell'impianto un tubo di collegamento (non fornito) tra un drenaggio del primo stadio ed un drenaggio del secondo stadio.

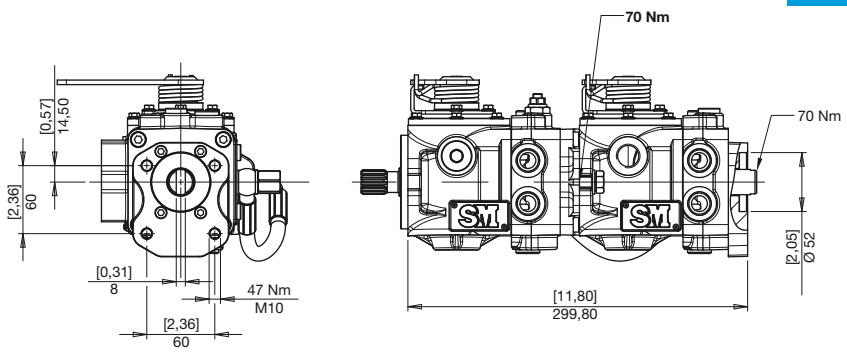
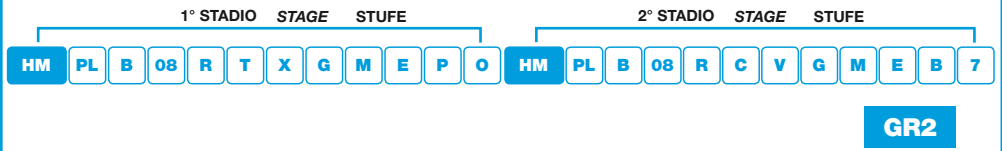
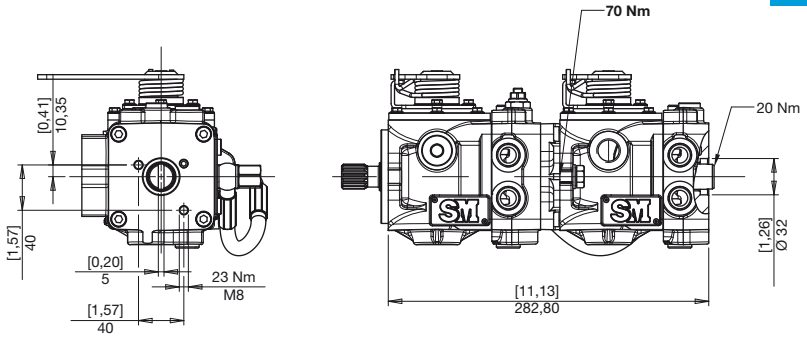
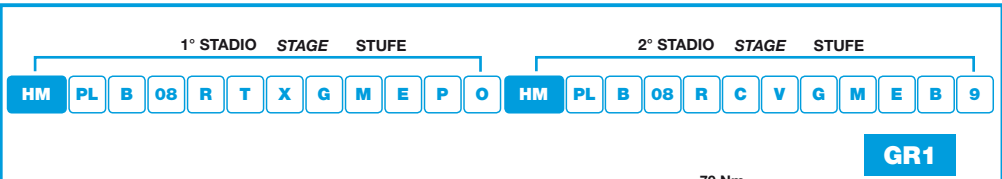
- La configurazione Tandem standard è con pompa da 8cc nel primo stadio.
- Con albero rinforzato è disponibile una sola configurazione con pompa da 8cc nel secondo stadio.

In the tandem pumps with one boost pump it is mandatory to assemble in the plant a connecting pipe (not supplied) between a drain of the first stage and a drain of the second one.

- The standard Tandem configuration is with a 8cm³ pump in the first stage.
- With reinforced shaft only one configuration with 8cm³ pump in the second stage is available.

Bei den Tandempumpen mit einer Verstärkerpumpe muss in der Anlage ein Verbindungsrohr (nicht beigelegt) zwischen einer Drainage der ersten Stufe und einer Drainage der zweiten Stufe installiert werden.

- Die serienmäßige Tandemversion hat eine 8cc Pumpe in der ersten Stufe.
- Mit verstärkter Welle ist nur eine einzige Ausführung mit 8cc in der zweiten Stufe erhältlich.



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