



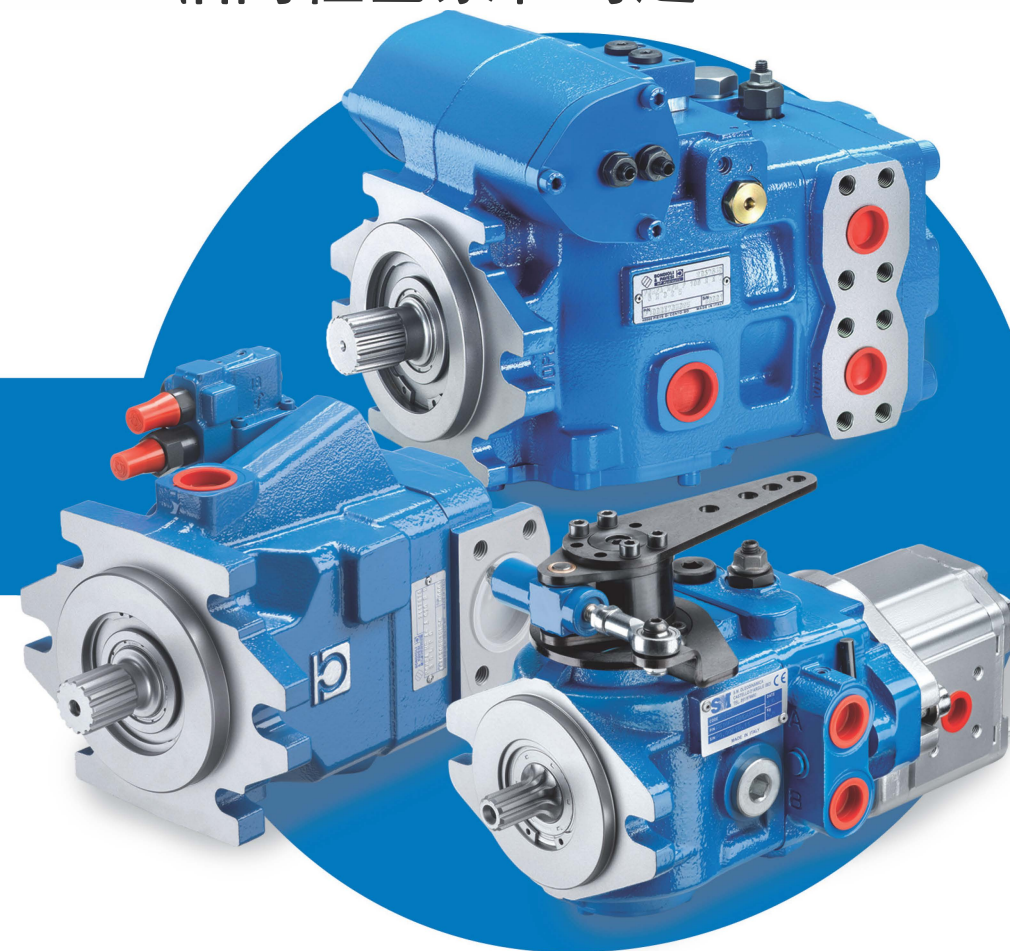
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398C30000-1012-1000



AXIAL PISTON PUMPS AND MOTORS 轴向柱塞泵和马达



AXIAL PISTON PUMPS AND MOTORS
轴向柱塞泵和马达

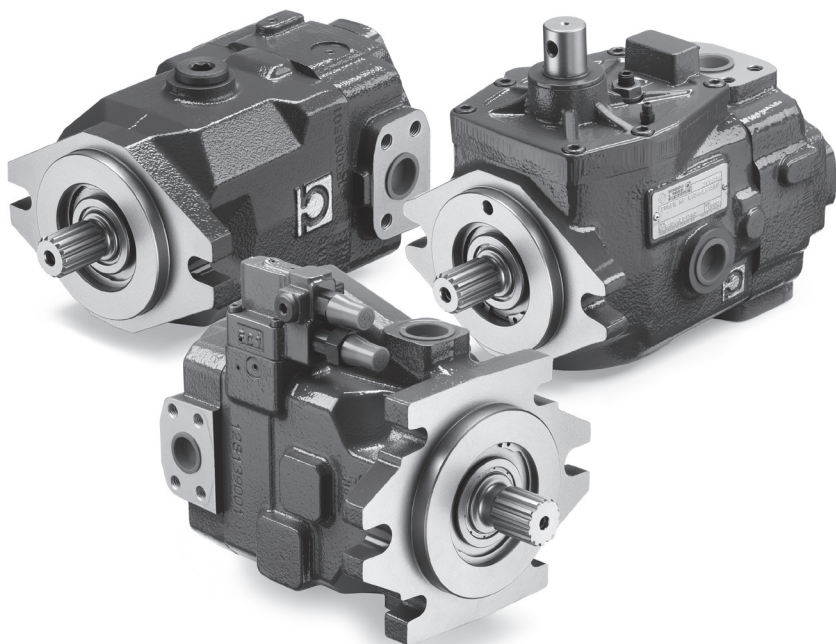


**POMPE A PISTONI ASSIALI
PER CIRCUITO APERTO**

**OPEN CIRCUIT
AXIAL PISTON PUMPS**

开式系统轴向柱塞泵

OP012



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ISTRUZIONI GENERALI DI IMPIEGO OPERATING INSTRUCTIONS

操作说明



**BONDIOLI
& PAVESI**
HP Hydraulic

FLUIDO IDRAULICO

Fluidi idraulici HLP (DIN 51224 parte 2)
Oli lubrificanti per motori API CD (SAE) Fluidi idraulici HLPV DIN 51224 parte 3 (J183).

TEMPERATURE LIMITE DI FUNZIONAMENTO

Temperatura minima -20°C
Temperatura massima continua +90°C
Temperatura massima di picco +100°C
Deve essere verificata la rispondenza alla viscosità del fluido richiesta per il corretto funzionamento.

VISCOSITÀ

Minima 10 mm²/s (per brevi periodi)
Massima 1000 mm²/s (per brevi periodi alla partenza)
Campo di viscosità raccomandato 15-90 mm²/s

PRESSIONE DI FUNZIONAMENTO IN ASPIRAZIONE

Pressione massima assoluta:

P min 0,8 bar
P max 2 bar

PRESSIONE DI DRENAGGIO

P max 2 bar (assoluti)

GRADO DI FILTRAZIONE

Le classi di contaminazione consigliate sono le seguenti:

Classe ISO4406 20/18/15 (NAS1638 - 9)

INSTALLAZIONE

Prima di far funzionare la pompa, assicurarsi che tutto il circuito idraulico sia accuratamente riempito d'olio e disareato.

Filtrare l'olio di riempimento in modo da garantire la classe ISO o NAS richiesta.

Prevedere nel circuito un sistema di filtraggio che garantisca la classe ISO o NAS richiesta. Avviare l'impianto lentamente a vuoto, facendolo spurgare bene dell'aria residua prima di applicare il carico.

Sostituire i filtri dopo le prime 50 ore di lavoro.

Sostituire il filtro del circuito idraulico ogni 500 ore di funzionamento.

Sostituire il fluido idraulico come da specifiche del fornitore.

In caso di mancato funzionamento di pompe o motori HP HYDRAULIC non insistere inutilmente; ricontrollare la corretta esecuzione dell'impianto ed eventualmente contattare il ns. ufficio tecnico.

HYDRAULIC FLUID

Use only HLP (DIN 51224 part 2) hydraulic fluids.

API CD Engine lubricating oils (SAE). HLPV Hydraulic fluids DIN 51224 part 3 (J183).

MAX WORKING TEMPERATURE

Min. temperature -20°C

Max continuous temperature +90°C

Max peak temperature +100°C

Check oil viscosity respects operation requirements.

OIL VISCOSITY

Min. oil viscosity 10 mm²/s (for brief intervals).

Max. oil viscosity 1000 mm²/s (for brief intervals during start-up).

Recommended oil viscosity range 15-90 mm²/s.

INLET CONTINUOUS OPERATION

PRESSURE

Absolute max pressure:

P min 0,8 bar

P max 2 bar

DRAIN PRESSURE

P max 2 bar (absolute)

FILTERING RATIO

The suggested contamination classes are: Class ISO4406 20/18/15 (NAS1638 - 9)

INSTALLATION

Before operation make sure the hydraulic circuit has been completely filled with oil and is purged from air.

Filter oil in order to guarantee a class equal to required ISO or NAS class.

Equip the circuit with a filtering system that guarantees a class equal to required ISO or NAS class.

Start the machine slowly, without load, making a good air purging before loading the circuit.

Replace filters after the first 50 hours working. Replace hydraulic circuit filter each 500 hours of work.

Replace hydraulic fluid as per supplier's specifications.

In case of failure of HP HYDRAULIC pumps and motors, do not retry uselessly: recheck the complete circuit assembling and, eventually, contact HP HYDRAULIC technical office.

液压油

仅用HLP(DIN51224第2部分)液压油
API CD柴油机润滑油(SAE)
HLPV液压油(DIN51224第3部分)(J183)

工作温度

最低温度: -20°C

最高持续温度: +90°C

最高峰值温度: +100°C

根据操作要求检测液压油粘度

油液粘度

最小油液粘度: 10mm/s (短时间运行)

最大油液粘度: 1000mm/s (泵启动时短时间运行)

推荐油粘度范围: 15-90mm/s

吸油口持续吸油压力

绝对压力

P min. 0,8Bar

p max. 2Bar

泄油口压力

P max. 2Bar (绝对压力)

过滤精度

推荐油液清洁度等级:

ISO4406 20/18/15(NAS1638-9)

安装

在操作之前, 确保将液压管路内注满液压油, 排净空气。

过滤液压油, 以确保清洁度等级达到ISO或NAS标准。

将过滤系统安装在右路中, 以确保清洁度等级达到ISO或NAS标准。

慢慢启动设备, 不带负载, 在给回路加载前将空气全部排净。

在第一次工作50小时后, 更换过滤器。

以后每工作500小时更换过滤器。

根据每位供应商的说明定期更换液压油。

如果泵和马达出现问题, 请不要继续重试, 请选检查全部的安装管路, 最后联系HP HYDRAULIC的技术部门。



Operare sempre prestando la massima attenzione agli organi in movimento; non utilizzare indumenti larghi o svolazzanti.

Non approssimarsi a ruote, cingoli, trasmissioni a catena o ad albero non adeguatamente protette ed in movimento, o che potrebbero iniziare a muoversi in qualsiasi istante senza preavviso.

Non svitare e scollegare raccordi e tubi con il motore in moto.

Evitare le fughe di olio, per prevenire l'inquinamento ambientale.

HP Hydraulic si solleva da ogni responsabilità riguardante la non osservanza di queste indicazioni e del rispetto delle normative di sicurezza vigenti, anche se non contemplate nel presente manuale.



When operating pay always your best attention to moving machine parts; do not use loose or fluttering clothes.

Do not approach to wheels, tracks, chain drives or shaftings if they are moving and not properly protected, or if they could start moving suddenly and without any warning.

Do not screw out or link off connectors and pipes if engine is working.

Avoid oil leak in order to prevent environment pollution.

HP Hydraulic relieves from all and any responsibilities concerning not compliance with these instructions and observance of safety rules in force, also if not provided for in this manual.



当操作时请注意设备的动作部分, 不要穿松散和摆动的衣服。不解近正在动作中的或者没有完全保护好轮子、轨道、链条和轴, 如果它们可能突然启动或没有安全告示时也要注意。在电机或柴油机运行时, 不要拆下联轴器 and 管路避免油液泄露以保护环境, 防止污染。

HP HYDRAULIC 公司不承担任何因不按照此手册规定所引起的责任, 同样包括不包含在此手册中的安全守则。

SM A1

POMPE A PISTONI ASSIALI PER CIRCUITO APERTO CON REGOLAZIONE LOAD SENSING O A PRESSIONE COSTANTE OPEN CIRCUIT AXIAL PISTON PUMPS WITH LOAD-SENSING OR CONSTANT PRESSURE CONTROL 开式系统轴向柱塞泵，带负载敏感控制和恒压控制

Le pompe a pistoni assiali serie SM A1 sono state concepite per operare in circuito aperto.

I vari sistemi di regolazione disponibili le rendono facilmente adattabili alle esigenze applicative sia per il settore industriale che per quello mobile. 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 (315 bar di picco). I controlli permettono un funzionamento con regolazione load sensing o a pressione costante.

Le pompe possono essere composte in versione tandem.

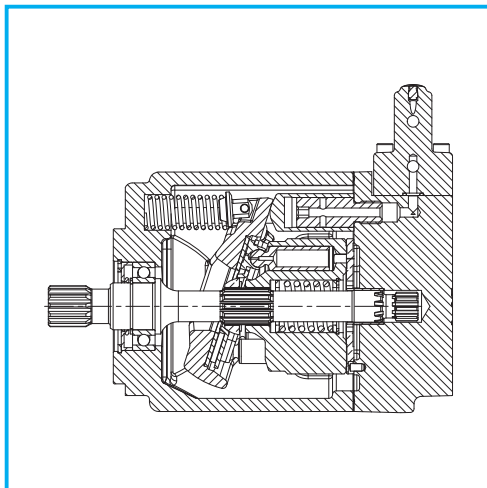
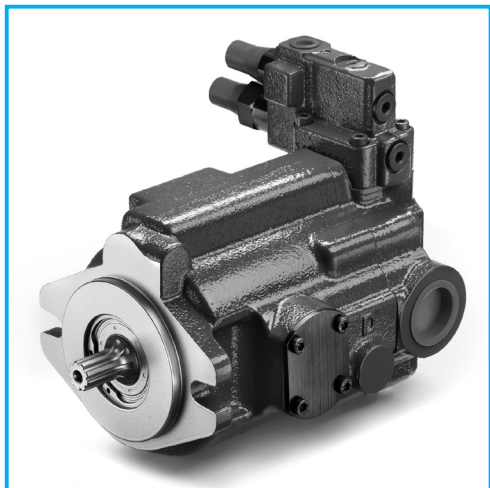
Axial piston pumps series SM A1 have been designed to operate in an open circuit. Control systems actually available are making easy to use these pumps in any application for industrial and mobile field. Development of rotating groups, especially designed, united to an accurate study of oil passage sections into the pumps, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure until 250 bar and until 315 bar for peak pressure. Control types allow a Load-sensing or a constant pressure control over the pump.

It is possible to couple tandem versions.

SM A1系列泵具有多种控制方式，可以应用在工业和行走机械领域很多不同场合中。

对旋转组件的研发和特别设计，加上对油路截面的精确研究，可以使泵在高速下工作，达到现代柴油机的要求，稳定状态下持续工作压力可达到280bar，峰值工作压力可达到350bar。

此系列泵可通过选配连接法兰将双泵串联。



DATI TECNICI TECHNICAL DATA 技术参数

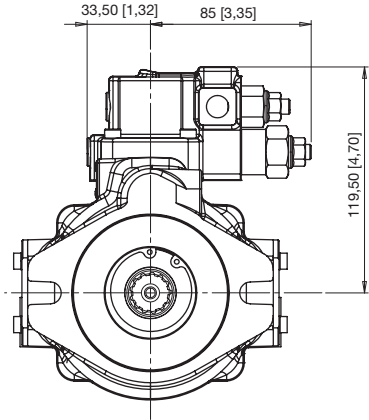
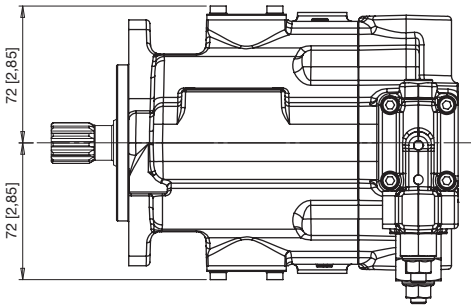
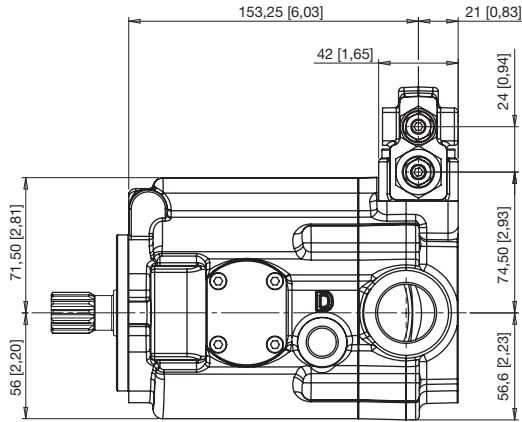
GRUPPO GROUP 组别	CILINDRATA TEORICA NOMINAL DISPLACEMENT 公称排量 (TM)		CONTINUA CONTINUOUS 持续压力		PRESSIONE PRESSURE DRUCK INTERMITTENTE INTERMITTENT 间歇压力		PICCO PEAK 峰值压力		VELOCITÀ DI ROTAZIONE SPEED 速度 MAX MIN		MASSA WEIGHT 重量	
	cm³	in³	bar	psi	bar	psi	bar	psi	min⁻¹	min⁻¹	kg	lbs
SM A1	10	0,61	250	3625	280	4060	315	4568	3300	500	10	22
	12	0,73										
	14	0,85										
	16	0,98										
	18	1,0										



DIMENSIONI
SIZE
尺寸

SM A1

R

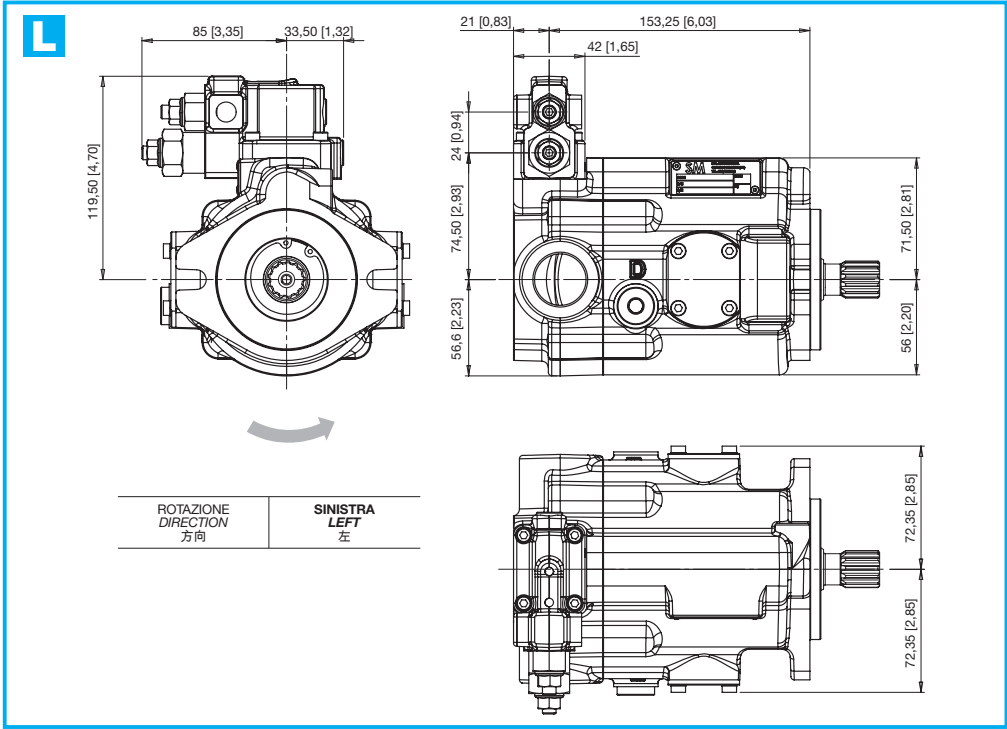


ROTAZIONE
DIRECTION
方向

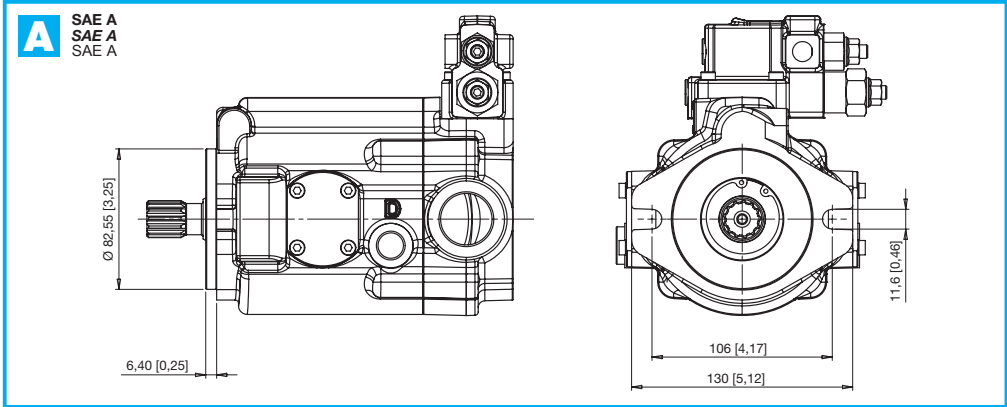
DESTRA
RIGHT
右

DIMENSIONI
SIZE
尺寸

SM A1



FLANGE
FLANGES
法兰





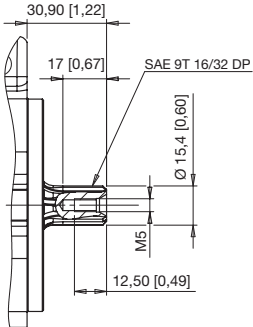
**ESTREMITÀ ALBERI
SPLINE SHAFTS**
花键轴

SM A1

V

**COPPIA MAX
MAX TORQUE**
最大扭矩

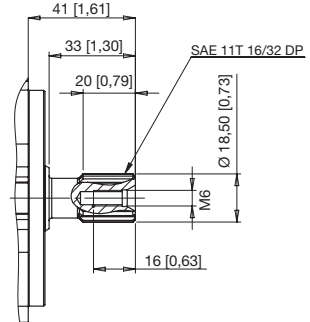
120 N•m



X

**COPPIA MAX
MAX TORQUE**
最大扭矩

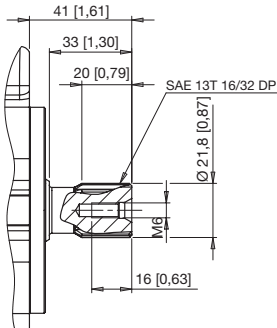
160 N•m



9

**COPPIA MAX
MAX TORQUE**
最大扭矩

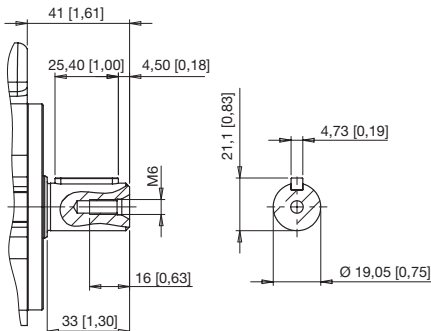
310 N•m



E

**COPPIA MAX
MAX TORQUE**
最大扭矩

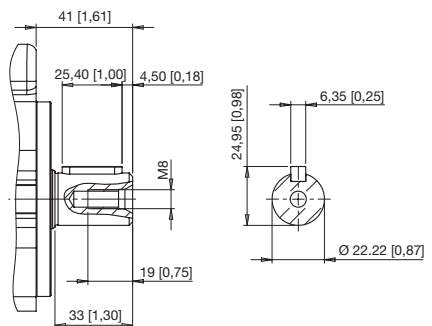
113 N•m



J

**COPPIA MAX
MAX TORQUE**
最大扭矩

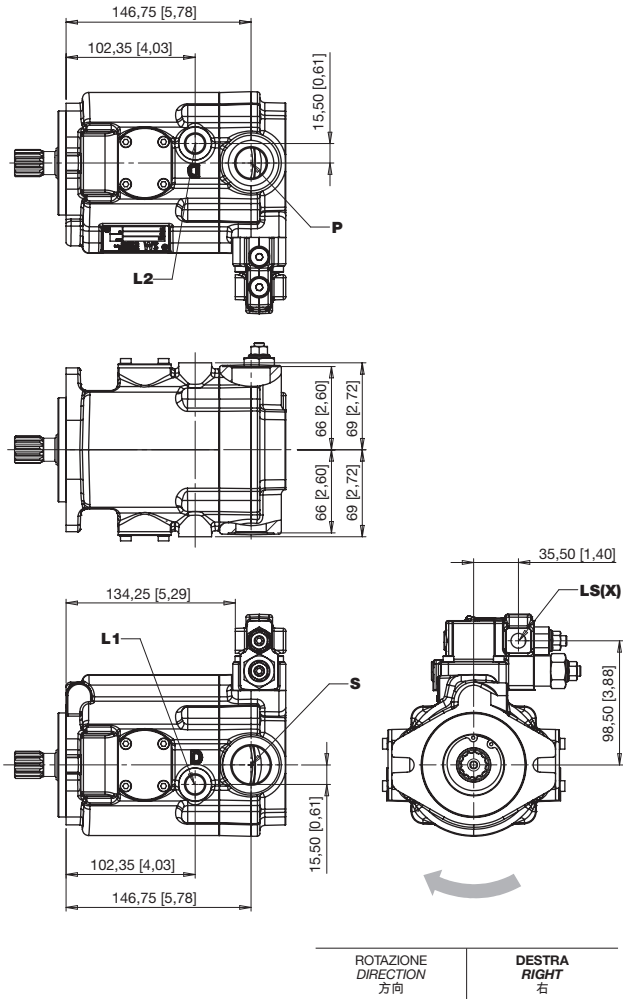
210 N•m



BOCCHIE VERSIONE DESTRA
RIGHT VERSION PORTS
右版本油口

SM A1

GU



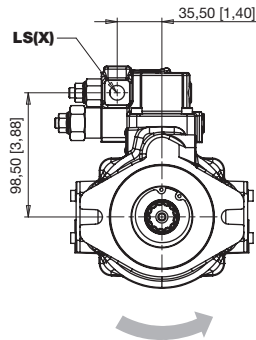
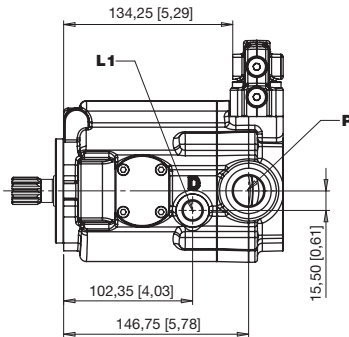
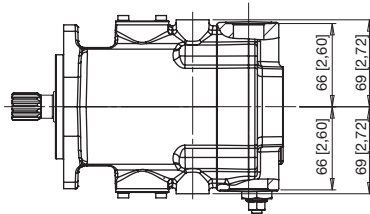
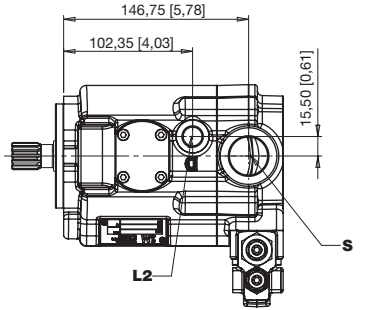
S	Aspirazione Feeding pump inlet 吸油口	P	Mandata Output 输出油口
L1 L2	Drenaggi Drain 泄油口	LS(X)	Pilotaggio Pilot 先导油口



BOCCHIE VERSIONE SINISTRA
LEFT VERSION PORTS
左版本油口

SM A1

G U



ROTAZIONE
DIRECTION
方位

SINISTRA
LEFT
左

S Aspirazione
Feeding pump inlet
吸油口

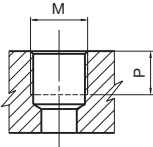
P Mandata
Output
输出油口

L1 Drenaggi
L2 Drain
泄油口

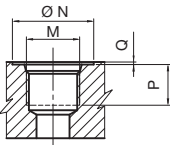
LS(X) Pilotaggio
Pilot
先导油口

BOCCHIE
PORTS
油口

SM A1



TIPO TYPE 类型	M		P	
		Nm	mm	in
G1	1/8" GAS BSPP	8	8	0,31
G3	3/8" GAS BSPP	40	12	0,47
G6	3/4" GAS BSPP	90	19	0,75
G7	1" GAS BSPP	160	21	0,83



TIPO TYPE 类型	DIMENSIONE SIZE 尺寸	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
U3	3/8"	25	0,98	13	0,51	0,3	0,01	9/16-18 UNF	40
U6	3/4"	41	1,61	20	0,79	0,3	0,01	1-1/16-12 UNF	90
U7	1"	49	1,93	20	0,79	0,3	0,01	1-5/16-12 UNF	160

COMBINAZIONI
COMBINATIONS
组合

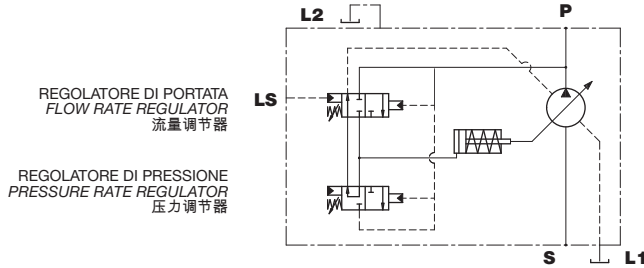
TIPO TYPE 类型	S ASPIRAZIONE INLET 吸油口	P MANDATA OUTLET 输出油口	L1 - L2 DRENAGGIO DRAIN 泄油口	LS(X) PILOTAGGIO PILOT 先导油口
G	G7	G6	G3	G1
U	U7	U6	U3	U2



**REGOLAZIONI
CONTROL SYSTEMS**
控制系统

SM A1

L **REGOLATORE DI PRESSIONE/PORTATA**
PRESSURE/FLOW RATE REGULATOR
压力流量调节器



SETTAGGIO REGOLATORI
CONTROL SYSTEM SET
控制系统设定

PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力		DIFFERENZIALE DI PRESSIONE Δp PRESSURE DIFFERENTIAL Δp 负载敏感压力 Δp		
bar	psi	14 bar - 203 psi	21 bar - 305 psi	25 bar - 363 psi
180	2610	A	B	C
210	3045	E	F	G
250	3625	I	L	M
280	4060	O	P	Q

È necessario prevedere una valvola di massima pressione esterna tarata ad un valore superiore del 10% della taratura del regolatore di pressione della pompa.

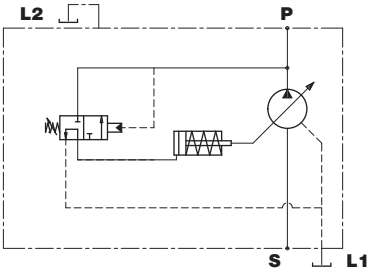
An external relief valve set at 10% above the pump pressure regulator must always be provided.

外部溢流阀设定要比压力补偿器大10%

P

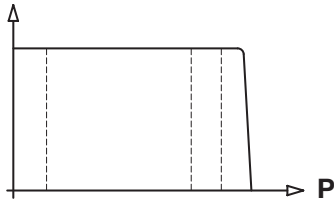
REGOLATORE DI PRESSIONE
PRESSURE RATE REGULATOR
压力调节器

REGOLATORE DI PRESSIONE
PRESSURE RATE REGULATOR
压力调节器



PORTATA
FLOWRATE
流量

Q



PRESSIONE DI ESERCIZIO
WORKING PRESSURE
工作压力

SETTAGGIO REGOLATORI
CONTROL SYSTEM SET
系统控制设定

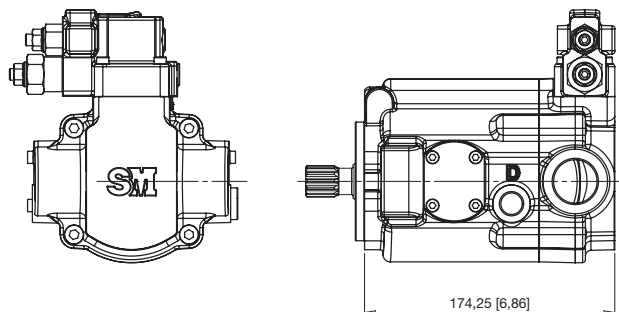
CODICE CODE 代号	PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力	
	bar	psi
D	180	2610
H	210	3045
N	250	3625
R	280	4060



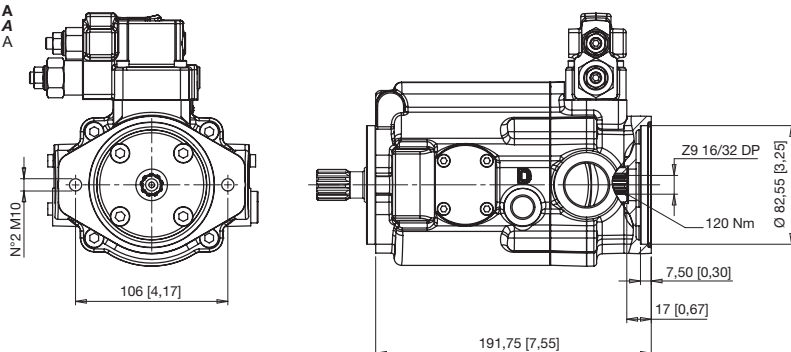
PREDISPOSIZIONI
VERSION
安装形式

SM A1

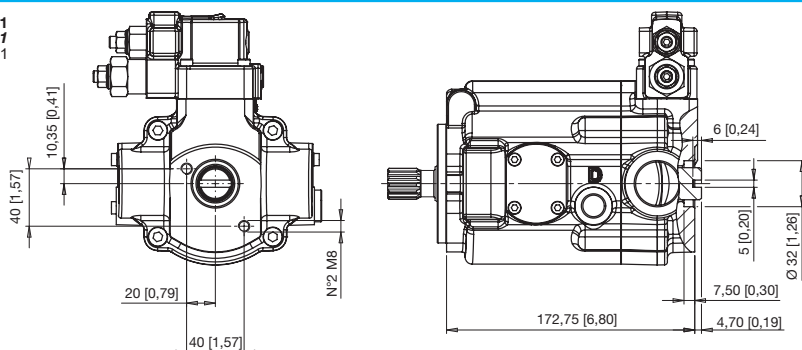
0 **NESSUNA PREDISPOSIZIONE**
NO SPECIAL FITTINGS
无特殊连接



5 **SAE A**
SAE A
SAE A



9 **GR.1**
GR.1
GR.1

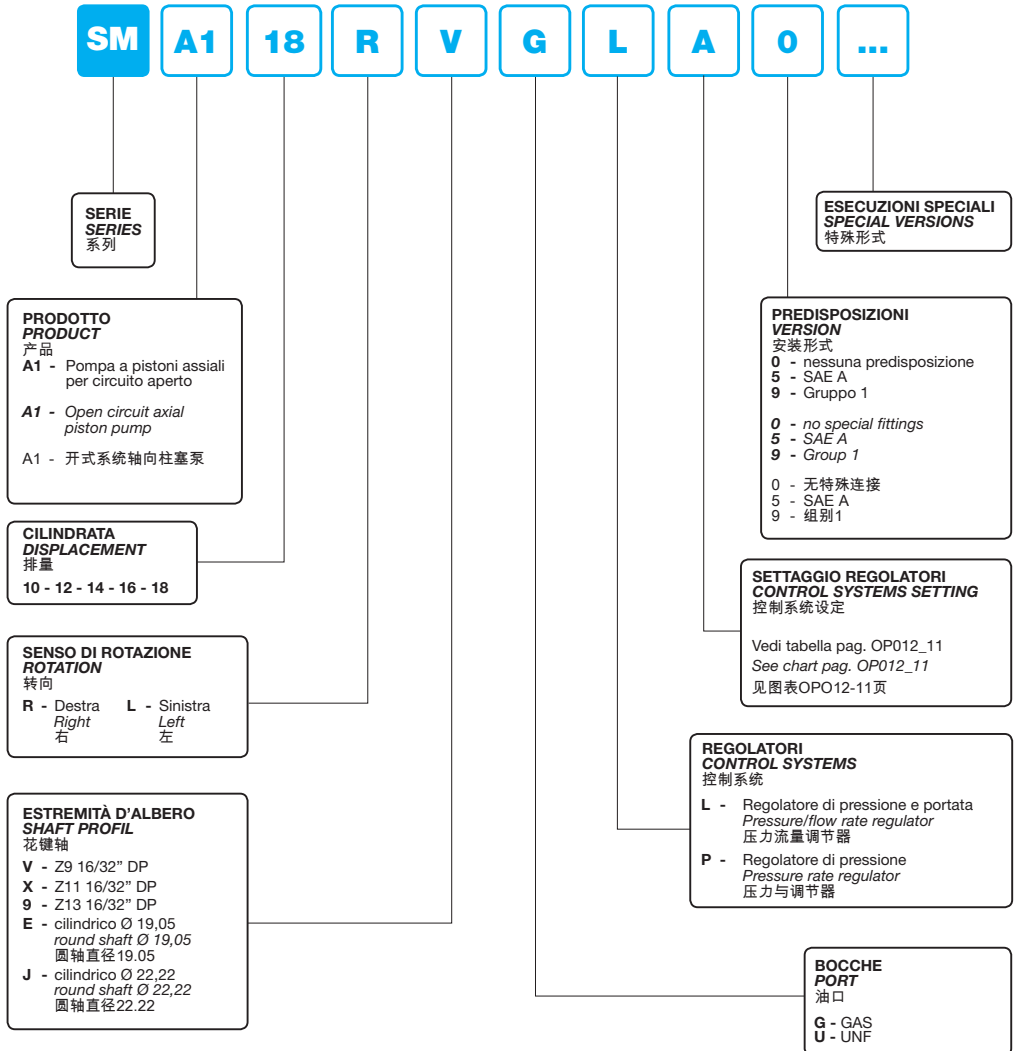






ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
订货示例

SM A1



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.

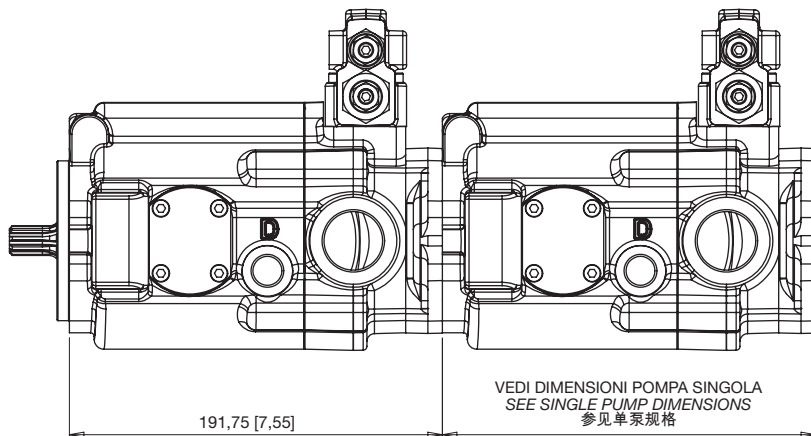
You build the ordering code of a multiple pump by summing the order code of the individual pumps, see our example.

您建立的多联泵订购代码是通过总结单泵的订购代码得到的，参见示例。



POMPA CON PREDISPOSIZIONE SAE A
PUMP PREPARED FOR SAE A
CONNECTION
SAE A准备用于泵连接

POMPA CON ALBERO Z9
PUMP WITH SPLINED SHAFT
Z9 16/32" DP
花键轴Z9 16/32" DP用于泵



HP A4

POMPE A PISTONI ASSIALI PER CIRCUITO APERTO A CILINDRATA FISSA OPEN CIRCUIT AXIAL FIXED-DISPLACEMENT PISTON PUMPS 开式系统定排量轴向柱塞泵

Le pompe a pistoni assiali serie HP A4 sono state concepite per operare in circuito aperto.

I vari sistemi di regolazione disponibili le rendono facilmente adattabili alle esigenze applicative sia per il settore industriale che per quello mobile.

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 richieste dai moderni motori diesel, garantendo una buona affidabilità per pressioni di funzionamento fino a 280 bar continui (350 bar di picco).

Utilizzando le opportune predisposizioni, è possibile comporre versioni tandem.

The HP A4 series axial piston pumps have been designed to work in an open circuit. Control systems actually available are making easy to use these pumps in any application for industrial and mobile field. Development of rotating groups, especially designed, united to an accurate study of oil passage sections into the pumps, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure until 280 bar and until 350 bar for peak pressure.

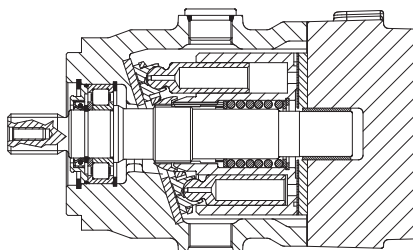
It is possible to couple Tandem versions for both pump types, by means of coupling proper flanges.

HP A4系列泵具有多种控制方式，可以应用在工业和行走机械领域很多不同场合中。

对旋转组件的研发和特别设计，加上对油路截面的精确研究，可以使泵在高速下工作，达到现代柴油机的要求，稳定状态下持续工作压力可达到280bar，峰值工作压力可达到350bar。

此系列泵可通过选配连接法兰将双泵串联。

HP A4 34.46.58.65



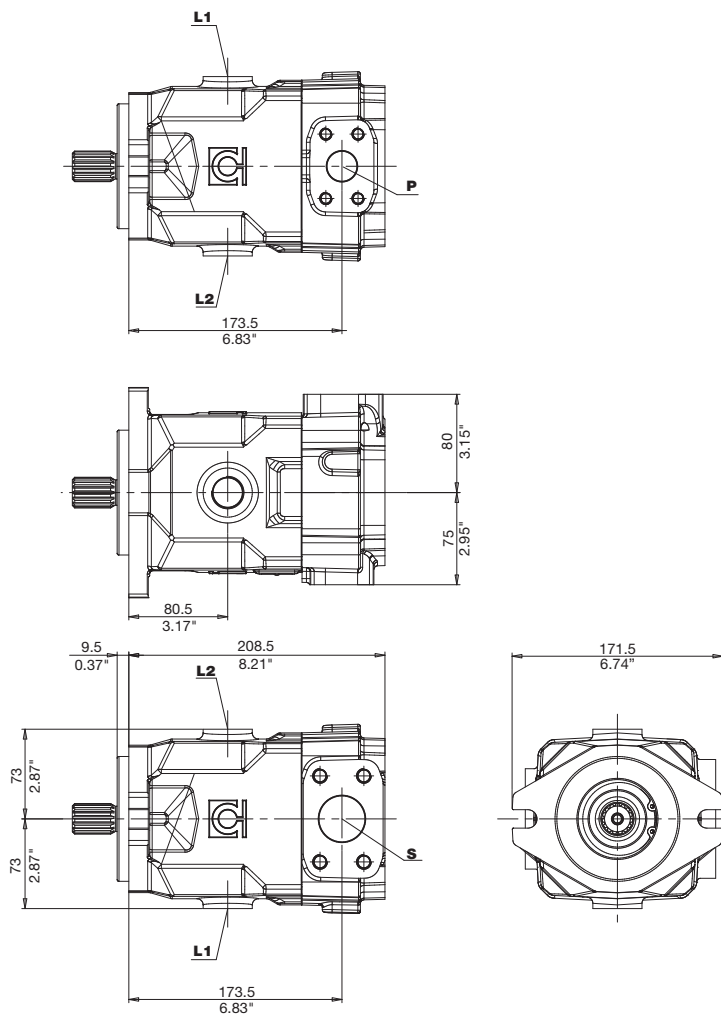
DATI TECNICI TECHNICAL DATA 技术参数

GRUPPO GROUP 组别	CILINDRATA TEORICA NOMINAL DISPLACEMENT 公称排量 (TM)		CONTINUA CONTINUOUS 持续压力		PRESSIONE PRESSURE DRUCK INTERMITTENTE INTERMITTENT 间歇压力		PICCO PEAK 峰值压力		VELOCITÀ DI ROTAZIONE SPEED 转速		MASSA WEIGHT 重量	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs
HP A4	34	2,08	280	4060	315	4568	350	5075	2800	500	23	52,8
	46	2,51	280	4060	315	4568	350	5075	2800	500	23	52,8
	58	3,54	250	3625	300	4350	320	4640	2650	500	24	57,2
	65	3,97	250	3625	300	4350	320	4640	2500	500	24	57,2



DIMENSIONI
SIZE
尺寸

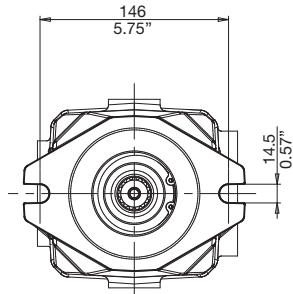
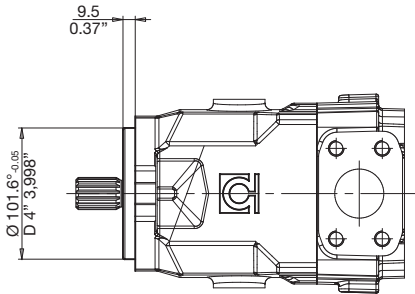
HP A4



FLANGE
FLANGES
法兰

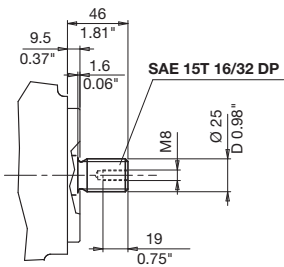
HP A4

B SAE B
SAE B
SAE B

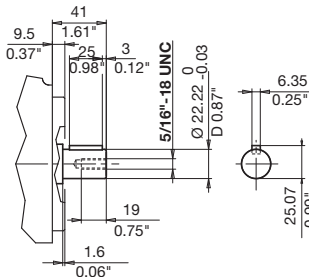


ESTREMITÀ ALBERI
SPLINE SHAFTS
花键轴

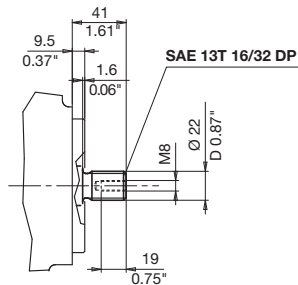
1 COPPIA MAX
MAX TORQUE
最大扭矩 460 N•m



6 COPPIA MAX
MAX TORQUE
最大扭矩 210 N•m



9 COPPIA MAX
MAX TORQUE
最大扭矩 310 N•m

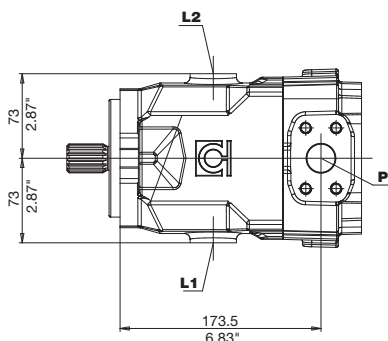
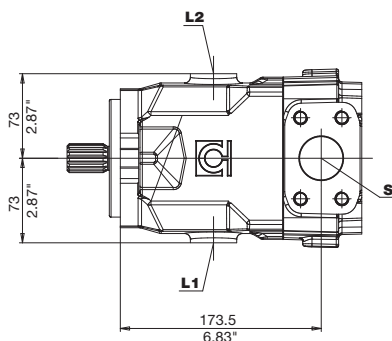
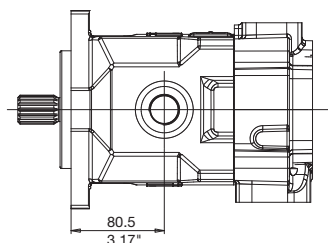
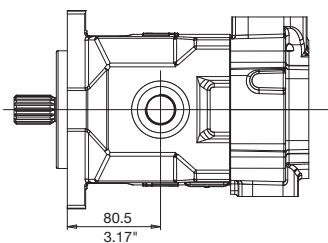
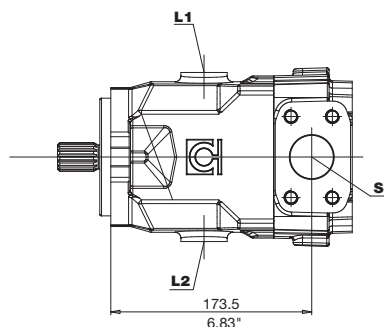
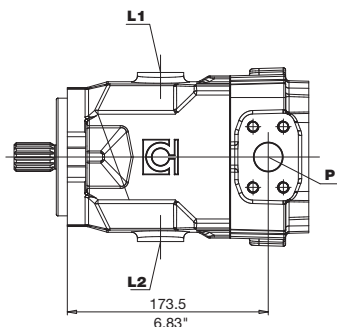




BOCCHIE LATERALI
LATERAL PORTS
侧面油口

HP A4

S N



ROTAZIONE
DIRECTION
方位

DESTRA
RIGHT
右

ROTAZIONE
DIRECTION
方位

SINISTRA
LEFT
左

S Aspirazione
Feeding pump inlet
吸油口

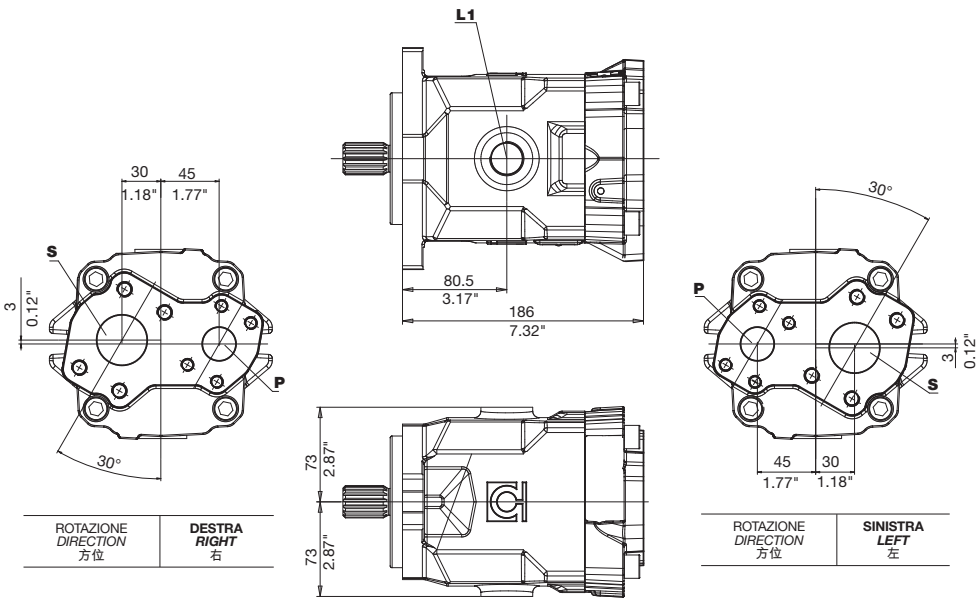
L1 Drenaggi
L2 Drain
泄油口

P Mandata
Output
输出油口

BOCCHIE POSTERIORI
REAR PORTS
后部油口

HP A4

R T



S Aspirazione
Feeding pump inlet
吸油口

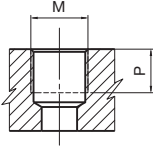
L1 Drenaggi
L2 Drain
泄油口

P Mandata
Output
输出油口

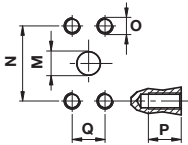


BOCCHIE
PORTS
油口

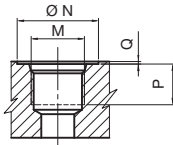
HP A4



TIPO TYPE 类型	M	Nm	mm	P	in
G6	3/4" GAS BSPP	90	19		0,75



TIPO TYPE 类型	M		N		P		Q		O	Nm
	mm	in	mm	in	mm	in	mm	in		
N7	25	1	52,4	2,06	18	0,71	26,2	1,03	M10	38
N9	38	1,5	69,9	2,75	20	0,79	35,7	1,41	M12	70



TIPO TYPE 类型	DIMENSIONE SIZE 尺寸	N		P		Q		M	Nm
		mm	in	mm	in	mm	in		
U6	3/4"	41	1,61	20	0,79	0,3	0,01	1-1/16-12 UNF	90

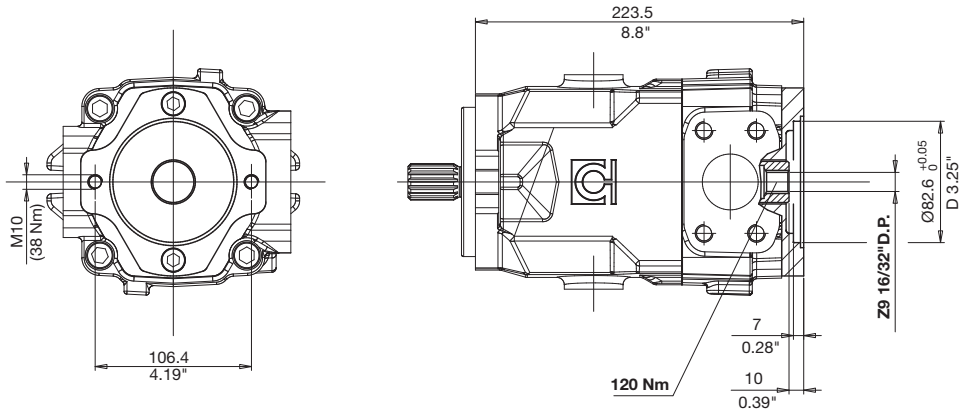
COMBINAZIONI
COMBINATIONS
组合

TIPO TYPE 类型	S ASPIRAZIONE INLET 吸油口	P MANDATA OUTLET 输出油口	L1 - L2 DRENAGGIO DRAIN 泄油口
S	N9	N7	G6
N	N9	N7	U6
R	N9	N7	G6
T	N9	N7	U6

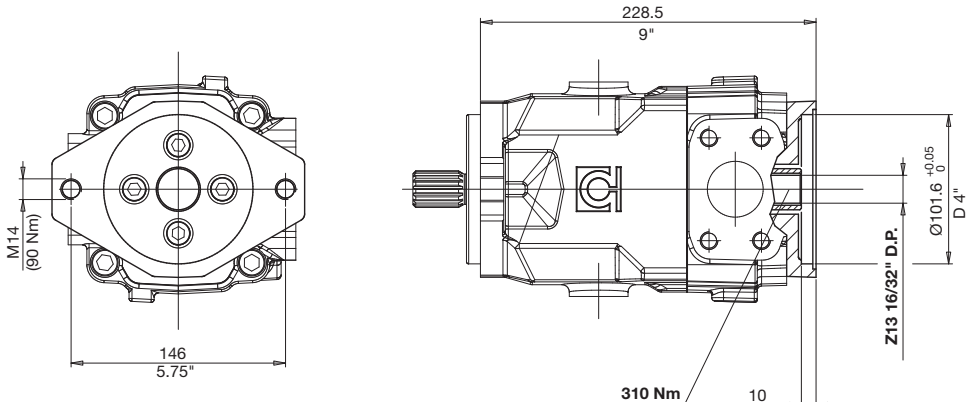
PREDISPOSIZIONI
VERSION
安装形式

HP A4

5
SAE A
SAE A
SAE A



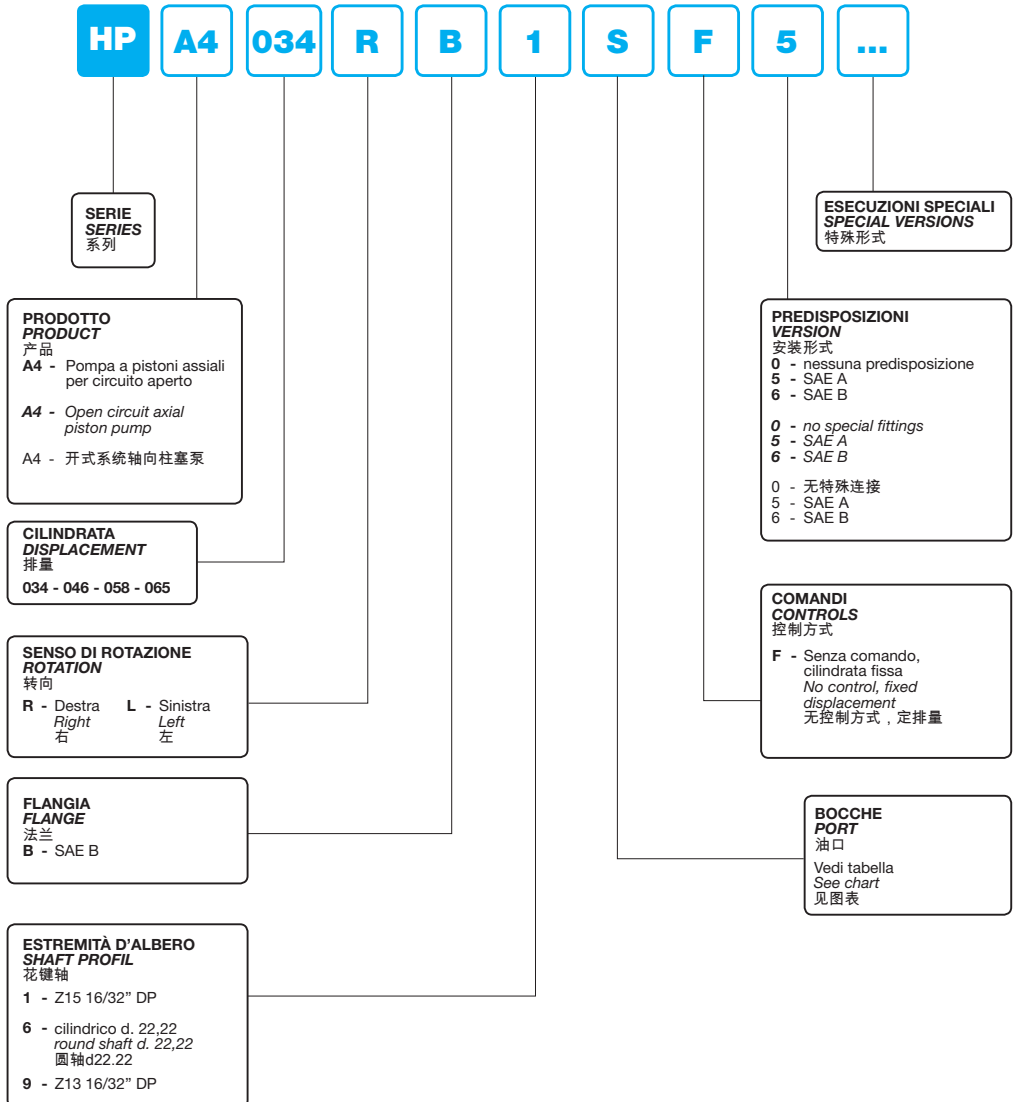
6
SAE B
SAE B
SAE B





ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
订货示例

HP A4



HP A4

POMPE A PISTONI ASSIALI PER CIRCUITO APERTO A COMANDO MANUALE OPEN CIRCUIT AXIAL FIXED-DISPLACEMENT PISTON PUMPS WITH MANUAL CONTROL 开式系统定排量轴向柱塞泵手动控制

Le pompe a pistoni assiali serie HP A4 sono state concepite per operare in circuito aperto.

I vari sistemi di regolazione disponibili le rendono facilmente adattabili alle esigenze applicative sia per il settore industriale che per quello mobile.

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 richieste dai moderni motori diesel, garantendo una buona affidabilità per pressioni di funzionamento fino a 280 bar continui (350 bar di picco).

I controlli, esposti nella presente sezione, permettono un funzionamento con regolazione manuale.

Utilizzando le opportune predisposizioni, è possibile comporre versioni tandem.

The HP A4 series axial piston pumps have been designed to work in an open circuit. Control systems actually available are making easy to use these pumps in any application for industrial and mobile field. Development of rotating groups, especially designed, united to an accurate study of oil passage sections into the pumps, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure until 280 bar and until 350 bar for peak pressure.

This section shows the direct manual control.

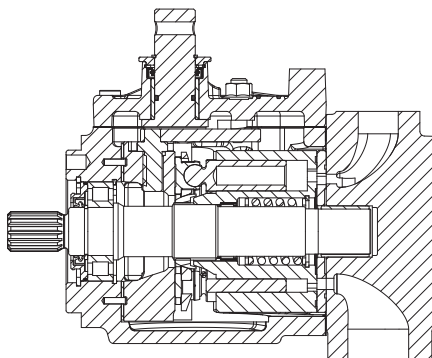
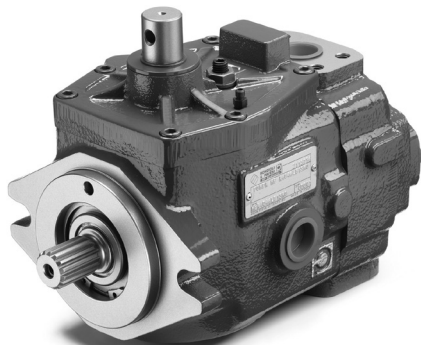
It is possible to couple Tandem versions for both pump types, by means of coupling proper flanges.

HP A4系列泵具有多种控制方式，可以应用在工业和行走机械领域很多不同场合中。

对旋转组件的研发和特别设计，加上对油路截面的精确研究，可以使泵在高速下工作，达到现代柴油机的要求，稳定状态下持续工作压力可达到280bar，峰值工作压力可达到350bar。

此系列泵可通过选配连接法兰将双泵串联。

HP A4 34.46.58.65



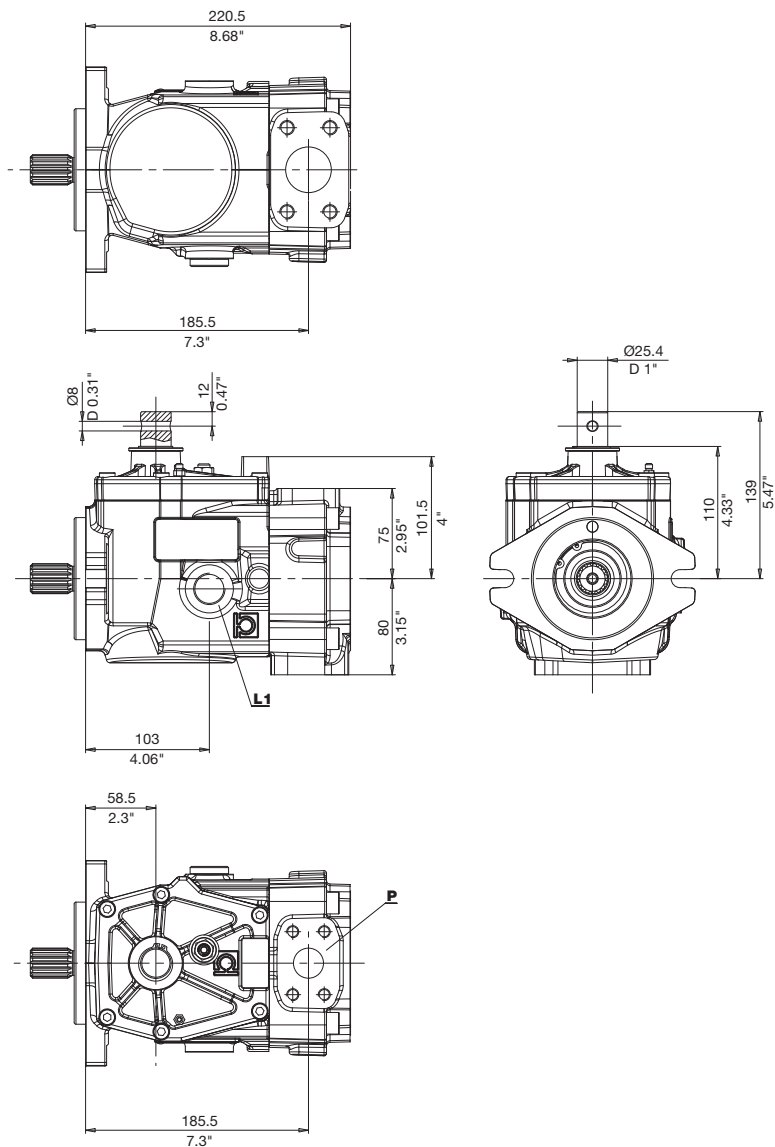
DATI TECNICI TECHNICAL DATA 技术参数

GRUPPO GROUP 组别	CILINDRATA TEORICA NOMINAL DISPLACEMENT 公称排量 (TM)		CONTINUA CONTINUOUS 持续压力		INTERMITTENTE PRESSURE DRUCK 间歇压力		PICCO PEAK 峰值压力		VELOCITÀ DI ROTAZIONE SPEED 转速		MASSA WEIGHT 重量	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs
HP A4	34	2,08	280	4060	315	4568	350	5075	2800	500	23	52,8
	46	2,51	280	4060	315	4568	350	5075	2800	500	23	52,8
	58	3,54	250	3625	300	4350	320	4640	2650	500	24	57,2
	65	3,97	250	3625	300	4350	320	4640	2500	500	24	57,2



DIMENSIONI
SIZE
尺寸

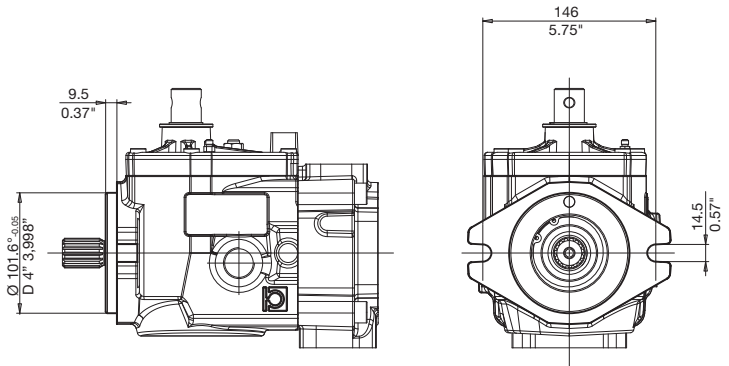
HP A4



FLANGE
FLANGES
法兰

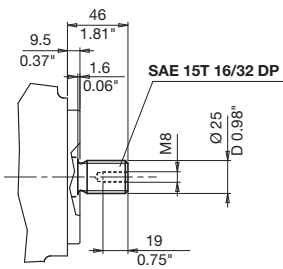
HP A4

B SAE B
SAE B
SAE B

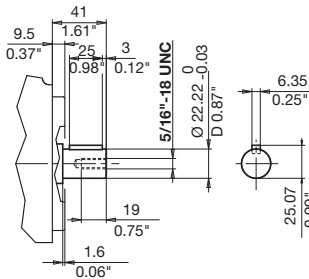


ESTREMITÀ ALBERI
SPLINE SHAFTS
花键轴

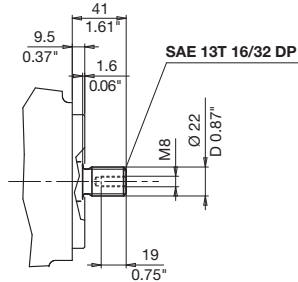
1 COPPIA MAX
MAX TORQUE
最大扭矩 460 N•m



6 COPPIA MAX
MAX TORQUE
最大扭矩 210 N•m



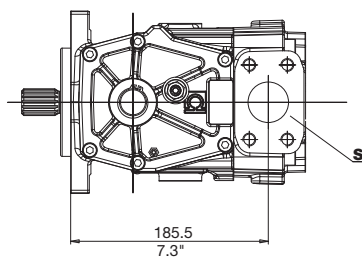
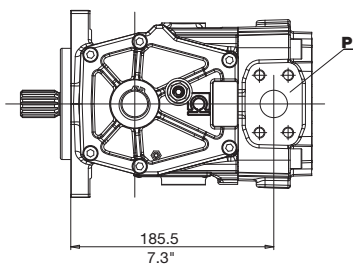
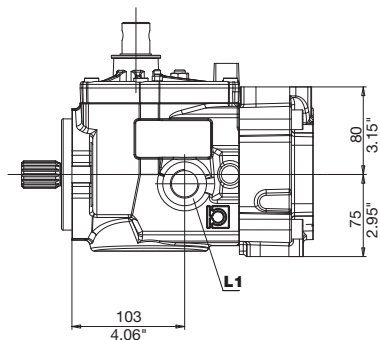
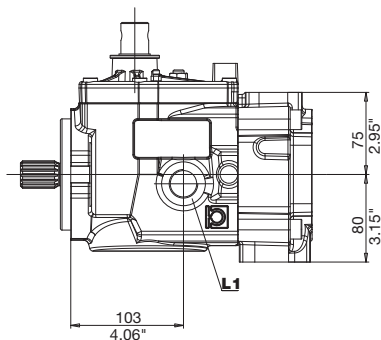
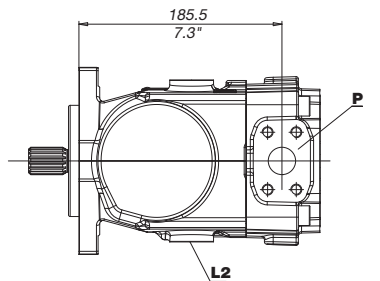
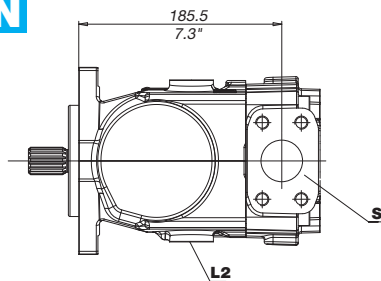
9 COPPIA MAX
MAX TORQUE
最大扭矩 310 N•m



BOCCHIE LATERALI
LATERAL PORTS
侧面油口

HP A4

S N



ROTAZIONE
DIRECTION
方位

SINISTRA
LEFT
左

ROTAZIONE
DIRECTION
方位

DESTRA
RIGHT
右

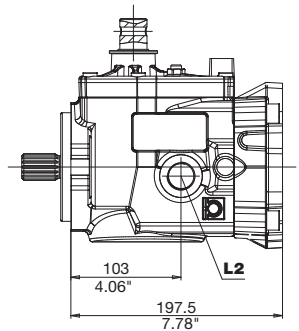
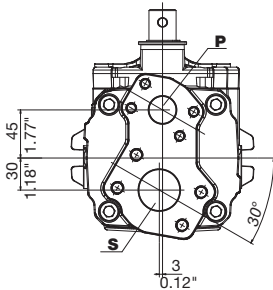
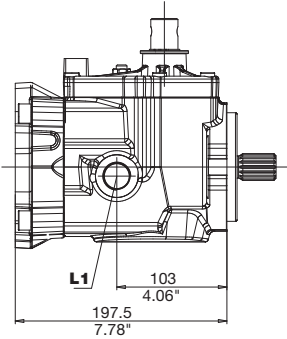
S Aspirazione
Feeding pump inlet
吸油口

L1 Drenaggi
L2 Drain
泄油口

P Mandata
Output
输出油口

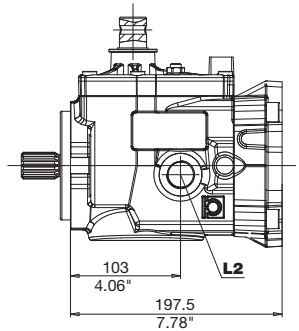
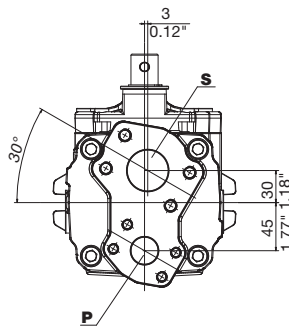
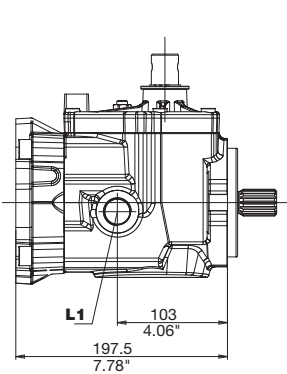
BOCCHIE POSTERIORI
REAR PORTS
后方油口

RT



ROTAZIONE
DIRECTION
方位

SINISTRA
LEFT
左



ROTAZIONE
DIRECTION
方位

DESTRA
RIGHT
右

S Aspirazione
Feeding pump inlet
吸油口

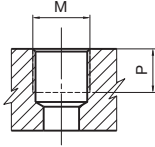
L1 Drenaggi
Drain
泄油口

P Mandata
Output
输出油口

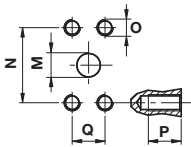


**BOCCHIE
PORTS
油口**

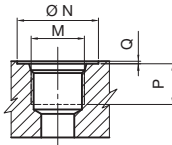
HP A4



TIPO TYPE 类型	M		P	
		Nm	mm	in
G6	3/4" GAS BSPP	90	19	0,75



TIPO TYPE 类型	M		N		P		Q		O	
	mm	in	mm	in	mm	in	mm	in	mm	Nm
N7	25	1	52,4	2,06	18	0,71	26,2	1,03	M10	38
N9	38	1,5	69,9	2,75	20	0,79	35,7	1,41	M12	70



TIPO TYPE 类型	DIMENSIONE SIZE 尺寸	N		P		Q		M	
		mm	in	mm	in	mm	in	mm	Nm
U6	3/4"	41	1,61	20	0,79	0,3	0,01	1-1/16-12 UNF	90

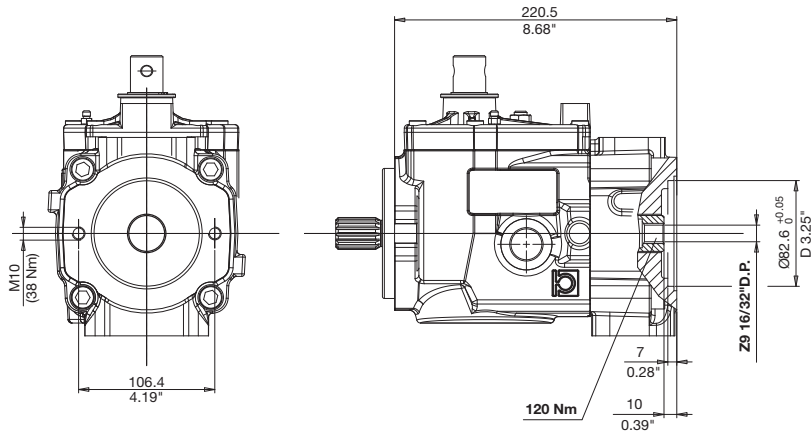
**COMBINAZIONI
COMBINATIONS
组合**

TIPO TYPE 类型	S ASPIRAZIONE INLET 吸油口	P MANDATA OUTLET 输出油口	L1 - L2 DRENAGGIO DRAIN 泄油口
S	N9	N7	G6
N	N9	N7	U6
R	N9	N7	G6
T	N9	N7	U6

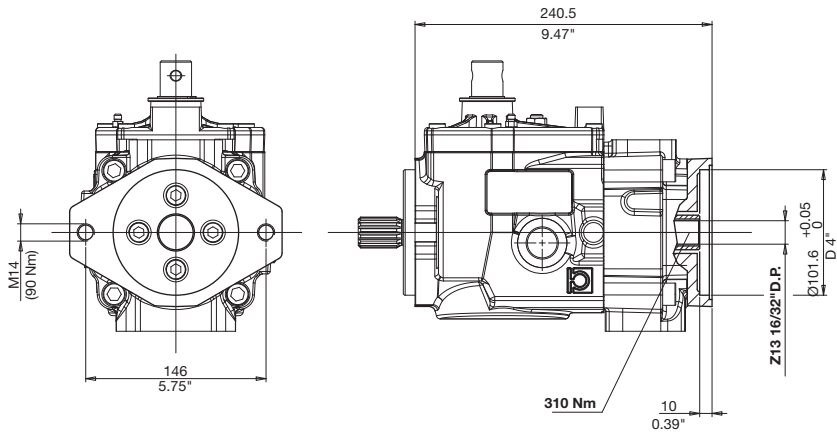
PREDISPOSIZIONI
VERSION
安装形式

HP A4

5
SAE A
SAE A
SAE A



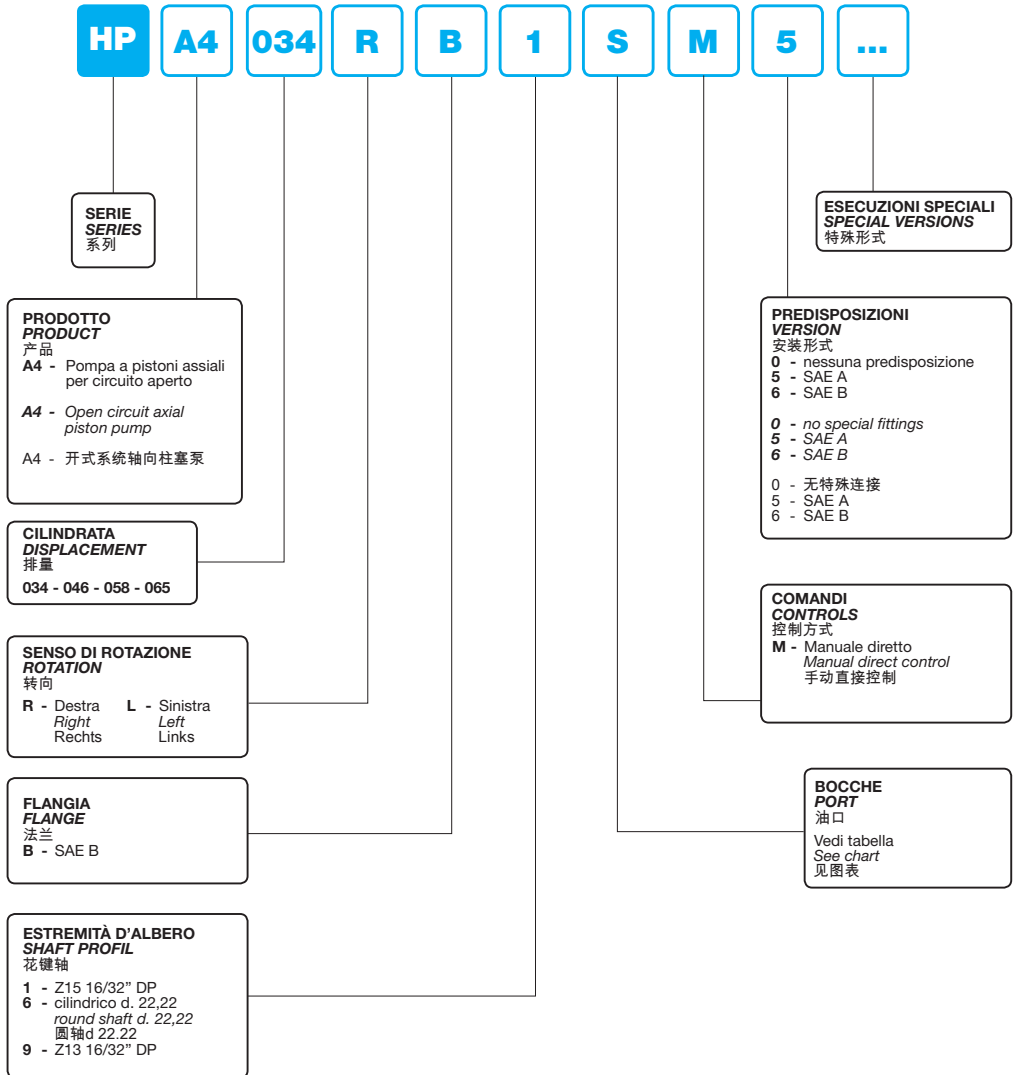
6
SAE B
SAE B
SAE B





ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
订货示例

HP A4



HP A4

POMPE A PISTONI ASSIALI PER CIRCUITO APERTO CON REGOLAZIONE LOAD SENSING O A PRESSIONE COSTANTE OPEN CIRCUIT AXIAL PISTON PUMPS WITH LOAD-SENSING OR CONSTANT PRESSURE CONTROL 开式系统轴向柱塞泵，带负载敏感控制和恒压控制

Le pompe a pistoni assiali serie HP A4 sono state concepite per operare in circuito aperto.

I vari sistemi di regolazione disponibili le rendono facilmente adattabili alle esigenze applicative sia per il settore industriale che per quello mobile.

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 richieste dai moderni motori diesel, garantendo una buona affidabilità per pressioni di funzionamento fino a 280 bar continui (350 bar di picco).

I controlli, esposti nella presente sezione, permettono un funzionamento con regolazione load sensing o a pressione costante.

Utilizzando le opportune predisposizioni, è possibile comporre versioni tandem.

The HP A4 series axial piston pumps have been designed to work in an open circuit. Control systems actually available are making easy to use these pumps in any application for industrial and mobile field. Development of rotating groups, especially designed, united to an accurate study of oil passage sections into the pumps, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure until 280 bar and until 350 bar for peak pressure.

Control types shown in this section allow a Load-sensing or a constant pressure control over the pump.

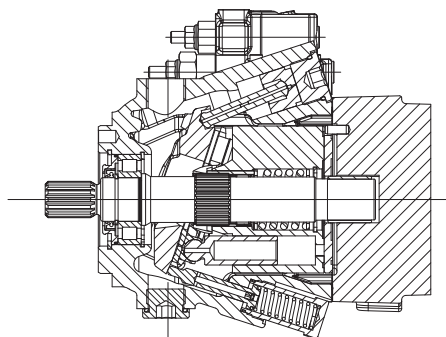
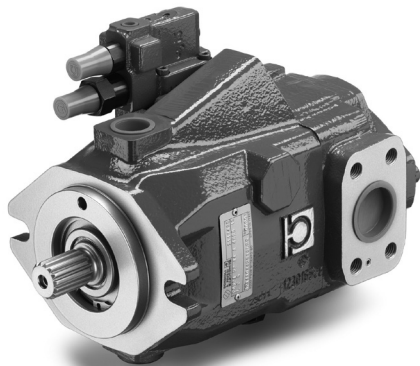
It is possible to couple Tandem versions for both pump types, by means of coupling proper flanges.

HP A4系列泵具有多种控制方式，可以应用在工业和行走机械领域很多不同场合中。

对旋转组件的研发和特别设计，加上对油路截面的精确研究，可以使泵在高速下工作，达到现代柴油机的要求，稳定状态下持续工作压力可达到280bar，峰值工作压力可达到350bar。

此系列泵可通过选配连接法兰将双泵串联。

HP A4 34.46.58.65

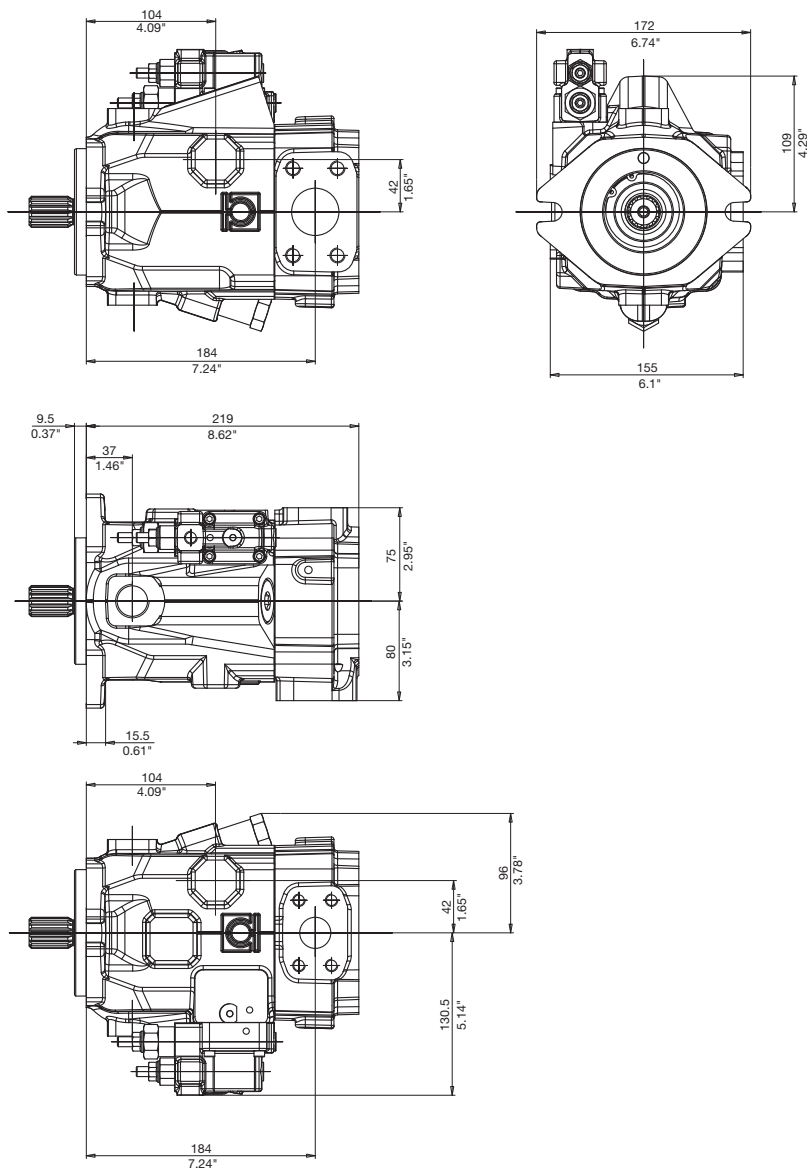


DATI TECNICI TECHNICAL DATA 技术参数

GRUPPO GROUP 组别	CILINDRATA TEORICA NOMINAL DISPLACEMENT 公称排量 (TM)		CONTINUA CONTINUOUS 持续压力		PRESSIONE PRESSURE DRUCK 间歇压力		PICCO PEAK 峰值压力		VELOCITÀ DI ROTAZIONE SPEED 转速		MASSA WEIGHT 重量	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs
HP A4	34	2,08	280	4060	315	4568	350	5075	2800	500	23	52,8
	46	2,51	280	4060	315	4568	350	5075	2800	500	23	52,8
	58	3,54	250	3625	300	4350	320	4640	2650	500	24	57,2
	65	3,97	250	3625	300	4350	320	4640	2500	500	24	57,2

DIMENSIONI
SIZE
 尺寸

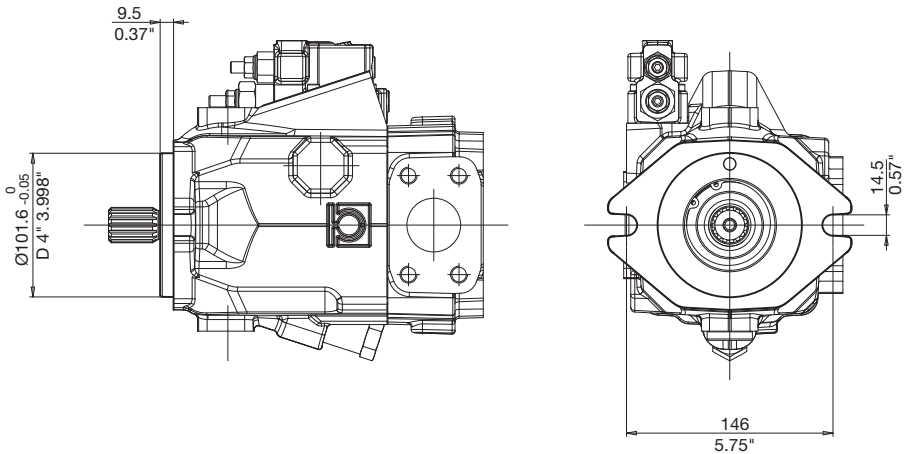
HP A4



FLANGE
FLANGES
法兰

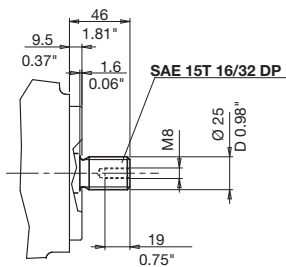
HP A4

B SAE B
SAE B
SAE B

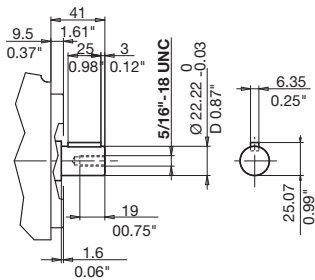


ESTREMITÀ ALBERI
SPLINE SHAFTS
花键轴

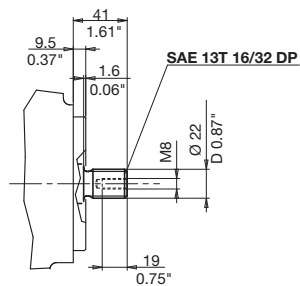
1 COPPIA MAX
MAX TORQUE
最大扭矩 460 N•m



6 COPPIA MAX
MAX TORQUE
最大扭矩 210 N•m



9 COPPIA MAX
MAX TORQUE
最大扭矩 310 N•m

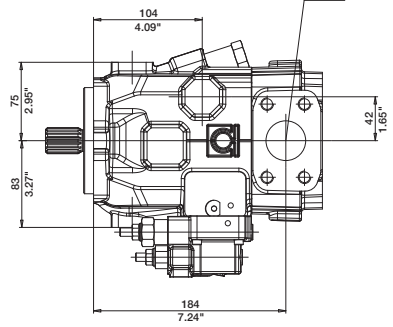
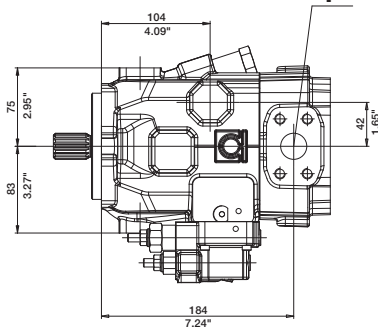
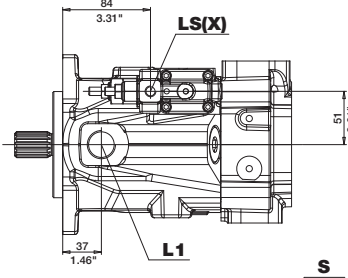
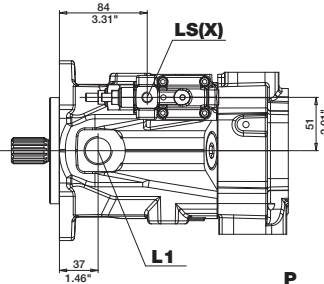
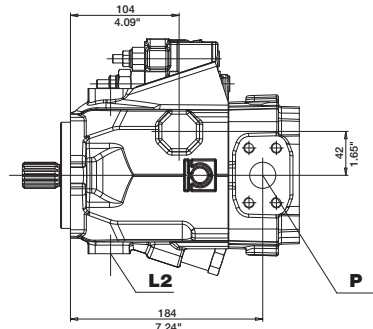
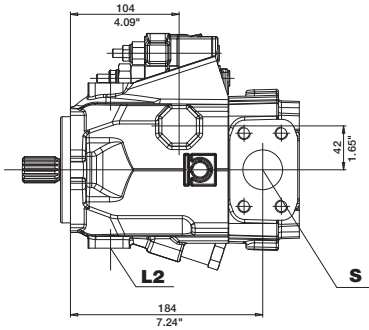




BOCCHIE LATERALI
LATERAL PORTS
侧面油口

HP A4

S N



ROTAZIONE
DIRECTION
方位

DESTRA
RIGHT
右

ROTAZIONE
DIRECTION
方位

SINISTRA
LEFT
左

S Aspirazione
Feeding pump inlet
吸油口

P Mandata
Output
输出油口

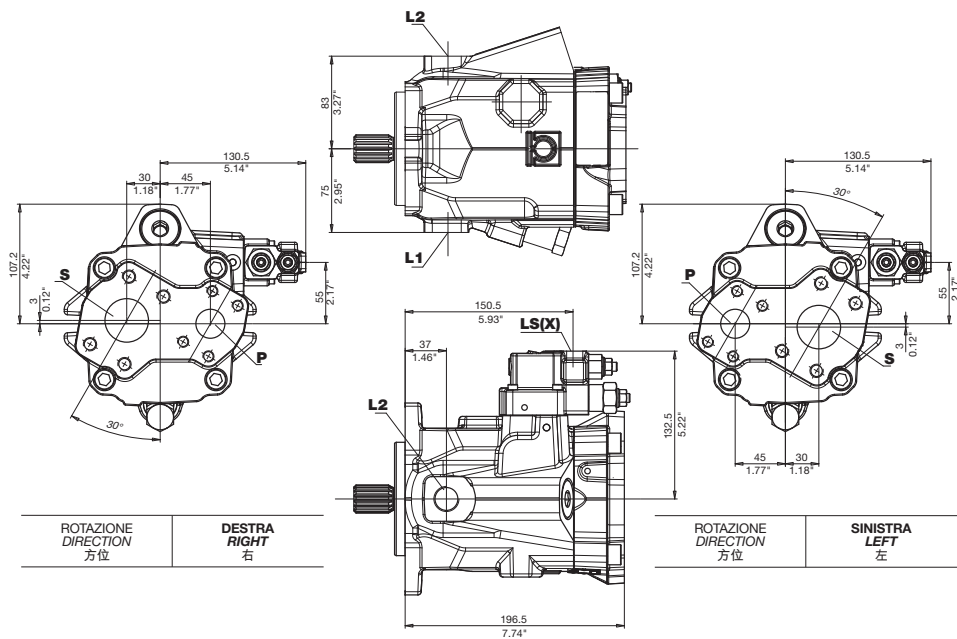
L1 Drenaggi
Drain
泄油口

LS(X) Pilotaggio
Pilot
先导油口

BOCCHIE POSTERIORI
REAR PORTS
后方油口

HP A4

R T



S Aspirazione
Feeding pump inlet
吸油口

P Mandata
Output
输出油口

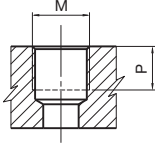
L1 Drenaggi
Drain
泄油口

L2 Pilotaggio
Pilot
先导油口

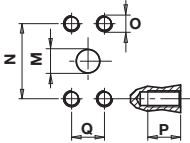


**BOCCHIE
PORTS
油口**

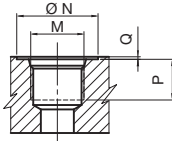
HP A4



TIPO TYPE 类型	M		P	
		Nm	mm	in
G1	1/8" GAS BSPP	8	8	0,31
G6	3/4" GAS BSPP	90	19	0,75



TIPO TYPE 类型	M		N		P		Q		O	
	mm	in	mm	in	mm	in	mm	in		Nm
N7	25	1	52,4	2,06	18	0,71	26,2	1,03	M10	38
N9	38	1,5	69,9	2,75	20	0,79	35,7	1,41	M12	70

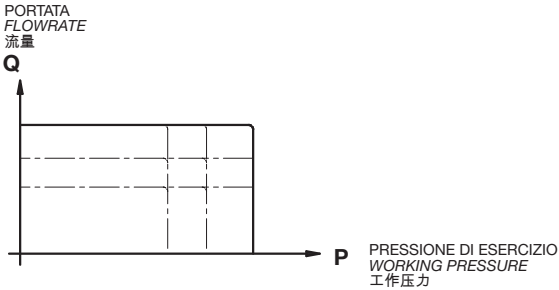
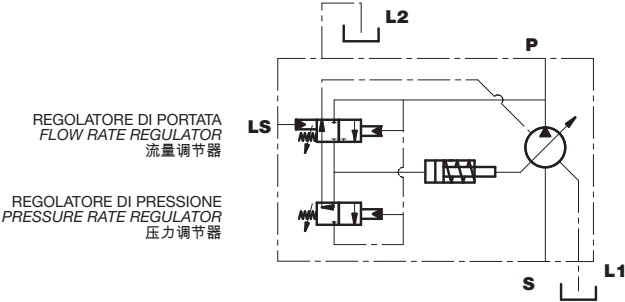


TIPO TYPE 类型	DIMENSIONE SIZE 尺寸	N		P		Q		M	
		mm	in	mm	in	mm	in		Nm
U2	1/4"	20	0,79	12	0,47	0,3	0,01	7/16-20 UNF	17
U6	3/4"	41	1,61	20	0,79	0,3	0,01	1-1/16-12 UNF	90

**COMBINAZIONI
COMBINATIONS
组合**

TIPO TYPE 类型	S ASPIRAZIONE INLET 吸油口	P MANDATA OUTLET 输出油口	L1 - L2 DRENAGGIO DRAIN 泄油口	LS(X) PILOTAGGIO PILOT 先导油口
S	N9	N7	G6	G1
N	N9	N7	U6	U2
R	N9	N7	G6	G1
T	N9	N7	U6	U2

L **REGOLATORE DI PRESSIONE/PORTATA**
PRESSURE/FLOW RATE REGULATOR
压力流量调节器



PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力		DIFFERENZIALE DI PRESSIONE Δp PRESSURE DIFFERENTIAL Δp 负载敏感压力 Δp		
bar	psi	14 bar - 203 psi	21 bar - 305 psi	25 bar - 363 psi
180	2610	A	B	C
210	3045	E	F	G
250	3625	I	L	M
280	4060	O	P	Q
315	4568	S	T	U
350	5075	Z	X	Y

È necessario prevedere una valvola di massima pressione esterna tarata ad un valore superiore del 10% della taratura del regolatore di pressione della pompa.

An external relief valve set at 10% above the pump pressure regulator must always be provided. 外部溢流阀设定要比压力补偿器大10%

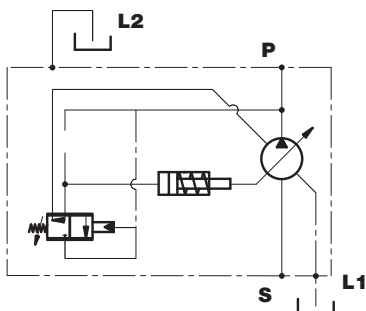


**REGOLAZIONI
CONTROL SYSTEMS**
控制系统

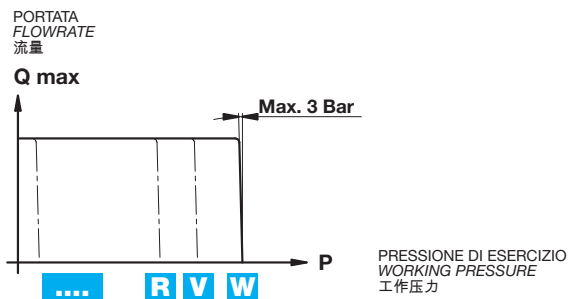
HP A4

P **REGOLATORE DI PRESSIONE
PRESSURE RATE REGULATOR**
压力调节器

REGOLATORE DI PRESSIONE
PRESSURE RATE REGULATOR
压力调节器

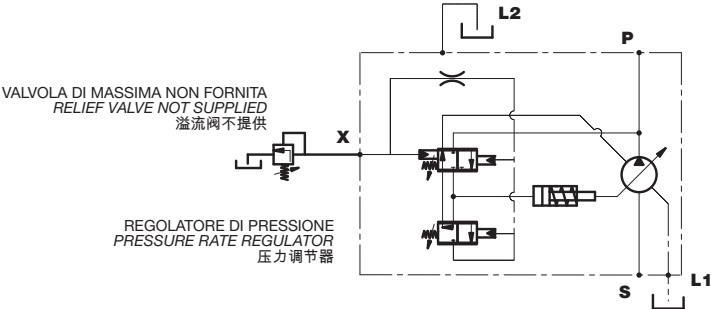


CURVA CARATTERISTICA DELLA POMPA CON REGOLATORE DI PRESSIONE
CHARACTERISTIC CURVE OF THE PUMP WITH PRESSURE REGULATOR
特性曲线泵带压力调节器

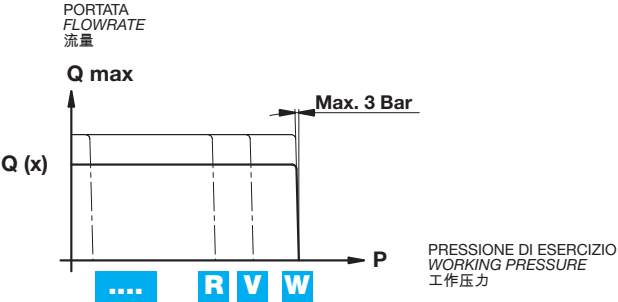


CODICE CODE 代号	PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力	
	bar	psi
D	180	2610
H	210	3045
N	250	3625
R	280	4060
V	315	4568
W	350	5075

R **REGOLATORE DI PRESSIONE A CONTROLLO REMOTO**
PRESSURE/FLOW RATE REGULATOR REMOTE CONTROLLED
压力流量远程控制调节器



CURVA CARATTERISTICA DELLA POMPA CON REGOLATORE DI PRESSIONE
CHARACTERISTIC CURVE OF THE PUMP WITH PRESSURE REGULATOR
特性曲线泵带压力调节器



DIFFERENZIALE DI PRESSIONE 21 bar PRESSURE DIFFERENTIAL 21 bar 压力差21bar

CODICE CODE 代号	PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力	
	bar	psi
D	180	2610
H	210	3045
N	250	3625
R	280	4060
V	315	4568
W	350	5075



PREDISPOSIZIONI

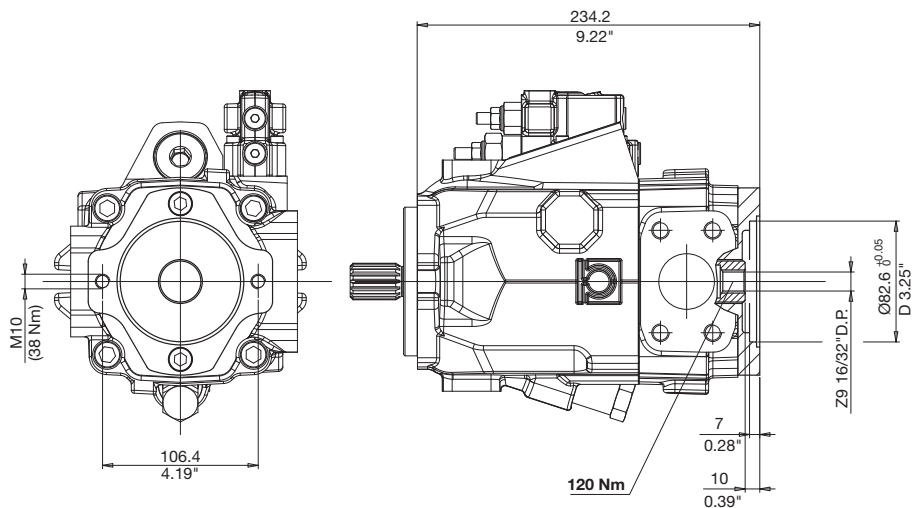
VERSION

安装形式

HP A4

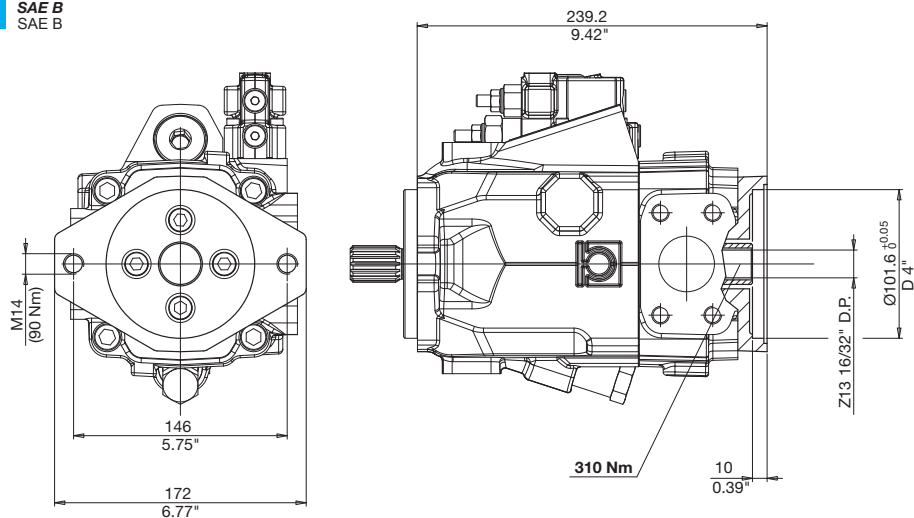
5

SAE A
SAE A
SAE A



6

SAE B
SAE B
SAE B

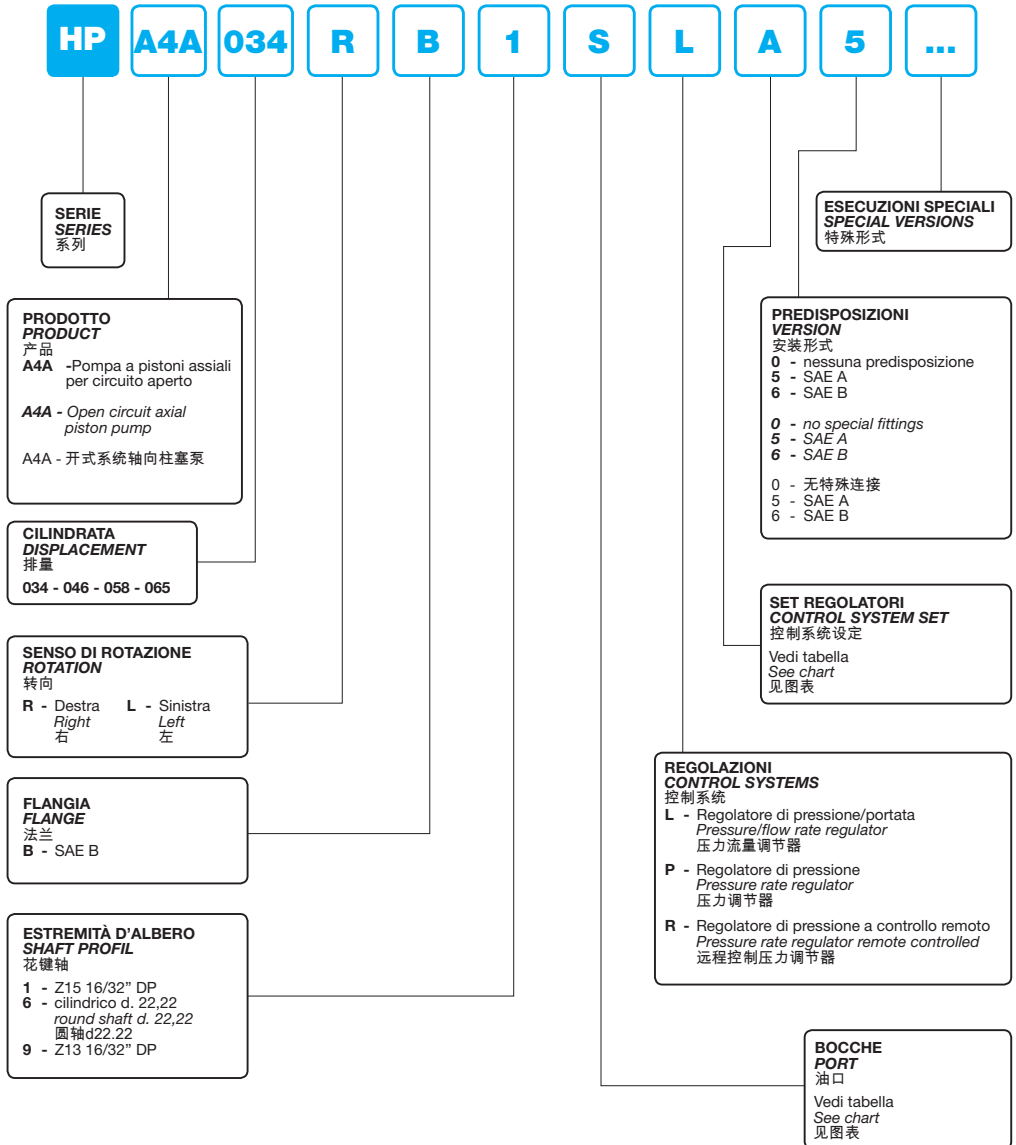






ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
订货示例

HP A4



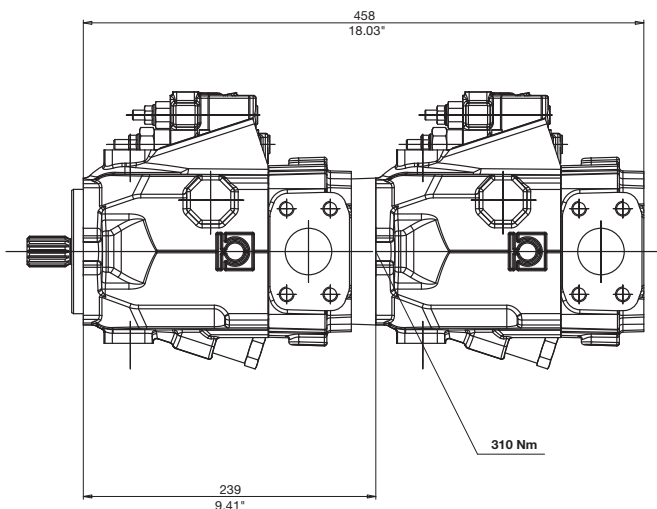
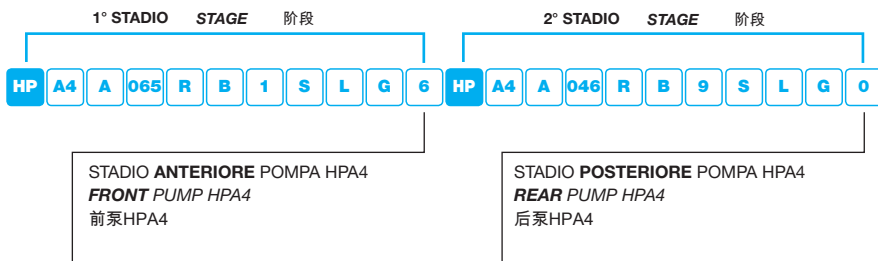
HP A4

POMPE MULTIPLE MULTIPLE GEAR PUMPS 多联泵

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.

您所建立的多联泵代号是通过总结单泵的代号得到的，参见示例。





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

You build the ordering code of an integrated version by summing the order code of the individual pumps, see our example.

您所建立的多联泵代号是通过总结单泵的代号得到的，参见示例。

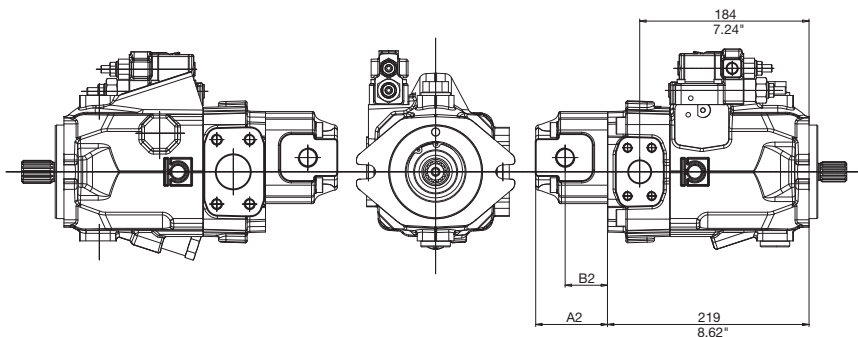


PREDISPOSIZIONE STADIO INGRANAGGI
IN GHISA HPG2
FITTING FOR CAST IRON GEAR PUMP HPG2

铸铁泵配件HPG2

PREDISPOSIZIONE
PER POMPA HPA4-HPA6
*FITTING FOR PUMP
HPA4-HPA6*

泵配件HPA4-HPA6



TIPO TYPE 类型	A2		B2	
	mm	in	mm	in
05	48,3	1,90	27,3	1,07
06	51,0	2,01	30,0	1,18
08	55,5	2,19	34,5	1,36
11	60,0	2,36	39,0	1,54
14	69,0	2,72	37,0	1,46
17	73,5	2,89	41,5	1,63
20	78,0	3,07	46,0	1,81
26	87,5	3,44	57,0	2,24
31	96,0	3,78	65,5	2,58
34	101,5	4,00	71,0	2,80

HP A6

POMPE A PISTONI ASSIALI PER CIRCUITO APERTO CON REGOLAZIONE LOAD SENSING O A PRESSIONE COSTANTE OPEN CIRCUIT AXIAL PISTON PUMPS WITH LOAD-SENSING OR CONSTANT PRESSURE CONTROL 开式系统轴向柱塞泵，带负载敏感控制和恒压控制

Le pompe a pistoni assiali serie HP A6 sono state concepite per operare in circuito aperto.

I vari sistemi di regolazione disponibili le rendono facilmente adattabili alle esigenze applicative sia per il settore industriale che per quello mobile.

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 richieste dai moderni motori diesel, garantendo una buona affidabilità per pressioni di funzionamento fino a 280 bar continui (350 bar di picco).

Utilizzando le opportune predisposizioni, è possibile comporre versioni tandem.

The HP A6 series axial piston pumps have been designed to work in an open circuit. Control systems actually available are making easy to use these pumps in any application for industrial and mobile field. Development of rotating groups, especially designed, united to an accurate study of oil passage sections into the pumps, allow high speed rotation, like required by modern diesel engines, giving extreme reliability for working continuous pressure until 280 bar and until 350 bar for peak pressure.

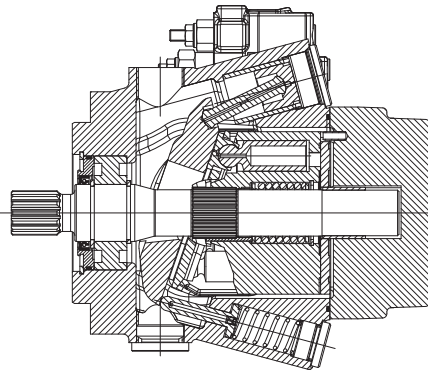
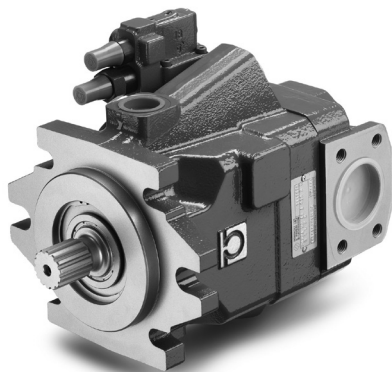
It is possible to couple Tandem versions for both pump types, by means of coupling proper flanges.

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此系列泵可通过选配连接法兰将双泵串联。

HP A6 70.80.90



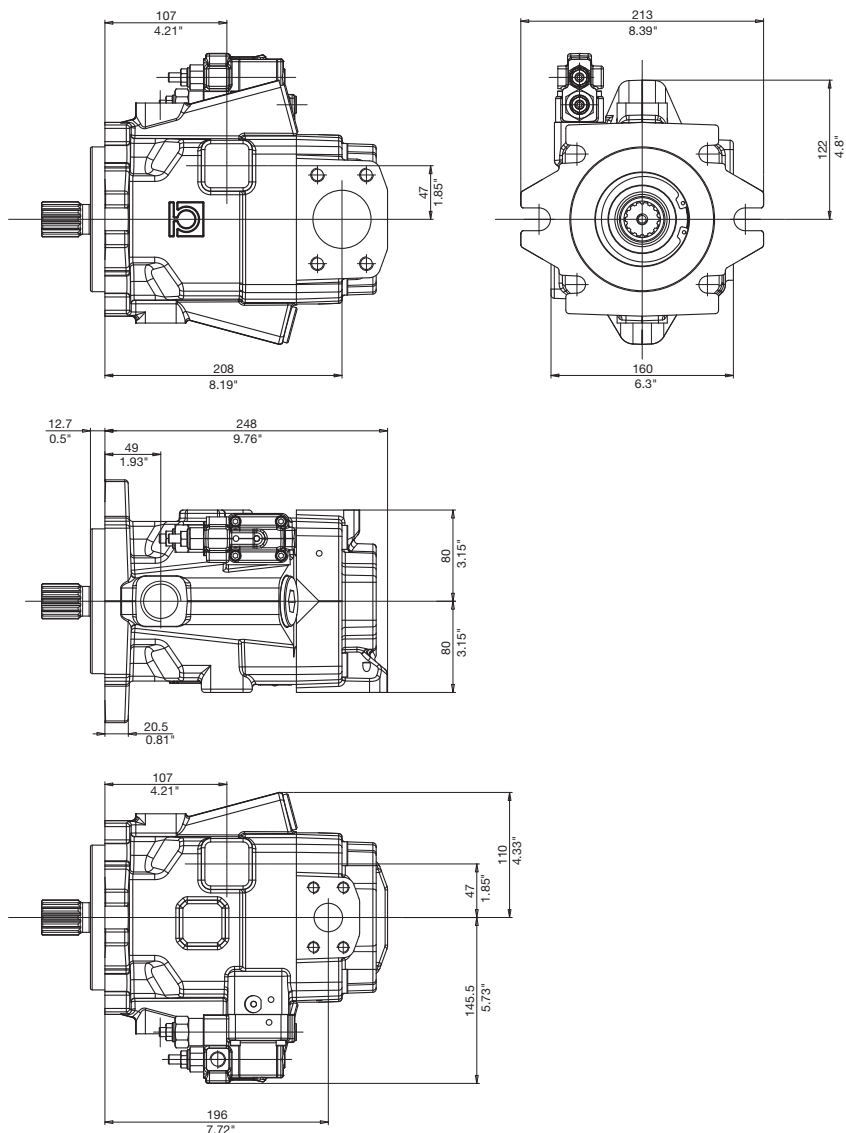
DATI TECNICI TECHNICAL DATA 技术参数

GRUPPO GROUP 组别	CILINDRATA TEORICA NOMINAL DISPLACEMENT 公称排量 (TM)		CONTINUA CONTINUOUS 持续压力		PRESSIONE PRESSURE DRUCK INTERMITTENTE INTERMITTENT 间歇压力		PICCO PEAK 峰值		VELOCITÀ DI ROTAZIONE SPEED 转速		MASSA WEIGHT 重量	
	cm ³	in ³	bar	psi	bar	psi	bar	psi	min ⁻¹	min ⁻¹	kg	lbs
HP A6	70	4,28	280	4060	315	4350	350	4640	2500	500	33	76
	80	4,89	250	3625	300	4060	320	4350	2400	500	33	76
	90	5,50	250	3625	280	4060	300	4350	2300	500	33	76



DIMENSIONI
SIZE
尺寸

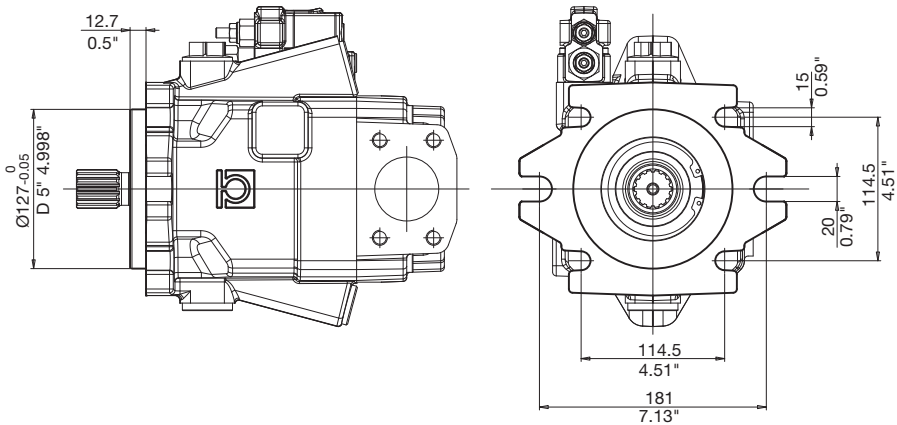
HP A6



FLANGE
FLANGES
法兰

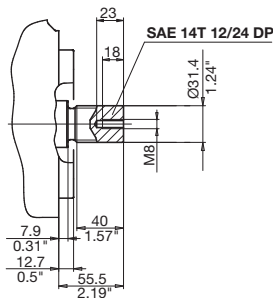
HP A6

E SAE C (2 FORI + 4 FORI)
SAE C (2 AND 4 HOLES)
SAE C (2和4孔)



ESTREMITÀ ALBERI
SPLINE SHAFTS
花键轴

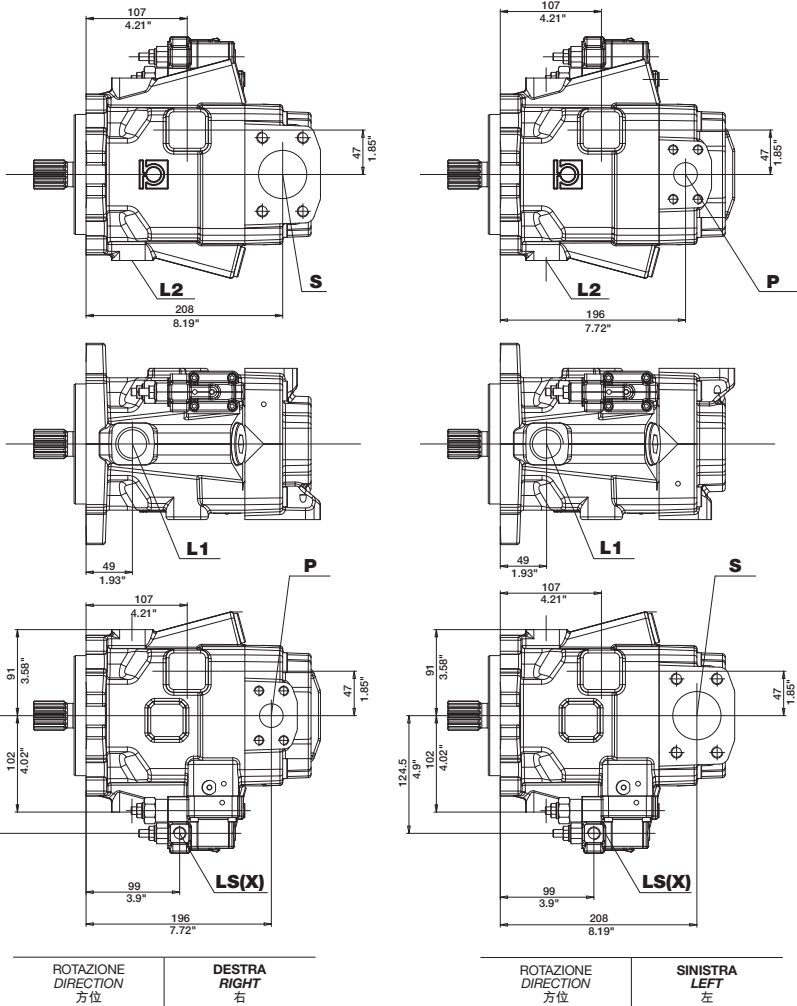
3 COPPIA MAX
MAX TORQUE
最大扭矩 850 N•m



BOCCHIE LATERALI
LATERAL PORTS
 侧面油口

HP A6

S N



S Aspirazione
 Feeding pump inlet
 吸油口

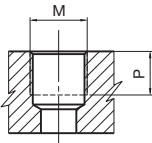
P Mandata
 Output
 输出油口

L1 Drenaggi
 Drain
 泄油口

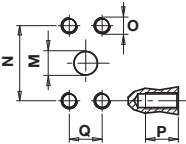
LS(X) Pilotaggio
 Pilot
 先导油口

BOCCHIE
PORTS
油口

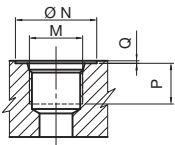
HP A6



TIPO TYPE 类型	M	Nm	P	mm	in
G2	1/4" GAS BSPP	17	12	0,47	
G7	1" GAS BSPP	160	18	0,70	



TIPO TYPE 类型	M		N		P		Q		O	
	mm	in	mm	in	mm	in	mm	in		Nm
N7	25	1	52,4	2,06	18	0,71	26,2	1,03	M10	38
N0	51	2	77,8	3,06	20	0,79	42,9	1,69	M12	70



TIPO TYPE 类型	DIMENSIONE SIZE 尺寸	N		P		Q		M	
		mm	in	mm	in	mm	in		Nm
U2	1/4"	21	0,83	12	0,47	0,3	0,01	7/16-20 UNF	17
U7	1"	49	1,93	18	0,70	0,3	0,01	1-5/16-12 UNF	160

COMBINAZIONI
COMBINATIONS
组合

TIPO TYPE 类型	S ASPIRAZIONE INLET 吸油口	P MANDATA OUTLET 输出油口	L1 - L2 DRENAGGIO DRAIN 泄油口	LS(X) PILOTAGGIO PILOT 先导油口
S	N0	N7	G7	G2
N	N0	N7	U7	U2

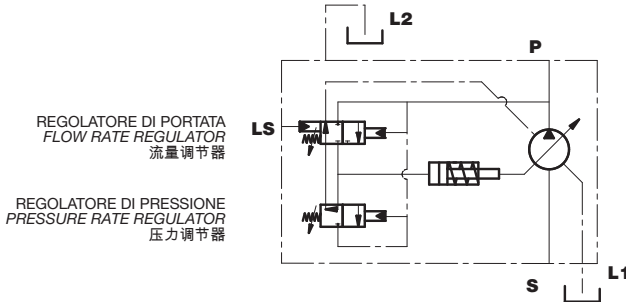


**REGOLAZIONI
CONTROL SYSTEMS**
控制系统

HP A6

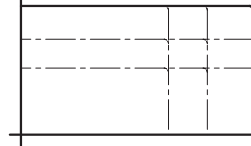


**REGOLATORE DI PRESSIONE/PORTATA
PRESSURE/FLOW RATE REGULATOR**
压力流量调节器



PORTATA
FLOWRATE
流量
Q

Q



P
PRESSIONE DI ESERCIZIO
WORKING PRESSURE
工作压力

PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力		DIFFERENZIALE DI PRESSIONE Δp PRESSURE DIFFERENTIAL Δp 负载敏感压力 Δp		
bar	psi	14 bar - 203 psi	21 bar - 305 psi	25 bar - 363 psi
180	2610	A	B	C
210	3045	E	F	G
250	3625	I	L	M
280	4060	O	P	Q
315	4568	S	T	U
350	5075	Z	X	Y

È necessario prevedere una valvola di massima pressione esterna tarata ad un valore superiore del 10% della taratura del regolatore di pressione della pompa.

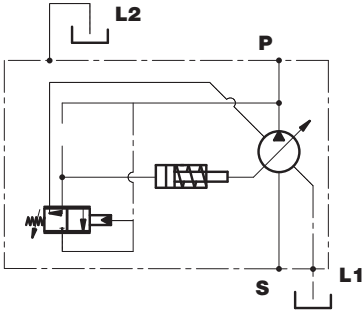
An external relief valve set at 10% above the pump pressure regulator must always be provided.

外部溢流阀设定要比压力补偿器大10%



REGOLATORE DI PRESSIONE
PRESSURE RATE REGULATOR
压力调节器

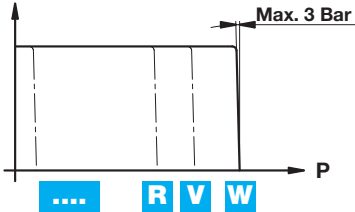
REGOLATORE DI PRESSIONE
PRESSURE RATE REGULATOR
压力调节器



CURVA CARATTERISTICA DELLA POMPA CON REGOLATORE DI PRESSIONE
CHARACTERISTIC CURVE OF THE PUMP WITH PRESSURE REGULATOR
特性曲线泵带压力调节器

PORTATA
FLOWRATE
流量

Q max



PRESSIONE DI ESERCIZIO
WORKING PRESSURE
工作压力

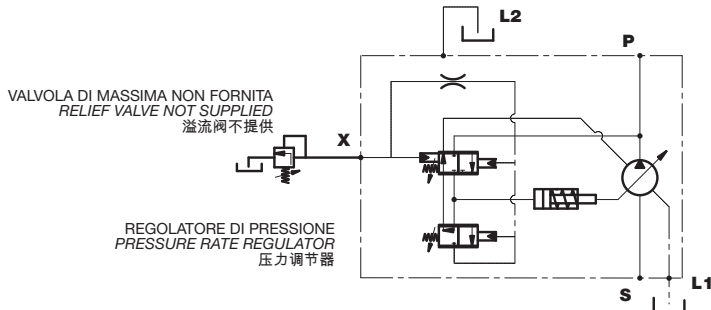
CODICE CODE 代号	PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力	
	bar	psi
D	180	2610
H	210	3045
N	250	3625
R	280	4060
V	315	4568
W	350	5075



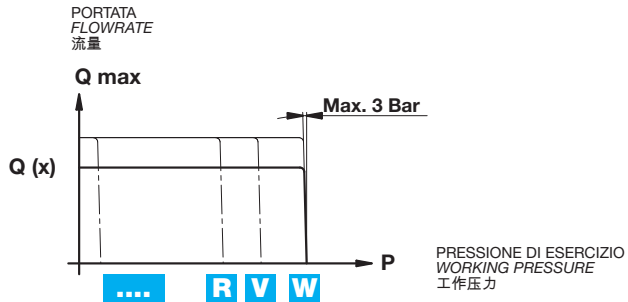
**REGOLAZIONI
CONTROL SYSTEMS**
控制系统

HP A6

R **REGOLATORE DI PRESSIONE A CONTROLLO REMOTO**
PRESSURE/FLOW RATE REGULATOR REMOTE CONTROLLED
压力流量调节器带远程控制



CURVA CARATTERISTICA DELLA POMPA CON REGOLATORE DI PRESSIONE
CHARACTERISTIC CURVE OF THE PUMP WITH PRESSURE REGULATOR
特性曲线泵带压力调节器

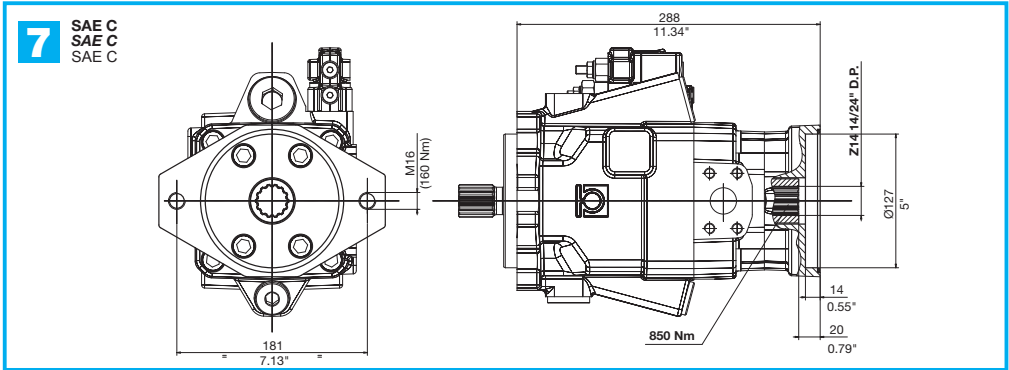
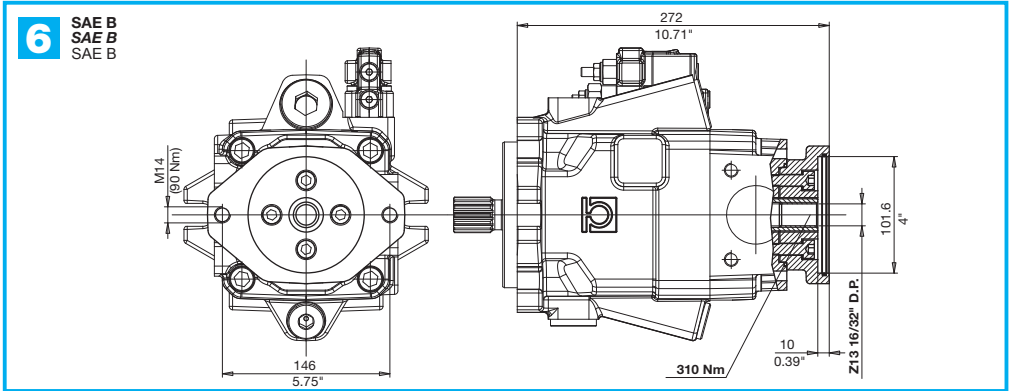
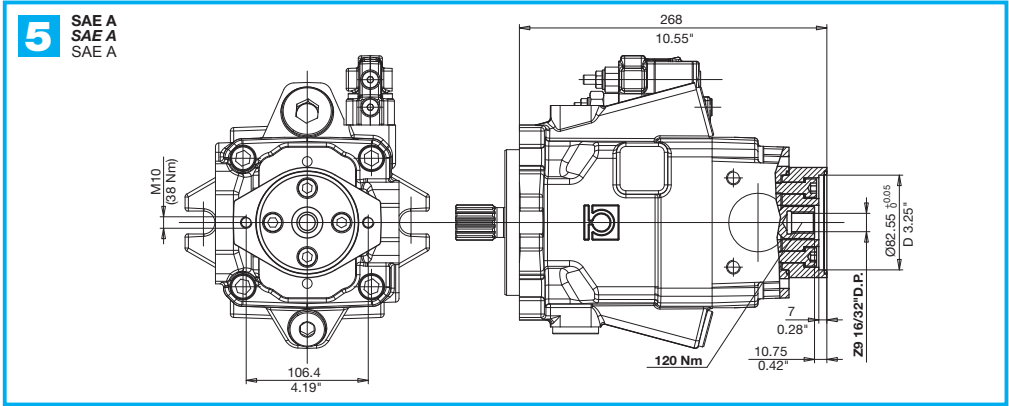


DIFFERENZIALE DI PRESSIONE 21 bar **PRESSURE DIFFERENTIAL 21 bar** 压力差 21 bar

CODICE CODE 代号	PRESSIONE DI ESERCIZIO WORKING PRESSURE 工作压力	
	bar	psi
D	180	2610
H	210	3045
N	250	3625
R	280	4060
V	315	4568
W	350	5075

PREDISPOSIZIONI
VERSION
安装形式

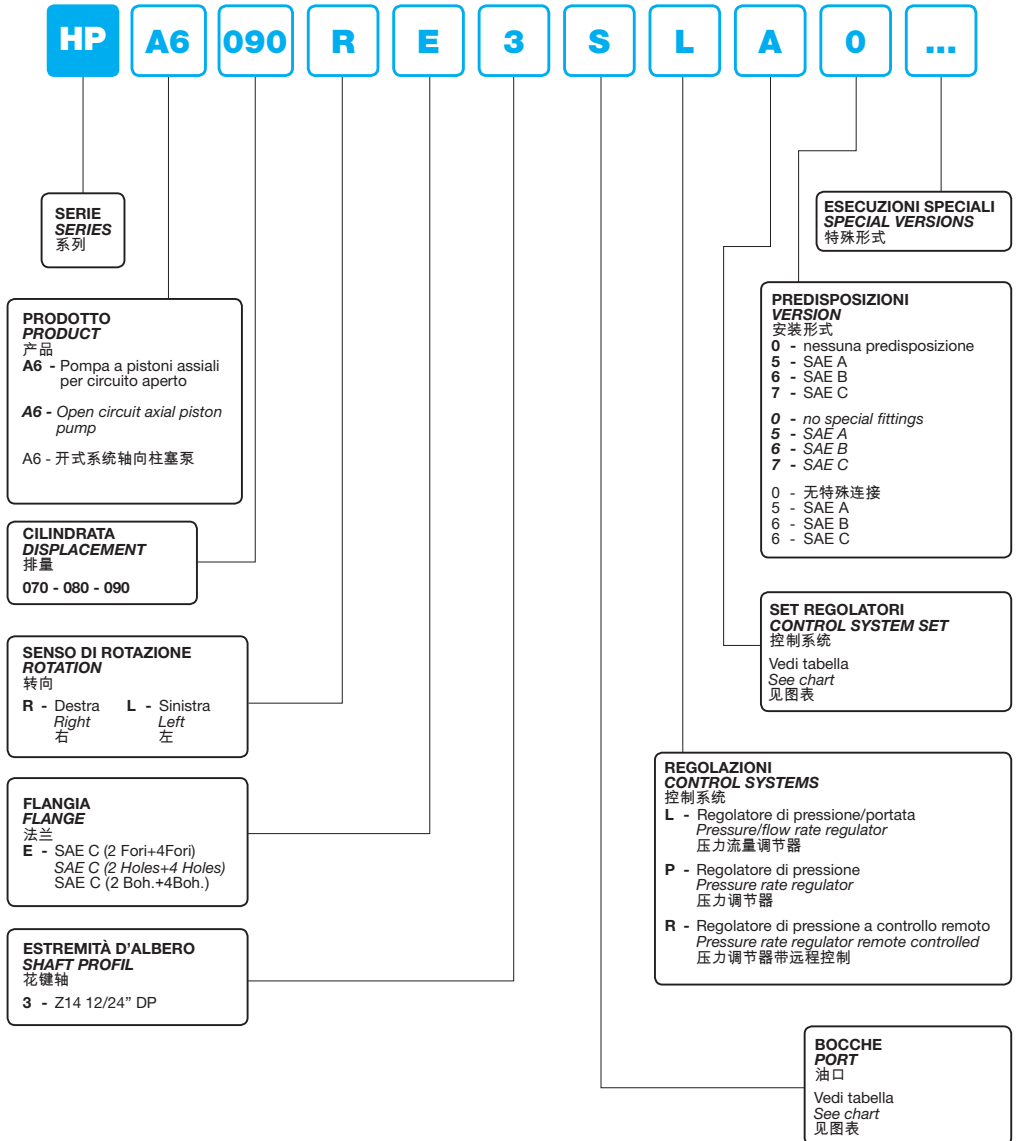
HP A6





ISTRUZIONI PER L'ORDINAZIONE
ORDERING INSTRUCTIONS
订货示例

HP A6



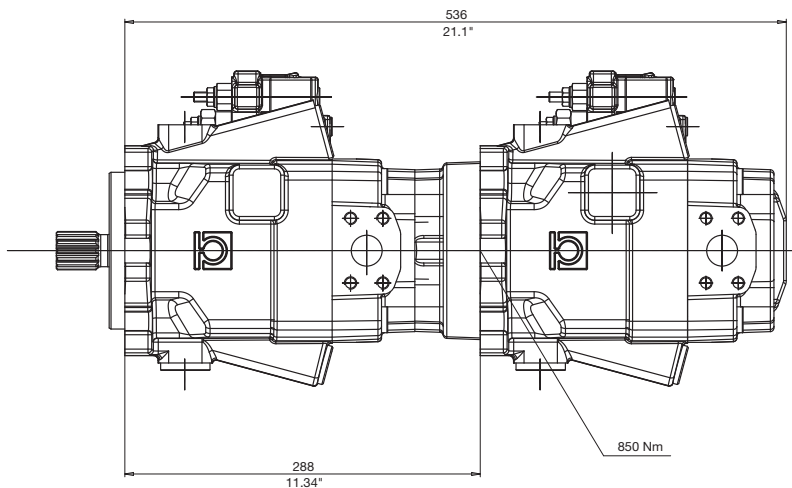
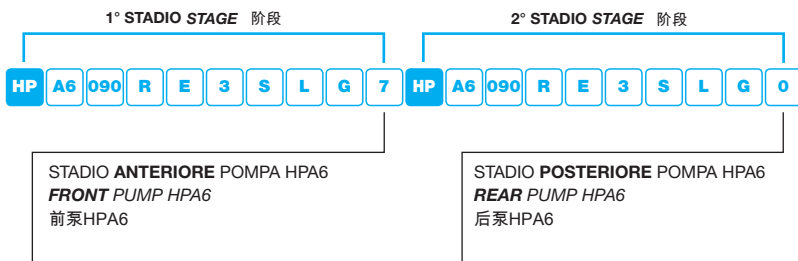
HP A6

POMPE MULTIPLE MULTIPLE GEAR PUMPS 多联泵

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.

您所建立的多联泵代号是通过总结单联泵代号得到的，参见示例。

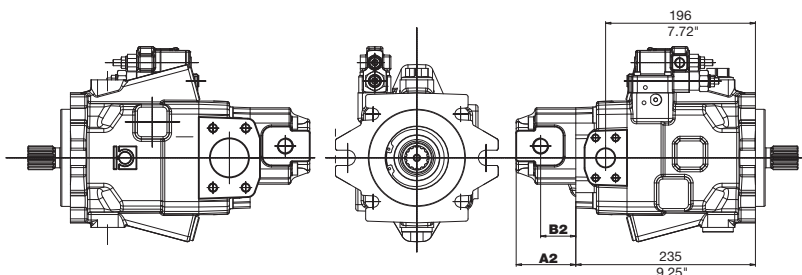
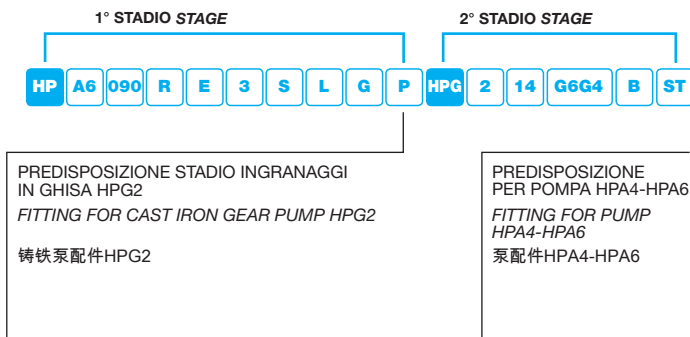




Il codice di ordinazione di una versione integrata si ottiene sommando, come mostrato in esempio, i codici delle singole pompe (stadi) ricavati seguendo le regole di ordinazione delle pompe relative.

You build the ordering code of an integrated version by summing the order code of the individual pumps, see our example.

您所建立的多联泵代号是通过总结单联泵代号得到的，参见示例。



TIPO TYPE 类型	A2		B2	
	mm	in	mm	in
05	48,3	1,90	27,3	1,07
06	51,0	2,01	30,0	1,18
08	55,5	2,19	34,5	1,36
11	60,0	2,36	39,0	1,54
14	69,0	2,72	37,0	1,46
17	73,5	2,89	41,5	1,63
20	78,0	3,07	46,0	1,81
26	87,5	3,44	57,0	2,24
31	96,0	3,78	65,5	2,58
34	101,5	4,00	71,0	2,80

