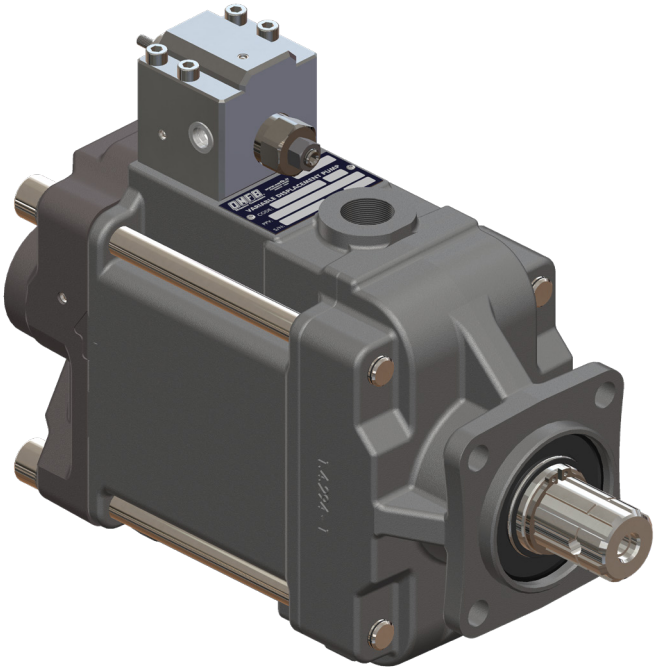


Pompe a cilindrata variabile
Variable displacement pumps

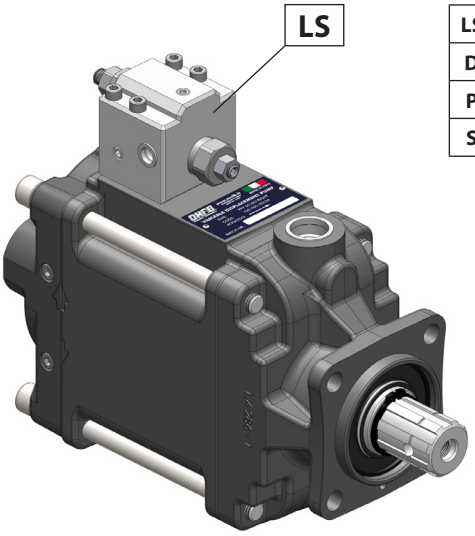
• Introduzione e dati tecnici
Introduction and technical features ..... pag. 03

• GAMMA PPV / *PPV Range*
PPV 60 ..... pag. 07
PPV 90-110 ..... pag. 15
PPV 130 ..... pag. 23
PPV 150 ..... pag. 27

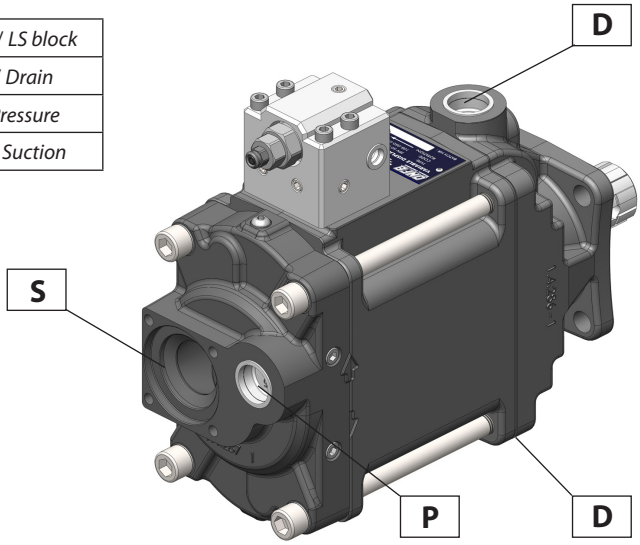
• Regolatori
Controls ..... pag. 31
• Valvola di flussaggio
Flushing valve ..... pag. 39
• Regolatore portata costante
Constant flow control ..... pag. 40
• Applicazioni PPV TANDEM
TANDEM PPV applications ..... pag. 41
• Ricambi / *Spare parts* ..... pag. 45
• Accessori / *Accessories* ..... pag. 47

• Codifica versioni
Versions coding ..... pag. 48

Pompe a cilindrata variabile
Variable displacement pumps
PPV 60-90-110-130-150

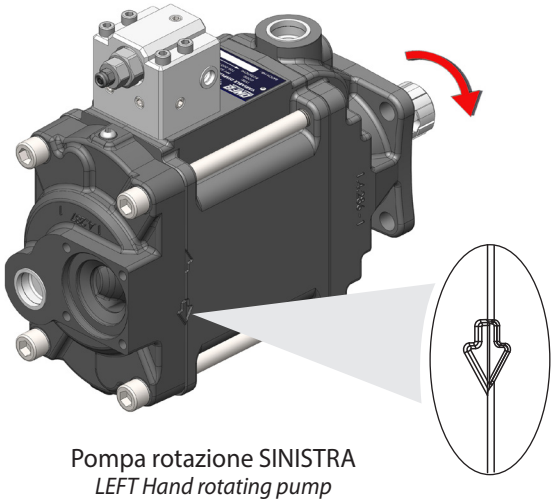


LS	Blocchetto LS / *LS block*
D	Drenaggio / *Drain*
P	Pressione / *Pressure*
S	Aspirazione / *Suction*

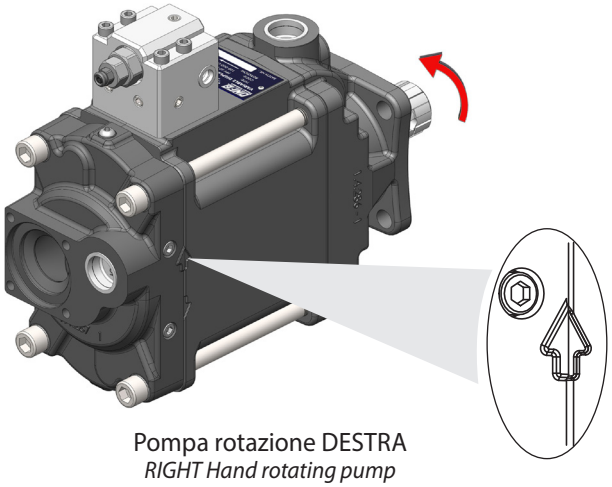


La pompa a pistoni assiali a cilindrata variabile OMFB è di tipo a piatto oscillante.
La cilindrata della pompa dipende dalla corsa dei pistoni pompanti, che a sua volta dipende dall'inclinazione del piatto oscillante. La pompa all'avviamento si trova in cilindrata massima per effetto di due molle che spingono il piatto oscillante. La cilindrata della pompa viene ridotta agendo su due pistoni comandati idraulicamente in grado di vincere la forza delle molle. Un corpo cilindri ruota solidale con l'albero e costringe i pistoni a ruotare anch'essi alla stessa velocità dell'albero ed a compiere il percorso circolare sul piatto oscillante che ne provoca il movimento alternativo. La pompa in questo modo è in grado di erogare portata dal valore massimo fino ad un valore nullo.
La variazione della cilindrata è comandata dal regolatore che si trova montato sulla pompa stessa.
Sono pompe adatte a funzionare in circuito aperto. Permettono di avere tempi di reazione brevi e, grazie alla loro larghezza ridotta, il montaggio diretto sulle prese di forza (PTO) dei veicoli commerciali.
In fase d'ordine è necessario specificare il senso di rotazione della pompa.

The OMFB variable displacement axial piston pump has got a swash plate.
The displacement of the pump depends on the stroke of the pistons, which is determined by the inclination of the swash plate. At the start, the pump is at its maximum displacement position because of the springs pushing against the swash plate. The displacement of the pump is reduced by means of two pistons hydraulically operated that win the force of the springs. The cylinders block rotates together with the shaft forcing the pistons to rotate at the same speed of the shaft and make a circular path on the swash plate that causes the reciprocating movement. In this way, the pump is able to deliver from the maximum to zero flow rate.
The variation of the displacement is controlled by a regulator, which is fitted on the pump itself.
These pumps are designed to operate in open circuit. They allow very quick reaction time and thanks to its compact size they can be coupled directly onto PTO's of commercial vehicles.
When ordering please specific the required direction of rotation.



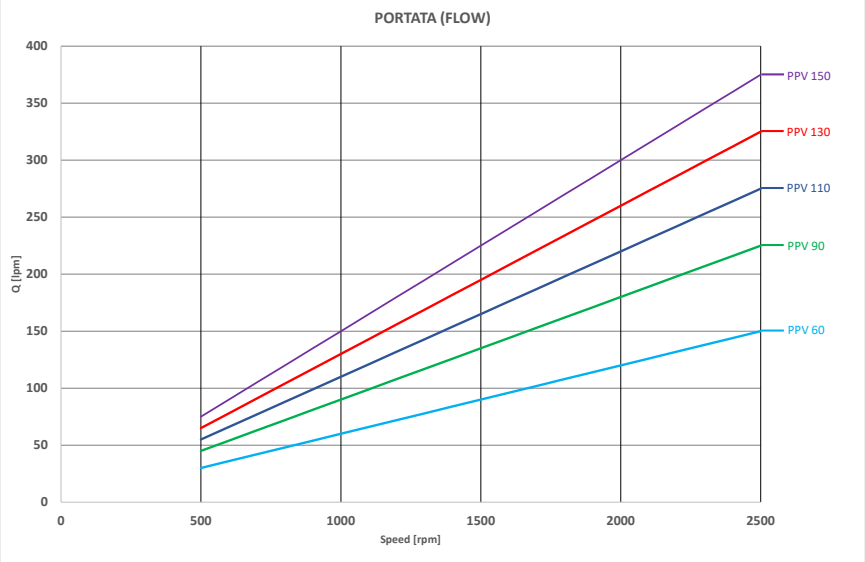
Pompa rotazione SINISTRA
LEFT Hand rotating pump

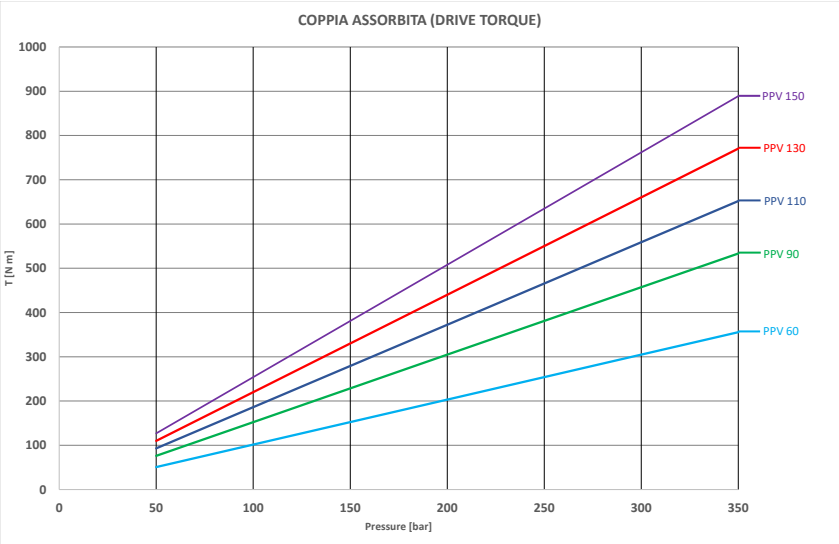


Pompa rotazione DESTRA
RIGHT Hand rotating pump

Pompe a cilindrata variabile
Variable displacement pumps
PPV 60-90-110-130-150

DATI TECNICI / TECHNICAL FEATURES	PPV 60		PPV 90		PPV 110		PPV 130		PPV 150	
Portata / *Flow*	60 l/min.		90 l/min.		110 l/min.		130 l/min.		150 l/min.	
Angolo di regolazione massima / *Max. swash plate angle*	21,5°									
Pressione di lavoro / *Working pressure*	Continua *Continuous*	Intermittente *Intermittent*	Continua *Continuous*	Intermittente *Intermittent*	Continua *Continuous*	Intermittente *Intermittent*	Continua *Continuous*	Intermittente *Intermittent*	Continua *Continuous*	Intermittente *Intermittent*
	375 bar	400 bar	375 bar	400 bar	375 bar	400 bar	375 bar	400 bar	300 bar	320 bar
Pressione d'ingresso assoluta necessaria nel circuito aperto *Absolute inlet pressure required in open circuit*	0,85 bar									
Pressione massima ammissibile sul corpo (statica/dinamica) *Max. permissible housing pressure (static/dynamic)*	1 bar		3 bar							
Pressione d'ingresso massima ammissibile *Max. permissible inlet pressure (static/dynamic)*	2 bar									
Numero di giri max. con angolo di regolazione max.a una pressione d'ingresso assoluta di 1 bar. *Max. speed during suction operation and max. swash plate angle at 1 bar abs. Inlet pressure*	2500 rpm		2300 rpm		2200 rpm		2100 rpm		1800 rpm	
Numero giri max. in annullamento e pressione d'ingresso assoluta 1bar. *Max. speed with zero stroke and 1 bar abs. Inlet pressure*	3000 rpm									
Numero di giri minimo in funzionamento continuo *Min. speed in continuous operation*	500 rpm									
Coppia motrice necessaria a 100 bar *Required drive torque at 100 bar*	100 Nm		150 Nm		185 Nm		220 Nm		250 Nm	
Potenza motrice a 250 bar e 2000 rpm *Drive power at 250 bar and 2000 rpm*	53 kW		80 kW		100 kW		120 kW		125 kW	
Peso / *Weight*	24 Kg		29 Kg		30 Kg		27 Kg		27 Kg	





La versione **ADJUSTABLE**, prevede una vite di regolazione posteriore che limita la cilindrata massima della pompa a valori inferiori a quella nominale.

*The **ADJUSTABLE** version consists of a rear setting screw that limits the max. displacement of the pumps to lower values than the nominal one.*

Cilindrata / *Displacement* **60cc**	
Campo regolazione cilindrata *Displacement limitation range*	40 - 60 cm^3
Limitazione della cilindrata *Displacement limitation range*	4,3 cm^3/rev

Cilindrata / *Displacement* **90cc**	
Campo regolazione cilindrata *Displacement limitation range*	55 - 90 cm^3
Limitazione della cilindrata *Displacement limitation range*	5,7 cm^3/rev

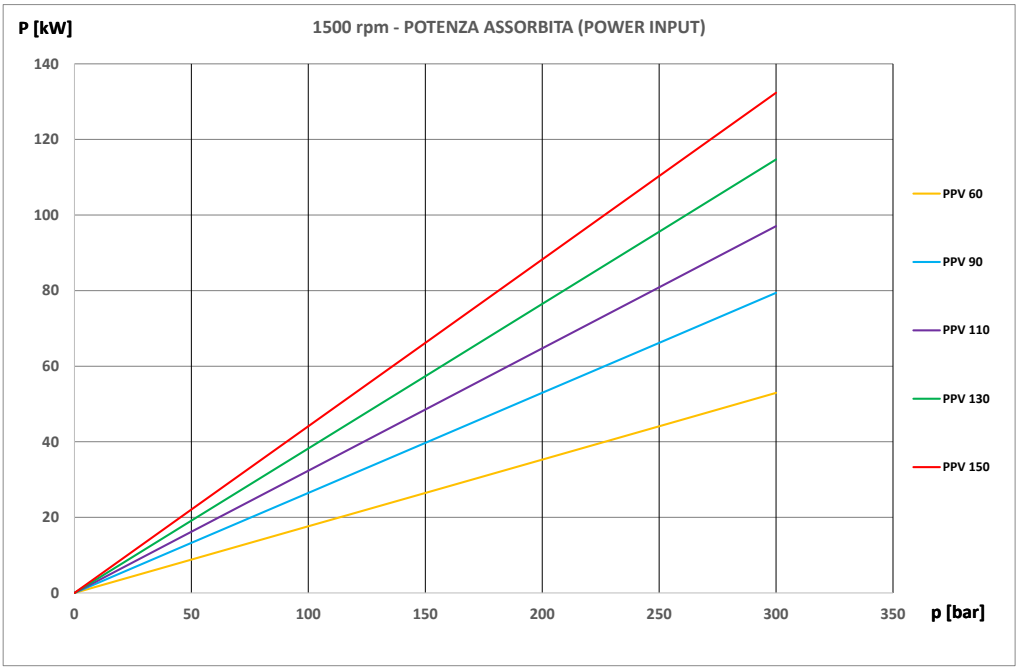
Cilindrata / *Displacement* **110cc**	
Campo regolazione cilindrata *Displacement limitation range*	85 - 110 cm^3
Limitazione della cilindrata *Displacement limitation range*	6,6 cm^3/rev

Cilindrata / *Displacement* **130cc**	
Campo regolazione cilindrata *Displacement limitation range*	90 - 130 cm^3
Limitazione della cilindrata *Displacement limitation range*	7,1 cm^3/rev

Cilindrata / *Displacement* **150cc**	
Campo regolazione cilindrata *Displacement limitation range*	100 - 150 cm^3
Limitazione della cilindrata *Displacement limitation range*	7,9 cm^3/rev

Pompe a cilindrata variabile
Variable displacement pumps
PPV 60-90-110-130-150





Fluido idraulico / *Fluid*	Minerale o sintetico compatibile con guarnizioni: *Mineral or synthetic compatible with the following seals: HNBR*				
Temperatura di lavoro/*Working temperature*	-32 +80 °C				
Temperatura ambiente/*Ambient temperature*	-40 +60 °C				
Viscosità cinematica consigliata *Kinematic viscosity suggested*	T media ambiente (°C) *Average ambient temp. (°C)*	< -40	-40÷10	10÷35	> 35
	VG (cSt = mm²/s)	16	22	32	46
Viscosità cinematica ottimale di esercizio *Optimale kinematic viscosity*	VG= 10 cSt ÷ 100 cSt				
Viscosità cinematica max consentita all'avviamento *Max kinematic viscosity suggested at the start-up*	VG= 750 cSt				
Indice di viscosità consigliato *Viscosity index suggested*	VI > 100				

Filtrazione / *Filtration*			
Pressione di lavoro/*Working pressure (bar)*	ΔP<140	140<ΔP<210	ΔP>210
Contaminazione classe NAS 1638 *Contamination class NAS 1638*	9	8	7
Contaminazione classe ISO 4406-1999 *Contamination class ISO 4406-1999*	20/18/15	19/17/14	18/16/13
Da ottenere con filtro βx >75 secondo ISO 16889 *To be optained with filter βx >75 according ISO 16889*	10 µm		

Grandezze nominali
Nominal values

Portata
Flow

$$Q\ [lpm] = \frac{V \cdot n \cdot \eta_V}{1000}$$

Coppia motrice
Torque

$$T\ [N \cdot m] = \frac{V \cdot \Delta p}{20 \cdot \pi \cdot \eta_{hm}}$$

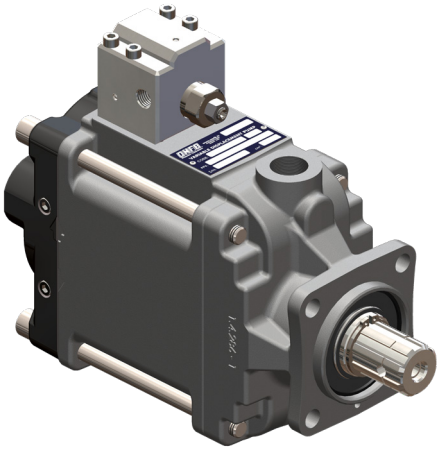
Potenza motrice
Power

$$P\ [kW] = \frac{2 \cdot \pi \cdot T \cdot n}{60000} = \frac{Q \cdot \Delta p}{600 \cdot \eta_{tot}}$$

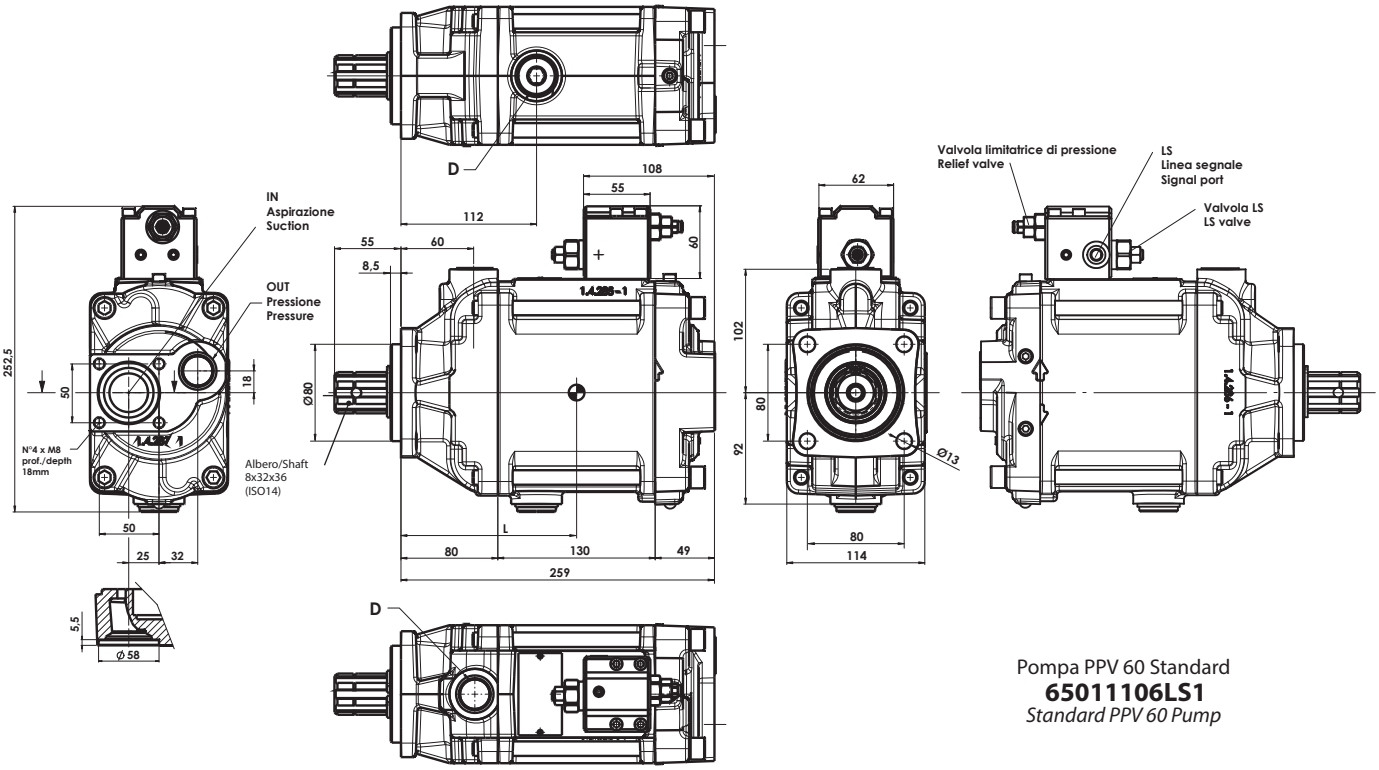
FORMULE / *FORMULAS*

V = cilindrata [cm³ / rev] */ displacement*
Δp = salto di pressione [bar] */ pressure drop*
n = velocità di rotazione [rpm] */ rotation speed*
η_V = rendimento volumetrico */ volumetric efficiency*
η_{hm} = rendimento idro-meccanico */ hydro-mechanic efficiency*
$\eta_{tot} = \eta_V \times \eta_{hm}$ = rendimento totale */ overall efficiency*

Pompe a cilindrata variabile
Variable displacement pumps
PPV 60



Ingombro / *Dimensions*



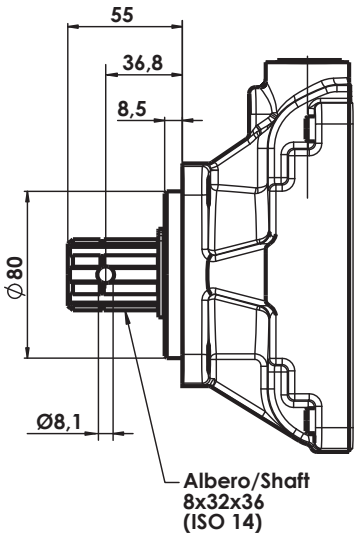
Pompa PPV 60 Standard
65011106LS1
Standard PPV 60 Pump

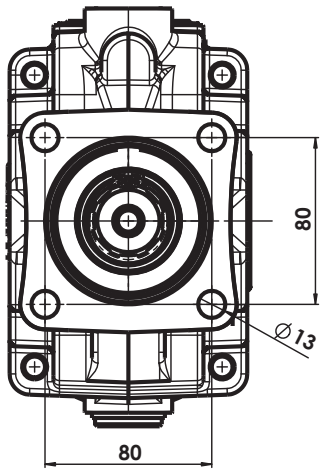
Dati tecnici / *Technical data*

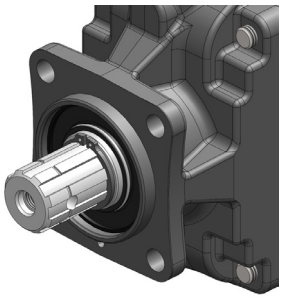
		BSPP (GAS)	UNF
LS	Blocchetto LS/ *LS block*	G 1/4	
D	Drenaggio / *Drain*	G 3/4	1 1/16-12 UN-2B
OUT	Pressione / *Pressure*	G 3/4	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50 mm	
L	Baricentro / *Center of mass*	145 mm circa/*approx*	

Flangiatura anteriore
Front flange
PPV 60

ISO 7653 - Ø 80 - 4fori / *holes*

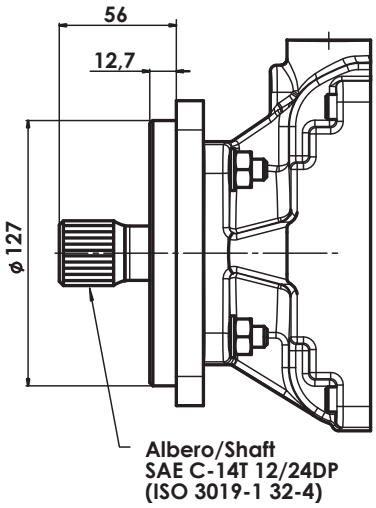


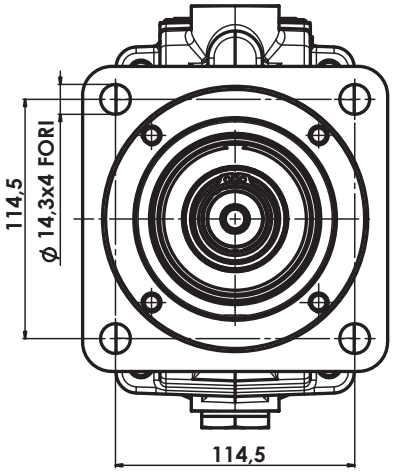


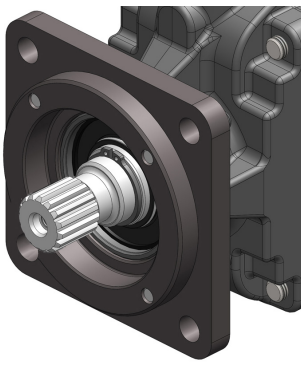


Coppia trasmissibile massima 900 Nm
Max. torque 900 Nm

ISO 3019-1 SAE C - 4fori / *holes*





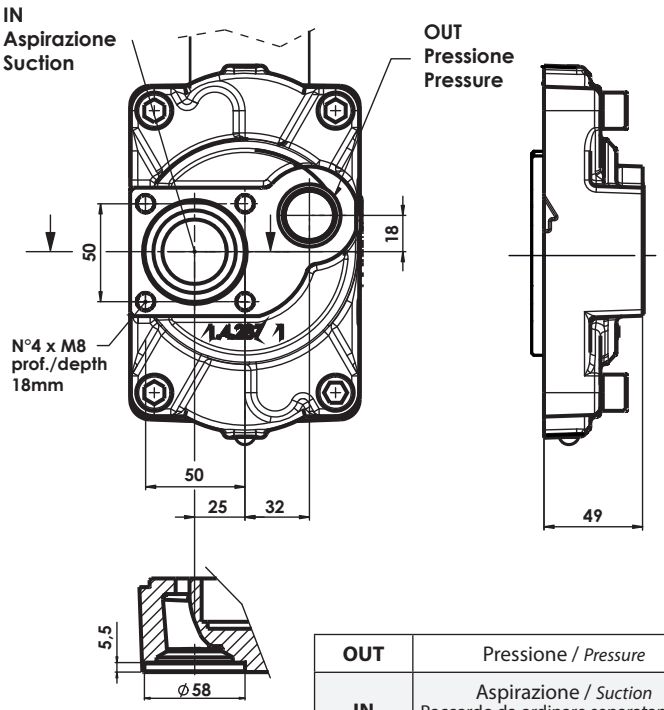


Coppia trasmissibile massima 640 Nm
Max. torque 640 Nm

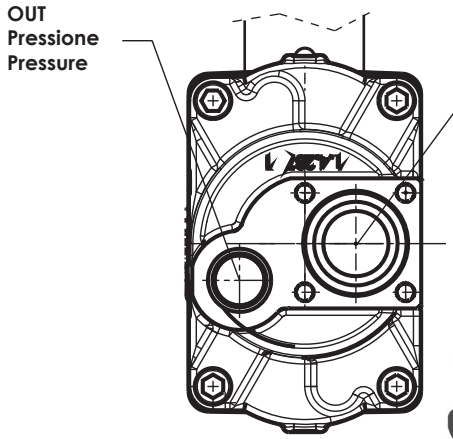
Fondello posteriore
Rear cover
PPV 60 - AX

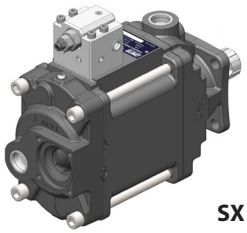
Assiale / *Axial* (STANDARD)

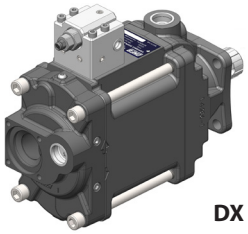
Rotazione destra / *Right rotation*
Senza limitazione / *No adjustment*



Rotazione sinistra / *Left rotation*
Senza limitazione / *No adjustment*



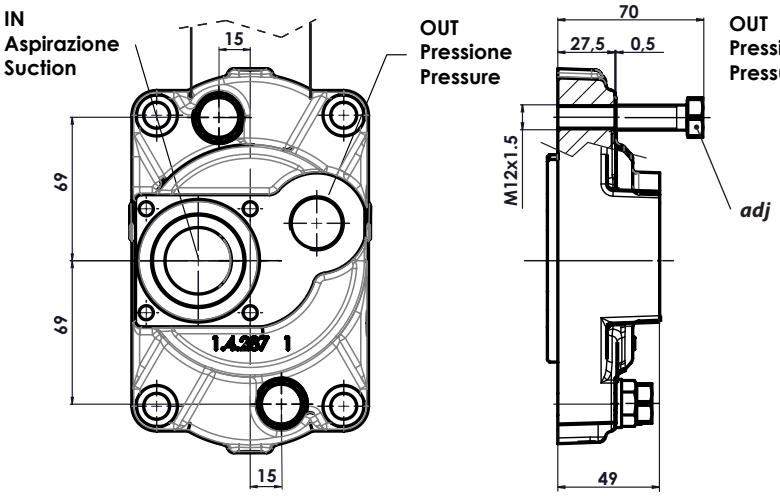

SX


DX

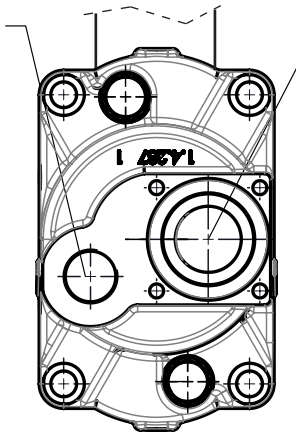
OUT	Pressione / *Pressure*	G 3/4	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	

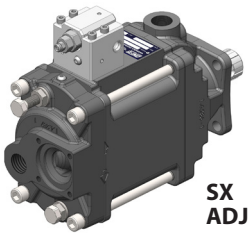
Assiale / *Axial* (ADJUSTABLE)

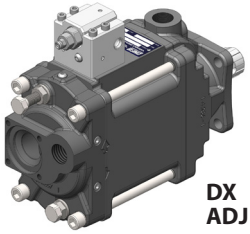
Rotazione destra / *Right rotation*
Con limitazione / *With adjustment*



Rotazione sinistra / *Left rotation*
Con limitazione / *With adjustment*



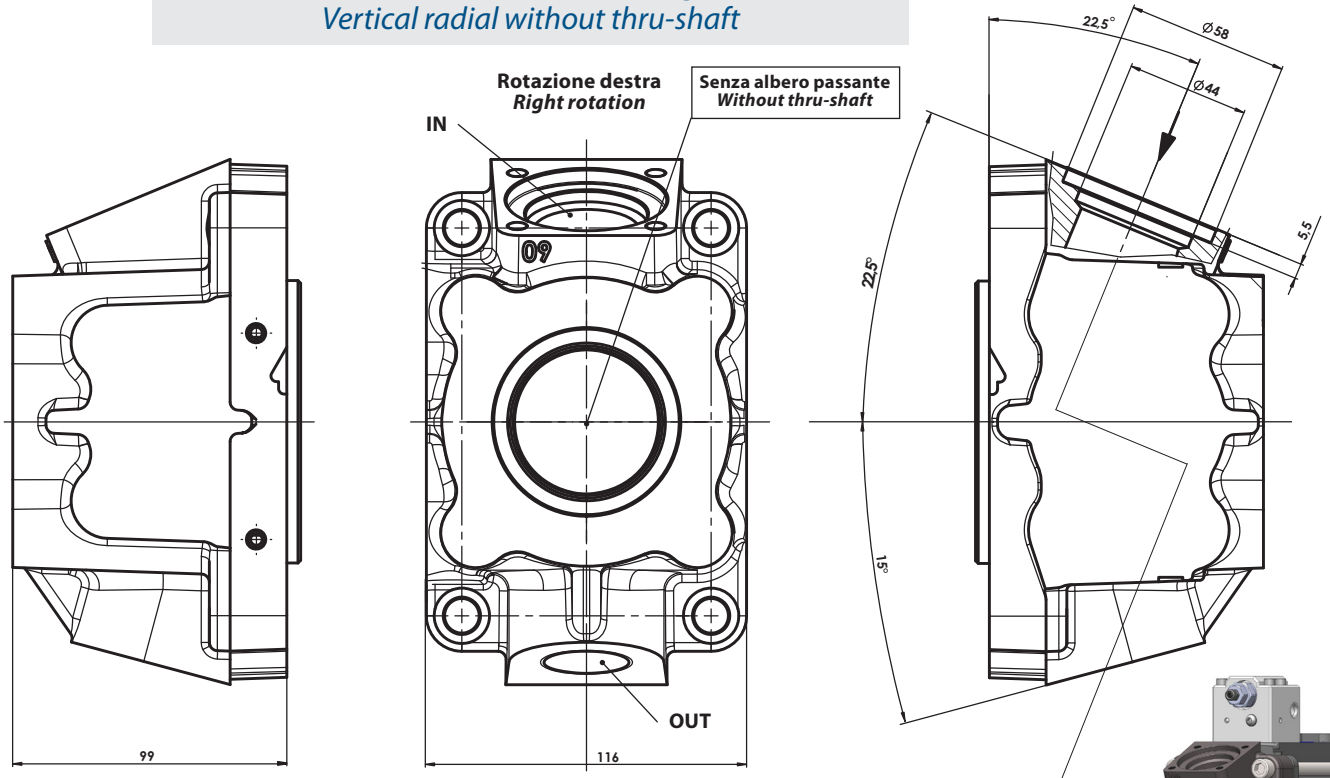

SX
ADJ

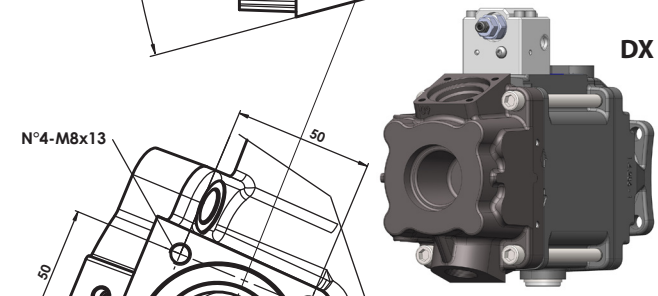

DX
ADJ

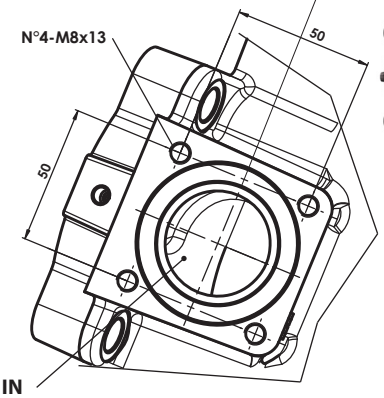
OUT	Pressione / *Pressure*	G 3/4	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	

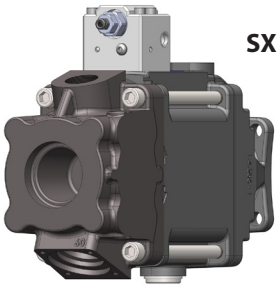
Fondello posteriore
Rear cover
PPV 60 - RV

Radiale verticale senza albero passante
Vertical radial without thru-shaft

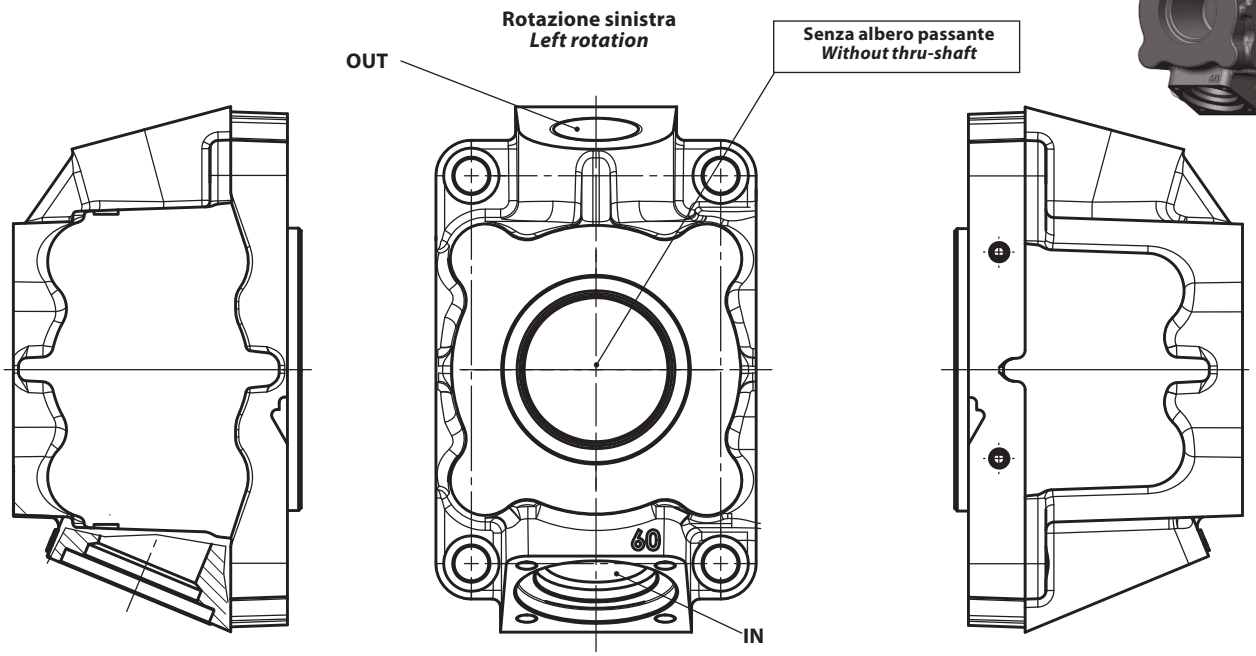




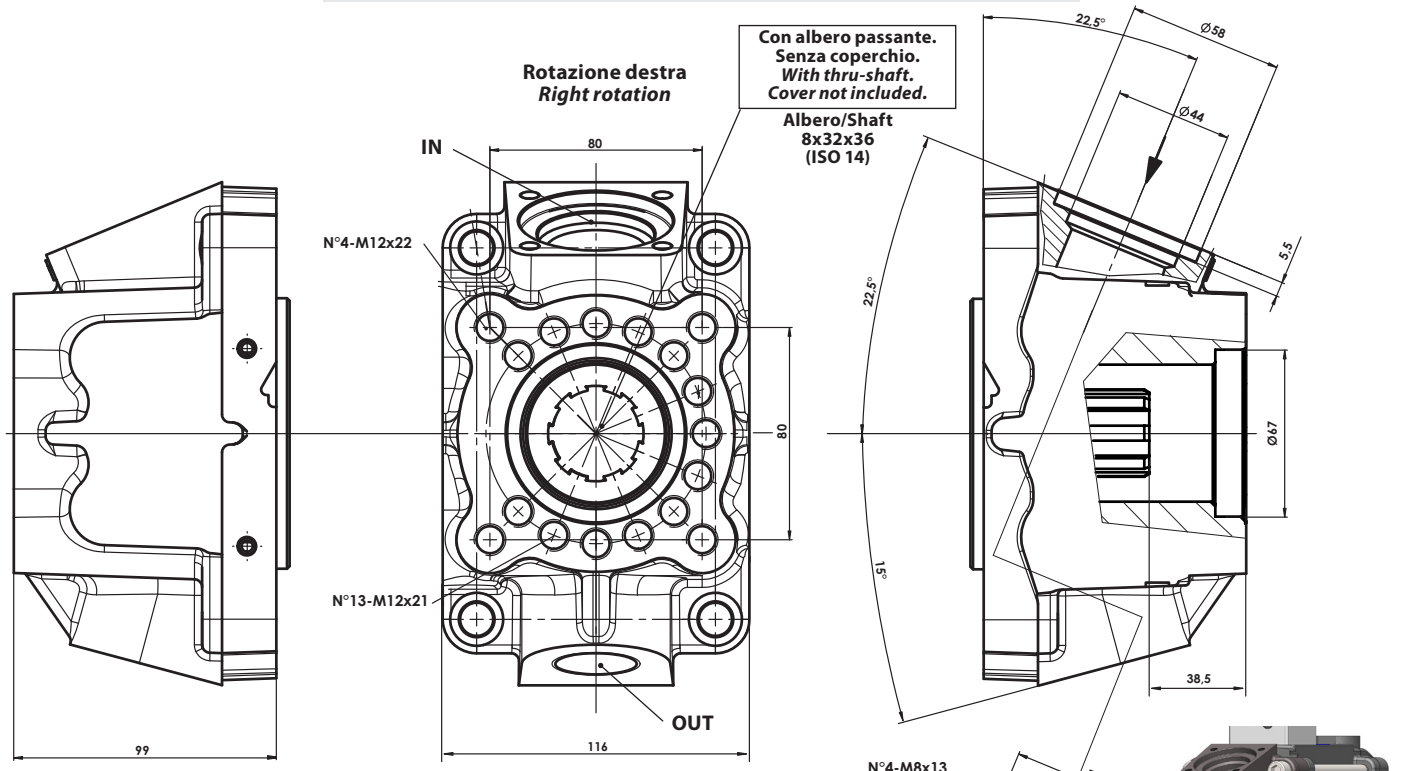




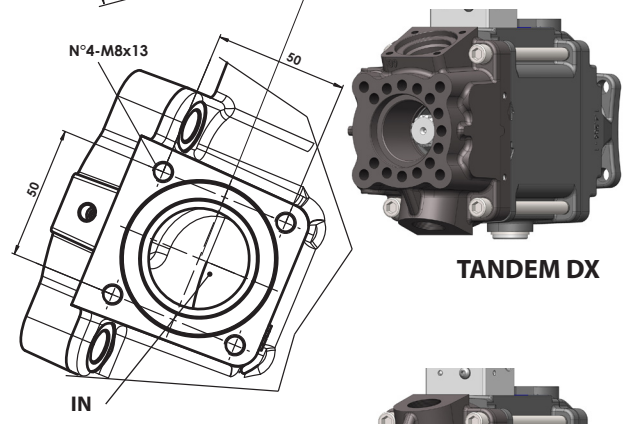
OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	



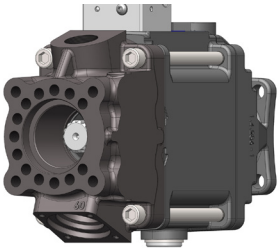
Radiale verticale con albero passante (TANDEM)
Vertical radial with thru-shaft



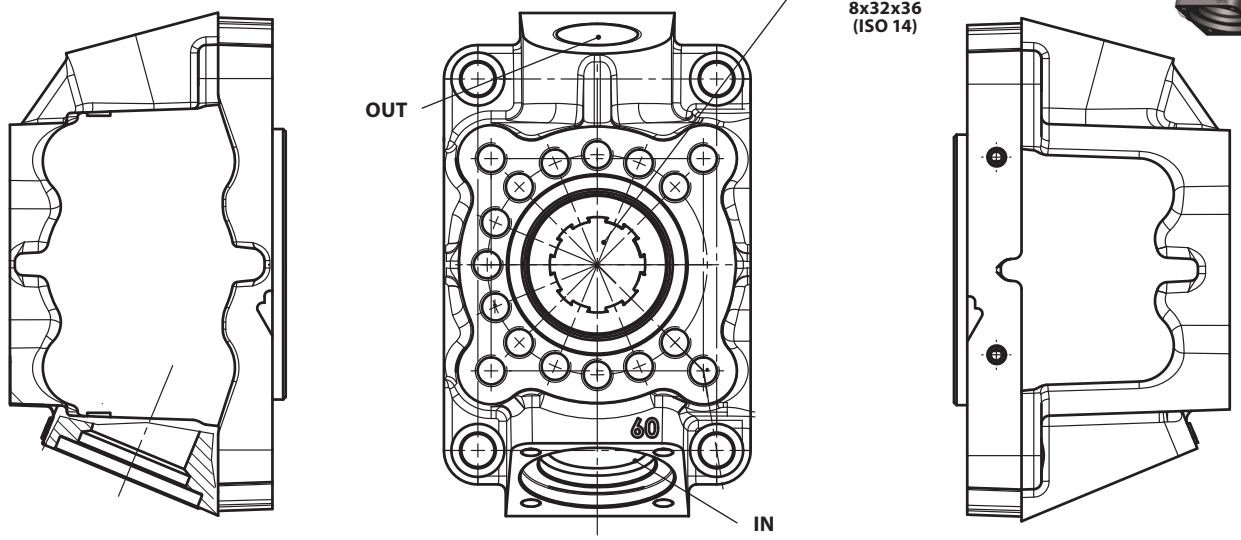
OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	



TANDEM DX



TANDEM SX

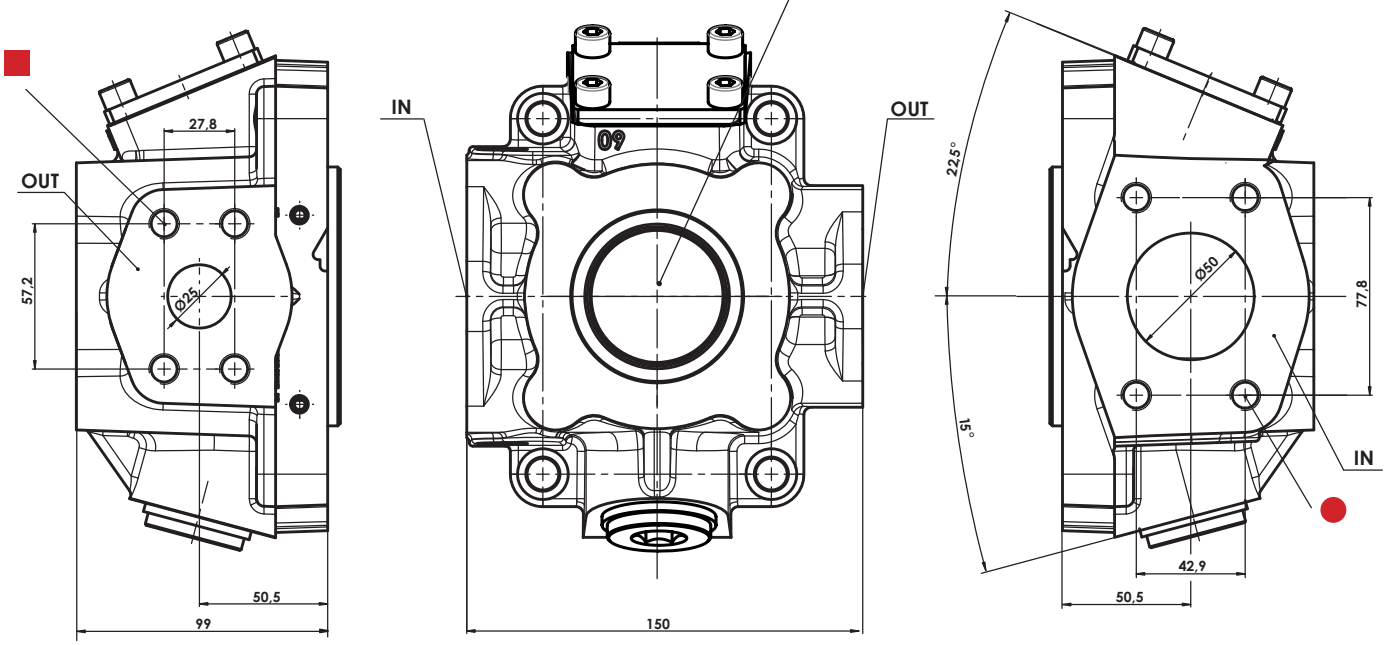


Fondello posteriore
Rear cover
PPV 60 - RO

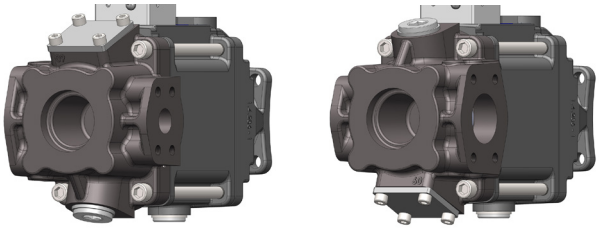
Radiale orizzontale SAE senza albero passante
Horizontal SAE radial without thru-shaft

Rotazione destra
Right rotation

Senza albero passante.
Without thru-shaft.



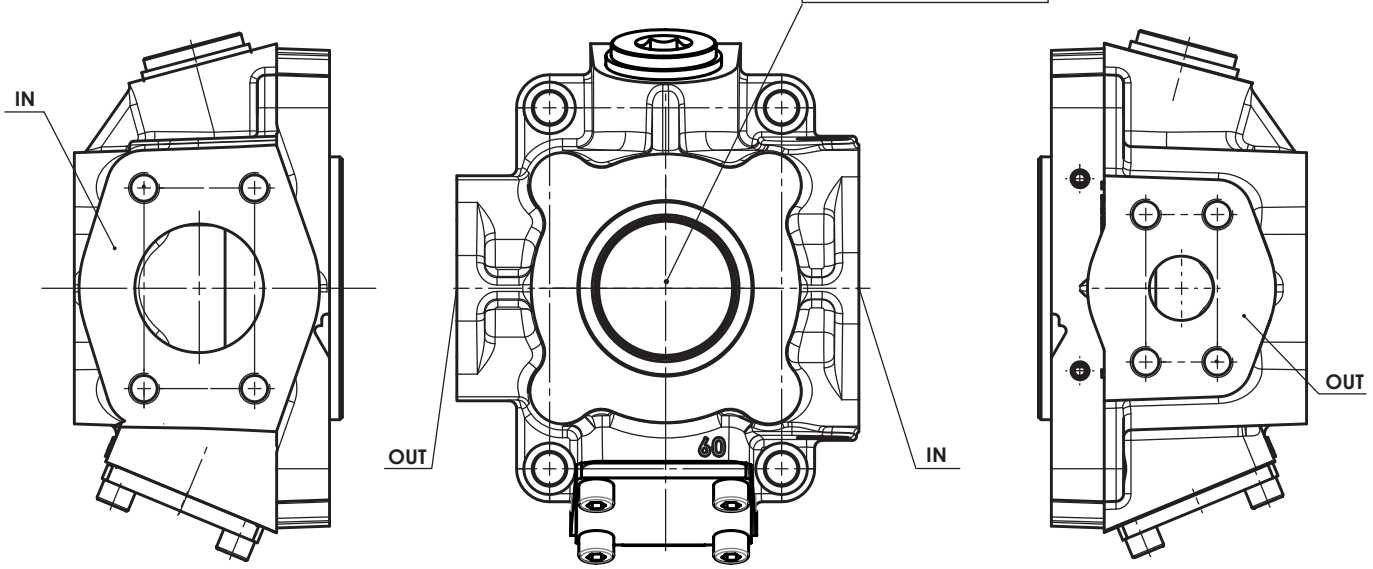
OUT	Pressione *Pressure*	1" SAE 6000	M12	7/16"UNC
IN	Aspirazione *Suction*	2" SAE 3000	M12	1/2"UNC



DX **SX**

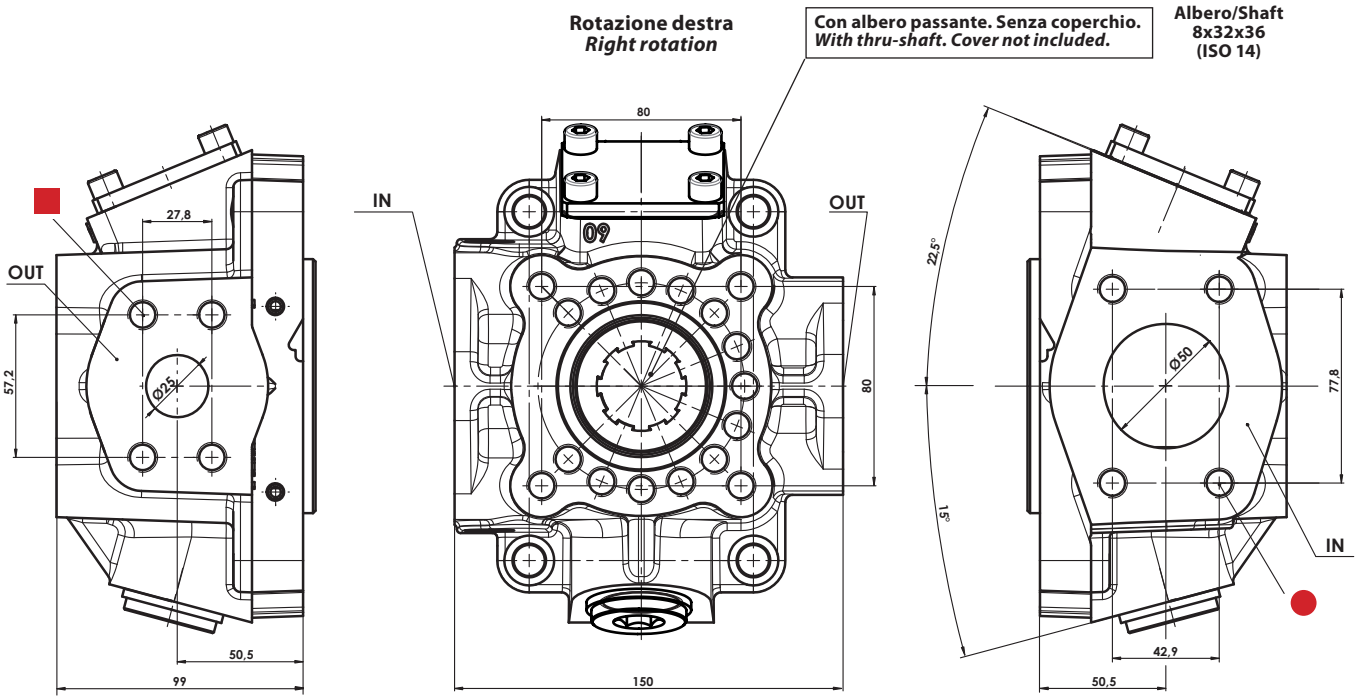
Rotazione sinistra
Left rotation

Senza albero passante.
Without thru-shaft.

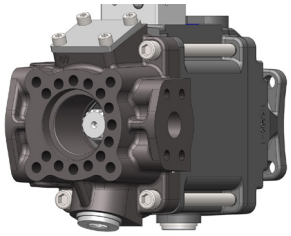


Fondello posteriore
Rear cover
PPV 60 - PO

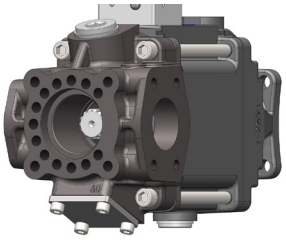
Radiale orizzontale SAE con albero passante (TANDEM)
Horizontal SAE radial with thru-shaft



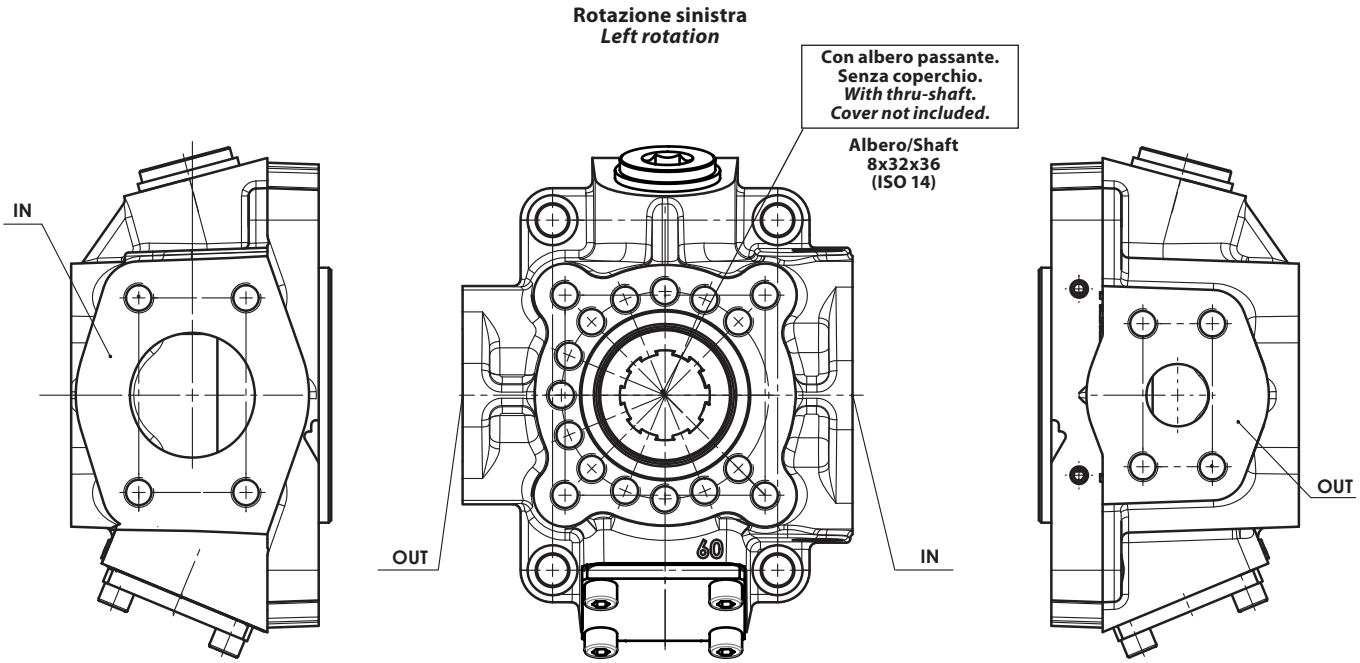
OUT	Pressione *Pressure*	1" SAE 6000	M12	1/2"UN
IN	Aspirazione *Suction*	2 1/2" SAE 3000	M12	1/2"UN



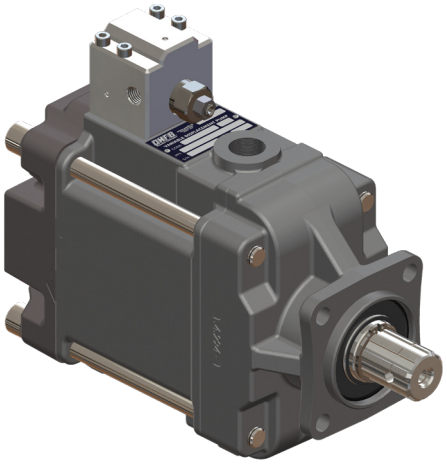
TANDEM DX



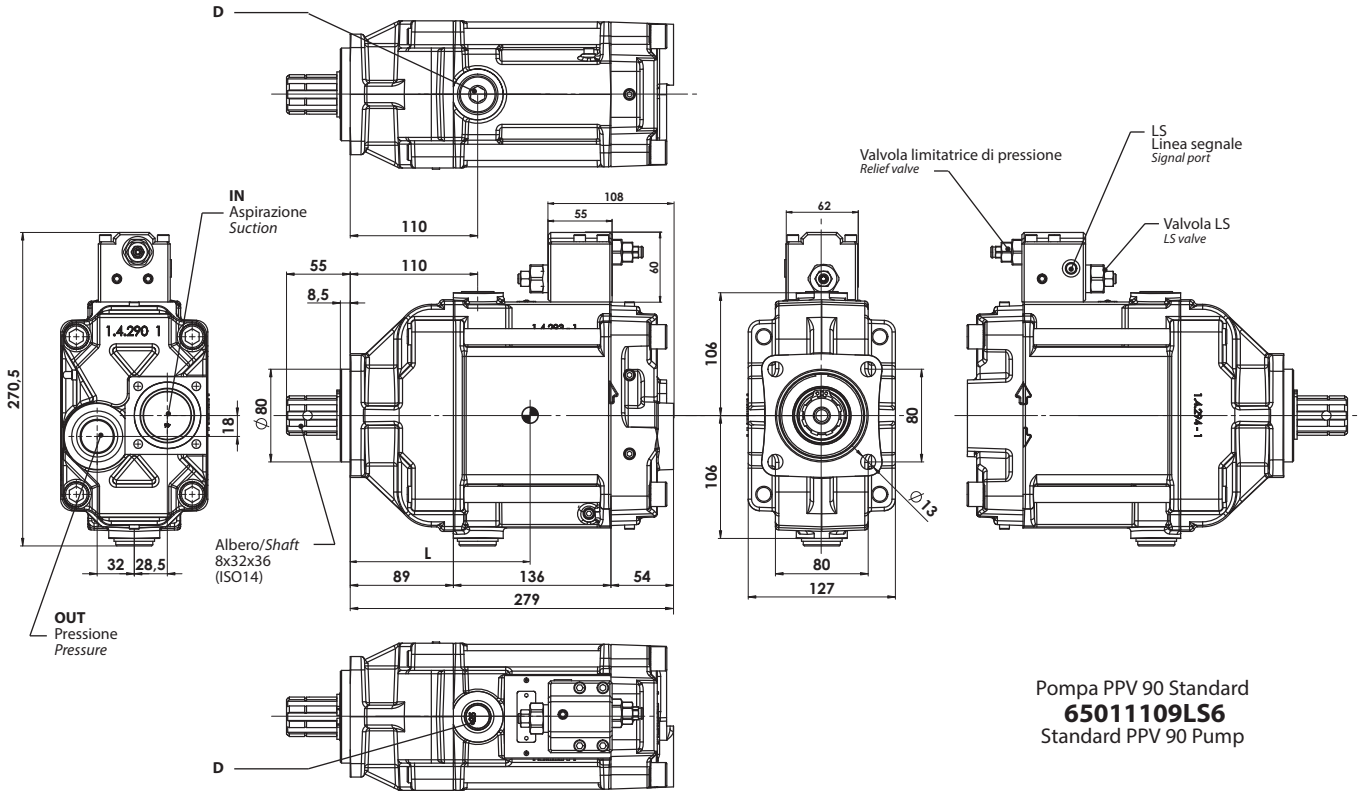
TANDEM SX



Pompe a cilindrata variabile
Variable displacement pumps
PPV 90 - 110



Ingombro / *Dimensions*



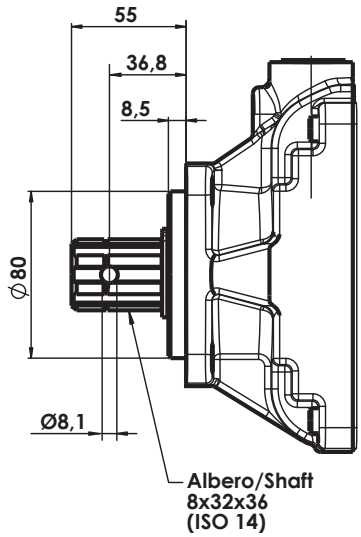
Pompa PPV 90 Standard
65011109LS6
Standard PPV 90 Pump

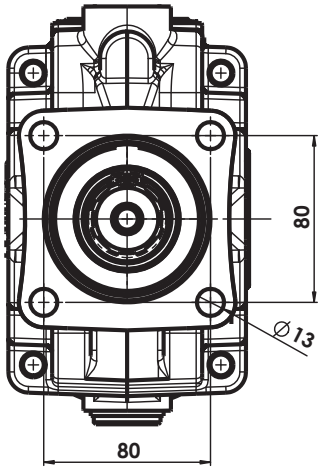
Dati tecnici / *Technical data*

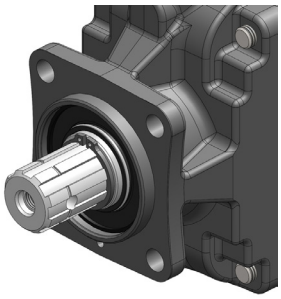
		BSPP (GAS)	UNF
LS	Blocchetto LS/ *LS block*	G 1/4	
D	Drenaggio / *Drain*	G 3/4	1 1/16-12 UN-2B
OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50 mm	
L	Baricentro / *Center of mass*	148 mm circa/approx	

Flangiatura anteriore
Front flange
PPV 90 - 110

ISO 7653 - Ø 80 - 4fori / *holes*

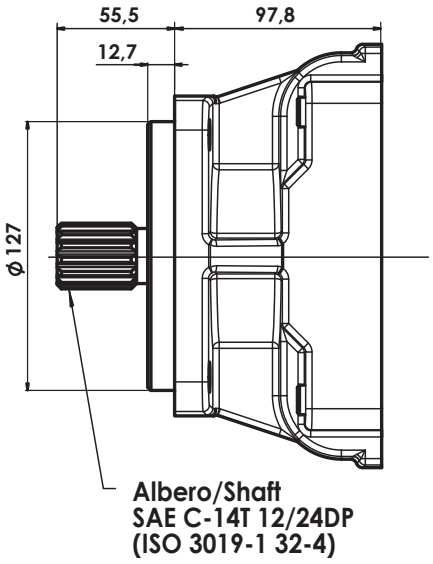


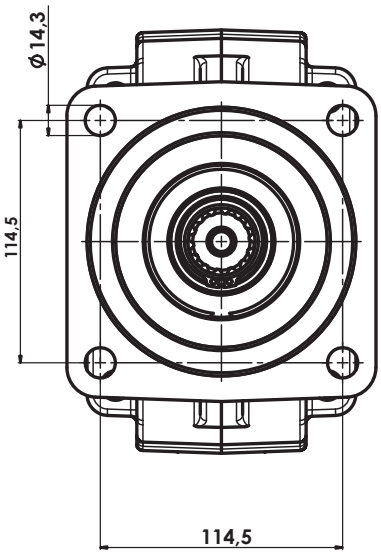


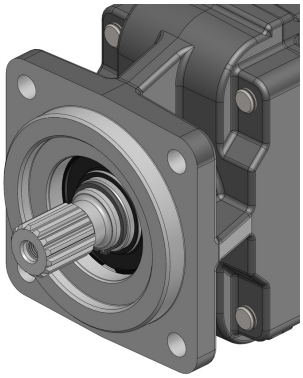


Coppia trasmissibile massima 900Nm
Max. torque 900Nm

ISO 3019-1 SAE C - 4fori / *holes*





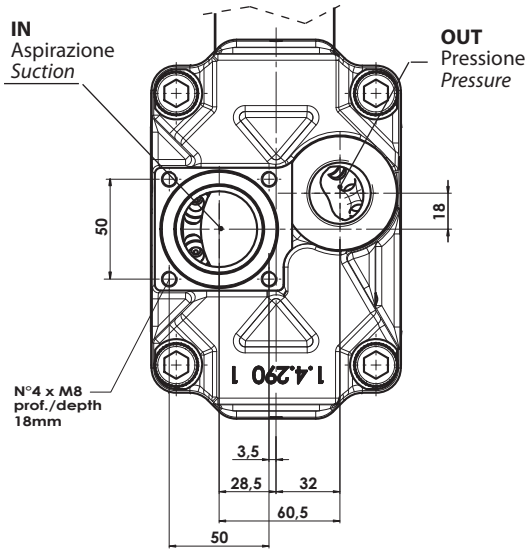


Coppia trasmissibile massima 640Nm
Max. torque 640Nm

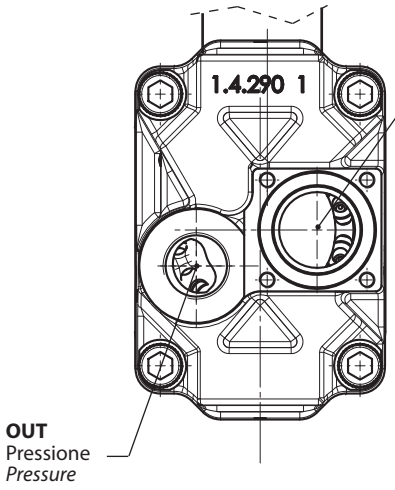
Fondello posteriore
Rear cover
PPV 90 - 110 - AX

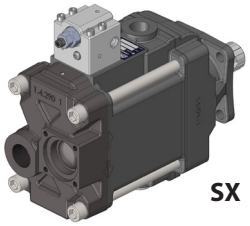
Assiale / *Axial* (STANDARD)

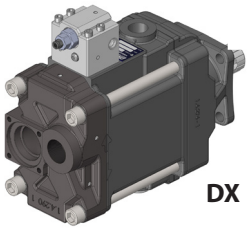
Rotazione destra / *Right rotation*
Senza limitazione / *No adjustment*



Rotazione sinistra / *Left rotation*
Senza limitazione / *No adjustment*



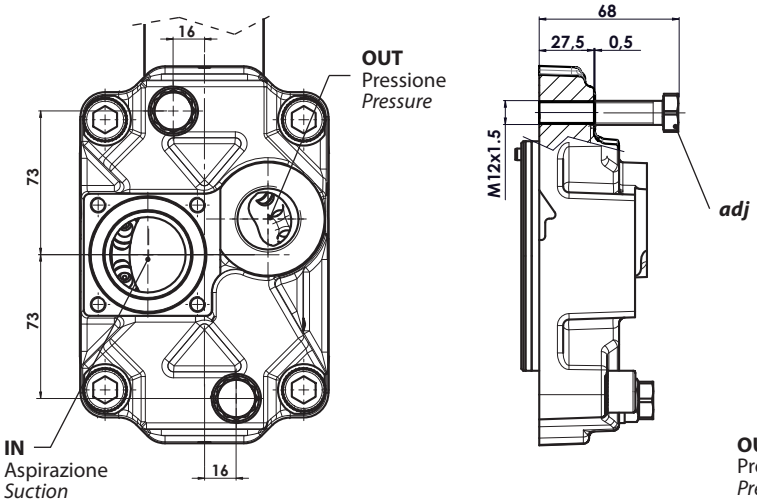

SX


DX

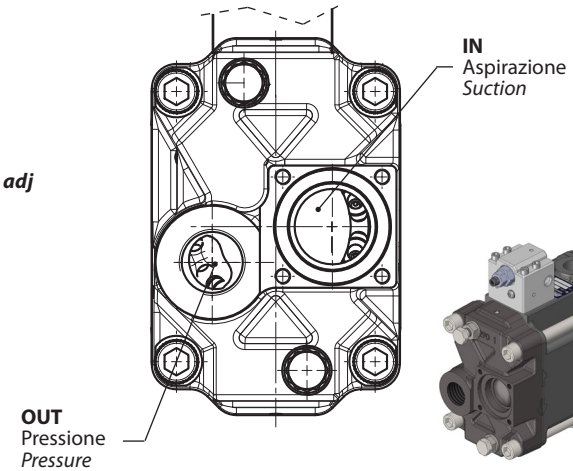
OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	

Assiale / *Axial* (ADJUSTABLE)

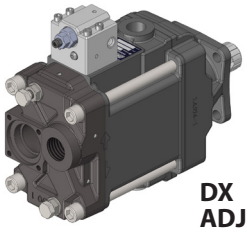
Rotazione destra / *Right rotation*
Con limitazione / *With adjustment*



Rotazione sinistra / *Left rotation*
Con limitazione / *With adjustment*



SX
ADJ

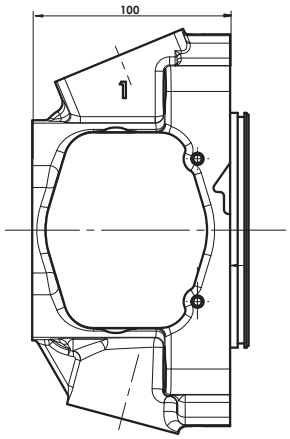

DX
ADJ

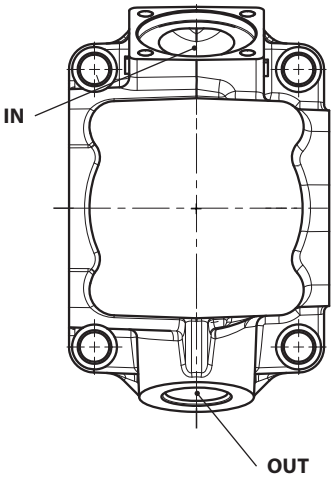
OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	

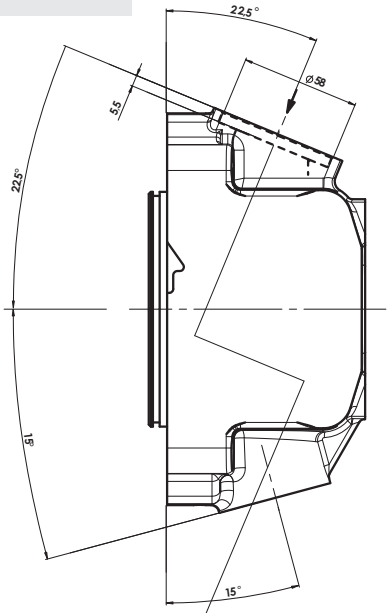
Fondello posteriore
Rear cover
PPV 90 - 110 - RV

Radiale verticale senza albero passante
Vertical radial without thru-shaft

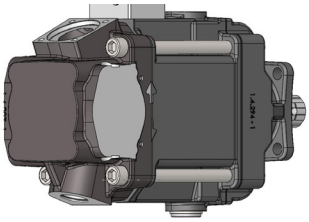
Rotazione destra
Right rotation

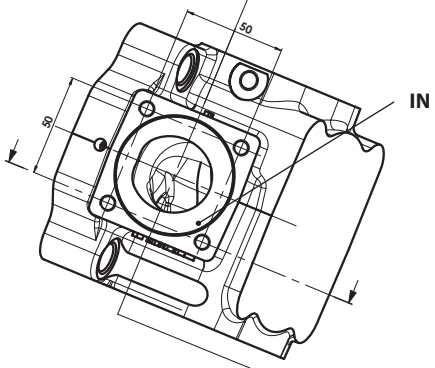




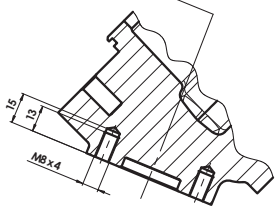


DX

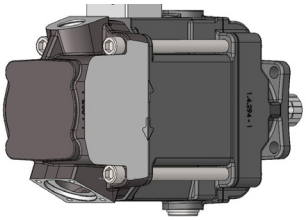




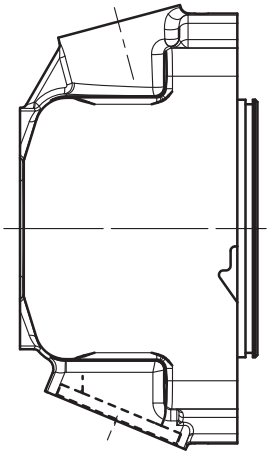
OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	

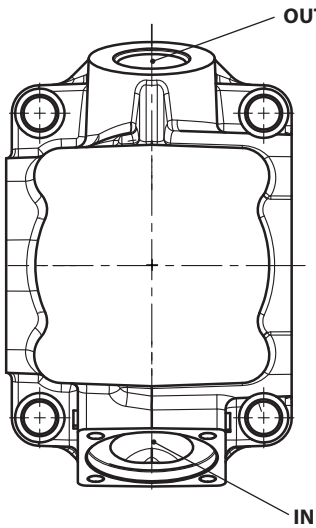


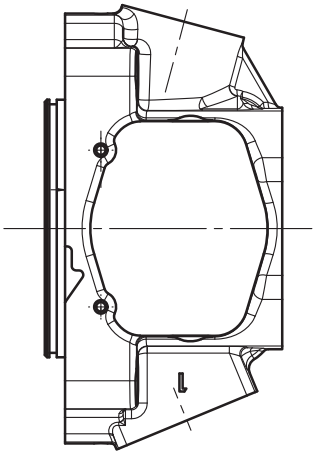
SX



Rotazione sinistra
Left rotation







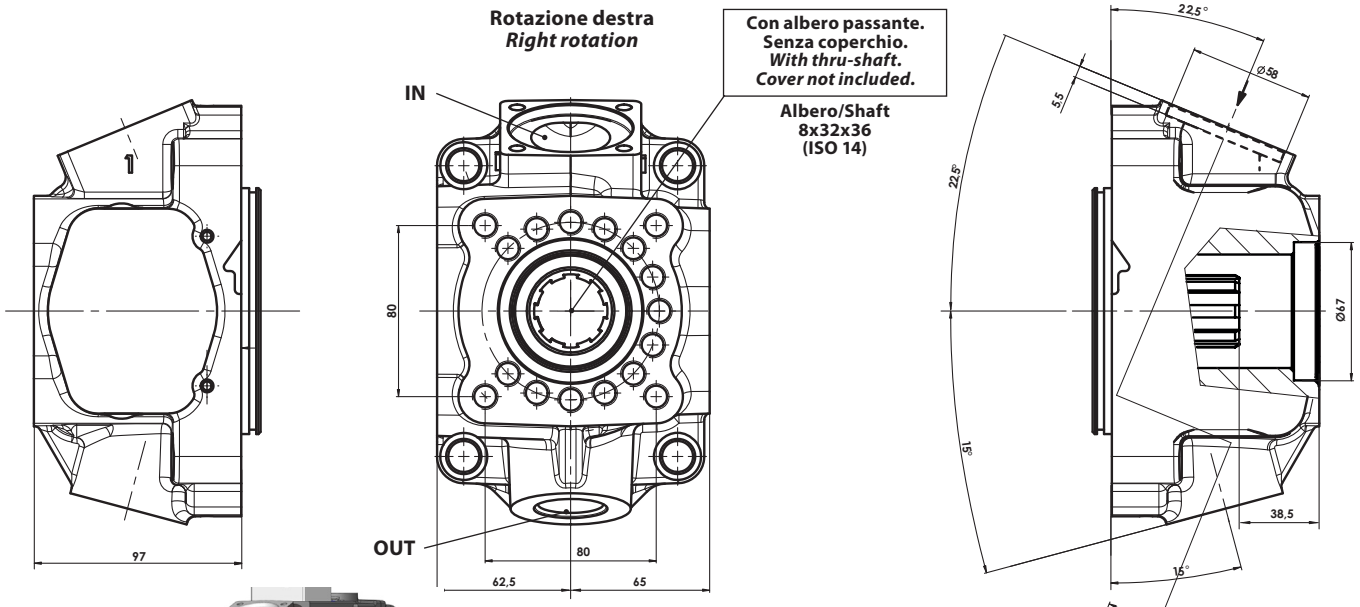
Fondello posteriore
Rear cover
PPV 90 - 110 - PV

Radiale verticale con albero passante (TANDEM)
Vertical radial with thru-shaft

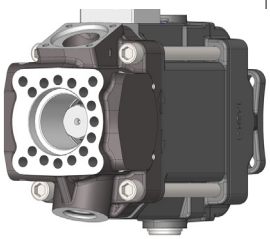
Rotazione destra
Right rotation

Con albero passante.
Senza coperchio.
With thru-shaft.
Cover not included.

Albero/Shaft
8x32x36
(ISO 14)

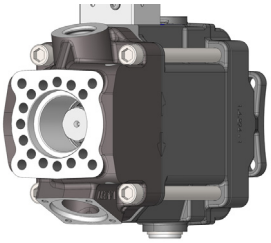


TANDEM DX

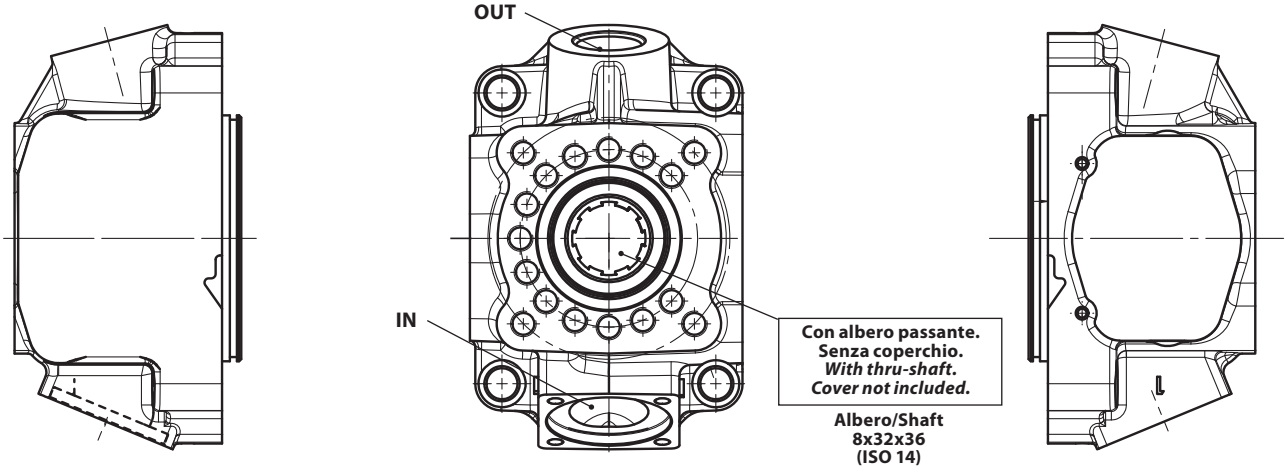


OUT	Pressione / *Pressure*	G 1	1 5/16-12 UN-2B
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm	

TANDEM SX



Rotazione sinistra
Left rotation

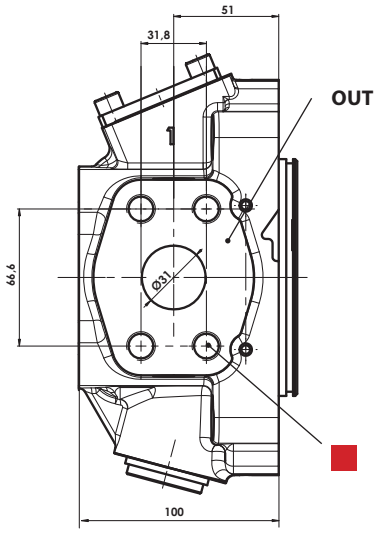


Con albero passante.
Senza coperchio.
With thru-shaft.
Cover not included.

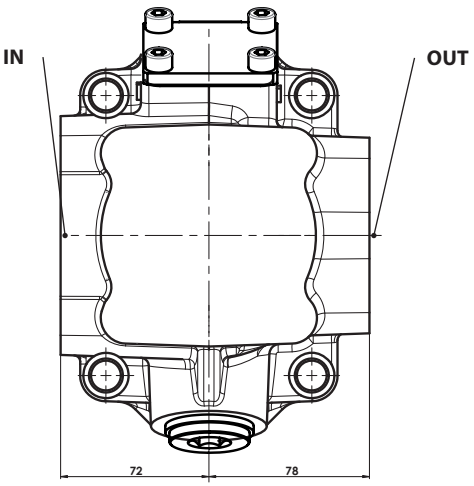
Albero/Shaft
8x32x36
(ISO 14)

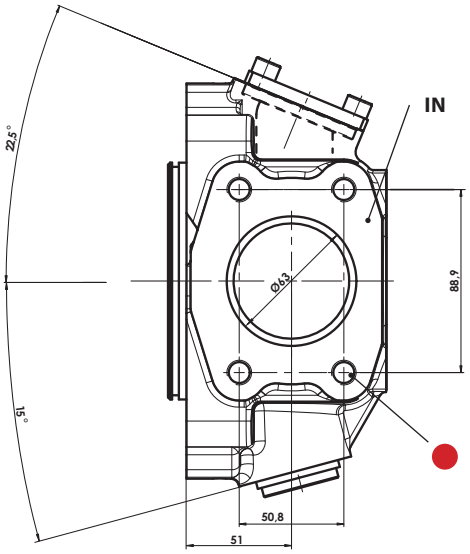
Fondello posteriore
Rear cover
PPV 90 - 110 - RO

Radiale orizzontale SAE senza albero passante
Horizontal SAE radial without thru-shaft

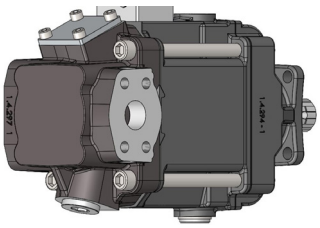


Rotazione destra
Right rotation

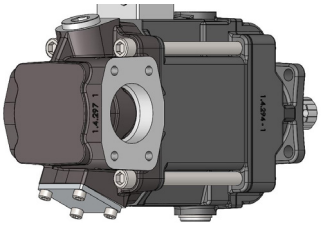




OUT	Pressione *Pressure*	1 1/4" SAE 6000	M14	1/2"UN
IN	Aspirazione *Suction*	2 1/2" SAE 3000	M12	1/2"UN

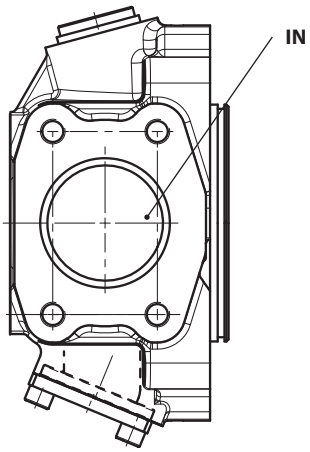


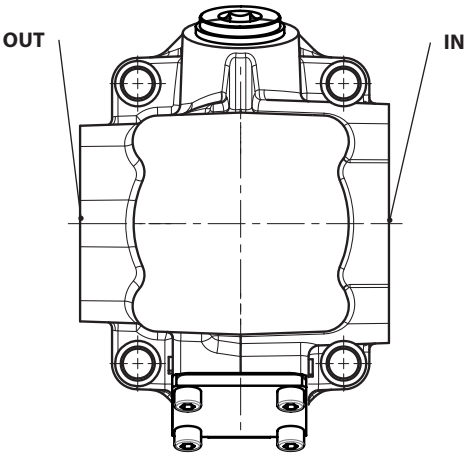
DX

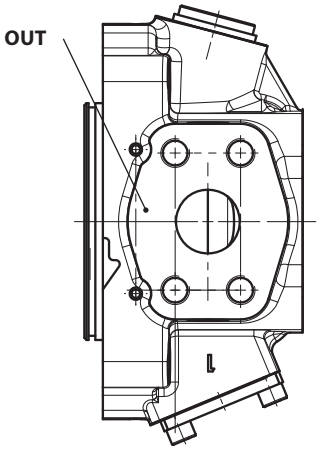


SX

Rotazione sinistra
Left rotation



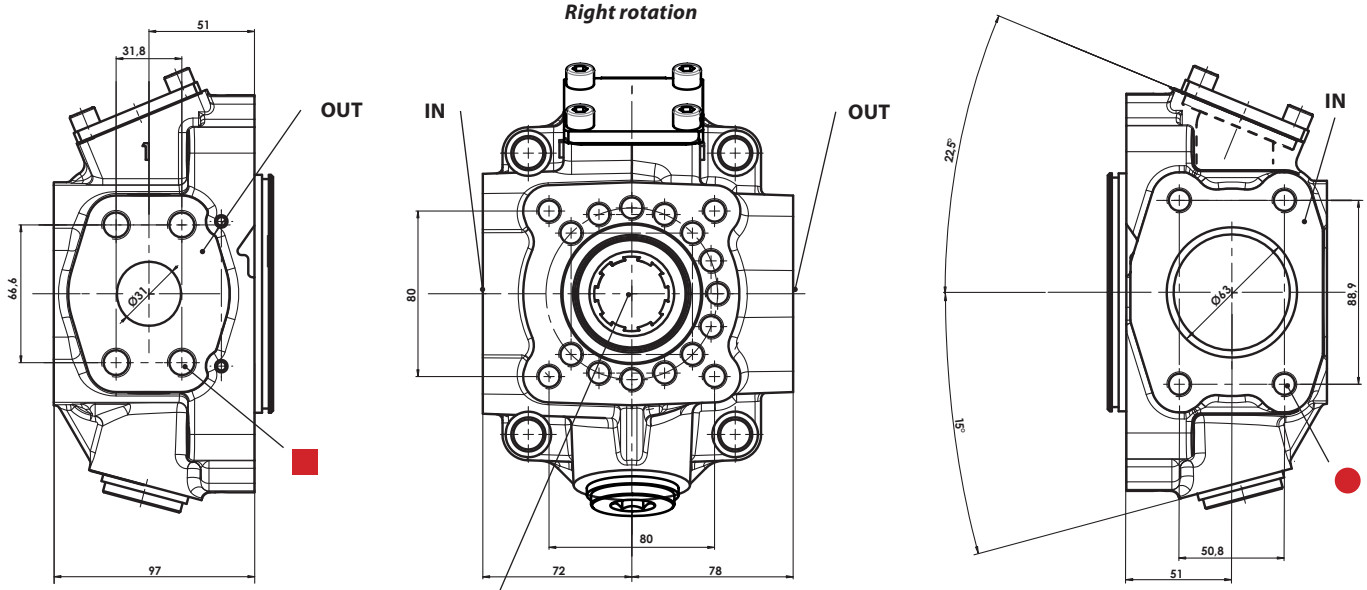




Fondello posteriore
Rear cover
PPV 90 - 110 - PO

Radiale orizzontale SAE con albero passante (TANDEM)
Horizontal SAE radial with thru-shaft

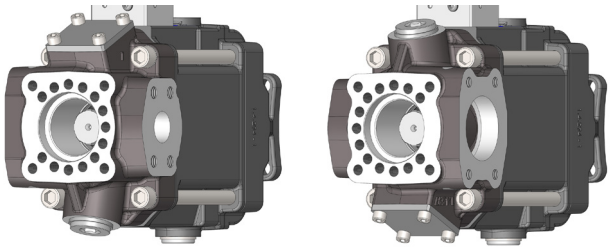
Rotazione destra
Right rotation



Con albero passante. Senza coperchio. ***With thru-shaft. Cover not included.***

Albero/Shaft 8x32x36 (ISO 14)

OUT	Pressione *Pressure*	1 1/4" SAE 6000	M14	1/2"UNC
IN	Aspirazione *Suction*	2 1/2" SAE 3000	M12	1/2"UNC

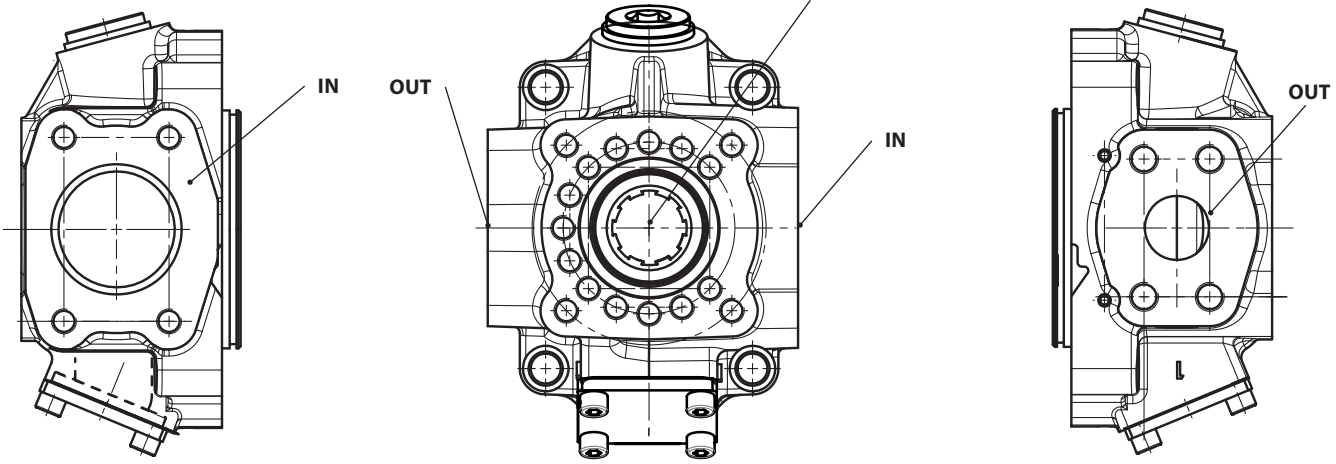


TANDEM DX **TANDEM SX**

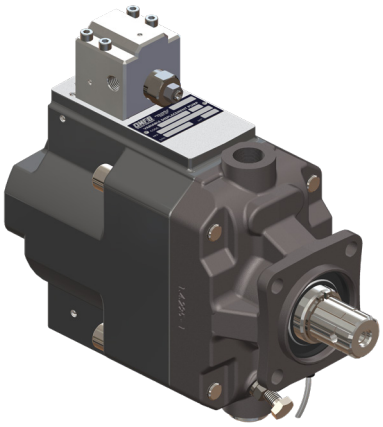
Rotazione sinistra
Left rotation

Con albero passante. Senza coperchio. ***With thru-shaft. Cover not included.***

Albero/Shaft 8x32x36 (ISO 14)



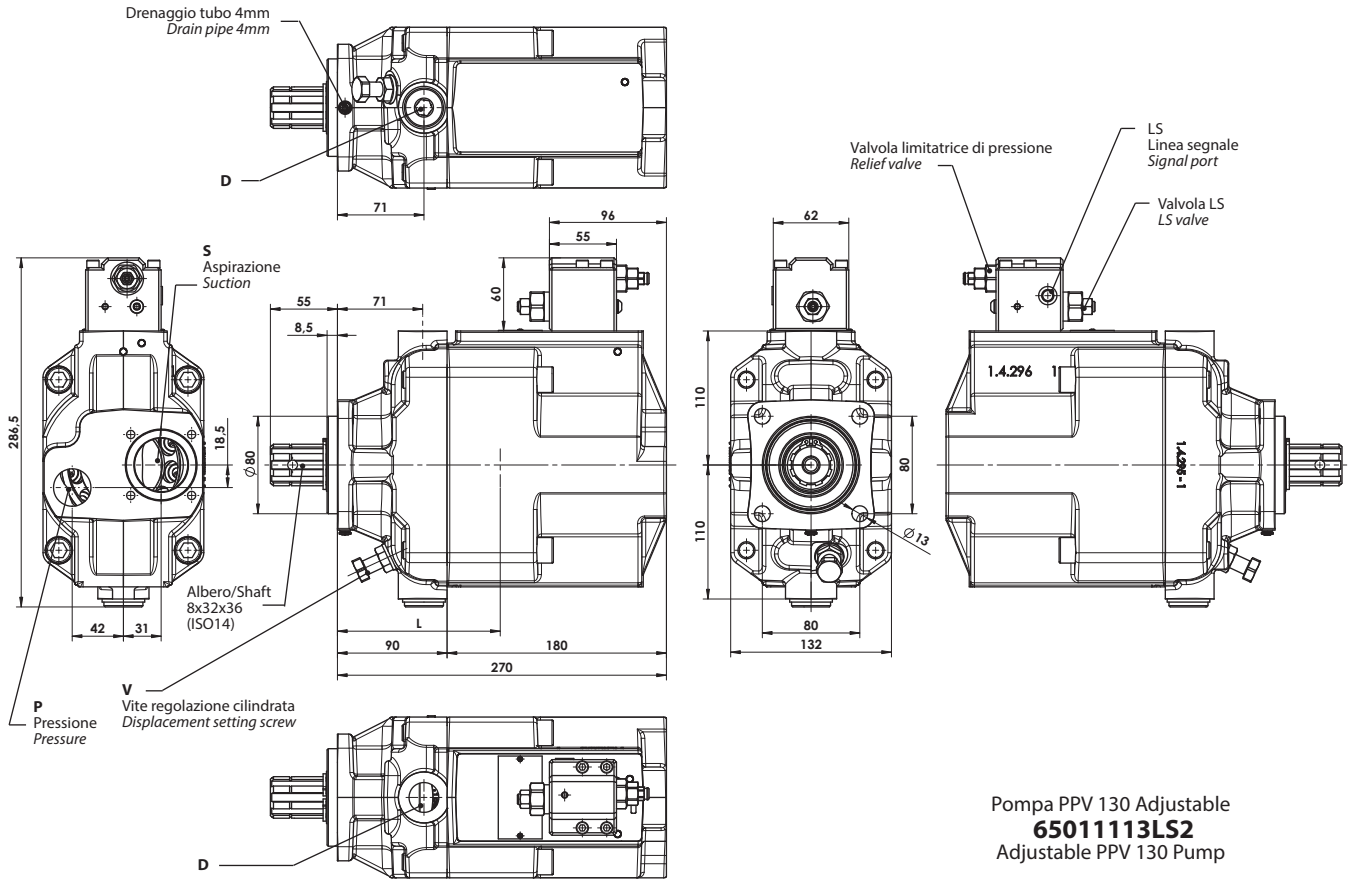
Pompe a cilindrata variabile
Variable displacement pumps
PPV 130 adjustable



Dati tecnici / *Technical data*

		BSPP (GAS)
LS	Blocchetto LS/ *LS block*	G 1/4
D	Drenaggio / *Drain*	G 3/4
OUT	Pressione / *Pressure*	G 1
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50 mm
L	Baricentro / *Center of mass*	145 mm circa/*approx*

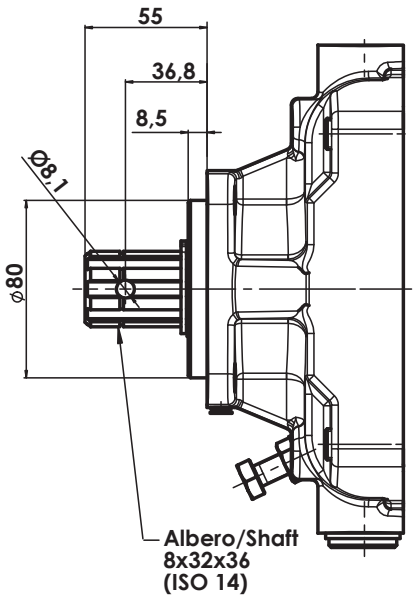
Ingombro / *Dimensions*

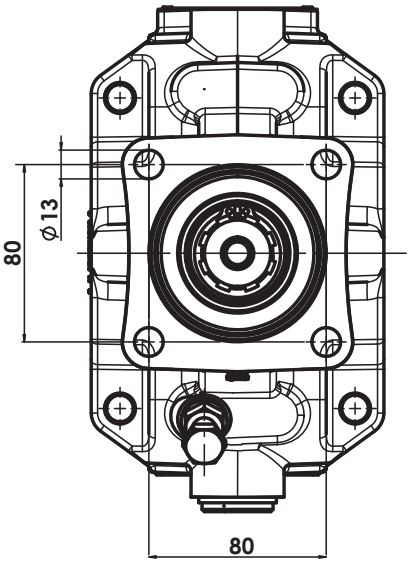


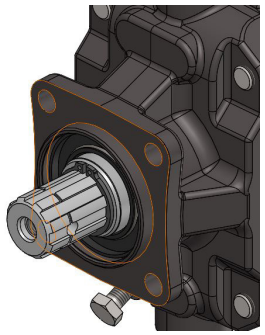
Pompa PPV 130 Adjustable
65011113LS2
Adjustable PPV 130 Pump

L'inversione della rotazione della pompa può essere effettuata solo presso il produttore o distributore autorizzato.
The change of pump rotation can only be carried out at the authorized producer's or distributor's.

ISO 7653 - Ø 80 - 4fori / *holes*

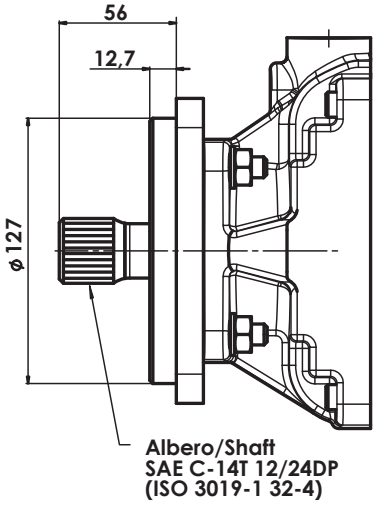


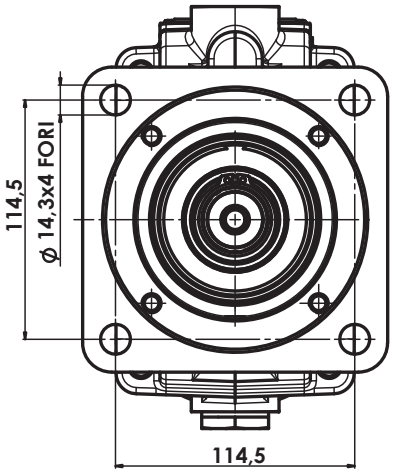


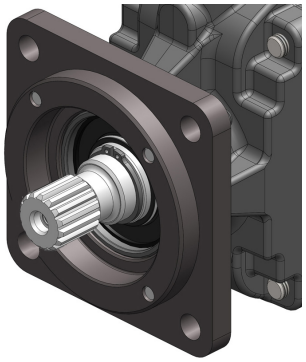


Coppia trasmissibile massima900Nm
Max. torque 900Nm

ISO 3019-1 SAE C - 4fori / *holes*





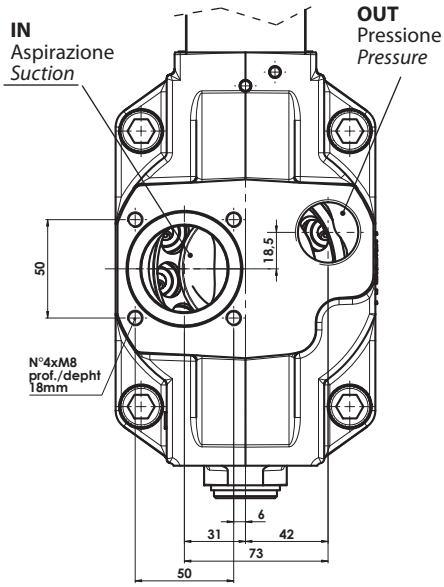


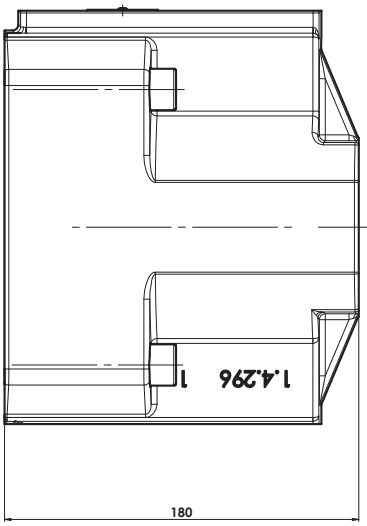
Coppia trasmissibile massima 640Nm
Max. torque 640Nm

Fondello posteriore
Rear cover
PPV 130 adjustable - AX - PV

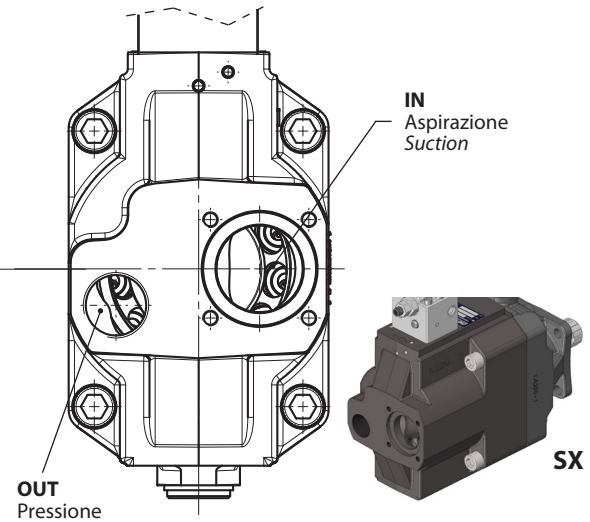
Assiale / *Axial* (STANDARD)

Rotazione destra / *Right rotation*
Con limitazione / *With adjustment*

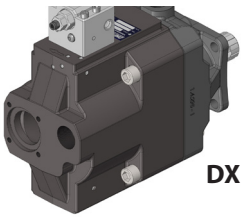




Rotazione sinistra / *Left rotation*
Con limitazione / *With adjustment*



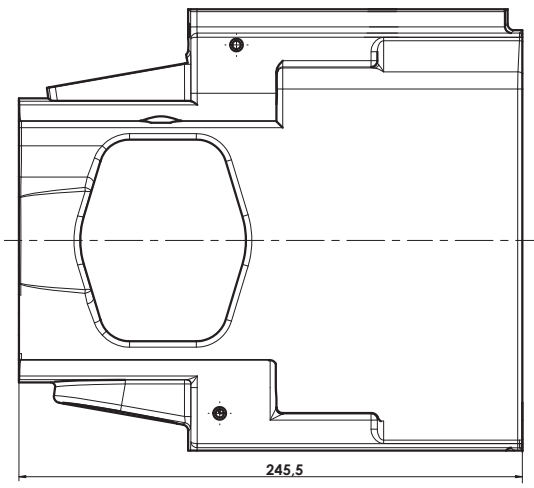
SX


DX

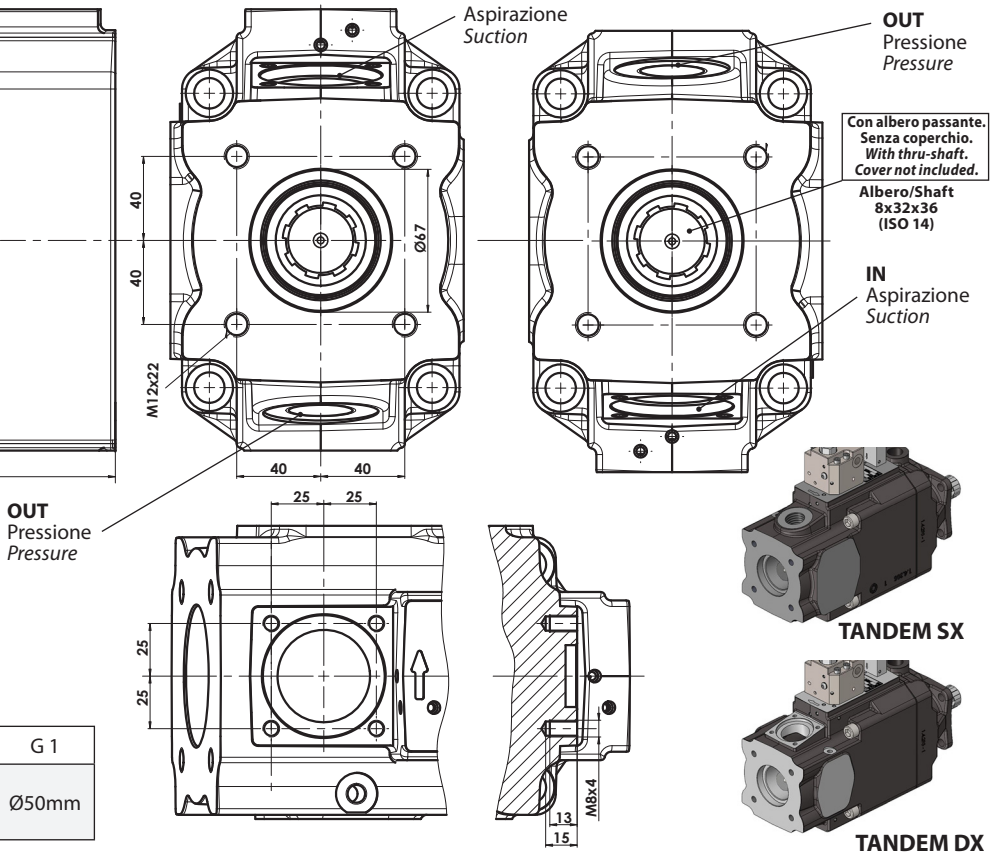
OUT	Pressione / *Pressure*	G 1
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm

Radiale verticale con albero passante (TANDEM)
Vertical radial with thru-shaft

Rotazione destra / *Right rotation*
Con limitazione / *With adjustment*



Rotazione sinistra / *Left rotation*
Con limitazione / *With adjustment*

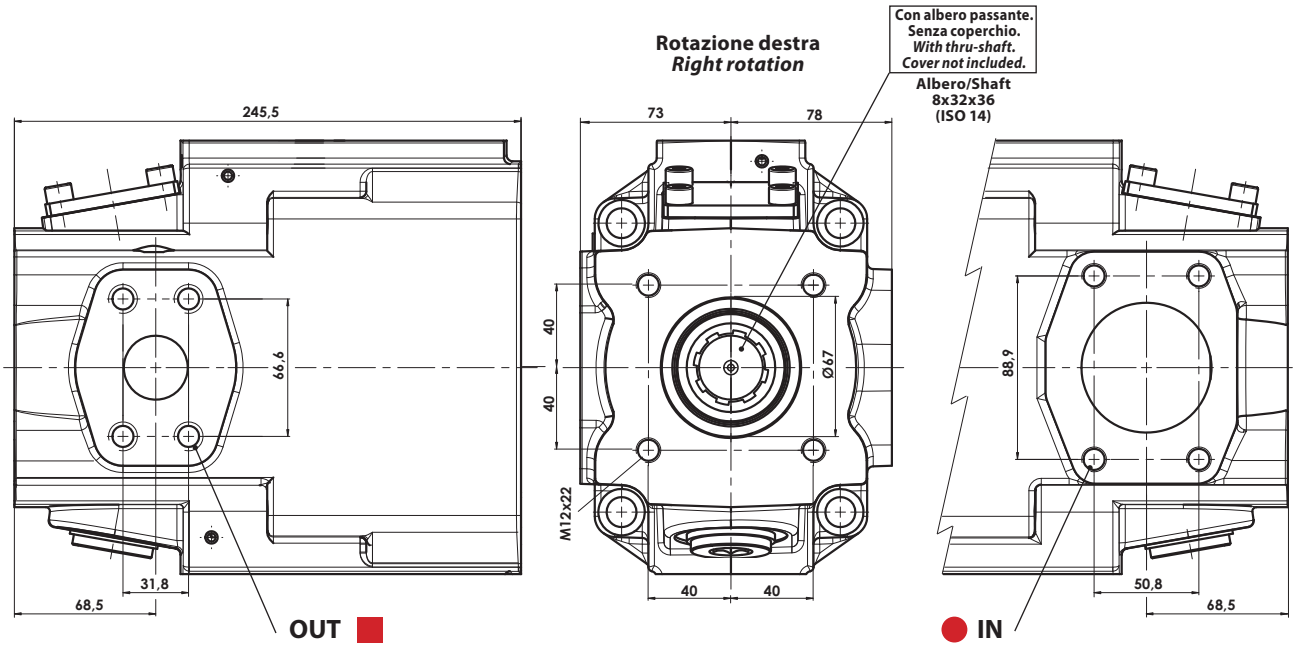


TANDEM SX

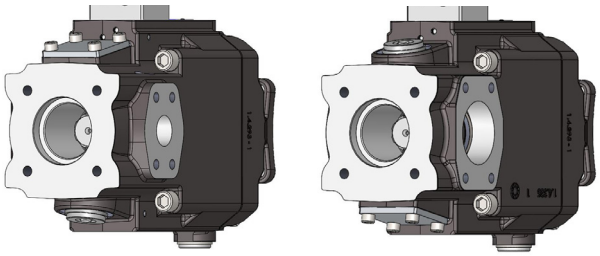
TANDEM DX

OUT	Pressione / *Pressure*	G 1
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm

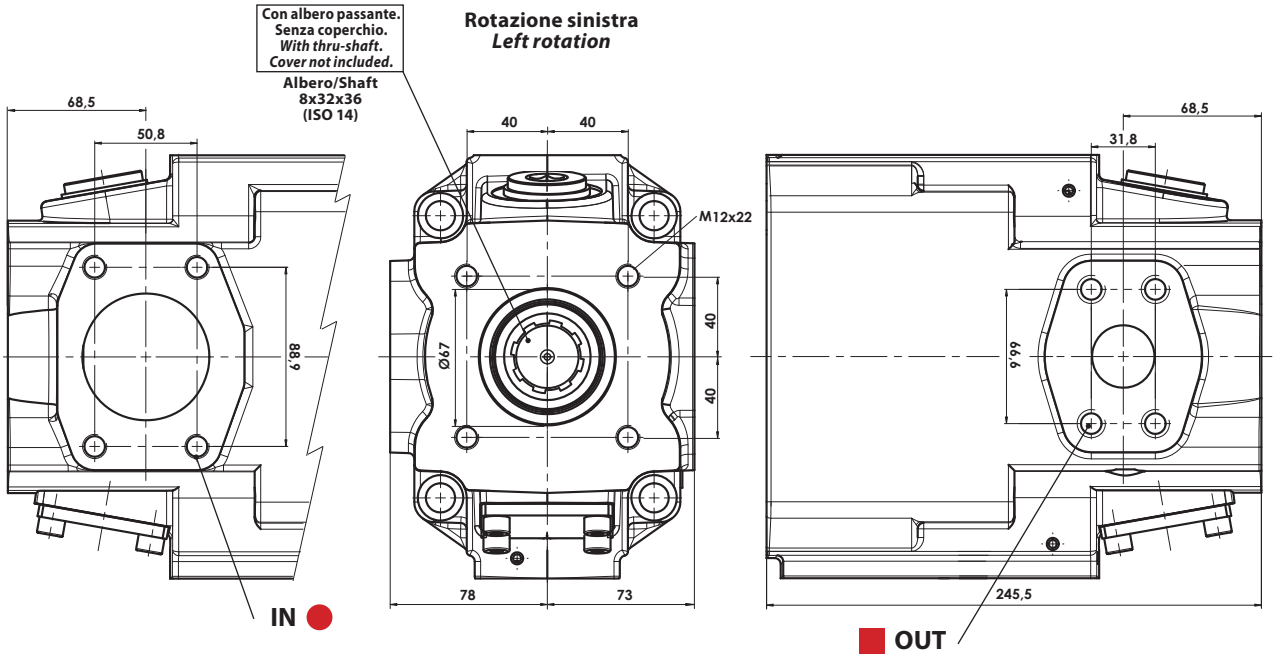
Radiale orizzontale SAE con albero passante (TANDEM)
Horizontal SAE radial with thru-shaft



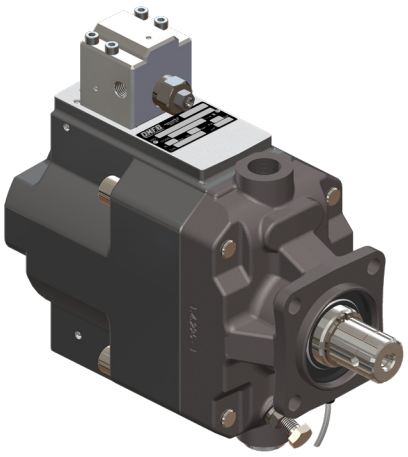
OUT	Pressione *Pressure*	1-1/4" SAE 6000	■ M14
IN	Aspirazione *Suction*	2 1/2" SAE 3000	● M12



TANDEM DX **TANDEM SX**



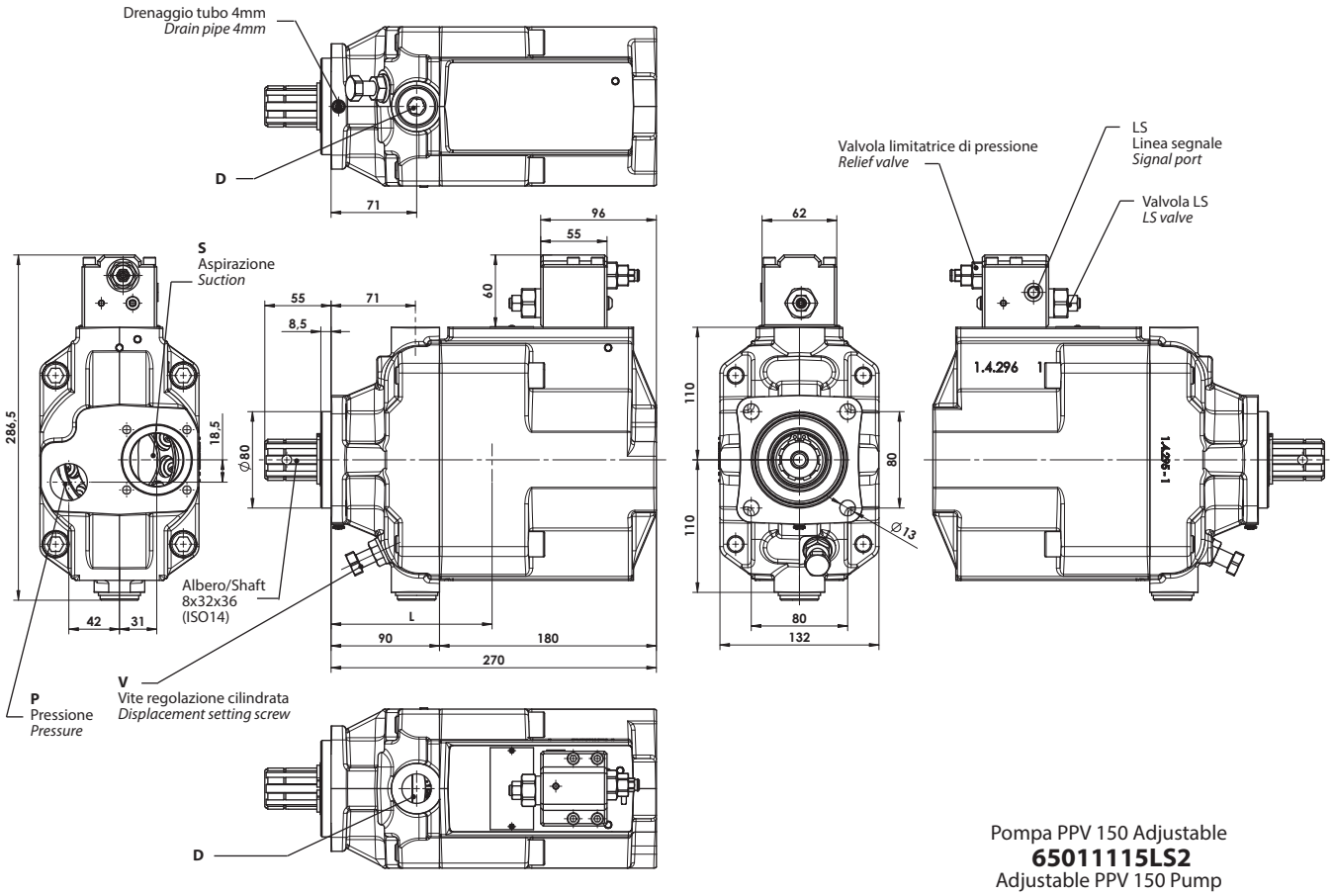
Pompe a cilindrata variabile
Variable displacement pumps
PPV 150 adjustable - AX



Dati tecnici / *Technical data*

		BSPP (GAS)
LS	Blocchetto LS/ *LS block*	G 1/4
D	Drenaggio / *Drain*	G 3/4
OUT	Pressione / *Pressure*	G 1
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50 mm
L	Baricentro / *Center of mass*	145 mm circa/*approx*

Ingombro / *Dimensions*

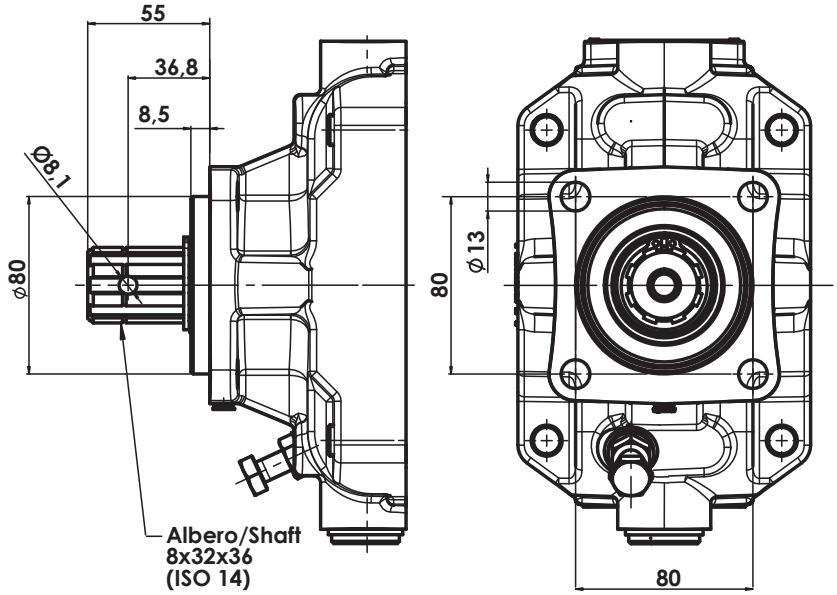


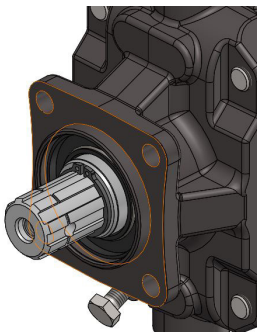
Pompa PPV 150 Adjustable
65011115LS2
Adjustable PPV 150 Pump

L'inversione della rotazione della pompa può essere effettuata solo presso il produttore o distributore autorizzato.
The change of pump rotation can only be carried out at the authorized producer's or distributor's.

Flangiatura anteriore
Front flange
PPV 150 adjustable

ISO 7653 - Ø 80 - 4fori / *holes*



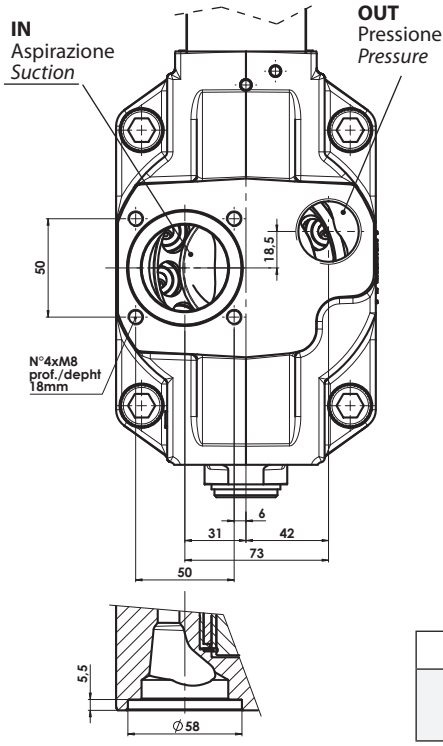


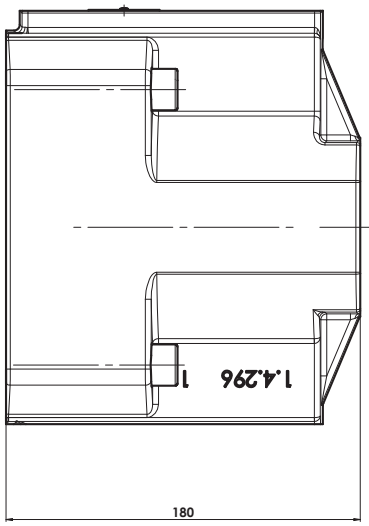
Coppia trasmissibile massima900Nm
Max. torque 900Nm

Fondello posteriore
Rear cover
PPV 150 adjustable

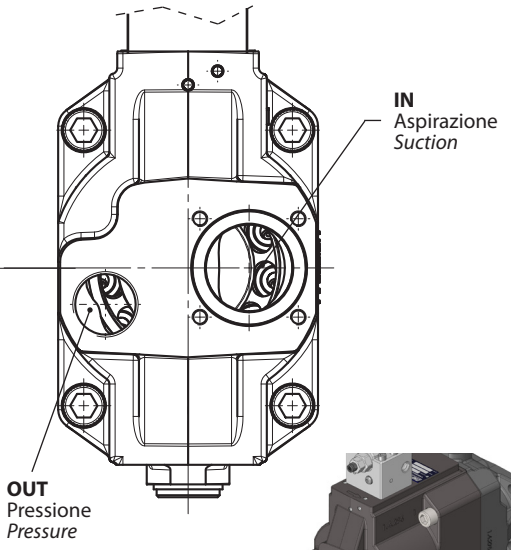
Assiale / *Axial* (STANDARD)

Rotazione destra / *Right rotation*
Con limitazione / *With adjustment*

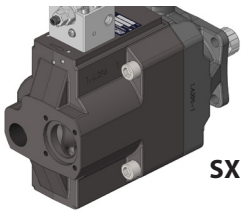




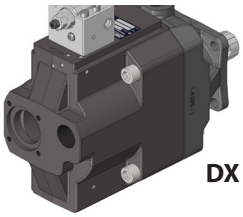
Rotazione sinistra / *Left rotation*
Con limitazione / *With adjustment*



OUT	Pressione / *Pressure*	G 1
IN	Aspirazione / *Suction* Raccordo da ordinare separatamente *Suction fitting to be ordered separately*	Ø50mm

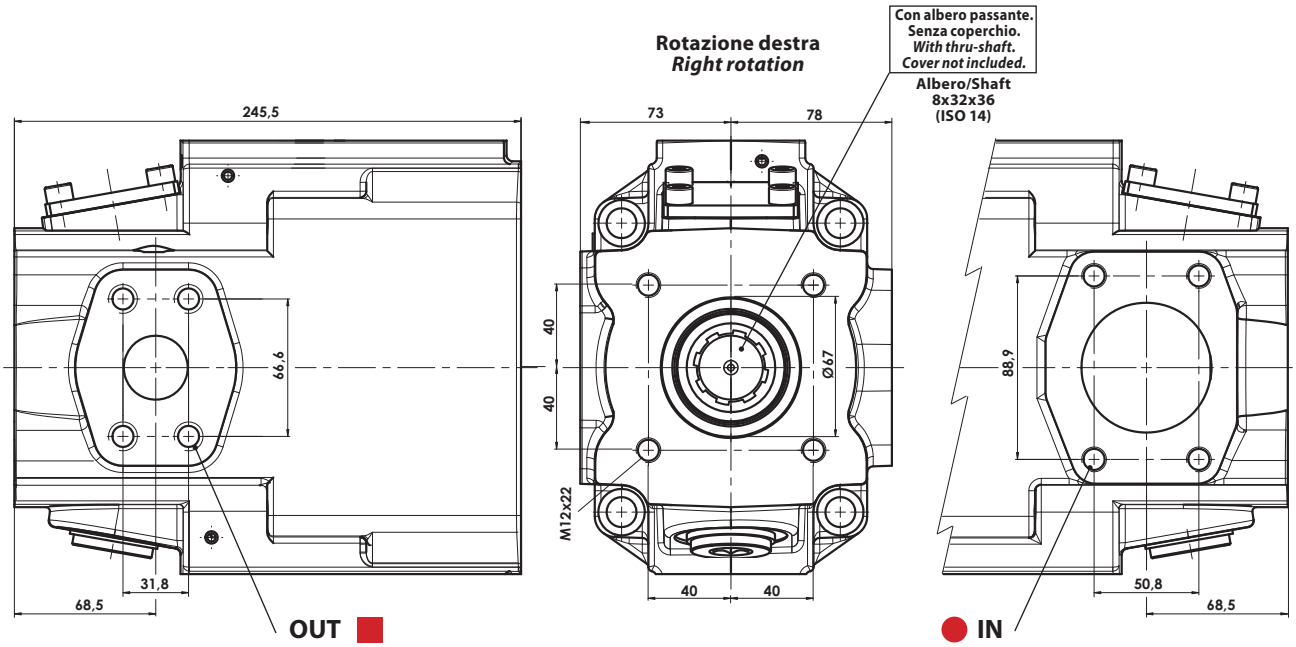


SX

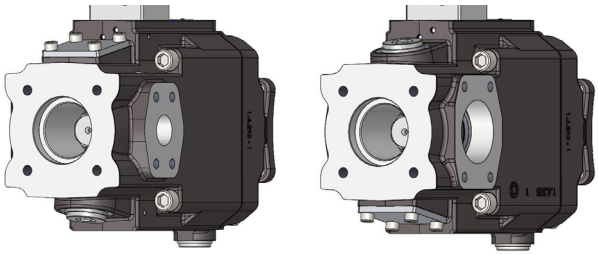


DX

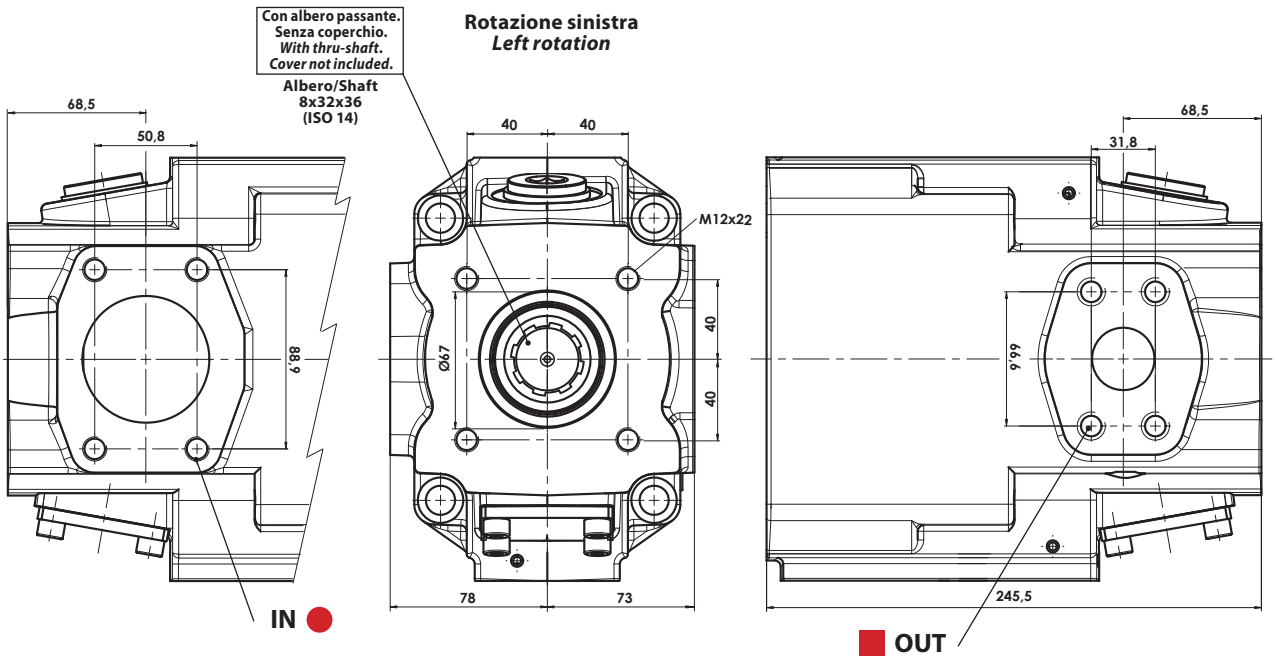
Radiale orizzontale SAE con albero passante (TANDEM)
Horizontal SAE radial with thru-shaft



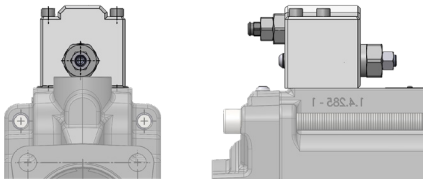
OUT	Pressione *Pressure*	1-1/4" SAE 6000	M14
IN	Aspirazione *Suction*	2 1/2" SAE 3000	M12



TANDEM DX **TANDEM SX**



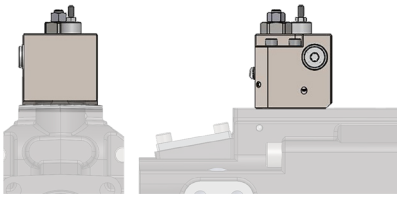
Regolatore Load Sensing (LS) - *Load Sensing regulator (LS)*



Regola la cilindrata della pompa per mantenere una differenza di pressione costante (indipendente dal carico) attraverso una strozzatura.

Adjust the pump displacement to maintain a constant pressure difference (independent of the load) through a costriction. ..... pag. 33

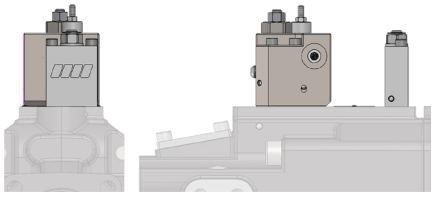
Compensatore di pressione (PI) - *Pressure compensator (PI)*



Compensatore di pressione con pressione impostabile direttamente sulla pompa. Il compensatore di pressione regola la cilindrata della pompa automaticamente per mantenere costante la pressione del sistema in presenza di diversi fabbisogni di portata.

Pressure compensator with adjustable pressure directly on the pump. The pressure compensator adjusts the pump's displacement automatically in order to keep the constant pressure within the system no matter the different flow requirements. ..... pag. 34

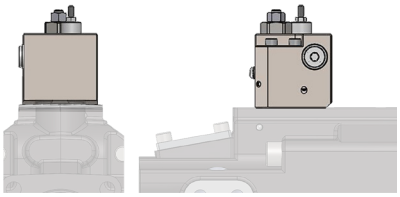
Potenza costante (PW) - *Constant power (PW)*



Il regolatore mantiene costante l'assorbimento di potenza/coppia al variare della pressione, controllando la cilindrata della pompa.

The regulator keeps the power/torque absorption constant as the pressure changes, controlling the displacement of the pump. ..... pag. 35

Regolatore (BE) - *Regulator (BE)*



Regola la cilindrata della pompa per mantenere una differenza di pressione costante (indipendente dal carico) attraverso una strozzatura. Il regolatore viene utilizzato in tutti gli impianti senza depresurizzazione del segnale load sensing.
N.B.: il regolatore con bleed non può essere utilizzato con la versione PW.

Adjust the displacement of the pump to maintain a constant pressure difference (independent of the load) through a choke. the regulator is used in all systems without bleed in the load sensing signal.
N.B.: the regulator with bleed cannot be used with the PW version. ..... pag. 36

Kit conversione (bleed) - *Conversion kit (bleed)* ..... pag. 37

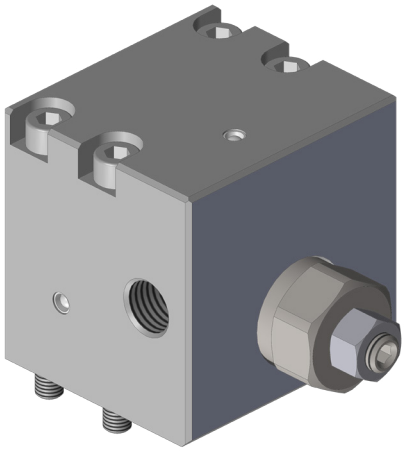
REGOLATORE LOAD SENSING LS
Regolare la pressione differenziale Δp = pressione impianto meno pressione segnale.
L'intervallo di regolazione è 15-50 bar.
Settaggio preimpostato 25 bar ±2%.
Regolazione 15 bar/rev.

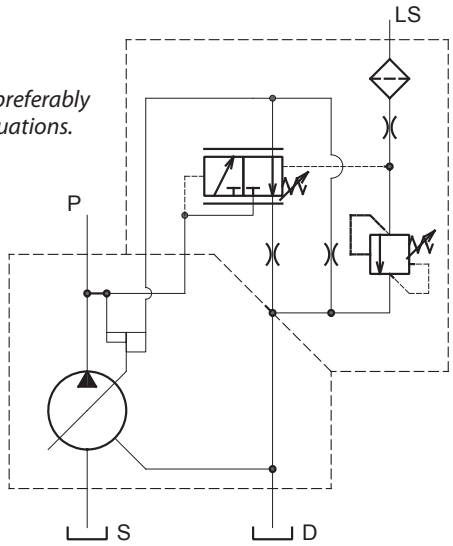
Regolare la pressione max. dell'impianto fra 20 e 350 bar.
Il valore preimpostato della valvola limitatrice di pressione è di 330 bar.
Regolazione 80 bar/rev.
La capacità della linea di segnale LS deve adattarsi al relativo impianto idraulico. La linea di segnale deve essere preferibilmente costituita da un tubo flessibile di diametro idoneo a garantire lo smorzamento di eventuali fluttuazioni del segnale LS.

LS LOADING SENSING CONTROL
Regulate the differential pressure Δp = circuit pressure less signal pressure.
The adjustment range is 15-50 bar.
Default setting 25 bar ±2%.
Setting 15 bar/rev.

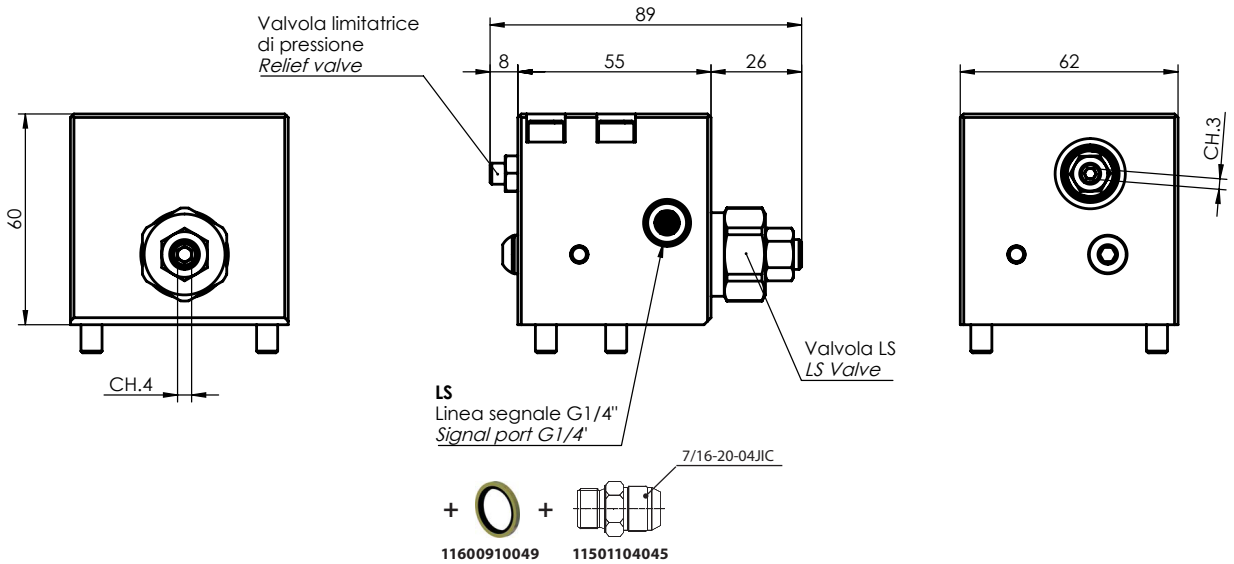
Adjust the maximum pressure of hydraulic circuit between 20 and 350 bar.
The default setting of the pressure relief valve is 330 bar.
Setting 80 bar/rev.
The capacity of the LS line has to be adapted to the related hydraulic circuit. The signal line should preferably consist of a flexible hose having suitable diameter to ensure the damping of possible LS signal fluctuations.

Schema idraulico pompa con regolatore LS
Pump with LS control hydraulik scheme





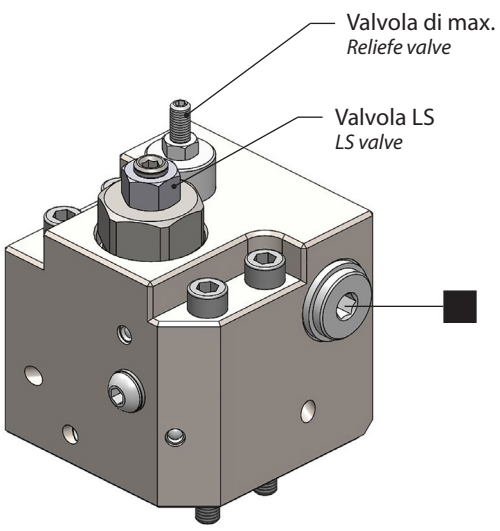
Ingombro / *Dimensions*



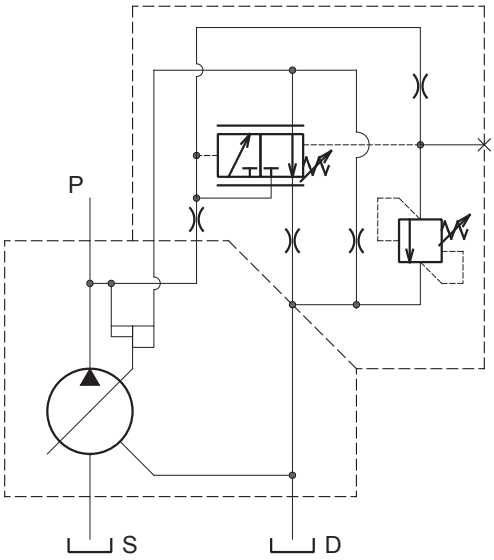
N.B. Disponibile anche versione con funzione "bleed" per sistemi senza la depressurizzazione del segnale LS.
Also available version with "bleed" function for systems without LS signal depressurization.

REGOLATORE PI
Regolare la pressione max. dell'impianto fra 80 e 350 bar.
Il valore preimpostato della valvola limitatrice di pressione è di 330 bar.
Regolazione 80 bar/rev.
Regolatore di pressione con pressione impostabile sulla valvola.
Questo regolatore mantiene una pressione costante nel circuito idraulico al variare della portata.
Il controllo modula la portata della pompa in modo idoneo a mantenere la pressione del sistema al valore impostato sulla valvola di massima. È quindi concepito per sistemi a pressione costante nei quali occorrono diverse portate o come limitazione della pressione a bassa perdita di un sistema idraulico.

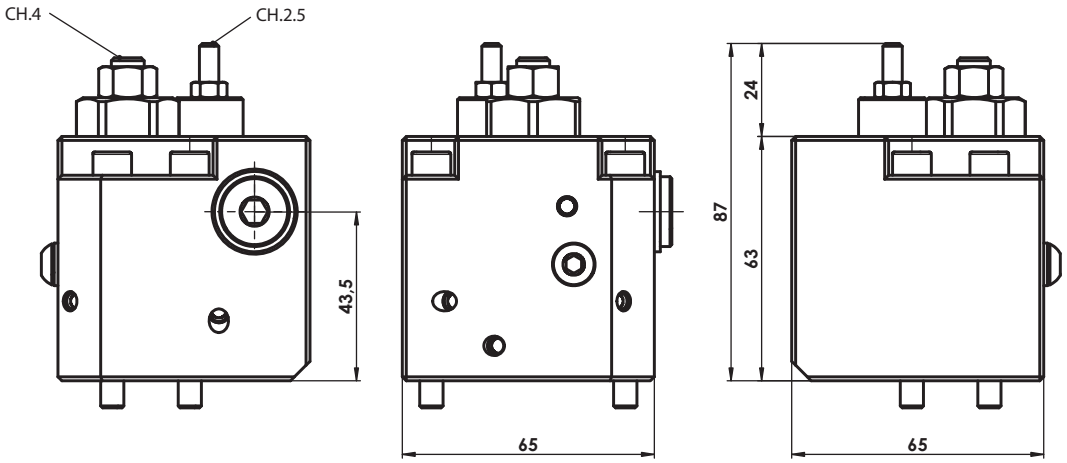
PI CONTROL
Adjust the maximum pressure of hydraulic circuit between 80 and 350 bar.
The default setting of the pressure relief valve is 330 bar.
Setting 80 bar/rev.
Adjustable Pressure control.
This control ensures a constant pressure in the hydraulic circuit by changing the flow.
The control adjusts the flow in such a way to keep constantly the pressure value set at the relief valve.
It is therefore designed for applications with constant pressure where different flow rates are required or as a limitation of low pressure drop within a hydraulic system.



Schema idraulico pompa con regolatore PI
Pump with PI control hydraulik scheme



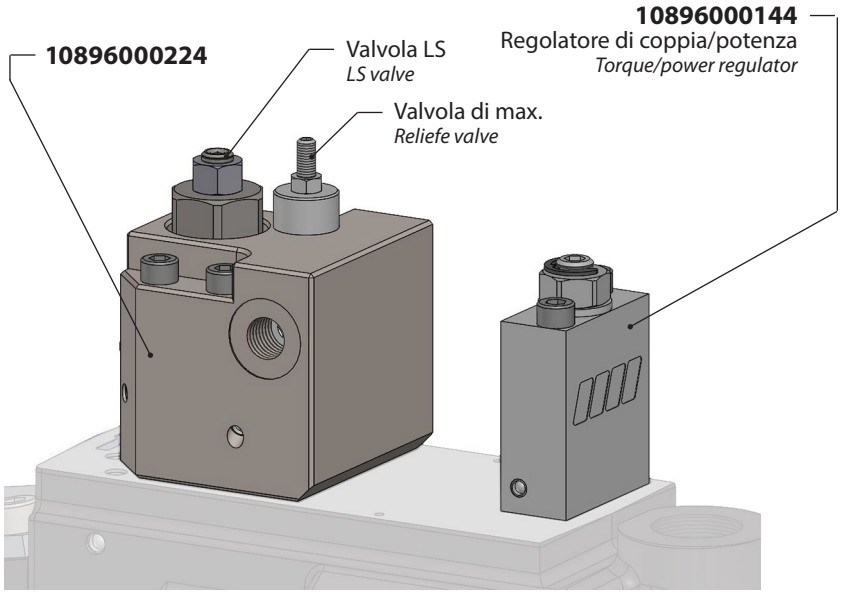
Ingombro / *Dimensions*



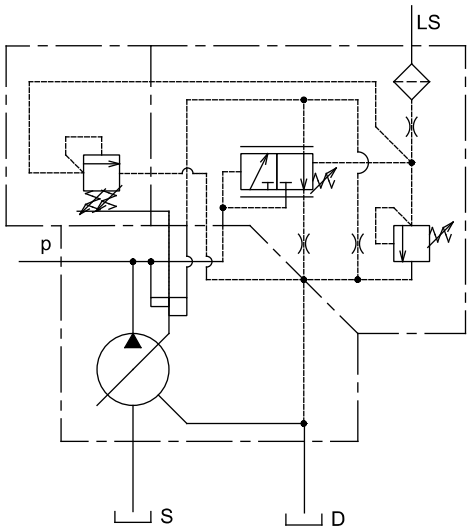
■ Togliendo il tappo indicato, il regolatore si trasforma in Regolatore di pressione con Controllo Remotato.
By removing the indicated cap, the regulator turns into pressure regulator with Remote Control.

REGOLATORE PW (potenza costante)
Regola la coppia massima assorbita con un campo di regolazione tra i 200 e i 700 Nm.
Questo regolatore adatta la cilindrata della pompa in funzione della pressione nell'impianto, in modo che la coppia assorbita non superi il valore impostato in modo che l'albero motore, il motore o la trasmissione siano protetti da sovraccarichi.

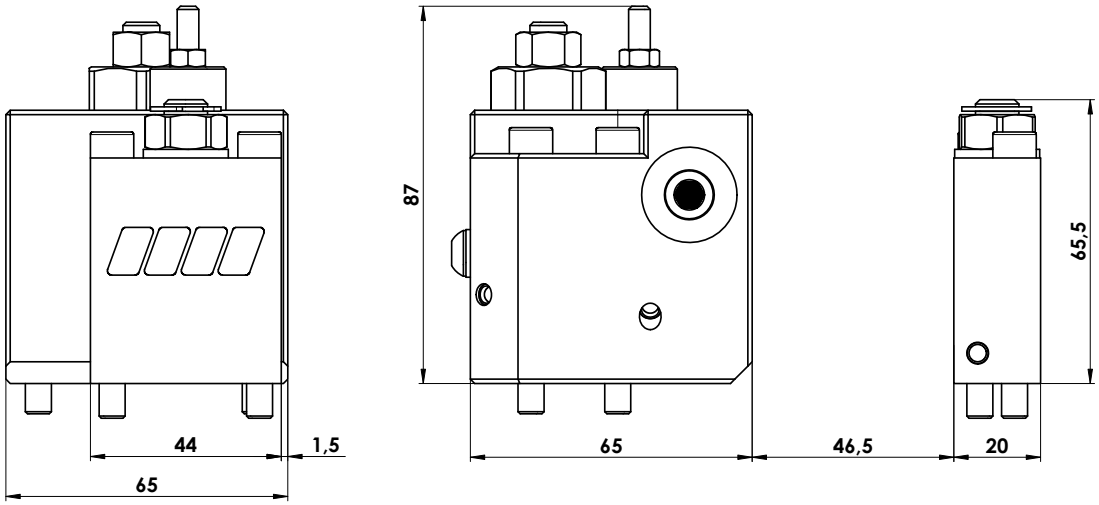
PW CONTROL
It adjusts the maximum absorbed torque with an adjustment range between 200 and 700 Nm.
The regulator adapts the pump displacement according to the pressure in the system, to maintain the pre-adjusted torque value and protect motor shaft, motor or transmission from overloads.

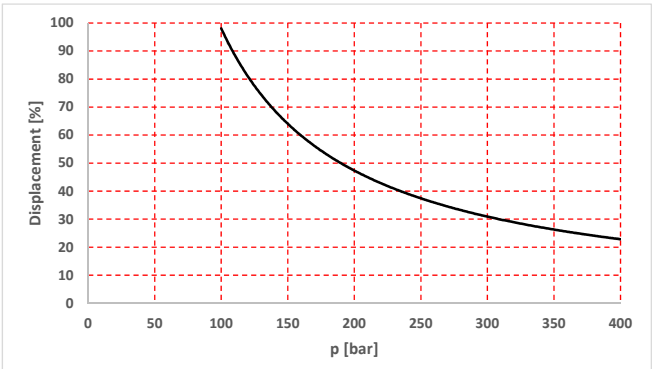


Schema idraulico pompa con regolatore PW
Pump with PW control hydraulik scheme



Ingombro / *Dimensions*





N.B. disponibile anche in versione per sistemi senza segnale load sensing.
also available for systems without load sensing signal

REGOLATORE BE
Regolare la pressione differenziale Δp = pressione impianto meno pressione segnale.
L'intervallo di regolazione è 15-50 bar.
Settaggio preimpostato 25 bar ±2%.
Regolazione 15 bar/rev.

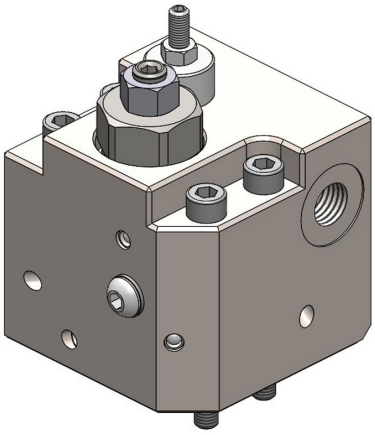
Regolare la pressione max. dell'impianto fra 20 e 350 bar.
Il valore preimpostato della valvola limitatrice di pressione è di 330 bar.
Regolazione 80 bar/rev.
La capacità della linea di segnale LS deve adattarsi al relativo impianto idraulico. La linea di segnale deve essere preferibilmente costituita da un tubo flessibile di diametro idoneo a garantire lo smorzamento di eventuali fluttuazioni del segnale LS.

Regola la cilindrata della pompa per mantenere una differenza di pressione costante (indipendente dal carico) attraverso una strozzatura. il regolatore viene utilizzato in tutti gli impianti senza depresurizzazione del segnale load sensing.
N.B.: il regolatore con bleed non può essere utilizzato con la versione PW.

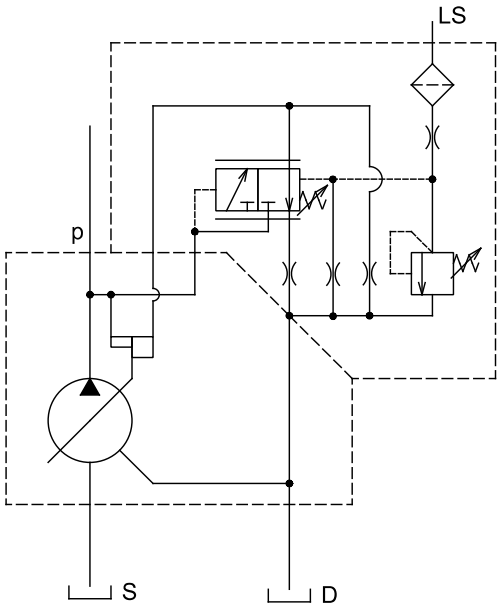
BE CONTROL
Regulate the differential pressure Δp = circuit pressure less signal pressure.
The adjustment range is 15-50 bar.
Default setting 25 bar ±2%.
Setting 15 bar/rev.

Adjust the maximum pressure of hydraulic circuit between 20 and 350 bar.
The default setting of the pressure relief valve is 330 bar.
Setting 80 bar/rev.
The capacity of the LS line has to be adapted to the related hydraulic circuit. The signal line should preferably consist of a flexible hose having suitable diameter to ensure the damping of possible LS signal fluctuations.

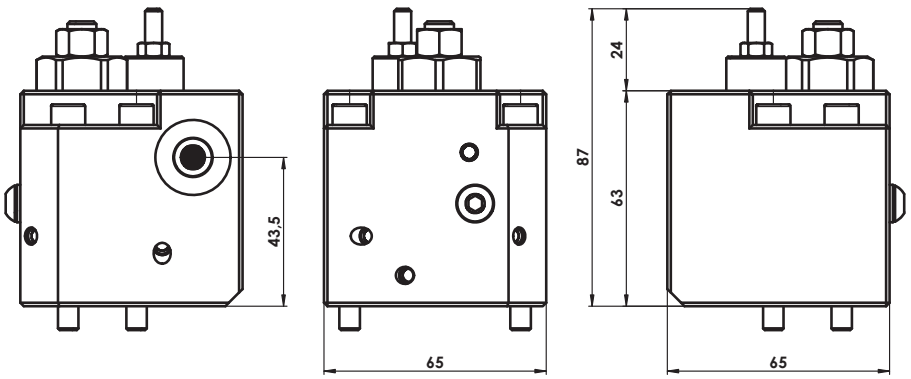
Adjust the displacement of the pump to maintain a constant pressure difference (independent of the load) through a choke. the regulator is used in all systems without depresurizing the load sensing signal.
N.B.: the regulator with bleed cannot be used with the PW version.



Schema idraulico
Hydraulik scheme



Ingombro / *Dimensions*



Kit conversione (bleed)
Conversion kit (bleed)

Kit conversioni / *Conversion kit*

	**10896030013**	Trasforma i regolatori cod. 10896000224 e 10896000233 nella versione 10896000313 **N.B.: il regolatore con bleed non può essere utilizzato con la versione PW** ***Transforms the controllers cod. 10896000224 and 10896000233 in the version 10896000313*** ***N.B.: the regulator with bleed cannot be used with the PW version***	Istruzioni *Instructions*
	**10896030022**	Trasforma il regolatore 10896000224 nella versione 10896000233 *Turns controller 10896000224 into version 10896000233*	

REGOLATORE PE

DISPONIBILE A BREVE
COMING SOON

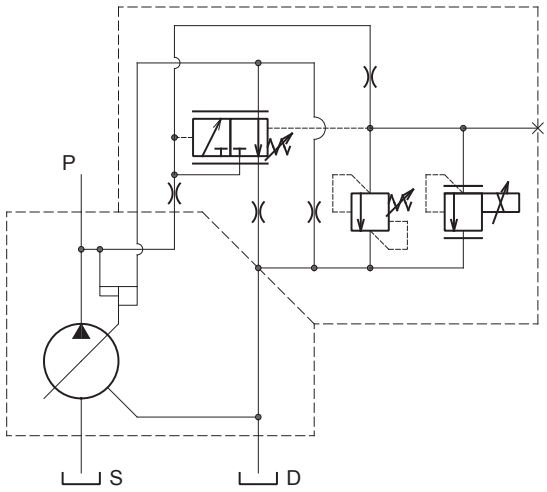
Regolare la pressione minima = pressione impianto meno pressione segnale.
L'intervallo di regolazione è 15-50 bar.
Settaggio preimpostato 25 bar ±2%.
Regolazione 15 bar/rev.

Regolare la pressione max. dell'impianto fra 20 e 350 bar.
Il valore preimpostato della valvola limitatrice di pressione è di 330 bar.
Regolazione 150 bar/rev.
Regolatore di pressione con pressione massima e minima impostabili sulle valvole ed intermedia impostabile elettricamente. Questo regolatore mantiene una pressione costante nel circuito idraulico al variare della portata. Il controllo modula la portata della pompa in modo idoneo a mantenere la pressione del sistema al valore impostato sulla valvola di massima. È quindi concepito per sistemi a pressione costante nei quali occorrono diverse portate: le pressioni massima e minima sono impostabili in modo meccanico, la pressione nel mezzo è regolabile elettricamente. La curva del regolatore ha caratteristica crescente.

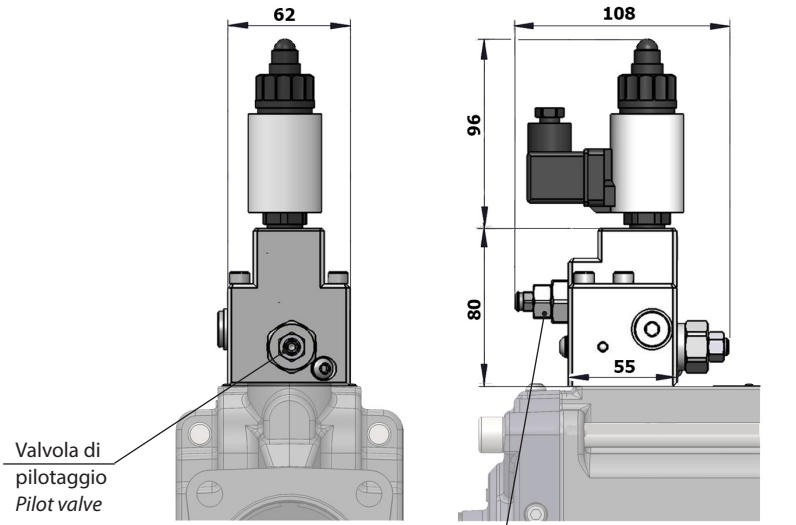
PE CONTROL
Regulate the minimum pressure = circuit pressure less signal pressure.
The adjustment range is 15-50 bar.
Default setting 25 bar ±2%.
Setting 15 bar/rev.

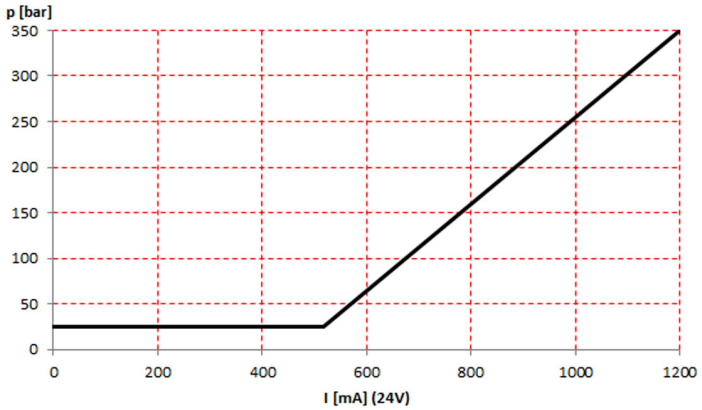
Adjust the maximum pressure of hydraulic circuit between 20 and 350 bar.
The default setting of the pressure relief valve is 330 bar.
Setting 150 bar/rev.
Pressure regulator with minimum and maximum pressure rates adjustable on the valves and with electrically adjustable intermittent pressure. This control ensures a constant pressure in the hydraulic circuit by changing the flow. It is therefore designed for applications with constant pressure where different flow rates are required: minimum and maximum pressure rates are set mechanically while intermediate pressure is electrically controlled.

Ingombro / *Dimensions*



Schema idraulico pompa + PE
Pump + PE hydraulik scheme





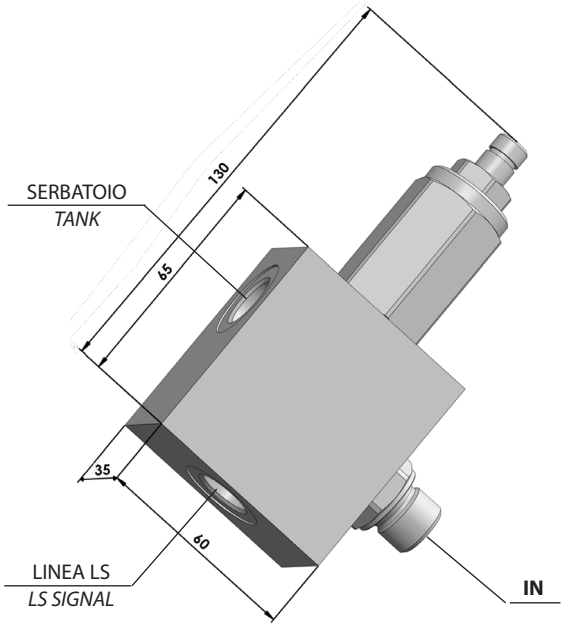
Valvola di flussaggio per circuiti load sensing
Flushing valve for load sensing circuit

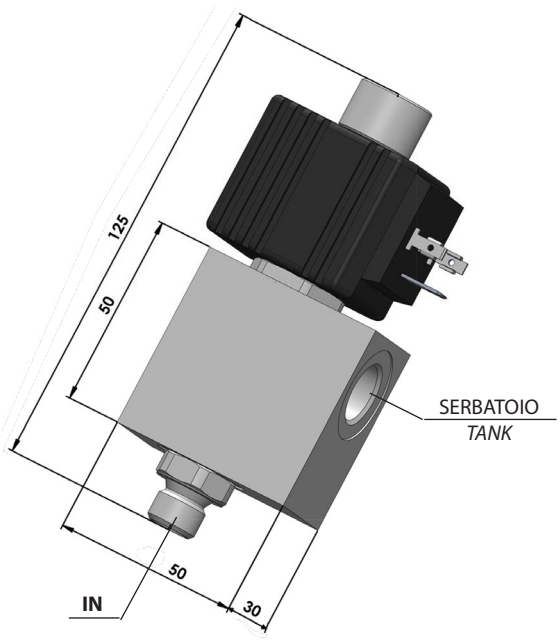
La valvola garantisce una minima circolazione di olio verso scambiatore di calore o serbatoio per proteggere la pompa da surriscaldamento negli impianti in cui la pompa lavora molto tempo in azzeramento di cilindrata (condizione di stand-by). Durante il funzionamento con distributore o blocchi, la valvola viene esclusa automaticamente con comando idraulico o attraverso un comando elettrico la cui logica di controllo è a carico del cliente.

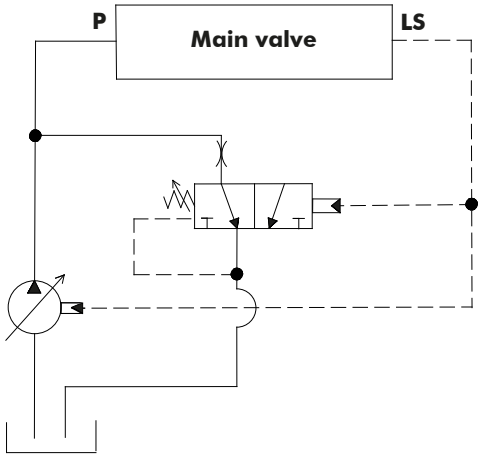
The valve guarantie small flow through the pump to coaling or tank, in order to protects the pump from overheated on the application with long time in stand-by condition. When a load sensing valve function is engaged the flushing valve is disengeged automatically with hydraulic pilot or with electrical pilot by the logic control of customer.

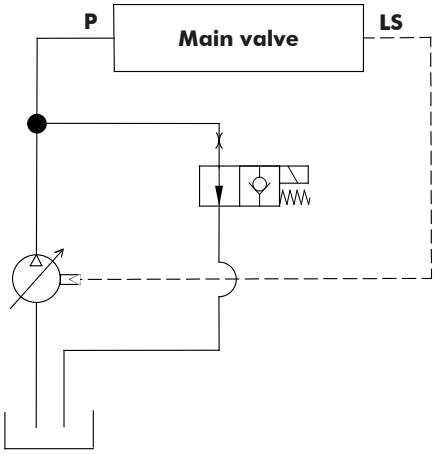
Caratteristiche tecniche:	*Technical charateristichs:*
Portata libera circolazione: 30 l/min	*Flow control: 30 l/min*
Pressione di regolazione: da 2 a 25 bar	*Pilot pressure settings: da 2 a 25 bar*
Pressione massima: 420 bar	*Maximum pressure: 420 bar*
Porte: G1/4	*Ports: G1/4*

Comando idraulico / *Hydraulic pilot* Codice / *Code*	Comando elettrico / *Electrical pilot* Codice / *Code*	
B5001072001BC	**B5001072002BC**	**24V DIN**
	B5001072003BC	**12V DIN**
	B5001072004BC	**24V DEUTCH**
	B5001072005BC	**12V DEUTCH**







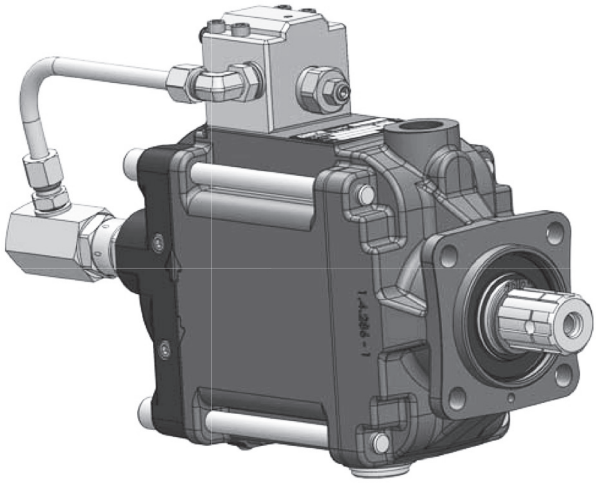


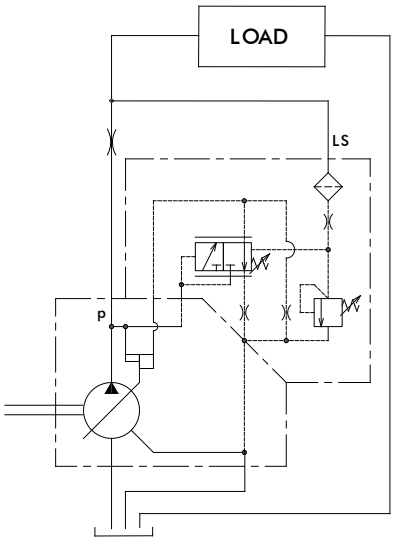
Regolatore a portata costante (CF)

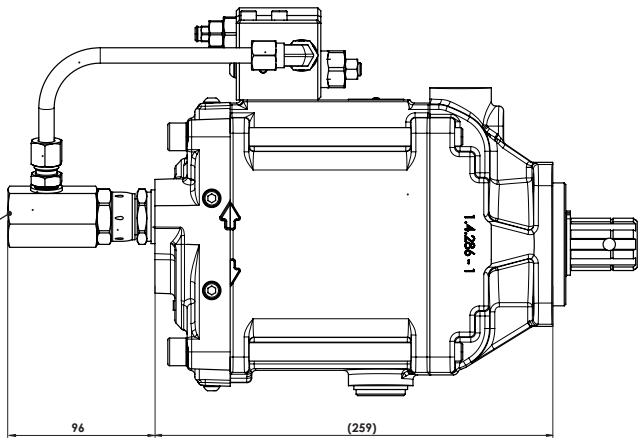
Constant flow control (CF)

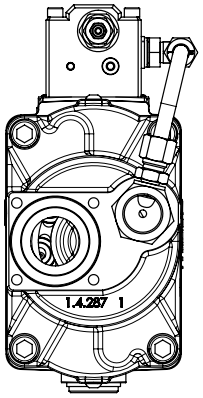
Il regolatore a portata costante garantisce una portata fissa al variare della velocità e del carico sulla pompa, grazie al compensatore load sensing. Il regolatore mantiene costante la differenza di pressione tra monte e valle dello strozzatore sulla linea P. La taratura del regolatore è variabile tra i 15 e 40 bar.

The constant flow control guarantee a fixed flow rate at different pump speed and load. The regulator keeps the pressure margin across the orifice into P line. Setting of pressure margin: 15 to 40 bar.

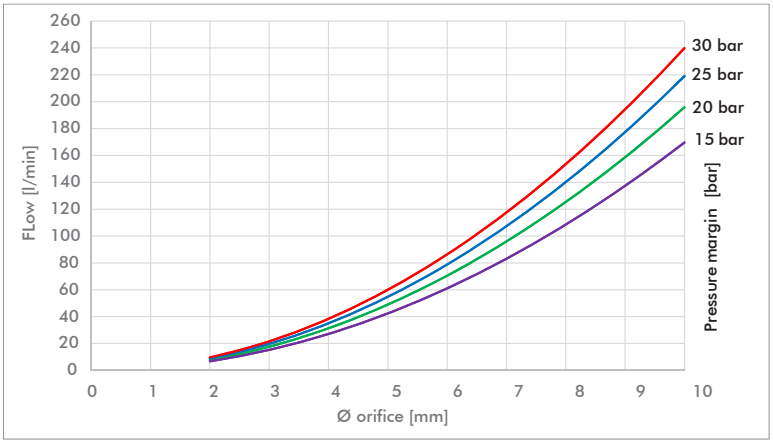








PPV 60	G 3/4
PPV 90-110-130-150	G 1



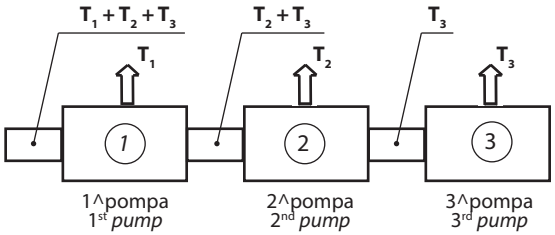
Il regolatore a portata costante è disponibile con diverse taratura di portata, per ogni ulteriore informazioni si prega di contattare il servizio tecnico.

The constant flow regulator is available with different flow settings, for any further information please contact the technical service.

Versione flange ed alberi (lato uscita) - *Flange and shaft version (output side)*							
Codice *Code*	PPV 60	PPV 90 PPV 110	PPV 130 PPV 150	Descrizione *Description*	Flangia *Flange*	Albero *Shaft*	Coppia max. trasmissibile *Max. output torque* T_{OUT} max.
11400000839				Solo coperchio *Only cover*	---	---	---
11465000066				ISO	DIN ISO 7653	8x32x36 DIN ISO 14	800 Nm
11465010064				SAE A	SAE A 2-hole J744 82-2 DIN ISO 3019-1	SAE A J744 (16-4 DIN ISO 3019-1) 9T 16/32 DP	100 Nm
11465010162				SAE B	SAE B 2-hole J744 101-2 DIN ISO 3019-1 SAE B 4-hole J744 101-4 DIN ISO 3019-1 Ruotata di 20° / *20° rotation*	SAE B J744 (22-4 DIN ISO 3019-1) 13T 16/32 DP	210 Nm
11465000100				ISO	DIN ISO 7653	8x32x36 DIN ISO 14	800 Nm
11465010108				SAE A	SAE A 2-hole J744 82-2 DIN ISO 3019-1	SAE A J744 (16-4 DIN ISO 3019-1) 9T 16/32 DP	100 Nm
11465010206				SAE B	SAE B 2-hole J744 101-2 DIN ISO 3019-1 SAE B 4-hole J744 101-4 DIN ISO 3019-1 Ruotata di 20° / *20° rotation*	SAE B J744 (22-4 DIN ISO 3019-1) 13T 16/32 DP	210 Nm
11465010304				SAE BB	SAE B 2-hole J744 101-2 DIN ISO 3019-1 SAE B 4-hole J744 101-4 DIN ISO 3019-1 Ruotata di 20° / *20° rotation*	SAE BB J744 (25-4 DIN ISO 3019-1) 15T 16/32 DP	400 Nm
11465010402				SAE C	SAE C 2-hole J 744 127-2 DIN ISO 3019-1 SAE C 4-hole J 744 127-4 DIN ISO 3019-1	SAE C J744 (32-4 DIN ISO 3019-1) 14T 12/24 DP	640 Nm
11465000137				ISO	DIN ISO 7653	8x32x36 DIN ISO 14	800 Nm
11465010224				SAE B	SAE B 2-hole J744 101-2 DIN ISO 3019-1 SAE B 4-hole J744 101-4 DIN ISO 3019-1 Ruotata di 20° / *20° rotation*	SAE B J744 (22-4 DIN ISO 3019-1) 13T 16/32 DP	210 Nm
11465010322				SAE BB	SAE B 2-hole J744 101-2 DIN ISO 3019-1 SAE B 4-hole J744 101-4 DIN ISO 3019-1 Ruotata di 20° / *20° rotation*	SAE BB J744 (25-4 DIN ISO 3019-1) 15T 16/32 DP	400 Nm
11465010420				SAE C	SAE C 2-hole J 744 127-2 DIN ISO 3019-1 SAE C 4-hole J 744 127-4 DIN ISO 3019-1	SAE C J744 (32-4 DIN ISO 3019-1) 14T 12/24 DP	640 Nm

Prestare attenzione alla coppia massima trasmissibile: se non rispettata, la flangia o l'albero potrebbero venirne danneggiati.
Un supporto addizionale sarebbe opportuno per più pompe combinate.
Possibilità di avere versioni addizionali a richiesta.

Pay attention to the maximum permissible drive torque: flange or shaft may be damage.
An additional support is to be provided for pump combinations.
Additional version on request.



Coppia 1^ pumpa T1
Coppia 2^ pumpa T2
Coppia 3^ pumpa T3

Coppia in ingresso $T_{IN}=T_1+T_2+T_3$
T_{IN} < 900Nm for 6501----------
T_{IN} < 640Nm for 6512 ----------

Coppia in uscita $T_{OUT}=T_2+T_3$
$T_{OUT,\ 1}=T_2+T_3$
$T_{OUT,\ 1} < T_{OUT,\ MAX}$..... vedere tabella

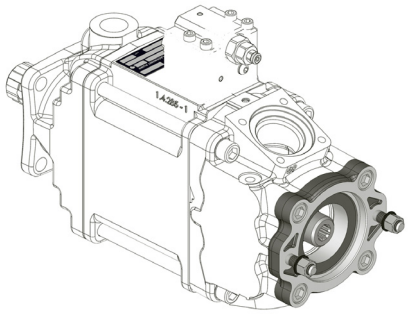
$T_{OUT,\ 2}=T_3$
$T_{OUT,\ 2} < T_{OUT,\ MAX}$..... vedere tabella

Torque at 1st pump T1
Torque at 2nd pump T2
Torque at 3rd pump T3

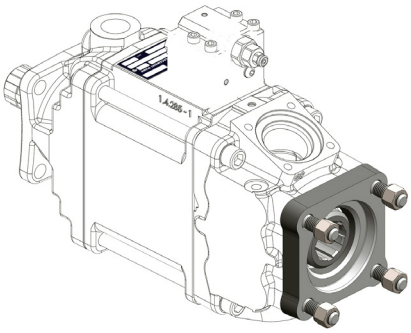
Input torque $T_{IN}=T_1+T_2+T_3$
T_{IN} *< 900Nm for 6501* ----------
T_{IN} *< 640Nm for 6512* ----------

Outpur torque $T_{OUT}=T_2+T_3$
$T_{OUT,\ 1}=T_2+T_3$
$T_{OUT,\ 1} < T_{OUT,\ MAX}$..... *see table*

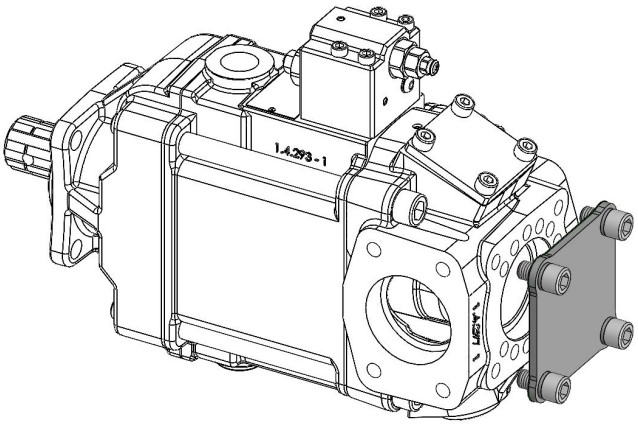
$T_{OUT,\ 2}=T_3$
$T_{OUT,\ 2} < T_{OUT,\ MAX}$..... *see table*



11465010064
Applicazione PPV60 tandem / Pompa SAE A Z9
(coppia trasmissibile 100Nm)
PPV tandem 60 size / SAE A Z9 pump adaptor
(max. allowed torque 100Nm)

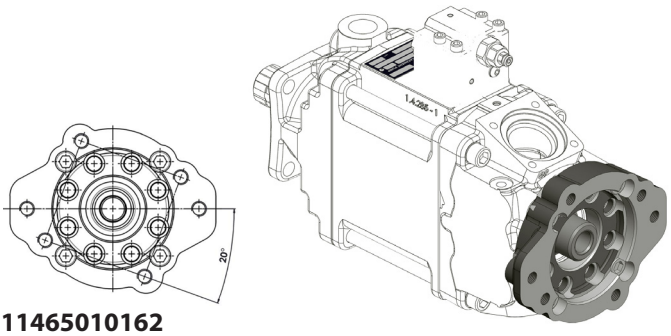


11465000066
Applicazione PPV60 tandem / Pompa ISO 7653
(coppia trasmissibile 800Nm)
PPV tandem 60 size / ISO 7653 pump adaptor
(max. allowed torque 800Nm)

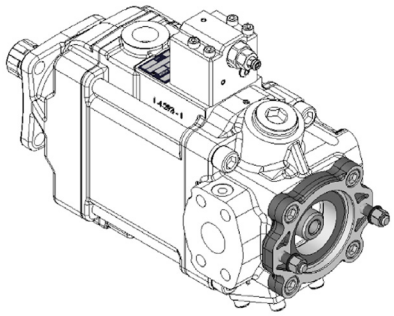


11400000839
Coperchio di chiusura
Cover

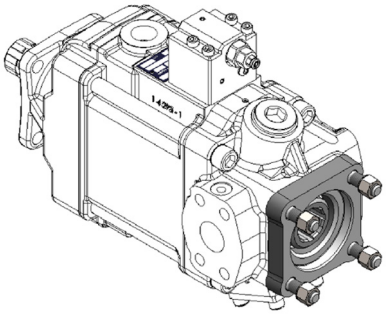
N.B. Con l'applicazione di questo coperchio, è possibile trasformare una pompa **TANDEM con albero passante**, in una pompa **SINGOLA**.
*N.B. With the application of this cover, it is possible to transform a **TANDEM pump** with a through shaft, into a **SINGLE pump**.*



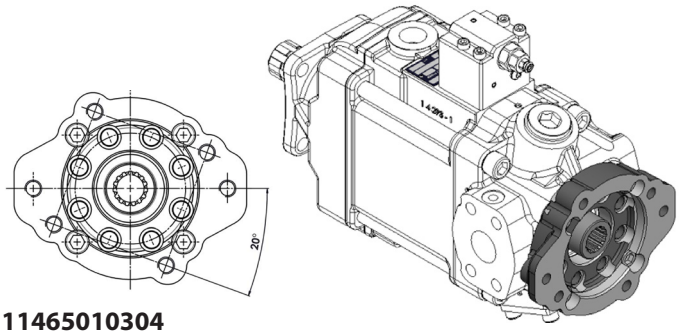
11465010162
Applicazione PPV60 tandem / Pompa SAE B Z13
(coppia trasmissibile 210Nm)
PPV tandem 60 size / SAE B Z13 pump adaptor
(max. allowed torque 210Nm)



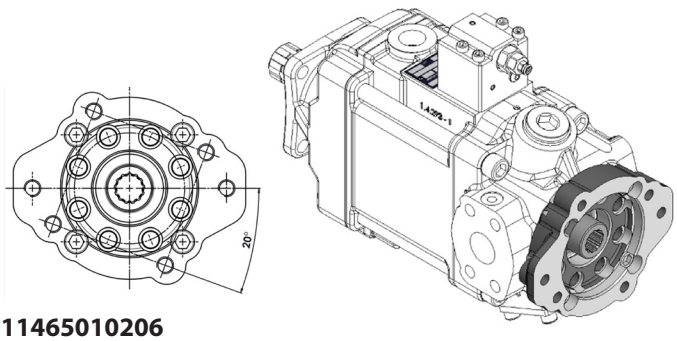
11465010108
Applicazione PPV tandem 90-110 / Pompa SAE A Z9
(coppia trasmissibile 100Nm)
PPV tandem 90-110 size / SAE A Z9 pump adaptor
(max. allowed torque 100Nm)



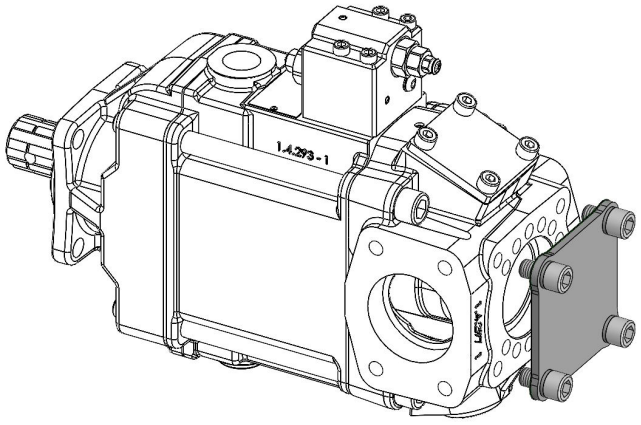
11465000100
Applicazione PPV tandem 90-110 / Pompa ISO 7653
(coppia trasmissibile 800Nm)
PPV tandem 90-110 size / ISO 7653 pump adaptor
(max. allowed torque 800Nm)



11465010304
Applicazione PPV tandem 90-110 / Pompa SAE BB Z15
(coppia trasmissibile 400Nm)
PPV tandem 90-110 size / SAE BB Z15 pump adaptor
(Max. allowed torque 400Nm)

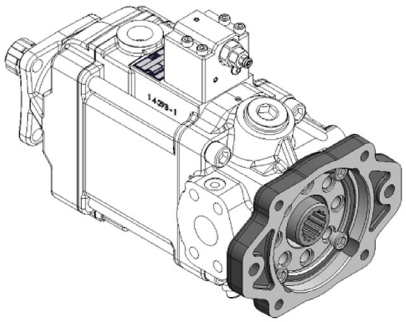


11465010206
Applicazione PPV tandem 90-110 / Pompa SAE B Z13
(coppia trasmissibile 210Nm)
PPV tandem 90-110 size / SAE B Z13 pump adaptor
(max. allowed torque 210Nm)

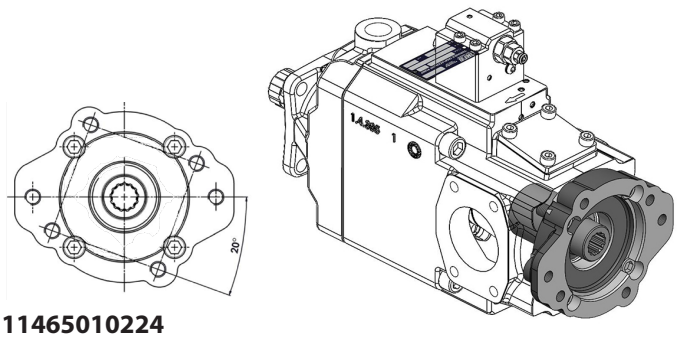


11400000839
Coperchio di chiusura
Cover

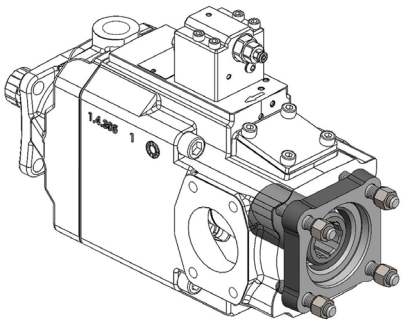
N.B. Con l'applicazione di questo coperchio, è possibile trasformare una pompa **TANDEM con albero passante**, in una pompa **SINGOLA**.
*N.B. With the application of this cover, it is possible to transform a **TANDEM pump** with a through shaft, into a **SINGLE pump**.*



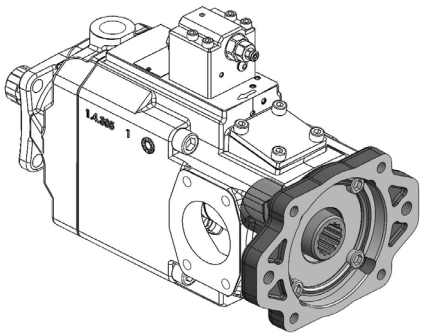
11465010402
Applicazione PPV tandem 90-110 / Pompa SAE C Z14
(coppia trasmissibile 640Nm)
PPV tandem 90-110 size / SAE C Z14 pump adaptor (Max. allowed torque 640Nm)



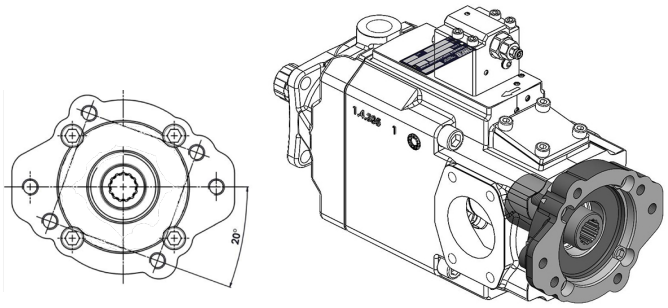
11465010224
Applicazione PPV tandem 130-150 / Pompa SAE B Z13
(coppia trasmissibile 210 Nm)
PPV tandem 130-150 size / SAE B Z13 pump adaptor
(max. allowed torque 210 Nm)



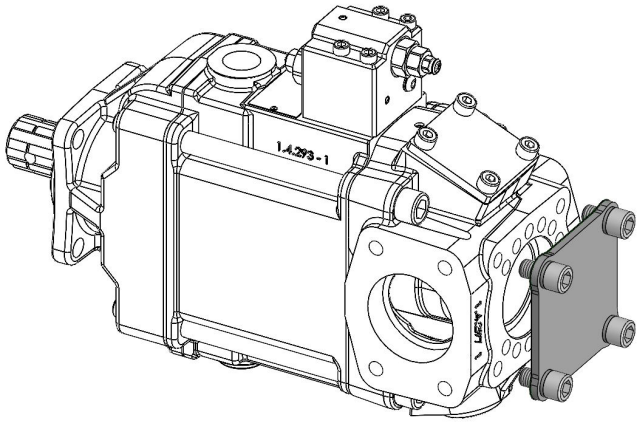
11465000137
Applicazione PPV tandem 130-150 / Pompa ISO 7653
(coppia trasmissibile 800 Nm)
PPV tandem 130-150 size / ISO 7653 pump adaptor
(Max. allowed torque 800 Nm)



11465010420
Applicazione PPV tandem 130-150 / Pompa SAE C Z14
(coppia trasmissibile 640 Nm)
PPV tandem 130-150 size / SAE C Z14 pump adaptor
(Max. allowed torque 640 Nm)

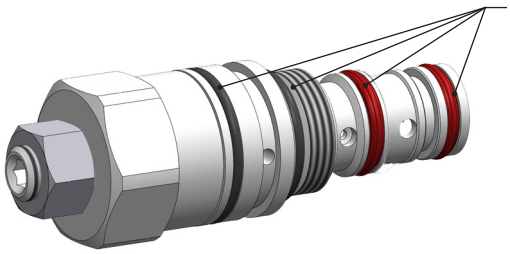


11465010322
Applicazione PPV tandem 130-150 / Pompa SAE BB Z15
(coppia trasmissibile 400 Nm)
PPV tandem 130-150 size / SAE BB Z15 pump adaptor
(Max. allowed torque 400 Nm)



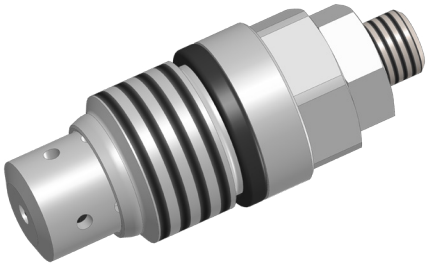
11400000839
Coperchio di chiusura
Cover

N.B. Con l'applicazione di questo coperchio, è possibile trasformare una pompa **TANDEM con albero passante**, in una pompa **SINGOLA**.
*N.B. With the application of this cover, it is possible to transform a **TANDEM pump** with a through shaft, into a **SINGLE pump**.*



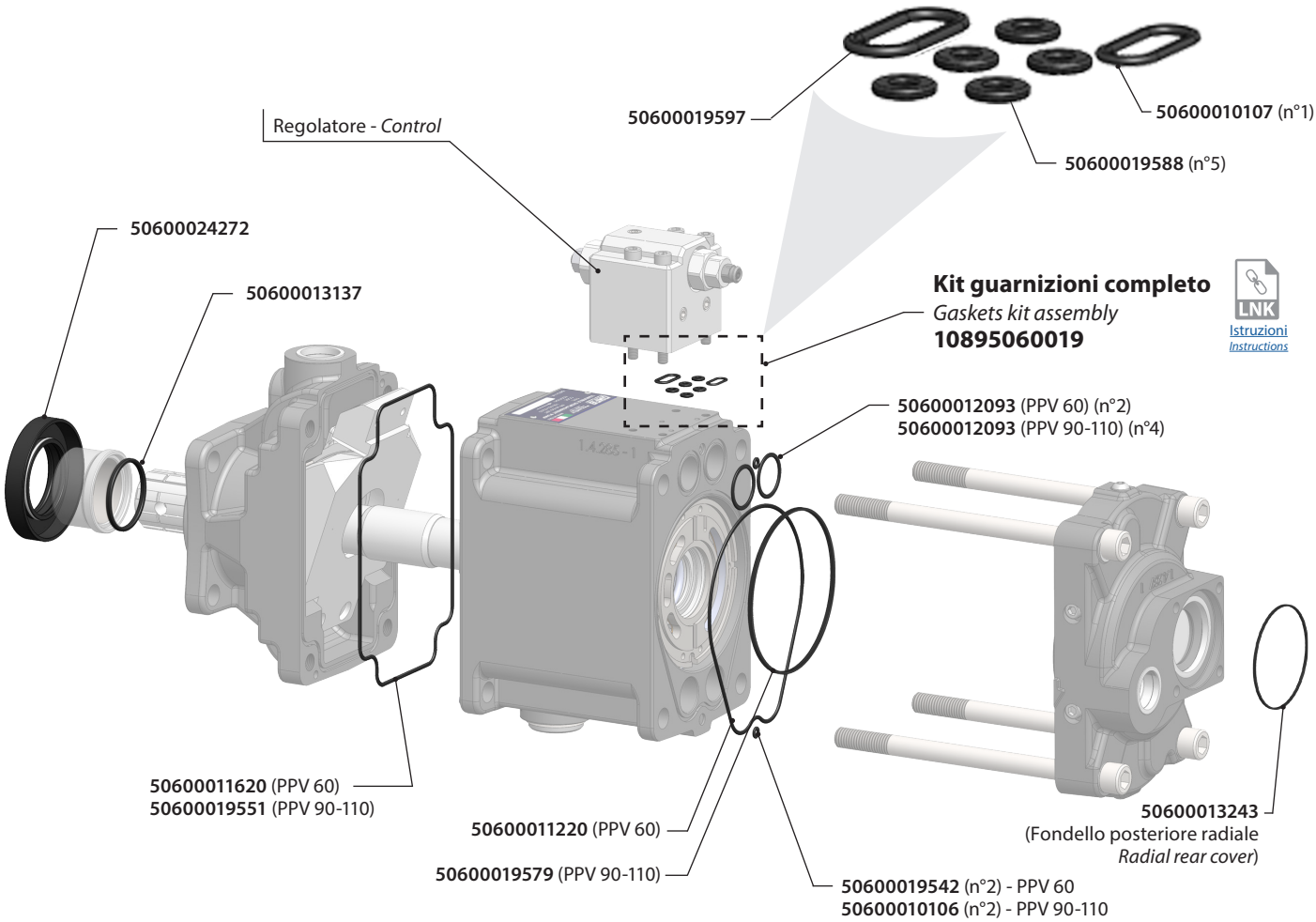
Kit guarnizioni
Gaskets kit
10895060028

Valvola LS
LS valve
10896090100



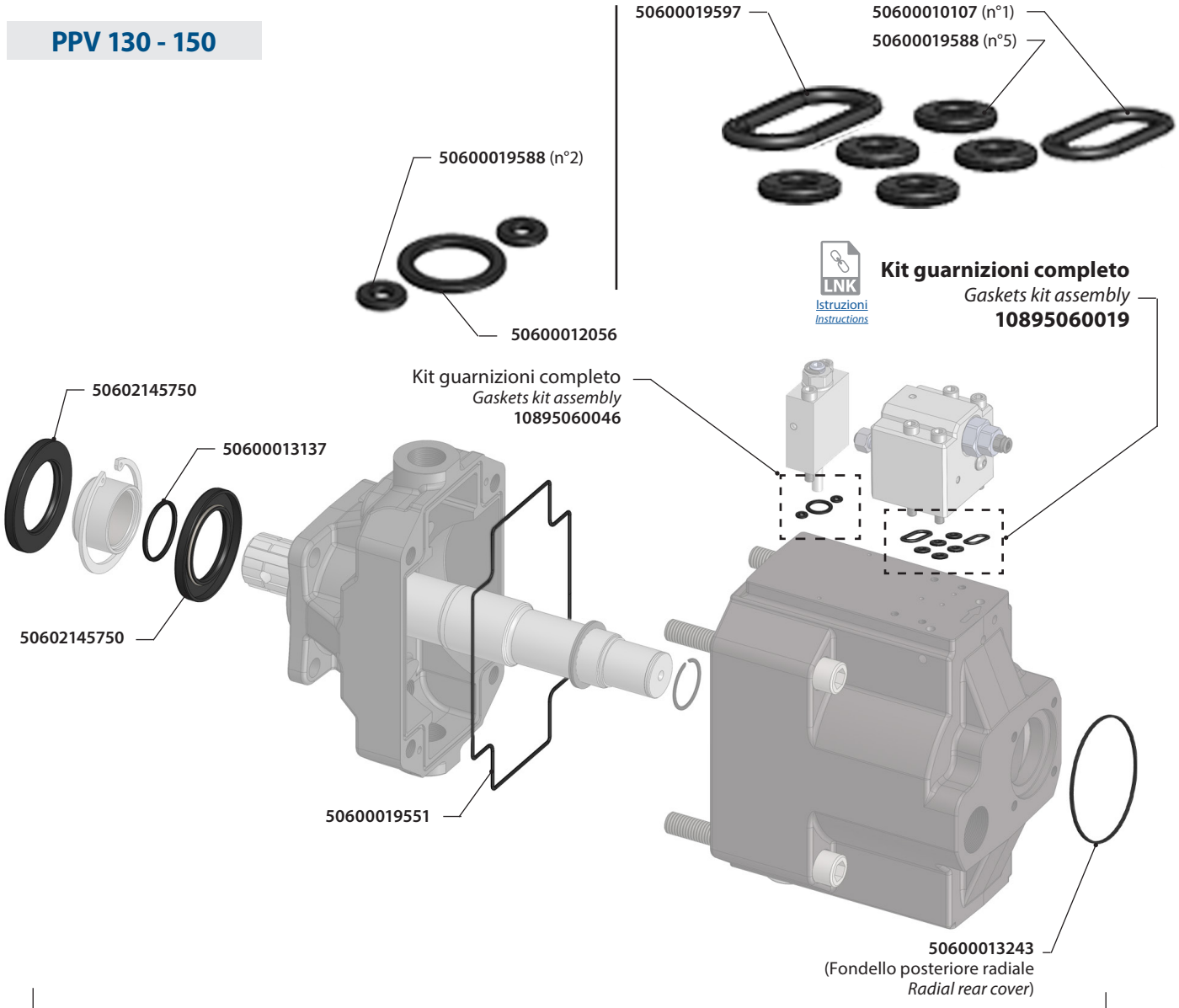
Valvola limitatrice
di pressione
Relief valve
13490300460

PPV 60-90-110



Kit guarnizioni POMPA completo - *PUMP gaskets kit assembly*
10895060608 (PPV 60) / **10895060751** (PPV 90-110)

PPV 130 - 150



Kit guarnizioni pompa completo
Pump gaskets kit assembly
10895061303 (PPV 130 - 150)

Ricambi piatto distributore
Port plate spare parts

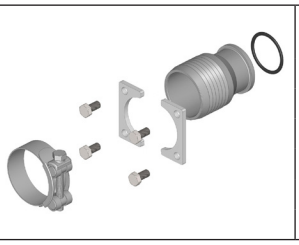
Tipo pompa *Pump type*		Kit ricambio piatto distributore *Port plate spare part kit*
PPV 60	DX	10896020604
	SX	10896010606
PPV 90	DX	10896020908
	SX	10896010900
PPV 110	DX	10896021103
	SX	10896011105

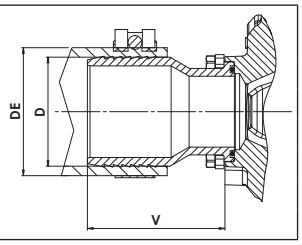
L'inversione della rotazione delle pompe PPV130-PPV150, può essere effettuata solo presso il produttore o distributore autorizzato.
The change of pump rotation for PPV130-PPV150, can only be carried out at the authorized producer's or distributor's.

DX = Piastra di distribuzione rotazione destrorsa / *Port plate for clockwise rotation*
SX = Piastra di distribuzione rotazione sinistrorsa / *Port plate for counter rotation*

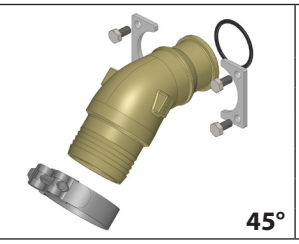
Raccordi aspirazione / *Suction fittings*

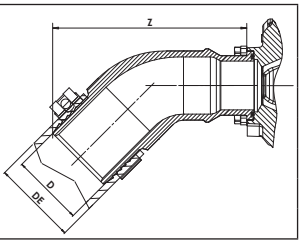
Codice *Code*	D mm	DE mm	V mm	Peso *Weigth* Kg
15511200507	50	60-63	59	0,59
15511200516	50	64-67	59	0,6
15511200605	60	68-73	79	0,77
15511200632	63	74-79	79	0,8
15511200767	76	86-91	94	1



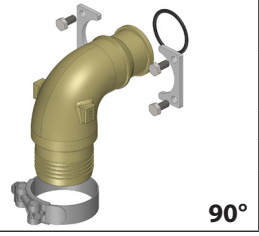


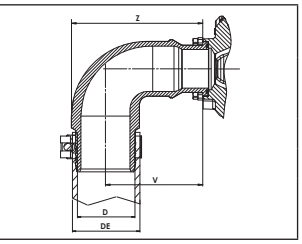
Codice *Code*	D mm	DE mm	V mm	Peso *Weigth* Kg
15511245504	50	60-63	141	1
15511245513		64-67		
15511245602	60	68-73	161	1,4
15511245639	63	74-79	163	1,7
15511245764	76	86-91	167	2,1



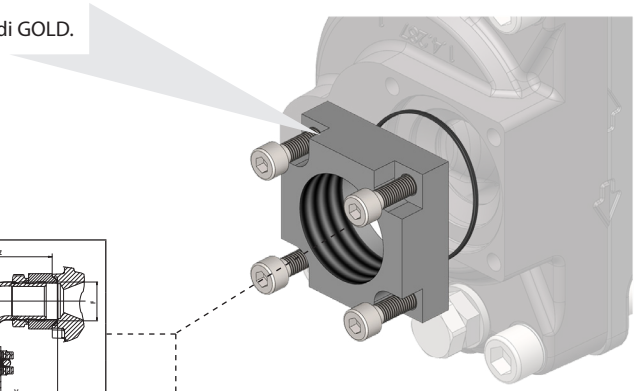


Codice *Code*	D mm	DE mm	V mm	Z mm	Peso *Weigth* Kg
15511290509	50	60-63	94	120	1,1
15511290518		64-67			
15511290607	60	68-73	103	139	1,5
15511290634	63	74-79	103	139	1,9
15511290769	76	86-91	103	140	2,3



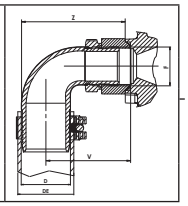


15511300408
Kit flangia foro filettato G1-1/2, per montaggio raccordi GOLD.
Flange kit G1-1/2 threaded hole, for mounting GOLD fittings.



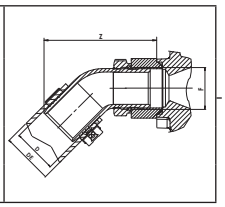
Codice *Code*	F ISO 228	D mm	DE mm	V mm	Z mm	Peso *Weigth* Kg
15510000592	G1-1/2	50	60-63	85	114	0,99
15510000609			64-67			1
15510000654		60	68-73	88	123	1,06





Codice *Code*	F ISO 228	D mm	DE mm	Z mm	Peso *Weigth* Kg
15509000540	G1-1/2	50	60-63	133	0,79
15509000559			64-67		0,82
15509000611		60	68-73	153	1





Codifica versioni
Versions coding

650 **1** **1** **1** **06** **LS** **1**

Famiglia / *Family*
650 : ISO 7653 - Ø 80 - 4fori / *holes*
651 : ISO 3019-1 SAE C - 4fori / *holes - i=114,5*

Albero / *Shaft*
1 : DIN 5462 8x32x36 (ISO14)
2 : SAE C - 14T 12/24 32-4

Porte / *Ports*
1 : BSPP (GAS)
5 : UNF

Fondello posteriore / *Rear cover*
1 AX : Assiale / *Axial* **(STANDARD)**
2 RV : Radiale verticale SENZA albero passante / *Radial vertical WITHOUT thru-shaft*
3 PV : Radiale verticale CON albero passante / *Radial vertical WITH thru-shaft* **(TANDEM)**
4 RO : Radiale orizzontale SAE SENZA albero passante / *SAE radial horizontal WITHOUT thru-shaft*
5 PO : Radiale orizzontale SAE CON albero passante / *SAE radial horizontal WITH thru-shaft* **(TANDEM)**

Cilindrata / *Displacement*
06 60 cc
09 90 cc
11 110 cc
13 130 cc
15 150 cc

Regolatore / *Control*
LS : LS Load sensing
PI : Pressione idraulica / *Hydraulic pressure*
PE : Pressione elettrica / *Electric pressure*
PW : Regolatore a potenza costante / *Power control*
BE : Regolatore differenza pressione costante
Constant pressure difference

Rotazione
Limitazione cilindrata
Rotation
Displacement adjustment
1 : DESTRA nessuna limitazione
RIGHT no adjustment
2 : DESTRA con limitazione **(ADJUSTABLE)**
RIGHT with adjustment
6 : SINISTRA nessuna limitazione
LEFT no adjustment
7 : SINISTRA con limitazione **(ADJUSTABLE)**
LEFT with adjustment

Le versioni **ADJUSTABLE**, prevedono una vite di regolazione posteriore che limita la cilindrata della pompa a valori inferiori a quella nominale.
*The **ADJUSTABLE** versions consists of a rear setting screw that limits the displacement of the pumps to lower values than the nominal one.*



Le pompe con il **FONDELLO POSTERIORE** serie **AX - RV - PV** possono montare i raccordi di aspirazione codice 155xxxxxxxx elencati a pagina 47. I raccordi sono da ordinare separatamente alla pompa.
*Pumps with the **AX - RV - PV REAR COVER** can be fitted with the suction fittings code 155xxxxxxxx listed on page 47. Fittings are to be ordered separately at the pump.*



Le pompe con il **FONDELLO POSTERIORE** serie **PO - PV (TANDEM)** possono montare le applicazioni codice 114650xxxxx elencateda pagina 41. Le applicazioni sono da ordinare separatamente alla pompa.
*Pumps with the **PO - PV (TANDEM) series REAR COVER** can mount the applications code 114650xxxxx listed from page 41. Applications are to be ordered separately at the pump.*