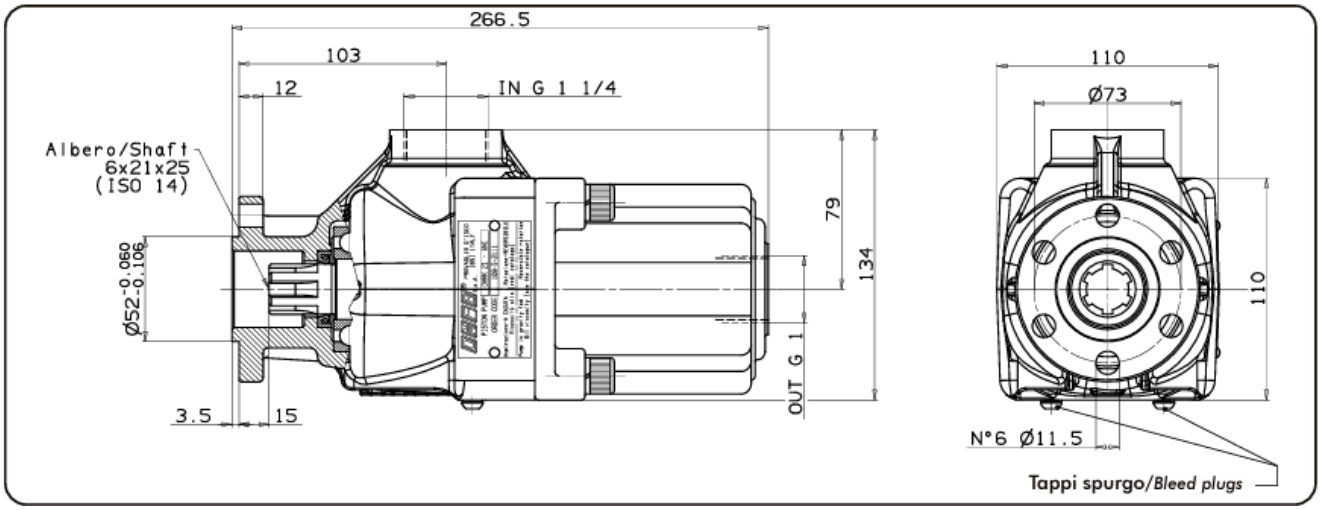
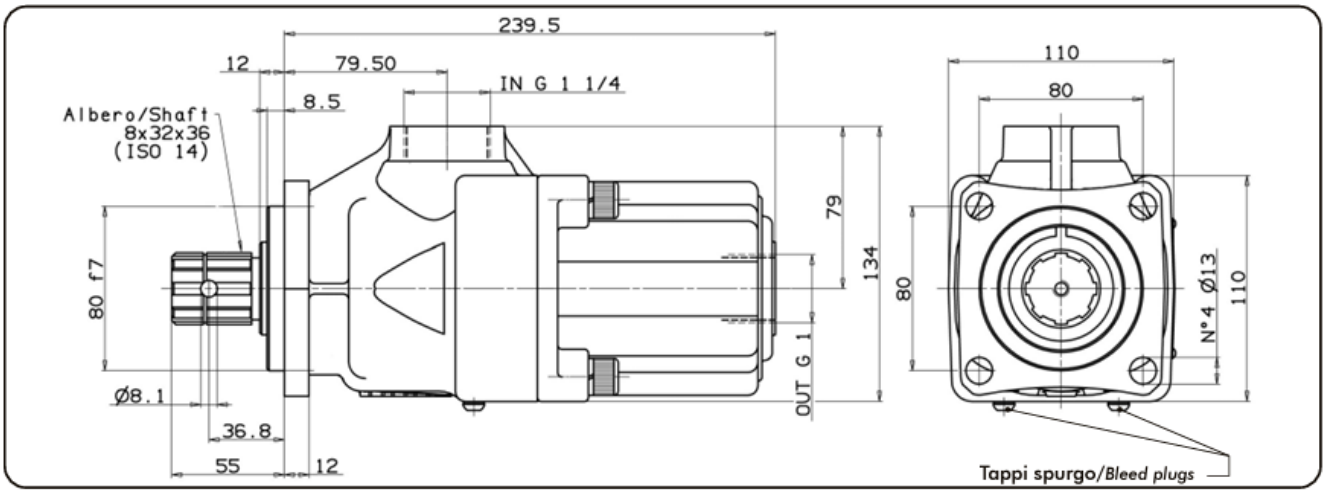
PISTON PUMPS

1800 022 831

www.heavyhydraulics.com.au

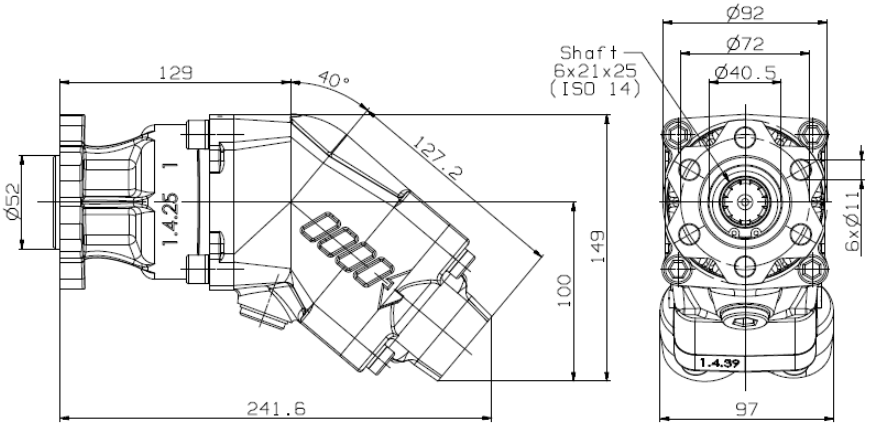


Pump type	Code	Displacement cm³/rev	Pressure Max bar	Pressure Peak bar	Max speed rpm	Weight kg
DARK-21	10800502111	20,25	350	400	1800	13,9
DARK-28	10800502817	27				13,9
DARK-35	10800503512	33,75				13,8
DARK-42	10800504217	40,5				13,7
DARK-48	10800504815	47,25				13,6
DARK-52	10800505216	51,97				13,6
DARK-55	10800505510	54	300	350	1500	13,5
DARK-60	10800505912	59,3				13,4



Pump type	Code	Displacement cm³/rev	Pressure Max bar	Pressure Peak bar	Max speed rpm	Weight kg
DARK-21	10800502120	20,25	350	400	1800	14,8
DARK-28	10800502826	27				14,5
DARK-35	10800503521	33,75				14,4
DARK-42	10800504226	40,5				14,3
DARK-48	10800504824	47,25				14,2
DARK-52	10800505225	51,97				14,2
DARK-55	10800505529	54	300	350	1500	14,2
DARK-60	10800505921	59,3				14,2

Dimensions



TECHNICAL FEATURES

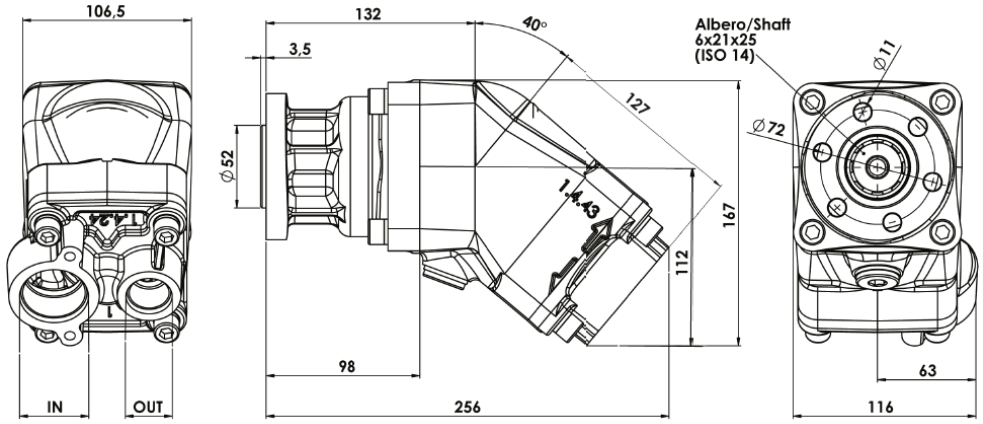
Pump type	Displacement	Pressure		Speed			Min. speed	Weight
	cm³/rev	P1 bar	P3 bar	V0 rpm	V1 rpm	V2 rpm	rpm	kg
HDS-12	12.62	350	400	3000	2300	3000	300	8,3
HDS-17	16.98							8,3
HDS-25	25.12							8,4
HDS-34	33.80							8,3

P1 = *Max. continuous pressure* (100%)
P3 = *Max. peak pressure* (6 sec.max)

V0 = *Max. continuous speed without load*
V1 = *Max. continuous speed*
V2 = *Max. intermittent speed*

Pump type	Rotation		IN	OUT	IN	OUT
	Right	Left	ISO 228	ISO 228	SAE	SAE
HDS-12	60600210123	60600210129	G 1	G 3/4		
HDS-17	60600210173	60600210179				
HDS-25	60600210253	60600210259				
HDS-34	60600210343	60600210349				

Dimensions



TECHNICAL FEATURES

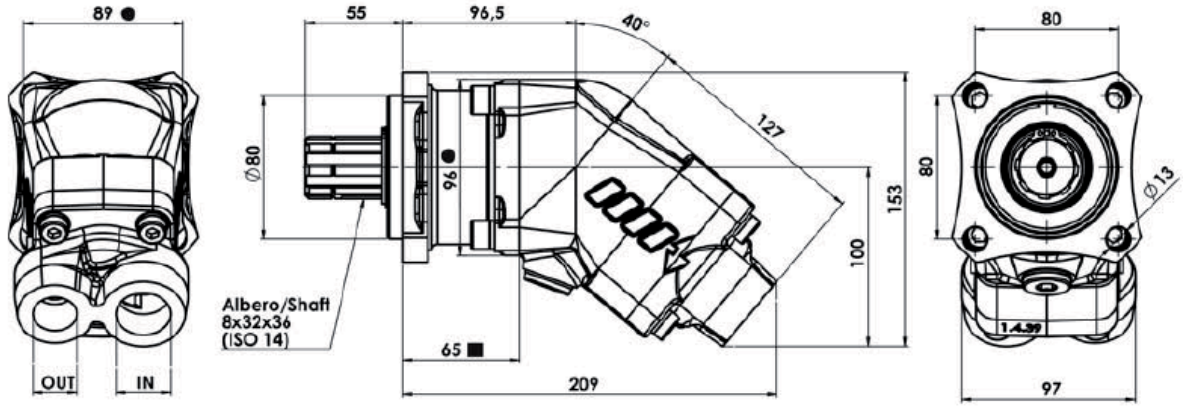
Pump type	Displacement	Pressure		Speed			Min. speed	Weight
	cm³/rev	P1 bar	P3 bar	V0 rpm	V1 rpm	V2 rpm	rpm	kg
HDS-40	41.25	350	400	2700	1900	2500	300	11,6
HDS-47	47.13							11,7
HDS-55	56.70	320	340					11,6
HDS-64	63.56	280	300					11,5

P1 = *Max. continuous pressure* (100%)
P3 = *Max. peak pressure* (6 sec.max)

V0 = *Max. continuous speed without load*
V1 = *Max. continuous speed*
V2 = *Max. intermittent speed*

Pump type	Rotation		IN	OUT	IN	OUT
	Right	Left	ISO 228	ISO 228	SAE	SAE
HDS-40	60600210403	60600210409	G 1 1/4"	G 3/4"		
HDS-47	60600210473	60600210479				
HDS-55	60600210553	60600210559				
HDS-64	60600210643	60600210649				

Dimensions



TECHNICAL FEATURES

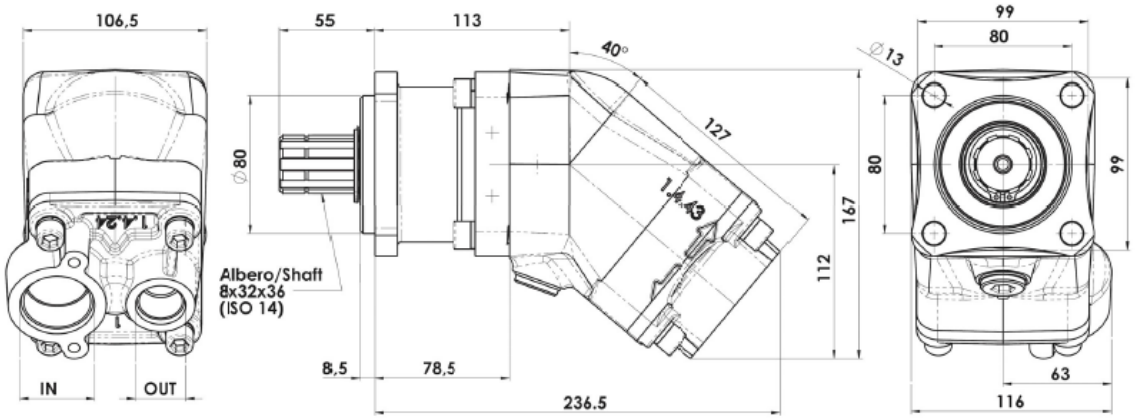
Pump type	Displacement	Pressure		Speed			Min. speed	Weight
	cm³/rev	P1 bar	P3 bar	V0 rpm	V1 rpm	V2 rpm	rpm	kg
HDS-12	12.62	350	400	3000	2300	3000	300	8.8
HDS-17	16.98							8.6
HDS-25	25.12							8,8
HDS-34	33.80							8,6

P1=*Max. continuous pressure* (100%)
P3=*Max. peak pressure* (6 sec.max)

V0=*Max. continuous speed without load*
V1=*Max. continuous speed*
V2=*Max. intermittent speed*

Pump type	Rotation		IN	OUT	IN	OUT
	Right	Left	ISO 228	ISO 228	SAE	SAE
HDS-12	60100110123	60100110129	G 1	G 3/4		
HDS-17	60100110173	60100110179	G 1	G 3/4		
HDS-25	60100110253	60100110259	G 1	G 3/4		
HDS-34	60100110343	60100110349	G 1	G 3/4		

Dimensions



TECHNICAL FEATURES

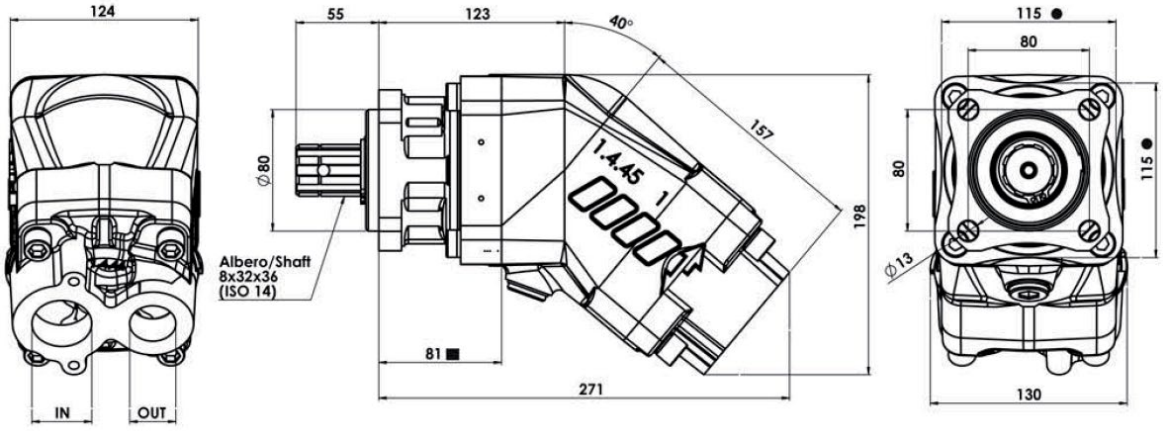
Pump type	Displacement	Pressure		Speed			Min. speed	Weight
	cm³/rev	P1 bar	P3 bar	V0 rpm	V1 rpm	V2 rpm	rpm	kg
HDS-40	41.25	350	400	2700	1900	2500	300	12,3
HDS-47	47.13							
HDS-55	56.70							
HDS-64	63.56							12,1
MDS-80	77.25	250	300	2300	1800	2100		12

P1= *Max. continuous pressure* (100%)
P3= *Max. peak pressure* (6 sec.max)

V0=*Max. continuous speed without load*
V1=*Max. continuous speed*
V2=*Max. intermittent speed*

Pump type	Rotation		IN	OUT
	Right	Left	ISO 228	ISO 228
HDS-40	60100110403	60100110409	G 1 1/4"	G 3/4"
HDS-47	60100110473	60100110479		
HDS-55	60100110553	60100110559		
HDS-64	60100110643	60100110649		
MDS-80	60300110803	60300110809		

Dimensions



TECHNICAL FEATURES

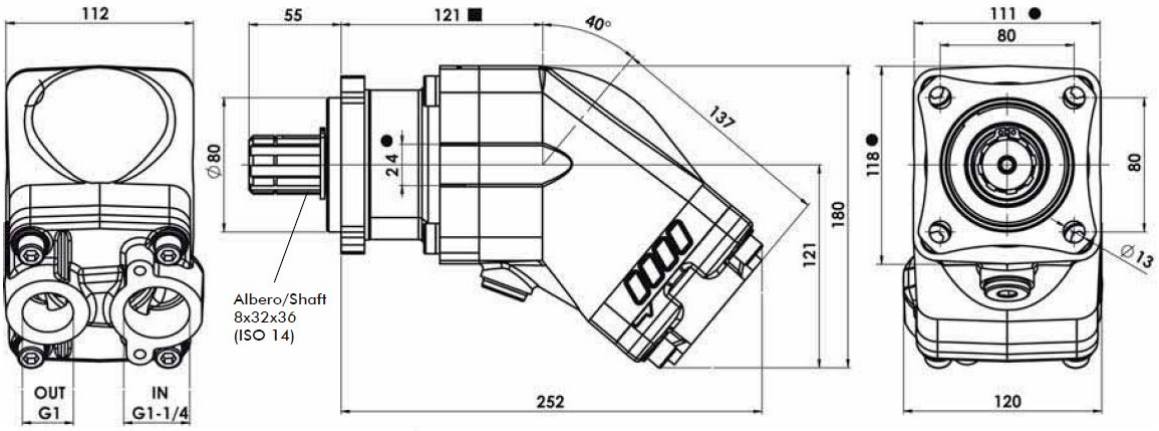
Pump type	Displacement	Pressure		Speed			Min. speed	Weight
		P1	P3	V0	V1	V2		
	cm³/rev	bar	bar	rpm	rpm	rpm	rpm	kg
HDS-84	84.33	350	400	2300	1500	2000	300	19.2
HDS-108	107				1500			18.6
HDS-130	131.62				1750			18.3
MDS-120	122.1	260	280		1500			18.4
MDS-130	131.62	250	270		1500			18.7

P1 = *Max. continuous pressure* (100%)
P3 = *Max. peak pressure* (6 sec.max)

V0 = *Max. continuous speed without load*
V1 = *Max. continuous speed*
V2 = *Max. intermittent speed*

Pump type	Rotation		IN	OUT
	Right	Left	ISO 228	ISO 228
HDS-84	60100110843	60100110849	G 1 1/4"	G 1"
HDS-108	60100111083	60100111089	G 1 1/2"	
HDS-130	60100111303	60100111309		
MDS-120	60300111203	60300111209		
MDS-130	60300111303	60300111309		

Dimensions



TECHNICAL FEATURES

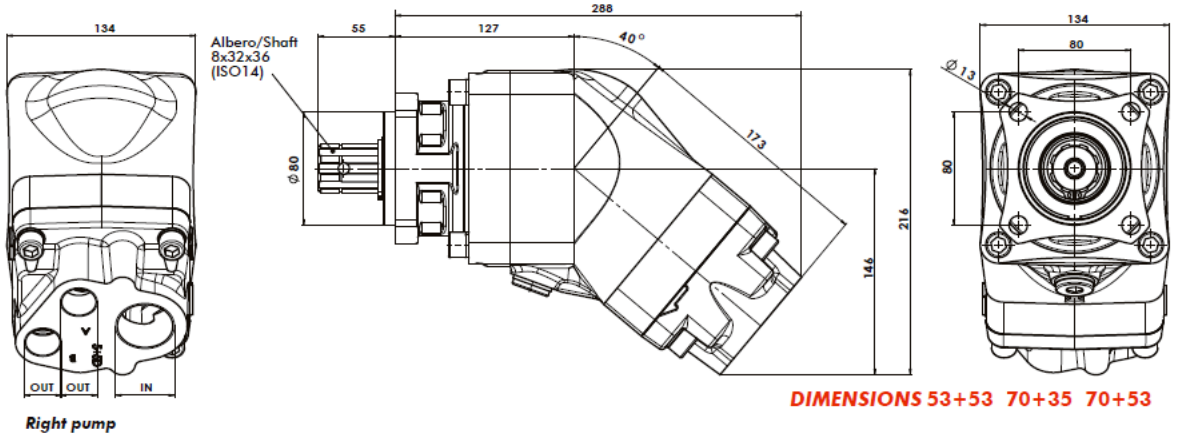
Pump type	Displacement	Pressure		Speed			Min. speed	Weight
	cm³/rev	P1 bar	P3 bar	V0 rpm	V1 rpm	V2 rpm	rpm	kg
HDT-75	75,5	350	370	2300	1500	2000	300	14,9
HDT-84	84,2							14,7
HDT-96	95.5							14,7
HDT-108	107							14,5

P1=*Max. continuous pressure* (100%)
P3=*Max. peak pressure* (6 sec.max)

V0=*Max. continuous speed without load*
V1=*Max. continuous speed*
V2=*Max. intermittent speed*

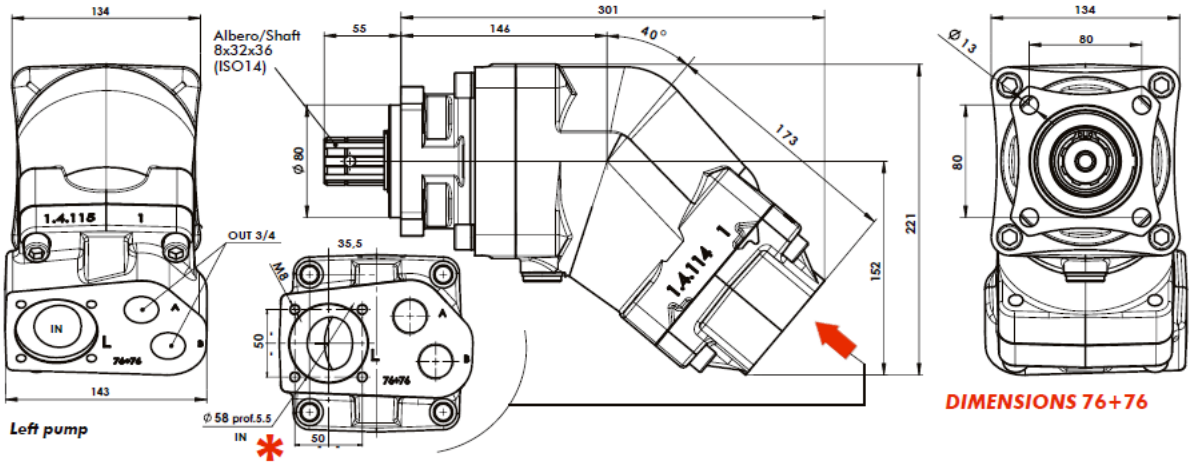
Pump type	Rotation		IN	OUT
	Right	Left	ISO 228	ISO 228
HDT-75	60200110753	60200110759	G 1 1/4"	G 1"
HDT-84	60200110843	60200110849		
HDT-96	60200110963	60200110969		
HDT-108	60200111083	60200111089		

Dimensions



Right pump

DIMENSIONS 53+53 70+35 70+53



Left pump

DIMENSIONS 76+76

Pump type	Rotation	Code	Rear cover*	IN ISO 228	OUT ISO 228	Weight
TWIN FLOW 53+53	Right	60400115053	50002995307	G 1 1/4"	G 3/4"	21,5 kg
	Left	60400115059	50002995405			
TWIN FLOW 70+35	Right	60400117033	50002997001	G 1 1/4"		21,5 kg
	Left	60400117039	50002997109			
TWIN FLOW 70+53	Right	60400117053	50002997403	G 1 1/2"		22,1 kg
	Left	60400117059	50002997501			
TWIN FLOW 76+76	Right	60400117673	50002997618	Ø58 *		24,4 kg
	Left	60400117679	50002997609			

To change the pump rotation, the rear body must be replaced.

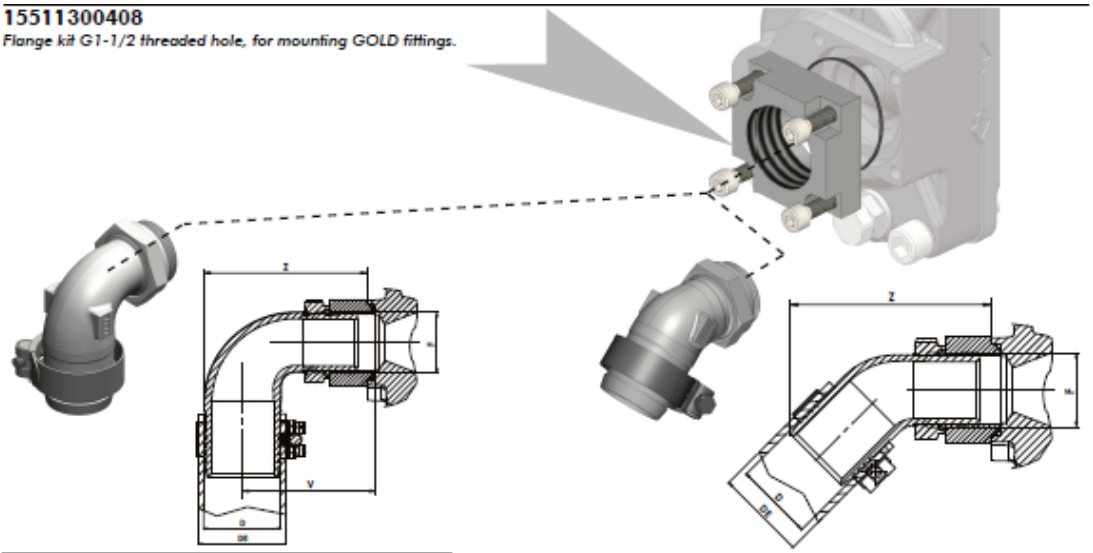
TECHNICAL FEATURES	53+53	70+35	70+53	76+76
Displacement (cc/rev)	53	36.5	53	75.1
Displacement (cc/rev)	55	68.3	66.2	74.8
Max. continuous pressure (bar)	350	350	300	300
Max. peak pressure (bar)	400	400	350	350
Max. speed without load (rpm)	2550	2550	2550	2550
Max. speed with load on A and B outputs (*)	1800	1800	1650	1500
Max. speed with load on 1 output only (*)	2100	2100	2100	2100
Max. continuous power (kW)	111	108	98	110
Max. intermittent power (kW)	127	123	114	129

Max. continuous pressure (100%)
Max. peak pressure (6 sec.max)

(*) Speed with pipe internal diameter 63mm (2"1/2) minimum.
Pump 53+53 and 70+35: with pipe internal diameter 50mm (2") max. speed 1200rpm.
Pump 70+53: only with pipe internal diamater 63mm (2"1/2).

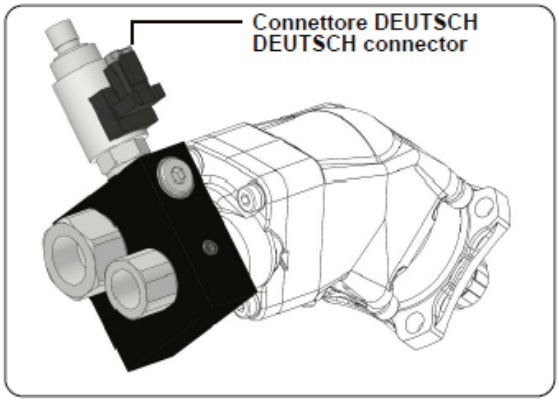
Fittings suitable for TWINFLOW 76+76 ONLY

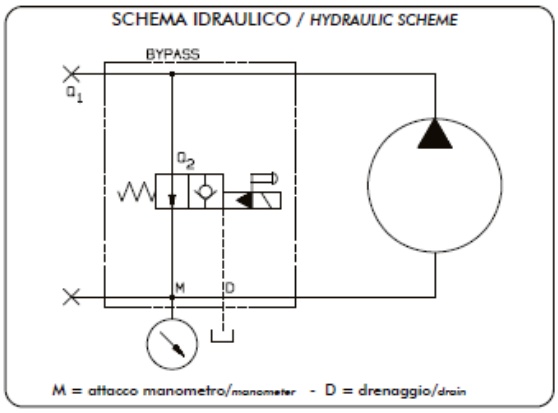
15511300408
Flange kit G1-1/2 threaded hole, for mounting GOLD fittings.



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

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



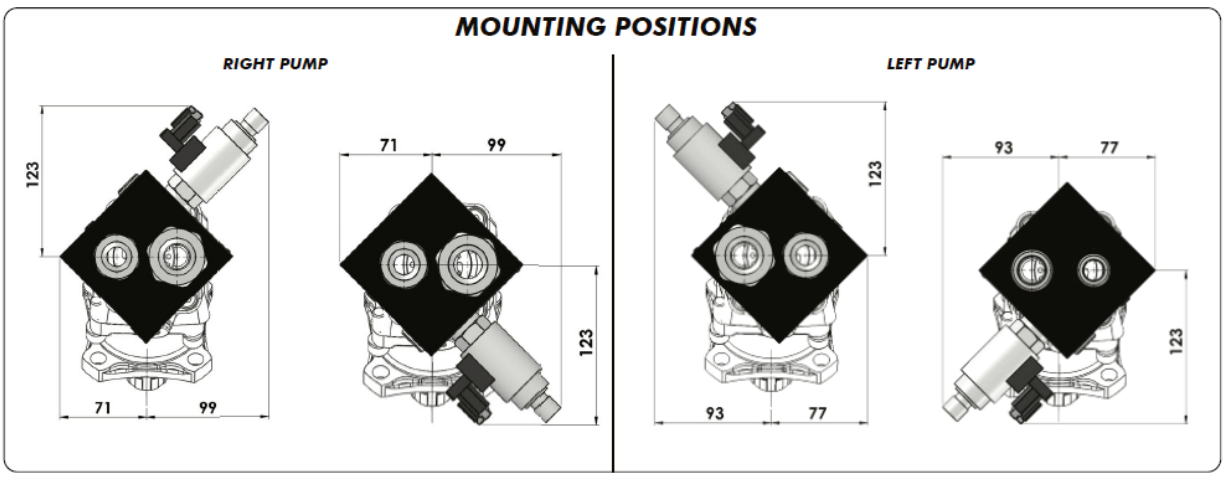


The bypass valve is used together with HDS bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating the pump's oil flow Q (see diagram 1) inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.

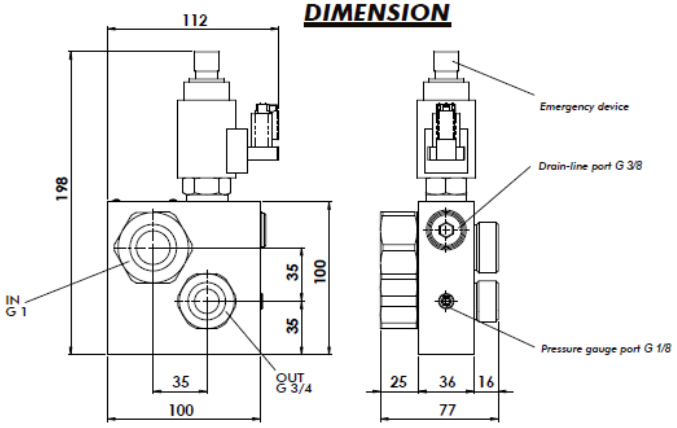
Pump type	Order code		Max. pressure	Enclosure	Coil power
	12V	24V			
HDS-12 HDS-17 HDS-25 HDS-34	10820012345	10820024341	400 bar *	IP 66	24W

* See pumps catalogue for related pressure values.

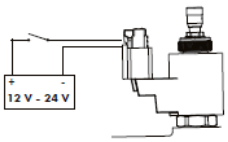
MOUNTING POSITIONS



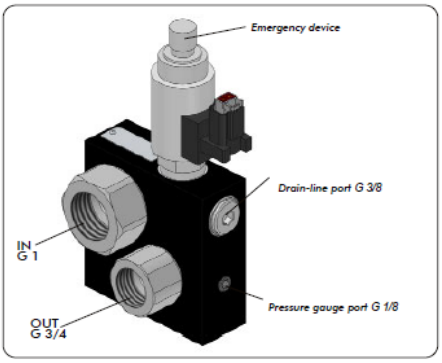
DIMENSION

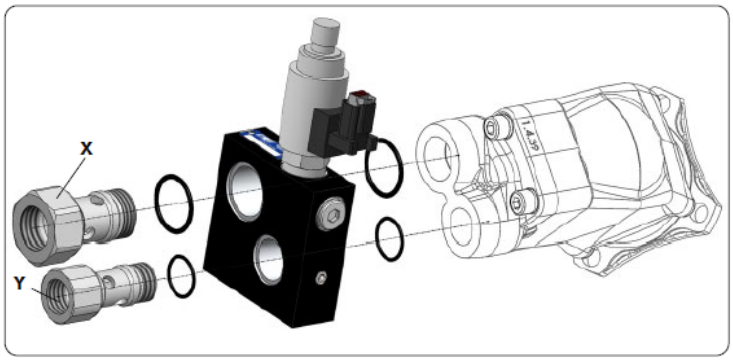


TIGHTENING TORQUE	
G 1/2	80Nm
G 3/4	140Nm
G 1	170Nm
G 1 1/4	200Nm
G 1 1/2	250Nm



MOUNTING INSTRUCTIONS





1 - Clean the pump and by-pass valve surfaces.
2 - Place the o-ring included in the kit as shown in the picture, with grease.
*3 - Screw in **X** part and **Y** part (see tightening torque in the table).*
4 - Connect pressure/suction pipe.
5 - Electrical wiring-up: the by-pass valve is normally open. To deliver oil you have to energise the solenoid valve.

OPTIONAL
Electric kit
Code 30600102357

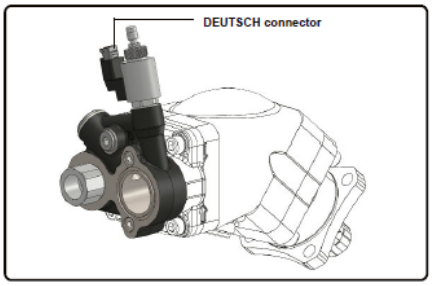
OPTIONAL
2-Pole female connector DEUTSCH
Code 13104500045

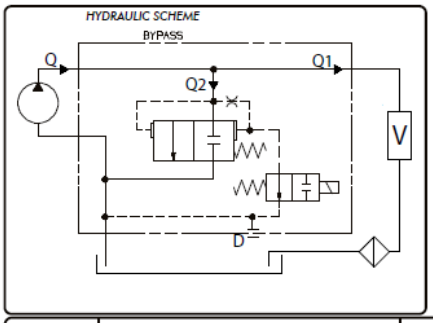
WARNING

The solenoid valve is operated by an electric switch situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.

If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a pipe drain valve hole and the tank.

This emergency is "push and twist" type. The solenoid valve is complete with an emergency device so that the pump can be used even in the event of a solenoid valve malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space. A pressure gauge can be connected to the G 1/8 connection to enable pressure measurements.

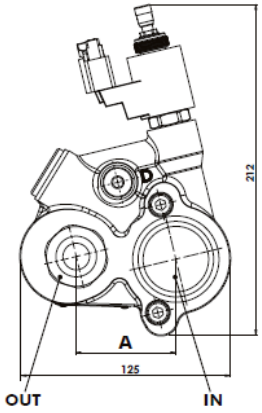


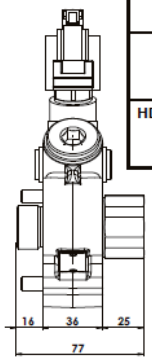


The bypass valve is used together with HDS-HDT bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating the pump's oil flow Q (see diagram 1) inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.

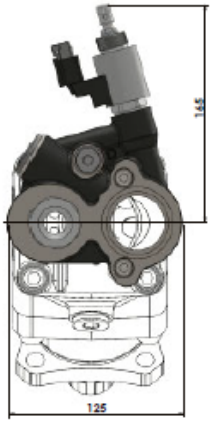
Pump type	Order code 12V	Order code 24V	Max. pressure	Enclosure	Coil power
HDS-40 HDS-47 HDS-55 HDS-64	10820012498	10820024494	400 bar *	IP66	22W
MDS-80					
HDS-84 HDS-108 HDS-130	10820012872	10820024878			
MDS-130					
HDT-75 HDT-84 HDT-96 HDT-108	10820012881	10820024887			

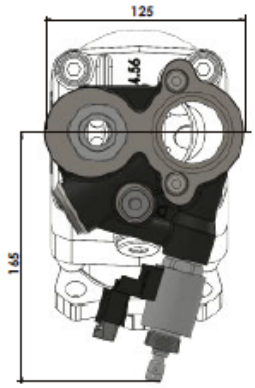
* See pumps catalogue for related pressure values.

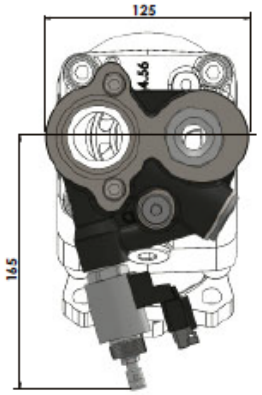


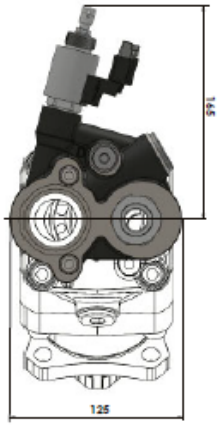


	A	IN	OUT
HDT 10820012881 10820024887	65	G1-1/4	G1
HDS 84/108 MDS130 10820012872 10820024878	60	G1-1/2	G1
HDS 40/47/55/64 MDS 80 10820012498 10820024494	60	G1-1/4	G3/4

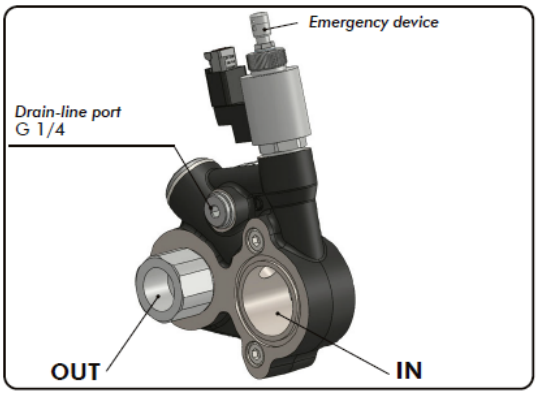


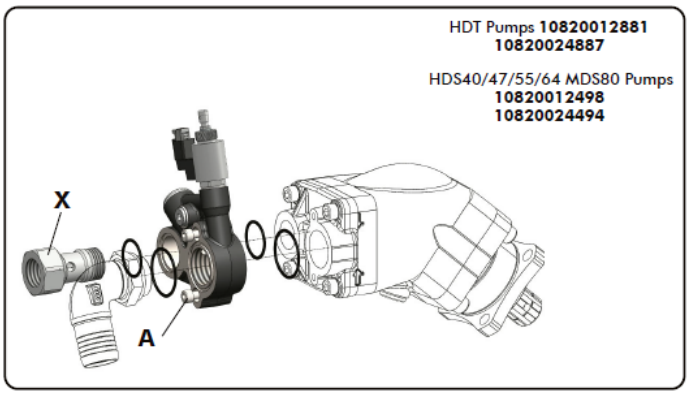


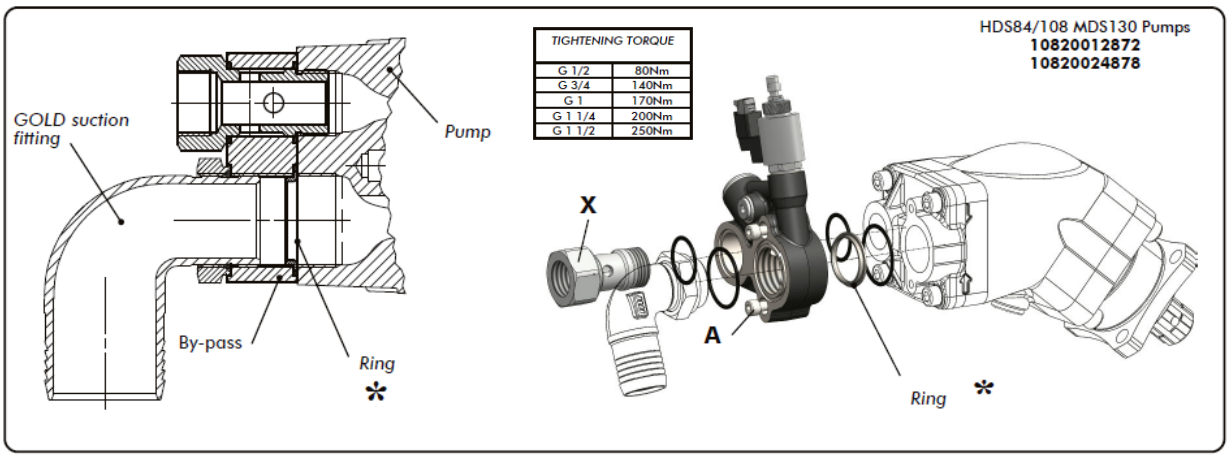




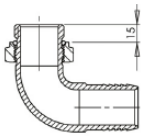
MOUNTING INSTRUCTIONS



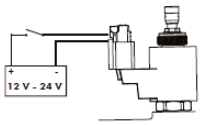




1 - Clean the pump and by-pass valve surfaces.
2 - Place the o-ring (and the ring * if present) included in the kit as shown in the picture, with grease.
3 - Screw in the by-pass valve with included screws M8x40 **(A)** but without tightening.
4 - Screw in **X** part (see tightening torque in near table), tighten the screws M8x40 with torque 25 Nm checking that valve and rear cover surfaces are completely in contact each other.
5 - Connect pressure/suction pipes, paying attention to use maximum length threaded fitting = 15mm.
6 - Electrical wiring-up: the by-pass valve is normally open. To deliver oil you have to energies the solenoid valve.

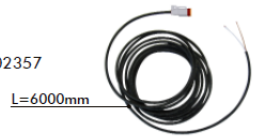


point 5

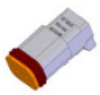


point 6

OPTIONAL
Electric kit
Code 30600102357



OPTIONAL
2-Pole female connector DEUTSCH
Code 13104500045

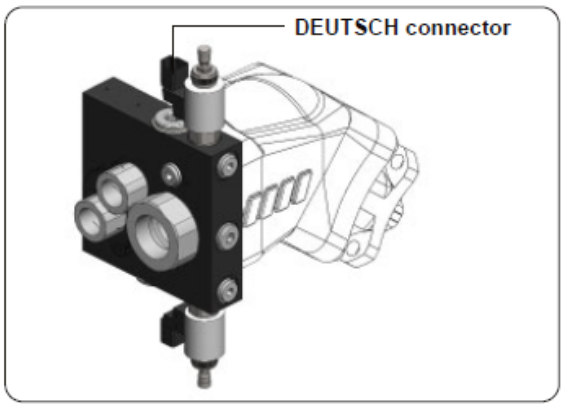


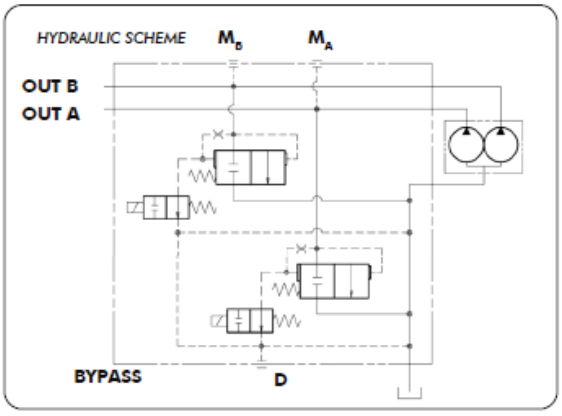
WARNING

The solenoid valve is operated by an electric switch situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.

If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a pipe drain valve hole and the tank.

This emergency is "push and twist" type. The solenoid valve is complete with an emergency device so that the pump can be used even in the event of a solenoid valve malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space.

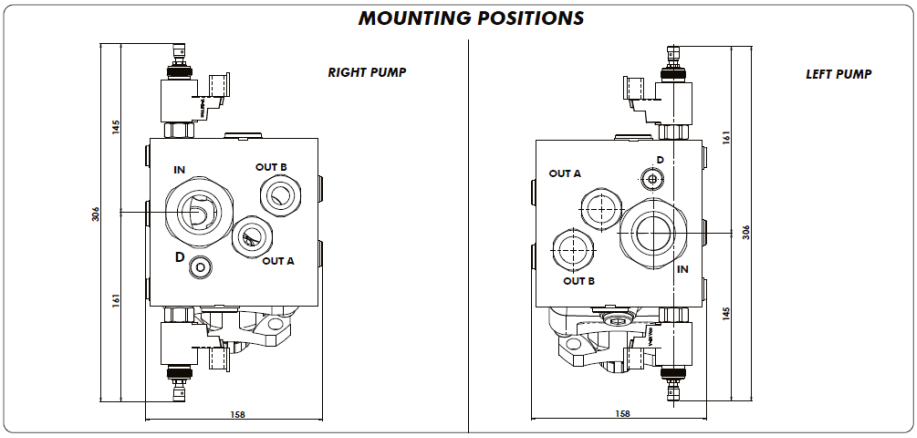


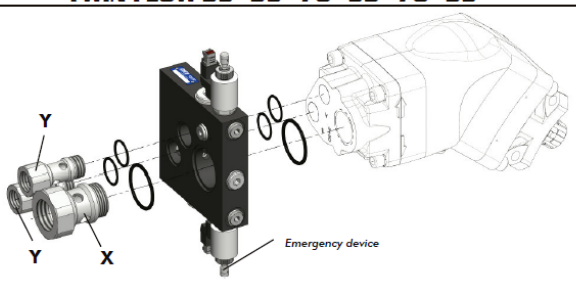
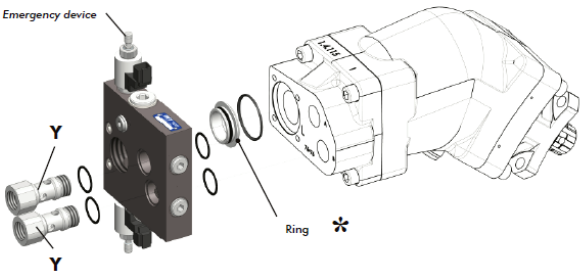
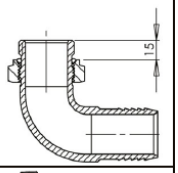
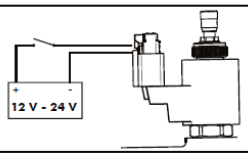


The bypass valve is used together with "TWIN FLOW" bent axis piston pumps if the pump turns constantly when the vehicle is on (in installations with the power takeoff without a coupling or coupled directly to the motor). In such cases, all the oil flow delivered is circulated, at the maximum pump capacity permitted by the turning speed of the motor, through piping that is usually not sized for capacities greater than those required for the normal use of the pump, consequently giving rise to pointless energy losses and overheating in the system. The bypass valve serves the purpose of partially recirculating, ***for each delivery****, the pump's oil flow Q inside the pump so that a flow Q1 (corresponding to the difference between the total flow Q and the recycled flow Q2) circulates through the system's piping. The proportion of total capacity distributed to the flows Q1 and Q2 depends on the system load losses and the bypass valve. In any case, it is essential to guarantee an oil flow Q1 of at least 5-10 l/min to ensure adequate pump cooling.*

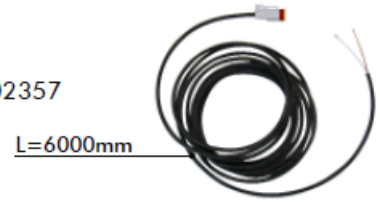
Pump type	Order code		Max. pressure	Enclosure	Coil power
	12V	24V			
TWIN-FLOW 53+53 70+35	10820012541	10820024547	400 bar *	IP 66	22W
TWIN-FLOW 70+53	10820012710	10820024716			
TWIN-FLOW 76+76	10820012765	10820024761			

* See pumps catalogue for related pressure values.



TWIN-FLOW 53+53 - 70+35 - 70+53	TWIN-FLOW 76+76
	
1 - *Clean the pump and by-pass valve surfaces.*	
2 - *Place the o-ring included in the kit as shown in the picture.*	- *Place the o-rings and the ring* ✲ *included in the kit as shown in the picture.*
3 - *Screw in X part and Y parts (See tightening torque in table).*	- *Screw in the body and the Y parts (See tightening torque in table).*
4 - *Connect pressure/suction pipes.*	- *Connect pressure/suction pipes, paying attention to use* ***MAXIMUM*** *lenght threaded fittings = 15mm.* 
5 - *Electrical wiring-up: the by-pass valve is normally open. To deliver oil you have to energise the solenoid valve.* 	

OPTIONAL
Electric kit
Code 30600102357



OPTIONAL
2-Pole female connector DEUTSCH
Code 13104500045

WARNING

The solenoid valves are operated by electric switches situated in the cab. The bypass valve is normally used in systems with an open-center main distributor.

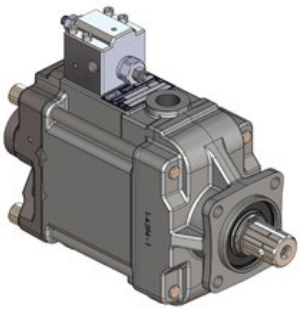
If it is used in systems with a closed-center distributor, or if it is impossible to guarantee the minimum flow rate of 5-10 l/min (Q1) through the piping, it becomes necessary to connect a 3/8" pipe between the valve's auxiliary connection and the tank (use the fitting G1/4 included in the package).

The solenoid valves are completed with an emergency device so that the pump can be used even in the event of a solenoid valves malfunction. The valve can be used equally for pumps turning either to the right or to the left and it can be installed in two different positions, rotated through 180° so as to make best use of available space.

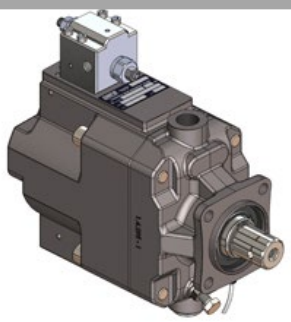
A pressure gauge can be connected to the 3/8" connection to enable pressure measurements.

PPV ISO 60CC

PPV ISO 90CC



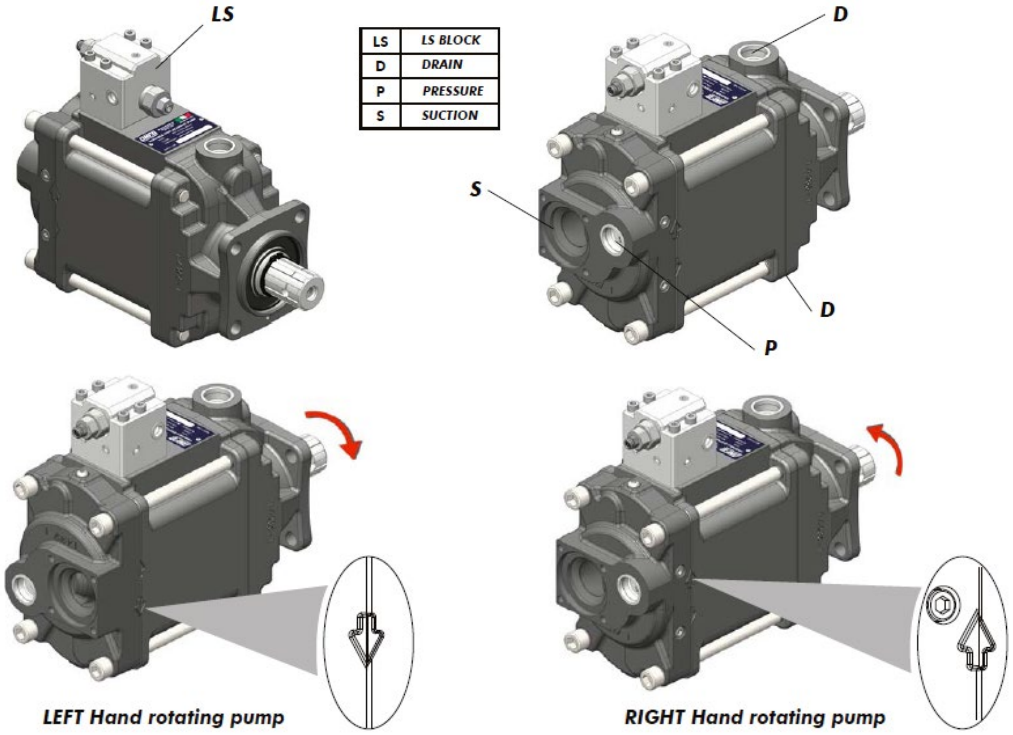
PPV ISO 110CC



PPV ISO 130CC

AVAILABLE CODES			
	CODE	DESCRIPTION	
PPV 60	65011106LS6	PPV ISO 7653 32X36 BSP AX LS 060L	AXIAL (STANDARD)
	65011106LS1	PPV ISO 7653 32x36 BSP AX LS 060R	
	65011106LS7	PPV ISO 7653 32x36 BSP AX LS 060L L	Adjustable
	65011106LS2	PPV ISO 7653 32x36 BSP AX LS 060R L	
	65011206LS1	PPV ISO 7653 32X36 BSP RV LS 060R	Radial/vertical
	65011206LS6	PPV ISO 7653 32X36 BSP RV LS 060L	
	65011306LS1	PPV ISO 7653 32X36 BSP PV LS 060R	Tandem
	65011306LS6	PPV ISO 7653 32X36 BSP PV LS 060L	
	65011406LS1	PPV ISO 7653 32X36 BSP RO LS 060R	Radial/horizontal
	65011406LS6	PPV ISO 7653 32X36 BSP RO LS 060L	
	65011506LS1	PPV ISO 7653 32X36 BSP PO LS 060R	Tandem
	65011506LS6	PPV ISO 7653 32X36 BSP PO LS 060L	
	65125106LS1	PPV SAE C4 C-14T UNF AX LS 060R	AXIAL (STANDARD)
	65125106LS2	PPV SAE C4 C-14T UNF AX LS 060R L	Adjustable
	65125106LS6	PPV SAE C4 C-14T UNF AX LS 060L	AXIAL (STANDARD)
	65125106LS7	PPV SAE C4 C-14T UNF AX LS 060L L	Adjustable
PPV 90	65011109LS6	PPV ISO 7653 32x36 BSP AX LS 090L	AXIAL (STANDARD)
	65011109LS1	PPV ISO 7653 32x36 BSP AX LS 090R	
	65011109LS7	PPV ISO 7653 32x36 BSP AX LS 090L L	Adjustable
	65011109LS2	PPV ISO 7653 32x36 BSP AX LS 090R L	
	65011209LS1	PPV ISO 7653 32X36 BSP RV LS 090R	Radial/vertical
	65011209LS6	PPV ISO 7653 32X36 BSP RV LS 090L	
	65011309LS1	PPV ISO 7653 32X36 BSP PV LS 090R	Tandem
	65011309LS6	PPV ISO 7653 32X36 BSP PV LS 090L	
	65011409LS1	PPV ISO 7653 32X36 BSP RO LS 090R	Radial/horizontal
	65011409LS6	PPV ISO 7653 32X36 BSP RO LS 090L	
	65011509LS1	PPV ISO 7653 32X36 BSP PO LS 090R	Tandem
	65011509LS6	PPV ISO 7653 32X36 BSP PO LS 090L	
PPV 110	65011111LS6	PPV ISO 7653 32x36 BSP AX LS 110L	AXIAL (STANDARD)
	65011111LS1	PPV ISO 7653 32x36 BSP AX LS 110R	
	65011111LS7	PPV ISO 7653 32x36 BSP AX LS 110L L	Adjustable
	65011111LS2	PPV ISO 7653 32x36 BSP AX LS 110R L	
	65011211LS1	PPV ISO 7653 32X36 BSP RV LS 110R	Radial/vertical
	65011211LS6	PPV ISO 7653 32X36 BSP RV LS 110L	
	65011311LS1	PPV ISO 7653 32X36 BSP PV LS 110R	Tandem
	65011311LS6	PPV ISO 7653 32X36 BSP PV LS 110L	
	65011411LS1	PPV ISO 7653 32X36 BSP RO LS 110R	Radial/horizontal
	65011411LS6	PPV ISO 7653 32X36 BSP RO LS 110L	
	65011511LS1	PPV ISO 7653 32X36 BSP PO LS 110R	Tandem
	65011511LS6	PPV ISO 7653 32X36 BSP PO LS 110L	
	65121111LS1	PPV SAE C4 C-14T BSP AX LS 110R	AXIAL (STANDARD)
	65121111LS6	PPV SAE C4 C-14T BSP AX LS 110L	
PPV 130 Adjustable	65011113LS2	PPV ISO 7653 32X36 BSP AX LS 130R	AXIAL
	65011113LS7	PPV ISO 7653 32X36 BSP AX LS 130L	
	65011113PI2	PPV ISO 7653 32X36 BSP AX PI 130R	AXIAL
	65011113PI7	PPV ISO 7653 32X36 BSP AX PI 130L	

The OMFB variable displacement axial piston pump has 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 cylinder block rotates together with the shaft forcing the pistons to rotate at the same speed as 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 circuits. They allow very quick reaction time and thanks to their compact size they can be coupled directly onto the PTOs of commercial vehicles. When ordering please specify the required direction of rotation.



TECHNICAL FEATURES	PPV60		PPV90		PPV110		PPV130	
Flow	60 l/min.		90 l/min.		110 l/min.		130 l/min.	
Max. swash plate angle	21,5°							
Working pressure	Continuous	Intermittent	Continuous	Intermittent	Continuous	Intermittent	Continuous	Intermittent
	375 bar	400 bar	375 bar	400 bar	375 bar	400 bar	375 bar	400 bar
Absolute inlet pressure required in open circuit	0,85 bar							
Max. permissible housing pressure (static/dynamic)	1 bar		3 bar					
Max. permissible inlet pressure (static/dynamic)	2 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	
Max. speed with zero stroke and 1 bar abs. Inlet pressure	3000 rpm							
Min. speed in continuous operation	500 rpm							
Required drive torque at 100 bar	100 Nm		150 Nm		185 Nm		220 Nm	
Drive power at 250 bar and 2000 rpm	53 kW		80 kW		100 kW		145 kW	
Weight	24 Kg		29 Kg		30 Kg		27 Kg	

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

DISPLACEMENT 60cc	
Displacement limitation range	40 - 60 cm^3
Displacement limitation range	4,3 cm^3/rev

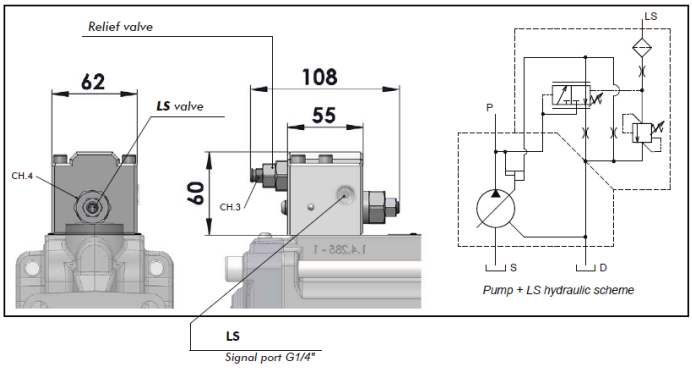
DISPLACEMENT 90cc	
Displacement limitation range	55 - 90 cm^3
Displacement limitation range	5,7 cm^3/rev

DISPLACEMENT 110cc	
Displacement limitation range	85 - 110 cm^3
Displacement limitation range	6,6 cm^3/rev

DISPLACEMENT 130cc	
Displacement limitation range	90 - 130 cm^3
Displacement limitation range	12 cm^3/rev

LS LOADING SENSING CONTROL

Regulate the differential pressure Δp = circuit pressure less signal pressure. The adjustment range is 15-50 bar. The default setting is 25 bar ±2%. Setting 15 bar/rev.---Adjust the maximum pressure of the hydraulic circuit between 20 and 350 bar. The default setting of the pressure relief valve is 330 bar. Setting 150 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 a suitable diameter to ensure the damping of possible LS signal fluctuations.

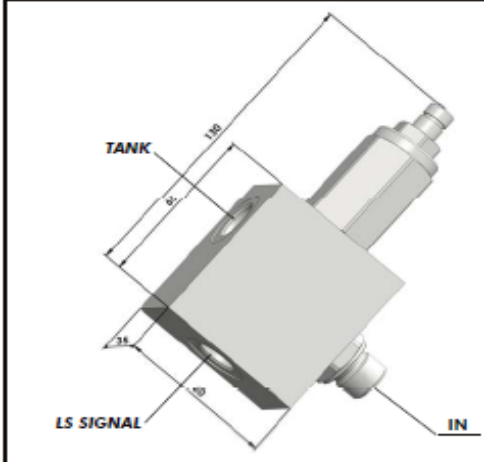


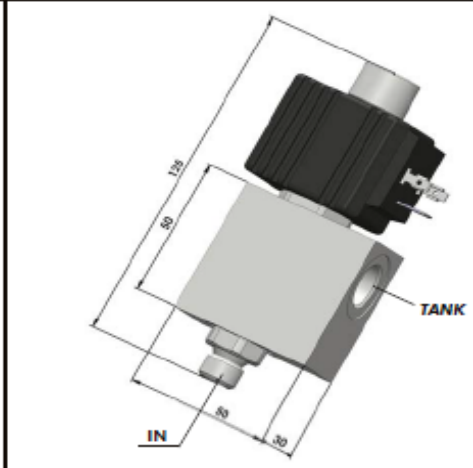
FLUSHING VALVE FOR LOAD SENSING CIRCUIT

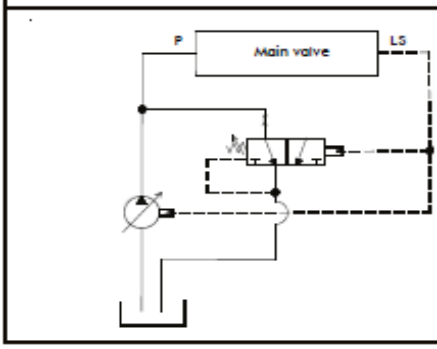
The valve guarantees a small flow through the pump to the cooling or tank, in order to protect the pump from overheating on the application for a long time in standby condition. When a load-sensing valve function is engaged the flushing valve is disengaged automatically with a hydraulic pilot or with an electrical pilot by the logic control of the customer.

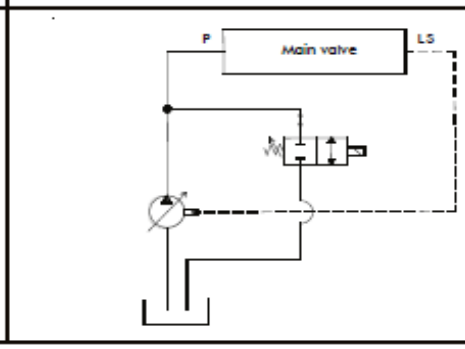
Technical charateristichs:
Flow control: 30 l/min
Pilot pressure settings: da 2 a 25 bar
Maximum pressure: 420 bar

Hydraulic pilot	*Electrical pilot*	
Code	Code	
B5001072001BC	B5001072002BC	24V DIN
	B5001072003BC	12V DIN
	B5001072004BC	24V DEUTCH
	B5001072005BC	12V DEUTCH



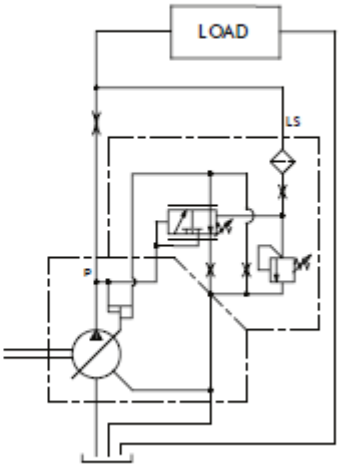


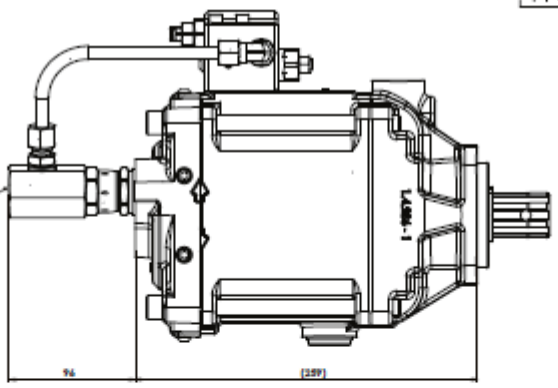




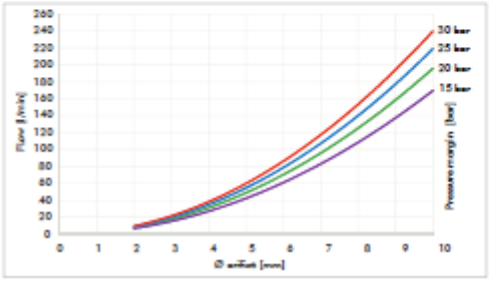
CONSTANT FLOW CONTROL

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.





PPV60	G3/4
PPV90 110-130	G1



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