



BENT-AXIS PISTON PUMPS

The new bent axis piston pumps series HDS, HDT, MDS and TFP ensure lower noise level thanks to a new internal gear machining method that improves significantly the mechanical coupling between the cylinder block and the driving gear guaranteeing maximum performances at extremely low noise level.



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HYDRAULIC COMPONENTS

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QUALITY SYSTEM
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= ISO/TS 16949 =

A very unique pump

Compact size cast iron body.

Overall dimensions reduced and high resistance to pressure peaks (up to 400 Bar) to match higher working pressure of the latest machines.

Hardened splined output shaft.

Better resistance to the torque driven by the PTO.

FKM and reinforced oil-seals.

This solution allows the pump to bear back pressures.

Operating temperature.

Special gaskets allow the pump to operate at a temperature ranging from -40°C and $+140^{\circ}\text{C}$.

Seven pistons.

The optimal solution to allow a more constant load on bearing and, consequently, a more fluent delivery and less pulsation.

Improved suction port.

Optimised in order to achieve lower noise level.

Pistons' barrel driven by the shaft.

The already proven tapered toothing allows the pistons to work without radial load resulting in a longer resistance to fatigue.

Choice of compatible materials for sliding surfaces.

Sliding surfaces made of aluminum and nitrated cast iron to guarantee a longer life against contaminated fluid.

Tapered roller bearings.

The tapered roller bearings can offer bigger load capacity against high working pressure.

3-piece body.

This solution allows constant lubrication of the bearings.

By-pass valve option.

The by-pass valve is mainly used in applications where the pump is permanently driven.

Special versions available:

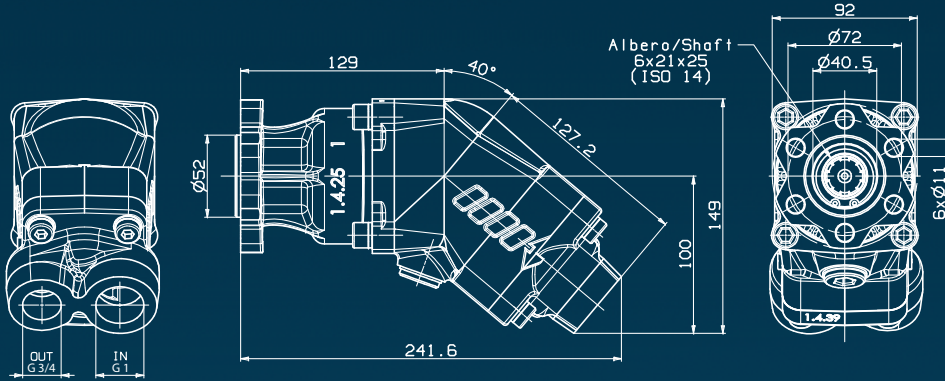
Versions with SAE shafts and UNF ports.



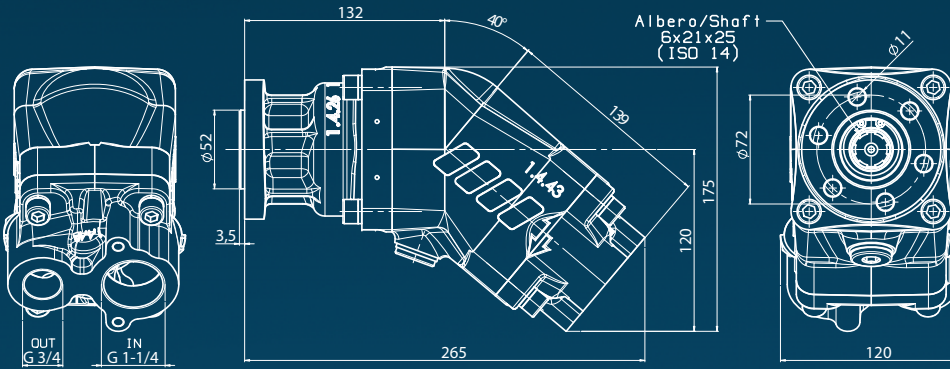
HDS UNI

Unidirectional bent axis piston pumps with displacement from 12 to 64 cm³.

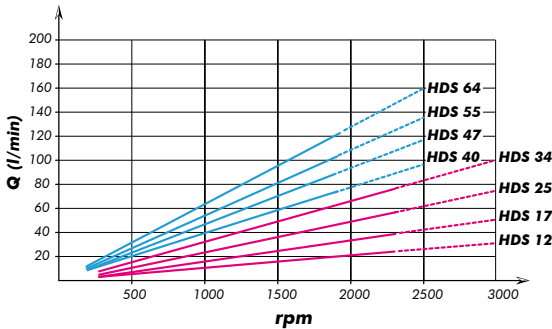
HDS 12-17-25-34 UNI



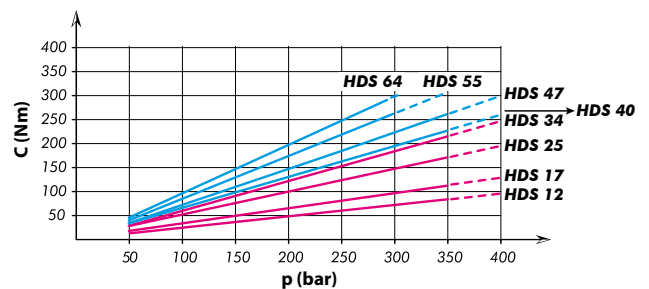
HDS 40-47-55-64 UNI



FLOW



DRIVE TORQUE



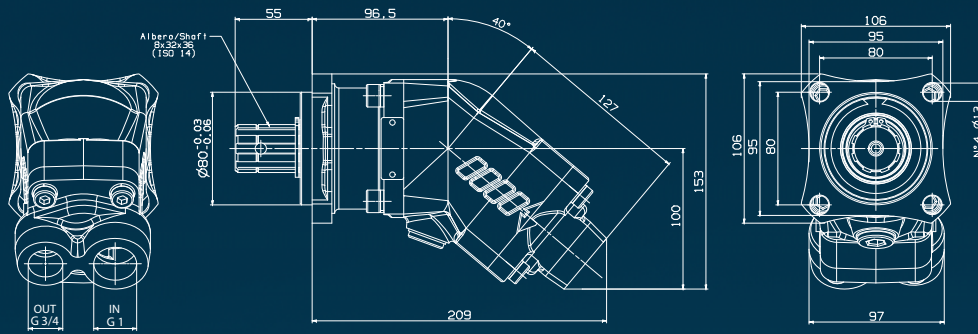
TECHNICAL FEATURES

Pump type	Rotation		Displac. cm ³	Pressure bar		Max speed			Min speed rpm	Weight kg
	right	left		P1	P3	rpm without load	rpm continuous	rpm intermittent		
HDS-12 UNI	606-002-10123	606-002-10129	12,62	350	400	3000	2300	3000	300	8,3
HDS-17 UNI	606-002-10173	606-002-10179	16,98	350	400	3000	2300	3000	300	8,3
HDS-25 UNI	606-002-10253	606-002-10259	25,12	350	400	3000	2300	3000	300	8,3
HDS-34 UNI	606-002-10343	606-002-10349	33,80	350	400	3000	2300	3000	300	8,3
HDS-40 UNI	606-002-10403	606-002-10409	41,25	350	400	2700	1900	2500	300	13
HDS-47 UNI	606-002-10473	606-002-10479	47,13	350	400	2700	1900	2500	300	13
HDS-55 UNI	606-002-10553	606-002-10559	56,70	300	350	2700	1900	2500	300	13
HDS-64 UNI	606-002-10643	606-002-10649	63,56	280	300	2700	1900	2500	300	13

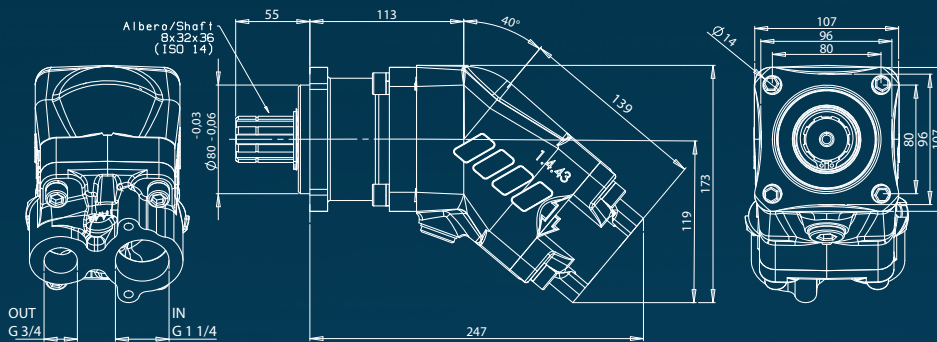
HDS ISO

Unidirectional bent axis piston pumps with displacement from 12 to 130 cm³.

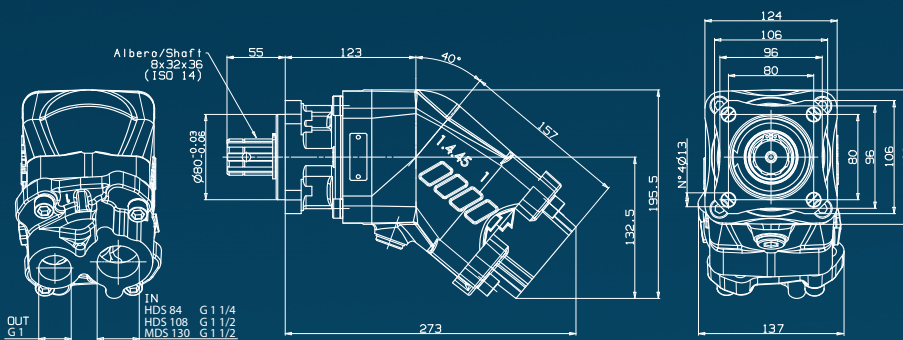
HDS 12-17-25-34 ISO



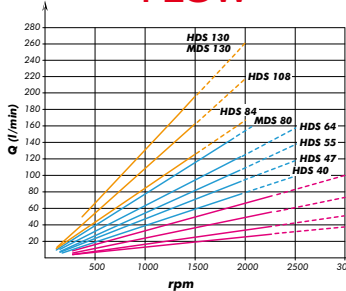
HDS 40-47-55-64 - MDS 80 ISO



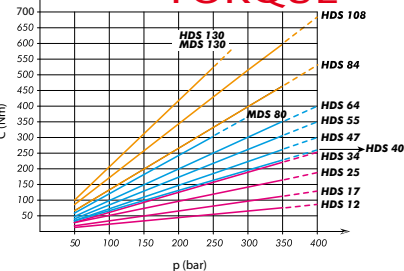
HDS 84-108-130 - MDS 130 ISO



FLOW



DRIVE TORQUE



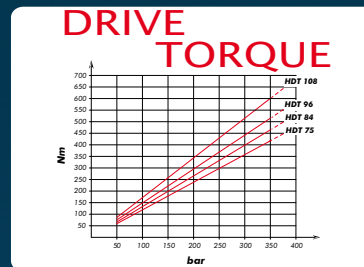
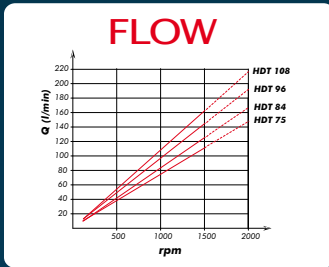
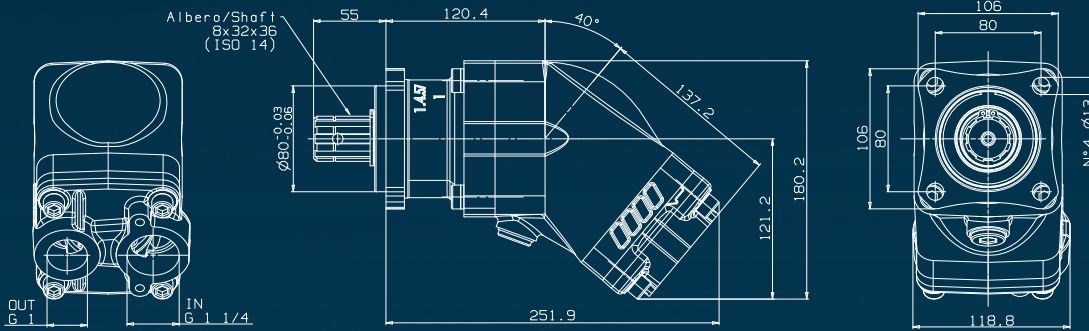
TECHNICAL FEATURES

Pump type	Rotation		Displ. cm ³	Pressure bar		Max speed			Min speed / Weight	
	right	left		P1	P3	rpm without load	rpm continuous	rpm intermittent	rpm	kg
HDS-12 ISO	601-001-10123	601-001-10129	12,62	350	400	3000	2300	3000	300	8,7
HDS-17 ISO	601-001-10173	601-001-10179	16,98	350	400	3000	2300	3000	300	8,7
HDS-25 ISO	601-001-10253	601-001-10259	25,12	350	400	3000	2300	3000	300	8,7
HDS-34 ISO	601-001-10343	601-001-10349	33,80	350	400	3000	2300	3000	300	8,7
HDS-40 ISO	601-001-10403	601-001-10409	41,25	350	400	2700	1900	2500	300	13,2
HDS-47 ISO	601-001-10473	601-001-10479	47,13	350	400	2700	1900	2500	300	13,2
HDS-55 ISO	601-001-10553	601-001-10559	56,70	350	400	2700	1900	2500	300	13,2
HDS-64 ISO	601-001-10643	601-001-10649	63,56	350	400	2700	1900	2500	300	13,2
MDS-80 ISO	603-001-10803	603-001-10809	77,25	250	300	2300	1800	2100	300	13,2
HDS-84 ISO	601-001-10843	601-001-10849	84,33	350	400	2300	1500	2000	300	18,2
HDS-108 ISO	601-001-11083	601-001-11089	107	350	400	2300	1500	2000	300	18,2
HDS-130 ISO	601-001-11303	601-001-11309	131,62	350	400	2300	1750	2000	300	18,2
MDS-130 ISO	603-001-11303	603-001-11309	131,62	250	270	2300	1500	2000	300	18,2

HDT

Unidirectional bent axis piston pumps with displacement from 75 to 108 cm³.

HDT 75-84-96-108



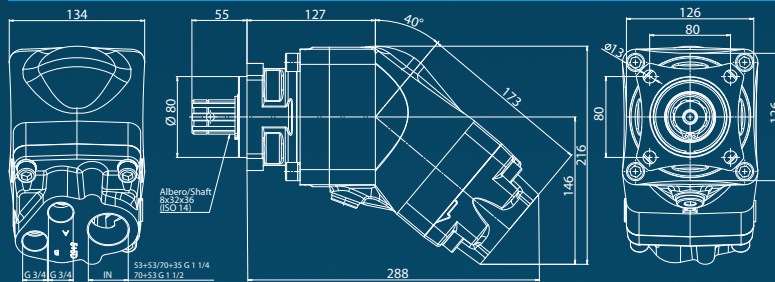
TECHNICAL FEATURES

Pump type	Rotation		Displac. cm ³	Pressure bar		Max speed rpm			Min speed rpm	Weight kg
	right	left		P1	P3	without load	continuous	intermittent		
HDT-75	602-001-10753	602-001-10759	75,5	350	370	2300	1500	2000	300	15
HDT-84	602-001-10843	602-001-10849	84,2	350	370	2300	1500	2000	300	15
HDT-96	602-001-10963	602-001-10969	95,5	350	370	2300	1500	2000	300	15
HDT-108	602-001-11083	602-001-11089	107	350	370	2300	1500	2000	300	15

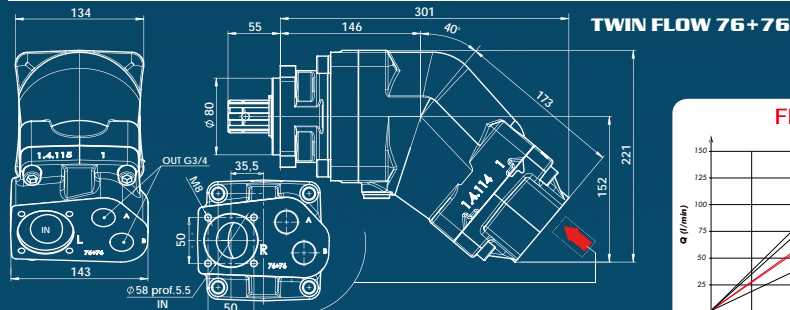
TWIN-FLOW

Unidirectional bent axis piston pumps with double output.

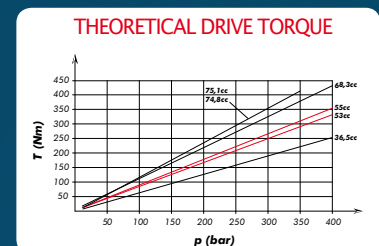
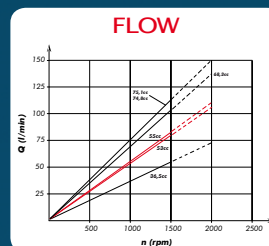
TWIN FLOW 53+53/70+35/70+53/76+76



TWIN FLOW 53+53
70+35/70+53



TWIN FLOW 76+76



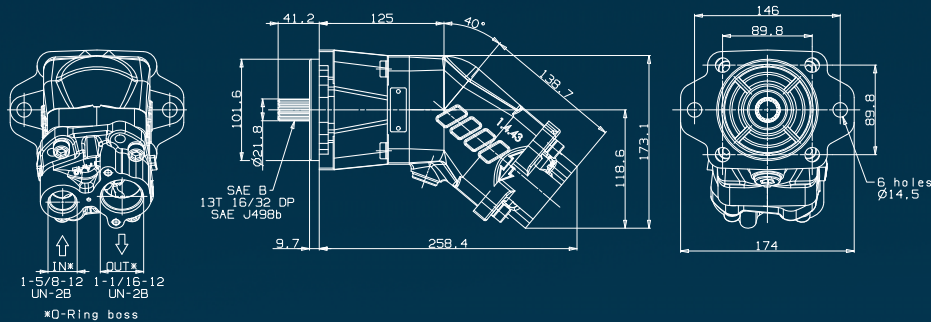
TECHNICAL FEATURES

Pump type	Rotation		Rear cover	Pressure bar		Max speed rpm			Max power kW	
	right	left		P1	P2	without load	with load on A and B outputs	with load on 1 output only	continuous	intermit.
TWIN-FLOW 53+53	604-001-15053	604-001-15059	500-029-95307 500-029-95405	350	400	2550	1800	2100	111	127
TWIN-FLOW 70+35	604-001-17033	604-001-17039	500-029-97001 500-029-97109	350	400	2550	1800	2100	108	123
TWIN-FLOW 70+53	604-001-17053	604-001-17059	500-029-97403 500-029-97501	300	350	2550	1650	2100	98	114
TWIN-FLOW 76+76	604-001-17673	604-001-17679	500-029-97618 500-029-97609	300	350	2550	1500	2100	110	129

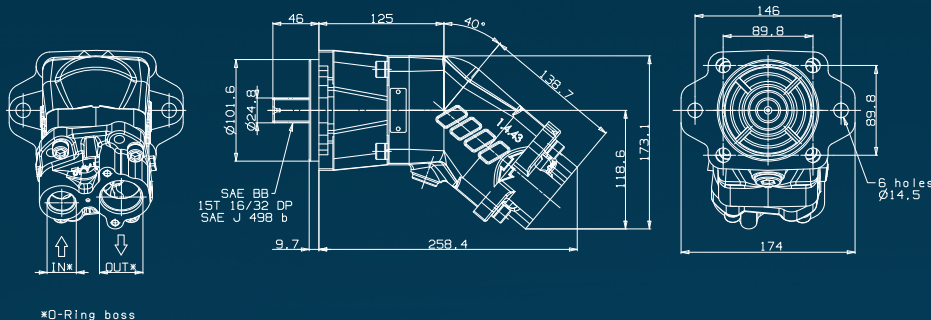
HDS-MDS SAE

Unidirectional bent axis piston pumps, displacements from 47 to 130 cm³, available with shaft and flange SAE-B, SAE-BB and SAE-C.

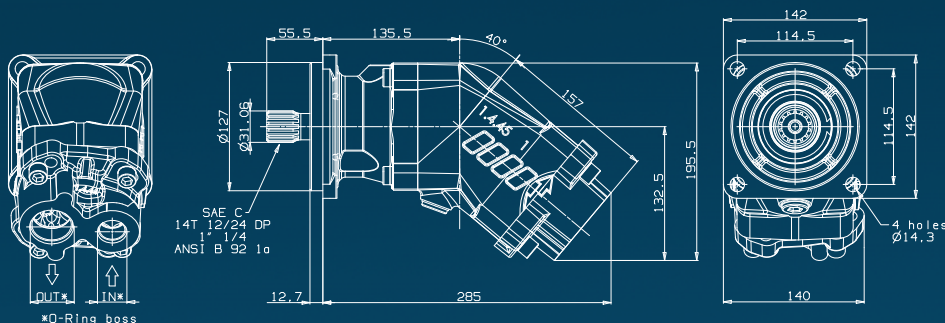
HDS SAE-B - MDS SAE-B



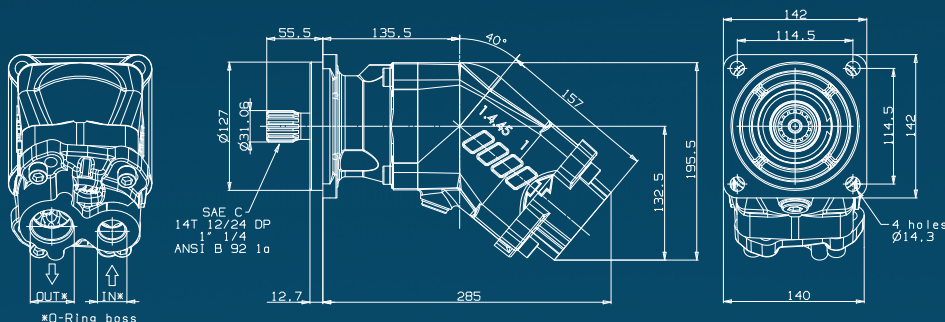
HDS SAE-BB - MDS SAE-BB



HDS 47/55/64 SAE-C - MDS 80 SAE-C



HDS 84/108 SAE-C - MDS 130 SAE-C



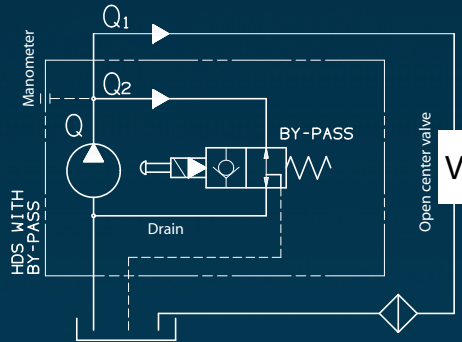
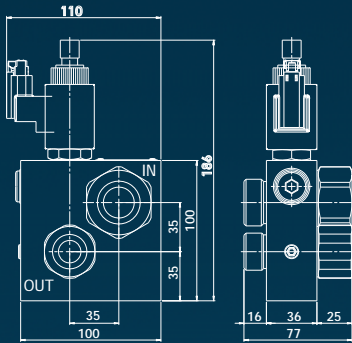
TECHNICAL FEATURES

Pump type	Rotation		Displac. cm ³	Pressure bar		Max speed			Min speed rpm	Weight kg
	right	left		P1	P3	rpm without load	rpm continuous	rpm intermittent		
HDS-47 SAE-B	613-074-50473	613-074-50479	47,13	350	400	2700	1900	2500	300	14
HDS-55 SAE-B	613-074-50553	613-074-50559	56,70	350	400	2700	1900	2500	300	14
HDS-64 SAE-B	613-074-50643	613-074-50649	63,56	350	400	2700	1900	2500	300	14
HDS-47 SAE-BB	613-077-50473	613-077-50479	47,13	350	400	2700	1900	2500	300	14
HDS-55 SAE-BB	613-077-50553	613-077-50559	56,70	350	400	2700	1900	2500	300	14
HDS-64 SAE-BB	613-077-50643	613-077-50649	63,56	350	400	2700	1900	2500	300	14
MDS-80 SAE-BB	613-077-50803	613-077-50809	77,25	250	300	2300	1800	2100	300	14
HDS-47 SAE-C	614-080-50473	614-080-50479	47,13	350	400	2700	1900	2500	300	14
HDS-55 SAE-C	614-080-50553	614-080-50559	56,70	350	400	2700	1900	2500	300	14
HDS-64 SAE-C	614-080-50643	614-080-50649	63,56	350	400	2700	1900	2500	300	14
MDS-80 SAE-C	614-080-50803	614-080-50809	77,25	250	300	2300	1800	2100	300	14
HDS-84 SAE-C	614-080-50843	614-080-50849	84,33	350	400	2300	1500	2000	300	17,8
HDS-108 SAE-C	614-080-51083	614-080-51089	107	350	400	2300	1500	2000	300	17,8
MDS-130 SAE-C	614-080-51303	614-080-51309	131,62	250	270	2300	1500	2000	300	17,8

By-pass valves

By-pass valve is used together with Bent Axis HDS-HDT piston pumps in case the pump is always in rotation while the vehicle is turned on (mounting with PTO without engagement or directly on motor).

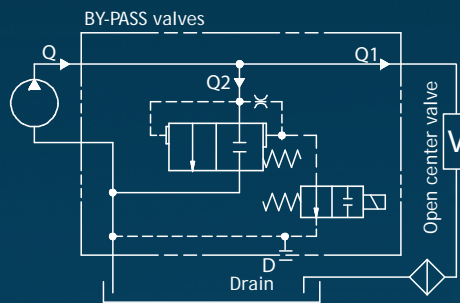
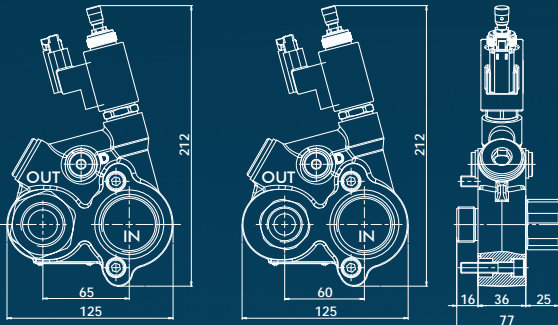
HDS 12-17-25-34



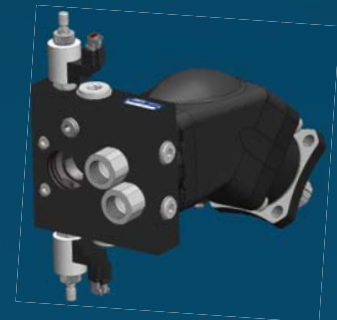
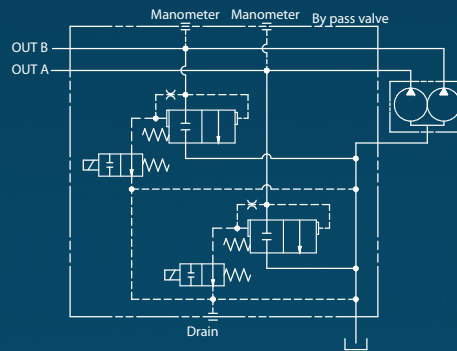
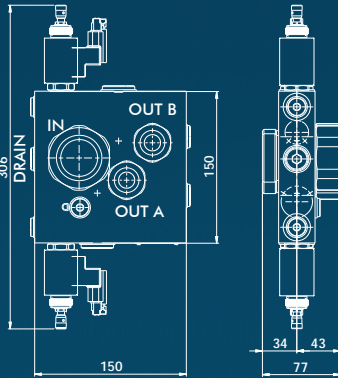
HDS - MDS - HDT

HDT

HDS-MDS



TWIN FLOW



TECHNICAL FEATURES

Pump type	Order code		Pressure max bar	IN	OUT	Manometer	Drain-line	Enclosure	Coil power W
	12 V	24 V							
HDS-12 ISO HDS-17 ISO HDS-25 ISO HDS-34 ISO	108-200-12345	108-200-24341	400*	G 1	G 3/4	G 1/8	G 3/8	IP 66	22
HDS-40 ISO HDS-47 ISO HDS-55 ISO HDS-64 ISO MDS-80 ISO	108-200-12498	108-200-24494	400*	G 1 1/4	G 3/4	G 3/4	G 1/4	IP 66	22
HDS-84 ISO HDS-108 ISO MDS-130 ISO	108-200-12872	108-200-24878	400*	G 1 1/2	G 1	G 3/4	G 1/4	IP 66	22
HDT-75 HDT-84 HDT-96 HDT-108	108-200-12881	108-200-24887	400*	G 1 1/4	G 1	G 3/4	G 1/4	IP 66	22
TWIN-FLOW 53+53 TWIN-FLOW 70+35	108-200-12541	108-200-24547	400*	G 1 1/4	G 3/4	G 3/8	G 1/4	IP 66	22
TWIN-FLOW 70+53	108-200-12710	108-200-24716							
TWIN-FLOW 76+76	108-200-12765	108-200-24761		G 1 1/2					

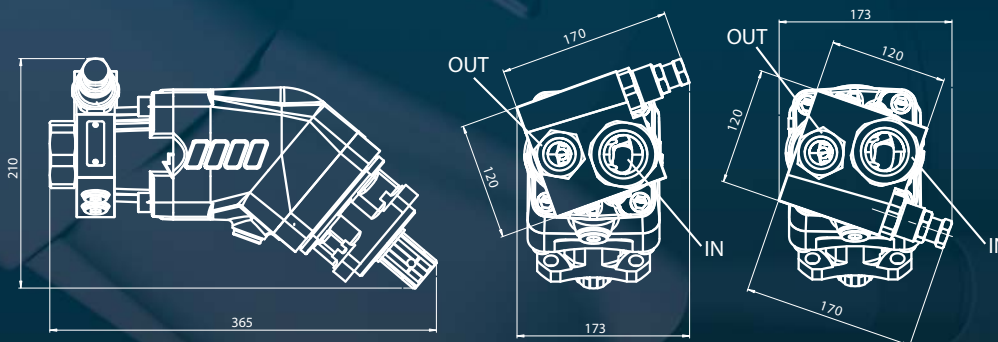
* See pumps catalogue for related pressure values.

Relief valve assembly

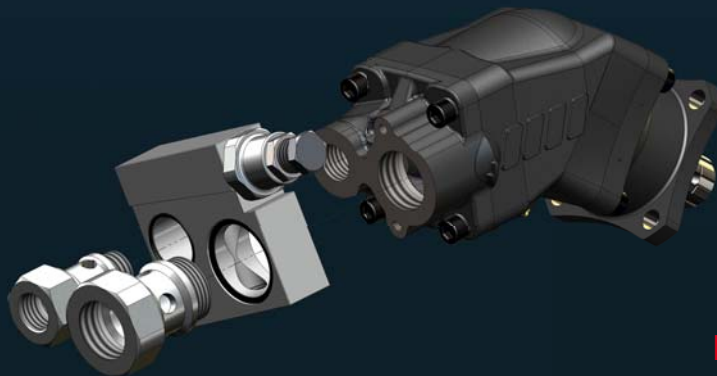
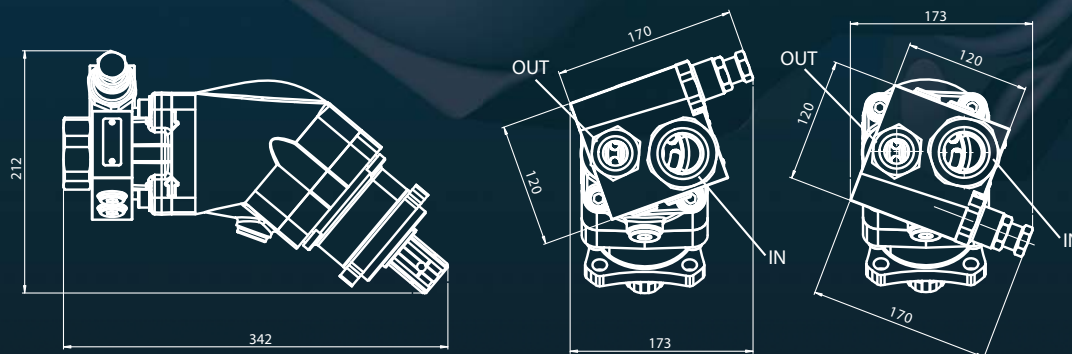
Relief valve assembly for "HDS-MDS-HDT" bent axis piston pumps

This valve can be directly fitted on the rear cover of the pump in such a way that the return flow goes back to tank through the pump itself saving one hose. The valve protects the pump from peak pressure due to any wrong operations such as closed circuit or coupling not connected. The fitment of the relief valve assembly onto the pump is symmetric, thus it is possible to rotate it by 180° just to avoid any interferences.

HDS-MDS



HDT



TECHNICAL FEATURES

HYDRAULIC SCHEME

Pump type	Order code	Setting pressure		IN	OUT
		min. bar	max. bar		
HDS-40 ISO HDS-47 ISO HDS-55 ISO HDS-64 ISO MDS-80 ISO	108-205-00479	45 ± 5	360 ± 5	G 1 1/4	G 3/4
HDS-84 ISO	108-205-00844	45 ± 5	360 ± 5	G 1 1/4	G 1
HDS-108 ISO	108-205-01085			G 1 1/2	G 1
MDS-130 ISO					
HDT-75 HDT-84 HDT-96 HDT-108	108-205-50843	45 ± 5	360 ± 5	G 1 1/4	G 1

