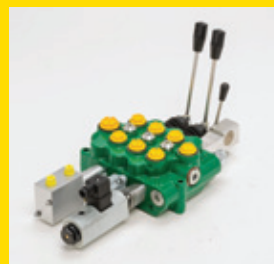


Products Range

Detailed Release

Overview

EO.000.0226.15.00IM09



COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV
ISO 9001



Final revised edition - February 2026

Information and data in this catalogue are all referring to the standard product.
Salami's policy consists of a continuous product development; therefore, we reserve the rights to change product's specifications and data performances at any time and without any prior notice.



GLOBAL HEADQUARTERS

Salami S.p.A.
Modena - Italy
www.salami.it

SALAMI WORLDWIDE BRANCHES

Salami España
Barcelona - Spain
www.salamiespana.es

Salami France
Lyon - France
www.salami.fr

Salami Hydraulics N.A Inc
Liverpool - USA
www.salamihydraulics.com

Salami S.p.A. is not solely an Italian company, but mainly one of the Italian engineering excellences in the hydraulic power market applied to mobile systems.

Founded in Modena in 1956, **Salami S.p.A.** has steadily grown through specific guidelines to reach today's goal of being identified as a top-level symbol of efficiency and reliability in its sector both for domestic and international markets.

Salami has always remained loyal to the three pillars indicated by the founder - Giuseppe Salami - which have allowed it to be a great and popular brand everywhere: Quality, Innovation and Service. Thanks to its distribution network located in the US, Canada, France and S.p.A. in and with the help of its business partners, **Salami S.p.A.** is able to deliver its products worldwide, assisting every single market with the renowned excellence of Italian engineering.

You can find our most up to date Standard Sales Conditions on our Website: www.salami.it



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Applications

Mini loader

Hydraulic bushcutter

Backhoe loader

Forest crane

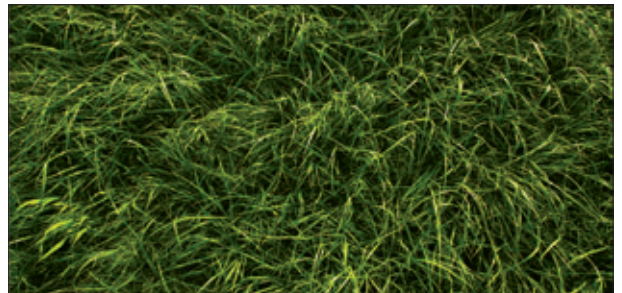
Cable hoist

Telescopic handler

Aerial Working Platform

Material handling

Garbage Truck





GENERAL FEATURES

- monoblock construction;
- hardened and nickel plated spools;
- standard spools: cylinder and motor double and single acting, float in 4th position, regenerative in 3rd and 4th position.
- extensive several spool control and spool positioning devices;
- power beyond (HPCO) configuration;
- spool with overcenter and hydraulic kick-out built-in.



VDM6/VDM065

- parallel circuit with single load check valve on pressure "P" line;
- tandem circuit;
- on-off electric control with manual lever or override;
- solenoid unloading valve;
- nominal flow rate: $45 \div 50$ l/min.



VDM6A

- parallel circuit with individual load check valves;
- auxiliary valves on port A and B;
- single/double acting conversion port valve;
- solenoid high pressure carry over;
- nominal flow rate: $45 \div 50$ l/min.



VDM07

- parallel circuit with load check valve on pressure "P" line;
- auxiliary valve on B port or relief valve on neutral line that can relief both ports;
- nominal flow rate: 50 l/min.

VDM8

- parallel circuit with individual load check valves;
- auxiliary valves on port A and B;
- on-off electric control with manual lever or override;
- solenoid unloading valve;
- nominal flow rate: $75 \div 80$ l/min.

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	Nominal Flow		Max. Flow		Operating Pressure		Max. Operating Pressure						Nr of Sections	Circuit*
							P		A/B		T			
TYPE	l/min	US gpm	l/min	US gpm	bar	psi	bar	psi	bar	psi	bar	psi		
VDM6	45	12	60	16	350	5070	350	5070	350	5070	25	360	1 ÷ 7	P / S ⁽¹⁾ / T ⁽²⁾
VDM6A	45	12	60	16	350	5070	350	5070	350	5070	25	360	1 ÷ 7	P
VDM065	60	16	75	20	350	5070	350	5070	350	5070	25	360	1 ÷ 7	P
VDM07	50	14	65	17	315	4560	315	4560	315	4560	20	300	1 ÷ 6	P
VDM8	75	20	90	24	350	5070	350	5070	350	5070	25	360	1 ÷ 5	P

* P = Parallel / S = Series / T = Tandem

(1) Series circuit only on the first working section of the 2, 3, 4, 5 and 6 working sections monoblocks. Series realized inside the spool.

(2) Tandem circuit available only on the first working section of the 2, 3, 4, 5 and 6 working sections monoblocks.

INLET VALVES		VDM6								VDM065								VDM6A								VDM07								VDM8							
Main relief valve - Direct type (VS)		•								•								•								•								•							
Main relief valve - Pilot type (AR)																																		•							
Solenoid Unloading valve (EV)		•								•								•																•							
AUXILIARY VALVES																																									
Overload (VA)																		•								•								•							
Overload and Anticavitation (AR)																		•																•							
Anticavitation (VR)																		•								•								•							
Conversion (CV)																		•								•								•							
Unidirectional Mechanical (VUM)																		•																							
Unidirectional Piloted (VUP)																																									
SPOOL CONTROLS																																									
Mechanical		•								•								•								•								•							
Hydraulic		•																•								•								•							
Pneumatic		•																•								•								•							
Direct Electric		•								•								•								•								•							
Electro-Hydraulic																																		•							
Electro-Pneumatic		•																•								•								•							
SPOOL POSITIONINGS																																									
Spring Return		•								•								•								•								•							
Detent		•								•								•								•								•							
Float		•								•								•								•								•							
Microswitch/Potentiometer Device		•								•								•								•								•							
Torque Limiting																		•																•							
Detent with Hydraulic Kick-Out		•								•																•								•							
TYPES OF PORTS AND THREADS		P	PL	P3	T	TL1	TLA/B	P	PL	P3	T	TL1	TLA/B	P	PL	P3	T	TS	TL1	TLA/B	P	T	TLA/B	P	PL	P3	T	TLA/B													
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G3/8	•	•	•	S	•	S	•	S	S	S	•	S	S	•	•	•		•	•		•	•	•																	
	G1/2	S	S		•		•		•	•	•	•	•	•	S	S	S	•			•	S	S		•	•	•		•												
	G3/4																S			S				S	S		•	•													
BSPF - JIS B 2351-1 (UNI EN ISO 8434-1)	G3/8	•	•	•		•		•						•	•	•		•	•		•																				
	G1/2				•		•										•			•						S		S													
	G3/4																							S	S		S	S													
METRIC ISO 262 (UNI EN ISO 9974-1 - THREADS UNI ISO 262)	M18x1,5	•	•	•		•		•						•	•	•		•	•		•																				
	M22x1,5				•		•										•			•				•	•	•		•													
	M27x2																									•	•														
METRIC ISO 6149 (UNI EN ISO 6149- 1-2-3)	M18x1,5	•	•	•		•		•						•	•	•		•	•		•	•	•	•																	
	M22x1,5				•		•								S	•			•					•	•	•		•													
	M27x2																									•	•														
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE6 (9/16-18 UNF)		S				S	S	S	S	S	S	S	S																											
	SAE8 (3/4-16 UNF)	•	•	•	S	•	S	•	S	S	S	S	S	S	•	•	•	S	•	•	S	•	•	•	•																
	SAE10 (7/8-14 UNF)				•		•		•	•	•	•	•	•		S	•			•					•	•	•		•												
	SAE12 (1-1/16-12 UN)																										•	•													

• = Standard/S = Special

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GENERAL FEATURES

- sectional construction;
- hardened and nickel plated spools;
- parallel, tandem and series circuit;
- individual load check valve protection on each section;
- auxiliary service port pressure relief valves;
- power beyond (HPCO) configuration;
- extensive spool control and spool positioning devices;
- standard spools: cylinder and motor double and single acting, float in 4th position, regenerative in 3rd and 4th position.



VD6A

- inlet with built-in pressure compensated priority flow control valve;
- on-off electric control with manual lever or override;
- solenoid unloading valve;
- spool with overcenter valve and hydraulic kick-out built-in;
- complete range of mid inlet and outlet modules;
- nominal flow rate: 45 ÷ 50 l/min.



VD8A

- dynamic LS priority flow inlet module;
- single or biblock construction available;
- on-off electric control with manual override;
- spool with overcenter valve built-in and hydraulic kick-out built-in;
- complete range of mid inlet and outlet modules;
- nominal flow rate: 75 ÷ 80 l/min.



VD10A

- modular construction up to 10 sections;
- parallel, tandem and series circuit;
- individual load check valve;
- auxiliary service port pressure relief valves;
- nominal flow rate: 120 l/min.



VD12A

- modular construction up to 10 sections;
- parallel, tandem and series circuit available;
- individual load check valve;
- auxiliary service port pressure relief valves;
- nominal flow rate: 180 l/min.

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	Nominal Flow		Max. Flow		Operating Pressure		Max. Operating Pressure						Nr of Sections	Circuit*
							P		A/B		T			
TYPE	l/min	US gpm	l/min	US gpm	bar	psi	bar	psi	bar	psi	bar	psi		
VD6A	45	12	60	16	350	5070	350	5070	350	5070	25	360	1 ÷ 8 ⁽¹⁾	P / S / T
VD8A	75	20	90	24	350	5070	350	5070	350	5070	25	360	1 ÷ 8 ⁽¹⁾	P / S / T
VD10A	120	32	140	37	280	4060	280	4060	315	4560	25	360	1 ÷ 8 ⁽¹⁾	P / S / T
VD12A	180	48	240	63	280	4060	280	4060	315	4560	25	360	1 ÷ 8 ⁽¹⁾	P / S / T

* P = Parallel / S = Series / T = Tandem / (1) For more working sections please contact our sales department.

INLET VALVES		VD6A							VD8A							VD10A							VD12A						
Main relief valve - Direct type (VS)		•							•							•							•						
Main relief valve - Pilot type (AR)									•							•							•						
Solenoid Unloading valve (EV)		•							•							•							•						
AUXILIARY VALVES																													
Overload (VA)		•							•							•							•						
Overload and Anticavitation (AR)		•							•							•							•						
Anticavitation (VR)		•							•							•							•						
Conversion (CV)		•							•																				
Unidirectional Mechanical (VUM)																													
Unidirectional Piloted (VUP)																													
CONTROLS																													
Mechanical		•							•							•							•						
Hydraulic		•							•							•							•						
Pneumatic		•							•							•							•						
Direct Electric		•							•																				
Electro-Hydraulic		•							•							•							•						
Electro-Pneumatic		•							•							•							•						
SPOOL POSITIONINGS																													
Spring Return		•							•							•							•						
Detent		•							•							•							•						
Float		•							•							•							•						
Microswitch/Potentiometer Device		•							•							•							•						
Torque Limiting		•							•																				
Detent with Hydraulic Kick-Out		•							•							•							•						
TYPES OF PORTS AND THREADS		P	PL	P3	T	TL1	TL	A/B	P	PL	P3	T	TL1	TL	A/B	P	PL	P3	T	TL	A/B	P	PL	P3	T	TL	A/B		
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G3/8	•	•	•	S	•		•																					
	G1/2				•		•	S*	•	•	•				•														
	G3/4								•			•		•	S	•	•	•			•								
	G1																		•			•	•	•	•	•	•		
BSPF - JIS B 2351-1 (UNI EN ISO 8434-1)	G3/8	•	•	•		•		•														•		•					
	G1/2				•		•		•	•	•				•														
	G3/4											•		•															
	G1																												
METRIC ISO 262 (UNI EN ISO 9974-1 - THREADS UNI ISO 262)	M18x1,5	•	•	•		•		•																					
	M22x1,5				•		•		•	•	•				•														
	M27x2											•		•															
METRIC ISO 6149 (UNI EN ISO 6149-1-2-3)	M18x1,5	•	•	•		•		•																					
	M22x1,5				•		•		•	•	•				•														
	M27x2											•		•															
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE6 (9/16-18 UNF)							S																					
	SAE8 (3/4-16 UNF)	•	•	•		•		•							S														
	SAE10 (7/8-14 UNF)				•		•		•	•	•	•			•														
	SAE12 (1-1/16-12 UN)											•		•		•	•	•			•								
	SAE16 (1-5/16-12 UN)																		•			•	•	•	•	•	•		

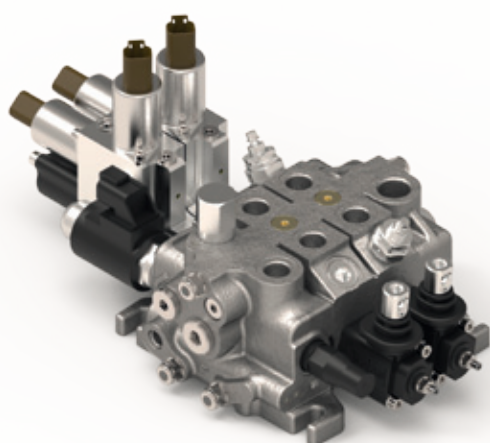
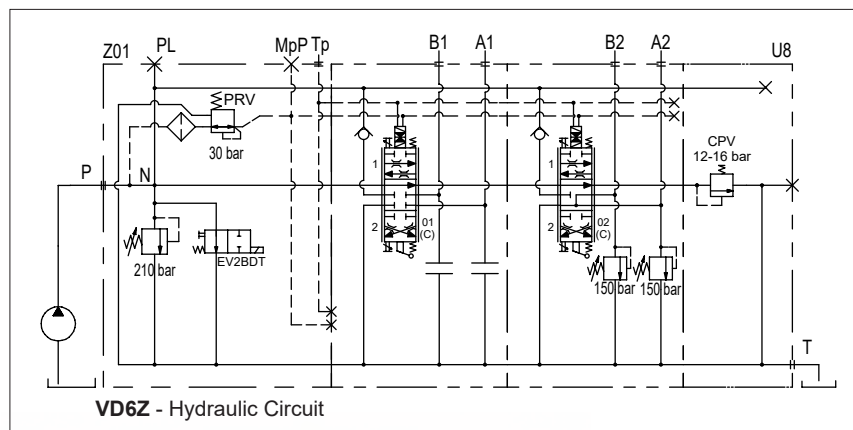
• = Standard/S= Special/S*= Special, max pressure= 280 bar / 4060 psi.

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GENERAL FEATURES

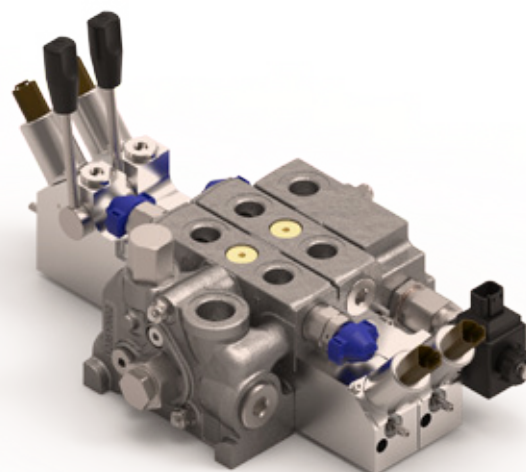
- sectional construction;
- hardened and nickel plated spools;
- parallel, serie and tandem circuit;
- electro-hydraulic proportional spool control;
- high metering spools;
- manual lever dual command;
- remote pilot pressure port;
- solenoid unloading valve;
- back pressure valve;
- power beyond hpco;
- spool stroke adjusters.



VD6Z

electro-hydraulic proportional for fixed displacement pump

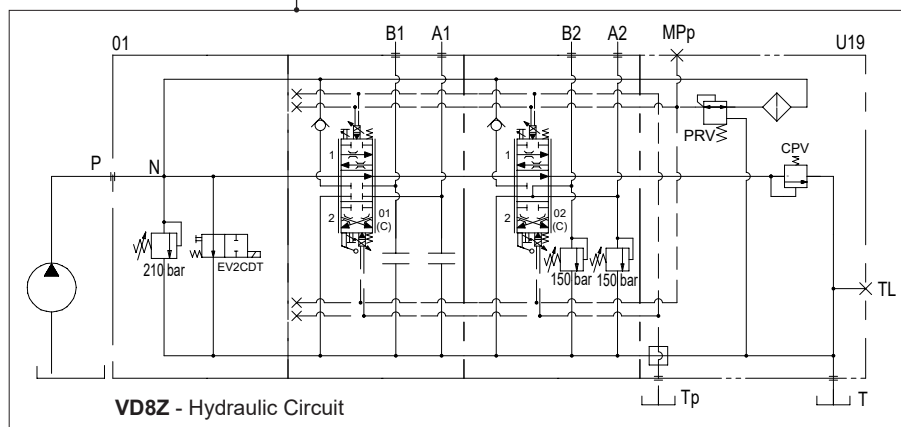
- Stackable with VD6A standard sections



VD8Z

electro-hydraulic proportional for fixed displacement pump

- Stackable with VD8A standard sections



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	Nominal Flow		Max. Flow		Max. Operating Pressure								Nr of Sections	Circuit*
					P		A/B		T		Tp (drain port)			
TYPE	l/min	US gpm	l/min	US gpm	bar	psi	bar	psi	bar	psi	bar	psi		
VD6Z	45	12	60	16	350	5070	350	5070	25	360	5	70	1 ÷ 10	P/S/T
VD8Z	75	20	90	24	350	5070	350	5070	25	360	5	70	1 ÷ 10	P/S/T

* P = Parallel / S = Series / T = Tandem

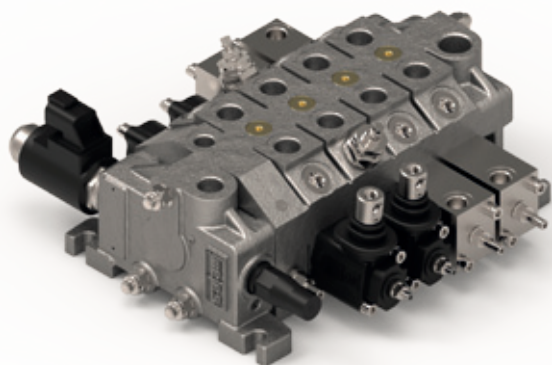
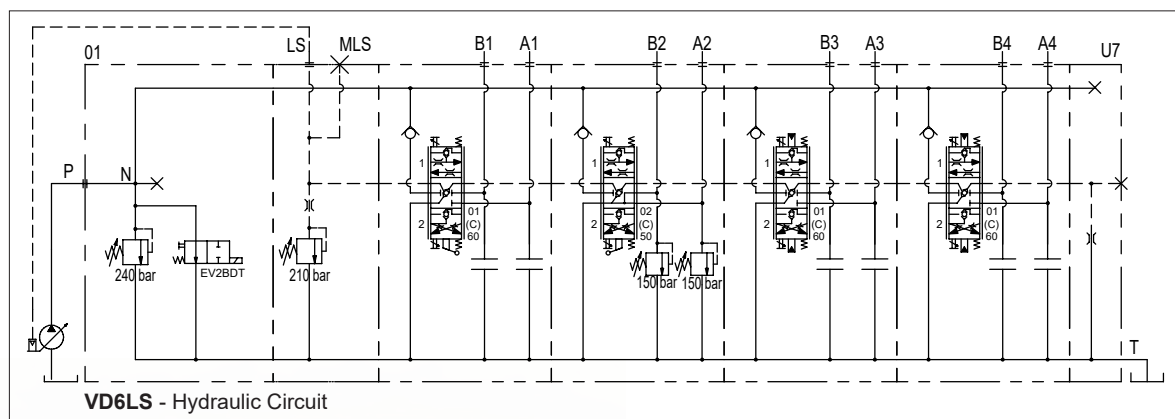
INLET VALVES		VD6Z									VD8Z								
Main relief valve - Direct type (VS)		●									●								
Main relief valve - Pilot type (VS)											●								
Solenoid Unloading valve (EV)		●									●								
Pressure Reducing Valve (PRV)		●																	
OUTLET VALVES																			
Back pressure valve (CPV)		●									●								
Pressure Reducing Valve (PRV)											●								
AUXILIARY VALVES																			
Overload (VA)		●									●								
Overload and Anticavitation (AR)		●									●								
Anticavitation (VR)		●									●								
Conversion (CV)		●									●								
CONTROLS																			
Manual Lever		●									●								
SPOOL POSITIONINGS																			
Electro-Hydraulic On/Off		●									●								
Electro-Hydraulic Proportional		●									●								
Electro-Hydraulic On/Off with Lever		●									●								
Electro-Hydraulic Proportional with Lever		●									●								
TYPES OF PORTS AND THREADS		P	PL	P3	MPp	Tp	A/B	T	TL2	TL	P	PL	P3	A/B	T	TL1	TL	Pp	Tp
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4				●	●												●	●
	G3/8	●	●				●												
	G1/2			●				●	●	●	●	●	●	●					
	G3/4														●	●	●		
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)				●	●												●	●
	SAE8 (3/4-16 UNF)	●	●				●												
	SAE10 (7/8-14 UNF)			●				●	●	●	●	●	●	●					
	SAE12 (1-1/16-12 UN)														●	●	●		
ELECTRICAL DATA		Proportional					ON-OFF				Proportional					ON-OFF			
Voltage	12V	●					●				●					●			
	24V	●					●				●					●			
Current (12V)	Min	896mA					-				792mA					-			
	Max	1364mA					1400mA				1364mA					1400mA			
Current (24V)	Min	448mA					-				396mA					-			
	Max	682mA					700mA				650mA					700mA			
Resistance	12V	4.72 Ω +/-5%									4.72 Ω +/-5%								
	24V	20.8 Ω +/-5%									20.8 Ω +/-5%								
PWM Frequency	12V	100HZ					Direct Current				100HZ					Direct Current			
	24V																		
Connector	AMP Junior Timer (JA)	●					●				●					●			
	Deutsch DT04-2P (DT)	●					●				●					●			
Protection Class	IP6K6	●					●				●					●			

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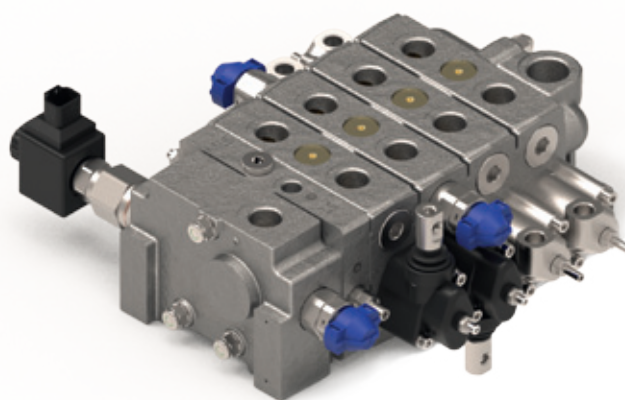
GENERAL FEATURES

- sectional construction;
- hardened and nickel plated spools:
- parallel circuit;
- closed centre;
- Load sensing main relief valve;
- solenoid unloading valve;
- high metering double acting cylinder and motor spools;
- spool control: manual, manual joystick, cable remote, hydraulic piloted, pneumatic piloted;
- spool positioning: spring centred, detent, friction detent.
- spool stroke adjusters.



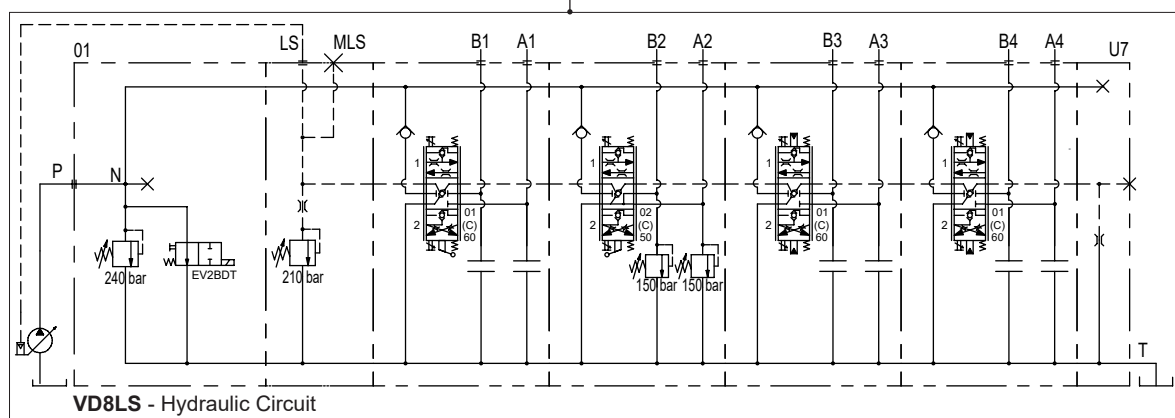
VD6LS

Closed centre for variable displacement LS pump



VD8LS

Closed centre for variable displacement LS pump



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	Max. Flow		Max. Operating Pressure								Nr of Sections	Circuit*
			LS Main Relief bar		P		A/B		T			
TYPE	l/min	US gpm	bar	psi	bar	psi	bar	psi	bar	psi		
VD6LS	60	16	320	4600	350	5070	350	5070	25	360	1 ÷ 8	P
VD8LS	90	24	320	4600	350	5070	350	5070	25	360	1 ÷ 8	P

* P = Parallel

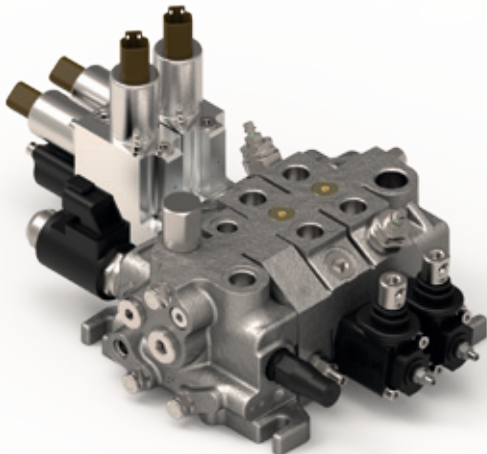
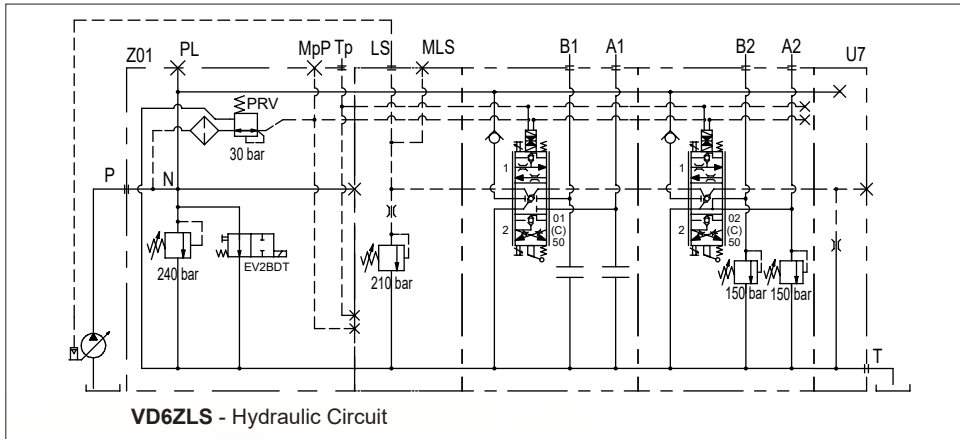
INLET VALVES		VD6LS								VD8LS					
Main relief valve - Direct type (VS)		•								•					
Solenoid Unloading valve (EV)		•								•					
Hydraulic Unloading valve (EHV)										•					
INTERMEDIATE VALVES															
Load sensing valve (VSLS)		•								•					
AUXILIARY VALVES															
Overload (VA)		•								•					
Overload and Anticavitation (AR)		•								•					
Anticavitation (VR)		•								•					
Conversion (CV)		•								•					
CONTROLS															
Mechanical		•								•					
Hydraulic		•								•					
Pneumatic		•								•					
SPOOL POSITIONINGS															
Spring Return		•								•					
Detent		•								•					
TYPES OF PORTS AND THREADS		P	PL	LS	MLS	A/B	T	TL2	P	PL	LS	MLS	A/B	T	TL
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			•	•						•	•			
	G3/8	•	•			•									
	G1/2						•	•	•	•			•		
	G3/4													•	•
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			•							•				
	SAE8 (3/4-16 UNF)	•	•			•									
	SAE10 (7/8-14 UNF)						•	•	•	•			•		
	SAE12 (1-1/16-12 UN)													•	•

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GENERAL FEATURES

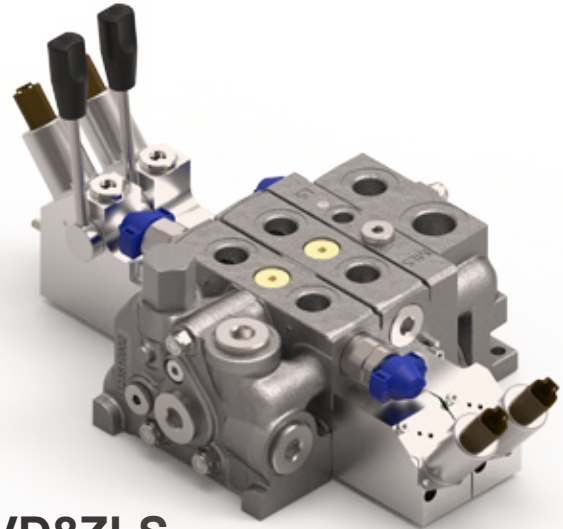
- sectional construction;
- hardened and nickel plated spools;
- parallel circuit;
- closed centre;
- Load sensing main relief valve;
- electro-hydraulic proportional spool control;
- high metering double acting cylinder and motor spools;
- manual lever dual command;
- remote pilot pressure port;
- solenoid unloading valve;
- spool stroke adjusters.



VD6ZLS

electro-proportional for variable displacement LS pump

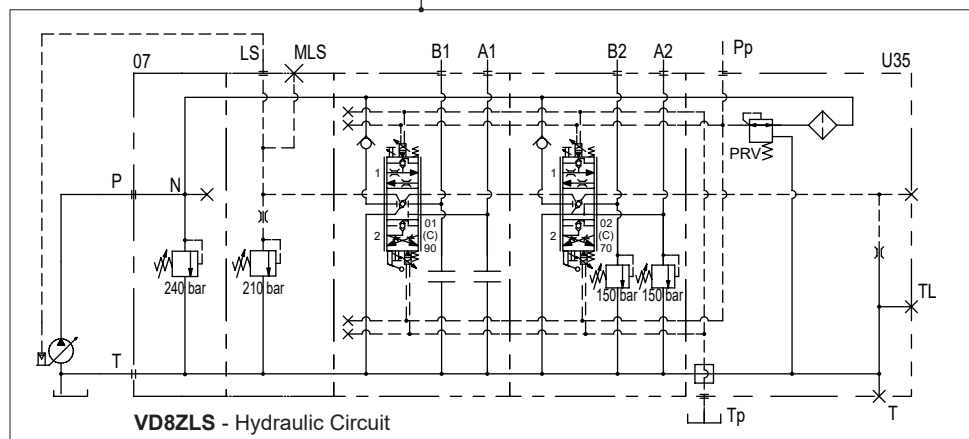
- Stackable with VD6LS sections



VD8ZLS

electro-proportional for variable displacement LS pump

- Stackable with VD8LS sections





	Max. Flow		Max. Operating Pressure										Nr of Sections	Circuit*
			LS Main Relief bar		P		A/B		T		Tp (drain port)			
TYPE	l/min	US gpm	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi		
VD6ZLS	60	16	320	4600	350	5070	350	5070	25	360	5	70	1 ÷ 8	P
VD8ZLS	90	24	320	4600	350	5070	350	5070	25	360	5	70	1 ÷ 8	P

* P = Parallel

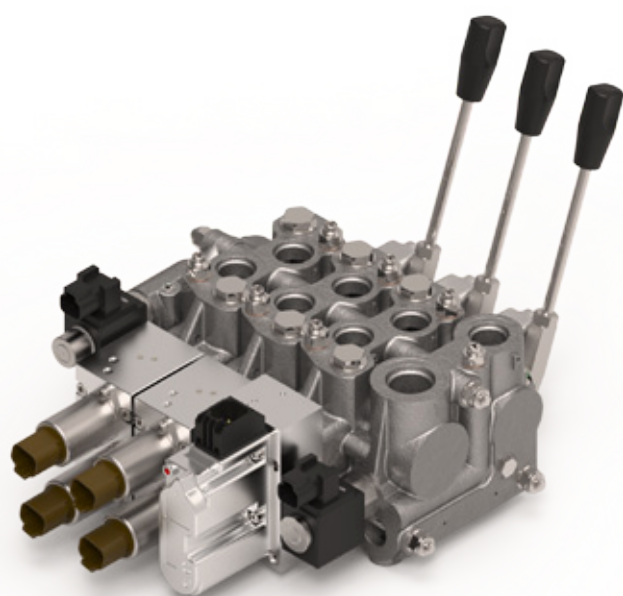
INLET VALVES		VD6ZLS										VD8ZLS									
Main relief valve - Direct type (VS)		●										●									
Main relief valve - Pilot type (VS)												●									
Solenoid Unloading valve (EV)		●										●									
Pressure Reducing Valve (PRV)		●																			
INTERMEDIATE VALVES																					
Load sensing valve (VSLS)		●										●									
OUTLET VALVES																					
Pressure Reducing Valve (PRV)												●									
AUXILIARY VALVES																					
Overload (VA)		●										●									
Overload and Anticavitation (AR)		●										●									
Anticavitation (VR)		●										●									
Conversion (CV)		●										●									
CONTROLS																					
Manual Lever		●										●									
SPOOL POSITIONINGS																					
Electro-Hydraulic On/Off		●										●									
Electro-Hydraulic Proportional		●										●									
Electro-Hydraulic On/Off with Lever		●										●									
Electro-Hydraulic Proportional with Lever		●										●									
TYPES OF PORTS AND THREADS		P	PL	MPp	Tp	LS	MLS	A/B	T	TL2	P	PL	LS	MLS	A/B	T	TL	Pp	Tp		
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4			●	●	●	●						●	●				●	●		
	G3/8	●	●					●													
	G1/2						●		●	●	●	●			●						
	G3/4															●	●				
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)			●	●	●	●						●	●				●	●		
	SAE8 (3/4-16 UNF)	●	●					●													
	SAE10 (7/8-14 UNF)						●		●	●	●	●			●						
	SAE12 (1-1/16-12 UN)															●	●				
ELECTRICAL DATA		Proportional					ON-OFF					Proportional					ON-OFF				
Voltage	12V	●					●					●					●				
	24V	●					●					●					●				
Current (12V)	Min	896mA										792mA									
	Max	1364mA					1400mA					1364mA					1400mA				
Current (24V)	Min	448mA										396mA									
	Max	682mA					700mA					650mA					700mA				
Resistance	12V	4.72 Ω +/-5%										4.72 Ω +/-5%									
	24V	20.8 Ω +/-5%										20.8 Ω +/-5%									
PWM Frequency	12V	100HZ					Direct Current					100HZ					Direct Current				
	24V																				
Connector	AMP Junior Timer (JA)	●					●					●					●				
	Deutsch DT04-2P (DT)	●					●					●					●				
Protection Class	IP6K6	●					●					●					●				

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GENERAL FEATURES

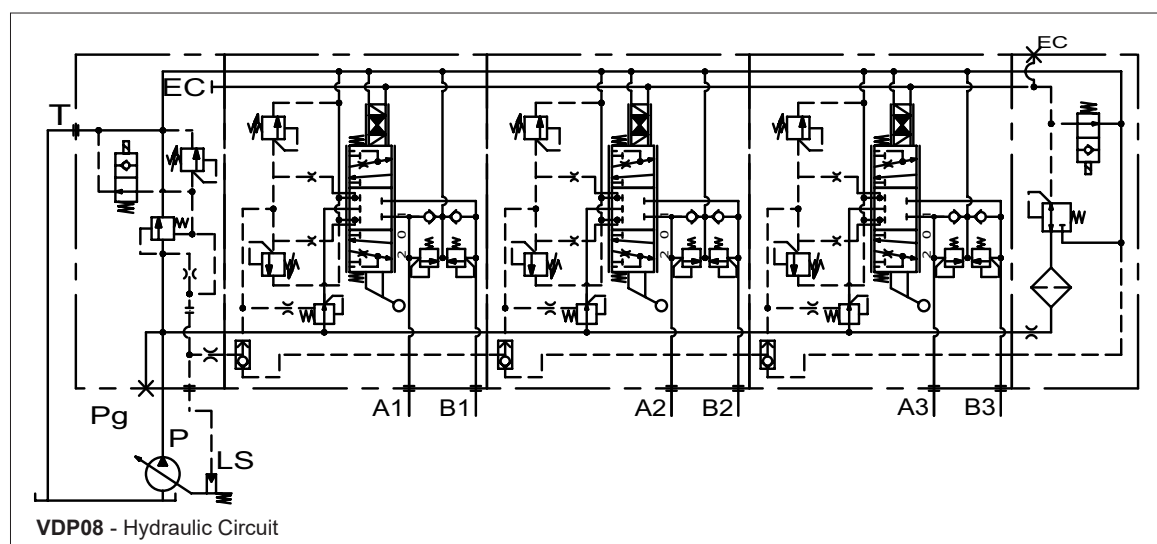
- Sectional construction;
- Load-independent flow control: open/closed centre for fixed/variable displacement pumps;
- Spool Actuation: mechanical, cable remote, pneumatic, electro-pneumatic, hydraulic, electro-hydraulic (switching, proportional or closed loop integrated proportional);
- Pressure Limitation - Inlet module:
 - main relief valve (VSLS) controls the maximum pressure acting on the main flow regulator.
- Pressure Limitation - Working module:
 - anti-shock and anti-cavitation valves on ports A/B;
 - secondary LS valves that controls the working section's pressure, acting on locals flow regulators;
 - external pressure setting for compensator port or service port.
- Solenoid unloading functions:
 - LS signal unloading function (Inlet Section)/Pilot line unloading function (End Section).



Electronics and Control Systems
(see page 18)

VDP08

Pre-compensated Proportional LS Valve for
Fixed and Variable Displacement pumps



VDP08 - Hydraulic Circuit

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	Max. Flow						Operating Pressure		Max. Operating Pressure						Nr of Sections	Circuit**
	P		A/B						P		A/B		T*			
TYPE			l/min	US gpm	l/min	US gpm										
VDP08	l/min	US gpm	pressure compensated section		no-pressure compensated section		bar	psi	bar	psi	bar	psi	bar	psi		
	130	34	95	25	105	27.7	350	5070	315	4570	350	5070	10	145	1 ÷ 8	FDC / CDC

*T= Back Pressure on "T tank port" with KM spool actuation 5 bar recommended

** FDC = fixed displacement circuit / VDC = variable displacement circuit.

INLET VALVES		VDP08					
Main relief valve (VSLS)		•					
Solenoid Unloading valve (EV)		•					
AUXILIARY VALVES							
Overload and Anticavitation (AR)		•					
Anticavitation (VR)		•					
Load sensing valve (VSLS)		•					
CONTROLS							
Mechanical		•					
Hydraulic		•					
Pneumatic		•					
Electro-Hydraulic On/Off		•					
Electro-Hydraulic Proportional open loop		•					
Electro-Hydraulic Proportional closed loop		•					
Electro-Pneumatic		•					
SPOOL POSITIONINGS							
Spring Return		•					
Float		•					
TYPES OF PORTS AND THREADS		P	PL	T	TL	LS	A/B
BSP (UNI ISO 1179 - THREADS UNI ISO 228/1)	G1/4					•	
	G3/8						
	G1/2	S					•
	G3/4	•	•	S			
	G1			•	•		
SAE UN-UNF (UNI ISO 11926 - THREADS UNI ISO 725)	SAE4 (7/16-20 UNF)					•	
	SAE6 (9/16-18 UNF)						
	SAE8 (3/4-16 UNF)						
	SAE10 (7/8-14 UNF)	S					•
	SAE12 (1-1/16-12 UN)	•	•	S			
	SAE16 (1-5/16-12 UN)			•	•		
ELECTRICAL DATA		Proportional		ON-OFF			
Voltage	12V	•		•			
	24V	•		•			
Current (12V)	Min	200 mA		200 mA			
	Max	1500 mA		1500 mA			
Current (24V)	Min	100 mA		100 mA			
	Max	750 mA		750 mA			
Resistance	12V	4.72 Ω +/-5%					
	24V	20.8 Ω +/-5%					
PWM Frequency	12V	100HZ		Direct Current			
	24V						
Connector	AMP Junior Timer (JA)	•		•			
	Deutsch DT04-2P (DT)	•		•			
	Flying leads	•		•			
Protection Class	IP6K6	•		•			

•= Standard/S= Special

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Joystick Electronic Control

LAP Series

Single Axis Hall effect Joystick PWM output.

LAS Series

Single Axis Hall effect Joystick analogue and ratiometric output.

It can be used in conjunction with a logic control unit (PLC) or power control device (PWM driver).

LAC Series

Single Axis Hall effect Joystick CANbus output.



COMMON FEATURES

The use of Hall effect sensors, which eliminates any contact between moving electrical parts, improves overall resolution, precision and life;

- Spring Centre with cruise control programmable;
- Friction;
- PC programmable;
- Knob with lens included;
- Deutsch Connector.

LAP3 Series

Single Axis Hall effect Joystick PWM output, stainless steel for Marine Application (Marine - grade version for LAP).



FEATURES

The use of Hall effect sensors, which eliminates any contact between moving electrical parts, improves overall resolution, precision and life;

- Spring Centre with cruise control programmable;
- Friction;
- PC programmable;
- Knob with lens included;
- Deutsch Connector;
- Materials: all metal parts are stainless steel, all aluminium parts are deep anodised.

DAP Series

Single Axis Hall effect fingertip Joystick PWM output.

DAS Series

Single Axis Hall effect fingertip Joystick analogue and ratiometric output.

It can be used in conjunction with a logic control unit (PLC) or power control device (PWM driver).

DAC Series

Single Axis Hall effect fingertip Joystick CANbus output.



COMMON FEATURES

The use of Hall effect sensors, which eliminates any contact between moving electrical parts, improves overall resolution, precision and life.

- Spring Centre with cruise control programmable;
- Friction;
- PC programmable;
- Knob with lens included;
- Deutsch Connector;
- Red paddle for priority or emergency functions.



Joystick Electronic Control

RPC Series

PWM Rotary Proportional Controller for single or dual coil - Panel Mount.



FEATURES

RPC is a family of panel mount PWM rotary controllers for proportional solenoid valves.

- Single coil dial;
- Dual coil dial;
- PC programmable;
- Deutsch connector;

SRG Series

Step Mode Controller and Ramp Generator - Panel Mount



FEATURES

- Single coil driver
- PWM and Analogue output signal
- PC programmable
- Deutsch connector

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Joystick Electronic Control

JEP Series

Multi - Axis hall effect Joystick

With PWM output, it can directly control proportional valves, often serving as the sole control unit for the entire machine.

JES Series

Multi - Axis hall effect Joystick

With signal outputs, also available in ratiometric version, can be used in conjunction with a logic control unit (PLC) or power control device (PWM driver).

JEC Series

Multi - Axis hall effect Joystick

It transmits control signals through a CANbus network.

COMMON FEATURES

Redundant Hall effect sensors, which measure the magnetic field generated by permanent ferromagnets, offering high precision and long-lasting solution.



- PC programmable;
- virtual cross to restrict diagonal movements;
- adjustable output curves;
- capacitive dead man switch;
- adjustable dead band for each axis;
- auxiliary outputs activated by user-defined logic;
- speed sets;
- dump valve output with a delayed turn-off;
- ability to control tracked machines with up/down and left/right joystick movements;
- serial port for configuration and calibration through simple serial interface adapter;
- provided with 50 cm unpluggable cable;

TECHNICAL INFORMATION	
Power Supply Voltage	10 – 30 VDC
Thumbwheel Input Signal	Range 0,5V – 4,5V
Working Temperature Range	-40 to + 70 °C
Under Panel Size	diameter 80mm; depth 90mm
Working Angle	+ / - 18 degrees
Max force on handle	800 N
Handle full stroke required force	14 N
Electromagnetic Compatibility (EMC)	EN13309 – EN ISO 14982
IP-Class	IP65
Weight (approx.)	1,15 kg
Max force on handle	800 N
Handle full stroke required force	14 N
Electromagnetic Compatibility (EMC)	EN13309 – EN ISO 14982
IP-Class	IP65
Weight (approx.)	1,15 kg

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Electronic Control Unit

ECU6 Series



FEATURES

- PWM output;
- electronic regulator that can command three pairs of proportional solenoids (six coils) from three analogue input signal centred to 2.5V with range from 0 to 5V.
- + 5V Stabilised output;
- PC programmable.

CONTROL SPECIFICATIONS	
Voltage	10 – 30 VDC
Number of Inputs	3
Number of PWM Outputs	6
Max Current Absorption	60 mA + Load on Outputs
Supply for External Potentiometer	+5V – 50 mA max current
Working Ambient Temperature	-20 to + 60 °C
PWM minimum current regulation range	100 mA
PWM maximum current regulation range	2500 mA
Time ramp up/down independently adjustable	From 0,1s to 10s
PWM adjustable frequency table values	From 50 Hz to 300 Hz
Max DV output current	2500 mA
Reference Input Signal Range	0,5V – 4,5V
IP-Class	IP68
Programming	PC Programmed (Serial)
Digital Inputs	3

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GENERAL FEATURES

- high volumetric efficiency achieved by floating bushings and axial compensation;
- 12 teeth integral shaft: one piece, solid gear;
- modular construction.

1.5PE

- single shaft seal;
- rear covers with built-in valves;
- flanges: European, SAE AA;
- ports: European, German and American standards;
- shafts: European and American standards;
- compact design for double and multiple pumps.



TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
1.5PE - 1.4	1.4	0.09	250	3625	270	3915	290	4205	700	5000
1.5PE - 2.1	2.1	0.13	250	3625	270	3915	290	4205	700	5000
1.5PE - 2.8	2.8	0.17	250	3625	270	3915	290	4205	700	4500
1.5PE - 3.5	3.5	0.21	250	3625	270	3915	290	4205	700	4500
1.5PE - 4.1	4.1	0.25	250	3625	270	3915	290	4205	700	4000
1.5PE - 5.2	5.2	0.32	230	3335	250	3625	270	3915	700	4000
1.5PE - 6.2	6.2	0.38	230	3335	250	3625	270	3915	600	3600
1.5PE - 7.6	7.6	0.46	200	2900	220	3190	250	3625	600	3300
1.5PE - 9.3	9.3	0.57	180	2610	200	2900	240	3480	600	3000
1.5PE - 11	11	0.67	170	2465	190	2755	220	3190	600	3000

2PE

- double shaft seal;
- outrigger bearing for radial and axial loads;
- extensive range of rear covers with built-in valves;
- compact design for double and multiple pumps;
- flanges: European, German, SAE A, SAE B, 4 Bolts;
- ports: European, German and American standards;
- shafts: European and American standards.



TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
2PE - 3.2*	3.3	0.20	250	3625	280	4060	300	4350	600	4000
2PE - 3.9*	3.9	0.24	250	3625	280	4060	300	4350	600	4000
2PE - 4.5	4.6	0.27	250	3625	280	4060	300	4350	600	4000
2PE - 6.5	6.5	0.40	250	3625	280	4060	300	4350	600	4000
2PE - 8.3	8.3	0.51	250	3625	280	4060	300	4350	500	3500
2PE - 10.5	10.6	0.65	250	3625	280	4060	300	4350	500	3500
2PE - 11.3	11.5	0.68	250	3625	280	4060	300	4350	500	3500
2PE - 12.5	12.8	0.78	250	3625	280	4060	300	4350	500	3500
2PE - 13.8	14	0.85	250	3625	280	4060	300	4350	500	3500
2PE - 16	16.6	1.01	250	3625	280	4060	300	4350	400	3000
2PE - 19	19.4	1.15	220	3190	240	3480	260	3750	400	3000
2PE - 22.5	22.9	1.37	200	2900	220	3190	240	3480	400	2750
2PE - 26	26.7	1.63	180	2610	200	2900	220	3190	300	2500

*=Available only as rear pump

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2.5PB

- double shaft seal;
- outrigger bearing for radial and axial loads;
- extensive range of rear covers with built-in valves;
- compact design for double and multiple pumps;
- flanges: European, SAE A, SAE B, 3 Bolt;
- ports: European, American standards;
- shafts: European and American standards.



TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
2.5PB - 5.5*	5.97	0.36	250	3625	280	4060	300	4350	600	3000
2.5PB - 8.3*	8.29	0.5	250	3625	280	4060	300	4350	600	3000
2.5PB - 11.5*	11.76	0.72	250	3625	280	4060	300	4350	600	3000
2.5PB - 13.8*	14.07	0.86	250	3625	280	4060	300	4350	600	3000
2.5PB - 16	16	0.97	250	3625	280	4060	300	4350	600	3000
2.5PB - 19	19.3	1.17	250	3625	280	4060	300	4350	600	3000
2.5PB - 22	22.2	1.35	250	3625	280	4060	300	4350	500	3000
2.5PB - 25	25.2	1.53	250	3625	280	4060	300	4350	500	3000
2.5PB - 28	27.6	1.68	250	3625	280	4060	300	4350	500	3000
2.5PB - 32	32.4	1.97	230	3330	250	3625	260	3750	500	3000
2.5PB - 38	38.1	2.32	200	2900	220	3190	240	3480	400	2750
2.5PB - 44	44.2	2.69	170	2465	190	2755	210	3040	400	2500

*=Available only as rear pump, displacements 11.5-13.8 are available as single pump only with drive shaft "55"

3PE

- double shaft seal;
- outrigger bearing for radial and axial loads;
- extensive range of rear covers with built-in valves;
- compact design for double and multiple pumps;
- flanges: European, German standards and SAE B;
- ports: European, German and American standards;
- shafts: European and American standards.



TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
3PE - 21	20.6	1.26	250	3625	280	4060	300	4350	600	3000
3PE - 27	27	1.65	250	3625	280	4060	300	4350	600	3000
3PE - 33	33.5	2.04	250	3625	280	4060	300	4350	600	3000
3PE - 38	38.7	2.36	240	3480	260	3750	275	3990	500	2750
3PE - 46	46.9	2.86	250	3625	270	3915	280	4060	500	2750
3PE - 55	54.1	3.3	220	3190	240	3480	250	3625	400	2500
3PE - 65	63.1	3.85	200	2900	220	3190	240	3480	400	2500
3PE - 75	73.4	4.48	180	2610	200	2900	220	3190	400	2500



GENERAL FEATURES

- gear pumps with aluminium body, cast iron mounting flanges and end covers.
- high volumetric efficiency achieved by floating bushings and axial compensation;
- 12 teeth integral shaft: one piece, solid gear;
- modular construction.



3.5PC

- double shaft seal;
- flanges: European, SAE B;
- ports: European, American standards;
- shafts: European and American standards.

TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
3.5PC - 55	54.8	3.34	250	3625	280	4060	300	4350	400	2750
3.5PC - 64	63.2	3.85	250	3625	280	4060	300	4350	350	2750
3.5PC - 75	74.7	4.55	230	3330	250	3625	280	4060	300	2500
3.5PC - 87	88	5.36	210	3040	230	3330	260	3750	300	2250
3.5PC - 98	99	6.03	200	2900	220	3190	250	3625	300	2000



MULTIPLE STAGE CONFIGURATIONS WITH DIFFERENT PUMP GROUPS



2PE/1.5PE

Double tandem or multiple pumps with individual or common suction.



2.5PB/2PE

Double tandem or multiple pumps with individual, separate or common suction.

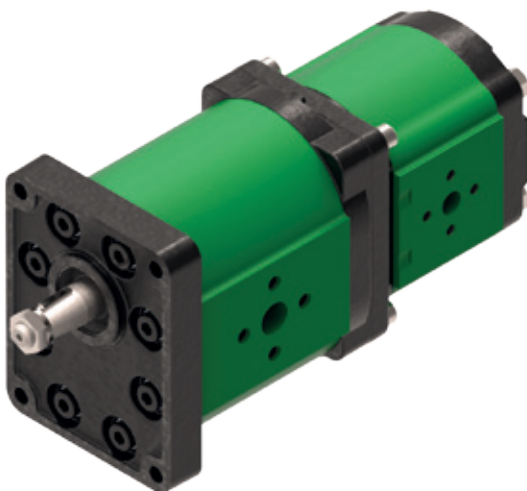


3PE/2PE

Double tandem or multiple pumps with individual, separate or common suction.

3PE/1.5PE

Double tandem or multiple pumps with individual or common suction.



3.5PC/3PE

Double tandem or multiple pumps with individual suction.

3.5PC/2PE

Double tandem or multiple pumps with individual or separate suction.

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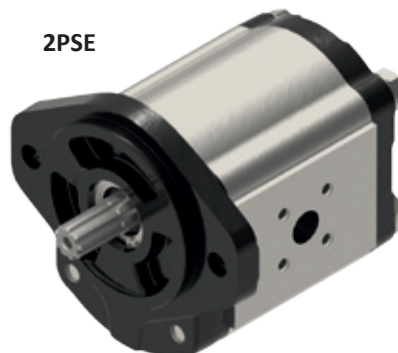


2PSE Low noise (Aluminium Body Gear Pump)

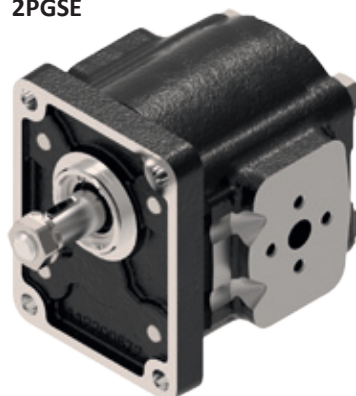
2PGSE Low noise (High Pressure Cast Iron Gear Pump, 300 bar)

- + Flow pulsations reduction: -80%
- + Noise emissions reduction: up to 10 dB(A) (average) compared to standard gear pumps
- + Downstream vibration reduced
- + Longer pump life

2PSE



2PGSE

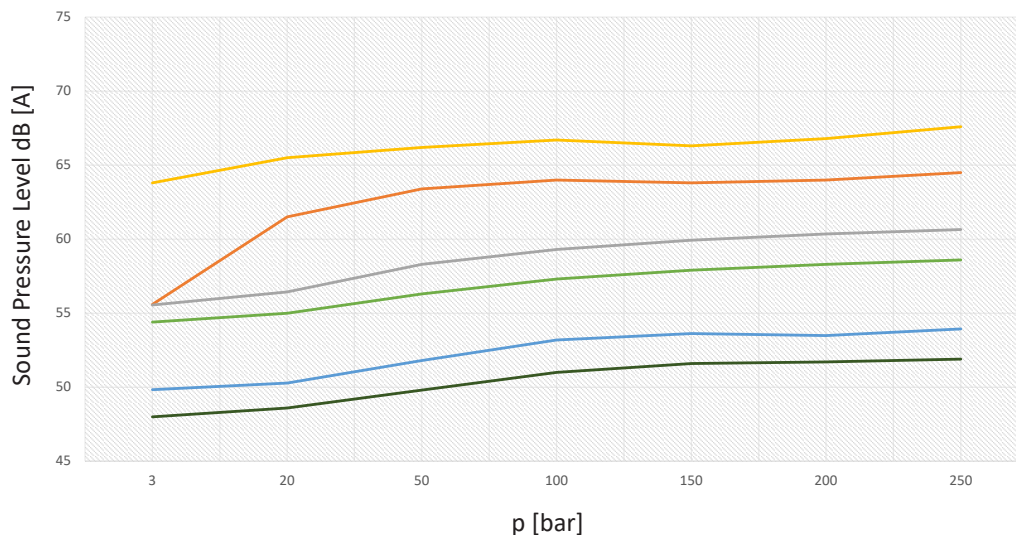


GENERAL FEATURES

- 2PSE gear pump made with aluminium body, cast iron mounting flanges and end covers;
- 2PGSE gear pump made with cast iron body, flanges and end covers;
- gear: double flank engagement, tooth profile optimization to reduce relative sliding, specific heat treatment to minimize the deformation;
- axial balancing bushings optimized to minimize the volume trapped during teeth engagement.
- high volumetric efficiency achieved by floating bushings and axial compensation;
- 12 teeth integral shaft: one piece, solid gear;
- modular construction;
- compact design for double and multiple pumps;
- common parts with 2PE and 2PGE series;
- double shaft seal;
- extensive range of rear covers with built-in valves;
- flanges: European, German, SAE A, SAE B;
- ports: European and German flanged ports; BSPP (Gas) and ODT (SAE) threaded ports; American SAE J518 - standard pressure series 3000 psi flanged ports (available in 2PGSE pump).
- shafts: European and American standards.

Noise Level Reduction

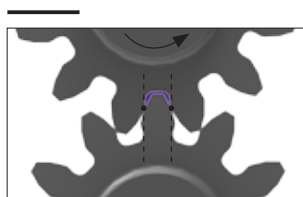
- 2PE 22.9 cm³/rev
- 2PE 11.5 cm³/rev
- Standard Aluminium body gear pump
- 2PSE 22.9 cm³/rev
- 2PSE 11.5 cm³/rev
- Low noise Aluminium body gear pump
- 2PGSE 22.9 cm³/rev
- 2PGSE 11.5 cm³/rev
- Low noise Cast iron gear pump



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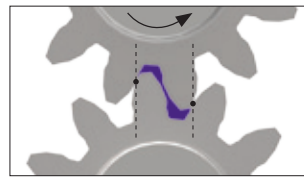


Pressure Ripple Comparison

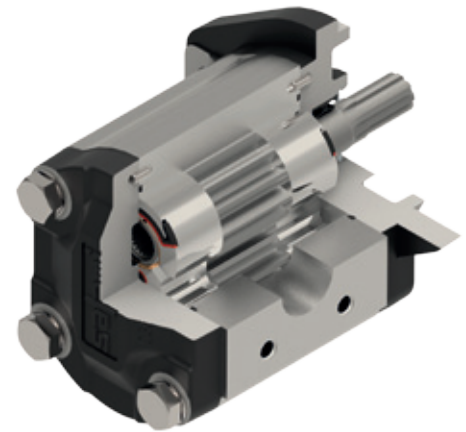


Low noise gear pump

Time (ms)



Standard gear pump



Applications:

- Hydraulic presses, Waste compactors, Forklifts, Drives for elevators/hoists, Farm vehicles, Municipal vehicles, Earthmoving machines, Hydraulic steering systems.

2PSE

TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
2PSE - 3.2*	3.3	0.20	250	3625	280	4060	300	4350	600	4000
2PSE - 3.9*	3.9	0.24	250	3625	280	4060	300	4350	600	4000
2PSE - 4.5	4.6	0.27	250	3625	280	4060	300	4350	600	4000
2PSE - 6.5	6.5	0.40	250	3625	280	4060	300	4350	600	4000
2PSE - 8.3	8.3	0.51	250	3625	280	4060	300	4350	500	3500
2PSE - 10.5	10.6	0.65	250	3625	280	4060	300	4350	500	3500
2PSE - 11.3	11.5	0.68	250	3625	280	4060	300	4350	500	3500
2PSE - 12.5	12.8	0.78	250	3625	280	4060	300	4350	500	3500
2PSE - 13.8	14	0.85	250	3625	280	4060	300	4350	500	3500
2PSE - 16	16.6	1.01	250	3625	280	4060	300	4350	400	3000
2PSE - 19	19.4	1.15	220	3190	240	3480	260	3750	400	3000
2PSE - 22.5	22.9	1.37	200	2900	220	3190	240	3480	400	2750
2PSE - 26	26.7	1.63	180	2610	200	2900	220	3190	300	2500

*= Available only as rear pump

2PGSE

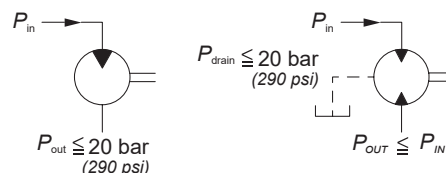
TYPE	Displacement		Continuous pressure P ¹		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ¹
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
2PGSE - 6.5	6.5	0.40	300	4350	320	4650	600	4000
2PGSE - 8.3	8.3	0.51	300	4350	320	4650	500	3500
2PGSE - 11.3	11.5	0.68	300	4350	320	4650	500	3500
2PGSE - 13.8	14	0.85	300	4350	320	4650	500	3500
2PGSE - 16	16.6	1.01	300	4350	320	4650	500	3000
2PGSE - 19	19.4	1.15	300	4350	320	4650	500	3000
2PGSE - 22.5	22.9	1.37	280	4060	300	4350	500	2750
2PGSE - 26	26.7	1.63	260	3750	280	4060	500	2500
2PGSE - 28	28.1	1.71	230	3335	250	3625	500	2500

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GENERAL FEATURES

- gear motors with aluminium body, cast iron mounting flanges and end covers.
- high volumetric efficiency achieved by floating bushings and axial compensation;
- 12 teeth integral shaft: one piece, solid gear;
- modular construction.



The Motors are equipped with HPD shaft seal (20 bar), on request is available also for motor with outrigger bearing.

Max drain pressure is influenced by rotational speed of the unit.

1.5ME

- high pressure single shaft seal;
- rear covers with built-in valves;
- flanges: European, SAE AA;
- ports: European, German and American standards;
- shafts: European and American standards.



TYPE	Displacement		Max. continuous pressure P ¹		Max. starting pressure P ²		Min. speed at P ¹	Max. speed at P ²
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
1.5ME - 2.8	2.8	0.17	250	3625	270	3915	700	4500
1.5ME - 3.5	3.5	0.21	250	3625	270	3915	700	4500
1.5ME - 4.1	4.1	0.25	250	3625	270	3915	700	4000
1.5ME - 5.2	5.2	0.32	230	3335	250	3625	700	4000
1.5ME - 6.2	6.2	0.38	230	3335	250	3625	600	3600
1.5ME - 7.6	7.6	0.46	200	2900	220	3190	600	3300
1.5ME - 9.3	9.3	0.57	180	2610	200	2900	600	3000
1.5ME - 11	11	0.67	170	2465	190	2755	600	3000

2ME

- high pressure double shaft seal;
- outrigger bearing for radial and axial loads;
- extensive range of rear covers with built-in valves;
- flanges: European, German, SAE A, SAE B, 4 Bolts;
- ports: European, German and American standards;
- shafts: European and American standards;
- external and internal drain.



TYPE	Displacement		Max. continuous pressure P ¹		Max. starting pressure P ²		Min. speed at P ¹	Max. speed at P ²
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
2ME - 4.5	4.6	0.27	250	3625	280	4060	600	4000
2ME - 6.5	6.5	0.40	250	3625	280	4060	600	4000
2ME - 8.3	8.3	0.51	250	3625	280	4060	500	3600
2ME - 10.5	10.6	0.65	250	3625	280	4060	500	3500
2ME - 11.3	11.5	0.68	250	3625	280	4060	500	3500
2ME - 12.5	12.8	0.78	250	3625	280	4060	500	3400
2ME - 13.8	14	0.85	250	3625	280	4060	500	3400
2ME - 16	16.6	1.01	250	3625	280	4060	450	3200
2ME - 19	19.4	1.15	220	3190	240	3480	450	3200
2ME - 22.5	22.9	1.37	200	2900	220	3190	450	3000
2ME - 26	26.7	1.63	180	2610	200	2900	450	2850

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2.5MB

- high pressure double shaft seal;
- outrigger bearing for radial and axial loads;
- flanges: European, SAE A, SAE B, 3 Bolt;
- ports: European and American standards;
- shafts: European and American standards.



TYPE	Displacement		Max. continuous pressure P ¹		Max. starting pressure P ²		Min. speed at P ¹	Max. speed at P ²
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
2.5MB - 16	16	0.97	250	3625	280	4060	600	3000
2.5MB - 19	19.3	1.17	250	3625	280	4060	600	3000
2.5MB - 22	22.2	1.35	250	3625	280	4060	500	3000
2.5MB - 25	25.2	1.53	250	3625	280	4060	500	3000
2.5MB - 28	27.6	1.68	250	3625	280	4060	500	3000
2.5MB - 32	32.4	1.97	230	3330	250	3625	500	3000
2.5MB - 38	38.1	2.32	200	2900	220	3190	400	2750
2.5MB - 44	44.2	2.69	170	2465	190	2755	400	2500

3ME

- high pressure double shaft seal;
- outrigger bearing for radial and axial loads;
- flanges: European, German standards and SAE B;
- ports: European, German and American standards;
- shafts: European and American standards.



TYPE	Displacement		Max. continuous pressure P ¹		Max. starting pressure P ²		Min. speed at P ¹	Max. speed at P ²
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
3ME - 27	27	1.65	250	3625	300	4350	600	3000
3ME - 33	33.5	2.04	250	3625	300	4350	600	3000
3ME - 38	38.7	2.36	250	3625	300	4350	500	2750
3ME - 46	46.9	2.86	250	3625	280	4060	500	2750
3ME - 55	54.1	3.3	220	3190	250	3625	400	2500
3ME - 65	63.1	3.85	200	2900	240	3480	400	2500
3ME - 75	73.4	4.48	180	2610	220	3190	400	2500

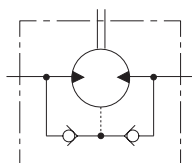


2ME - Configurations

IDV

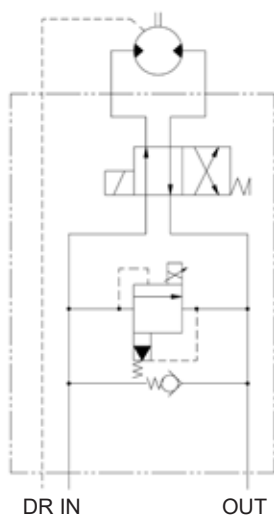
Internal drain valve

- reversible release with internal drain valve.



EPP-RV Fan drive

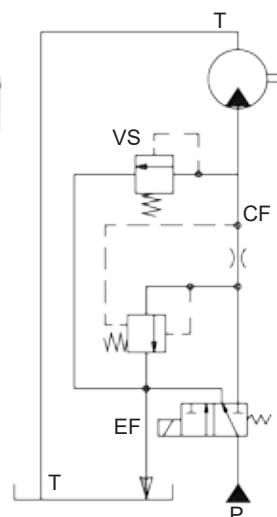
- electric proportional relief valve for a precise temperature regulation;
- available with directional valve for an efficient radiator cleaning;
- waterproof coils protection up to IP65;
- reduced weight thanks to a Finite Elements structural optimization;
- protection against pressure and torque shocks;
- maximum speed in case of electric power failure;
- ports: European and American standards (SAE and BSPP).



VRS

Air compressor drive

- electric or manual motor speed control;
- electric venting valve.



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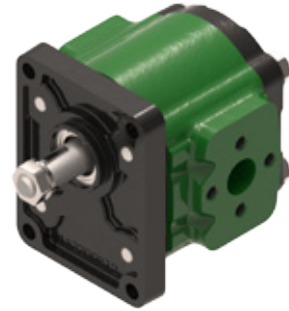


GENERAL FEATURES

- gear pumps with high tensile cast iron;
- high pressure;
- 12 teeth integral shaft: one piece, solid gear;
- double shaft seals.

2PGE - High tensile cast iron pump, 300 bar

- high volumetric efficiency by innovative design and accurate control of machining tolerances;
- flanges: European, German, SAE A, SAE B, ISO (for PTO designs);
- Ports: European, German and American SAE J518 (standard pressure series 3000 psi) flanged ports. BSPP (Gas) and ODT (SAE) threaded ports;
- shaft: European and American standards.



TYPE	Displacement		Continuous pressure P ¹		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ¹
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
2PGE - 6.5	6.5	0.40	300	4350	320	4650	600	4000
2PGE - 8.3	8.3	0.51	300	4350	320	4650	500	3500
2PGE - 11.3	11.5	0.68	300	4350	320	4650	500	3500
2PGE - 13.8	14	0.85	300	4350	320	4650	500	3500
2PGE - 16	16.6	1.01	300	4350	320	4650	500	3000
2PGE - 19	19.4	1.15	300	4350	320	4650	500	3000
2PGE - 22.5	22.9	1.37	280	4060	300	4350	500	2750
2PGE - 26	26.7	1.63	260	3750	280	4060	500	2500
2PGE - 28	28.1	1.71	230	3335	250	3625	500	2500

PG330 OEM'S Construction - High pressure

PG331 Dealers Construction - Compact two pieces modular design

- high volumetric efficiency throughout the full pressure range, by narrow machining tolerance range and by floating thrust plates, that ensure axial compensation too;
- flanges: European, SAE A, SAE B, SAE C, ISO (for PTO designs);
- ports: European and American standards;
- shafts: European and American standards.



TYPE	Displacement		Continuous pressure P ¹		Intermittent pressure P ²		Peak pressure P ³		Min. speed at P ¹	Max. speed at P ^{2**}
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	bar	psi	rpm	
PG330 - 23	23.4	1.43	280	4060	300	4350	320	4650	400	3000
PG330 - 28	28.6	1.74	280	4060	300	4350	320	4650	400	3000
PG330 - 34	34.4	2.1	280	4060	300	4350	320	4650	400	3000
PG330 - 40	40.3	2.46	280	4060	300	4350	320	4650	400	2700
PG330 - 47	47.4	2.89	280	4060	300	4350	320	4650	400	2700
PG330 - 55	55.2	3.37	260	3750	280	4060	300	4350	400	2700
PG330 - 64	64.3	3.92	240	3500	260	3750	280	4060	350	2500
PG330 - 72	73.4	4.48	220	3200	240	3500	260	3750	350	2500
PG330 - 80	80.6	4.91	200	2900	220	3200	240	3500	350	2500



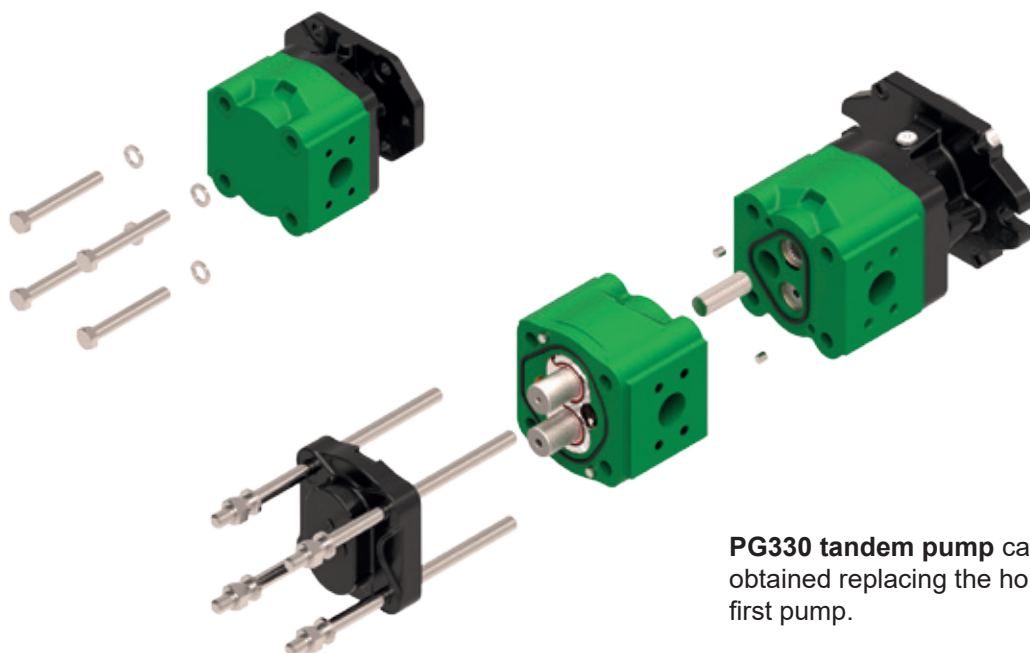
PG330 and PG331

Sharing the same features, in terms of dimensions and working conditions.

PG330 optimized for high volume and for OEM's customers, PG331 has been designed for Retailers simplifying the switch from single to multiple stage pump configuration. Both are available in single, double, triple version.

PG330 Single pump

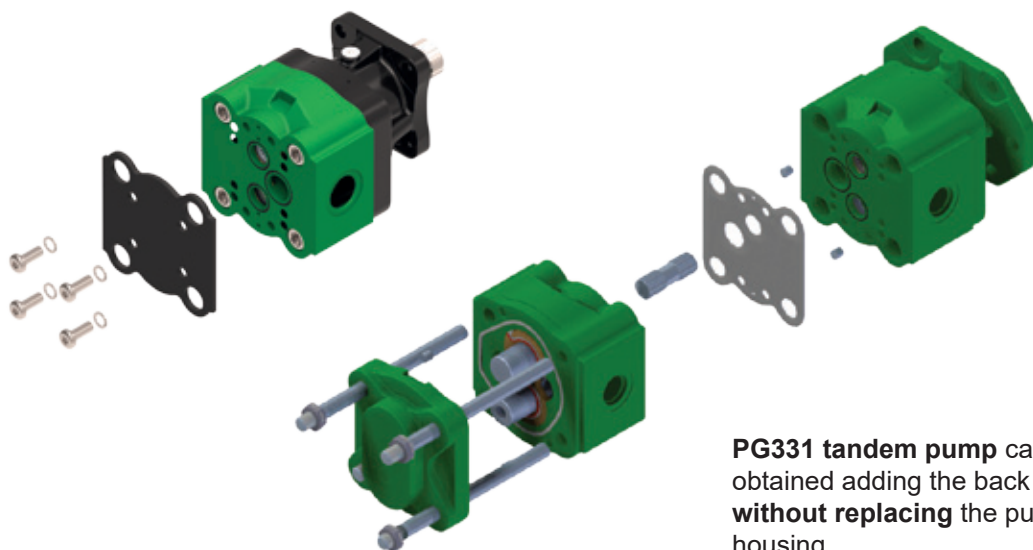
PG330 Multiple pump assembly



PG330 tandem pump can be obtained replacing the housing of the first pump.

PG331 Single pump

PG331 Multiple pump assembly



PG331 tandem pump can be obtained adding the back cover **without replacing** the pump's gear housing.

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MULTIPLE STAGE CONFIGURATIONS WITH DIFFERENT PUMPS GROUP



2PGE/1.5PE

Double tandem or multiple pumps with individual or common suction.



2PGE/2PE

Double tandem or multiple pumps with individual, separate or common suction.



PG330/2PGE PG330/2PE

Double tandem or multiple pumps with individual, separate or common suction.



PG331/2PE PG331/2PGE

Double tandem or multiple pumps with individual, separate or common suction.

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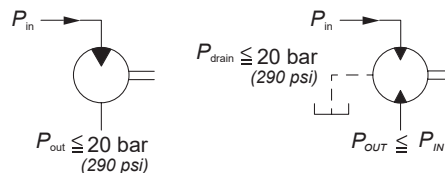


GENERAL FEATURES

- cast iron gear motors;
- high pressure;
- 12 teeth integral shaft: one piece, solid gear;
- double shaft seal.

2MGE

- high pressure double shaft seal;
- high torque;
- flanges: European, German, SAE A, SAE B;
- Ports: European, German and American SAE J518 (standard pressure series 3000 psi) flanged ports. BSPP (Gas) and ODT (SAE) threaded ports;
- shaft: European and American standards;
- external and internal drain.



The Motors are equipped with HPD shaft seal (20 bar), on request is available also for motor with outrigger bearing.

Max drain pressure is influenced by rotational speed of the unit.



TYPE	Displacement		Max. continuous pressure P ¹		Max. starting pressure P ²		Min. speed at P ¹	Max. speed at P ²
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
2MGE - 6.5	6.5	0.40	250	3625	280	4060	600	4000
2MGE - 8.3	8.3	0.51	250	3625	280	4060	600	3600
2MGE - 11.3	11.5	0.68	250	3625	280	4060	600	3500
2MGE - 13.8	14	0.85	250	3625	280	4060	600	3400
2MGE - 16	16.6	1.01	250	3625	280	4060	450	3200
2MGE - 19	19.4	1.15	250	3625	280	4060	450	3200
2MGE - 22.5	22.9	1.37	250	3625	280	4060	450	3000
2MGE - 26	26.7	1.63	230	3335	260	3750	450	2850
2MGE - 28	28.1	1.71	200	2900	230	3335	450	2500

MG330

- high pressure double shaft seal;
- high torque;
- flanges: European, SAE B, SAE C;
- ports: European and American standards;
- shaft: European and American standards;
- external and internal drain.



TYPE	Displacement		Max. continuous pressure P ¹		Max. starting pressure P ²		Min. speed at P ¹	Max. speed at P ²
	cm ³ /rev	cu.in/rev	bar	psi	bar	psi	rpm	
MG330 - 23	23.4	1.43	240	3480	300	4350	600	3000
MG330 - 28	28.6	1.74	240	3480	300	4350	600	3000
MG330 - 34	34.4	2.1	240	3480	300	4350	600	3000
MG330 - 40	40.3	2.46	220	3190	280	4060	550	2700
MG330 - 47	47.4	2.89	240	3480	280	4060	550	2700
MG330 - 55	55.2	3.37	220	3190	280	4060	550	2700
MG330 - 64	64.3	3.92	200	2900	260	3750	500	2500
MG330 - 72	73.4	4.48	200	2900	260	3750	500	2500
MG330 - 80	80.6	4.91	180	2610	200	2900	500	2500



GENERAL FEATURES

- gear flow dividers with aluminium body, cast iron end covers;
- high volumetric efficiency achieved by floating bushings and axial compensation;
- two or more modular stages;
- 12 teeth integral shaft: one piece, solid gear in every single stages;
- available with ports for the main European, German and American standards;
- common Inlet Port available also on the end cover.

1.5DRE

- up to 6 stages;
- 1.5DRE-VA: cylinder synchronizing function.



TYPE	Displacement		Max outlet pressure				Max outlet Δp		Speed		Flow per section		Flow per section	
			P ₁	P ₂	P ₁	P ₂	between sections		min.	max.	min.	max.	min.	max.
	cm ³ /rev	cu.in./rev	bar	bar	psi	psi	bar	psi	rpm		l/min		gpm	
1.5DRE - 2.8	2.8	0.17	250	270	3625	3915	50	725	1200	4500	3.54	13.26	0.93	3.49
1.5DRE - 3.5	3.5	0.21	250	270	3625	3915	50	725	1200	4500	4.42	16.58	1.16	4.36
1.5DRE - 4.1	4.1	0.25	250	270	3625	3915	50	725	1200	4000	5.18	17.26	1.36	4.54
1.5DRE - 5.2	5.2	0.32	230	250	3335	3625	50	725	1200	4000	6.57	21.89	1.73	5.76
1.5DRE - 6.2	6.2	0.38	230	250	3335	3625	50	725	1200	3400	7.83	22.19	2.06	5.84
1.5DRE - 7.6	7.6	0.46	200	220	2900	3190	50	725	1200	3400	9.60	27.20	2.53	7.16
1.5DRE - 9.3	9.3	0.57	180	200	2610	2900	50	725	1200	3000	11.75	29.37	3.09	7.73
1.5DRE - 11	11	0.67	170	190	2465	2755	50	725	1200	3000	13.89	34.74	3.66	9.14

2DRE

- all bodies provision for AR cylinder synchronizing valves;
- up to 6 stages;
- 2DRE-VA: cylinder synchronizing function;
- 2DRE-AR: for cylinder synchronizing in both directions (additional Tank connection required).



TYPE	Displacement		Max. Outlet Pressure				Max. Outlet Δp		Speed		Flow per section		Flow per section	
			P ₁	P ₂	P ₁	P ₂	between sections		min.	max.	min.	max.	min.	max.
	cm ³ /rev	cu.in./rev	bar	bar	psi	psi	bar	psi	rpm		l/min		gpm	
2DRE - 8,3	8.3	0.51	250	280	3625	4060	50	725	1200	3600	10.36	31.07	2.73	8.18
2DRE - 10,5	10.6	0.65	250	280	3625	4060	50	725	1200	3500	13.39	39.05	3.52	10.28
2DRE - 11,3	11.5	0.68	250	280	3625	4060	50	725	1200	3500	14.53	42.37	3.82	11.15
2DRE - 12,5	12.8	0.78	250	280	3625	4060	50	725	1200	3400	16.04	45.45	4.22	11.96
2DRE - 13,8	14	0.85	250	280	3625	4060	50	725	1200	3400	17.43	49.39	4.59	13.00
2DRE - 16	16.6	1.01	250	280	3625	4060	50	725	1100	3200	19.22	55.92	5.06	14.71
2DRE - 19	19.4	1.15	220	240	3150	3450	50	725	1100	3200	22.46	65.35	5.91	17.20
2DRE - 22,5	22.9	1.37	220	240	3150	3450	50	725	1100	3000	26.52	72.32	6.98	19.03
2DRE - 26	26.7	1.63	200	220	2900	3150	50	725	1100	2850	29.87	77.40	7.86	20.37
2DRE - 32	32.4	1.98	200	220	2900	3150	50	725	1100	2700	34.85	85.55	9.71	22.51



2PE - VSQ High Low Pump

High-Low pump is the most suitable choice when the actuator needs quick movements with low pressure and slow speed under high pressure. This particular dual pump with integrated valves has been specially designed for applications such as clamping mechanisms, metal forming, crimping machines, compactors, log splitters, presses.

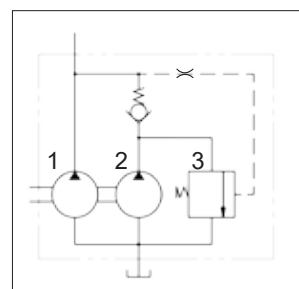
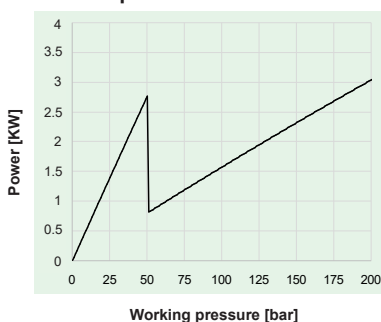
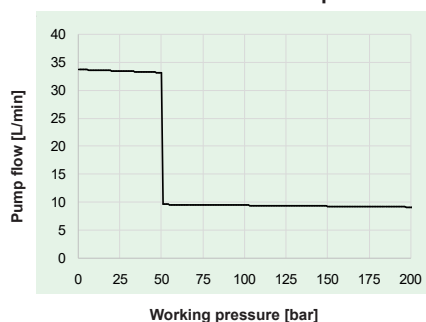
- Sequence unloading valve setting range:

30-60 bar (440-870 psi)

60-120 bar (870-1740 psi)



Example: 6.5cc/16cc - 1500 rpm - 50 bar



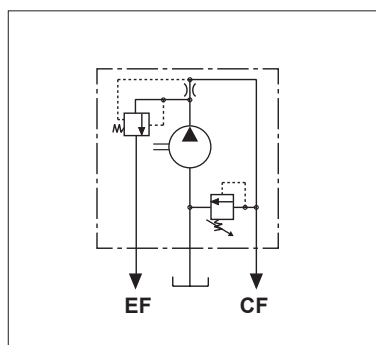
1= Stage high pressure
2= Stage low pressure
3= Unloading valve

VPS1/VPDS1 - Priority and LS Priority Flow Valve

- fixed priority flow valve;
- dynamic LS priority flow valve, flow on demand.

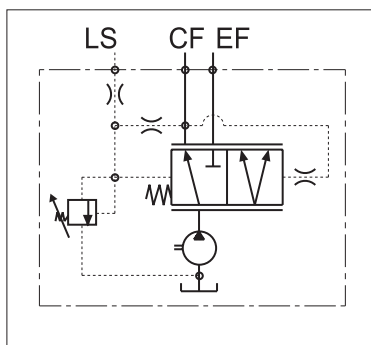


VPS1



CF= Priority flow port
EF= Excess flow port

VPDS1



CF= Priority flow port
EF= Excess flow port
LS= Load sensing signal port

Available for 2PE, 2.5PB,
3PE, PG330/331 pumps.

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