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**SOLENOID VALVE  
PRESSURE-REDUCING  
CHECK VALVE  
FLOW CONTROL  
LEVER**

## Hydraulic Directional Control Solenoid Valves



These solenoid valves are used to control the direction of actuator movement, such as hydraulic cylinders and hydraulic sizes, the main spool is shifted by and NG10 motors. In NG6 two solenoids mounted on either side of the valve. For sizes and above, spool movement is achieved through system NG16 hydraulic pressure, which is controlled by a pilot valve mounted on

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
NG6	80 LPM	350 Bar	24 VDC	2 KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406
NG10	120 LPM	350 Bar	24 VDC	8/6 KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406
NG16	250 LPM	280 Bar	24 VDC	9/8 KG	30- to 50+	30- to 80+	Class 9.NAS 1638
		350 Bar	220 VAC				-20.18.15ISO4406

## Block-Mounted Solenoid Pressure Relief Valve



This type of hydraulic valve is used to control system pressure (and actuator force). It consists of a main relief valve and a solenoid valve mounted directly on top of it. Both are connected to the return line through internal passages. The solenoid determines when the relief function (lower valve) is active or inactive. This type of valve is also known as an unloading valve.

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
DBW10G	250 LPM	350 Bar	24 VDC	7/6KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406
DBW20G	500 LPM	350 Bar	24 VDC	7/6KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406

## Block-Mounted Manual Pressure Relief Valve



This hydraulic valve is commonly used in industrial hydraulic systems. Unlike the solenoid-operated version, it is manually adjusted by the user to regulate system pressure. It provides a .reliable solution for pressure control in various hydraulic circuits

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
DB10	250 LPM	350 Bar	24 VDC	6/2KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406
DB20	500 LPM	350 Bar	24 VDC	6/3KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406

## Inline Solenoid Pressure Relief Valve



Functionally similar to the block-mounted solenoid pressure relief valve, this valve eliminates the need for a mounting block. Instead, it is directly integrated into the hydraulic circuit using threaded connections provided on its body

Valve Size	Maximum	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
DBW10	LPM 250	Bar 350	VDC 24	1KG/4	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15
DBW20	LPM 500	Bar 350	VDC 24	KG 5	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15

## Inline Manual Pressure Relief Valve



Functionally similar to the block-mounted manual pressure relief valve, this valve does not require a mounting block. It is directly installed into the hydraulic circuit using the threaded connections on its body

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
DB10G	LPM 250	Bar 350	VDC 24	3KG/5	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15
DB20G	LPM 500	Bar 350	VDC 24	3KG/5	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15

## Block-Type Reducing Valve



This valve functions similarly to a block-type electro-hydraulic pressure reducing valve. However, unlike the block-type version, it does not require a mounting block for installation. Instead, it is directly connected to the hydraulic circuit via threads integrated into its housing.

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
DRC10	150 LPM	350 Bar	24 VDC	5/3KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406

## Modular Reducing Valve

The modular reducing valve operates similarly to the block-type reducing valve, with the key difference being its design for reduced cost and space efficiency. It is used to lower pressure within hydraulic lines.



Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
DR6	60 LPM	315 Bar	24 VDC	2/1KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406
DR10	80 LPM	210 Bar	24 VDC	2/1KG	30- to 50+	30- to 80+	Class 9.NAS 1638
			220 VAC				-20.18.15ISO4406

## Modular Pilot-Operated Check Valve



This is a type of hydraulic valve installed in a modular (sandwich-type) configuration. In its normal state, it blocks fluid flow and locks the hydraulic line. Fluid is only allowed to pass when a hydraulic pilot signal is applied. It is typically mounted beneath a directional control valve.

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
Z2S6	LPM 60	Bar 315	VDC 24	8KG/0	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15
Z2S10	LPM 120	Bar 315	VDC 24	3KG	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15

## Modular Flow Control Valve



A modular flow control valve is a useful tool for controlling fluid flow in hydraulic systems. Installed in a modular (sandwich-type) configuration, it is used to either reduce or increase the flow within hydraulic lines.

Valve Size	Maximum Flow	Maximum Operating	Coil Type	Weight	Fluid	Ambient	Oil Quality
Z2FS6	LPM 80	Bar 315	VDC 24	8KG/0	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15
Z2FS10	LPM 160	Bar 315	VDC 24	1KG/3	50+ to 30-	80+ to 30-	1638 NAS.9 Class
			VAC 220				ISO4406-20.18.15

## Manual Hydraulic Flow Control Valve (Lever Type)

Levers in Hydraulic Systems are mechanical arms used for manually operating hydraulic valves. These devices control the direction of fluid flow by transmitting mechanical force to open, close, or redirect the circuit. Their simple yet robust design allows for reliable performance under harsh working conditions, making them ideal for non-automated systems such as industrial machinery, agricultural equipment, and heavy-duty tools. Due to their high durability, ease of use, and low maintenance requirements, levers are considered essential components in many hydraulic systems.



Unit	Value	Operating Conditions
U.S.G.P.M 12	l/min 45	Nominal Flow Rating / Displacement
PSI 4600	Bar 315	
PSI 360	Bar 25	Max Back Pressure
°F 176 to 4-	°C 80 to 20-	Oil Temperature with NBR Seals
°F 212 to 4-	°C 100 to 20-	with FPM (Viton) Seals
cSt 75 to 10 From	s/mm <sup>2</sup> 75 to 10 From	Oil Viscosity – Operating Range
cSt 400 / 10	s/mm <sup>2</sup> 400 / 10	Minimum / Maximum
	μ 30>	Oil Filtration
°F 140 to 31-	°C 60 to 35-	Ambiant Temperature Range
	6 to 1	Number Of Spools
min/in <sup>3</sup> 0,18	min/cm <sup>3</sup> 3	(cSt – A(B)–T 46 ,(°F 110) °40C ,(PSI 1450) bar 100 Internal Leakage (at
	4406 ISO - 16/19	Max. Level Of Contamination

## Open Circuit Variable Displacement



The PV open circuit variable displacement piston pump is a type of hydraulic pump with adjustable flow rate, used in open hydraulic circuits. This pump controls fluid displacement using a swash bar. It is ideal 420 plate mechanism and operates at pressures up to .for industrial applications requiring high precision and efficiency

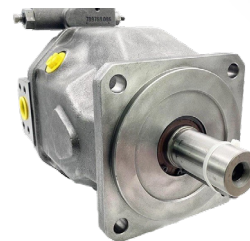
		PV016	PV020	PV023	PV028	PV032	PV040	PV046
Frame size		1	1	1	1	2	2	2
Max. Displacement	[.rev/cm3]	16	20	23	28	32	40	46
rpm 1500 Output flow at	[l@min]	24	30	34.5	42	48	60	69
Nominal pressure pN	[bar]	350	350	350	350	350	350	350
Min. outlet pressure	[bar]	15	15	15	15	15	15	15
(1 working cycle %20 Max. pressure pmax at	[bar]	420	420	420	420	420	420	420
Case drain pressure, continuous	[bar]	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Case drain pressure, max. peak	[bar]	2	2	2	2	2	2	2
.Min. Inlet pressure, abs	[bar]	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Max. Inlet pressure	[bar]	16	16	16	16	16	16	16
bar 350 rpm and 1500 Input power at	[kW]	61.5	19.5	22.5	27.5	31	39	45
bar, abs, inlet pressure 1 Max speed at	[rpm]	2800	3000	3000	3000	2800	2800	2800
Min. speed	[rpm]	400	400	400	400	400	400	400
Moment of inertia	[kgm <sup>2</sup> ]	0.002	0.002	0.002	0.002	0.004	0.004	0.004
Weight	[kg]	19	19	19	19	30	30	30

		PV63	PV80	PV92	PV140	PV180	PV270	PV360
Frame size		3	3	3	4	4	5	6
Max. Displacement		63	80	92	140	180	270	360
rpm 1500 Output flow at	[l@min]	94.5	120	138	210	270	405	540
Nominal pressure pN	[bar]	350	350	350	350	350	350	350
Min. outlet pressure	[bar]	15	15	15	15	15	15	15
(1 working cycle %20 Max. pressure pmax at	[bar]	420	420	420	420	420	420	420
Case drain pressure, continuous	[bar]	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Case drain pressure, max. peak	[bar]	2	2	2	2	2	2	2
.Min. Inlet pressure, abs	[bar]	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Max. Inlet pressure	[bar]	16	16	16	16	16	16	16
bar 350 rpm and 1500 Input power at	[kW]	61.5	78	89.5	136	175	263	350
bar, abs, inlet pressure 1 Max speed at	[rpm]	2800	2500	2300	2400	2200	1800	1750
Min. speed	[rpm]	400	400	400	400	400	400	400
Moment of inertia	[kgm <sup>2</sup> ]	0.018	0.018	0.018	0.03	0.03	0.098	0.103
Weight	[kg]	59	59	59	90	90	172	180



## Rexroth Variable Displacement Piston

This is an axial piston pump with variable displacement, used in hydraulic systems to regulate flow and pressure. It is ideal for high-pressure applications requiring precise flow control and is available in various sizes to meet a wide range of industrial demands



:The control method is	
	DR-Pressure controller
	DRG-Pressure controller, remote controlled
	Pressure and flow controller-DFR <sup>2</sup> DFR1
	DFLR-Pressure, flow and power control
	control ED-Electro-hydraulic pressure control
	ER-Electro-hydraulic pressure control

○ Sizes 28 to 140 (A10VO)

○ Nominal pressure 280 bar

○ Maximum pressure 350 bar

Size		NG		18	28	45	71	88	100	140
Displacement, geometric, per revolution		Vg max	cm <sup>3</sup>	18	28	45	71	88	100	140
Rotational speed (maximum <sup>1</sup> )	at Vg max	Nnom	rpm	3300	3000	2600	2200	2100	2000	1800
	(at Vg < Vg max <sup>2</sup> )	Nmax perm	rpm	3900	3600	3100	2600	2500	2400	2100
Flow	at nom and Vg max	lv max	l <sup>3</sup> /min	59	84	117	156	185	200	252
	rpm and Vg max 1500 at ne	lve max	l <sup>3</sup> /min	27	42	68	107	132	150	210
bar 280 Power at Ap	at nnom, Vg max	P max	kW	28	39	55	73	86	93	118
	rpm and Vg max 1500 at ne	PE max	kW	12.6	20	32	50	62	70	98
Torque at Vg max and	bar 280 = Ap	T max	Nm	80	125	200	316	392	445	623
	bar 100 = Ap	T	Nm	30	45	72	113	140	159	223



## Fixed Displacement Piston Pump with Bent-Axis Design

These pumps, featuring a bent-axis design and variable flow characteristics, are well-suited for heavy-duty industrial applications requiring high pressure and variable flow. They are used in open-circuit hydraulic systems and are available in a wide range of sizes to meet diverse operational needs

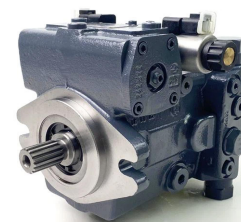


Size				90	107	125	160	180	200	250	355	500	710	1000
Displacement		{V}_{g}	3 ^ i * n	5.49	6.51	7.63	9.79	10.98	12.2	15.25	21.66	30.51	43.33	61.02
			r ^ c * m	90	106.7	125	160.4	180	200	250	355	500	710	1000
.Speed max		(1 Nmax	rpm	1800	1600	1600	1450	1450	1550	1500	1320	1200	1200	950
		(2 Nmax limit	rpm	3350	3000	3000	2650	2650	2750	1800	1600	1500	1500	1200
.Flow max		q_v max	gpm	42.8	44.9	52.8	61.2	69	81.9	99.1	123.9	158.5	218.2	251
			L @ min	162	170	200	232	261	310	375	469	600	826	950
Power at	bar 5100 = Ap	P max	HP	127	134	157	183	205	244	295	368	472	670	747
	bar 350 = Ap	P max	kW	95	100	117	135	152	181	219	273	350	497	554
	bar 5800 = Ap	P max	HP	145	153	179	208	233	277	—	—	—	—	—
	bar 400 = Ap	P max	kW	108	114	133	155	174	207	—	—	—	—	—
Torque at	bar 5100 = Ap	T	lb-ft	372	442	517	664	746	828	1036	1470	2070	2940	4141
	bar 350 = Ap	T	Nm	501	594	696	893	1003	1114	1393	1978	2785	3955	5570
	bar 5800 = Ap	T	lb-ft	422	500	586	752	845	938	—	—	—	—	—
	bar 400 = Ap	T	Nm	572	678	795	1020	1145	1272	—	—	—	—	—

Size				5	10	12	16	23	28	32	45	56	63	80
Displacement		{V}_{g}	3 ^ i * n	0.3	0.63	0.73	0.98	1.4	1.71	1.95	2.78	3.42	3.84	4.91
			c * m	4.93	10.3	12	16	22.9	28.1	32	45.6	56.1	63	80.4
.Speed max		(1 Nmax	rpm	5600	3150	3150	3150	2500	2500	2500	2240	2000	2000	1800
		(2 Nmax limit	rpm	8000	6000	6000	6000	4750	4750	4750	4250	3750	3750	3350
.Flow max		q_v max	gpm	7.3	8.6	10	13.2	15.1	18.5	21.1	27	29.6	33.3	38
			L @ min	27.6	32.4	37.8	50	57	70	80	102	112	126	144
Power at	bar 5100 = Ap	P max	HP	(3 ^ 19.5	25	30	39	44	55	63	80	88	99	113
	bar 350 = Ap	P max	kW	(3 ^ 14.5	18.9	22	29.2	—	41	47	59.5	65	73.5	84
	bar 5800 = Ap	P max	HP	—	30	34	45	51	63	71	91	100	113	129
	bar 400 = Ap	P max	kW	—	22	25	34	38	47	53	68	75	84	96
Torque at	bar 5100 = Ap	T	lb-ft	(3 ^ 18	42	50	65	94	116	132	189	232	260	331
	bar 350 = Ap	T	Nm	(3 ^ 24.7	57	67	88	126	156	178	254	312	350	445
	bar 5800 = Ap	T	lb-ft	—	48	56	75	107	131	150	214	263	295	377
	bar 400 = Ap	T	Nm	—	65	76	101	145	178	203	290	356	400	511

## Variable Displacement Piston Pump

The AV•VG model is an axial piston pump with a swash plate design, specifically engineered for closed-circuit hydrostatic systems. Its adjustable displacement allows for precise control of output flow according to system demands. With high efficiency, quick response to load changes, and a compact design, this pump is an excellent choice for industrial applications and mobile machinery



Size			18	28	45	63	
Displacement							
variable pump	Vg max	cm <sup>3</sup>	18	28	46	63	
(bar 20 = boost pump (at p	Vg Sp	cm <sup>3</sup>	5.5	6.1	8.6	14.9	
Speed							
maximum at Vg max	nmax continuous	rpm	4000	3900	3300	3000	
(1 limited maximum	nmax limited	rpm	4850	4200	3550	3250	
(2 intermittent maximum	.nmax interm	rpm	5200	4500	3800	3500	
minimum	nmin	rpm	500	500	500	500	
Flow							
at nmax continuous and Vg max	qv max	l/min	72	109	152	189	
(3 Power							
bar 300 = at nmax continuous and Vg max Δp	Pmax	kW	36	54.6	75.9	94.5	
(3 Torque at Vg max	bar Tmax 300 = Δp		Nm	86	134	220	301
	bar T 100 = Δp		Nm	28.6	44.6	73.2	0.103
Rotary stiffness	Shaft end S	c	Nm/rad	20284	32143	53404	78370
	Shaft end T	c	Nm/rad	—	—	73804	92368
Moment of inertia for rotary group	JRG	kgm <sup>2</sup>	0.001	0.002	0.003	0.006	
(4 .Angular acceleration, max	a	rad/s <sup>2</sup>	6800	5500	4000	3300	
Filling capacity	V	L	0.45	0.64	0.75	1.1	
(Mass approx. (without through drive	m	kg	(5 (18)14	25	27	39	



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