3 WAY (3/2) POPPET VALVES FOR AIR AND VACUUM SERVICE

HERION

SOLENOID OR AIR ACTUATED

BROCHURE N-223



HERION'S HIGH PERFORMANCE POPPET VALVES

For those applications requiring high Cv, fast response times, large exhaust capacity, and a valve that is dirt tolerant - poppet valves offer an excellent solution. HERION offers a complete series of **Inline Poppet Valves** - 3/2 (3 way, 2 position) solenoid and air-actuated in port sizes from 1/2" to 2" NPT. Standard models include solenoid actuated valves with internal air pilot, and solenoid actuated valves with external air pilot supply, and valves with air actuation.

Note: Also available in a 4/2 (4 way, 2 position) version. See Brochure N-223A.



Poppet Valves

Left: *3/2 solenoid valve normally closed, normally open air or vacuum service 1/2" to 2" NPT. Optional manual actuator on sizes 1/2" to 1" NPT*

Right: *3/2 air actuated valve normally closed 1/2" to 2" NPT*

HERION POPPET VALVE FEATURES

- Operates with or without lubrication
- Long life
- Exceptionally long pilot valve life
- Extremely fast response time
- Excellent repeatability
- High flow
- Easy to service
- Bubble tight shut-off
- Quick exhaust feature (sizes 1 1/4" and larger)
- Light weight aluminum body
- High reliability backed by worldwide service
- Slip on coil design readily accepts explosion proof solenoids designed to meet CENELEC and North American NEC codes.

APPLICATIONS

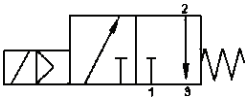
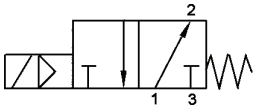
- Large cylinders
- Clutches and brakes (except on mechanical power presses where double valves are required).
- Air bags
- Air-oil boosters
- Emergency exhausting of air lines

SPECIFICATIONS

Port Sizes: 1/2 to 2 inches NPT
(Metric G thread on request)
Flow medium: Filtered air, lubricated or non-lubricated
Medium Temperature: 20° - 140°F
Materials: Housing – Aluminum
Seats – Polyurethane
Other Options available on request, i.e. high cycle, low temp., lower power consumption.

ORDER INFORMATION

Solenoid actuated valves with internal pilot air supply

Symbol	Nom. Size (mm)	Size (NPT) Ports 1,2	Size (NPT) Ports 3	Operating Pressure psi min.	Operating Pressure psi max.	C_v Factor Ports 1-2	C_v Factor Ports 2-3	Response Time (ms)	Weight (lb.)	Sect. Dwg. No.	Spare Parts Kit	Order No. Valve	Order No. Solenoid
Normally closed 	15	½	¾	30	150	4.8	6.1	10	2.8	1	0555370	8026580.0801	
	20	¾	1	30	150	8.3	14.4	10	3.3	1	0555371	8026680.0801	
	25	1	1	30	150	11.7	15.6	10	3.3	1	0555371	8026780.0801	
	30	1 ¼	1 ¼	30	150	19.2	23.0	12	6.6	2	0557142	8026880.0801	
	40	1 ½	1 ½	30	150	26.7	31.8	15	8.4	3	0557141	8026980.0801	
	50	2	2	30	150	39.6	44.4	20	15.0	3	0557140	8027080.0801	
Normally open 	15	½	¾	30	150	4.8	6.1	10	2.8	4	0555372	8028580.0801	
	20	¾	1	30	150	8.3	14.4	10	3.3	4	0555373	8028680.0801	
	25	1	1	30	150	11.7	15.6	10	3.3	4	0555373	8028780.0801	
	30	1 ¼	1 ¼	30	150	19.2	23.0	12	6.6	5	0557148	8028880.0801	
	40	1 ½	1 ½	30	150	26.7	31.8	15	8.4	6	0557147	8028980.0801	
	50	2	2	30	150	39.6	44.4	20	15.0	6	0557146	8029080.0801	

3/2 Directional Control Valves
Actuation: Electromagnetic
Indirectly-controlled poppet valves
Connections G 1/2 to G 2

- **High flow rate**
- **Optionally pilot-operated by foreign pilot source**
- **High repeatability of switching time**
- **Easily interchangeable solenoid system**



Technical data

Operating medium:
For filtered, lubricated or non-lubricated air
Mode of operation:
Solenoid operated, indirectly controlled
Mounting position:
Optional, preferably vertival; with strong vibration vertical to axis of vibration
Flow direction:
Fixed
Nominal sizes:
15 to 50 mm
Connection:
G 1/2 to G 2
Operating pressure:
max. 10 bar
Temperature range:
-10* to +60 °C
*With minus temperatures, use conditioned dry air. If installed in the open protect all connections against the penetration of moisture!
Material:

Housing:	Aluminium
Seat seal:	AU (polyurethane)
Inner part:	POM

Ordering example

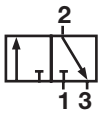
3/2 directional control valve, nominal size 25, connection G 1, solenoid 24 V DC, electrical connection DIN 43650 form A, protection class IP 00
Type: 8026770.0800.024.00

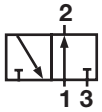
Further versions

With manual override
Design bistable

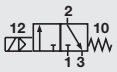
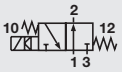
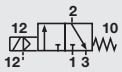
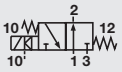
Connectors

See data sheet 750**3364**

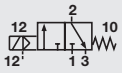




General information

Symbol	Type Valvel . Solenoid	Connection 1	2	3	Nominal size	Operation presssure Min. (bar)	Max. (bar)	Control. pressure Min. [1]	Max. [1]	Flow (l/min)	Switching time (ms)	Weight (kg)
	**8026570.0800** *	G 1/2	G 1/2	G 3/4	15	2	10	–	–	5000	10	1.3
	8026670.0800 *	G 3/4	G 3/4	G 1	20	2	10	–	–	8000	10	1.5
	8026770.0800 *	G 1	G 1	G 1	25	2	10	–	–	12000	10	1.5
	8026870.0800 *	G 1	G 1 1/4	G 1 1/4	32	2	10	–	–	18000	12	3.0
	8026970.0800 *	G 1 1/2	G 1 1/2	G 1 1/2	40	2	10	–	–	25000	15	3.8
	8027070.0800 *	G 2	G 2	G 2	50	2	10	–	–	35000	20	6.8
	**8028570.0800** *	G 1/2	G 1/2	G 3/4	15	2	10	–	–	5000	10	1.3
	8028670.0800 *	G 3/4	G 3/4	G 1	20	2	10	–	–	8000	10	1.5
	8028770.0800 *	G 1	G 1	G 1	25	2	10	–	–	12000	10	1.5
	8028870.0800 *	G 1	G 1 1/4	G 1 1/4	32	2	10	–	–	18000	12	3.0
	8028970.0800 *	G 1 1/2	G 1 1/2	G 1 1/2	40	2	10	–	–	25000	15	3.8
	8029070.0800 *	G 2	G 2	G 2	50	2	10	–	–	35000	20	6.8
	**8026571.0800** *	G 1/2	G 1/2	G 3/4	15	0	10	2	10	5000	10	1.3
	8026671.0800 *	G 3/4	G 3/4	G 1	20	0	10	2	10	8000	10	1.5
	8026771.0800 *	G 1	G 1	G 1	25	0	10	2	10	12000	10	1.5
	8026871.0800 *	G 1	G 1 1/4	G 1 1/4	32	0	10	2	10	18000	12	3.0
	8026971.0800 *	G 1 1/2	G 1 1/2	G 1 1/2	40	0	10	2	10	25000	15	3.8
	8027071.0800 *	G 2	G 2	G 2	50	0	10	2	10	35000	20	6.8
	**8028571.0800** *	G 1/2	G 1/2	G 3/4	15	2	10	2	10	5000	10	1.3
	8028671.0800 *	G 3/4	G 3/4	G 1	20	2	10	2	10	8000	10	1.5
	8028771.0800 *	G 1	G 1	G 1	25	2	10	2	10	12000	10	1.5
	8028871.0800 *	G 1	G 1 1/4	G 1 1/4	32	2	10	2	10	18000	12	3.0
	8028971.0800 *	G 1 1/2	G 1 1/2	G 1 1/2	40	2	10	2	10	25000	15	3.8
	8029071.0800 *	G 2	G 2	G 2	50	2	10	2	10	35000	20	6.8

Valves for vacuum

	**8026572.0800** *	G 1/2	G 1/2	G 3/4	15	0,01 mbar	6	4	10	5000	20	1.3
	8026672.0800 *	G 3/4	G 3/4	G 1	20	0,01 mbar	6	4	10	8000	20	1.5
	8026772.0800 *	G 1	G 1	G 1	25	0,01 mbar	6	4	10	12000	20	1.5
	8026872.0800 *	G 1	G 1 1/4	G 1 1/4	32	0,01 mbar	6	4	10	18000	25	3.0
	8026972.0800 *	G 1 1/2	G 1 1/2	G 1 1/2	40	0,01 mbar	6	4	10	25000	30	3.8
	8027072.0800 *	G 2	G 2	G 2	50	0,01 mbar	6	4	10	35000	35	6.8

* When ordering please indicate solenoid, voltage and current type (frequency).
[1] Required pilot pressure ≥ operating pressure, min. 2 bar; with vacuum operating pressure + 1 bar, min. 4 bar.

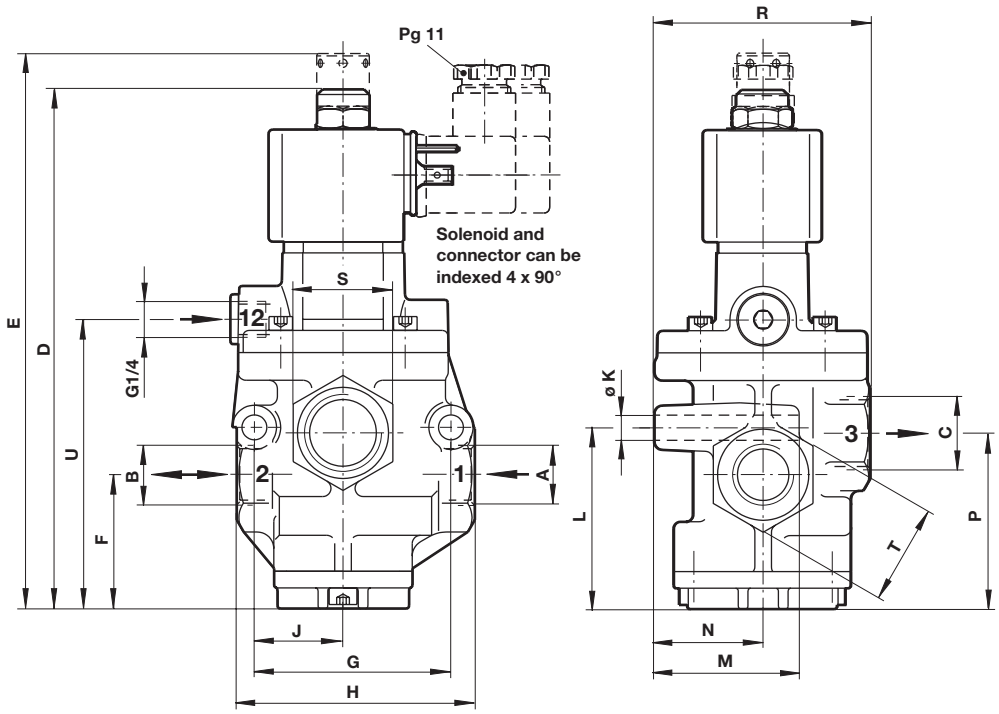
Parameters for solenoids

	Type	Current draw 24 V DC (W)	230 V AC (VA)	Protection class	Temperature fluid max. (°C)	Ambient (°C)	Weight (kg)	Dimensional drawing No.	Circuit diagram No.
	**0800**	16	27	IP 00 without Connector	+80	-25 to +60	0.14	M02	SB01
	0801	16	27	IP 65 with Connect. DIN 43650 form A	+80	-25 to +60	0.14	M02	SB01
	**3980**	12	–	EEx me II T5 EEx me II T6	+60 +45	-20 to +60 -20 to +45	0.3	M03	SB04
	3981	–	13	EEx me II T5 EEx me II T6	+60 +45	-20 to +60 -20 to +45	0.3	M03	SB07

Standard voltages: 24 V DC; 24 V, 110 V, 230 V 50 Hz; 120 V, 220 V 60 Hz.

Dimensional drawings

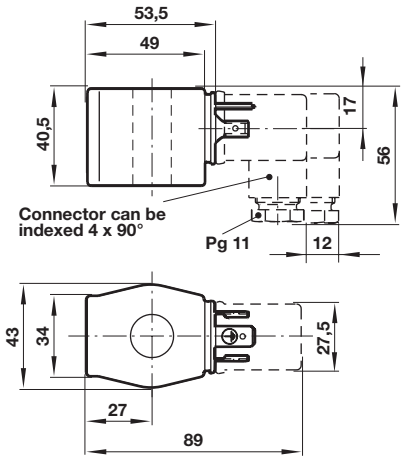
M01



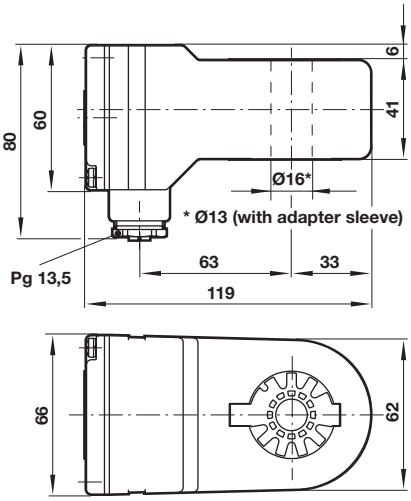
Type	A	B	C	D	E	F	G	H	J	Ø K	L	M	N	P	R	S	T	U
80265XX	G1/2	G1/2	G3/4	187.5	–	48	71	86	32	9	65.5	52	39	63.5	78	36	36	104.5
80266XX	G3/4	G3/4	G1	197.5	–	51.5	82.5	112	39	9	74.5	54	40	73	92	46	46	114.5
80267XX	G1	G1	G1	197.5	–	51.5	82.5	112	39	9	74.5	54	40	73	92	46	46	114.5
80268XX	G1	G1 1/4	G1 1/4	239	–	70	104	142	48	11	108	64	42	98	108	60	60	148
80269XX	G1 1/2	G1 1/2	G1 1/2	265	–	85	118	164	50,5	14	121.5	70	46	115.5	123	60	68	168
80270XX	G2	G2	G2	304	–	98	148	200	66	18	144	85	56	137	153	90	90	204
80285XX	G1/2	G1/2	G3/4	–	200.5	48	71	86	32	9	65.5	52	39	63.5	78	36	36	104.5
80286XX	G3/4	G3/4	G1	–	210.5	51.5	82.5	112	39	9	74.5	54	40	73	92	46	46	114.5
80287XX	G1	G1	G1	–	210.5	51.5	82.5	112	39	9	74.5	54	40	73	92	46	46	114.5
80288XX	G1	G1 1/4	G1 1/4	–	252	70	104	142	48	11	108	64	42	98	108	60	60	148
80289XX	G1 1/2	G1 1/2	G1 1/2	–	279	85	118	164	50,5	14	121.5	70	46	115.5	123	60	68	168
80290XX	G2	G2	G2	–	317	98	148	200	66	18	144	85	56	137	153	90	90	204

Dimensional drawings solenoids

M02

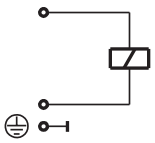


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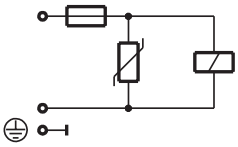


Electrical circuit diagrams

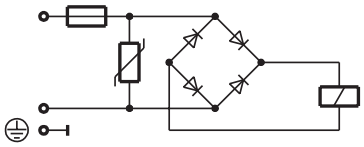
SB01



SB04



SB07



Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under **'Technical Data'**.
Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult HERION.
Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products where applicable.