

- **Ideal for a wide variety of industrial applications**
- **Quick easy installation**
- **Low power solenoids**
- **Simple, compact design and construction**

Technical data valves

Medium:

Neutral gaseous and liquid fluids,
air and vacuum compatibility is based on combination
of body and seal materials

Operation:

Poppet valve, directly actuated with spring return

Port size:

M5	series 9
Rc1/8, Rc1/4, M8x1	series 2
Rc1/8, Rc1/4, M12 x 1	series 6

Operating pressure:

Maximum 82,5 bar (see individual details)

Flow:

Body

Kv max.	0,042	Kv min.	0,029	series 9
	0,254		0,025	series 2
	0,508		0,029	series 6

Stop

Kv max.	0,021	Kv min.	0,013	series 9
	0,117		0,021	series 2
	0,225		0,020	series 6

Power rating:

0,65 W	series 9
7 W	series 2
10 W	series 6

Operating temperature:

-20°C to 130°C

Lead wire type:

AWG 24	series 9
AWG 18 or 20	series 2
AWG 18	series 6

Cable Length:

305 mm (black colour)	series 9
610 mm (black colour)	series 2 & 6

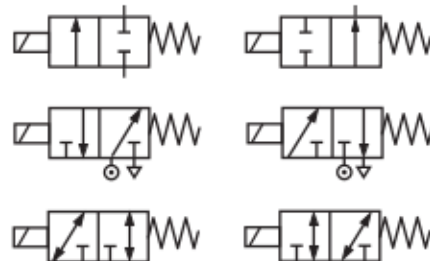
Material

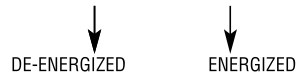
Body: brass or stainless steel
Seals: Buna, fluorocarbon, Ethylene propylene, Neoprene W® or
Teflon® (please see model codes)
adapters (3 way only): stainless steel



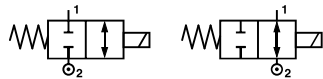
Ordering information

See model codes



**2-way normally closed**

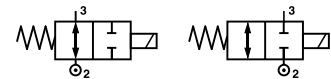
Port identification:
IN – 2
OUT – 1



Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
9	1,5	–	0,042	–	7,0

2-way normally open

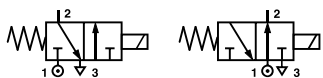
Port identification:
IN – 2
OUT – 3



Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
9	–	1,2	–	0,021	6,5

3-way normally closed

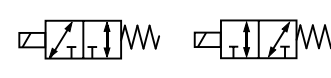
Port identification:
IN – 1
CYL – 2
EXH – 3



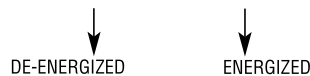
Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
9	1,5	1,2	0,029	0,020	5,5

3-way multi purpose

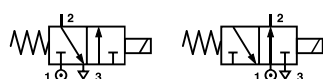
Port identification:
N.C. – 1
COM – 2
N.O. – 3



Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
9	1,5	1,2	0,035	0,015	3,0

3-way normally open

Port Identification:
EXH – 1
CYL – 2
IN – 3



Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
9	1,5	1,2	0,042	0,012	4,0

* Max. operating pressure differential

Model Codes (Series 9)

*****--**--*****

Prefixes (Optional)	Substitute
Oxygen Service	Y

Series	Substitute
9	9

Port	Substitute
M5	D
M5 (Manifold Mount)	C

Housing / Coil	Substitute
Grommet (Leads exit top)	1

Body Material	Substitute
Stainless steel	0
Brass	1

Voltage	Substitute
5 V DC	5VDC
12 V DC	12VDC
15 V DC	15VDC
24 V DC	24VDC

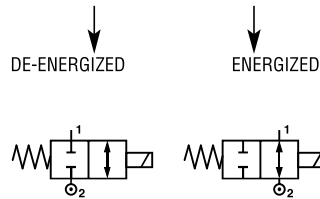
Seal	Substitute
Buna	01
Fluorocarbon	02
Ethylene Propylene (EPR), Food Grade	13

Orifice	Substitute
1,5 mm	2

Function	Substitute
2-Way Normally Closed	1
2-Way Normally Open	2
3-Way Normally Closed (line connect style with threaded port)	4
3-Way Normally Open	5
3-Way Multi Purpose (universal)	6



2-Way Normally Closed



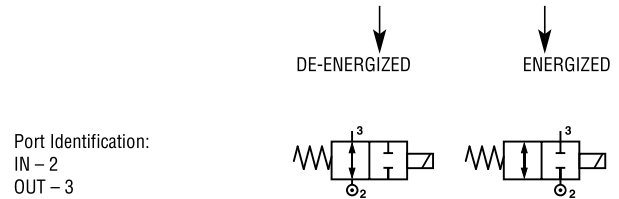
Port Identification:
IN – 2
OUT – 1

Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
2	0,8		0,029		69,0
	1,2		0,042		41,5
	1,5		0,080		27,5
	2,0		0,113		20,5
	2,4		0,146		17,5
	3,0		0,204		10,5
	4,0		0,242		7,0
	4,8**		0,321		3,0
	6,0**		0,375		1,0
6	0,8		0,029		83,0
	1,2		0,042		69,0
	1,5		0,79		34,5
	2,0		0,116		20,5
	2,4		0,170		14,0
	3,0		0,246		10,5
	4,0		0,310		7,5
	4,8		0,363		4,0
	6,0		0,510		2,0

* Max. operating pressure differential

** Only available with Rc 1/4 port

2-Way Normally Open

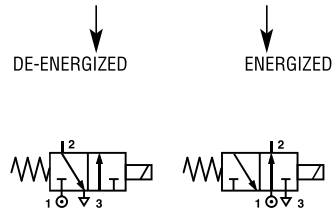


Port Identification:
IN – 2
OUT – 3

Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
2		0,8		0,029	27,5
		1,2		0,042	20,5
		1,5		0,080	12,5
		2,0		0,113	9,5
		2,4		0,170	7,5
6		0,8		0,029	69,0
		1,2		0,042	41,5
		1,5		0,080	24,0
		2,0		0,113	17,5
		2,4		0,170	12,0
		3,0		0,246	7,0

* Max. operating pressure differential

3-Way Normally Closed



Port Identification:
IN – 1
CYL – 2
EXH – 3

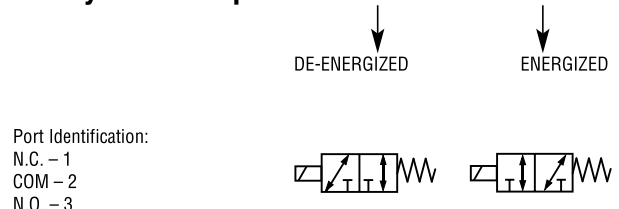
Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
2	0,8	0,8	0,029	0,021	17,5
	1,2	1,2	0,042	0,054	12,0
	1,5	1,5	0,071	0,096	8,5
	2,0	2,0#	0,104	0,120	7,0
	2,4	2,0#	0,138	0,120	5,0
	3,0	2,0#	0,20	0,120	3,0
	4,0	2,0#	0,237	0,120	1,5
	4,8**	2,0#	0,288	0,120	0,5
	6,0**	2,0#	0,346	0,120	0,5
6	0,8	0,8	0,029	0,021	20,5
	1,2	1,2	0,042	0,054	17,5
	1,5	1,5	0,075	0,096	14,0
	2,0	2,0	0,112	0,15	12,5
	2,4	2,4	0,15	0,175	8,5
	3,0	3,0	0,230	0,20	6,0
	4,0	3,0	0,310	0,20	3,5
	4,8	3,0	0,380	0,20	2,0
	6,0	3,0	0,542	0,20	1,0

* Max. operating pressure differential

Larger stop orifice available with reduced pressure ratings; please consult Norgren

** Only available with Rc 1/4 port

3-Way Multi Purpose



Port Identification:
N.C. – 1
COM – 2
N.O. – 3

Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
2	0,8	0,8	0,029	0,021	12,0
	1,2	1,2	0,042	0,054	8,5
	1,5	1,5	0,071	0,096	7,0
	2,0	2,0#	0,104	0,120	5,0
	2,4	2,0#	0,138	0,120	3,5
	3,0	2,0#	0,20	0,120	1,5
	4,0	2,0#	0,237	0,120	1,0
	4,8**	2,0#	0,288	0,120	0,5
	6,0**	2,0#	0,346	0,120	0,5
6	0,8	0,8	0,029	0,021	19,0
	1,2	1,2	0,042	0,054	14,0
	1,5	1,5	0,075	0,096	12,0
	2,0	2,0	0,112	0,15	8,5
	2,4	2,4	0,15	0,175	7,0
	3,0	3,0	0,230	0,20	4,0
	4,0	3,0	0,310	0,20	3,0
	4,8	3,0	0,380	0,20	1,5
	6,0	3,0	0,542	0,20	1,0

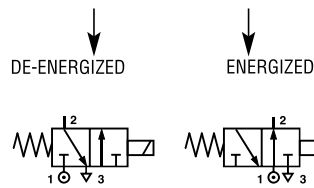
* Max. operating pressure differential

Larger stop orifice available with reduced pressure ratings; please consult Norgren

** Only available with Rc 1/4 port



3-Way Normally Open



Port Identification:

EXH – 1

CYL – 2

IN – 3

Series	Orifice Diameter (mm)		Kv Factor		MOPD* (bar)
	Body	Stop	Body	Stop	
2	0,8	0,8	0,029	0,021	14,0
	1,2	1,2	0,042	0,054	10,5
	1,5	1,5	0,071	0,096	8,5
	2,0	2,0#	0,104	0,120	7,0
	2,4	2,0#	0,138	0,120	5,0
	3,0	2,0#	0,2	0,120	4,0
	4,0	2,0#	0,237	0,120	1,5
	4,8**	2,0#	0,288	0,120	0,5
	6,0**	2,0#	0,346	0,120	0,3
6	0,8	0,8	0,029	0,021	27,5
	1,2	1,2	0,042	0,054	17,5
	1,5	1,5	0,075	0,096	14,0
	2,0	2,0	0,112	0,15	12,0
	2,4	2,4	0,15	0,175	8,5
	3,0	3,0	0,230	0,20	6,0
	4,0	3,0	0,310	0,20	3,5
	4,8	3,0	0,380	0,20	2,5
	6,0	3,0	0,650	0,20	1,0

* Max. operating pressure differential

Larger stop orifice available with reduced pressure ratings; please consult Technical Service

** Only available with Rc 1/4 port

Model Codes (Series 2 & 6)

*****-**-*****

Prefixes (Optional)	Substitute
UL Recognized	U
Oxygen Service	Y
Low Wattage -1.5 Watt*	A
Low Wattage -2.0 Watt*	B
Low Wattage -2.5 Watt*	C
Low Wattage -3.0 Watt*	D

Series	Substitute
2	2
6	6

Port	Substitute
Rc 1/8	A
Rc 1/4	B
Manifold Mount (M8 x 1, Series 2), (M12 x 1, Series 6)	C

Housing/Coil	Substitute
Grommet/Dry Coil	1
Yoke/Top Spade (Series 2 only)	3
Grommet / Molded Coil (Series 6 only)	4
Yoke/with Bracket Top Spade (Series 2 only)	7
Slotted/1/4 Vertical Spade (Series 6 only)	9
Slotted/Molded Coil with Wire Leads (Series 2 only)	9

Body Material	Substitute
Stainless steel	0
Brass	1
Operator	3

Voltage	Substitute
12 V DC	12VDC
24 V DC	24VDC
24 V 60 Hz	24/60
120 V 60 Hz	120/60
110 V 50 Hz	110/50
220 V 50 Hz	220/50
240 V 60 Hz	240/60

Seal	Substitute
Buna	01
Fluorocarbon	02
Teflon® (2-Way Normally Closed only)	08
Neoprene W®	12
Ethylene Propylene (EPR), Food Grade	13

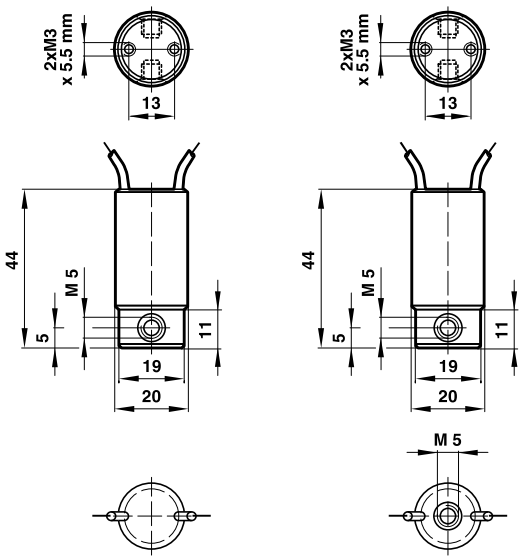
Orifice	Substitute
0,8 mm	0
1,2 mm	1
1,5 mm	2
2,0 mm	3
2,4 mm	4
3,0 mm	5
4,0 mm	6
4,8 mm (Series 6 or Series 2 with Rc 1/4)	7
6,0 mm (Series 6 or Series 2 with Rc 1/4)	8

Function	Substitute
2-Way Normally Closed	1
2-Way Normally Open	2
3-Way Normally Closed (free vent style for exhaust to atmosphere)	3
3-Way Normally Closed (line connect style with piping adapter)	4
3-Way Normally Open	5
3-Way Multi-Purpose (universal)	6

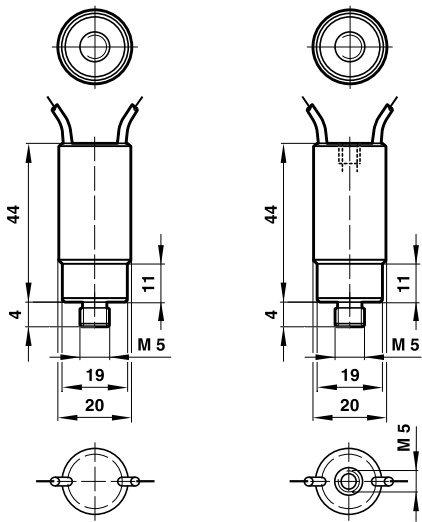
* Adding low watt coil decreases pressure and flow rating of valve



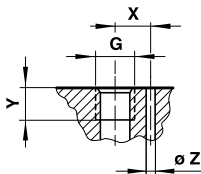
Standard Valves Series 9



Manifold Mount Valve Series 9



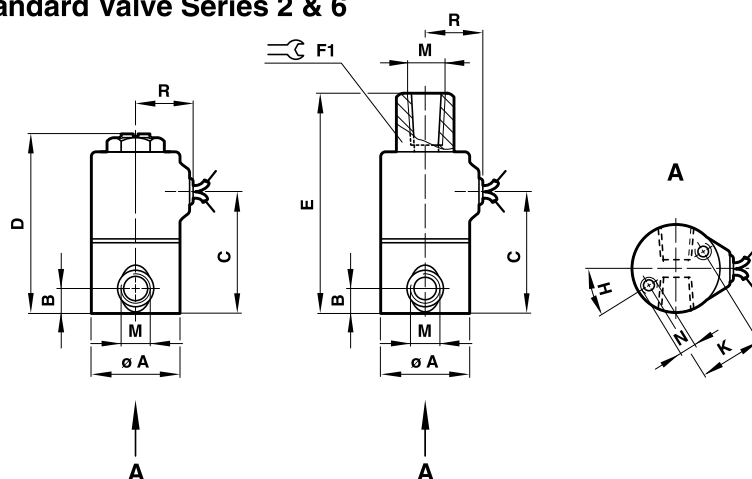
Manifold Mount Interface



Series	G	X	Y	Ø Z
9	M5	5,45	4	2,0

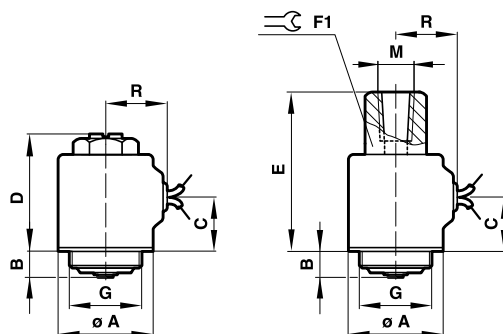


Basic Dimensions Standard Valve Series 2 & 6 Grommet/Dry Coil (1)



Series		Ø A	B	C	D	E	F1	H	K	M	N	R
2	Rc 1/8	25	7	38	59	69	15	32 - 1/2°	18,6	Rc1/8	M4 x 6,5 mm	16
	Rc 1/4	30	9	42	63	74	18	41°	23	Rc1/4	M4 x 6,5 mm	16
Series		Ø A	B	C	D	E	F1	H	K	M	N	R
6	Rc 1/8	41	9	52	73	90	18	45°	31,4	Rc1/8	M5 x 8 mm	26
	Rc 1/4	41	9	52	73	90	18	45°	31,4	Rc1/4	M5 x 8 mm	26

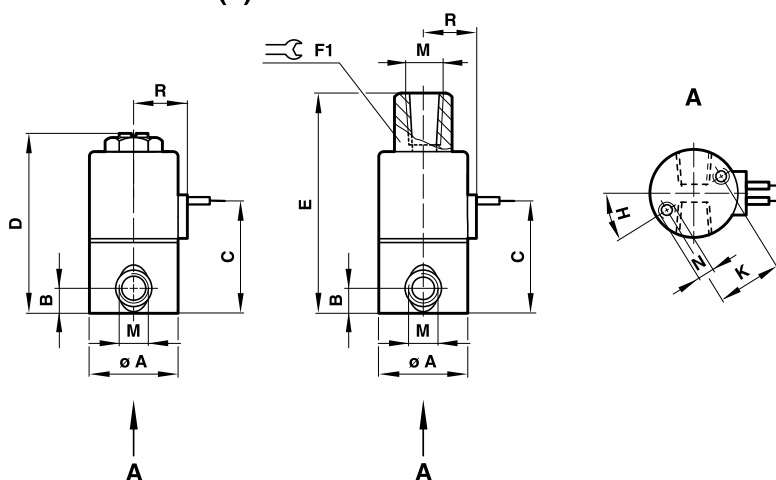
Operator Standard



Series		Ø A	B*	C	D	E	F1	G	M	R
2		26	-	18	39	47	15	3/4 - 32 UNEF	Rc1/8	16
Series		Ø A	-	C	D	E	F1	G	M	R
6	Rc 1/8	42	-	25	46	63	18	1 - 32 UN	Rc1/8	26
	Rc 1/4	42	-	25	46	63	18	1 - 32 UN	Rc1/4	26

* Consult Technical Center for Dimension B

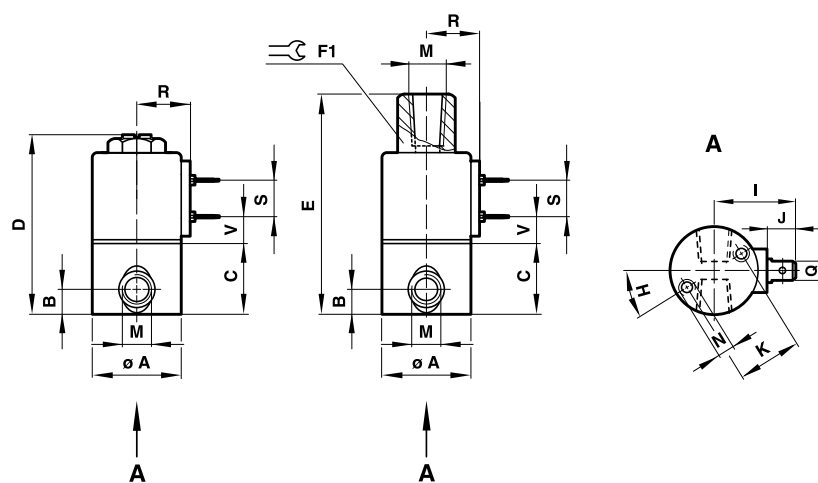
Slotted/Molded Coil with Wire Leads (9)



Series		Ø A	B	C	D	E	F1	H	K	N	M	R
2	Rc 1/8	26	7	36	59	69	15	32 - 1/2°	18,6	M4 x 6,5 mm	Rc1/8	16
	Rc 1/4	30	9	39	62	74	18	41°	23	M4 x 6,5 mm	Rc1/4	16

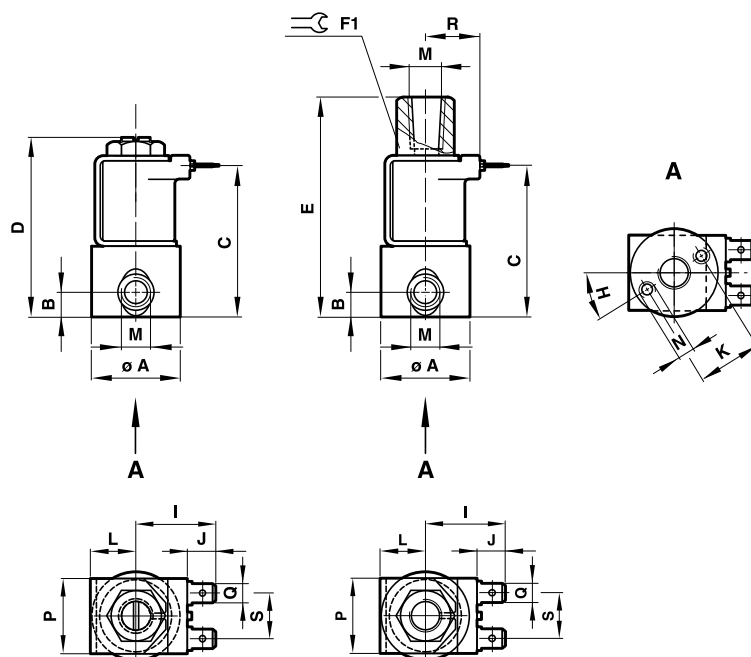


Slotted/1/4 Vertical Spade (9)



Series	Ø A	B	C	D	E	F1	H	I	J	K	M	N	Q	S	R	V	
6	Rc 1/8	41	9	27	73	90	18	45°	32	10	31	Rc1/8	M5 x 8 mm	6,0 x 0,8	13	22	9
	Rc 1/4	41	9	27	73	90	18	45°	32	10	31	Rc1/4	M5 x 8 mm	6,0 x 0,8	13	22	9

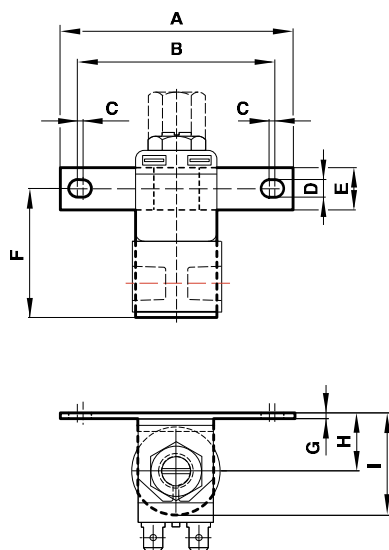
Yoke/Top Spade (3)



Series	Ø A	B	C	D	E	F1	H	I	K	L	M	N	P	Q	S	
2	Rc 1/8	25	7	37	59	69	15	32–1/2°	30	18,6	15,5	Rc1/8	M4 x 6,5 mm	25	6,0 x 8,1	15
	Rc 1/4	30	9	50	62	74	18	41°	30	23	15,5	Rc1/4	M4 x 6,5 mm	25	6,0 x 8,1	15

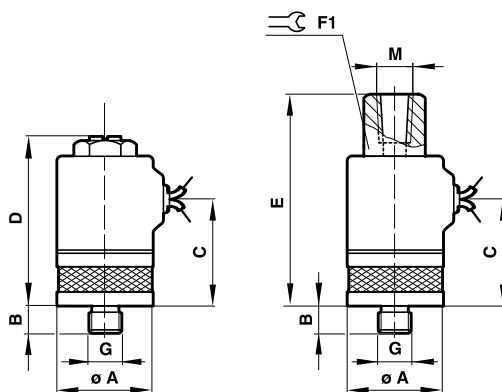


Yoke with Bracket/Top Spade (7)



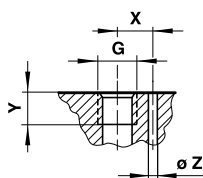
Series		A	B	C	D	E	F	G	H	I
2	Rc 1/8	79,2	64,5	8,26	7,1	15	36	3,9	15,5	28
	Rc 1/4	79,2	64,5	8,26	7,1	15	39	3,9	15,5	28

Manifold Mount Valve Series 2 & 6



Series	Ø A	B	C	D	E	F1	G	M
2	25	6	32	53	62	15	M8x1	Rc1/8 or Rc1/4
Series	Ø A	B	C	D	E	F1	G	M
6	41	8	44	65	82	18	M12x1	Rc1/8 or Rc1/4

Manifold Mount Interface



Series	G	X	Y	Ø Z
2	M8x1	8	7	2
6	M12x1	13	8	7

Warning

These products are intended for use in industrial 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 NORGREN.

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.