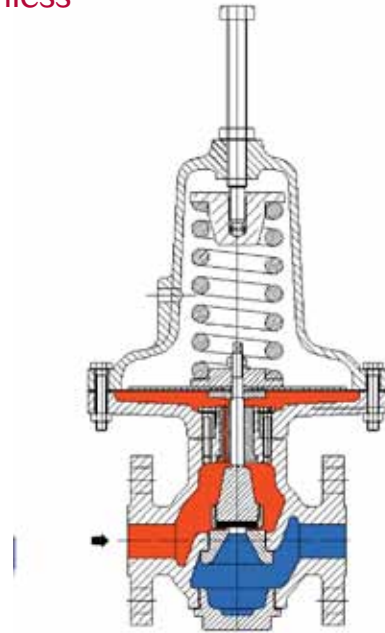


MK608UBS Series

Threaded or Flanged Connections Carbon Steel, Stainless Steel & Alloy Construction

The MK608UBS Series are spring loaded, direct-operated, pressure relief valves used downstream of pressure regulators to protect the downstream system from over pressure. Their main function is to regulate the inlet pressure.

They can also be used as back pressure regulators as they have good throttling characteristics. They are available in 1/2" through 2" (DN15 through DN50) body sizes. These regulators have a compact design and construction such to sustain rugged use and their construction makes them easy to install and to maintain.



FEATURES

- Flow to close design
- Available with ISA face to face dimensions
- From 5 to 9 different Cv's for each size to assure high accuracy in regulation
- Metal or soft seat (featuring leakage from II to VI)
- Internal pressure sensing (external upon request)
- Packingless construction (available only with internal pressure sensing)
- Wide range of actuators according to the requested regulation range
- Wide range of elastomeric diaphragms or in AISI 316
- Fully sealed construction available (suitable for dangerous media; ATEX compliant)

SPECIAL CONSTRUCTION

USB regulators are also available in special configurations:

- Exotic materials in short lead times (e.g. duplex, super-duplex, alloy steel, monel, inconel, etc)
- Differential versions (with single or double diaphragm) for applications where the differential pressure between two spots has to be controlled and maintained constant
- Vacuum breaker



Jordan Valve a division of Richards Industries
3170 Wasson Road • Cincinnati, OH 45209
513.533.5600 • 800.543.7311 • 513.871.0105 (f)
info@richardsind.com • www.jordanvalve.com

Tab. [1] - Fluid Applications

Gas	Air, inert gas, CO ₂ , CO, hydrocarbons, O ₂ , H ₂ , F, NH ₃ , frigorific gas.
Steam/Vapour	Steam H ₂ O, alcoholic steams, organic steams, sulphuric acid
Liquids	Water, aqueous solutions, hydrocarbons, hydrocarbons, alcohol, lubricating oils, diathermic oils, solvents, frigorific fluids, acrylic compounds

Tab. [2] - Capacities

Nozzle	Body Size									
	1/2" (DN15)		3/4" (DN20)		1" (DN25)		1-1/2" (DN40)		2" (DN50)	
1	0.031	0,031	0.031	0,031	0.031	0,031	0.031	0,031	0.031	0,031
5	0.60	0,20	0.60	0,20	0.60	0,20	0.60	0,20	0.60	0,20
8	1.7	0.33	1.7	0.33	1.7	0.33	1.7	0.33	1.7	0.33
10	2.5	0,40	2.5	0,40	2.5	0,40	2.5	0,40	2.5	0,40
12	3.4	0,50	3.4	0,50	3.4	0,50	3.4	0,50	3.4	0,50
16			6.5	0,90	6.5	0,90	7.0	0,90	7.0	0,90
20					8.7 (7.5*)	1,4	9.0 (7.7*)	1,4	9.0 (7.7*)	9.0 (7.7*)
1,4							19 (15*)	3,0	19 (15*)	3,0
45									35 (28*)	5,5

□ Cv for all body sizes with **elastomer diaphragm**
*Reduced Cv for actuator 100

■ Cv for all body sizes with **metal diaphragm**

Tab. [3] - Actuators Operating Range

Actuators	Actuators Spring Ranges	Maximum Allowable Pressure
100	4.5 to 46.0 Barg	52 Barg
120	2.6 to 29.5 Barg	33 Barg
130	1.7 to 22.1 Barg	25 Barg
140	0.7 to 9.2 Barg	10 Barg
220	0,094 to 2,7 Barg	3 Barg
360	0,0025 to 0,84 Barg	1 Barg
515	0,0012 to 0,23 Barg	0,25 Barg

Tab. 4 - Material Combination

Body				
	Carbon Steel (AF1/AS1)	Full Carbon Steel (AF2/AS2)	316 SS (IF2/IS2)	Full 316 SS (IF3/IS3)
	0°C ≤ T ≤ 200°C (-32°F ≤ T ≤ 392°F)	-29°C ≤ T ≤ 250°C (-20°F ≤ T ≤ 482°F)	-29°C ≤ T ≤ 250°C (-20°F ≤ T ≤ 482°F)	-196°C ≤ T ≤ 250°C (-320°F ≤ T ≤ 482°F)
Body	ASME SA-216 WCC	ASME SA-216 WCC	ASME SA-351 CF8M	ASME SA-351 CF8M
Blinhead	ASME SA-216 WCC	ASME SA-216 WCC	ASME SA-351 CF8M	ASME SA-351 CF8M
Gaskets Set	See Tab. [5]			
Trim				
Disc (standard)	See Tab. [6]			
Seat	ASME A-479 316	ASME A-479 316	ASME A-479 316	ASME A-479 316
Plug	ASME A-479 316	ASME A-479 316	ASME A-479 316	ASME A-479 316
Guide	17-4 PH	17-4 PH	ASME A-479 304	ASME A-479 304
Actuator				
Spring case	ASME SA-278 35	ASME SA-216 WCC	ASME SA-216 WCC	ASME SA-351 CF8M
Actuator diaphragm case	ASME SA-216 WCC	ASME SA-216 WCC	ASME SA-351 CF8M	ASME SA-351 CF8M
Spring	ASTM A-401	ASTM A-401	ASTM A-401	ASTM A-313 316
Diaphragm	See Tab. [7]			

Note: SS = Stainless Steel

Tab. [5] - Temperature range for flat gaskets

Materials	Temperature Limits
Polytetrafluoroethylene (PTFE)	-200 to 250°C (-328 to 482°F)
No asbestos	-50 to 200°C (-58 to 392°F)
Graphite + AISI 316	-200 to 500°C (-328 to 1022°F)

Tab. [6] - Temperature range and inlet pressure limits for Disc material

Materials	Temperature Limits	Maximum Pressure
Fluoroelastomer (FKM-FPM)	-10 to 200°C (-14 to 392°F)	40barg (580psig)
Polytetrafluoroethylene (PTFE)	-200° to 250°C (-328 to 482°F)	200barg (2900psig)
Stainless Steel	-196 to 455°C (-321 to 851°F)	280barg (4060psig)

Tab. [7] - Temperature range for diaphragms

Materials	Temperature Limits
Chloroprene (CR)	-20 to 90°C (-4 to 194°F)
NBR	-25 to 90°C (-13 to 194°F)
HNBR	-15 to 120°C (5 to 248°F)
Fluorocarbon (FKM-FPM)	-10 to 200°C (14 to 392°F)
Ethylene-Propylene (EPDM)	-35 to 160°C (-31 to 320°F)
Tetrafluoroethylene/propylene (TFE/P)	5 to 200°C (41 to 392°F)
Silicone (VMQ)	-50 to 150°C (-58 to 300°F)
Fluorosilicone (FVMQ)	-50 to 150°C (-58 to 300°F)
Stainless Steel	-196 to 455°C (-321 to 851°F)

Tab. [8] - Temperature range for O-Rings

Materials	Temperature Limits
Polytetrafluoroethylene (PTFE)	-200 to 250°C (-328 to 482°F)
Fluorocarbon (FKM-FPM)	-10 to 200°C (14 to 392°F)

Tab. [9] - Temperature range for Metal parts

Materials	Temperature Limits
Cast Iron	0 to 2 (32 to 449,6°F)
Carbon Steel	-29 to 425°C (-20 to 797°F)
Stainless Steel	-196 to 455°C (-321 to 851°F)

MK608UBS SERIES DIRECT OPERATED PRESSURE RELIEF/BACK PRESSURE VALVE

Tab. [10] - Spring Ranges

Spring ranges are based on the following assumptions:

- Stroke from setpoint is ±3mm
- Offset max 20% for minimum set pressure
- Low unbalancing forces on the plug

If different operating conditions are required please contact factory.

*Thin diaphragm (FKM 0,18mm) and upside down installation.

Upright installation

Upsidedown installation

Actuator	Spring	Spring Ranges			
		Minimum Set Pressure		Maximum Set Pressure	
		Barg	Psig	Barg	Psig
100	4BIS	4,5	65	8,7	126
	6	7,2	105	14,0	203
	7	10,4	151	21,6	314
	8	14,6	211	23,0	334
	9	22,0	319	34,6	502
	9BIS	27,4	397	37,9	550
	10	34,1	494	41,7	604
120	10BIS	37,8	548	46,0	667
	4BIS	2,6	37	4,1	59
	6	3,8	56	6,6	95
	7	5,3	77	10,1	147
	8	7,3	105	10,8	156
	9	10,8	156	16,2	235
	9BIS	13,3	193	17,8	258
130	10	16,4	238	19,5	283
	10BIS	18,1	263	29,5	428
	4BIS	1,7	25	3,0	44
	6	2,7	39	4,9	71
	7	3,8	55	7,6	110
	8	5,2	76	8,0	116
	9	7,8	113	12,1	175
140	9BIS	9,7	141	13,2	192
	10	12,0	174	14,5	211
	10BIS	13,3	193	22,1	320
	4BIS	0,7	10	1,3	19
	6	1,1	16	2,1	31
	7	1,6	23	3,3	47
	8	2,2	32	3,5	50
220	9	3,3	48	5,2	75
	9BIS	4,1	60	5,7	83
	10	5,1	74	6,3	91
	10BIS	5,7	82	9,2	133
	2BIS	0,094	1,36	0,12	1,8
	3	0,106	1,54	0,20	3,0
	4	0,127	1,84	0,24	3,4
360	4BIS	0,144	2,1	0,37	5,4
	6	0,26	3,8	0,60	8,7
	7	0,40	5,8	0,93	13,4
	8	0,58	8,4	0,99	14,3
	9	0,89	13	1,5	21,5
	9BIS	1,1	16	1,6	23,6
	10	1,4	20	1,8	25,9
	10BIS	1,6	23	2,7	38,7
	1*	0,0025	0,036	0,014	0,21
	1BIS	0,015	0,22	0,018	0,25
515	2BIS	0,019	0,27	0,039	0,56
	3	0,023	0,33	0,063	0,92
	4	0,029	0,42	0,073	1,1
	4BIS	0,035	0,50	0,12	1,7
	6	0,071	1,0	0,19	2,7
	7	0,11	1,6	0,29	4,2
	8	0,17	2,4	0,31	4,4
	9	0,27	3,9	0,46	6,7
	9BIS	0,34	4,9	0,50	7,3
	10	0,43	6,2	0,55	8,0
515	10BIS	0,48	6,9	0,84	12,2
	1*	0,0012	0,017	0,0077	0,11
	1BIS	0,0059	0,09	0,010	0,14
	2BIS	0,0080	0,12	0,021	0,30
	3	0,0100	0,15	0,034	0,50
	4	0,014	0,20	0,04	0,6
	4BIS	0,016	0,24	0,06	0,9
	6	0,036	0,5	0,10	1,5
	7	0,06	0,9	0,16	2,3
8	0,09	1,3	0,17	2,4	
9	0,14	2,1	0,23	3,3	

MK608UBS SERIES DIRECT OPERATED PRESSURE RELIEF/BACK PRESSURE VALVE

Tab. [11] - Weights | Actuators: 100, 120 130, 140.

	NPT/GAS	Class 150 RF	PN 16/25/40	Class 300 RF
DN15 (1/2")	16,7kg (36,8lbs)	16,6kg (36,4lbs)	17,5kg (38,6lbs)	18,5kg (40,8lbs)
DN20 (3/4")	16,7kg (36,8lbs)	17kg (37,5lbs)	18kg (39,7lbs)	19,5kg (43lbs)
DN25 (1")	16,6kg (36,6lbs)	17,5kg (38,6lbs)	18,5kg (40,8lbs)	20kg (44,1lbs)
DN40 (1-1/2")	16,5kg (36,4lbs)	20,1kg (44,3lbs)	21,5kg (47,4lbs)	24kg (52,9lbs)
DN50 (2")	18,5kg (40,8lbs)	22kg (48,5lbs)	23,1kg (50,9lbs)	26,3kg (58lbs)

Tab. [12] - Weights | Actuator: 220.

	NPT/GAS	Class 150 RF	PN 16/25/40	Class 300 RF
DN15 (1/2")	18,6kg (41lbs)	18,5kg (40,8lbs)	19,5kg (43lbs)	20,5kg (45,2lbs)
DN20 (3/4")	18,6kg (41lbs)	19kg (41,9lbs)	20kg (44,1lbs)	21,5kg (47,4lbs)
DN25 (1")	18,5kg (40,8lbs)	19,5kg (43lbs)	20,5kg (45,2lbs)	22kg (48,5lbs)
DN40 (1-1/2")	20,6kg (45,4lbs)	22,1kg (48,7lbs)	23,5kg (51,8lbs)	26kg (57,3lbs)
DN50 (2")	20,5kg (45,2lbs)	24kg (52,9lbs)	25,1kg (55,3lbs)	28,3kg (62,4lbs)

Tab. [13] - Weights | Actuator: 360.

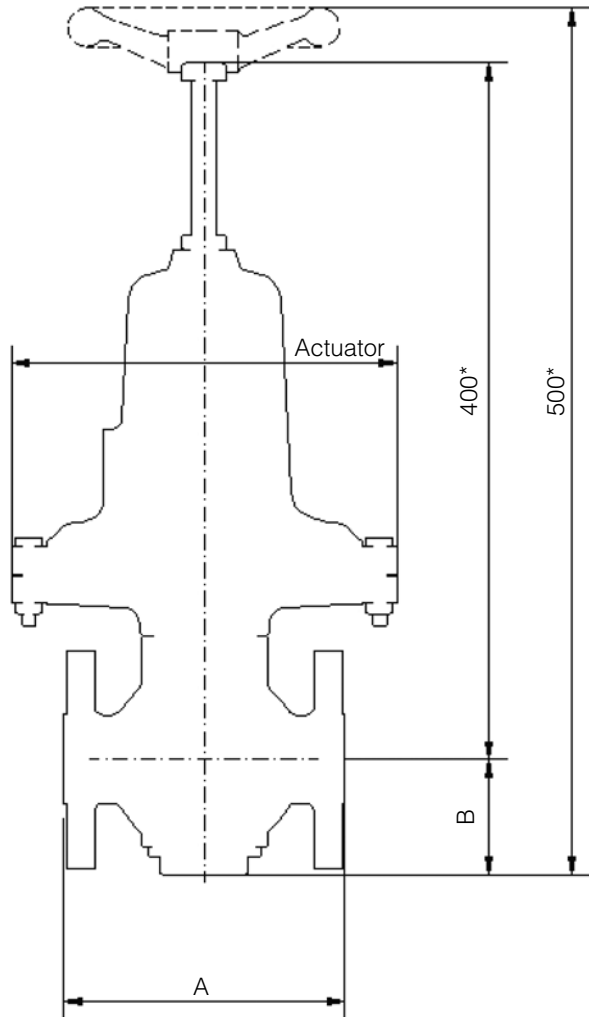
	NPT/GAS	Class 150 RF	PN 16/25/40	Class 300 RF
DN15 (1/2")	33,5kg (73,9lbs)	33,4kg (73,6lbs)	34,4kg (75,8lbs)	35,4kg (78lbs)
DN20 (3/4")	33,5kg (73,9lbs)	33,9kg (74,7lbs)	34,9kg (76,9lbs)	36,4kg (80,3lbs)
DN25 (1")	33,4kg (73,6lbs)	34,4kg (75,8lbs)	35,4kg (78lbs)	36,9kg (81,4lbs)
DN40 (1-1/2")	35,5kg (78,3lbs)	37kg (81,6lbs)	38,4kg (84,7lbs)	40,9kg (92,2lbs)
DN50 (2")	35,4kg (78lbs)	38,9kg (85,8lbs)	40kg (88,2lbs)	43,2kg (95,2lbs)

Tab. [14] - Weights | Actuator: 515.

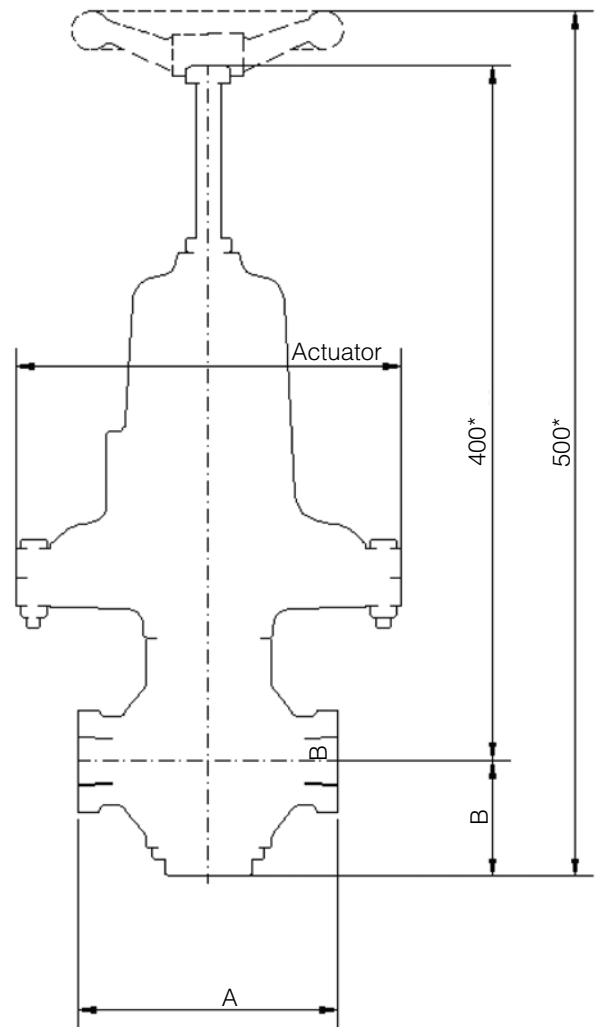
	NPT/GAS	Class 150 RF	PN 16/25/40	Class 300 RF
DN15 (1/2")	23,8kg (52,5lbs)	23,7kg (52,3lbs)	24,7kg (54,5lbs)	25,7kg (56,7lbs)
DN20 (3/4")	23,8kg (52,5lbs)	24,2kg (53,4lbs)	25,2kg (55,6lbs)	26,7kg (58,9lbs)
DN25 (1")	23,7kg (52,3lbs)	24,7kg (54,5lbs)	25,71kg (56,7lbs)	27,2 (60lbs)
DN40 (1-1/2")	25,8kg (56,9lbs)	27,3kg (60,2lbs)	28,7kg (63,3lbs)	31,2kg (68,8lbs)
DN50 (2")	25,7kg (56,7lbs)	29,2kg (64,4lbs)	30,3kg (66,8lbs)	33,5kg (73,9lbs)

MK608UBS SERIES DIRECT OPERATED PRESSURE RELIEF/BACK PRESSURE VALVE

UBS flanged valve dimensional drawings



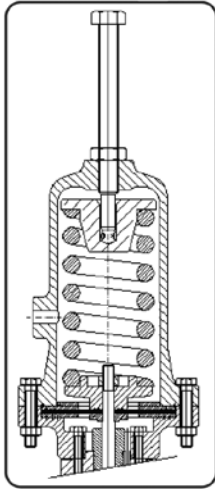
UBS threaded valve dimensional drawing



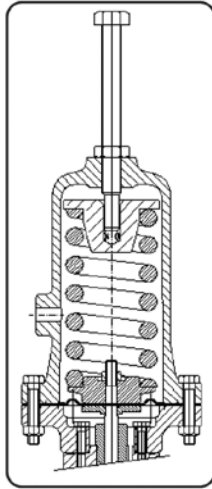
Tab. [15] - Body Sizes and face to face dimensions

Size (DN)	Flanged				Threaded			
	Face to Face Dimensions							
	ANSI Connections				Connections		NPT-F GAS-F Con. BSP-F	
	150	300	600	150/300/600	PM 16			
					PN 25			
A		B	A	B	A	B		
1/2" (DN15)	184 (7-1/4")	190 (7-1/2")	203 (8")	75 (3")	160mm (6-1/4")	66mm (3-3/4")	130mm (5-1/8")	66mm (3-3/4")
3/4" (DN20)	184 (7-1/4")	194 (7-1/2")	206 (8-1/8")					
1" (DN25)	184 (7-1/4")	197 (7-3/4")	210 (8-1/4")					
1-1/2" (DN40)	222 (8-3/4")	235 (9-1/2")	251 (10")		185mm (3-1/4")	82mm (3-1/4")	170mm (6-3/4")	82mm (3-1/4")
2" (DN50)	254 (10")	267 (10-1/2")	267 (10-1/2")					

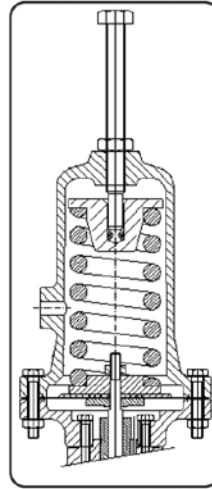
Actuator 100/120



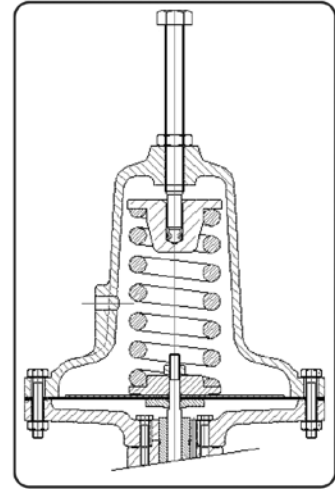
Actuator 130



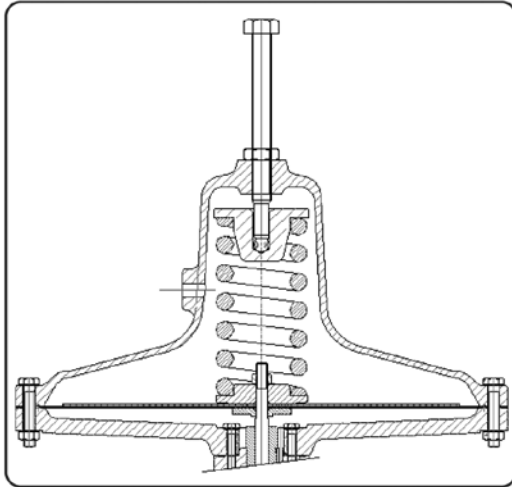
Actuator 140



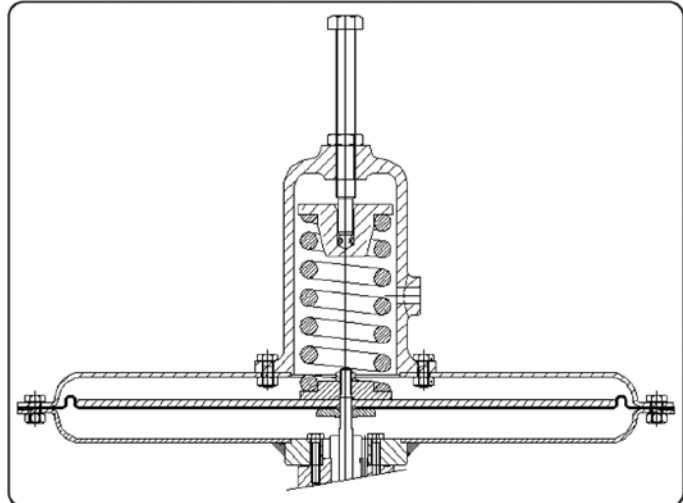
Actuator 220



Actuator 360



Actuator 515



UBS Actuators:

The above drawings show all our available actuators, which are perfectly interchangeable the one with the others according to desired pressure regulation (please refer also to Tab. 3). The table below shows the actuators dimensions.

Tab. [16] - Actuators dimension

Actuator	Outer Diameter	
	mm	Surface
100	132	9,7 (1,5)
120	132	20,7 (3,2)
130	132	27,8 (4,3)
140	140	64,5 (10)
220	220	226,5 (35,1)
360	360	730,1 (113,2)
515	480	1346 (208,6)



Jordan Valve a division of Richards Industries
 3170 Wasson Road • Cincinnati, OH 45209
 513.533.5600 • 800.543.7311 • 513.871.0105 (f)
 info@richardsind.com • www.jordanvalve.com

Jordan Valve reserves the right to make revisions to its product, specifications, literature and related information without notice. Please visit our web-site at www.jordanvalve.com for the latest information on our products.