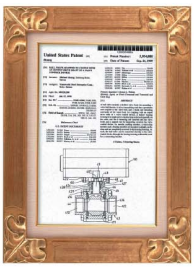
DO YOU STILL USE CONVENTIONAL ACTUATOR MOUNTING?

Conventional mounting method is to use a bracket and adapter between ball valve and actuator, however, the bracket and adapter can often be the source of failure for valve / actuator packages:

- A simple misalignment of the bracket and adapter can cause excessive wear and high torque than expected, this can result in stem leakage or valve stall.
- A warped bracket, however slightly, or the bolt drillings lose center, stem side loading can occur.
- If the adapter is too long and bracket bolts are drawn down tightly, the adapter can jam the valve stem into valve ball resulting in higher torque than the actuator provided.
- The bracket and adapter leave exposed moving parts, when the adapter turns it can become a pinch point and injury may occur.
- The connections between the adapter and the valve stem and the adapter and the actuator drive can create a slope, known as hysteresis, the looseness of the connecting surface can cause the valve to not fully open or fully close.

Patented Direct Mount Design

The U.S.,Germany, and China Patent and Trademark Offices Have awarded Mars Valve Patent Protection for the Direct Mount Design.



1

2

3

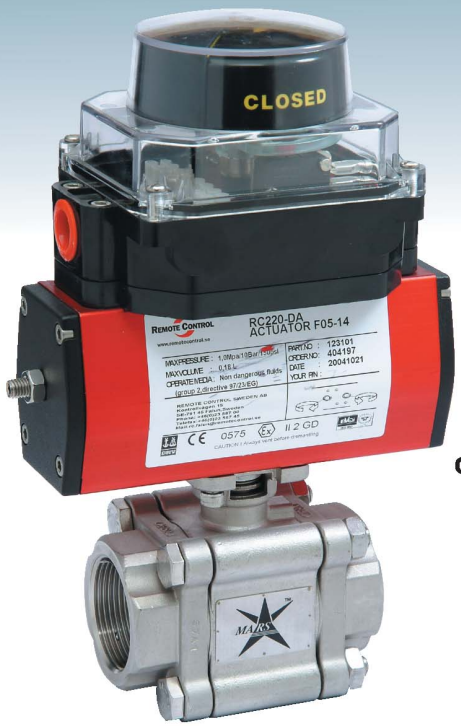
1) U.S. Patent 5,954,088
2) Germany Patent 299.02.532.2
3) China Patent ZL 98 2 09161.3

Mars Direct Mount Ball Valve Sets A New Standard For Ball Valve / Actuator Mounting, Enhances Functional Performance With Easy Installation And Lower Maintenance Cost.

The new way of mounting actuator is the Direct Mount Configuration, it is designed to overcome the problems of conventional actuator mounting.This design allows an actuator bolted directly to the top of ball valves for greater reliability, easy installation and improved cycling life.

No bracket and adapter are required, the valve stem is an integral part of the actuator drive. The direct valve stem coupling to actuator shaft ensures correct alignment of the valve to the actuator, minimizes stem side loading and backlash during operation, increased service life and performance.

- **Modular design and simplicity**
  No confusion as to how to select brackets and adapters.
- **Low cost and easy automation**
  Direct mount eliminates the need for additional brackets and adapters, time and labor saving too.
  In the event maintenance is needed, Mars Direct Mount ball valves facilitate fast, easy breakdown and assembly of ball valve and actuator package, the result is reduced maintenance time and the lowest overall cost of ownership.
- **Compact and Space-Saving**
  The close coupling of the actuator to the valve makes the total package as compact as possible.
- **Safety**
  There are no External Moving Parts, No Pinch Points.
- **Direct Valve Stem / Actuator Drive Connection**
  Less chance for Hysteresis.



Mars Patented Direct Mount Ball Valves
Making Automation Easy

SERIES 88
Direct Mount Three-Piece Ball Valves

Construction	3-Piece In-Line Swing Out Design, Full Port or Reduced Port
Size Range	Full Port: 1/4" to 4" (DN 8 to DN 100) Reduced Port:1/2" to 4" (DN 15 to DN 100)
Pressure Rating	3000 PSI Max.
Valve Material	Standard: ASTM A351 Gr. CF8M / DIN 1.4408 Options: WCB, 316L S/S, Titanium, Duplex , Hastelloy C...etc.
Seat Material	Standard: R-TFE Options: TFM 1600, PEEK, Carbon filled PTFE, Delrin, UHMWPE, 50/50 S/S filled PTFE, Metal Seats.. .and others
Inspection and Test	API 598, BS6755 Part 1
Compliance Standards	ANSI B16.34, ANSI B16.25, ANSI B1.20, API 6D, API 598, API 607 ISO 5209, ISO 5211, ISO 5752
Material Certificate	EN 10204 - 3.1
Quality System	ISO 9001
Options	NACE MR-0175 Standard valve is non-fire safe design, fire safe valve is optional

APPROVALS


Fire safe tested
API 607 Rev. 4

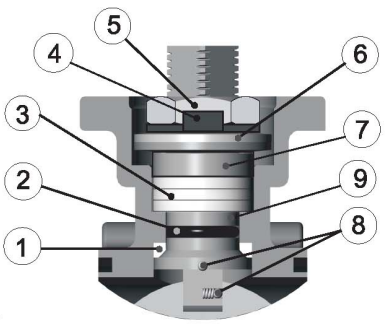
CE
0035
PED/97/23/EC
Category III
Module H


TA-Luft

Ex
II 3 GD
ATEX 94/9/EC

Mars Unique SealMax® Triple-Sealing Stem Packing System - Live Loaded - Maintenance Free - Extra Long Cycle Life - TA-Luft Approved

1. **Pyramidal Stem with Stem Seal**
   First stage of defense against leakage.
   The 45° slope of the stem accompany the stem seal effectively blocks all leak path during rotation.
2. **O-Ring Stem Packing**
   Second stage of defense against leakage.
   Enhances stem seal and maintains stem alignment, provides extra longer service life
3. **V-Ring Stem Packing**
   Third stage of defense against leakage.
   Multiple layers of V-Ring Chevron Packing expands side way as it is being compressed, blocking all air pockets to prevent leak path.
4. **Lock Saddle**
   Stabilizes the entire stem nut to keep it from loosening during operation



5. **Stem Nut**
   Compress the entire stem system to enable blocking of leakage.
6. **Belleville Washers**
   Automatically compress the seals to adjust for wear, pressure, and temperature fluctuations.
7. **Gland**
   Made of stainless steel, equally distributes the compressive force on the packing and seal.
8. **Anti-Static Device**
   Stem-to-Ball and Stem-to-Body as standard.
9. **Super Smooth Stem Finish**
   Reduces seal friction and operating torque, prolongs service life.

AVAILABLE END CONNECTIONS


FIG. 88-10
Threaded


FIG. 88-20
Socket Weld


FIG. 88-30
Butt Weld


FIG. 88-5A
Flange
PN 16


FIG. 88-70
Tube(ISO), Butt Weld
FIG. 88SN-20
Tube(OD), Butt Weld

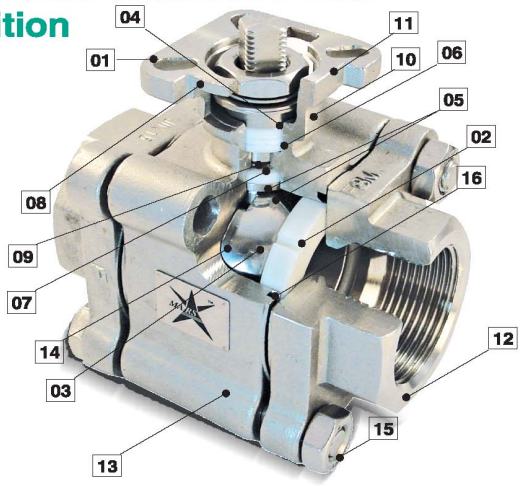

88SN-10
Clamp Ends


Series 88
Instrumentation ball valve


Sampling Ends

MARS SERIES 88
DIRECT MOUNT BALL VALVES
OFFER ADVANTAGE WELL BEYOND FOLLOWERS

Fire-Safe Certified to API 607 4th Edition



01. DUAL PATTERN ISO 5211 Mounting Pad With Square Shaft
No bracket and adapter are required for actuator mounting, provides easy and low cost actuation with improved cycle life.

02. Seats
*Features with relief slots to relieve pressure in upstream, reducing seat wear and valve torque
*Wide range of materials available to suit various applications

03. Ball
*Precisely machined, mirror polished solid ball for bubble tight shutoff with less operating torque
*A relief hole in stem slot to balance the pressure in the body cavity ensures tight shutoff and long service life

04. Blow-Out Proof Stem
Prevents stem from blowing out, for maximum safety

05. Anti-Static Device
Spring loaded Stem to ball and stem body anti-static device as standard

06. Super Smooth Stem Surface
Reduces seal friction and operating torque, prolongs service life.

07. MARS SealMax® Stem Design
Provides optimum stem seal and extremely high cycle life

08. Patented Leak-Watching Window
Standard on Mars Direct Mount Ball Valves, for an early warning of stem leak, prevents accident and business disruption costs.

09. O-Ring Stem Seal
Enhances stem wear and maintains stem alignment, provides extra longer service life

10. Extended Valve Neck
Gives sufficient room between mounting pad and valve body, allows easy access for mounting actuator without interference with pipeline

11. Locking Device Standard

12. Stainless Steel Welded Ends in 316L Standard
Reduces inter-granular corrosion in welding.

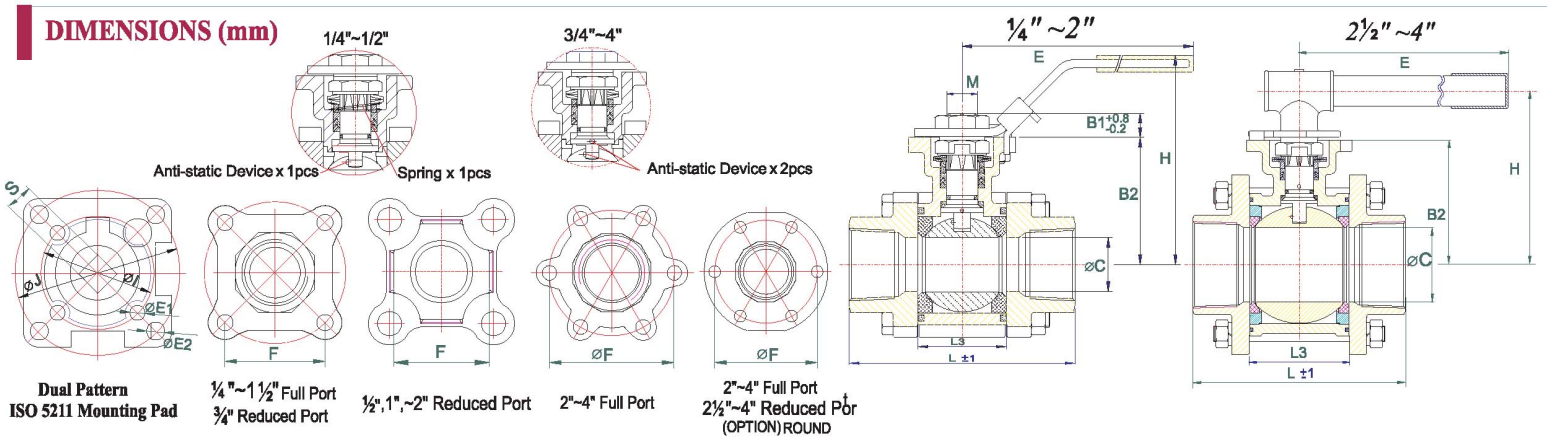
13. 3-Piece Swing-Out Design
Fast and simple inline maintenance

14. Floating Ball
Provides pressure assisted sealing plus temperature and wear compensation, for positive shutoff

15. Encapsulated Body Bolts (up to 2")
Enhance environment protection essential for API 607 Fire-Safe qualification

16. Fully Contained Body Seals
Allows in line welding without disassembly, maintains sealing integrity from high vacuum to high pressure and temperature application.

DIMENSIONS (mm)



Dimension S: 17/19 Standard 17, Option 19

H, B1 DIMENSIONS ± 0.5mm

SIZE	øA		B1		B2		øC		ød1		# ø G		E	@ E	S		øG		H		@H	J		L		*L	*L1	L1		L2		ø I	
	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	F	R	F	R	F	R	F	F	R	F	R	F	F	F	R	F	R	F	R
¼"	14.3		7.6		42.6		11.5 # 9.24		9.24		13.7		139			9		21.7		77			3.35 # 1.6		75		60	70	75		10		36	
⅜"	17.6		7.6		42.6		12.6 #12.53		12.53		17.5		139			9		21.7		77			2.8 # 1.6		75		60	70	75		10		36	
½"	21.9	21.9	7.6	7.6	42.6	42.6	15	12.6	15.76	15.76	21.7	21.7	139	139	185	9	9	21.7	21.7	77	77	83	1.6	1.6	72.5	75	75	75	75	75	10	10	36	36
¾"	27.3	27.3	8.6	7.6	46.85	42.6	20	15	20.96	20.96	27.2	27.2	139	139	185	9	9	27.2	27.2	82	77	88	1.6	1.6	85.4	72.5	80	90	90	74.8	13	13	36	36
1"	33.9	33.9	10.4	8.6	59.3	46.85	25	20	26.64	26.64	34	34	165	139	212	11	9	34	34	98.5	82	106	1.6	1.6	105.3	85.4	90	100	110	89.8	13	13	42	36
1¼"	42.8	42.8	10.4	10.4	62.6	59.3	32	25	35.08	35.08	42.7	42.7	165	165	212	11	11	42.7	42.7	102	98.5	109	1.6	1.6	111	105.3	110	110	115	1094	13	13	42	42
1½"	48.9	48.9	13.4	10.4	79	62.6	38	32	40.94	40.94	48.6	48.6	215	165	262	14	11	48.6	48.6	128	102	128	1.6	1.6	127.3	111	120	125	130	114.4	13	13	50	42
2"	61.3	61.3	13.4	13.4	87.7	79.0	50	38	52.51	52.51	60.5	60.5	215	215	262	14	14	60.5	60.5	137	128	137	1.6	1.6	142.8 *145	127.3	140	150	142.8 *145	130	16	16	50	50
2½"	ANSI 74 PN 76.9	ANSI 74 PN 76.9	16.8	13.4	108.7	87.7	65	50	65	65.7 #62.28	73	73	300	215	300	17/19	14	76.3	76.3	167	137	167	2	2	185	*145	185	190	185	*145	16	16	70	50
3"	90	90	17.8	16.8	117.7	108.7	80	65	80	77.9 # 77.9	89	89	370	300	370	17/19	17/19	90	90	176	167	176	2	2	205	185	205	220	205	185	16	16	70	70
4"	115.5	115.5	16.8	17.8	133.7	117.7	100	80	102	102 # 102	114	114	370	370	370	17/19	17/19	116	116	192	176	192	3.5 # 2	2	240	205	240	270	240	205	20	20	70	70

*L - Dimension for DIN 3202-M3 Length
*L1 - Dimension for S13 Length

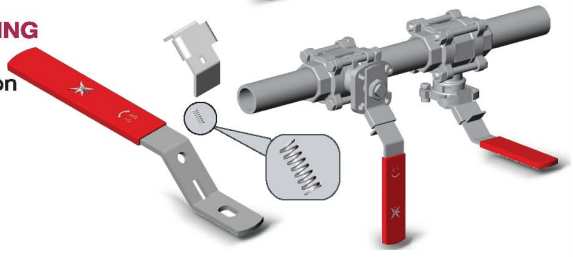
@ Dimension for-PN40/PN16
# Dimension For SCH.40
* Dimension For Round End Cap

HANDLE STYLE

STANDARD HANDLE:
-S.S. handle with vinyl sleeves (1/4" to 2")
-S.S T-handle (2 1/2" to 4")

HANDLE OPTIONS:
- S.S. Investment cast handle(1/4" to 2")
- Oval handle (1/4" to 2")

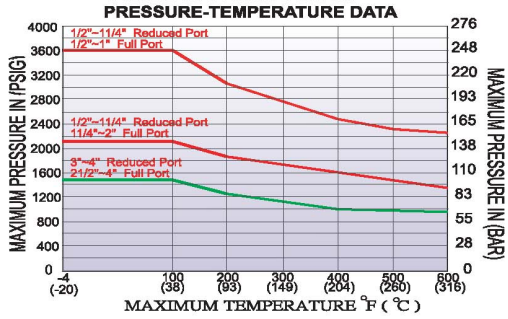
SPRING RETURN SLIDING LOCK HANDLE:
No matter the orientation of the ball valves, the SRSL handle always secures handle in position, making valve operation safe.



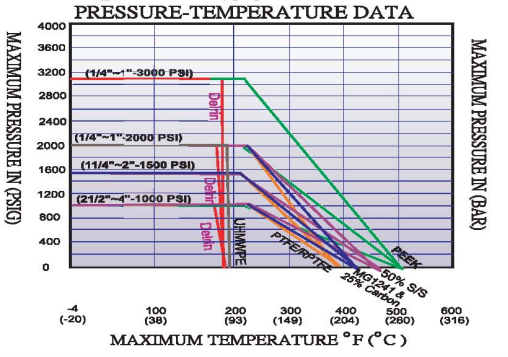
Breakaway Torque (Nm)				Cv (G.P.M.)	
INCH	Inch-Lb	Full port	Red. port	Full port	Red. port
1/4"	69	8	-	8	-
3/8"	69	8	-	8	-
1/2"	69	8	8	15	8
3/4"	92	10	8	34	15
1"	138	16	10	56	34
1.1/4"	207	23	16	85	56
1.1/2"	288	33	23	125	85
2"	415	47	33	250	125
2.1/2"	553	62	47	320	250
3"	898	101	62	580	320
4"	1094	124	101	1020	580

* Break Away Torque
-30% safety factor included
-Standard Mars valves are assembled with silicon-free based in lubricant, torque for dry assembled valves please consult factory

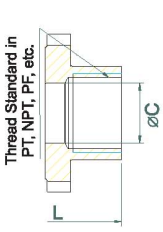
VALVE BODY RATING CHART
PRESSURE-TEMPERATURE DATA



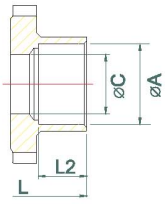
SEAT RATING CHART
PRESSURE-TEMPERATURE DATA



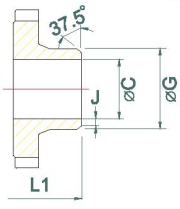
END CAP OPTIONS



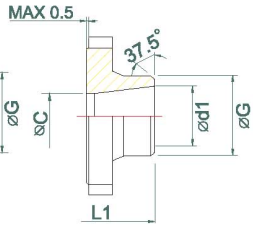
88-10
Threaded



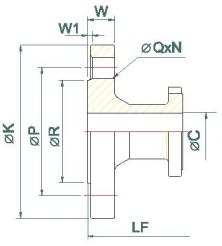
88-20
Socket Weld



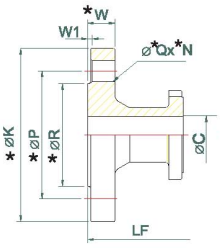
88-30
Butt Weld



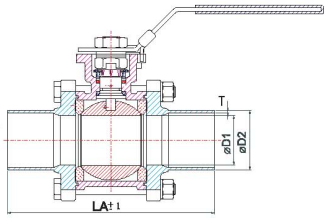
88-30
* SCH. 40 Available on request
¼"~4"- Full Port
½"~4" Reduced Port



88-50/88-5A
Flange End
(PN25/40 F1)/(PN16)
1/2"~4" / 1/2"~2"



88-5A
Flange End
(PN16)
21/2"~4"

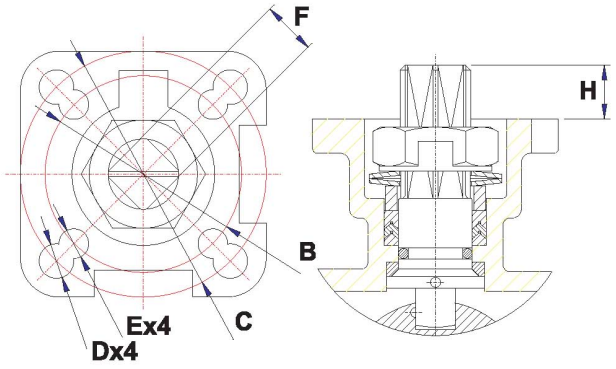


88-70
(Butt Weld) ISO
3/8"~4"

	ø J		øE1		øE2		M		L3		øF		ø K	ø P	ø R	ø Q	N	W	W1	LF	ø *K	ø P	ø *R	ø *Q	*N	*W	øD1	øD2	T	LA	ISO5211		Wt.(Kg)	
	F	R	F	R	F	R	F	R	F	R	F	R	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	R
1	42		6		6		7/16"-20UNF		24.5		38.2		PN25/40(8850)						PN16(88-5A)												◆F03/ F04 F04/F05		0.89	
2	42		6		6		7/16"-20UNF		24.5		38.2																12.6	17.2	2.1	120	◆F03/ F04 F04/F05		0.88	
3	42	42	6	6	6	6	7/16"-20UNF	7/16"-20UNF	24.5	24.5	38.2	38.2	95	65	45	14	4	16	2	130							15	21.3	2.1	140	◆F03/ F04 F04/F05	◆F03/ F04 F04/F05	0.82	0.83
4	42	42	6	6	6	6	7/16"-20UNF	7/16"-20UNF	31.4	24.5	44.3	38.2	105	75	58	14	4	18	2	150							20	26.9	2.1	140	◆F03/ F04 F05/F07	◆F03/ F04 F04/F05	1.29	0.84
5	50	42	6	6	7	6	9/16"-18UNF	7/16"-20UNF	41.3	31.4	50	44.3	115	85	68	14	4	18	2	160							25	33.7	2.3	152	◆F04/F05 F05/F07	◆F03/ F04 F05/F07	2.01	1.50
6	50	50	6	6	7	7	9/16"-18UNF	9/16"-18UNF	48.4	41.3	57.2	50	140	100	78	18	4	18	2	180							32	42.4	2.5	165	◆F04/F05 F05/F07	◆F04/F05 F05/F07	2.76	2.17
7	70	50	7.5	6	9	7	3/4"-16UNF	9/16"-18UNF	56.3	48.4	66.6	57.2	150	110	88	18	4	18	3	200							38	48.3	2.5	190	F05 & F07	◆F04/F05 F05/F07	4.21	4.27
8	70	70	7.5	7.5	9	9	3/4"-16UNF	3/4"-16UNF	71.4	56.3	114 *112	66.6	165	125	102	18	4	20	3	230							50	60.3	3	203	F05 & F07	F05 & F07	5.83 *6.93	5.30
9	102	70	10	7.5	12	9	M24	3/4"-16UNF	86.6	71.4	139	114 *112	185	145	122	18	8	22	3	290	185	145	122	18	4	18	65	76.1	3.5	254	F07/F10	F05 & F07	12	6.51
10	102	102	10	10	12	12	M24	M24	99	86.6	160	139	200	160	138	18	8	24	3	310	200	160	138	18	8	20	80	88.9	3.5	280	F07/F10	F07/F10	16.2	12
11	102	102	10	10	12	12	M24	M24	127	99	193	160	235	190	162	22	8	24	3	350	220	180	158	18	8	20	100	114.3	3.5	317	F07/F10	F07/F10	25.8	16.2

◆ Size 1/4" to 1/2" ISO 5211 standard configuration is F03/F04, F03/F04/F05 & F04/F05 as option.
Size 3/4" ISO 5211 standard configuration is F03/F04, F03/F04/F05 & F05/F07 as option.
Size 1" to 11/4" ISO 5211 standard configuration is F04/F05, F05/F07 as option.

MARS TOP WORKS MAKE AUTOMATION AS EASY AS IT GETS



88 SERIES Standard Dimension F: 17/19 Standard 17 Option 19

SIZE	ISO5211 DIN 3337	B Inner Holes PCD	C Outer Holes PCD	D Outer Holes DIA (Clearance)	E Inner Holes DIA (Clearance	F Stem Square Across Flats	H Square H/T Above plate
1/4"~ 1/2"	F03/F04 * F03/F04/F05 * F04/F05	36	42	6	6	9	7.6
3/4"	F03/F04 * F03/F04/F05 * F05/F07	36	42	6	6	9	8.6
1"	F04/F05 * F05/F07	42	50	7	6	11	10.4
1-1/4"	F04/F05 * F05/F07	42	50	7	6	11	10.4
1-1/2"	F05/F07	50	70	9	7.5	14	13.4
2"	F05/F07	50	70	9	7.5	14	13.4
2-1/2"	F07/F10	70	102	12	10	17 / 19	16.8
3"	F07/F10	70	102	12	10	17 / 19	17.8
4"	F07/F10	70	102	12	10	17 / 19	16.8

* Size 1/4" to 1/2" ISO 5211 standard configuration is F03/F04, F03/F04/F05 & F04/F05 as option.
* Size 3/4" ISO 5211 standard configuration is F03/F04, F03/F04/F05 & F05/F07 as option.
* Size 1" to 11/4" ISO 5211 standard configuration is F04/F05, F05/F07 as option.

MARS OPTIONAL VALVE ACCESSORIES INCREASE PRODUCTIVITY AND GIVE YOU MORE CONTROL OVER YOUR INDUSTRIAL PROCESS

SERIES 88

V-Control Ball Valves

Mars V-Control Ball valves match the control performance of globe valve, excellent for modulating service, but Mars V-Control ball valves are more compact, lighter weight, and much less expensive than globe valves.

30 ° V 60 ° V 90 ° V

30°V, 60°V, and 90°V are standard, others on request

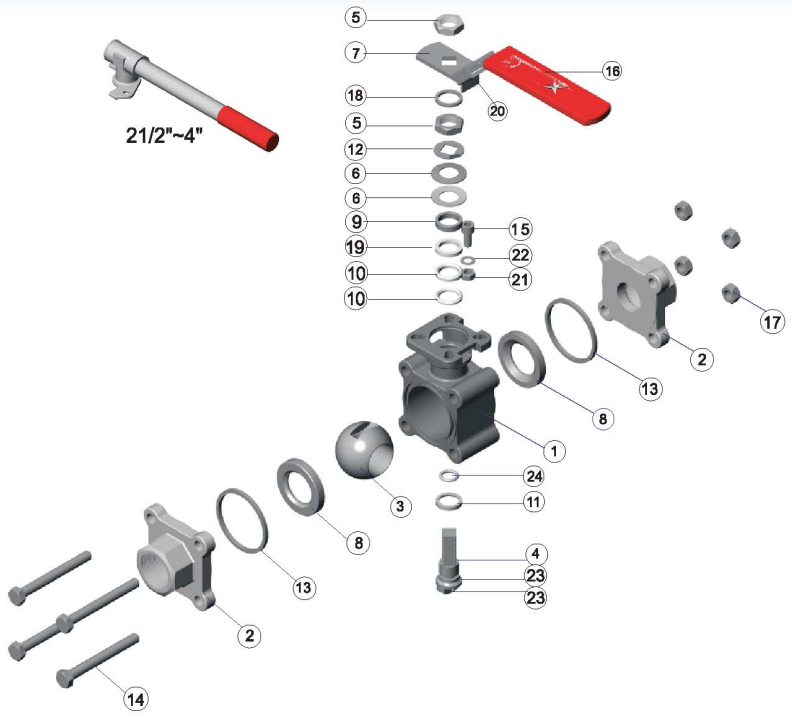
BALL VALVES With Heating Jacket

Jacket ball valve prevents solidification and blockage in use of hot water, steam, or other appropriate heating or cooling medium.

Diverter Ball Valves

For Diversion, Mixing, and Blending applications
Side Entry: T-Port, L-Port
Bottom Entry: T-Port, L-Port, LL-Port

MATERIALS LIST



NO.	PART NAME	MATERIAL	Q'TY
1	Body	ASTM A351 Gr. CF8M	1
2	End Cap	ASTM A351 Gr. CF8M¤	2
3	Ball	SUS316	1
4	Stem	SUS316	1
5	Stem Nut	SUS 304	2
6	Belleville Washer	SUS 301	2
7	Handle	SUS 304	1
8	Seat	RPTFE	2
9	Gland	SUS 304	1
10	Stem Packing	PTFE	◇
11	Stem Seal	RPTFE	1
12	Lock Saddle	SUS 304	1
13	Joint Gasket	PTFE	2
14	Bolt	SUS 304	*
15	Stop Pin	SUS 304	1
16	Handle Sleeve	Vinyl	1
17	Bolt Nut	SUS 304	ƒ
18	Stem Washer	SUS 304	1
19	Stem Packing	25% Glass Fiber Filled + PTFE	1
20	Locking Device	SUS 304	1
21	Pin Nut	SUS 304	1
22	Washer	SUS 304	1
23	Antistatic - Device	SUS 316	@
24	O-RING	VITON	1

¤ Socket weld and butt weld uses CF3M material
◇ For 1/4"~2"-2pcs, 21/2"~4"-3pcs.
* For ¼" to 1½"- 4pcs ; For 2"~4" - 6pcs
ƒ For ¼" to 1½"- 4pcs ; For 2"-6pcs,For 2½"~4" - 12pcs
@ 1/4"~1/2"-1pcs. 3/4"~4"-2pcs.

HOW TO ORDER ☑88-10 F05STX

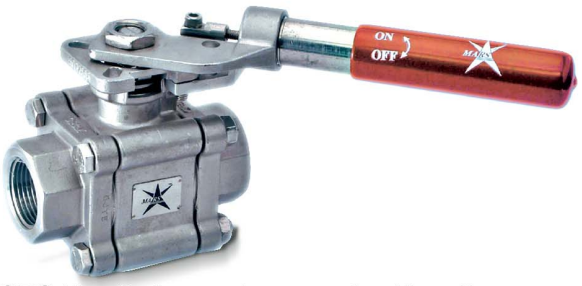
88-10	F	05	S	T	X
VALVE	PORT TYPE	SIZE	BODY MATERIAL	SEAT MATERIAL	HANDLE STYLE
☑88-10 ☐88-20 ☐88-30 ☐88-50 ☐88-70	☑F ☐R	☐01) 1/4" ☐02) 3/8" ☐03) 1/2" ☐04) 3/4" ☑05) 1" ☐06) 1 1/4" ☐07) 1 1/2" ☐08) 2" ☐09) 2 1/2" ☐10) 3" ☐11) 4"	☑S - CF8M ☐W -WCB ☐L - 316L ☐D - Duplex ☐T -Titanium ☐A - Alloy 20	☐P PTFE ☐R R-TFE ☑T TFM1600 ☐S 50/50 S.S.+PTFE ☐M MG1241 ☐C Carbon filled PTFE ☐U UHMWPE ☐K Peek ☐D Delrin ☐A Metal	☐A - Std. handle ☐I - Investment Cast ☐O-Oval handle ☐L -SRSL handle ☐S -SRS handle ☑X -Bare shaft

Titanium BALL VALVES

Light weight, Excellent for Corrosion Resistance

Other special alloy available on request
Monel
Hastelloy C
Alloy 20
Duplex

With (SRS) Spring Return Safety Handle



The SRS Handle is a spring energized handle, the ball valve will return to pre-determined closed (or open) position when an operator disengages from handle, provides safe and positive fail close or open operation, creating a reliable sampling, filling, dispensing, and pressure relief valve. Full S.S. construction provides excellent corrosion resistance for extended service life.

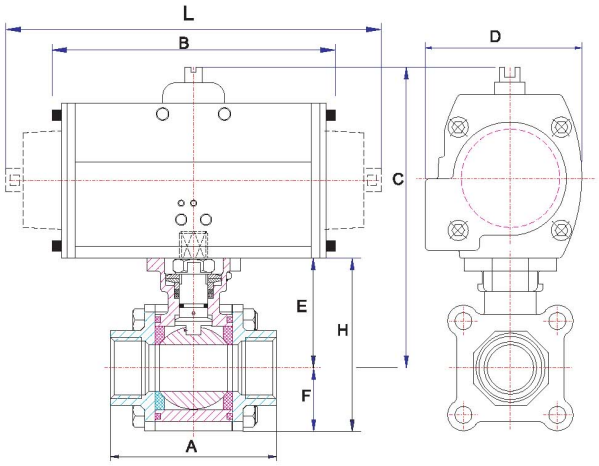
With Mars "TSM"Unit

Adds Extra Safety and Long Service Life

- The TSM unit designed for possible fugitive emission to meet TA-Luft requirements for a safe and clean environment, provides a secondary stem seal for the valve stem, prolongs service life.
- The TSM unit can also function as stem extension for insulation.

MARS VALVE OFFERS SINGLE-RELIABLE-SOURCE FOR A COMPLETE LINE OF BALL VALVES, ACTUATORS, AND ACCESSORIES TO MEET YOUR VALVE AUTOMATION REQUIREMENTS.

AirMars Pneumatic Actuators



Double-Acting (80 PSI)

*Round end cap

Valve Size	A	B	C	D	E	F	H	Actuator	Wt Lbs.	Wt Kg.	Remark
1/4"	75	120	126.6	62.2	42.6	25.6	68.2	A-125	3.95	1.79	
3/8"	75	120	126.6	62.2	42.6	25.6	68.2	A-125	3.95	1.79	
1/2"	72.5	120	126.6	62.2	42.6	25.6	68.2	A-125	3.95	1.79	
3/4"	85.4	120	130.9	62.2	46.9	30.7	77.6	A-125	4.98	2.26	
1"	105.3	144.3	158.3	81.4	59.3	33.8	93.1	A-250	7.85	3.56	
11/4"	111	144.3	161.6	81.4	62.6	38.6	101.2	A-250	9.28	4.21	
11/2"	127.3	149.2	197	95	79	43.3	122.3	A-450	13.51	6.13	
2"	145	183	228.7	119	87.7	* 61.4 64.5	* 149.1 * 152.2	A-1000	20.01 *22.26	9.07 *10.09	+ ☐
21/2"	185	183	249.7	119	108.7	* 73.2 78.5	* 181.9 *187.2	A-1000	30.80 *33.58	13.97 *15.23	
3"	205	183	258.7	119	117.7	* 84.3 91	* 202 208.7	A-1000	39.22 *41.60	17.79 *18.87	
4"	240	259.6	294.7	140.5	133.7	* 99 107	* 232.7 240.7	A-2250	66.78 *71.90	30.27 *32.59	+ ☐

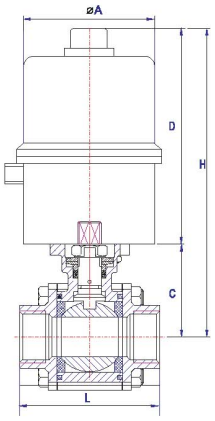
Spring-Return (80 PSI)

*Round end cap

Valve Size	A	L	C	D	E	F	H	Actuator	Wt Lbs.	Wt Kg.	Remark
1/4"	75	194.6	141.6	81.4	42.6	25.6	68.2	A-250SR4	5.93	2.69	+ ☐ ISO F04
3/8"	75	194.6	141.6	81.4	42.6	25.6	68.2	A-250SR4	5.93	2.69	+ ☐ ISO F04
1/2"	72.5	194.6	141.6	81.4	42.6	25.6	68.2	A-250SR4	5.93	2.69	+ ☐ ISO F04
3/4"	85.4	194.6	145.9	81.4	46.9	30.7	77.6	A-250SR5	6.97	3.16	+ ☐ ISO F04 &
1"	105.3	205.6	177.3	95	59.3	33.8	93.1	A-450SR4	10.71	4.86	+ ☐
11/4"	111	250.0	203.6	119	62.6	38.6	101.2	A-1000SR4	17.21	7.81	+ ☐
11/2"	127.3	250.0	220	119	79	43.3	122.3	A-1000SR4	20.13	9.13	+ ☐
2"	145	355.0	248.7	140.5	87.7	* 61.4 64.5	* 149.1 * 152.2	A-2250SR4	33.91 *36.16	15.37 *16.39	+ ☐
21/2"	185	355.0	269.7	140.5	108.7	* 73.2 78.5	* 181.9 * 187.2	A-2250SR4	44.69 *47.47	20.27 *21.53	+ ☐
3"	205	422	313.7	185.2	117.7	* 84.3 91	* 202 208.7	A-3650SR4	70.73 *73.11	32.09 *33.17	+ ☐
4"	240	422	329.7	185.2	133.7	* 99 107	* 232.7 240.7	A-3650SR4	89.95 *95.07	40.77 *43.09	+ ☐

& Air Supply 100 PSI

PowerMars Electric Actuators



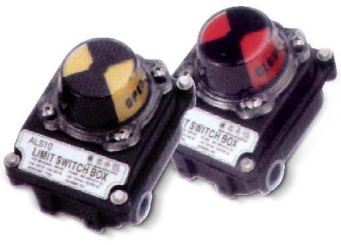
VALVE SIZE	Electric Actuator	Flange Type	◇	øA	C	D	H	L	◇ STEM	ISO 5211	Lbs.	Kg
1/4"	OM-1	F03/F05	14	114	42.6	155	197.6	75	9	F03/F04	6.16	2.79
3/8"	OM-1	F03/F05	14	114	42.6	155	197.6	75	9	F03/F04	6.16	2.79
1/2"	OM-1	F03/F05	14	114	42.6	155	197.6	72.5	9	F03/F04	6.16	2.79
3/4"	OM-1	F03/F05	14	114	46.9	155	201.9	85.4	9	F03/F04	7.19	3.26
1"	OM-1	F03/F05	14	114	59.3	155	214.3	105.3	11	F04/F05	8.74	3.96
11/4"	OM-1	F03/F05	14	114	62.6	155	217.6	111	11	F04/F05	10.17	4.61
11/2"	OM-A	F07	17	114	79	203	282	127.3	14	F05/F07	15.29	6.93
2"	OM-2	F07	22	180	87.7	255	342.7	145	14	F05/F07	36.12 *38.37	16.37 *17.39
21/2"	OM-2	F07	22	180	108.7	255	363.7	185	17	F07/F10	46.93 *49.71	21.27 *22.53
3"	OM-3	F07	22	180	117.7	255	372.7	205	17	F07/F10	56.70 *57.74	25.70 *26.17
4"	OM-3	F07	22	180	133.7	255	388.7	240	17	F07/F10	74.51 *79.83	33.77 *36.09

* Round end cap.

Automation Accessories

MARS SOLENOID VALVES

LIMIT SWITCHES



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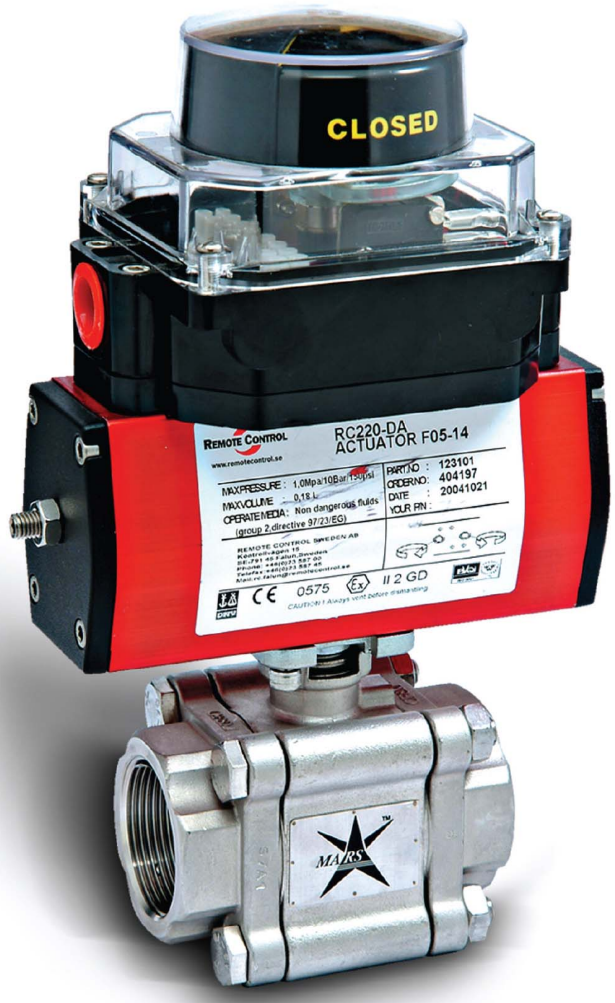

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