



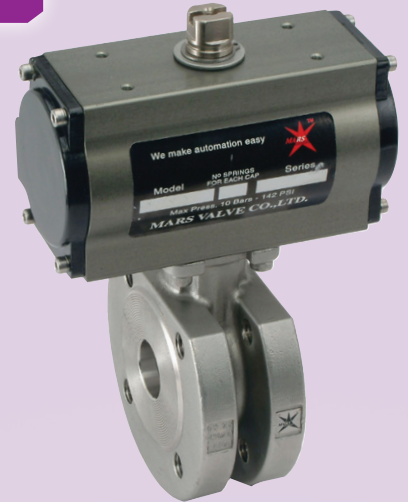
**Mars Valve – Leading the Industry
Partnering with you**

SERIES 99



SIL 3 Certified

High Performance Wafer Type Ball Valve Direct Mount of Actuators



TA-Luft
&
ISO 15848-1



Mars Direct Mount Ball Valves, Easy to Automate ! Wafer type Compact Ball Valve, Full Port Design

Size Range: (1/2" – 6" / DN 15 – DN 150)

Pressure Rating:

FIG. 99-10 PN 10/16

FIG. 99-20 PN 25/40

FIG. 99-30 ANSI 150#

Body, end caps: CF8M/1.4408, WCB/1.0619,
Alloy 20, Duplex, Hastelloy C

Seats: RTFE or PTFE, various options are available:
TFM1600, CTFE (25%Carbon / 75%PTFE),
UHMWPE, 50/50 S/S filled PTFE & **Metal Seats**

Compliance Standard:

ASME B16.34 Fully conforms

ASME B16.5, ISO 5211, ISO 5209, EN 1092-1,

MSS SP-55, EN 10204-3.1

Quality Assurance: ISO 9001

Inspection and Test: API 598

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

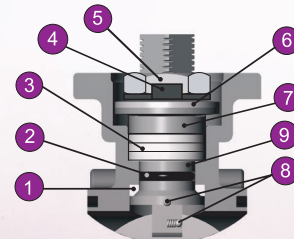
Second stage of defense against leakage. Enhances stem seal and maintains stem alignment, provides extra longer service life.

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.

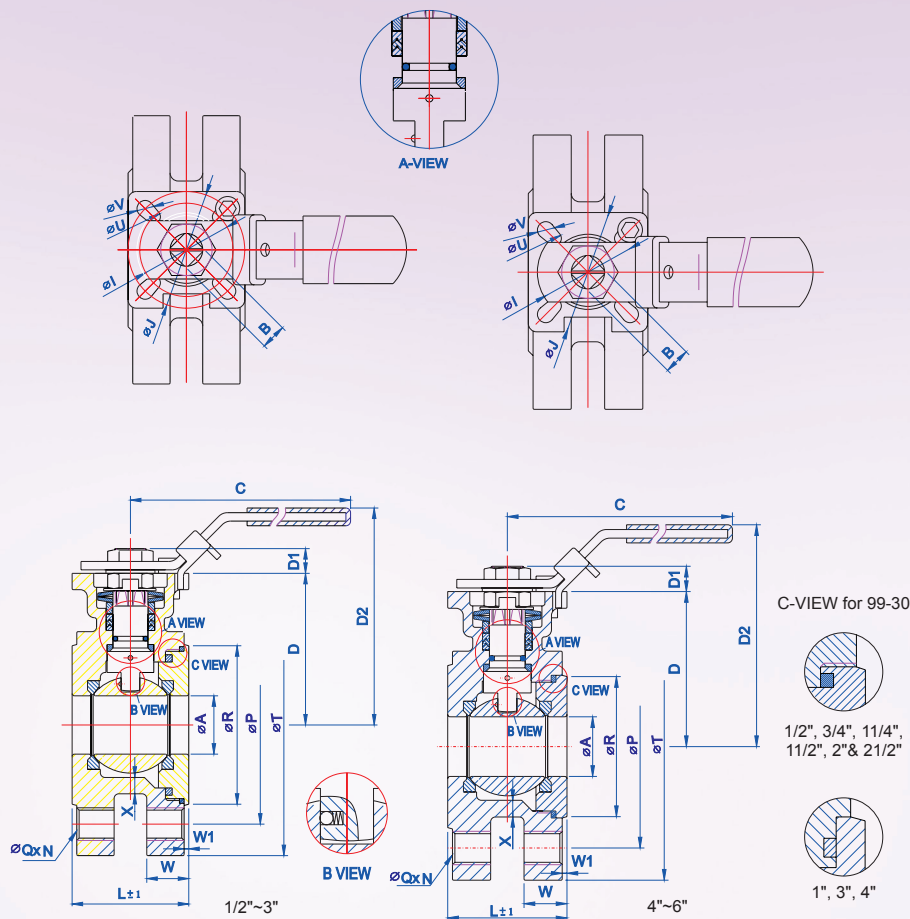
8. Anti-Static Device

Stem-to-Ball and Stem-to-Body as standard.

9. Super Smooth Stem Finish

Reduces seal friction and operating torque, prolongs service life.

Dimensions (mm)



Breakaway Torque(RTFE)

SERIES 99-10/20(PN16/40)
SERIES 99-30(#150)

SIZE	DN	Inch-Lb	Nm
1/2"	15	44	5
3/4"	20	62	7
1"	25	142	16
1 1/4"	32	159	18
1 1/2"	40	257	29
2"	50	319	36
2 1/2"	65	532	60
3"	80	656	74
4"	100	797	90
5"	125	1958	221
6"	150	2073	234

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.

Pressure Vs. Temperature Chart

SERIES 99-10/20(PN16/40)
SERIES 99-30(#150)

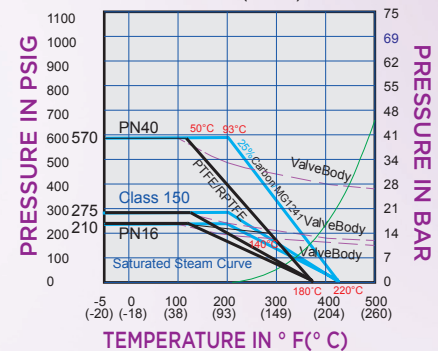


FIG. 99-10 (PN10/16) & FIG. 99-20(PN25/40)

Dimension B: 17/19
Standard 17, Option 19

* Dimension For 99-20

SIZE	ØA	B	C	D	D1	D2	ØI	ØJ	L	N	*N	ØP	ØQ	ØR	ØT	W	W1	ØU	ØV	Wt(kg)	ISO5211
1/2"	15.0	9	139	48.7	7	85	36	42	40.8	4	4	65	M12	45	82	16	2	6	6	1.30	F03/F04
3/4"	20.0	9	139	53.7	8	90	36	42	44	4	4	75	M12	58	98.6	18	2	6	6	1.96	F03/F04
1"	25.0	11	165	65	12	104	42	50	50	4	4	85	M12	68	115	18	2	6	7	2.8	F04/F05
1 1/4"	32.0	11	165	77	11.3	116	42	50	60	4	4	100	M16	78	140	18	2	6	7	4.15	F04/F05
1 1/2"	38.0	14	215	85.5	15.5	135	50	70	65	4	4	110	M16	88	150	18	3	7.5	9	5.25	F05/F07
2"	50.0	14	215	93	16	142	50	70	80	4	4	125	M16	102	165	20	3	7.5	9	6.66	F05/F07
2 1/2"	65.0	17/19	263	109.7	15.8	168	70	102	110	4	8	145	M16	122	185	22	3	10	12	11.88	F07/F10
3"	80	17/19	313	119.5	16	178	70	102	120	8	8	160	M16	138	200	24	3	10	12	14.9	F07/F10

FIG. 99-10 (PN10/16) & FIG. 99-20(PN25/40)

* Dimension For 99-20

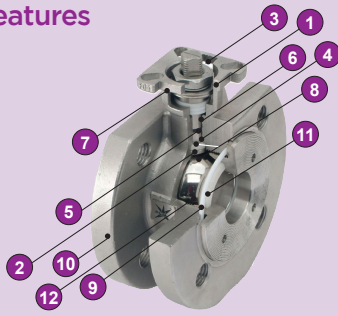
SIZE	ØA	B	C	D	*D	D1	D2	*D2	ØI	ØJ	L	N	ØP	*ØP	ØQ	*ØQ	ØR	*ØR	ØT	*ØT	W	*W	W1	ØU	ØV	Wt(kg)	ISO5211
4"	100	17/19	344	131.7	132.7	17.8	190	191	70	102	150	8	180	190	M16	M20	158	162	220	235	20	24	3	10	12	20.38	F07/F10
5"	125	27	705	192.7		28.5			125	140	200	8	210		M16		188		250		20.9		3	14	18	50.8	F12/F14
6"	150	27	705	210.2		28.5			125	140	240	8	240		M20		212		285		22.4		3	14	18	68.2	F12/F14

99-30 (ANSI CLASS 150)

Dimension B: 17/19
Standard 17, Option 19

SIZE	ØA	B	C	D	D1	D2	ØI	ØJ	L	N	ØP	ØQ	ØR	ØT	W	W1	ØU	ØV	X	Wt(kg)	ISO5211
1/2"	15.0	9	139	48.7	7	85	36	42	40.8	4	60.5	1/2"- 13UNC	35.1	88.9	11.2	1.6	6	6	7.7	1.69	F03/F04
3/4"	20.0	9	139	53.7	8	90	36	42	44	4	69.9	1/2"- 13UNC	42.9	98.6	11.2	1.6	6	6	9	2.10	F03/F04
1"	25.0	11	165	65	12	104	42	50	50	4	79.2	1/2"- 13UNC	64	108	11.2	1.6	6	7	7	3.02	F04/F05
1 1/4"	32.0	11	165	77	11.3	116	42	50	60	4	88.9	1/2"- 13UNC	63.5	117.3	12.7	1.6	6	7	7	5.56	F04/F05
1 1/2"	38.0	14	215	85.5	15.5	135	50	70	65	4	98.6	1/2"- 13UNC	73.2	127	14.3	1.6	7.5	9	6	6.17	F05/F07
2"	50.0	14	215	93	16	142	50	70	80	4	120.7	5/8"-11UNC	91.9	152.4	15.9	1.6	7.5	9	6	8.70	F05/F07
2 1/2"	65.0	17/19	263	109.7	15.8	168	70	102	110	4	139.7	5/8"-11UNC	104.6	177.8	17.6	1.6	10	12	8	13.62	F07/F10
3"	80	17/19	313	119.5	16	178	70	102	120	4	152.4	5/8"-11UNC	127	190.5	19	1.6	10	12	9	18.85	F07/F10
4"	100	17/19	344	132.7	17.8	191	70	102	150	8	190.5	5/8"-11UNC	157.2	228.6	23.9	1.6	10	12	9.2	29.6	F07/F10
5"	125	27	705	192.7	28.5		125	140	200	8	215.9	3/4"-10UNC	185.7	250	22.3	1.6	14	18		50.8	F12/F14
6"	150	27	705	210.2	28.5		125	140	240	8	241.3	3/4"-10UNC	215.9	285	23.8	1.6	14	18		68.2	F12/F14

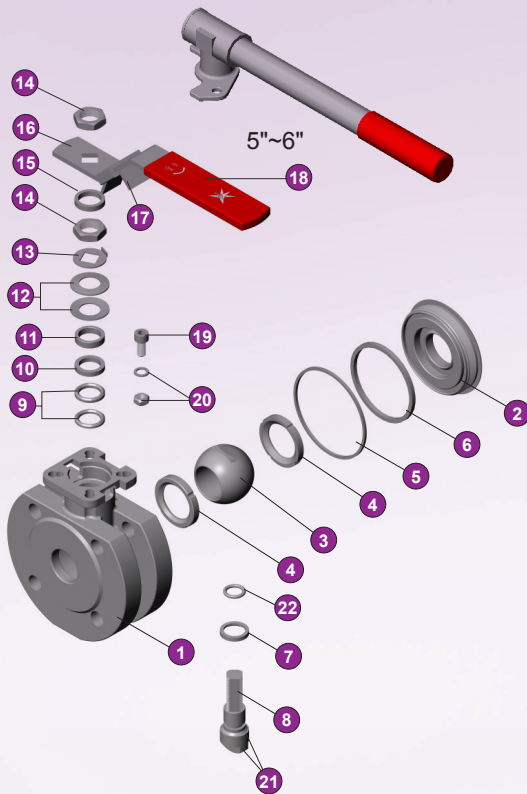
Design Features



- 1. Dual Pattern ISO 5211 Mounting Pad With Square Shaft**
No bracket and adapter are required for actuator mounting, provides easy and low cost automation with improved cycle life.
- 2. MARS SealMax® Stem Design**
Provides optimum stem seal and extremely high cycle life.
- 3. Patented Leak-Watching Window**
Standard on Mars Direct Mount Ball Valves, for an early warning of stem leak, prevents accident and business disruption costs.

- 4. Blow-Out Proof Stem**
- 5. O-Ring Stem Seal**
Enhances stem wear and maintains stem alignment.
- 6. Super smooth stem surface**
Reduces seal friction and operating torque.
- 7. Locking Device Standard**
- 8. Anti-Static Device**
Standard applied to stem-to-ball and stem-to-body.
- 9. Fully Encapsulated Body Seals**
Maintains sealing integrity from high vacuum to high pressure and temperature applications.
- 10. Compact design for space and weight savings**
- 11. Seats**
 - Features with relief slots to relieve pressure in upstream, reduces seat wear and valve torque.
 - Wide range of materials available to suit various applications.
- 12. Ball**
 - Precisely machined, mirror finished ball surface 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 .
 - V-PORT control valves available.
- 13. Fire-safe design in compliance with API 607**

Material List



NO.	PART NAME	MATERIAL	Q'TY
1	Body	CF8M/WCB	1
2	End Cap	CF8M/WCB	1
3	Ball	SS316/CF8M	1
4	Seat	PTFE/RPTFE	2
5	Joint Gasket	PTFE	1
6	Joint Gasket	PTFE	1
7	Stem Seal	RPTFE	1
8	Stem	SUS 316	1
9	Stem Packing	PTFE	*
10	Stem Packing	25% GLASS FIBER FILLED+ PTFE	1
11	Gland	SUS 304	1
12	Belleville Washer	SUS 301	2
13	Lock Saddle	SUS 304	1
14	Stem Nut	SUS 304	2
15	Stem Washer	SUS 304	1
16	Handle	SUS 304	1
17	Locking Device	SUS 304	1
18	Handle Sleeve	VINYL	1
19	Stop Pin	SUS 304	1
20	Pin Nut & Washer	SUS 304	1
21	Anti-static Device	SUS 316	2
22	O-RING	VITON	1

* For 1/2"~2"-2pcs,
For 2 1/2"~6"-3pcs.

Series 99 High Performance V-Port Control Ball Valves

Mars V-Port ball valves are used for control the flow. It delivers a precise flow control while retaining the durability and tight shutoff characteristics of a ball valve, excellent for regulating service. It is a compact and economical solution compared to traditional systems.

Available in 30°, 60°, and 90° V-notch configurations. Mars V-Port ball valves feature an integrated V-notch machined directly into the ball, not a seat insert, this design not only improves flow characteristics but also eliminates the need for frequent seat replacement.



Series 99 Available with Engineered Metal Seats

The Mars metal seat ball valve is built for tough applications involving high temperature, high pressure, and abrasive fluids. It's ideal for use in Oil & Gas, Petroleum, Petrochemical, Chemical, Pulp & Paper, and Mining industries.



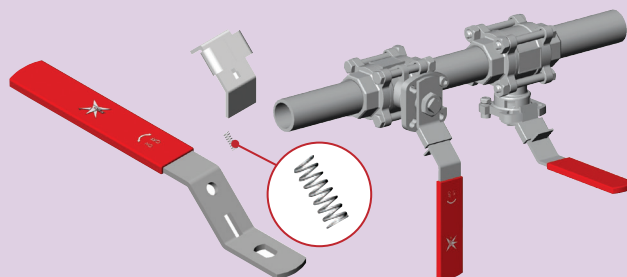
Series 99 With MARS TSM Unit



The TSM unit designed for possible Fugitive emission, provides a secondary stem seal to prolong service life.

The TSM unit can also function as stem extension for insulation.

Spring Return Sliding Lock Handle (SRSL)



Regardless of the orientation of the ball valves, the SRSL handle always secures handle in position, making valve operation safe.

Spring Return Safety Handle (SRS 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.

Heating Jacket



HOW TO ORDER ■ 99-30 ST05B

99-30 VALVE	S BODY MATERIAL	T SEAT MATERIAL	05 SIZE	B HANDLE STYLE
☐ 99-10 PN10/16 ☐ 99-20 PN25/40 ☒ 99-30 ANSI 150	☒ S - CF8M ☐ W - WCB ☐ A5 - Duplex ☐ A - Alloy 20 ☐ C6 - Hastelloy C	☐ P - PTFE ☐ R - RTFE ☒ T - TFM1600 ☐ S - 50/50 S.S.+PTFE ☐ M - MG1241 ☐ C - Carbon filled PTFE ☐ U - UHMWPE ☐ A - Metal	☐ 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" ☐ 13) 6"	☐ Std. handle ☐ L - SRSL handle ☐ S - SRS handle ☒ B - Bare shaft



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