J.S.COCK A/S
DISTRIBUTOR NORWAY

Take
a Good Look
It May Be Your Future

MARS
SERIES 90

High Performance
Flanged Ball Valves
1/2" to 4" Full Port
Fire-Safe Certified

www.marsvalve.com.tw

SERIES 90
High Performance Flanged Ball Valves

Construction	Split-Body Flanged Ball Valves, Full Port
Size Range	1/2" to 4" (DN 15 to DN 100)
Pressure Rating	FIG. 90-10 ANSI 150# FIG. 90-30 PN 10/16 DIN F1 FIG. 90-40 PN 10/16 DIN F4 FIG. 90-50 PN 25/40 DIN F1 FIG. 90-60 PN 25/40 DIN F4 FIG. 90-90 JIS 5K
Valve Material	Standard: ASTM A351 Gr. CF8M / EN 10213 1.4408 Options: WCB/1.0619, CF3M/1.4409, Titanium, Duplex , Hastelloy C, Alloy 20, Monel
Seat Material	Standard: R-TFE / PTFE Options: TFM 1600, PEEK, Carbon filled PTFE, Delrin, UHMWPE, 50/50 S/S filled PTFE, Metal Seats....and others
Inspection and Test	API 598
Compliance Standards	ASME B16.34, ASME B16.5, ASME B16.10(CLASS), API 6D, API 607, ISO 5211, MSS SP55, DIN3202 F1/F4(PN), ISO 5209, EN1092-1
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	

SIL 3

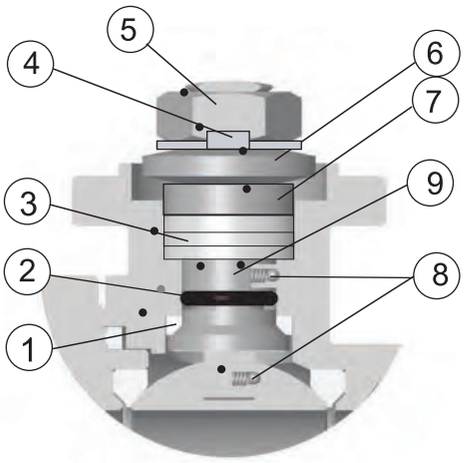
Fire safe tested
API 607 Rev 6

CE
0035
PED 2014/68/EU
Category II
Module H

TA-Luft

ATEX 2014/34/EU

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.

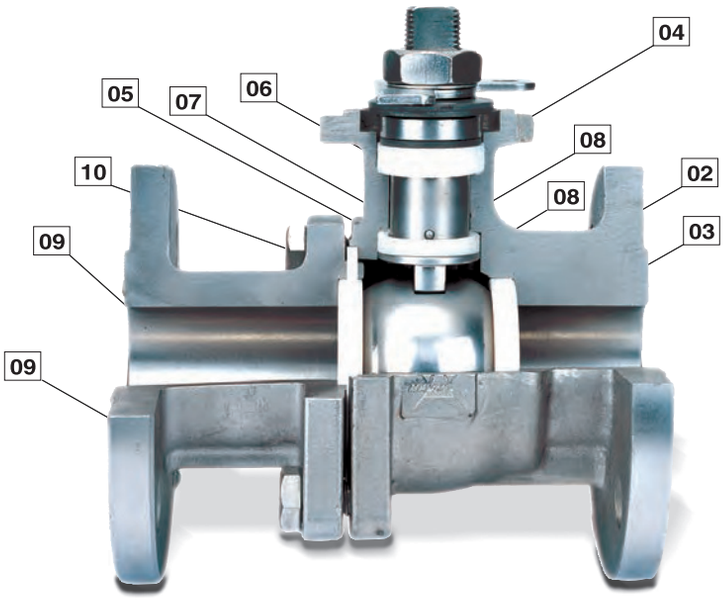
6. Belleville Washers
Automatically compress the seals to adjust for wear, pressure, and temperature fluctuations.

7. Gland
Made of stainless steel, equally distributes the compressive force on the packing and seal.

8. Anti-Static Device
Spring loaded Stem-to-Ball and Stem-to-Body as standard.

9. Super Smooth Stem Finish
Reduces seal friction and operating torque, prolongs service life.

Series 90
DESIGN FEATURES



1. Fire-Safe Certified to API 607 6th Edition

2. Ball
- Floating ball design provides pressure-assisted sealing plus temperature and wear compensation.
- 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.
- V-PORT control valves available on request

3. 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.

4. Fully machined ISO 5211 mounting pad
Tapped and drilled, ease of automation

5. Mars SealMax® Stem Design
Provides optimum stem seal and extremely high cycle life

6. Super smooth stem surface
Reduces seal friction and operating torque, prolongs service life

7. Blow-out proof stem
Prevents stem from blowing out, for maximum safety

8. Anti-Static Device
Standard applied stem-to-ball and stem to-body

9. All wetted parts and flange surface fully machined

10. Fully encapsulated body seals
Maintenance sealing integrity from high vacuum to high pressure and temperature applications.

11. Interchangeable Parts with Series 90D ball valves
End caps, Ball, and Ball Seats are interchangeable with Mars Series 90D ball valves, reduce manufacturing costs and your parts inventory

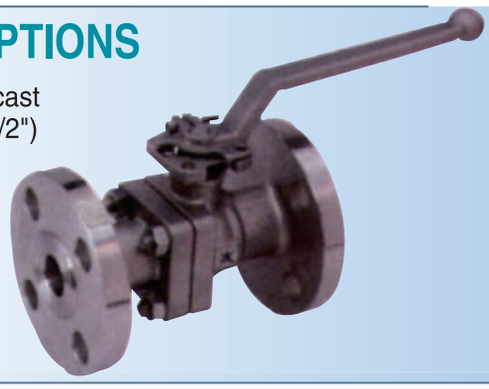
STANDARD HANDLE

S.S. Handle with vinyl sleeves (1/2" to 2 1/2")

S.S. T - Handle (3" and 4")

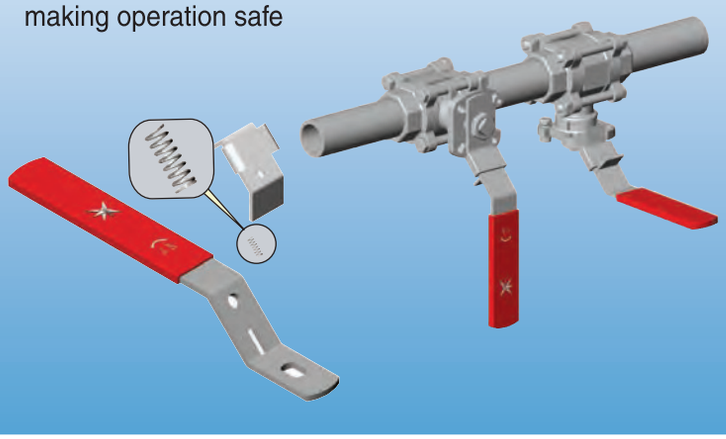
HANDLE OPTIONS

S . S . investment cast handle (1/2" to 2 1/2")

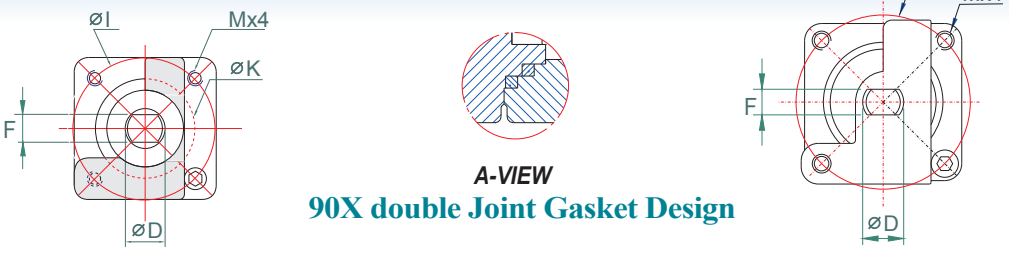


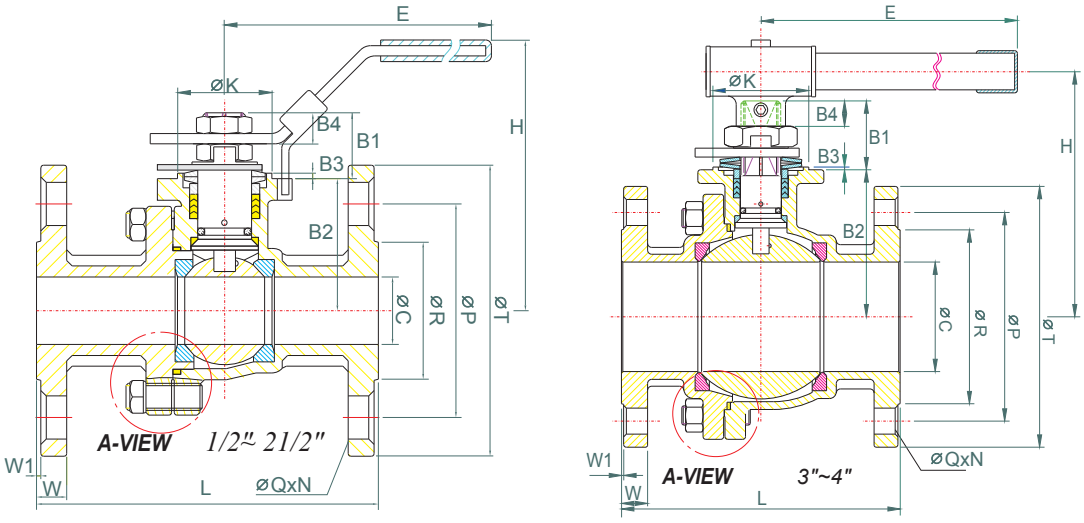
- **SPRING RETURN SLIDING LOCK(SRSL) HANDLE MAKES OPERATION SAFE**

No matter the orientation of the ball valves, the SRSL handle always (1/2" to 2 1/2") secures handle in position, making operation safe



DIMENSIONS(mm)





90-10 (ANSI CLASS 150)

H ± 1m/m

SIZE	B1+0.5	B2	B3	B4±1.5/0.5	øC	øD	E	F	H	øI	øK	L	M	N	øP	øQ	øR	øT	W	W1	Wt(kg)	ISO5211
1/2"	23	34.5	1	9.2	15.0	11.1	170	8.0	80	42	30	108.3	M5(10-24UNC)	4	60.5	16	35.1	88.9	11.2	1.6	1.69	F04
3/4"	23	42	1	10.2	20.0	11.1	170	8.0	87	42	30	117.3	M5(10-24UNC)	4	69.9	16	42.9	98.6	11.2	1.6	2.10	F04
1"	23.5	49.8	2	8.1	25.0	14.3	207	9.7	103	50	35	127.1	M6(1/4"-20UNC)	4	79.2	16	50.8	108	11.2	1.6	3.02	F05
11/4"	23.5	55	2	8.1	32.0	14.3	207	9.7	108	50	35	139.7	M6(1/4"-20UNC)	4	88.9	16	63.5	117.3	12.7	1.6	5.56	F05
11/2"	34.8	78.3	2	14.8	38.0	19.0	261	12.0	153	70	55	165.1	M8(5/16"-18UNC)	4	98.6	16	73.2	127	14.3	1.6	6.17	F07
2"	34.8	86.4	2	14.8	50.0	19.0	261	12.0	162	70	55	178.3	M8(5/16"-18UNC)	4	120.7	19	91.9	152.4	15.9	1.6	8.70	F07
21/2"	34.8	97.4	2	14.8	65.0	19.0	261	12.0	173	70	55	190	M8(5/16"-18UNC)	4	139.7	19	104.6	177.8	17.6	1.6	13.62	F07
3"	46	107.4	2	23.5	80.0	24.0	365	15.0	174.8	102	70.0	203.5	M10(3/8"-16UNC)	4	152.4	19	127	190.5	19	1.6	18.58	F10
4"	46	122.4	2	23.5	100	24.0	365	15.0	189.9	102	70.0	228.6	M10(3/8"-16UNC)	8	190.5	19	157.2	228.6	23.9	1.6	29.6	F10

90-30 F1 (PN10/16)/90-40 F4 (PN10/16)

* Dimension for (90-30) F1

SIZE	B1+0.5	B2	B3	B4±1.5/0.5	øC	øD	E	F	H	øI	øK	L F4	L *F1	M	N	øP	øQ	øR	øT	W	W1	Wt(kg)	ISO5211
1/2"	23	34.5	1	9.2	15.0	11.1	170	8.0	80	42	30	115	130	M5	4	65	14	45	95	16	2	2.23	F04
3/4"	23	42.5	1	10.2	20.0	11.1	170	8.0	87	42	30	120	150	M5	4	75	14	58	105	18	2	3.10	F04
1"	23.5	50	2	8.1	25.0	14.3	207	9.7	103	50	35	125	160	M6	4	85	14	68	115	18	2	4.11	F05
11/4"	23.5	54.7	2	8.1	32.0	14.3	207	9.7	108	50	35	130	180	M6	4	100	18	78	140	18	2	5.56	F05
11/2"	34.8	78	2	14.8	38.0	19.0	261	12.0	153	70	55	140	200	M8	4	110	18	88	150	16	3	7.64	F07
2"	34.8	86.7	2	14.8	50.0	19.0	261	12.0	162	70	55	150	230	M8	4	125	18	102	165	18	3	9.45	F07
21/2"	34.8	98	2	14.8	65.0	19.0	261	12.0	173	70	55	170	290	M8	4	145	18	122	185	18	3	13.93	F07
3"	46	108.0	2	23.5	80.0	24.0	365	15.0	175.4	102	70.0	180	310	M10	8	160	18	138	200	20	3	18.6	F10
4"	46	123.0	2	23.5	100	24.0	365	15.0	190.5	102	70.0	190	350	M10	8	180	18	158	220	20	3	25.86	F10

90-50 F1 (PN25/40)/90-60 F4 (PN25/40)

* Dimension for (90-50) F1

SIZE	B1+0.5	B2	B3	B4±1.5/0.5	øC	øD	E	F	H	øI	øK	L F4	L *F1	M	N	øP	øQ	øR	øT	W	W1	Wt(kg)	ISO5211
1/2"	23	34.5	1	9.2	15.0	11.1	170	8.0	80	42	30	115	130	M5	4	65	14	45	95	16	2	2.23	F04
3/4"	23	42.5	1	10.2	20.0	11.1	170	8.0	87	42	30	120	150	M5	4	75	14	58	105	18	2	3.10	F04
1"	23.5	50	2	8.1	25.0	14.3	207	9.7	103	50	35	125	160	M6	4	85	14	68	115	18	2	4.11	F05
11/4"	23.5	54.7	2	8.1	32.0	14.3	207	9.7	108	50	35	130	180	M6	4	100	18	78	140	18	2	5.56	F05
1½"	34.8	78.0	2	14.8	38.0	19.0	261	12.0	153	70	55	140	200	M8	4	110	18	88	150	18	3	7.64	F07
2"	34.8	86.7	2	14.8	50.0	19.0	261	12.0	162	70	55	150	230	M8	4	125	18	102	165	20	3	10.15	F07
2½"	34.8	98.0	2	14.8	65.0	19.0	261	12.0	173	70	55	170	290	M8	8	145	18	122	185	22	3	15.00	F07
3"	46	108.0	2	23.5	80.0	24.0	365	15.0	175.4	102	70.0	180	310	M10	8	160	18	138	200	24	3	20.3	F10
4"	46	123.0	2	23.5	100	24.0	365	15.0	190.5	102	70.0	190	350	M10	8	190	22	162.6	235	24	3	29.92	F10

90-90 (JIS 5K)

SIZE	B1+0.5	B2	B3	B4±1.5/0.5	øC	øD	E	F	H	øI	øK	L	M	N	øP	øQ	øR	øT	W	W1	ISO5211
1/2"	23	34.5	1	9.2	15.0	11.1	170	8.0	80	42	30	108.3	M5(10-24UNC)	4	60	12	35.1	88.9	11.2	1.6	F04
3/4"	23	42	1	10.2	20.0	11.1	170	8.0	87	42	30	117.3	M5(10-24UNC)	4	65	12	42.9	98.6	11.2	1.6	F04
1"	23.5	49.8	2	8.1	25.0	14.3	207	9.7	103	50	35	127.1	M6(1/4"-20UNC)	4	75	12	50.8	108	11.2	1.6	F05
11/4"	23.5	55	2	8.1	32.0	14.3	207	9.7	108	50	35	139.7	M6(1/4"-20UNC)	4	90	15	63.5	117.3	12.7	1.6	F05
1½"	34.8	78.3	2	14.8	38.0	19.0	261	12.0	153	70	55	165.1	M8(5/16"-18UNC)	4	95	15	73.2	127	14.3	1.6	F07
2"	34.8	86.4	2	14.8	50.0	19.0	261	12.0	162	70	55	178.3	M8(5/16"-18UNC)	4	105	15	88	152.4	15.9	1.6	F07
2½"	34.8	97.4	2	14.8	65.0	19.0	261	12.0	173	70	55	190	M8(5/16"-18UNC)	4	130	15	104.6	177.8	17.6	1.6	F07
3"	46	107.4	2	23.5	80.0	24.0	365	15.0	174.8	102	70.0	203.5	M10(3/8"-16UNC)	4	145	19	125	190.5	19	1.6	F10

SERIES 90
MARS OPTIONAL VALVE ACCESSORIES INCREASE PRODUCTIVITY AND GIVE YOU MORE CONTROL OVER YOUR INDUSTRIAL PROCESS

SERIES 90 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, 90° V are standard, others on request

SERIES 90C Cryogenic Ball Valves

For low temperature to -196°c
1/2" to 4", Full Port

SERIES 90 With Heating Jacket

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

Mars "TSM" Unit adds Extra Safety and Long Service Life

- Secondary Seal for possible fugitive emission to meet TA-Luft requirement for a safe and clean environment
- Function as Stem Extension for insulation
- ISO 5211 mounting pad and square shaft for direct actuator mounting with no brackets and adapters, ease of automation.
- Cast bosses for monitoring device

SERIES 90 TITANIUM BALL VALVES

Mars Valve is specialized in producing TITANIUM ball valves including Series 20, Series 22, Series 77, Series 83, Series 88, Series 90, Series 90D, and Series 91D

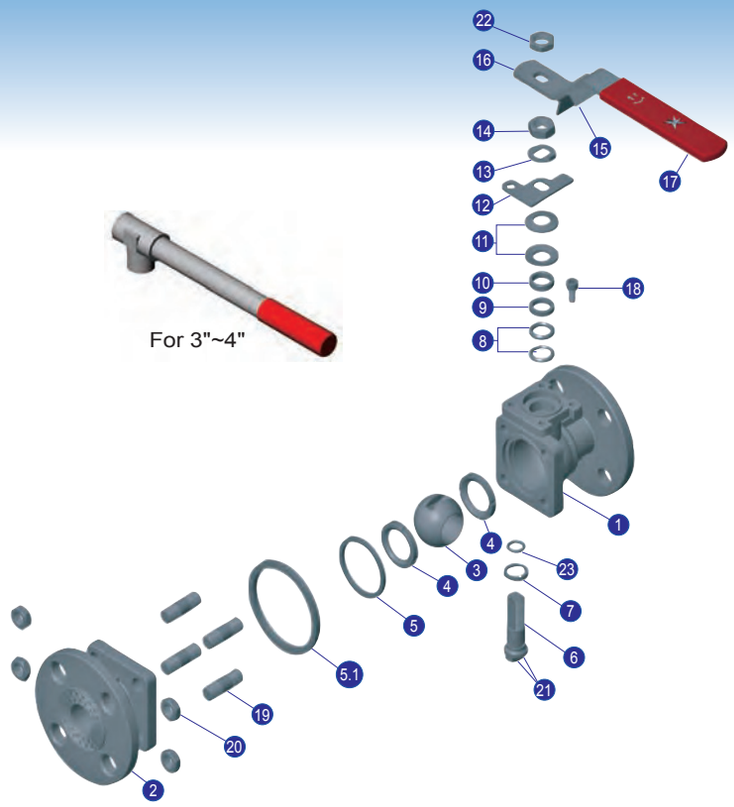
Castings inspeted to MSS SP-55

X-Ray testing per specifications of ANSI B16.34 ANNEX-B and ASTM E446 level 2 can be conducted

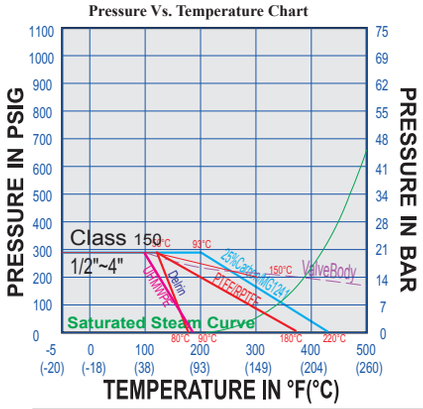
SERIES 90
MATERIALS LIST

NO.	PART NAME	MATERIAL	Q'TY
1	Body	*CF8M / WCB*	1
2	Cap	*CF8M / WCB*	1
3	Ball	*CF8M*	1
4	Seat	*RPTFE*	2
5	Joint Gasket	*PTFE*	1
6	Stem	*SUS316*	1
7	Stem Seal	*RPTFE*	1
8	Stem Packing	*PTFE*	§
9	Stem Packing	25% GLASS FIBER FILLED+ *PTFE*	1
10	Gland	*SUS 304*	1
11	Belleville Washer	*SUS 301*	2
12	Locking Plate	*SUS 304*	1
13	Lock Saddle	*SUS 304*	1
14	Stem Nut	*SUS 304*	1
15	Locking Device	*SUS 304*	1
16	Handle	*SUS 304*	1
17	Handle Sleeve	*VINYL*	1
18	Stop Pin	*SUS 304*	1
19	Bolt	*SUS 304*	‡
20	Bolt (Stud & Nut)	*SUS 304*	‡
21	Anti-static Device	*SUS 316*	2
22	Handle Nut	*SUS 304*	1
23	O-RING	*VITON*	1

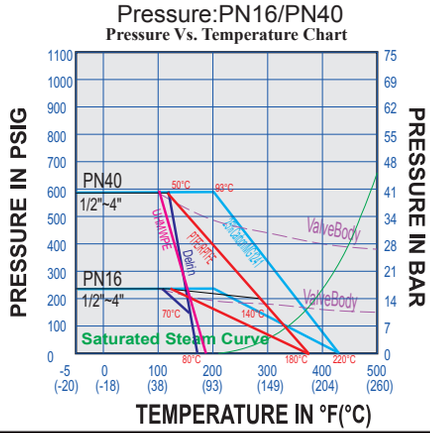
§ For 1/2"~11/4"- 2pcs , For 11/2"~21/2"- 3pcs.
‡ For 1/2"~2"-4pcs of bolt; For 21/2"~4" -8 pcs of stud and nut
NO.* 5.1 for 90X double Joint Gasket Design



Class 150: Series 90-10 (1/2"~4")



PN16: SERIES 90-30/40 (1/2"~4")
PN40: SERIES 90-50/60 (1/2"~4")
Pressure:PN16/PN40



Breakaway Torque(RPTFE) & Cv Value

SIZE	DN	Inch-Lb	Nm	CV	Kv M^3/h
1/2"	15	89	10	15	13
3/4"	20	124	14	40	34
1"	25	151	17	70	60
1.1/4"	32	204	23	110	94
1.1/2"	40	257	29	250	213
2"	50	319	36	430	366
2.1/2"	65	523	59	700	595
3"	80	691	79	1100	935
4"	100	833	94	2000	1700

* 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

HOW TO ORDER ☑90-10 ST05B

90-10	S	T	05	B
VALVE	**BODY MATERIAL**	**SEAT MATERIAL**	**SIZE**	**HANDLE STYLE**
☑ 90-10 #150	☑ S - CF8M	☐ P PTFE	☐ 01) 1/4"	☐ Std. handle
☐ 90-30 PN16 F1	☐ W - WCB	☐ R R-TFE	☐ 02) 3/8"	☐ I - Investment Cast
☐ 90-40 PN16 F4	☐ L - CF3M	☑ T TFM1600	☐ 03) 1/2"	☐ O - Oval handle
☐ 90-50 PN40 F1	☐ D - Duplex	☐ S 50/50 S.S.+PTFE	☐ 04) 3/4"	☐ L - SRSL handle
☐ 90-60 PN40 F4	☐ T - Titanium	☐ M MG1241	☑ 05) 1"	☐ S - SRS handle
	☐ A - Alloy 20	☐ C Carbon filled PTFE	☐ 06) 1 1/4"	☑ B - Bare shaft
		☐ U UHMWPE	☐ 07) 1 1/2"	☐ G - Gear box
		☐ K Peek	☐ 08) 2"	
		☐ D Delrin	☐ 09) 2 1/2"	
		☐ A Metal	☐ 10) 3"	
			☐ 11) 4"	

Oslo 22 21 51 00 | Bergen 55 39 32 00 | Arendal 37 06 11 40
post@jsc.no | www.jsc.no
J.S.COCK A/S
DISTRIBUTOR NORWAY