



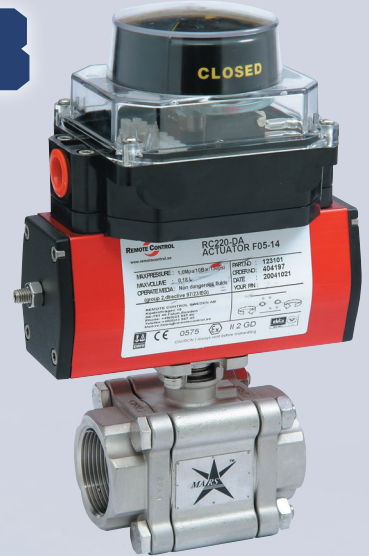
**Mars Valve – Leading the Industry
Partnering with you**

SERIES 88



SIL 3 Certified

High Performance 3-Piece Ball Valve Direct Mount of Actuators



API 607
7th Edition
ISO 10497
3rd Edition



2014/68/EU



2014/34/EU



TA-Luft
&
ISO 15848-1



EC1935/2004



Mars Direct Mount Ball Valves, Easy to Automate ! Full Port & Reduced Port

Full Port Sizes : (1/4" – 4" / DN 8 – DN 100)

Full Port Pressure rating : 1/4" – 1" 2000psi / PN125
1-1/4" – 2" 1500psi / PN100
2-1/2" – 4" 1000psi / PN63

Body, end caps : CF8M / 1.4408, WCB / 1.0619, CF3M / 316L,
Alloy 20, Duplex, Hastelloy C

Seats: RTFE standard, various options are available: PEEK,
TFM 1600, CTFE (25%Carbon / 75%PTFE), Delrin, UHMWPE,
50/50 S/S filled PTFE, & **Metal Seats**

End Connections:

Threaded, Socket Weld, Butt Weld, Flanged,
Butt Weld SCH 40, ISO 1127, SMS3008, EN12627.
Tube(ISO), Extended Butt Weld

Compliance Standard:

NPT ASME B1.20.1, BSPP ISO 228-1, BSPT ISO 7-1, DIN2999
SOCKET WELD ASME B16.11
BUTT WELD ASME B16.25
Flanged EN1092-1, ASME B16.5
ISO 5211, ISO 5209, EN 10204-3.1

Quality Assurance: ISO 9001

Inspection and Test: API 598

For valves full compliance with ASME B16.34, please consult
factory

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

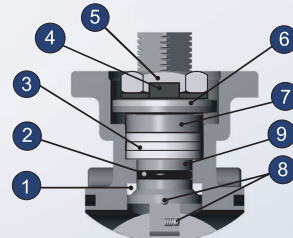
Second stage of defense against leakage. Enhances stem
seal and maintains stem alignment, provides extra longer
service life.

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.

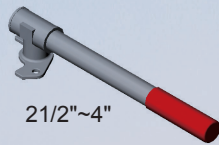
8. Anti-Static Device

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

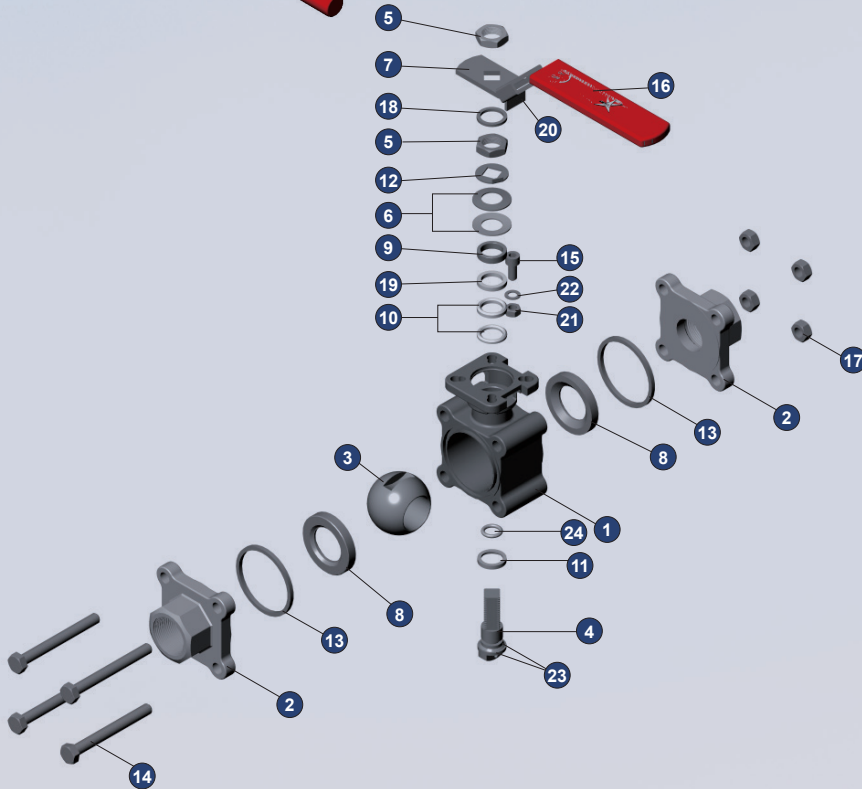
9. Super Smooth Stem Finish

Reduces seal friction and operating torque, prolongs service
life.

Material List



2 1/2"~4"



NO.	PART NAME	MATERIAL	Q'TY
1	Body	CF8M / WCB	1
2	End Cap	CF8M ^W / WCB	2
3	Ball	SUS316/CF8M	1
4	Stem	SUS 316	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	f
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	Anti-static Device	SUS 316	@
24	O-RING	VITON	1

✧ Socket weld and Butt weld uses CF3M material

♦ For 1/4"~2"-2pcs, 2 1/2"~4"-3pcs.

* For 1/4" to 1 1/2"-4pcs; For 2"~4" - 6pcs

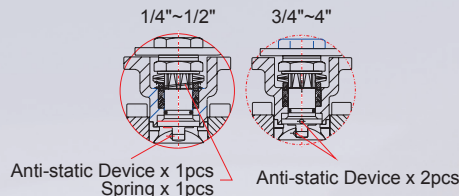
f For 1/4" to 1 1/2"- 4pcs ; For 2"-6pcs, For 2 1/2"~4"-12pcs

@ 1/4"~1/2"-1pcs. 3/4"~4"-2pcs.

SERIES 88/88A Ball valve uses WCB material,
For 4", bolt uses Ferritic Steels material, B7M
(No.14 bolt B7M equipped with No.17 bolt nut 2HM)

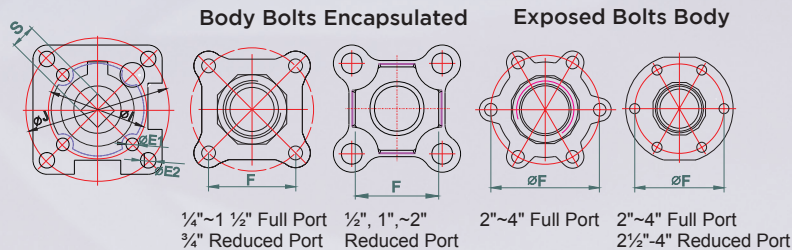
Dimensions (mm)

Dual Pattern
ISO 5211 Mounting Pad



Anti-static Device x 1pcs
Spring x 1pcs

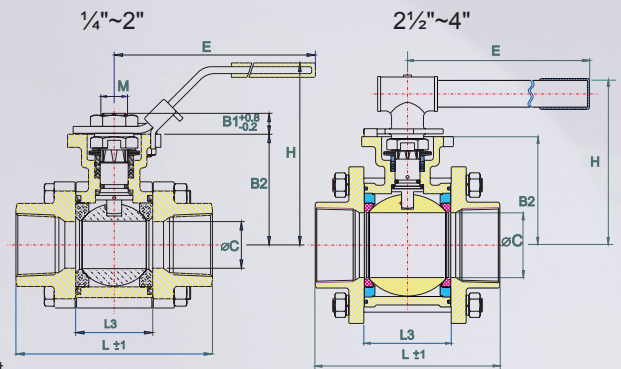
Anti-static Device x 2pcs



Body Bolts Encapsulated

Exposed Bolts Body

1/4"~1 1/2" Full Port
3/4" Reduced Port
1/2", 1", ~2"
Reduced Port
2"~4" Full Port
2 1/2"~4" Full Port
2 1/2"~4" Reduced Port



Dimension S: 17/19
Standard 17, Option 19

SIZE	ØA		B1		B2		ØC		Ø d1		# ØG		E		@E		S	ØG		H		@H		J		L		L1		*L	*L1	L2	L3		ØI		ØJ		ØE1		ØE2	
	F	R	F	R	F	R	F	R	F	R	F	R	F	R	F	R		F	R	F	R	F	R	F	R	F	R	F	R	F	F	F	R	F	R	F	R	F	R	F	R	
1/4"	14.3		7.6		42.6		11.5 #9.24		9.24		13.7		139		9			21.7		77		2.35 #1.6		75		75		60	70	10		24.5		36		42		6		6		
3/8"	17.6		7.6		42.6		12.6 #12.53		12.53		17.5		139		9			21.7		77		2.8 #1.6		75		75		60	70	10		24.5		36		42		6		6		
1/2"	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	10	10	24.5	24.5	36	36	42	42	6	6	6	6	
3/4"	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	90	74.8	80	90	13	13	31.4	24.5	36	36	42	42	6	6	6	6
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	34.0	34.0	98.5	82	106	1.6	1.6	105.3	85.4	110	89.8	90	100	13	13	41.3	31.4	42	36	50	42	6	6	7	6
1 1/4"	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	115	109.4	110	110	13	13	48.4	41.3	42	42	50	50	6	6	7	7
1 1/2"	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	130	114.4	120	125	13	13	56.3	48.4	50	42	70	50	7.5	6	9	7
2"	61.3	61.3	13.4	13.4	87.7	79	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	142.8 **145	130	140	150	16	16	71.4	56.3	50	50	70	70	7.5	7.5	9	9
2 1/2"	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	2.0	2.0	185	**145	185	**145	185	190	16	16	86.6	71.4	70	50	102	70	10	7.5	12	9
3"	90.0	90.0	17.8	16.8	117.7	108.7	80	65	80	77.9 #77.9	89	89	370	300	370	17 19	17 19	90.0	90.0	176	167	176	2.0	2.0	205	185	205	185	205	220	16	16	99	86.6	70	70	102	102	10	10	12	12
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	116.0	116.0	192	176	192	3.5 #2.0	2.0	240	205	240	205	240	270	20	20	127	99	70	70	102	102	10	10	12	12

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

** Dimension For Round End Cap

@ Dimension for-PN40/PN16
Dimension For SCH.40

Breakaway Torque (RTFE) & Cv Value

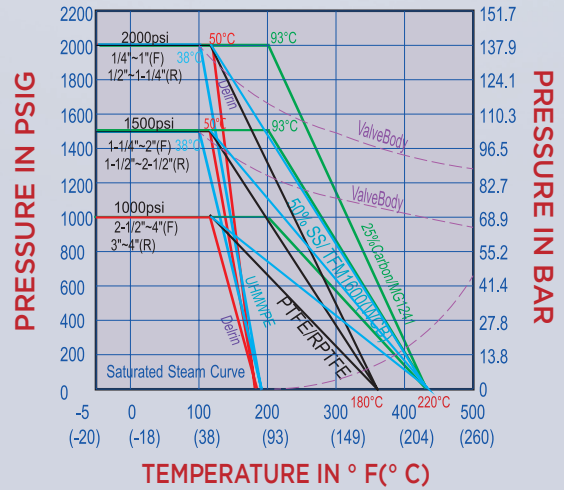
SIZE.	Nm		Inch-Lb		Cv		Kv-M3/h
	Full port	Red. port	Full port	Red. port	Full port	Red. port	Full port
1/4"	8	-	69	-	7	-	6
3/8"	8	8	69	-	8	-	7
1/2"	8	8	69	69	15	8	13
3/4"	10	8	92	69	40	15	34
1"	16	10	138	92	70	40	60
1.1/4"	23	16	207	138	110	70	94
1.1/2"	33	23	288	207	250	110	213
2"	34	33	301	288	430	250	366
2.1/2"	62	34	553	301	700	430	595
3"	88	62	780	553	1100	700	935
4"	114	88	1010	780	2000	1100	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.

Pressure Vs. Temperature Chart



Series 88 High Performance V-Port Control Ball Valves

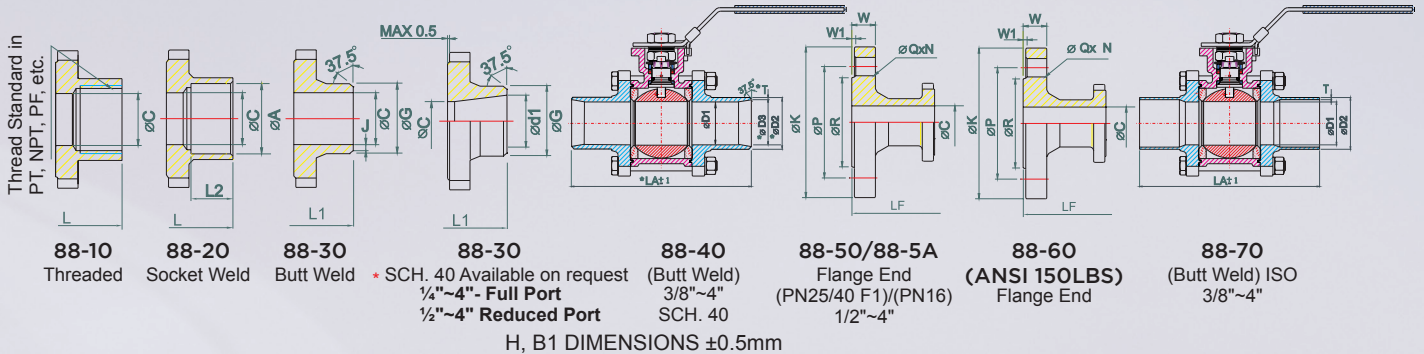
Mars V-Port ball valves are used for control the flow. It delivers a precise flow control while retaining the durability and tight shutoff characteristics of a ball valve, excellent for regulating service. It is a compact and economical solution compared to traditional systems.

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 88 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.

End Cap Options



	M		ØF		ØK	ØP	ØR	ØQ	N	W	W1	LF	ØK	ØP	ØR	ØQ	N	W	W1	LF	*ØD3	*ØD2	*T	*LA	ØD1	ØD2	T	LA	Wt(kg)		ISO5211							
	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	F	F	F	F	R	F	R						
	7/16"-20UNF		38.2		PN25/40(88-50)							PN16(88-5A)							150#(88-60)								88-40				88-70				0.89		F03 /F04 *F04/F05	
	7/16"-20UNF		38.2																								12.6	17.2	1.6	225	12.6	17.2	2.1	120	0.88		F03/F04 *F04/F05	
	7/16"-20UNF	7/16"-20UNF	38.2	38.2	95	65	45	14	4	16	2	130		88.9	60.5	35.1	16	4	11.2	1.6	127	15.76	21.3	1.6	225	15	21.3	2.1	140	0.82	0.83	F03/F04 *F04/F05	F03/F04 *F04/F05					
	7/16"-20UNF	7/16"-20UNF	44.3	38.2	105	75	58	14	4	18	2	150		98.6	69.9	42.9	16	4	11.2	1.6	140	20.96	26.7	1.6	225	20	26.9	2.1	140	1.29	0.84	F03/F04 *F05/F07	F03/F04 *F04/F05					
	9/16"-18UNF	7/16"-20UNF	50	44.3	115	85	68	14	4	18	2	160		108	79.2	50.8	16	4	11.5	1.6	154	26.64	33.4	1.6	245	25	33.7	2.3	152	2.01	1.50	F04/F05 *F05/F07	F03/F04 *F05/F07					
	9/16"-18UNF	9/16"-18UNF	57.2	50	140	100	78	18	4	18	2	180		117.3	88.9	63.5	16	4	13.1	1.6	172	35.08	42.2	1.6	255	32	42.4	2.5	165	2.76	2.17	F04/F05 *F05/F07	F04/F05 *F05/F07					
	3/4"-16UNF	9/16"-18UNF	66.6	57.2	150	110	88	18	4	18	3	200		127	98.6	73.2	16	4	14.6	1.6	186	40.94	48.3	1.6	260	38	48.3	2.5	190	4.21	4.27	F05/F07	F04/F05 *F05/F07					
	3/4"-16UNF	3/4"-16UNF	114	66.6	165	125	102	18	4	20	3	230		152.4	120.7	91.9	19	4	16.2	1.6	213.8	52.48	60.3	1.6	275	50	60.3	3	203	5.83 6.93	5.30	F05/F07	F05/F07					
	M24	3/4"-16UNF	139	114	185	145	122	18	8	22	3	290		185	145	122	18	4	18	177.8	139.7	104.6	19	4	18	1.6	245	65	73	2.0	334	65	76.1	3.5	254	12	6.51	F07/F10
	M24	M24	160	139	200	160	138	18	8	24	3	310	200	160	138	18	8	20	190.5	152.4	127	19	4	19.6	1.6	261.6	80	88.9	2.0	354	80	88.9	3.5	280	16.2	12	F07/F10	F07/F10
	M24	M24	193	160	235	190	162	22	8	24	3	350	220	180	158	18	8	20	228.6	190.5	157.2	19	8	23.9	1.6	348	102.26	114.3	2.0	365	100	114.3	3.5	317	25.8	16.2	F07/F10	F07/F10

♦ 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.

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-, L-, LL-Port

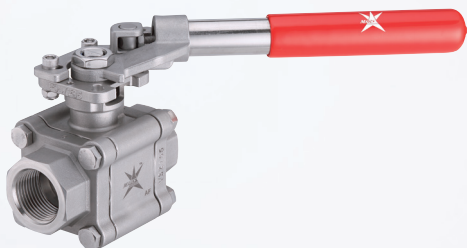
SERIES 88 WITH MARS TSM Unit



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

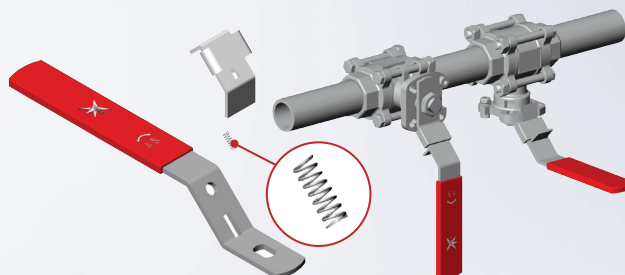
The TSM unit can also function as stem extension for insulation.

Spring Return 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.

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.

HOW TO ORDER ■ 88-10 ST05B

88-10 VALVE	F PORT TYPE	S BODY MATERIAL	T SEAT MATERIAL	05 SIZE	B HANDLE STYLE
■ 88-10 Threaded ☐ 88-20 Socket Weld ☐ 88-30 Butt Weld ☐ 88-40 Extended Butt Weld ☐ 88-50 PN25/40 Flange ☐ 88-5A PN16 Flange ☐ 88-60 ANSI#150 Flange ☐ 88-70 Tube(ISO) Butt Weld	■ F ☐ R	■ S - CF8M ☐ W - WCB ☐ L - CF3M ☐ A5 - Duplex ☐ T - Titanium ☐ A - Alloy 20	☐ P - PTFE ☐ R - RTFE ■ T - TFM1600 ☐ S - 50/50 S.S.+PTFE ☐ M - MG1241 ☐ C - Carbon filled PTFE ☐ U - UHMWPE ☐ K - Peek ☐ D - Delrin ☐ A - Metal	☐ 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"	☐ Std. handle ☐ I - Investment Cast ☐ O - Oval handle ☐ L - SRSL handle ☐ S - SRS handle ■ B - Bare shaft ☐ G - Gear box



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