

# M32 Alloy 20 Series Data Sheet



## 3-Pc 1500 WOG (Alloy 20)

### Firesafe Direct Mount Ball Valve



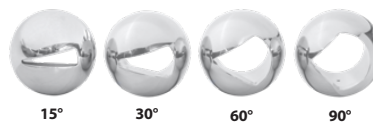
#### Features:

- 1500 WOG 1/2" thru 2" Full Bore: NPT, SW, or BW (SCH 80) End Connections
- ISO 5211 Direct Mount Pad
- Body Wall Thickness ASME B16.34
- Firesafe Tested API 607
- Anti-Static Device and Live-Loaded Packing
- Bubble Tight Shut Off
- Blowout Proof, Low Torque Guided Stem Design
- Wide Range of Soft Seated Options
- Manual, Electric, Pneumatic Operators
- Globally Certified and Approved

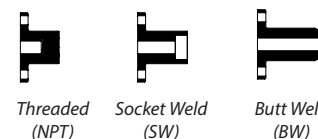
#### Certifications & Compliance

**Fire Testing:** API 607 Certified  
**Testing:** API 598  
**Design:** ASME B16.34  
**Markings:** MSS-SP-25, PED  
**Certifications:** API 607, SIL, PED, ABS

#### Flow Control & V-Ball Solutions

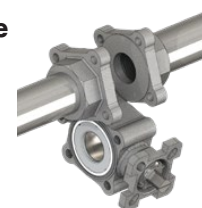


#### End Connections



#### Swing-Out Maintenance Design

Seats and seals replaceable without having to cut pipe or remove end caps from piping.



#### Torques (in-lbs)\*

Size	TFM 1600 Torque	TFM 4215 Torque	50/50 Torque	PEEK Torque
in	in-lbs			
1/2"	63	95	101	127
3/4"	70	106	113	141
1"	93	140	149	187
1 1/2"	229	344	367	459
2"	370	555	592	740

#### Torques (Nm)\*

Size	TFM 1600 Torque	TFM 4215 Torque	50/50 Torque	PEEK Torque
mm	Nm			
DN15	7	11	12	15
DN20	8	12	13	16
DN25	10.5	16	17	21
DN40	26	39	41	52
DN50	42	63	67	84

\*Raw torques shown. Minimum 30% safety factor should be added for actuator sizing.

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## Exploded View & Bill of Materials

### Fine-Tuned Design Details

(Four Improvements to the Industry Standard)

#### 1. Larger Stem

Higher margin of safety, more resistant to side loading and fatigue stress.

#### 2. Gaskets to Fill the Gaps

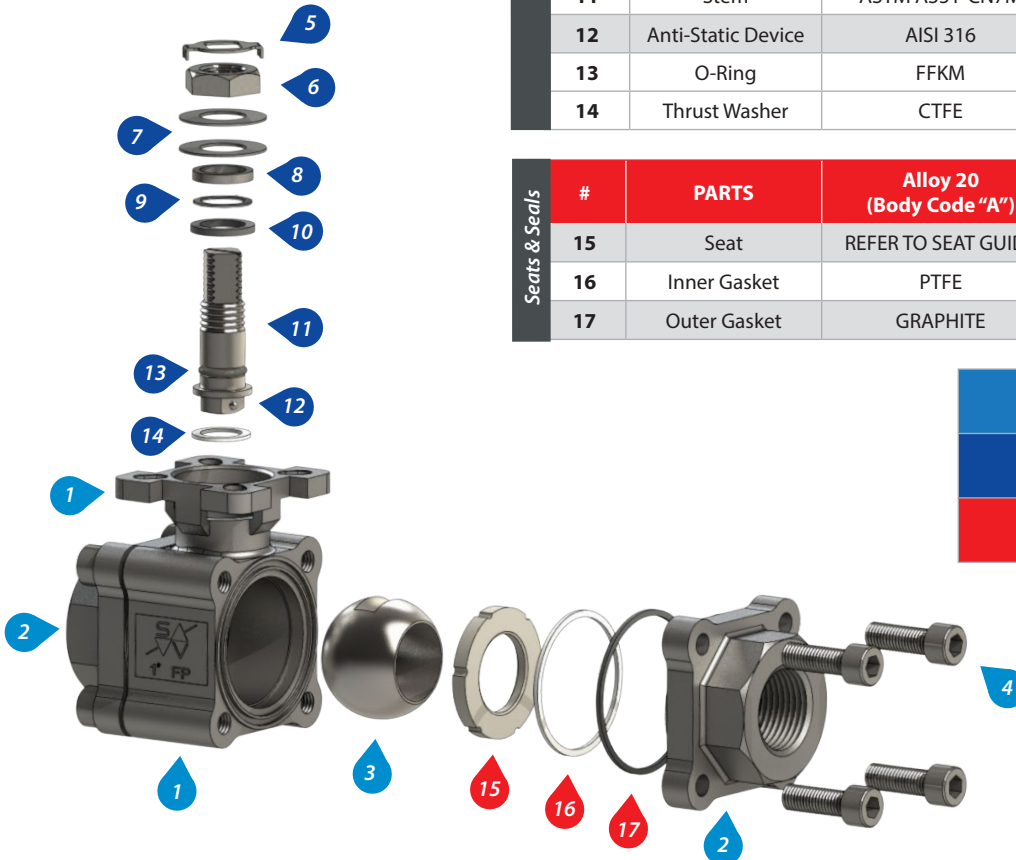
50% thicker than industry standard, graphite firesafe.

#### 3. Thicker Body Walls

ASME B16.34 body wall thickness provides extra safety factor should the valve be overpressurized

#### 4. Precision Machined Sealing Areas

Less dimensional variation allows for less seat compression, resulting in lower and more consistent torques.



Body & Ball	#	PARTS	Alloy 20 (Body Code "A")
	1	Body	ASTM A351-CN7M
	2	End Cap	ASTM A351-CN7M
	3	Ball	ASTM A351-CN7M
	4	Bolts	AISI 304

Stem & Packing	#	PARTS	Alloy 20 (Body Code "A")
	5	Nut Lock	AISI 304
	6	Nut	AISI 304
	7	Belleville Washers	AISI 301
	8	Gland	AISI 304
	9	Packing Protector	CTFE
	10	Stem Packing	GRAPHITE
	11	Stem	ASTM A351-CN7M
	12	Anti-Static Device	AISI 316
	13	O-Ring	FFKM
14	Thrust Washer	CTFE	

Seats & Seals	#	PARTS	Alloy 20 (Body Code "A")
	15	Seat	REFER TO SEAT GUIDE
	16	Inner Gasket	PTFE
17	Outer Gasket	GRAPHITE	

Blue Light = Body & Ball

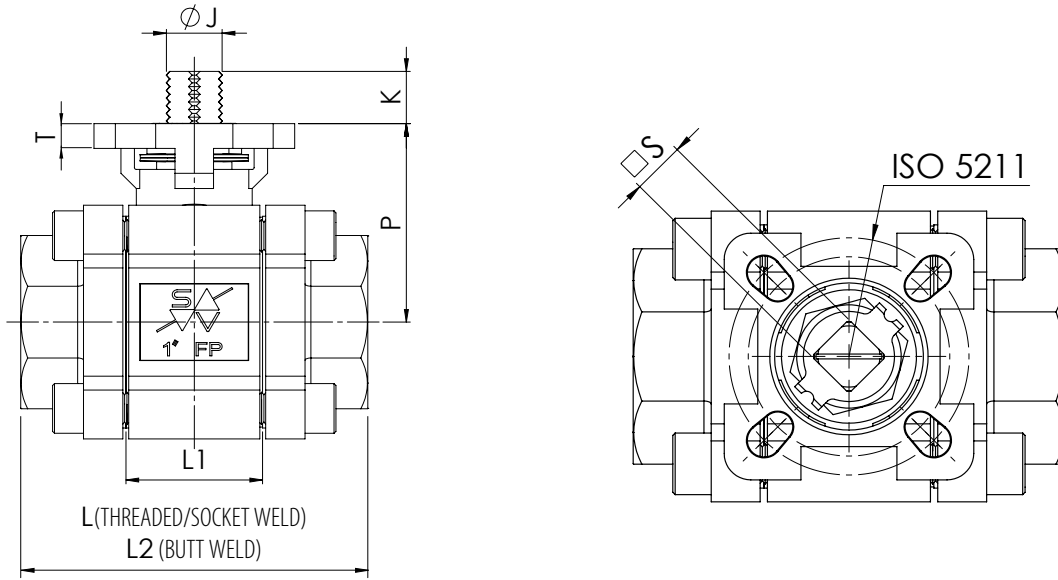
Blue = Stem & Packing

Red = Seats & Seals

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## Dimensional Data



## Standard Dimensions (in)

Size	BORE	□S	Ø J	K	L (Threaded / Socket Weld)	L1	L2 (Butt Weld)	P	T	ISO 5211	WEIGHT
in	in	in	in	in		in		in	in		lbs
1/2"	0.59	0.354	0.47	0.35	2.76	0.90	6.50	1.65	0.16	F03-F04	1.9
3/4"	0.79	0.354	0.47	0.35	3.15	1.20	7.48	1.77	0.16	F03-F04	2.6
1"	0.98	0.433	0.55	0.55	3.54	1.39	8.50	2.05	0.26	F04-F05	4.2
1 1/2"	1.50	0.551	0.75	0.80	4.72	2.10	9.49	2.68	0.28	F05-F07	9.0
2"	1.97	0.551	0.75	0.80	5.51	2.75	11.50	3.41	0.30	F05-F07	15.0






## Metric Dimensions (mm)

Size	BORE	□S	Ø J	K	L (Threaded / Socket Weld)	L1	L2 (Butt Weld)	P	T	ISO 5211	WEIGHT
mm	mm	mm	mm	mm		mm		mm	mm		kg
DN15	15	9	12	9	70	22.9	165	42	4.0	F03-F04	0.9
DN20	20	9	12	9	80	30.4	190	45	4.0	F03-F04	1.2
DN25	25	11	14	14	90	35.4	216	52	6.5	F04-F05	1.9
DN40	38	14	19	20.3	120	53.4	241	68	7.0	F05-F07	4.1
DN50	50	14	19	20.3	140	69.9	292	86.5	7.5	F05-F07	6.9

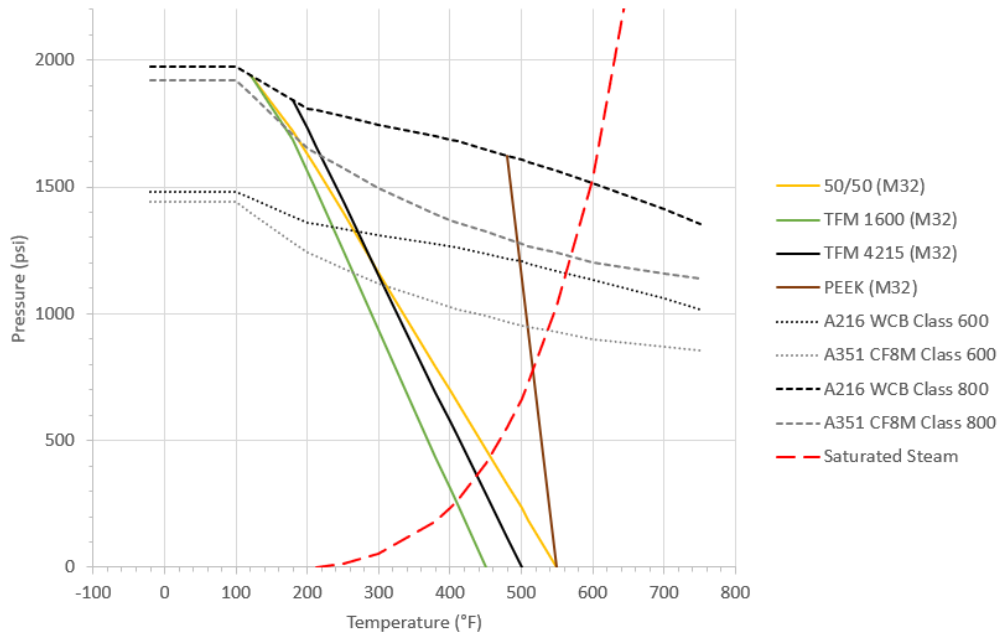
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## M32 Series Seat Guide

TFM 1600 (MODIFIED PTFE)	TFM 4215	50/50 (PTFE + 316SS)	PEEK	UHPHE
<b>RECOMMENDED</b>	<b>RECOMMENDED</b>	<b>RECOMMENDED</b>	<b>RECOMMENDED</b>	<b>RECOMMENDED</b>
Chemical Environments, Steam, Moderate Pressures	Higher Steam than standard TFM 1600. Moderate abrasives	Saturated Steam, High Temperatures, Abrasives	High Temperatures, High Pressures	Nuclear and tobacco industries, abrasive application
<b>NOT RECOMMENDED</b>	<b>NOT RECOMMENDED</b>	<b>NOT RECOMMENDED</b>	<b>NOT RECOMMENDED</b>	<b>NOT RECOMMENDED</b>
Fluorinated Chemicals	Fluorinated Chemicals	Chlorine Solutions	Low Torque Requirements, Some Acids	Elevated temperature applications
<b>TEMPERATURE</b>	<b>TEMPERATURE</b>	<b>TEMPERATURE</b>	<b>TEMPERATURE</b>	<b>TEMPERATURE</b>
-45°C to +232°C (-50°F to +450°F)	-40°C to +260°C (-40°F to +500°F)	-45°C to +288°C (-50°F to +550°F)	-45°C to +288°C (-50°F to +550°F)	-70°F to 200°F (-57°C to 90°C).
<b>COLOR</b>	<b>COLOR</b>	<b>COLOR</b>	<b>COLOR</b>	<b>COLOR</b>
 Translucent White	 Dark Grey	 Dark Grey	 Beige	 Off White

### Pressure Temperature Chart



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## Cv Values

### V-Port

Size	V-Port	Percent Open (Angle of Rotation)										
		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
		(0°)	(9°)	(18°)	(27°)	(36°)	(45°)	(54°)	(63°)	(72°)	(81°)	(90°)
1/2"	15°	0.00	0.04	0.18	0.44	0.69	0.99	1.64	2.12	2.85	3.64	4.30
	30°	0.00	0.04	0.23	0.47	0.77	1.19	1.83	2.47	3.43	4.65	5.58
	60°	0.00	0.05	0.28	0.73	1.11	1.83	2.92	4.29	7.00	9.43	12.78
	90°	0.00	0.06	0.47	0.85	1.28	2.05	3.24	4.74	8.26	11.61	14.72
3/4"	15°	0.00	0.05	0.24	0.56	0.90	1.34	2.15	2.75	3.76	4.75	5.56
	30°	0.00	0.07	0.30	0.61	0.99	1.57	2.42	3.25	4.52	6.12	7.34
	60°	0.00	0.08	0.35	0.93	1.46	2.42	3.85	5.64	9.21	12.41	16.28
	90°	0.00	0.09	0.59	1.11	1.69	2.69	4.27	6.24	10.85	15.28	19.39
1"	15°	0.00	0.06	0.32	0.95	1.50	2.35	3.80	4.70	6.50	8.50	9.85
	30°	0.00	0.08	0.45	1.25	2.06	3.54	5.30	7.70	10.49	12.84	15.48
	60°	0.00	0.09	0.68	1.74	2.78	5.13	8.00	11.88	18.71	23.22	32.84
	90°	0.00	0.12	0.93	2.78	5.09	7.74	12.20	17.33	24.48	26.79	43.89
1 1/2"	15°	0.00	0.06	0.38	1.17	2.28	3.85	5.59	8.10	10.99	14.86	17.85
	30°	0.00	0.08	0.65	1.88	3.39	5.66	8.36	12.12	16.17	20.44	23.90
	60°	0.00	0.09	0.92	2.81	4.69	8.89	14.85	21.16	30.73	45.88	59.74
	90°	0.00	0.11	1.07	4.01	7.44	14.06	23.76	26.78	48.03	71.17	90.50
2"	15°	0.00	0.06	0.69	2.26	4.45	7.30	10.68	15.40	21.39	28.75	35.05
	30°	0.00	0.09	1.18	3.79	7.53	12.26	17.83	26.44	36.45	48.09	55.92
	60°	0.00	0.11	1.51	5.80	10.39	20.60	33.98	48.75	69.04	104.2	136.5
	90°	0.00	0.17	1.89	7.28	13.58	25.38	42.30	55.56	87.04	129.8	167.3

### Full Port

Size	Cv
1/2"	15
3/4"	35
1"	68
1-1/2"	155
2"	300

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## M32 Series Part # Builder

A	-	B	-	C	D	E	F	-	G	-	H
M15F	-	03	-	A	A	0	F	-	L	-	-

\*Note: 1) Not all combinations available, and special solutions not shown are possible. Please call factory for details. 2) Max-Air Technology reserves the right to change or modify products without prior notice & without incurring any obligation to make such changes on products previously or subsequently sold.

## Example Part # M32N-01-AA0F-L

**EXAMPLE DESCRIPTION:** 1" M32N SERIES BALL VALVE, 1500 WOG FULL PORT, NPT ENDS, ASTM A351 CN7M ALLOY 20 BODY, ASTM CN7M ALLOY 20 BALL & STEM, TFM 1600 SEATS, FFKM STEM O-RING, ISO5211 MOUNTING PAD, FIRE-SAFE, W/ LOCKING LEVER HANDLE

A - SERIES	B - SIZE	C - BODY
<b>M32N</b> - FLOATING 3-PC 1500 WOG BALL VALVE, NPT X NPT ENDS, FULL BORE <b>M32S</b> - FLOATING 3-PC 1500 WOG BALL VALVE, SW X SW ENDS, FULL BORE <b>M32T</b> - FLOATING 3-PC 1500 WOG BALL VALVE, SW X NPT ENDS, FULL BORE <b>M32B</b> - FLOATING 3-PC 1500 WOG BALL VALVE, BUTT WELD ENDS SCH80, FULL BORE <b>M32X</b> - FLOATING 3-PC 1500 WOG BALL VALVE, EXTENDED BW ENDS SCH80, FULL BORE	0M - 1/2" 0T - 3/4" 01 - 1"	1M - 1 1/2" 02 - 2" A - ASTM A351 - CN7M (ALLOY 20)

D - TRIM	E - BALL TYPE	F - SEATS	G - OPERATOR	H - SPECIAL
A - ASTM A351 - CN7M (ALLOY 20)	0 - FULL PORT V - V-PORT BALL R - RELIEF VENTED BALL	F - TFM 1600 G - TFM 4215 S - 50/50 P - PEEK U - UHMPHE 9 - SPECIAL	L - LOCKING LEVER E - OVAL HANDLE 9 - SPECIAL	CONSULT FACTORY