

## HIGH TEMPERATURE TWO-PIECE BALL VALVE FIGURE. 72 SERIES WITH TFM1600 SEATS

### Description

An economical two-piece full bore ball valve designed for manual or actuated operation and tight shut off isolation. The figure 72 full bore bidirectional ball valve offers reliability with an easily maintainable design. Manufactured in both carbon steel and stainless steel as standard.

TFM1600 seats allow a tight shut-off isolation for steam lines (up to 12.0 barg) and high temperature hot water / condensate lines and other gas and liquid systems compatible with this valves material construction.

The figure 72 is stocked within the UK in DIN (PN16/40) flanged connections, with ANSI (Class 150/300) available on request. The valve is supplied as standard with a lockable handle suitable to be pad locked in either the open or closed position.

This valve can also be fitted with a wide range of switches and actuators to suit any requirements.



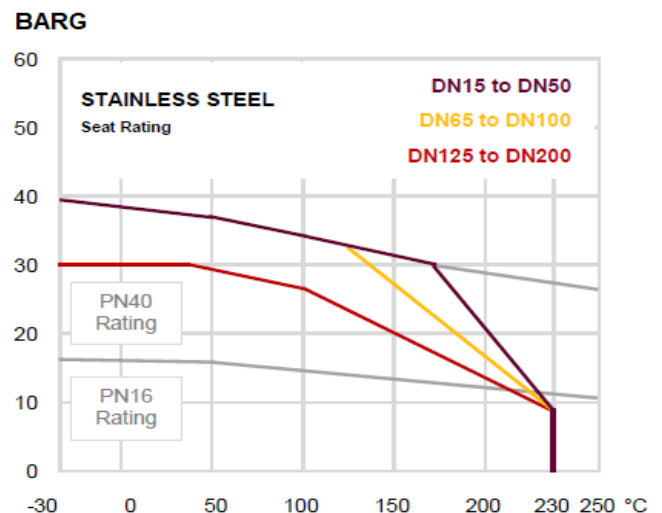
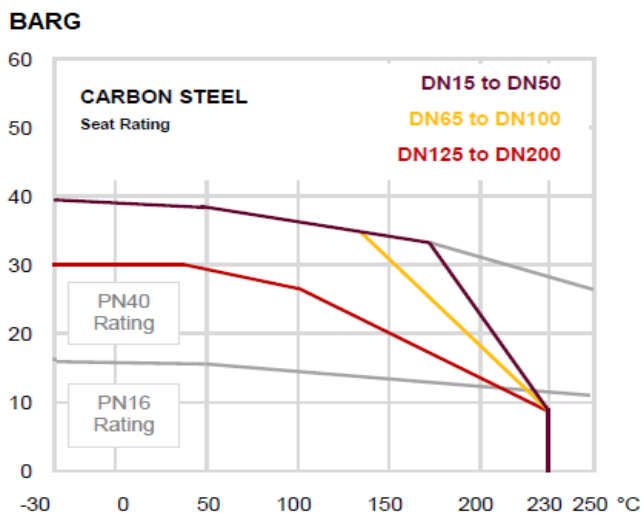
### Design Advantages

- Design EN ISO 17292, EN 12516
- Full port orifice minimizes pressure drops & prolong life
- Blow-out proof stem design for maximum safety
- TFM1600 soft seats suitable to 230.0°C
- Anti-static / ATEX 94/9/EC (Ex II 2 G-D EX-c II)
- API 607 4th Edition Fire-Safe certified
- TA-Luft (VDI 2440, Sec. 3.3.1.3) certified
- Face to face length EN 558-1, 27 (short)
- Available in stainless steel (72-8) and carbon steel (72-4)

### Specifications

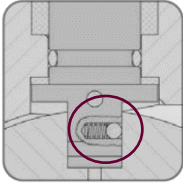
<b>Construction</b>	Two-piece, full bore
<b>Size</b>	DN15 (1/2") to DN200 (8")
<b>Body</b>	CF8M, WCB / 1.4408, 1.0619
<b>Ball</b>	1.4308 (72-4) / 1.4408 (72-8)
<b>Stem</b>	1.4308 (72-4) / 1.4408 (72-8)
<b>Seat</b>	PTFE (TFM1600)
<b>Pressure Rating</b>	DIN PN16 / PN40
<b>Temperature Range</b>	-30° to +230° (See Graph)

### Pressure vs. Temperature Chart

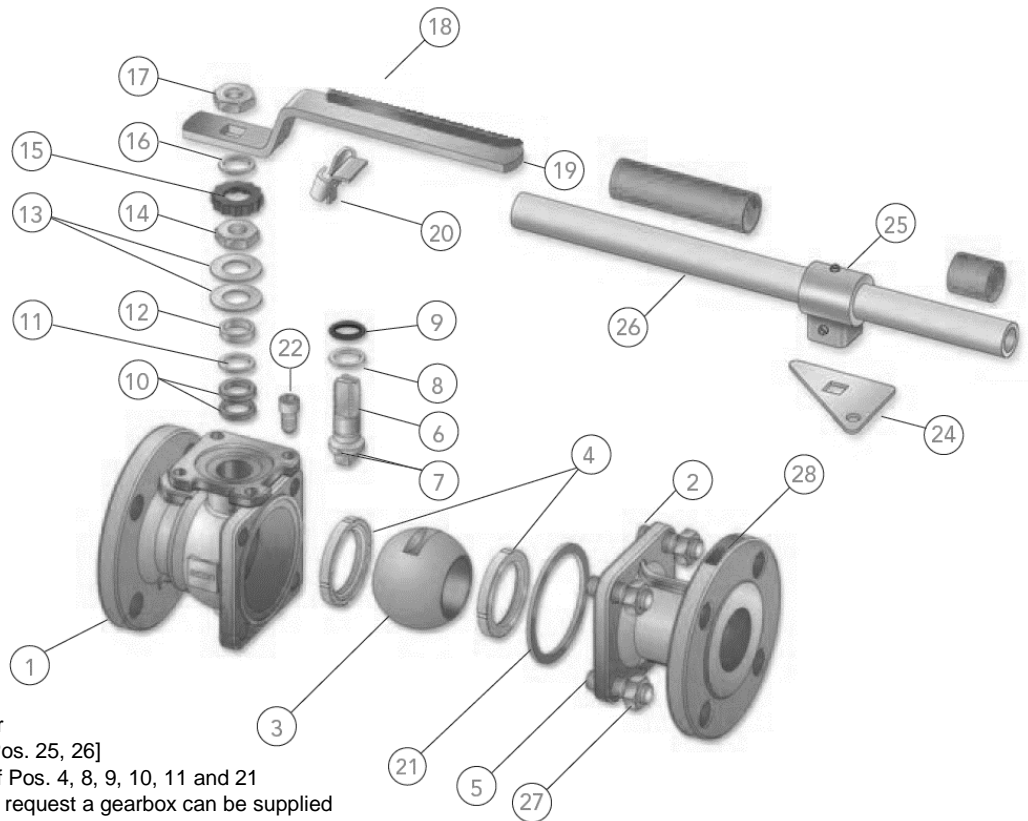
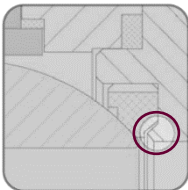


## Material Breakdown

### Anti-Static & Atex Device



### Fire-Safe Design



### Remarks

- DN15 to DN80 with Hand lever
- DN100 to DN150 with T-bar [Pos. 25, 26]
- Standard spares kit consists of Pos. 4, 8, 9, 10, 11 and 21
- DN200 is without operator. On request a gearbox can be supplied

Pos	Name	Material		Pos	Name	Material	
		WCB-7249	CF8M-7289			WCB-7249	CF8M-7289
1	Body	1.0619	1.4408	15	Lock Plate	1.4301	1.4301
2	Body End	1.0619	1.4408	16	Ring	1.4301	1.4301
3	Ball	1.4308 (4)	1.4408	17	Nut	1.4301	1.4301
4	Seat Ring	TFM1600	TFM1600	18	Sleeve	Plastic	Plastic
5	Stud	1.7225	1.4301	19	Hand lever	1.4301	1.4301
6	Stem	1.4301 (4)	1.4401	20	Locking Device	1.4301	1.4301
7	Anti-static Device	1.4301	1.4401	21	Body Gasket	1.4401 (2)	1.4401 (2)
8	Thrust Washer	PTFE	PTFE	22	Cap Screw	1.4301	1.4301
9	O-ring	FKM	FKM	23	Nut	1.4301	1.4301
10	Gland Packing	Grafoil	Grafoil	24	Stop Plate	1.4301	1.4301
11	Bush	1.4301	1.4301	25	T-bar Support	1.4308	1.4308
12	Gland	1.4401	1.4401	26	T-bar (1)	St. A53 (3)	St. A53 (3)
13	Belleville Washer	1.4310	1.4310	27	Nut	1.0503	1.4301
14	Nut	1.4301	1.4301	28	Name Plate	1.4301	1.4301

(1) DN100 to DN150 | (2) Spiralwound | (3) Zinc Plated | (4) Upon request also an available with 1.4408 ball and 1.4401 stem

## Kv and Torques

DN	Kv	Nm based on TFM1600 seat in Fire-Safe execution, excl. safety			
		5.0 bar	10 bar	20 bar	50 bar
15	26.0	6.0	6.0	6.0	6.0
20	43.0	7.0	7.0	7.0	7.0
25	81.0	12.0	12.0	13.0	14.0
32	121.0	15.0	15.0	17.0	20.0
40	225.0	23.0	23.0	25.0	28.0
50	415.0	30.0	33.0	37.0	40.0
65	649.0	46.0	52.0	64.0	79.0
80	1125.0	75.0	83.0	93.0	107.0
100	1990.0	115.0	129.0	150.0	184.0
125	3201.0	219.0	242.0	334.0	368.0
150	4671.0	322.0	357.0	391.0	467.0
200	8651.0	426.0	495.00	558.0	610.0

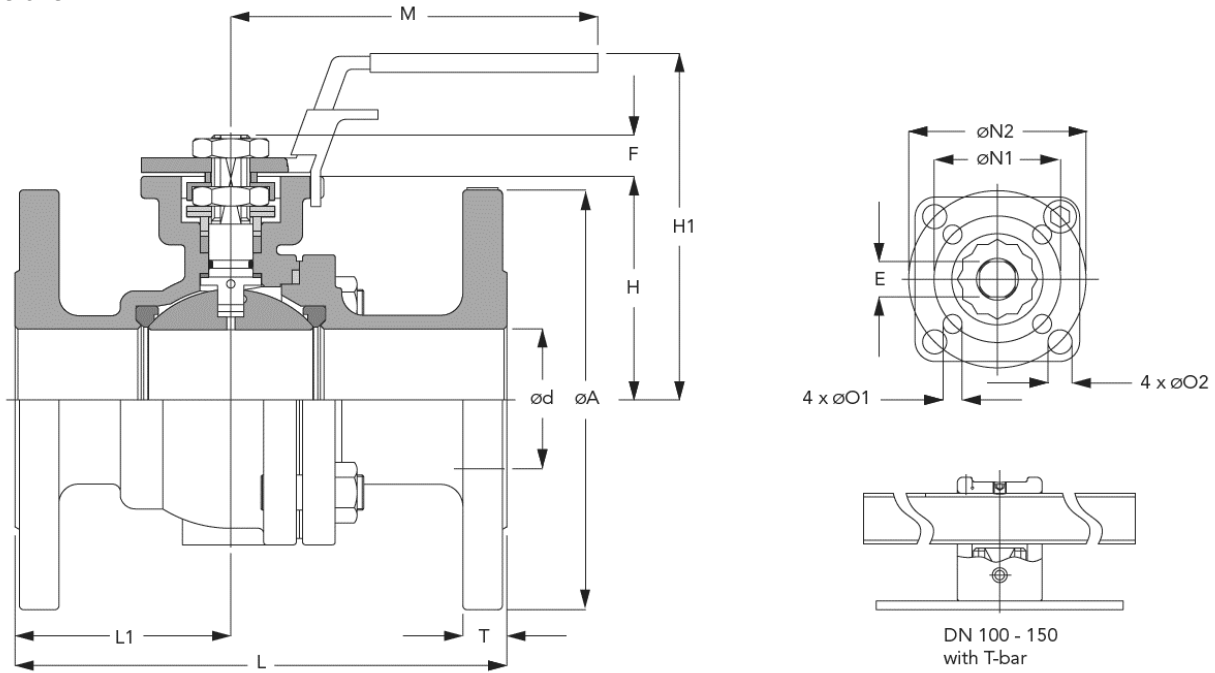
### Notes;

Kv is the capacity in m<sup>3</sup>/h from water at 20°C at a differential pressure of 1 bar.

The Kv value are valid in the fully open position only.

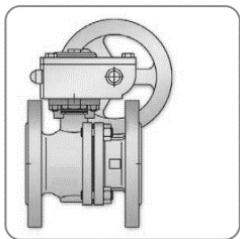
Recommended safety margin is 40.0% at 'normal' conditions (example: fluid between -20° and 100°C)

## Dimensions



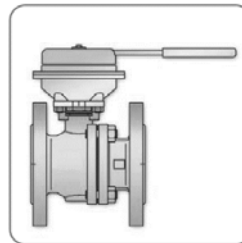
DN	Ød	ØA		#E	F	H	H1	L	L1		M	ØN1	ØN2	ØO1	ØO2	T		kg	
		PN16	PN40						PN16	PN40						PN16	PN40	PN16	PN40
15	15	95	95	9	9	48.0	79.0	115	49.5	49.5	145	36	42	6	6	16	16	-	2.4
20	20	105	105	9	9	53.0	84.0	120	54.0	54.0	145	36	42	6	6	18	18	-	3.2
25	25	115	115	11	11	58.5	90.5	125	56.0	56.0	175	42	50	6	7	18	18	-	4.2
32	32	140	140	11	11	71.0	103.0	130	57.4	57.4	175	42	50	6	7	18	18	-	5.5
40	38	150	150	14	14	76.0	111.0	140	58.0	58.0	194	50	70	7	9	18	18	-	6.9
50	50	165	165	14	14	85.0	120.0	150	63.0	63.0	194	50	70	7	9	20	20	-	9.5
65	63	185	185	17	17	101.5	150.0	170	69.0	64.0	265	70	102	9	11	18	22	13.8	13.5
80	76	200	200	17	17	111.5	160.0	180	74.5	69.5	265	70	102	9	11	20	24	17.7	17.8
100	100	220	235	22	22	140.0	182.0	190	83.0	78.0	400	-	102	-	11	20	24	25.2	30.5
125	125	250	270	27	27	183.0	260.0	325	153.0	160.0	600	-	125	-	14	22	26	60.0	62.5
150	150	285	300	27	27	202.0	280.0	350	162.0	176.0	800	-	125	-	14	22	28	71.8	73.8
200	200	340	375	27	27	252.5	279.5	400	191.0	221.0	-	-	125	-	14	24	34	127.0	152.0

## Manual Options



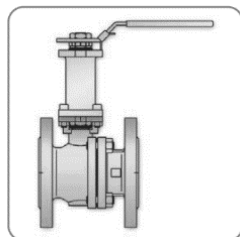
### Gearbox

- Visual open/close indication
- Mechanical end stops for open/close position
- ISO 5211 mounting flange



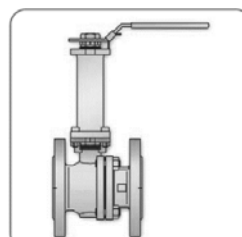
### Spring Return Handle

- Design for fail-safe applications



### Extended Spindle

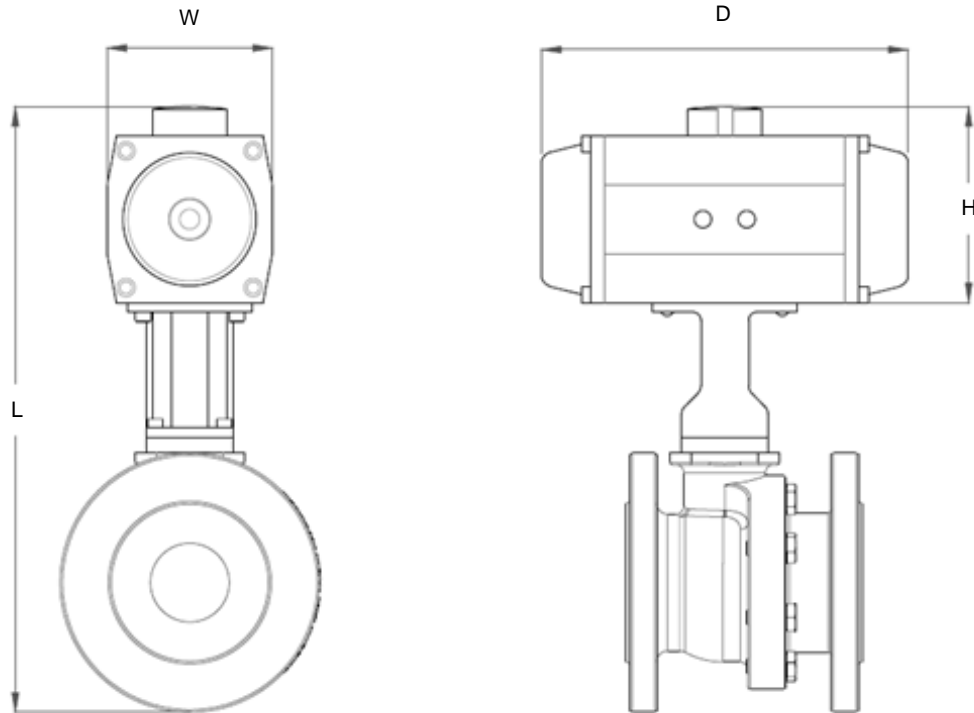
- To clear pipework lagging
- Standard length 100mm



### Extended Bonnet for Low Temp.

- Design for cold media applications (<-30°C)

### Fail-Safe Pneumatically Actuated (Others available on request)



DN	ACTUATOR Model	No. of Springs	Min. Air Supply (bar G)	Closing Speed (Seconds)	L		W	D	H	kg	
					PN16	PN40				PN16	PN40
15	AP3	6	5.5	0.5 to 1.0	316	316	85	213	120	-	8.0
20	AP3	6	5.5	0.5 to 1.0	326	326	85	213	120	-	8.8
25	AP3	6	5.5	0.5 to 1.0	336	336	85	213	120	-	9.8
32	AP3.5	6	5.5	0.5 to 1.0	371	371	98	236	130	-	12.8
40	AP4	6	5.5	0.5 to 1.0	396	396	110	276	145	-	16.1
50	AP4	6	5.5	0.5 to 1.0	413	413	110	276	145	-	18.7
65	AP4.5	6	5.5	0.5 to 1.0	466	466	128	310	172	27.5	27.2
80	AP5	6	5.5	1.5 to 2.0	497	497	140	366	185	35.4	35.5
100	AP5	6	5.5	1.5 to 2.0	535	543	140	366	185	42.9	48.2
125	AP8	6	5.5	4.0 to 6.0	708	718	215	563	300	112.8	115.3
150	AP8	6	5.5	4.0 to 6.0	745	752	215	563	300	124.6	126.6
200	AP10	6	6.0	7.0 to 8.0	908	925	290	750	385	238.0	263.0

### Standard Actuator Specifications (Others available on request)

Stroke	90° with single travel adjustment $\pm 3^\circ$
Operating Temperature	-20 °C ÷ +80 °C (-4 °F ÷ +175 °F) standard
Design Reference	UNI EN 15714-3, ISO 5211, VDI / VDE 3845
Flange Interface	ISO 5211
Accessories Flange	VDI / VDE 3845, UNI EN 15714-3
Certification	2014/34/UE ATEX, SIL IEC 61508 - IEC 61511, GOST-R, CU TR 10 CU TR 32
Body Material	Anodised Extruded Aluminium
End Caps	Die Cast Aluminium
O-RING	Nitrile Rubber NBR (Others available on request)
LOWER PINION O-RING	Nitrile Rubber NBR (Others available on request)

## Additional Actuator Options

**Limit Switch Box**



**Pneumatic Positioner Unit**



**Solenoid Valve**



**Electro-Pneumatic Positioner**



**Electro-Pneumatic Positioner with Limit Switch Box**



**Disengageable Gear Box**



## Assembly & Testing

All actuated valves are fully assembled and function tested prior to dispatch unless stated otherwise.