

Flanged Ball Valves

2-Piece Body · Full Port · Direct Mount ISO 5211 · ASME Class 150 / 300 · EN PN10-PN40

A single two-piece flanged ball valve platform covering both ASME and EN pressure classes. Full port throughout, with an integral ISO 5211 mounting pad cast into the body so pneumatic or electric actuators bolt straight on without a bracket or coupling. Standard and fire safe variants share the same envelope, mounting pad and face-to-face dimensions, so a fire safe valve can be substituted without changing the pipework or the actuator.

Design Features

- Built-in **ISO 5211 direct mounting pad** — no bracket or coupling required for actuation
- **Fire safe design approved** to API 607 5th edition and ISO 10497
- **Anti-static device** maintaining continuity between ball, stem and body
- **Blow-out proof stem**, fitted from inside the body
- **Pressure balance hole** in the ball slot to relieve body cavity pressure
- **TA-Luft / ISO 15848-1** fugitive emission design approved
- **NACE MR-0175** compliance available as an option
- Castings approved to **TÜV AD 2000-Merkblatt W0**
- Options: pneumatic or electric actuator, limit switch box, positioner, gear operator



TWO-PIECE FLANGED BALL VALVE WITH LEVER AND INTEGRAL ISO 5211 DIRECT MOUNT PAD

Range & Model Reference

SERIES	FLANGE STANDARD	RATING	STANDARD TYPE	FIRE SAFE TYPE
ASME Class 150	ASME B16.5 raised face	Class 150 (PN20)	KV-L41	KV-L61
ASME Class 300	ASME B16.5 raised face	Class 300 (PN50)	KV-L42	KV-L62
EN PN10	EN 1092-1 Type 11 flange	PN10	KV-L4J	KV-L6J
EN PN16	EN 1092-1 Type 11 flange	PN16	KV-L4K	KV-L6K
EN PN25	EN 1092-1 Type 11 flange	PN25	KV-L4M	KV-L6M
EN PN40	EN 1092-1 Type 11 flange	PN40	KV-L4N	KV-L6N

Sizes: NPS 1/2" to 8" (ASME) and DN15 to DN200 (EN). Fire safe models differ only in stem packing, bushing and body gasket materials — see Materials of Construction.

Applicable Standards

ASME SERIES — KV-L41 / L42 / L61 / L62		EN SERIES — KV-L4J / K / M / N, L6J / K / M / N	
Design standard	ASME B16.34	Design standard	EN 12516-1
Fire safe design	API 607 5th ed. 2005, ISO 10497	Fire safe design	API 607 5th ed. 2005, ISO 10497
Face to face	ASME B16.10	Face to face	L — DIN 3202 F18 (F4 DN15-100 / F5 DN125-200) *L — DIN 3202 F17 (F1 DN15-100 / F7 DN125-200) EN 558 Series 27
Flanged ends	ASME B16.5 Class 150 / 300	Flanged ends	EN 1092-1 PN10-40
Inspection & testing	API 598	Inspection & testing	EN 12266-1

Flow Coefficient & Weights Cv identical for all pressure classes

NPS	DN	Cv	ASME WEIGHT (kg)		EN WEIGHT (kg)			
			Class 150	Class 300	F4/F5 PN10-16	F4/F5 PN25-40	F1/F7 PN10-16	F1/F7 PN25-40
1/2"	15	18	1.6	2.54	2.37	2.37	2.42	2.42
3/4"	20	36	2.3	3.64	3.15	3.15	3.23	3.23
1"	25	48	3.0	4.55	4.09	4.09	4.37	4.37
1-1/4"	32	93	3.5	5.17	5.56	5.56	5.95	5.95
1-1/2"	40	165	5.6	8.69	6.98	6.98	7.81	7.81
2"	50	207	8.4	10.9	9.67	9.67	10.4	10.4
2-1/2"	65	450	14.5	17.5	13.9	14.6	15.5	17.5
3"	80	780	18.5	27.3	18.1	20.4	20.1	23.5
4"	100	1360	29.5	41.8	25.3	29.5	28.7	35.9
5"	125	1700	53.5	67.6	51.0	59.5	—	—
6"	150	2600	74.0	100.6	72.5	84.5	—	—
8"	200	4200	128.0	144.3	120 †	151 †	—	—

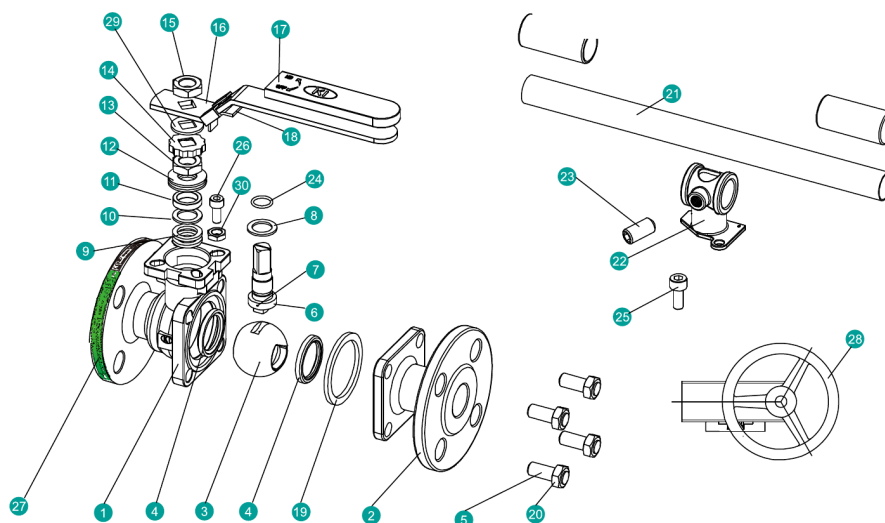
Cv values are for the full port valve in the fully open position. † DN200 short-series weights are published for PN16 (120 kg) and PN40 (151 kg) only. — indicates the combination is not offered.

Operating Torque Close-to-open torque at differential pressure ΔP, standard TFM1600 / PTFE seats

NPS	DN	ΔP 5 bar (75 psi)		ΔP 10 bar (150 psi)		ΔP 20 bar (300 psi)		ΔP 40 bar (600 psi)		ΔP 50 bar (700 psi)	
		N·m	in·lb	N·m	in·lb	N·m	in·lb	N·m	in·lb	N·m	in·lb
1/2"	15	5	44	5	44	5	44	5	44	5	44
3/4"	20	6	53	6	53	6	53	6	53	6	53
1"	25	10	88	10	88	11	97	11	97	11	97
1-1/4"	32	13	115	13	115	15	133	17	150	17	150
1-1/2"	40	19	168	19	168	22	195	24	212	24	212
2"	50	25	221	29	257	32	283	34	301	35	310
2-1/2"	65	40	354	45	398	49	434	52	460	54	478
3"	80	65	575	72	637	81	717	88	779	90	796
4"	100	100	885	110	973	122	1080	132	1168	135	1195
5"	125	190	1681	210	1858	245	2168	280	2478	285	2522
6"	150	280	2478	306	2708	340	3009	510	4514	530	4690
8"	200	370*	3274	430	3805	487	4310	730	6461	760	6726

- Torque increases by approximately 30% with reinforced fibreglass PTFE, carbon-filled PTFE, EK+PTFE or TFM4215 seats.
- Figures at 5 bar are maximum values, measured after the valve has stood for 24 hours.
- Apply a safety factor of at least 30% when sizing an actuator.
- ΔP 40 bar applies to the EN PN40 series; ΔP 50 bar applies to the ASME Class 300 series. * Corrected from the source data, which printed 487 N·m against 3274 in·lb.

Materials of Construction



EXPLODED ASSEMBLY — LEVER OPERATED NPS ½-2½ / DN15-65 (LEFT), PIPE HANDLE AND GEAR OPERATION NPS 3-8 / DN80-200 (RIGHT)

NO.	PART NAME	316 STAINLESS ASTM / EN	304 STAINLESS ASTM / EN	CARBON STEEL ASTM / EN
1	End cap	A351-CF8M 1.4408	A351-CF8 1.4308	A216-WCB 1.0619
2	Body	A351-CF8M 1.4408	A351-CF8 1.4308	A216-WCB 1.0619
3	Ball	A351-CF8M 1.4408	A351-CF8 1.4308	
4	Ball seat	TFM1600 / PTFE / TFM4215		
5	Body bolting	A193-B8 (ASME) / A2-70 (EN)		A193-B7 (ASME) / 8.8 (EN)
6	Stem	316	304	
7	Anti-static device	316	304	
8	Thrust washer	PTFE / TFM1600		
9	Stem packing	PTFE / graphite*		
10	Bushing	50% SS + 50% PTFE / 304*		
11	Gland	316		
12	Belleville washer	301		
13	Stem nut	A194-8		
14	Stop-lock cap	304		
15	Handle nut ‡	A194-8		
16	Lever ‡	304		
17	Handle sleeve	304		
18	Lock device ‡	304		
19	Body gasket	PTFE / 316 spiral wound + graphite*		
20	Bolt nut	A194-8 (ASME) / A2-70 (EN)		A194-2H (ASME) / 8 (EN)
21	Pipe handle §	A53 + plated Zn		
22	Handle adapter §	A351-CF8		
23	Set screw §	A2-70		
24	O-ring	FKM (Viton)		
25	Bolting §	A2-70		
26	Stop bolt	A2-70		
27	Nameplate	304		
28	Worm gear (optional)	Package		
29	Support washer	304		
30	Stop nut	A2-70		

* Materials shown in red apply to the fire safe models (KV-L61, KV-L62, KV-L6J, KV-L6K, KV-L6M, KV-L6N). ‡ NPS ½-2½ / DN15-65 only. § NPS 3-8 / DN80-200 only. 1.4408 ≡ CF8M, 1.4308 ≡ CF8, 1.0619 ≡ WCB.

Dimensions — ASME Class 150 & 300 All dimensions in millimetres

Table 1 — ASME Class 150 (KV-L41 / KV-L61)

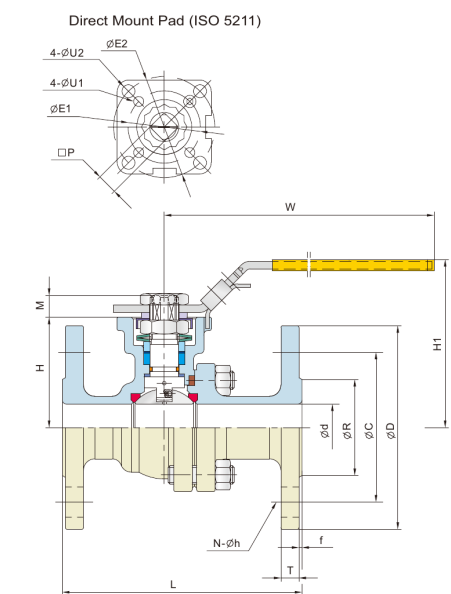
NPS	Ød	L	ØR	ØD	ØC	T	f	N	Øh	H	H1	W	□P	M	ØE1	ØE2	U1	U2	ISO 5211
1/2"	15	108	35.0	90	60.3	8.0	2	4	16.0	49	79	147	9	9	36	42	6	6	F03-F04
3/4"	20	117	43.0	100	69.9	8.9	2	4	16.0	53	84	147	9	9	36	50	6	7	F03-F05
1"	25	127	51.0	110	79.4	9.6	2	4	16.0	59	90	177	11	11	42	50	6	7	F04-F05
1-1/4"	32	140	63.5	115	88.9	11.2	2	4	16.0	71	102	177	11	11	42	70	6	9	F04-F07
1-1/2"	38	165	73.2	125	98.4	12.7	2	4	16.0	76	110	197	14	14	50	70	7	9	F05-F07
2"	50	178	92.0	150	120.7	14.3	2	4	19.0	82	115	197	14	14	50	70	7	9	F05-F07
2-1/2"	63.5	190	104.7	180	139.7	15.9	2	4	19.0	102	150	267	17	17	70	102	9	11	F07-F10
3"	76	203	127.0	190	152.4	17.5	2	4	19.0	112	176	300	17	17	70	102	9	11	F07-F10
4"	100	229	157.0	230	190.5	22.3	2	8	19.0	140	211	400	22	22	—	102	—	11	F10
5"	125	356	186.0	255	215.9	22.3	2	8	22.3	183	263	600	27	27	125	—	14	—	F12
6"	150	394	216.0	280	241.3	23.9	2	8	22.3	204	284	800	27	27	125	—	14	—	F12
8"	200	457	270.0	345	298.5	27.0	2	8	22.3	253	334	800	27	27	125	140 ^a	14	18 ^a	F12 / F14 ^a

Table 2 — ASME Class 300 (KV-L42 / KV-L62)

NPS	Ød	L	ØR	ØD	ØC	T	f	N	Øh	H	H1	W	□P	M	ØE1	ØE2	U1	U2	ISO 5211
1/2"	15	140	35.0	95	66.7	12.7	2	4	16.0	49	79	147	9	9	36	42	6	6	F03-F04
3/4"	20	152	43.0	115	82.6	14.3	2	4	19.0	59	89	147	9	9	36	42	6	6	F03-F04
1"	25	165	51.0	125	88.9	15.9	2	4	19.0	64	95	177	11	11	42	50	6	7	F04-F05
1-1/4"	32	178	63.5	135	98.4	17.5	2	4	19.0	71	102	177	11	11	42	50	6	7	F04-F05
1-1/2"	38	190	73.2	155	114.3	19.1	2	4	22.3	80	113	197	14	14	50	70	7	9	F05-F07
2"	50	216	92.0	165	127.0	20.7	2	8	19.0	85	118	197	14	14	50	70	7	9	F05-F07
2-1/2"	63.5	241	104.7	190	149.2	23.9	2	8	22.3	102	150	267	17	17	70	102	9	11	F07-F10
3"	76	282	127.0	210	168.3	27.0	2	8	22.3	112	176	300	17	17	70	102	9	11	F07-F10
4"	100	305	157.0	255	200.0	30.2	2	8	22.3	140	211	400	22	22	—	102	—	11	F10
5"	125	381	186.0	280	235.0	33.4	2	8	22.3	183	263	600	27	27	125	—	14	—	F12
6"	150	403	216.0	320	269.9	35.0	2	12	22.3	204	284	800	27	27	125	—	14	—	F12
8"	200	502	270.0	380	330.2	39.7	2	12	25.4	253	334	800	27	27	125	140 ^a	14	18 ^a	F12 / F14 ^a

^a Optional. NPS 8 can be supplied with either an F12 or an F14 mounting pad; the F14 pad uses ØE2 140 mm with 4 × ØU2 18 mm.

Reference Views



DIRECT MOUNT PAD AND SECTIONAL ARRANGEMENT — LEVER OPERATED SIZES

Dimensions — EN PN10 / 16 / 25 / 40 All dimensions in millimetres

Table 3 — EN 1092-1 flanged (KV-L4J / L4K / L4M / L4N and KV-L6J / L6K / L6M / L6N)

DN	PN	Ød	L	*L	ØR	ØD	ØC	f	T	N	Øh	H	H1	W	□P	M	U1	U2	ØE1	ØE2	ISO 5211
15	10-40	15.0	115	130	45	95	65	2	16	4	14	48	78	147	9	9	6	6	36	42	F03-F04
20	10-40	20.0	120	150	58	105	75	2	18	4	14	53	84	147	9	9	6	6	36	42	F03-F04
25	10-40	25.0	125	160	68	115	85	2	18	4	14	59	90	177	11	11	6	7	42	50	F04-F05
32	10-40	32.0	130	180	78	140	100	2	18	4	18	71	102	177	11	11	6	7	42	50	F04-F05
40	10-40	38.0	140	200	88	150	110	3	18	4	18	76	110	197	14	14	7	9	50	70	F05-F07
50	10-40	50.0	150	230	102	165	125	3	20	4	18	85	118	197	14	14	7	9	50	70	F05-F07
65	10/16	63.5	170	—	122	185	145	3	18	4	18	102	150	267	17	17	9	11	70	102	F07-F10
65	10/16	63.5	—	290	122	185	145	3	18	4	18	107	155	267	17	17	9	11	70	102	F07-F10
65	25/40	63.5	170	290	122	185	145	3	22	8	18	107	155	267	17	17	9	11	70	102	F07-F10
80	10/16	76.0	180	310	138	200	160	3	20	8	18	112	176	300	17	17	9	11	70	102	F07-F10
80	25/40	76.0	180	310	138	200	160	3	24	8	18	117	181	300	17	17	9	11	70	102	F07-F10
100	10/16	100.0	190	350	158	220	180	3	20	8	18	140	210	400	22	22	—	11	—	102	F10
100	25/40	100.0	190	350	162	235	190	3	24	8	22	140	210	400	22	22	—	11	—	102	F10
125	10/16	125.0	325	400	188	250	210	3	22	8	18	183	263	600	27	27	14	—	125	—	F12
125	25/40	125.0	325	400	188	270	220	3	26	8	26	183	263	600	27	27	14	—	125	—	F12
150	10/16	150.0	350	450	212	285	240	3	22	8	22	204	284	800	27	27	14	—	125	—	F12
150	25/40	150.0	350	450	218	300	250	3	28	8	26	204	284	800	27	27	14	—	125	—	F12
200	10/16	200.0	400	550	268	340	295	3	24	8	22	253	334	800	27	27	14	18 ^a	125	140 ^a	F12 / F14 ^a
200	25	200.0	400	550	278	360	310	3	30	12	26	253	334	800	27	27	14	18 ^a	125	140 ^a	F12 / F14 ^a
200	40	200.0	400	550	285	375	320	3	34	12	30	253	334	800	27	27	14	18 ^a	125	140 ^a	F12 / F14 ^a

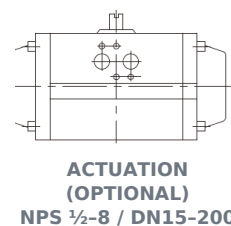
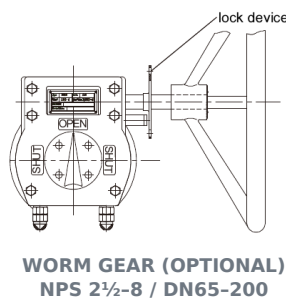
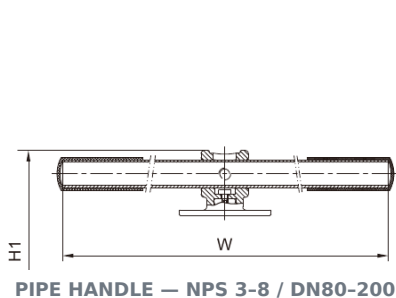
L — short face-to-face series (DIN 3202 F4 / F5). *L — long face-to-face series (DIN 3202 F1 / F7). Series designation by size: F1 / F4 for DN15-DN100, F7 / F5 for DN125-DN200. DN65 is listed on three lines because the short and long series are offered separately at PN10/16 — confirm the required series at order. ^a Optional F14 pad (ØE2 140 mm, 4 × ØU2 18 mm) available on DN200.

Dimension Key

Ød	Full bore diameter
L	Face to face — short series (DIN 3202 F4 / F5)
*L	Face to face — long series (DIN 3202 F1 / F7)
ØR	Raised face diameter
ØD	Flange outside diameter
ØC	Bolt circle diameter
f	Raised face height
T	Flange thickness

N × Øh	Number and diameter of bolt holes
H	Centreline to top of mounting pad
H1	Overall height including lever
W	Lever / pipe handle length
□P / M	Mounting pad square and height
ØE1 / ØU1	Bolt circle 1 and 4 off tapped holes
ØE2 / ØU2	Bolt circle 2 and 4 off tapped holes

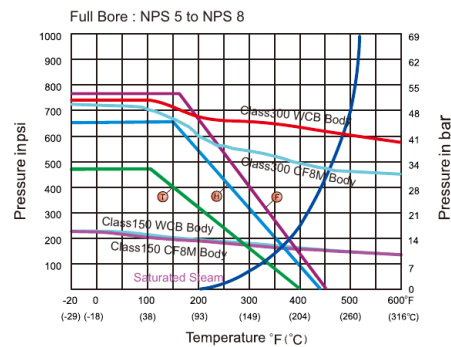
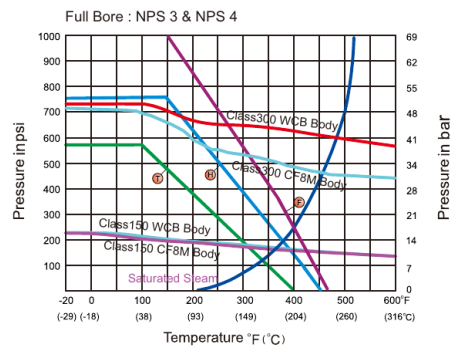
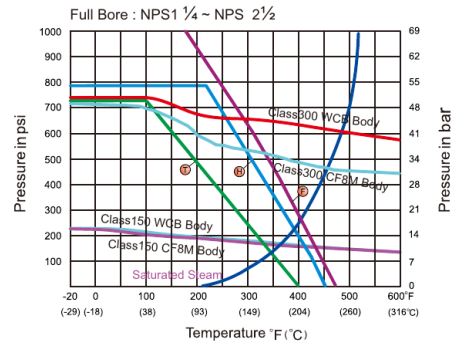
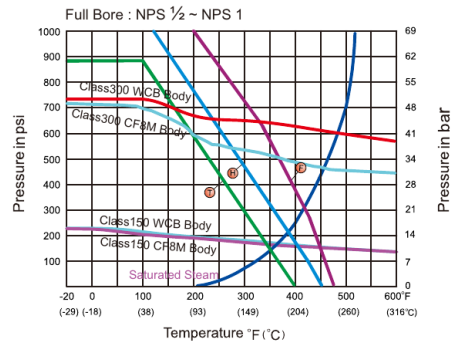
Operating Options



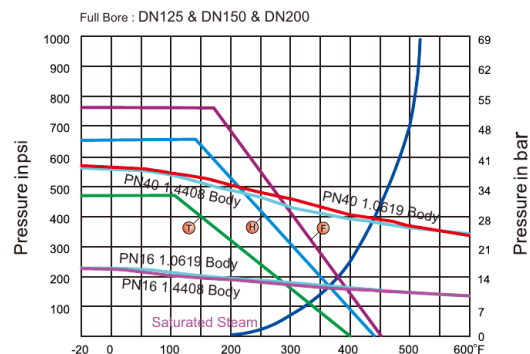
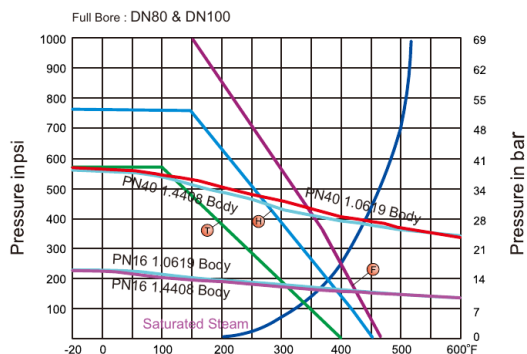
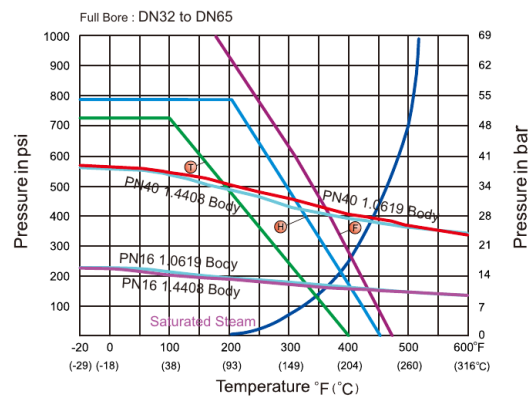
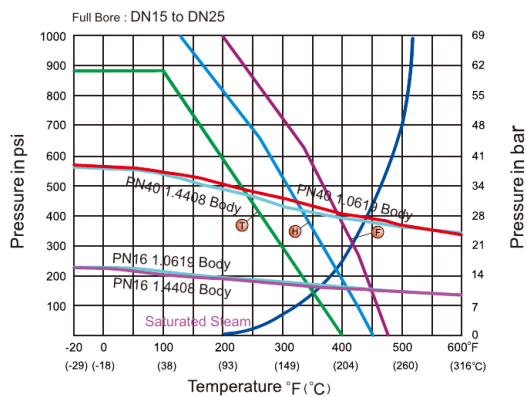
Pressure - Temperature Data

The pressure/temperature rating of a ball valve is governed not only by the shell material but also by the seat, gland packing and flange gasket materials. The charts below show the shell ratings with the seat material limits marked. Body ratings are for ASTM A351 Gr.CF8M and A216 Gr.WCB (ASME series) and EN 10213 Nr. 1.4408 and Nr. 1.0619 (EN series). For other shell materials refer to the current edition of ASME B16.34 or EN 12516-1.

ASME Class 150 / 300 — shell rating by size group



EN PN16 / PN40 — shell rating by size group



Seat material limits marked on the charts: P — PTFE, T — TFM1600, F — TFM4215. Redrawn by Actuation Valve & Control Ltd from the manufacturer's published data. Certified drawings and rating curves are available on request against a specific order.