



PMP PRECISION VALVE CO. LTD.

www.pmpvalve.com



ZFI Series **KNIFE GATE** **Valve**

2" - 36"

- **Power**
- **Cement**
- **Paper & Pulp**
- **Petrochemical**
- **Chemical**
- **Mining**
- **Pharmaceutical**
- **Food Processing**
- **Water, Waste Water & Sea Water**

“ZFI” Series Heavy Duty Knife Gate Valve



ZFI series valves are uni-directional, full lug design and manufactured as per MSS SP-81 standard and TAPPI TIS 405-8 standard for Industrial service applications. The ZFI series design assures non-clogging shut-off of suspended solids.

The ZFI series Knife Gate Valve can be used for liquid, solid-liquid mixes / slurries, dry bulk solid applications. These valves are provided with full bore (100%) opening which does not restrict the flow of the media in pipeline.

Resilient seated valves offer a leak tight shutoff. Metal seated valves offer leakage within permissible limits as per MSS SP-81 standard.



ZFI Series Knife Gate Valve Features:

- A full lug type design available in ANSI B16.5 (class 150) / DIN PN 10 / PN 16 flange drilling and other standards available.
- Investment cast up to 16" diameter.
- Sealing configurations: integral metal seat / resilient seat locked in place by a stainless steel retainer ring.
- Sealing achieved by means of welded jams pushing the gate on to the seat for full face contact between gate and seat.
- Gate having beveled knife-edge to cut through solid particles settled at bottom of body and achieve full closure.
- Self lubricated packing gland.
- Packing: PTFE Impregnated Synthetic Fibre with EPDM O-ring.
- Rising stem as standard / Non rising stem is available on request.
- Operating options: Hand wheel / Hand Lever / Bevel Gear / Pneumatic Cylinder / Electric Actuator & Hydraulic Cylinder.

The ZFI Series Valves are available in the following Sealing Configurations:

- ZFI-M: Integral metal seat.
- ZFI-S: Resilient seat retained by stainless steel ring.



Standard Technical Specifications Materials of Construction

Standard Technical Specifications:

Manufacturing Standard	- As per MSS-SP 81 / TAPPI TIS 450-8
Lug / Flange	- Full Lug up to 24" & Full Flanged for larger sizes
Bore Opening	- Full bore (100%)
Flange Drilling	- Suitable for ANSI B16.5 Class 150
Face To Face	- As per MSS SP-81
Sealing Configuration	- Integral metal seat in "ZFI-M" - Resilient seat retained by stainless steel retainer ring in "ZFI-S"
Pressure Rating	- 150 PSI rated from 2" to 24", 100 PSI rated from 26" to 30", 75 PSI rated from 32" to 36"
Nominal Size	- 2" to 36" (larger diameters upon request)



Materials of Construction:

Housing	- Cast Stainless Steel ASTM A 351 Gr. CF:8 / CF:8M / CF:3M / CH:20 / CK:20 (other materials on request)
Gate	- Stainless Steel ASTM A 240 Gr. 304 / 316 / 310 (other material on request)
Seat for ZFI-M	- Same as body material
Seat for ZFI-S	- Resilient seat retained by stainless steel retainer ring (Resilient seats are available in EPDM / Viton / Neoprene / White silicon / NBR / PTFE material)
Stem	- Stainless Steel ASTM A 276 Gr. 304 / 316
Packing	- Synthetic yarn with PTFE impregnation, Graphited yarn, Ceramic rope



Painting | Testing

Temperature Suitability Chart

Painting:

For non-stainless steel parts - Epoxy painted shade Orange RAL 2004, total dry film thickness maintained 250 microns minimum / as per custom requirement

Testing:

Body test pressure - As per MSS SP-81 norms up to 36" / As agreed mutually for higher sizes

Seat leakage for ZFI-M - 40 cc / min / inch at 2.8 bar as per MSS SP-81

Seat leakage for ZFI-S - Zero leakage at 2.8 bar

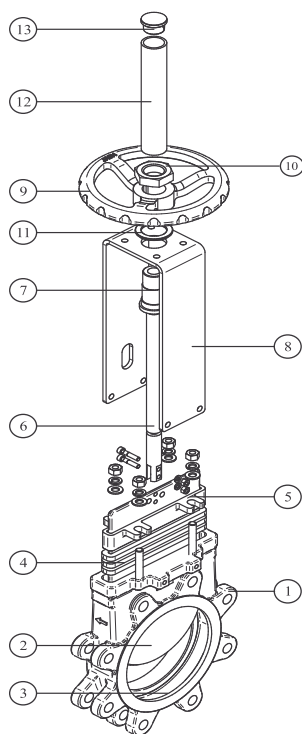
TEMPERATURE SUITABILITY CHART

Resilient Seat			
Sr. no.	Material	Temperature rating (max)	Application
1	EPDM	248 °F	Acids & non-mineral oils
2	Viton	392 °F	Different chemicals (High temperature)
3	Buna-N	248 °F	Petroleum products
4	White neoprene	176 °F	Food products

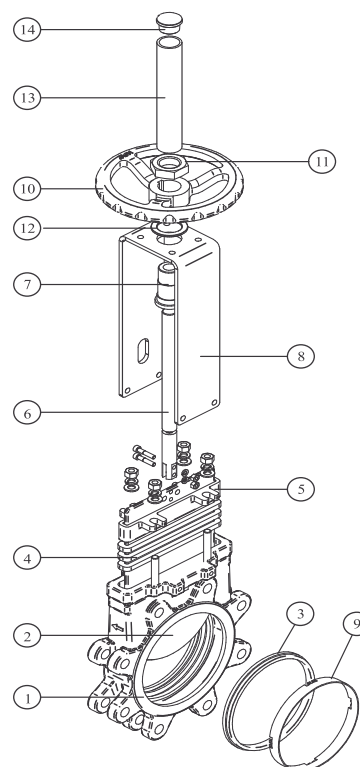
Gland Packing			
Sr. no.	Material	Temperature rating (max)	pH
1	Synthetic yarn with PTFE	482 °F	2-13
2	Graphite yarn	1200 °F	0-14
3	Ceramic rope	1800 °F	

Exploded View

Knife Gate Valve Type ZFI-M



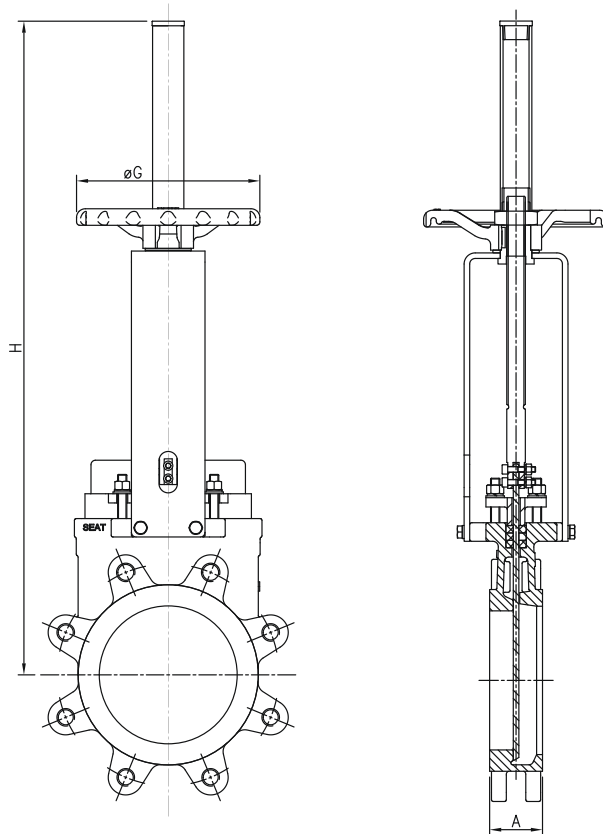
Knife Gate Valve Type ZFI-S



ZFI-M		
Part no.	Part	Standard Construction
1	Housing	CF:8M
2	Gate	SS:316
3	Seat	Metal
4	Packing	PTFE
5	Gland	CF:8M
6	Stem	SS:304
7	Stem nut	Brass
8	Yoke	SS:304
9	Hand wheel	Ductile iron
10	Lock nut	SS:304
11	Washer	LTB2
12	Stem protector	Mild steel
13	Cap	PVC

ZFI-S		
Part no.	Part	Standard Construction
1	Housing	CF:8M
2	Gate	SS:316
3	Seat	Resilient Buna
4	Packing	PTFE
5	Gland	CF:8M
6	Stem	SS:304
7	Stem nut	Brass
8	Yoke	SS:304
9	Seat retainer ring	SS:316
10	Hand wheel	Ductile iron
11	Lock nut	SS:304
12	Washer	LTB2
13	Stem protector	Mild steel
14	Cap	PVC

Hand Wheel Operated | Rising Stem Dimensional Details 2" - 24" (50mm - 600mm)

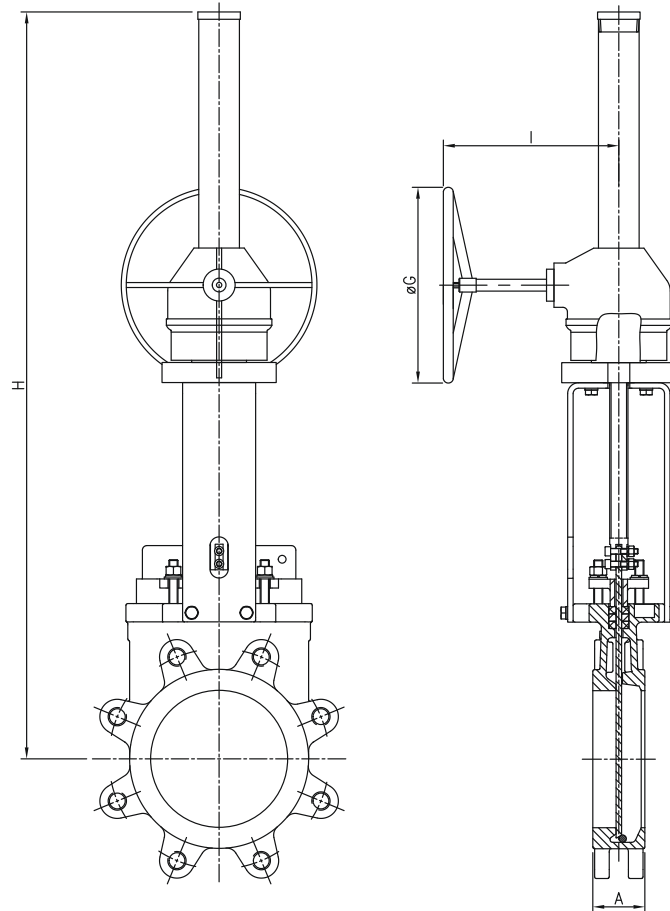


Valve size		A		H		øG		Weight	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	lbs	kg
2	50	1.88	48	18.5	470	8.1	205	20	9
2.5	65	2.00	51	19.5	495	8.1	205	22	10
3	80	2.00	51	20.7	526	8.1	205	24	11
4	100	2.00	51	23.2	590	8.1	205	29	13
5	125	2.25	57	26.2	665	8.1	205	37	17
6	150	2.25	57	28.1	714	8.1	205	46	21
8	200	2.75	70	35.4	899	12.4	315	71	32
10	250	2.75	70	40.7	1034	12.4	315	99	45
12	300	3.00	76	46.3	1176	12.4	315	143	65
14	350	3.00	76	51.6	1310	15.7	399	216	98
16	400	3.50	89	54.5	1385	15.7	399	276	125
18	450	3.50	89	61.6	1565	21.7	551	353	160
20	500	4.50	114	65.9	1674	21.7	551	452	205
24	600	4.50	114	77.2	1960	21.7	551	639	290

Note:

(1) Hand wheel operated valves can be provided with options of chain wheel, non-rising stem and stem extension.

Gear Operated | Rising Stem Dimension Details 8" - 36" (200mm - 900mm)



Valve size		A		H		I		øG	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
8	200	2.75	70	42.0	1066	8.0	200	14.0	350
10	250	2.75	70	47.0	1193	8.0	200	14.0	350
12	300	3.00	76	52.0	1320	8.0	200	14.0	350
14	350	3.00	76	57.0	1447	12.0	300	14.0	350
16	400	3.50	89	60.0	1524	12.0	300	14.0	350
18	450	3.50	89	69.0	1752	12.0	300	14.0	350
20	500	4.50	114	74.0	1879	12.0	300	16.0	400
24	600	4.50	114	85.0	2159	12.0	300	16.0	400
30	750	4.62	117	110.0	2794	16.0	400	16.0	400
36	900	4.62	117	129.0	3276	16.0	400	16.0	400

Note:

- (1) Gear box shall have 4:1 gear ratio.
- (2) Gear box operated valves can be provided with options of chain wheel, non-rising stem and stem extension.

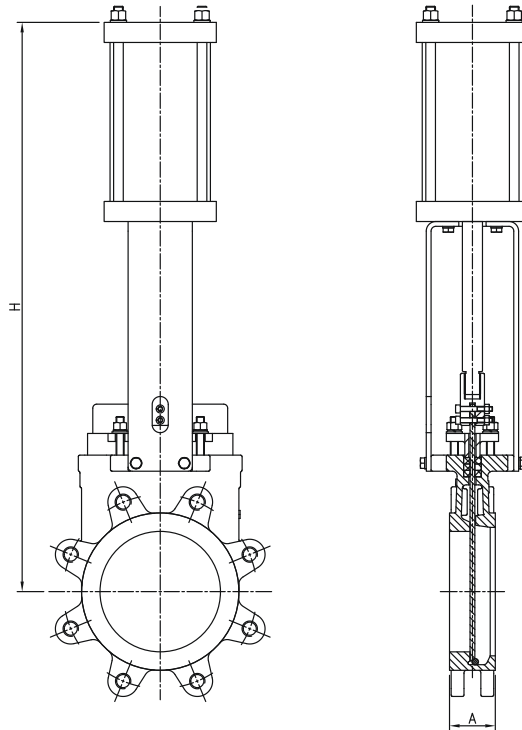
Pneumatic Cylinder Operated

Dimension Details

2" - 36" (50mm - 900mm)

Standard technical specification & materials of construction:

Type	- Linear double acting
Suitable applications	- On-off duty
Body material	- Aluminum / Carbon steel
Piston rod	- SS 304
Pistons	- Mild steel
Supply air pressure	- 50 PSI to 150 PSI



Valve size		A		H		Cylinder bore		Cylinder stroke		Max. differential pressure	
Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	PSI	bar
2	50	1.88	48	19.1	485	4	100	2.6	66	150	10
2.5	65	2.00	51	21.5	546	4	100	3.1	78	150	10
3	80	2.00	51	22.2	563	4	100	3.7	94	150	10
4	100	2.00	51	24.4	619	4	100	4.5	114	150	10
5	125	2.25	57	27.6	701	5	125	5.5	139	150	10
6	150	2.25	57	28.7	728	5	125	6.5	165	150	10
8	200	2.75	70	36.0	914	7	178	8.5	216	150	10
10	250	2.75	70	41.3	1049	7	178	10.4	264	150	10
12	300	3.00	76	47.2	1198	8	200	12.4	314	110	7.5
14	350	3.00	76	51.6	1310	8	200	12.8	325	80	5.4
16	400	3.50	89	57.1	1450	10	250	16.7	424	80	5.4
18	450	3.50	89	65.9	1673	12	300	18.7	474	80	5.4
20	500	4.50	114	71.3	1811	12	300	20.7	525	60	4
24	600	4.50	114	80.7	2049	12	300	24.6	624	60	4
30	750	4.62	117	102.4	2600	14	350	30.5	774	40	2.7
36	900	4.62	117	126.0	3200	16	400	36.4	924	40	2.7

Note:

- (1) Cylinder bore sizes mentioned in above table are calculated considering 80 PSI air supply pressure.
- (2) Upon request cylinders can be offered with positioners, manual override facility etc.
- (3) Upon request accessories like solenoid valve, air filter regulators, limit switches or proximity switches can be offered.

Electric Actuator Operated

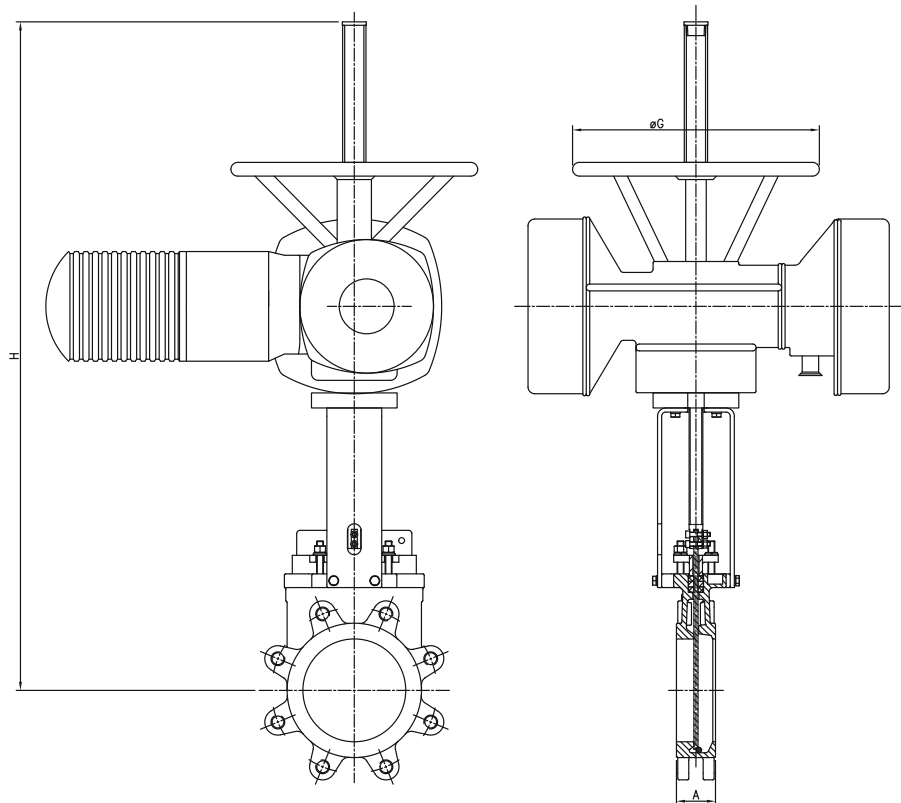
Dimension Details

2" - 36" (50mm - 900mm)

Standard electric actuators are provided with below features:

Manual override provision in case of power failure.

Limit switches for open & close position.

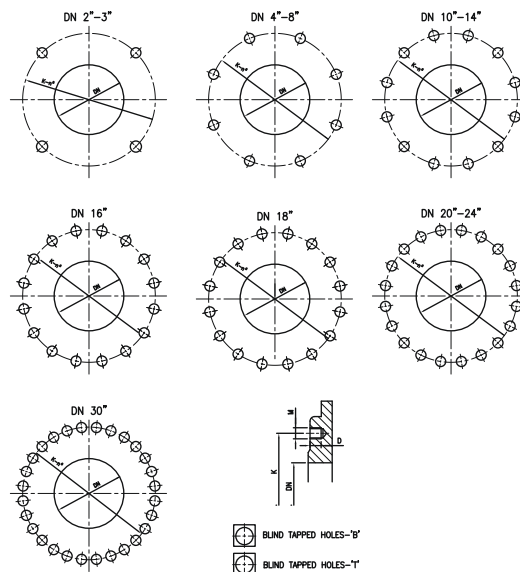


Valve size		A		H		øG		Torque (N-m)	Stem thread details
Inches	mm	Inches	mm	Inches	mm	Inches	mm		
2	50	1.88	48	22.6	574	5.9	149	10	20 mm x 4 mm
2.5	65	2.00	51	23.8	600	5.9	149	10	20 mm x 4 mm
3	80	2.00	51	24.4	619	5.9	149	10	20 mm x 4 mm
4	100	2.00	51	26.2	665	5.9	149	10	20 mm x 4 mm
5	125	2.25	57	27.8	706	5.9	149	15	20 mm x 4 mm
6	150	2.25	57	29.1	739	5.9	149	20	20 mm x 4 mm
8	200	2.75	70	33.5	850	7.9	200	30	25 mm x 5 mm
10	250	2.75	70	37.2	944	7.9	200	45	25 mm x 5 mm
12	300	3.00	76	40.7	1033	7.9	200	70	25 mm x 5 mm
14	350	3.00	76	47.2	1199	7.9	200	110	25 mm x 5 mm
16	400	3.50	89	50.0	1270	7.9	200	160	35 mm x 6 mm
18	450	3.50	89	53.9	1369	12.4	315	190	35 mm x 6 mm
20	500	4.50	114	61.4	1559	12.4	315	270	35 mm x 6 mm
24	600	4.50	114	70.1	1780	12.4	315	450	35 mm x 6 mm
30	750	4.62	117	102.4	2600	15.7	398	510	50 mm x 8 mm
36	900	4.62	117	129.9	3299	15.7	398	535	50 mm x 8 mm

FLANGE DRILLING DETAILS

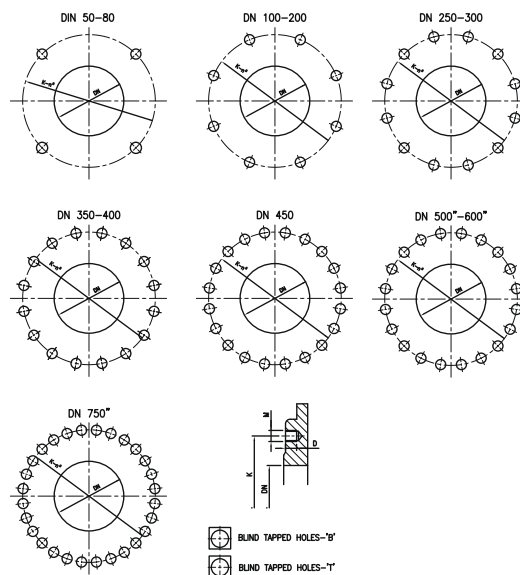
ANSI B16.5 150lb

Size		K	n°	M	D	B - T
Inches	mm					
2	50	4 3/4"	4	5/8" UNC	0.48"	2 - 2
2.5	65	5 1/2"	4	5/8" UNC	0.48"	2 - 2
3	80	6"	4	5/8" UNC	0.48"	2 - 2
4	100	7 1/2"	8	5/8" UNC	0.48"	2 - 6
5	125	8 1/2"	8	3/4" UNC	0.60"	2 - 6
6	150	9 1/2"	8	3/4" UNC	0.60"	2 - 6
8	200	11 3/4"	8	3/4" UNC	0.60"	4 - 6
10	250	14 1/4"	12	7/8" UNC	0.60"	4 - 8
12	300	17"	12	7/8" UNC	0.60"	4 - 8
14	350	18 3/4"	12	1" UNC	0.78"	4 - 8
16	400	21 1/4"	16	1" UNC	0.78"	4 - 12
18	450	22 3/4"	16	1 1/8" UNC	0.86"	6 - 10
20	500	25"	20	1 1/8" UNC	0.86"	6 - 14
24	600	29 1/2"	20	1 1/4" UNC	1.00"	6 - 14
30	750	36"	28	1 1/4" UNC	1.00"	10 - 18
36	900	42 1/2"	32	1 1/2" UNC	1.00"	14 - 18



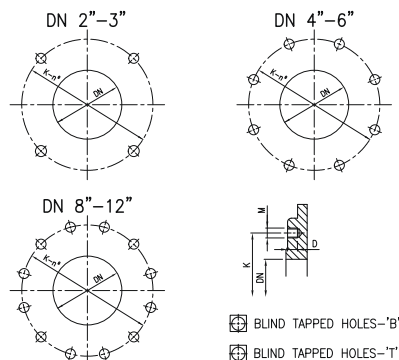
DIN PN 10

DN	K	n°	M	D	B - T
50	125	4	M-16	12	2 - 2
65	145	4	M-16	12	2 - 2
80	160	8	M-16	12	2 - 2
100	180	8	M-16	12	2 - 6
125	210	8	M-16	15	2 - 6
150	240	8	M-20	15	2 - 6
200	295	8	M-20	15	4 - 6
250	350	12	M-20	15	4 - 8
300	400	12	M-20	15	4 - 8
350	460	16	M-20	20	6 - 10
400	515	16	M-12	20	6 - 10
450	565	20	M-24	22	6 - 10
500	620	20	M-24	22	6 - 14
600	725	20	M-27	25	6 - 14
750	914.5	28	M-27	25	10 - 18
900	1050	28	M-30	25	14 - 18



PN 16

DN	K	n°	M	D	B - T
50	125	4	M-16	12	2 - 2
65	145	4	M-16	12	2 - 2
80	160	8	M-16	12	2 - 2
100	180	8	M-16	12	2 - 6
125	210	8	M-16	15	2 - 6
150	240	8	M-20	15	2 - 6
200	295	12	M-24	15	4 - 6
250	355	12	M-24	15	4 - 8
300	410	12	M-24	15	4 - 8





www.pmpvalve.com

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



PMP PRECISION VALVE CO. LTD.

www.pmpvalve.com

**PMP Precision Valve Co. Ltd.
3540 Poirier Boulevard
Saint Laurent, QC, H4R 2J5**

**Tel. 514-331-0729
Fax. 514-331-9849
Email. info@pmpvalve.com**

**PMP Precision Valve Co. Ltd.
Stealth Division
375 University Avenue East
Unit #205 C1
Waterloo, ON, N2K 3M7**

**Tel. 905-845-4500
Fax. 905-845-4505
Email. info@pmpvalve.com**

**PMP Precision Valve Co. Ltd.
1102-333 Garrett Rd.
Qualicum Beach, BC, V9K 1H4**

**Tel. 250-713-5838
Fax. 866-388-8658
Email. info@pmpvalve.com**

Distributor



Pictures shown are general, unless specific job names are listed.
Manufacturer reserves the right to depart from the catalogue specifications and illustrations.

ZFI-1116E