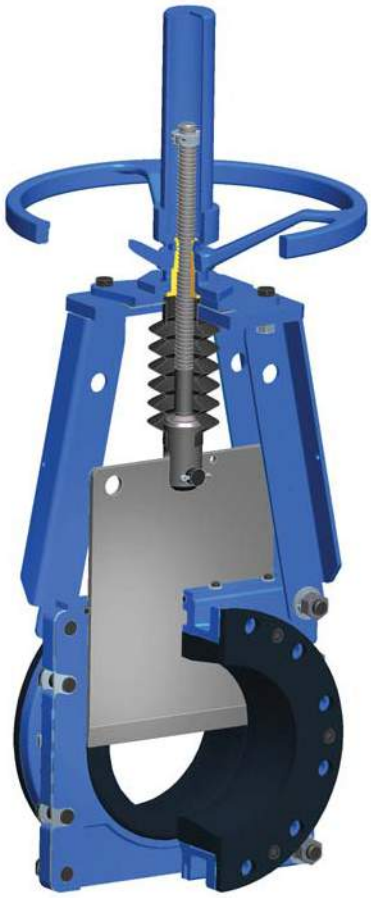
Fabri-Valve®

33 PTA / 33 PTD
Slurry Valves

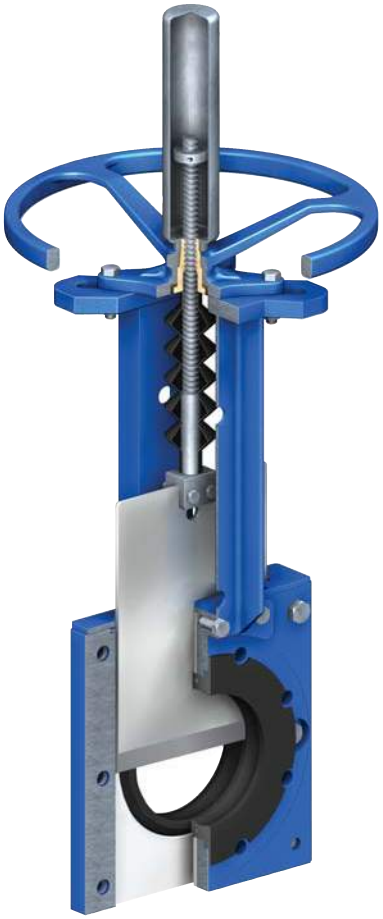
ITT

ENGINEERED FOR LIFE

33 PTA / 33 PTD



33 PTA
Heavy Duty Slurry



33 PTD
Light to Medium Duty Slurry

ITT is a global leader in fluid handling with 65 years of design, manufacture, and fabrication of engineered valves with specific expertise in slurry applications.

Customers depend on ITT Engineered Valves for reliable delivery, cost effective solutions, and after sale support.

The 33 PTA and 33 PTD push through style knife gate valves are designed specifically for demanding slurry applications and designed to maximize service life and minimize down time.

Modes of operation

How the valves work:

The PTA and PTD slurry valves are a push through design which discharges a minimum amount of process media when cycling between open and closed. In the open position the sleeves seal against each other providing the pressure barrier. During operation the gate separates the sleeves as it transitions from open to closed, which leads to a momentary discharge. This small amount of discharge exits through the bottom of the valve and can be safely directed away with the use of a splash guard mounted to the bottom of the valve.

Open Position

- Gate fully withdrawn from process flow
- Sleeves in contact with each other sealed by axial compression
- Pressure boundary maintained by sleeves
- No obstructions or cavities for solids to collect
- Zero discharge in open position

Mid-stroke Position

Closed Position

- Gate has separated sleeves
- Sleeves in contact with gate and sealed by axial compression
- Pressure boundary maintained
- Zero discharge in closed position

Standard Actuation Types:

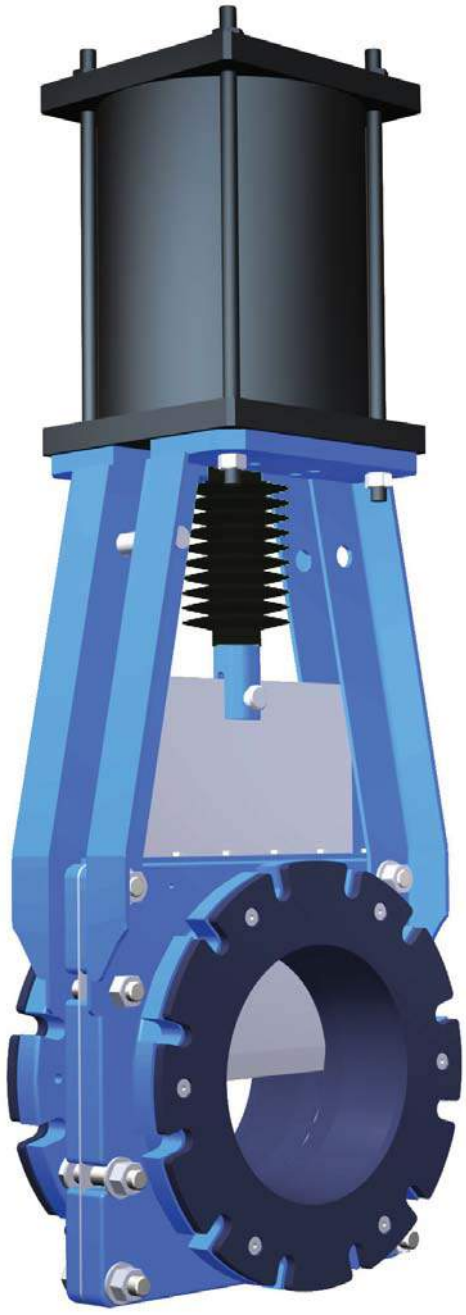
Handwheel

Bevel Gear

Pneumatic

Hydraulic

33 PTA



33 PTA Heavy Duty Slurry Valve

- Engineered elastomer sleeves provide maximum performance throughout a wide range of abrasive and corrosive applications
- Able to be used in wet or dry applications with large particles
- Full port opening eliminates turbulence and minimizes pressure drop across valve
- Heavy duty sleeves are molded with an integral, fully encapsulated stiffener ring
- Full gate closure is assured by the lack of a cavity where solids can collect
- Integrated gate wiper extends gate and sleeve life and minimizes the possibility of discharge from the top of the valve
- No metal components are in contact with the process flow when in the open position
- Heavy duty sleeves are replaceable without valve disassembly
- 100% factory tested for 100% bi-directional bubble tight shut-off with zero downstream leakage
- No lubrication required

General Applications:

Mining
Power
Pulp and Paper
Alumina
Chemical
Cement, Sand, Aggregate

Materials of Construction:

Housing: Cast ductile iron
Gate: 316 stainless steel
Sleeves: Natural rubber (standard)

Temperature Rating:

Natural rubber sleeves = -50°F – 180°F (-46°C – 82°C)
See page 5 for alternate sleeve materials

Pressure Ratings:

3" - 24" (DN 80-600):
100 psi CWP (6.9 bar)

26" - 36" (DN 650-900):
75 psi CWP (5.2 bar)

Optional gate materials are available to accommodate higher pressure requirements. Consult factory for larger sizes and higher pressure ratings.

33 PTA Features

Available Sleeve Materials:

Natural Rubber (standard):
This sleeve material has the highest resistance to abrasion and tearing, and it also has good resistance to heat. Maximum temperature 180°F (82°C).

EPDM:
This sleeve material has a wide variety of applications with superior resistance to solvents, acids, and alkalais as well as water and steam. Excellent resistance to higher temperatures. Great resistance to ozone and sunlight. Not recommended for use with oils, gasoline or other hydrocarbon based solvents or agents. Maximum temperature is 300°F (149°C).[1]

NBR:
This sleeve material has excellent resistance to petroleum based oils, greases and other non oxidizing chemicals as well as hydrocarbon based agents. Poor resistance to ozone and oxygenated solvents. Maximum temperature is 250°F (121°C).[1]

HNBR:
This sleeve material has excellent resistance to petroleum based oils, greases and other non oxidizing chemicals as well as hydrocarbon based agents. Poor resistance to ozone and oxygenated solvents. Maximum temperature is 280°F (138°C).[1]

Chlorbutyl:
This sleeve material has good resistance to heat, oxygen, ozone and sunlight. Excellent resisitant to alkalais and oxygenated solvents, water and steam. Poor resistance to hydrocarbon based agents. Maximum temperature is 230°F (110°C).[1]

Neoprene:
This sleeve material is a general purpose sleeve material with resistance to mineral oils and greases. Fair resisitance to abrasion. Maximum temperature is 180°F (82°C).[1]

Note: All hazardous media and non-hazardous media above 180F must utilize safety precautions such as a splash guard to redirect the high temperature or hazardous discharge (see page 12 for details).
1 Exposure to continuous elevated temperatures will result in premature aging of the elastomer.

Standard Configuration:

- Ductile iron housing
- 316SS gate
- Natural rubber sleeves
- Mild steel yoke
- Ductile iron handwheel
- Rubber coated retaining ring (8" and larger)

Options

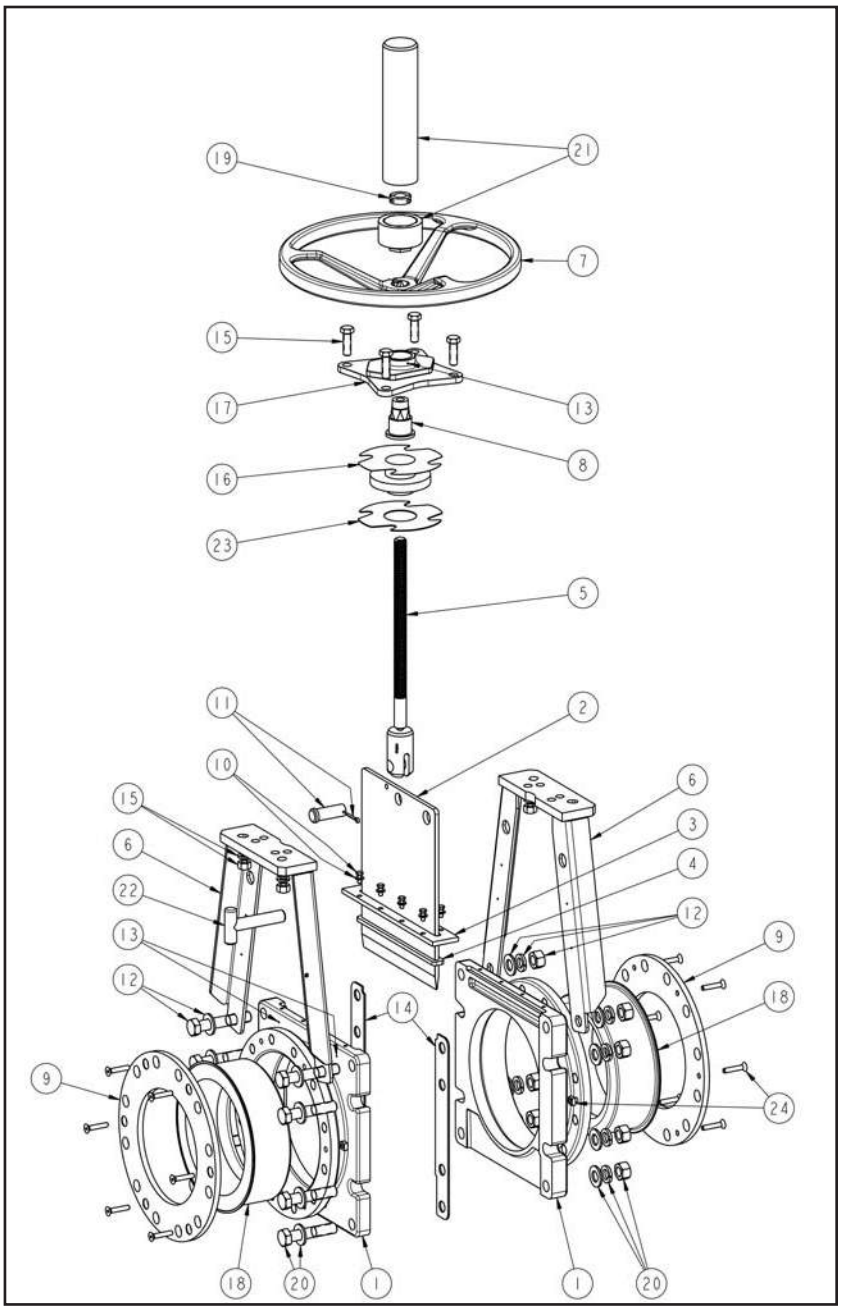
- Alternate yoke materials
- Rod boots
- Handwheel stem covers
- Alternate actuation
  - Hand wheel
  - Bevel gear
  - Air cylinder
  - Hydraulic cylinder
  - Electric
  - Other
- Alternate wiper material
- Alternate sleeve configuration without load distribution rings (consult factory)
- Alternate sleeve material based on service conditions (media and temperature)
- Limit switches and positioners per customers' requirements

Features:

- Cast iron body housing
- Heavy duty yoke
- Lockout/tagout
- Full gate withdrawl
- Packingless design
- Heavy duty elastomer sleeves
- Unobstructed flow
- Blind flange capable
- Retainer rings to aid in installation

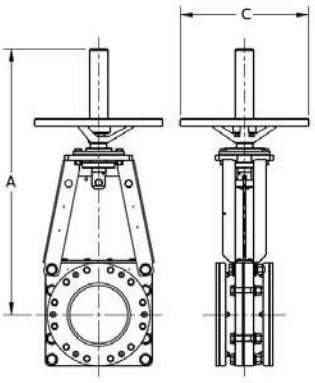
33 PTA

33 PTA Exploded View Parts List		
1	Body	Ductile Iron
2	Gate	316 SS
3	Wiper Gland	Mild Steel
4	Wiper Material	Acrylic Silicone
5	Stem Assembly	304 SS
6	Yoke	Mild Steel
7	Handwheel	Ductile Iron
8	Stem Nut	Bronze
9	Sleeve Retainer Ring	Rubber/Mild Steel
10	Packing Gland Fasteners	Plated Steel
11	Gate Fasteners	304 SS
12	Yoke Fasteners	Plated Steel
13	Greese Fitting	Plated Steel
14	Body Spacer	Carbon Steel
15	Yoke Hub Fasteners	Plated Steel
16	Rod Boot	Nylon
17	Yoke Hub	Mild Steel
18	Sleeve	Rubber/Mild Steel
19	Stop Nut	Carbon Steel
20	Body Fasteners	Stainless Steel
21	Stem Cover	Mild Steel
22	Lock Pin	17-4 SS
23	Rod Boot Spacer Plate	Stainless Steel
24	Sleeve Retainer Fasteners	Plated Steel

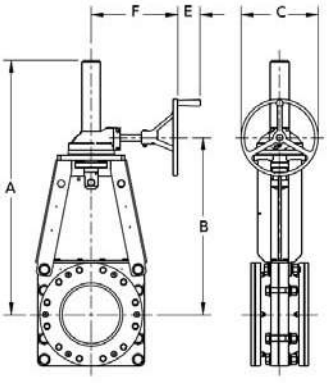


PTA Dimensions

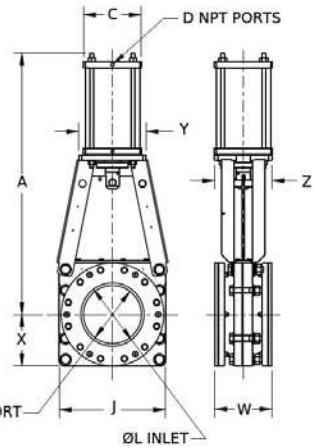
Hand Wheel



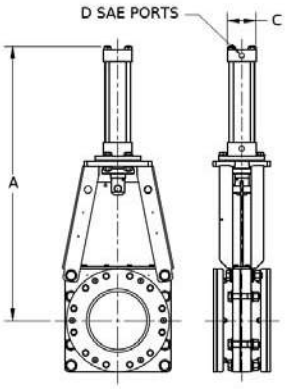
Bevel Gear



Air Cylinder



Hydraulic Cylinder



Dimensions (inches), Weight (lbs.)

Valve Size										Hand Wheel		
IN	DN	ØH	J	ØL	W*	W**	X	Y	Z	A	C	Weight
3	75	2.41	8.88	2.81	6.88	5.88	4.44	8.00	7.62	23.28	16	83
4	100	3.33	11.00	3.88	6.88	5.88	5.50	8.50	7.24	24.97	16	104
6	150	5.38	13.00	5.81	7.00	6.00	6.50	8.50	8.01	28.35	16	119
8	200	6.88	15.25	7.75	7.25	6.25	7.63	8.50	8.99	33.95	20	214
10	250	9.06	16.56	9.81	8.88	7.88	8.28	10.50	8.99	41.26	20	293
12	300	10.75	21.00	11.50	10.13	9.13	10.50	12.75	12.75	-	-	-
14	350	12.50	22.75	13.25	10.13	9.13	11.38	12.75	12.72	-	-	-
16	400	14.00	24.25	14.75	11.00	9.75	12.13	14.75	14.74	-	-	-
18	450	14.88	26.50	16.75	12.25	10.75	13.25	14.75	14.74	-	-	-
20	500	15.56	28.38	18.50	14.13	12.63	14.19	17.00	17.00	-	-	-
24	600	21.19	33.80	23.00	14.63	13.13	16.90	19.00	18.99	-	-	-

Valve Size		Bevel Gear						Air Cylinder				Hydraulic Cylinder			
IN	DN	A	B	C	E	F	Weight	A	C	D	Weight	A	C	D	Weight
3	75	22.26	14.95	12	3.5	13.48	132	19.32	5.5	0.38"-18	75	21.07	3.0	8	77.2
4	100	23.95	15.75	12	3.5	13.48	153	22.26	6.5	0.38"-18	101	23.50	3.0	8	98.5
6	150	27.33	19.13	12	3.5	13.48	169	28.39	9.0	0.38"-18	145	29.76	3.5	8	124
8	200	32.78	23.47	12	3.5	13.48	246	33.34	9.0	0.38"-18	236	34.34	3.5	8	200
10	250	39.47	27.52	12	3.5	13.48	325	40.65	9.0	0.38"-18	322	42.65	4.5	12	314
12	300	45.79	31.02	24	-	16.65	475	47.15	12.8	0.50"-14	502	48.53	5.0	12	446
14	350	48.69	33.92	24	-	16.65	542	51.80	12.8	0.50"-14	571	53.18	5.0	12	562
16	400	55.24	39.61	24	-	19.26	806	58.45	14.8	0.75"-14	1072	58.93	5.0	12	754
18	450	61.98	41.73	24	-	19.26	956	61.88	14.8	0.75"-14	1225	63.14	6.5	12	972
20	500	65.36	45.11	24	-	19.26	1187	67.58	17.0	0.75"-14	1463	68.52	6.5	12	1214
24	600	77.95	53.32	24	-	19.26	1553	81.60	19.0	0.75"-14	1926	82.91	7.5	16	1694

Dimensions (mm), Weight (kgs.)

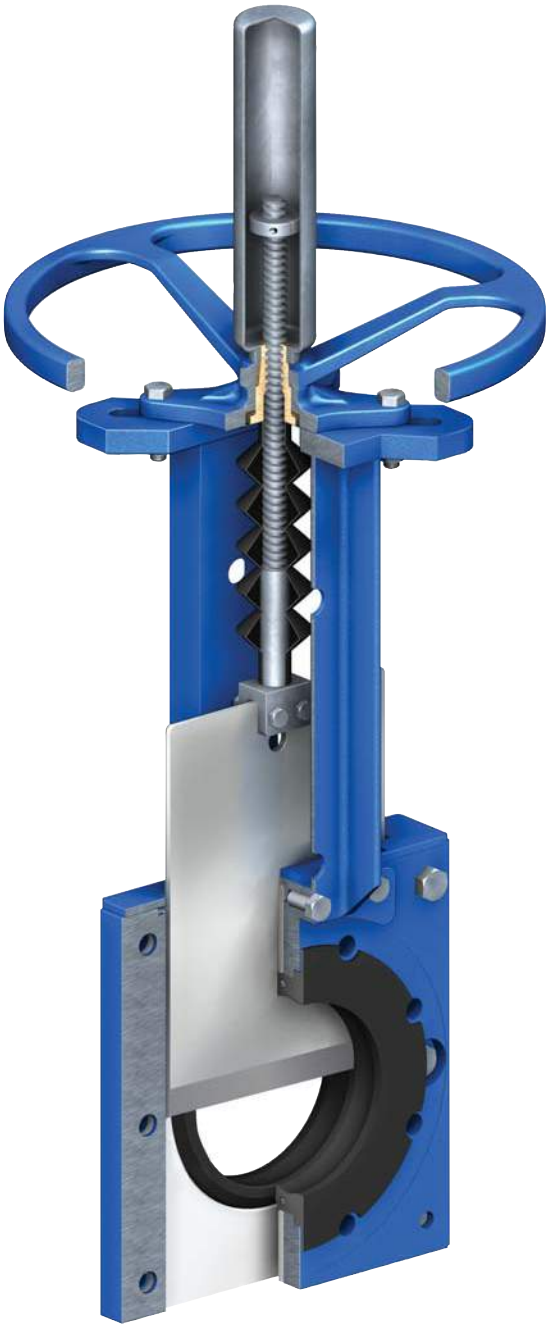
Valve Size									Hand Wheel			
DN	IN	ØH	J	ØL	W*	W**	X	Y	Z	A	C	Weight
75	3	61	226	71	175	149	113	203	193	591	406	37.6
100	4	85	279	99	175	149	140	216	184	634	406	47.2
150	6	137	330	148	178	152	165	216	203	720	406	54.0
200	8	175	387	197	184	159	194	216	228	862	508	97.1
250	10	230	421	249	226	200	210	267	228	1048	508	133
300	12	273	533	292	257	232	267	324	324	-	-	-
350	14	318	578	337	257	232	289	324	323	-	-	-
400	16	356	616	375	279	248	308	375	374	-	-	-
450	18	378	673	425	311	273	337	375	374	-	-	-
500	20	395	721	470	359	321	360	432	432	-	-	-
600	24	538	859	584	372	334	429	483	482	-	-	-

Valve Size		Bevel Gear						Air Cylinder				Hydraulic Cylinder			
DN	IN	A	B	C	E	F	Weight	A	C	D	Weight	A	C	D	Weight
75	3	565	380	305	89	342	59.9	491	140	0.38"-18	33.8	535	76.2	8	35
100	4	608	400	305	89	342	69.4	565	165	0.38"-18	45.8	597	76.2	8	45
150	6	694	486	305	89	342	76.7	721	229	0.38"-18	65.8	756	88.9	8	56
200	8	833	596	305	89	342	112	847	229	0.38"-18	107	872	88.9	8	91
250	10	1003	699	305	89	342	147	1033	229	0.38"-18	146	1083	114	12	142
300	12	1163	788	610	-	423	215	1198	325	0.50"-14	228	1233	127	12	202
350	14	1237	862	610	-	423	246	1316	325	0.50"-14	259	1351	127	12	255
400	16	1403	1006	610	-	489	366	1485	376	0.75"-14	486	1497	127	12	342
450	18	1574	1060	610	-	489	434	1572	376	0.75"-14	556	1604	165	12	441
500	20	1660	1146	610	-	489	538	1717	432	0.75"-14	664	1740	165	12	551
600	24	1980	1354	610	-	489	704	2073	483	0.75"-14	874	2106	191	16	768

* Face to face including sleeve retainer rings. Add 1/4" to 1/2" for easy installation
** Face to face without sleeve retainer rings. Add 1/4" to 3/4" for easy installation

Note: Consult factory for alternate flange drilling patterns

33 PTD



33 PTD Light to Medium Duty Slurry Valve

- Engineered elastomer sleeves provide maximum performance throughout a wide range of abrasive and corrosive applications
- Full ported opening eliminates turbulence and minimizes pressure drop across valve
- Heavy duty sleeves are molded with an integral, fully encapsulated stiffener ring
- UHMWP gate support liners guide the gate through the entire stroke, greatly reducing wear on the sleeves and gates
- Full gate closure is assured by the lack of a cavity where solids can collect
- Integrated gate wiper extends gate and sleeve life and minimizes the possibility of discharge from the top of the valve
- No metal components are in contact with the process flow when in the open position
- Heavy duty sleeves are replaceable without valve disassembly
- Open and closed lockout / tagout positions
- 100% factory tested for 100% bi-directional bubble tight shut-off with zero downstream leakage
- No lubrication required

Materials of Construction:
Housing: Mild steel
Gate: 316 Stainless Steel
Sleeves: Natural Rubber

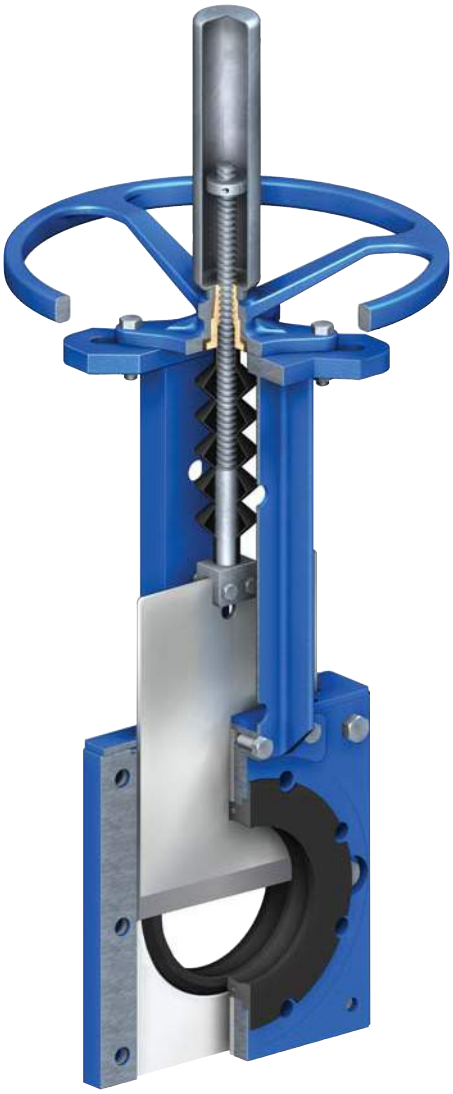
Temperature Rating:
Natural Rubber sleeves = -50°F –180°F (-46°C – 82°C)
See page 9 for alternate sleeve materials

Pressure Ratings:
3" - 16" (DN 80 - 400):
150 CWP (10.3 Bar)

18" - 24" (DN 450 - 600):
90 CWP (6.2 Bar)

Alternate gate materials are available to accommodate higher pressure requirements.

33 PTD Features



Available Sleeve Materials:

Natural Rubber (standard):
This sleeve material has the highest resistance to abrasion and tearing, and it also has good resistance to heat. Maximum temperature 180°F (82°C).

EPDM:
This sleeve material has a wide variety of applications with superior resistance to solvents, acids, and alkalais as well as water and steam. Excellent resistance to higher temperatures. Great resistance to ozone and sunlight. Not recommended for use with oils, gasoline or other hydrocarbon based solvents or agents. Maximum temperature is 300°F (149°C).[1]

Note: All hazardous media and non-hazardous media above 180F must utilize safety precautions such as a splash guard to redirect the high temperature or hazardous discharge (see page 12 for details).
1 Exposure to continuous elevated temperatures will result in premature aging of the elastomer.

Standard Configuration:

- Mild steel housing
- 316SS gate
- Natural rubber sleeves with integral retainer ring
- Mild steel yoke
- Ductile iron handwheel

Options

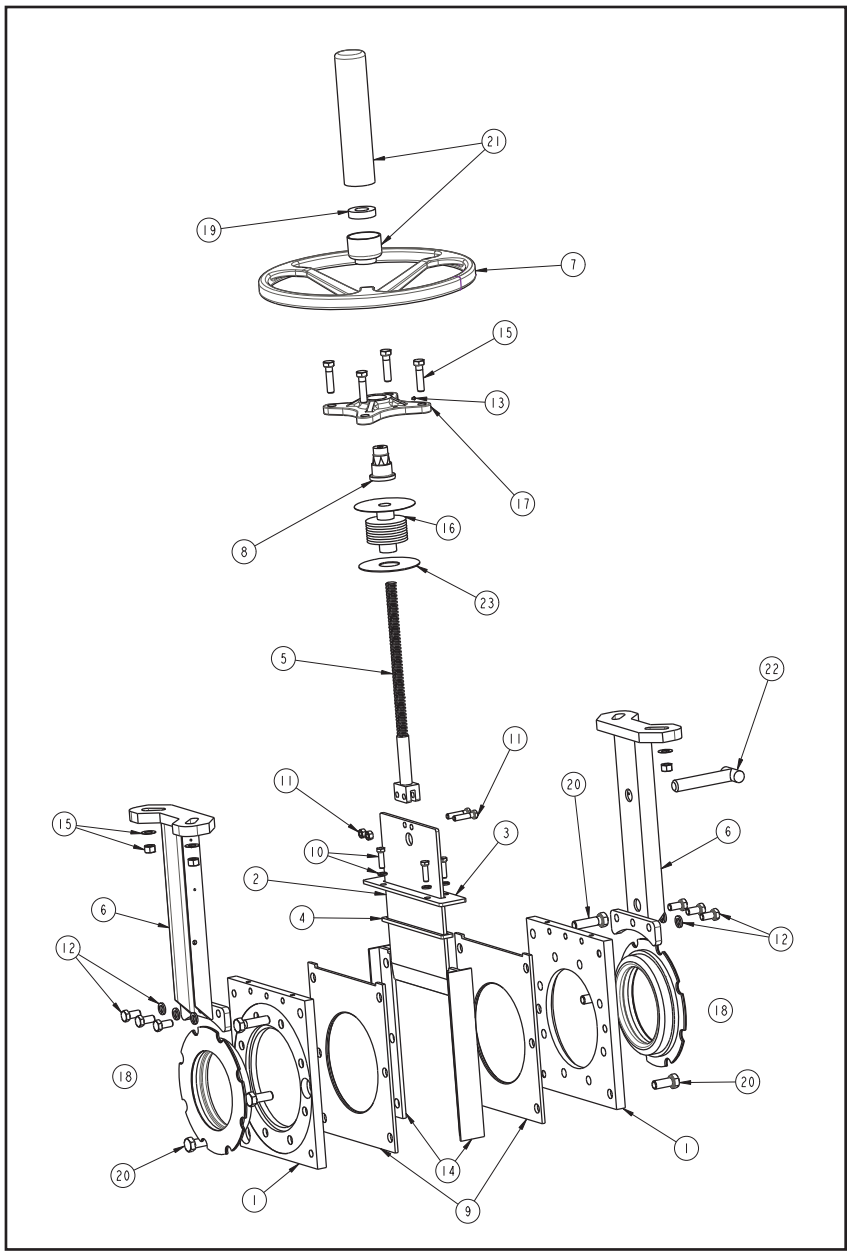
- Alternate flange drilling
- Rod boots
- Handwheel stem covers
- Alternate body materials
- Alternate yoke materials
- Alternate actuation
  - Hand wheel
  - Bevel gear
  - Air cylinder
  - Hydraulic cylinder
  - Electric
  - Other
- Alternate wiper material
- Alternate sleeve material based on service conditions (media and temperature)
- Limit switches and positioners per customers' requirements

Features:

- Steel body housing
- Heavy duty yoke
- Lockout/tagout
- Full gate withdrawl
- Packingless design
- Heavy duty elastomer sleeves
- Unobstructed flow
- Blind flange capable
- Retainer rings to aid in installation

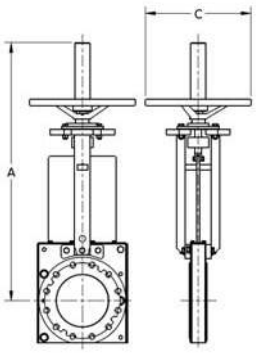
33 PTD

33 PTD Exploded View Parts List		
1	Body	Mild Steel
2	Gate	316 SS
3	Wiper Gland	Mild Steel
4	Wiper Material	Acrylic Silicone
5	Stem Assembly	304 SS
6	Yoke	Mild Steel
7	Handwheel	Ductile Iron
8	Stem Nut	Bronze
9	Gate Support Liner	UHMWP
10	Packing Gland Fasteners	Plated Steel
11	Gate Fasteners	Plated Steel
12	Yoke Fasteners	Plated Steel
13	Grease Fitting	Plated Steel
14	Body Spacer	Mild Steel
15	Yoke Hub Fasteners	Plated Steel
16	Rod Boot	Nylon
17	Yoke Hub	Mild Steel
18	Sleeve with Retainer Ring	Rubber/Mild Steel
19	Stop Nut	Carbon Steel
20	Body Fasteners	Stainless Steel
21	Stem Cover	Mild Steel
22	Lock Pin	17-4 SS
23	Rod Boot Support Plate	Stainless Steel

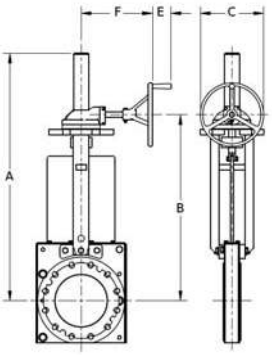


PTD Dimensions

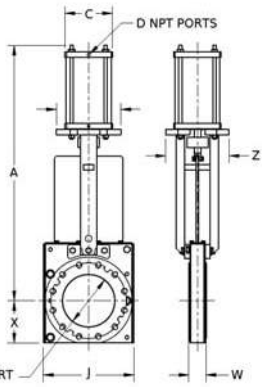
Hand Wheel



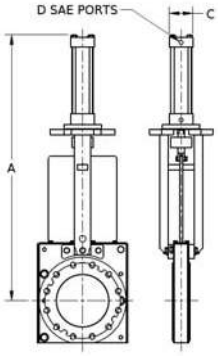
Bevel Gear



Air Cylinder



Hydraulic Cylinder



Dimensions (inches), Weight (lbs.)

Valve Size								Hand Wheel			Bevel Gear						Hydraulic Cylinder		
IN	DN	ØH	J	W	X	Y	Z	A	C	Weight	A	B	C	E	F	Weight	A	C	D
2	50	Consult Factory						-	-	-	-	-	-				Consult Factory		
3	80	3.00	8.00	2.50	4.25	6.50	6.50	24.81	16.00	90	-	-	-	-	-	-			
4	100	4.00	9.50	2.50	4.50	6.50	6.50	27.56	16.00	100	-	-	-	-	-	-			
6	150	6.00	11.75	2.75	6.00	9.00	8.88	33.94	16.00	130	-	-	-	-	-	-			
8	200	8.00	14.38	3.25	6.50	11.00	10.88	42.44	20.00	210	-	-	-	-	-	-			
10	250	10.00	17.13	3.25	8.19	12.25	12.00	50.59	20.00	280	-	-	-	-	-	-			
12	300	12.00	19.63	3.50	10.00	12.25	12.25	-	-	-	57.88	40.81	12.00	3.50	13.59	164			
14	350	13.25	21.63	3.63	11.00	14.50	14.50	-	-	-	63.39	44.31	12.00	3.50	13.59	218			
16	400	15.25	24.00	4.19	13.00	16.50	16.63	-	-	-	65.88	48.88	12.00	3.50	16.25	323			
18	450	17.25	25.75	4.19	13.75	16.50	16.63	-	-	-	70.25	51.44	18.00	6.50	17.00	345			
20	500	19.25	28.00	5.19	15.50	18.00	19.00	-	-	-	80.63	59.31	18.00	6.50	17.00	504			
24	600	23.25	32.75	5.19	21.4	18.00	19.00	-	-	-	100.63	72.56	24.00	6.50	18.25	590			

Valve Size		Air Cylinder															
IN	DN	Cyl Size	A	C	D	Cyl Size	A	C	D	Cyl Size	A	C	D	Cyl Size	A	C	D
2	50	Consult Factory						-	-	-	-	-	-	-	-		
3	80	5"	24.50	5.50	3/8"-18	6"	24.75	6.50	3/8"-18	-	-	-	-	-	-	-	-
4	100	5"	27.56	5.50	3/8"-18	6"	27.25	6.50	3/8"-18	-	-	-	-	-	-	-	-
6	150	6"	33.88	6.50	3/8"-18	8"	34.25	9.00	3/8"-18	-	-	-	-	-	-	-	-
8	200	8"	42.25	9.00	3/8"-18	10"	43.75	11.00	1/2"-14	-	-	-	-	-	-	-	-
10	250	8"	50.75	9.00	3/8"-18	10"	52.25	11.00	1/2"-14	12"	52.75	12.75	1/2"-14	-	-	-	-
12	300	8"	57.63	9.00	3/8"-18	10"	59.18	11.00	1/2"-14	12"	59.63	12.75	1/2"-14	-	-	-	-
14	350	10"	64.63	11.00	1/2"-14	12"	65.13	12.75	1/2"-14	14"	65.00	14.75	3/4"-14	-	-	-	-
16	400	10"	70.69	11.00	1/2"-14	12"	71.19	12.75	3/4"-14	14"	71.06	14.75	3/4"-14	16"	71.38	17.0	3/4"-14
18	450	10"	75.06	11.00	1/2"-14	12"	75.56	12.75	3/4"-14	14"	75.44	14.75	3/4"-14	16"	75.75	17.0	3/4"-14
20	500	12"	85.94	12.75	1/2"-14	14"	85.81	14.75	3/4"-14	16"	86.13	17.00	3/4"-14	18"	87.13	19.0	3/4"-14
24	600	12"	105.9	12.75	1/2"-14	14"	105.8	14.75	3/4"-14	16"	106.13	17.00	3/4"-14	18"	107.13	19.0	3/4"-14

Dimensions (mm), Weight (kgs.)

Valve Size								Hand Wheel			Bevel Gear						Hydraulic Cylinder		
DN	IN	ØH	J	W	X	Y	Z	A	C	Weight	A	B	C	E	F	Weight	A	C	D
50	2	Consult Factory						-	-	-	-	-	-				Consult Factory		
80	3	76	203	64	108	165	165	630	406	40.8	-	-	-	-	-	-			
100	4	102	241	64	114	165	165	700	406	45.4	-	-	-	-	-	-			
150	6	152	298	70	152	229	226	862	406	59.0	-	-	-	-	-	-			
200	8	203	365	83	165	279	276	1078	508	95.3	-	-	-	-	-	-			
250	10	254	435	83	208	311	305	1285	508	127	-	-	-	-	-	-			
300	12	305	499	89	254	311	311	-	-	-	1470	1037	305	89	345	74.4			
350	14	337	549	92	279	368	368	-	-	-	1610	1125	305	89	345	98.9			
400	16	387	610	106	330	419	422	-	-	-	1673	1242	305	89	413	147			
450	18	438	654	106	349	419	422	-	-	-	1784	1307	457	165	432	156			
500	20	489	711	132	394	457	483	-	-	-	2048	1506	457	165	432	229			
600	24	591	832	132	543	457	483	-	-	-	2556	1843	610	165	464	268			

Valve Size		Air Cylinder															
IN	DN	Cyl Size	A	C	D	Cyl Size	A	C	D	Cyl Size	A	C	D	Cyl Size	A	C	D
50	2	Consult Factory						-	-	-	-	-	-	-	-		
80	3	127mm	622	140	3/8"-17	152mm	629	165	3/8"-17	-	-	-	-	-	-	-	-
100	4	127mm	700	140	3/8"-18	152mm	692	165	3/8"-18	-	-	-	-	-	-	-	-
150	6	152mm	861	165	3/8"-18	203mm	870	229	3/8"-18	-	-	-	-	-	-	-	-
200	8	203mm	1073	229	3/8"-18	254mm	1111	279	1/2"-14	-	-	-	-	-	-	-	-
250	10	203mm	1289	229	3/8"-18	254mm	1327	279	1/2"-14	305mm	1340	324	1/2"-14	-	-	-	-
300	12	203mm	1464	229	3/8"-18	254mm	1503	279	1/2"-14	305mm	1515	324	1/2"-14	-	-	-	-
350	14	254mm	1642	279	1/2"-14	305mm	1654	324	1/2"-14	356mm	1651	375	3/4"-14	-	-	-	-
400	16	254mm	1796	279	1/2"-14	305mm	1808	324	3/4"-14	356mm	1805	375	3/4"-14	406mm	1813	432	3/4"-14
450	18	254mm	1907	279	1/2"-14	305mm	1919	324	3/4"-14	356mm	1916	375	3/4"-14	406mm	1924	432	3/4"-14
500	20	305mm	2183	324	1/2"-14	356mm	2180	375	3/4"-14	406mm	2188	432	3/4"-14	457mm	2213	483	3/4"-14
600	24	305mm	2691	324	1/2"-14	356mm	2688	375	3/4"-14	406mm	2696	432	3/4"-14	457mm	2721	483	3/4"-14

Note: Consult factory for alternate flange drilling patterns

Safety is Our Concern

For 65 years ITT Engineered Valves has placed a strong emphasis on quality, safety, environmental, and health concerns – for our workforce, our customers and populations served by our products. Every product we design and manufacture keeps our core values at the forefront.

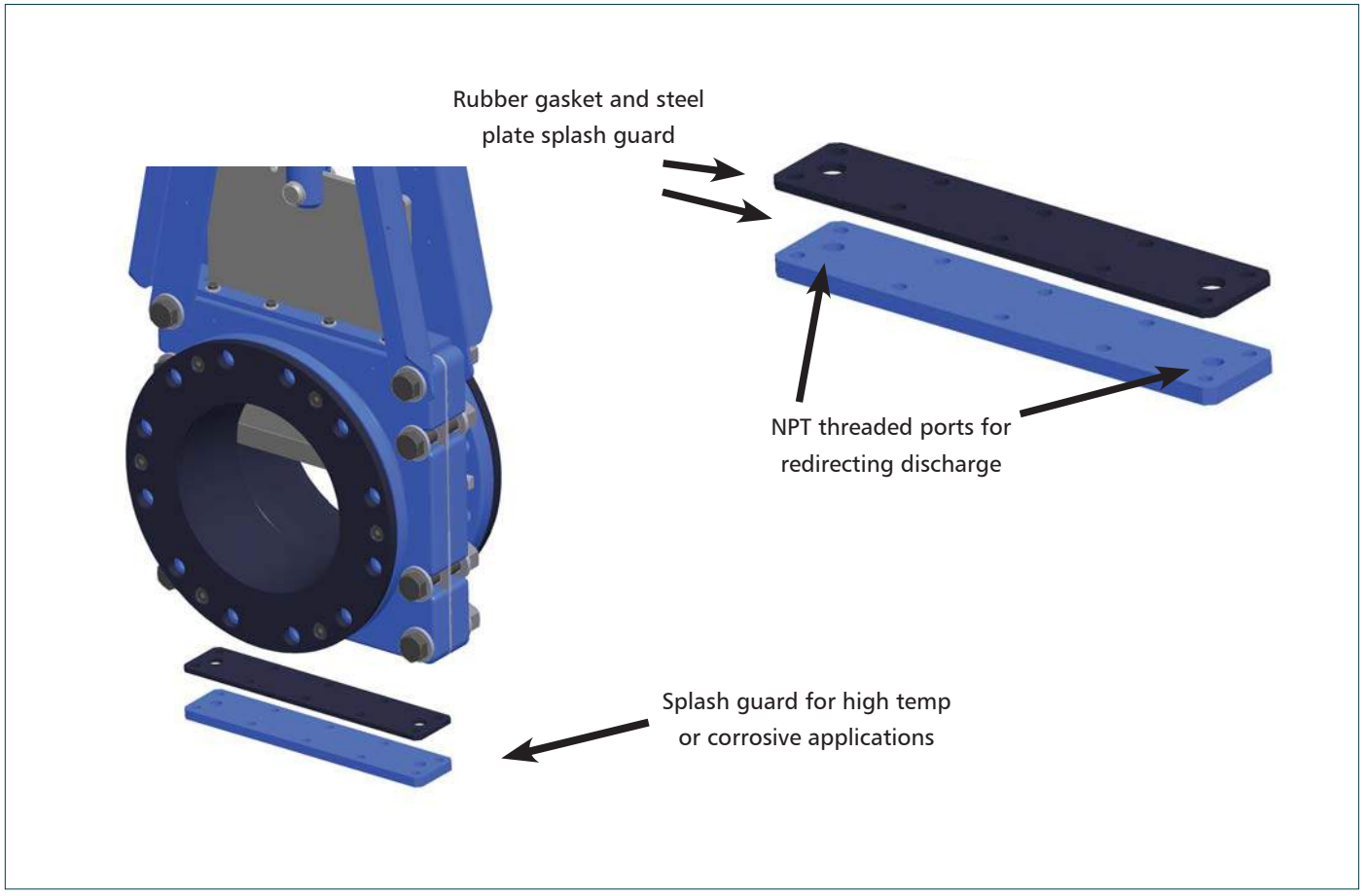
Push through valves discharge line media from the bottom of the valve when transitioning from open to closed. Discharge from push through valves must be taken into consideration when exposure would be hazardous to personnel or the environment.

ITT Engineered Valves limits the temperature rating of non-hazardous line media of our 33 PTA and 33 PTD to 180° F when not used in conjunction with proper safety precautions. Installation location of discharging valves must always be taken into consideration to eliminate exposure to personnel and the environment.

The 33 PTA and 33 PTD can be used in Hazardous/Non-Hazardous media above 180°F, within elastomer limitations, but must utilize safety precautions such as a splash guard to redirect the high temperature or hazardous discharge to a safe location.

What does a discharging valve mean?

- Discharging valves are designed to clear the sleeves and body cavities of solids by allowing a small amount of media to flush out through the bottom of the valve every time the valve is cycled open or closed.
- This "self flushing" feature eliminates the need for additional flush piping or routine cleaning of the valve to remove solids build-up.
- Splash guards mount to the bottom of the valve and have threaded ports to allow customer to re-direct discharge to a safe area.
- Splash guards and instructions for their use are available from ITT.



Available Sleeve Materials

Natural Rubber:

Advantages:
- Fatigue and tear resistance
- Dynamic loading
- High tensile strength and resistant to elongation
- Good flexibility in cold weather (-50°F)

Disadvantages:
- Poor resistance to grease/oil, ozone, acids & hydrocarbon fuels
- Continuous operation temperature <180°F

EPDM:

Advantages:
- Low friction coefficient
- Good outdoor weathering resistance
- Sustain high continuous operating temperature
- Excellent anti-hydrolyzing (water & steam) resistance

Disadvantages:
- Poor resistance to hydrocarbon fuels & greases
- Low resistance to most of mineral-oil-based-fluids

Neoprene:

Advantages:
- Resistance to mineral oils and greases

Disadvantages:
- Reduced resistance to abrasion compared to natural rubber

NBR:

Advantages:
- Resistant to hydrocarbon based solvents
- Good resistance to alkalis, gasoline, oil and acids

Disadvantages:
- Poor resistance to ozone and oxygenated solvents
- Low resistance to most of mineral-oil-based-fluids

HNBR:

Advantages:
- Resistant to hydrocarbon based solvents
- Good resistance to alkalis, gasoline, oil and acids

Disadvantages:
- Poor resistance to ozone and oxygenated solvents
- Low resistance to most of mineral-oil-based-fluids

Chlorbutyl:

Advantages:
- Heath, oxygen, ozone and sunlight resistance
- Resistance to alkalais, oxygenated solvents

Disadvantages:
- Poor resistance to hydrocarbon based on agents

33PTA sleeve with separate retaining ring

33PTD sleeve with integral retaining ring

Slurry Valve Selection

In addition to the 33PTA and 33PTD slurry valves, ITT offers other valves that are well suited for slurry service. Particle size, slurry concentration, pressure, temperature and line size are considerations when selecting the proper valve for your service. The following guidelines will aid in the selection of the most common valve appropriate for the specific application. Please contact your local sales representative or the factory for special considerations or alternate configurations that may be suited for your service conditions.

Smaller Particles, Low Solids

- Presence of solids is primarily by accident
- Solids size smaller than 100 mesh (less than 0.006 inches or 149 microns)
- Non-settling slurry
- The slurry specific gravity < 1.05
- Less than 10% solids by weight

Fabri-Valve 33PTD
Additional Valve Options
Fabri-Valve C67 with Chest Liners
Fabri-Valve XS150-ULV
Fabri-Valve CF33/133

Smaller Particles, High Solids

- Solids size smaller than 100 mesh (less than 0.006 inches or 149 microns)
- Up to 30% solids by weight

Fabri-Valve 33PTD
Additional Valve Options
Fabri-Valve XS150-ULV
Fabri-Valve CF33/133

Medium Particles

- Solids size from 100 to 6 mesh (0.006-0.132 inches or 149-3353 microns)
- Settling or non settling slurry
- The slurry specific gravity < 1.2
- 10-30% solids by weight

Fabri-Valve 33PTA or 33PTD
Additional Valve Options
Fabri-Valve CF33/133
Must have flush bonnet or splash guard

Larger Particles

- Slurry's main purpose is to transport material
- Solids size 6 to 4 mesh (0.132-.0185 inches or 3353-4760 microns)
- Settling or non-settling slurry
- The slurry specific gravity > 1.2
- Greater than 30% solids by weight

Fabri-Valve 33PTA or 33PTD
Additional Valve Options
Fabri-Valve CF33/133
Must have flush bonnet or splash guard

Valve Guide by Slurry Type

This guide is intended to be used as a general guide to slurry valve applications.
Refer to the factory for specific recommendations based on actual service conditions.

					Dirty Water	Low Concentration <10% Solids			Medium Concentration 10-30% solids			High Concentration >30% solids		
Product	Max. Dia (In.)	Discharge	Pressure Limit (PSI)	Temperature Limit (°F)	Small Particulate	Small Particulate	Medium Particulate	Large Particulate	Small Particulate	Medium Particulate	Large Particulate	Small Particulate	Medium Particulate	Large Particulate
C/F 133	54	Zero[1]	150[2]	200[3]										
C/F 33	54	High	150[2]	200[3]										
33PTA	36	Low	100[2]	180[4]										
33PTD	24	Low	90/150[5]	180[4]										
67 w/ Chest Liners	24	Zero	150	350										
	30		100											
	36		80											
XS150-ULV	24	Zero	150	170[3]										
XS150	24	Zero	285	280[3]										
45 RP	24	Zero	150	170[3]										
Dia-Flo Straightway	12	Zero	100	225										
Dia-Flo Weir	12	Zero	200	350										
Cam-Tite	6	Zero	1500[6]	750[6]										

Best
Acceptable
Not Recommended

Particle Size	Small	Medium	Large*
microns	<149	149-3353	3353-4760
inches	<0.006	0.006-0.132	0.132-0.185
mesh size	>100	100-6	6-4

*Consult factory for larger particle sizes

1 Flushing or draining the bonnet is required.

2 Higher pressure options are available

3 Higher temperature options are available

4 Valve Temperature Rating = 180° F (Non hazardous line media). Hazardous/Non-Hazardous media above 180°F must utilize safety precautions such as a splash guard to redirect the high temperature discharge

33 PTA EPDM sleeves = -20–300°F (-29–149°C)

33 PTD EPDM = -20–300°F (-29–149°C)

Natural Rubber sleeves = -50–180°F (-46–82°C)

The maximum temperature limitation of the EPDM sleeve used in the 33PTA is 300°F (149°C). Exposure to continuous elevated temperatures will result in premature aging of the elastomer.

5 150 CWP (10.3 Bar): 3" - 16" (DN 80 - 400) and 90 CWP (6.2 Bar): 18" - 24" (DN 450 - 600)

6 Dependent on material selected and size

Customer is responsible to protect personnel and the environment from hazardous discharge.

ITT Engineered Valves

ITT Engineered Valves offers not only a broad range of specialty knife gate valves but also is an industry leading manufacturer of diaphragm and ball valves for corrosive and erosive services across many industries.

Fabri-Valve
C45


Dia-Flo
Diaphragm valve


Cam-Tite
ball valve


Fabri-Valve
XS150-ULV


Fabri-Valve
C/F 33/133

Fabri-Valve
C67

ITT Industrial Process Global Mining Capabilities

ITT Goulds dominance in the mining industry dates back to the latter 1800s. Designed for the most severe applications, our pumps can be found in coal, aluminum, copper, iron, clay, phosphate, potash, soda ash, salt, gold and aggregate industry throughout the world.

ITT offers the widest range of corrosion and abrasion resistant slurry pumps in the industry, including vertical, horizontal, and submersible designs for cyclone feed, tailings disposal, minerals processing, mine dewatering, clarifier underflow, and sump services. For more information visit: www.gouldspumps.com/market_MiningandMinerals.html

For more information contact:

Engineered Valves
1110 Bankhead Avenue
Amory, MS 38821 USA
tel (800) 541-1849
(662) 256-7185
fax 662-256-7932
www.engvalves.com
engvalves.custserv@itt.com

ITT Brazil
Estrada Velha Itu-Salto km 40.4
Salto, São Paulo 13324-195
tel 55-11 4602 9200
fax 55-11 4602 9215

ITT China
32F Tower A, Hongqiao City Center
of Shanghai, 100 Zunyi Rd,
Shanghai 200051, China
tel 86-21 2231-2222
fax 86-21 2231-2200

Engineered Valves
33 Centerville Road
Lancaster, PA 17603
tel 717-509-2200
fax 1-800-231-0330

ITT
ENGINEERED FOR LIFE