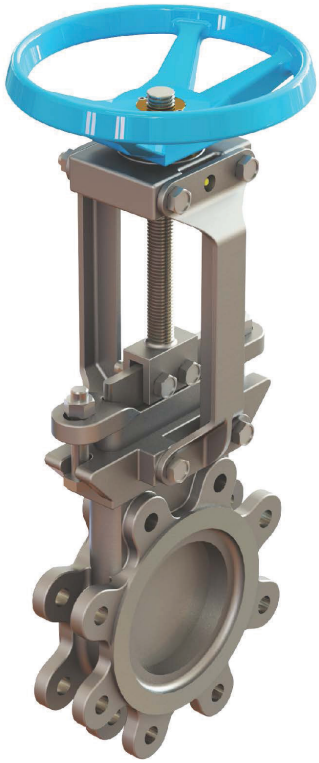
FIGURE 6500
KNIFE GATE VALVES

FNW®

STAINLESS STEEL UNI-DIRECTIONAL METAL-SEATED KNIFE GATE VALVE

Figure 6500 is an all-cast stainless steel body and yoke with investment cast packing follower. It is designed for the pulp and paper, chemical, mining, power, petroleum, and food process industries, as well as municipal water and waste treatment plants. It is ideal for handling dense mixtures of stock and slurries with uni-directional shutoff. The shearing action of the knife gate cuts through solids and cleans the seat as it closes.



FEATURES

- Uni-directional shutoff
- Maximum pressure: 150 PSI CWP
- Maximum temperature: 248°F (120°C)
- Cast stainless steel body, yoke, and packing gland
- Stainless steel hardware
- Gate edge radius (improves packing seal)
- Elastomer quad seal is standard in packing arrangement
- Resilient anti-extrusion ring (supports packing and acts as gate wiper)
- Machine gland pocket area
- Bonnetless, outside screw, and yoke
- Rising stem
- Smooth flow, non-clogging step seat design
- Cast iron hand wheel
- Available in sizes 2” – 24”
- Standard design accommodates locking device

PRODUCT SPECIFICATIONS

Standards

- Design: MSS SP-81
- Flange drilling: ANSI B16.5
- Seat/Shell test: MSS SP-81
- Material: ASME B16.34

FIGURE NUMBER MATRIX

FNW 6500		
SEAT	SIZE (IN.)	
Stainless Steel = S (Integral)	2 = K	12 = 12
	2-1/2 = L	14 = 14
	3 = M	16 = 16
	4 = P	18 = 18
	6 = U	20 = 20
	8 = X	24 = 24
	10 = 10	

CV & WEIGHT

Size (in.)	Cv	Wt (lbs)
2	240	20
2-1/2	565	24
3	565	29
4	1.040	31
6	2,440	51
8	4.460	75
10	6,250	128
12	9,400	163
14	12,500	243
16	16,500	309
18	21,400	386
20	27,000	463
24	39,700	540

Weights are for general reference only.

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FEATURES

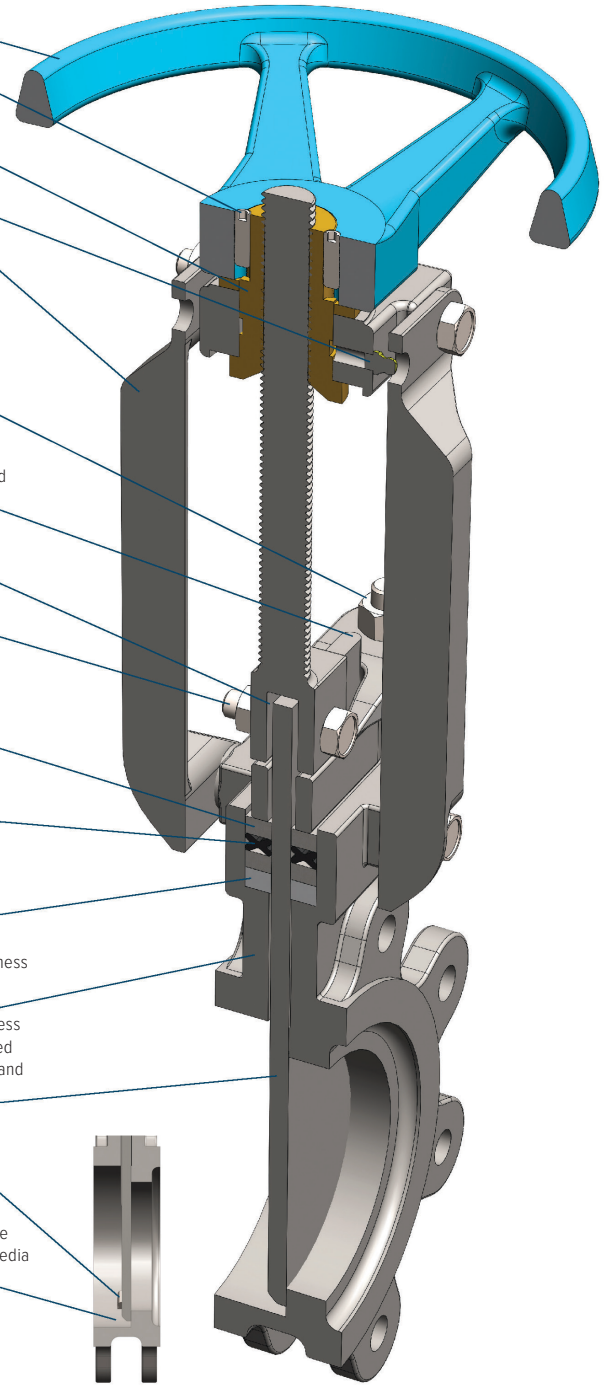
Hand wheel is heavy cast iron with a rounded grip and epoxy-coated hand wheel.

Double set screws prevent threaded-on hand wheel from backing off or coming loose.

Aluminum-bronze thrust components for antigalling operation.

Grease fitting for maintaining smooth drive sleeve operation.

Cast stainless steel yoke arms provide optimum flexural rigidity.



Stainless steel hardware is standard.

Radius gate edge improves packing seal and life. Along with the rounded packing chamber, the system reduces the amount of force needed to arrest packing leaks.

Stem-to-gate clevis is deliberately loose to allow play in gate to minimize binding.

Horizontal clevis bolts (except 2") provide flexibility of the gate during travel.

Multiple layers of PTFE impregnated square braid packing provides excellent gland sealing at full valve pressure differential.

Elastomer quad seal improves packing performance by promoting live loading of the packing.

Reinforced anti-extrusion ring enhances packing functionality, reduces friction, acts as a gate wiper, and supports the gate in horizontally mounted valves.

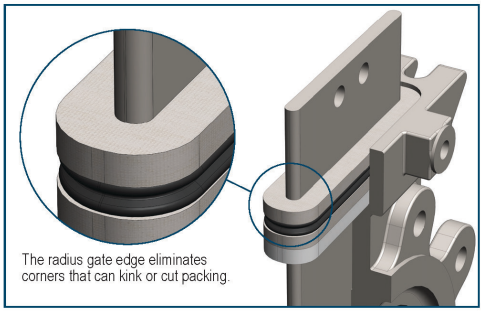
The single piece cast all stainless steel body is rugged and compact. It offers better leak tightness than fabricated or two-piece designs.

The gate is high-quality, ground-finished stainless steel. A generous gate thickness, well supported by the packing, resists distortion or deflection and is less likely to bend in severe conditions.

Gate wedges located in the body aid the final gate/seat sealing with a non-sliding motion.

A stepped seating design keeps the upstream area clear. There is no dead pocket space in the bottom of the body where suspended solids/media can collect.

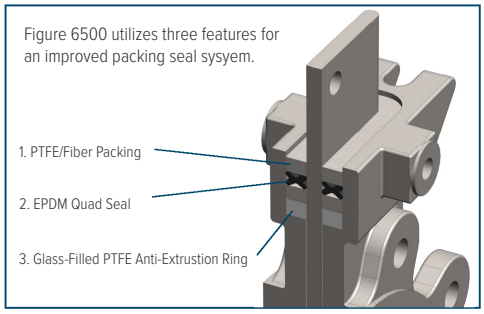
RADIUS GATE EDGE



A radius gate edge and curved packing chamber are standard on the Figure 6500 Knife Gate Valve. The curved configuration:

- Improves sealing by eliminating sharp corners
- Improves packing life
- Eliminates sharp corners where corrosion and/or erosion can occur
- Requires less compression, thus reducing gate friction
- Reduced gate friction means less thrust and torque needed for operation

PACKING CONFIGURATION



In addition to the curved packing chamber, the Figure 6500 Knife Gate Valve standard packing configuration includes:

- Multi-layered square braid PTFE impregnated fiber which provides excellent gland sealing at full valve pressure
- A center-located EPDM "quad" seal which provides multiple sealing contact points and semi-energized live loading of the packing
- An anti-extrusion ring that enhances packing support, acts as a gate wiper, and helps center the gate

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FIGURE 6500
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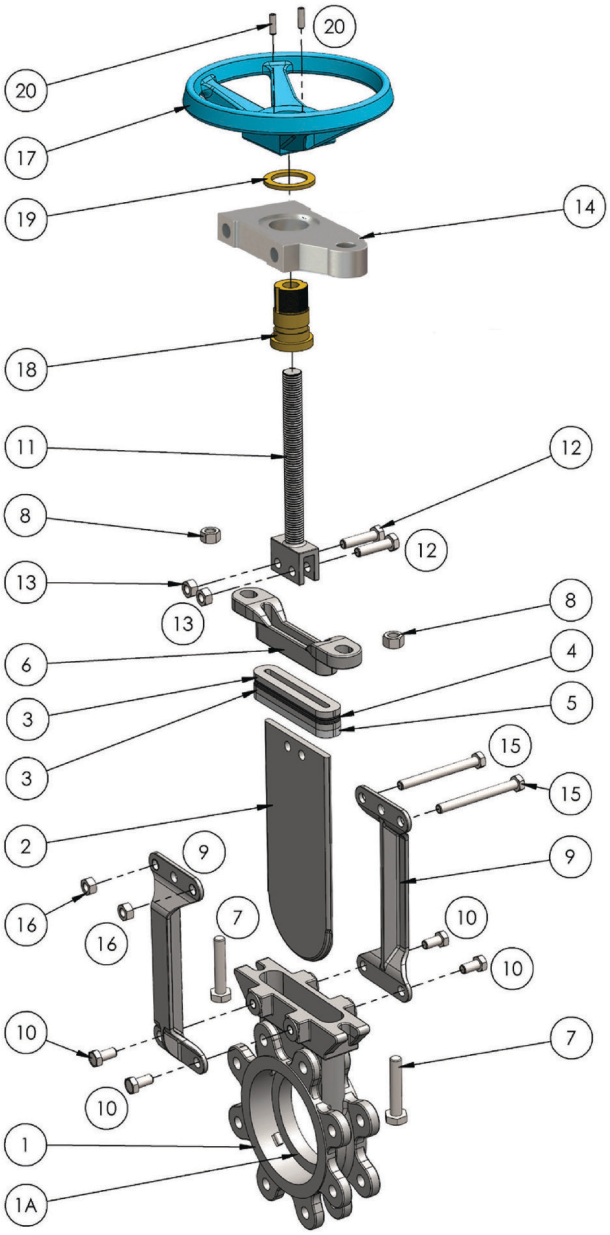

STANDARD MATERIALS

Ref #	Description	Material	Qty
1	Body	Stainless Steel, ASTM A351 Gr. CF8M	1
1A	Seat (Integral)	Stainless Steel, ASTM A351 Gr. CF8M	1
2	Gate	Stainless Steel, ASTM A240 Type 316	1
3	Packing	PTFE Impregnated Fiber	2 (2”–18”) 3 (20” & 24”)
4	Quad Seal	EPDM	1
5	Anti-Extrusion Ring	Glass-Filled PTFE	1
6	Gland	Stainless Steel, ASTM A351 Gr. CF8	1
7	Gland Bolt	Stainless Steel 304, ASTM A193 Gr. B8	2–10
8	Gland Nut	Stainless Steel 304, ASTM A194 Gr. 8	2–10
9	Yoke Arm	Stainless Steel, ASTM A351 Gr. CF8	2
10	Yoke Bolt	Stainless Steel 304, ASTM A193 Gr. B8	4
11	Stem	Stainless Steel, ASTM A276 Type 304	1
12	Clevis Bolt	Stainless Steel 304, ASTM A193 Gr. B8	1 (2”) 2 (2-1/2”–24”)
13	Clevis Nut	Stainless Steel 304, ASTM A194 Gr. 8	1 (2”) 2 (2-1/2”–24”)
14	Collar	Stainless Steel, ASTM A351 Gr. CF8	1
15	Collar Bolt	Stainless Steel 304, ASTM A193 Gr. B8	2 (2”–8”) 4 (10”–24”)
16	Collar Nut	Stainless Steel 304, ASTM A194 Gr. 8	2 (2”–8” only)
17	Hand Wheel	Cast Iron, ASTM A126 Gr. B	1
18	Yoke Sleeve	Aluminum Bronze, ASTM B148, UNS C95200	1
19	Thrust Washer	Aluminum Bronze, ASTM B150, UNS C62300	1
20	Set Screws	Stainless Steel, 304SS	2

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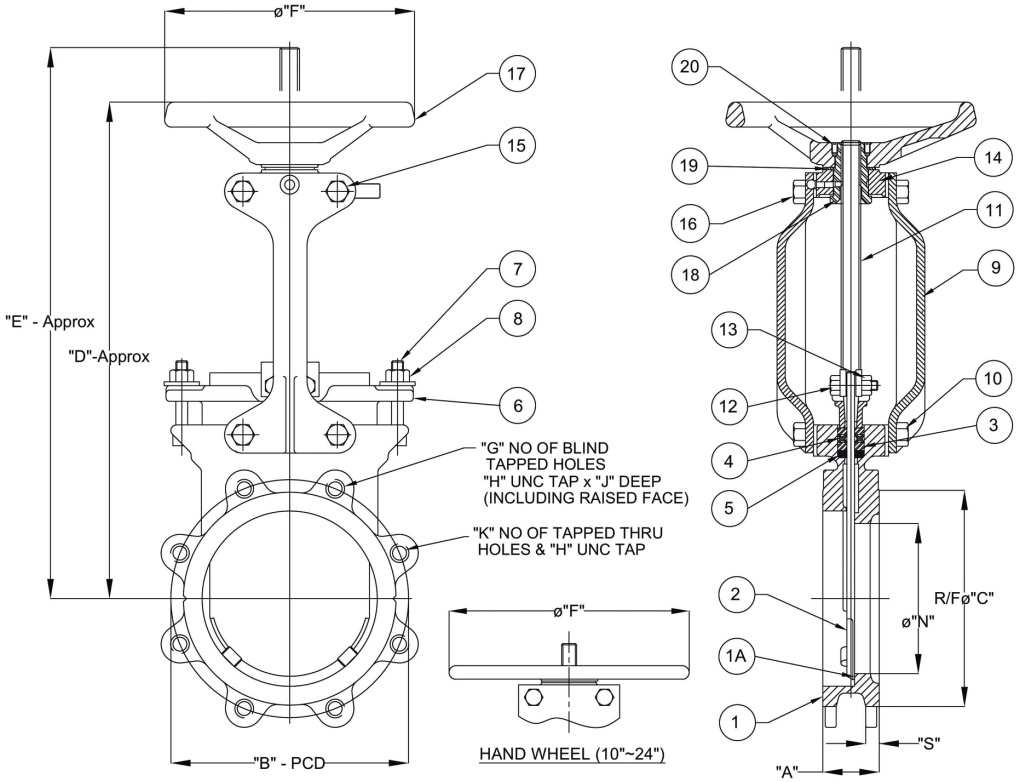
PARTS DIAGRAM



DIMENSIONS (INCHES)

Size	A	B	C	D	E	F	G	H	J	K	N	S
2	1.88	4.75	3.62	12.99	14.17	7.99	2	5/8	0.31	2	2.00	0.47
2-1/2	2.00	5.50	4.65	15.55	17.72	7.99	2	5/8	0.37	2	2.95	0.47
3	2.00	6.00	5.00	15.55	17.72	7.99	2	5/8	0.37	2	2.95	0.47
4	2.00	7.50	6.18	17.52	20.67	7.99	2	5/8	0.37	6	4.00	0.47
6	2.25	9.50	8.50	20.87	25.98	10.00	2	3/4	0.37	6	6.00	0.57
8	2.75	11.75	10.63	25.00	31.89	12.01	2	3/4	0.43	6	8.00	0.57
10	2.75	14.25	12.76	27.56	37.40	15.89	4	7/8	0.43	8	9.37	0.69
12	3.00	17.00	14.76	30.51	42.72	15.89	4	7/8	0.43	8	11.42	0.69
14	3.00	18.75	16.26	32.68	47.05	20.00	4	1	0.51	8	12.76	0.75
16	3.50	21.25	18.50	36.81	52.17	20.00	6	1	0.67	10	14.57	0.87
18	3.50	22.75	21.00	41.34	59.25	20.00	6	1-1/8	0.67	10	16.93	0.94
20	4.50	25.00	22.99	46.06	65.35	20.00	8	1-1/8	0.91	12	18.50	0.98
24	4.50	29.50	27.24	53.54	77.17	20.00	8	1-1/4	0.91	12	22.64	0.98

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