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SECTION 40\_XX\_XX  
Knife Gate Valves

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Knife Gate Valves for Potable Water or Sewage

B. Related Sections:

1. (application specific requirements provided by the engineer)

1.02 REFERENCES

- A. ASME B16.1 and ASME B16.5 Pipe Flanges and Flanged Fittings
- B. ASME B16.20 Metallic Gaskets for Pipe Flanges
- C. MSS SP-81 Stainless Steel Knife Gate Valves with Flanged Ends

1.03 SUBMITTALS

- A. (application specific requirements provided by the engineer)

1.04 WARRANTY

- A. Valves shall be warranted by the manufacturer for defects in materials and workmanship for a period of two years (24 months) from date of shipment.

PART 2 PRODUCTS

2.01 GENERAL

- A. (application specific requirements provided by the engineer)

2.02 Knife Gate Valves for Potable Water and Sewage Service

- A. Manufacturers: DeZURIK Model KGC-BD or pre-approved equal.

- B. Design:

1. Knife Gate Valve shall be Bi-Directional Cast Knife Gate
2. General:

- a. Body: One-piece cast. Valve inside diameter shall be 100% of adjacent pipe area equal to ANSI B36.10 STD pipe inside diameter.
- b. Gate: Edges shall be radiused and machined to reduce friction and extend life of valve packing. Gate faces to be finished ground to 63  $\mu$ m Ra.
- c. Packing System: Low Maintenance Packing System shall fit a machined packing chamber. The packing system shall consist of multiple layers of PTFE packing with an anti-extrusion ring to maintain packing shape and minimize wear. Packing gland material shall be 316 stainless steel.
- d. Resilient Seat: The resilient seat shall be capable of bubble-tight, bi-directional shut-off at all pressures and provide shut-off on dead-end service. Valves shall be of perimeter seat design and the seat shall provide guiding for the gate. Resilient seat shall be of one-piece rubber molded seat with seat guides at the top and an

encapsulated 316 stainless steel insert for rigidity. Seat guides shall be locked into a machined pocket in the bottom of the packing chamber and not interfere with the integrity of the packing chamber. The perimeter seat shall be locked into the valve body in a dovetail groove. Resilient seat material shall be \_\_\_\_\_ (NBR) (EPDM) (CR) (FKM)

- e. Design Maximum Working Pressure: 150 psi (1030 kPa)
- f. Maximum Fluid Temperature: (Dictated by application requirements and limited to elastomer selection)
- g. Valve design shall provide 100% flow when fully opened.
- h. Flange Drilling shall be in accordance with ASME 16.5 class 150, 2-24" (50-600 mm). Raised faces shall be full width per ASME 16.20 Face-to-Face dimension and MSS SP-81 for knife gate valves.
- i. Yoke and Valve Stem shall be 304 stainless steel. The yoke sleeve shall be aluminum bronze. A standard locking device that will withstand the maximum output force of the actuator shall be available upon request.
- j. Manual actuators shall be hand or chain wheel. Bevel gears shall be used when the rim pull exceeds 80 pounds force.
- k. Electric Motor Operators and Cylinder actuators shall be provided as specified.

C. Materials:

- 1. Body: Cast stainless steel, ASTM A351 CF8M
- 2. Gate: 316 stainless steel, ASTM 240
- 3. Seat: Chloroprene (CR), Acrylonitrile-Butadiene (NBR), Terpolymer of Ethylene and Diene (EDPM), or Fluoro Rubber (FKM)
- 4. Bolting/hardware: Stainless steel

D. Testing:

- 1. Valves to be tested in accordance with MSS SP-151 specification.
- 2. Certified test reports shall be available upon request.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install valves as specified in section (application specific requirements provided by the engineer) and the manufacturer's instructions.

**3.02 COMMISSIONING**

- A. Field testing (application specific requirements provided by engineer)