



閘刀閥使用及保養要點

Instruction for KS Knife Gate Valve Operation and Maintenance

1. 用途：本閘門適用於漿液、污水、粉粒體等介質的管路上做截流使用。
Application: Designed for slurry, waste water and powder flow blockage operation.

2. 性能規範

Specification and Performance

型號 Model	尺寸 NPS	接口耐壓等級 Connection Rating	試驗壓力 Test Pressure (kg/cm ²)		工作溫度 Working Temperature	適用介質 Working Fluid
不鏽鋼閘刀閥 Stainless Steel Knife Gate Valve	2"~12"	JIS 5K .10K	閘體 Body	閘密封 Seat seal	≤300°C	紙漿、污水、煤渣、粉粒體顆粒、稠狀混合物 Waste water, Pulp, Cinder, Particulate solids, Viscous mixtures
		ANSI#150				
		DIN PN10	11	2.8		

3. 結構特點：

Design Features

- 3.1 緊密配合的閘板密封面，可刮除密封面上的粘著物，自動清除雜物。

Tightly mated gate seal faces scraping off adhered material; self-cleaning foreign material.

- 3.2 不銹鋼閘板可防止腐蝕引起的密封洩漏。

Stainless steel valve gate prevents seal face leakage from corrosion.

- 3.3 緊湊的結構長度，可節省原料及安裝空間，也有效維持管道強度。

Compact structure design reduces installation space and material usage, helps piping strength.

- 3.4 多層密封填料迫緊設計，使上部密封有效防止洩漏，經久耐用。

Multi-layered gland packing effectively prevents leakage, extends packing life.

- 3.5 圓柱型支架，具足夠的結構強度。

Cylindrical yokes render structural rigidity.

- 3.6 閘體上的導塊使閘板正確運作。擠壓塊保證閘板有效密封。

Guide in valve body ensures correct positioning of gate; while pawl block facilitates gate sealed effectively.

- 3.7 閘體加強骨幹設計提高閘體強度。

Valve body stiffener design promotes valve body strength.

3.8 本閥體基本結構見圖 1

Primary structure for the valve is shown in Fig. 1

4 工作原理

Operation Mechanism

4.1 手動式:

手動閥門用手轉動手輪，使閥桿帶動閘板上、下作動，開啟及關閉閥門。
順時針方向旋轉，閘板下降，閥門關閉。逆時針方向旋轉，閘板上升，閥門開啟。

Manually:

Turning the hand wheel, the valve stem will move the gate up or down, open or close the valve. Turning clockwise, the gate will move down closing the valve. Turning counter-clockwise, the gate will move up opening the valve.

4.2 氣動式:

空氣壓力輸入氣缸，氣缸軸帶動閘板上、下作動，開啟及關閉閥門。

Air-actuated

Injecting air into cylinder, shaft actuates gate up and down to open and close the valve.

5 保管、保養、安裝和使用

Storage, Maintenance, Installation and Put into service

5.1 閥門應存放在乾燥，通風的室內，閥門通道兩端應密閉。

如有安裝氣缸驅動器，其空氣輸入孔亦應密閉防止粉塵進入。

Valves should be stored indoors, keeping dry and ventilation.

Air connections on air actuators should be blocked from dust contamination.

5.2 長期存放的閥門應定期檢查，清除污物。應特別注意密封面的清潔，防密封面的損壞。

Periodically inspect stored valves, clean contaminant. Special attention for cleaning seal faces, prevent them from damage.

5.3 安裝前應仔細核對閥門標誌是否與使用要求相符。

Before installation, please confirm tag information is consistent with process requirement.

5.4 安裝前應檢查閥門內腔和密封面，如有污垢，應使用清潔布擦拭乾淨。

Prior to installation, please check valve body internal and seal faces; wipe off contaminants with clean rags.

6 可能發生的故障、原因及消除方法見表 1

For potential problems, probable cause and solution, please refer to Table 1. Troubleshooting.

表 1 可能發生的故障、原因及消除方法

Table 1. Troubleshooting



可能發生的故障 Potential Problem	發生故障的原因 Probable Cause	消除方法 Solution
填料迫緊滲漏 Leaking Gland Packing	1. 填料壓蓋未壓緊 1. Loose stuffing box cover 2. 填料因使用過久或保存不妥而失效 2. Packing is ineffective due to inappropriate handling or might be aged.	1. 均勻地擰緊螺母，將填料壓緊 1. Evenly tighten nuts to compact gland packing 2. 更換填料 2. Replace new packing
密封面間滲漏 Leakage through Sealing Faces	1. 密封面有污雜物附著 1. Foreign material sticking on sealing faces 2. 密封面損壞 2. Damaged sealing faces	1. 將污雜物清除乾淨 1. Clean all foreign material 2. 重新加工修整或更換 2. Repair or replace
閥體與法蘭連接處滲漏 Valve body and flange face leakage	1. 連接螺栓緊固不均勻 1. Uneven bolt tightening 2. 閥體或法蘭密封面損壞 2. Valve body or flange face damaged	1. 均勻擰緊 1. Tightening bolts evenly 2. 重新修整 2. Repair and lapping
手輪轉動不靈活或閘板不能正常啟閉 Hand wheel uneasy to operate or valve gate could not operate smoothly	1. 填料壓得太緊 1. Gland packing too tight 2. 閥桿螺母有損壞 2. Damaged valve stem screw thread 3. 閥桿螺母的螺紋嚴重磨損或斷裂 3. Worn or broken valve stem screw thread 4. 閥桿彎曲 4. Bent valve stem	1. 適當旋松填料壓板上的螺母 1. Loosen stuffing box nuts 2. 拆開修整螺紋和清除污雜物 2. Repair screw thread and clean foreign material 3. 更換閥桿螺母 3. Replace valve stem 4. 矯正閥桿 4. Straighten valve stem
氣缸伸縮作動不靈活閘板不能正常啟閉 Air cylinder does not actuate smoothly that valve gate could not open properly	1. 填料壓得太緊 1. Gland packing too tight 2. 活塞迫緊損壞漏氣 2. Air leakage from worn piston packing 3. 氣缸軸表面損壞 3. Worn cylinder surface 4. 空氣壓力不足 4. Air pressure too low	1. 適當旋松填料壓板上的螺母 1. Loosen stuffing box nuts 2. 更換氣缸迫緊、油封 2. Replace packing, O-seal 3. 氣缸更換 3. Replace cylinder 4. 檢查現場空氣壓力，正常工作需求壓力為 5kg/cm ² 以上 4. Air operating pressure should be higher than 5kg/cm ²

圖 1 閥體基本結構

Fig. 1 Primary structure for the valve

