HIGH PERFORMANCE KNIFE GATE VALVES
Elite Valve starts its casting process with wax moulds, which are used to produce high quality investment patterns. This process allows us the opportunity to review the product prior to casting to inspect for defects, producing only the finest quality castings.

Investment cast bodies offers a high quality finish with less porosity and distortion than typical sand cast valves.

Our wax moulds, as shown above, offer higher quality patterns with less distortion and reduced machining. From the wax they are covered in a ceramic slurry. The alloy is poured into the moulds and broke away after cooling.

Rough cast bodies produced by this process result in a flawless look, reducing machining time.

The final stage assembly and testing to ensure that all valves are individually tested to exceed TAPPI standards.

In the machining stage the rough cast stainless steel bodies are precisely machined to exact tolerances.
**TIE RODS AND NUTS**
For bore sizes from 3 1/4” to 12”
- Stainless steel construction to limit corrosion.
For bore size from 14” to 20”
- High strength steel barstock along with zinc plated steel nuts (Grade 5)

**HEAD & CAP**
CNC machined from hot rolled steel plates
ASTM A36 or better

**PISTON WEAR STRIP**
For bore sizes from 10” to 20”
- Teflon tape filled with particles of bronze and glass for smoother piston operation.

**GLAND BUSHINGS**
Cartridge type, made from bronze SAE 660. Seals can be replaced without dismantling the cylinder.

**ROD WIPER**
Stops dust and other particles from entering the cylinder. Standard material is polyurethane. It can be replaced with fluorocarbon (viton) for higher temperature applications.

**CYLINDER BARREL**
For bore sizes from 3 1/4” to 12”
- Heavy wall steel tubing with a polished chrome plated interior for increased durability
For bore sizes from 14” to 20”
- Thermoset fiber reinforced composite, specially designed for cylinder tubing for weight reduction and corrosion resistance

**PISTON**
For bore sizes from 3 1/4” to 8”
- CNC machined from high strength aluminum barstock (6061-T6)
For bore sizes from 10” to 20”
- Mild steel construction
- Wear strips are added on the outside diameter to protect the tube and assure a perfect fit.

**PISTON PACKING**
Two pressure sensitive “U” cups for better sealing and durability.

**PISTON ROD**
High carbon content steel SAE 1045, ground, polished and chrome plated 316 stainless steel (available on request).

**SEALS AND PACKING**
“U” Cup and “O” Ring used for added security. A high durometer nitrile material is offered as a standard for a temperature rating from 34 deg. C to 120 deg. C (-30° F to 250° F). For temperatures ranging up to 250°C (450° F), Fluorocarbon (viton) seals and packing are available.
FLUE GAS DESULFURIZATION
Flue gas desulfurization provides a cleaning process for wasted gas that occurs during the incineration of sulphurous fuels. Cleaning procedures are used to absorb the sulfur compounds. The un-cleaned flue gas is cleaned by a wash suspension consisting of water and calcium, calcium hydroxide or chalk.

MINING
Mining involves the science, technology, and business of the discovery of gold, in addition to its removal and its sale in the marketplace. The long process of rock and dirt removal extracting the gold can be vigorous. This requires adding solutions and thickening agents to remove the unwanted material. E5700 knife gate is designed for the ability of an easy repair and comes with safety options.

POWER
There are three major types of power generation systems: natural gas, oil-fueled, and biofuel. Natural gas power generation systems may provide combined heat and power systems that use cogeneration to produce both electric power and usable heat. Reserving the backup energy in a power generation system can be used to provide electricity to a transmission system or grid in the event of a power outage.

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WASTE WATER
Wastewater is the spent or used water from homes, communities, farms and businesses that contains enough harmful material to damage the water’s quality. Wastewater includes both domestic sewage and industrial waste from manufacturing sources. Metals, organic pollutants, sediment, bacteria and viruses may all be found in wastewater. As a result, untreated wastewater can cause serious harm to the environment and threatens all forms of life.

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The Elite E5700 Knife Gate Valve has been used successfully in slurry applications, out performing traditional rubber boot design knife gate valves. The removable seat reduces cavities and impact for applications such as backfill cement, water and sand mixes, glass beads, polymer resin (pellets) and many more.

**Typical Knife Gate**
- Flow against the seat to press the gate against the seat ring using the force from the flow to seal.
- Typical knife gates expose the packing, allowing pressure to push up and out through the top of the stuffing box.
- The stuffing box typically gets clogged with line slurry settlement causing the gate to not fully close.
- The debris comes through destroying the seat ring from behind making imperfections, not providing a solid seal.
- Soft seated valves, with o rings are exposed allowing that also to be vulnerable..

**Elite Valve Knife Gate**
- Our Knife gate flows toward the seat to press the gate against the dogs to seal the valve.
- The Flow going toward the seat usually takes most of the beating with the heavy slurry and debris that comes at the port opening. Elite has devised a replaceable seat ring for easy repair, while staying cost efficient.
- The reverse flow keeps the slurry away from the stuffing box and with a self flushing design also allows for the knife gate to close fully, and smoothly.
- Several different Port options make it easy to change your port openings from reduced port to a “V” port.
- It is designed with a self flushing seat to help keep particle matter from accumulating around the seat.
Replaceable Seat Rings

Elite Valve can provide the best valve on the market. What makes our valve superior is that we can build this valve around your needs. Customized replaceable seat rings allow for easy maintenance and minimal down time. Our specialized filing system and customer service numbering allows for full traceability of previously ordered seat rings. Each seat ring is measured and given a code. Recording your seat measurements and benefiting from our in-house machine shop allows us to duplicate your seat ring that day. Elite Offers a Full Port, “V” Port and reduced port, and our newest low flow control seat ring.

Features

- Resilient or metal seated sealing surfaces
- “V” Port Valve, 15°, 30°, 60°
- Comes available in 316 SS and RC50 and other exotic alloys

Teflon Packing Gland Gate Follower

Standard
Teflon
400° F
Slurry Process

Energized Packing
Teflon with Wiper
300° F
Self Adjusting
Fine Powders

High Temp.
Graphoil
1100° F
High Temp

Live Load
Style
400° F
Temp cycling
ELITE SPECIALTY VALVES

STANDARD ANSI 150

• 2” to 36”
• ANSI Class 150 Lb.
• Investment cast up to 12”
• Standard handwheel operation with double start threaded stem
• Optional actuator optional, hydraulic or pneumatic cylinder actuator
• Safety lockout capabilities in a fully opened or closed position

Bonnetered Knife Gate

• Sizes 2’ - 36”
• 150 Lb. Flange lug body
• 316 Stainless body and gate standard
• Uni-Directional Seating
• Great for containing gases that might escape during the process
• Metal or resilient Seating

Plated Knife Gate

• 2” to 36”
• ANSI 150 Lb.
• 2 Piece split
• Full Port through conduit design
• Replaceable seat ring
• Full packing glands
• Safety lockout capabilities in a fully opened or closed position

Features

• Recycle trash seat design
• Pneumatic & Hydraulic cylinder
• Carbon, Stainless Steel
• Optional alloys
• 150 Lb. lug body design
• 316 SS body & gate are standard
• Full port opening meets TAPPI
• Large gland & lantern area for improved packing
• Robust cast yoke assembly with direct mount cylinder flange or stanchions
• 2” to 12” (INVESTMENT CAST)
• 14” to 42” (SAND CAST)
• Two Piece stem two bolt design

OPTIONAL
• Live Loaded packing for high cycle or elevated operating temperatures
• Full port opening

CYLINDER ACTUATORS
All Elite Knife Gate Valves can be supplied with pneumatically or hydraulically actuated cylinders, consult factory for additional details. The robust yoke assembly allows for quick, direct mounting for the cylinder. Our cast yokes are produced with appropriate holes to accommodate proximity style switches.
STANDARD
- 3” to 12”
- 150 Lb. lug body design
- 316 SS body & gate are standard
- Reduced port opening
- Replaceable 316ss seat ring see page. 3
- Large gland & lantern area for improved packing
- Robust cast yoke assembly with direct mount cylinder flange or stanchions

3/4” Target mount standard holes
3/4” Safety lockout holes
(pin optional)

PACKING GLANDS
Extra deep packing glands to accommodate additional rows of braided packing. Smooth wall finish to prevent scoring of the gate promoting gland leakage.

OPTIONAL
- Live Loaded packing for high cycle and or elevated operating temperatures
- Full port opening

Optional Chest purge ports

ELITE 5700 HIGH PERFORMANCE KNIFE GATE

LOCKING DEVICES
All standard yoke equipped knife gate valves are available with a locking device for both manual and automated protection. A heavy duty pin passes through the yoke and clevis. The padlock secures it. The pins are designed to withstand the full thrust load capacity of the actuator.

YOKES
Robust stainless steel cast yoke are standard and accommodate full automation, and proximity switch installation. Stainless steel stanchions are standard on sizes over 12”

CLEVIS
Investment cast clevis’ with two bolt design provides even distribution of forces, which eliminates lateral gate deflection.

Elite Valve Canada uses a proprietary alloy to achieve RC50 hardness on the gates and seat rings for our replaceable seat ring valve. This offers excellent wear, corrosion, and impact resistance. The maximum temperature rating is 900°F (482°C). Gates and seat rings are hardened throughout, providing years of performance.
## E5700 Investment Cast - Replacement Seat

<table>
<thead>
<tr>
<th>Model</th>
<th>Body</th>
<th>Gate</th>
<th>Seat</th>
<th>Topworks</th>
<th>Packing</th>
<th>Operator</th>
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