Welcome to

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Extremely durable pumps and valves for abrasive slurry transport

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TDH slurry pumps are designed for continuous pumping of highly abrasive and high density slurries — with the greatest reliability — reducing downtime and maximizing production.

Unlike competing models, TDH slurry pumps will maintain high efficiencies over the entire wear life of their components. Continuous adjustment of impellers or adjustable liners is not required.

For interchangeability and maximum uptime, TDH casings for horizontal shaft slurry pumps (models T, P, R, N, D, and G) use the same base, bearing housings, bearings, and sealing options.

All pumps and parts are centrally warehoused in Houston, Texas for fast service and delivery.

### Series Summary

<table>
<thead>
<tr>
<th>SERIES</th>
<th>TYPE</th>
<th>DISCHARGE DIAMETER</th>
<th>HEAD</th>
<th>FLOW RATE</th>
<th>CASING PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>inch (mm)</td>
<td>feet (meters)</td>
<td>US gpm (m^3/hour)</td>
<td>MWP PSI (bar)</td>
</tr>
<tr>
<td>T</td>
<td>Heavy duty</td>
<td>1-14 (25-350)</td>
<td>240 (73)</td>
<td>16,000 (3,600)</td>
<td>300 (20.7)</td>
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<tr>
<td>R</td>
<td>Low Head/ High Volume</td>
<td>3-18 (75-450)</td>
<td>180 (55)</td>
<td>24,000 (5,500)</td>
<td>150 (10.3)</td>
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<tr>
<td>D</td>
<td>Dredge</td>
<td>4-10 (100-250)</td>
<td>150 (46)</td>
<td>6,000 (1,362)</td>
<td>150 (10.3)</td>
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<td>V</td>
<td>Vertical Cantilever</td>
<td>1.5-10 (40-250)</td>
<td>16 (50)</td>
<td>6,000 (1,362)</td>
<td>150 (10.3)</td>
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<tr>
<td>P</td>
<td>High Head/ Heaviest Duty</td>
<td>1-4 (25-100)</td>
<td>325 (100)</td>
<td>4,500 (900)</td>
<td>500 (35)</td>
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<tr>
<td>N</td>
<td>Unlined – High Chrome</td>
<td>2-10 (500-250)</td>
<td>240 (73)</td>
<td>6,500 (1,475)</td>
<td>150 (10.3)</td>
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<tr>
<td>G</td>
<td>Gravel</td>
<td>6-8 (150-200)</td>
<td>240 (73)</td>
<td>6,000 (1362)</td>
<td>150 (10.3)</td>
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<tr>
<td>F</td>
<td>Vertical Froth</td>
<td>2-6 (50-150)</td>
<td>80 (24)</td>
<td>1,000 (225)</td>
<td>100 (6.9)</td>
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TDH “T” Tough Series — Metal Lined

“T” pumps are designed for a wide band of slurry applications. They are generally used for slurries containing high concentrations of erosive solids and when a tough, heavy duty pump is required. This series also offers multiple impeller and sealing options for each pump size enhancing the ability to ensure proper application and correct hydraulic selection.

Series “T” Attributes — Metal Lined:
- Horizontal, Centrifugal, Single Stage, Lined, Split Case, End-Suction pumps
- Discharge diameters 1” to 18” (25 mm to 450 mm)
- Heads through 240 ft. (73 m)
- Flow rates through 20,000 US gpm (4542 m³/h)
- Casing pressure MWP 300 psi (20.7 bar) metal lined
- Temperature limitation 250ºF (120ºC) metal lined
- Standard hardness 600-650 BHN (59.8 Rc) metal lined
- pH range from 1-14 in both metal and elastomeric configurations
- Sealing options:
  - Dynamic seal — no flush water
  - Dynamic seal — extremely low flush rate
  - Static stuffing box — full flush rate
  - Static stuffing box — low flush rate
  - Mechanical seal

TDH “T” Tough Series — Elastomer Lined

“T” pumps are designed for a wide band of slurry applications. They are generally used for slurries containing high concentrations of erosive solids and where a tough, heavy-duty pump is required. This series also offers multiple impeller and sealing options for each pump size enhancing the ability to ensure proper application and correct hydraulic selection.

Series “T” Attributes — Elastomer Lined:
- Horizontal, Centrifugal, Single Stage, Lined, Split Case, End-Suction pumps
- Discharge diameters 1” to 18” (25 mm to 450 mm)
- Heads through 150 ft. (46 m)
- Flow rates through 20,000 US gpm (4542 m³/h)
- Casing pressure MWP 170 psi (11.7 bar) elastomer lined
- Temperature limitation 150ºF (65ºC) rubber lined
- Temperature limitation 220ºF (104ºC) butyl or hypalon lined
- pH range from 1-14 in both metal and elastomeric configurations
- Sealing options:
  - Dynamic seal — no flush water
  - Dynamic seal — extremely low flush rate
  - Static stuffing box — full flush rate
  - Static stuffing box — low flush rate
  - Mechanical seal
**TDH “P” Pressure Series**

“P” pumps are extremely tough, large, slow speed pumps that are designed with extra abrasive resistant material to deal with your most challenging applications.

“P” pumps are designed for high pressure, and can train as many as 5 pumps in series.

“P” pumps can also be used for slurries containing high concentrations of erosive solids.

“P” pumps are only available with metal liners and impellers.

Series “P” Attributes:
- Horizontal, Centrifugal, Single Stage, Lined, Split Case, End-Suction pumps
- Discharge diameters 1” to 4” (25 mm to 100 mm)
- Heads through 325 ft. (100 m)
- Flow rates through 4,000 US gpm (900 m³/h)
- Casing pressure MWP 500 psi (35 bar) metal lined
- Temperature limitation 250ºF (120ºC) metal lined
- Standard hardness 600-650BHN (59.8 Rc) metal lined
- pH range from 1-14
- Sealing options:
  - Dynamic seal — no flush water
  - Dynamic seal — extremely low flush rate
  - Static stuffing box — full flush rate
  - Static stuffing box — low flush rate
  - Mechanical seal

**Typical Frame Assembly Parts**

(Variations occur between models)

**Typical Stuffing Box Assembly Parts**
**Typical Dynamic Seal Assembly Parts**

- **Grease Lubricated**
  - NECK RING
  - LANTERN RING
  - GLAND RING
  - O RING
  - GLAND PACKING OR LIP SEALS
  - EXPELLER RING (METAL AND ELASTOMER)

**Typical Metal Wet Assembly Parts**

(Variations occur between models)

- DISCHARGE JOINT RING
- IMPELLER
- FRAME PLATE LINER INSERT
- VOLUTE LINER SEAL
- INTAKE JOINT RING
- VOLUTE LINER
- THROATBUACH

**Typical Dynamic Seal Assembly Parts**

- **Water Lubricated**
  - SEAR RING
  - LANTERN RESTRICCTOR
  - GLAND PACKING
  - O RING
  - GLAND
  - EXPELLER RING LF

**Typical Elastomer Wet End Assembly Parts**

(Variations occur between models)

- FRAME PLATE LINER
- COVER PLATE LINER
- THROATBUACH
- INTAKE JOINT RING
- IMPELLER
### Typical Applications

- **Continuous or “snore” operation**
- **Sump drainage**
- **Abrasive slurries**
- **Washdown**
- **High density slurries**
- **Floor drainage**
- **Large particle slurries**
- **Mixing**

### TDH Vertical Cantilevered Slurry Pump

**Fully Cantilevered Seal-Free Design**

This pump incorporates heavy duty roller bearings, heavy walled metal casings, rubber lined heavy duty steel columns and discharge pipes. A “double-section” impeller allows fluid to enter both top and bottom. Used in conjunction with a long robust shaft, this combination protects submerged bearings, packing, lip and mechanical seals. This capability when combined with TDH engineering expertise improves correct hydraulic selection, promotes proper application, and increases cost effectiveness.
V SERIES VERTICAL SLURRY PUMPS

Motor shaft down

Standard set

Extended set with tailpipe

Standard impeller

Large particle impeller

Motor shaft up

M SERIES VERTICAL MULTISTAGE

TDH “M” Series
Light Vertical Multistage Centrifugal

Applications:
- Filter press membrane
- Process flow water
- Cleaning systems
- Industrial boosting
- High pressure washing
- Cooling system
- Reverse osmosis
- Irrigation
**TDH “M” Series Composite Curve**

- Design Criteria
  - The TDH “M” Series pump is designed for use with non-viscous fluids, non-flammable fluids, without solids or fibers and a maximum specific gravity of 1.03. The design also allows the pumping of slightly corrosive fluid.
  - Maximum fluid temperature is 140 degrees C, and current design specifications are for a maximum of 1000 meters of elevation.
  - Supports maximum head distance of between 120 and 200 meters.
  - Supports flow rates of up to 240 cubic meters per hour.

**Description “M” Series Pump**

- **Description**
  - The TDH “M” Series Pump is an above ground vertical multistage centrifugal pump which is driven by a fully enclosed, IP55, Class F insulated motor. The motor shaft connects to the pump with a coupling.
  - The pressure resistant containment cylinder and diffusers are fixed between the pump head and the inlet-outlet chamber with stay bolts.
  - The suction and discharge are located on the same plane at the bottom of the pump.

**TDH “M” Sectional Assembly Drawing**

- Model Numbers: 001, 002, 003, 004, 008, 012, 016, 020

<table>
<thead>
<tr>
<th>PART</th>
<th>ITEM</th>
<th>MATERIAL</th>
<th>ASTM/AISI</th>
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<tbody>
<tr>
<td>Motor</td>
<td>1</td>
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<tr>
<td>Pump Head</td>
<td>2</td>
<td>Cast Iron</td>
<td>ASTM25B</td>
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<tr>
<td>Seal Base</td>
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<td>AISI304</td>
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<tr>
<td>Mech Seal</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top Diffuser</td>
<td>5</td>
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<td>AISI304</td>
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<tr>
<td>Diffuser</td>
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<tr>
<td>Support Diffuser</td>
<td>7</td>
<td>Stainless Steel</td>
<td>AISI304</td>
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<tr>
<td>Inducer</td>
<td>8</td>
<td>Stainless Steel</td>
<td>AISI304</td>
</tr>
<tr>
<td>Inlet Outlet Chamber</td>
<td>9</td>
<td>Stainless Steel</td>
<td>AISI304</td>
</tr>
<tr>
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<td>9</td>
<td>Stainless Steel</td>
<td>AISI304</td>
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<tr>
<td>Base Plate</td>
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<td>Cast Iron</td>
<td>ASTM25B</td>
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<tr>
<td>Bearing</td>
<td>11</td>
<td>Tungsten Carbide</td>
<td></td>
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<tr>
<td>Impeller</td>
<td>12</td>
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<tr>
<td>Shaft</td>
<td>13</td>
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<td>Impeller Sleeve</td>
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<tr>
<td>Cylinder</td>
<td>15</td>
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<tr>
<td>Coupling</td>
<td>16</td>
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**TDH “M” Sectional Assembly Drawing**

Model Numbers: 032, 042, 065, 085

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<tr>
<td>Top Diffuser 4</td>
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<td></td>
</tr>
<tr>
<td>Support Diffuser 5</td>
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<td>Diffuser 6</td>
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<td>Bottom Bearing 10</td>
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<td>Shaft 12</td>
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<td>Intermediate Bearing 13</td>
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<td>Rubber Parts 20</td>
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**TDH “M” Sectional Assembly Drawing**

Model Numbers: 120, 150, 200

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<td>Pump Head 2</td>
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<td>Mech Seal 3</td>
<td>Stainless Steel</td>
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<td>Discharge 4</td>
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<tr>
<td>Rubber Parts 20</td>
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</table>

**TDH “H” Series Peristaltic Pump**

- Pressure up to 22 bar
- Flows rates up to 90,000 liters per hour

**Attributes:**
- Low cost of ownership
- Abrasion resistant
- No moving parts in the liquid stream
- Accurate dosing
- Self-priming
- Can pump liquids containing up to 80% inorganic solids (fines)
- Aseptic pumping smooth liquid passage
- Suitable for handling shear sensitive products
- Can run dry
- High suction capability of up to 95% vacuum
- No seals
- Reversible rotation, empties line or blockages
- Can pump viscous or high density fluids
The unique design of TDH peristaltic pumps make them ideally suited to a wide range of applications:

- **Abrasive fluids**
  Lime mixing, circulation, filter press feed, and dosing

- **Corrosive fluids**
  Ferric chloride, copper sulphate, process chemicals, acids, including alkalis

- **Shear sensitive fluids**
  Coagulants, flocculants and bacterial remediation treatments

- **Mining industry**
  Dosing process reagents, thickener underflow, polymers and slurry transfer

- **Water treatment**
  Dosing lime, hypochlorite, silicate, polymer, ferric chloride, sludge transfer and filter press feeds

- **Chemical industry**
  Corrosive acids, bases and hydrocarbons

- **Printing and packaging**
  Inks (including water based inks), paints, dyes and glue

- **Battery filling, chemical cleaning, equipment sterilizing, seed coating**
  Biocides, hydrogen peroxide, sodium hypochlorite, caustic soda

- **Agriculture**
  Feed additives, animal vaccines and waste transfer

- **Pulp and paper**
  Pulp, dyes, lime slurry and chemicals

- **Food and beverage**
  Breweries, diatomaceous earth, wineries, dairies, sugar refining
TDH Model PG75X50 Triplex Plunger Pump

TDH Attributes:
- Small overall footprint
- Light weight
- Low noise
- High efficiency
- Liquids and emulsions: 0-95 degrees Celsius.
- Two gear ratios
- Two regulating valves for constant output
- Safety valve on discharge to ensure non overload
- Splash and force lubrication available

TDH 50 Cycle Selection Chart

<table>
<thead>
<tr>
<th>Piston (mm)</th>
<th>m³/h</th>
<th>bar</th>
<th>kW</th>
<th>bar</th>
<th>kW</th>
<th>bar</th>
<th>kW</th>
<th>bar</th>
<th>kW</th>
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<td>22</td>
<td>2.4</td>
<td>450</td>
<td>37</td>
<td>510</td>
<td>45</td>
<td>630</td>
<td>55</td>
<td>-</td>
<td>75</td>
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<td>25</td>
<td>3.0</td>
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<td>37</td>
<td>450</td>
<td>45</td>
<td>560</td>
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<td>26</td>
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<td>400</td>
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<td>500</td>
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<td>32</td>
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<td>35</td>
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<td>180</td>
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<td>220</td>
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<td>55</td>
<td>380</td>
<td>75</td>
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<td>40</td>
<td>8.1</td>
<td>140</td>
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<td>45</td>
<td>10.2</td>
<td>110</td>
<td>37</td>
<td>130</td>
<td>45</td>
<td>170</td>
<td>55</td>
<td>220</td>
<td>75</td>
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<tr>
<td>50</td>
<td>12.6</td>
<td>90</td>
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<td>110</td>
<td>45</td>
<td>130</td>
<td>55</td>
<td>180</td>
<td>75</td>
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Stroke mm: 95
Motor Speed: 1450
Gear Ratio: 3.65
Pump Speed: 405
## TDH 60 Cycle Selection Chart

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<thead>
<tr>
<th>Stroke mm</th>
<th>m³/h</th>
<th>Y225M-4 kW</th>
<th>bar</th>
<th>Y250M-4 kW</th>
<th>bar</th>
<th>Y280G-4 kW</th>
<th>bar</th>
<th>Y280M-4 kW</th>
<th>bar</th>
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<tr>
<td>22</td>
<td>2.9</td>
<td>45</td>
<td>45</td>
<td>560</td>
<td>55</td>
<td>750</td>
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## Technical Specifications:

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<th>NO.</th>
<th>PART NAME</th>
<th>MATERIAL</th>
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<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>WCB</td>
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<tr>
<td>2</td>
<td>Valve Plate</td>
<td>Composite Engineering Ceramics</td>
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<tr>
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<td>Valve Seat</td>
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<td>5</td>
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<td>Holder</td>
<td>Q235</td>
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<td>11</td>
<td>Pneumatic Actuator</td>
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</tbody>
</table>

Pneumatic Double Disc Gate Valve

### Product Information:

Pneumatic double disk gate valves are commonly used in the mining, paper making, and chemical industries. The valve plate and seat are made from highly durable ceramics making them ideal for abrasive slurries. This valve can tolerate up to 1.0 MPa of pressure and 200°C.

The valve mid-body is welded WCB steel and a seamless steel tube. The pneumatic load required for opening is very low. It has high wear resistance, and good sealing performance making it an ideal choice.
Cast Iron Knife Gate Valve

Product Information:
The body is casted as a whole, single unit making it easier to open and close. The seal is graphite or PTFE.
The polished gate surface will enhance the sealing, and prolong the life-span of the packing and seat.
This product is widely used in paper making, sugar refining, mining, metallurgy, chemical industries, electric power generation, and water treatment among others.

Technical Specifications:

<table>
<thead>
<tr>
<th>Normal Diameter</th>
<th>DN50-1800 2”-48”</th>
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<tbody>
<tr>
<td>Pressure Rating</td>
<td>0.6MPa, 1.0MPa, 1.6MPa, 2.5MPa, ASME CLASS 150LB</td>
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<tr>
<td>Pressure Test</td>
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<td></td>
<td>DN250-DN400 10bar</td>
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<tr>
<td></td>
<td>DN450-600 6bar</td>
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<tr>
<td></td>
<td>DN700-800 5bar</td>
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<tr>
<td></td>
<td>DN900-1000 3bar, DN1200-1800 1bar</td>
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<tr>
<td>Suitable Temperature</td>
<td>-60°C ~ +1100°C</td>
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<tr>
<td>Leakage Level</td>
<td>Metal Scaling / D Level</td>
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<tr>
<td></td>
<td>EPDM A/EPDM scaling A level (0 leakage)</td>
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</table>
CERAMIC KNIFE VALVES

Ceramic Knife Gate Valve

Application:

Knife gate valves, also known as slurry gate valves, are used in the mining, coal power plant, refuse, slag, and sewage industries. It is slim, small, and lightweight design. This valve can handle pressures up to 1.0 MPa, and temperatures ≤180°C. The sealing surface and all medium-contacting parts are made of structural ceramic with extremely high chemical stability and hardness. It exhibits extremely strong resistance to abrasion, corrosion, and erosion, as well as good heat insulation and minimal thermal expansion.

Duckbill and Wafer Check Valves

TDH valves offer reliable and cost effective solutions for flow control. Our duckbill and wafer check valves are 100% vulcanized rubber and are suitable for almost any environment. Our check valves are maintenance-free and have no mechanical components. The lack of an outside energy source requirement makes these perfect for rural applications. They will not warp, freeze, or clog. Operation is nearly silent. They eliminate costly repairs to gate valves and other system damage from backflow. Give TDH a call to create a custom, cost effective solution for your process.
Pinch Valves

Highlights:
✓ Full circular port
✓ Mechanical or compressed air pinch mechanism
✓ Single or dual pinch mechanism
✓ Simple economical design
✓ Rugged construction
✓ Light weight

Specifications:
- Flanges: ANSI STD. 125/150 lbs.
- Housing: Cast iron, ASTM A48, Class 35
- Stem: 303 stainless steel
- Yoke: Carbon steel

Features:
- Clog resistant full round opening
- Low pressure drop
- No packing
- Drop tight closure
- On/Off or throttling service
- Fail Open or Fail Closed pneumatic actuators
- Long lasting compression molded sleeve

Application:
Ideal for automatic control of abrasive, viscous, and corrosive fluids including wastewater, mine slurry, chemicals, cement, pulp, powder and pellets.

Operation:
A full round, pneumatically operated valve with the maintenance free Onyx Actuator. The actuator uses a spring for reliable Fail-Open (PFO) or Fail-Closed (PFC) operation in a range of sizes. Does not require lubricated air.

Options:
- Double thickness sleeve
- Epoxy paint
- Sleeve elastomer
- 316 stainless steel stem
- ANSI STD 300 lbs. flange
- Secondary containment package
- Auxiliary hand wheel
- Positioners
- Solenoid valves
- Limit switches

Slurry Ceramic Ball Valves

Range:
✓ Nominal Pressure: 1.6 MPa
✓ Temperature: 200 degrees C
✓ Ceramic Hardness: HRC90

Components:
- Body: WCB
- Seat: Industrial Ceramic
- Ball: Industrial Ceramic
- Body Sleeve: Industrial Ceramic
- Packing: High Temp Graphite

Applications:
- Hard rock mining
- Coal preparation
- Sand and gravel
- Pulp and paper

Operation Options:
- Manual hand wheel or lever
- Single or double acting pneumatic actuator
- Electric actuator
- Hydraulic actuator

Features:
- TDH’s ceramic ball valve for abrasive slurry applications offer a high degree of corrosion resistance in addition to abrasion/wear resistance.
- High precision machining results in superior ball and seat interfacing for tight shut-off.
- The ceramic components are completely sealed preventing process media from contact with the valve body housing.
- Valves are suitable for both On-Off and Modulating control applications
All of our customer support needs can be met with a combination of “in house” service personnel, full time engineering staff, professional chemists, contract service representatives, and a growing dealer network.

In house, we offer the following services & analytical capabilities:

**Design and Build Services:**
- Plant lay-out drawings
- P&I diagrams
- Flowcharts
- Stoichiometric and mass balance calculation

**Consultation Services:**
- Tailings waste analysis for possible beneficial uses
- Diagnosis, retro-fit, and design improvement of competing filter presses (and other equipment)

**Laboratory Capabilities:**
- Testing services
- Sieve size particle distribution
- Particle size by laser diffraction
- Shape and surface analysis by Stokes Law settling
- Elemental analysis by x-ray fluorescence (XRF)
- Mineral analysis x-ray diffraction (XRD)
- Novel waste usage technologies (e.g. enzymatic stabilization, unique binders, mechanical activation, fly ash activation)
PROCESS EQUIPMENT
Belt Presses • Clarifiers • Cyclones • Dewatering Screens • Filter Presses • Thickeners
• Flocculant Blending • Toshiba Flow Meters • Non-Nuclear Density Meters
• Slurry Pumps • Valves

AUTOMATION AND CONTROLS
Ultrasonic Liquid Level Controllers • PLC, HMI and VFD Programming
• Flocculate Batching Systems • Flocculate Metering Systems

LIQUID/SOLIDS SEPARATION CHEMICALS
Flocculants • Coagulant • Dispersant

PIPE | HDPE
Custom Made HDPE Fittings • Electro Fusion Couplers • Fusion Machines
• Rubber Lined Steel Pipe • Ceramic Lined Elbows & Fittings

FILTRATION SYSTEMS
Water • Oil • Fuel • Hydraulic

SCREENS
Dewatering • Incline Screens • Horizontal Screens

SLURRY PUMPS AND VALVES
Horizontal Slurry Pumps • Vertical Slurry Pumps • Pneumatic, Manual Pinch Valve
• Electric and Butterfly Valves • Butterfly and Check Valves

WASH PLANTS
Complete (Design and Build) • Portable • Skid Mounted

ENGINEERING & LAB SERVICES
Engineering Design Build • Turnkey Systems • In-house Lab Testing
• Beneficial Uses • Consultation

United States
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Tons Per Hour: 916-663-3800
TDH Slurry: 713-984-4910

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