ENIDINE non-adjustable micro-bore hydraulic shock absorbers can accommodate varying energy conditions. This family of tamperproof shock absorbers provides consistent performance, cycle after cycle. Non-adjustable models are designed to absorb maximum energy within a compact envelope size.

The TK Series is a versatile, miniature design which provides effective, reliable deceleration and vibration control for light loads. Models can accommodate a wide range of operating conditions.

The Enidine STH Series offers the highest energy absorption capacity relative to its size. These custom-orificed shock absorbers are designed to meet exact application requirements. STH Series shock absorbers are available in fully threaded cylinder bodies, providing flexibility in mounting configurations.

Features and Benefits

- Extensive non-adjustable product line offers flexibility in both size and energy absorption capacity to fulfill a wide range of application requirements.
- Tamperproof design ensures repeatable performance.
- Special materials and finishes can be designed to meet specific customer requirements.
- Incorporating optional fluids and seal packages can expand the standard operating temperature range from (-10°C to 80°C) to (-30°C to 100°C).
- Threaded cylinders provide mounting flexibility and increase surface area for improved heat dissipation.
- A select variety of surface finishes maintains original quality appearance and provides the longest corrosion resistance protection.
- ISO quality standards result in reliable, long-life operation.

TK 10 Series
TK 21 Series
TK 6 Series
Enidine Non-Adjustable Single-Orifice Shock Absorbers

The internal structure of a single orifice shock absorber is shown above. When a force is applied to the piston rod, the check ball is seated and the valve remains closed. Oil is forced through the orifice, creating internal pressure allowing smooth, controlled deceleration of the moving load. When the load is removed, the compressed coil spring moves to reposition the piston head, the check ball unseats, opening the valve that permits rapid return of the piston head rod to the original extended position.

The closed cellular foam accumulator is compressed by the oil during the stroke, compensating for fluid displaced by the piston rod during compression. Without the fluid displacement volume provided by the foam accumulator, the closed system would be hydraulically locked.

Single-orifice shock absorbers provide constant orifice area (dashpot) damping.
Non-Adjustable Series Hydraulic Shock Absorbers
TK Micro-Bore Series, STH Series

Ordering Information/Application Worksheet

Example 1: Standard Products
10 TK 10 M - 2 B
Select quantity
Select catalog number
Select thread designation from engineering data chart (if applicable)
Select damping constant from appropriate sizing graph
Select piston rod type

Example 2: Custom Orifice Products*
10 STH .25M
APPLICATION DATA
Select quantity
Select catalog number

Ordering Information/Application Worksheet

Example 1: Standard Products

Example 2: Custom Orifice Products*

Motion Direction (Check One):

- Horizontal
- Vertical
- Incline
- Rotary Horizontal
- Rotary Vertical

Weight (Min./Max.):__________________________________________________(Kg)
Cycle Rate:____________________________________________________(cycles/hour)
Additional Propelling Force (If known):_______________________________(N)

Air Cyl: Bore______ (mm) Max. Pressure______(bar) Rod Dia.______(mm)
Hydraulic Cyl: Bore______ (mm) Max. Pressure______(bar) Rod Dia.___ (mm)
Motor _____________ (kW)   Torque_____________(Nm)

Ambient Temp.:___________________________________________________________(°C)

Environmental Considerations: _____________________________________________
__________________________________________________________________________________

SHOCK ABSORBER APPLICATION

Number of Shock Absorbers to Stop Load
Impact Velocity (min./max.):_________________________________________(m/s)
Shock Absorber Stroke Requirements:______________________________(mm)
(a) Load Requirements _________(Kg)

RATE CONTROL APPLICATION

Number of Rate Controls to Control the Load:
Control Direction:  ☐ Tension (T) ☐ Compression (C)
Required Stroke: ______________________(mm) Est. Stroke Time: ______________________(s)
Estimated Velocity at the Rate Control: ______________________(m/s)

*Enidine will specify individual part number for each application.
Non-Adjustable Series Hydraulic Shock Absorbers
TK Micro-Bore Series

### TK 6M, TK 8M Series

#### Standard

<table>
<thead>
<tr>
<th>Catalog No./Model</th>
<th>Bore Size (mm)</th>
<th>Stroke (mm)</th>
<th>Fy Max. Max/c</th>
<th>FyC</th>
<th>Fp Max. Reaction Force (Nm/c)</th>
<th>Extended (Nm)</th>
<th>Compressed (Nm)</th>
<th>Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK 6M</td>
<td>4.2</td>
<td>4.0</td>
<td>1.0</td>
<td>3</td>
<td>600</td>
<td>360</td>
<td>1.0</td>
<td>3.5</td>
</tr>
<tr>
<td>TK 8M</td>
<td>4.0</td>
<td>6.0</td>
<td>6.0</td>
<td>4</td>
<td>800</td>
<td>360</td>
<td>1.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**Notes:** 1. Dash numbers in page color are non-standard lead time items, contact Enidine.

#### Non-Adjustable Series

#### Technical Data

**TK 6M/TK 8M**

<table>
<thead>
<tr>
<th>Catalog No./Model</th>
<th>Damping Constant</th>
<th>A (mm)</th>
<th>C (N/mm)</th>
<th>D (mm)</th>
<th>F (mm)</th>
<th>G (mm)</th>
<th>H (mm)</th>
<th>Q (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK 6M</td>
<td>-1, -2, -3</td>
<td>29.0</td>
<td>M6 x 0.5</td>
<td>2.0</td>
<td>5.0</td>
<td>1.0</td>
<td>9.0</td>
<td></td>
</tr>
<tr>
<td>TK 8M</td>
<td>-1, -2, -3</td>
<td>44.6</td>
<td>M8 x 1.0</td>
<td>2.0</td>
<td>25.0</td>
<td>4.4</td>
<td>4.0</td>
<td>1.0</td>
</tr>
</tbody>
</table>

**Notes:** 1. Dash numbers in page color are non-standard lead time items, contact Enidine.
Non-Adjustable Series Hydraulic Shock Absorbers

TK Micro-Bore Series

TK 10M Series

Standard

TK 21M Series

Standard

Technical Data

<table>
<thead>
<tr>
<th>Catalog No./Model</th>
<th>S Stroke (mm)</th>
<th>E Max. (Nm/c)</th>
<th>F Max. Reaction Force (N)</th>
<th>Nominal Coil Spring Force (N)</th>
<th>Fp Max. Propelling Force (N)</th>
<th>Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK 21M</td>
<td>6.4</td>
<td>5.6</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

*Note: A4 and E apply to button models and urethane striker cap accessory.

<table>
<thead>
<tr>
<th>Catalog No./Model</th>
<th>S Stroke (mm)</th>
<th>Δ= Non-standard lead time items, contact Enidine.</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK 10M (B)</td>
<td>6,4</td>
<td></td>
</tr>
</tbody>
</table>

Notes: 1. Δ: Non-standard lead time items, contact Enidine.
2. (B) indicates button model of shock absorber.

<table>
<thead>
<tr>
<th>Catalog No./Model</th>
<th>S Stroke (mm)</th>
<th>E Max. (Nm/c)</th>
<th>F Max. Reaction Force (N)</th>
<th>Nominal Coil Spring Force (N)</th>
<th>Fp Max. Propelling Force (N)</th>
<th>Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TK 21M</td>
<td>6.4</td>
<td>5.6</td>
<td>8</td>
<td>12</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

*Note: A4 and E apply to button models and urethane striker cap accessory.

Note: A positive stop is required to prevent the bottoming of the TK 21M shock absorber.
Non-Adjustable Series Hydraulic Shock Absorbers

STH Series

STH .25M → STH 1.5M x 2 Series

Technical Data

**Custom Orificed Products**

<table>
<thead>
<tr>
<th>Catalog No./Model</th>
<th>S Stroke (mm)</th>
<th>F Max. Reaction (N)</th>
<th>Force (N)</th>
<th>Nominal Coil Spring Force (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ΔSTH .25M</td>
<td>9,0</td>
<td>11</td>
<td>11</td>
<td>4,900</td>
</tr>
<tr>
<td>ΔSTH .5M</td>
<td>12,5</td>
<td>45</td>
<td>18</td>
<td>2,000</td>
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<tr>
<td>ΔSTH .75M</td>
<td>19,0</td>
<td>265</td>
<td>35</td>
<td>180</td>
</tr>
<tr>
<td>ΔSTH 1.0M</td>
<td>25,0</td>
<td>500</td>
<td>50</td>
<td>275</td>
</tr>
<tr>
<td>ΔSTH 1.0M x 2</td>
<td>30,0</td>
<td>1,000</td>
<td>60</td>
<td>425</td>
</tr>
<tr>
<td>ΔSTH 1.5M</td>
<td>25,0</td>
<td>1,50</td>
<td>90</td>
<td>420</td>
</tr>
<tr>
<td>ΔSTH 1.5M x 2</td>
<td>50,0</td>
<td>2,000</td>
<td>90</td>
<td>850</td>
</tr>
</tbody>
</table>

**Notes:**
1. Custom orificed application data needed.
2. All shock absorbers will function at 5% of their rated energy per cycle. If less than 5%, a smaller model should be specified.
3. Enidine recommends a positive stop to prevent bottoming of the shock absorber.
4. Δ = Non-standard lead time items, contact Enidine.
Non-Adjustable Series Hydraulic Shock Absorbers
TK Micro-Bore Series, STH Series

TK 10M → STH 1.5M x 2 Series

Jam Nut (JN)

Lock Ring (LR)

Square Flange (SF)

Side Load Adapter (SLA)

Accessories

<table>
<thead>
<tr>
<th>Catalog No./ Model</th>
<th>Part Number</th>
<th>Model Ref</th>
<th>JA mm</th>
<th>JB mm</th>
<th>JH mm</th>
<th>Mass g</th>
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</thead>
<tbody>
<tr>
<td>JN M10 x 1</td>
<td>J24921183</td>
<td>TK10M/TK21M</td>
<td>15,0</td>
<td>16,0</td>
<td>3,2</td>
<td>2,8</td>
</tr>
<tr>
<td>JN M14 X 1</td>
<td>J24930035</td>
<td>STH 25M</td>
<td>19,7</td>
<td>20,7</td>
<td>4,0</td>
<td>3</td>
</tr>
<tr>
<td>JN M22 X 2.5</td>
<td>J2602167</td>
<td>STH 5M</td>
<td>33,5</td>
<td>33,5</td>
<td>5,5</td>
<td>5</td>
</tr>
<tr>
<td>JN M30 X 2</td>
<td>J30583167</td>
<td>STH 75M</td>
<td>41,6</td>
<td>41,6</td>
<td>7,0</td>
<td>6</td>
</tr>
<tr>
<td>JN M36 X 1.5</td>
<td>J2314035</td>
<td>STH 1.0M</td>
<td>41,6</td>
<td>41,6</td>
<td>7,0</td>
<td>6</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalog No./ Model</th>
<th>Part Number</th>
<th>Model Ref</th>
<th>B mm</th>
<th>LH mm</th>
<th>Mass g</th>
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</thead>
<tbody>
<tr>
<td>LR M45 x 1.5</td>
<td>F86637849</td>
<td>STH 1.5 Series</td>
<td>57,2</td>
<td>9,5</td>
<td>75</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalog No./ Model</th>
<th>Part Number</th>
<th>Model Ref</th>
<th>FC mm</th>
<th>FH mm</th>
<th>SA mm</th>
<th>SB mm</th>
<th>Bolt Size mm</th>
<th>Mass g</th>
</tr>
</thead>
<tbody>
<tr>
<td>SF M45 X 1.5</td>
<td>M48637129</td>
<td>STH 1.5 Series</td>
<td>8,6</td>
<td>12,7</td>
<td>57,2</td>
<td>49,3</td>
<td>M8</td>
<td>142</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Catalog No./ Model</th>
<th>Part Number</th>
<th>Model Ref</th>
<th>Stroke mm</th>
<th>A mm</th>
<th>B mm</th>
<th>C</th>
<th>D mm</th>
<th>E mm</th>
<th>E WF mm</th>
<th>VLC mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLA 10MA</td>
<td>SLA 33157</td>
<td>TK 10M/TK21M</td>
<td>6,9</td>
<td>12</td>
<td>11</td>
<td></td>
<td>5,0</td>
<td>21,6</td>
<td>13,0</td>
<td>11,0</td>
</tr>
</tbody>
</table>

Notes: 1. Maximum sideload angle is 30°.
2. Δ = Non-standard lead time items, contact Enidine.
Non-Adjustable Series Hydraulic Shock Absorbers
TK Micro-Bore Series, STH Series

Rectangular Flange (RF)

Universal Retaining Flange (UF)