High Pressure Ball Valves

INNOVATIVE FLUID POWER

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*Recommendations for actuator size are based on a typical application: Double acting actuator, 3000 psi max. pressure, mineral based hydraulic fluid, 80-100 psi shop air, and a moderate duty cycle. Applications with Spring Return actuators, higher system pressures, low lubricity fluids, or infrequent cycling (< once/hr.) may require a larger size actuator. Please consult HYDAC Engineering Department for assistance sizing actuators for these applications.

1) See pages 39 - 40 for information on solenoid valves.

**Model Code**

KHB-25SAE-1114 - A 5 1 A A

ball Valve
Available for both KHB & KHM Series
(See pages 5 - 17 for details on ball valve model codes)

Note: OMIT the handle code rather than entering the code for no handle.

Actuator Type
A = Pneumatic - single (ESA) or double acting (EDA)

Size*
1 = 12 (recommended for valves KHB-06... & KHB-10)
2 = 25 (recommended for valves KHB-16... & KHB-20)
3 = 40
4 = 65
5 = 100 (recommended for valves KHB-25... & KHM-32)
6 = 200
7 = 350 (recommended for valves KHM-40... & KHM-50)

Operation
1 = All Double acting (air to A to open, air to B to close)
2 = #2 Spring Set (balances with 40 psi)
3 = #3 Spring Set (balances with 60 psi)
4 = #4 Spring Set (balances with 80 psi)
5 = #5 Spring Set (balances with 100 psi)
6 = #6 Spring Set (balances with 120 psi)

Limit Switches
A = none
B = Standard Limit Switch Module (2 SPDT)

Additional Options
A = none
B = Control Valve: 120V AC
C = Control Valve: 24V DC

Model Codes containing selections listed in RED are non-standard items - Minimum quantities will apply - Contact HYDAC for information and availability
Not all combinations are available

**Description**
The HYDAC dependable rack and pinion pneumatic actuators are compact and efficient components with a trouble-free, high-cycle service life.

The double piston design allows significantly reduced cylinder diameter and overall size as compared to single piston design. Each piston has a gear rack that applies an equal force at two points directly across the diameter of a common pinion gear. This feature, combined with the patented suspension system, creates a symmetrically balanced, center-mount actuator with a short, powerful stroke, rapid response, and fully concentric operating loads for optimum life expectancy and performance in control valve applications.

**Product Features**
- Reliable rack and pinion design.
- High output torque and compactness
- Integrated air manifold and internal porting
- A solenoid valve can be mounted directly onto actuator body thus external piping is simplified
- Double-acting and single-acting (spring return) models are available
- Self-lubricating bands reduce friction and smooth piston travel, and increase efficiency
- Limit switch available

**Ordering**

**Pneumatic Actuators (double acting) & Mounting Kits**

<table>
<thead>
<tr>
<th>Valve Size</th>
<th>Actuator Model Code</th>
<th>Actuator Part Number</th>
<th>Mounting Kit Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>KHB-06 (1/4&quot;)</td>
<td>EDA-12</td>
<td>02700204</td>
<td>02061508</td>
</tr>
<tr>
<td>KHB-10 (3/8&quot;)</td>
<td>EDA-12</td>
<td>02700204</td>
<td>02061508</td>
</tr>
<tr>
<td>KHB-16 (1/2&quot;)</td>
<td>EDA-25</td>
<td>02700205</td>
<td>02061509</td>
</tr>
<tr>
<td>KHB-20 (3/4&quot;)</td>
<td>EDA-25</td>
<td>02700205</td>
<td>02061510</td>
</tr>
<tr>
<td>KHB-25 (1&quot;)</td>
<td>EDA-100</td>
<td>02700206</td>
<td>02061511</td>
</tr>
<tr>
<td>KHM-32 (1 1/4&quot;)</td>
<td>EDA-100</td>
<td>02700206</td>
<td>02061512</td>
</tr>
<tr>
<td>KHM-40 (1 1/2&quot;)</td>
<td>EDA-350</td>
<td>02700207</td>
<td>02061513</td>
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<tr>
<td>KHM-50 (2&quot;)</td>
<td>EDA-350</td>
<td>02700207</td>
<td>02061513</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Optional Accessories (model code / part number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limit Switch Box (2 SPDT switches) ACTUATOR LIMIT SWITCH HDN/2</td>
</tr>
<tr>
<td>Limit Switch Mounting Kit (for EDA-12) ACTUATOR LIMIT SWITCH MTG KIT MKN-12</td>
</tr>
<tr>
<td>Limit Switch Mounting Kit (for EDA-25 thru EDA-350) ACTUATOR LIMIT SWITCH MTG KIT MKN-25/350</td>
</tr>
<tr>
<td>Solenoid Control Valve (120 VAC) 3-Way</td>
</tr>
<tr>
<td>Solenoid Control Valve (24 VDC) 3-Way</td>
</tr>
</tbody>
</table>

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**High Pressure Ball Valves**

**Dimensions**

Clearance Required to Remove Cover

- Optional Limit Switch
- Enclosure: NEMA 4, includes 2 SPDT switches plus visual indicator.
- Switches: up to 250 V AC or DC. Contacts: N/O and N/C
- Temperature: -4˚ to 175˚F
- Housing Material: Aluminum housing, polyurethane finish.

- Actuator
  - Operating Pressure: 120 psi max.
  - Rotation: 90° Pressurize port “A” for counter-clockwise rotation (opening the valve)
  - Temperature: -4˚ to 175˚F
  - Materials: Aluminum housing and shaft, polyurethane finish.
  - Service Life: up to one million cycles
  - Mounting: Bottom flange and square drive to ISO 5211
    Top and solenoid flange to VDE-VDI 3845 NAMUR

- Visual Indicator (standard)
- Mounting Kit

**Tie Bar Design**

Used With: KHB & KHB3K sizes -06, -10, -16, -20, -25

<table>
<thead>
<tr>
<th>Ball Valve / Actuator Size</th>
<th>H1</th>
<th>H2</th>
<th>H3</th>
<th>H4</th>
<th>L1</th>
<th>L2</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>Operating Time (sec)</th>
<th>Air Cons. (in³/1atm)</th>
<th>Weight (lbs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KHB-06 / EDA-12</td>
<td>2.2</td>
<td>2.4</td>
<td>6.6</td>
<td>5.3</td>
<td>2.8</td>
<td>4.1</td>
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<td>1.8</td>
<td>0.5</td>
<td>7</td>
<td>8</td>
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<td>4.5</td>
<td>8.7</td>
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<td>4.4</td>
<td>8.7</td>
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<td>1.2</td>
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<td>16</td>
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<td>11.2</td>
<td>5.2</td>
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<td>5.6</td>
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<td>42</td>
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</tbody>
</table>

Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.
Dimensions are in inches and lbs.
*Dependent upon valve and seal materials selected.