Most hydraulic systems comprise of a pumping unit/hydraulic controls/actuator and interconnecting pipework to connect the system together.

The ZBG Range of Electro-Hydraulic Actuators from Advanced Actuator combine all these sections into one self-contained unit.

For simple open/close applications the ZBG Range of Electro-Hydraulic Actuators offers benefits that make it a cost effective, reliable, easy to install solution.

**Advantages**

- Self-contained – no hydraulic pipework to install
- Completely sealed – does not ‘breathe’
- Adjustable thrust and speed
- No filtration required
- No solenoid valves required
- Ultra low maintenance
- Compact
- Numerous optional features
- Very easy to install and commission
The ZBG Actuator is a Very Simple Robust Unit

The electric motor is close coupled to a gear pump which in turn is connected to a hydraulic control block. This block has two pressure and two flow control valves all of which are adjustable and independent of each other thus allowing flexibility in terms of thrust and speed settings. From the control block pipework connects through to a hydraulic cylinder. With the exception of the electric motor, all the above items are then encased in a carbon steel tube which acts as the oil reservoir.

By spinning the electric motor in one direction oil is taken in from the reservoir by the pump and fed through to the cylinder via the control block and the cylinder extends. As the cylinder extends the motor can be stopped and the cylinder will hydraulically lock at that position.

To retract the cylinder spin the motor in the opposite direction. The unit is completely sealed from the outside by a series of ‘O’ rings which prevents the ingress of contamination.
### Range Performance Table

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Max Extend Thrust kgf</th>
<th>Max Retract Thrust kgf</th>
<th>Max Stroke mm*</th>
<th>Max Speed mm/sec</th>
<th>Motor Range kw</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZBG</td>
<td>139</td>
<td>500</td>
<td>250</td>
<td>650</td>
<td>0-290</td>
<td>0.55</td>
</tr>
<tr>
<td>ZBG</td>
<td>159</td>
<td>1250</td>
<td>850</td>
<td>800</td>
<td>0-250</td>
<td>0.25 - 1.5</td>
</tr>
<tr>
<td>ZBG</td>
<td>193</td>
<td>2500</td>
<td>1600</td>
<td>1200</td>
<td>0-250</td>
<td>0.25 - 3.0</td>
</tr>
<tr>
<td>ZBG</td>
<td>219</td>
<td>4000</td>
<td>2750</td>
<td>1600</td>
<td>0-200</td>
<td>0.25 - 3.0</td>
</tr>
<tr>
<td>ZBG</td>
<td>245</td>
<td>6000</td>
<td>4500</td>
<td>2500</td>
<td>0-200</td>
<td>0.55 - 5.5</td>
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<tr>
<td>ZBG</td>
<td>273</td>
<td>8000</td>
<td>6000</td>
<td>3500</td>
<td>0-160</td>
<td>0.75 - 7.5</td>
</tr>
<tr>
<td>ZBG</td>
<td>298</td>
<td>10000</td>
<td>7500</td>
<td>4000</td>
<td>0-140</td>
<td>0.75 - 7.5</td>
</tr>
<tr>
<td>ZBG</td>
<td>368</td>
<td>13000</td>
<td>10000</td>
<td>5000</td>
<td>0-120</td>
<td>0.75 - 15</td>
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<tr>
<td>ZBG</td>
<td>419</td>
<td>22500</td>
<td>16500</td>
<td>5000</td>
<td>0-120</td>
<td>2.2 - 18.5</td>
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<tr>
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<td>508</td>
<td>40000</td>
<td>30000</td>
<td>5000</td>
<td>0-100</td>
<td>2.2 - 22</td>
</tr>
<tr>
<td>ZBG</td>
<td>610</td>
<td>80000</td>
<td>60000</td>
<td>5000</td>
<td>0-50</td>
<td>2.2 - 30</td>
</tr>
</tbody>
</table>

*Actual maximum stroke will depend upon the thrust required.
MAIN FEATURES

- Thrust range 25kgf – 80,000kgf (55lb – 176,000lb)
- Speed range: 0 – 290 mm / sec. (0 – 11.4 ins / sec.)
- Stroke length: 0 – 5000 mm (0 – 16,4ft.)
- Temperature range: min. -20°C, max. +70°C
- Various mounting arrangements — trunnion (standard) — flange — foot — end swing pin.
- All steel case construction — no breakage due to shock resistant to erosion by chemical fumes or sinter.
- Any non-corrosive fluid except water.*
- All static seals are standard ‘O’-rings.
- Piston rod—080M40 steel ground and hard chromed with a surface layer of 40 – 50 μm and polished to give a finish of 0.2 – 0.3 μm Ra tolerance f7.
- N.B. Although this specification gives a high degree of protection against wear and corrosion, serious consideration should be given to the Optional Features (see OF15 a/b) when operating in a hostile environment (chemical salt water—sinter etc), or if piston rod is extended for prolonged periods.
- Cylinder body—cold drawn, stress relieved, seamless mild steel honed tube. Surface finish of 0.2 – 0.25 μm Ra tolerance H8.
- All parts replaceable.

Optional Features

OF 1 Mounting brackets
OF 2 Manual operation
OF 3 Limit switches
OF 4 Pressure switches
OF 5 Potentiometers
OF 6 Starter a) integral b) remote
OF 7 Position control amplifier a) integral b) remote
OF 8 Starter/position control amplifier a) integral b) remote
OF 9 Remote position indicator
OF 10 Local mechanical position indicator
OF 11 Anti-condensation heaters
OF 12 Fluid heaters
OF 13 Piston rod: a) BS970. Grade 080M40 steel ground, 25 μm nickel, 50 – 75 μm chrome, polish 0.2 – 0.3 μm Ra. b) BS970. Grade 316S31 stainless steel ground, 75 – 100 μm chrome, polish 0.2 – 0.3 μm Ra.

*We must be advised regarding specific requirements prior to manufacture. Actuators can be supplied to operate outside this temperature range upon request.
**OTHER PRODUCTS**

- **EK and EKR actuators**
  Linear or 0 – 90 degree electro-hydraulic actuators for modulating or isolating duty. Thrusts up to 80,000kg and torques up to 135,000NM within the standard range. Optional features make these units adaptable for most applications.

- **Stepping Actuators**
  Primarily for choke valve control, the Advanced Actuator stepping actuator range come in either pneumatic or hydraulic formats. As with all Advanced Actuators they come with a number of optional features.

- **Electric Actuators**
  Modular in design, both multi and 1/4 turn available offering compact solutions. For modulating or isolating duty with options of foundation field bus and HART. Other features include double sealing of the enclosure, standard ISO5211 mounting, local or remote control and manual operation are a few of the options with these actuators.

- **Pneumatic actuators**
  Quarter turn scotch yoke design in both single and double acting formats. Anodised outer surface with double coating on the cylinder bore. Mountings for both ISO 5211 and DIN3337. Optional features include limit switches, position controllers, integrally mounted solenoid controls and valve/actuator mounting brackets.

- ** Hydraulic Cylinders**
  Complete range of heavy-duty high quality fully serviceable (i.e. can be rebuilt) metric hydraulic cylinders to CETOP/R10H.

**We also Represent**

- Kawasaki Hydraulics
- Staffa

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