Production-Pressure-Operated Gas Lift Valves

Retrievable valves for continuous tubing flow production

APPLICATIONS
- Continuous tubing flow

BENEFITS
- Enables uniform operation and extended run life
- Improves efficiency with free flow of injection gas to tubing
- Increases reliability

FEATURES
- Hydraulic forming process for the bellows
- Large-area crossover seats
- Premium materials suitable for various environments
- Floating seats for versatile application and economical replacement
- Guided valve stem for precise alignment with the seat during operation
- Reverse-flow check valves to prevent backflow into the tubing annulus

Field-proven Camco* gas lift and subsurface safety systems’ production-pressure-operated gas lift valves are available as the 1-in [25.4-mm] OD BKR-5 and BKF-12 valves and the 1½-in [38.1-mm] OD R-25P valves.

A multi-ply MONEL® bellows provides the force necessary to maintain the BKR-5 and R-25P valves in the normally closed position, while the BKF-12 valve uses an atmospheric-pressure-charged, multi-ply MONEL bellows and an INCONEL® spring.

All the valves contain integral reverse-flow check valves and crossover seats. The 1-in valves also have floating seats.

Port sizes
1-in OD valves are available in ¼-, ⅜-, and ⅝-in [3.2-, 4.8-, and 6.4-mm] port sizes. 1½-in OD valves are available in ¼-, ⅜-, ⅝-, ⅞-, and ⅝-in [3.2-, 4.8-, 6.4-, 8.0, and 9.5-mm] port sizes.

Operation
Production fluid enters the gas lift valve and acts on the effective bellows area. The production pressure necessary to compress the bellows of the BKR-5 and R-25P valves is determined by precharged nitrogen pressure. The force necessary to overcome the INCONEL spring in the BKF-12 valve is provided by the production and gas pressure times the effective bellows area.

As production pressure overcomes the precharged nitrogen pressure in the bellows or the preset spring force, the bellows compresses and lifts the stem tip off the seat. Injection gas then flows through the seat, past the reverse-flow check valve, and into the production conduit.
<table>
<thead>
<tr>
<th>Valve Type</th>
<th>Nominal OD, in [mm]</th>
<th>Latch</th>
<th>Running Tool</th>
<th>Pulling Tool</th>
<th>Mandrel Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>BKR-5</td>
<td>1.000 [25.4]</td>
<td>Integral bottom</td>
<td>GA-2</td>
<td>JDC†</td>
<td>KBM, KBMM, KBMG, KBG</td>
</tr>
<tr>
<td>BKF-12</td>
<td>1.000 [25.4]</td>
<td>BK series</td>
<td>JK</td>
<td>JDC</td>
<td>KBM, KBMM, KBMG, KBG</td>
</tr>
<tr>
<td>R-25P</td>
<td>1.500 [38.1]</td>
<td>RA</td>
<td>JC-3</td>
<td>JDC</td>
<td>MMA</td>
</tr>
<tr>
<td>R-25P</td>
<td>1.500 [38.1]</td>
<td>RK</td>
<td>RK-1</td>
<td>JDS</td>
<td>MMM, MMG, MMRG</td>
</tr>
</tbody>
</table>

†Use core extension with this pulling tool for integral bottom latch valves.