

BK-B

Barrier Series injection-pressure-operated gas lift valve

APPLICATIONS

- Tubing or annular flow
- Continuous or intermittent production
- High-performance gas lift installations

BENEFITS

- Enhances safety and wellbore integrity
- Reduces downtime with reliable, robust performance
- Lowers costs with versatility and efficiency
- Uniformly operates over a series of injection pressures to increase production

FEATURES

- Field-proven design and operation
- Qualification to API 19G2 V1 standard
- Corrosion resistance through nickel alloy construction
- Premium specification nonmetallic PTFE-based seal stack
- Guided valve stem that precisely aligns stem to seat during operation
- Barrier-qualified reverse-flow check valve system that provides robust seal between tubing and casing annulus
- Compatible with Camco* gas lift and subsurface safety systems' standard and select sidepocket mandrels

BK-B Barrier Series injection-pressure-operated gas lift valves are used for continuous or intermittent gas lift production. Based on field-proven Camco systems technology, these 1-in-OD retrievable valves feature a barrier-qualified, integral reverse-flow check valve.

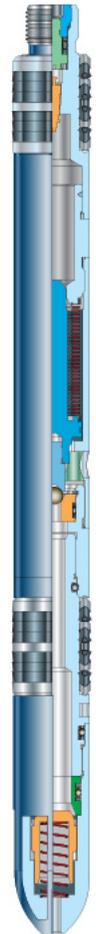
Applications include tubing flow when the valves are installed in standard side pocket mandrels or annular flow when they are installed in side pocket mandrels ported for annular flow. A nitrogen-charged, multi-ply MONEL® bellows provides the force necessary to maintain the valves in a normally closed position.

The bellows design incorporates a silicone fluid dampening and overpressure protection device to increase valve life while the dome volume gas has been optimized to help reduce load rates. The bellows assembly is rated to 3,500 psi dome charge.

The barrier gas lift valve's design is based on Schlumberger traditional unloading and operating gas lift valves, which incorporate a high-specification, metal-to-metal back check sealing module that has been developed and tested to meet strict quality, leak-rate, and performance standards. The check design incorporates enhanced geometry to minimize erosion while maintaining dart stability during high-rate operations. This increased performance and reliability enables the barrier gas lift valves to be installed as a well barrier element.

Operation

The BK-B valve is injection pressure operated. A precharged nitrogen pressure in the dome acts on the bellows assembly to hold the valve closed. Injection gas enters the valve and acts on the effective bellows area, while tubing pressure acts on the effective port area of the ball. As these pressures overcome the precharged pressure in the dome, 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.



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BK-B Valve Specifications

OD (not including latch), in	1
Length (not including latch), in [mm]	13.299 [337.8]
Max. valve pressure rating, psi [MPa]	10,000 [68.9]
Max. valve operating temperature rating, degF [degC]	350 [177]
Orifice size range, in	$\frac{1}{64}$ to $\frac{2}{64}$

Materials

Body parts	MONEL 400 and K-500, INC 925
O-ring seals	Aflas® with PEEK® backups
Seat	Tungsten carbide
Seal stack	PTFE seal stack with energizing rings and carbon-filled PEEK backup rings
Back check dart and seat	Stellite®

Secondary accessories

Latch	BK-2 series
Running tool	JK
Pulling tool	1¼-in JDC
Kickover tool	OK series
Mandrel types	K series (eg KBMG, KBMM, KBMM-R, and KBG)