

Increase your production, while protecting the plunger and down hole tubing components

A plunger lift system involves three components: the surface equipment (the lubricator, sensor, controller), the in-hole equipment (the plunger) and the bottom hole equipment (the bumper spring assembly). Because it located at the bottom of the well, the bumper spring assembly may seem less important than the other visible parts of the system. Yet its role is critical to protecting the components of the system and the well's down hole integrity.

The bottom hole bumper spring is placed down hole to serve as a resilient landing spot for the plunger, so it doesn't fall through the seating nipple. It also protects the tubing, seating nipple and plunger itself by absorbing the impact of the arriving plunger. This is particularly critical should there be an absence of liquids, causing the plunger to fall with excessive speed and land with greater impact. Any bumper spring assembly will perform these core functions.

At PCS, we make sure our equipment does more than just the basics.

The PCS Bottom Hole Bumper Spring has evolved over more than 20 years of field application and testing. Because of its importance in protecting the well and extending

the life of the plunger lift system, the PCS Bottom Hole Bumper Spring is designed for maximum durability and is engineered to actually minimize down hole restrictions and sand cutting. The results: increased production and profits.

PCS' commitment to providing the strongest, most efficient bottom hole bumper spring is evident:

- > **Standard fish neck allows for easy wireline retrieval**
- > **Tapered neck design facilitates installation and removal**
- > **Engineered design accounts for temperature, corrosion and extreme down hole conditions**
- > **Encased steel rod allows for easier in-tact removal**
- > **Extra-long case and custom machining maximize fluid flow**
- > **Double-nut locking mechanism eases field repair**

Choosing an artificial lift system is a big decision. Take a closer look at the PCS Bottom Hole Bumper Spring, and it's plain to see that a PCS Plunger Lift system isn't just the best choice, it's the only choice.



BOTTOM HOLE BUMPER SPRING



- 1 STANDARD FISHING NECK**
 - > Allows for easy wireline retrieval, if necessary, reducing maintenance costs
 - > Designed to API standards
- 2 TAPERED BODY**
 - > Streamlined design eases removal when fluids are in the tubing
 - > Prevents damage upon retrieval
- 3 SPRING**
 - > One-piece construction is strong and durable
 - > Engineered to withstand repeated impact
- 4 STEEL ROD**
 - > Heavy-duty encased steel rod allows for in-tact retrieval
- 5 CAGE**
 - > Extra-long design allows for maximum gas and fluid flow, increasing production rates
- 6 BODY SIZING**
 - > Available in multiple “no-go” sizes to prevent fall through at the seating nipple
- 7 CUP OPTIONS**
 - > Multiple cup options match the well’s seating nipple applications
 - > Available in single, dual and chevron
- 8 LOCKING MECHANISM**
 - > Double-nut locking mechanism allows for easy field repair and cup replacement
- 9 ORIFICE**
 - > 1 1/8" diameter orifice maximizes the flow area, increasing production

THE SPECIFICATIONS

Bottom Hole Bumper Springs

Tubing Size	No-Go Size	Optional No-Go
2 1/16"	1.515	N/A
2 3/8"	1.877	1.900
2 7/8"	2.341	N/A
3 1/2"	2.842	N/A

Product Styles:

A. Free Floater B. Self Dump C. Conventional



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FOR MORE INFORMATION, PLEASE CONTACT YOUR LOCAL PCS REPRESENTATIVE OR VISIT OUR WEBSITE AT PCSLIFT.COM.