



PRODUCTION

## SUCKER ROD GUIDES

Increase production and extend rod and tubing-string life with proven, cost-effective solutions

DRILLING & FORMATION EVALUATION  
WELL CONSTRUCTION  
COMPLETION & STIMULATION  
**PRODUCTION**



# **A simple solution for better production**

The simplest solutions are often best. Sucker rod guides can reduce the number of costly hot oil and chemical treatments in many sucker-rod-lifted wells. By doing so they can lower operating costs, reduce downtime, and reduce environmental risk. Sucker rod guides not only clear the production path in your well, but they also protect costly artificial lift equipment—including sucker rods, couplings, and tubing—from wear. The result is fewer tubing and rod pulls, lower overall operating costs, and increased well production with less well downtime.

# Artificial-lift technologies to match your needs

Optimizing production is no longer an option—it's a necessity.



But unleashing the potential of your rod-lift wells involves more than control and analysis; it requires a systematic approach that combines a comprehensive package of proven equipment with innovative field-management solutions. Weatherford, the only oilfield services company to offer extensive solutions for all forms of artificial lift, brings global expertise and an unparalleled depth of products to suit any production need.

We are the only original equipment manufacturer to offer fully integrated reciprocating rod lift (RRL) solutions, including manufacturing, service, repair, and refurbishment. With a complete well-optimization package, from pumping system design and installation to wellsite automation to data analysis, we can create a solution to deliver what you need—a system designed specifically for your well, using the most advanced technology available.

Complementing our comprehensive pumping solutions is our complete array of sucker rod guides to match a wide range of well conditions throughout the world. Manufactured in North America, our conventional and premium sucker rod guides are the culmination of expert engineering and design, superior materials, and the Weatherford promise of reliability.



# Built for toughness and reliability

## Injection molded directly onto the sucker rod

Our guides are made of premium thermoplastics that are reinforced with glass or aramid fibers for added toughness. Using a wide range of materials to match a variety of production applications, Weatherford offers rod guide solutions for the most demanding wells, including those with high water cuts, high temperatures, corrosives, and abrasives. The materials chart below is for your reference.

Our newest material PPS-X, is our extreme application material. Specifically formulated for high-temperature, highly deviated wells, PPS-X can be used for the most demanding applications. Please consult your Weatherford representative for a collaborative discussion of the optimal material for your well.

Material	Base Polymer	Continuous Use Temperature Limitation	Hot Oiling	Acceptable For		Recommended For		
				Sweet Crude	Sour Crude	Sand	Water	Brine
AU	PPA	280°F (138°C)**	•	•	•		•	
AF	PPA	400°F (204°C)**	•	•	•	•	•	•
PPS	PPS	400°F (204°C)	•	•	•	•	•	•
PPS-X	PPS	500°F (260°C)	•	•	•	•	•	•
LG15	*	350°F (204°C)**	•	•	•		•	
UHMWPE	*	180°F (82°C)		•	•	•	•	
NFF	Nylon	275°F (135°C)	•	•		•	•	

\* Proprietary

\*\* Maximum temperature limitation is dependent on water cut. Please contact Weatherford for assistance in selecting the proper material for your well.

# Premium Sucker Rod Guides

## Unparalleled technology to protect your investment

Weatherford premium sucker rod guides outperform any conventionally designed guides, including many “premium” designs on the market. Our high-performance guides offer wider vanes, more erodible wear volume, and excellent sucker-rod-string protection, even in corrosive wells.



### Cobra® Sucker Rod Guides

#### More Durable

Cobra guides have more than twice the erodible wear volume (EWW) of comparably sized straight-vane designs. With more material outside the coupling diameter, Our 5-in.-long Cobra guides are a long-lasting and cost-efficient addition to your sucker rod string.

#### More Protection

Deep channels and extra-wide vanes are hallmark design features for Cobra guides. These characteristics distribute loads more evenly across the contact area, protect more of the tubing circumference, and improve downhole wear protection.

#### More Streamlined

Cobra guides feature tapered ends for a smooth contour that improves flow characteristics. In high-volume or corrosive wells, tapered ends reduce turbulence, keep fluid drag to a minimum, and virtually eliminate the effects of inhibitor washing above the guide.

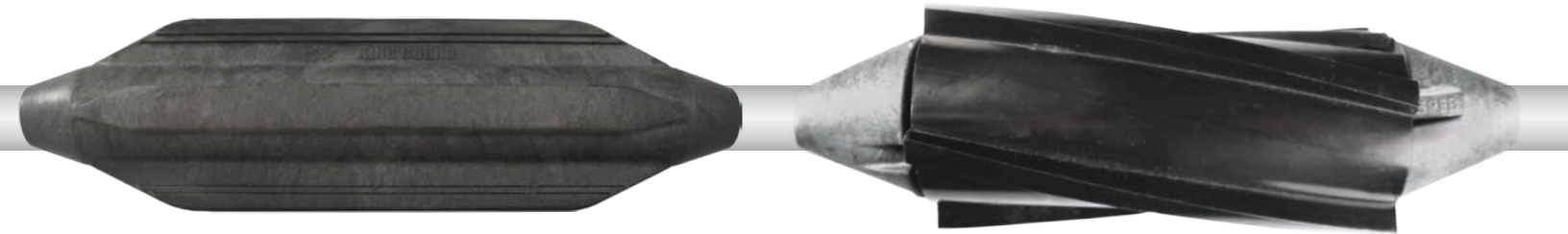
#### More Intuitive

Proprietary Wear Gauges™ indicators provide visual confirmation of the remaining EWW on Cobra guides. EWW is the amount of protective material outside the OD of the rod coupling; once the EWW is depleted, your rod guides must be replaced. Our Wear Gauges indicators are molded onto alternating guide vanes, assuring that your tubing is protected from rod couplings.

### King Cobra Sucker Rod Guides

#### More Coverage

Two inches longer than Cobra guides, King Cobra guides offer even greater EWW and increased contact with tubing, resulting in a longer life of the rods and tubing. These guides are designed for tough wells, generally those with an inclination greater than 10° or a dogleg severity of at least 5° per 100 ft.



## King Cobra LT Rod Guides

### Less Turbulence

Designed to minimize fluid drag and turbulence created by other rod guides, the King Cobra LT offers smooth and reliable operation in highly corrosive or viscous wells. The guides on the vanes are the key to operating where other designs fail: A narrow width allows maximum fluid flow, and increased length allows better flow stabilization.

## SpinTerra® PCP Rod Guides

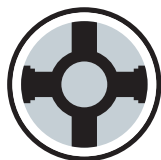
### More Run life

SpinTerra PCP guides are manufactured in two parts, with the base injection molded onto the sucker rod and the race installed over the base. This design allows the guide to spin freely, lowering horsepower and torque requirements while protecting rods and tubing from premature wear. The exclusive helical grooves found in the race ID improve performance and run life in sand-producing wells by pushing solids out from between the rotor and base. Our SpinTerra guides operate in wells at up to 180°F (82°C).

### Cobra or Conventional?



King Cobra

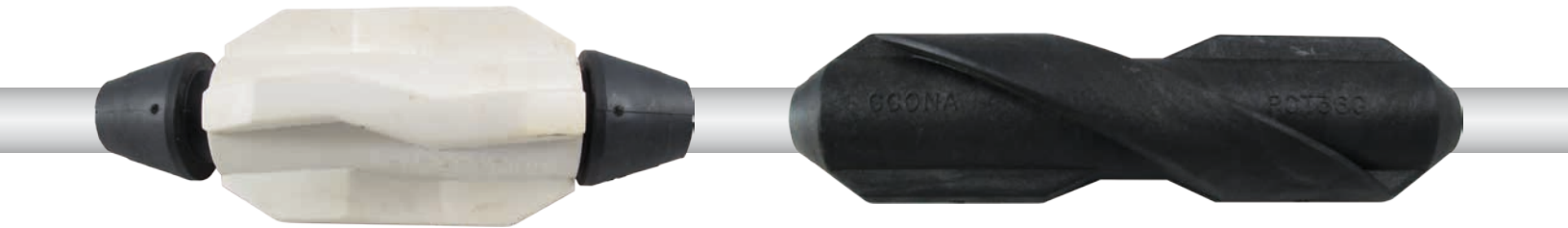


King Cobra LT



Conventional

Wider vanes on Cobra guides provide more erodible wear volume, greater contact with the tubing, and better wear protection.



## SpinTerra® II PCP Rod Guides

### More Performance

SpinTerra II PCP guides have an exclusive two-part design that includes a rotating race molded onto the rod and a centralizing sleeve molded around the rotating race. Other PCP guides use snap-on centralizers, which are prone to failure in abrasive and high-temperature wells. SpinTerra II guides offer unparalleled performance, operating in wells at up to 400°F (204°C).

## PCT360™ Rod Guides

### More Applications

For use in reciprocating and progressing cavity pump (PCP) rod applications, this patent-pending rod guide offers superior protection in highly deviated wells with high side loading.

### More Features

PCT360 guides not only offer wider vanes and increased length for greater erodible wear volume and stability, but also include dual-angled vanes. This unique feature allows for easier rotation, maximum flow rate, and a reduced likelihood of increased torque on downhole equipment.

## Exclusive SpinTerra II Features

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- A unique zigzag vane design enhances centralizer effectiveness, provides more erodible wear volume, and offers maximum fluid bypass.
- The race and sleeve have tight tolerances that keep abrasives from embedding in the sleeve while providing stability without the looseness or “rocker effect” of other PCP guides.
- During operation, the race rotates while the sleeve remains stationary. This design distributes wear to the race and sleeve to inhibit wear on rod or tubing surfaces.
- High temperature rating is 400°F (204°C).

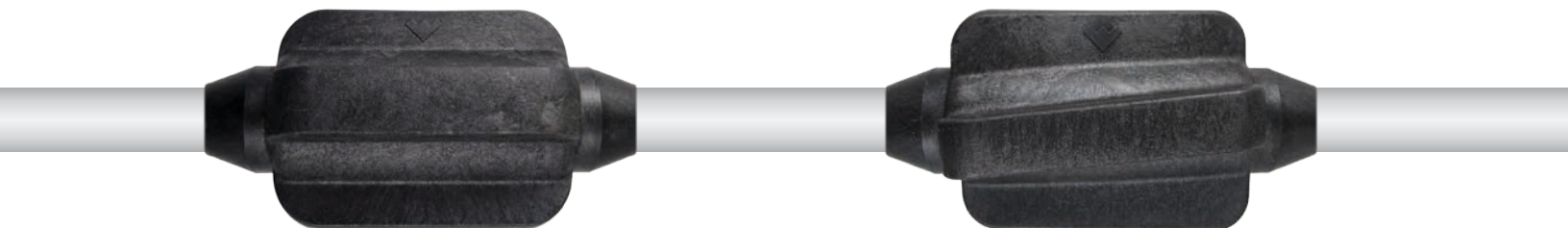




# Conventional Sucker Rod Guides

Cost-efficient solutions to protect your investment

Our conventional rod guides are suited for light-corrosion wells with moderate to heavy paraffin accumulation. Slant-vane and straight-vane designs are available in a variety of materials and, like our premium sucker rod guides, are injection molded to the rod for increased strength. All conventional designs have nontapered ends.



## Straight-Vane Sucker Rod Guides

Straight-vane rod guides control wear on the sucker rod string in low-corrosion applications that require fewer than one pull per year. All Weatherford sucker rod guides effectively centralize the rod string, which significantly reduces wear on tubing, sucker rods, and couplings.

## Slant-Vane Sucker Rod Guides

A slant-vane scraper provides broader cutting action and cleans nearly the full circumference of tubing with each stroke. The slant vane rod guide efficiently removes moderate paraffin buildup, leaving your production path clear.

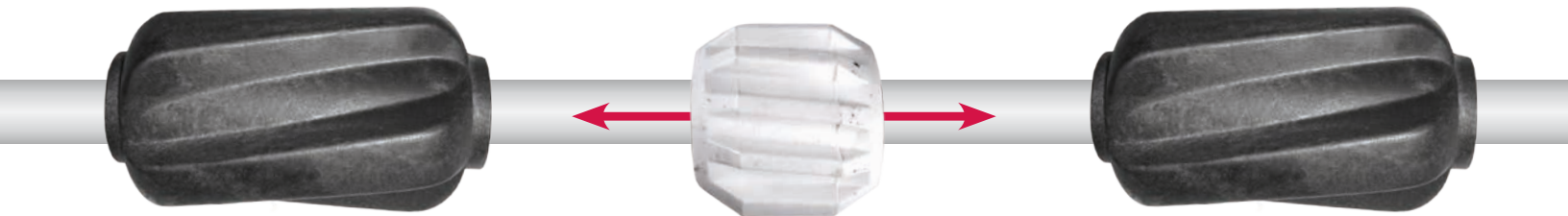
## Stabilizer Bars

Weatherford stabilizer bars, available in 30- and 48-in. lengths, centralize the plunger and sinker bars, offering protection to sucker rods and

tubing. All stabilizer bars use between one and three King Cobra guides and are manufactured using our S87 specialized sucker rod material.

Tubing Size	2 in.	2-7/8 in.	3 in.
Rod guide type	King Cobra	King Cobra, King Cobra LT	King Cobra
Rod diameters		7/8 in. or 1 in.	
Pen sizes		3/4 in. or 7/8 in.	
Length		30 in. or 48 in.	

Weatherford stabilizer bars are manufactured from our S87 material (3130). Other materials, including premium thermoplastics, are offered by special order.



### Double-Action Sucker Rod Guides

For heavier paraffin accumulation, our double-action system combines either straight, straight-vane, or slant-vane scrapers with reciprocators. While scrapers keep tubing walls clean, reciprocators clean the rods for less restricted pumping, reduced strain on the rod string, and fewer rod and pump failures.

**Injection-molded guides** keep tubing clean and act as stops for reciprocating scrapers.

**Reciprocating scrapers** remove paraffin from sucker rods.



## Intelligent Rod Rotators

Weatherford intelligent rod rotators can extend the life of your rod guides up to 400 percent. Our rod rotators combine straight-vane guides with a precise rotator. They not only clear paraffin on the full internal circumference of the tubing, but also reduce production losses and operator's time.

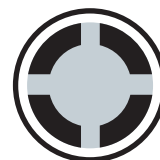
Our patented intelligent rod rotators include internal rotation sensors that quickly alert operators to rotator failure, potentially saving weeks of declining production and downtime.



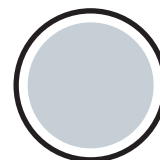
### Straight Vane or Slant Vane?



Slant Vane



Straight Vane



Rod Rotator

Slant-vane scrapers (left) remove paraffin from a broader area than straight-vane scrapers (middle), while straight-vane scrapers coupled with an intelligent rod rotator (right) clear the full circumference of the tubing string.





## **Our commitment to quality and safety**

If we can't do it right and do it safely, we don't do it.

In all Weatherford operations, our most important mission is pursuing the highest possible standards to maximize our quality, health, safety, and environmental performance. Our sucker rod guides, like any other Weatherford product

or service, embody our dedication to safety and quality throughout the lifetime of the product, including design, manufacturing, transporting, installing, servicing, and refurbishment.

Weatherford serves the worldwide exploration and production industry with an exceptional breadth of products and services that span the life cycle of a well. As the only oilfield services company to offer extensive solutions for all forms of artificial lift, we bring global expertise and an unparalleled depth of products to suit any production need. To learn how Weatherford delivers unmatched breadth, depth, and expertise to help you optimize the productivity and profitability of your assets, contact your local Weatherford representative. For more information about our offerings, visit [weatherford.com](http://weatherford.com)



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