

ARTIFICIAL LIFT SYSTEMS

SUCKER RODS AND COROD[®] CONTINUOUS ROD

Delivering the right solution
for any rod-lift application



Weatherford[®]

MAXIMIZE UPTIME WITH THE RIGHT ROD STRING

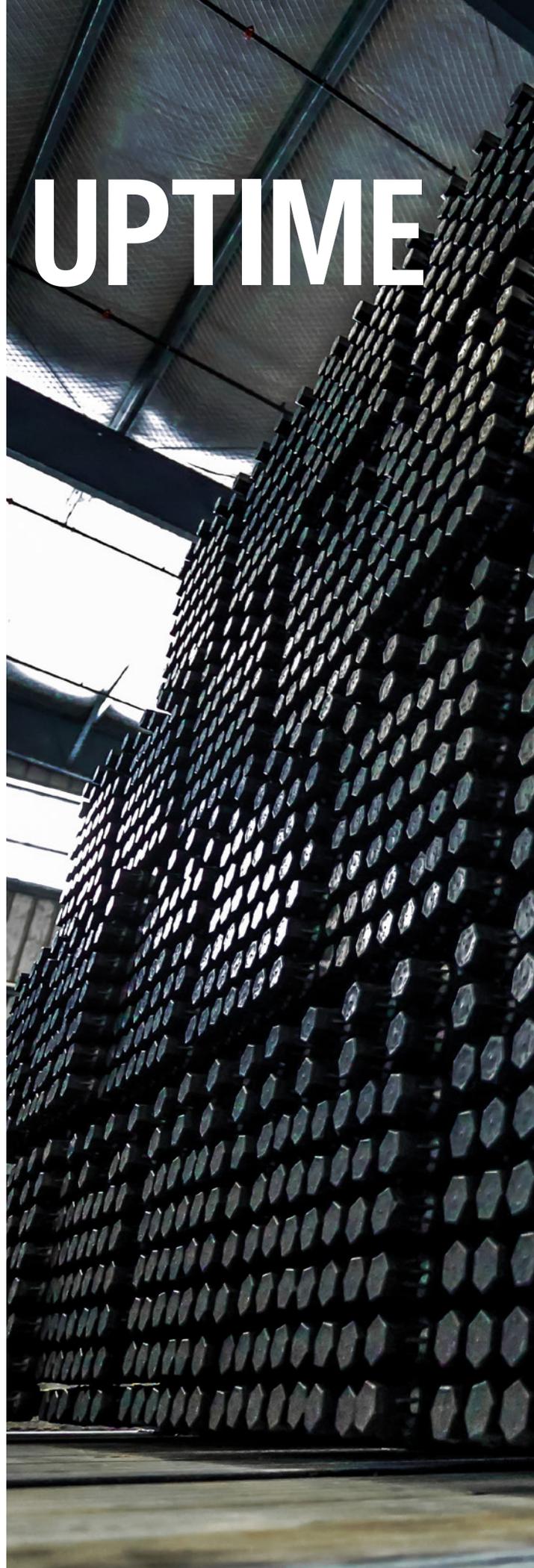
Only Weatherford delivers a superior, unbiased solution for every rod-lift application.

Rod lift is the undisputed king of production efficiency. As well designs transition from vertical to horizontal and into increasingly deep and challenging formations, quality manufacturing and expertise can mean the difference between productive uptime and costly downtime.

As the world leader in rod lift, Weatherford offers a portfolio that guarantees a match for your application, budget, and production strategy. Drawing on decades of experience from every productive basin in the world, we prescribe the optimal rod type for your well, be it standard-service or premium sucker rods, continuous rods, or our extreme-environment solutions, such as Calabar COROD®.

Manufactured globally, our rod-lift solutions are the culmination of expert engineering and design, superior manufacturing processes, and the Weatherford promise of reliability. As your trusted partner, we help you to design and install a complete, high-performance rod-lift solution from downhole to the surface to the point of sale.

UNLIMITED
MANUFACTURER WARRANTY AVAILABLE
ON OUR PREMIUM GREENVILLE RODS





Our superior manufacturing processes, stringent quality control, and vast technical understanding combine to extend the traditional performance capabilities of rod lift.

Surpassing Manufacturing Standards

We have a century of manufacturing experience. Since 1908, Weatherford has manufactured rod-lift equipment. Today, we have a global manufacturing base for rod lift with world-class facilities in the U.S., Canada, and China. These facilities implement rigorous quality assurance processes that exceed ISO 9001. For our sucker rods, we go beyond API 11B specifications and follow an exacting quality program to help ensure zero manufacturing defects.

Improving Product Performance

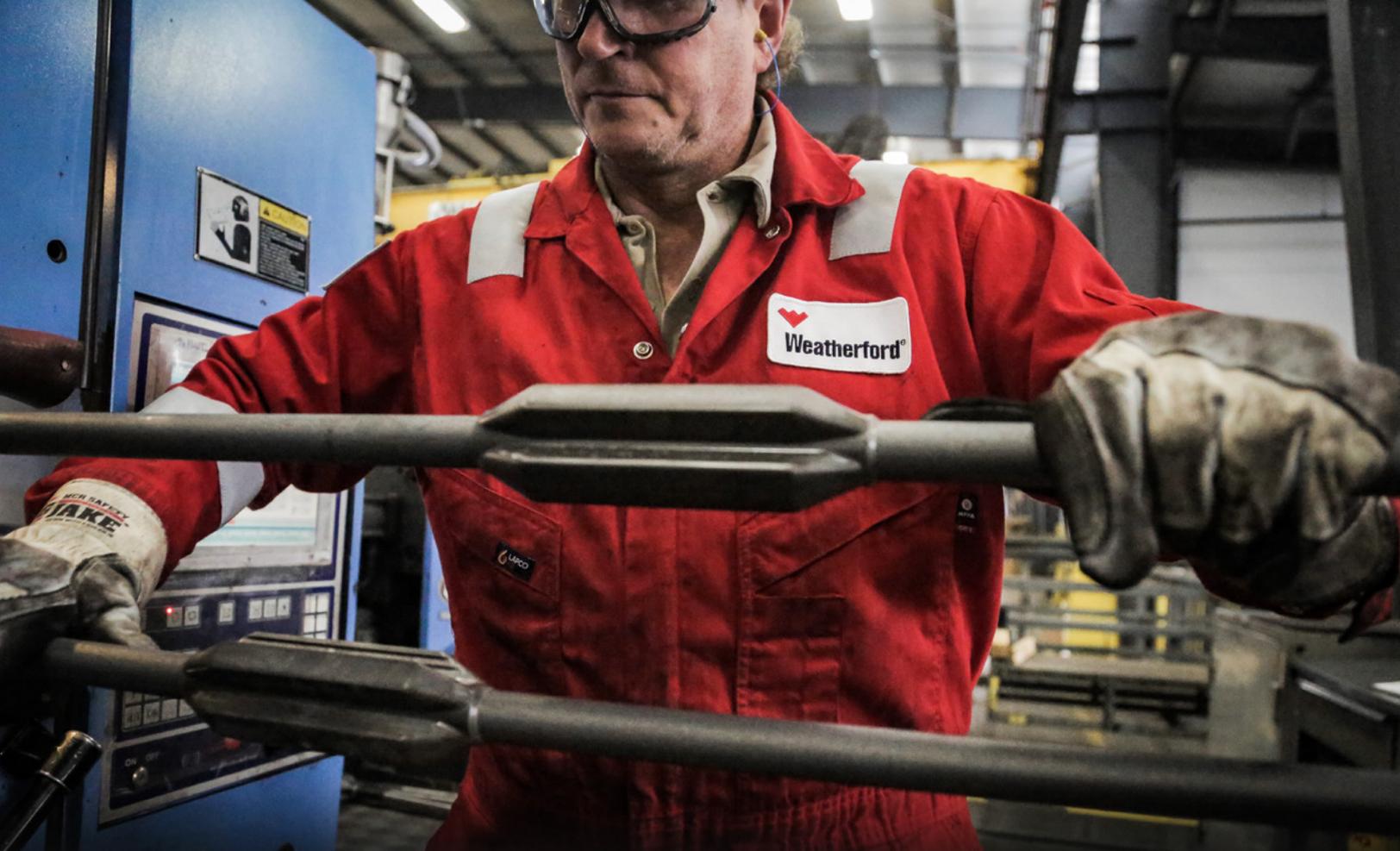
We constantly improve our rod-string designs. Our Houston Technology Center hosts weekly manufacturing and R&D meetings that address emerging challenges and continuously innovate our products. This tight correlation between current performance and future need enables us to create new metallurgies, improve heat-treating processes, and enhance system designs when and where needed most.

Maintaining Leading Engineering Expertise

Our rod-lift operations are powered by people who understand your challenges. These experienced personnel have the know-how to help you with your every need, from manufacturing, to selection, to post-sale services. Our engineering teams leverage deep expertise to continually improve on our designs and create innovations every 12 to 48 months. Finally, we cultivate leadership for the future through our NextGen program, a five-year leadership development initiative that accelerates technical skill sets for rod-lift engineers.

Realizing the Rod-Lift Field of the Future

We help you to lift smarter. We use Production 4.0 capabilities to connect your reservoir, rod-lift system, and surface facilities to enable informed decisions. The ForeSite® optimization platform helps you to maximize productivity from the wellbore to the processing plant, and autonomously pinpoint and prioritize production issues to enable proactive optimization.



BOOST RUN LIFE

WHILE BALANCING EFFICIENCY AND ECONOMICS

Our sucker rods give you unmatched quality and maximum uptime.

Not all rod-lift applications are created equal. From yesterday's vertical assets to today's high-volume long laterals and corrosive wellbores, only Weatherford can be true to your well with application-specific, cost-competitive solutions.

We manufacture an exhaustive portfolio of quality sucker rods for every well environment. Weatherford is a one-stop shop for all of your needs, from non-API to API, from quenched and tempered (Q&T) to normalized and tempered (N&T), and from standard service to premium. And should your needs change, our nimble and global manufacturing teams meet any challenge with technical support before and after the sale.

We manufacture sucker rods with an unparalleled quality focus that spans materials sourcing to post-failure analysis. We begin with raw materials that undergo a complete audit and inspection upon arrival. From straightening to forging to shot peening to threading, our manufacturing process—housed in the most advanced facilities of their kind—vastly exceeds ISO certifications and API specifications to deliver the Weatherford promise of quality.

Visit our Greenville facility, the world's most advanced sucker-rod manufacturing center

Our Greenville, Texas, manufacturing plant is truly state of the art. Operating for more than 30 years, this Six-Sigma-operated plant features an unmatched quality-control program and a capacity of 300,000 rods per month.

Featuring best-in-class engineering practices that range from a proprietary shot-peening process to robotic capabilities that ensure repeatable precision, our data-driven manufacturing process removes the causes of defects. To see how this facility can deliver high-quality rods for your asset, please contact your local Weatherford representative to arrange a visit.

The world's best rods meet top-tier couplings, guides, and more

Our sucker-rod portfolio includes a comprehensive line of rod-string accessories—including but not limited to sucker-rod guides, couplings, rod rotators, sinker bars, and pony rods—to meet every well condition.

GUIDES

Made of premium thermoplastics and reinforced with glass or aramid fibers, our sucker-rod guides range from premium—including Cobra® and King Cobra guides—to conventional. These solutions suit the most demanding wells, including those with high water cuts, high temperatures, corrosion, and abrasives.

COUPLINGS

Manufactured to strict quality-control standards from high-strength alloy steel, our sucker rod couplings are available in spray metal, slimhole, fullsize, and oversized configurations from 5/8 to 1-1/8 in.

Our Sucker-Rod Portfolio at a Glance

We offer rods that range in diameter from 5/8 to 1-1/8 in. (1.59 to 2.86 cm) and in 25- and 30-ft lengths.

Grade or Type	Recommended Application	Composition
Grade C Rods	Light- to medium-load applications in noncorrosive or inhibited wells	AISI 1536 carbon-manganese alloy steel
Grade D Rods	Medium to heavy-load applications in noncorrosive or effectively inhibited corrosive wells	AISI 4142 chromium-olybdenum alloy steel
Grade KD Rods	Medium- to heavy-load applications in effectively inhibited corrosive wells	AISI 4720 nickel-chromium-molybdenum alloy steel
XD Rods	High-strength service	Special chrome-moly alloy steel
HD Rods	Deep, highly loaded wells in mildly corrosive environments when corrosion-inhibiting practices are followed	Special nickel-chrome-moly alloy steel
EL® Rods	Ultrahigh load wells in mild sweet (CO ₂) and sour (H ₂ S) corrosive environments	Special chrome-moly alloy steel
KDP Rods	Medium to heavy load applications where enhances strength and impact properties are needed	Special nickel-chromoly alloy steel
S-88 Rods	Deep, highly-loaded wells in mildly corrosive environments with satisfactory corrosion-inhibiting practices	3130M nickel-chrome steel
EX Rods	Medium to heavy-load applications with a history of corrosion failures	High-chrome alloy steel

REDUCE ROD-TUBING FRICTION AND MAXIMIZE RUN LIFE

Our COROD[®] continuous rods deliver reliable rod-lift performance in problematic wells.

Deep and deviated wells force you to compensate your investment with rod guides, rotators, and other accessories. COROD simplifies your operations with an uninterrupted string that features only a single connection at top and bottom.

With more continuous-rod installations than any other company, Weatherford offers a complete service that includes planning, service, and failure analysis. Available in round and our exclusive elliptical design, COROD reduces production-tubing and surface-equipment wear by dispersing contact loads throughout the rod string and using less weight than conventional sucker rods.

Available in several metallurgies and multiple sizes, COROD serves a wide range of applications from standard-service to high-strength to the all-new Calabar COROD for corrosive wells.

INSTALLED
30,000
COROD[®] STRINGS
WORLDWIDE



COROD eliminates the need for couplings, centralizers, and rod guides to maximize production flow by creating a larger annular space between the production tubing and the rod string.



Calabar COROD® maximizes uptime in corrosive wells.

The number one cause of failure for all rods is corrosion. Developed in response, Calabar COROD uses a proprietary, two-stage epoxy-coating process to maximize performance in wells with a history of corrosion failure. With its patented coating, Calabar COROD protects the steel substrate from fluids and metal-on-metal contact. The result is not only a durable string that resists corrosion, but also one that reduces production-tubing wear and drag.

Manufactured at our California facility, Calabar COROD undergoes a battery of quality control tests that identify even tiny defects. During installation, Calabar COROD technicians use specially developed rod-gripper pads that maintain rod integrity by increasing surface contact while minimizing damage at high pull loads. And should repairs be needed in the field, our mobile coating-repair trailers mimic our manufacturing process at the wellsite.

Our COROD Portfolio at a Glance

We offer all COROD types in both round and elliptical profiles.

Grade or Type	Recommended Application	Composition
COROD D Grade	Medium-load RRL in noncorrosive, mildly corrosive, but effectively inhibited	AISI 1536 carbon-manganese alloy steel
DWR Regular-Strength	Medium-load RRL in mild to medium corrosive environments that are effectively inhibited	Chrome-nickel-molybdenum special alloy
DE/DER Regular-Strength	Medium-load RRL where carbon dioxide or chlorides are present, and for corrosive environments that are effectively inhibited	Chrome-molybdenum special alloy, micro-alloyed with titanium
ME Mil-Strength	Medium-load pumping in deep, high-volume wells with noncorrosive to mildly corrosive environments that are inhibited.	Chrome-molybdenum special alloy, micro-alloyed with titanium and 2% more chromium
SE/SER High-Strength	Heavy-load RRL in deep, high-volume wells with mild to medium corrosive environments that are effectively inhibited	Chrome-molybdenum special alloy, micro-alloyed with titanium
SWR High-Strength	Heavy-load RRL in deep, high-volume wells with mild to medium corrosive environments that are effectively inhibited	Chrome-nickel-molybdenum special alloy
Calabar COROD	RRL applications in wells with a history of corrosion and bottomhole temperatures up to 212°F (100°C)	Chrome-nickel-molybdenum special alloy with dual-layer fusion-bonded coating layers



MAXIMIZE UPTIME WITH THE RIGHT ROD STRING

Weatherford delivers an unbiased solution for any rod-lift application. To learn more about these industry-leading, application-specific technologies, please visit weatherford.com.

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