SUCKER RODS

- **API sucker rods**
  - Grade C — designed for low to medium loads, noncorrosive or effectively inhibited; made from AISI 1530 modified steel
  - Grade D carbon steel — designed for medium loads, noncorrosive or effectively inhibited; made from AISI 1530 modified steel
  - Grade D alloy — designed for medium to high loads, noncorrosive or effectively inhibited; made from AISI 4142 modified steel
  - Grade K — designed for low to medium loads in corrosive wells where inhibiting is recommended; made from AISI 4621 modified steel
  - Grade KD — designed for medium to high loads in corrosive wells where inhibiting is recommended; made from AISI 4320 modified steel

- **High-strength sucker rods**
  - High resistance/critical service — made from specially developed AISI 4138 modified steel to provide the required high mechanical strength, reducing susceptibility to H2S-induced embrittlement (sulfide stress cracking or SSC); recommended for services in deep wells with high loads; inhibiting suggested to improve performance
  - Ultrahigh strength — made from AISI 4330 modified steel; recommended for noncorrosive wells with very high loads
  - Plus Rod — made from AISI 1530 modified steel. Its external surface is quenched whereas the core remains untempered. The external martensitic layer creates a permanent state of compression in the surface of the rod, which results in high fatigue resistance. Recommended for noncorrosive wells with very high loads.

- **Progressing cavity pump (PCP) sucker rods**
  - Grade D X-Torque PCP rods — available in 1-in size with 7/8-in pins and 1¼-in size with 1-in pins; designed for medium- to high-torque loads, noncorrosive or effectively inhibited; made from AISI 4142 modified steel
  - Grade KD X-Torque PCP rods — available in 1-in size with 7/8-in pins and 1¼-in size with 1-in pins; designed for medium- to high-torque loads in corrosive wells where inhibiting is recommended; made from AISI 4320 modified steel
  - Hollow PCP sucker rods — made from seamless tubing with 1,000-, 1,500-, and 2,500-ft-lbf torque rating. The hollow tubes are connected by a high-strength nipple.

- **Proprietary sucker rods**
  - BlueRod™ — premium connection Grade D; new pin and coupling design for moderate to very high loads where corrosion inhibiting is recommended; can eliminate connection failures from connection loss of displacement from operational issues such as fluid pound, gas interference, deviated wellbores with high side loadings, and improper makeup
  - BlueRod — premium connection Grade KD; new pin and coupling design for moderate to very high loads in corrosive wells where inhibiting is recommended; can eliminate connection failures from connection loss of displacement from operational issues such as fluid pound, gas interference, deviated wellbores with high side loadings, and improper makeup

- **COMING SOON: Ultrahigh strength for sour service**

- **Fiberglass sucker rods**
  - Fiberglass — 1-in x 37.5-ft size with 7/8-in pins and 1¼-in x 37.5-ft size with 1-in pins
  - Fiberglass pony rods — 3-ft, 6-ft, 9-ft, 18-ft lengths in 1-in and 1¼-in sizes

ROD GUIDES

- **Standard guides** — short, molded-on rod guides used in shallow wells with minimum side loadings, providing minimal erodible wear volumes (EWV)
- **Proprietary guides** — longer mold-on rod guides used in deeper deviated applications where high side loads are an issue, with better turbulence control across the guide and better EWV
- **Dual system guides** — used for paraffin control; mold-on guides with sliding guides between each molded guide scraping off paraffin from the rod as the mold-on guide scrapes the tubing

SINKER BARS AND STABILIZER BARS

- **Sinker bars** — used at the bottom of the rod string to help reduce compression in the rod string due to rod buckling in cyclic load reversals; also used in highly deviated and horizontal applications above the kickoff point, helping push the smaller rods through this area
- **Stabilizer bars** — installed between the sinker bars to centralize the bars and reduce tubing wear from the connections at the point of contact with the tubing; also installed above the downhole pump to centralize the pull rod or pull tube during the downstroke, reducing wear and premature failure at the downhole pump
NEW DOWNHOLE PUMPS
We can recommend, design, and provide all sizes and varieties of downhole pumps for all applications. Downhole pumps are the final component of this artificial lift system connected at the bottom of the well to the sucker rods. Besides the many styles of API downhole pumps, there are also specialty pumps for severe applications such as sand, gas interference, and high-viscosity oil.

GAS SEPARATORS
Gas separators are used at the bottom of the tubing string, below the seating nipple, to help reduce gas breakout entering the wellbore and migrating through the downhole pump. A proper gas separator eliminates the gas interference that can cause insufficient pump intake and gas pound and contribute to rod string fatigue and pumping unit gearbox damage.

- Packer style
  - 2 3/8-in, 2 7/8-in, 3 1/2-in tubing for 4 1/2-in, 5 1/2-in, 7-in casing
  - J55 and L80 materials

- Mother Hubbard style
  - 2 3/8-in, 2 7/8-in, and 3 1/2-in tubing
  - J55 and L80 materials
  - Includes seating nipple, slotted sub, tubing chamber, tubing couplings, and bull plug