KD™ Sucker Rod

Proven fatigue endurance within corrosive wells

Applications

- Reciprocating rod lift systems
- PCP lift systems
- Medium- to heavy-load systems in effectively inhibited, corrosive wells

Features and Benefits

- AISI 4720SR nickel-chromium, molybdenum-alloy steel for effective performance in corrosive environments
- API DS Special rating for improved corrosion resistance
- Normalized and tempered steel improves mechanical properties for overall toughness and reduced brittleness
- Shot-peened process creates compressive stress that strengthens surface-tension properties for enhanced downhole longevity

Tool Description

Weatherford KD sucker rods are manufactured from AISI 4720SR nickel-chromium, molybdenum-alloy steel and designed for medium-load applications within inhibited, moderately corrosive wells and offer an upgrade from API DS alloys to offer even greater corrosion resistance. KD sucker rods conform to API 11B DS specifications and follow the strict Weatherford quality standards observed with all Weatherford sucker rods. KD sucker rods also receive a proprietary shot-peen process proven to improve fatigue life by up to 10 times. KD sucker rods feature fully rolled, cold-formed threads designed to provide a precise and smooth reinforced thread structure. KD sucker rods are also liberally coated with atmospheric inhibitors and carefully palletized in bundles for safe transport and handling.

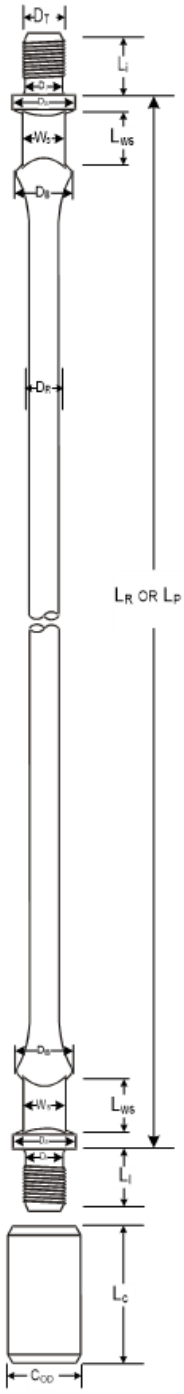
Weatherford KD sucker rods provide enhanced fatigue resistance for enhanced performance corrosive wells.

Weatherford®

KD™ Sucker Rod

Specifications

	Description	in. (mm)			
ID	Nominal size	0.750 (19.05)	0.875 (22.23)	1.000 (25.40)	1.125 (28.58)
D_R	Rod body diameter				
D_S	Pin shoulder OD	1.500 (38.10)	1.625 (41.28)	2.000 (50.80)	2.250 (57.15)
D_T	Nominal thread diameter	1.063 (26.99)	1.187 (30.16)	1.375 (34.93)	1.562 (39.69)
L_I	Pin length	1.43 (36.51)	1.62 (41.28)	1.87 (47.63)	2.125 (53.98)
W_S	Wrench square width	1.00 (25.40)		1.313 (33.34)	1.500 (38.10)
L_{WS}	Wrench square length	1.25 (31.75)			1.63 (41.28)
D_B	Bead diameter	1.40 (35.72)	1.50 (38.1)	1.90 (48.42)	2.187 (55.63)
D_I	Stress relief diameter	0.915 (23.24)	1.04 (26.42)	1.22 (31.17)	1.414 (35.92)
L_R	Sucker rod length	25 and 30 ft (7.62 and 9.144 m)			
L_P	Pony rod length	2, 4, 6, 8, 10 ft (.6, 1.2 ,1.8, 2.4, 3 m)			
L_C	Coupling OD, SH	4.00 ft (101.6 m)			
C_{OD}	Coupling OD, SH	1.50 (38.10)	1.625 (41.30)	2.00 (80.80)	2.25 (53.0)
C_{OD}	Coupling OD, FH	1.625 (41.30)	1.812 (46.00)	2.187 (55.60)	2.375 (60.30)
~ 25-ft rod weight w/o coupling		38.5 lbs (17.5 kg)	52.0 lbs (23.6 kg)	69.9 lbs (31.7 kg)	88.7 lbs (40.2 kg)
~ 25-ft rod weight w/FH coupling		40.0 lbs (18.1 kg)	53.8 lbs (24.4 kg)	72.5 lbs (32.9 kg)	91.8 lbs (41.6 kg)
~ 25-ft rod weight w/SH coupling		39.8 lbs (18.1 kg)	53.5 lbs (24.3 kg)	71.9 lbs (32.6 kg)	91.17 lbs (41.35 kg)



Chemical Composition

Material	C %	Mn %	Ph %	S %	Si %	Ni %	Cr %	Mo %	Other %
4720SR	0.19 to 0.23	0.85 to 1.05	0.030 Max	0.040 Max	0.15 to 0.35	0.90 to 1.20	0.80 to 1.05	0.22 to 0.30	0.40 to 0.60 Cu/ 0.020 to 0.040 Va

Mechanical Properties

API Grade	Yield Strength ksi (Kpa)	Tensile Strength ksi (MPa)	Elongation % 8 in. (in.)	Reduction %	Heat Treatment
DS Special	90 (620)	115 to 140 (792 to 965)	10 Min	45 Min	Normalized and Tempered

Maximum Allowed Stress Calculation

$(T/2.8 + 0.375\ S_{MIN}) * SF$

[1] Provided satisfactory corrosion-inhibiting practices are followed.
[2] Weatherford recommends applying a service factor to the specified-torque limit based on operating conditions. Please refer to Weatherford engineering bulletin TB-135 for further guidance on torque limits.