



## 1. Sucker Rod and Pup Joint (Pony Rod)



Steel sucker rod is one of the important equipment in oilfield. C, D and K grade types are our main products manufactured in accordance with API Spec 11B. Grade C sucker rod adopts SSYD-1 high-grade carbon steel (AISI 1526), featuring proper strength, good plasticity and relative corrosion resistance. It is often applicable to acid medium environment and will not cause sulfide stress cracking. Grade D sucker rod is made from high-quality 30CrMoA alloy steel (AISI 4130). It owns the features of high strength, good plasticity and long usage life. It is usually used in deep oil wells with non-corrosive or light corrosive medium. Grade K sucker rod uses superior quality 20Ni2MoA alloy steel (AISI 4620) with features of proper strength, good plasticity and corrosion resistance. It is suitable to shallow wells with light load and corrosive medium.

### Technical Parameters

Size (in)	Rod D. (in)	Thread D. (in)	Length (ft)	Outside Diameter of Pin Shoulder (mm)	Length of Thread (mm)	Length of Wrench Square (mm)	Width of Wrench Square (mm)
5/8	5/8	15/16	2 4 6 8 10 25 30	31.80	31.75	≥ 31.8	22.20
3/4	3/4	1 1/16		38.10	36.50		25.40
7/8	7/8	1 3/16		41.30	41.28		
1	1	1 3/8		50.80	47.63	≥ 38.1	33.30
1 1/8	1 1/8	1 9/16		57.20	53.98	≥ 41.3	38.10

### Mechanical Properties

Grade	Yield Strength Rel (Mpa)	Tensile Strength Rm (Mpa)	Percentage Elongation A (%)	Contraction Percentage of Area Z (%)	Impact Toughness $\alpha(3/cm^2)$
C	≥ 414	620-793	≥ 12	≥ 55	≥ 70
D	≥ 620	794-965	≥ 10	≥ 50.5	≥ 58.85
K	≥ 414	620-793	≥ 12	≥ 55	≥ 70



## 2. Coupling, Adapter Coupling and Polished Rod



### Coupling

Sucker rod coupling, adapter coupling and polished rod coupling are all designed conforming to API Spec 11B standard, adopting high-quality carbon steel or alloy steel (AISI1045 or AISI4135). Normally, there are two wrench squares on the coupling and excircle. We can also provide couplings without wrench square. After heat treatment, the hardness of Grade T coupling is HRA56-62, with good corrosion resistance and abrasion resistance. Sucker rod coupling is used to connect sucker rods with same dimension. Adapter coupling is used to connect sucker rods in different sizes or connect polished rod or sucker rod string. Polished rod coupling is used for connecting polished rod and sucker rod. Pay attention to that the use of sucker rod coupling on polished rod will cause coupling cracking.



### Technical Parameters

#### 1) Full Coupling

Size (in)	Coupling O.D W (mm) (+0.13, -0.25)	Length L (mm) (+1.57, 0.00)	Thread DN (in)	Length of Wrench Square (mm)	Hardness (HRA)
5/8	38.1	101.6	15/16	31.8	56-62
3/4	41.3		1 1/16		
7/8	46.0		1 3/16		



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1	55.6		1 <sup>3</sup> / <sub>8</sub>	38.1	
1 <sup>1</sup> / <sub>8</sub>	60.3	114.3	1 <sup>9</sup> / <sub>16</sub>		

### 2) Slim Hole Coupling

Size (in)	Coupling O.D W (mm) (+0.13, -0.25)	Length L (mm) (+1.57,0.00)	Thread DN (in)	Length of Wrench Square (mm)	Hardness (HRA)
5/8	31.75	101.6	1 <sup>5</sup> / <sub>16</sub>	31.8	56-62
3/4	38.10		1 <sup>1</sup> / <sub>16</sub>		
7/8	41.30		1 <sup>3</sup> / <sub>16</sub>		
1	50.80		1 <sup>3</sup> / <sub>8</sub>	38.1	

### 3) Full Adapter Coupling

Size (in)	Coupling O.D W (mm) (+0.13, -0.25)	Length L (mm) (+1.57,0.00)	Min. Thread D. (in)	Max. Thread D. (in)	Hardness (HRA)
5/8-3/4	41.3	101.6	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	56-62
3/4-7/8	46.0		1 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	
7/8-1	55.6	114.3	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	
1-1 <sup>1</sup> / <sub>8</sub>	60.3	127.0	1 <sup>3</sup> / <sub>8</sub>	1 <sup>9</sup> / <sub>16</sub>	

### 4) Slim Hole Adapter Coupling

Size (in)	Coupling O.D W (mm) (+0.13, -0.25)	Length L (mm) (+1.57,0.00)	Min. Thread D. (in)	Max. Thread D. (in)	Hardness (HRA)
5/8-3/4	38.10	101.6	1 <sup>5</sup> / <sub>16</sub>	1 <sup>1</sup> / <sub>16</sub>	56-62
3/4-7/8	41.30		1 <sup>1</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>16</sub>	
7/8-1	50.80	114.3	1 <sup>3</sup> / <sub>16</sub>	1 <sup>3</sup> / <sub>8</sub>	

### 5) Full Polished Rod Coupling

Size (in)	Coupling O.D W (mm) (+0.13, -0.25)	Length L (mm) (+1.57,0.00)	Thread DN (in)	Outside Small Diameter Taper of Internal Thread	Hardness (HRA)
5/8	38.1	101.6	1 <sup>5</sup> / <sub>16</sub>	9°	56-62
3/4	41.3		1 <sup>1</sup> / <sub>16</sub>		
7/8	46.0		1 <sup>3</sup> / <sub>16</sub>		
1	55.6		1 <sup>3</sup> / <sub>8</sub>		
1 <sup>1</sup> / <sub>8</sub>	60.3	114.3	1 <sup>9</sup> / <sub>16</sub>		

### 6) Slim Hole Polished Rod Coupling

Size (in)	Coupling O.D W (mm) (+0.13, -0.25)	Length L (mm) (+1.57,0.00)	Thread DN (in)	Outside Small Diameter Taper of Internal Thread	Hardness (HRA)
5/8	31.75	101.6	1 <sup>5</sup> / <sub>16</sub>	9°	56-62



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$\frac{3}{4}$	38.10		$1\frac{1}{16}$		
$\frac{7}{8}$	41.30		$1\frac{3}{16}$		
1	50.80		$1\frac{3}{8}$		

### Mechanical Properties

Tensile Strength Rm (N/mm <sup>2</sup> )	Yield Strength Rel (N/mm <sup>2</sup> )	Percentage Elongation A (%)	Contraction Percentage of Area Z (%)
≥ 655	≥ 405	≥ 24	≥ 48



### 3. Polished Rod

In the rod pump system, polished rod is an important part for connecting pumping unit and sucker rod string. Our company mainly supplies two types of polished rods including general rod and one end upsetting type polished rod. They are both designed in accordance with API Spec 11B standard and are made from fine Cr-Mo alloy steel 42CrMoA or Ni-Mo alloy steel 20Ni2MoA (equivalent to AISI4140 or AISI4620) after cold drawing, rolled thread and surface grinding. They have the features of high strength, good toughness, smooth surface and long service life. Anti-corrosion polished rod is divided into general polished rod and one end upsetting type polished rod. It is also designed conforming to the requirements for Grade II polished rod in API Spec 11B standard. With proper strength, it is applied in oil wells with corrosive medium. General polished rod is connected with polished rod coupling, while one end upsetting type polished rod is connected to the sucker rod coupling.

### Technical Parameters

Size (in)	Rod D. (mm)	Length (ft)	Thread D. (in)	Thread Length (mm)	Small Diameter Taper of Thread
1	25.4	30	$\frac{15}{16}$	28.58	9°



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1Upset		25	$\frac{15}{16}$	$1\frac{1}{16}$	31.75	36.5	
$1\frac{1}{8}$		24	$\frac{15}{16}$	$1\frac{1}{16}$	34.93		
$1\frac{1}{8}$ Upset	28.6	16	$1\frac{3}{16}$	$1\frac{3}{8}$	41.28	47.63	
$1\frac{1}{4}$			$1\frac{3}{16}$		34.93		
$1\frac{1}{4}$ Upset	31.8		$1\frac{3}{8}$	$1\frac{9}{16}$	47.63	53.98	
$1\frac{1}{2}$	38.1		$1\frac{3}{8}$		44.45		

### Mechanical Properties

Grade	Yield Strength Rel (Mpa)	Tensile Strength Rm (Mpa)	Percentage Elongation A (%)	Contraction Percentage of Area Z (%)	Impact Toughness $a_k(J/cm^2)$
1	$\geq 414$	620-827	$\geq 12$	$\geq 55$	$\geq 70$
2	General $\geq 586$	655-1102	$\geq 10$	$\geq 50$	$\geq 58.8$
	Anti-corrosion $\geq 414$		$\geq 12$	$\geq 55$	$\geq 70$

### 4. Ultra High Strength Sucker Rod

In the environment with non-corrosive or light corrosive medium, ultra high strength sucker rod is often used in deep wells or oil wells with big pump volume. It can effectively prolong the oil recovery cycle and reduce the pump hanging weight. Ultra high strength sucker rods newly developed by our company are made from alloy steel. They have same dimension, structure and parameters with Grade D sucker rod, but its strength is much higher than sucker rod. Based on Grade D sucker rod, Grade HY adopts the surface strength of a special surface quenching strengthened rod body, which effectively improves the anti-fatigue performance of rod body.



### Mechanical Properties

Grade	Yield Strength Rel (Mpa)	Tensile Strength Rm (Mpa)	Percentage Elongation A (%)	Contraction Percentage of Area Z (%)	Impact Toughness $a_k(J/cm^2)$
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HL	≥ 795	966-1195	≥ 10	≥ 45	≥ 58.8
HY	≥ 795	966-1195	-	-	-



### 5. Sinker Bar

It is designed in accordance with API standard and is made from domestic high-quality carbon steel or alloy structural steel. The two ends have same outside threads. Sinker bar can be classified into Grade I and Grade II according to the standard. It can be connected with the polished rod at the top of oil well, or connected to the sucker rod at the bottom of oil wells. upside

### Technical Parameters

Size (in)	Rod D. (mm)	Thread DN (in)	Rod Body Length (ft)	Length of Fishing Neck (in)	Size of Connecting Sucker Rod (in)
1 <sup>1</sup> / <sub>4</sub>	31.75	1 <sup>5</sup> / <sub>16</sub>	25	4	5/ <sub>8</sub>
1 <sup>3</sup> / <sub>8</sub>	34.93				
1 <sup>1</sup> / <sub>2</sub>	38.10	1 <sup>1</sup> / <sub>16</sub>			3/ <sub>4</sub>
5/ <sub>8</sub>	41.28	1 <sup>3</sup> / <sub>16</sub>			7/ <sub>8</sub>
3/ <sub>4</sub>	44.45				

### Mechanical Properties

Grade	Tensile Strength Rm (Mpa)	Percentage Elongation A (%)	Contraction Percentage of Area Z (%)
1	448-620	≥ 15	≥ 55
2	621-794	≥ 12	≥ 50

### High Strength Sucker Rod

High strength sucker rod is a steel rod, typically between 25 and 30 feet (7 to 9 meters) in length. It has threaded ends. This product is used in oil industry for connecting the surface components and downhole components of a reciprocating piston pump. The pumpjack, as the above-ground drive for the well pump, is connected to the downhole pump by a series of interconnected high strength sucker rods.