



Sucker Rods/ Drive Rods/ Pony Rods

Steel Sucker Rods and drive Rods are manufactured from micro-alloyed, modified special quality hot rolled carbon or alloy steel. Bar and sucker rod dimensions and tolerances conform to API Spec 11B, latest edition, and AISI Steel Products Manual.

Sucker rods are available in 5/8" (15.88mm), 3/4" (19.05mm), 7/8" (22.23mm), 1" (25.40mm) and 1 1/8" (28.58mm).

Drive Rods for Progressing Cavity Pump applications are available in 1" (25.40mm), 1 1/4" (31.75mm) and 1 1/2" (38.10mm) body diameter and in 25' (7.62m) lengths.

Pony Rods are also available in 2ft. (0.61m), 4ft. (1.22m), 6ft. (1.83m), 8ft. (2.44m), 10ft. (3.05m) and 12ft. (3.66m) lengths.

All rods are straightened and inspected by Eddy Current for surface defects. Both ends are upset by automatic highspeed hot forging. Rods are full length normalized to relieve residual stresses, air-quenched, and tempered to refine and homogenize grain structure, and surface shot-blasted to remove any remaining heat treat scale. All rods are also shotpeened to improve fatigue life. Upset pin blanks are machined and dimensions gauged. Pin threads are cold-formed to strengthen the thread from fatigue. An inhibitor-lubricant is applied to each pin and thread protector installed. An oil soluble coating protects the rods from atmospheric corrosion in storage. All rods are bundled to prevent handling damage during transportation to the well location. (The rods can also be custom export crated for overseas shipping if required.)

Quality control inspections and performed at each step of the manufacturing process.

Specifications					
Type	54	78	75	96	97
AISI Grade	C-1541-VM	A-4142M	A-4330-M	A-4138-M	A-4330-M
API Grade	D	D	D	SPECIAL	SPECIAL
	RANGE	RANGE	RANGE	RANGE	RANGE
Carbon	.40/.44	.38/.43	.30/.34	.38/.42	.30/.34
Maganese	1.40/1.60	.80/1.00	.80/1.00	1.10/1.40	.80/1.00
Phosphorus	.40Mx	.035Mx	.035Mx	.035Mx	.035Mx
Sulfur	.40Mx	.035Mx	.040Mx	.035Mx	.040Mx
Silicon	.15/.35	.15/.35	.15/.35	.20/.35	.15/.35
Copper	.35Mx	.35Mx	.35Mx	.35Mx	.35Mx
Nickel	.25Mx	.25Mx	1.65/1.85	.30Mx	1.65/1.85
Chromium	.20Mx	.90/1.10	.80/1.00	.55/.85	.80/1.00
Molybdenum	.06Mx	.15/.25	.20/.30	.25/.35	.20/.30
Vandium	.07/.09	.030/.045	.07/.09	.045/.065	.07/.09
Columbium (niobium)	-	-	-	.027/.043	-

All specifications are subject to change without notice.
API Grades C and K information available upon request.



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Rod Pin Size	Nominal Diameter of Pin
5/8"	15-16"
3/4"	1-1/16"
7/8"	1-3/16"
1"	1-3/8"
1-1/8"	1-9/16"

Sucker Rod Selection Guide

- **Type 54 API Grade D (Carbon)** - AISI C-1541-VM Carbon-Manganese Alloy Steel. Designed for medium to heavy loads at any depth in non-corrosive well fluids. This grade can be utilized in both reciprocating and Progressing Cavity Pump (PCP) applications.

- **Type 78 API Grade D (Alloy)** - AISI A-4142-M Chromium-Molybdenum Alloy Steel. Designed for heavy rod loads at any depth in mild to medium corrosive well fluids that are effectively inhibited against corrosion attack. This grade has been alloyed and effectively heat-treated to resist corrosion and fatigue. Type 78 rods are recommended for both reciprocating and Progressing Cavity Pump (PCP) applications.

- **Type 75 API Grade D (Special Alloy)** - AISI A-4330-M Nickel-Chromium-Molybdenum Alloy Steel. Designed for heavy loads at any depth in corrosive well fluids that are effectively inhibited against corrosion attack. This grade has been alloyed and then effectively heat-treated to maximize its corrosion and fatigue resistance. Type 75 rods are ideally suited for both reciprocating and Progressing Cavity Pump (PCP) applications.

- **Type 96 Special High Strength Grade** - AISI A-4138-M Chromium-Molybdenum Alloy Steel. Designed for extra heavy loads at any depth in corrosive well fluids that are effectively inhibited against corrosion attack. This grade has been alloyed, effectively heat treated, and Norpeened to resist corrosion and fatigue. Type 96 rods are designed for reciprocating applications but can be utilized in some Progressing Cavity Pump (PCP) applications.

- **Type 97 Special High Strength Grade** - AISI A-4330-M Nickel-Chromium-Molybdenum Alloy Steel. Designed for extra heavy loads at any depth in corrosive well fluids that are effectively inhibited against corrosion attack. This grade has been alloyed, effectively heat treated, and Norpeened to maximize its corrosion and fatigue resistance. Type 97 rods are designed for reciprocating applications but can be utilized in some Progressing Cavity Pump (PCP) applications.

- **Pony Rods** - manufactured to the same dimensions, tolerances and grades as Sucker Rods and Drive Rods. Standard lengths: 1' (.30 m) – machined only, 2' (.61 m), 4' (1.22 m), 6' (1.83 m), 8' (2.44 m) and 10' (3.05 m). Other lengths are available on request.

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Definitions					
Loads		Seating Depth and/or Sucker Rod String Lengths			
* Light = Less than 25,00 psi (172 Mpa)		* Shallow = Less than 4,000 ft (1219m)			
* Medium =25,000 psi to 35,000 psi (172 Mpa to 241 Mpa)		* Medium = 4,000 ft to 7,000 ft (1219m to 2134m)			
* Heavy = 35,00 psi to 42,000 psi (241 Mpa to 290 Mpa)		* Deep =7,000 ft and deeper (2134m)			
* Extra Heavy = 42,000 psi and greater (290 Mpa)					
Definitions not intended as design criteria. Contact Canam Pipe & Supply for specific rod strength recommendations.					
Type	54	78	75	96	97
Physical properties- as normalized and tempered					
Tensile, ksi	115/140	120/140	125/140	140/150	140/150
Yield, ksi	85 min.	100 min.	100 min.	115 min.	115 min.
EI, 8" %	15 min.	10 min.	10 min.	10 min.	10 min.
Reduction in Area %	50 min.	45 min.	45 min.	45 min.	45 min.
Hardness, Rc	22.30	22/30	22/33	30/33	30/33



Additional Rod Dimensions				
Rod Size	Width of Wrench Flat +/- 1/32"	Length of Rod +/- 2"	Length of Pony Rod +/- 2"	Approximate Shipping Weight/ Per Rod
3/4"	1"	25'	2', 4', 6', 8', 10', 12'	42 lb/ 19.0 kg
7/8"	1"	25'	2', 4', 6', 8', 10', 12'	57 lb/ 25.8 kg
1"	1-5/16"	25'	2', 4', 6', 8', 10', 12'	74 lb/ 33.5 kg
1-1/8"	1-1/2"	25'	2', 4', 6', 8', 10', 12'	94 lb/ 42.2 kg

Sizes of Rod	Nominal Outside Diameter of Pin	Outside Diameter of Shoulder & Box	Outside Diameter of Coupling	Length of Pin	Minimum Length of Wrench Square	Width of Wrench Square Rods	Width of Wrench Flats Couplings	Minimum Length of Coupling
5/8"	15/16"	1-3/8"	1-1/2"	1-1/8"	1-1/4"	7/8"	1-3/8"	4"
3/4"	1-1/16"	1-1/2"	1-5/8"	1-3/8"	1-1/4"	1"	1-1/2"	4"
7/8"	1-3/16"	1-5/8"	1-13/16"	1-3/8"	1-1/4"	1"	1-5/8"	4"
1"	1-3/8"	2"	2-3/16"	1-3/4"	1-1/2"	1-5/16"	1-7/8"	4"
1-1/8"	1-9/16"	2-1/4"	2-3/8"	2"	1-5/8"	1-1/2"	2-1/8"	4-1/2"

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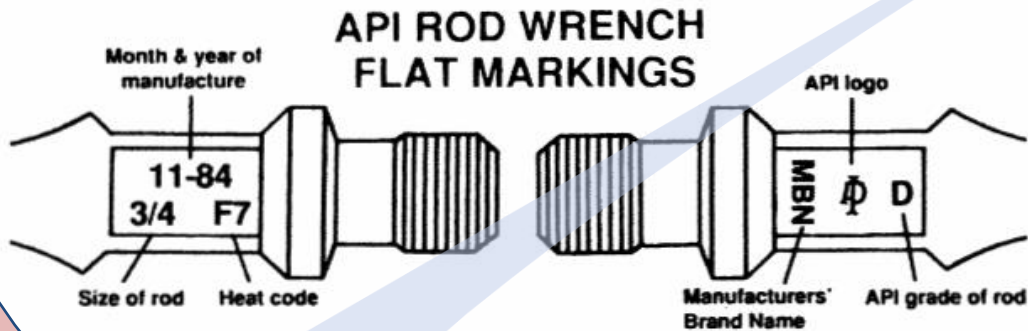




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Maximum Torque Limit for Sucker Rods, Drive Rods, and Pony Rods					
All torque values are in ft. lbs.					
Rod Size	Grade D Carbon (54)	Grade D Alloy (78)	Grade D Special Alloy (75)	Special Service (96)	Special Service (97)
3/4"	430	460	470	500	500
7/8"	675	735	750	800	800
1"	1,010	1,100	1,110	1,200	1,200
*1" with 7/8" modified pins	N/A	1,100	1,110	1,200	1,200
1-1/8"	N/A	1,570	N/A	N/A	1,700
*1-1/4" with 1" modified pins	N/A	2,000	2,100	2,500	2,500
*1-1/4" with 1" modified pins	N/A	2,000	2,100	2,500	2,500
1-1/2" with 1-1/8" modified pins	N/A	3,000	3,150	3,750	3,750

• All values based on rods and couplings in like new condition.
 • *Non-API Drive Rods specifically designed for torsional application.
 • No derating factor for slimhole couplings with High Strength Couplings are used.
 • Values based on actual test results.
 • E116 Rod Elevator for 1-1/4" Drive Rods.
 • E115 (Modified) Rod Elevator for 1-1/2" Drive Rods.
 • To maximize rod fatigue life we recommend using a .8 safety factor.
 Note – Correct sucker rod makeup is critical to the operation of a Progressing Cavity Pump installation.



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