

## TA and TS Couplings

TA (T) and TS (spray metal) couplings, sub-couplings and polished rod couplings are our standard API 11B offering. The TA and TS couplings are manufactured from quenched and tempered AISI-8630M special bar quality (SBQ) steel. AISI-8630M SBQ steel has excellent impact properties and good tolerance to corrosion. US Rod uses SBQ steel to generate the highest quality product. Other raw materials, such as seamless tubing, can leave residual stresses in the steel and can have poor wall concentricity. This can lead to improper load distribution across the coupling. Our machining process utilizes the most modern manufacturing equipment and methods to machine coupling dimensions to exact tolerances and roll the threads using a cold thread forming process. Cold thread forming produces superior tensile, shear, and fatigue strength over traditional cut threads.

All of our couplings utilize an enhanced face design for maximum contact with the sucker rod makeup face. This allows for higher makeup loads and greater breakout torque values, decreasing connection failures.

Couplings are then black oxide coated for atmospheric corrosion resistance and anti-galling properties.

## HA and HAS High Strength Couplings

Our high strength couplings use the same quenched and tempered AISI-8630 SBQ material properly heat treated to achieve higher yield strength and tensile strength. Using the same high quality manufacturing process, these couplings are recommended when using high strength rods, extended pin or progressing cavity pump (PCP) applications. Available in through-hardened or spray metal.

## TS & TSS Severe Service Couplings

Manufactured from modified AISI-4320 these couplings are recommended in severe service applications when standard couplings fail. This material was selected and modified with additional chromium, for increased corrosion tolerance and additional nickel for better impact properties, to give superior life and corrosion tolerance over our standard coupling material. Also available as high strength couplings. See below for chemistry and mechanical properties.



US Rod Manufacturing is the only privately owned and operated Sucker Rod manufacturing plant in the USA.

All US Rod Manufacturing couplings are subject to our strict quality control manufacturing processes.

# COUPLINGS

Grade	Style	Material	Minimum Tensile, ksi
TA	Through Hardened	AISI-8630M	95
TAS	Spray Metal	AISI-8630M	95
HA	Through Hardened	AISI-8630M	130
HAS	Spray Metal	AISI-8630M	130
TS	Through Hardened	AISI-4320M	95
TSS	Spray Metal	AISI-4320M	95
HS	Through Hardened	AISI-4320M	125
HSS	Spray Metal	AISI-4320M	125

	AISI-8630M	AISI-4320M
API Grade	TA/TS & HA/HAS	TS/TSS/HS/HSS
Aluminum (Al)	0.04 max.	0.035 max.
Carbon (C)	0.28 – 0.33	0.18 - 0.24
Chromium (Cr)	0.40 – 0.60	0.80 - 1.05
Copper (Cu)	0.35 Max	0.35 max.
Manganese (Mn)	0.65 – 0.95	0.80 - 1.00
Molybdenum (Mo)	0.15 – 0.25	0.20 - 0.30
Nickel (Ni)	0.35 – 0.75	1.15 - 1.35
Phosphorus (P)	0.03 Max	0.025 max.
Silicon (Si)	0.15 – 0.35	0.15 - 0.35
Sulfur (S)	0.03 max	0.025 max.
Vanadium (V)	-	0.04 - 0.07

	AISI-8630M	AISI-8630M	AISI-4320M	AISI-4320M
API Grade	TA/TAS	HA/HAS	TS/TSS	HS/HSS
Tensile, ksi (MPa)	95/120 (655/127)	130/145 (896/1000)	95/120 (655/127)	125/145 (861/1000)
Yield, ksi (MPa)	80/120 (522/689)	110 Min (758)	80/120 (522/689)	80 Min (522)



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