

## Material: ASME SA-592 Grade F

### Standard Specification for High-Strength Quenched and Tempered Low-Alloy Steel Forged Fittings and Parts for Pressure Vessels

**Group:** Ferrous Mild Steel Alloys

**Sub Group:** ASME SA-592 Grade F High-Strength Quenched and Tempered Low-Alloy Steel Forged Fittings and Parts for Pressure Vessels

**Application:** Intended for Valve, Pump, General Engineering, Automotive and Other Industries

**Grade Belongs to the Industry:** Forging

Chemical Composition		
Carbon	C %	0.100 - 0.200
Silicon	Si %	0.150 - 0.350
Manganese	Mn %	0.600 - 1.000
Phosphorus	P %	0.025 max.
Sulphur	S %	0.025 max.
Chromium	Cr %	0.400 - 0.650
Nickel	Ni %	0.700 - 1.000
Molybdenum	Mo %	0.400 - 0.600
Copper	Cu %	0.150 - 0.500
Vanadium	V %	0.030 - 0.080
Boron	B %	0.002 - 0.006
Iron	Fe %	Balance
-	-	-
-	-	-
-	-	-

Heat Treatment
Annealing or Normalizing or Hardening + Tempering

Mechanical Properties	
Tensile Strength in Mpa	725 - 930
Yield Strength in Mpa	620 min.
Elongation in %	17 min.
Reduction of Area in %	40 min.
Hardness in BHN	-
Impact in Joule	-

Cross Reference Table			
Material	Standard	Country	Grade Belong to the Industry
1.8719	DIN	Germany	Steel
1.892	EN	European Union	Steel
6386 Type 12	AMS	USA	Steel
K11576	UNS	USA	Casting
SA-487 Grade 7A	ASME	USA	Casting
J12084	UNS	USA	Casting
A487 7A	ASTM	USA	Casting

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