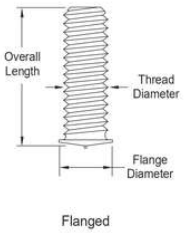

Flanged

Image Industries Data Sheet

CDS25-3

1/4-20 X 3 Capacitor Discharge, Stainless Steel, Weld Stud

Properties

Ferrule: N/A
Welding Process: CD
Material: Stainless 302/304 (302/302HQ/304/18-8 Stainless Steel)
Non-Flanged: No
Mini-Flanged: No
Weight: 41.82 Lbs/1,000

General Attributes

Thread Size: 1/4-20
Thread Pitch: 20
Thread Diameter: 0.25
Flange Diameter: 0.312
Overall Length: 3
Overall Length (Decimal): 3

Mechanical Properties

Fastener Dimensional Properties

Nominal Diameter (in): 0.250
Threads per Inch: 20.00
Calculated Pitch Diameter (in): 0.218
Calculated Minor Diameter (in): 0.185
Effective Weldbase Diameter: N/A
(SAF) Calculated Stress Area Full Body: N/A
(SAP) Calculated Stress Area Pitch: N/A
(SAT) Calculated Stress Area Threads (in): 0.0318 (a)

Material Properties

(UTM) Ultimate Tensile Strength Min (PSI)/(MPa): 70,000 (b)
(YTM) Yield Tensile Strength Min (PSI)/(MPa): 35,000 (b)
(PTM) Proof Tensile Strength Min(PSI)/(MPa) 90% YTM: 31,500 (c)
(YSM) Yield Shearing Stress Min (PSI)/(MPa): 20,195 (c)

Fastener Body Mechanical Properties

Tensile
Full Diameter Yield Tensile Strength Min (YTM*SAF): N/A
Pitch Diameter Yield Tensile Strength Min (YTM*SAP): N/A

Thread Mechanical Properties

Tensile
Ultimate Tensile Strength Min (UTM*SAT): 2,227
Yield Tensile Strength Min (YTM*SAT): 1,114
Proof Load Tensile Strength (PTM*SAT): 1,002
Preload Reused Tensile (75% PL): 752 (d)
Preload Permanent (90% PL): 902 (e)

Torque
Friction Coefficient: 0.2 (f)
Torque Reused (FC*PR*ND): 37.6
Torque Permanent (FC*PP*ND): 45.1
Torque Ultimate (FC*UTS*ND): 111.4 (g)

Shear
Yield Shear Min (YSM*SAT): 642.6 (h)

Shear
Full Diameter Yield Shear Min (YSM*SAF): N/A
Pitch Diameter Yield Shear Min (YSM*SAP): N/A

a) Stress area for the threads is calculated on an area approximately half way between the root diameter and pitch diameter. This more closely reflects actual results versus using root diameter for stress area calculations.

b) Data provided by our suppliers.

c) Proof Tensile is estimated to be 90% of Yield Tensile when Proof Tensile data is not readily available.

d) Preload for reuse of threaded fastener is 75% of Proof Load. Fastener may be rebolted multiple times with no degradation.

e) Preload for permanent installation of fastener is 90% of Proof Load. Fastener is permanently stretched and will not achieve the same clamping force on reuse.

f) Friction Coefficient will vary greatly depending on bolting conditions including lubrication. 0.2 is standard when bolt condition is plain finish or unknown.

g) Ultimate Torque is not useful in designing a bolted joint. Preloaded torque is more practical. This data is provided as a reference only.

h) Using the distortion-energy theory; Maximum Shear Stress equals .577 times the Maximum Tensile.

CAUTION:

Fasteners should not be used at their tensile or shear limits. A safety factor must be applied to engineering calculations. The particular safety factor will vary depending on the application.

Customers should always evaluate fasteners for suitability of their own applications.

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