

Materials

Steel Products: C12L14 Cold Drawn Bar through 5", C1117, C1117L or C12L14 Bar from 5" through 7".

Aluminum Products: 2024-T351 Extruded and Drawn Aluminum Bar.

Stainless Steel Products: 18-8 (type 303) Austenitic, Non-Magnetic Bar.

Finishes

Steel Products: Hot Process Black Oxide surface preparation, impregnated with naphthenic oil, centrifugally dried.

Zinc Plated Steel Products: ZincYellow Chromate to ASTM B633-85.

Aluminum Products: Bright Finish.

Stainless Steel Products: Bright Finish.

Black Oxide

The black oxide on our carbon steel collars and couplings is formulated as part of the total performance of the product. It enhances the holding ability of the collar/coupling, has anti-stick-slip characteristics and helps to keep the torque rating of the screw within its designed parameters. It also provides corrosion protection, although it is not intended to be used as an outside weather protective finish.

Stick-Slip

Stick-slip is the condition where the screw, instead of rotating uniformly as torquing continues, begins to show a stop-start pattern. When this happens, the torsioning effect on the screw is being absorbed as excess friction between the threads or the underside of the head and the mating parts of the collar, instead of contributing to the stress in the joint of the elements. If the stresses are low, the collar will not achieve the full holding power and could potentially cause a failure.

HARDWARE TORQUE CHARTS

Torque Ratings—Clamp Screw

INCH Clamp Screw	Seating Torque (lb-in)		METRIC Clamp Screw	Seating Torque (Nm)	
	ALLOY	STAINLESS STEEL		ALLOY	STAINLESS STEEL
#2-56	6	3.8	M2	0.60	0.36
#4-40	15	8	M2.5	1.21	0.73
#6-32	28	15	M3	2.10	1.10
#8-32	49	28	M4	4.60	2.50
#10-32	76	45	M5	9.50	5.40
1/4-28	170	110	M6	16.00	9.60
5/16-24	325	190	M8	39.00	23.00
3/8-24	570	345	M10	77.00	46.00

Torque Ratings—Set Screw

INCH Set Screw	Seating Torque (lb-in)		METRIC Set Screw	Seating Torque (Nm)	
	ALLOY	STAINLESS STEEL		ALLOY	STAINLESS STEEL
#1-72	0.8	0.48	M2.5	0.57	0.44
#2-56	1.8	1.08	M3	0.92	0.73
#4-40	5.0	3.00	M4	2.20	1.76
#6-32	10.0	6.00	M5	4.00	3.20
#8-32	15.0	12.00	M6	7.20	5.76
#10-32	25.0	18.00	M8	17.00	13.60
1/4-20	87.0	70.00	M10	33.00	26.40
5/16-18	165.0	130.00			
3/8-16	290.0	230.00			
1/2-13	620.0	500.00			

HARDWARE

Inch alloy steel socket cap screws: heat treated, meet or exceed ANSI/ASME B18.3 and ASTM A574-90. Nypatch® vibration resistant feature on coupling screws. Zinc yellow chromate plated on zinc plated collars.

Metric alloy steel socket cap screws: heat treated, meet or exceed ANSI/ASME B18.3.1M and ASTM A574M-90 property class 12.9. Nypatch® vibration resistant feature on coupling screws.

Inch stainless steel socket cap screws: 18-8 (300 series) austenitic stainless steel, meet or exceed ANSI/ASME B18.3 and ASTM F837-91. Nypatch® vibration resistant feature on coupling screws.

Metric stainless steel socket cap screws: 18-8 (300 series) austenitic stainless steel, meet or exceed ANSI/ASME B18.3.1M and ASTM F837M-91. Nypatch® vibration resistant feature on coupling screws.

Inch alloy and stainless steel socket set screws: cup point, heat treated, meet or exceed ANSI/ASME B18.3, forged socket.

Metric alloy and stainless steel socket set screws: cup point, heat treated, meet or exceed ANSI/ASME B18.3.6M, forged socket.

INSTALLATION INSTRUCTIONS

Shaft Collars

1. Use collars as they are received. Do not degrease.
2. Wipe the bore clean.
3. Apply a thin coat of light oil to the shaft.
4. Place collar in desired location on shaft and tighten the collar with an unplated wrench until a slight resistance is felt.
5. On two-piece collars be sure to maintain the gap between the two halves of the collar during installation.
6. Wring collar into final position and tighten screws to the full recommended seating torque. (See charts on this page.)

Rigid Couplings

1. Align the coupling on the two shafts to be connected.
2. Tighten the Nypatch® clamp screws with an unplated wrench to half of the recommended seating torque.
3. Tighten screws to the full recommended seating torque. (See charts on this page.)
4. Be sure to maintain the gap between the two halves of the coupling on two-piece styles.

Specials: As a service to our customers, we offer our extensive machining experience and capabilities to manufacture custom parts. If you don't see what you are looking for in our standard line, please inquire about our custom fabrication service.