

► DESCRIPTION

UCAN 410 stainless U-DRILLS® steel light to medium-duty self-drilling screws are engineered for speed, consistency, and strength. They are cold-formed with rolled threads for superior point strength and fast drilling performance in joined materials up to 0.220 inch thick.

The "Light-to-Medium Duty" refers to the range of steel thicknesses these fasteners are engineered to penetrate while still providing reliable holding strength. The result is a fast, efficient, and dependable fastening solution for commercial and industrial jobsite applications. The screws are available in a variety of thread lengths and #3 drill points from #10 to 1/4" size.

► MATERIAL SPECIFICATION

Material:

- Cold heading quality wire
- Stainless steel AISI 410

Heat treatment:

Surface Hardness

- HV 550 Min.

Core Hardness

- HV 400-500 (HRC 40-48)

Corrosion protection:

- Silver Ruspro® Coating, 1000 hrs salt spray resistance
- The coating's effectiveness in preventing galvanic corrosion depends on protecting the connection from moisture.

► ASSESSMENTS AND STANDARDS COMPLIANCE

The 410 ss self-drilling screws comply with the material, processes and performance requirements of the following standards: ASTM C1513; ASTM A500; SAE J78

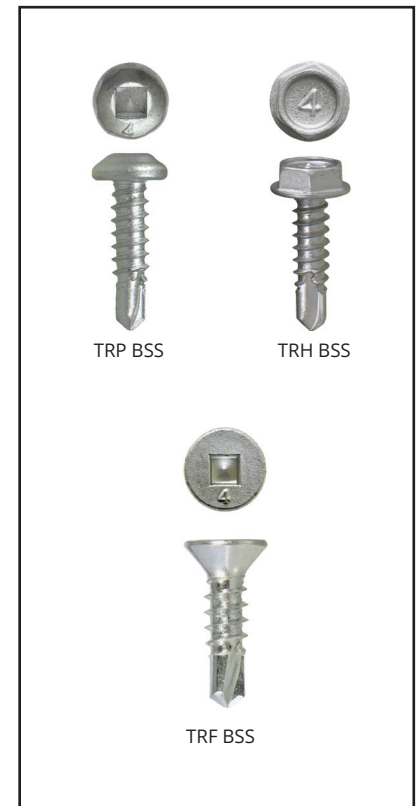
The screw's load capacities are based on an independent testing agency in compliance with the following standards:

- Tension - AC491 S3.2.2 (AISI S904)
- Shear - AC491 S3.2.2 (AISI S904)
- Torsion - AC118 S3.3 (ASME B18.6.3)
- Pull Out - AC 491 S3.4.3 (AISI S905)
- Lap Shear (bearing) - AC118 S4.3 (AISI S905)
- Member materials - ASTM A653, ASTM A36, ASTM A1011

► INSTALLATION

1. Install the screws into the base steel material without pre-drilling.
The length of the forged drill point determines the material thickness to be drilled (max. 0.220 inch).
2. The maximum thickness of the combined material without pre-drilling the connected material depends on the length of the forged drill point (max. 0.220 inch Drill Point Capacity).
3. For effective drilling speed, see Table 1.
4. Always drive self-drilling screws perpendicular to the work surface.
5. It is highly advised to use torque control when fastening into thin sheet metal.
6. Do not exceed more than 20% of the minimum torsional strength, shown in Table 1.

For complete line of U-Drills screws please see the current UCAN contractors Price List.



► TECHNICAL DATA

Table 1 - Screw Strength Data

Screw Size	Drill Point	Nominal Diameter	Average Ultimate Load		Min. Torsional Strength*	Recommended Drill Speed
			Tension	Shear		
		inch	lbf	lbf	lb-in	RPM
10-16	3	0.190	3,438	2,087	61	1800-2500
12-14		0.216	4,572	2,906	92	1000-1800
1/4-14		0.250	5,964	3,598	150	

* Minimum torsional strength is as per ASTM C1513, SAE J78-1998.

Table 2 - Characteristic Pullout Data^{1,2,3,4}

Screw Size	Drill Point	Units	Screw head not in contact with the material					
			18 Ga	16 Ga	14 Ga	12 Ga	1/8"	3/16"
		inch	0.0445	0.0590	0.0710	0.1015	0.1330	0.1900
10-16	3	lbf	375	529	684	1,357	2,000	-
12-14			341	560	733	1,558	2,288	2,878
1/4-14			376	540	741	1,630	2,293	2,990

¹ Published pullout strengths are based on independent laboratory testing and for information only

² The Allowable strength (ASD design) and Design strength (LSD Design) shall be calculated in accordance with AISI S100

³ For connection design, published pull-out values shall be compared to pull-over and screw strength, and the lowest must be used

⁴ Values are based on steel members with the minimum strength of F_y 33 ksi

Table 3 - Characteristic Shear Data^{1,2,3,4}

Screw Size	Drill Point	Screw head not in contact with the material	Units	Screw head in contact with the material					
				22 Ga	20 Ga	18 Ga	16 Ga	14 Ga	12 Ga
			inch	0.0305	0.0360	0.0445	0.0590	0.0710	0.1015
10-16	3	18 Ga	lbf	908	-	1,049	-	-	-
12-14		12 Ga		-	-	-	-	-	2,620
12-14		1/8"		1,222	1,451	2,157	3,252	3,021	-
1/4-14		12 Ga		-	-	-	-	-	3,507
1/4-14		1/8"		1,500	-	2,123	4,251	4,694	-

¹ Published shear strengths are based on independent laboratory testing and for information only

² The Allowable strength (ASD design) and Design strength (LSD Design) shall be calculated in accordance with AISI S100

³ For connection design, published pull-out values shall be compared to pull-over and screw strength, and the lowest must be used

⁴ Values are based on steel members with the minimum strength of F_y 33 ksi