HEX WASHER HEAD BIMETAL SELF DRILLING SCREW

304 STAINLESS, CLIMAX COATED

CERTIFICATION | TECHNICAL DATA

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TECHNICAL DATA SHEET:

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Hex Washer Head Bimetal 304 Stainless Self Drilling Screws are designed for superior performance in corrosive environments, these bimetal self-drilling screws feature a 304 stainless steel body for long-term durability and a hardened carbon steel drill point for fast, reliable penetration into metal.

Finished with CliMax coating for added corrosion resistance, these screws are ideal for exterior applications where strength and longevity matter.

KEY BENEFITS

- Offer superior corrosion resistance & better galvanic compatibility in dissimilar metal applications—especially when used with aluminum—compared to fasteners with standard zinc plating.
- Hardened drill point & lead threads for efficient drilling & precise tapping.
- Stainless steel screws are more resistant to Hydrogen Assisted Stress Corrosion Cracking (HASCC) cracking than typical case-hardened fasteners.

APPLICATIONS

- Curtain Wall
- Window Installation
- Glazing
- Ventilated Facades
- Exterior Applications
- Solar Panel Systems

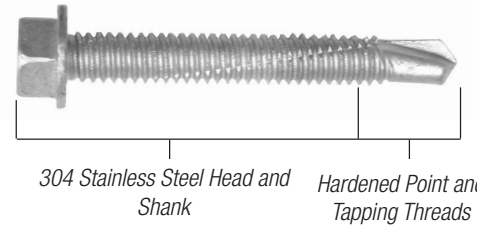
APPROVALS & CERTIFICATIONS

- Testing conducted in accordance with AISI S904 and AISI S905.

FASTENER SPECIFICATIONS

- **Head Type:** Hex Washer Head
- **Diameter:** #10, #12, 1/4"
- **Drill Point:** Type: #3

MATERIAL SPECIFICATIONS



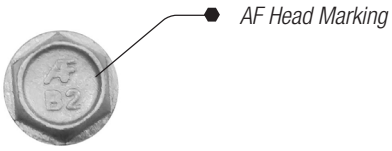


TABLE 1: MATERIAL SPECIFICATIONS

FASTENER COMPONENT	SPECIFICATION
Fastener Body	Bimetal 304 Stainless Steel
Plating/Coating	CliMax Coated

Our CliMax Coating is a high-performance duplex coating system featuring a zinc-aluminum rich basecoat and an organic topcoat, designed to protect parts from rust, oxidation, and environmental degradation while ensuring consistent torque and tension. With exceptional adhesion, flexibility, and resistance to hydrogen embrittlement and galvanic corrosion, it extends part lifespan and reduces long-term maintenance costs.

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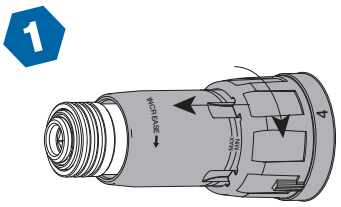
INSTALLATION SPECIFICATIONS

TABLE 2: MINIMUM SPACING AND EDGE DISTANCE IN STEEL[1,2]

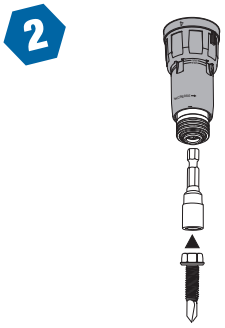
SCREW DIAMETER: d (in.)	MINIMUM SPACING: 3d (in.)	MINIMUM EDGE DISTANCE: 1.5d (in.)
0.19 (#10)	9/16	5/16
0.216 (#12)	11/16	3/8
0.25 (1/4)	3/4	3/8

1. Minimum spacing and edge distance requirements per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*

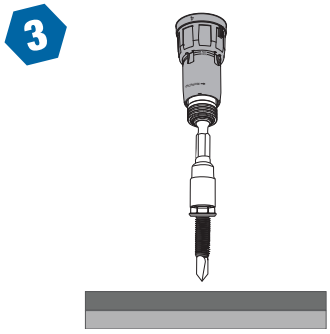
INSTALLATION INSTRUCTIONS



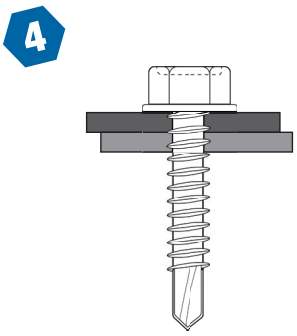
1. Install with a maximum drill speed of 2400 RPM using an adjustable torque screwdriver. Drill speed may need to be adjusted downward based on base material and screw size.



2. Use corresponding hex nut driver with adjustable torque screwdriver.



3. Position the screw perpendicular to and touching the base material.



4. Tighten the screw until the screw head is in firm contact with the base material.

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TECHNICAL SPECIFICATIONS

TABLE 3: FASTENER TENSILE AND SHEAR STRENGTHS[1,2,3]

DIAMETER	TENSION			SHEAR		
	ULTIMATE	ASD	LRFD	ULTIMATE	ASD	LRFD
#10-16	–	–	–	2815	938	1408
#12-14	2765	922	1383	4247	1416	2124
1/4"-20	4321	1440	2161	5756	1919	2878

1. Ultimate strength values are based on testing.
2. ASD values use a safety factor, Ω, equal to 3, per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*
3. LRFD values use a resistance factor, Φ, equal to 0.5, per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*
4. The values given are for the strength of the screw itself. Additional capacities for bearing and pull-over need to be determined for a connection-specific configuration for the individual project per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*

TABLE 4: ULTIMATE PULL-OUT CAPACITY OF SCREW CONNECTIONS IN STEEL (LBS)

DIAMETER	THICKNESS OF MEMBER NOT IN CONTACT WITH SCREW HEAD					
	0.06	0.125	0.25	0.06	0.125	0.25
	ULTIMATE STRENGTH = 45 ksi			ULTIMATE STRENGTH = 58 ksi		
#10-16	436	908	1817	562	1171	2342
#12-14	496	1033	2066	639	1331	2662
1/4"-20	574	1195	2391	740	1541	3081

1. Ultimate pull-out strength values are based on Eq. J4.4.1-1 per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*

TABLE 5: ALLOWABLE (ASD) PULL-OUT CAPACITY OF SCREW CONNECTIONS IN STEEL (LBS)

DIAMETER	THICKNESS OF MEMBER NOT IN CONTACT WITH SCREW HEAD					
	0.06	0.125	0.25	0.06	0.125	0.25
	ULTIMATE STRENGTH = 45 ksi			ULTIMATE STRENGTH = 58 ksi		
#10-16	145	303	606	187	390	781
#12-14	165	344	689	213	444	887
1/4"-20	191	398	797	247	514	1027

1. ASD values use a safety factor, Ω, equal to 3, and are based on Eq. J4.4.1-1 per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*

TABLE 6: DESIGN (LRFD) PULL-OUT CAPACITY OF SCREW CONNECTIONS IN STEEL (LBS)

DIAMETER	THICKNESS OF MEMBER NOT IN CONTACT WITH SCREW HEAD					
	0.06	0.125	0.25	0.06	0.125	0.25
	ULTIMATE STRENGTH = 45 ksi			ULTIMATE STRENGTH = 58 ksi		
#10-16	218	454	908	281	585	1171
#12-14	248	516	1033	319	666	1331
1/4"-20	287	598	1195	370	770	1541

1. LRFD values use a resistance factor, Φ, equal to 0.5, and are based on Eq. J4.4.1-1 per AISI S100-16, *North American Specification for the Design of Cold-Formed Steel Structural Members.*

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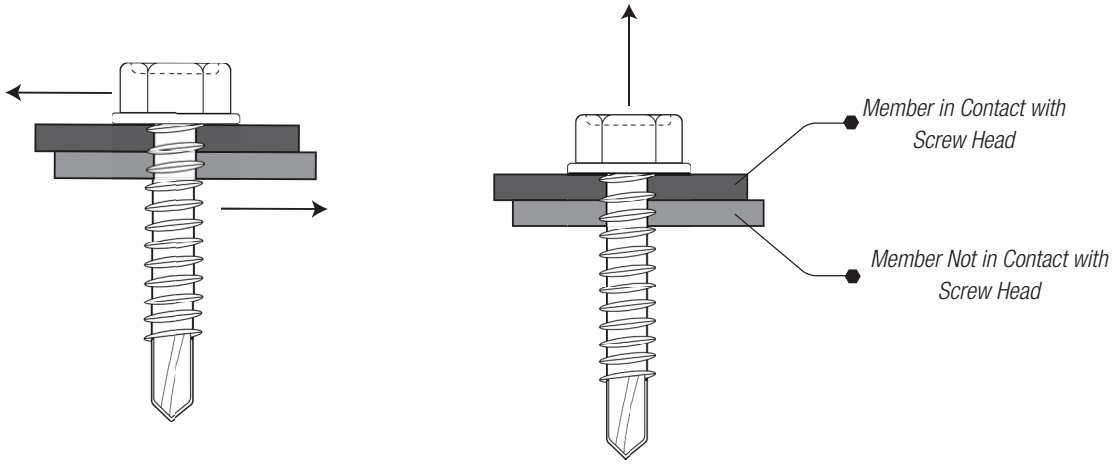

SHEAR **TENSION PULL-OUT**

ORDERING INFORMATION

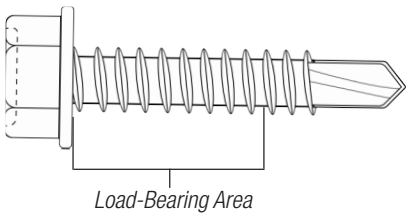

TABLE 7: ORDERING INFORMATION

PART NUMBER	SIZE	POINT TYPE	HEX HEAD	MAXIMUM LOAD BEARING LENGTH[1] (in.)	MINIMUM PROTRUSION LENGTH[2]	NOMINAL HEAD DIAMETER[3] (in.)	NOMINAL HEAD HEIGHT[4] (in.)	QTY/BOX
3HWTSB210034	#10-16 x 3/4"	#3	5/16"	0.250	1/2"	0.400	0.14	1000
3HWTSB212100	#12-14 x 1"	#3	5/16"	0.500	1/2"	0.415	0.18	750
3HWTSB212200	#12-14 x 2"	#3	5/16"	1.500	1/2"	0.415	0.18	400
3HWTSB21420100	1/4-20 x 1"	#3	3/8"	0.188	13/16"	0.500	0.23	500
3HWTSB21420112	1/4-20 x 1-1/2"	#3	3/8"	0.688	13/16"	0.500	0.23	400
3HWTSB21420200	1/4-20 x 2"	#3	3/8"	1.188	13/16"	0.500	0.23	250
3HWTSB21420300	1/4-20 x 3"	#3	3/8"	2.188	13/16"	0.500	0.23	200

1. The Maximum Load Bearing Length is calculated by subtracting the Minimum Protrusion Length from the Nominal Length of the fastener.
2. Minimum Protrusion Length is the length that allows the higher hardness tip and lead threads to protrude out of the back side of the supporting material.
3. Nominal head diameter is the diameter of the integral washer on hex washer head fasteners.
4. Nominal head height includes the thickness of the integral washer on hex washer head fasteners.