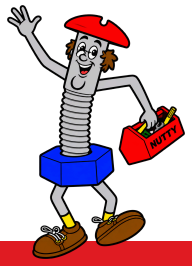
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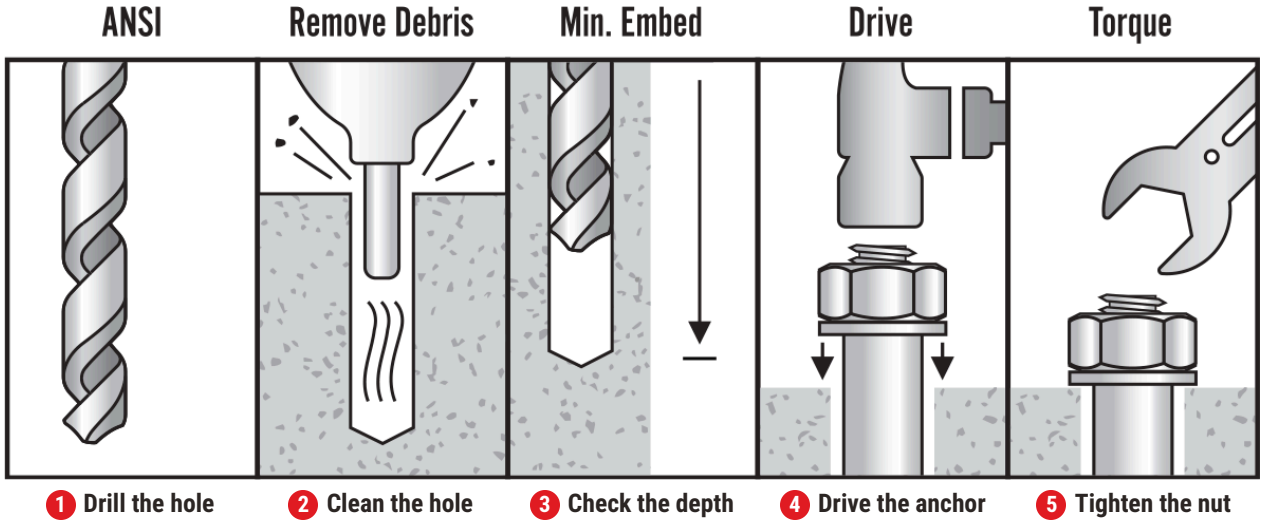
INSTALLATION INSTRUCTIONS

Hex Sleeve Anchors

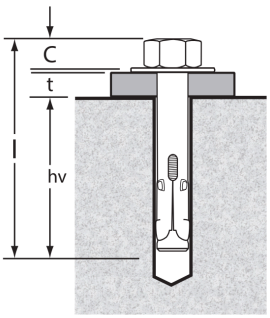


- **Pre-assembled** with nut and washer: ready to install, no loose parts.
- **Hole size = anchor size**: drill the same diameter as the anchor, through the fixture.
- For **concrete, grout-filled block, hollow block, brick and stone**.
- Zinc-plated steel or **18-8 stainless steel** for wet and outdoor use.

1.0 Installation Read all steps before you start



1. **Drill the hole.** Use a carbide-tipped masonry bit meeting **ANSI B212.15**, the **same diameter as the anchor** (a 3/8" anchor takes a 3/8" bit). Drill perpendicular to the work surface. Do not ream the hole or let the drill wobble.
2. **Clean the hole.** Blow out the dust with compressed air and brush with a nylon brush, then blow out again. A clean hole is necessary for full performance.
3. **Check the depth.** Drill **at least one anchor diameter deeper** than the embedment you need, but no closer than two anchor diameters to the bottom surface of the concrete. Minimum embedment for each size is on page 2. In hollow block, through-drilling is allowed; the sleeve must expand in the solid part of the block.
4. **Drive the anchor.** Leave the nut and washer on the anchor. Put it through the fixture into the hole and tap it in with a hammer until the washer rests **solidly against the fixture**. Make sure the anchor reaches the required embedment depth.
5. **Tighten the nut.** Tighten the nut with a wrench **3 to 5 turns past hand-tight**, or to the installation torque below. This pulls the cone into the sleeve and expands it against the hole wall. Do not over-tighten.



Choosing the Anchor Length

Anchor length (l) = Min. embedment (h_v) + Fixture thickness (t) + Nut height (C)

Nut height C equals the anchor diameter. **Example:** 3/8" anchor through a 1/4" plate: 1-1/4" + 1/4" + 3/8" = 1-7/8" → **HSA38178**. If the result falls between stock lengths, pick the next longer one.

Installation Torque (normal-weight concrete)

Anchor Dia.	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
Torque (ft-lbs)	4	8	15	25	55	90

Safety: Always wear safety glasses. Follow the drill manufacturer's instructions.

2.0 Stock Numbers & Sizes

Hole size = anchor diameter

Plated Steel – Zinc Plated

Stock #	Size (Dia. x Length)	Drill Size	Min. Embedment
HSA14138	1/4" x 1-3/8"	1/4"	1-1/8"
HSA14214	1/4" x 2-1/4"	1/4"	1-1/8"
HSA516112	5/16" x 1-1/2"	5/16"	1-3/16"
HSA516212	5/16" x 2-1/2"	5/16"	1-3/16"
HSA38178	3/8" x 1-7/8"	3/8"	1-1/4"
HSA383	3/8" x 3"	3/8"	1-1/4"
HSA384	3/8" x 4"	3/8"	1-1/4"
HSA12214	1/2" x 2-1/4"	1/2"	1-1/2"
HSA123	1/2" x 3"	1/2"	1-1/2"
HSA124	1/2" x 4"	1/2"	1-1/2"
HSA126	1/2" x 6"	1/2"	1-1/2"
HSA58214	5/8" x 2-1/4"	5/8"	2"
HSA583	5/8" x 3"	5/8"	2"
HSA58414	5/8" x 4-1/4"	5/8"	2"
HSA586	5/8" x 6"	5/8"	2"
HSA34212	3/4" x 2-1/2"	3/4"	2-1/4"
HSA34414	3/4" x 4-1/4"	3/4"	2-1/4"
HSA34614	3/4" x 6-1/4"	3/4"	2-1/4"

18-8 Stainless Steel

Stock #	Size (Dia. x Length)	Drill Size	Min. Embedment
XHSA14138	1/4" x 1-3/8"	1/4"	1-1/8"
XHSA14214	1/4" x 2-1/4"	1/4"	1-1/8"
XHSA516112	5/16" x 1-1/2"	5/16"	1-3/16"
XHSA516212	5/16" x 2-1/2"	5/16"	1-3/16"
XHSA38178	3/8" x 1-7/8"	3/8"	1-1/4"
XHSA383	3/8" x 3"	3/8"	1-1/4"
XHSA384	3/8" x 4"	3/8"	1-1/4"
XHSA12214	1/2" x 2-1/4"	1/2"	1-1/2"
XHSA123	1/2" x 3"	1/2"	1-1/2"
XHSA124	1/2" x 4"	1/2"	1-1/2"
XHSA58414	5/8" x 4-1/4"	5/8"	2"

3.0 Installation Data by Diameter

Anchor Dia.	Drill Size	Bolt Thread	Min. Embedment	Install Torque (ft-lbs)	Min. Edge Distance	Min. Spacing
1/4"	1/4"	10-24	1-1/8"	4	1-1/4"	1-11/16"
5/16"	5/16"	1/4-20	1-3/16"	8	1-1/2"	2-3/16"
3/8"	3/8"	5/16-18	1-1/4"	15	1-3/4"	2-1/4"
1/2"	1/2"	3/8-16	1-1/2"	25	2-1/4"	3-3/8"
5/8"	5/8"	1/2-13	2"	55	3-1/8"	4-1/8"
3/4"	3/4"	5/8-11	2-1/4"	90	3-3/4"	5-1/16"

Minimum embedment is the least depth the anchor must be set into the base material. Drill the hole at least one anchor diameter deeper. Installation torque is for normal-weight concrete. Minimum edge and spacing distances are for reduced loads; use the full critical distances (12 diameters from an edge, 3 embedment depths between anchors) for full load. Design loads must be calculated by a qualified engineer.

Disclaimer: The above is a compilation of data from various industry standards. The Nutty Company, Inc. has made every effort to present the data accurately. However, The Nutty Company, Inc. cannot be held liable for any claim traceable to any errors, typographical or otherwise, contained herein.



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4.0 Material & Specifications

Property	Specification
Anchor Body (plated)	Carbon steel: 1/4"–5/16" C1035; 3/8"–3/4" C1010/C1018
Sleeve & Washer (plated)	Carbon steel, C1010/C1018
Finish (plated)	Zinc plated, ASTM B633 SC1 Type III with clear chromate
Stainless Steel	All components AISI Type 304 (18-8) stainless steel
Base Material	Concrete, grout-filled and hollow concrete block, brick and stone
Applications	Shelving, cable trays, sill plates, door & window frames, railings, light-duty fixtures

5.0 Load Capacities in Normal-Weight Concrete Ultimate / Allowable (4:1)

Ultimate Loads

Anchor Dia.	Embed. Depth	f'c = 2,000 psi		f'c = 3,000 psi		f'c = 4,000 psi	
		Tension (lbs)	Shear (lbs)	Tension (lbs)	Shear (lbs)	Tension (lbs)	Shear (lbs)
1/4"	1-1/8"	1,100	1,480	1,220	1,480	1,280	1,500
	1-11/16"	1,290	1,760	1,370	1,760	1,490	1,780
5/16"	1-3/16"	1,380	2,080	1,840	2,230	1,980	2,400
	1-7/16"	1,550	2,120	1,940	2,300	2,060	2,480
	2-1/16"	1,690	2,430	2,100	2,480	2,190	2,520
3/8"	1-1/4"	1,730	2,800	2,150	2,860	2,510	3,100
	1-1/2"	1,830	2,880	2,340	2,920	3,110	3,220
	2-1/2"	2,070	3,170	2,590	3,470	3,320	3,690
1/2"	1-1/2"	2,440	4,220	3,060	4,450	4,240	4,900
	2-1/4"	3,180	5,010	4,100	5,010	4,700	5,070
	3-3/8"	3,410	5,090	4,250	5,100	5,140	5,180
5/8"	2-1/4"	4,460	7,070	5,540	8,130	6,140	8,160
	2-3/4"	4,920	7,800	5,610	8,510	6,590	8,590
	3-15/16"	5,050	7,990	5,670	8,530	7,140	8,660
3/4"	1-7/8"	4,360	9,640	6,250	10,980	8,490	11,420
	2-1/4"	4,510	10,230	6,710	11,640	8,920	13,080
	3-3/8"	6,950	11,640	8,230	11,770	9,530	13,110

Allowable Loads (factor of safety 4)

Anchor Dia.	Embed. Depth	f'c = 2,000 psi		f'c = 3,000 psi		f'c = 4,000 psi	
		Tension (lbs)	Shear (lbs)	Tension (lbs)	Shear (lbs)	Tension (lbs)	Shear (lbs)
1/4"	1-1/8"	275	370	305	370	320	375
	1-11/16"	323	440	343	440	373	445
5/16"	1-3/16"	345	520	460	558	495	600
	1-7/16"	388	530	485	575	515	620
	2-1/16"	423	608	525	620	548	630
3/8"	1-1/4"	433	700	538	715	628	775
	1-1/2"	458	720	585	730	778	805
	2-1/2"	518	793	648	868	830	923
1/2"	1-1/2"	610	1,055	765	1,113	1,060	1,225
	2-1/4"	795	1,253	1,025	1,253	1,175	1,268
	3-3/8"	853	1,273	1,063	1,275	1,285	1,295
5/8"	2-1/4"	1,115	1,768	1,385	2,033	1,535	2,040
	2-3/4"	1,230	1,950	1,403	2,128	1,648	2,148
	3-15/16"	1,263	1,998	1,418	2,133	1,785	2,165
3/4"	1-7/8"	1,090	2,410	1,563	2,745	2,123	2,855
	2-1/4"	1,128	2,558	1,678	2,910	2,230	3,270
	3-3/8"	1,738	2,910	2,058	2,943	2,383	3,278

6.0 Load Capacities in Hollow Concrete Block 2,000 psi block

Ultimate Loads

Anchor Dia.	Embed. Depth	Hollow Core		Grout-Filled	
		Tension (lbs)	Shear (lbs)	Tension (lbs)	Shear (lbs)
1/4"	1-1/8"	1,070	1,350	1,200	1,350
	1-5/8"	1,100	1,350	1,290	1,350
5/16"	2-1/16"	1,130	2,270	1,480	2,270
3/8"	1-1/2"	1,370	3,060	2,310	3,060
	2-1/2"	1,400	3,060	2,410	3,060
1/2"	1-7/8"	1,380	4,080	2,100	4,080
	2-3/8"	-	-	2,690	4,080
	3-3/8"	-	-	2,820	5,200
5/8"	2"	-	-	3,110	6,580
	3-15/16"	-	-	4,100	6,580
3/4"	2-1/2"	-	-	4,240	10,280
	3-9/16"	-	-	4,990	10,280

Allowable Loads (factor of safety 4)

Anchor Dia.	Embed. Depth	Hollow Core		Grout-Filled	
		Tension (lbs)	Shear (lbs)	Tension (lbs)	Shear (lbs)
1/4"	1-1/8"	268	338	300	338
	1-5/8"	275	338	323	338
5/16"	2-1/16"	283	568	370	568
3/8"	1-1/2"	343	765	578	765
	2-1/2"	350	765	603	765
1/2"	1-7/8"	345	1,020	525	1,020
	2-3/8"	-	-	673	1,020
	3-3/8"	-	-	705	1,300
5/8"	2"	-	-	778	1,645
	3-15/16"	-	-	1,025	1,645
3/4"	2-1/2"	-	-	1,060	2,570
	3-9/16"	-	-	1,248	2,570

- Allowable loads are one-fourth of the ultimate tension and shear capacities (4:1 safety factor). Higher safety factors may be needed for life-safety or overhead use.
- Values are for anchors at critical spacing and edge distance; reduce loads at smaller distances. "–" = no published value.
- Load data is for use by a qualified design engineer.