RED HEAD®
CONCRETE ANCHORING SPECIALISTS

Dynabolt® Sleeve Anchors

Versatile, Medium-Duty Sleeve Anchor

Dynabolt
Hex Nut Sleeve Anchor

DESCRIPTION/SUGGESTED SPECIFICATIONS

Sleeve Type Anchors—

SPECIFIED FOR ANCHORAGE INTO CONCRETE, GROUT-FILLED CONCRETE BLOCK, HOLLOW CONCRETE BLOCK AND BRICK

Dynabolt Masonry Sleeve Anchor

Sleeve type anchors feature a split expansion sleeve over a threaded stud bolt body and integral expander, nut and washer.

Anchors are made of Plated Carbon Steel, or Type 18-8 Stainless Steel.

Anchors should be installed with carbide tipped hammer drill bits made in accordance to ANSI B212.15-1994.

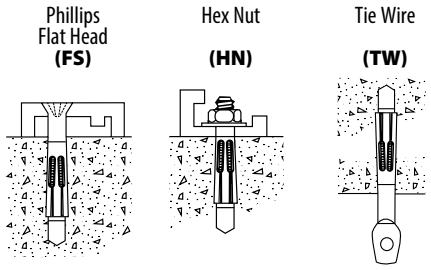
Anchors are tested to ASTM E488 criteria.

ADVANTAGES

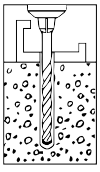
- Anchor diameter equals hole diameter
- Available in hex head and three other head styles
- Available 1/4 - 3/4" diameter up to 6-1/4" length
- Zinc plated carbon steel and 304 stainless steel
- Provides full 360° hole contact over large area and reduces concrete stress
- Heavy-loading capacity
- Preassembled for faster, easier installations
- Dynabolt can be installed through object to be fastened
- Sleeve design improves holding power
- No pre-spotting of holes necessary

Available Head Styles

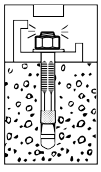
Full range of head style, corrosion protection, and sizes makes the Dynabolt Sleeve the right product for almost any application.



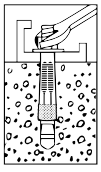
INSTALLATION STEPS



1. Use a carbide tipped drill bit whose diameter is equal to the anchor. See Chart to determine proper size bit for anchor used. Dnll hole to any depth exceeding minimum embedment. Clean hole.



2. Insert assembled anchor through fixture and into hole so that washer or head is flush with materials to be fastened.



3. Expand anchor by tightening nut or head 2 to 3 turns.

APPROVALS/LISTINGS

Meets or exceeds U.S. Government G.S.A. Specification A-A-1922A (Formerly GSA: FF-S-325 Group II, Type 3, Class 3)

Factory Mutual

APPLICATIONS

Electrical junction boxes are common applications for the Dynabolt Sleeve anchor because it works well in solid concrete, concrete block, and brick. It is also available in several finished head styles.

The Dynabolt Sleeve anchor works well in hollow materials like brick and block. It is available in zinc-plated carbon steel and 304 stainless steel.

Door and window frames are commonly attached to the structure with Dynabolt Sleeve anchors because of their finished & threshold head styles and performance in block & brick.

SELECTION CHART

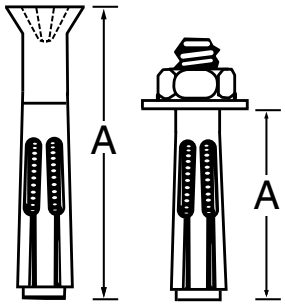
Dynabolt
Carbon Steel with Zinc Plating

Typical Applications—Shelf ledgers, electrical boxes, conduit

Environment—Interior (non-corrosive)

Level of Corrosion—Low

*** Effective Anchor Length**



HEAD STYLE	PART NUMBER	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH* In. (mm)	BOLT DIA./ THREADS PER INCH	MIN. EMBEDMENT In. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
HEX NUT	HN-1614	5/16″	1-1/2 (38.1)	1/4″ /20	1-1/4 (31.8)	1/4 (6.4)	100/ 4.0	1000/ 41
	HN-3817	3/8″	1-7/8 (47.6)	5/16″ /18	1-1/2 (38.1)	3/8 (9.5)	50/ 3.5	500/ 36
	HN-3830		3 (76.2)	5/16″ /18	1-1/2 (38.1)	1-1/2 (38.1)	50/ 4.9	400/ 40
	HN-1222	1/2″	2-1/4 (57.2)	3/8″ /16	1-7/8 (47.6)	3/8 (9.5)	25/ 3.3	250/ 34
	HN-1230		3 (76.2)	3/8″ /16	1-7/8 (47.6)	1-1/8 (28.6)	25/ 4.0	200/ 33
	HN-1240		4 (101.6)	3/8″ /16	1-7/8 (47.6)	2-1/8 (54.0)	25/ 5.3	200/ 44
	HN-5830	5/8″	3 (76.2)	1/2″ /13	2 (50.8)	1 (25.4)	25/ 7.0	150/ 46
	HN-5842		4-1/4 (108.0)	1/2″ /13	2 (50.8)	2-1/4 (57.2)	10/ 3.9	100/ 41
	HN-3440	3/4″	4 (101.6)	5/8″ /11	2-1/4 (57.2)	1-3/4 (44.5)	5/ 3.2	50/ 33
PHILLIPS FLAT HEAD*	FS-3840	3/8″	4 (101.6)	5/16″ /18	1-1/2 (38.1)	2-1/2 (63.5)	50/ 5.3	400/ 44
	FS-3850	(head dia. .722)	5 (127.0)	5/16″ /18	1-1/2 (38.1)	3-1/2 (88.9)	50/ 5.6	300/ 40
	FS-3860		6 (152.4)	5/16″ /18	1-1/2 (38.1)	4-1/2 (114.3)	50/ 8.0	300/ 48
TILE WIRE	TW-1614	5/16″	1-1/2 (38.1)	1/4″ /20	1-1/2 (38.1)	9/32 (7.1)	100/ 4.9	1000/ 50

* Phillips flat head uses a standard 80°–82° counter sink.

SELECTION CHART

Dynabolt
Type 304 Stainless Steel

Typical Applications—Cladding and Brick Ties

Environment—Slight to moderate degree of pollution

Level of Corrosion—Medium

HEAD STYLE	PART NUMBER	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH* In. (mm)	BOLT DIA./ THREADS PER INCH	MIN. EMBEDMENT In. (mm)	MAX. THICKNESS OF MATERIAL TO BE FASTENED In. (mm)	QTY/WT PER BOX lbs.	QTY/WT PER MASTER CARTON lbs.
HEX NUT	SHN-3817	3/8″	1-7/8 (47.6)	5/16″ /18	1-1/2 (38.1)	3/8 (9.5)	50/ 3.5	500/ 36
	SHN-1222	1/2″	2-1/4 (57.2)	3/8″ /16	1-7/8 (47.6)	3/8 (9.5)	25/ 3.3	250/ 34
	SHN-1240		4 (101.6)	3/8″ /16	1-7/8 (47.6)	2-1/8 (54.0)	25/ 5.3	200/ 44
PHILLIPS FLAT HEAD*	SFS-3826	3/8″	2-7/8 (73.0)	5/16″ /18	1-1/2 (38.1)	1-3/8 (34.9)	50/ 3.8	500/ 40
	SFS-3840		4 (101.6)	5/16″ /18	1-1/2 (38.1)	2-1/2 (63.5)	50/ 5.3	400/ 44

* Flat head uses a standard 80°–82° counter sink.
For continuous extreme low temperature applications, use stainless steel.

Dynabolt Sleeve Anchors — Ultimate Tension and Shear Values in Concrete (Lbs/kN)*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE Ft. Lbs. (Nm)	BOLT DIA. In. (mm)	MINIMUM EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE (STEEL)	f'c = 2000 PSI (13.8 MPa)		f'c = 3000 PSI (20.7 MPa)		f'c = 4000 PSI (27.6 MPa)	
					TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon or Stainless	1,200 (5.3)	1,215 (5.4)	1,325 (5.9)	1,215 (5.4)	1,450 (6.4)	1,215 (5.4)
5/16 (7.9)	8 (10.8)	1/4 (6.4)	1-1/4 (31.8)		1,400 (6.2)	2,040 (9.1)	1,920 (8.5)	2,220 (9.9)	2,600 (11.6)	2,400 (10.7)
3/8 (9.5)	14 (19.0)	5/16 (7.9)	1-1/2 (38.1)		1,620 (7.2)	2,560 (11.4)	2,240 (10.0)	2,800 (12.5)	3,100 (13.8)	3,040 (13.5)
1/2 (12.7)	20 (27.1)	3/8 (9.5)	1-7/8 (47.6)		2,220 (9.9)	3,250 (14.5)	3,140 (14.0)	4,000 (17.8)	4,400 (19.6)	4,500 (20.0)
5/8 (15.9)	48 (65.1)	1/2 (12.7)	2 (50.8)		3,080 (13.7)	6,440 (28.6)	4,400 (19.6)	7,240 (32.2)	6,120 (27.2)	8,080 (35.9)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/4 (57.2)		4,200 (18.7)	10,200 (45.4)	6,060 (27.0)	11,600 (51.6)	8,900 (39.6)	13,100 (58.3)

* For continuous extreme low temperature applications, use stainless steel.
For AN-1405, Ultimate Pullout: 500 lbs. & Ultimate Shear: 1751 lbs. based on 4,000 psi.
* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values

Dynabolt Sleeve Anchors — Ultimate Tension and Shear Values in Lightweight Concrete (Lbs/kN)*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE Ft. Lbs. (Nm)	BOLT DIA. In. (mm)	MINIMUM EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE (STEEL)	f'c = 4000 PSI (27.6 MPa)		f'c = 6000 PSI (41.4 MPa)	
					TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon or Stainless	870 (3.9)	730 (3.2)	1,066 (4.7)	894 (4.0)
5/16 (7.9)	8 (10.8)	1/4 (6.4)	1-1/4 (31.8)		1,260 (5.6)	1,680 (7.5)	1,440 (6.4)	2,220 (9.9)
3/8 (9.5)	14 (19.0)	5/16 (7.9)	1-1/2 (38.1)		1,620 (7.2)	2,300 (10.2)	2,240 (10.0)	2,800 (12.5)
1/2 (12.7)	25 (33.9)	3/8 (9.5)	1-7/8 (47.6)		2,600 (11.6)	2,400 (10.7)	3,160 (14.1)	2,400 (10.7)
5/8 (15.9)	48 (65.1)	1/2 (12.7)	2 (50.8)		3,240 (14.4)	5,600 (24.9)	4,300 (19.1)	7,840 (34.9)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/4 (57.2)		3,640 (16.2)	8,640 (38.4)	5,800 (25.8)	12,480 (55.5)

Dynabolt Sleeve Anchors — Ultimate Tension and Shear Values in Concrete Masonry Units (Lbs/kN)*

ANCHOR DIA. In. (mm)	INSTALLATION TORQUE Ft. Lbs. (Nm)	BOLT DIA. In. (mm)	MINIMUM EMBEDMENT DEPTH In. (mm)	ANCHOR TYPE (STEEL)	LIGHTWEIGHT				MEDIUM WEIGHT			
					HOLLOW CORE		GROUT FILLED		HOLLOW CORE		GROUT FILLED	
					TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)	TENSION Lbs. (kN)	SHEAR Lbs. (kN)
1/4 (6.4)	3.5 (4.7)	3/16 (4.8)	1-1/8 (28.6)	Carbon	1,120 (5.0)	1,215 (5.4)	1,120 (5.0)	1,215 (5.4)	1,120 (5.0)	1,215 (5.4)	1,120 (5.0)	1,215 (5.4)
				Stainless	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)	640 (2.8)	1,620 (7.2)
3/8 (9.5)	15 (20.3)	5/16 (7.9)	1-1/2 (38.1)	Carbon	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)	1,360 (6.0)	2,560 (11.4)
				Stainless	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)	1,160 (5.2)	2,560 (11.4)
1/2 (12.7)	25 (33.9)	3/8 (9.5)	1-7/8 (47.6)	Carbon	N/A	N/A	2,220 (9.9)	3,500 (15.6)	N/A	N/A	2,220 (9.9)	3,500 (15.6)
				Stainless	N/A	N/A	2,100 (9.3)	3,500 (15.6)	N/A	N/A	2,100 (9.3)	3,500 (15.6)
5/8 (15.9)	55 (74.6)	1/2 (12.7)	2 (50.8)	Carbon	N/A	N/A	3,080 (13.7)	6,440 (28.6)	N/A	N/A	3,080 (13.7)	6,440 (28.6)
				Stainless	N/A	N/A	3,080 (13.7)	6,440 (28.6)	N/A	N/A	2,820 (12.5)	6,440 (28.6)
3/4 (19.1)	90 (122.0)	5/8 (15.9)	2-1/2 (63.5)	Carbon	N/A	N/A	4,200 (18.7)	10,200 (45.4)	N/A	N/A	4,200 (18.7)	10,200 (45.4)

* Allowable values are based upon a 4 to 1 safety factor. Divide by 4 for allowable load values. **The tabulated values are for anchors installed in a minimum of 12 diameters on center and a minimum edge distance of 6 diameters for 100 percent anchor efficiency. Spacing and edge distance may be reduced to 6 diameter spacing and 3 diameter edge distance, provided the values are reduced 50 percent. Linear interpolation may be used for intermediate spacings and edge distances.**

Combined Tension and Shear Loading—for Dynabolt Anchors

Allowable loads for anchors subjected to combined shear and tension forces are determined by the following equation:

$$(Ps/Pt) + (Vs/Vt) \leq 1$$

Ps = Applied tension load Vs = Applied shear load Pt = Allowable tension load Vt = Allowable shear load