

# Dynabolt<sup>®</sup> Sleeve Anchors

**Versatile,  
Medium-Duty  
Sleeve Anchor**



**Dynabolt  
Hex Nut Sleeve Anchor**

## 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

## 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.

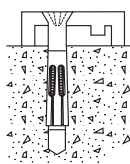
## ADVANTAGES

- 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

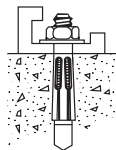
### Available Head Styles

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

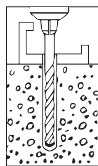
Phillips Flat Head  
(FS)



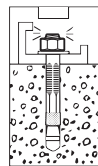
Hex Nut  
(HN)



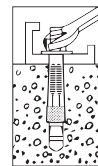
## INSTALLATION STEPS



**1.** Use a carbide tipped drill bit whose diameter is equal to the anchor. See Chart to determine proper size bit for anchor used. Drill 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.

## 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.

## SELECTION CHART

# Dynabolt

Carbon Steel w/Zinc Plating

HEAD STYLE	PART NO.	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH*		BOLT DIA. / THREADS PER INCH	MIN. EMBEDMENT		MAX. THICKNESS OF MATERIAL TO BE FASTENED		QTY/WT PER BOX qty / lbs.	QTY/WT PER MASTER CTN qty / lbs.
			in.	(mm)		in.	(mm)	in.	(mm)		
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" (head dia. .722)	4	(101.6)	5/16" / 18	1-1/2	(38.1)	2-1/2	(63.5)	50 / 5.3	400 / 44
	FS-3850		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

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

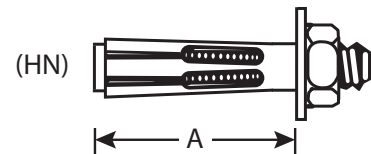
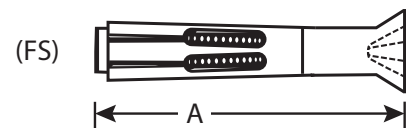


**Typical Applications**—Shelf ledgers, electrical boxes, conduit

**Environment**—Interior (non-corrosive)

**Level of Corrosion**—Low

### \*Effective Anchor Length



## SELECTION CHART

# Dynabolt

304 Stainless Steel

HEAD STYLE	PART NO.	ANCHOR DIA. & DRILL BIT SIZE	EFFECTIVE ANCHOR LENGTH		BOLT DIA. / THREADS PER INCH	MIN. EMBEDMENT		MAX. THICKNESS OF MATERIAL TO BE FASTENED		QTY/WT PER BOX qty / lbs.	QTY/WT PER MASTER CTN qty / lbs.
			in.	(mm)		in.	(mm)	in.	(mm)		
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.



**Typical Applications**—Cladding and Brick Ties

**Environment**—Slight to moderate degree of pollution

**Level of Corrosion**—Medium

## PERFORMANCE TABLE

### Dynabolt Sleeve Anchors

### Ultimate Tension and Shear Values in Solid Concrete (lbs/kN)\*

ANCHOR DIAMETER in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		BOLT DIAMETER 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.

\* To calculate the Allowable Load of the anchor, divide the Ultimate Load by 4.

## PERFORMANCE TABLE

### Dynabolt Sleeve Anchors

### Ultimate Tension and Shear Values in Lightweight Concrete (lbs/kN)\*

ANCHOR DIAMETER in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		BOLT DIAMETER 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)

\* To calculate the Allowable Load of the anchor, divide the Ultimate Load by 4.

## PERFORMANCE TABLE

### Dynabolt Sleeve Anchors

### Ultimate Tension and Shear Values in Concrete Masonry Units (lbs/kN)\*

ANCHOR DIAMETER in. (mm)		INSTALLATION TORQUE ft. lbs. (Nm)		BOLT DIAMETER 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)	640	(2.8)
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)	1,160	(5.2)
1/2	(12.7)	25	(33.9)	3/8	(9.5)	1-7/8	(47.6)	Carbon	N/A	N/A	2,200	(9.9)	3,500	(15.6)	N/A	N/A	2,200	(9.9)	3,500	(15.6)	N/A	N/A	2,200	(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)	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)	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)	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)	N/A	N/A	4,200	(18.7)	10,200	(45.4)

\* To calculate the Allowable Load of the anchor, divide the Ultimate Load by 4. 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.

Note: N/A is defined as Not Advisable.

### 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



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