

General Information

Lok-Bolt AS®

Sleeve Anchor

Product Description

The Lok-Bolt AS is an all-steel pre-assembled single unit sleeve anchor which is designed for use in concrete or masonry base materials. The anchors are available in multiple head styles for multiple applications and a finished appearance. Anchor extender sleeves can be added to create longer lengths.

General Applications And Uses

- Door and window frame installations
- Masonry applications
- Electrical /Mechanical applications
- Mounting fixtures on walls
- General purpose anchoring

Features And Benefits

- + Variety of head styles, lengths and sizes
- + All steel component design
- + Preassembled anchor for immediate installation
- + Sleeve design keeps anchor centered in hole
- + Sleeve has 360° contact area for even stress distribution
- + Versatile— can be used for solid and hollow concrete or masonry applications
- + Designed to allow fixture to draw snug against the base material during tightening

Guide Specifications

Csi divisions: 03 16 00 - Concrete Anchors and 05 05 19 - Post-installed Concrete Anchors
Expansion anchors shall be Lok-Bolt AS as supplied by Powers Fasteners, inc., Brewster, NY.
Anchors shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

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Hex Head

Head Styles

- Hex Head
- Acorn Nut
- Round Head
- Combo Flat Head
- Threshold Flat Head
- Rod Hanger
- Tie-Wire

Anchor Materials

- Zinc Plated Carbon Steel
- Type 304 Stainless Steel

Anchor Size Range (typ.)

- 1/4" diameter through 3/4" diameter

Suitable Basematerials

- Normal-Weight Concrete
- Grouted Concrete Masonry (CMU)
- Hollow Concrete Masonry (CMU)
- Brick Masonry

Material Specifications

Anchor Component	Carbon Steel Version	Stainless Steel Version
Plow-Bolt	Aisi 1010/1018	Type 304 stainless steel
Expansion sleeve	Aisi 1010	Type 304 stainless steel
Extender	Aisi 1010	N/A
Zinc Plating	AsTM B 633, sCi, Typeiii (Fe/Zn5)	N/A

Installation Specifications

Acorn Nut and Hex Head Lok-Bolt AS

Dimension	Nominal Anchor Diameter, d					
	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
ANSI drill Bit size, d_{bit} (in.)	1/4	5/16	3/8	1/2	5/8	3/4
Fixture Clearance Hole, d_h (in.)	5/16	3/8	7/16	9/16	11/16	15/16
Plow Bolt size (UNC)	10-24	1/4-20	5/16-18	3/8-16	1/2-13	5/8-11
Nut Height (in.)	3/16	7/32	17/64	21/64	7/16	35/64
Washer o.d., d_w (in.)	1/2	5/8	13/16	1	1-3/8	1-3/4
Wrench size (in.)	3/8	7/16	1/2	9/16	3/4	15/16



Round Head Lok-Bolt AS

Dimension	Nominal Anchor Diameter, d		
	1/4"	5/16"	3/8"
ANSI drill Bit size, d_{bit} (in.)	1/4	5/16	3/8
Fixture Clearance Hole, d_h (in.)	5/16	3/8	7/16
Plow Bolt size (UNC)	10-24	1/4-20	5/16-18
Head Height (in.)	11/64	13/64	15/64
Head Width, d_{hd} (in.)	29/64	9/16	43/64



Combo Flat Head Lok-Bolt AS

Dimension	Nominal Anchor Diameter, d		
	1/4"	5/16"	3/8"
ANSI drill Bit size, d_{bit} (in.)	1/4	5/16	3/8
Fixture Clearance Hole, d_h (in.)	5/16	3/8	7/16
Plow Bolt size (UNC)	10-24	1/4-20	5/16-18
Head Height (in.)	5/32	3/16	15/64
Head Width, d_{hd} (in.)	1/2	5/8	3/4



Rod Hanger Lok-Bolt AS

Dimension	Nominal Anchor Diameter, d		
	1/4"	5/16"	3/8"
ANSI drill Bit size, d_{bit} (in.)	5/16	3/8	1/2
Plow Bolt size (UNC)	1/4-20	5/16-18	3/8-16
Coupling Height (in.)	7/8	1	1-1/4
Washer o.d., d_w (in.)	5/8	13/16	1
Coupling Wrench size (in.)	3/8	1/2	11/16



Threshold Lok-Bolt AS

Dimension	Anchor Size, d
	1/4"
ANSI drill Bit size, d_{bit} (in.)	1/4
Fixture Clearance Hole, d_h (in.)	5/16
Plow Bolt size (UNC)	10-24
Head Height (in.)	5/64
Head Width, d_{hd} (in.)	23/64

Tie-Wire Lok-Bolt AS

Dimension	Anchor Size, d
	5/16"
ANSI drill Bit size, d_{bit} (in.)	5/16
Fixture Clearance Hole, d_h (in.)	3/8
Plow Bolt size (UNC)	1/4-20
Head Height (in.)	1-9/16
Head Width, d_{hd} (in.)	31/64



Installation Instructions

Hex/Acorn/Flat Head Round Versions

Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required.

The tolerances of the drill bit used must meet the requirements of ANSi standard B212.15

Blow the hole clean of dust and other material. do not expand the anchor prior to installation.

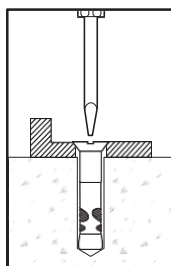
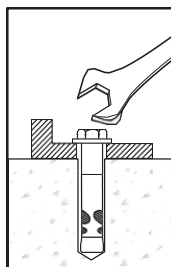
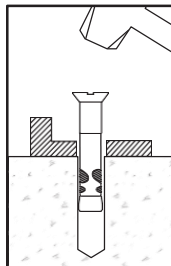
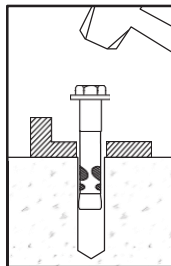
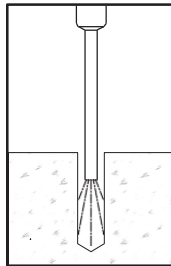
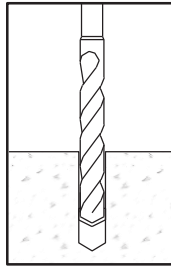
Hex Head/Acorn Nut
Position the washer on the anchor and thread on the nut.

drive the anchor through the fixture into the anchor hole until the nut and washer are firmly seated against the fixture. Be sure the anchor is driven to the required embedment depth.

Flat Head/round Head
drive the anchor through the fixture until the anchor is firmly seated. Be sure the anchor is driven to the required embedment depth.

Hex Head/Acorn Nut
Tighten the anchor by turning the nut or head 3 to 5 turns past finger tight or by applying the guide installation torque from the finger tight position.

Flat Head/round Head
Tighten the anchor by turning the head 3 to 5 turns past finger tight.



Rod Hanger Version

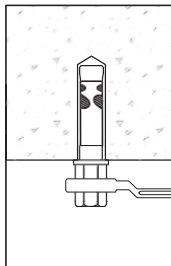
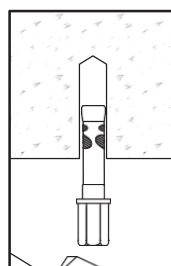
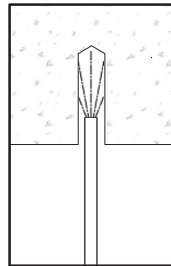
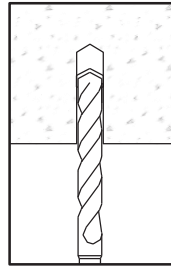
Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required.

The tolerances of the drill bit used must meet the requirements of ANSi standard B212.15

Blow the hole clean of dust and other material. do not expand the anchor prior to installation.

drive the anchor into the hole until the anchor is at the required embedment depth.

Tighten the coupler nut and washer up to the concrete surface and tighten the anchor by turning the nut 3 to 5 turns past finger tight or by applying the guide installation torque from the finger tight position.



Tie-Wire Version

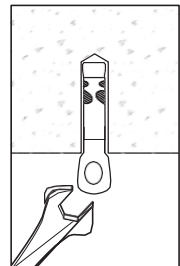
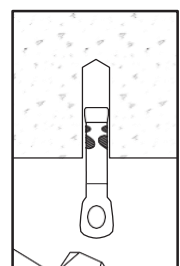
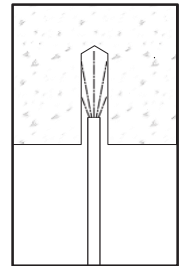
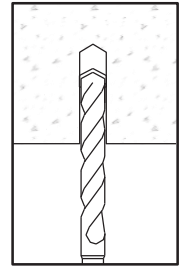
Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required.

The tolerances of the drill bit used must meet the requirements of ANSi standard B212.15

Blow the hole clean of dust and other material. do not expand the anchor prior to installation.

drive the anchor into the hole until the head is firmly seated against the base material. Be sure the anchor is driven to the required embedment depth.

Tighten the tie wire nut by turning the head 3 to 5 turns past finger tight or by applying the guide installation torque from the finger tight position.



Performance Data

Ultimate and Allowable Load Capacities for Carbon and Stainless Steel Lok-Bolt AS Anchors in Normal Weight Concrete^{1,2,3}



Nominal Anchor Diameter d in.	Min. Embed. Depth h _v in.	Guide Installation Torque ft.-lbs.		Minimum Concrete Compressive Strength, f' _c											
				3,000 psi				3,500 psi				4,000 psi			
		Carbon	Stainless	Ultimate		Allowable		Ultimate		Allowable		Ultimate		Allowable	
				Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.		
1/4	1/2	2	-	225	1,000	55	250	240	1,000	60	250	260	1,000	65	250
	1	6	4	910	1,120	230	280	980	1,120	245	280	1,050	1,120	265	280
5/16	1	12	-	1,205	2,360	300	590	1,300	2,360	325	590	1,390	2,360	350	590
3/8	1-1/4	18	18	1,875	4,110	470	1,030	2,040	4,110	510	1,030	2,165	4,110	540	1,030
1/2	1-1/2	26	26	2,235	4,860	560	1,215	2,420	4,860	605	1,215	2,580	4,860	645	1,215
5/8	2	50	40	4,870	4,860	1,220	1,215	5,260	4,860	1,315	1,215	5,625	4,860	1,405	1,215
3/4	2-1/4	90	60	5,045	11,040	1,260	2,760	5,450	11,040	1,365	2,760	5,825	11,040	1,455	2,760

- The ultimate load values listed above must be reduced by a minimum safety factor of 4.0 or greater to determine the allowable working load. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.
- Allowable load capacities listed are calculated using an applied safety factor of 4.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.
- Tabulated load values are for anchors installed at a minimum spacing distance between anchors and an edge distance of 12 times the anchor diameters.

Ultimate and Allowable Load Capacities for Carbon and Stainless Steel Lok-Bolt AS Anchors in Hollow or Solid Concrete Masonry^{1,2,3,4}



Nominal Anchor Diameter d in.	Minimum Embed. Depth h _v in.	Guide Installation Torque ft.-lbs.	Minimum Edge Dist. in.	Minimum End Dist. in.	Ultimate Loads		Allowable Loads	
					Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.
1/4	1	4	3-3/4	4	800	1,140	160	225
5/16	1	8			905	1,570	180	310
3/8	1-1/4	15			1,100	1,570	220	310
1/2	1-1/2	18			1,525	1,570	305	310
5/8	1-1/2	30			2,250	1,770	450	355

- Tabulated load values are for anchors installed in minimum 6 inch wide, Grade N, Type II, normal-weight concrete masonry units conforming to ASTM C 90. Mortar must be minimum Type N, S, or M. Masonry prism compressive strength must be 1,500 psi minimum at time of installation.
- Allowable load capacities listed are calculated using an applied safety factor of 5.0. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety or overhead.
- A suitable anchor length must be selected which includes consideration of a fixture to engage the base material at the minimum embedment depth when anchoring into hollow concrete masonry. (e.g. attachment thickness + face shell thickness embedment + one half inch = suitable anchor length)
- The consistence of hollow concrete block masonry base material can vary greatly. Consideration of job site testing should be given to verify conformance of base materials and anchor performance in actual conditions.

Ultimate and Allowable Load Capacities for Carbon or Stainless Steel Lok-Bolt AS Anchors in Solid Clay Brick Masonry^{1,2}



Nominal Anchor Diameter d in.	Minimum Embed. Depth h _v in.	Guide Installation Torque ft.-lbs.	Minimum Edge Dist. in.	Minimum End Dist. in.	f'm ≥ 1,500 psi (10.4 MPa)			
					Ultimate		Allowable	
					Tension lbs.	Shear lbs.	Tension lbs.	Shear lbs.
1/4	1	4	4	1-1/2	800	950	160	190
3/8	1-1/4	15	8	8	1,100	3,000	220	600
1/2	1-1/2	26	8	8	1,560	3,150	310	630
5/8	2	40	8	8	2,470	5,250	495	1,050

- Tabulated load values are for anchors installed in Grade SW, multiple wythe solid clay brick masonry conforming to ASTM C 62.
- Allowable load capacities listed are calculated using a safety factor of 5.0 or greater. Consideration of safety factors of 10 or higher may be necessary depending on the application, such as life safety.

(b)

Ordering Information



Hex Nut Lok-Bolt AS

Catalog Number		Size	Drill Dia.	Std. Box	Std. Wt.
Carbon Steel	Stainless Steel				
3114J	-	5/16" x 1-1/2"	5/16"	100	4.25
3124J	-	5/16" x 2-3/8"	5/16"	100	5.75
3717J	-	3/8" x 1-7/8"	3/8"	50	3.50
3730J	3730SS	3/8" x 3"	3/8"	25	2.50
-	-	3/8" x 4"	3/8"	50	-
5022SJ	5022SS	1/2" x 2-1/2"	1/2"	25	3.50
5030SJ	-	1/2" x 3"	1/2"	25	4.31
5040J	5040SS	1/2" x 3-3/4"	1/2"	25	5.50
-	-	1/2" x 5-1/4"	1/2"	25	-
5060	-	1/2" x 6"	1/2"	25	8.75
6222	-	5/8" x 2-1/2"	5/8"	25	6.31
-	-	5/8" x 3"	5/8"	25	-
6242	-	5/8" x 4-1/4"	5/8"	10	4.10
-	-	5/8" x 5-3/4"	5/8"	10	-
7524	-	3/4" x 2-3/4"	3/4"	10	4.60
7542	-	3/4" x 4-1/4"	3/4"	5	3.50
7562	-	3/4" x 6-1/4"	3/4"	5	4.50
-	-	3/4" x 8-1/4"	3/4"	10	-



Acorn Nut Lok-Bolt AS

Catalog Number		Size	Drill Dia.	Std. Qty	Std. Wt.
Carbon Steel	Stainless Steel				
2505J	-	1/4" x 5/8"	1/4"	100	2.00
2513J	2513SS-100	1/4" x 1-3/8"	1/4"	100	2.75
2522J	-	1/4" x 2-1/4"	1/4"	100	3.25



Round Head Lok-Bolt AS, Slotted

Catalog Number		Size	Drill Dia.	Std. Box	Std. Wt.
Carbon Steel	Stainless Steel				
5205J	-	1/4" x 1-3/8"	1/4"	100	4.25
-	-	1/4" x 2-1/4"	1/4"	100	-
-	-	1/4" x 3"	1/4"	100	-
-	-	1/4" x 3-3/4"	1/4"	100	-
-	-	5/16" x 2-3/8"	5/16"	100	-
-	-	5/16" x 3-3/8"	5/16"	100	-
-	-	3/8" x 2-3/4"	3/8"	50	-
-	-	3/8" x 3-3/4"	3/8"	50	-



Combo Flat Head Lok-Bolt AS

Catalog Number		Size	Drill Dia.	Std. Box	Std. Ctn.
Carbon Steel	Stainless Steel				
-	-	1/4" x 1-1/2"	1/4"	100	-
-	-	1/4" x 2-1/4"	1/4"	100	-
-	-	1/4" x 3"	1/4"	100	-
-	-	1/4" x 4"	1/4"	100	-
-	-	1/4" x 5-1/4"	1/4"	100	-
-	-	5/16" x 2-1/2"	5/16"	100	-
-	-	3/8" x 2-3/4"	3/8"	50	-
-	-	3/8" x 4"	3/8"	50	-
-	-	3/8" x 5"	3/8"	50	-
-	-	3/8" x 6"	3/8"	50	-



Threshold Flat Head Lok-Bolt AS

Cat #	Size	Drill Dia.	Std. Box	Std. Ctn.
-	1/4" x 2"	1/4"	100	-



Rod Hanger Lok-Bolt AS

Cat #	Size	Drill Dia.	Std. Qty	Std. Wt.
5810J	1/4" x 1-1/2"	5/16"	50	2.75
5815J	3/8" x 1-7/8"	3/8"	50	4.50
5825	1/2" x 2-1/4"	1/2"	25	5.25



Tie-Wire Lok-Bolt AS

Cat #	Size	Drill Dia.	Std. Box	Std. Ctn.
-	5/16" x 2-3/8"	5/16"	100	-



Lok-Bolt AS Extenders

Cat #	Size	Drill Dia.	Std. Box	Std. Ctn.
-	3/8" x 1-1/4"	3/8"	50	-