

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 keeps anchor centered in hole and 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: 03151–Concrete Anchoring, 04081-Masonry Anchorage, 5090-Metal Fastenings. Sleeve anchors shall be Lok-Bolt AS anchors supplied by Powers Fasteners, Inc.

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, SC1, Type III (Fe/Zn 5)	N/A

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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 BASE MATERIALS

- Normal-weight Concrete
- Grout-filled Concrete Masonry (CMU)
- Hollow Concrete Masonry (CMU)
- Brick Masonry

INSTALLATION SPECIFICATIONS

Acorn Nut and Hex Head Lok-Bolt AS

Dimension	Nominal Anchor Size, <i>d</i>					
	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"
ANSI Drill Bit Size, <i>d_{bit}</i> (in.)	1/4	5/16	3/8	1/2	5/8	3/4
Fixture Clearance Hole, <i>d_h</i> (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., <i>d_w</i> (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 Size, <i>d</i>		
	1/4"	5/16"	3/8"
ANSI Drill Bit Size, <i>d_{bit}</i> (in.)	1/4	5/16	3/8
Fixture Clearance Hole, <i>d_h</i> (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, <i>d_{hd}</i> (in.)	29/64	9/16	43/64



Combo Flat Head Lok-Bolt AS

Dimension	Nominal Anchor Size, <i>d</i>		
	1/4"	5/16"	3/8"
ANSI Drill Bit Size, <i>d_{bit}</i> (in.)	1/4	5/16	3/8
Fixture Clearance Hole, <i>d_h</i> (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, <i>d_{hd}</i> (in.)	1/2	5/8	3/4



Rod Hanger Lok-Bolt AS

Dimension	Nominal Anchor Size, <i>d</i>		
	1/4"	3/8"	1/2"
ANSI Drill Bit Size, <i>d_{bit}</i> (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., <i>d_w</i> (in.)	5/8	13/16	1
Coupling Wrench Size (in.)	7/16	1/2	11/16



Threshold Lok-Bolt AS

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

Tire-Wire Lok-Bolt AS

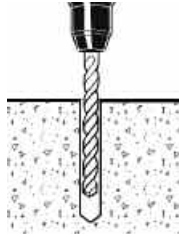
Dimension	Anchor Size, <i>d</i>
	5/16"
ANSI Drill Bit Size, <i>d_{bit}</i> (in.)	5/16
Fixture Clearance Hole, <i>d_h</i> (in.)	1/4
Plow Bolt Size (UNC)	1/4-20
Head Height (in.)	1-9/16
Head Width, <i>d_{hd}</i> (in.)	31/64



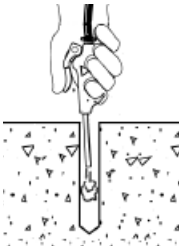
INSTALLATION INSTRUCTIONS

Hex/Acorn/Flat Round Head Versions

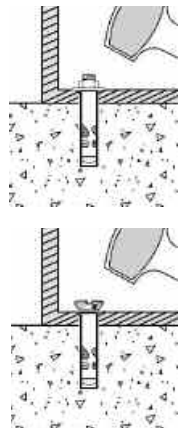
Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required. The tolerances of the drill bit used must meet the requirements of ANSI Standard B212.15



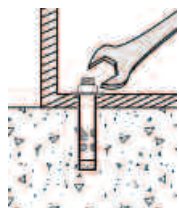
Blow the hole clean of dust and other material. Do not expand the anchor prior to installation



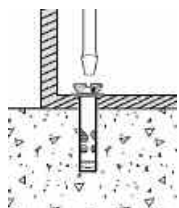
Hex Head/Acorn Nut
Position the washer on the anchor and thread on the nut. Drive the anchor through the fixture into the anchor hole until the nut and washer are firmly seated against the fixture. Be sure the anchor is driven to the required embedment depth.



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.

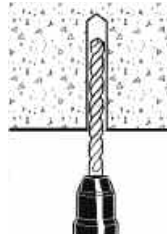


Flat Head/Round Head
Tighten the anchor by turning the head 3 to 5 turns past finger tight.



Rod Hanger Version

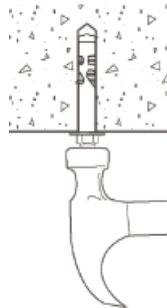
Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required. The tolerances of the drill bit used must meet the requirements of ANSI Standard B212.15



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.

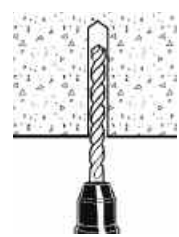


Tighten the coupler nut and washer up to the concrete surface and tighten the anchor by turning the nut 3 to 5 turns past finger tight or by applying the guide installation torque from the finger tight position.



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

Anchor Diameter <i>d</i> in. (mm)	Minimum Embed. Depth <i>h_v</i> in. (mm)	Guide Installation Torque ft.-lbs.		Minimum Concrete Compressive Strength	
				3,500 psi (24.1 MPa)	
				Tension lbs. (kN)	Shear lbs. (kN)
		Carbon	Stainless		
1/4 (6.4)	1/2 (12.7)	2	-	240 (1.0)	1,000 (4.4)
	1 (25.4)	6	4	980 (4.3)	1,120 (5.0)
5/16 (7.9)	1 (25.4)	12	-	1,300 (5.6)	2,360 (10.5)
3/8 (9.5)	1-1/4 (31.7)	18	18	2,040 (9.0)	4,110 (8.3)
1/2 (12.7)	1-1/2 (38.1)	26	26	2,420 (10.7)	4,860 (21.6)
5/8 (15.9)	2 (50.8)	50	40	4,750 (21.1)	4,860 (21.6)
3/4 (19.1)	2-1/4 (57.2)	90	60	5,020 (22.3)	11,040 (49.0)

1. The values listed above are ultimate load capacities which 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.

2. Tabulated load values are for anchors installed at a minimum spacing distance between anchors and an edge distance of 12 times the anchor diameter.

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

Anchor Diameter <i>d</i> in. (mm)	Minimum Embed. Depth <i>h_v</i> in. (mm)	Guide Installation Torque ft.-lbs.		Minimum Concrete Compressive Strength	
				3,500 psi (24.1 MPa)	
				Tension lbs. (kN)	Shear lbs. (kN)
		Carbon	Stainless		
1/4 (6.4)	1/2 (12.7)	2	-	60 (0.27)	250 (1.1)
	1 (25.4)	6	4	245 (1.1)	280 (1.2)
5/16 (7.9)	1 (25.4)	12	-	325 (1.4)	590 (2.6)
3/8 (9.5)	1-1/4 (31.7)	18	18	510 (2.2)	1,028 (4.5)
1/2 (12.7)	1-1/2 (38.1)	26	36	605 (2.7)	1,215 (5.4)
5/8 (15.9)	2 (50.8)	50	40	1,185 (5.3)	1,215 (5.4)
3/4 (19.1)	2-1/4 (57.2)	90	60	1,255 (5.6)	2,760 (12.2)

1. 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.

2. Tabulated load values are for anchors installed at a minimum spacing distance between anchors and an edge distance of 12 times the anchor diameter.

PERFORMANCE DATA

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



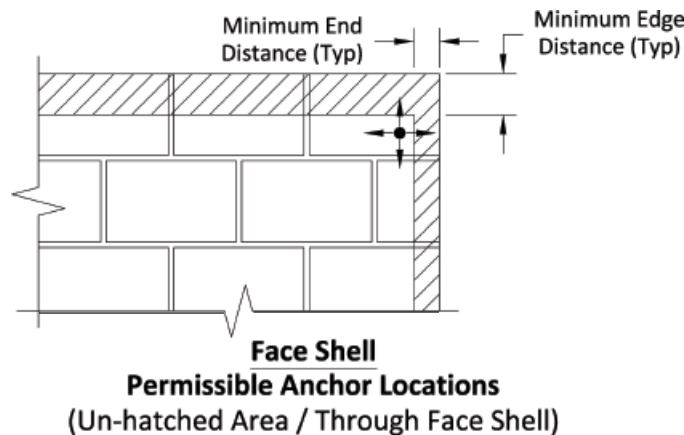
Anchor Diameter <i>d</i> in. (mm)	Minimum Embed. Depth <i>h_v</i> in. (mm)	Guide Installation Torque ft.-lbs.	Minimum Edge Dist. in. (mm)	Minimum End Dist. in. (mm)	<i>f'm</i> ≥ 1,500 psi (10.4 MPa)			
					Ultimate		Allowable	
					Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4 (6.4)	1 (25.4)	4	3-3/4 (95.3)	4 (101.3)	800 (3.6)	1,140 (5.1)	160 (3.6)	225 (1.0)
5/16 (7.9)	1 (25.4)	8			905 (4.0)	1,570 (7.0)	180 (0.80)	310 (1.4)
3/8 (9.5)	1-1/4 (31.7)	15			1,100 (4.8)	1,570 (7.0)	220 (0.97)	310 (1.4)
1/2 (12.7)	1-1/2 (38.1)	18			1,525 (6.7)	1,570 (7.0)	305 (1.3)	1,570 (7.0)

1. Tabulated load values are for anchors installed in minimum 6-inch wide, Grade N, Type II, normal-weight concrete masonry units. Mortar must be minimum Type N,S or M. Masonry prism compressive strength must be 1,500 psi minimum at time of installation.
2. Allowable load capacities listed are calculated using a 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.
3. 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.
4. The consistency of hollow concrete block masonry base materials 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}

Anchor Diameter <i>d</i> in. (mm)	Minimum Embed. Depth <i>h_v</i> in. (mm)	Guide Installation Torque ft.-lbs.	Minimum Edge Dist. in. (mm)	Minimum End Dist. in. (mm)	<i>f'm</i> ≥ 1,500 psi (10.4 MPa)			
					Ultimate		Allowable	
					Tension lbs. (kN)	Shear lbs. (kN)	Tension lbs. (kN)	Shear lbs. (kN)
1/4 (6.4)	1 (25.4)	4	4 (101.3)	1-1/2 (38.1)	800 (3.6)	950 (4.2)	160 (0.7)	190 (0.8)
3/8 (9.5)	1-1/4 (31.7)	15	8 (203.2)	8 (203.2)	1,100 (4.9)	3,000 (13.3)	220 (0.9)	600 (2.6)

1. Tabulated load values are for anchors installed in Grade SW, multiple wythe solid clay brick masonry conforming to ASTM C 62.
2. 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.



ORDERING INFORMATION

Hex Nut Lok-Bolt AS

Catalog Number		Size	Drill Dia.	Std. Box	Std.Ctn.
Carbon Steel	Stainless Steel				
5005S	-	5/16" x 1-1/2"	5/16"	100	1000
5010S	-	5/16" x 2-3/8"	5/16"	100	500
5015S	6152S	3/8" x 1-7/8"	3/8"	50	500
5020S	6153S	3/8" x 3"	3/8"	50	500
5022S	-	3/8" x 4"	3/8"	50	250
5025S	6156S	1/2" x 2-1/2"	1/2"	25	250
5030S	6157S	1/2" x 3"	1/2"	25	250
5034S	6160S	1/2" x 3-3/4"	1/2"	25	125
5033S	-	1/2" x 5-1/4"	1/2"	25	125
5032S	-	1/2" x 6"	1/2"	10	100
5035S	-	5/8" x 2-1/2"	5/8"	25	125
5038S	-	5/8" x 3"	5/8"	25	125
5040S	6164S	5/8" x 4-1/4"	5/8"	10	100
5045S	-	5/8" x 5-3/4"	5/8"	10	100
5050S	-	3/4" x 2-3/4"	3/4"	10	100
5055S	-	3/4" x 4-1/4"	3/4"	10	40
5060S	-	3/4" x 6-1/4"	3/4"	10	30
5065S	-	3/4" x 8-1/4"	3/4"	10	30



Acorn Nut Lok-Bolt AS

Catalog Number		Size	Drill Dia.	Std. Box	Std.Ctn.
Carbon Steel	Stainless Steel				
5125S	-	1/4" x 5/8"	1/4"	100	1000
5150S	6150S	1/4" x 1-3/8"	1/4"	100	1000
5175S	-	1/4" x 2-1/4"	1/4"	100	1000



Round Head Lok-Bolt AS, Slotted

Catalog Number		Size	Drill Dia.	Std. Box	Std.Ctn.
Carbon Steel	Stainless Steel				
5205S	-	1/4" x 1-3/8"	1/4"	100	1000
5210S	6180S	1/4" x 2-1/4"	1/4"	100	1000
5215S	-	1/4" x 3"	1/4"	100	1000
5220S	-	1/4" x 3-3/4"	1/4"	100	1000
5225S	-	5/16" x 2-3/8"	5/16"	100	1000
5230S	-	5/16" x 3-3/8"	5/16"	100	500
5235S	-	3/8" x 2-3/4"	3/8"	50	500
5240S	-	3/8" x 3-3/4"	3/8"	50	250



ORDERING INFORMATION

Combo Flat Head Lok-Bolt AS

Catalog Number		Size	Drill Dia.	Std. Box	Std. Ctn.
Carbon Steel	Stainless Steel				
5305S	-	1/4" x 1-1/2"	1/4"	100	1000
5310S	6170S	1/4" x 2-1/4"	1/4"	100	1000
5315S	6172S	1/4" x 3"	1/4"	100	1000
5320S	-	1/4" x 4"	1/4"	100	500
5325S	-	1/4" x 5-1/4"	1/4"	100	500
5330S	-	5/16" x 2-1/2"	5/16"	100	1000
5340S	-	3/8" x 2-3/4"	3/8"	50	500
5345S	6174S	3/8" x 4"	3/8"	50	250
5350S	6175S	3/8" x 5"	3/8"	50	250
5360S	6176S	3/8" x 6"	3/8"	50	250



Threshold Flat Head Lok-Bolt AS

Cat #	Size	Drill Dia	Std. Box	Std. Ctn
5500S	1/4" x 2"	1/4"	100	1000



Rod Hanger Lok-Bolt AS

Cat #	Size	Drill Dia	Std. Box	Std. Ctn
5810S	1/4" x 1-1/2"	1/4"	50	250
5815S	3/8" x 1-7/8"	3/8"	50	250
5825S	1/2" x 2-1/4"	1/2"	25	125



Tie-Wire Lok-Bolt AS

Cat #	Size	Drill Dia	Std. Box	Std. Ctn
5700S	5/16" x 1-1/2"	5/16"	100	1000



Lok-Bolt AS Extenders

Cat #	Size	Drill Dia	Std. Box	Std. Ctn
5684S	3/8" x 1-1/4"	3/8"	50	500

