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 applications
- Mounting fixtures
- Cladding and clips
- 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 anchor 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, 04 05 19.16 - Masonry Anchors, and 05 05 19 - Post-Installed Concrete Anchors. Expansion anchors shall be Lok-Bolt AS as supplied by DEWALT, Towson, MD. Anchors shall be installed in accordance with published instructions and the Authority Having Jurisdiction.

SECTION CONTENTS

LOK-BOLT AS ASSEMBLY

HEAD STYLES

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

ANCHOR MATERIALS

- Zinc Plated Carbon Steel
- 304 Stainless Steel

ANCHOR SIZE RANGE (TYP.)

- 1/4" to 3/4" diameters

SUITABLE BASE MATERIALS

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

MATERIAL SPECIFICATIONS

Anchor Component	Carbon Steel Version	Stainless Steel Version
Plow Bolt	AISI 1018	Type 304 Stainless Steel
Expansion Sleeve	AISI 1010	Type 304 Stainless Steel
Extender (as applicable)	AISI 1010	N/A
Zinc Plating	ASTM B633, SC1, Type III (Fe/Zn 5)	N/A
Minimum yield strength for carbon steel plow bolt is 53,700 psi and minimum yield strength for stainless steel plow bolt is 65,000 psi.		

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 (in.)	1/4	5/16	3/8	1/2	5/8	3/4
Fixture Clearance Hole (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
Wrench Size (in.)	3/8	7/16	1/2	9/16	3/4	15/16
Washer O.D. (in.)	1/2	5/8	13/16	13/16	1-3/8	1-3/4

Combo Round Head Lok-Bolt AS

Dimension	Nominal Anchor Diameter, d		
	1/4"	5/16"	3/8"
ANSI Drill Bit Size (in.)	1/4	5/16	3/8
Fixture Clearance Hole (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 (in.)	29/64	9/16	43/64
Phillips Driver Size (No.)	#3	#3	#4

Combo Flat Head Lok-Bolt AS (80°– 82° head)

Dimension	Nominal Anchor Diameter, d		
	1/4"	5/16"	3/8"
ANSI Drill Bit Size (in.)	1/4	5/16	3/8
Fixture Clearance Hole (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 (in.)	1/2	5/8	3/4
Phillips Driver Size (No.)	#2	#3	#4

Rod Hanger Lok-Bolt AS

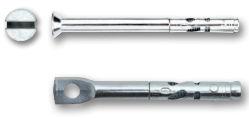
Dimension	Nominal Anchor Diameter, d		
	1/4"	3/8"	1/2"
ANSI Drill Bit Size, d_{bit} (in.)	5/16	3/8	1/2
Plow Bolt Size (UNC)	1/4-20	5/16-18	3/8-16
Coupling Size (UNC)	1/4-20	3/8-16	1/2-13
Coupling Height (in.)	7/8	1	1-1/4
Coupling Wrench Size (in.)	3/8	1/2	11/16
Washer O.D. (in.)	5/8	13/16	13/16

Threshold Lok-Bolt AS (80°– 82° head)

Dimension	Anchor Size, d
	1/4"
ANSI Drill Bit Size (in.)	1/4
Fixture Clearance Hole (in.)	5/16
Plow Bolt Size (UNC)	10-24
Head Height (in.)	5/64
Head Width (in.)	23/64

Tie-Wire Lok-Bolt AS

Dimension	Anchor Size, d
	5/16"
ANSI Drill Bit Size (in.)	5/16
Plow Bolt Size (UNC)	1/4-20
Head Height (in.)	1-9/16
Head Width (in.)	31/64
Tie Wire Hole Size	9/32

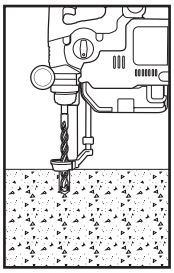


INSTALLATION INSTRUCTIONS

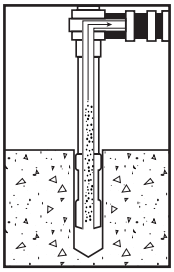
Hex/Acorn/Flat Head Round Versions

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

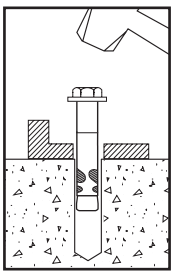


Remove dust and debris from the hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.

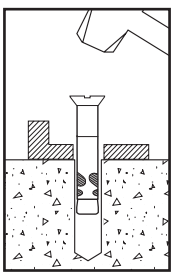


Hex Head/Acorn Nut
Position the washer on the anchor and thread on the nut.

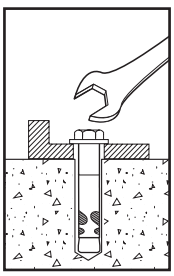
Drive the anchor through the fixture into the anchor hole until the nut and washer are firmly seated against the fixture. Be sure the anchor is driven to the required embedment depth.



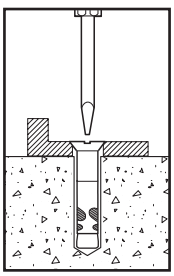
Flat Head/Round Head
Drive the anchor through the fixture until the anchor is firmly seated. Be sure the anchor is driven to the required embedment depth.



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.



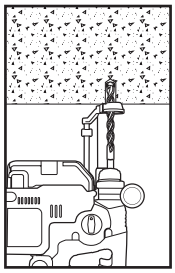
Flat Head/Round Head
Tighten the anchor by turning the head 3 to 5 turns past finger tight.



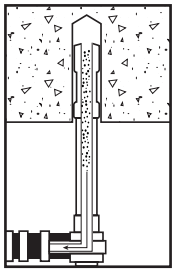
Rod Hanger Version

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.

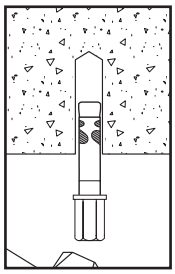
The tolerances of the drill bit used must meet the requirements of ANSI Standard B212.15



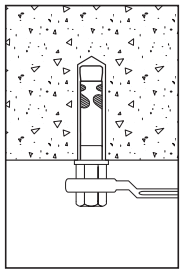
Remove dust and debris from the hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.



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



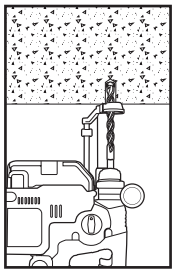
Tighten the coupler nut and washer up to the concrete surface and tighten the anchor by turning the nut 3 to 5 turns past finger tight or by applying the guide installation torque from the finger tight position.



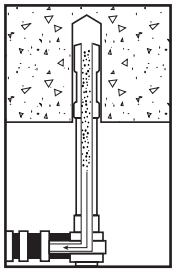
Tie-Wire Version

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.

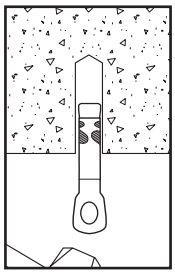
The tolerances of the drill bit used must meet the requirements of ANSI Standard B212.15



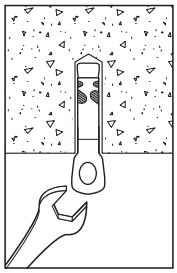
Remove dust and debris from the hole during drilling (e.g. dust extractor, hollow bit) or following drilling (e.g. suction, forced air) to extract loose particles created by drilling.



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 (ASD)

Ultimate and Allowable Load Capacities for Carbon and Stainless Steel Lok-Bolt AS Anchors in Normal Weight Concrete[1,2,3,4]

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			
				Ultimate		Allowable		Ultimate		Allowable		Ultimate		Allowable	
		Carbon	Stainless	Tension lbs.	Shear lbs.	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	2	225	1,000	55	250	240	1,000	60	250	260	1,000	65	250
	1	4	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	25	25	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

1. 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.
2. 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.
3. Tabulated load values are for anchors installed at a minimum spacing distance between anchors and an edge distance of 12 times the anchor diameters.
4. The embedment depth is measured from the outside surface of the concrete member to the embedded end of the anchor prior to tightening.

Ultimate and Allowable Load Capacities for Carbon and Stainless Steel Lok-Bolt AS Anchors in Hollow or Solid Concrete Masonry[1,2,3,4,5,6]

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	25			1,525	1,570	305	310
5/8	1-1/2	30			2,250	1,770	450	355

1. Tabulated load values are for anchors installed in minimum 6 inch wide, Grade N, Type II, normal-weight concrete masonry units conforming to ASTM C90. Mortar and mortar strength must be 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 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.
3. A suitable anchor length must be selected which includes consideration of a fixture attachment to engage the base material at the minimum embedment depth when anchoring into hollow concrete masonry. (e.g. attachment thickness + face shell thickness embedment + approximately one quarter inch = suitable anchor length)
4. 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.
5. Tabulated load values are for anchors installed at a minimum spacing distance between anchors of 16 times the anchor diameters.
6. The embedment depth is measured from the outside surface of the masonry member to the embedded end of the anchor prior to tightening.

Ultimate and Allowable Load Capacties for Carbon or Stainless Steel Lok-Bolt AS Anchors in Solid Clay Brick 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.	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	25	8	8	1,560	3,150	310	630
5/8	2	40	8	8	2,470	5,250	495	1,050

1. Tabulated load values are for anchors installed in Grade SW, minimum two-wythe solid clay brick masonry conforming to ASTM C62. Mortar and mortar strength must be Type N, S or M.
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 or overhead.
3. Tabulated load values are for anchors installed at a minimum spacing distance between anchors of 16 times the anchor diameters.
4. The embedment depth is measured from the outside surface of the brick masonry member to the embedded end of the anchor prior to tightening.

ORDERING INFORMATION

Hex Nut Lok-Bolt AS

Cat. No.		Size	Drill Dia.	Pack Qty.	Ctn. Qty.
Carbon Steel	Stainless Steel				
05005S-PWR	-	5/16" x 1-1/2"	5/16"	100	1000
05010S-PWR	-	5/16" x 2-3/8"	5/16"	100	500
05015S-PWR	06152S-PWR	3/8" x 1-7/8"	3/8"	50	500
05020S-PWR	06153S-PWR	3/8" x 3"	3/8"	50	500
05022S-PWR	-	3/8" x 4"	3/8"	50	250
05025S-PWR	06156S-PWR	1/2" x 2-1/2"	1/2"	25	250
05030S-PWR	06157S-PWR	1/2" x 3"	1/2"	25	250
05034S-PWR	06160S-PWR	1/2" x 3-3/4"	1/2"	25	125
05033S-PWR	-	1/2" x 5-1/4"	1/2"	25	125
05032S-PWR	-	1/2" x 6"	1/2"	10	100
05035S-PWR	-	5/8" x 2-1/2"	5/8"	25	125
05038S-PWR	-	5/8" x 3"	5/8"	25	125
05040S-PWR	06164S-PWR	5/8" x 4-1/4"	5/8"	10	100
05045S-PWR	-	5/8" x 5-3/4"	5/8"	10	100
05050S-PWR	-	3/4" x 2-3/4"	3/4"	10	100
05055S-PWR	-	3/4" x 4-1/4"	3/4"	10	40
05060S-PWR	-	3/4" x 6-1/4"	3/4"	10	30
05065S-PWR	-	3/4" x 8-1/4"	3/4"	10	30

The published length is measured from below the washer to the end of the anchor.

Acorn Nut Lok-Bolt AS

Cat. No.		Size	Drill Dia.	Pack Qty.	Ctn. Qty.
Carbon Steel	Stainless Steel				
05125S-PWR	-	1/4" x 5/8"	1/4"	100	1000
05150S-PWR	06150S-PWR	1/4" x 1-3/8"	1/4"	100	1000
05175S-PWR	-	1/4" x 2-1/4"	1/4"	100	1000

The published length is measured from below the washer to the end of the anchor.

Combo Round Head Lok-Bolt AS, Slotted

Cat. No.		Size	Drill Dia.	Pack Qty.	Ctn. Qty.
Carbon Steel	Stainless Steel				
05205S-PWR	-	1/4" x 1-3/8"	1/4"	100	1000
05210S-PWR	06180S-PWR	1/4" x 2-1/4"	1/4"	100	1000
05215S-PWR	-	1/4" x 3"	1/4"	100	1000
05220S-PWR	-	1/4" x 3-3/4"	1/4"	100	1000
05225S-PWR	-	5/16" x 2-3/8"	5/16"	100	1000
05230S-PWR	-	5/16" x 3-3/8"	5/16"	100	500
05235S-PWR	-	3/8" x 2-3/4"	3/8"	50	500
05240S-PWR	-	3/8" x 3-3/4"	3/8"	50	250

The published length is measured from below the head to the end of the anchor.

Combo Flat Head Lok-Bolt AS

Cat. No.		Size	Drill Dia.	Pack Qty.	Ctn. Qty.
Carbon Steel	Stainless Steel				
05305S-PWR	-	1/4" x 1-1/2"	1/4"	100	1000
05310S-PWR	06170S-PWR	1/4" x 2-1/4"	1/4"	100	1000
05315S-PWR	06172S-PWR	1/4" x 3"	1/4"	100	1000
05320S-PWR	-	1/4" x 4"	1/4"	100	500
05325S-PWR	-	1/4" x 5-1/4"	1/4"	100	500
05330S-PWR	-	5/16" x 2-1/2"	5/16"	100	1000
05340S-PWR	-	3/8" x 2-3/4"	3/8"	50	500
05345S-PWR	06174S-PWR	3/8" x 4"	3/8"	50	250
05350S-PWR	06175S-PWR	3/8" x 5"	3/8"	50	250
05360S-PWR	06176S-PWR	3/8" x 6"	3/8"	50	250

The published length is the overall length of the anchor.

Threshold Flat Head Lok-Bolt AS

Cat. No.	Size	Drill Dia.	Pack Qty.	Ctn. Qty.
05500S-PWR	1/4" x 2"	1/4"	100	1000

The published length is the overall length of the anchor.

Rod Hanger Lok-Bolt AS

Cat. No.	Size	Drill Dia.	Pack Qty.	Ctn. Qty.
05810S-PWR	1/4" x 1-1/2"	5/16"	50	250
05815S-PWR	3/8" x 1-7/8"	3/8"	50	250
05825S-PWR	1/2" x 2-1/4"	1/2"	25	125

The published length is measured from below the washer to the end of the anchor.

Tie-Wire Lok-Bolt AS

Cat. No.	Size	Drill Dia.	Pack Qty.	Ctn. Qty.
05700S-PWR	5/16" x 2-3/8"	5/16"	100	1000

The published length is measured from below the head to the end of the anchor.

Lok-Bolt AS Extenders

Cat. No.	Size	Drill Dia.	Pack Qty.	Ctn. Qty.
05684S-PWR	3/8" x 1-1/4"	3/8"	50	500

These extenders can be used to lengthen 3/8" Round Head and Combo Flat Head anchors. The overall length including the externally threaded section is approximately 1-5/8". The thread is 5/16-18 and the internal thread depth is approximately 5/8".