

## GENERAL INFORMATION

## LOK-BOLT AS®

Sleeve Anchor

1/4" diameter anchor data for CIP is  
bubbled for convenience

\*CIP See Pages 2,4

## 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, 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.

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LOK-BOLT AS  
ASSEMBLY

## 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
- Grouted Concrete Masonry (CMU)
- Hollow Concrete Masonry (CMU)
- Brick Masonry

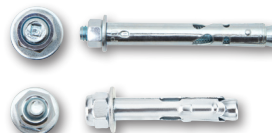
## MATERIAL SPECIFICATIONS

| 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, SC1, Type III (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   |
| Phillips Driver Size                 | #3                         | #3     | #4      |



### 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     |
| Phillips Driver Size                 | #2                         | #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

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.

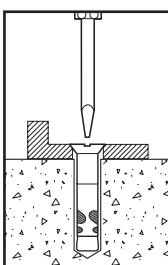
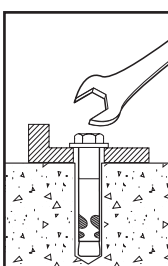
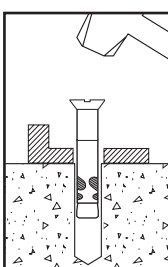
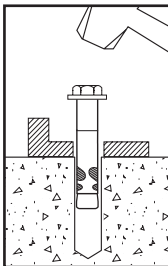
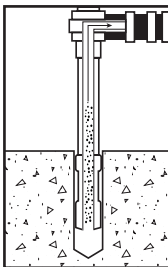
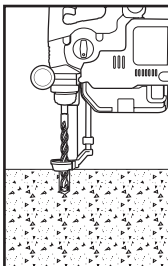
Hex Head/Acorn Nut  
Position the washer on the anchor and thread on the nut.

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

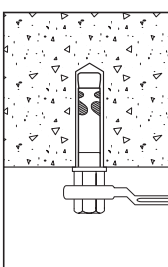
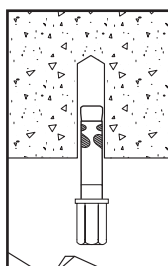
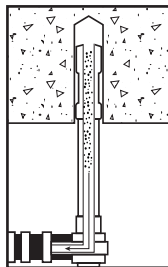
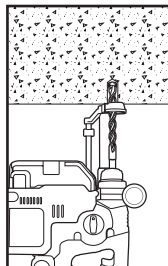
Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required.

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

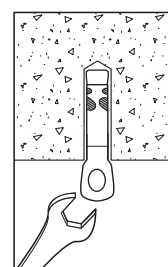
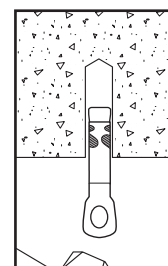
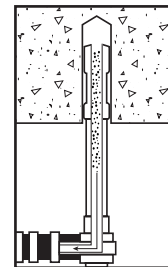
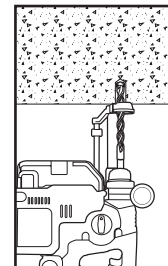
Using the proper diameter bit, drill a hole into the base material to a depth of at least 1/2" or one anchor diameter deeper than the embedment required.

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

### Ultimate and Allowable Load Capacities for Carbon and Stainless Steel Lok-Bolt AS Anchors in Normal Weight Concrete<sup>1,2,3,4</sup>



| Nominal Anchor Diameter<br>d<br>in. | Min. Embed. Depth<br>h<br>in. | Guide Installation Torque<br>ft.-lbs. |           | Minimum Concrete Compressive Strength, f <sub>c</sub> |            |              |            |              |            |              |            |              |            |              |            |
|-------------------------------------|-------------------------------|---------------------------------------|-----------|---|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|--------------|------------|
|                                     |                               |                                       |           | 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                                     | -         | 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.
- 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<sup>1,2,3,4,5,6</sup>



| Nominal Anchor Diameter<br>d<br>in. | Minimum Embed. Depth<br>h<br>in. | Guide Installation Torque<br>ft.-lbs. | Minimum Edge Dist.<br>in. | Minimum End Dist.<br>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.
- Tabulated load values are for anchors installed at a minimum spacing distance between anchors and an edge distance of 16 times the anchor diameters.
- 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 Capacities for Carbon or Stainless Steel Lok-Bolt AS Anchors in Solid Clay Brick Masonry<sup>1,2,3,4</sup>



| Nominal Anchor Diameter<br>d<br>in. | Minimum Embed. Depth<br>h<br>in. | Guide Installation Torque<br>ft.-lbs. | Minimum Edge Dist.<br>in. | Minimum End Dist.<br>in. | f <sub>m</sub> ≥ 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 or overhead.
- Tabulated load values are for anchors installed at a minimum spacing distance between anchors and an edge distance of 16 times the anchor diameters.
- The embedment depth is measured from the outside surface of the brick masonry member to the embedded end of the anchor prior to tightening.

**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        |

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

**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      |

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

**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       |

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

**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       |

The published length is the overall length of the anchor

**Threshold Flat Head Lok-Bolt AS**

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

The published length is the overall length of the anchor

**Rod Hanger Lok-Bolt AS**

| Cat # | Size          | Drill Dia. | Std. Box | Std. Ctn. |
|-------|---------------|------------|----------|-----------|
| 5810S | 1/4" x 1-1/2" | 5/16"      | 50       | 250       |
| 5815S | 3/8" x 1-7/8" | 3/8"       | 50       | 250       |
| 5825S | 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 # | Size           | Drill Dia. | Std. Box | Std. Ctn. |
|-------|----------------|------------|----------|-----------|
| 5700S | 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 # | Size          | Drill Dia. | Std. Box | Std. Ctn. |
|-------|---------------|------------|----------|-----------|
| 5684S | 3/8" x 1-1/4" | 3/8"       | 50       | 500       |