

GENERAL INFORMATION

SUSPENDER®

Rod Hanging Anchors

PRODUCT DESCRIPTION

Suspender threaded rod anchors are a next step in the evolution of threaded rod anchoring. These one-piece anchors feature heads that are both end-tapped and cross-tapped to permit both in-line mounting and side-mounting of threaded rod systems, eye rings and more.

Suspender anchors feature a universal driver for all anchor sizes. Only the Suspender drive socket is needed with the self-drilling anchors for wood and steel, or in pre-drilled applications. This unique system allows users to consolidate inventory to complete a project and reduces downtime required to retrieve the correct part.

GENERAL APPLICATIONS AND USES

- Hanging Pipe and Sprinkler Systems
- HVAC Ductwork and Strut Channels
- Suspending Conduit and Cable Trays
- Suspended Ceilings
- Lighting Systems and Overhead Utilities
- Electrical Systems

FEATURES AND BENEFITS

- + Ease and speed in overhead installation
- + Lower in-place cost, when compared to beam clamps, lag bolts and dropins
- + Solid, one-piece, cold formed and machined anchor
- + Coupler head is both end and cross drilled to accept vertical (in-line) and horizontal (side-mount) applications
- + Entire system requires only one driver
- + 3/8" to 1/2" thread adapter allows installation of 1/2"-13 threaded rod components

APPROVALS AND LISTINGS

- FM Approvals (FM) - see listing for applicable sizes and types
Pipe Hangers components for automatic sprinkler systems
- Underwriters Laboratory (UL) - see listing for applicable sizes and types
Pipe Hangers - File No. EX1289 and VFXT7.EX1289

GUIDE SPECIFICATIONS

CSI Divisions: 03 16 00 - Concrete Anchors, 05 05 23 - Metal Fastenings and 06 05 23 - Wood, Plastic, and Composite Fastenings. Rod Hangers shall be Suspender anchors as supplied by DEWALT, Towson, MD. Anchors shall be installed in accordance with published instruction and the Authority Having Jurisdiction.

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STEEL SUSPENDER



WOOD SUSPENDER



CONCRETE SUSPENDER

ANCHOR MATERIALS

- Zinc Plated Carbon Steel

ANCHOR SIZE RANGE (TYP.)

- 3/8" for Steel
- 3/8" for Wood
- 3/8" for Concrete
(Threaded Coupler Heads)

THREAD VERSION

- Unified Coarse Thread (UNC)

SUITABLE BASE MATERIALS

- Steel Purlins and Beams
- Wood and Timber
- Concrete Members

MATERIAL SPECIFICATIONS

| Component | Component Material |
|-----------------------|-----------------------------------|
| Screw Body | Case hardened carbon steel |
| Coupling (UNC thread) | Case hardened carbon steel |
| Zinc Plating | ASTM B633, SC1, Type III (Fe/Zn5) |

INSTALLATION SPECIFICATIONS

Steel Suspender

| Rod Coupler Size | 3/8" |
|-----------------------------|--------|
| Coupling Thread Size (UNC) | 3/8-16 |
| Coupling Thread Depth (in.) | 3/8 |
| Coupling Height (in.) | 1 |
| Socket Driver Size (in.) | 1/2 |

Note: the side mount couplings have full thread depth (through head).

Wood Suspender

| Rod Coupler Size | 3/8" |
|-----------------------------|--------|
| Coupling Thread Size (UNC) | 3/8-16 |
| Coupling Thread Depth (in.) | 3/8 |
| Coupling Height (in.) | 1 |
| Socket Driver Size (in.) | 1/2 |

Note: the side mount couplings have full thread depth (through head).

Concrete Suspender

| Rod Coupler Size | 3/8" |
|-----------------------------|--------|
| ANSI Drill Bit (in.) | 1/4 |
| Overall Screw Shank Length | 2-1/4 |
| Anchor Thread Length (in.) | 2 |
| Coupling Thread Size (UNC) | 3/8-16 |
| Coupling Thread Depth (in.) | 1/2 |
| Coupling Height (in.) | 1 |
| Socket Driver Size (in.) | 1/2 |

Note: the side mount couplings have full thread depth (through head).

Installation Guidelines

1. If pre-drilling is required (certain types of wood truss/wood joist and all concrete base materials), select the recommended drill bit type and diameter.

For concrete, drill a hole to the appropriate embedment depth, adding at least 1/4" to the drilling depth to prevent the tip of the fastener from running into the back of the anchor hole during installation.

2. Select the appropriate socket driver for the anchor size and type to be installed and mount into chuck of installation tool. Insert the coupling head into the socket driver, and install perpendicular to the base material surface. Drive the fastener with a smooth steady motion until the driver and coupling is seated against the surface of the base material.

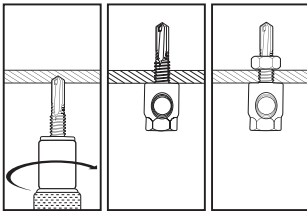
3. Thread the appropriate diameter steel threaded rod or threaded bolt into the coupling. The threaded rod or bolt should fully engage the thread length of the coupling on a vertical mount fastener. The threaded rod or threaded portion of the bolt can pass through coupling of a side mount attachment.

When installing Suspender, eye protection should be worn as a safety precaution.

UL and/or FM listings for Steel Suspender require installations with a retaining nut (see performance data and listings as applicable).

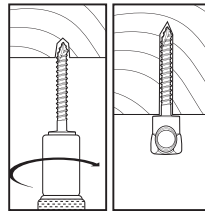
Suggested drill speed for Steel Suspender installations is 1200 to 1800 rpm.

Steel



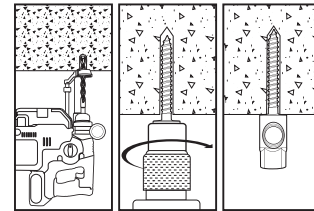
Install with universal socket driver.

Wood



Install with universal socket driver.

Concrete



Install with universal socket driver.

PERFORMANCE DATA

Suspender for Steel - Dual Direction

| Cat. No. | Screw Description | Mount Direction | Rod Size | Driver No. | Min. Thick. in. | Max. Thick. in. | Load Direction | UL | | FM | |
|------------|------------------------|-----------------|----------|------------|-----------------|-----------------|----------------|-----------|--------|-----------|--------|
| | | | | | | | | Pipe Size | Thick. | Pipe Size | Thick. |
| PFM227110N | 1/4-20 x 1" #3/nut | Vert. & Horiz. | 3/8" | PFM2201300 | 0.060 | 0.188 | V | 4" | 0.060" | 4" | 16 ga. |
| | | | | | | | H | 4" | 0.060" | 4" | 16 ga. |
| PFM227120N | 1/4-20 x 1-1/2" #3/nut | Vert. & Horiz. | 3/8" | PFM2201300 | 0.060 | 0.188 | V | 4" | 0.060" | 4" | 16 ga. |
| | | | | | | | H | 4" | 0.060" | 4" | 16 ga. |
| PFM227130N | 1/4-20 x 1-1/2" #5/nut | Vert. & Horiz. | 3/8" | PFM2201300 | 0.125 | 0.500 | V | 4" | 0.060" | 4" | 16 ga. |
| | | | | | | | H | 4" | 0.060" | 4" | 16 ga. |

Suspender for Steel - Ultimate Load Capacities when Installed in Steel¹

| Cat. No. | Screw Description | Mount Direction | Rod Coupler Size | Steel Gage Thickness | | | | | | |
|---|------------------------|-----------------|------------------|------------------------|-----------------|-----------------|------------------|-------------------|------------------|------------------|
| | | | | 16 0.060 lbs. | 14 0.075 lbs. | 12 0.105 lbs. | 1/8 0.125 lbs. | 3/16 0.187 lbs. | 1/4 0.250 lbs. | 1/2 0.500 lbs. |
| Suspender For Steel - Vertical | | | | | | | | | | |
| PFM227110N | 1/4-20 x 1" #3 | Vertical | 3/8 | 785 | 1,140 | 1,740 | 2,375 | 4,695 | - | - |
| | 1/4-20 x 1" #3/nut | Vertical | 3/8 | 3,435 | 4,025 | 4,280 | 4,690 | 5,810 | - | - |
| PFM227120N | 1/4-20 x 1-1/2" #3 | Vertical | 3/8 | 785 | 1,140 | 1,740 | 2,375 | 4,695 | - | - |
| | 1/4-20 x 1-1/2" #3/nut | Vertical | 3/8 | 3,435 | 4,025 | 4,280 | 4,690 | 4,695 | - | - |
| PFM227130N | 1/4-20 x 1-1/2" #5 | Vertical | 3/8 | - | - | - | - | 3,675 | 5,205 | 5,205 |
| | 1/4-20 x 1-1/2" #5/nut | Vertical | 3/8 | 3,435 | 4,025 | 4,280 | 4,690 | 5,810 | 5,810 | 5,810 |
| Suspender For Steel - Horizontal | | | | | | | | | | |
| PFM227110N | 1/4-20 x 1" #3 | Side | 3/8 | 1,740 | 1,945 | 2,420 | 2,570 | 2,810 | - | - |
| | 1/4-20 x 1" #3/nut | Side | 3/8 | 2,755 | 2,810 | 2,570 | 2,810 | 2,810 | - | - |
| PFM227120N | 1/4-20 x 1-1/2" #3 | Side | 3/8 | 1,740 | 1,945 | 2,420 | 2,570 | 2,810 | - | - |
| | 1/4-20 x 1-1/2" #3/nut | Side | 3/8 | 2,755 | 2,810 | 2,570 | 2,810 | 2,810 | - | - |
| PFM227130N | 1/4-20 x 1-1/2" #5 | Side | 3/8 | - | - | - | - | 2,205 | 2,810 | 2,810 |
| | 1/4-20 x 1-1/2" #5/nut | Side | 3/8 | 2,755 | 2,810 | 2,570 | 2,810 | 2,810 | 2,810 | 2,810 |

1. The values listed above are ultimate load capacities which should be reduced by a minimum safety factor of 3.0 or greater to determine the allowable working load.
2. The strength of the threaded rod used with the Suspender anchors must be considered when determining the controlling load capacity of the assembly.

Suspender for Wood - Ultimate Load Capacities when Installed in Wood^{1,2}

| Cat. No. | Screw Description | Mount Direction | Rod Coupler Size | Driver No. | Ultimate Tension Load lbs* | UL | FM |
|--|-------------------|-----------------|------------------|------------|----------------------------|----------------|----------------|
| | | | | | | Max. Pipe Size | Max. Pipe Size |
| Suspender For Wood - Vertical | | | | | | | |
| PFM2271000 | 5/16" x 2-1/2" | Vert. | 3/8" | PFM2201300 | 2,670 | 4" | 4" |
| Suspender For Wood - Horizontal | | | | | | | |
| PFM2271000 | 5/16" x 2-1/2" | Side | 3/8" | PFM2201300 | 1,450 | 4" | - |

*Ultimate Loads In Douglas Fir, Pine and Spruce

1. Truss/joist manufacturers may require pre-drilled holes with wood depending on the location of the anchor installation. Consult with the truss/joist manufacturer for details.
2. The values listed above are ultimate load capacities that must be reduced by a minimum safety factor of 3.0 or greater to determine the allowable working load.

Suspender for Concrete - Ultimate Load Capacities when Installed in Normal-Weight Concrete^{1,2}

| Cat No. | Rod Coupler Size in. | Screw Description | Mount Direction | ANSI Drill Bit Diameter in. | Embed. Depth in. | Minimum Concrete Compressive Strength (f'c) | | | | | |
|------------|----------------------|-------------------|-----------------|-----------------------------|------------------|---|------------|--------------|------------|--------------|------------|
| | | | | | | 2,000 psi | | 4,000 psi | | 6,000 psi | |
| | | | | | | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. | Tension lbs. | Shear lbs. |
| PFM2271050 | 3/8 | 5/16" x 2-1/4" | Vertical | 1/4 | 2-1/4 | 1,760 | 2,580 | 2,595 | 2,640 | 2,770 | 2,700 |

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.
2. Linear interpolation may be used to determine load capacities for intermediate compressive strengths.

Suspender for Concrete - Factory Mutual (FM Global) Listings for Pipe Hangers

| Cat. No. | Rod Coupler Size in. | Screw Description | Mount Direction | ANSI Drill Bit Diameter in. | Embedment Depth in. | FM Max. Pipe Size |
|------------|----------------------|-------------------|-----------------|-----------------------------|---------------------|-------------------|
| PFM2271050 | 3/8 | 5/16" x 2-1/4" | Vertical | 1/4 | 2-1/4 | 4" |

ORDERING INFORMATION

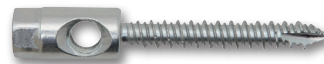
Suspender for Steel - Dual Direction

| Cat. No. | Description | Driver | Rod Size | Pack Qty. | Carton Qty. |
|------------|------------------------|------------|----------|-----------|-------------|
| PFM227110N | 1/4-20 x 1" #3/nut | PFM2201300 | 3/8" | 25 | 125 |
| PFM227120N | 1/4-20 x 1-1/2" #3/nut | PFM2201300 | 3/8" | 25 | 125 |
| PFM227130N | 1/4-20 x 1-1/2" #5/nut | PFM2201300 | 3/8" | 25 | 125 |



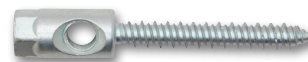
Suspender for Wood - Dual Direction

| Cat. No. | Description | Driver # | Rod Size | Pack Qty. | Carton Qty. |
|------------|----------------|------------|----------|-----------|-------------|
| PFM2271000 | 5/16" x 2-1/2" | PFM2201300 | 3/8" | 25 | 125 |





Suspender for Concrete - Dual Direction

| Cat. No. | Description | Driver | Rod Size | Pack Qty. | Carton Qty. |
|------------|----------------|------------|----------|-----------|-------------|
| PFM2271050 | 5/16" x 2-1/4" | PFM2201300 | 3/8" | 25 | 125 |



Concrete Installation Accessories and Tool Guide

| Cat. No. | Description | Drilling | |
|------------|-------------------------------|---|---|
| | | Rotary Hammer | SDS+ Bit |
| PFM2271050 | 3/8" Hanger 5/16" x 2-1/4" |  DCH273P2DH |  DW5517 (1/4") |

Steel and Wood Installation Accessories

| Cat. No. | Description | Pack Qty. |
|------------|------------------------------------|-----------|
| PFM2201100 | Hangermate/Suspender Pole Tool Kit | 1 |

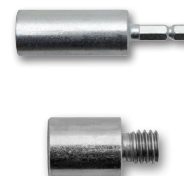
The pole tool kit is designed for use with standard 1/2" steel conduit tubing (conduit not included) and can be customized to various lengths and ceiling heights.



Universal Installation Accessories

| Cat. No. | Description | Pack Qty. |
|------------|-------------------------|-----------|
| PFM2201300 | Universal Socket Driver | 1 |
| PFM2201050 | 3/8" to 1/2" Adapter | 1 |

The 3/8" to 1/2" adaptor has a 3/8-16 external thread and a 1/2-13 internal thread.



MECHANICAL ANCHORS

SUSPENDER®
Rod Hanging Anchors