



## SOUTHERN FAB & SUPPORTS INC

13939 Old Texaco Road

Conroe, TX 77302

# Installation Instructions For SFS VARIABLE SPRING HANGERS

## 1.0 GENERAL NOTES

- 1.1 SFS Pipe Supports are designed and engineered to support Piping Systems. Supports are to be installed according to the Support Drawing at each support node and located per the drawings within the listed tolerance. **The use of pipe supports in any other manner than for which they were designed may result in support failure causing property damage and injury. Please contact a SFS representative if you are in doubt of the correct use or application of this product.**
- 1.2 Installation Instructions are also specified in the latest edition of ANSI/MSS SP-58 – Pipe Hangers and Supports – Material, Design, Manufacture, Selection, Application, and Installation.
- 1.3 Spring Hanger assemblies will be shipped as pre-assembled units as practical as possible. Larger and longer assembly components may be shipped on separate pallets (i.e. – clamps, rods, spring hangers). Most assemblies shall be palletized.
- 1.4 All thread engagements shall be checked after final adjustments of the spring hanger assembly and shall meet the following requirements:
  - A. Nuts, eye nuts, bridge clevises, turnbuckles – Male thread shall fully engage the female thread.
  - B. For hardware that has sight holes, such as load couplings and rod couplings – the male thread must be visible in the sight hole.

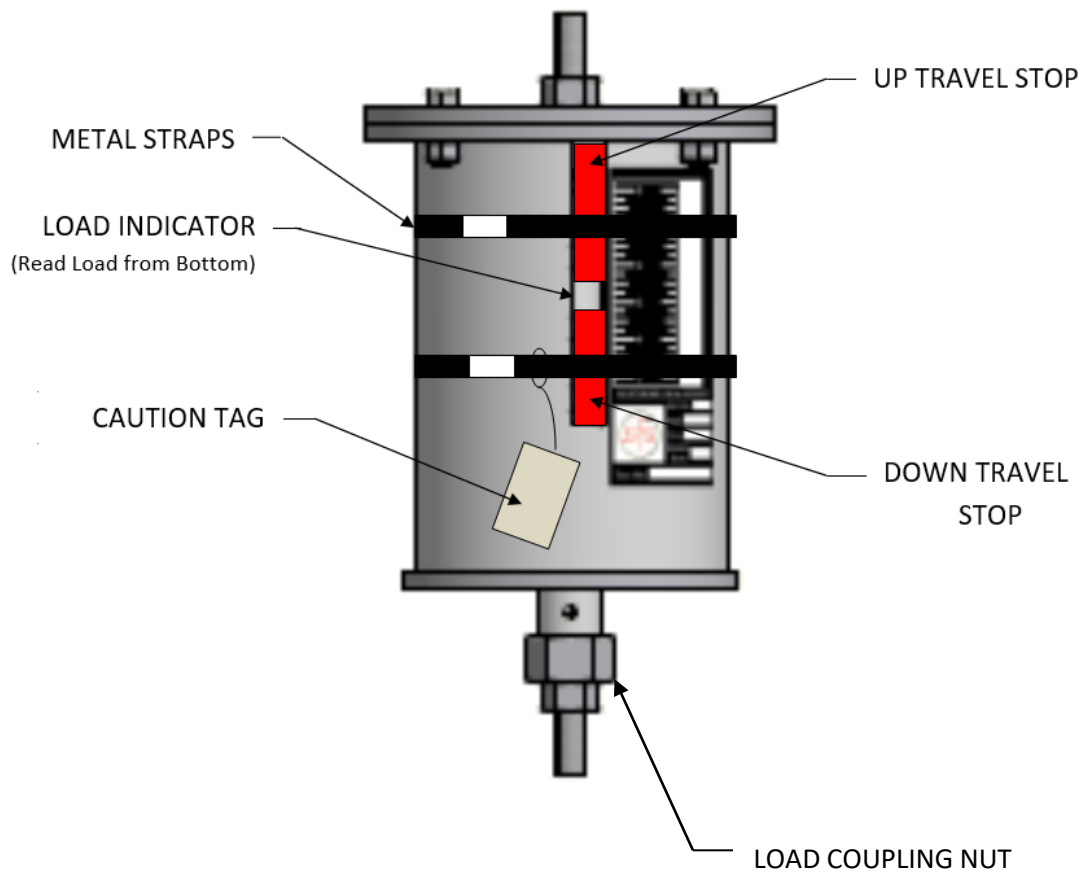
**Improper thread engagement on a pipe support that is under a load may cause a disengagement of the threaded rod which could result in property damage or injury.**
- 1.5 Hex nuts should be used to lock turning devices such as turnbuckles in place to prevent the device from turning and disengaging with the threaded rod. Hex nuts should be tightened with a wrench.



## 2.0 Variable Spring General Installation Instructions

- 2.1 The Variable Spring Hanger is provided with a Load Scale that allows a visual inspection of the Load setting of the Spring Hanger and also the deflection of the spring. The Operating (HOT) Load is indicated with a Red Marker on the Load Scale. The Installed (COLD) Load is indicated with a White Marker on the Load Scale.
- 2.2 SFS Spring Hangers are preset to the COLD Load with Travel Stops that lock the spring in position. These Travel Stops will allow the piping system to be temporarily Hydro-Tested to twice the Design Load.

**TRAVEL STOPS SHOULD NEVER BE REMOVED PRIOR TO OR DURING THE INSTALLATION OF THE SPRING HANGER. ANY ATTEMPT TO REMOVE THE TRAVEL STOPS WITHOUT REMOVING THE LOAD FROM THE STOPS COULD RESULT IN INJURY OR PROPERTY DAMAGE.**





## 3.0 Installation Instructions for Spring Hangers

### 3.1 Installation - Types A, B, C, & G.

These Types of Spring Hangers are designed to be suspended with hanger rods and structural attachments from the supporting steel.

- a. The engineer's Hanger Assembly Drawing should be used to locate structural attachments, hanger configurations, etc.
- b. Locate and attach the structural attachment to the supporting steel. Connect the Variable Spring Hanger to the structural attachment as shown on the engineer's drawing.
- c. Attach the pipe attachment (pipe clamp, lug, etc..) to the pipe.
- d. Complete the assembly by connecting the Spring Hanger to the pipe attachment via threaded rod as shown on engineer's drawing.
- e. The Hanger Rod must not exceed 4° off the vertical axis.
- f. Once all piping is installed and in place and hydrostatic testing is complete at ambient temperature, the travel stops must be removed. Cut the shipping bands off and remove the lower travel stops. The upper travel stops must be removed now. To remove these travel stops, turn load coupling until travel stops become loose enough to be removed by hand.
- g. After removing the upper travel stop turn load coupling to bring load indicator back to the cold load mark. Use a lock nut to secure the rod.

**ANY ATTEMPT TO REMOVE THE TRAVEL STOPS WITHOUT REMOVING THE LOAD FROM THE STOPS COULD RESULT IN INJURY OR PROPERTY DAMAGE.**

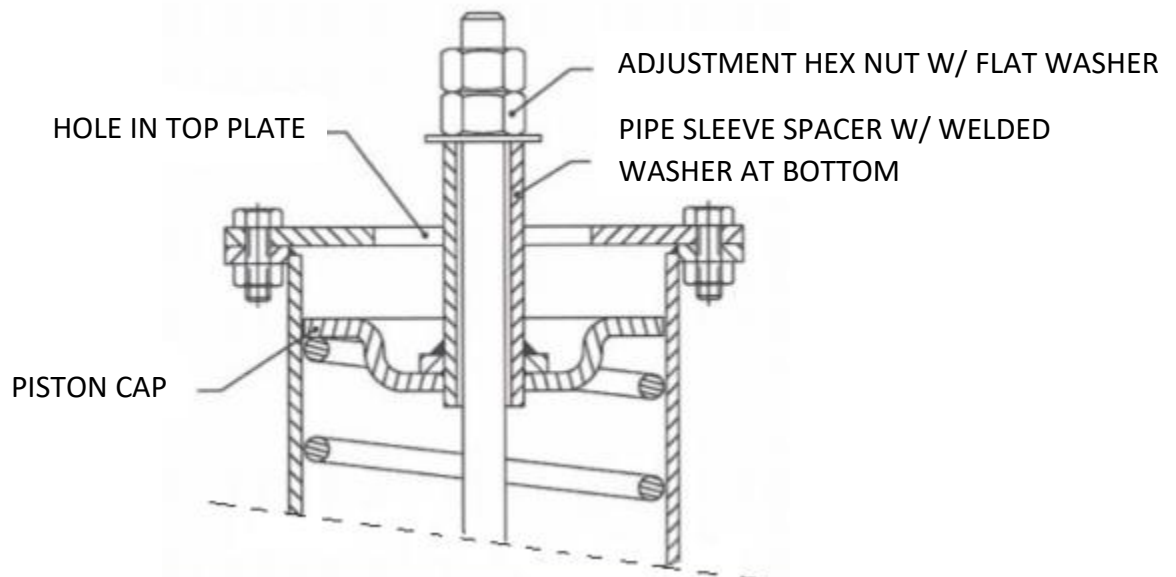
### 3.2 Installation - Type D

Type D Spring Hangers rest on the two supporting structural members, usually on a pair of channels. Type D has a rod which passes through the hanger and between the supporting channels with a supplied pipe sleeve spacer and hex nuts, permitting adjustment from the top. The spacer is shipped loose and can be found in the top of the spring hanger housing for shipment.

- a. After placing the Type D Spring Hanger on top of the supporting channels, remove the spacer from the top of the Spring Hanger Housing and place the spacer on top of the piston cap with the welded flat washer on the bottom. The pipe spacer should be protruding up and out of the Spring Hanger. Insert the Hanger Rod through the spacer and secure rod with two hex nuts at the top of the Hanger Rod. (See diagram below).
- b. Attach the pipe attachment (pipe clamp, lug, etc..) to the pipe and the rod assembly to support the pipe as shown on engineer's drawing.



## TYPE "D" TOP SECTIONAL DIAGRAM



- c. The Hanger Rod must not exceed 4° off the vertical axis.
- d. Once all piping is installed and in place and hydrostatic testing is complete at ambient temperature, the travel stops must be removed. Cut the shipping bands off and remove the lower travel stops. The upper travel stops must be removed now. To remove these travel stops, turn Adjustment Hex Nut until travel stops become loose enough to be removed by hand.
- e. After removing the upper travel stop, turn Adjustment Hex Nut to bring load indicator back to the cold load mark. Use a lock nut to secure the rod.

**ANY ATTEMPT TO REMOVE THE TRAVEL STOPS WITHOUT REMOVING THE LOAD FROM THE STOPS COULD RESULT IN INJURY OR PROPERTY DAMAGE.**

### 3.3 Installation – Type E

Type E Spring Hangers also rest on two structural members, usually on a pair of channels. The Type E Spring Hanger comes with an extra long Load Coupling that passes through the pair of channels and the Spring Hanger can be adjusted below the channels.



- a. Place the Type E Spring Hanger on top of the pair of channels and allow the load coupling to pass through the channels. **Customer must provide size of structural steel (i.e., pair of channels) to provide correct length of load coupling.**
- b. Attach the pipe attachment (pipe clamp, lug, etc..) to the pipe.
- c. Complete the assembly, by connecting the Spring Hanger to the pipe attachment via threaded rod as shown on engineer's drawing.
- d. The Hanger Rod must not exceed 4° off the vertical axis.
- e. Once all piping is installed and in place and hydrostatic testing is complete at ambient temperature, the travel stops must be removed. Cut the shipping bands off and remove the lower travel stops. The upper travel stops must be removed now. To remove these travel stops, turn load coupling until travel stops become loose enough to be removed by hand.
- f. After removing the upper travel stop, turn load coupling to bring load indicator back to the cold load mark. Use a lock nut to secure the rod.

**ANY ATTEMPT TO REMOVE THE TRAVEL STOPS WITHOUT REMOVING THE LOAD FROM THE STOPS COULD RESULT IN INJURY OR PROPERTY DAMAGE.**

### 3.4 Installation – Type F

Type F Springs support the pipe from underneath the pipe. These Spring Hangers are typically bolted to the floor, welded to structural steel, or bolted to structural steel.

- a. Bolt or weld the Type F spring Support in place as shown on the engineer's drawing.
- b. Place the Load Flange (supplied with the spring support) on the top of the Type F Spring Support.
- c. Adjust the load column and load flange until it makes contact with the pipe. Tighten the load column up against the pipe with a rod that is placed in the holes at the top of the load column.
- d. e. Once all piping is installed and in place and hydrostatic testing is complete at ambient temperature, the travel stops must be removed. Cut the shipping bands off and remove lower travel stops. Turn the load column counter clockwise until the upper travel stop loosens enough that it can be removed by hand. If the travel stops do not come out easily, then adjust the load column up or down until the stops are loose and can be removed by hand.

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## 4.0 Final Adjustments to Spring Hangers

Prior to start-up of piping system, each Spring Hanger should be inspected to insure that the load indicator is located at the Cold Load setting. This is indicated by a white marker next to the load scale. If the Spring Hanger is not set at the Cold Load setting, then adjust the spring hanger using the load coupling or the load column until the load indicator is at the Cold Load setting.

After the piping system is operational and operating temperatures are in effect, periodic checks of the Spring Hangers should indicate that the Load Indicator is at the Hot Load setting. This is indicated by a red marker next to the load scale. If the Spring Hanger is not set at the Hot Load setting, adjustment can be made to the load coupling or load column until the load indicator is at the Hot Load setting.

## 5.0 Do Not Disassemble Spring Hangers

The Spring Coil inside the housing of the Spring Hangers is pre-compressed and the unit is under pressure. Disassembling a Spring Hanger Unit can cause severe injury, so **under no circumstances should it be disassembled.**