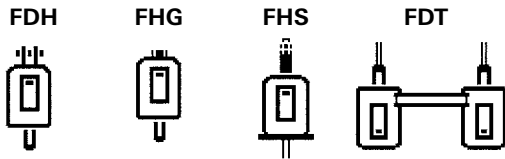


# INSTALLATION INSTRUCTIONS FOR SPRING HANGERS / SUPPORTS

## Hangers



## Supports



### General information

Spring hangers and supports are delivered on pallets. Ensure careful handling during transport on site. The corrosion protection, the connecting threads, manufacturer's plate and scales are especially at risk. Storage should be in closed rooms; if stored in the open air the devices should be protected from moisture and dirt with suitable coverings.

### Connections

To fasten the hangers / support to the load bearing structure, the required connections must be prepared; welding plates, clamping lugs for the hanging versions FHD, FHG and FDT; supports (perforated) or support plates for the base-mounted types FHS, FSS and FSP and brackets for the sway supports.

### Function

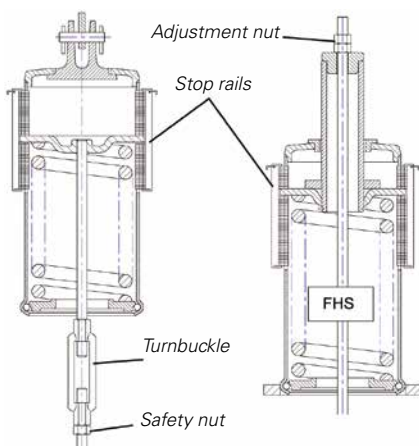
Spring hangers and supports carry forces from the pipe support to the load-bearing structure over a specific travel range. The hangers/ supports are set to the required load at the factory (fitting unblocked devices is not recommended).

### Installation

Hangers must be connected in a form-closed way with the connections; support bolts must be secured with cotter pins or safety rings, thread connections with lock nuts.

### Load connection/load adjustment

#### Hanger with turnbuckle



The lower tie rod (threaded rod) must first be screwed in to the turnbuckle of the hanger and connected with the load to be carried (note system dimension E of the turnbuckle, lubricate both threads of the turnbuckle well in advance and screw on safety nuts first).

The length of the lower tie rod is to be adapted to the real installation dimensions if necessary. The turnbuckle is turned until the intended cold load is reached. (The set cold load can be read on the travel scale on the engraved or blue triangle.) This point is reached when on both sides the travel stops become loose through the existing play and can be easily removed by hand. (Remove transport lock first.) In the case of a larger thread diameters (for example from around M 42) the turnbuckles cannot be adjusted under load; they must be relieved of the load using additional aids (lifting tool, hydraulic lift).

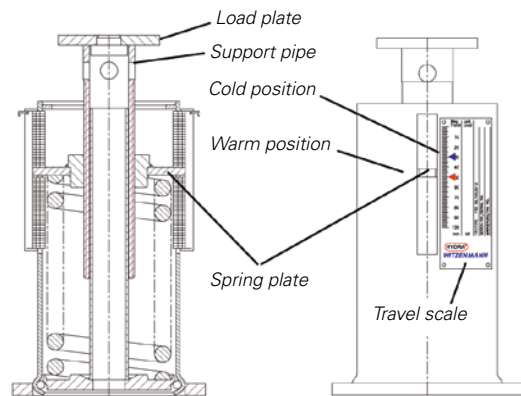
#### Double hanger with traverse (FDT)

As described above; ensure the load is even on both tie rods.

#### Hanger without turnbuckle (FHS).

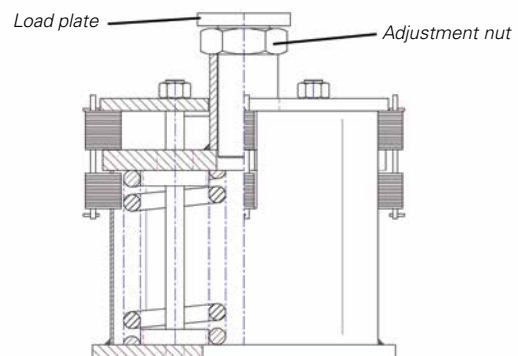
Turn the adjustment nut until the intended cold load is reached (previously lubricate thread). Continue as above.

#### Supports size 01-11



Insert the load plate with flange loosely. Turning the support pipe (previously lubricate thread) tensions it (adjustment option + 30 mm). With supports from size 08 the load plate should be relieved of the load using suitable aids (such as lifting tool, hydraulic lift).

#### Supports size 12-16 (FSS; FSP)



Insert the load plate with thread part loosely. Turning the adjustment nut (previously lubricate thread) tensions it (adjustment option + 30 mm). With supports from size 08 the load plate should be relieved of the load using suitable aids (such as lifting tool, hydraulic lift).

### Sway support size 01-11 (FSG)

On the side of the moveable support pipe, the joint head is loosely inserted as with the other supports. Turning the support pipe (previously lubricate thread) tensions it (adjustment option + 30 mm). With sway supports from size 08 load relief should be done as with supports.

### After unblocking

The travel stops are now suspended with their wire hangers below the nib of the load plate in the housing slit for retention and secured with wire (up to size 11). From size 12 these are fastened to welded-on thread bolts. Finally, for hangers, the angular draw of the load chain must be checked. Taking into account the movements to be expected during operation, this should not be more than 4°. All thread connections in the load chain (except the left-hand thread in the turnbuckle) are to be secured with nuts.

### Hydraulic pressure testing

For hydraulic testing of pipe systems supported by hangers/supports, the hangers/supports should be blocked in order to avoid unacceptable movement of the pipe. The hangers/supports are dimensioned in such a way that both in the blocked and unblocked state, twice the nominal load of the hanger/support can be borne with a safety factor of 1.25 (in the unblocked state the hanger/support moves to the lower stop).

### Operating check

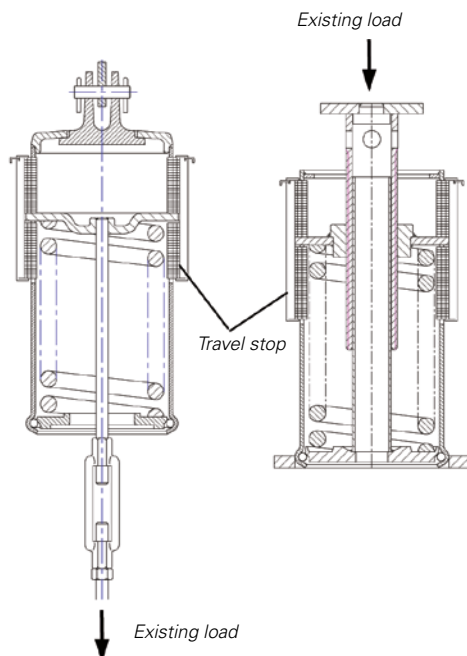
After commissioning of the system the warm positions of the hangers/supports are to be checked (red triangle on the travel scale). If greater deviations are noted, additional corrective measures are required. If the cause is smaller/larger loads than calculated, the set loads of the hangers and supports must be adjusted. This can be done through further adjustment of the turnbuckle or adjusting nut. If the travel reserves are exceeded in the process, the device must be replaced with another.

### Maintenance

Spring hangers and supports are absolutely maintenance-free and have no wearing parts.

### Supplement - Unblocking

Hangers/supports are fitted blocked. All loads based on the set blocking load (medium, insulation, other loads) affect the hanger and the support.



After removing the tensioning belt placed around the hanger/support (transport lock), the blocking elements placed in the housing slit (Size 01-11, 2 pieces; Size 12-16, 4 pieces) must be removed by hand.

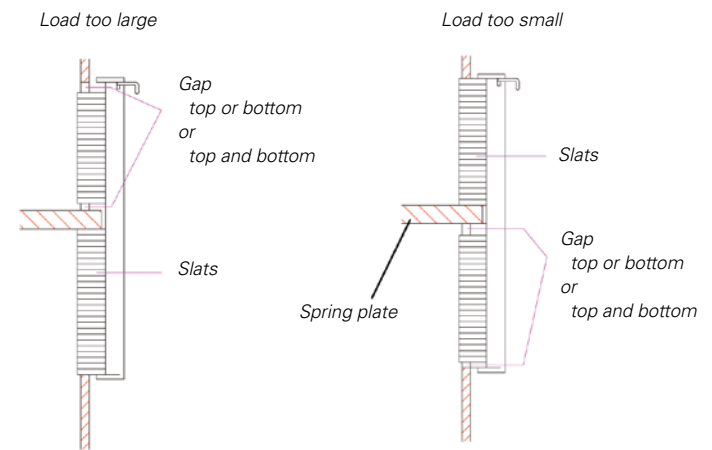
If not, the effective load  $F_{\text{vorh}}$  deviates from the travel stop of the hanger/support. Changing the installation dimension (with the hanger by turning the turnbuckle; with the support by turning the support pipe or adjustment nut) the effective force on the hanger/support can be corrected and the set travel stop adapted. The position of the slats indicates whether the existing load is too large or too small.

Existing load too large:

- With hangers increase installation dimension
- With supports reduce installation dimension

Existing load too small:

- With hangers reduce installation dimensions
- With supports increase installation dimensions



### Important

Correcting the installation dimension changes the existing loads on the adjacent support points.

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