

## MOUNTING INSTRUCTIONS

### Contents:

- Transport and storage
- General information
- Installation instruction for hangers (general information, attachments, hanger types)
- Installation instruction for supports
- Spring hangers and supports

### 1. Transport and storage

Transport and storage of the hangers, supports and their components has to be carried out with care in order to avoid their damage and damage of their marking. They should be protected from dirt and corrosion.

Spring hangers and spring supports should be stored in closed rooms. For outdoors storage, hangers must be protected from dirt and humidity by suitable covering.

### 2. General information

Hangers are supplied in no assembled state in marked packages. If required, they are supplied in assembled one. Assemblage depends on the type of hanger.

Supports are supplied in assembled state. If required, the guidance is in a separate package for one type with corresponding marking.

The threaded rods for hangers are supplied in bundles.

The springs hangers and spring supports are supplied separately with corresponding marking.

### 3. Installation instruction for hangers

Installation of hangers and spring hangers shall be performed according to assembly drawings of manufacturer.

The hanger components are compiled with possibility to adjust the length of hanger. Threaded rods are in length 0.5 m; 1 m; 1.5 m or 2 m with assembly allowances. The correct length will be modified during installation. Threaded rods are combined for the hangers with length over 2 meters; they are connected by the rod coupling and 2 counter nuts.

The correct splaying of stud pins has to be checked.

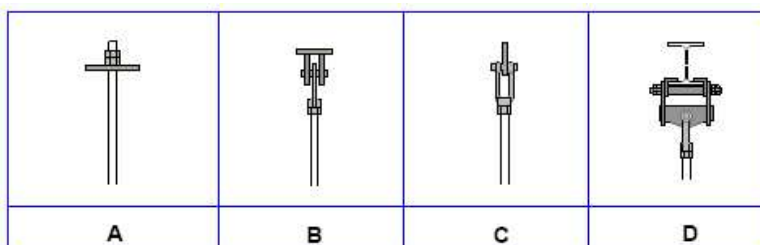
The screwed depth of elements with screws has to be checked, the threaded length of the rod must be visible in all check holes (eye nut, turnbuckle, clevis with pin).

Tightening of hanger is done using turnbuckle in rod assemble or in a spring (for spring hanger types). Tightening of hangers without turnbuckles (type I, J) is done by the nuts. The

hanger rods are maintenance-free by the correct assembly.

## Attachment elements

Hangers are fixed to the structures by one of these attaching elements:



type A – plate with counter nuts

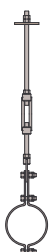
type B – weld-on clevis

type C – weld-on eye plate and clevis with pin

type D – beam clamp

Welding elements are coated with weldable prime coat and it has to be repaired after welding.

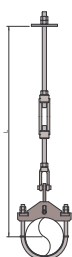
## Hangers



### Type A – rod clamp hanger for horizontal pipes

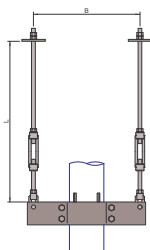
Clamps and components of hangers with diameter up to DN 150 are supplied in no assembled state in marked packages. Clamps with larger diameters are delivered separately, the packages contains only the other components.

Clamp connection to the threaded rod is realised via the eye nut and the bolt must be tightened in a way that allows the loose turning of eye nut.



### Type B – rod hanger for horizontal pipes with U-bolt clamp

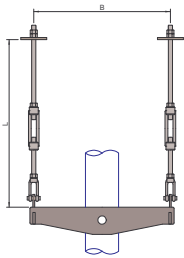
The U-bolt clamp with an inlay plate is supplied separately in preassembled state with corresponding marking. The package contains the other components. The U-bolt connection to the threaded rod is realised via the clevis with pin. After adjusting the U-bolt clamp, the connections have to be tightened.



### Type C – double rod hanger for riser pipes

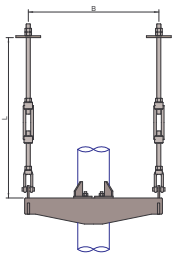
The riser clamp of this hanger is supplied with loosely connected parts. The package contains the other components of the rods. Clamp connections to the threaded rods are realised via the eye nuts and the bolts must be tightened in a way that allows the loose turning of eye nuts.

Lugs are welded on the hangers with larger diameters. These lugs are not supplied by LPS.



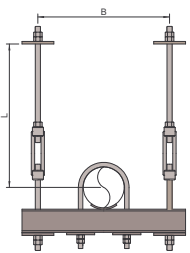
**Type D – double rod hanger for riser pipes**

The parts of riser clamp are supplied in no assembled state, covered with a plastic foil. The marked package contains the other components of the rods. Side smaller plates are set into the notch underneath of the main plates and they connect hanger with threaded rods via the clevises with pin. The main plates of hanger can be fixed with the welding tube – plugs. These lugs are not supplied by LPS.



**Type D – double rod hanger for riser pipes**

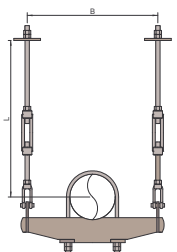
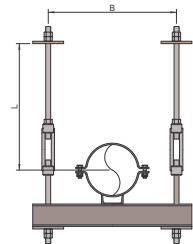
The parts of riser clamp are supplied in no assembled state, covered with a plastic foil. The marked package contains the other components of the rods. Side smaller plates are set into the notch underneath of the main plates and they connect hanger with threaded rods via the clevises with pin. Supplied lugs are welded on the pipeline.



**Type F – double rod hanger for horizontal pipes**

Beam with U-bolt is supplied separately, components in package. Threaded rods are passed through the beam and are secured with nuts. Beam must be in horizontal position regarding to its longitudinal axis.

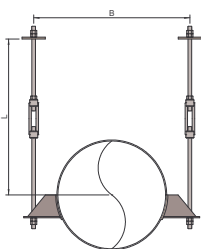
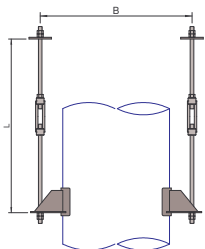
Variation with the sliding support: the support must be welded to beam. Coat has to be repaired after welding.



**Temperature variation up to 450 °C:**

The parts of hanger are supplied in no assembled state, covered with a plastic foil. The marked package contains the other components of the rods.

Side smaller plates are set into the notch underneath of the main plates and they connect hanger with threaded rods via the clevises with pin.

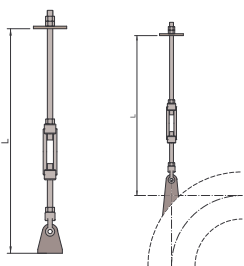


**Type I – double rod hanger for riser pipes**

**Type J – double rod hanger for horizontal pipes**

Bottom ends are supplied separately. The marked package contains the other components of the rods.

Bottom ends are welded to pipeline. Top coat has to be repaired after welding. Threaded rods are passed through the bottoms and are secured with nuts.

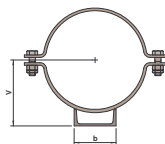


**Type K – rod hanger with weld-on lug for horizontal pipes**

**Type L – rod hanger with weld-on lug for elbows**

Lugs and components are supplied in no assembled state in marked package. Lug is welded to pipeline and connected to the threaded rod via clevis with pin. Coat has to be repaired after welding.

## 4. Installation instruction for supports



Sliding clamp supports (e. g. type K520, K800, K802, K820, K830) and fix points (type P871) are located on the sliding surfaces, which must be properly cleansed and adapted.

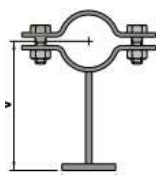


The supports with inclined pipe clamps (variations S, SD, SD3 and SD4) can be placed under the piping, which is fixed in correct height.

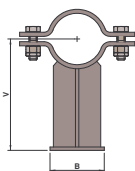


In a case of problems with installation of the S variations (e. g. clamps do not fit and match on the tube and the span is larger), then the process is following:

- use the longer assembly screw bolts and constrict the both parts of the support around the tube,
- finally gradually change the assembly screw bolts by the original connection accessories.

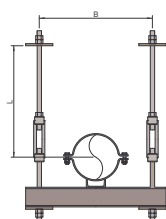


In a case of supports with horizontal clamps and fix points, pipeline is fitted into the foot of this support. The upper part has to be securely bolted to prevent pipeline shift.

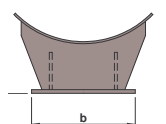


Necessary level adjustment could be done via base plate, which must be firstly connected to the structure and fixed against any movement (by welding or bolting).

High of high-adjustable supports is regulated according to their type (by welding or bolting).



Sliding clamp supports are welded to beam in combination with double rod hanger for horizontal pipes (type F). Coat has to be repaired after welding.



Weld-on pipe shoes (e.g. type K810, K813, K840) are welded on the strict determined place. Coat has to be repaired after welding.

It is necessary to pay attention to different designs, pipe diameters, operating temperatures of supports.

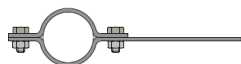
If required, to limit the shifts of the support on the base, it is possible to use a restraint plates. Their fixation depends on the type. Restraint plates are coated with weldable prime coat and it has to be repaired after welding.

## U-bolts



U-bolts are supplied with nuts in marked packages.  
The both nuts shall be secured with counter nut.

## Clips



Clips are supplied with bolts and nuts in marked packages. They are fixed against any movements by welding or bolting.

## 5. Spring hangers and spring supports

The spring hangers and spring supports are supplied separately, with corresponding marking, blocked and preset to the required load.

The threaded rod will be modified to the required length and screwed into the spring hanger before the installation.

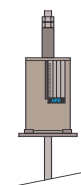
Cold load is set by arresty plate inserted to opposite slots. This will fix the board of spring against the move in both directions and also arrests the spring during compression test.

Deblocking of spring shall be executed after the ending of assembly and after the pressure test of corresponding pipeline.



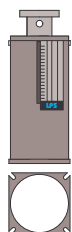
### Assembly setting of spring hanger in rod, under construction and

The turnbuckle must be turned until the arresty plates can be pulled out by hand.  
Afterwards the cold load is reached.



### Assembly setting of spring hanger on construction and under hanger

The turnbuckle is substituted by the adjustment nuts. They are turned until the cold load is applied and the arresty plates can be pulled out by hand.



### Spring supports

After positioning, the base plate is connected to the structure via welding or bolting. Load distribution is effected through the load tube with load plate.  
Cold load is set by arresty plate inserted to opposite slots. They will fix the board of spring against the move in both directions and also arrest the spring during compression test.

## Load readjustment

For spring hangers, load can be readjusted to achieve the balance by loosening or tightening the threaded rods:

- spring hanger in rod and spring hanger under the construction – by the turning of turnbuckle,
- spring hanger on construction and spring under hanger – by the lock nuts.

For spring supports, load can be readjusted by a corresponding transposition of the load tube.

Spring supports and hangers are marked with name plate with important information:

- type of spring and marking,
- load, travel and spring rate.