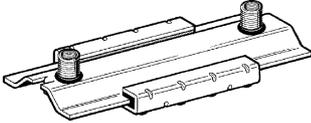


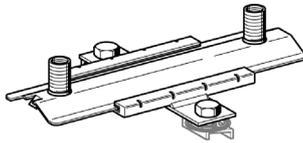
### Products

**Slide Set GS H3G**



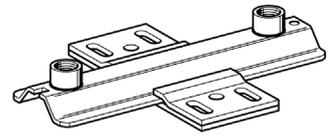
Standard; ULTRAglide

**Slide Set GS CC-H3G2-PL**

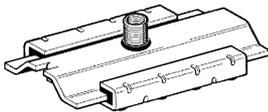


Standard; ULTRAglide

**Slide Set GS F 80 1G2**

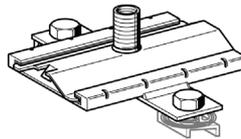


**Slide Set GS H3G**



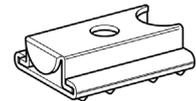
Standard; ULTRAglide

**Slide Set GS CC-H3G-PL**

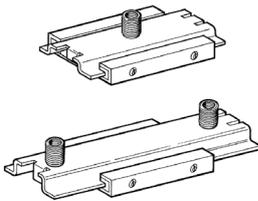


Standard; ULTRAglide

**Slide Set GS 1G**

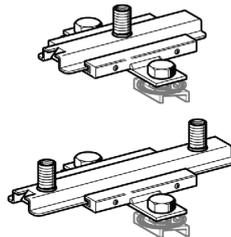


**Slide Set GS 2G + 2G2**



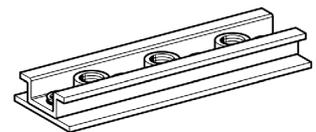
Standard; ULTRAglide

**Slide Set GS CC-2G-PL + CC-2G2-PL**

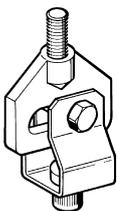


Standard; ULTRAglide

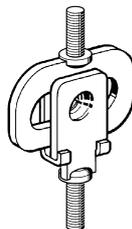
**Slide Element GS 41**



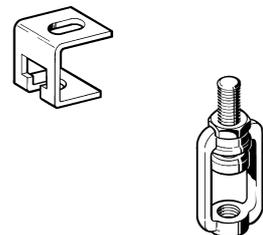
**Slide Element GLE J**



**Slide Element GLE LC**



**Height Adjuster HRS; 0; P**



### Sliding Supports for Compensation of Thermal Expansion

**"Natural" compensation of expansion by L or U shaped bends**

**Vertical drop**  
If a pipe has to be fixed close to a vertical drop return, either a spring hanger or a spring support is recommended from 3mm vertical expansion onwards.

In case of 2-Dimensional expansion, an XY slide combination is recommended before and after the pipe bend.

Fixed points should be located close to the pipe branches.

Fixed point      Guided support

Pipe length relevant for expansion L

U-bend      L-bend

$\Delta z$

$\Delta x$        $\Delta y$

$\Delta x/2$

Bending leg L-A

**"Mechanical" compensation by axial expansion joint**

**Caution!**

► Directly before and after the expansion joint, in a distance of 2 x pipe diam., two guided supports are required. Normally, the subsequent guided support should be installed with a shorter distance (0.7 x LST). LST = pipe support distance.

Normally, an axial expansion joint is positioned half-way between 2 fixed points. **Please consider the installation guidelines of the manufacturer.**

Temperature during installation

+20°C

Operating temperature

+140°C

$\Delta L_1 < \Delta L_3$

LST      0.7xLST

F!      F!

DN

$\Delta L_1 < \Delta L_3$

Annotations illustrate the expansion behaviour of the pipe. The longer the distance between the sliding support and the fixed point, the greater the sliding distance. Therefore, the installation position (off-centre position) of the slide plate relative to the holder has to be determined to allow for the full sliding distance to be accommodated by the sliding support. The location and the expected sliding distance and direction of movement must be taken into consideration.

**Caution!**

► For pipework 200NB and above, and for pipe support distances greater than 250mm from the building structure, slide set H3G/1 should be used. If required, the pipe is to be guided laterally as well to prevent buckling.

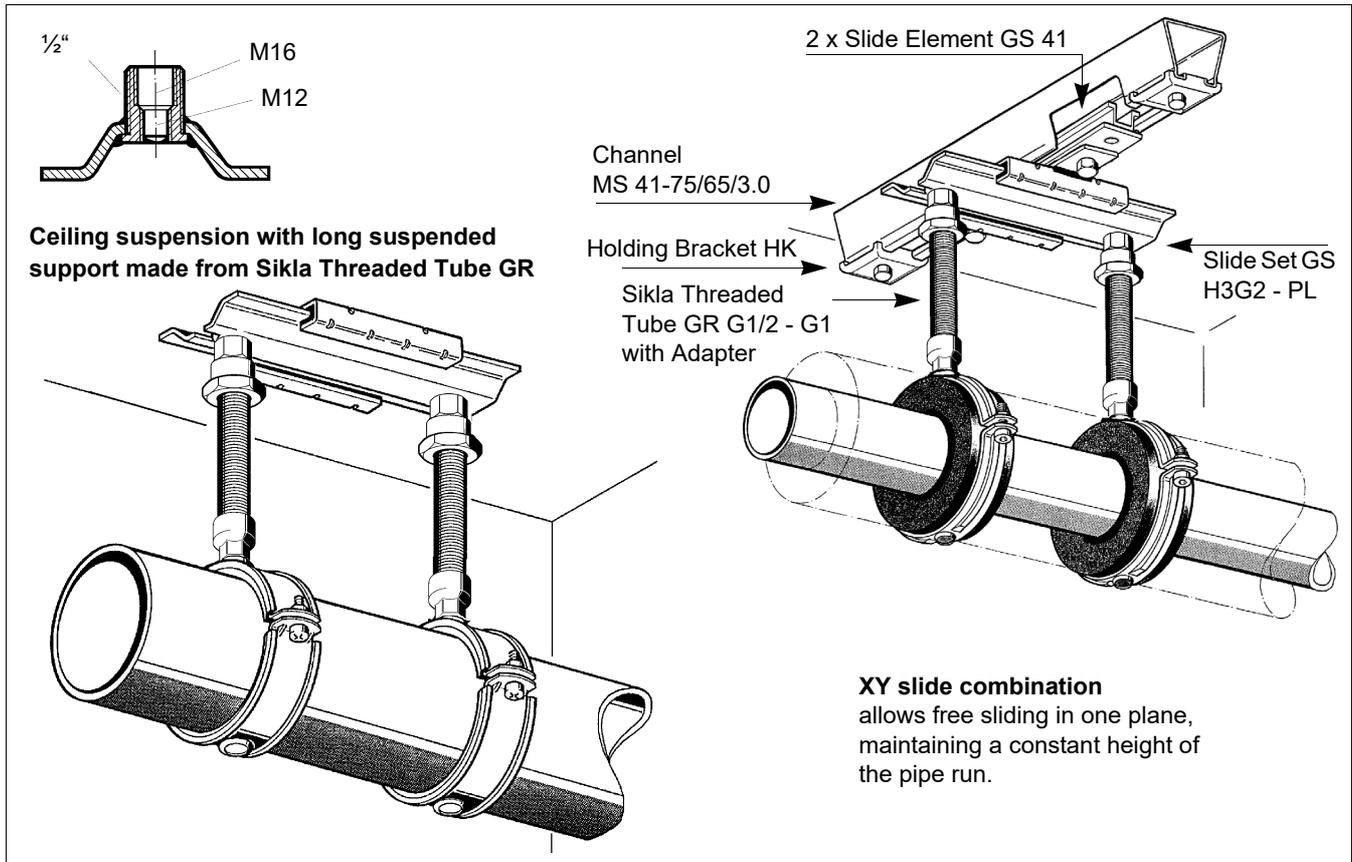
**Caution!**

► When slide supports are installed, it has to be considered that the sliding plate part fluctuates around the centre position under operating temperature. Consider direction of movement!

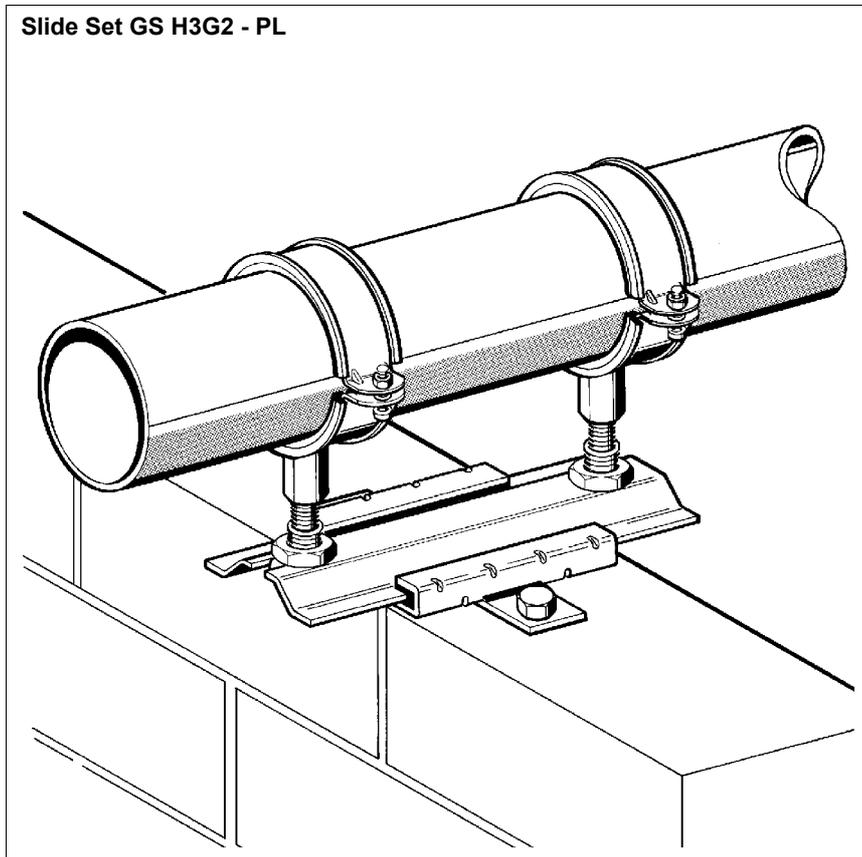
**Note:**

► Plastic pipes expand approx. 10 x more than metal pipes. For exact calculation of length variation see chapter "Pipeline technology".

### Slide Set GS H3G



### Slide Set GS H3G2 - PL



**Note:**

- Support elements to the Slide Set must be adequately rigid. For greater support distances use Threaded Tubes GR

The Slide Set GS H3G is used as a restricting guided support.

Plastic slide rails (for a max. temperature of up to 130°C) guarantee noiseless sliding.

Max. sliding distance for H3G/1 = 140 mm

**Note:**

- The thread connections of the Slide Set are secured against resultant bending moments with adapters or Locking Nuts.

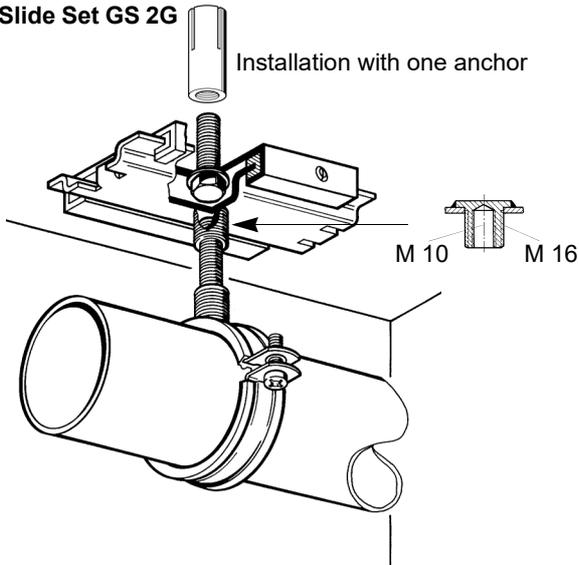
### Application Examples for Slide Set GS H3G and 2G

**Note:**

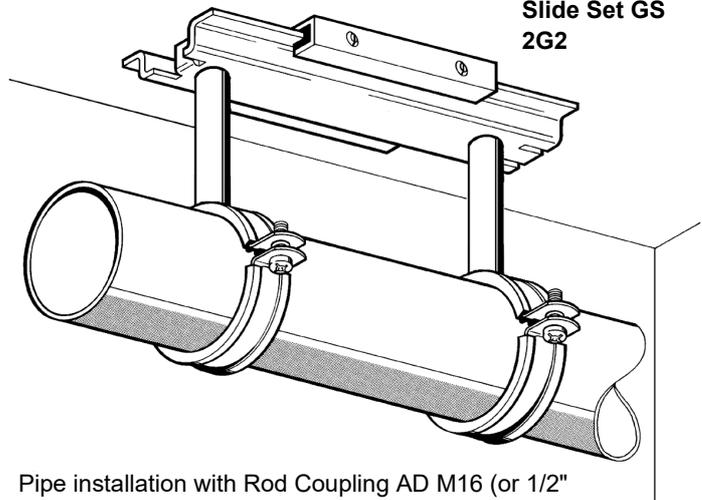
- ▶ When using the version ULTRAGlide with special nano coating, the resulting friction force is halved.

**Slide Set GS 2G**

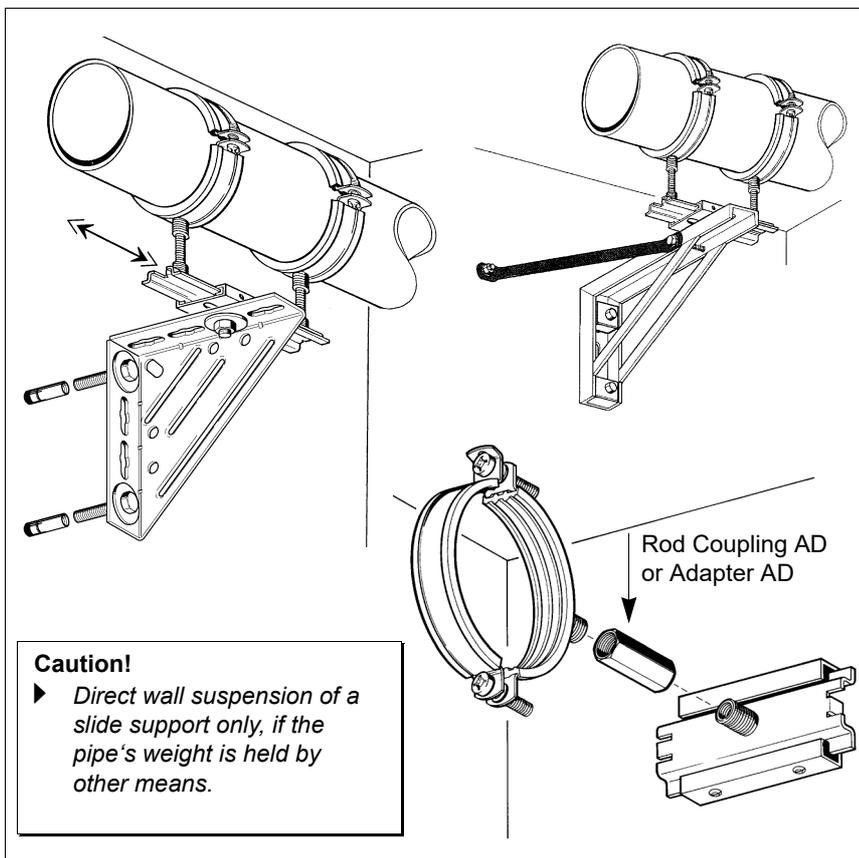
Installation with one anchor



**Slide Set GS 2G2**



Pipe installation with Rod Coupling AD M16 (or 1/2" for H3G), particularly practical for bridging insulation thicknesses in increments 45, 100 or 150mm.



**Caution!**

- ▶ Direct wall suspension of a slide support only, if the pipe's weight is held by other means.

For wall suspension, the best and safest solution is to fix the Slide Sets GS onto Support Brackets WK.

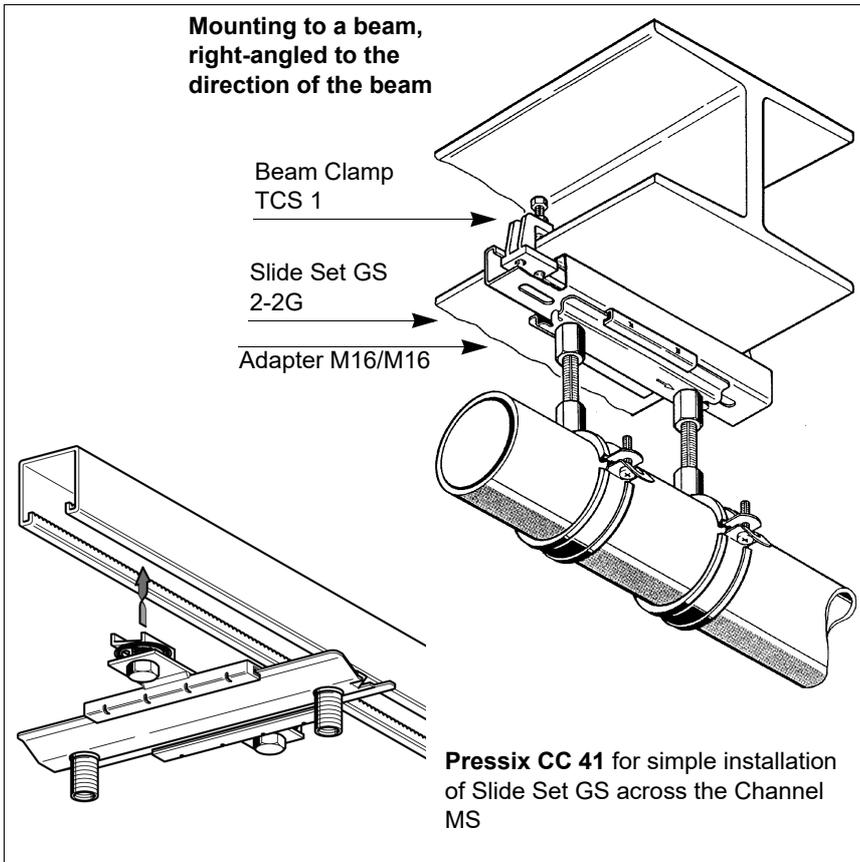
All Support Brackets WK made of section steel have holes positioned correctly, so that Tie Rods STR, which are available as accessory, can be bolted on immediately.

**Note:**

- ▶ Only with smallest wall distances (up to approx. 150 mm) the Support Bracket WK can be installed without lateral brace.

For fixing in short distance from the Wall this arrangement is possible with Stabil D-3G and Ratio S.

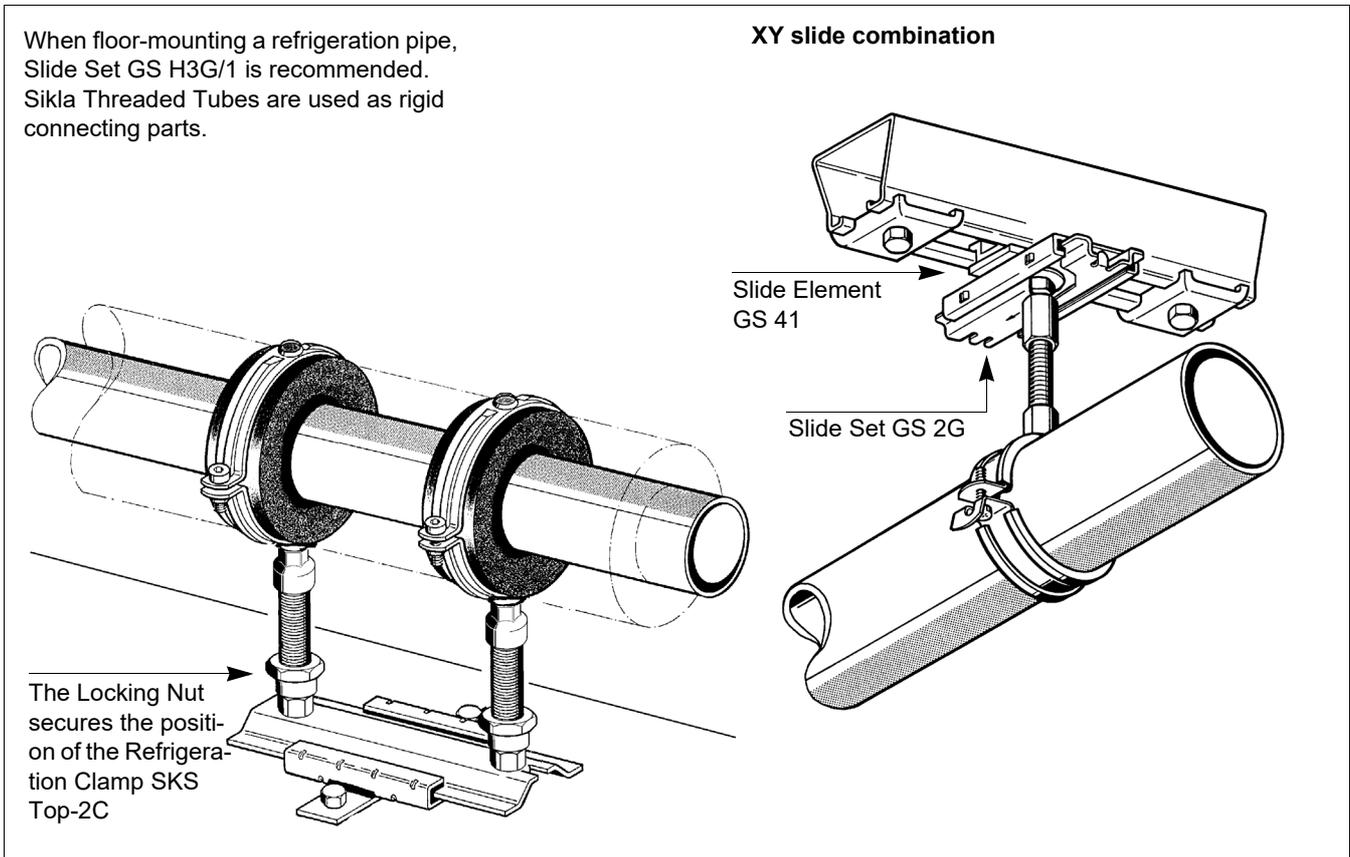
### Application Examples for Slide Set GS H3G and 2G



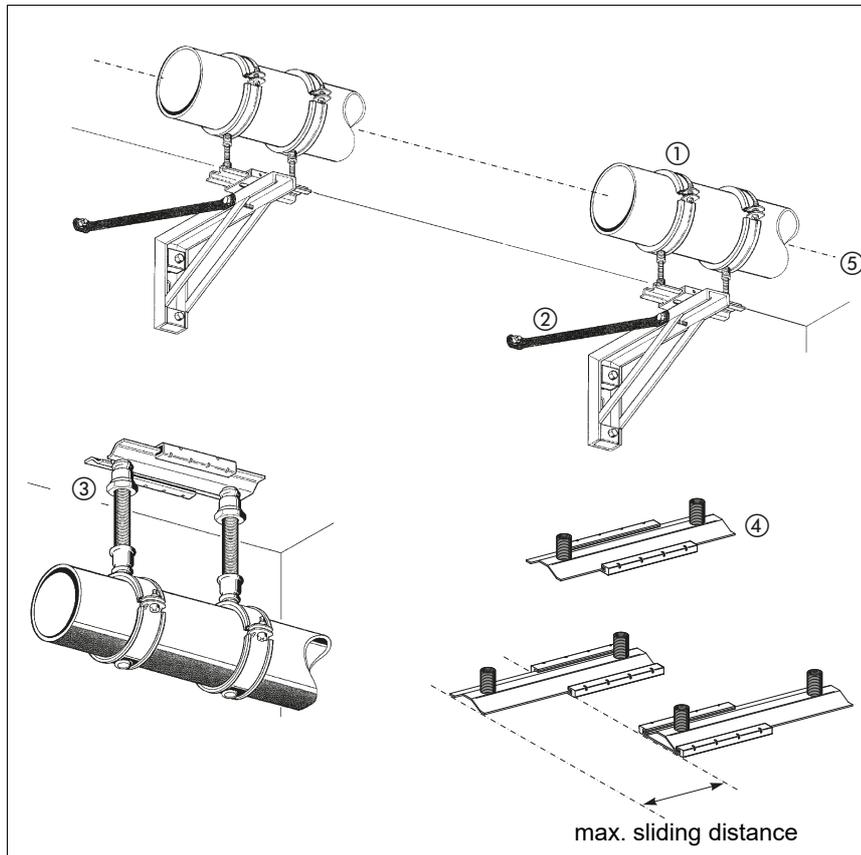
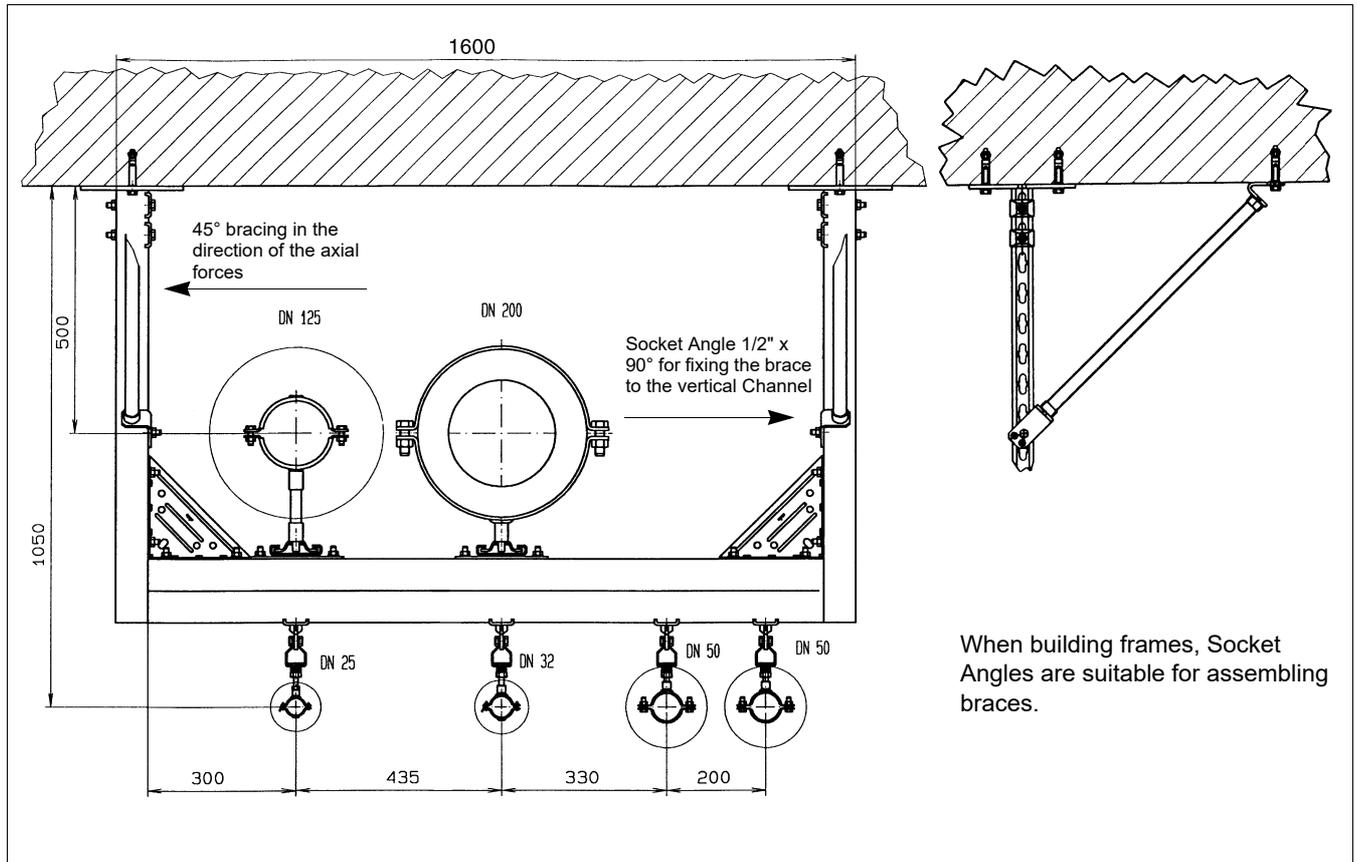
**Note:**

► In case of an imposed lateral load, the permissible bending moment of the channel should not be exceeded.

In exceptional cases it is allowed to weld on the beam (with permission of the structural engineer). Before welding the plastic guide rail has to be taken out of the base body.

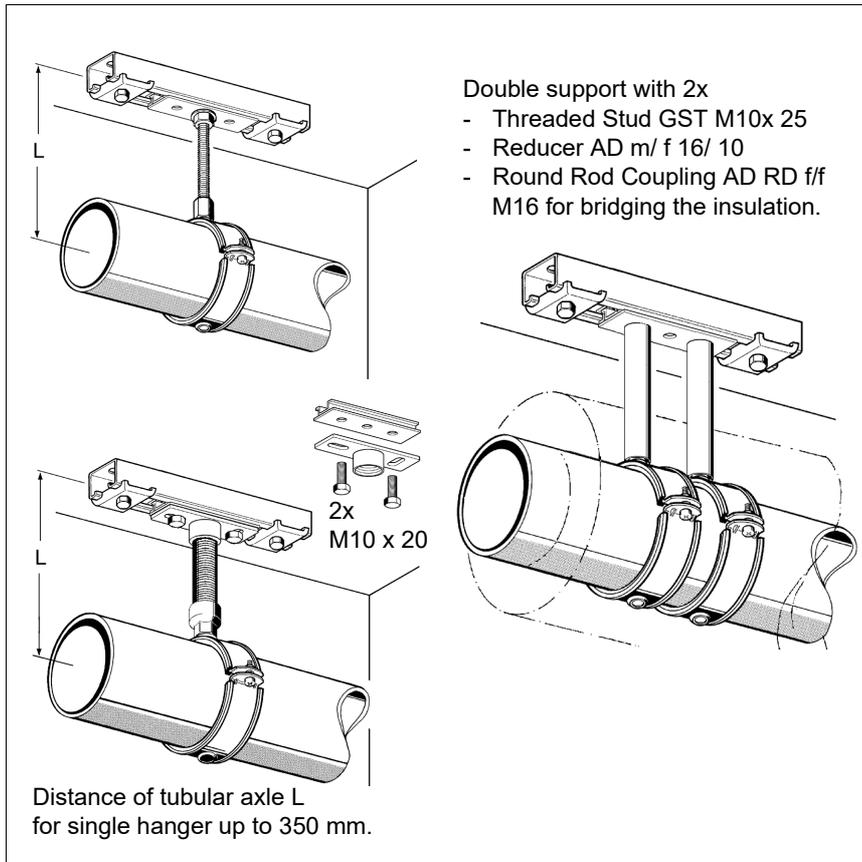


### Basic Rules for the Installation of Slide Supports



- ① Slide supports for horizontal pipe runs are primarily designed for **floor-mounted or ceiling-suspended pipework**.
- ② Slide supports have to transfer friction forces in the direction of the pipe axis. Therefore their installation requires **lateral bracing at each support position**.
- ③ The **connecting parts** between the Side Set GS and the pipe clamp are to be designed to accommodate bending forces. The connecting nuts of the sliding plate part are to be secured using Lock Nuts.
- ④ Under operating conditions, the sliding plate part fluctuates **around the centre position**. The direction and distance of **sliding movement has to be considered** during installation.
- ⑤ Slide supports must be aligned according to the pipe axis and / or direction of movement.

### Slide Element GS 41 and Laws of Friction at Slide Supports



**Note:**

► For dimensioning of connecting elements (Threaded Stud GST / Threaded Tube GR) the bending moment of the frictional force  $F_R$  has to be considered.

Possible application in every Channel of system 41:

- ◆ Single support with Threaded Stud GST M10
- ◆ Single support with mounting plate GPL stabil up to G1"
- ◆ Double support.

A special saddle serration of the channels allows sliding suspension also with channelopening showing down.

The distance in which the Slide Element 41 is able to move is only restricted by the channel length.

Especially when using pipe clamps with lining, a close distance to the slide plane has to be kept.

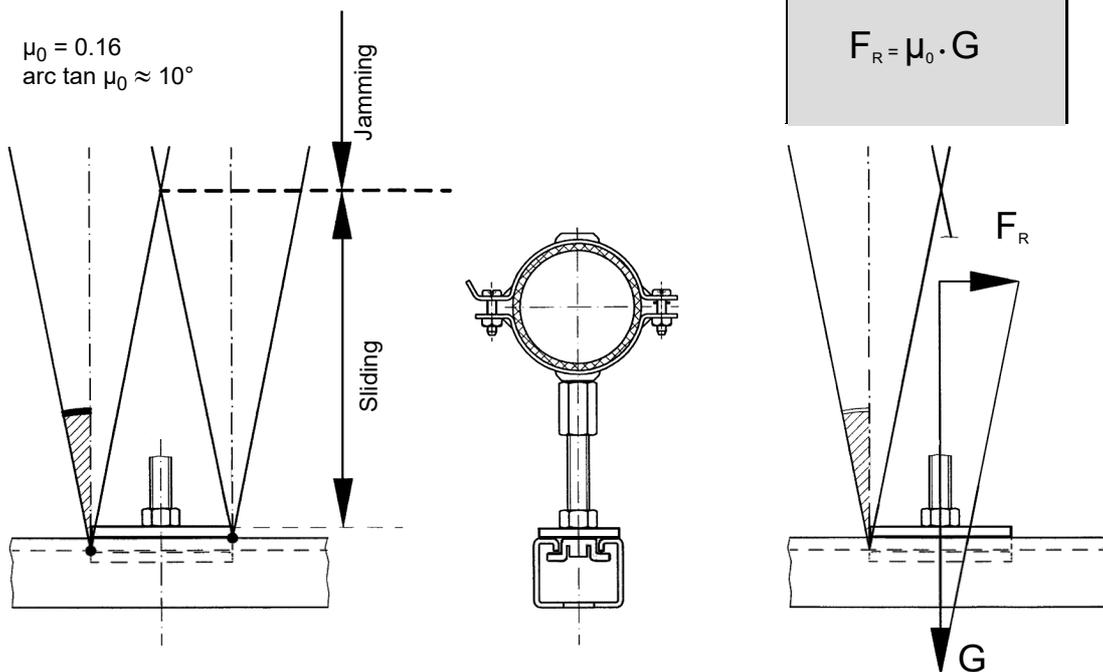
The risk of jamming depends on the distance (and not on the weight) of the pipe.



### Laws of friction at slide supports GS

$$\mu_0 = 0.16$$

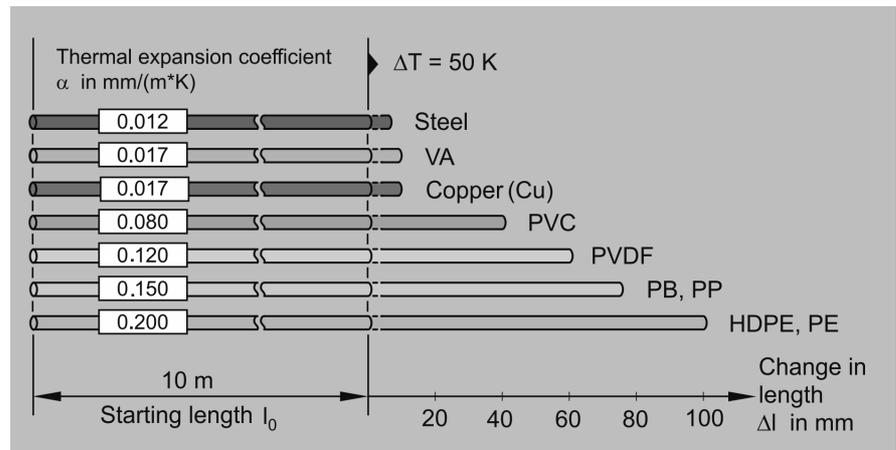
$$\text{arc tan } \mu_0 \approx 10^\circ$$



### Determination of linear expansion, distances to the building structure and friction force

#### Pipes need freedom ...

Please help with your knowledge to select the right products and avoid problems!

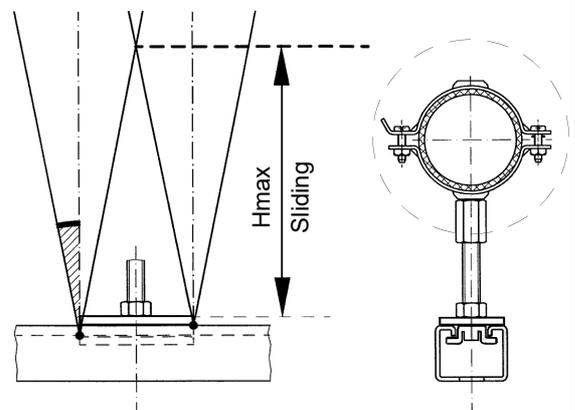


1 A steam pipeline ss, length  $L = 50$  m  $\varnothing 219.1 \times 3.0$  installed at  $T_E = 20^\circ$  C and reaches an operating temperature of  $T_B = 130^\circ$  C.

What max. change of length has to be expected and which product has to be selected as guided support?

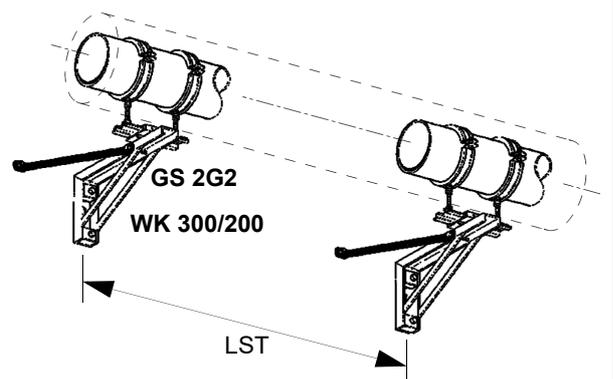
2 Insulated pipeline  $\varnothing 60.3 \times 2.9$  mounted onto a sliding element 4'

What is the max. distance  $H_{max}$  from pipe centre to slider allowed for secure sliding?



3 Hot water pipeline  $\varnothing 114.3 \times 3.6$  with insulation thickness 100 mm fixed on Guided Set 2-2G which is mounted on WK 300/200 LST = 4 m apart.

What friction force  $F_R$  results?

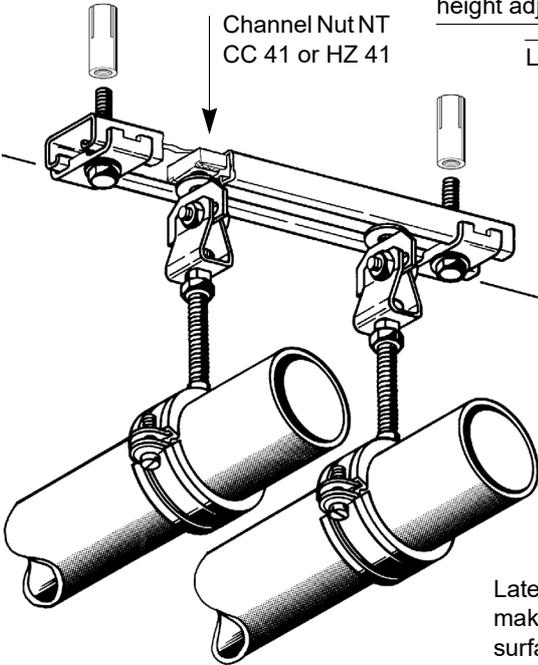


### Slide Element GLE J

Types M8 ... M16

for loads up to 3.5 or 6.0 kN respectively

Parallel pipe runs

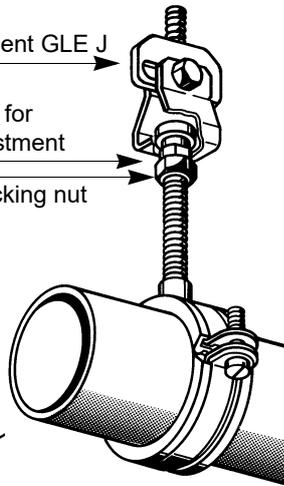


Single support

Slide Element GLE J

Knurled nut for height adjustment

Locking nut



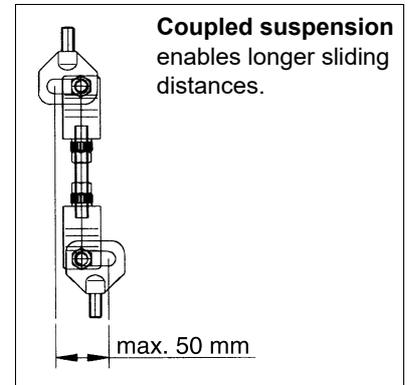
In single suspension arrangements, the Slide Element must be installed as illustrated and must be secured against turning (unwinding).

Lateral sway allowance of 10° makes installation to sloped surfaces possible

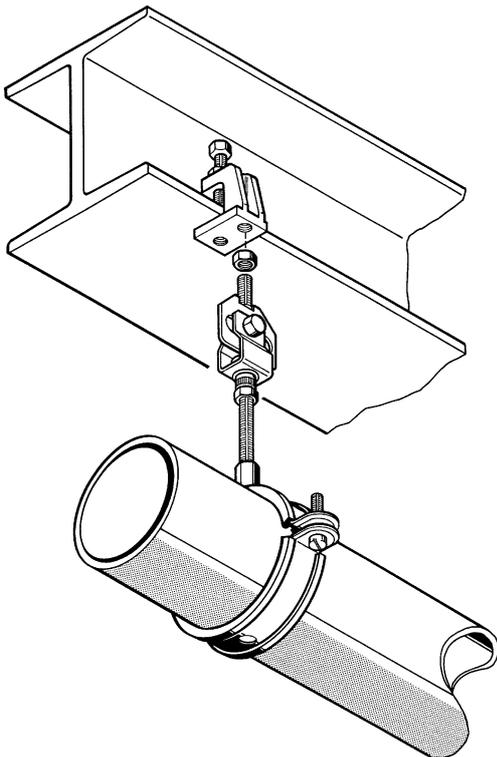
The knurled nut of Slide Element GLE J allows height adjustment of 15mm, the sliding distance is 25mm.

**Caution!**

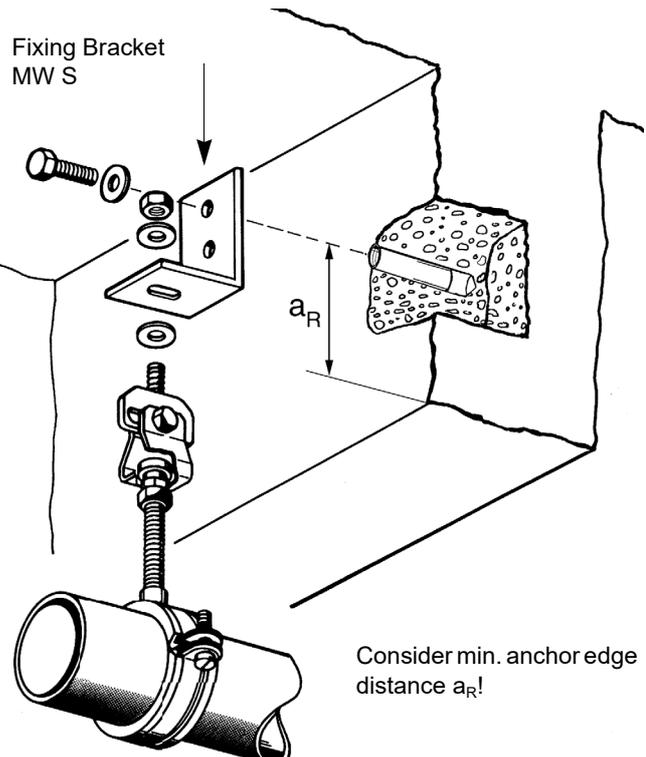
► As soon as the height has been adjusted, the knurled nut has to be fixed with a locking nut.



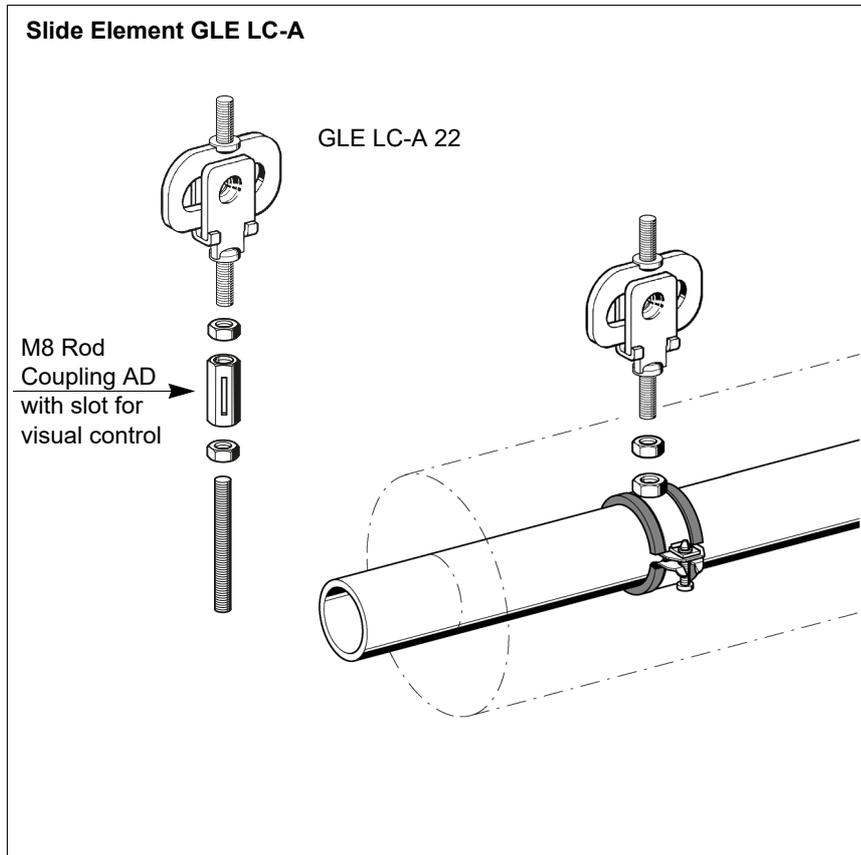
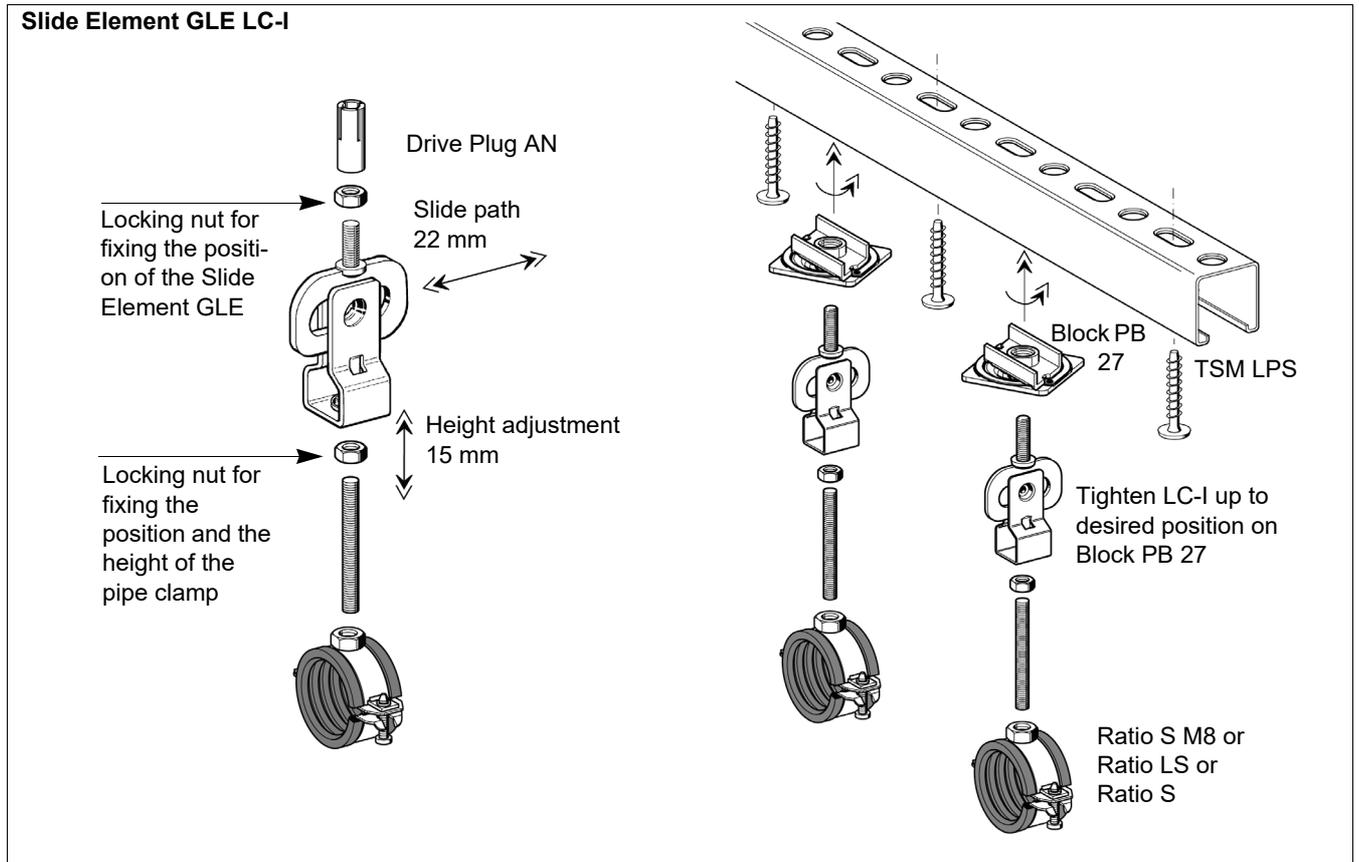
**Installation to steel beams**



**Installation to concrete beams**



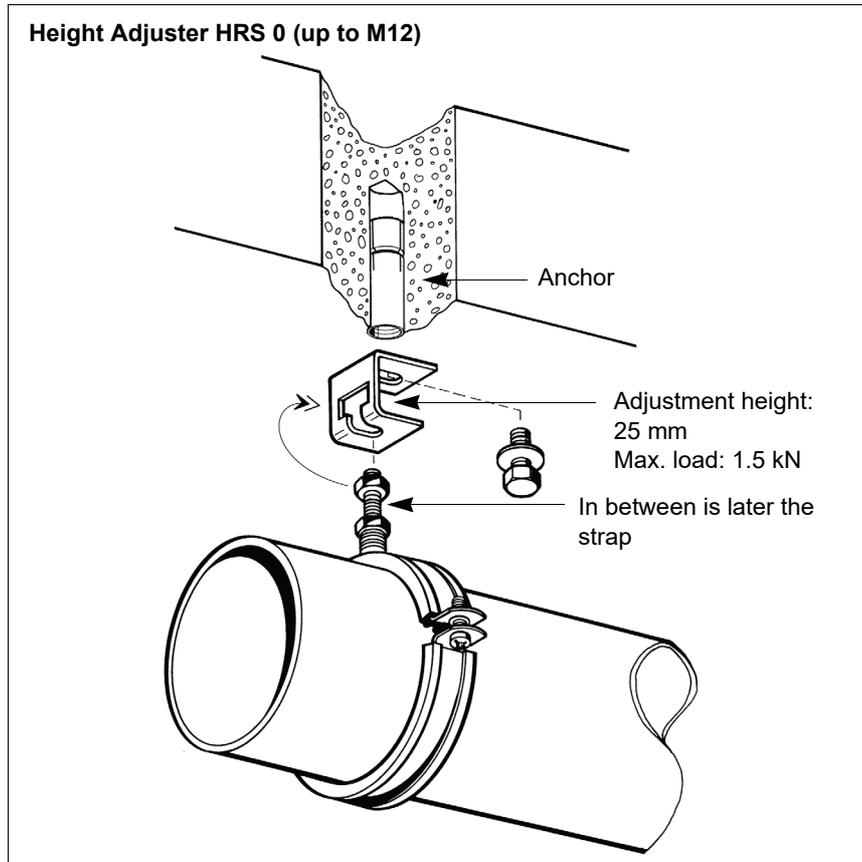
### Slide Element GLE LC



The LC-I and LC-A Slide Elements GLE fit to the lightweight system and can be combined with numerous parts of the Pressix high-speed installation system.

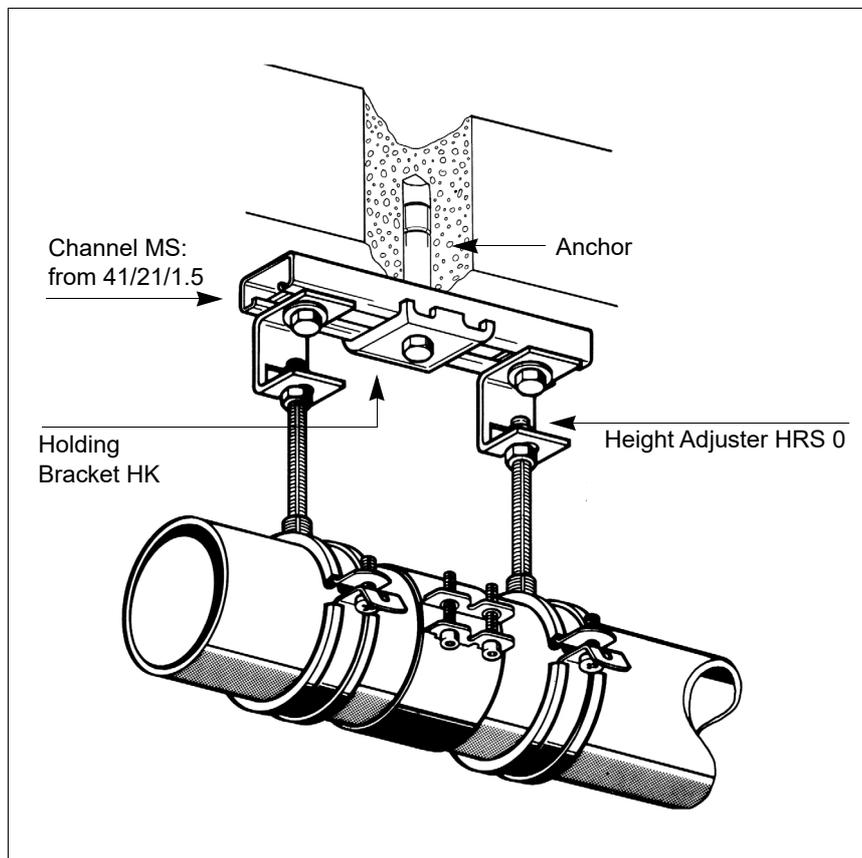
Slide Element GLE LC-A with lateral thread connection, especially suitable for direct installation to smaller pipes with insulation thickness up to 40 mm.

### Height adjustment



#### Installation:

1. Unscrew the two Hexagon Nuts NT, the last one only a small amount.
2. The Threaded Stud GST is hooked into the Height Adjuster by the top Nut.
3. Precise height adjustment of the suspended support is achieved by turning the top Hexagon Nut against the Height Adjuster.
4. Lock the Adjuster in place using the unscrewed lower Nut.



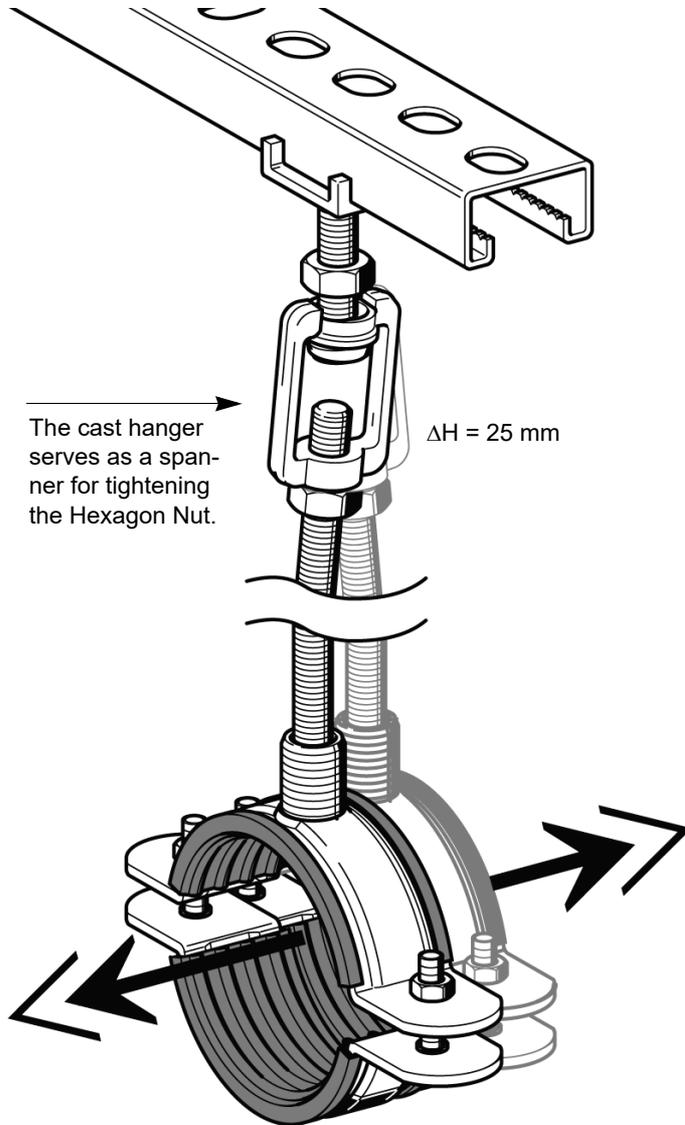
Height adjustment to achieve specific gradient and accurate alignment of pipeline, especially important in draining area.

#### Note:

- For durably securing the adjusted height, the connection must always be fixed by a locking nut.

### Height adjustment

Height Adjuster HRS P up to 4 kN

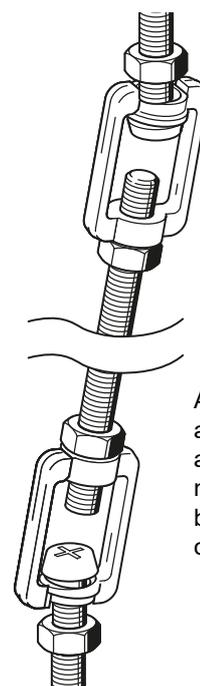


The cast hanger serves as a spanner for tightening the Hexagon Nut.

$\Delta H = 25 \text{ mm}$

#### Caution!

- ▶ Fixing a locking nut to secure the cup nut the height adjusted is secured.



As both a height adjuster, and also allows pendular movements up to  $7^\circ$  both for singular or coupled suspensions.