



# Pipe Hangers and Supports Pvt. Ltd

## **NEWSLETTER- 14**

**(Snubber – Chapter – 4)**

In continuation to the news letters issued earlier under the title “Snubbers”, let us discuss some more points on the same title for better understanding of the subject.

### **Typical construction principle of Snubber-**

It can be explained in a very simple way as follows-

The snubber assembly has threaded rod ends with an eye on either side. Each Eye is provided with a swivel bearing to accommodate free movement.

The Snubber body as such in its simple form has an oil reservoir which supplies oil to two chambers (say chamber 1&2) that are connected through a small tiny port.

The reservoir is filled with oil (liquid) of specific viscosity, flash & fire point to have free flow, safety etc.

### **During static thermal condition-**

Case 1- when the thermal **movement causes contraction** of snubber length

Since the medium temperature flowing thru the pipe increases slowly, the pipe movement is gradual only. As such the liquid flows through the small port from say 1<sup>st</sup> chamber to the 2nd chamber at a very low velocity (2mm/sec), thereby accommodating the movement of pipe by due contraction of snubber length.

Case 2- when the thermal **movement causes extension** of snubber length

the liquid flows through the small port from 2nd chamber to the 1<sup>st</sup> chamber at a very low velocity (2mm/sec), thereby accommodating the movement of pipe by due extension of snubber length.

Thus the snubber takes care of either expansion or contraction of pipe during normal thermal condition.

Considering the available movement & required movement the snubber length is fixed accordingly under cold position.

### **During dynamic load condition-**

The load/force will be sudden & instantaneous.

This causes the liquid to flow with very high velocity. Since the port is very small / tiny, it prevents flow of liquid between chambers. When there is no flow, the snubber acts as a rigid member, thus transferring the force from the pipe to the structure, through the snubber thus saving the pipe from sabotage.

### **Pipe extensions of snubbers**

To take care of the various length/distance (technically called as assembly length) between the pipe & structure, **pipe extensions** of various lengths are available.

This extension is connected to the one end of snubber so that we get increased length between eye to eye. But there is a limitation of length on the pipe extensions & it will be upto **certain available range only**. These pipe extension lengths vary between snubber manufacturers/suppliers.

### **Inherent advantages of pipe extensions:**

1. This helps to have snubber of desired length considerably so as to bridge the gap to the extent possible.
2. This helps to limit rod angulation caused by the other two directional thermal movements, may be within permissible limits, with or without offsets.
3. With pipe extensions, a provision for slight site adjustment in length is available. But the available site adjustment varies depending on the length of the extensions.

No supplier provides site adjustment on snubber length that has no pipe extensions.

In such cases, the travel reserve if available can only be suitably adjusted to meet the shortage to the extent possible.

When it is not possible to maintain the client assembly length, even with pipe extensions, the shortage in length (between assembly length & snubber length with pipe extensions finalized) has to be suitably bridged by structural arrangement by the client.

Let us discuss on the arrangements with illustrations & other points to be considered in the next issue. Till then bye!

For past newsletters please look up our website [www.pipehangers.in](http://www.pipehangers.in)

### **About Pipe Hangers:**

## **A Global Solution to Spring Hangers and Supports**

**We are the leading manufacturer of spring hangers, supports & accessories. Over the past 32 years we have supplied to major power plants, refineries, nuclear installations & process industries in India & several International projects.**