



## NEWSLETTER - 09

### SNUBBER (Chapter-01)

We have discussed Rigid Struts in the earlier issue.

1. As explained Rigid Struts are capable of taking Static (unidirectional) & or Dynamic loads (by direction) & will NOT accommodate or take care of **Any movement**. It means **Zero movement in the load acting direction of the Rigid strut**.
2. **Why is a snubber required in a piping system?**  
Normally Critical piping systems will undergo stress analysis A) Static & B) dynamic (these can be understood with the use of computerized software)
3. Static analysis result gives the load, movement at support points. Dynamic analysis result gives the effect on piping due to dynamic loads.
4. At some strategic points dynamic loads on piping will be heavy. Pipe is to be relieved of this load. If not these dynamic loads which are **sudden & occasional** in nature will destroy & sabotage the piping system.
5. In order to safe guard the piping from such **dynamic loads** ( $\pm$ )acting in a particular direction ( say X or Y or Z)& **thermal movement** acting in the same load acting direction at a specific point on piping “SNUBBER” is used. This snubber absorbs the dynamic load acting on the piping & transfers the load to the structure & is thus grounded. Also it accommodates the thermal movement in that direction which is gradual.
6. In a nutshell, SNUBBER is used to absorb the sudden surge (dynamic) load which may be + ve (Tensile) or –ve (compressive)at a point in piping & at the same time takes care of the thermal movement that the pipe experiences at that point in the (dynamic) load acting direction.
7. These Snubbers may be of mechanical or hydraulic type.  
Let us discuss Hydraulic snubbers which are used extensively.
  - A. **How does a Hydraulic Snubber work/function?-(simplified explanation only)**
  - B. **How is snubber selected for a given dynamic load & thermal movement?**
  - C. **What is the construction principle of a Snubber?**
  - D. **Arrangement of Snubber assembly with illustration.**

Let us visit one by one:

8. **A. How does a Hydraulic Snubber work/function?-(simplified explanation only)**  
From the above explanation Snubber has to do three functions.
  - 8.1 Absorb the Thermal movement in the dynamic load acting direction (X or Y or Z) & may be + or – under two different thermal conditions to which the piping is subject to.
  - 8.2 Should absorb the Dynamic load on pipe which is sudden & may act +ve (tensile) or -ve (compressive) & act simultaneously.
  - 8.3 Should transfer the dynamic load from piping to the structure

**Let us discuss further in the next issue. Till then BYE!**

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