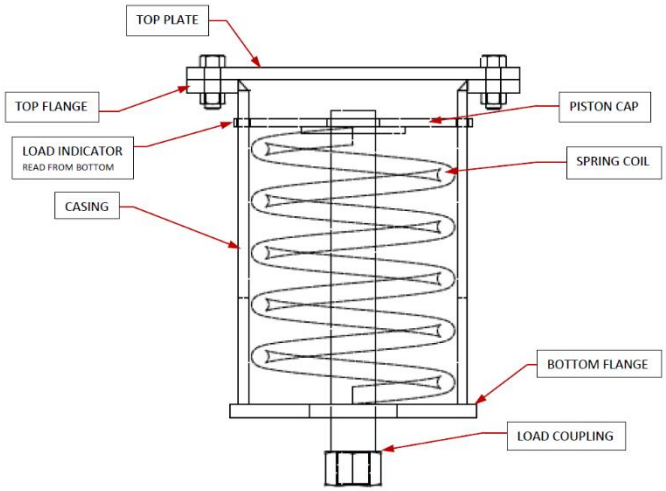
WHAT IS A VARIABLE SPRING HANGER?

Variable effort supports also known as variable hangers or variables are used to support pipe lines subjected to moderate vertical thermal movements. Variable Springs are used to support the weight of pipe work or equipment along with weight of fluids (gases are considered weightless) while allowing certain quantum of movement with respect to the structure supporting it. Spring supports may also be used to support lines subject to relative movements occurring typically due to subsidence or earthquakes. A variable spring hanger unit is fairly simple in construction with the pipe virtually suspended directly from a helical coil compression spring .

The main components being:

1. Top Plate
2. Top Flange
3. Bottom Flange or base plate
4. Helical Spring Coil
5. Load Coupling or a Load Column
6. Travel Stops
7. Name Plate
8. Casing
9. Piston Cap

Components of a Spring Hanger



Normally Clients / Engineering Consultants will furnish the following data when issuing enquires for Variable effort units.

1. Hot Load (Operating Load)/ Cold Load (Installed Load)
2. Thermal Movement (with direction i.e. up or + & down or -)
3. Maximum Variability (Variation in the hot and cold loads) is less than or equal to 25%.
4. Type of Support i.e. whether hanging type, foot mounted type etc.
5. Special features.
6. Preferred surface protection / Galvanized / Neoprene coated coil

Hot load is the operating load of the support in the “Hot” condition i.e. when the pipe has traveled from the cold condition to the hot or working condition. Normally MSS-SP58 specifies max Load Variation (popularly called LV) as 25%.

Variability: V = Spring Rate x Movement / Hot Load < 25%

Generally spring supports are suspended from a structure with the pipe supported beneath the spring hanger, but due to layout feasibility or any other reason Base Mounted type supports (Type F) are fixed to floor or structure and the pipe is made to “sit” on top of the flange of the spring support.