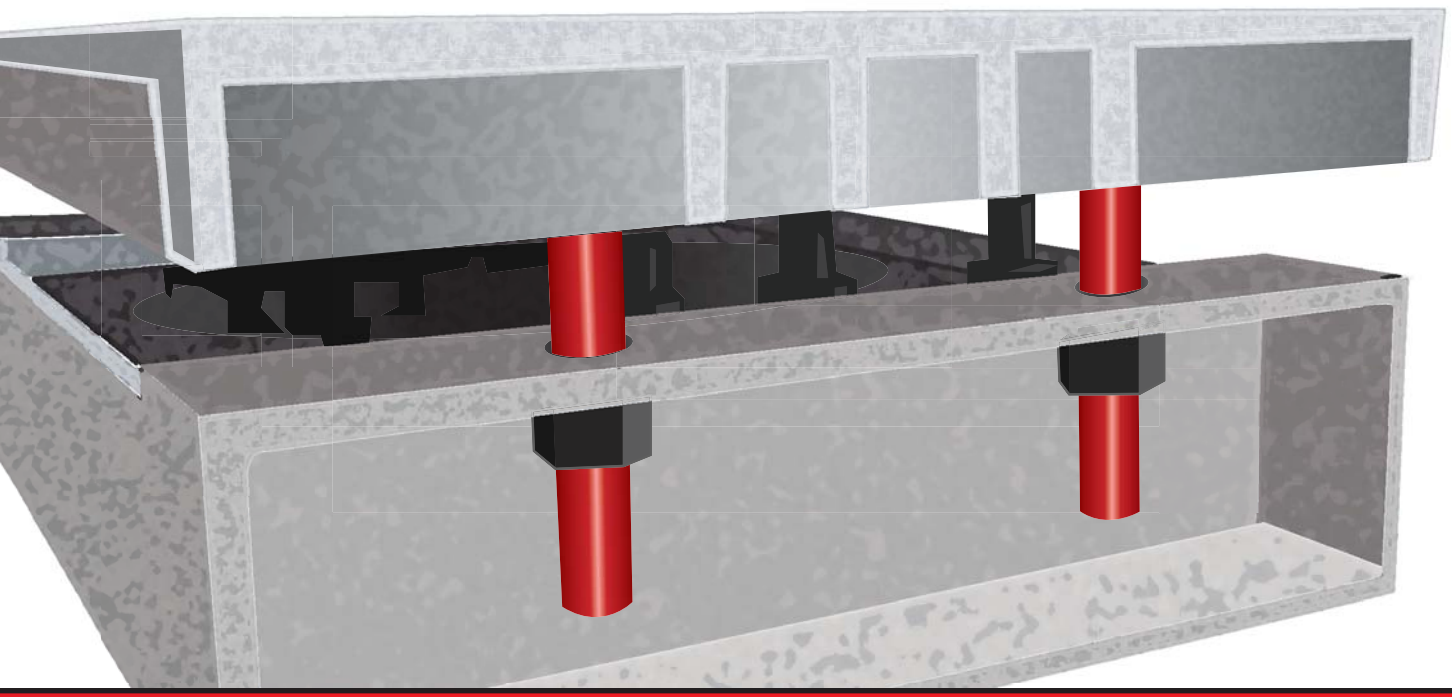
TECHNICAL BULLETIN



ENGINEERED PIPE SUPPORTS
BIG TON SPRING SUPPORTS

PIPING TECHNOLOGY & PRODUCTS, INC.

U.S. Bellows, Inc.®

SWECO FAB

Pipe Shields Inc.®

Anchor/Darling Enterprises, Inc.®

website: **www.pipingtech.com**

email: **info@pipingtech.com**

ENGINEERED PIPE SUPPORTS
BIG TON SPRING SUPPORTS

TECHNICAL BULLETIN

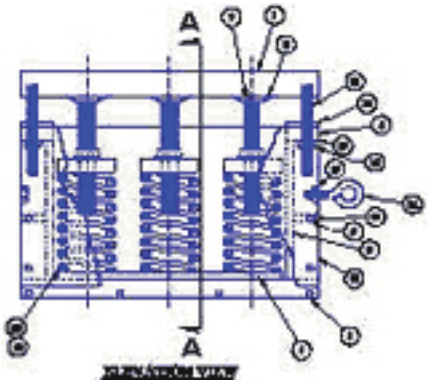
Big Ton Spring Supports

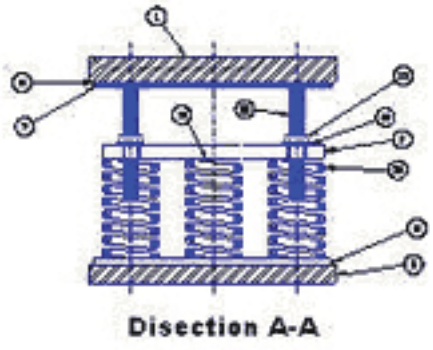
"Big Ton" is the name PT&P uses for a special type of variable spring supports which was developed for the petrochemical industry. Many of these supports have been in service for more than twenty years. These supports are very stable and can be designed to supports loads up to 200,000 pounds. A typical Big Ton will have a rectangular array of coil springs supporting a pressure plate which in turn support a top load flange. Slide plates are used when required.

Big Tons provide the designer with options that are not available with typical spring supports because they can support vessels and other components which have piping attached to them. The piping designer can choose to support these components and thus reduce loads which would be transferred to the piping. This is often a more economical and stable design for entire systems.

A recent example of this occurred during the design of a major new additions to a refiner in Korea. The original design called for a number of large constant spring hangers to support the piping. PT&P engineers showed our customer how to use Big Ton supports for certain units and eliminate the need for constant supports for the piping. This reduced the cost of the support system and also provided a more reliable total system.

The illustration below show a big Ton with nine springs set within an efficiently compacted structure. The table below is a Bill of Material for this unit. Notice the many components that go into making a Big Ton. All Big Tons are in rectangular configurations. Some Big Tons, because of spatial restraints, are designed in one row, as shown in Fig. 1. This tends to make for longer units. If width is not of great concern and length is, then Big Tons can be designed with more than one row as shown in Fig. 2.





Material Items

Item No.	Qty	Description
1	1	Top Load Flange
2	1	Bottom Flange
3	2	Side Plate
4	2	Side Plate Top Bar
5	2	Slide Plate BTM. Bar
6	1	Spring BTM. Support Plate
7	3	Stud Pressure Plate
8	6	Pressure Plate Guide Bars
9	3	Spring Pressure Plate
10	4	Shim Plates
11	6	Load Studs
12	6	Load Stud Nuts
13	6	Load Stud Washers
14	12	Cover Plate bolts
15	4	Lifting nuts
16	8	Limit Stop Studs
17	8	Limit Stop Washers
18	8	Limit Stop Nuts
19	2	Cover Plates
20	2	Cover Plate Gasket
21	4	Lifting Eye Bolts
22	1	Name Plate
23	4	Side Plate Vertical Bars
24	9	Outer Spring
25		Inner Spring (as Req'd)

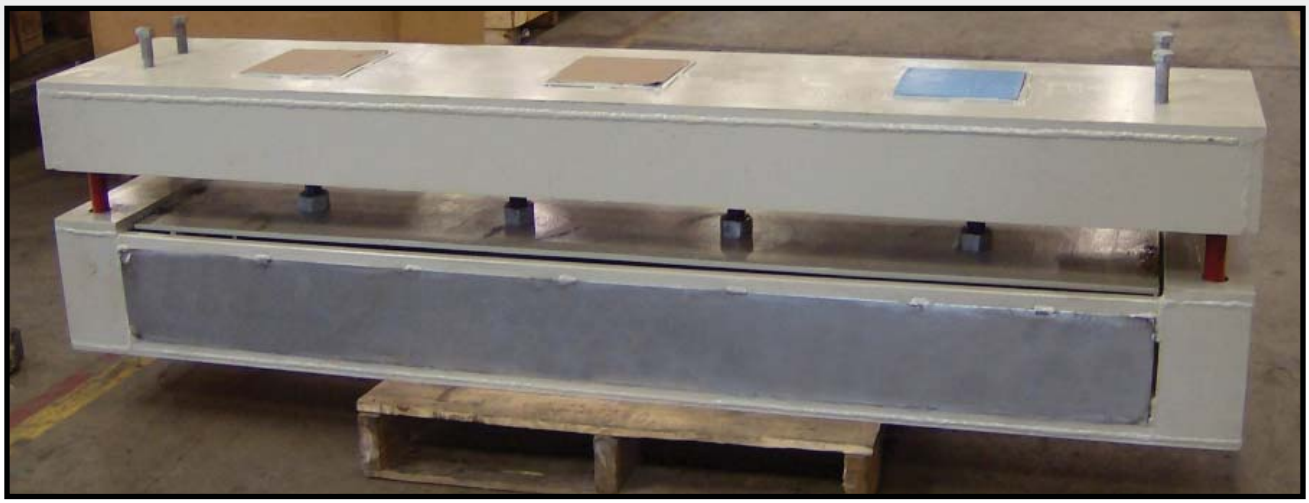
PT&P
Piping Technology & Products, Inc.

email: **info@pipingtech.com**
website: **www.pipingtech.com**

ENGINEERED PIPE SUPPORTS

BIG TON SPRING SUPPORTS

TECHNICAL BULLETIN



If you have a particular application to discuss, you will need the same type of information required for other spring supports such as, loads, travel, distances, and directions. If you are interested in learning more about Big Tons, please contact us. Please refer to ***Sizing a Variable Spring Support*** if you need help on sizing Big Ton Springs.