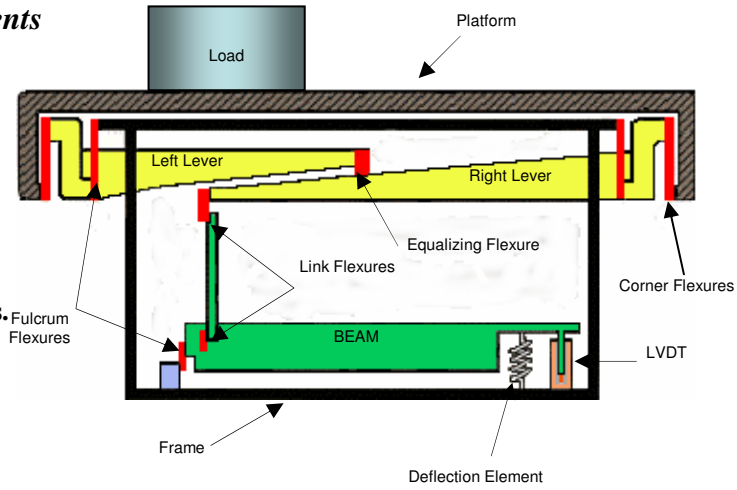
THAYER SOLIDS FLOW CONTROL

BUILT *SMART*
BUILT TO *SURVIVE*

The Basic THAYER Flexure Plate Leverage System

Laboratory Accuracy in Industrial Environments

- **Sustained sensitivity without maintenance.**
- **Deflection less than 0.001 inch.**
- **Cancellation of horizontal force vectors.**
- **Nullification of heavy tare loads.**
- **Immunity to off-center or overhung loads.**
- **Load transducer *completely* isolated from overloads.**
- **Non-tilting platform design.**
- **Low mechanical resonance frequency.**
- **Load transducer utilization factor > 90%.**
- **Scale capacity re-ratable in the field.**



The Basic THAYER Flexure-Plate Suspension system utilizes a series of blue steel flexure plates to transmit gravimetric loads vertically from the load receiving element through levers to the specifically selected controls. The combination of mass counterbalancing against tare loads, frictionless flexure-mounted levers and a high resolution transducer produces a force measuring system beyond compare. Of significance is the fact that infinite weighings may be made without maintenance or calibration, regardless of atmospheric or factory conditions. In many instances, THAYER Flexure Plate Suspension Systems placed in operation in 1950 are still working without maintenance or adjustment. Even though THAYER Flexure Plate Suspension systems have always been guaranteed for the life of the scale, Thayer Scale continues to make improvements and refinements.

Theory of operation

1.Load is opposed by Tension Forces in corner Flexures. (ΣT = Load)

2.Tension Forces in corner Flexures produce (corner) moments about Fulcrum Flexures.

3.Moment of left hand lever is transferred to right hand lever via Equalizing Flexure.

4.Summed Moment in right hand lever therefore proportional to load irrespective of load position.

5.Moment in right hand lever is opposed by tension in Link Flexure.

6.Tension in Link flexure produces displacement of Beam about its Fulcrum Flexure.

7.Displacement of Beam produces opposing Force in deflection element bringing system into equilibrium.

8.Differential Transformer produces proportional electrical signal for control use.

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