



**BUILT SMART
BUILT TO SURVIVE**

Model 4RF-6AR 4 Idler Belt Scale

Superior Performance in an economical package

The THAYER 4RF-6AR Belt Scale is designed for high accuracy (1/4% typical) inventory control and totalization. The weighbridge features exclusive rocking flexure suspension in the approach-retreat configuration. Measurement sensitivity is high, deflection is low, and the load cell is isolated from the error-inducing effects of extraneous lateral forces, off-center loading, foundation distortion, inclination hold-back forces, and high sporadic shocks and overloads. Tare load is mass counterbalanced to create superior signal to noise ratio in weight sensing, orders of magnitude better than belt scale designs supporting full tare load on the load sensor.

THAYER 4 Idler Belt Scale Features

- Depth of suspension member is 6 inches to meet deflection criterion.
- Mass counterbalance weights are used to counterbalance the dead load of the main frame weigh idlers and conveyor belt. The use of the mass counterbalance permits maximum utilization of the load cell.
- Special pentagonal (5-sided) tubular stringers employed to meet combination needs of torsional/bending rigidity and low material build-up area.
- Patented rocking-flexure primary pivot is wearless and uniquely accommodates a distorting foundation (as is characteristic of typical conveyor structures).
- Isolation lever suspended by stainless steel pre-stressed aircraft cable protects load cell from extraneous forces that arise from distorting foundation and serves to provide means to optimize load cell utilization factor.
- Patented calibration method utilizing a controlled belt travel interval makes one-shot adjustment possible.
- Unique test weight system eliminates need for test chains.
- Approach-Retreat suspension superior to all others for higher belt speeds (>500 fpm) and steeper inclines (>12 degrees).

A typical equipment package includes scale suspension, load sensor and belt speed transmitter.

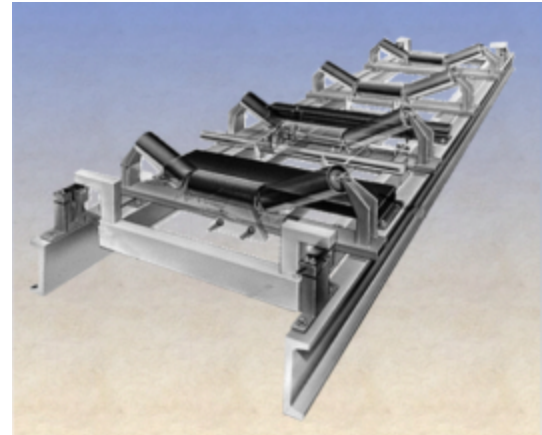


Speed Transmitter

A very important consideration in achieving high accuracy with a minimum bias error is the measurement of the conveyor speed. The THAYER speed measurement system is the product of many years of research. An accurate speed measurement requires the use of a precision wheel or pulley in contact with the tension side of the belt in the area where the scale weighbridge is located. The Belt Travel Pulser Assembly includes a precision pulley that has a tolerance of $\pm 0.05\%$. The speed transmitter is a high resolution electronic digital pulse generator. The transmitter is equipped with special seals designed for operation in dusty environments laden with abrasive dust. The pulse frequency is directly proportional to the speed of the conveyor belt and each pulse represents a specific increment of belt travel.



Load Cell



Model 4RF-6AR Rocking Flexure Belt Scale

THAYER Load Cell

Belt conveyor scales are unique in the field of weighing and do not easily lend themselves to the use of standard force transducers such as strain gage cells. Over 20 years of experience led Thayer Scale to the development of a load cell that is uniquely suited to belt conveyor scales.

The basic transducer is a linear variable differential transformer (LVDT) with an isoelastic element as the force reactor. Complete control of load cell performance is maintained by assembling and testing each load cell at the factory.

At Thayer Scale we custom build our load cells with capacity ranges that step up in fine increments. Our applications computer software can pick the best load cell for the job; one that will have a range that is ideally suited to the service it will perform. This, in culmination with our Isolation Lever and Mass Counterbalance enables us to reach 90+% Load Cell Utilization Factor on all applications.

Calibration

A belt scale should be thought of as a precision instrument and its performance should be quickly and easily checked. Thayer Scale can provide an accurate reliable calibration using a calibrating weight instead of test chains for all scale capacities. Thayer Scale developed and patented the first automatic calibration system in 1971.

The 4RF-6AR uses a test weight in the form of a round bar which resides in one of two positions ("V" notches) on an intermediate lever between the approach-retreat suspension and the load cell itself. This bar provides tare counterbalance in its "zero" position, and simulated calibration loading in its "span" position. This method of "test weight" application is referred to as the "moveable-poise" method, in contrast to the additive weight method.

Key advantages:

- Test Weight more manageable. One man operation.
- Loading effect independent of conveyor incline.
- Longitudinal restraining elements not falsely loaded.

Thayer Scale-Hyer Industries, Inc.

P.O. Box 669, 91 Schoosett Street, Pembroke, MA 02359

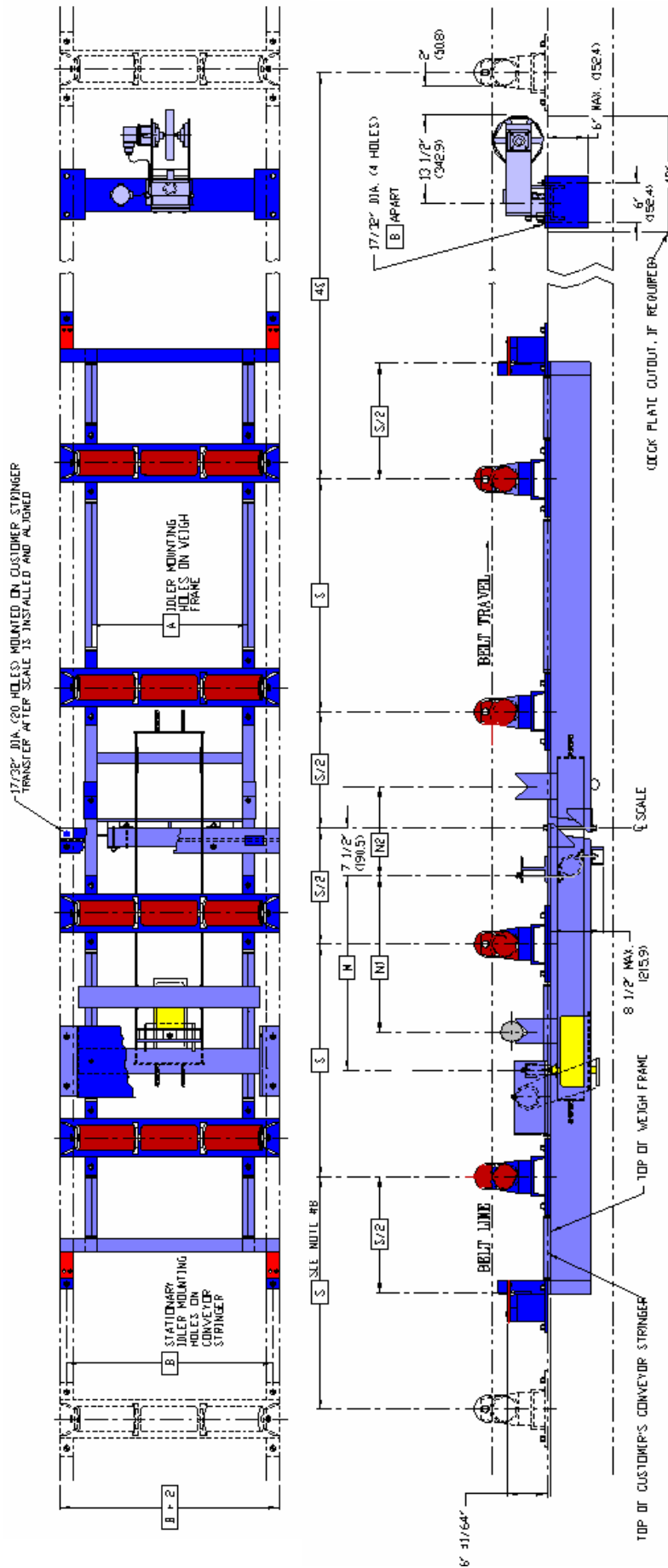
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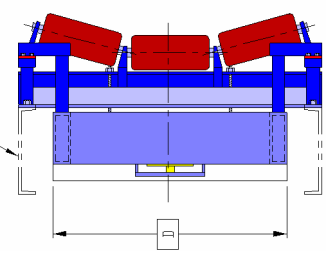
Thayer Scale 4RF Rocking Flexure Belt Scale



*DIMENSIONS

MODEL NUMBER	BELT WIDTH	A	B	D
4RF-6AR-24	24" (609.6)	25" (635)	33" (838.2)	27" (685.8)
4RF-6AR-30	30" (762)	29" (736.6)	39" (990.6)	33" (838.2)
4RF-6AR-36	36" (914.4)	33" (838.2)	45" (1143)	39" (990.6)
4RF-6AR-42	42" (1066.8)	39" (990.6)	51" (1295.4)	45" (1143)
4RF-6AR-48	48" (1219.2)	45" (1143)	57" (1447.8)	51" (1295.4)
4RF-6AR-54	54" (1371.6)	51" (1295.4)	63" (1600.2)	57" (1447.8)
4RF-6AR-60	60" (1524)	57" (1447.8)	69" (1752.6)	63" (1600.2)

TYPICAL CHANNEL TYPE CONVEYOR STRINGERS (BY CUSTOMER)



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