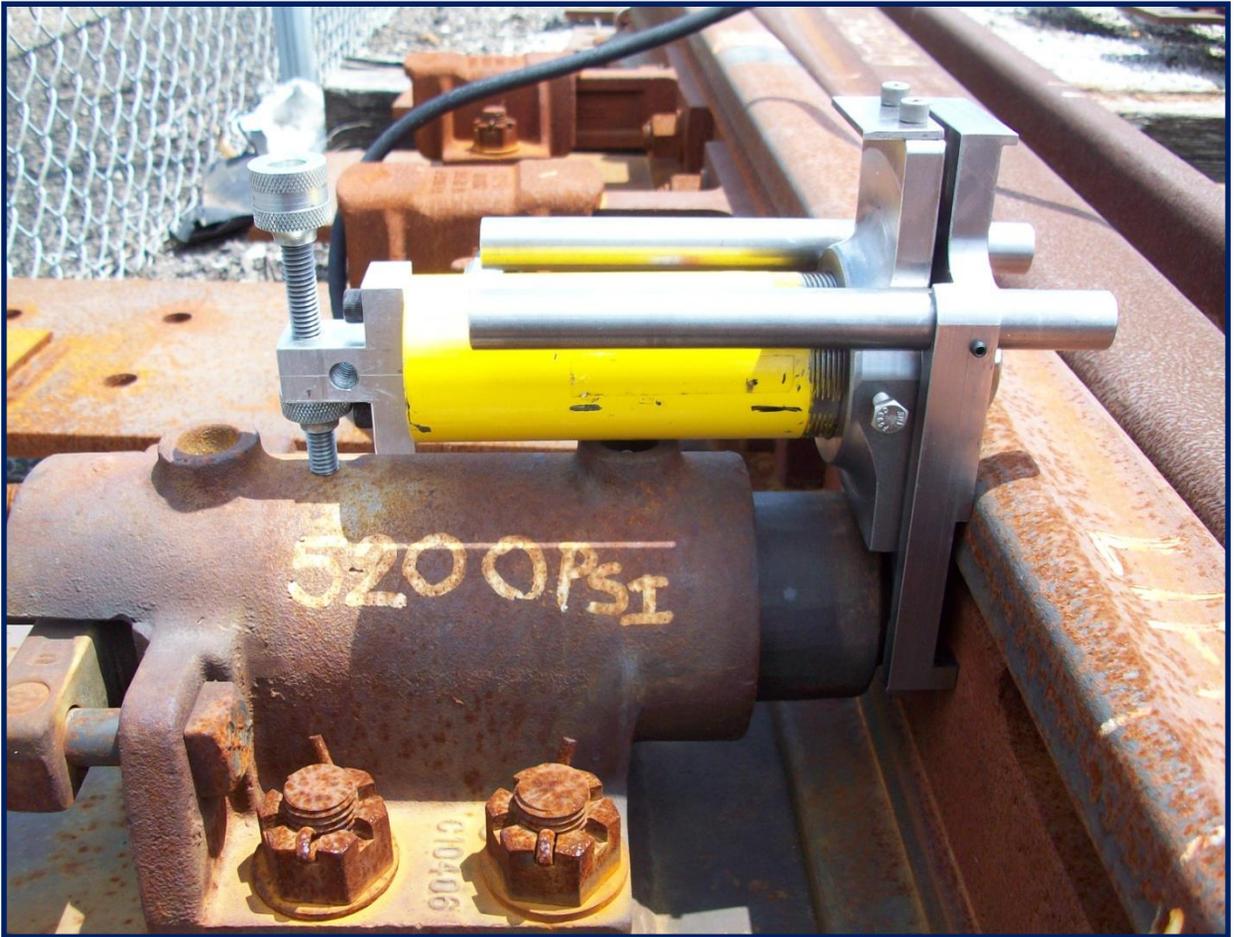


New Joules Engineering North America Inc.

An Argent Industrial Ltd. Company

Spring Frog Tester



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Rev. 4

Spring Frog Tester

The Spring Frog Tester is designed for the testing and inspection of the wing rail return spring used in spring frog turnouts.

The instrument is comprised of two sides.

The one side (**Spring Tester**) is used for testing the spring tension of the spring box assembly to ensure sufficient pressure is being exerted by the spring on the wing rail.

-The spring tester side is placed on the plunger with the forks between the rail and the plunger.

- The tester must be aligned parallel with the centerline of the spring box to ensure that there is no side loading when used. Use the leveling screw to align.

- **Zero the pressure gauge reading before testing.**

- Pump the pump to build the pressure and keep an eye on the spring plunger.

As soon as the spring plunger starts to move STOP and take the pressure gauge reading. Use the chart to read off the corresponding load. This is the spring load. The common **normal force** for the spring is **± 600 lbf (268 psi.)**

The load tolerance is between 582 lbf (260 psi) and 762 lbf (340 psi). Adjust spring tension as needed. **Check with the supplier of the spring rail frog for the correct settings for the frog being tested. Also refer to the track standards for correct spring tensions and loads. Loads might be different than the common load quoted above for different frogs and applications.**

- **Important Safety Notice**. The tester must regularly be checked for accuracy and functionality to ensure its accuracy, and repeatability of the readings. The physical integrity of the forks need to be checked on a regular basis. Check the tool overall for damage. It is recommended that master spring boxes from the frog suppliers be kept as a reference to use during in-house calibration and verification checks. Errors in the tool can lead to the spring being over, or under, tightened. New Joules Engineering North America does not recommend, or set, the spring tension standards, and are not responsible for the continuous accuracy of the inspection tool. The railroad must set their own use and verification standards and should implement a secondary safety check as verification after the use of the inspection tool to ensure that the springs are not over tightened, and operating properly after adjustment was carried out. If in doubt about the condition or accuracy of the gauge, replace it.

Gauge detail: 2 ½" Electronic Pressure Gauge 0 – 5,000 PSI ± 0.5%, ¼" NPT

CAUTION! When the spring tester side is used the **maximum** allowable pressure on the gauge is **340 psi (762 lbf)**. Do not over pressure.

The opposite side (**Spreader Side**) is used to spread open the wing rail to inspect for wear. The spreader is used in the throat area of the frog. Place the spreader jaws into the throat of the switch. Ensure that the 2 stabilizer bars are lying flat on top of the rails. Zero the pressure gauge before spreading. Pump the pump to build pressure and spread the wing rail open. Do not exceed **1,500 psi** on the spreader jaws.

CAUTION! When the spreader side is used the **maximum** allowable pressure on the gauge is **1,500 psi (3,360 lbf)**. If the wing rail does not open sufficiently at this pressure it is recommended that the frog retarder be disconnected by removing only one of the securing bolts and swiveling the retarder out of the way. The wing rail should now be able to move more freely. After inspection the retarder can be swiveled back into place and tightened back down. The resistance from the frog retarder in some frogs are too big, causing the higher pressure to open the wing rail. Rust may also prevent the wing rail from moving. Do not over pressure.

NOTICE: Secure the cylinder assembly in the toolbox when the cylinder is not in use in such a way that the cylinder will not move around inside the toolbox when the toolbox is carried or transported. If the cylinder assembly is not secured the cylinder assembly can move around in the toolbox and cause damage to the pressure gauge and other components within the toolbox.

CAUTION: This device is used under hydraulic pressure to open the wing rail, or compress the spring plunger, putting the device under load. Please keep hands and other body parts away from device while in use and practice extreme caution since failure of equipment being tested, or the test device, can occur at any time, or the test device to be ejected, which can cause injury. Ensure all pressure is removed from the hydraulics prior to removing the device after testing or use.

Rev. 4

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