



Track Stabilization Using Jewell Inclinometer



- **Objectives:** Measure rail track displacement
- **Solution:** Jewell Instruments **LSOC**
- **Benefits:** High-precision and shock-resistant
- **Results:** Extended and accurate detection of track faults

Overview

Track stabilization is an important part of most track surfacing projects. Proper track stabilization can provide up to 85 percent recovery of the original track lateral stability. Train stabilization can reduce slow orders and get trains back to running at track speed quicker, after tie change-out or undercutting operations.

The Harsco Model TS-30 is designed to increase the longevity of track balance by stabilizing the track through inserting controlled and accurate force directly into the track structure. The operator can set the desired down-feed pressure for each rail and

the machine maintains that constant pressure until the operator changes it.

The TS-30's work head produces a horizontal force of 50 tons at 45 Hz and a vertical down force of 50,000 lbs. The Jupiter control system provides diagnostic capabilities, which minimizes trouble-shooting time. It is also equipped with pre- and post-cross level data collection. Additionally, the TS-30 is engineered with "large, comfortable control cabs that are fully enclosed, and climatized with excellent track visibility," the company said, adding that the cab is accessible from either side of the machine via a rear platform and rear entry door.

The TS-50 Track Stabilizer is equipped with a high precision inclinometer on the front axle, an inclinometer on the rear axle, and two LVDT's mounted between the vibrating buggy and the main frame measuring the displacement relationship of each rail to the main frame.

Harsco selected the Jewell Instruments [LSOC-14.5](#) high precision inclinometer. The Jewell LSOC Series inclinometers are a fluid damped, flexure suspension, servo inclinometer. The LSOC is a precision internal grade sensing instrument, and it is Jewell's most robust solution designed to meet the needs



[Jewell Instruments LSOC](#)



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of a variety of commercial, industrial, and aerospace applications. Units are available with a 6-pin connector, or pin-terminals and in $\pm 5V$

The LSOC sensor provides:

- Extremely high resolution and low hysteresis of less than 0.0005% of full range output.
- Extremely robust designed to withstand shocks in excess of 1500g and vibration of 20 grams.
- Responds to changes of slope as small as 0.000006"/ft.
- High accuracy closed-loop force balanced sensor technology.
- Low white noise spectral density of better than 0.15 μV /Sq. Root HZ

The [LSOC](#) series has been successfully implemented in countless projects throughout the past decades, and with due to its phenomenal success and our customers continued satisfaction in mind, we're glad to inform that we recently designed an upgraded version of this product called [LSOX](#) with an optical module that offers improved linearity, less noise, and greater operating & storage temperature ranges. In addition, we're offering this exceptional [LOSX](#) inclinometer at a lower-cost and better lead time in comparison to our legacy LSOC series. [Contact our team today](#) to experience for yourself what our LSOX can do for you!



[Jewell Instruments LSOX](#)

About Jewell Instruments

Jewell Instruments is a world leader in the design, manufacture, and distribution of high-precision products. Our expertise includes acceleration and tilt sensors, electronic compasses, avionics components, solenoids, and panel meters. The extensive application knowledge we have obtained through decades of experience allows us to provide custom solutions for a diverse group of industries. In fact, customers from all over the globe contact us for solutions to aerospace, medical, industrial, and telecommunications applications - to name a few.

To find out more, visit our website!



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CSRL4 Rev. A