

Brains Meet Brawn

Hamilton Form's Smart Stress System (SSS) is used to tension steel strands for prestressed concrete forms. The Smart Stress System incorporates a position sensing cylinder, a human machine interface (HMI), and a programmable logic controller (PLC) to provide monitoring and control over the pulling operation.

The SSS has several intelligent features for ease of use and data retention. This includes the ability to monitor cylinder position and fluid pressure in real time and display that information on the HMI. The SSS can also save and export this data for the customer's record. The rugged build combined with the smart features makes the Smart Stress System the ideal solution for the modern prestressed industry.



Smart Features

- Hydraulic cylinder has position-sensing capabilities (LVDT sensor, or comparable).
- Controls (including HMI screens) are easy to understand without extensive training of the product.
- SSS has capability to store calibration data points for a maximum of 5 different cylinder stroke sizes.
- Hydraulic fluid temperature is automatically maintained. Temperature range is adjustable.
- SSS records “target” and “actual” pull information for each strand pull. This includes strand elongation using the position sensor and pull force using the fluid pressure sensor.
- SSS can wirelessly pull, store, and export in the form of logs or reports for customer’s use.

Our SSS Passed the Test



We asked the crew at Gate Precast in Hillsboro, Texas to put our Smart Stress System through real-world tests.

The result? After six months of testing, not only did the SSS make tensioning wire easier and reduced the opportunity for human error in pull data record-keeping, Gate liked the system so much they kept it! That’s saying something.

Here’s what else the team at Gate had to say:

— Norm Presello, Operations Manger
Gate Precast Company - Hillsboro

“We were more than happy to assist with the development of the Smart Stress System. Our precast industry is a tight knit group and their team of professionals was a delight to work with to reach a common goal of striving to improve our means and methods in an ever-changing world of new technology.”

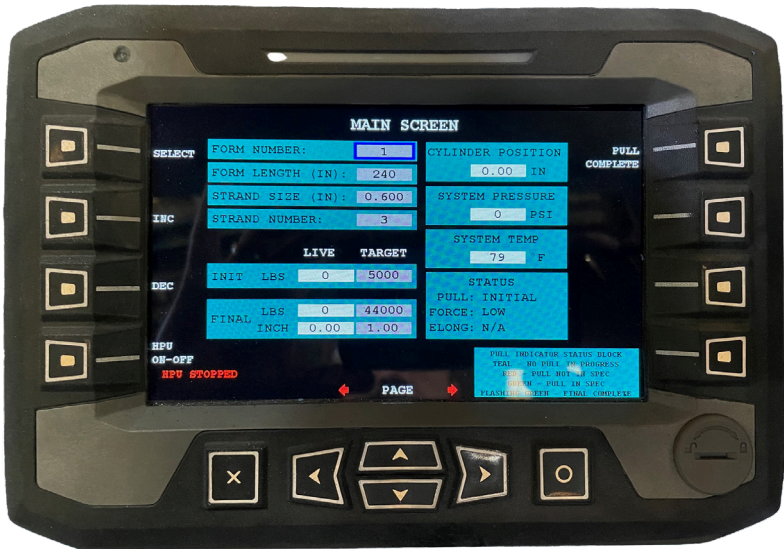
— Kayla Mendez, QC Operator,
Gate Precast Company - Hillsboro

“The five foot long hydraulic jack can accommodate longer pulls, saving time. The Smart Stress System also stores your pull data which you can download easily.”

Pull Information

Predetermined pull information, or “target” data, can be loaded before the operation to avoid the potential for error that comes with manual input. This includes the following fields:

- Bed #
- Bed length
- Strand size
- Strand #
- Initial tension (target)
- Final tension (target)
- Final elongation (target)



This information is visible and editable on the HMI during the pull for adjusting if necessary.

“Actual” pull information includes the following minimum fields:

- Date/time
- Initial tension (actual)
- Final tension (actual)
- Final elongation (actual)

After each final pull the information for the next strand is automatically loaded. Live data (cylinder position and fluid pressure) is always displayed on the HMI, even when the system is not under pressure.

Data is automatically saved during the strand pulling process in as many instances as possible (i.e. switching from initial to final pressure settings to automatically save the initial pull data) to avoid operator error.

Colored indicators on the HMI inform operator of pull status (i.e. green when the strand has been pulled within the acceptable tolerance level, and red if the strand has been pulled outside the tolerance level).

HAMILTON FORM COMPANY

For more than 56 years, Hamilton Form has been helping the precast community achieve stunning results with our custom, highly-engineered steel forms.

Precast. It’s all we do.

Patent Pending

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SSS

Hamilton Form Company

SMART
STRESS
SYSTEM

A SMARTER WAY
TO STRESS STRAND

A SMARTER WAY TO STRESS STRAND

SMART CONTROLS

Downloadable pull data reports replace handwritten logs and records. Customizable software — your data in your format. Pre-program pulls on a large, easy-to-read weatherproof control screen. Monitor pulls in real-time.



EMERGENCY SHUT-OFF

And other intuitive safety features to keep crews safe.



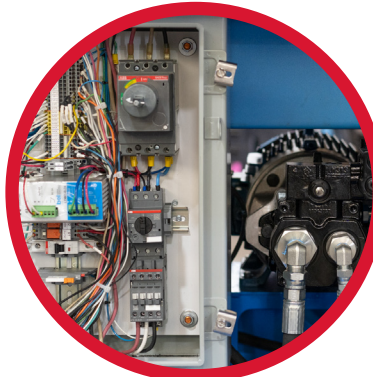
RETRACTABLE HOSES & CORDS

Convenience and an uncluttered work area.



THE INSIDE STORY

Critical components protected from the elements.



TOTAL WEIGHT & SIZE

Weighs in at 2,350 lbs and measures 5'2" (H) x 3'6" (W) x 7'9" (L)

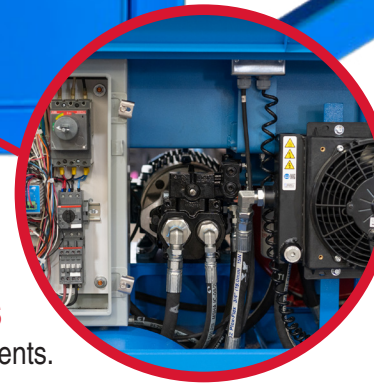
FORKLIFT POCKETS

For easy loading and unloading at the work site.



PROFESSIONAL-GRADE COUPLINGS

Built to last in demanding work environments.



ADJUSTABLE WORKLIGHTS

For safe operation after the sun goes down.



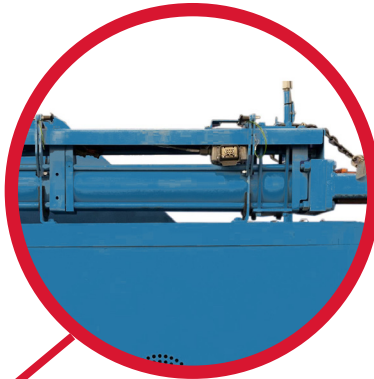
BEACON LIGHT & HORN

Helps maintain a safe work environment.



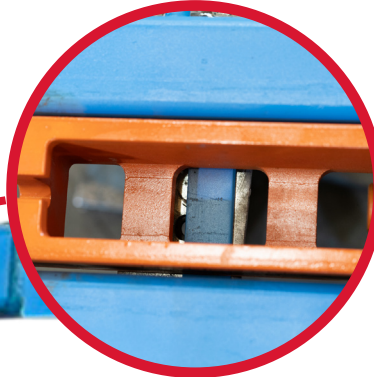
HYDRAULIC JACKS

4 different models — 48" & 60" jack options for both 1/2" and 0.6" strand sizes — packing 46,000 pounds of tensioning power.



MULTIPLE STRAND SIZES

Depending on model, jack can accommodate either 1/2" or 0.6" wire strand.



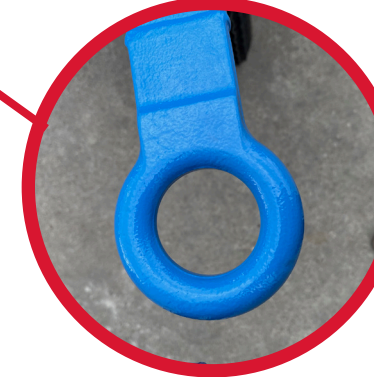
ACCESSIBLE PORTS

Easy access to system electronics and hydraulics.



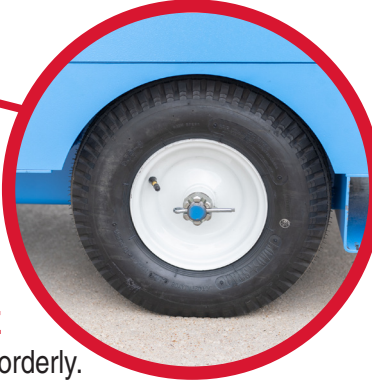
UNIVERSAL HITCH

Easily take the SSS to where the work is being done.



DURABLE TIRES

Rugged foam filled tires help ensure the SSS can go the distance.



CONVENIENT STORAGE

Helps keep the work area orderly.

