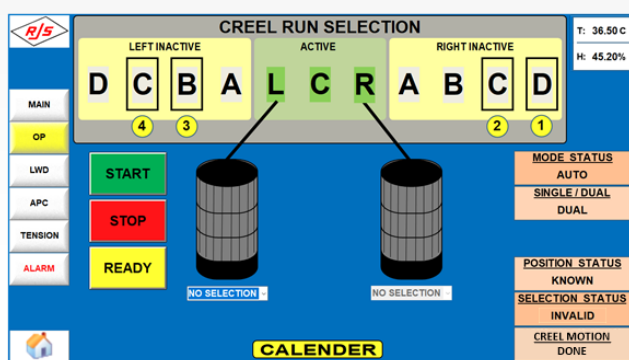




# Digi-Creel®

## ELECTRONIC PLATFORM FOR REAL-TIME CREEL ROOM MONITORING AND CONTROL



### Digi-Creel®

The RJS Digi-Creel is an advanced, digitally controlled system that integrates multiple creel room processes that previously functioned independently of each other. These previously separate systems include:

- ◆ Servo-Valve Operated Air Pressure Control Console (APC - RJS Model 363)
- ◆ Loose Wire Detection System (LWD - RJS Model 470)
- ◆ Shifting Platform Control (SPC - RJS Model 434)
- ◆ Shifting Platform Safety Devices
- ◆ Tension Monitoring System (TMS - RJS Model 579)

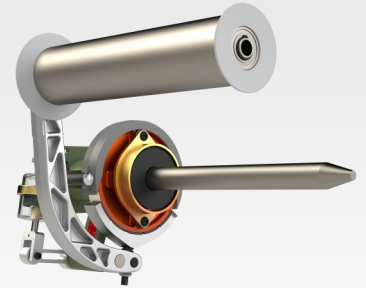
The Digi-Creel integrates these signals and controls into a common touch screen user interface. A series of data display screens and control screens are accessible by the operator. All signal data is made available over ethernet/IP protocol via an internal Programmable Logic Controller (PLC) accessible by other customer PLCs. The Digi-Creel system can be operated manually, per customer configured recipes or by integrating with a calender PLC. When integrating with a calender, the calender PLC sends commands to the Digi-Creel to adjust air pressure, therefore modifying wire tension in the creel room for improved production control.

DC-2108

# Key Features and Benefits

## ◆ Centralized Controls

- ◆ Integrates historically independent systems
- ◆ Touch screen operator interface for improved control
- ◆ Allows for remote monitoring for improved response time
- ◆ Allows for host communication and remote support
- ◆ Establishes platform for innovation and future integration



## ◆ Real-time Tension Adjustments

- ◆ Options available for recipe or calender signal control of all creel air pressures
- ◆ Provides a platform for recipe management that allows customers to configure within the established parameters for greater production standardization
- ◆ Zoned control options for improved control of manufacturing process
  - ◆ Can be configured by creel row or by zone, based on customer preference
  - ◆ Allows for fine tuning of tension accuracy across the creel system



## ◆ Recipe Management

- ◆ Reduces setup time
- ◆ Reduces operator error
- ◆ Controls production parameters for improved quality across all production shifts

## ◆ Additional Features

- ◆ Loose/broken wire detection by row or by proximity monitoring of each tension controller
- ◆ Automated control of shifting creel rows
- ◆ Monitoring of creel room temperature and relative humidity conditions
- ◆ Remote connectivity options available for timely technical support by authorized RJS technicians

# Digi-Creel® Interface

## ♦ Production Monitoring

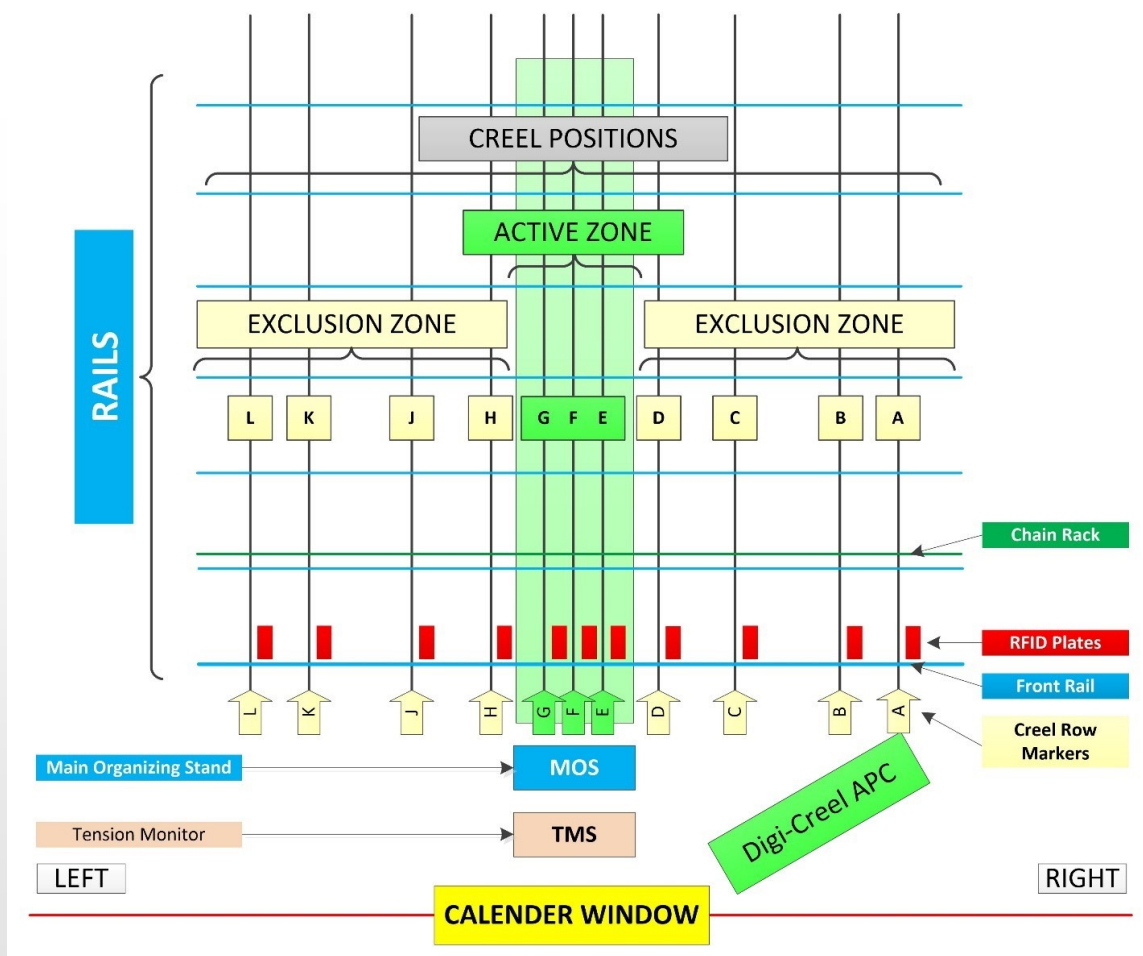
- ♦ Ability to remotely monitor/control, via Ethernet or Wi-Fi to computer LANs or hand-held devices
- ♦ All defined alarm states (Initial, Fix-in-Process, Resolved) are recorded and traceable by time, date, and personnel verification
- ♦ Broadcast real-time current/historical status to a remote display monitor

## ♦ Multi-Language Capable

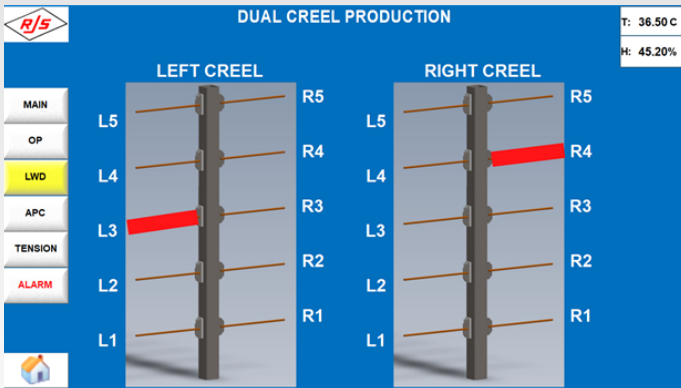
- ♦ The control system can be imbedded with multiple languages to better support diverse workplace requirements

## ♦ Typical Layout of Digi-Creel System

- ♦ Digi-Creel adds PLC control to the shifting platforms by providing programmed logic for positioning all creel rows for a given loading or running condition. The IPC touchscreen display allows the operator to select a row to move to the run position. When the operator executes the command, all creel rows will move in series to their new target positions. Safety devices are integrated into the Digi-Creel.

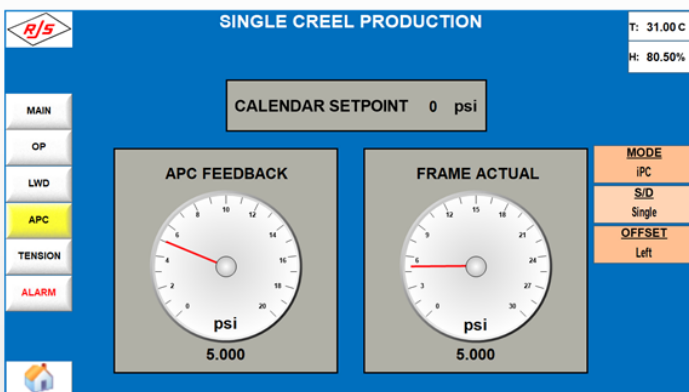
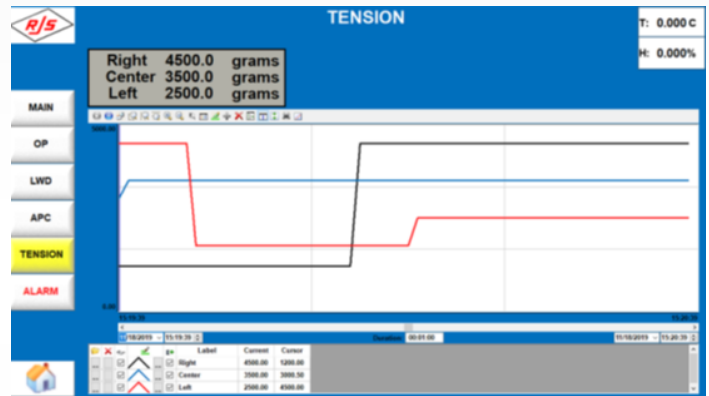


# Digi-Creel® Interface



- ◆ The sensor output signal from the tension monitoring stand is connected to the Digi-Creel. The tension values are made available with a data address for the calender to read at any time. Calender logic can read actual tension output for a specified air pressure input signal. This feedback loop allows the calender to signal to the Digi-Creel to make small adjustments to the air pressure for tension adjustment, providing the calender a more precise method of tension control.

- ◆ A slave PLC at each creel frame sends signal data for each Loose Wire Detection rod to the main PLC. When a loose or broken wire is detected, the Digi-Creel goes into an alarm state. The IPC touchscreen display shows a graphic representation of the copper detector rods, highlighting the rod that detected the broken wire. This information is also recorded in the event log. The main Digi-Creel PLC makes the detector rod status available with a data address for the calender, so that the calender operator has the option to act in response to a broken wire.



- ◆ The Digi-Creel outputs tension measurements to the touchscreen display and allows the creel room operator to monitor and adjust wire tension through the air pressure controller APC.
- ◆ The Digi-Creel system can be operated manually, per customer configurable recipes or by direct integration with a calender PLC.



Tel: +1 330-896-2387 sales@rjscorp.com

