



Cart Manager System™

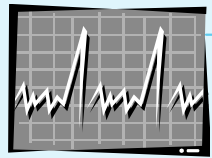
Torque Controller Management

Advanced Software for Managing Torque Controllers
Configuration, Operation and Data Collection



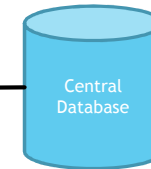
System Overview

Tool Carts (Multiple Stations)

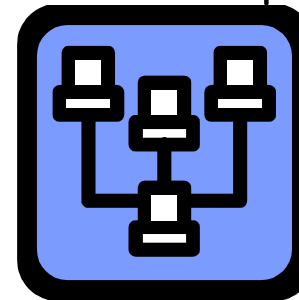


Supervisors Workstation

(Control Setup and Workflow)



(Connected or Disconnected operation)



Local Network

(Monitoring / Reporting)

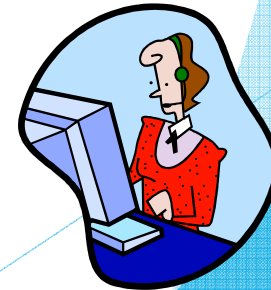
Features

- ▶ Manage a single cart (standalone) or Multiple torque carts (virtually unlimited)
- ▶ Multiple tool controller models and tools supported
- ▶ Manage the entire program
 - ▶ Control torque settings and workflow
 - ▶ Workflow version control / Rework versions
 - ▶ Centralized monitoring and reporting
 - ▶ Calibration certification management
 - ▶ Tool usage history
 - ▶ Operator / Workstation / Operation history reports
 - ▶ Production program management and reporting
 - ▶ Support non-torque steps in workflows (Lubricant, Measurement etc.)
 - ▶ Create serialized barcodes (Lot or Serial Traceability)
 - ▶ Control workflow selection via barcode
- ▶ Multi-user with advanced security options / Multi-language capable



Programs

- ▶ **CartManager - Supervisor program**
 - ▶ Allows for centrally controlled setups and data collection
- ▶ **CartClient - Runs a single cart**
 - ▶ Controls the operation of the Torque Controller and all aspects of the fastening operations
- ▶ **CartReporting - Reporting and Monitoring Tool**
 - ▶ Allows a non-operator to access reports and monitor connected stations



CartManager

- ▶ **Cart Maintenance**
 - ▶ Add, Update and Remove Carts from the system
 - ▶ Review and update cart assignments and capabilities
 - ▶ Retrieve results from Carts
- ▶ **Workflow Maintenance**
 - ▶ Maintain a central library of Workflows that are used to control a Fastening event
 - ▶ Transport and Authorize workflows to individual carts / workstations
- ▶ **WorkStation Maintenance**
 - ▶ Define workstations (locations carts can reside)
 - ▶ Define types of tools required to operate at a specific workstation
- ▶ **Tool Maintenance**
 - ▶ Define types of tools available to a cart (Capacity, capabilities, calibrations, etc.)
 - ▶ Calibration - Set requirements and track calibration certifications for tools
- ▶ **Program Management** - Track and control Workflows and results - used to combine like items for a production program
- ▶ **User and security maintenance**



CartClient

- ▶ Select Job / Workflow
 - ▶ Workflow may be assigned, selected or created based on security
- ▶ Workflow Maintenance (security controlled)
 - ▶ Allow permanent, temporary and Rework workflows to be maintained
- ▶ Run Job
 - ▶ Perform Fastening Events (Runs) for selected workflow and record results
 - ▶ Run Time Feedback - see results of current Fastening Event
 - ▶ Pass Fail indication
- ▶ Review Results - Allows operator to review past Fastening event results
- ▶ Calibration Tasks
- ▶ Free Run Mode (security controlled) - Allows operator to repeat step as needed



Cart Reporting



- ▶ Allows read only access to central database
- ▶ Select report from available options (Security Controlled)
 - ▶ Enter / Select parameters for the report
 - ▶ View Report in data grid on screen
 - ▶ Export Report to Excel™ Worksheet
- ▶ Program Review
 - ▶ Select Program
 - ▶ Review Operations and Workflow setup status
 - ▶ Review Production Counts vs. Forecasts
 - ▶ Review individual Fastening Event Reports for selected Workflows, Workstations