LISTEN.
THINK.
SOLVE.SM

FACTORYTALK PRODUCTIONCENTRE

Application Solutions for Manufacturing

ALLEN-BRADLEY • ROCKWELL SOFTWARE

**Rockwell
Automation**

FACTORYTALK
## A COMPLETE PRODUCTION MANAGEMENT SOLUTION

Bring measured improvements in control and performance to your production management environment with Rockwell Software FactoryTalk® from Rockwell Automation.

The modular, integrated FactoryTalk ProductionCentre software suite delivers comprehensive production management functionality plus highly developed decision support tools that address the most demanding manufacturing environments • Improve your control over quality, speed and waste • Create a flexible real-time production environment • Manage capacity and cycle time for efficient growth • Automate records management • Evaluate value-add versus non value-add functions • Analyze overproduction, excessive inventory, faulty processes and more.

How? By reducing human error and increasing paper-less tracking throughout your entire production environment, including: supplier management, manufacturing, quality control, and returns and complaint handling.

The FactoryTalk ProductionCentre application suite offers a flexible, configurable approach to managing product quality, manufacturing speed and waste, while allowing for growth and unprecedented records keeping management.
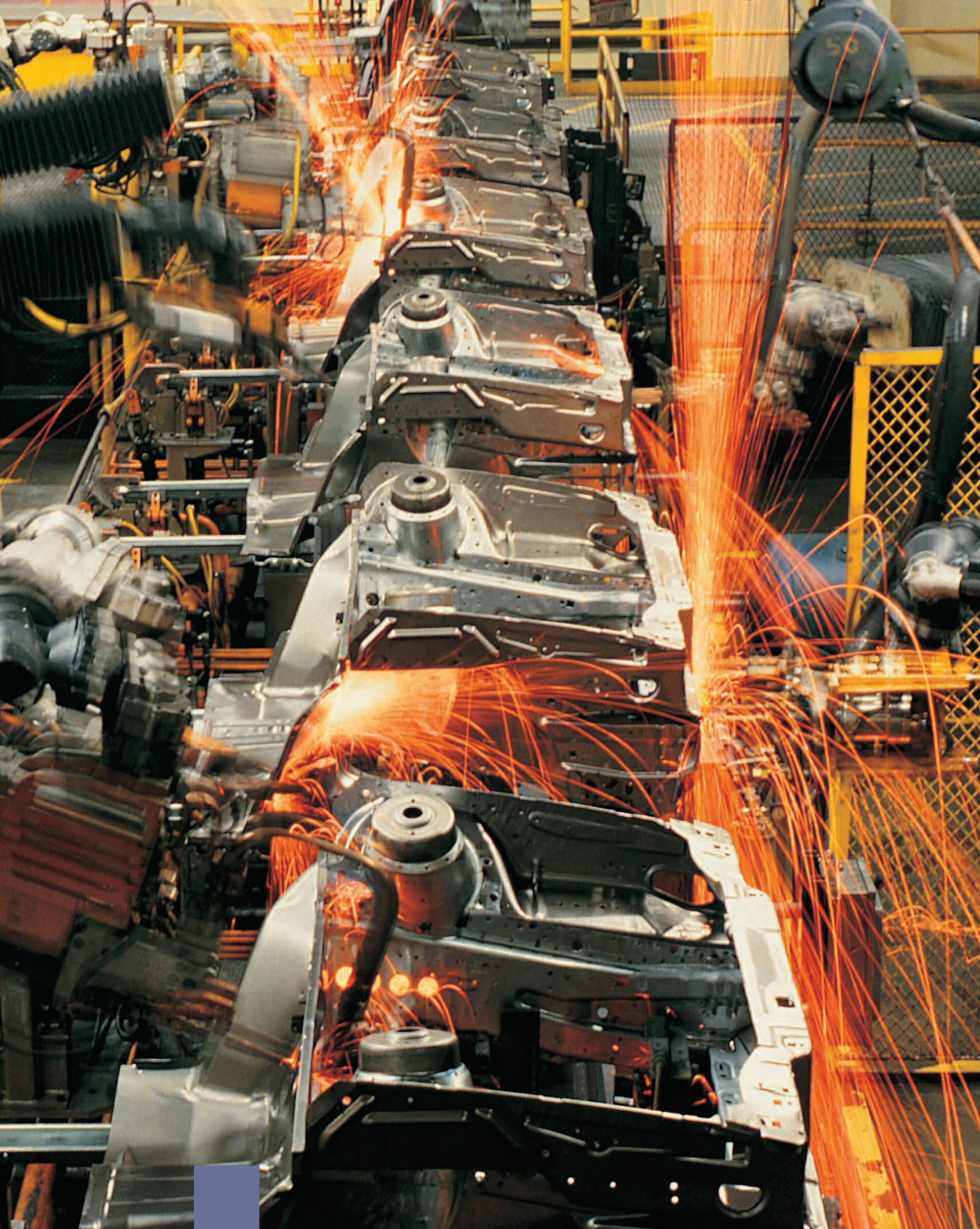
FACTORYTALK PRODUCTIONCENTRE CREATES A FLEXIBLE SOLUTION SUITE

You want to make world-class products at competitive prices. FactoryTalk® ProductionCentre helps make it happen:

- Improve quality while reducing cost of quality.
- Realize the efficiencies of global operational standards.
- Reduce the cost of regulatory compliance and minimize the impact of recalls.
- Accelerate time-to-volume for new products.
- Information-enable your Six Sigma and lean initiatives.
- Reduce manufacturing cycle times and excess inventory.
- Collaborate for better customer service.
- Share real-time data on quality and shop floor status.

THE COMPETITIVE LANDSCAPE

Collaborative systems are a hallmark of industry leaders in today's competitive global environment. Enterprise resource planning (ERP) systems transformed the loosely coupled business applications landscape into a sophisticated, integrated knowledge management tool. Extending that same strategy into the production environment requires a unique blend of manufacturing-focused applications and expertise. Companies that want to compete in an increasingly global marketplace recognize the need to reassess their manufacturing information strategy for production management systems.

Rockwell Software combines an unparalleled understanding of the manufacturing automation environment with the needs of manufacturing information technology to deliver a multi-industry, integrated and modular manufacturing execution software solution set that supports both discrete and hybrid production processes.

FactoryTalk ProductionCentre is a mission-critical platform for industry applications requiring real-time production management. Synchronize real-time production data with enterprise resource planning information, and sustain plant operation even if a security event isolates your ERP system from your sites.

A core Platform Server and optional modules offer out-of-the-box support for key industry applications:

- *Shop Operations and Quality:* Track and control production, while supporting dynamic work-flow based routings; maintain complete device, as-built and batch history records. Monitor out-of-bounds conditions in real-time, and manage rework and defects.
- *CAPA and Complaint Handling:* Provide an electronically stored closed-loop process management system with enterprise-wide access for Corrective Action/Preventive Action and Complaint Handling. Create a comprehensive event audit trail with electronic signatures and approvals. Analyze root cause and failures; deliver compliance and regulatory reporting.
- *RMA Management and Repair:* Enable superior customer service in a timely fashion with easy access to unit or lot history – including parts used and previous repair history. Track and manage factory and field repair orders with multiple return scenarios.
- *Supplier Management:* Facilitate complex supply chain management and worldwide visibility. Capture test and measure data. Evaluate supplier quality.

THE TECHNOLOGY ADVANTAGE

Designed to leverage existing networks and systems, FactoryTalk ProductionCentre uses a three tier J2EE architecture that operates independent of the operating system on Windows, Solaris, or Linux. This approach optimizes access to real-time data, while improving performance of operational knowledge stores and analysis functions. It is a flexible, secure and scalable system for a single site or an entire, multi-site enterprise. Some key benefits include:

- Each site maintains its own data.
- Enterprise roll-up maintains site ID data.
- Manufacture at one site, but handle repairs at a different location.
- Reporting at site or enterprise level–or both.
- Load balancing and clustering support with the application server at each site.

FactoryTalk ProductionCentre establishes a mission-critical platform for industry applications focused on real-time production management.
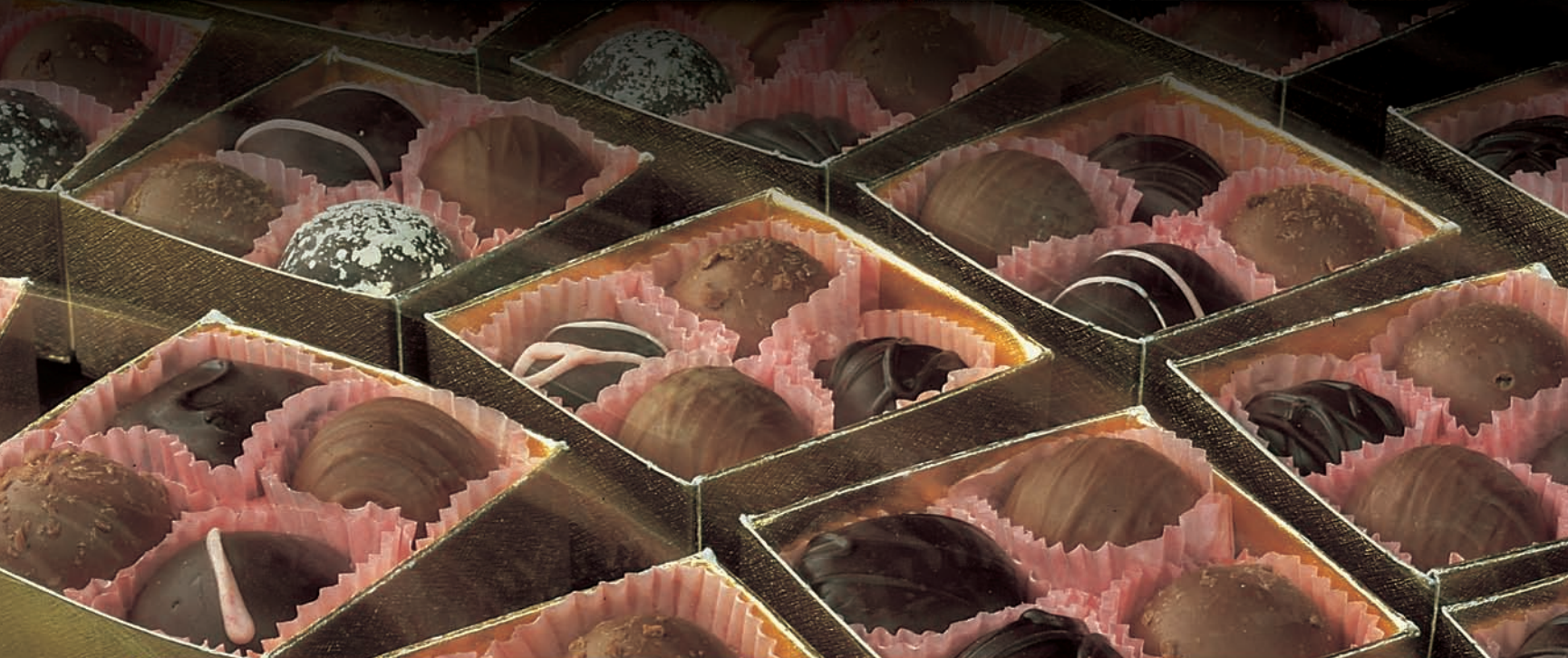
Lot Operations — Transfer

Rockwell Software

Toolbar: Start | Complete | Yeast Prop | Scrap | Hold | Quar | Refresh | See Sample

1 Lot(s)

Name	Elapsed	Part Number	Revision	Quantity	Finished	Status	State	Type	Inv	Route	Step	Operation
WO121_0006	0:09:39	Wort_Type_01	1	1000	0	Started	Hold	Bulk	WIP	Brewing_Process	020	Transfer

Tabs: Tracked Object History Drill Down | History | Transaction History | Yields | Comments | Consumption | Download Wort Transfer Data | BOM View

As Designed - Wort_Type_01 [1]
- CACL2 - CACL2 [1]
- CEREALS - CEREALS [1]
- H2O - H2O [1]
- HCL - HCL [1]
- HOPS - HOPS [1]
- Pale_Malt_01 - Pale_Malt_01 [1]
- Yeast - Yeast [1]

As Built - WO121_0006
- CACL2 - CACL2_1024_001 Qty: 1.0
- CEREALS - CEREALS_1024_001 Qty: 25.0
- H2O - H2O_0001 Qty: 900.0
- HOPS - HOPS_0912_001 Qty: 5.0
- Pale_Malt_01 - PMALT_1104_01 Qty: 500.0

Lot Operations — Brewhouse

Rockwell Software

Toolbar: Refresh | Schedule | Sample | Scrap | See Sampl. | Start | Complete

3 Lot(s)

Name	Elapsed	Part Number	Revision	Quantity	Finished	Status	State	Type	Inv	Route	Step	Op
WO121_0005	1:59:24	Wort_Type_01	1	999	0	Started	Quarantine	Bulk	WIP	Brewing_Process	010	Brew
WO121_0006	0:00:00	Wort_Type_01	1	1000	0	Started	Normal	Bulk	WIP	Brewing_Process	010	Brew
WO121_0007	79:31:00	Wort_Type_01	1	880	0	Queued	Normal	Bulk	WIP	Brewing_Process		

Tabs: Brewing Campaign | Data Collection | Consumption | BOM View | History | Transaction History | Comments | Tests | Defects and Repairs

Tracking ID — Consume | Remove | Lots | Find Inv | Open Silo

Parts for WO121_0006 (Wort_Type_01[1])

Sequence	Status	Reference	Part Number	Revision	Description	Quantity	UOM	Tracking ID
	OK	CACL2	CACL2	1	CACL2	1	pound	CACL2_1024_001
	OK	CEREALS	CEREALS	1	CEREALS	25	pound	CEREALS_1024_001
	OK	H2O	H2O	1	H2O	900	litter	H2O_0001
	OK	HOPS	HOPS	1	HOPS	5	pound	HOPS_0912_001
	OK	Pale_Malt_01	Pale_Malt_01	1	Pale_Malt Type 1	500	pound	PMALT_1104_01

Lot Operations — Brewhouse

Rockwell Software

Toolbar: Refresh | Schedule | Sample | Scrap | See Sampl. | Start | Complete

3 Lot(s)

Name	Elapsed	Part Number	Revision	Quantity	Finished	Status	State	Type	Inv	Route	Step	Op
WO121_0005	0:04:03	Wort_Type_01	1	999	0	Started	Quarantine	Bulk	WIP	Brewing_Process	010	Brew
WO121_0006	77:35:41	Wort_Type_01	1	1000	0	Queued	Normal	Bulk	WIP	Brewing_Process		
WO121_0007	77:35:39	Wort_Type_01	1	880	0	Queued	Normal	Bulk	WIP	Brewing_Process		

Tabs: Brewing Campaign | Data Collection | Consumption | BOM View | History | Transaction History | Comments | Tests | Defects and Repairs

Select an Order to Start — Campaign

Order	Item	Part Number	Rev	Description	Priority	Ordered	In Progress	Finished
GB_1011_01	Item 1	Wort_Type_01	1	Wort Type 01		30000	2801	2801
MR_1104_01	Item 1	Wort_Type_01	1	Wort Type 01		3000	1518	11
PO_191006_0001	Item 1	Wort_Type_01	1	Wort Type 01		10000	7000	0
PO_101606_001	Item 1	Wort_Type_01	1	Wort Type 01		30000	18875	1000
PO_221006_01	Item 1	Wort_Type_01	1	Wort Type 01		10000	2000	0
WO115	WOITEM_WO115	12 oz Booster Beer Case	1	12 oz Booster Beer		10	0	0
WO116	WOITEM_WO116	12 oz Booster Beer Case	1	12 oz Booster Beer		10	0	0
WO117	WOITEM_WO117	12 oz Booster Beer Case	1	12 oz Booster Beer		10	0	0

Inventory Status — Inventory Balance

Rockwell Software

Select	Carrier	Location	Min Balance	Current Balance	Desired Level	Status
true	Bin_Caffeine_02	Caffeine_Location	53000.0	52000.0	60000.0	Material needed
	Bin_Caps_01	Caps_Location	0.0	10000.0	0.0	OK
	Bin_Cereals_01		0.0	29998.542735	0.0	OK
	Bin_CitricAcid_01	Citric_Acid_Location	0.0	200000.0	0.0	OK
	Bin_H20_01		0.0	199947.538431	0.0	OK
	Bin_HCL_01		0.0	30000.0	0.0	OK
	Bin_HFCS_02	HFCS_Location	0.0	2000000.0	0.0	OK
	Caffeine_Bin_01	Receiving_Location	0.0	200000.0	0.0	OK
	FST_01	Wort_Type_01_Location	0.0	1362.0	0.0	OK
	FST_02	Wort_Type_01_Location	0.0	1507.0	0.0	OK
	FT_01		0.0	9869.0	0.0	OK
	FT_02		0.0	2800.0	0.0	OK
	FT_03	Wort_Type_01_Location	0.0	4050.0	0.0	OK
	FT_04	Wort_Type_01_Location	0.0	1000.0	0.0	OK
	FT_05	Wort_Type_01_Location	0.0	0.0	0.0	OK
	HCL_Bin_01		0.0	10000.0	0.0	OK
	RHT_01		0.0	0.0	0.0	OK
	Silo_Malt_01	Wort_Type_01_Location	0.0	159999.708549	0.0	OK

Buttons: Select Needed Material | Create Requisitions

FLEXIBLE ARCHITECTURE

A unique dual-client architecture allows FactoryTalk ProductionCentre to deliver Java and http/https client and scripting simultaneously. This supports deployment of the same content in Java and HTML for fast and slow networks, as well as pocket wireless devices. Supported system platforms include WebSphere, WebLogic, JBoss, Windows and Solaris. Reporting is swift, accurate, and presented in an actionable format. Role-based access supports decision making, as well as secure internal and external report distribution. It uses the FactoryTalk service oriented architecture (SOA) to share information easily with other FactoryTalk enabled applications and hardware, as well as third party or legacy systems.

Lower costs, improve quality, and increase productivity, on one flexible platform. FactoryTalk ProductionCentre is an enterprise-wide plant information software solution that drives manufacturing excellence. Converting day-to-day operations data into on-demand business knowledge enables unprecedented manufacturing flexibility. Combining automated asset, resource, supplier, complaint and quality management, with track and trace from cradle to grave delivers true visibility and better control of the manufacturing process.

SHOP OPERATIONS AND QUALITY

Today's highly competitive global market demands operational excellence as the price of survival. The Shop Operations module tracks production information while controlling production. Systematically enforcing manufacturing rules eliminates operator guesswork and ensures consistent GAMP (generally accepted manufacturing process) adherence. Support for dynamic work flow-based routings enables complete device, as-built and batch history records.

Managing errors is easier using rule-based notification of SPC violations, acceptance sampling plans, and real-time SPC charts. Defective units or lots are automatically re-routed for repair and remain in the tracking system.

This Shop Operations module enhances production flexibility, while creating one source of information for production decisions. For instance, by tracking inventory and equipment performance, informed decisions can easily be made about scheduling.

- *Work Order Management* provides an electronic "white board" for simplified planning and sequencing of work orders. "What if" capabilities facilitate proactive management of order due-dates and resources, compares actual to planned schedules, and highlights late orders.
- *Track and Trace* enables work-in-progress tracking at a serialized unit, lot (including splits and merges), or work-order level. Complete device and batch history records including operations, operators, equipment, components, test results, defects and rework. Support is provided for RFID, bar code scanning and direct integration to equipment.
- *Production Inventory* tracks location and quantity of raw-in-process (RIP) components issued to the shop floor. It triggers request for components to stores or suppliers, and facilitates Kanban execution through bin tracking and min/max replenishment.
- *Error Proofing* manages acceptance sampling plans, shop floor quality checklists, and testing reports including process capability indexes and real-time SPC charts, and variable and attribute control charts.
- *Production Performance* defines equipment model by site and tracks uptime and utilization.

REPORTING, ANALYSIS AND DATA MANAGEMENT

Analysis and reporting tools can integrate enterprise alerting, reporting, analysis and dashboards to deliver decision support directly or through other business systems or portals. Operational content is easily arranged for rapid identification and root cause analysis of key performance issues across a plant or enterprise. Other powerful features like Operator Certification and Engineering Change Order Manager allow even greater control to meet manufacturing goals.

The FactoryTalk ProductionCentre Shop Operations module tracks product and order information, improves production control, and enforces consistent manufacturing processes.

Unit Operations

File   View   Help

Rockwell Software   **Test / Repair**

Serial Number

Start Complete Crew MPIs Scrap Hold Release Refresh

1 Unit(s)

Serial Number	Elapsed	Part Number	Rev	Status	State	Route	Step	Last	Rework	Order	Container	Loca
WOAS-00276-L001		MTA0021	2	Started	Normal	RMA	030	RMA_Test	0	RMAMTA00358		

History | Consumption | BOM View | Transaction History | Yields | Comments | Tests | Defects and Repairs

View
○ Historical   ● Traveler   View Crew

Route	Step	Operation	Start Time	Complete Time	Elapsed	Pass	Operator	Reason	Comment	Equip
RMA	010	RMA_Receiving	11/14/2006 1:33:56 PM	11/14/2006 1:38:41 PM	0d 0:4:45	1	mreyna	OK		
RMA	020	RMA_Inspection	11/14/2006 1:58:55 PM	11/14/2006 1:59:11 PM	0d 0:0:15	1	mreyna	OK		
RMA	030	RMA_Test	11/14/2006 2:00:30 PM	11/14/2006 2:32:47 PM	0d 0:32:17	1	mreyna	OK		
RMA	040	RMA_Repair			0d 0:0:0	0				
RMA	050	RMA_Packout			0d 0:0:0	0				
RMA	060	RMA_Shipping	11/14/2006 2:41:38 PM		0d 0:0:0	0	mreyna			
RMA	070	RMA_Hold			0d 0:0:0	0				

RMA Order

Rockwell Software   **RMA Order**

RMA Information:

RMA No.:	RMAMTA00358	Issued By:	Created Date: 1/14/2006 1:14:26 PM State: Normal
Description:	MTA Board		Shipped Date: Status: Created

Account Find Criteria: Contact Information:

Account Name:	Athena	Account ID: A1000	Find	Name:	Bob Smith
Category:		Company: Athena	Clear	Phone No.:	630-555-5555
Description:	Athena Chemicals			Fax No.:	
Work Order:		Serial No.:		Email Addr:	smith@athena-syst.com

RMA Line Items | Mail Details | Bill Details | Ship Details | Work Orders

Modify Items   Count: 1

Item ID	Item Type	Priority	Part Number	Part Rev	Exp. Qty	Shipped Qty	Reason	Est. Receive Date	Req. Sh
RMAMTA00358_1_390	Upgrade	2	MTA0021	2	1	0	Defective Part	11/14/2006	11/21/20

OK   Cancel

SPC Charts Monitor

Rockwell Software   **SPC Charts Monitor**

□1 Chart □2 Charts □3 Charts □3 Charts □4 Charts

TEMPERATURE   Settings Statistics Violations

Individuals

RESIDUALS   AVG40.77   UCL   LCL

TEMPERATURE   Settings Statistics Violations

Moving Average

MOVING AVERAGE   AVG40.79   UCL   LCL

Main Editor

CAPA

New Next State Audit State Change ID Status Email Refresh Workflow
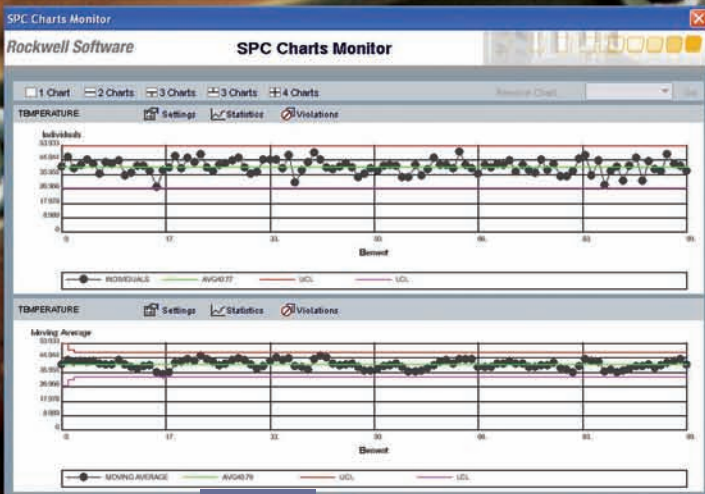
Number:	CAPA001	Title:	Unknown but persistent failure		
Workflow:	CapaRR_Sample	State: Initiate	Status: ACTIVE	Due Date:	6/21/04
Category:	Process	Severity: Priority	Priority: Medium	Warning Date:	6/18/04
Owner Group:		Owner:	Assignee Grp:	Assignee:	

General | Tasks | Comments | Affected Items | Incidents | CAPAs | Attachments | Notify L >>

General Attributes:

Description: defects have been found that are not part of the standard testing or defect reporting.
These new defects should be integrated into our Production Centre shop floor and quality reporting system.

Reason ...		Frequency: Frequent	Risk: Serious
Source:	Internal	Location: Identified on the Box Build lin	
Root Cause:	Process	Cause Desc: new defects that have not been accounted for by Design	
Solution:		Solution Desc:	Effectiveness:
Originator:	btsdemo	Originate Date: 6/3/04	Keyword 1:
Closed By:		Close Date:	Keyword 2:
Modified By:	crewID36003	Modify Date: 7/21/2004 11:16:25 AM	

Save   Done

FactoryTalk ProductionCentre

CAPA AND COMPLAINT HANDLING

Managing complaints and regulatory compliance is crucial to product quality and customer service. This module helps you reduce the cost of quality by delivering a secure electronic closed-loop process management system with enterprise-wide access. It generates a comprehensive events audit trail including electronic signatures and approvals, helps analyze root cause of failures, and delivers regulatory compliance reporting. Compatible with highly regulated industries, the system enables accuracy and reliability – even an unregulated supplier can provide their customers with accurate information regarding conformance immediately.

- *CAPA Corrective Action/Preventive Action* offers configurable work flows for corrective action creation and routing. Full audit logs and built-in enforcement of security rules enable a 21 CFR Part 11 compliant environment. Comprehensive product or order genealogy enables detailed root cause analysis.
- *Complaint Management Process* facilitates rapid, accurate responses to customers on all product issues. Expedited resolution processing means less time spent on issue management. Provides work flow for reportable events and to meet complaint or FDA reporting requirements. Designed to reduce the risk of FDA and QSR noncompliance.

RMA MANAGEMENT AND REPAIR

Delivering on the promise of customer service is a number one priority for maintaining your key business relationships. Rapid access to unit or lot history, including parts used and previous repair history, imparts valuable upstream and downstream knowledge about your production environment, suppliers and shipping. This RMA module helps internal and external facing repair organizations better manage factory and field repair orders, and delivers real-time knowledge about a product's history.

- *Control RMAs* issued for factory and field repair orders with multiple return scenarios including advanced exchange, return to factory, depot repair, return for credit, and upgrade. The module tracks return RMA verification against repair work orders and repair status, as well as shipment back to the customer.
- *Comprehensive Repair Data* enables root cause identification and provides "most common" repairs for a given defect based on past repair history. The module provides field failure feedback for continuous improvement of current and future products. It calculates RMA metrics such as aging, average turnaround time, and spare part consumption. All of this is added to product "as-built" and "as-maintained" history, no matter where the unit was previously built or repaired.

SUPPLIER MANAGEMENT

Supply chains are more complex than ever, yet many manufacturers still rely on outdated systems and institutional memory to manage supplier quality. The Supplier Management module provides visibility and traceability across suppliers, as well as the entire manufacturing process; this includes subcontracted manufacturing and capturing test and measurement data to evaluate supplier quality. Issue shop floor requisitions for materials, quality audit vendors with testing, and generate a desired statistical sampling rate based on supplier history. Implement standard sampling plans such as ANSI or Dodge. Full traceability of supplier components reduces the time required for root cause analysis and recall management. The module includes supplier part management and cross-referencing capabilities. Collaboration with the CAPA module provides Supplier Corrective Action Requests (SCAR).

Reporting on live transactional data enables real-time response and alerting, while reporting against historical data helps manufacturers analyze trends and identify root causes. Multi-site global manufacturers can aggregate and roll-up data across multiple sites to provide corporate analytics.

ADDITIONAL FUNCTIONS

Production and quality management form the core platform of FactoryTalk ProductionCentre. Additional capabilities help enforce best practices while empowering authorized personnel with the control required to help meet your manufacturing goals.

- *Operator Certification* controls operator access and actions for a product based on their qualification or certification.
- *Eco Manager* improves management of engineering change order issued for a product.

LET PRODUCTIONCENTRE MANAGE YOUR PRODUCTION CENTER

Realize substantial benefits in productivity and quality control. Reduce non value-add efforts like compiling, archiving and validation. Improve track and trace for greater efficiency in complaint handling and supplier management. Even engineering change orders are easy to track and administer, and consolidated databases produce significant reductions in audit, investigation and performance analysis functions. Six Sigma initiatives thrive on easily accessible, high-fidelity data.

MANUFACTURING ASSESSMENT AND PLANNING

Identifying, evaluating, and justifying potential improvements in production efficiency may require resources, expertise or time that you don't have. Rockwell Software consultants can help you understand your options. Partner with us to create your own unique roadmap to success.

FactoryTalk® ProductionCentre

Factory*Talk*®

INTEGRATED PRODUCTION AND PERFORMANCE SUITE

Design & Configuration
Integrated environments for creating, modeling,
and programming your production processes.

Production Management
Real-time coordination across your
plant-wide production processes.

Data Management
Tools and methods to use for collecting, transforming,
and integrating production information.

Quality & Compliance
Helps ensure operational processes and
procedures meet standards or specifications.

Asset Management
Helps optimize maintenance and plant operations
to improve your resource availability.

Performance & Visibility
Presents a window into the process so
you can make better decisions.

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