Real-Time Electronic Work Instructions

Product Options for Shop Floor Users, Supervisors, Managers

Top reasons why complex manufacturers are deploying Electronic Work Instructions (EWIs) faster than ever before!

- **Reduce errors** from users using outdated or incomplete instructions
- **Increase productivity** from time saved looking for the right paper documents
- **Reduce cycle time** from increased efficiency and instructions at operator's fingertips
- **Reduce new product introductions** with faster authoring, editing, and collaboration with shop floor users
- **Reduce time wasted** resolving shop floor questions/issues on 'how' to build
- **Add real-time traceability and accountability** of users for work performed
- **Eliminate paper data collection records with keyboard/bar code data entry and electronic signature in real time** for building a historical record
- **Streamline redline and WIP change process** electronically to speed change and record job history
- **Guide operators with correct workflow and tasks** needed for consistent, desired quality results
- **Bolster Outsourcing and Customer Compliance** with well documented, detailed instructions
- **Shorten time to market** with reduced shop floor delays
- **Improve product consistency and compliance** with step-by-step instructions and tasks
- **Improve training with consistent instructions format** outlining process, workflow, specific tasks for classroom or shop floor skills or cross functional training or new product training
- **Integrate real-time instructions** with existing shop floor MES, SCADA or Control Systems
- **Aids training in reshoring requirements** with simple user interface and easy to follow instructions to learn the process

Case Study Highlights: Based on over 15 years experience working with complex manufacturers to improve the above issues, Sequence Software customers have reported significant improvements and savings as shown below. Detailed customer case study examples are available upon request.

- **"Reduced rework** from 7% to 4.3%"
- **"Reduced documentation cycle time** (release of new/edited work instruction to shop floor) by 2 weeks!"
- **"Reduced engineering change time** from 1.5 hours to 5 minutes"
- **"Reduced labor for paper processing** saving $60K annually"
- **"Reduced documentation management time** for all departments 30 hours per day"
- **"Request for changes now handled in one spot** … compared to using spreadsheets to track requests"
- **"Improved training, supported cross-functional team learning** for significant productivity improvements"
- **"Real benefit is the visual nature of the system …** errors reduced, cycle time data now available, helps to make improvements"

Sequence Enterprise System includes the ability to publish standard work instructions for paper or electronic use. Transitioning to paperless can be done easily in small phases to focus on critical work centers, with additional expansions deployed later where needed. Work Instruction content is stored in the database, not as individual files, but content is auto formatted when view or print version is requested. An option to add real-time, visual instructions to the shop floor electronically can be done easily. Two user interface options are available, which can be deployed in different locations on the shop floor to meet specific requirements in those work areas.

Sequence Paperless User Interface Options - Breeze and WebSequence.
Rather than print PDF files or view static PDF documents, WinSequence offers the option to bring the electronic work instruction to the shop floor user's fingertips in real time when requested. Breeze and WebSequence provide the electronic view of the work instruction in a standard format but using no static files. Shop Floor Operators, Quality Technicians, Supervisors and Managers have the ability to view work instructions in real time, without looking for files or folders at their work center. Work performed such as Quality Tests can be recorded electronically to eliminate manual paper logs or spreadsheets that are difficult to summarize later in a report. Both user interfaces are web-based solutions and can be used on the same system network to match the specific requirements of each work center area and the roles of individuals performing the work. A comparison summary showing key features of each user interface option is described below.

ELECTRONIC WORK INSTRUCTIONS (EWI) AVAILABLE PRODUCT FEATURES	SEQUENCE BREEZE *Licenses by Workstation*	SEQUENCE WEBSEQUENCE *Licenses by Named Users*	REQUIRES ELEVATED USER PRIVILEGE	DESCRIPTION
User Role: Shop Floor Assemblers, Operators, Any Needing View of Work Instructions				
View Real-Time Instructions, No Static PDF Files	x	x		Instructions delivered from WinSequence Authoring database
Automatically Displays Standard, Consistent EWI Format	x	x		Real-time delivery from database to Operator Interface (Breeze or WebSequence)
Displays Defined Workflow, Tasks and Step Instructions	x	x		Created in WinSequence authoring for visual display at the user interface
Scrollable, Workflow and Task Instructions	x			Real-time scrollable view of the EWI in a browser window. User uses scroll bar to view all steps in EWI.
Step By Step Workflow and Task Instructions		x		User interface presents one step of EWI in the interface at a time. User clicks a mouse button to move to next or previous step in more complex assemblies.
Links to Other Docs or Videos	x	x		Hyper links to external docs such as specs or video files residing on a location on your network
Select EWI from Available List	x	x		Default EWI is the last published instruction
User Roles: Shop Floor Assemblers, Operators, Technicians, Quality Testing, Supervisors, Managers				
Novice & Expert Shop Floor User Views		x	x	Selectable (or preset) views of EWI details based on employee training/experience
Operator Data Collection		x		Users can be prompted to enter specific data at a step or operation that contribute to the device history record (DHR). Configuration can require authentication of entered data in support of 21 CFR Part 11
Electronic Signature To Signoff Work Performed		x		Operator electronic signature used to support 21 CFR Part 11 or other general device history records
Quality Data Collection		x	x	Electronic quality stamp authenticated by individuals with the quality privilege at steps or operations. Electronic signatures become part of the device history record (DHR)
Select EWI by Work Order from Tab		x		With the MRPUltra Option, work orders seamlessly import to Sequence from MRP and production can track data against the work order
Smooth Transition to New EWI Version When Parts are in WIP		x		Applies to Work Orders. WebSequence displays correct version of an EWI tied to a work order, allowing flexibility for older work orders in WIP to display different versions of instructions than new work orders
Submit Process Change Request, Tracked for Response to Authors		x		Users can easily make suggestions to update/correct the EWI from the shop floor electronically. Requests are automatically emailed to the Author(s), and tracked until a resolution has been completed.
Create Redlines for WIP orders		x	x	Often a Mgr/Supervisor, but could be a shop floor lead with assigned redline privileges. Redline is instantly visible on any other work order using the same version of the text step.
Approve new revisions prior to publishing		x	x	Peer or Supervisor/Managers can be part of the 'audience' for approving new changes to instructions. User must have Approval Privilege.
Automatically Load EWI Through Integration With Other Systems (Auto Logon)		x		With the MESUltra Option other software systems can initiate a call to automatically load the EWI for the user, where the external system knows: (1) the user, (2) part number or work order and (3) the work center or operation (optional).
Bar Coding Options		x		Bar code functionality to auto load work instructions and follow work-flow is possible. Various options are available and needs discussions regarding technology planned and specific workflow needs.
Administrator & IT Infrastructure Notes - *Reference Sequence System Requirements Document For More Details*				
No Management of Files	x	x		Sequence authoring and shop floor users do not need to manage files or paper
Not Hardware Specific	x	x		PCs, large monitors, laptops, tablets (use 1 available browsers below)
Web-based, Using Standard Browsers	x	x		Internet Explorer, Chrome, Safari

Sequence Electronic Work Instructions - User Interface Options

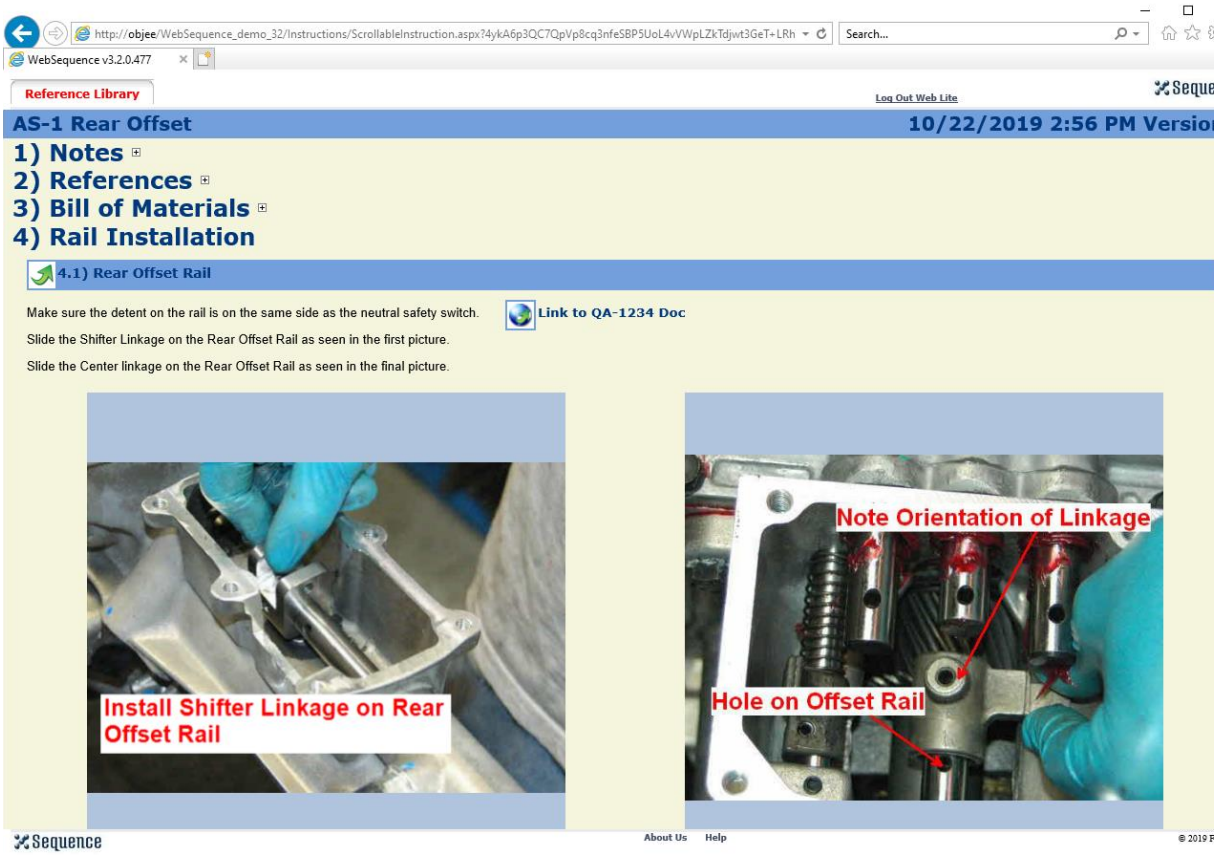
Examples of Breeze and WebSequence user interfaces for the shop floor are shown below. The actual amount of content is determined by your WinSequence authors … very simple, to more complex … and based on your shop floor user needs. WinSequence automatically formats the authoring content to the user interface features available.

Breeze User Interface – Real-Time, Scrollable View of Work Instruction Content

Breeze is a 'view only' user interface with shop floor users have the ability to select to view more information from the Reference Library tab, where the work instructions are available for view (default to most current published instructions).

Instructions and Reference Information In Real-Time At Your Fingertips!

- **#1 – History Notes** summarizes the notes from the author and revision change info
- **#2 – References** display additional reference information
- **#3 - Bill of Materials** for this assembly
- **#4 – Work Instructions** details by Operation – shown with specific task work details plus annotated pictures edited within WinSequence authoring.



- **Work Orders** (optional with MES Ultra) to select the instruction by Work Order #.
- **Administration** assigned to person(s) responsible for arranging user login, user privileges

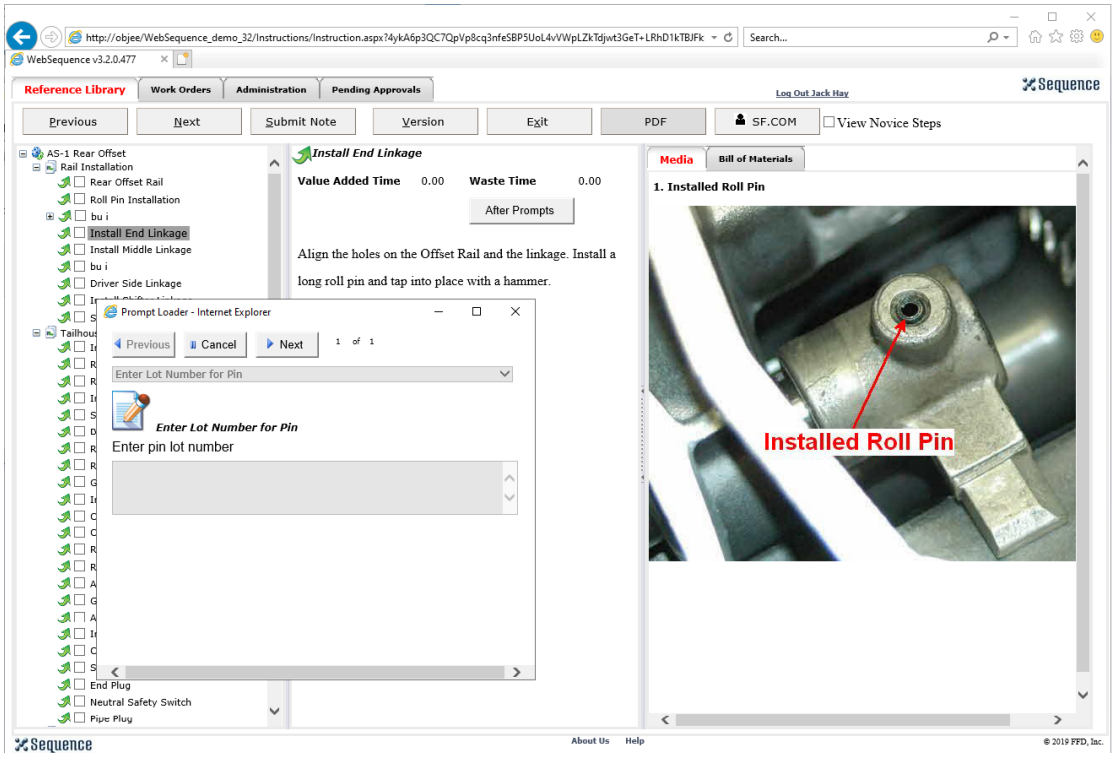
WebSequence User Interface – Interactive, Real-Time Capabilities

While the Breese functionality may be all that is needed in some areas of the shop floor, there may be other work centers with critical work that requires additional user interactions such as data collection, electronic signature, process change requests, redlines, and more.

WebSequence user interface has additional tabs for expanded functionality that requires user privileges

- **Reference Library** is similar to Breeze to select/launch the work instruction information
- **Work Orders (optional with MES Ultra)** to select the instruction by Work Order #
- **Administration** assigned to person(s) responsible for arranging user login, user privileges
- **Pending Approvals** for those who you determine should be part of the revision change review and approval process for work instructions (all managed within Sequence).
- **Previous/Next** navigation buttons to move from one step to another
- **Submit Note** for users to record process change requests which are emailed to the authors for review and requires determination to complete.
- **Version** provides more version history information
- **PDF** view the instruction in its entirety
- **Exit** to close that screen

The screen example below shows a data entry prompt at a specific step for user to enter lot #, along with electronic signature and date/time. Data collected is associated with the Work Order # or Job # or Serial # and stored in the Sequence database (Microsoft SQL Express or SQL Server). Production or device history reports can be created using standard report writers such as Microsoft SSRS (free reporting tool), Crystal Reports, or similar report writer.



Contact Sequence Software Technical Sales at 865.927.3000 Extension 614 with your questions or interest in a trial project to prove feasibility and potential increase in effectiveness for your operations

FFD Inc.
205 Perimeter Park Road
Knoxville, TN 37922