Work instructions... made easy

www.sequencesoftware.com
About FFD, Inc.

• FFD’s Sequence Enterprise Software is used by manufacturing companies worldwide to author, manage, deploy and validate critical manufacturing work instructions.

• **Sequence is a vital enabling technology accelerator for our customers allowing them to add significant value to their bottom line.**
A History of Customer Driven Innovation

2003
• Market research, beta testing, customer surveys
• Released V1.0 WinSequence and WebSequence, first database driven software for developing visual Work Instructions in a multi-user authoring environment with optional real-time shop floor operator interface

2004
• Released V2.0 with major updates to data model and all user interfaces
• Released MRPUltra as a product for integration to MRP/ERP

2006
• Released V2.5.25 with enhanced Work Order functions to address configurable products and customized work orders
• Developed multi-product plan for small to large business requirements
• Released LockStep single-user authoring version, fully scalable to allow small companies or early ‘pilot to production’ projects

2008
• V1.0 MESUltra for integration to MES systems
• Released V2.6 further streamlining user experience in WebSequence

2009
• To release V2.7 in March/April with WebSequence Media and MESUltra

2010
• Release V3.0 end 2011—Advanced Aero/Military Pack
Sequence is . . .

• A collaborative, multi-user enterprise work instruction solution

• Designed for the manufacturing enterprise needing work instructions that are fully integrated with ERP/PLM/MES and the ability to deploy in a real time, interactive paperless environment.
Customers & Industries

<table>
<thead>
<tr>
<th>Regulatory High-Tech, Military, Aerospace, Vehicle Test</th>
<th>Regulatory Automotive &amp; Vehicle OEM</th>
<th>Others:</th>
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<tr>
<td>Quickset (Moog)</td>
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<td>Medical Devices</td>
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<td>Sechan</td>
<td>CATERPILLAR</td>
<td>Marine</td>
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<td>Nanotech Instruments (MTS, now Agilent)</td>
<td>TENNECO</td>
<td>Food &amp; Beverage</td>
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<td>Novatel</td>
<td>Jeld-Wen</td>
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<td></td>
<td>Hayward Pool Products</td>
<td>Power &amp; Energy Systems</td>
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<td>Goldline Controls</td>
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Technology
Sequence Technology

• Sequence is a software package designed specifically for creation, maintenance, validation and deployment of manufacturing work instructions
  – Database-driven, Dynamic Work Instructions
  – MS.net, C#, SQL Server technologies
  – Some data is shared and can originate from master files such as ERP/MRP/PLM
  – Data structure easily integrates with other business and manufacturing systems
  – Sequence is ‘standard’ out of the box, but highly configurable by the user to produce a wide range of Work Instructions in different formats published either via paper or electronically
**Architecture**

**WinSequence™** - Robust Tool to
- Author;
- Edit;
- Manage Versions; and,
- Publish Work Instructions

**WebSequence™** - Real-Time Inter-Active Paperless System
- Electronic View of Most Recent Instructions;
- Work Order Specific Instructions;
- Data Collection; and,
- Shop Floor Feedback

Integration to ERP/PLM/MRP to capture BoMs, Routings, Work Orders to auto populate in Sequence database

Develop new standard Work Instructions stored as objects in database (not documents)

ERP
PLM / MRP Database

Sequence Work Instruction DB
SQL db

ERP, PLM / MRP
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System can provide proof of compliance.

Operators can provide electronic feedback and system automatically captures build history (user, date, time, etc.)

Instructions are electronically delivered in Real-Time to the shop floor.

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All information related to the work instructions is organized and created in a patent-pending smart ‘tree’ structure. Different ‘objects’ on the ‘tree’ have different icons.
PDF output

Data is re-formatted automatically from ‘tree’ structure to PDF document using a selected template from the Sequence library.
Electronic deployment

WebSequence allows electronic access to only *valid* published version of instructions
- Secure login
- Step by step presentation
Electronic deployment

Full-screen view of image is available for fine detail.

Align the outside locating pin with the split in the back fin.

There should be no gap between the fin of the part and the locating pins.

There is a gap between the part and the locating pins.

Navigate

Zoom +/-
Tablet options are expanding
Enabling manufacturing excellence!
Sechan Electronics

- 95% reduction in total change implementation cycle time
- 200 man hours per month reduction in administrative labor
- Manufacturing engineering capacity gains in excess of 20%

Traditional Process Control Documentation Change Process

Queue Issues, Looping, Process Lapses, Labor Intensive

New Process with Sequence

Electronic Notification / Approval / Distribution

"Sequence has allowed us to efficiently develop and deploy electronic work-instructions, and perhaps more importantly, timely corrective work instruction updates."

Dave Williams
President, Sechan Electronics
American Science & Engineering

- 15% reduction in new product deployment and engineering time
- 240+ man hours per month reduction in administrative labor (1.5 people per 8 hour shift)
- Electronic deployment allows “just-in-time” learning
- Reduced audit errors due to barcode scanning and electronic reporting
Moog Quickset

• Work instructions versioned to specific work orders / serial numbers provide complete traceability for any build and an easy path to objective evidence
• Complete revision history for serial-number / work-order specific information maintained for auditing and defect tracking