

Capital Workbooks

Automatically Create Operator Instructions

Electrical Systems Design
And Wire Harness Engineering

D A T A S H E E T

| Name | Part No. |
|------------------------------|----------|
| AB on C-7HS-456(1) On C-7 | AB-4061 |
| C-11 | PN1112 |
| C-3 | C-602 |
| C-4 | PN605 |
| C-7 | C-607(1) |
| INSRUN101:10 TAPE:INS100 | TA-001 |
| INSRUN104:10 TAPE:INS103 | TA-001 |
| INSRUN106:10 TAPE:INS105 | TA-001 |
| INSRUN108:10 TAPE:INS107 | TA-001 |
| INSRUN111:10 TAPE:INS110 | TA-001 |
| Pre-load connectors.2 | PN637 |
| Process single multi-cripp.1 | PN765 |
| Process Back views.1 | PN1100 |
| Process Back views.2 | PN1123 |

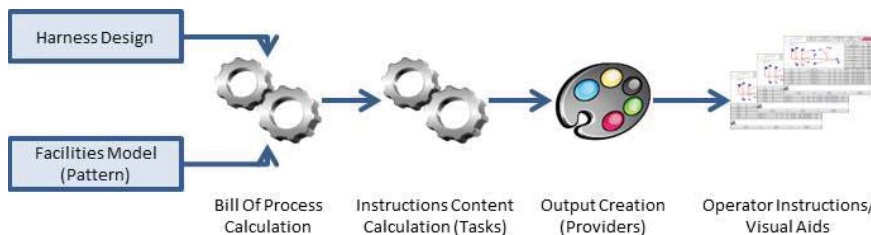
| Task | Matched Object | Time | Cost Center | Resource | Part No. |
|------------------|---------------------------------------|------|----------------|-------------------------|----------|
| Locate Connector | C-3 | 0.1 | 05 - Pre-Block | HD1 - Assembly Operator | C-002 |
| Locate Connector | C-7 | 0.1 | 05 - Pre-Block | HD1 - Assembly Operator | C-007(3) |
| Insert wire | Ground 1 At Ground 1.1 With W-23 W-24 | 0.00 | 05 - Pre-Block | HD1 - Assembly Operator | Equal A |
| Insert wire | W-8 TERM - FB-1 F3.1 | 0.00 | 05 - Pre-Block | HD1 - Assembly Operator | T-001 |
| Insert wire | W-9 TERM - FB-1 F3.2 | 0.00 | 05 - Pre-Block | HD1 - Assembly Operator | T-001 |
| Insert wire | W-10 TERM - FB-1 F4.1 | 0.00 | 05 - Pre-Block | HD1 - Assembly Operator | T-001 |
| Insert wire | W-11 TERM - FB-1 F4.2 | 0.00 | 05 - Pre-Block | HD1 - Assembly Operator | T-001 |
| Insert wire | W-12 TERM - FB-1 F5.1 | 0.00 | 05 - Pre-Block | HD1 - Assembly Operator | T-001 |

Automatically create detailed operator instructions and visual aids for every harness design and production facility.

Work Instructions Creation

Capital Workbooks is a powerful rules-driven software application that automatically creates instructions/visual aids for wire harness assembly operators. Typically one or more pages will be generated for each step of the harness assembly sequence, such as splicing, connector loading, and tape wrapping. The output documents can be styled in many ways (example: languages) and can include tables, static images, conditional images, synthesized graphics and much more.

Operator instructions are generated for any harness design/production facility combination. The software does this by mapping a digital description of the fully engineered harness design against a digital description of the production facility ("pattern"). The software calculates a specific assembly sequence (bill of process), including ancillary steps such as testing and packing, and the tasks comprising each step of the sequence. Highly configurable output creation templates contain "providers" which generate the operator instructions for each step of the sequence.



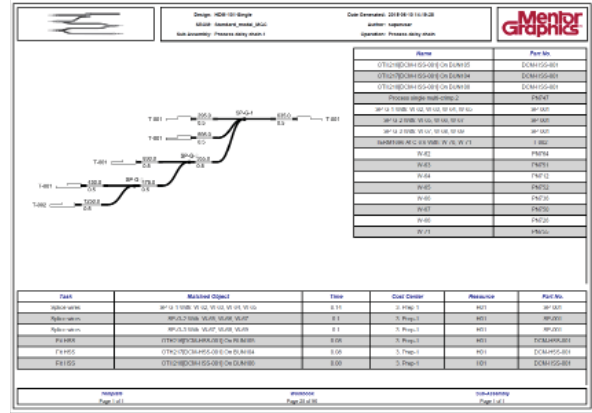
FEATURES AND BENEFITS:

- Rapid operator instructions generation: removes this from the critical path when introducing new or changed harness designs
- Automatic operator instructions generation: eliminates errors and minimizes costs of manufacturing documentation creation
- Rich, controlled output formats: conforms with quality standards, minimizes training needs and reduces the likelihood of mis-interpretation by production staff
- Highly configurable manufacturing facility modeling and output formats: supports many locations and quickly enables new facility start-up
- Batch processing: creates multiple work instructions sets without additional intervention
- HTML & PDF outputs: delivers operator instructions flexibly
- Full re-use of facility models and output formats: minimizes maintenance overhead
- Part of the Capital suite: minimizes IT overhead and benefits from advanced features (examples: design change management; security)

Configurability and Re-Use

Both the factory patterns and output providers are highly configurable and customizable, allowing IP to be securely captured. Capital is forward compatible, so new software versions can be deployed without rebuilding customizations.

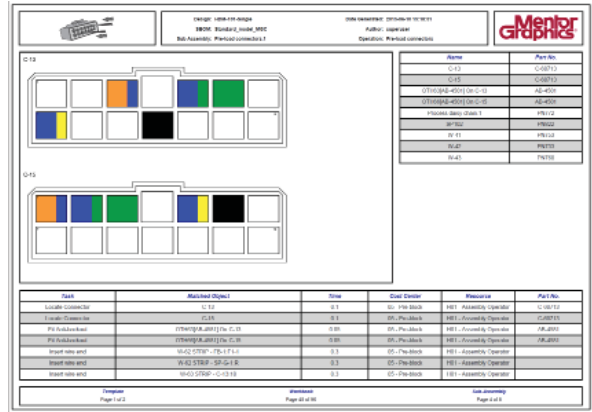
Patterns and providers are fully re-usable. So once these are defined, operator instructions can be generated for many different harness designs with no additional work. An extensive set of example providers is delivered with the software, covering the most common forms of visual aid seen in the industry.



Digital Continuity

Capital Workbooks acts on engineered harness design data, usually created using Capital HarnessXC or ModularXC. This design data may be created within the same database or imported from another Capital database using one of several mechanisms. Harness design data may also be imported from non Capital tools using formats such as DSI or KBL. Factory patterns created using Capital Harness TVM or MPM can also be directly re-used by Capital Workbooks, eliminating duplication or any need for further modeling.

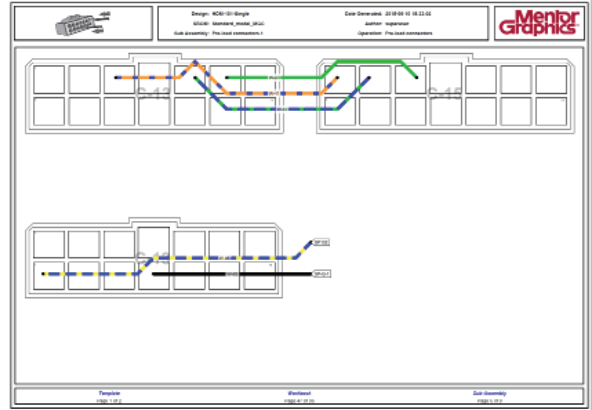
Taken together, digital continuity is created from harness design, through manufacturing and process engineering, and on into factory operations. This provides a seamless data flow that compresses response times, eliminates errors, and reduces costs.



Hardware and Software Requirements

For details on hardware or software requirements please contact your local sales office or visit:

www.mentor.com/supportnet/spt_configs/



Example operator instructions outputs: all content was generated automatically, including the splice tree diagram, shown at top

For the latest product information, call us or visit: www.mentor.com/capital

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