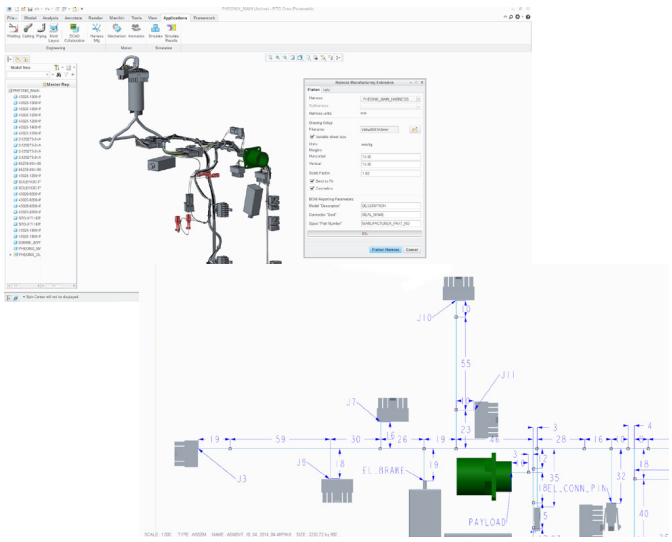
PTC Creo® Harness Manufacturing Extension

Automated Manufacturing Documentation

The PTC Creo Harness Manufacturing Extension (HMX) dramatically reduces the time spent generating manufacturing documentation from hours to minutes, accelerating time-to-market.

Many companies utilize electrical analysis tools to optimize the cost and weight of electrical harnesses, forcing the digital prototype to go through multiple iterations. However, the time to optimize a harness is limited due to the lead time required to finalize the harness design, manufacturing documentation, and complete production.

PTC Creo HMX dramatically reduces both the time to generate documentation and the user expertise required to develop standardized manufacturing documentation. At the touch of a button and at any stage of the design process, manufacturing documentation can be created, enabling more time to optimize design and allowing for greater flexibility when working with manufacturing partners.



Key benefits:

- Easily create manufacturing documentation to a pre-defined standard using an intuitive user interface
- Easily accommodate late design changes with an optimized documentation process
- Standardize documentation of manufacturing deliverables
- Optimize manufacturing costs
  - Evaluate the manufacturing impact on different harness routing concepts
  - Create documentation earlier in the design process to obtain competitive cost estimates from multiple manufacturing shops
- 3D retention
  - Associative drawing to the 3D model for fully iterative design process

PTC Creo HMX streamlines the process of creating manufacturing documentation and accelerates the time to manufacture.

Capabilities and specifications:

PTC Creo HMX comes in standard and advanced packages, complementing the functionality in the base license of PTC Creo Parametric™. The following table gives a comparison of the features supported by each option.

Features	HMX Lite	HMX Standard	HMX Advanced
Number of supported electrically active components (connectors, terminals, and splices)	5	20	> 20
Number of supported wires, bundles, cables, and overbraids	20	50	> 50
Supports overbraid			•
Supports cosmetic features: tapes, tie-wraps, markers, and heat shrink tubing		Supports tapes, tie-wraps, and markers only.	•
In-line components (axial)	Splices	•	•
In-line components (radial)			•
Dual in-line components			•
Supports sub harnesses			•
Closed loop topography		• Single	•
Branch bundle feature		• Single	•
Automatic Bend to Fit feature	•	•	•
Automatically attempts to resolve branch overlaps in 2D representation			•
Auto-generation and annotation of the 2D representation dimensions	•	•	•
Supports standard drawing sheet sizes: A0 to A4 and F to A	A0/F	•	•
User defined drawing templates		•	•
Supports variable drawing sheet that expands horizontally to fit the harness drawing			•
Map user defined parameter for BOM description	•	•	•
Map user defined parameter for spool part number		•	•
Map user defined parameter for connector seal			•
Auto-generation and placement of the bill of materials	• Electrically active components.	Generates bill of materials with consolidated spool usage.	Generates bill of materials with consolidated spool usage, wedges, and cavity seals.

Features	HMX Lite	HMX Standard	HMX Advanced
Auto-generation and placement of the Wire List table	•	•	•
Auto-generation and placement of the Connector Cavity tables		Contains the following parts: • Housing • Terminals • Wires	Contains the following parts: • Housing • Terminals • Seals • Wires • Rear view of the connector
Auto-pagination of BOM and Wire List tables on standard drawing sheets		•	•
Auto placement of 3D assembly view		•	•
Auto-generation of component views			•
Automatic ballooning of items			•
Export Wire Cutting List in the CSV file format		•	•
Export BOM in the CSV file format			•
DXF format for output			•
Automatic design-rule checking			•
Editing of the 2D harness manufacturing drawing	•	•	•
Associativity of connectors to 2D harness	•	•	•
Component flexible parameter preservation			•
Backshells and boots associativity			•
Grommet handling		•	•
Manifolds, T, Y; and transition boots			•
Alignment of flattened harness to attached component geometry			•
Splice handling improved	•	•	•
Bulk item handling		•	•
Multiple extraction for markers		•	•

Features	HMX Lite	HMX Standard	HMX Advanced
Configuration file for HMX drawing output			•
Reference designator and BOM Balloon improved positioning	Reference Designator only	Reference Designator only	•
Pagination of cavity tables		•	•
Bundle termination on entry port			•
Parallel splice processing			•
Table customization for user defined parameters			•
Table wire length manipulation			•
Windchill Compatibility			•
Front face dimensioning scheme option			•
Output file control options			•
Broken View			•
Leader Dimensioning	•	•	•
Absolute Dimensioning			•
Retaining Drawing Edits			•
Export DXF	•	•	•
Improved Table Customization			•
Alternative Cavity Views			•
Custom Symbols in Cavity Views			•
Multi-views in Cavity Table			•
Tables as Notes			•
Exclude single pin component cavity tables		•	•
Mixed Spool Unit Process			•
Admin Defined Configuration File Location			•

Features	HMX Lite	HMX Standard	HMX Advanced
Selection of Start Connector			•
Wirelist Sort Order			•
Create Bill of Materials table from top down			•
Sort and separate Bill of Materials table			•
Display Cavity Table target information			•
Exclude Cavity Tables for Splices			•
Retention of user added drawing objects			•
Improved table customization options			•
Display empty pins in cavity tables			•

Language support:

English, French, German, Italian, Korean, Japanese, Russian, Spanish, and Chinese (Simplified and Traditional)

Platform support:

Please visit the PTC support page for the most up-to-date platform support and system requirements.

For more information, please visit http://www.ptc.com/product/creo/ or contact a PTC sales representative.

>>> THE CREO ADVANTAGE:

Creo is the 3D CAD solution that helps you accelerate product innovation to build better products faster. Easy-to-learn Creo uses a model-based approach to seamlessly take you from the earliest phases of product design to manufacturing and beyond. Combining powerful, proven functionality with new technologies including generative design, real-time simulation, advanced manufacturing, IIoT and augmented reality, Creo helps you iterate faster, reduce costs and improve product quality. Creo is also available as a SaaS product, providing innovative cloud-based tools for real-time collaboration and streamlined license management and deployment. The world of product development moves quickly, and only Creo delivers the transformative tools you need to build competitive advantage and gain market share.

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