SHIPCONSTRUCTOR®

2013

Subscription Advantage Pack

License Agreement and Copyright Information

SHIPCONSTRUCTOR LICENSE AGREEMENT

BEFORE PROCEEDING WITH THE INSTALLATION, YOU MUST ACCEPT THE TERMS OF THIS AGREEMENT. INDICATE YOUR ACCEPTANCE OR REJECTION OF THIS AGREEMENT BY CLICKING ON THE APPROPRIATE BUTTON. IF YOU CLICK ON "REJECT," INSTALLATION WILL ABORT.

1. License Grant. **ShipConstructor Software Inc.**, #304 – 3960 Quadra Street, Victoria, B.C. Canada, V8X 4A3 ("SSI") grants to the person accepting this Agreement (the "**Licensee**") a non-exclusive, non-transferable right to use (the "**License**") in object code form those program modules, application programming interface ("**API**"), any other materials provided by SSI under this Agreement, and all upgrades, revisions, fixes, updates or enhancements to any of the foregoing ("**Licensed Materials**") specified in the Licensee's purchase order or request ("Invoice) solely on the software and hardware listed in the Licensed Materials manual ("**System Configuration**").
2. Academic Institutions/Trial Versions.
    a. In the event that the Licensee qualifies as an academic institution user in accordance with SSI's specifications (an "**Academic Licensee**"), the Academic Licensee and its faculty, employees and students may use the Licensed Materials for the singular purpose of either teaching, training users or undertaking research provided that the Licensed Materials, and all copies of the Licensed Materials, remain at all times at the Academic Licensee's premises and the Licensed Materials are used for no other purpose than that set forth above. The above restrictions are in addition to the restrictions on use set out in Section 5 below.
    b. In the event that the Licensee receives a trial version of the Licensed Materials for evaluation purposes, the terms and conditions of this Agreement, excluding Sections 15-19, shall continue to apply subject to the following provisions.
        i. the License pursuant to Section 1 above shall terminate at the end of the specified trial period;
        ii. the Licensee shall return the Hardware Key to SSI immediately upon expiry of the specified trial period and in any event within 28 days of the expiry of the specified trial period;
        iii. in the event that the Licensee does not return the Hardware Key in accordance with Section 2B.(b) above, SSI shall be entitled to invoice the Licensee for and the Licensee shall pay for the costs of the Hardware Key plus all shipping and handling expenses and SSI administrative charges; and
        iv. in the event that the Licensee elects to and does acquire a License, the terms and conditions of this Agreement, excluding Section 2B herein, shall continue on and apply.
3. Ownership. All rights, title and interests in and to the Licensed Materials and related documentation shall remain the sole property of SSI. Licensee shall not remove or alter any proprietary rights notices on the Licensed Materials and the documentation, and shall reproduce such notices on any copies that it makes. Licensee shall be liable for the security of the Licensed Materials and the documentation in its possession.
4. Expertise Required. Licensee is responsible for evaluating whether the Licensed Materials meets Licensee's requirements, and for operating the Licensed Materials and the results obtained. The Licensed Materials are intended for ship modeling and construction purposes only, and must be used by a person who has expertise and knowledge in this field. The Licensed Materials requires independent confirmation of the reliability and accuracy of all designs, drawings and other Licensed Materials output. An SSI representative may be made available under a separate consulting agreement, at the Licensee's request to provide training and consultation on the operation or integration of licensed materials.
5. Limitations on Use.
   Licensee shall:
    a. not make more copies of the Licensed Materials than are necessary for the Licensee's installation of the Licensed Materials and shall only create backup copies for archival or emergency restart purposes;
    b. maintain a log of the number of and location of all originals and copies of the Licensed Materials;
    c. include SSI's copyright, trademark and proprietary notices on any complete or partial copies of the Licensed Materials in the same form and location as the notice on any original work;
    d. not attempt to defeat any copy protection;
    e. not modify, any documentation, including any user manuals;
    f. not modify, translate, reverse engineer, decompile or disassemble the Licensed Materials;
    g. not sublicense, transfer, assign, sell, loan, rent or lease the Licensed Materials other than as permitted in this Agreement;
    h. use the Licensed Materials for its own internal use only;
    i. not permit any third party to use the Licensed Materials; and
    j. thoroughly test any and all custom interfaces in accordance with general engineering principles.
6. Delivery and Installation. All Licensed Materials will be delivered in an electronic format by media or method as SSI may elect and will be sent to the Licensee's designated email address or shipping address as specified in the Invoice. Licensee agrees to be responsible for installation of the Licensed Materials.
7. Term of License. The License term commences on the delivery of the Licensed Materials to the Licensee, and, subject to Section 2B above, is either perpetual if so requested on the Order, or on a month to month rental or lease basis. If Licensee chooses a lease option

the license converts to a perpetual term on Licensee's payment of the balance of the perpetual License fee (prior monthly payments receiving 80% credit). All Licenses are subject to termination in accordance with this Agreement.

8. System Configuration. Operation of the Licensed Materials requires use of the specified System Configuration, which Licensee shall acquire and implement. SSI shall not be responsible for any operational problems caused by the System Configuration.
9. Security. The Licensed Materials includes security elements which support the detection of unauthorized use or copying of the software and which may (a)report such unauthorized use or copying to the Licensee, and (b)if applicable based on Licensee's configuration, may report back specific user information such as User name and email address.
10. Hardware Keys. Licensed Materials use requires "Hardware Keys" supplied by SSI, which can be used only at the site(s) authorized by SSI. In the event of a failure of the Licensee's System Configuration, the Licensee may upon advising SSI use the Hardware Keys and Licensed Materials on another system and/or location.
11. License Fees. Licensee shall pay to SSI the License fees applicable for the Licensed Materials as set out in and in accordance with SSI's Invoice.
12. Services. Support services after the Warranty Period (as defined in Section 15 below) are provided by SSI under the terms of the SSI Subscription Agreement. Installation, consulting, training and implementation services, if requested by the Licensee, shall be provided by separate agreement and at an additional charge.
13. Taxes. All amounts payable by Licensee to SSI are exclusive of all commodity taxes, including but not limited to applicable sales, use, value added, custom duties, excise taxes and other similar government charges, all of which will be paid by Licensee. If Licensee is required by law to withhold any taxes, then Licensee shall pay SSI a gross amount of money such that the net amount received by SSI after deducting or withholding the required taxes is equal to the amount of the fee originally charged by SSI.
14. Interest Charges. If any amount payable under this Agreement is not paid within 30 days of becoming due, SSI shall have the right to impose a charge of 2% per month (24% annually) on the unpaid balance of the amount, from the due date until the date of receipt of all amounts in arrears including interest.
15. Purchase Orders. Any purchase order (an **"Order"**) delivered by Licensee shall at all times be deemed to incorporate this Agreement by reference and shall be subject to the applicable provisions of this Agreement. Any provisions of an Order shall not apply and shall not be binding upon SSI unless they relate to information which was requested by SSI. In the event of a conflict or an inconsistency between the provisions of an Order and the terms and conditions of this Agreement, this Agreement shall govern and supersede to the extent of such conflict or inconsistency.
16. Limited Warranty. SSI warrants that during a period of 90 days from the date of delivery of the Licensed Materials to Licensee (the "**Warranty Period**"), the Licensed Materials will perform substantially in accordance with the Licensed Materials documentation specifications, when used in accordance with this Agreement on a properly operating System Configuration. SSI's sole obligation under this Warranty, and Licensee's exclusive remedy, shall be to use reasonable commercial efforts to correct Errors (a bug, defect or other problem incurred by a user in operating the Software that prevents the Software from performing in a manner consistent with the applicable specifications set out in the User Manual) that the Licensee identifies to SSI through fixes or workarounds free of charge. If SSI determines that it is unable to make the Licensed Materials perform substantially as warranted, Licensee may terminate the License and receive a refund of a portion of the License Fees paid to date.
17. WARRANTY EXCLUSIONS. THE LIMITED WARRANTY CONTAINED IN SECTION 15 IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. ALL OTHER CONDITIONS, WARRANTIES, AND REPRESENTATIONS, EITHER EXPRESS OR IMPLIED, ARE EXCLUDED, INCLUDING BUT NOT LIMITED TO CONDITIONS, REPRESENTATIONS AND WARRANTIES RELATING TO MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SSI DOES NOT WARRANT THAT THE LICENSED MATERIALS ARE COMPLETELY ERROR FREE OR THAT ITS OPERATION WILL BE CONTINUOUS AND UNINTERRUPTED.
18. Maintenance Services. Licensee may elect, to obtain maintenance, support and upgrade services from SSI in accordance with and subject to the terms of SSI's standard Subscription Agreement.
19. Loss of Data. SSI shall not be responsible for any loss of or damage to files or data caused by the Licensed Materials, or be required to restore or rebuild files or data. Licensee shall implementing adequate backup procedures to avoid any loss of files and data.
20. Modifications. SSI may, from time to time, provide the Licensee with revisions to the Licensed Materials (the "Revised Licensed Materials"). The Licensee shall test any external applications using the revised API before implementing the new version. While it is SSI's intention that the Revised Licensed Materials shall be backward-compatible with the immediately prior version of the Licensed Materials, SSI does not guarantee or warrant that this shall be so, and SSI shall have no liability whatsoever to the Licensee for any failure of the Revised Licensed Materials to be backward compatible with any prior version of the Licensed Materials. Modifications requested by the Licensee shall be subject to prior written agreement as to scope and fees payable. Ownership of all Licensed Materials modifications shall vest in SSI. SSI does not warrant, guarantee or otherwise commit to supporting Licensed Materials that has been superseded by Revised Licensed Materials.
21. Confidential Information. Each party will not use the confidential information of the other party for any purpose except for the purpose described in this Agreement, and shall not disclose it to any other person except on a confidential basis to its employees and representatives who have a need-to-know the confidential information for such purposes. This Section 23 shall not apply to confidential information which (a) is or has become readily available to the public in the same form other than by an act or omission of the receiving party, (b) was lawfully obtained in the same form by the receiving party from a third party not under an obligation of confidence to the disclosing party, (c) was in the receiving party's possession in the same and material form prior to its receipt from the disclosing party and did not otherwise originate from the disclosing party, or (d) is required to be disclosed by operation of law.
22. Audit Rights. Upon reasonable notice by SSI, which shall be delivered on no more than an (annual?) basis, Licensee shall provide a signed statement verifying its compliance with the terms of this Agreement. SSI shall also have the right, upon reasonable notice and no

more than on an annual basis, to inspect Licensee's facilities to verify Licensee's compliance with such terms. Any such inspection or audit shall be conducted either by SSI or by representatives authorized by SSI to complete the inspection. If such inspections or audits disclose that the Licensee has installed, accessed or permitted access to the Licensed Materials in a manner that is not permitted under this Agreement, then Licensee shall be liable to pay for any unpaid license fees as well as the reasonable costs of the audit.

23. Termination. This Agreement may be terminated by either party, immediately by written notice, if the other party commits a breach of any material provision of this Agreement, including a failure to make payment when due, and fails to correct or rectify such breach within 30 days of receipt of the notice requesting it to do so. SSI shall be entitled to place time-lock devices and other disabling features in the Licensed Materials that become effective in the event that the Licensee has failed to comply with its payment obligations hereunder and as set out in SSI Invoices.
24. Effect of Termination. Upon termination of this Agreement Licensee shall immediately cease using the Licensed Materials, and within 14 days of termination return all Hardware Keys to SSI.
25. CONSEQUENTIAL DAMAGES. IN NO EVENT SHALL SSI BE LIABLE FOR ANY LOSS OF DATA OR PROFITS, ECONOMIC LOSS OR SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES WITH RESPECT TO THIS AGREEMENT OR THE LICENSED MATERIALS, HOWEVER CAUSED, EVEN IF SSI HAD OR SHOULD HAVE HAD ANY KNOWLEDGE OF THE POSSIBILITY OF SUCH DAMAGES.
26. DAMAGES LIMITATION. THE MAXIMUM LIABILITY OF SSI FOR ALL CLAIMS AND DAMAGES OF ANY KIND, WHETHER FOR FUNDAMENTAL BREACH OR ANY OTHER CAUSE UNDER THIS AGREEMENT, SHALL BE LIMITED IN THE AGGREGATE TO THE TOTAL OF ALL FEES PAID BY LICENSEE.
27. LIMITATION OF NON-APPLICABILITY. IN SOME JURISDICTIONS THE EXCLUSION OR LIMITATION OF WARRANTIES OR LIABILITY MAY NOT BE APPLICABLE, AND IN SUCH JURISDICTIONS SSI HEREBY LIMITS ITS LIABILITY TO THE FULLEST EXTENT PERMITTED BY LAW.
28. Applicable Law. This Agreement shall be subject to and construed in accordance with the laws of the Province of British Columbia, Canada, excluding its conflict of laws rules and the application of the UN Convention on Contracts for the International Sale of Goods.
29. References. SSI shall be allowed to incorporate Licensee's name in SSI's customer reference list and to use it for marketing.
30. Dispute. If any dispute arises under this Agreement, a good faith attempt to resolve the dispute will be made by senior management of both parties at a mutually agreeable site and time. If the parties are unable to reach agreement within 30 days after a request for such meeting, the dispute shall be referred to arbitration in English, before one arbitrator in Victoria, British Columbia, Canada, in accordance with the Commercial Arbitration Act of the British Columbia.
31. Entire Agreement. This Agreement contains the entire agreement between the parties and shall supersede all prior discussions and agreements between the parties regarding its subject matter.
32. Amendment. Any amendment of this Agreement must be in writing and signed by duly authorized representatives of the parties.
33. Waiver. The waiver by any party of a breach by the other party of this Agreement shall not be construed as a waiver by such party of any succeeding breach by the other party of the same or another provision.
34. Assignments. Licensee may not assign or transfer the License or Licensee's rights or obligations under this Agreement without SSI's prior written consent, and any such assignment or transfer without consent shall be null and void. A transfer of all or substantially all of the voting stock of the Licensee shall constitute a transfer for these purposes and shall be subject to SSI's prior written consent.
35. Successors and Assigns. This Agreement will bind and enure to the benefit of the parties and their respective successors and permitted assigns.
36. Severability. In the event that any provision of this Agreement is declared invalid, illegal or unenforceable by a court having jurisdiction, then the remaining provisions shall continue in full force and effect.
37. Force Majeure. Except as related to Licensee's obligation to make payments to SSI, neither party shall be liable for delays or non-performance if such delays or non-performance are beyond such party's reasonable control. A delayed party shall promptly notify the other party in writing stating the cause of the delay and its expected duration and shall use commercially reasonable efforts to remedy a delay or non-performance as soon as reasonably possible.
38. Survival. The provisions of Sections 3, 5, 11, 13, 14, 17 and 20-30 shall survive the expiry or termination of this Agreement.
39. Language. It is the express will of the parties that this Agreement and related documents have been prepared in English. C'est la volonté expresse des parties que la présente Convention ainsi que les documents qui s'y rattachent soient rédiges en anglais.

Suite 304
3960 Quadra Street
Victoria, BC
Canada V8X 4A3

Toll Free: 1-888-210-7420
Phone: 1-250-479-3638
Fax: 1-250-479-0868

Information: info@ShipConstructor.com
Support: support@ShipConstructor.com
Sales: SSI@ShipConstructor.com
Website: www.ShipConstructor.com

Subscription Advantage Pack

Introduction

The Subscription Advantage Pack (SAP) is a collection of value-added enhancements only available for customers which have up-to-date subscription (UM&S) at no extra cost. These features will allow them to gain early access to the latest product enhancements. The enhancements in the SAP where not included in the last release as they were still being tested at the time of the ShipConstructor release Feature cutoff. Every time a feature in the advantage pack is used it will make sure the user has a lock with a valid subscription date, if they do not they would not be able to use the feature.

Subscription Advantage Pack Contents

Export Product Hierarchy to Microsoft Project

This feature allows you to export to a Microsoft Project file that can be used for scheduling and for simulation inside Navisworks. Each assembly becomes a task with an estimated duration of 1 day. Assemblies that have subassemblies become summary tasks. User Defined Attributes assigned to assemblies are also exported up to a limit of ten.

Export Product Hierarchy to Navisworks Selection Sets

This feature allows you to export to an XML file that contains the selected product hierarchy as Navisworks selection sets for each assembly. This can be used in conjunction with the Microsoft Project schedule simulation in Navisworks.

MarineDrafting

MarineDrafting is a feature that generates simple 2D AutoCAD geometry from the ShipConstructor model. By generating this simple geometry the output can be more easily manipulated by users to conform to their requirements. The MarineDrafting view is a hybrid of a hidden view, sectioning and custom added geometry.

Panel Dimensioning

A command to quickly dimension plate panels in production drawings. The command works by creating dimensionable points and running AutoCAD’s quick dimension command.

Project Explorer

The project explorer is a palette that can be up for the entire ShipConstructor session. This palette can be docked in the AutoCAD window on the left or right, or can be undocked.

Show Part Properties in Drawing

This command will bring up the Part Properties palette. From this palette, you will be able to select a BOM definition, and essentially preview the part’s BOM properties while still in the model drawing.

Storing Commercial Extents in User-Defined Attributes

This feature allows you to save the height and length of all structure parts in a plate nest drawing as values in a User-Defined Attribute.

Appendix A Subscription Advantage Pack Commands

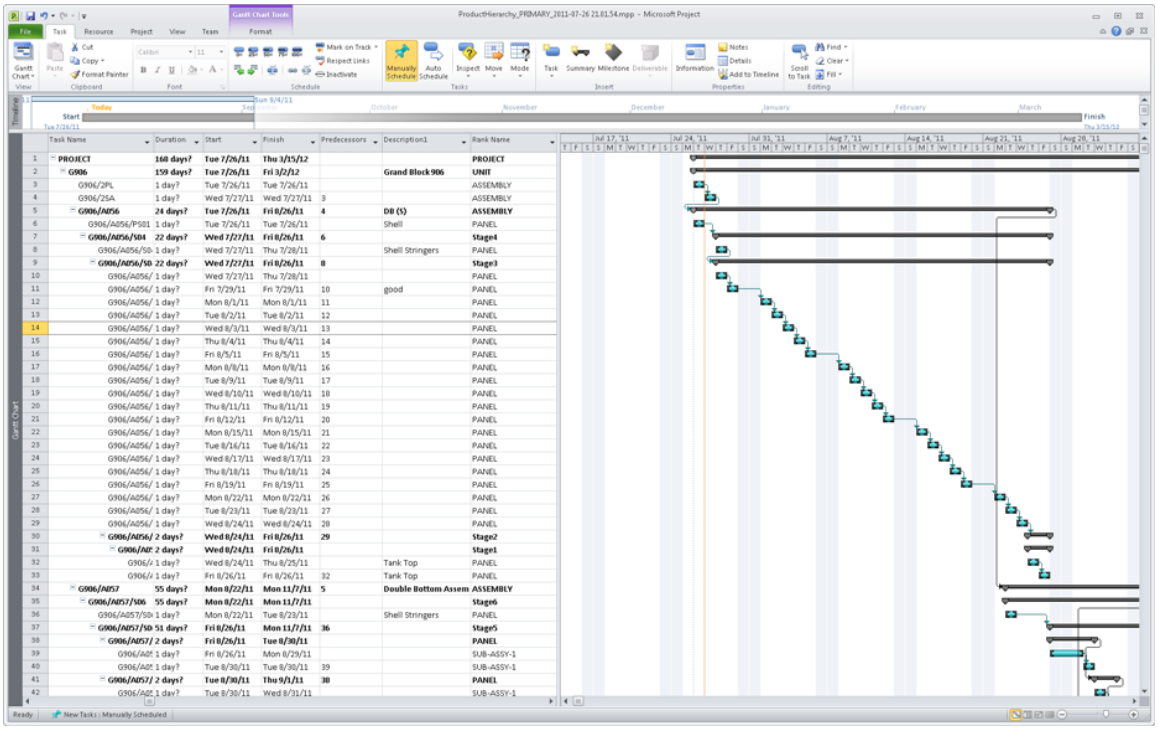
This manual lists all of the commands which are included in the Subscription Advantage Pack along with their options and required permissions.

Export Product Hierarchy to Microsoft Project

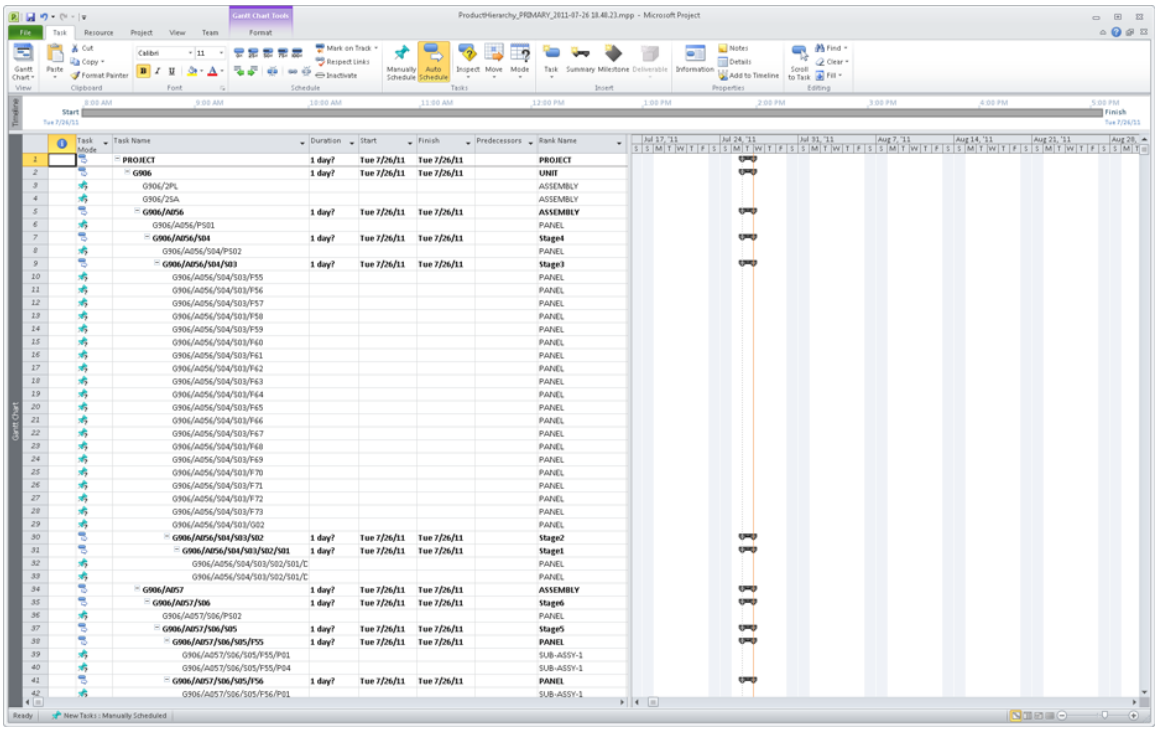
Introduction

This feature allows you to export to a Microsoft Project file that can be used for scheduling and for simulation inside Navisworks. Each assembly becomes a task with an estimated duration of 1 day. Assemblies that have subassemblies become summary tasks. User Defined Attributes assigned to assemblies are also exported up to a limit of ten.

If you don’t know the name of the product hierarchy or mistype it, the list of product hierarchies will be listed on the command line. If the product hierarchy has a space in the name then you need to surround the name in double quotes (Eg. “MY PH”). Optionally you can create a default schedule or not.



Project with Default Schedule



Project without Schedule

To Export a Microsoft Project file for a Product Hierarchy

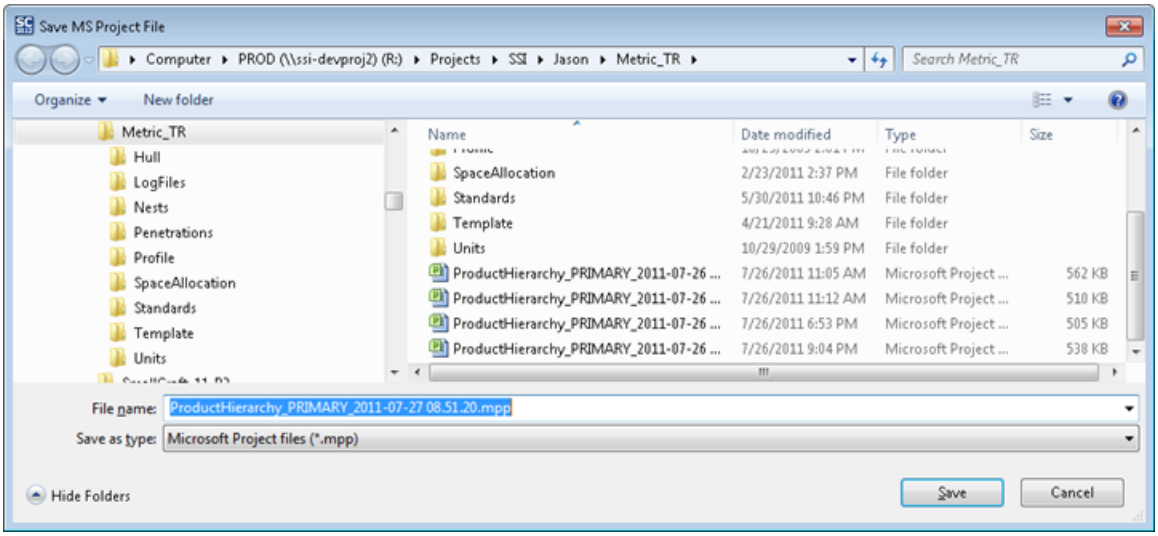
1. Run SCADVCreateMSProjectSchedule from the command line.

```
Create default schedule [Yes/No]:
```

2. Type Yes or No. Yes will set up the schedule so that sibling assembly tasks are completed sequentially in alphabetical sequence.

```
Name of product hierarchy to export <PRIMARY>:
```

3. Type the name of the product hierarchy to export. If the typed name doesn't match a product hierarchy in the project then the project hierarchy names are listed and you can retype the name.
4. Select the name of the MS Project file create. A default filename is created with a date/time stamp but you can rename it if you desire. If the filename already exists the existing file will be renamed to have a bak extension.



The output filename will be shown on the commandline when the export is complete.

Export Product Hierarchy to Navisworks Selection Sets

Introduction

This feature allows you to export to an XML file that contains the selected product hierarchy as Navisworks selection sets for each assembly. This can be used in conjunction with the Microsoft Project schedule simulation in Navisworks.

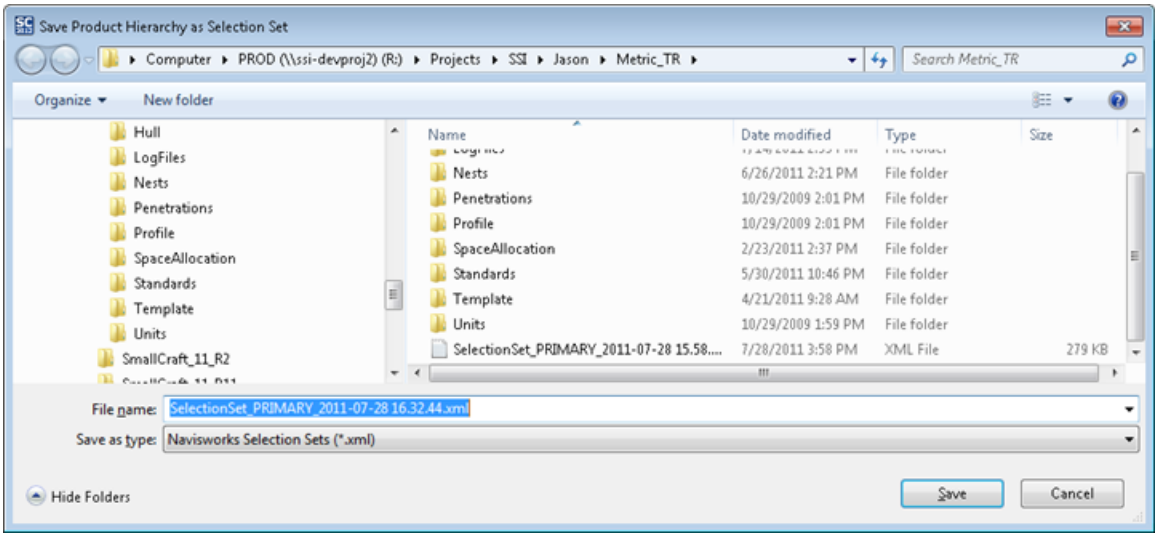
To export a Navisworks selection sets file for a product hierarchy

1. Run SCADVCreateNWSelectionSets from the command line.

```
Name of product hierarchy to export <PRIMARY>:
```

2. Type the name of the product hierarchy to export. If the typed name doesn't match a product hierarchy in the project then the project hierarchy names are listed and you can retype the name.

Select the name of the XML file create. A default filename is created with a date/time stamp but you can rename it if you desire. If the filename already exists the existing file will be renamed to have a bak extension.



The output filename will be shown on the commandline when the export is complete.

Each assembly becomes a selection set.

If you don't know the name of the product hierarchy or mistype it, the list of product hierarchies will be listed on the command line. If the product hierarchy has a space in the name then you need to surround the name in double quotes (Eg. "MY PH").

MarineDrafting

Introduction

MarineDrafting is a feature that generates simple 2D AutoCAD geometry from the ShipConstructor model. By generating this simple geometry the output can be more easily manipulated by users to conform to their requirements. The MarineDrafting view is a hybrid of a hidden view, sectioning and custom added geometry.

The MarineDrafting process has a setup process and a generate/update view process.

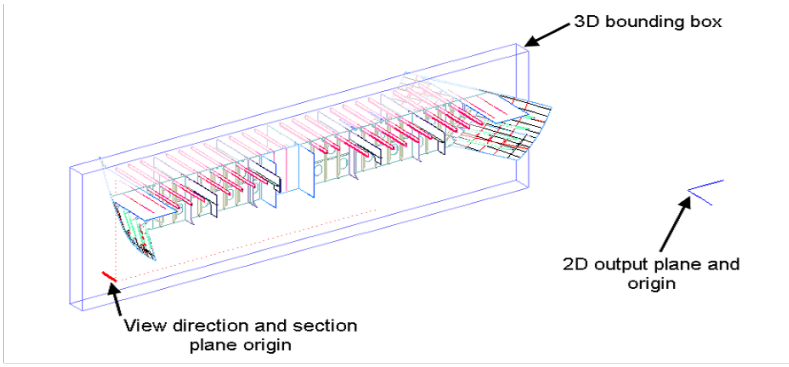
MarineDrafting is intended to work in the following drawing types:

- Product Hierarchy
- Assembly
- Equipment Arrangement
- HVAC Arrangement
- Pipe Arrangement

MarineDrafting is primarily intended to work with structure part types. Other part types may work but may not have the expected result. For structure parts no production information is shown in the output. The solid geometry of the parts is used so any details in the solids will show up.

Setup

The setup component consists of objects inserted into a production drawing that indicate what to include in the output, where to section the parts, what view direction to show, and where to place the output.



3D bounding box – Defined by a box solid. The solid should be orthogonal.

View direction and section plane origin – Defined by a line. The line must align with the faces of the box.

2D output plane and origin – defined by a polyline. The minimum extents point of the polyline defines the origin of the 2D view. The rotation of the view is hardcoded.

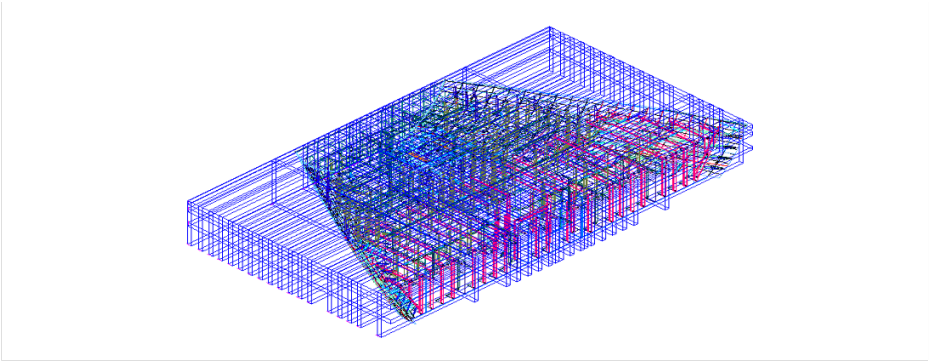
These elements can take time to setup manually so it is recommended that autosetup be used to generate the views initially.

Automatic View Setup

Autosetup creates 2D views automatically based on the parts in the current drawing. It will define a 2D view when there is a plate part with area greater than 5m^2. It sets the bounding box extents to the extents of all the parts in the drawing. The thickness of the bounding box is 300mm.

To setup views automatically:

1. Open a production drawing that contains objects that you want to include in a 2D view.
2. Choose SCADVMDAUTOSETUP



Manual View Setup

Manual setup is only recommended when autosetup fails to define a view you want.

To setup a view manually:

1. Create a solid box using the BOX command to define the boundary of objects to consider for the 2D view. Any object's extents that intersects that box will be added to the list of objects for that 2D view. Objects that are hidden or on off layers are not used.
2. Create a line that represents the view direction from start towards the end of the line. The line also defines the section plane. The line direction represents the normal of the section plane and the end point represents a point on the plane. It is recommended to place the endpoint so that the section plane goes through the middle of the plates in the primary plane. The end point of the line also represents the origin of the 3D view. This point will be mapped to the origin of the 2D view.
3. Create a RECTANG polyline that represents the location of the 2D view. The lower left extents will be the origin of the 2D view. This object is allowed to be in model space or any layout but for the purpose of the command it should be in model space. If you want to show it in a layout cut and paste it.
4. Choose SCADVMDSETUP

```
Select bounding box:
```

5. Select the box.

```
Enter tag number for section <1>:
```

6. The tag number uniquely identifies this 2D view (and its objects) in the drawing. A descriptive name may be helpful (Eg. 'Frame 65 Looking Forward'). You will see a warning if the tag number already exists.

```
Select line for view direction and section plane:
```

7. Pick the line.

```
Select polyline for output location:
```

8. Pick the polyline

Now the 2D view is ready to generate output. You can modify any of the components of the 2D view at any point. This could be to change the extents of the bounding box or change the view direction. The component objects are tagged with extended data to make them specific to a 2D view.

Generating Output

The output is generated to specific layers. All output geometry has an associated part GUID in the XData.

To generate output:

1. Choose SCADVMD. You are required to have setup at least one view previously.
2. Select any of the setup objects that make up the view to select it.

Output

Continuous and intercostals symbols

These symbols are inserted when plates are parallel to the view direction.

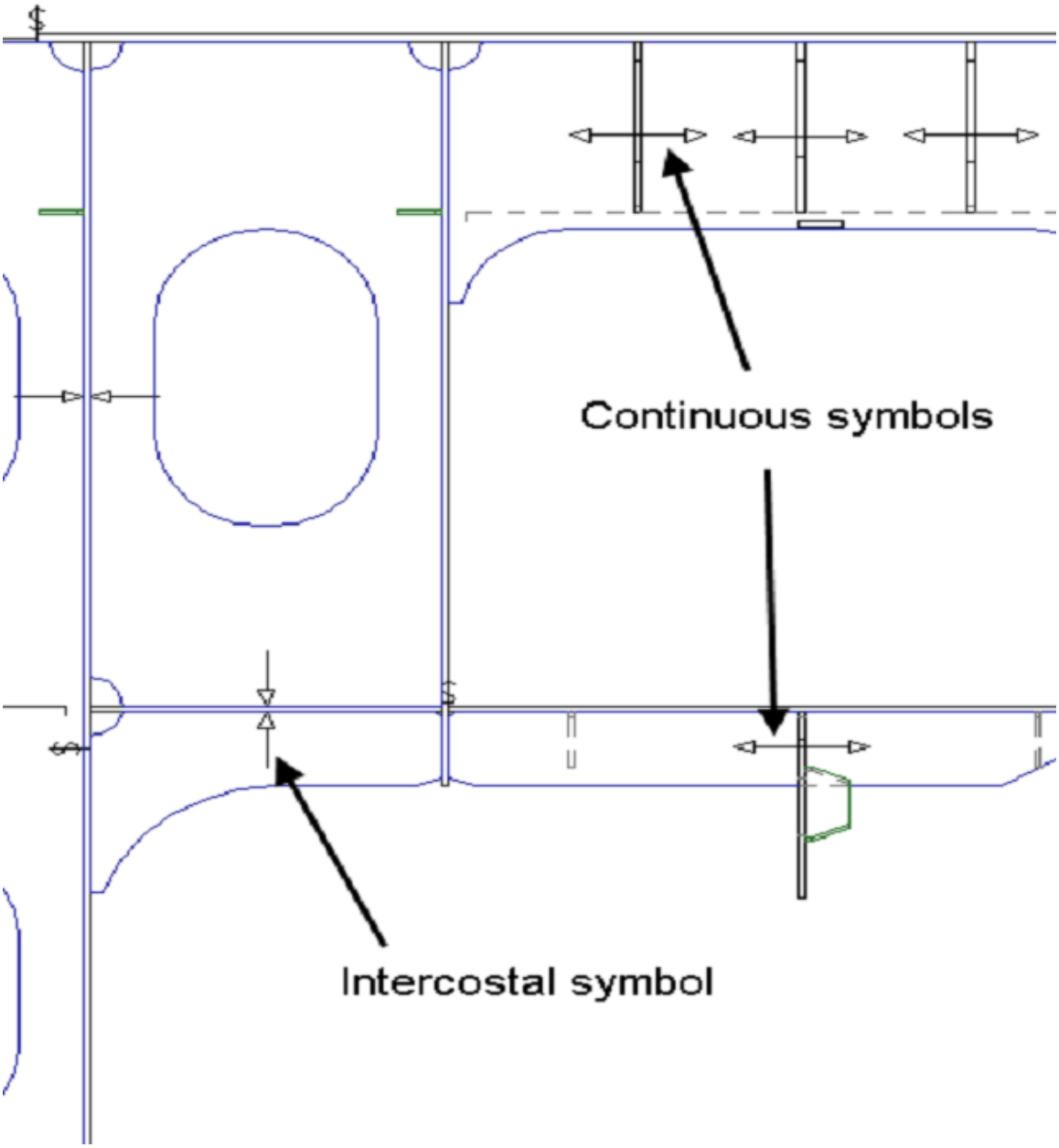
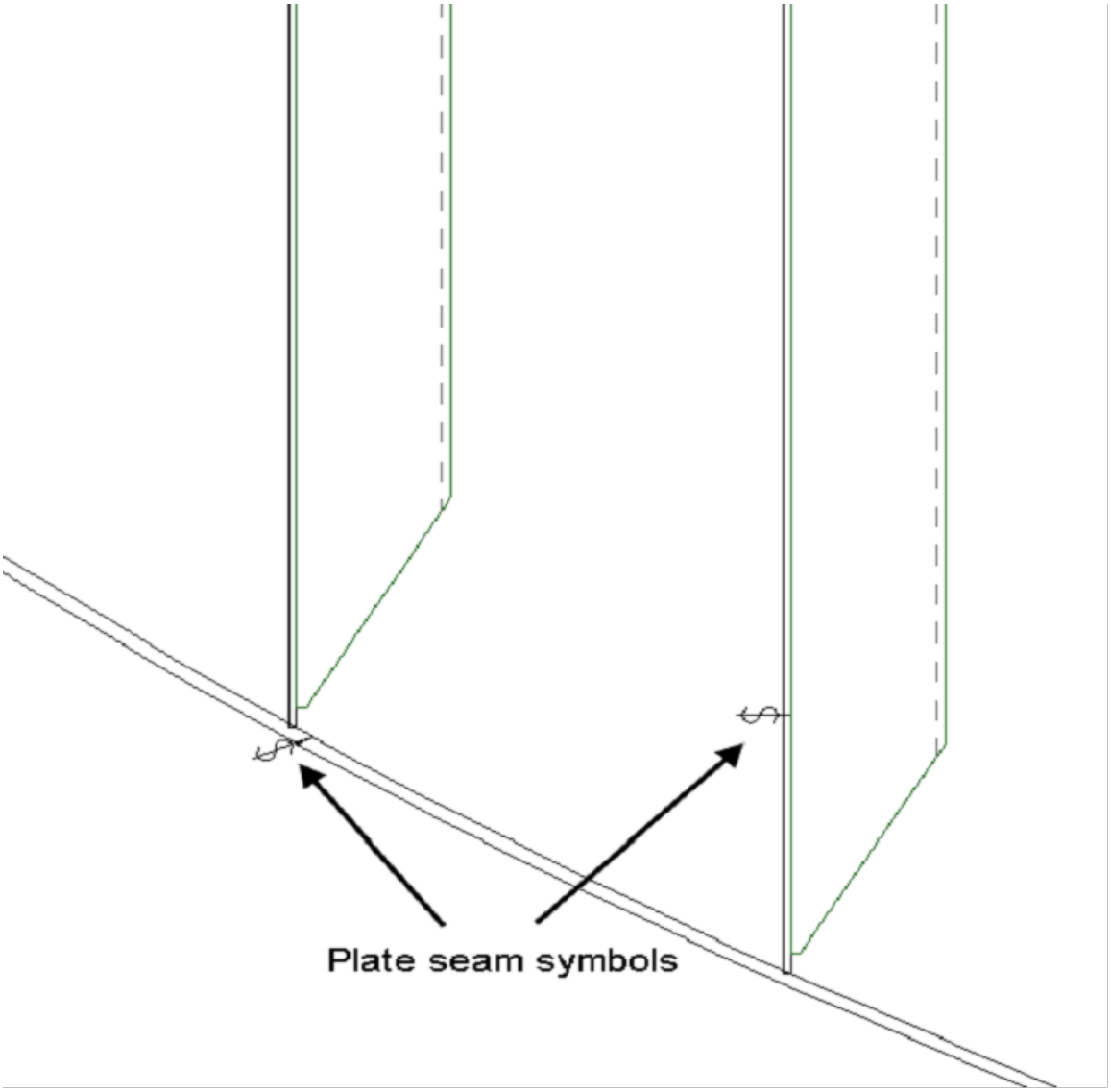


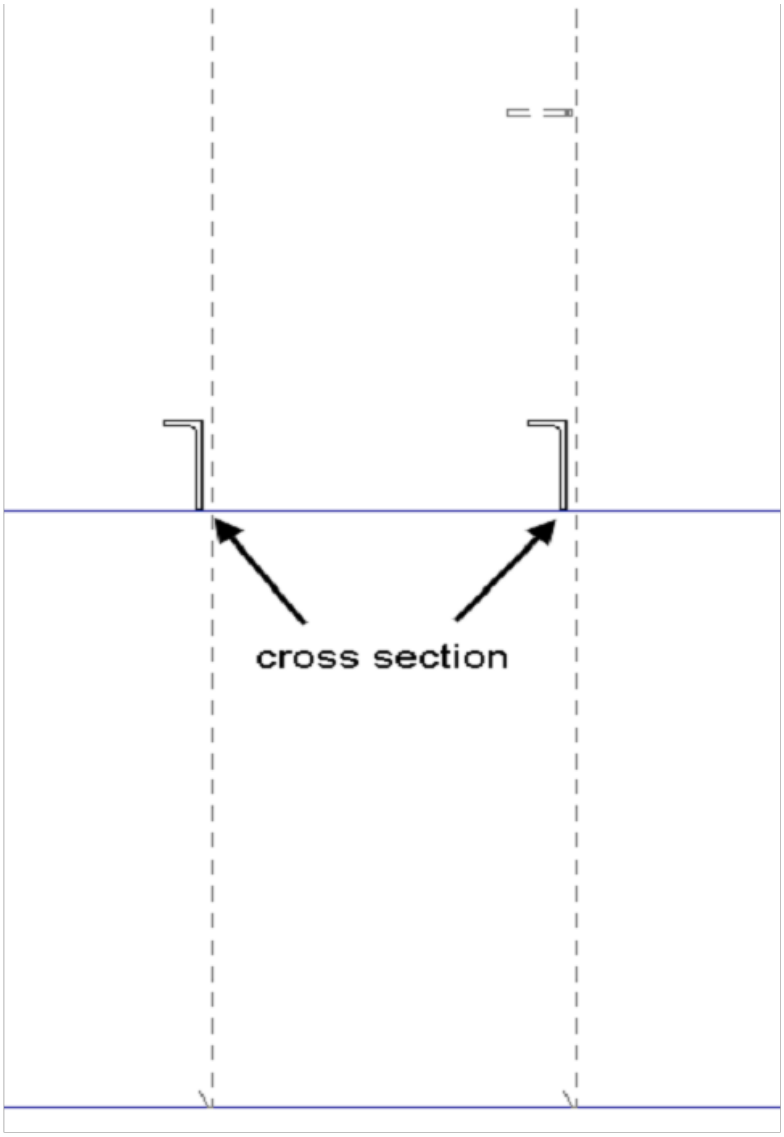
Plate seams for sectioned plates

Plate seams are inserted for plates that are sectioned.



Stiffener cross sections

Cross sections are inserted at the piecemark location of the part and offset to the throw side of the mold line. The cross section is true size.



Changing Part Colors

When the production drawing becomes out of date you want to know what 2D output has changed. To aid in this the SCADVMDCOLORTOPART and SCADVMDCOLORRESTORE commands were added.

To show out of date colors during update production drawing:

1. Choose Update Production Drawing
2. When the Modified Part Information window is displayed and you see that the parts are colored according to their state, run SCADVMDCOLORTOPART. The 2D view output geometry will now match the colors and you can see what output geometry is associated with changed parts. New parts won't show because the 2D view isn't updated yet to show those.
3. When you are done inspecting the output geometry run SCADVMDCOLORRESTORE to return the parts back to their original colors.

Automatic Labeling

Automatic labeling of geometry in 2D views in a way that would be similar to labeling parts from BOMs is unavailable at the moment. However, because elements of geometry in the 2D representation view are supplied with extended data (XDLIST), property labels can be attached to the elements of the representation geometry manually.

Automatic Dimensioning

Automatic dimensioning of geometry in 2D views in a way that would be similar to automatic dimensioning of pipe spools is not available. As a possible way to do manual dimensioning, users may consider the following steps:

To dimension a 2D view:

1. Run SCADVPANELDIMPOINTS to create reference points on panels;
2. Run QSELECT to select all points objects created by the previous command;
3. Run SCADVMDCOPYOBJECTS command to copy the points objects into the target 2D view;
4. Quick dimension the 2D view by using the reference points.

Panel Dimensioning

Introduction

A command to quickly dimension plate panels in production drawings. The command works by creating dimensionable points and running AutoCAD's quick dimension command.

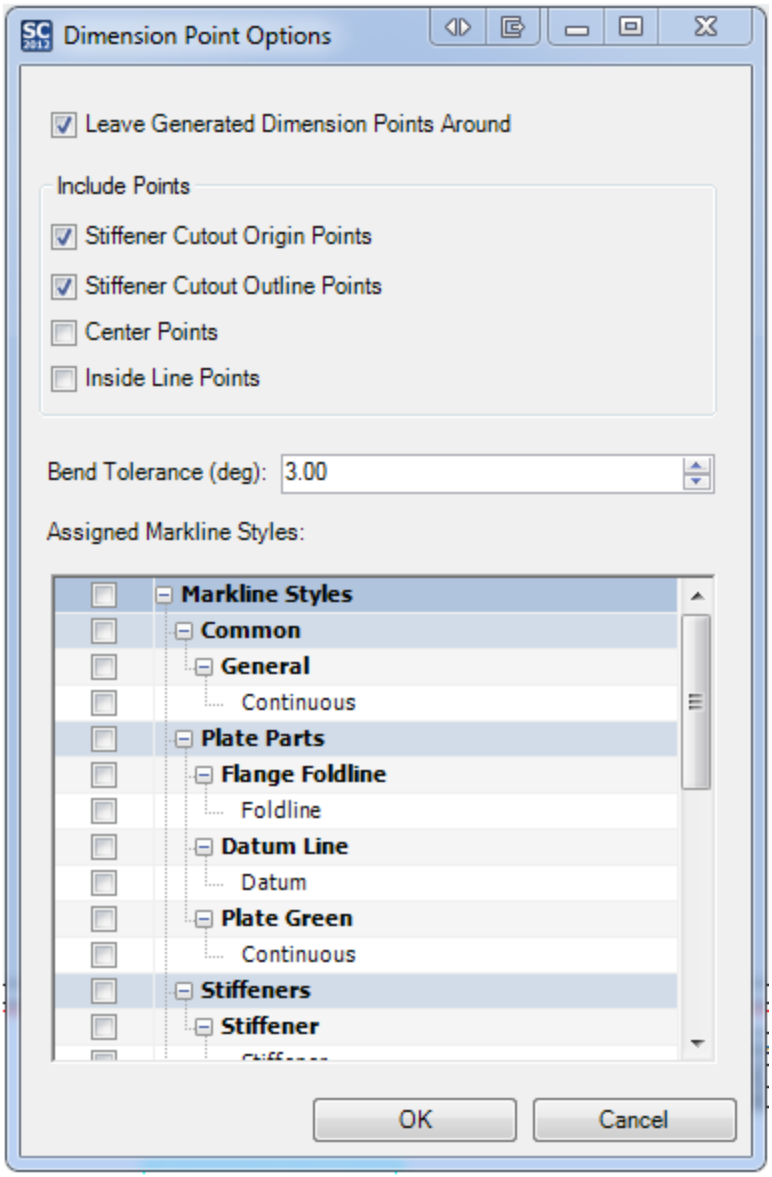
There are options to determine which points on the parts will be dimensioned. The dimension points will be projected to X-Y plane of current UCS; AutoCAD Quick Dimension command will be run automatically with all the dimension points generated. You can select where the dimension lines would be placed and choose options in the quick dimension command. You can also leave around the dimension points so that you can remove some which you don't desire to dimension and manually run the quick dimension command (QDIM).

To create dimension points

1. Run SCADVPANELDIMPOINTS from the command line.

```
Select Panel Parts:
```

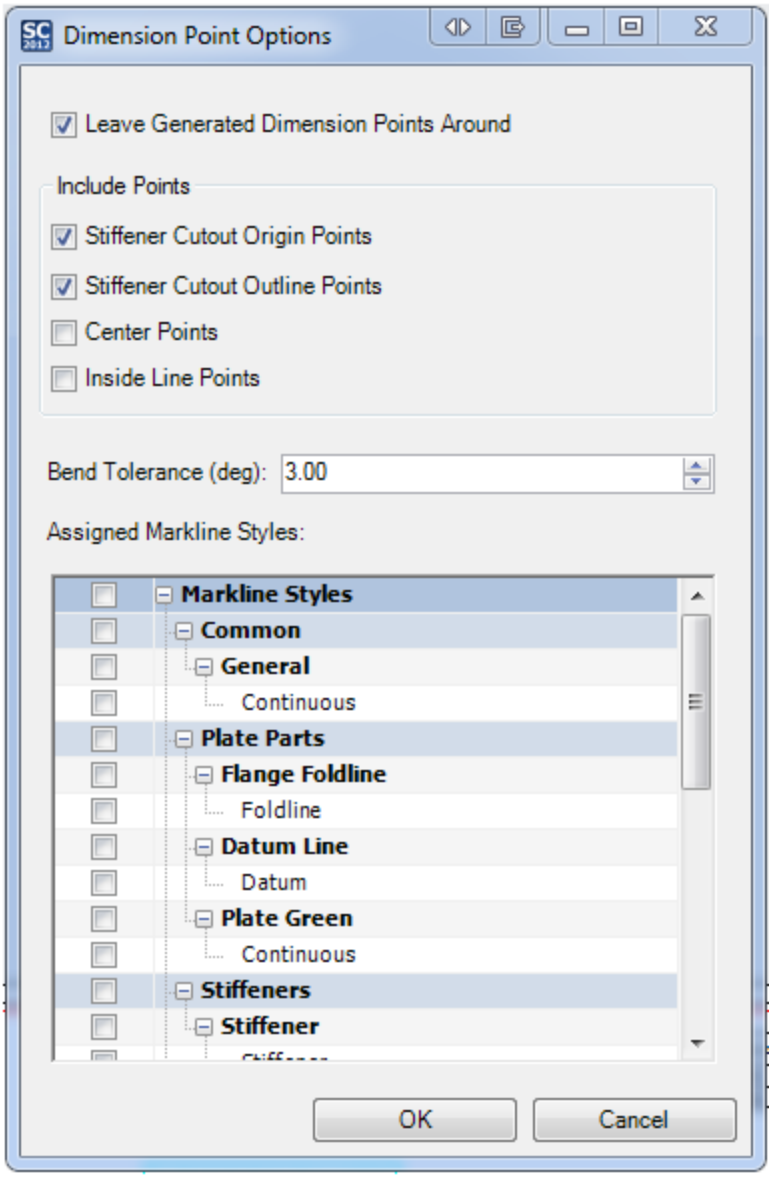
2. Select plate(s) to dimension.
3. The Dimension Point Options window is shown.



4. Check or uncheck options and click OK. Dimension points will be generated based on selected plates and Options; QDIM is going to be called automatically and passed in those points as selected points.

```
Specify dimension line position, or
[Continuous/Staggered/Baseline/Ordinate/Radius/Diameter/datumPoint/Edit/seTtings]
<Continuous>:
```

Dimension Point Options

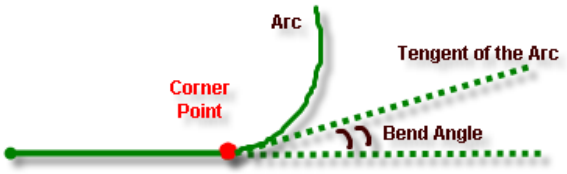


Leave generated dimension points around

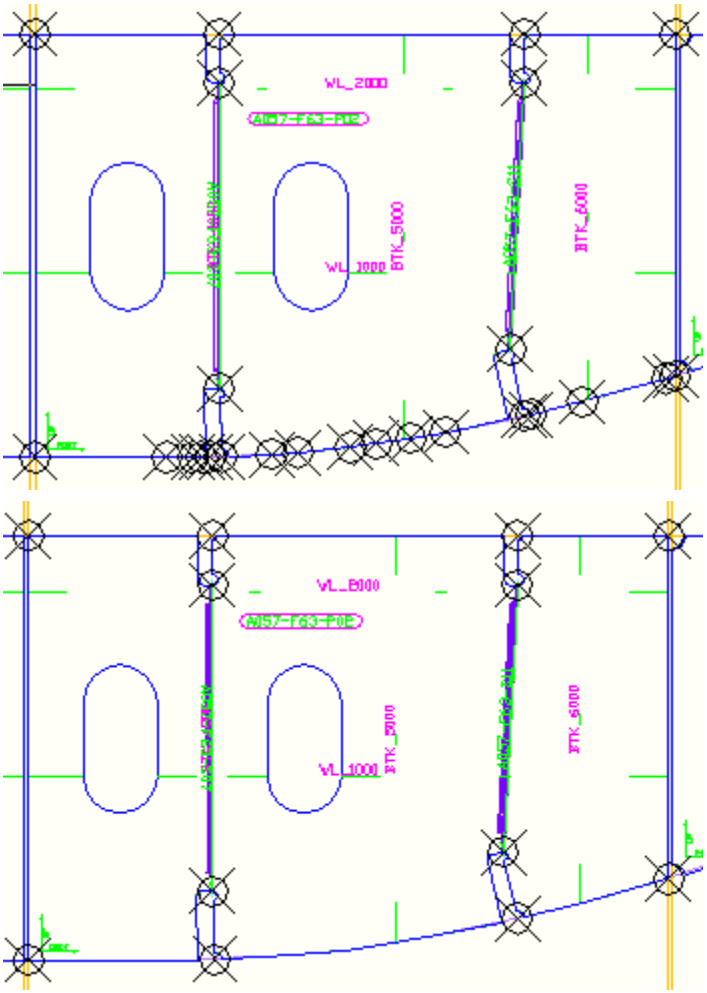
If checked, all generated points will be kept in the drawing after the command.

Bend Tolerance (DEG)

A positive angle in degrees. If the bend angle between two adjacent edges is less than the Bend Tolerance, the vertex point where the two edges meet is not considered significant and the vertex will not be a dimension point. Frequently, plate boundaries are created from many small pieces of straight or arc line segments, which would result in many corner points if no bend tolerance was used.



The following two images show that a larger bend tolerance will remove those extra corner points.



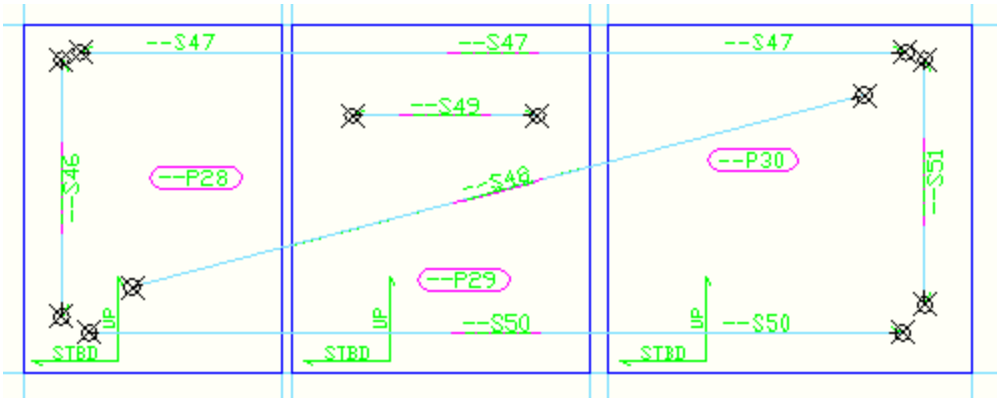
Tol: 0.0 (deg)

Tol: 3.(deg)

Lines in the following image are tangent on vertexes; those points were returned because those straight lines are orthogonal to X-Y plane of current UCS.

Assigned Markline Styles

All possible part types and mark line styles on plate parts are listed in the Assigned Markline Styles list. You can select specific mark line styles to generate dimension points for. ShipConstructor will generate dimension points for the end points that correspond to marklines with styles matching the selected styles.

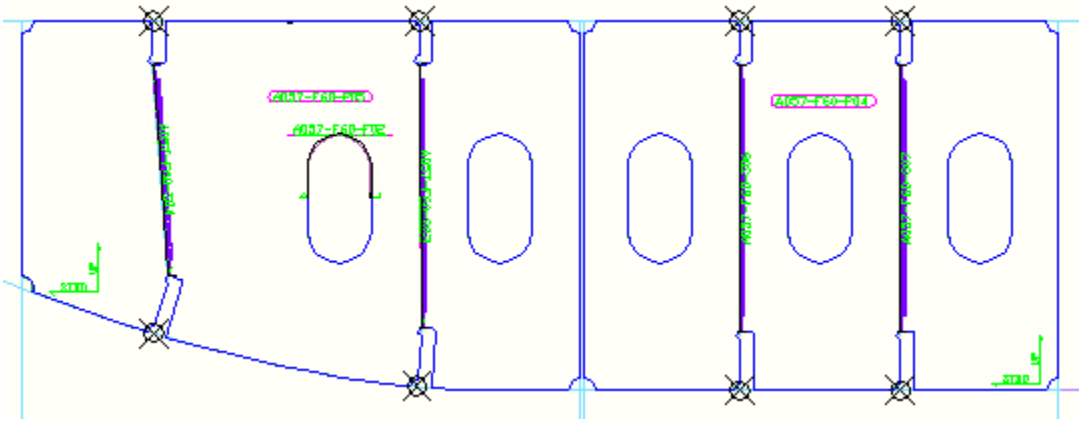


Include Points

> **Stiffener Cutout Outline Points** and **Center Points** options are related. If you want to see any arc's center point on the cutout, you should check both of these check boxes.
>
> **Stiffener Cutout Outline Points** and **Cutout Origin Points** options are not related. You can select either of them to show those points.

Stiffener Cutout Origin Points

Selecting this check box will generate dimension points for all stiffener cutout origin points (where the moldline of the stiffener passed though the plane of the plate. Stiffener cutouts are those automatically generated cutouts; manually created cutouts on plates will not get any points returned.



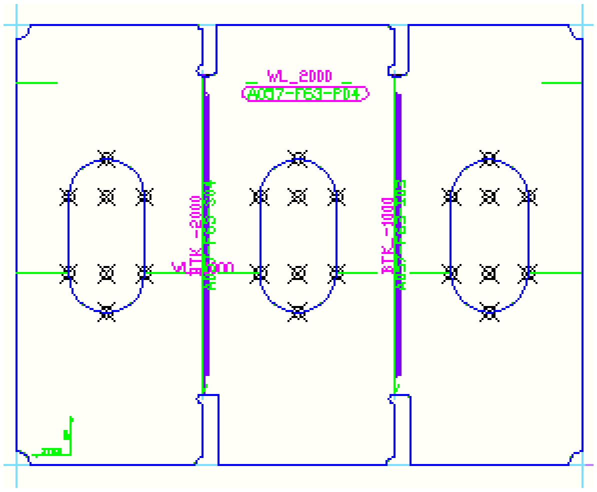
Center Points

Selecting this check box will generate dimension points for center points from arcs.

Inside Line Points

Selecting this check box will generate dimension points for all points from inside cut lines like lighting holes and penetrations.

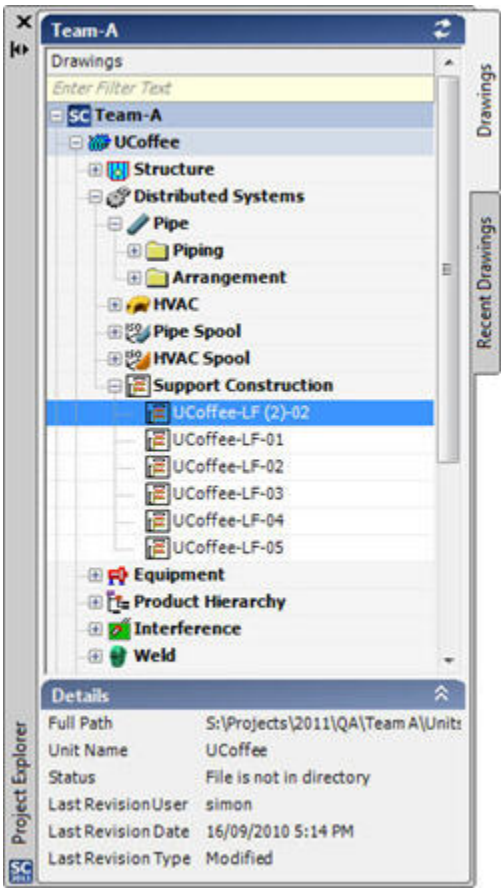
> **Inside Line Points** and **Center Points** options are related. If you want to see any arcs center point on the cutout, you should check both of these check boxes.


WL_2000
A057-F63-F04
BTK -2000
BTK -1000

Project Explorer

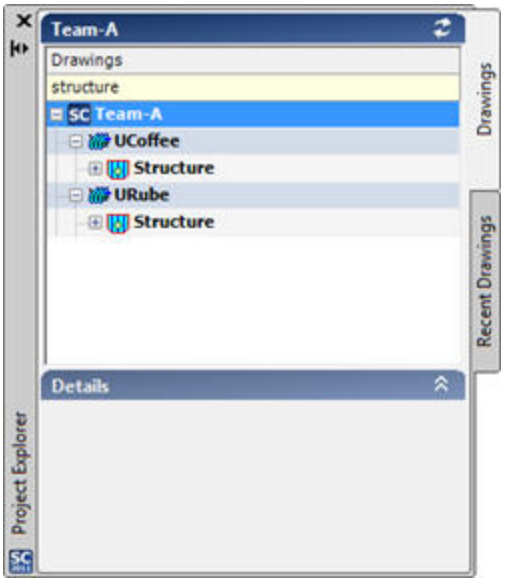
Introduction

The project explorer is a palette that can be up for the entire ShipConstructor session. This palette can be docked in the AutoCAD window on the left or right, or can be undocked.

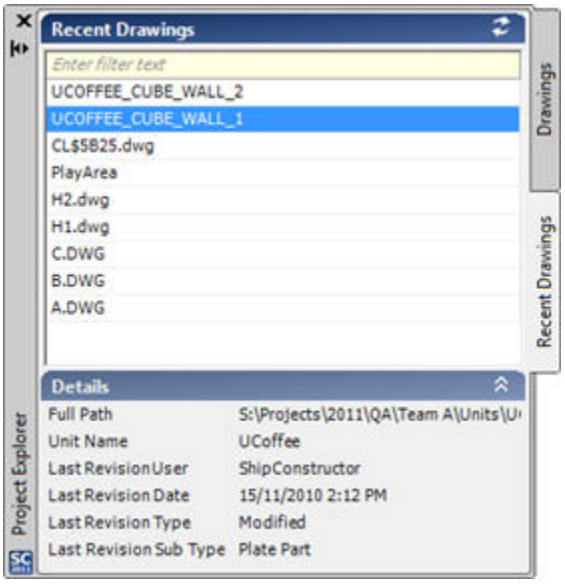


Features

- Double-clicking a drawing will open it, as long as it exists.
- Entering filter text will filter drawings and headings. To see Structure Drawings, type in “Structure” in the filter, hit Enter and you’ll see the results filtered as below. Just expand which Structure folder for easy navigation.



- The Details box gives extra information about the selected drawing. It can be hidden or shown by pressing the arrows on the top right of the box.
- The Refresh button near the top right of the main drawings box will refresh the entire drawing list. This can take as long as 30 seconds for very large projects.
- The Recent Drawings tab, lists recently opened drawings. These may not be ShipConstructor drawings. Double-clicking on the drawing in this tab will also open it, provided it still exists.

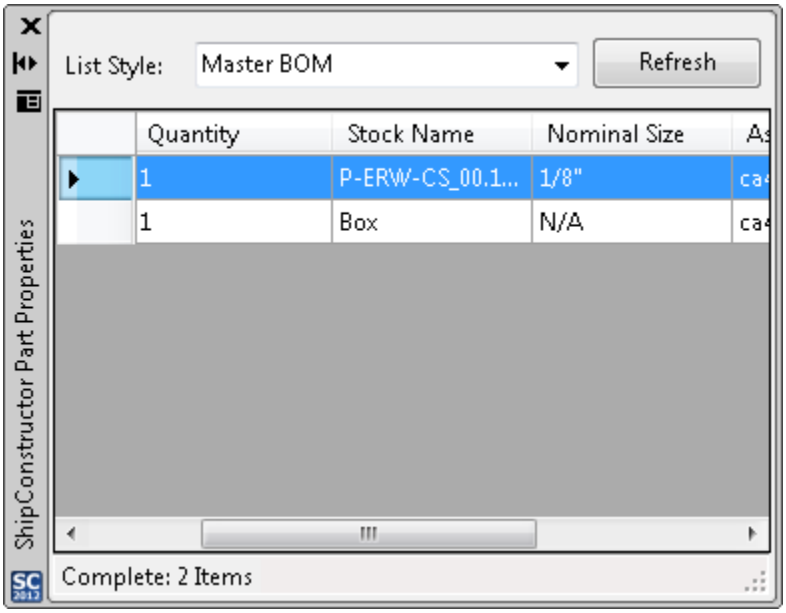


Show Part Properties in Drawing

Introduction

This command will bring up the Part Properties palette. From this palette, you will be able to select a BOM definition, and essentially preview the part's BOM properties while still in the model drawing.

The Part Properties Pallette



The loading of the data is done on a separate thread, so you will be able to continue to model in ShipConstructor while the data loads.

When switching drawings, the palette will automatically refresh with the now current drawing data for the selected BOM definition.

Selecting a part in the model will select it in the palette listing, and vice versa.

To view other properties or change columns, you must update your BOM definition in Manager.

Storing Commercial Extents in User-Defined Attributes

Introduction

This feature allows you to save the height and length of all structure parts in a plate nest drawing as values in a User-Defined Attribute.

To save the commercial extents for all the parts in the current drawing

1. Run SCADVSaveMinExtentsStructure from the command line. No other input is required.

This command creates two User-Defined Attributes called “Min Rectangular Height" and "Min Rectangular Length" (if those UDAs do not currently exist). Those UDAs are then assigned (if the UDAs aren’t already) to the various Structure part types: Plate, Stiffener, Faceplate, Twisted Stiffener, Curved Plate, and Corrugated Plate. Fabricated Profile Components are ignored.

For each of those parts in the current plate nest drawing, their minimum lengths and heights are calculated, and the corresponding values saved as the value for the UDAs. These UDAs can then be added to Bill of Materials to display them. Existing UDAs values are updated during successive commands.

Appendix A Subscription Advantage Pack Commands

This manual lists all of the commands which are included in the Subscription Advantage Pack along with their options and required permissions.

MarineDrafting Commands

Command: SCADVMDAUTOSETUP
Permissions: none Procedure: Automatic View Setup

Automatically creates bounding boxes for each main planar group that presents in the drawing. Automatically creates view direction lines. Automatically creates blank 2D views on the first Layout tab of the drawing. The 2D view output is tiled with frames in the first column then longitudinals then decks.

The command has many hardcoded parameters such as bounding box dimensions, view direction, 2D view scale, and other. View direction is set to looking forward, to port or down. This can be changed manually after the command is run. The view scale is set to 1:100. SCADVMDSETSCALE can be used to modify that.

If the drawing already contains views then autosetup will abort.

The tag names for the views are hard coded to FRAME<location>, LNGBHD<location>, DECK<location>.

Command: SCADVMDSETUP
Permissions: none Procedure: Manual View Setup

Creates a 2D view configuration from user drawn objects.

Command: SCADVMD
Permissions: none Procedure: Generating Output

Generates the 2D views. All output is placed on hardcoded layers that are preconfigured. Layer properties can be changed. The layers are mainly separated by part type but this will change in future versions.

Name	O..	Color	Linetype
SCon2d Erased		white	Continuous
SCon2d Hidden		8	SConDashed
SCon2d Hidden Corrugated Plate		8	SConDashed
SCon2d Hidden Equipment		8	SConDashed
SCon2d Hidden FacePlate		8	SConDashed
SCon2d Hidden HVAC		8	SConDashed
SCon2d Hidden PartView		8	SConDashed
SCon2d Hidden Pipe		8	SConDashed
SCon2d Hidden PipeHanger		8	SConDashed
SCon2d Hidden Plank		8	SConDashed
SCon2d Hidden Plate		8	SConDashed
SCon2d Hidden Plate Line		8	SConDashed
SCon2d Hidden Plate Out of Plane		8	SConDashed
SCon2d Hidden Plate Out of Plane Forward		8	SConDashed
SCon2d Hidden Standard Plate		8	SConDashed
SCon2d Hidden Standard Plate Out of Plane		8	SConDashed
SCon2d Hidden Stiffener		8	SConDashed
SCon2d Hidden Stiffener Flange Thickness		8	SConDashed
SCon2d Hidden Stiffener Line		8	SConDashed
SCon2d Partially Visible Plate Out of Plane		white	Continuous
SCon2d Plate Intersection		white	Continuous
SCon2d Plate Seam		white	Continuous
SCon2d Profile Cross Section		white	Continuous
SCon2d Section		white	Continuous
SCon2d Setup 2D View		white	Continuous
SCon2d Setup Bounding Box		blue	Continuous
SCon2d Setup View Direction		magenta	Continuous
SCon2d Visible		white	Continuous
SCon2d Visible Corrugated Plate		white	Continuous
SCon2d Visible Equipment		white	Continuous
SCon2d Visible FacePlate		white	Continuous
SCon2d Visible HVAC		white	Continuous
SCon2d Visible PartView		white	Continuous
SCon2d Visible Pipe		white	Continuous
SCon2d Visible PipeHanger		white	Continuous
SCon2d Visible Plank		white	Continuous
SCon2d Visible Plate		white	Continuous
SCon2d Visible Plate Out of Plane		white	Continuous
SCon2d Visible Plate Out of Plane Forward		white	Continuous
SCon2d Visible Standard Plate		white	Continuous
SCon2d Visible Standard Plate Out of Plane		white	Continuous

When the command is re-run on a view the view will leave any modified output geometry around. All unmodified geometry is removed. If the same geometry exists on the “SCon2d Erased” layer then it will not be brought back in.

Command: SCADVMDERASE
Permissions: none Procedure: none

Moves the selected objects to the layer “SCon2d Erased”. This command is used to hide the output geometry from coming back with the view is updated.

Command: SCADVMDMODIFY
Permissions: none Procedure: none

Copies the selected objects to the layer “SCon2d Erased”. This command is used to modify output geometry without the original geometry appearing again when the view is updated.

Command: SCADVMDCOPYOBJECTS
Permissions: none Procedure:

This command will make of copy of selected objects and transform them to the 2D output location. This can be useful when non-part objects like text or panel dimension points are drawn in the 3D location and you want to show it in the 2D view.

Command: SCADVMDISOLATE
Permissions: none Procedure: none

Hides all geometry in the model space that is not associated with the selected 2D view. This is useful for visualizing a particular 2d view. The SCUNHIDE command will restore the display of the other objects.

Command: SCADVMDSETSCALE
Permissions: none Procedure: none

Sets the output scale for the selected views. Warning: The scale text created by the SCADVMDAUTOSETUP command is not changed.

Command: SCADVMDCOLORTOPART
Permissions: none Procedure: Changing Part Colors

Changes the color of the 2D output geometry to match the part object’s color. This can be useful when updating the production drawing and showing the color overrides. This command will likely go away in the release and be replaced by improved functionality.

Command: SCADVMDCOLORRESTORE
Permissions: none Procedure:

Changes the color of the 2D output geometry back to its original color. Warning: This command will not restore the colors if the drawing is closed. This is intended to be used in conjunction with SCADVMDCOLORTOPART. This command will likely go away in the release and be replaced by improved functionality.

Command: SCADVMDLISTPART
Permissions: none Procedure: none

Output the list from the selected source parts.The output geometry is just simple AutoCAD objects and listing on them doesn't give you any information from the part it came from. This command gives you this capability.

Panel Dimension Command

Command: SCADVPANELDIMPOINTS
Permissions: none Procedure: Panel Dimensioning

Configuring Production Drawing Silent Update

When production drawings are updated using the silent command, -SCUpdateProdDwg or -SCUpdateProdDwgsSilent, not all of the options available through the user interface are configurable. These commands return control over some of these settings to the user. These values are stored in the registry of the computer that they are run on. If you modify these values they will only affect the computer they were changed on.

Command: SCAdvProdDwgUpdateSetArrangementRelabelAll
Permissions: none

Enables or disables the Relabel All option during Arrangement drawing silent update. The settings that are used for a relabel will be the last values set when using the user interface to configure it. This system uses the same mechanism to persist those values.

Command: SCAdvProdDwgUpdateSetArrangementSpoolOverride
Permissions: none

Enables or disables the Spool Override option during Arrangement drawing silent update.

Command: SCAdvProdDwgUpdateSetSpoolRedimensionSpools
Permissions: none

Enables or disables the Redimension Spools option during Spool drawing silent update.

Command: SCAdvProdDwgUpdateSetSupportConstructionRedimensionSupports
Permissions: none

Enables or disables the Redimension Supports option during Support Construction drawing silent update.

Project Explorer Command

Command: SCADVPROJECTEXPLORERSHOW
Permissions: none Procedure: Project Explorer

P&ID Consistency Checker Commands

Export P&ID Assert Data

Command: SCADVPNIDEXPORTPNPDATA
Permissions: none

This command works in the AutoCAD P&ID environment only. The command exports P&ID assets data from the currently opened P&ID project into an external XML file. Exportable P&ID assets may include P&ID equipment and inline assets such as valves, reducers, filters, and many others. The exported XML file represents a snapshot of P&ID data. P&ID snapshots can be compared against a ShipConstructor project. Please note that, in the first version of P&ID Consistency Checker, no information about pipe lines or pipe line segments is exported into XML.

Export Distributed System Data

Command: SCADVPNIDEXPORTDSDATA
Permissions: none

This command works in ShipConstructor projects only. The command exports all Pipe, HVAC, and Equipment parts data from the currently opened ShipConstructor project into an external XML file. Saved XML files represent snapshots of ShipConstructor that can be compared with P&ID data at a later point. Please note, that the SCEXPORTDSDATA command may require a significant amount time to complete its XML output in large projects. For example, generating XML files in projects where the total number of Pipe, HVAC, and Equipment parts exceeds 50,000 may take more than half an hour.

Export P&ID Assert Data

Command: SCADVPNIDCOMPAREPNPDSDATA
Permissions: none

This command is only supported in the ShipConstructor environment. The command is used to compare P&ID data against ShipConstructor data and to generate consistency reports. Please note that, in the first version of P&ID Consistency Checker, “live” comparison of data between a ShipConstructor project and an AutoCAD P&ID project is not supported. To compare two sets of data, P&ID data must be exported into an XML file before a comparison can be done. ShipConstructor data can be accessed without previously exporting it to an XML file. If the user runs the SCCOMPAREPNP command in a ShipConstructor project, the “Consistency Checker” dialog will open. If the user leaves the path to the ShipConstructor XML file blank, the comparison tool will automatically pick data from the currently opened ShipConstructor project.

Export Product Hierarchy to Microsoft Project

⚠ These commands require that Microsoft Project be installed on the computer.

Command: SCADVCreateMSProjectSchedule
Permissions: none Procedure: Export Product Hierarchy to Microsoft Project

Command: -SCADVCreateMSProjectSchedule
Permissions: none

A commandline version of the SCADVCreateMSProjectSchedule command. The filename will be prompted on the commandline and not in a window.

Export Product Hierarchy to Navisworks Selection Sets

Command: SCADVCreateNWSelectionSets
Permissions: none Procedure: Export Product Hierarchy to Navisworks Selection Sets

Save Minimum Extents for Structure Parts

Command: SCADVSaveMinExtentsStructure
Permissions: none Procedure: Storing Commercial Extents in User-Defined Attributes

Open Drawing from Part

With a model part selected, you can open up a corresponding production drawing. With a production part selected, you can open up the corresponding model drawing.

If you do not want to type each command when a part is selected, you can setup a context menu for them through:

Command: SCADVADDCONTEXTMENU
Permissions: none Details: Sets up a context menu for the open drawing commands listed below. User can then select a part, right click, and select which option they'd like.

Command: SCADVOPENNESTDRAWING
Permissions: none Details: With a model part selected, this command will open up the corresponding nest drawing if applicable.

Command: SCADVOPENASSEMBLYDRAWING
Permissions: none Details: With a model part selected, this command will open one of the corresponding assembly drawings if applicable.

Command: SCADVOPENSPOOLDRAWING
Permissions: none Details: With a model part selected, this command will open the corresponding spool drawing if applicable.

Command: SCADVOPENMODELDRAWING
Permissions: none Details: With a production part selected, this command will open the corresponding model drawing if applicable.

Command: SCADVOPENPROFILEPLOTDRAWING
Permissions: none Details: With a model part selected, this command will open corresponding profile plot drawing if applicable.

Show Part Properties in Drawing

Command: SCADVSHOWPARTSINDRAWING
Permissions: none Details: Show Part Properties in Drawing

Scripting Helpers

Command: SCADVENABLESILENTMODE
Permissions: none Details: Enables a silent mode in ShipConstructor which stops specific notification dialogs from being displayed. This can be used to help long or scripted operations avoid becoming paused by dialogs waiting for user input. Not all dialogs are hidden in silent mode. Silent mode should be disabled as soon as the long or scripted operation is complete. This command should not be run during normal ShipConstructor usage.

Command: SCADVDISABLESILENTMODE
Permissions: none Details: Disables silent mode in ShipConstructor. This command should not be run during normal ShipConstructor usage.

Command: SCADVSTARTDIALOGCLOSER

Permissions: none

Details: Enables the dialog closer functionality which forcibly closes all dialogs which may impede any commands that are run. This command is not safe to use during normal ShipConstructor usage and should not be run unless directed to by the ShipConstructor support team.

Command: SCADVSTOPDIALOGCLOSER

Permissions: none

Details: Disables the dialog closer functionality. This command is not safe to use during normal ShipConstructor usage and should not be run unless directed to by the ShipConstructor support team.

Command: SCADVDIALOGCLOSERLOGCOMMAND

Permissions: none

Details: Logs a user given string as the context of the currently running operation when the dialog closer functionality is enabled. This command is not safe to use during normal ShipConstructor usage and should not be run unless directed to by the ShipConstructor support team.