Advance Steel: Automatic generation of drawings using Drawing Processes

Emy Nestor
FTS Specialist, Autodesk Product Support
Hello,

I am Emy from Autodesk Technical Support team and I am happy to assist you 😊
Class summary

- **Drawing Process** – scope and use in detailing workflow
- Configure the Drawing Processes (DP) using **Drawing Process Manager (DPM)**
- The **most used options** and settings of DPM
- **Tips & Tricks** on using and configuring the drawing process
Key learning objectives

At the end of this class, you will be able to:

- Know the purpose and usage of drawing processes
- Configure the drawing processes and understand the settings and options
- Discover the most used options and settings
- Discover tips and trick on using and configuring the drawing processes
3D Model

Output
Drawing Process

- scope and use in detailing workflow
Main part (assembly)

Main part (assembly) detail
Overview / erection detail
Main part with attached parts

One assembly detail

+ SP details for components
How to create a detail drawing manually:

→ Repeat for all elements
Drawing Process (DP)

→ A template with the rules to be applied for automatic creation of detail drawings

- **Elements** to be selected for detailing
- **Page format** and arrangement of details in page
- **Drawing Style (DS)** to be used for each element
- behavior when the detail doesn’t fit into the current page

Main purpose of Drawing Processes:

→ to create the details automatically
Drawing Process Manager (DPM)
- Configure the Drawing Processes (DP)
DPM - Main dialog box
Flag for Quick documents
DPM – Drawing Process configuration
Drawing Process

Main definition (first Step)
- Select objects from 3D model
- Page format + DWG file settings
- Drawing styles to be used
- Additional scale settings

Additional Steps
Select objects from 3D model

Sort elements:

All / Selected

[+]

SP / MP / MP with attached parts / Cameras [ type ]

Beam / Plate / Position can be set / Thickness can be set

Example:

Selected Mp Beam, position can be set
**Prototype:** name of the DWG file used as page template

**Close page:** when to close the page template
- on page full
- on next object
- on next mainpart

**Drawing name:** rule for automatic naming of the generated DWG file(s):
- text
- tokens:
  - %Flat
  - %PosNum
  - %SinglePartPosNum
  - %SequenceNumber
  - %Assembly
  - %Prototype
  - %ModelName
Questions ?
Main definition (first Step)

- Select objects from 3D model
- Page format + DWG file settings
- Drawing styles to be used
- Additional scale settings
## Drawing Styles used to generate details

### Detail Style Map

<table>
<thead>
<tr>
<th>Order</th>
<th>Script</th>
<th>Model object</th>
<th>Drawing style</th>
<th>DS override</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mp - Beam Cambered</td>
<td>Mainpart - CamberedBeam 1:10 CO</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Columns, Function</td>
<td>Column - front, left, right</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Tie Beam, Function</td>
<td>Tie Beam - front, top, bottom</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Compression pipe, Function</td>
<td>Compression pipe - front, bottom</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Turnbuckle bracing, Function</td>
<td>Crossbracing - front, bottom</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Mp - Beam</td>
<td>Tie Beam - front, top, bottom</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Mp - Curved Beam</td>
<td>Mainpart - CurvedBeam</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Mp - Plate</td>
<td>Mainpart - Plate, AutoIntersections</td>
<td>none</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Grating</td>
<td>Mainpart - Grate, AutoIntersections</td>
<td>none</td>
<td></td>
</tr>
</tbody>
</table>

### Diagram

1. **Script expression**: False → Next line / rule
2. **True** → Next line / rule
3. **Model object**: False → Next line / rule
4. **True** → Next line / rule
5. **Drawing style** → Create detail
Using Scripts

Example: Filter the Tube / Pipes beams

'Returns TRUE for Pipe profiles only

Function checkElement(Obj)
    checkElement = False
    'Verify only for beams
    If Obj.IsKindOf(kBeamClass) = True Then
        If Obj.getProfType.getDSTVValues.DSTVType = kRO Then
            checkElement = True
        End If
    End If
End Function

Example: Filter the attached parts

'Returns TRUE for attached elements only

Function checkElement(Obj)
    checkElement = False
    If Obj.IsAttachedPart = True Then
        checkElement = True
    End If
End Function
Additional scale settings

- **Alternative scales:** 1:1, 2.5, 5, 10, 15, 20, 25
- **Special scales for selection views:** None

These settings allow for custom scale configurations for different views, providing flexibility in design and presentation.
**Drawing Process**

**Main definition (first Step)**
- Select objects from 3D model
- Page format + DWG file settings
- Drawing styles to be used
- Additional scale settings

**Additional Steps**
Questions ?
The most used options and settings of DPM
The most used options and settings of DPM

**Detail style map(s)**

![Detail style map](image)

- **Name:** Mainparts
- **Used settings:**
- **Type of used drawing styles:** Assembly

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The most used options and settings of DPM

Prototypes / Drawing file names
The most used options and settings of DPM

**Alternative scales**

- **Scales**
  - Alternative scales: 1:5, 10, 15, 20

- **Special scales for selection views**
  - None

*(only for views with the scale depending on the main view scale)*
The most used options and settings of DPM

**Copy & Deep copy**

**Compact function**

- **Create new drawing process**
  - Name: Copy of All Assembly PageFull A1
  - Start with: All Assembly PageFull A1

- **Deep Copy**
  - Deep copy current Drawing Processes
  - Deep copy the current Drawing Processes without used drawing styles
  - Full deep copy
    - Deep copy the current Drawing Processes and all used drawing styles

- **Compact the database**
  - What do you want to compact?
    - Drawing styles
    - Drawing processes
    - Drawing styles and drawing processes
  - Database to compact
    - Advance
    - User
  - Compact behavior
    - Compact
      - Find any identical records from detail tables and update all dependencies so that the redundant records are not referred any more
    - Compact with purge
      - Delete the redundant records from the detail tables and update the dependencies
Tips & Tricks
- Test the existing drawing processes output & settings
- Look to the drawing processes from other countries
- Review the existing options in DPM from time to time
• Use the drawing processes as a checking tool

- 3D model
- Prototype settings
- Drawing Process configuration
- Drawing Style configuration
Tips & Tricks

- Write down your remarks and ideas - right when you have them
Tips & Tricks

- Configure drawing processes for both types of object selection from 3D model

Main definition (first Step)

Select objects from 3D model

All / Selected
Tips & Tricks

- Configure your “Auto page” processes
Tips & Tricks

- **Study and improve the used Drawing Styles (DS)**

  Main purpose of Drawing Processes:
  → to create the details automatically

  The content of the detail itself is governed by the Drawing Style
The drawing process should create details for all elements.
Questions ?
Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day! 🌞
- Best to do it right after the session
- Instructors see results in real-time
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