Plant 3D User Community Virtual Meet Up
8th September 2020

David Manning
Designated Support Specialist
Plant 3D User Community Virtual Meet Up
September 8th, 2020

Joel Harris  
Designated Support Specialist

Jason Drew  
Designated Support Specialist
Plant 3D User Community Virtual Meet Up
8th September, 2020

Martin Buss
Designated Support Specialist
Before we begin

Keep your line muted to reduce background noise, until you ask a question.

Have a question? Use the Questions box or raise your hand.

This webinar is recorded. The recording will be available on this YouTube Playlist.
David Manning
Designated Support Specialist

Providing technical support to enterprise customers and the Autodesk communities in the following products and associated workflows:

- Plant 3D and P&ID
- AutoCAD
- ReCap
- Recap Photo
- Navisworks
- Fusion 360
- Vault
- BIM 360 tools
- With Autodesk since 2015
- My industry Experience:
  • 6 years Steam Plant Design
  • 12 Years Piping Design (Oil & Gas).
- Also interested in Mechanical Design, Additive and Generative manufacturing.
Vinod Balasubramanian
Senior Product Support Specialist

Vinod is currently a senior technical lead for AutoCAD toolsets software and a regular speaker at Autodesk University. He is responsible for handling business escalations on support issues, preparing partners for new releases, creating high-quality knowledge content, and helping to improve total experience of product for customers.
Martin Buss
Designated Support Specialist

- Premium Support Specialist at Autodesk since 2015.
- Mechanical engineer with experience in process engineering projects (power plant / pharma).
- Work experience with CAD piping applications like PDMS, PDS and Plant 3D.
- Supporting: Plant 3D, P&ID, BIM 360, Navisworks and AutoCAD.
Joel Harris
Designated Support Specialist

Providing technical support to enterprise customers and the Autodesk communities in the following products and associated workflows:

- Plant 3D and P&ID
- AutoCAD
- ReCap
- Recap Photo
- Navisworks
- Vault
- BIM 360 tools
- 23 years process piping designer
- 6 years AutoCAD developer/partner
- 5 years Autodesk Specialist
Jason Drew
Designated Support Specialist

Providing technical support to enterprise customers and the Autodesk communities in the following products and associated workflows:

- Plant 3D and P&ID
- AutoCAD
- Inventor
- 3DS Max
- Navisworks
- Fusion 360
- Vault

- IT Support – 10 years
- P&ID Design (Oil & Gas) – 3 years
- Autodesk – 8 years
Nabil Nougha

Technical Specialist AEC / Plant

Providing technical guidance and adoption to customers and the Autodesk communities in the following products and associated cross industry’s workflows:

- Plant 3D and P&ID
- AutoCAD
- Revit
- Recap
- Navisworks
- Inventor
- BIM 360

- 8 years at Autodesk, based in Dubai since 2014
- 10 Years Piping Designer & Superintendent positions
- Oil & Gas, Water, Petrochemical, Nuclear Industries
Agenda

▪ Overview
▪ Plant 3D News: General Updates and News
▪ This Month's theme: Pipe Supports
▪ Follow up Questions from last month
▪ Open Discussion and Q&A
Objective:
- Overview of pipe supports
- Creating custom supports
- Tips / Tricks / Best Practices

Scope:
- Each session is intended to be a casual engagement, with a small portion for news and information followed by a more general discussion around the products and workflows. The discussion is hopefully driven from the users attending.
We may make statements regarding planned or future development efforts for our existing or new products and services. These statements are not intended to be a promise or guarantee of business results, future availability of products, services or features but merely reflect our current plans and are based on factors currently known to us. These planned and future development efforts may change without notice. Purchasing and investment decisions should not be made based upon reliance on these statements.

Autodesk assumes no obligation to update these forward-looking statements to reflect events that occur or circumstances that exist or change after the date on which they were made. If this presentation is reviewed after 10 November 2020 these statements may no longer contain current or accurate information.

This presentation also contains information, opinions and data supplied by third parties and Autodesk assumes no responsibility for the accuracy or completeness of such information, opinions or data, and shall not be liable for any decisions made based upon reliance on any such information, opinions or data.

Autodesk’s partners frequently compete against each other in the marketplace, and it is critically important that all participants in this meeting observe all requirements of antitrust laws and other laws regarding unfair competition. Autodesk’s long insistence upon full compliance with all legal requirements in the antitrust field has not been based solely on the desire to stay within the bounds of the law, but also on the conviction that the preservation of a free and vigorous competitive economy is essential to the welfare of our business and that of our partners, the markets they serve, and the countries in which they operate. It is against the policy of Autodesk to sponsor, encourage or tolerate any discussion or communication among any of its partners concerning past, present or future prices, pricing policies, bids, discounts, promotions, terms or conditions of sale, choice of customers, territorial markets, quotas, inventory, allocation of markets, products or services, boycotts and refusals to deal, or any proprietary or confidential information. Communication of this type should not occur, whether written, oral, formal, informal, or “off the record.” All discussion at this meeting should be strictly limited to presentation topics.
Plant 3D News
Plant News

Adjustment to Community Meetup Schedule

- Alignment across Community Meetups
  - Impacts Plant Meetup for October and all future sessions
  - Plant Meetup will have a single event sign up for the Americas time zone
  - Sessions will continue to be posted on YouTube playlist for other geos

Playlist Link
Plant News

AU 2020

Attend at no cost

• There is no cost to attend AU 2020, but registration is required to participate
• Registration opens in mid-September

One global digital event

• AU 2020 begins November 17th with our Americas broadcast and continues around the globe
• If you’re in Asia Pacific, Middle East, Africa, or European time zones, join us beginning November 18th

Register at: au.autodesk.com
Pipe Supports Overview
Pipe Supports

Overview

• What is available out-of-the-box?
General

attaches AutoCAD objects to a pipe support

Convert Supports
Converts AutoCAD objects to a pipe support

Pipe Supports

Detach Supports
Detaches all AutoCAD objects from a pipe support

2016 unoff. Hotfix!

Attach Supports
Attaches AutoCAD objects to a pipe support

Toggle Lock Point of Support mode
When the Lock Point of Support mode is on, a support that is grip edit copied or moved will adjust to maintain the same connection point elevation.

Pipe Supports

on-the-fly creation of supports

AutoCAD Plant 3D 2016 Content\CPak Common\variants.zip

Project\Spec Sheets\PipeSupportsSpec.pspx

defined set of supports
Custom Pipe Supports
Pipe Supports – Custom

• Convert 3D AutoCAD Blocks

• Catalog part – Python scripted

```python
def CPTS_tep(s, D1 = 114.3, D2 = 114.3, D3 = 114.3, I1 = 0.8, I2 = 0.8, I3 = 0.8, pA1 = None, pA2 = None, pA3 = None, pD1 = None, pD2 = None, pD3 = None, ID = 'CPTS_tep', **kw):
    if PynACAFAdapterIgnoreWallThickness == False:
        x11 = x12 = x13 = 0.0
    else:
        x11 = I1
        x12 = I2
        x13 = I3
    C1 = CYLINDER(s, R=D1 / 2.0, H=D1, 0.0, 0.0).rotateY(-90).rotateX(180.0).translate((x11, 0.0, 0.0))
    c1 = rotateZ(90.0, pA1).translate((0.0, 0.0, 0.0))
    c2 = rotateZ(90.0, pA2).translate((0.0, 0.0, 0.0))
    c3 = rotateZ(90.0, pA3).translate((0.0, 0.0, 0.0))
    c1.uniteWith(c2)
    c1.erase()
    c1.uniteWith(c3)
    c1.erase()
    return c1
```
Custom 3D Blocks

Convert 3D Geometry or Blocks

- Use existing or vendor provided pipe support models
- Geometry can be 3D solids or AutoCAD Blocks
- Simple process:
  - Scale support model to fit the pipe outside diameter
  - Position support along the pipe
  - Use PLANTPIPESUPPORTCONVERT command or ribbon bar button
  - Open Properties Palette and assign an SKEY for isometric representation
Custom 3D Blocks
Convert 3D Geometry or Blocks - Example
Custom 3D Blocks ➤ Catalog Parts

Pipe Supports Catalog

Same method as creating other custom part types

- **PLANTPARTCONVERT** command to convert block in DWG
- Create new part within default Supports Catalog
- Add new part to *PipeSupportsSpec* for the project
- Add new support to Pipe Supports Spec tool palette or delete existing and re-create the palette
Custom 3D Blocks ➤ Catalog Parts

Pipe Supports Catalog

Notes on converting blocks to supports

- Align geometry to X axis based on WCS
- Insertion point should be at center of support
- Supports require only one pipe port facing positive X direction
Python scripts – Customizing supports

- SetLinearDimension provides the handles (grips), more than one is possible

```python
o4 = BOX(s, L=SL, H=SW, W=ST).translate((0.0, 0.0, 0.0)).
o0 = BOX(s, L=TL * 0.01, H=TL * 0.01, W=TL * 0.01).
o0.unionWith(o1)
o1.erase()
o0.unionWith(o2)
o2.erase()
o0.unionWith(o3)
o3.erase()
if o4:
o4.unionWith(o4)
o4.erase()
s.setPoint((0, 0, 0), (-1, 0, 0))
s.setLinearDimension('L', (0, 0, 0), (0, 0, -L))
s.setLinearDimension('WL', (0, 0, 0), (0, -L, 0))
```
Pipe Supports - Custom

SKEY for Isometric Drawings

- Assign SKEY after conversion

<table>
<thead>
<tr>
<th>Symbol</th>
<th>SKEY</th>
<th>Block Name</th>
<th>Image</th>
<th>Default Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support</td>
<td>SUPP</td>
<td>Support</td>
<td></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>General Support</td>
<td>01HG</td>
<td>Support-General</td>
<td></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Anchor</td>
<td>ANCH</td>
<td>Support-Anchor</td>
<td><img src="image.png" alt="Image" /></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Guide</td>
<td>GUID</td>
<td>Support-GUID</td>
<td><img src="image.png" alt="Image" /></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Spring</td>
<td>SPRG</td>
<td>Support-Spring</td>
<td><img src="image.png" alt="Image" /></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Dummy Leg</td>
<td>DUCK</td>
<td>Support-Leg1</td>
<td><img src="image.png" alt="Image" /></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Hanger</td>
<td>HANG</td>
<td>Support-Hanger1</td>
<td><img src="image.png" alt="Image" /></td>
<td>SUPPORT</td>
</tr>
<tr>
<td>Skid</td>
<td>SKID</td>
<td>Support-SKID</td>
<td><img src="image.png" alt="Image" /></td>
<td>SUPPORT</td>
</tr>
</tbody>
</table>
Tips & Tricks / Best Practices
Tip #1 – Dynamic Input

Placing / Moving Supports

- Allows precise placement and movement for supports
- Enabled from customization menu
- On / Off from ACAD tray
Tip #1 – Dynamic Input

Dynamic Input - Example
Tip #2 – Supports on Supports

• Attaches auxiliary supports to main supports
Tip #3 – Assigning Tag Numbers
Tagging and Iso / Ortho Annotation

- Assign tag format for pipe support
Tip #4 – Support Tag Annotations

Isometric Drawings

Support Tag Annotation for Isometric Drawings

• Modify IsoConfig.xml
  • Create new annotation scheme under default Theme
  • Themes ➤ Theme (Default) ➤ Annotations ➤ AnnotationSchemes ➤ ComponentScheme
  • Copy / paste / modify the existing “Tag” ComponentScheme

• <ComponentScheme Name="SupportTag" AnnotationStyle="Standard" Enabled="true" Grouping="true" Tag="XX" Alignment="FlatHorizontal" LeaderStyle="Always" Filter="Support" Fields="TAG" />

• Tag annotation will be shown on iso
Tip #4 – Support Tag Annotations

Orthographic Drawings

- Use Support Annotation [Tag]
Tip #4 – Support Tag Annotations

Iso / Ortho Annotation

- Support Annotation Examples
Tip #5 – How to move Plant supports – Use Grips!

• 5.1 Measure and insert
  ▪ Select support to see where to measure from, you might even want to explode the support temporarily to find good snaps, but don't forget to undo the explode
  ▪ Measure [command: di(stance)]
  ▪ Copy the number and paste to according field (switch with tab, delete, CTRL-V)

• 5.2 Drag to snap
  ▪ Isolate support, pipe, and snapable object
  ▪ Select view perpendicular to moving direction and the snap close to pipe center
  ▪ Drag to snap
Tip #6 – Don’t reset supports to default without knowing

Spec Update with Pipe Supports

1. Use ComponentDesignation=Parametric in the supports spec to avoid this!

(see also next slide)
Tip #6 – Don’t reset supports to default without knowing
Spec Update with Pipe Supports

• Set **Component Designation=Parametric** to avoid this behavior
• Implemented with Plant 3D 2018.1.1
• You can use SQLite editor to update all records at a time in the .pspc file with this SQL statement:

```
Update EngineeringItems Set ComponentDesignation="Parametric";
```

**Link: In the Pipes Blog Post “Parametric” Component Designation**
Known Issue
Supports on Sloped Pipe

- Support added to a sloped pipe is not tangent to the pipe

Link: Support added to a sloped pipe does not align with the pipe in AutoCAD Plant 3D
Additional Resources

- Blog Post – My Plant 3D Notes – Python Scripting for pipe supports
- AKN: Plant 3D Custom Python scripting for catalog parts Reference
- AU 2012 – Scripting Components for AutoCAD Plant 3D

AutoCAD DevBlog:
- Custom Python Scripts for AutoCAD Plant 3D – Part 1
- Custom Python Scripts for AutoCAD Plant 3D – Part 2
- Custom Python Scripts for AutoCAD Plant 3D – Part 3

- Autodesk App Store - Python Pipe Support
- Applied Software™ - Steel Supports for Plant 3D
Thank you... for getting involved
Reference Materials and Links

- Autodesk Knowledge Network
- Autodesk University
- Autodesk YouTube
  - Plant search Link
  - Autodesk AutoCAD Plant 3D
- Autodesk ANZ
  - AEC Collection – Let’s make a project
- Autodesk Blogs: Plant 3D - In The Pipes
Plant 3D Virtual Community Meetup resources

by Customer Success Team • on November 21, 2018

Overview
Objective:

- To provide a routine engagement with the Plant Design Community in the local region.
- To foster a collaborative user community while increasing the understanding and knowledge of Plant 3D and associated tools and workflows.

November 6th 2018
APAC Session
Agenda:
- Overview
- Plant 3D News
- Follow up on last month’s Questions
- Update 2019.1
- Open Discussion and Q&A

EMEA Session
Agenda:
- Overview
- Plant 3D News
- Follow up on last month’s Questions
- Update 2019.1
- Open Discussion and Q&A

AMER Session
Agenda:
- Overview
- Plant 3D News
- Follow up on last month’s Questions
- Update 2019.1
- Open Discussion

More detailed agendas to be published in advance in 2019

Presentation PDF Link
Presentation PDF Link
The Customer Success Learning Hub

- Access to articles, product updates, tips and tricks, and more
- View previous webcasts
- Browse upcoming webcasts and live events
- Share expertise with industry peers and product teams

customersuccess.autodesk.com

The Hub: A Place to Learn, Connect, and Share Expertise.
Plant 3D with the Experts - Video Blog Series

Do you want to know more about Plant 3D?
Do you want to know how to get started?
Are you an Plant 3D user or administrator with questions?

If you answered yes to any of these questions then this webinar series may be just the thing you need.

The Autodesk Product Support Team has planned a long list of short videos to help...
AutoCAD Plant 3D Community MeetUp Webinars

Autodesk is proud to present our monthly AutoCAD Plant 3D Community MeetUp webinar series. In this space we will hear news and information on AutoCAD Plant 3D design solutions, participate in live Q&As with Autodesk specialists, and have the opportunity to connect with diverse members throughout the worldwide AutoCAD Plant 3D community.

The webinars are scheduled for 30 minutes, though we will always extend beyond the initial half hour whenever a lively discussion happens to take a life of its own.

- Americas Session
- Europe Session
- Asia/Pacific Session

View all upcoming Customer Success events
View all past Customer Success events

New registration page, now online: https://www.autodesk.com/customer-success/plant-3d
Other Virtual Meetups
Share with your co-workers

Monthly Virtual Meetup

- **Virtual Meetup** is a monthly webinar and an ongoing forum engagement, supplemented by in-person meetings at AU Las Vegas and Regional AUs. Flavors of the main agenda:
  - **Connect with Experts** – best practices and live discussions with subject matter experts
  - **Open mic** – customers presenting their stories or workflows
  - **Updates from product teams** – a product team comes to share what’s new in the release and what’s coming next
Autodesk Health Dashboard
https://health.autodesk.com/

Sign In

Click Here

2021 + File Storage

2018 - 2020 File Storage

Services
“In the Pipes” Blog Has Moved

- As another step as Autodesk’s ongoing process to improve our customers experiences has moved the “In the Pipes” blog to a new home

https://blogs.autodesk.com/in-the-pipes/