



AUTODESK UNIVERSITY 2015

AEC10927

Fabrication: 60 Tips in 60 Minutes

Instructors:

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Learning Objectives

- Learn 15 tips
- Learn 15 more tips
- Learn yet another 15 additional tips
- And to change things up, learn 15 more tips.

Description

Last year's popular session is back by popular demand! Learn 60 all-new tips and tricks that are expanded to cover not only Fabrication CADmep software but the other Fabrication software products too. No frills, no long lectures—just a couple Fabrication software users in a tag-team style rapid-fire demonstration. In 60 minutes we'll cover 60 tips for using Fabrication software, so we'll take no questions during the session, but we'll be free afterward and via email throughout the year for any follow-up information you may need.

Your AU Experts

A Midwestern transplant now based in Southern California, veteran Autodesk University speaker Darren Young has held a variety of positions over the last 20 years, including CAD and CAM engineer, CAD administrator, and CAD/CAM systems developer. Currently Darren is the systems integration manager for Southland Industries, one of the largest mechanical engineering and construction companies in the United States. Darren manages one of the largest installations of Fabrication software licenses in the world. While Darren's true interest is the automation of manufacturing systems, his experience ranges from lean manufacturing to architecture, and this has led him to projects varying in scope from dress patterns to gas turbine piping. He has founded a consulting and development business, and he has been a technical editor and publication author.

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Tip #1 (All) - Darren

Can't create Deployments....

- 1) Copy the SETUP.INI to keep an original
- 2) Edit the SETUP.INI file. Look for the "EXTRA_FILES" line and replace with one of the following depending on the product....

For CADMep:

```
EXTRA_FILES=CADmep;*.exe;*.pit;*.xml;*.mc3;*.mlm;3rdParty:CER:Content:
%lang%;EULA:NLSDL:Setup:SetupRes:Third-Party Component Open Source
EULAs
```

For CAMduct:

```
EXTRA_FILES=CAMduct;*.exe;*.pit;*.xml;*.mc3;*.mlm;3rdParty:CER:Content
:%lang%;EULA:NLSDL:Setup:SetupRes:Third-Party Component Open Source
EULAs
```

For ESTmep:

```
EXTRA_FILES=ESTmep;*.exe;*.pit;*.xml;*.mc3;*.mlm;3rdParty:CER:Content:
%lang%;EULA:NLSDL:Setup:SetupRes:Third-Party Component Open Source
EULAs
```

Tip #2 (All) - Greg

Command List - All the commands you can use by clicking the line or typing the Abbreviation.

**Tip #3 (All) - Jubel**

You can now utilize the new API for complex (or even simple) automation. Great for working on all the objects simultaneously, or pushing data between Fabrication and external data sources that your enterprise uses. For detailed information on the new API visit the class ***SD9704 – Fabrication API at 1:00 pm on Thursday in Delfino 4006, Level 4.***

Tip #4 (CAMduct) - Darren

To create a file with one of every CID available, use the MAKEPAT command and specify ALL as the pattern number.

1. Turn of checking for "Oversize" in the database
2. Press "Ctrl+Shift+C" to display the command prompt
3. Type "MAKEPAT ALL"

Note, it may appear to lock up occasionally but it's still working. Eventually you'll end up with an MAJ with one of every CID.

<http://autode.sk/1SSWUYh>

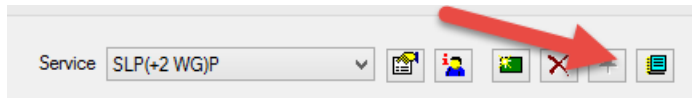
Tip #5 (ESTmep / CAMduct) - Greg

Filter layers States - Type in part of the layers your trying to filter.



Tip #6 (All) - Jubel

New "Manage" button in Setup Services makes it quick an easy to delete multiple services at once.



Tip #7 (All) - Darren

Using "Zero" (0.0) for ITM dimensions when there's an "Auto" option can be tricky. Things like insulation can offset based on these dimensions and produce dimension errors. Setting to Auto often bypasses these types of errors.

Tip #8 (All) - Greg

Viewer Settings - Control the Zoom Factors, Polar Snap Angles and under the Options tab set the Symbol, Node and Annotation Sizes.



Tip #9 (All) - Jubel

Most drainage pipe has the angle tolerance set on the item to get sloped pipe to work properly. (Show where it's located). If you don't want to use angle tolerance in a certain service, you can ignore it in that service only.



Tip #10 (CADmep) - Darren

Invalid Dimension Errors when adding insulation to an ITM? Select Multiple ITM's and apply it there. You'll still get the errors by clicking through them, you'll still end up applying the insulation.

You can also apply insulation via COD script as well.

Tip #11 (All) - Greg

Design Line View Settings - You can control what you see in a hover.

Tip #12 (CADmep) - Jubel

Use status blocks to identify what's been downloaded or spooled.

Tip #13 (All) - Darren

Fabrication COD's may strip anything after the last period "." when setting "Filename" property. Specify the extension too or use the ASCII(46) function to work around this limitation when specifying a name that contains a period. Fixed in 2016SP2.

Works...

```
Item.filename="Copper Elbow 45 PxP - Model 2926"
```

```
Item.filename="Copper Elbow 45 PxP - Model 2926.itm"
```

Does not work...

```
Item.filename="Copper Elbow 45 PxP - Model 2926.1" ("1" is removed)
```

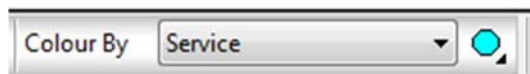
Work-arounds...

```
Item.filename="Copper Elbow 45 PxP - Model 2926.1.itm" (Strips only the *.itm")
```

```
Item.filename="Copper Elbow 45 PxP - Model 2926" + ascii(46) + ".1" (keeps the ".1" which is part of the model #)
```

Tip #14 (ESTmep / CAMduct) - Greg

Change Colors by - This allows you to see the MAJ file in 7 different ways. Service, Status, Section, Material, Takeoff, Spool, Job Colour

**Tip #15 (All) - Jubel**

CSVexport to export data to excel, so that data can be imported into various other software platforms.

Tip #16 (CADmep) - Darren

Use this Excel Formula in a Button Report to "Fix" Button Descriptions back to default ITM Filename after using VIPS.

```
=SUBSTITUTE(MID(J2,FIND("*",SUBSTITUTE(J2,"/","*",LEN(J2)-LEN(SUBSTITUTE(J2,"/",""))))+1,LEN(J2)), ".ITM", ""))
```

Tip #17 (ESTmep / CAMduct) - Greg

WorkSpace Tool - Use this tool bar to make Selection Sets, Filter what you want to see and Link in a PDF or DWG.

Tip #18 (CADmep) - Jubel

Use the command "ShowMeTheDiffs" command to help you figure out why the seemingly same items are different.

Tip #19 (All) - Darren

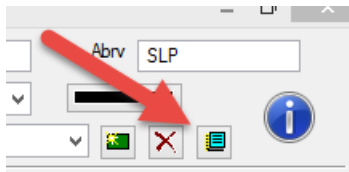
Use "Filter" when building a report to quickly find report fields.

Tip #20 (ESTmep / CAMduct) - Greg

Takeoff Area - Ever need to see how many sqft and area is?

**Tip #21 (All) - Jubel**

New "Manage" button in Edit Service Template makes it quick and easy to delete multiple templates at once.

**Tip #22 (All) - Darren**

Build a bogus report w/ALL fields to see data to give you an idea which fields to use.

Tip #23 (ESTmep / CAMduct) - Greg

Camera Views - Have you ever wanted to be able to store a view you were working on or a detail you need to refer to use the camera views.

**Tip #24 (CADmep) - Jubel**

“SelectFilter” command, easy way to filter out objects rather than using the “MapFilter” command.

Tip #25 (ESTmep / CAMduct) - Darren

Takeoff ALL products in an ITM or multiple ITM's

<http://autode.sk/1E8r3el>

Tip #26 (All) - Greg

Add Symbol for DL - You can add a Symbol to show up when placing an Equipment Item in DL.

Tip #27 (CADmep) - Jubel

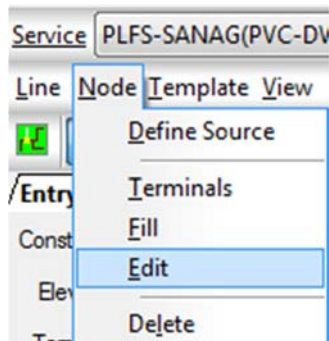
If attach relative is defaulted on an item, it will bring up the fix relative box so you can be more specific as to where you need a piece.

Tip #28 (All) - Darren

When editing a service template, you can add more than 1 ITM at a time, drag a folder and it'll add all ITM's in that folder.

Tip #29 (All) - Greg

Node Edit - Control if a node is movable or not.



Tip #30 (CADmep) - Jubel

Create a pup piece for PVC minimum length out of CID 2522, and rename the CID to 2041 so you can still add the item to total length of pipe.

Tip #31 (CADmep) – Darren (Tip courtesy - Scott Hendricks/Applied Software)

When adding a Folder in the "Folders" windows, you won't find it in the "Folders" of the Service Template editor. You don't have to Exist/Restart CADmep. Simply Close and Reopen (reopen is the key) the FOLDERS window and the Service Template editor will now see it.

Tip #32 (All) - Greg

Pick Constraints / Elevation - Used in DesignLine to select the size of an existing line or just need to get the elevation of a line.

**Tip #33 (CADmep) - Jubel**

When upgrading or moving a user to a new workstation, they like to have all the same columns available in the Items list. You can copy the detail.map file found in the folder...

`%LocalAppData%\Autodesk\Fabrication 20XX\CAMduct\`

...into the new installation. Saves a ton of time setting those up using the Customize interface.

Tip #34 (All) – Darren

The "Folders" window may not always reflect reality. It's not dynamically updated like Windows Explorer. A corrupt ITM may be missing info, the file name may not show (depends on column configuration) or folders may be missing (rebuild). Look at the library location via Windows Explorer for a list of "reality" to see where the problem really is.

Description	Ver	UID	Service Type	Cat	CID	Button
E2S 1 Figure One		F012405001	Pipe (Fitting)	Yes	2882	"00000000"
NH 1 No-Hub Coupling		F012465001	Pipe (Coupl...	Yes	2522	"00000000"
NH 10 Sixth Bend		F012325001	Pipe (Fitting)	Yes	2523	"00000000"
NH 12 Eighth Bend		F012335001	Pipe (Fitting)	Yes	2523	"00000000"
NH 14 Sixteenth Bend		F012285001	Pipe (Fitting)	Yes	2523	"00000000"
NH 16 Short Sweep		F012515001	Pipe (Fitting)	Yes	2523	"00000000"
NH 18 Long Sweep		F012445001	Pipe (Fitting)	Yes	2523	"00000000"
NH 20 Wye		F012585001	Pipe (Fitting)	Yes	2047	"00000000"
NH 21 Double Wye		F012395001	Pipe (Fitting)	Yes	2044	"00000000"
NH 21A Upright Wye		F012575001	Pipe (Fitting)	Yes	2938	"00000000"
NH 22 Combination		F012365001	Pipe (Fitting)	Yes	2000	"00000000"
NH 24 Double Combination		F012375001	Pipe (Fitting)	Yes	2001	"00000000"
NH 25 Figure Five Double Fixture Fitting		F012415001	Pipe (Fitting)	Yes	2001	"00000000"
NH 26 Tapped Wye		F012555001	Pipe (Fitting)	Yes	2044	"00000000"
NH 28 Sanitary Tee		F012365001	Pipe (Fitting)	Yes	2882	"00000000"
NH 30 Sanitary Cross		F012275001	Pipe (Fitting)	Yes	2882	"00000000"
NH 34 Sanitary Tapped Tee		F012545001	Pipe (Fitting)	Yes	2882	"00000000"
NH 36 Test Tee Less Plug		F012565001	Pipe (Fitting)	Yes	2160	"00000000"
NH 4 Quarter Bend		F012295001	Pipe (Fitting)	Yes	2097	"00000000"
NH 40A Short Reducer		F012475001	Pipe (Fitting)	Yes	2051	"00000000"
NH 42 P-Trap		F012235001	Pipe (Fitting)	Yes	906	"00000000"
NH 42A P-Trap Reducing		F012245001	Pipe (Fitting)	Yes	906	"00000000"
NH 44A Deep Seal P Trap		F012385001	Pipe (Fitting)	Yes	906	"00000000"
NH 45 Running Trap with Vent						
NH 48 Tapped Adapters		F012345001	Pipe (Fitting)	Yes	2522	"00000000"
NH 4A Tapped Quarter Bend		F012525001	Pipe (Fitting)	Yes	2097	"00000000"
NH 50 Blind Plug		F012355001	Pipe (Fitting)	Yes	2000	"00000000"
NH 8 Quarter Bend with Heel Opening		F012455001	Pipe (Fitting)	Yes	2326	"00000000"
NH 8A Double Quarter Bend		F012305001	Pipe (Fitting)	Yes	2821	"00000000"
NH 9 Fifth Bend		F012315001	Pipe (Fitting)	Yes	2523	"00000000"
NH Heavy Duty Coupling		F012435001	Pipe (Fitting)	Yes	2523	"00000000"

Tip #35 (ESTmep / CAMduct) - Greg

LOS - Layout Sheet Command. This allows you to create worksheet of your drawings to print view or Camera view.

Tip #36 (CADmep) - Jubel

The coveted "Fixer" command. A repeat from last year but it's worth repeating (and using).

Tip #37 (All) – Darren

Use "Versioning" to help manage your DB. If you move a connector to a new group, existing drawings will created bracketed entries in the original group. Make a copy of the connector/seam/etc in the NEW group and update the ITM's to point to it. Leave the old connector/seam/etc and make the version "9999" to indicate it's obsolete. Existing drawings will still find the old connector and work, and new items drawn will be correct.

Tip #38 (ESTmep / CAMduct) - Greg

Layout Tabs - Ever wanted to move takeoff ITMs from one tab to another use Show Selected Object/s

Tip #39 (CADmep) - Jubel

You can now setup Processes in CADmep just like in CAMduct and ESTmep.

Tip #40 (All) – Darren

Create a batch file ("SetFolderView.Bat") using Notepad in the root of your items folders. It should contain the following...

```
for /R "%~dp0" %%1 in (.) DO copy "%~dp0position.dat" "%1\position.dat" /Y
for /R "%~dp0" %%1 in (.) DO copy "%~dp0SetFolderView.Bat" "%1\SetFolderView.Bat" /Y
```

Using the FOLDERS window, set the view options you prefer for all folders. Once done, go to the same folder and click on the batch files to set the same view in all folders. The batch file copies itself to all folders as well so in the future, you can change the view settings of a single branch in the FOLDERS.

Tip #41 (All) - Greg

DL View Troubleshoot - Ever need to try and figure out why Design line didn't fill something like the Angle.

Tip #42 (CADmep / Revit) - Jubel

Use Revit models for equipment with ProcessRun command.

Tip #43 (All) – Darren

CADmep file dialogs slow or locking up? Rename the "Cloud" folders and make sure you don't have a device like your iPhone plugged into your computer.

Tip #44 (ESTmep / CAMduct) - Greg

Dynamic Fill - Draws and does 3D fill as you draw.

Tip #45 (CADmep) - Jubel

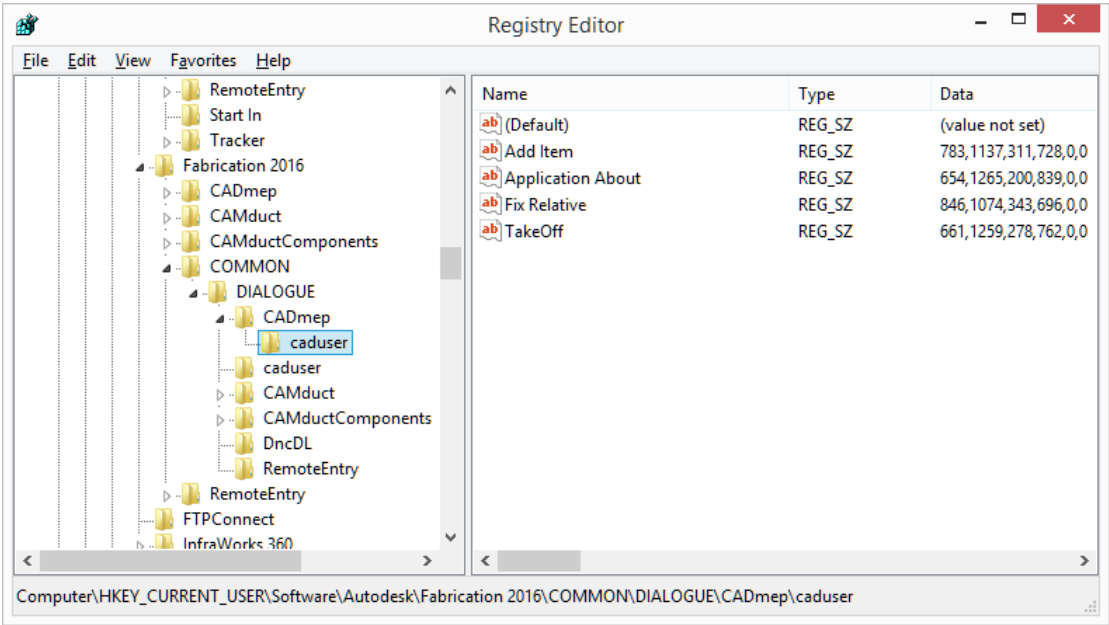
Did you know you can report elevations on hangers and tag them?



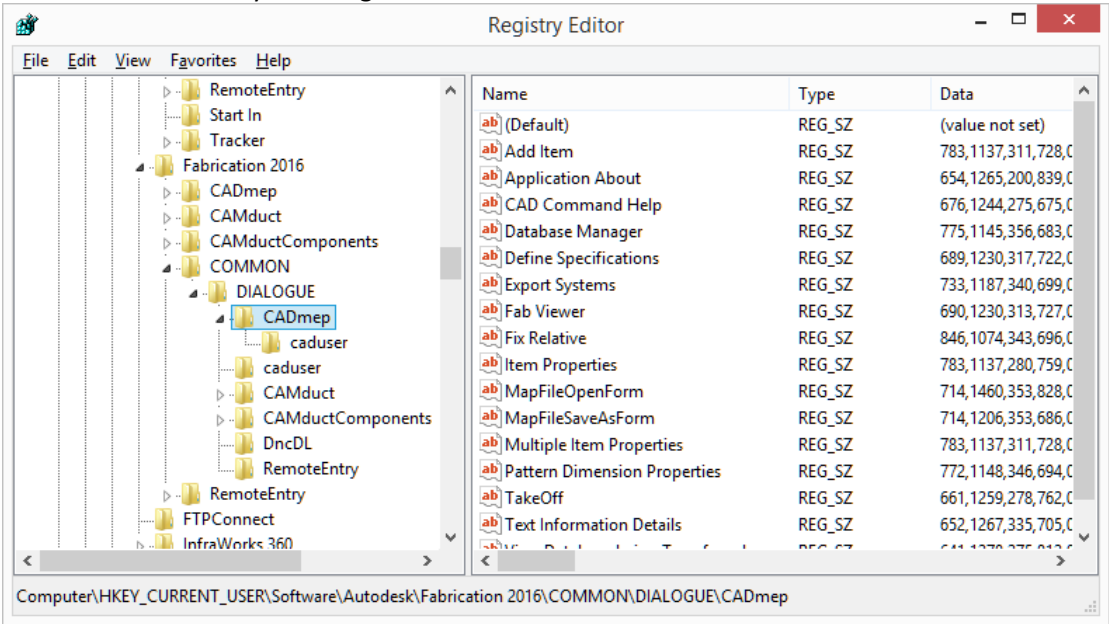
Tip #46 (All) – Darren

Lost Dialogs? Look in the registry...

With User Security in Config...

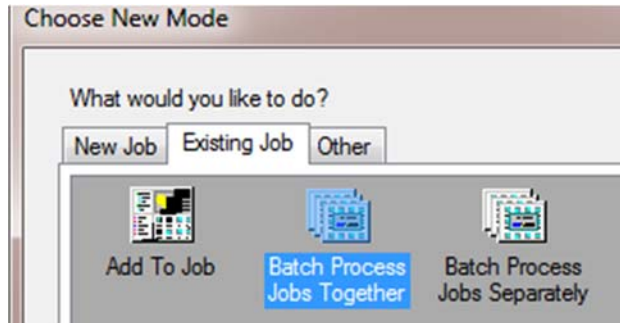


Without User Security in config...



Tip #47 (ESTmep / CAMduct) - Greg

Combine MAJs - Ever wanted to combine multiple MAJs in to one job to be able to run a reports or just want to add to your existing job you have open.

**Tip #48 (CADmep / Revit) - Jubel**

When saving a MAJ to Revit, turn off "status" checking.

Tip #49 (All) – Darren

Use two (2) single quotes ('') for inch marks on Product List items instead of a single (1) double quote (") as it'll throw off reports, Excel CSV imports, etc. Do this EVERYWHERE!

Tip #50 (All) - Greg

Line Combine - In DL you can combine multiple design lines in to one DL.

Tip #51 (CADmep / Revit) - Jubel

Explode sub-assemblies when exporting to MAJ for Revit.

Tip #52 (All) – Darren

Service Buttons still messed up no matter what you try? Shift-Right Click in open area of service for "Clear Cache".

Tip #53 (All) - Greg

Offset Line - OL can be used to duplicate a run in Design Line then just change the service and refill.

Tip #54 (All) - Jubel

If you do any scripting, Notepad++ should be your best friend, especially when coupled with good cod syntax settings. Notepad++ is freely available to download and install from notepad-plus-plus.org. You can find a fairly complete version of cod syntax highlighting for download as well as setting it up later in the recorded version and downloads for the class **MSF9703-L – Fabrication Advanced Scripting in the**

Monday Pre-Conference by Tim Catalano.

Tip #55 (All) – Darren

Black BD - Use a blank DB to import services. Strip everything out and export the IEZ. Import into a good DB to bring in just the services (layers, tags, etc.) and then assign the proper template.

Tip #56 (All) - Greg

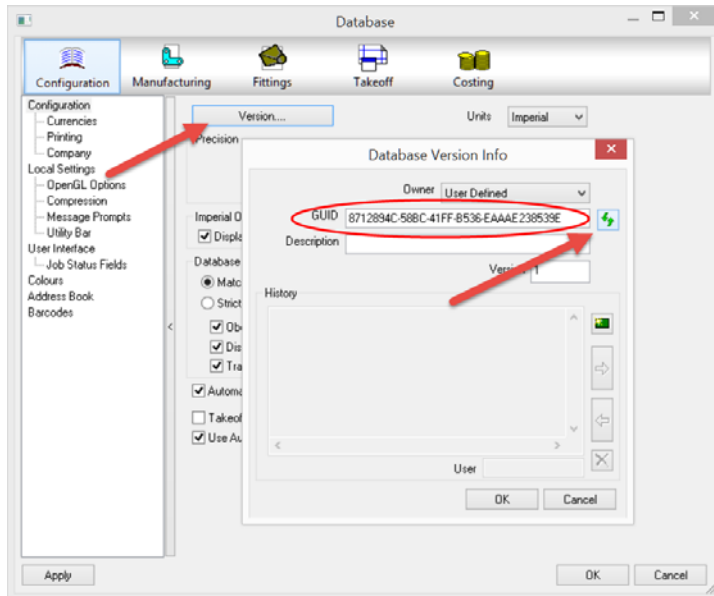
Line Offset/Elevation - This DL function allows you to apply a elevation change or offset between two points.

Tip #57 (CADmep) - Jubel

Hold Cntl while selecting CADmep object viewer to view selected items out of an xref. Only CADmep objects can be selected. Select items in current drawing first, then select items in xref after hitting enter once.

Tip #58 (All + Revit) – Darren

Don't see your configuration in Revit? Make sure to add a GUID to your database.



Tip #59 (All) - Greg

DL Templates - Ever wanted to use an Assembly with in DL to use over and over.

Tip #60 (CADmep) - Jubel

While you are in "Folders", holding down the shift key while right clicking on an item will bring up other options for that item. Example: "Change Properties" to do a search and replace in Material, Spec and Connector across multiple items without needing to script.

The image shows a "Change Properties" dialog box with the following settings:

- Change Material
From: PVC v1 To: PVC v1
- Change Specification
From: Piping Materials v1 To: Piping Materials v1
- Change Connector
From: Charlotte DWV FPT To: Charlotte DWV FPT

Buttons: OK, Cancel