SmartPlant 3D
Equipment Labs

Process, Power & Marine



INTERGRAPH

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LAB-1: Placing Equipment from the Catalog

Objective

After This Lab Students will be able to Place Equipment (catalog equipment) using PinPoint ribbon bar.

Lecture: Instructor Needs to show/explain PinPoint and Place Equipment commands before the lab.

In this lab, you will use the Place Equipment command to place a simple vertical vessel with skirt in the model. Use the PinPoint tool to place the equipment with precision by displaying and keying the coordinate data relative to a target position you set.

1 Open a Session file with Imperial Units

2 Define your Workspace to Show Building 1 and the coordinate system

3 If you are not in the Equipment task, then select Task -> Equipment and Furnishing

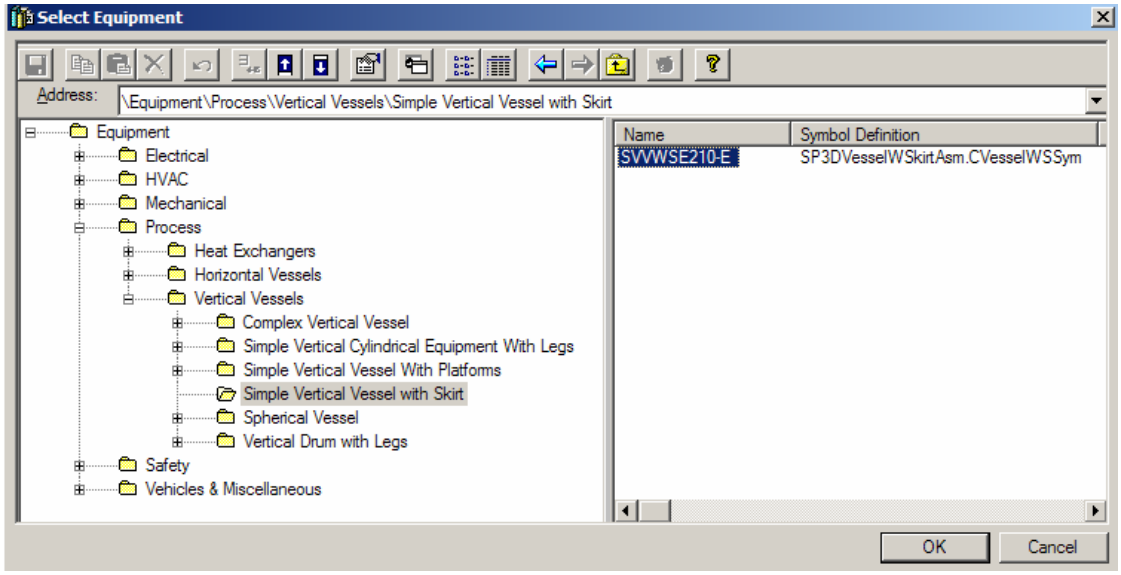
4 Make sure the Active Permission Group is set to ***Equipment*.**

Note: Objects that you place directly in the model are assigned to the active permission group. Therefore, you are responsible of making sure the equipment is assigned to the appropriate Permission Group.

5 Activate PinPoint by Selecting Tools > PinPoint

6 Select Place Equipment Command

7 Expand the Equipment Folder\Process Equipment\Vertical Vessels\Simple Vertical Vessel with Skirt folder until you see the part SWWSE210-E. Select the part and click the OK button.



8 Key in -21’ for Easting, 40’ for Northing and 2’ for Elevation

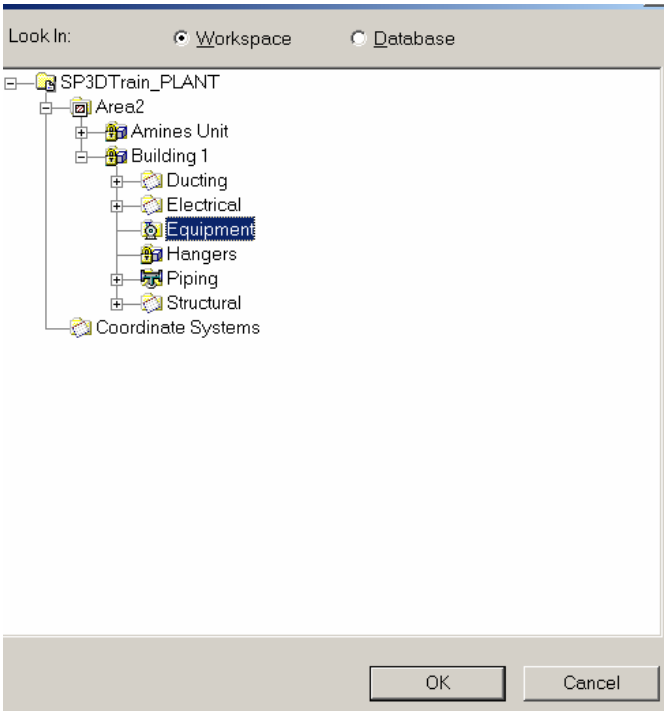
9 Left Click in the View to Accept the Location

10 While Equipment is Still Selected, change the name to T-101

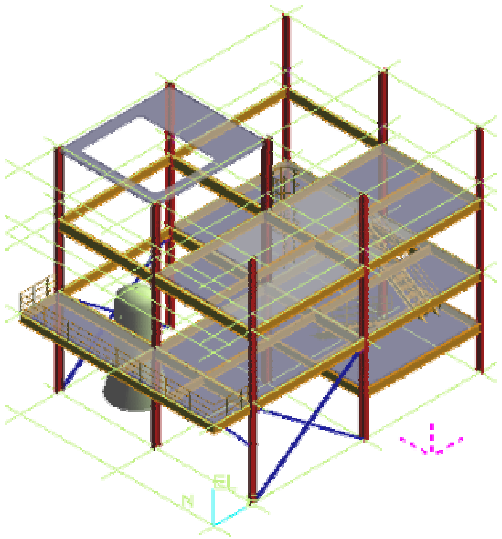
11 Go to the equipment ribbon bar and select ***More..*** in the ***System*** drop down list

Note: Objects that you place directly in the model are associated to a system in the System Hierarchy. Therefore, you are responsible for making sure the equipment is associated to the appropriate System.

12 System opens the Select System dialog box. Select the ***Area2- > Building 1 -> Equipment*** System and Click the OK button.



13 Right Click in the view to de-select the Equipment



LAB-2: Placing Equipment With Mate RelationShip

Objective

After This Lab Students will be able to Place Equipment (catalog equipment) using Mate Relationship.

Lecture: Instructor Needs to show/explain Placing Equipment with Mate Relationship

In this lab, you will use the PinPoint tool to place a pump with precision in the model. When you place the pump in the model, you are going to create a Mate constraint (positioning relationships) to an elevation plane.

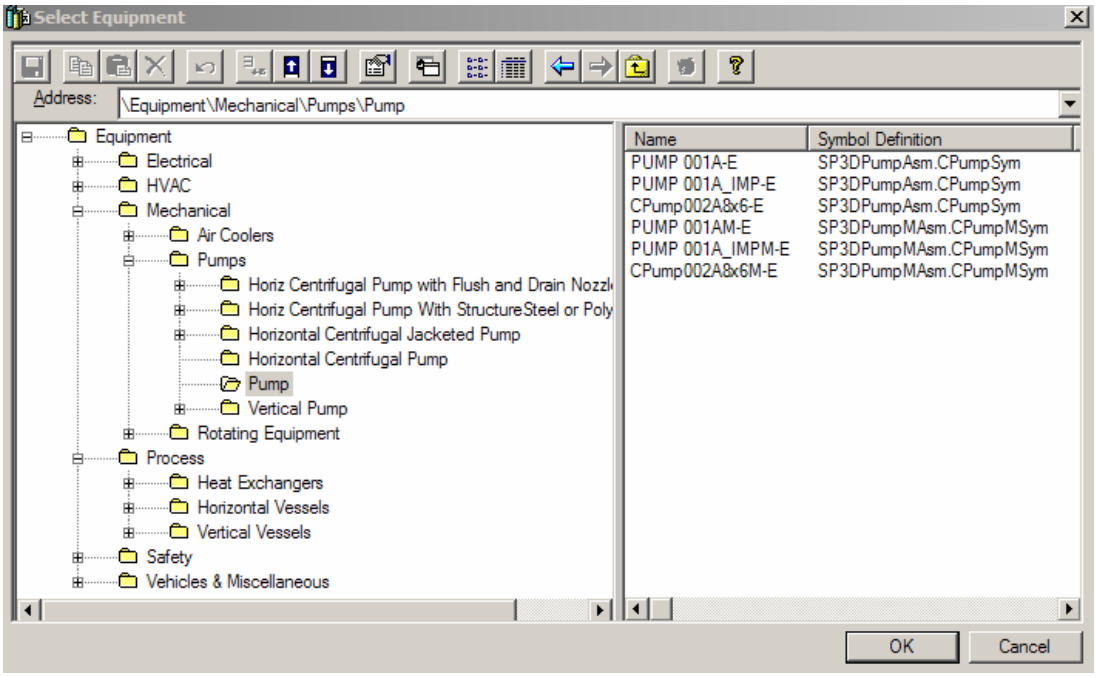
1 Open a Session file with Imperial Units

2 Define your Workspace to Show Building 1 and the coordinate system

3 Activate PinPoint by Selecting Tools > PinPoint

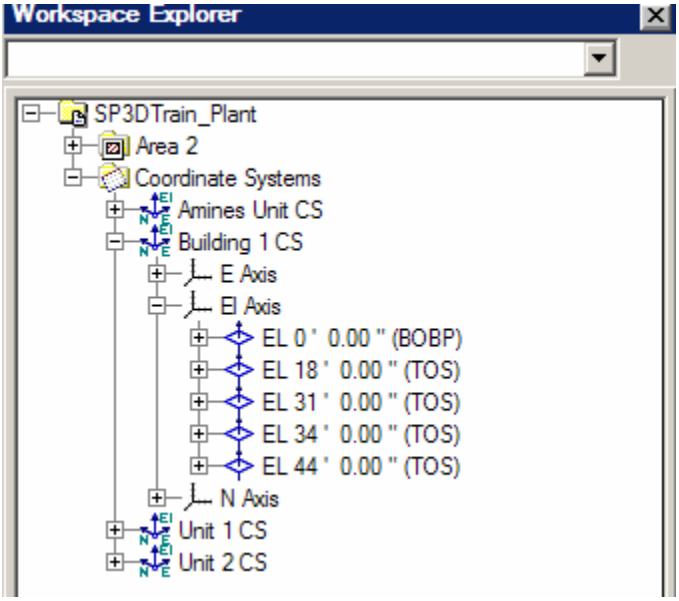
4 Select Place Equipment Command

5 Expand the Equipment\Equipment\Mechanical Equipment\Pumps\Pump until you see the part CPump002A8x6-E. Select the part and click the OK button.



6 Go to the PinPoint ribbon bar and key in 1’ for East and 12’for North

7 In Work Space Explorer, Expand the Co-ordinate System folder, Expand Building 1 CS folder, Expand EL Axis and Click on EL-0'-0" to mate the pump with elevation 0'.



8 In the Equipment Ribbon Bar, Key in 2' for offset

9 Go to the Equipment ribbon bar and key in **P-101** in the Name field

10 Make sure the System is set to ***Building 1 -> Equipment*** System

11 Right Click in the View to de-select the Equipment

LAB-3: Rotating Equipment While Placing / After Placement

Objective

After This Lab Students will be able to Rotate Equipment while Placement.

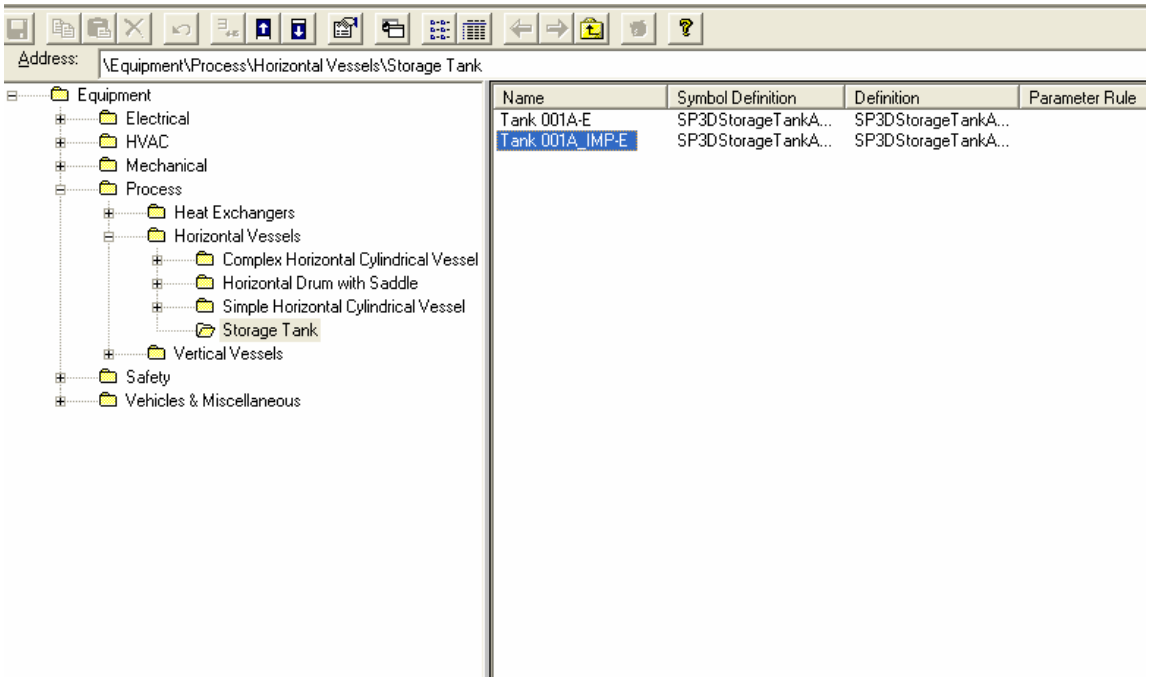
Lecture: Instructor Needs to show/explain Rotate Equipment while Placing Equipment and After Placement.

1 Open a session file and define a filter for your workspace that includes the Amines Unit and its coordinate system.

2 Activate PinPoint if not already active

3 Select Place Equipment command from the vertical toolbar to open the Select Equipment Dialog box.

4 From Catalog Browser, Select Process\Horizontal Vessels\Storage Tank, Tank_001A_IMP_E



5 Go to the Equipment ribbon bar and select **More..** in the **System** drop down list. System opens the Select System dialog box.

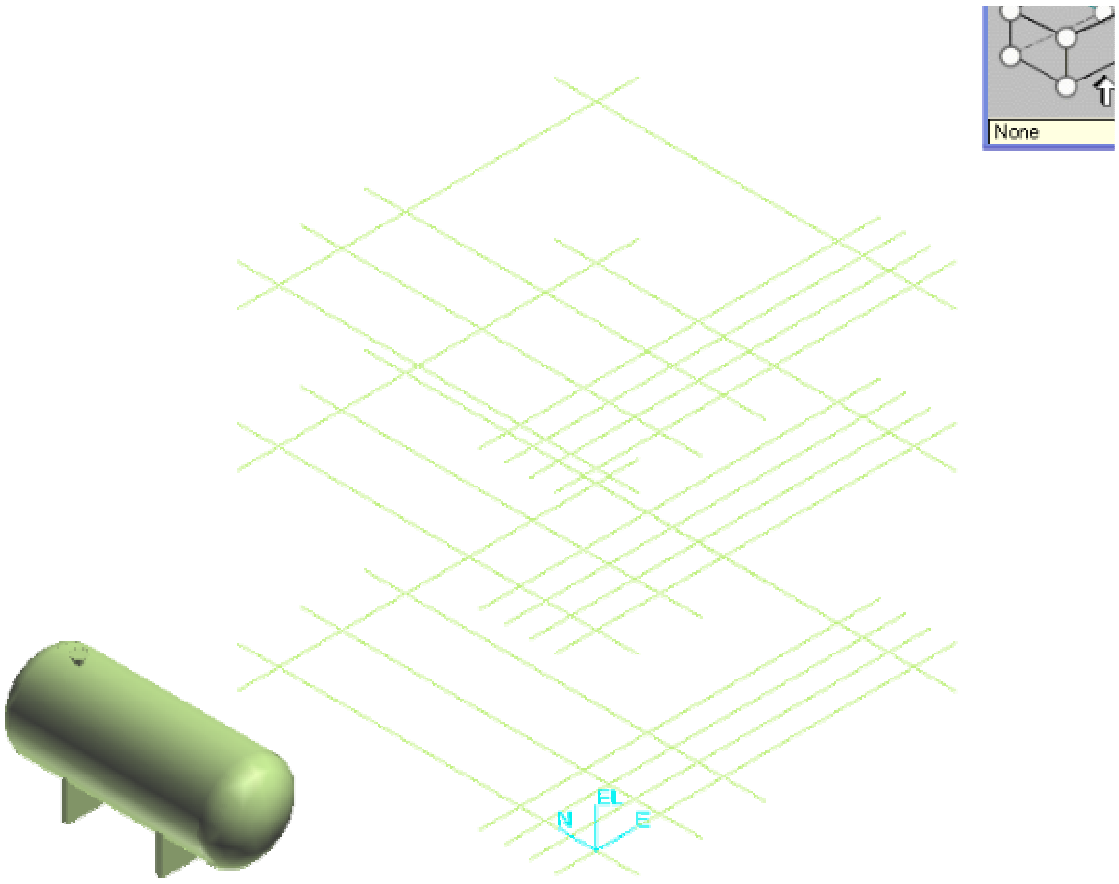
6 Select the **Area2 > Amines Unit -> Equipment** System and Click the OK button.

7 Key in 98’ for East, 100’ 6” for North and 6’ for Elevation

8 Press Left Arrow Key to Rotate Equipment Once

9 Click in the View to Place Equipment

10 Go to the Equipment ribbon bar and Key in **40V-101** in the Name field.



LAB-4: Placing Equipment Using Different Coordinate System

Objective

After this lab students will be able to place equipment using different coordinate systems.

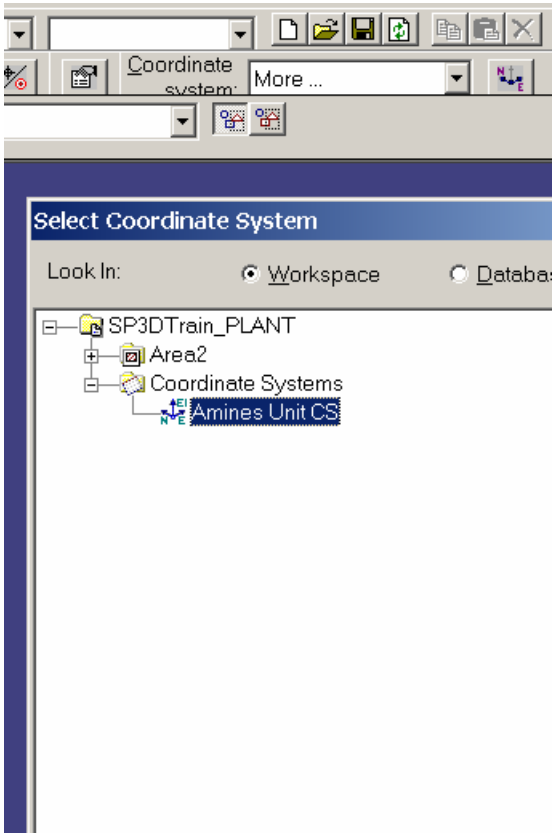
Lecture: Instructor Needs to show/explain different coordinate systems

1 Open a session file and define a filter for your workspace that includes the Amines Unit and its coordinate system.

2 Activate PinPoint if not already active

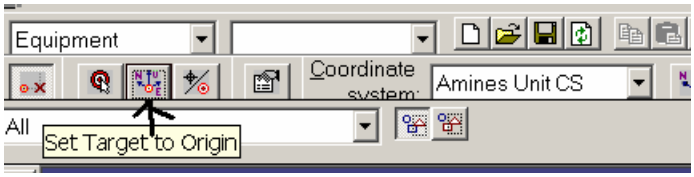
3 From Ribbon Bar, select more under Coordinate systems

4 Expand Coordinate systems and select Amines CS



5 Ok on the Select Coordinate System form

6 Select Set target to Origin Option



7 Select Place Designed Equipment Command

8 From Catalog Browser select, \Equipment\Process\Horizontal Vessels\Horizontal Drum with Saddle

9 Key in 5’ for East, 8’ for North and 22’ for Elevation.

10 Click in the view to accept the placement

11 Go to the Equipment ribbon bar and select **More..** in the **System** drop down list. System opens the Select System dialog box.

12 Select the **Area2 > Amines Unit -> Equipment** System and Click the OK button.

13 Go to the Equipment ribbon bar and Key in **41V-101** in the Name field.

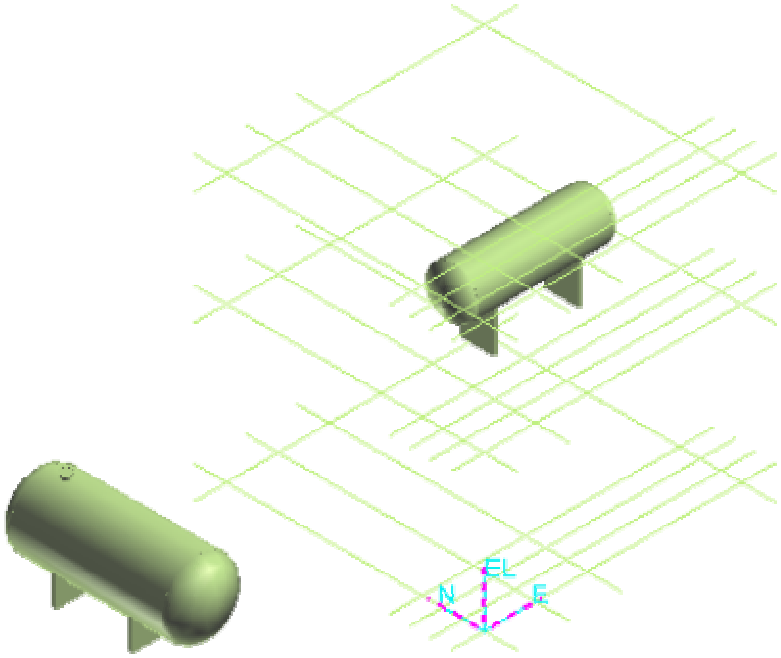
14 Select Place Equipment component command from the vertical toolbar

15 Select 41V-101 from WSE

16 Locate E245 Horizontal Cylindrical Tank using the tree view. Select the part and click the OK button (Equipment Components\Process Components\Vessel & Equipment Bodies\Horizontal Vessels and Tanks\Simple Horizontal Cylindrical Equipment Component (E245)

17 Key in 5’ for East, 8’ for North and 22’ for Elevation.

18 Change the name to Tank


EL
N
E

LAB-5: Placing Equipment Using PG and Properties Page

Objective

After this lab students will be able to place equipment in Appropriate Permission Group, WBS and Position it Using Properties Page

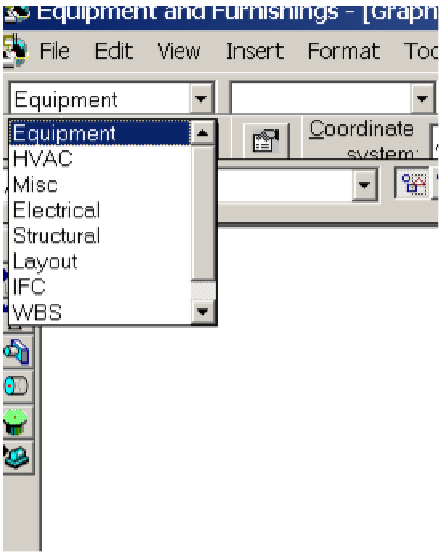
Lecture: Instructor Needs to show/explain Permission Group. Work Break Down Structure and also Property Page

1 Open a session file and define a filter for your workspace that includes the Amines Unit and its coordinate system.

2 Activate PinPoint if not already active

3 From Ribbon Bar, select more under Coordinate systems

4 From Available Permission Groups, Select Equipment



5 Select Place Equipment command from the vertical toolbar to open the select Equipment Dialog box

6 Select Pump_001A_IMP-E, under Equipment\Mechanical\Pumps\Pump

7 Click anywhere in the View

8 Go to the Equipment ribbon bar and make sure the **Amines Unit -> Equipment** System is set in the **System** drop down list

9 Go to the Equipment ribbon bar, and key in **41P-101A** in the Name field

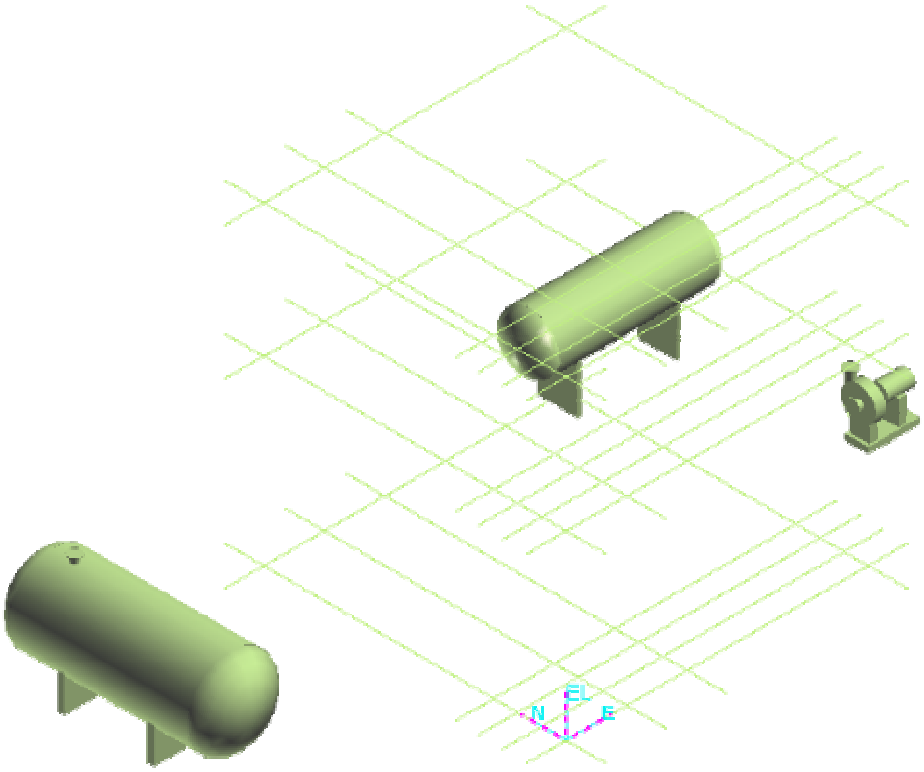
10 Select Edit, Properties

11 From Equipment Properties Page, Change the Category to Position and Orientation

12 Make Sure Active Coordinate System is Set to Amines CS

13 Change the East to 30', North to 5' and elevation to 3'

14 OK on the form



LAB-6: Equipment Modifications

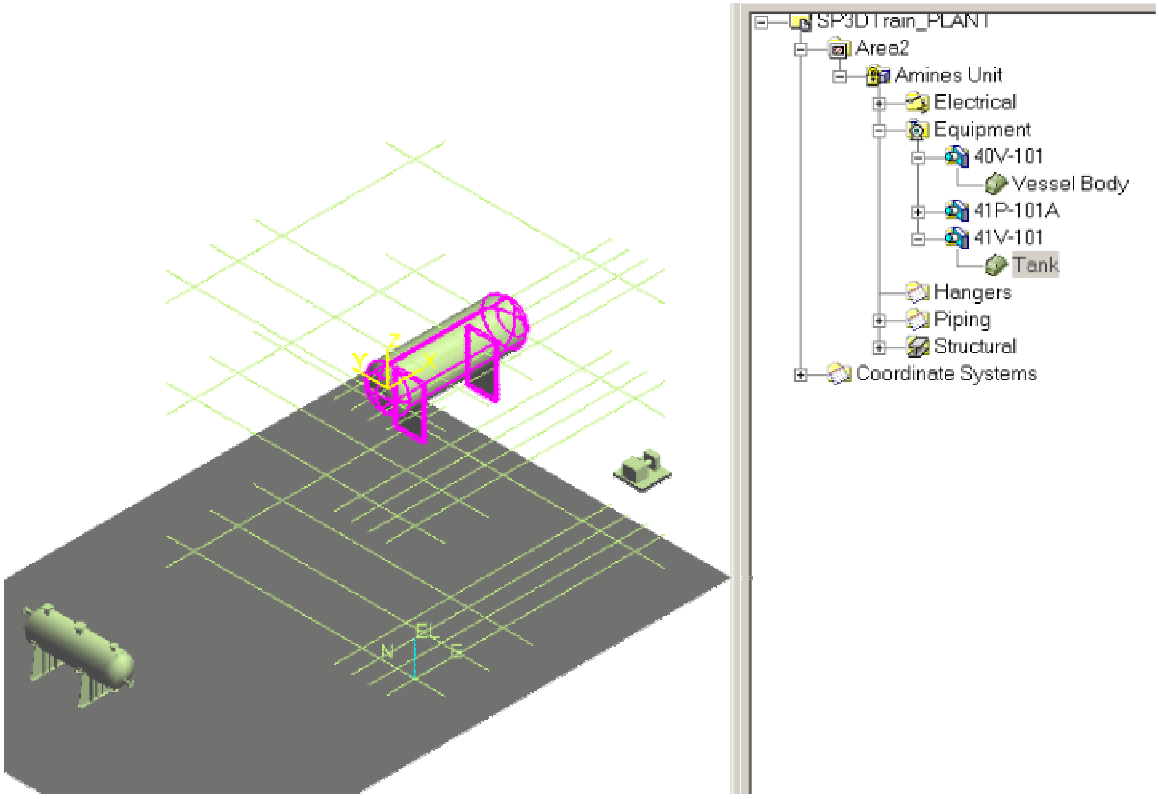
Objective

After completing this lab, Review the properties pages of selected equipments and Edit the occurrence attributes of selected equipments

Lecture: Instructor Needs to show/explain Property page modifications

1 Define your Workspace to Display the equipment in Amines Unit.

2 Select the Tank under **41V-101.** (Select the Tank in WSE)



3 Click the properties icon  on the Modify Equipment ribbon bar to open the Equipment Properties pages. Go to the Category List and select the Equipment dimensions category.

4 Make the following Changes and hit Apply
Vessel Diameter: 8’
Vessel Length: 14’ 10”
Vessel Center Height : 5’ 6”

5 Change the Category to Equipment Support

6 Make the following Changes
Support Thickness: 6” (6 inches)
Support Length: 7’
First Support Location: 3’
Second Support Location: 9’

7 Ok on the form

8 Select Nozzle STNoz1 under, Equipment 40V-101

9 Open property page for nozzle STNoz1

10 Change the size to 6” and name to “A”

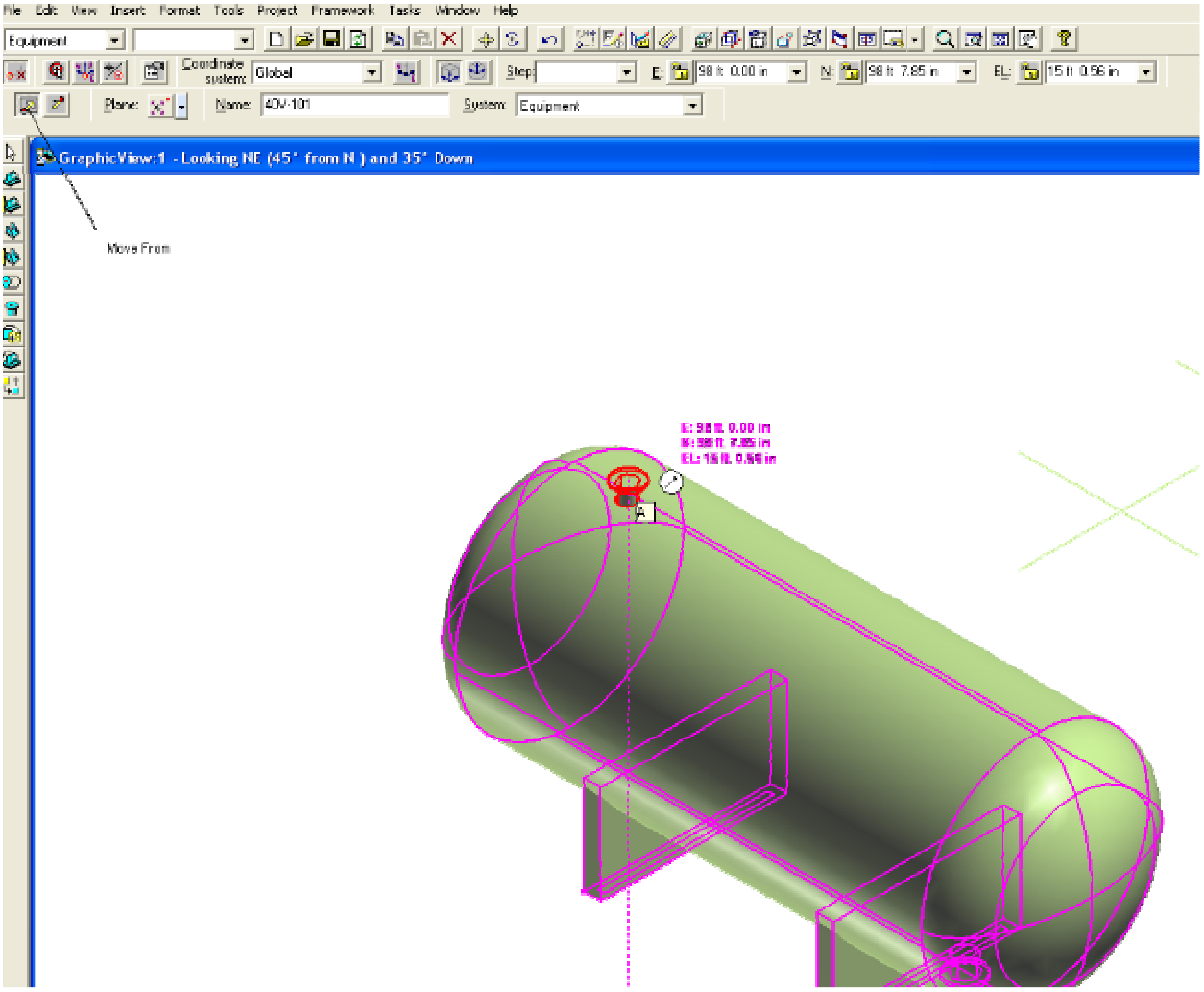
11 Ok on the form

12 Select Equipment 40V-101

13 Select Move command from common ribbon bar

14 Select Move from option

15 Select Nozzle “A” as move from point



16 Set Coordinate system to Global

17 Select Set target to origin option

18 Key in 98’ for East, 99’ 8” for North and 8’ 3” for elevation

19 Click in the view to place the equipment at new location

20 Select Suction Nozzle under 41P-101A

21 Open its Properties page

22 Change the size to 8” and name to N1

23 Change the discharge to 6” and name to N2

24 Select T-101 in building 1

25 Change the Vessel Length to 50’

26 Select Nozzle “C”, under T-101

27 Change N1 to 59’(location tab)

LAB-7: Placing Equipment Using Copy/Paste

Objective

After this lab students will be able to place copy equipment.

Lecture: Instructor Needs to show/explain Copy Paste command

1 Open a session file and define a filter for your workspace that includes the Amines Unit and its coordinate system.

2 Activate PinPoint if not already active

3 Select pump 41P-101A

4 Select Copy command

5 Select Paste command

6 System opens the Paste Special form. Amines Unit\Equipment folder in Work Space Explorer is already selected. Ok on the form to keep the pump in same parent system folder

7 A new equipment appears in Wok Space explorer in Amines Unit\Equipment folder

8 Change the name from Copy of 41P-101A to 41P-101B

9 Under 41P-101B change the name of nozzles to N1 and N2

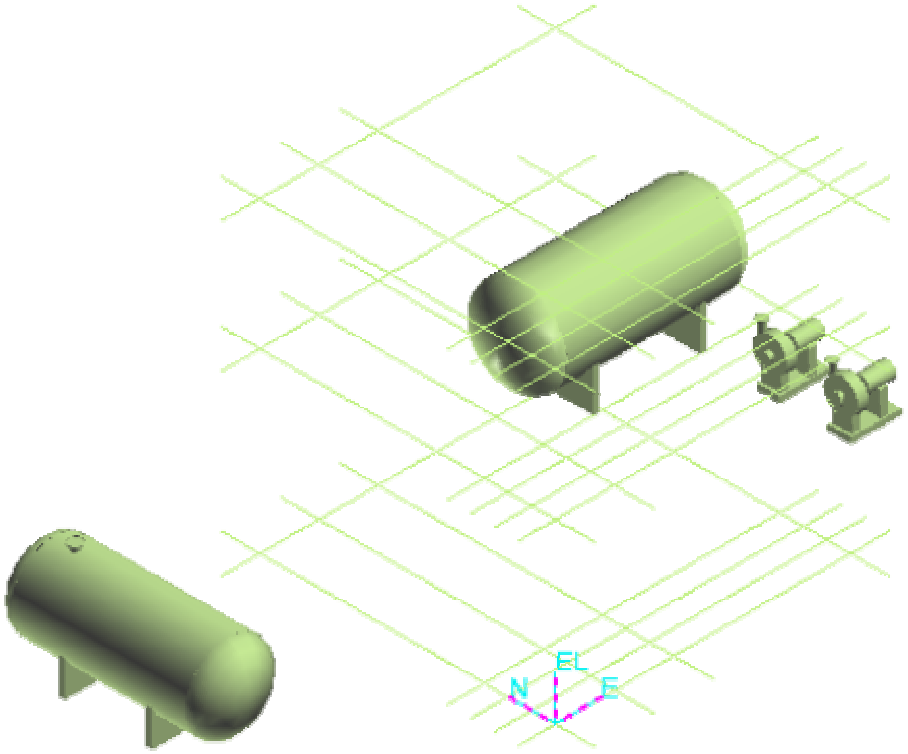
10 Select pump 41P-101B

11 Open its properties page and select Position and orientation category

12 Make sure Coordinate system is set to Amines CS

13 Change the North to 11'. Keep all other coordinates same

14 Your view should resemble this


EL
N
E

LAB-8: Placing Shapes to Build Designed Equipment

Objective

After this lab students will be able to build a designed equipment from Shapes

Lecture: Instructor Needs to show/explain placing shapes to Build designed equipment

1 Open a session file and define a filter for your workspace that includes the Unit 1 and its coordinate system.

2 Activate PinPoint if not already active

3 Change the Coordinate system to Unit 1(make sure to select set target to origin option after changing the coordinate system)

4 Select Place Designed Equipment

5 Select \Equipment\Process\Heat Exchangers\Kettle Heat Exchanger

Place the coordinate system at

Easting: 5 ft relative to the Unit 1 coordinate system

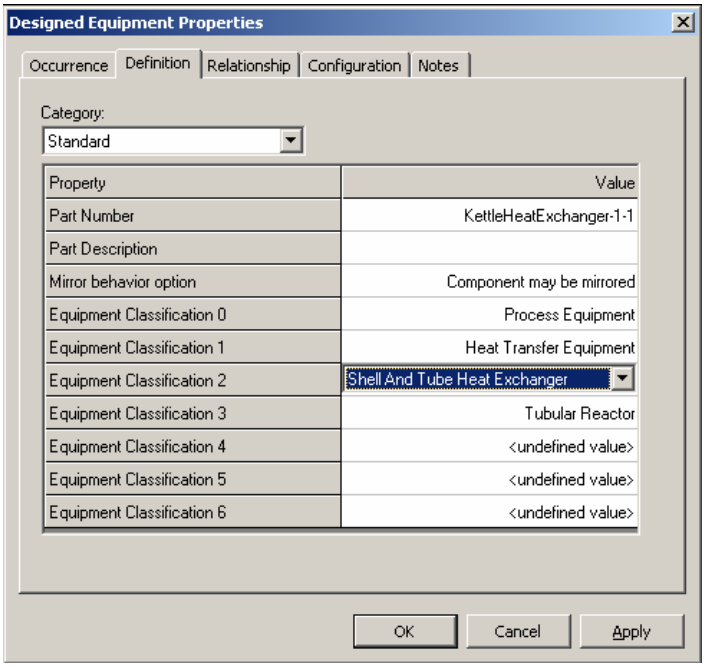
Northing: -20 ft relative to the Unit 1 coordinate system

Elevation: 6 ft relative to the Unit 1 coordinate system

6 Change the System to Unit 1\Equipment

7 Change the Name to E-102

8 Select E-102 and open its properties page. Set the classifications as shown (Definition Tab, Standard Category)



9 Select Place shape Command(click on place shape command and hold the left mouse button to display list of shapes). Select Cylinder Shape from the shape options.

10 Select Designed equipment E-102

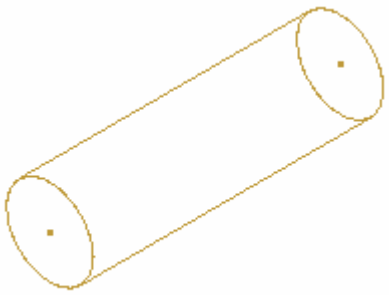
11 Enter A=20’ and B=6’

12 Using PinPoint place the shape at

Easting: 5 ft relative to the Unit 1 coordinate system

Northing: -20 ft relative to the Unit 1 coordinate system

Elevation: 6 ft relative to the Unit 1 coordinate system



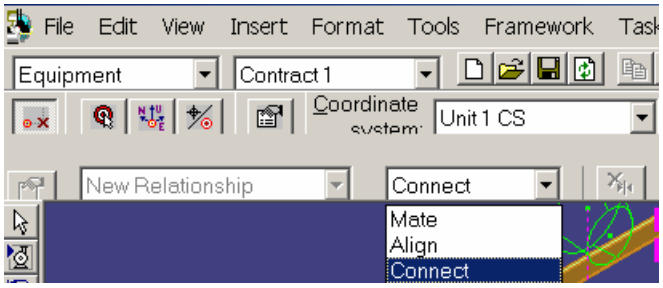
13 Select Place shape command and select Eccentric Cone from shapes

14 Select Designed equipment E-102

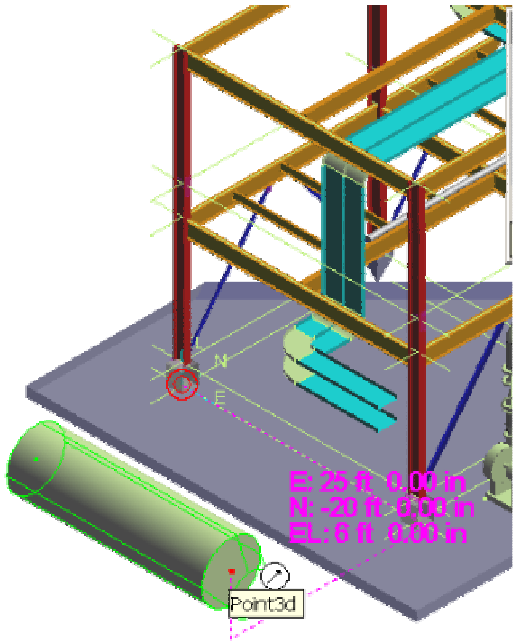
15 Enter A=3 ft, B=6 ft, C= 4 ft and Click OK

16 Using Arrows Keys rotate the shape so it is Flat on Bottom

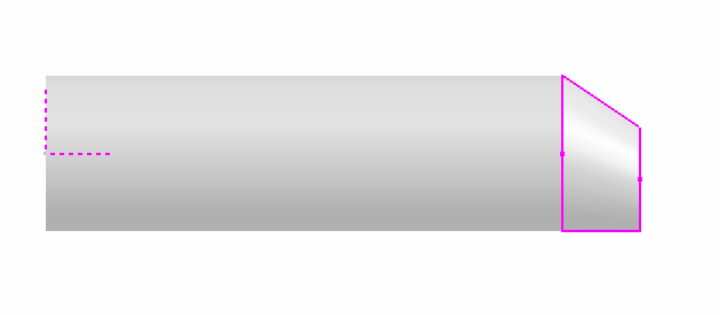
17 Change the Relationship to Connect from Mate



18 Select the Point at the East end of the Cylinder



19 Click to place the shape



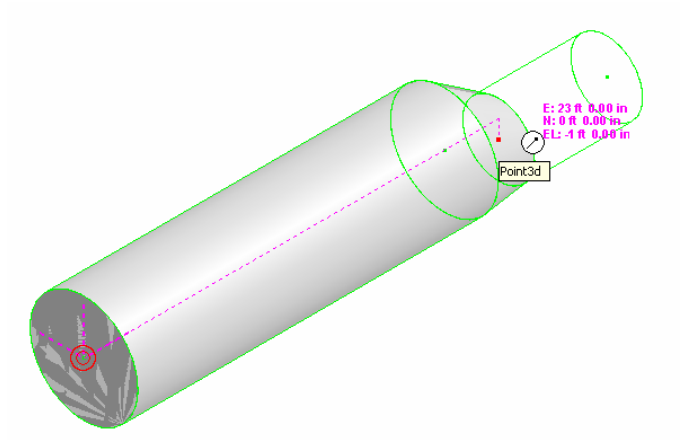
Elevation View

20 Select Place Shape Command. Select a Cylinder

21 Identify E-102

22 Enter A=6 and B=4

23 Using Connect Place it at the free end of Eccentric cone

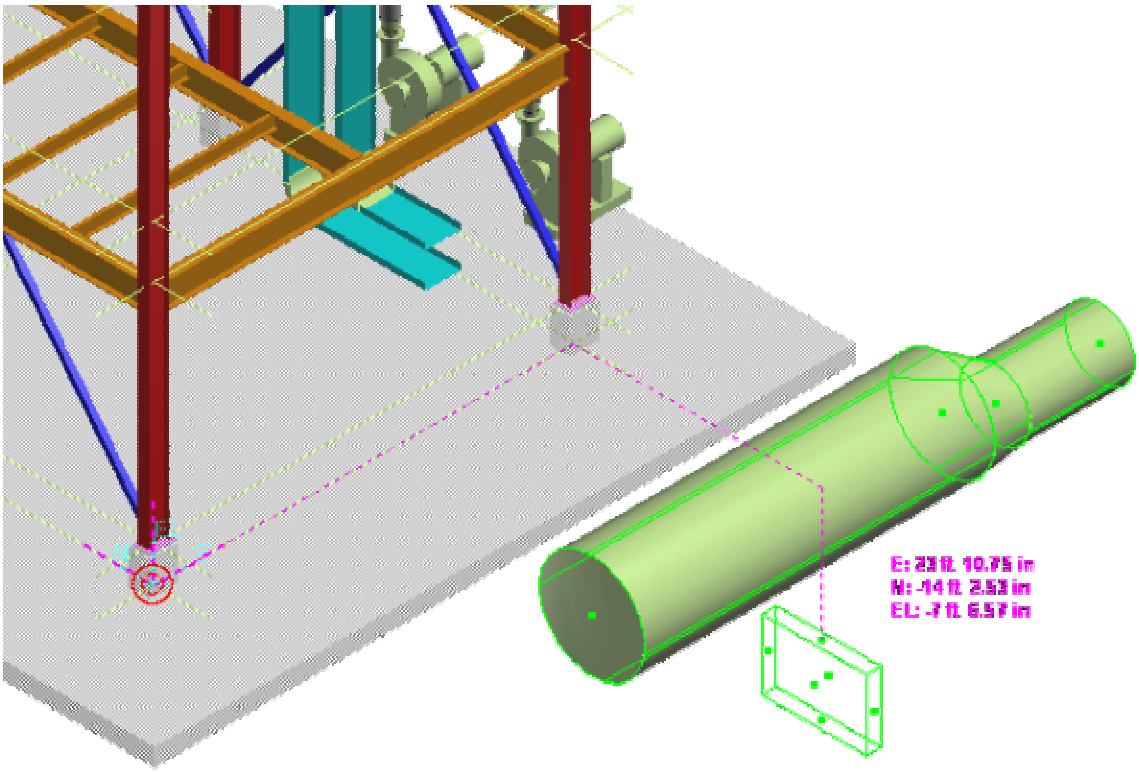


24 Select Place shape command

25 Select the Rectangular Solid shape

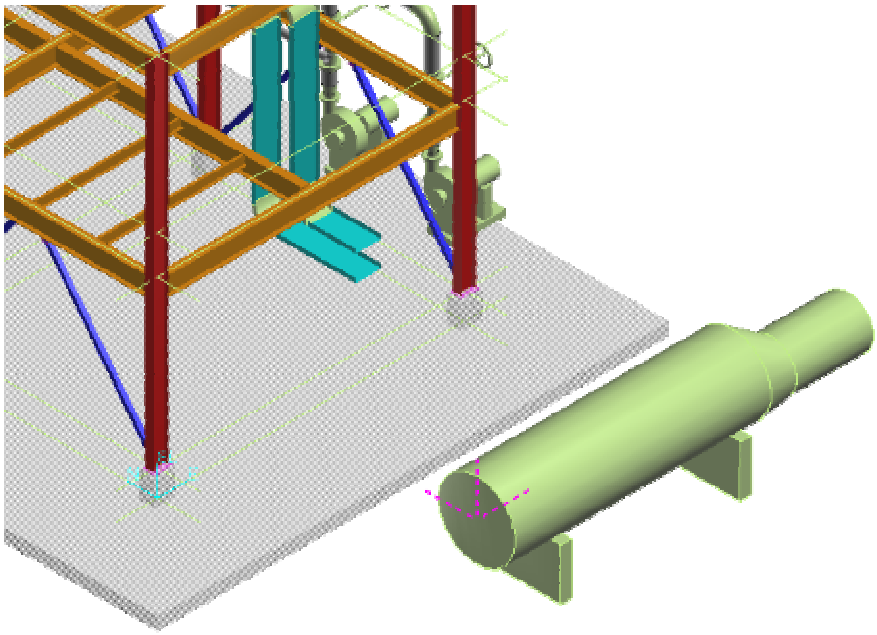
26 Enter A=4', B=6' and C=10" (C is 10 inches)

27 Using arrow keys rotate the shape as shown

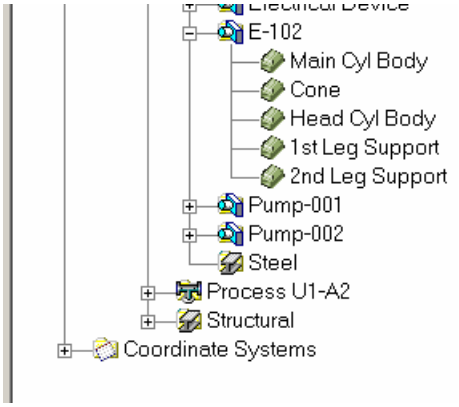


28 Place the shape at
   Easting: 4 ft relative to the first shape coordinate system
   Northing: 0 ft relative to the first shape coordinate system
   Elevation: -2 ft relative to the first shape coordinate system

29 Place a second Rectangular shape with same dimensions and orientation at
   Easting: 18 ft relative to the first shape coordinate system
   Northing: 0 ft relative to the first shape coordinate system
   Elevation: -2 ft relative to the first shape coordinate system



30 Rename all the Shapes under Designed Equipment E-102 as Shown



LAB-9: Adding Nozzles to Designed Equipment / Shapes

Objective

After this lab students will be able to add nozzles/ports to designed equipment/Shapes

Lecture: Instructor Needs to show/explain placing nozzles

1 Open a session file and define a filter for your workspace that includes the Unit 1 and its coordinate system.

2 Activate PinPoint if not already active

3 Select Place Nozzle Command

4 Select Shape(Main Cyl Body) under E-102

5 From the Port Type control on the Nozzle Properties form select **Piping Straight Nozzle**.

6 Define the following Properties:

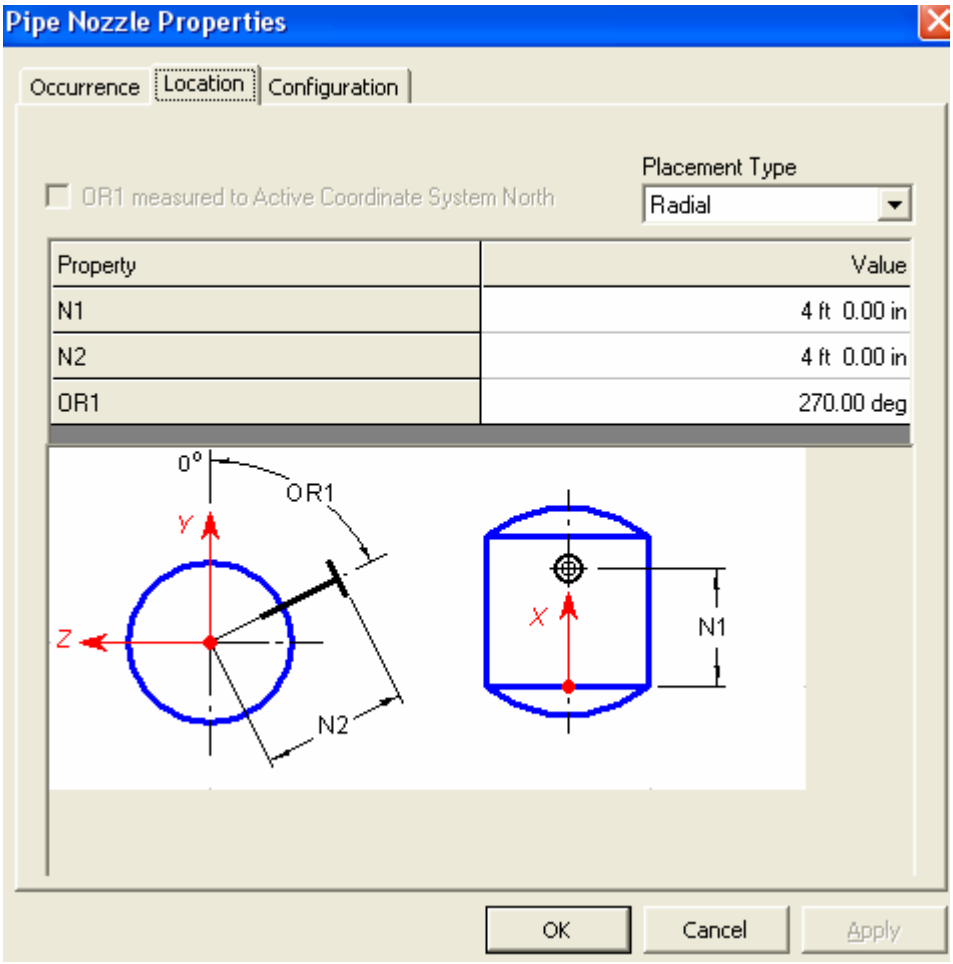
PortIndex: 1
NorminalSize: 8
NPDUnitType: in
Termination Class: Bolted
Termination SubClass: Flanged
End Preparation: RFFE
End Practice: US Practice
End Standard: Default
Rating Practice: US Practice
Pressure Rating: CL150
Flow Direction: Flow leaves this port

Scroll down

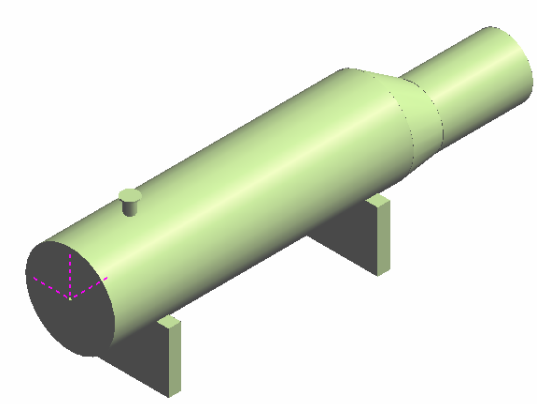
Nozzle Length: 1 ft
Name: N1

Switch to the location tab and select Radial in the Placement Type control. Define the following:

N1 = 4 ft
N2 = 4 ft
OR1 = 270 degree



7 Your screen should look like this



8 Select Place Nozzle Command

9 Select Shape(Main Cyl Body) under E-102

10 From the Port Type control on the Nozzle Properties form select **Piping Straight Nozzle**.

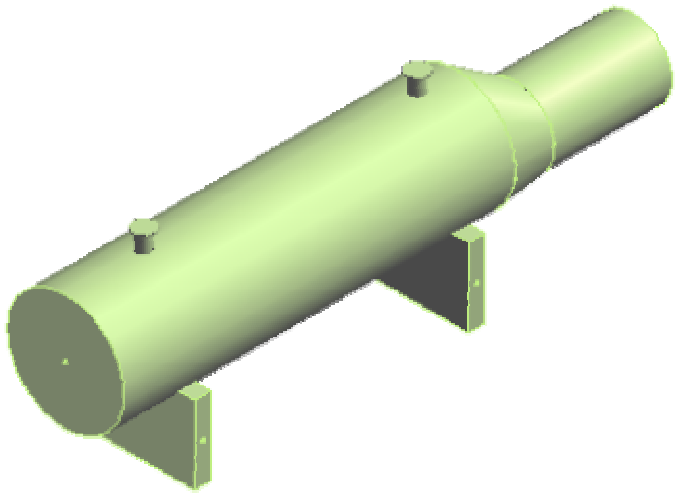
11 Define the following Properties:

PortIndex: 2
NorminalSize: 8
NPDUnitType: in
Termination Class: Bolted
Termination SubClass: Flanged
End Preparation: RFFE
End Practice: US Practice
End Standard: Default
Rating Practice: US Practice
Pressure Rating: CL150
Flow Direction: Flow leaves this port

Scroll down
Nozzle Length: 1 ft
Name: N2

Switch to the location tab and select Radial in the Placement Type control. Define the following:
N1 = 18 ft
N2 = 4 ft
OR1 = 270 degree

12 Your view should resemble this



LAB-10: Adding Nozzles using By Point Option

Objective

After this lab students will be able to add nozzles/ports to designed equipment/Shapes by point option

Lecture: Instructor Needs to show/explain placing nozzles using By point option

1 Open a session file and define a filter for your workspace that includes the Amines Unit and its coordinate system.

2 Activate PinPoint if not already active

3 Change the coordinate system to Amines Unit CS

4 Select Set target to origin option

5 Select Place Nozzle Command

6 Select Shape(Tank) under 41V-101

7 From the Port Type control on the Nozzle Properties form select **Piping Straight Nozzle**.

8 Define the following Properties, 8”, RFFE, Length 1’, Name N1 (Define Rest of the properties as previous labs)

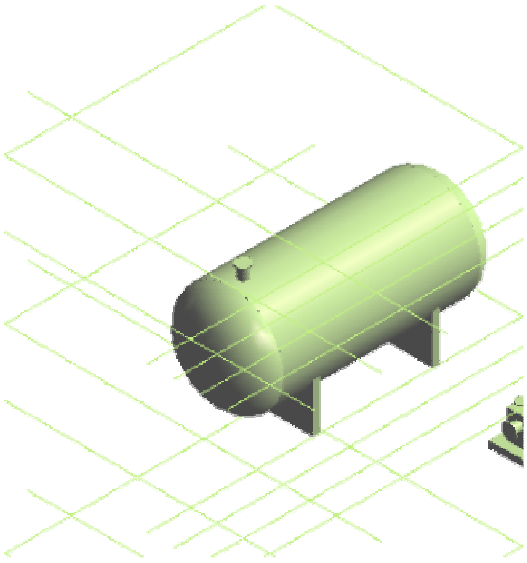
9 From Location Tab, select Position by point option. Ok on the form

10 Key in East 6’, North 8’ and Elevation 27’.

11 Rotate the Nozzle using arrow keys. Make sure RFFE is on top

12 Click to place the nozzle

13 Your View Should Resemble this



14 Select Place nozzle command

15 Select same Tank again

16 Define the following Properties, 8”, RFFE, Length 1’, Name N2 (Define Rest of the properties as previous labs)

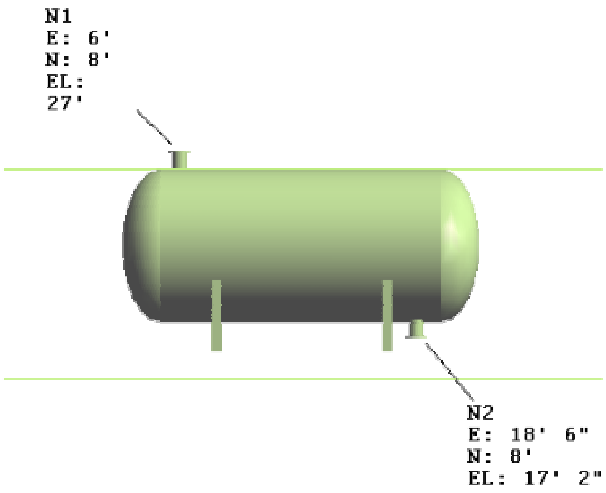
17 From Location Tab, select Position by point option. Ok on the form

18 Key in East 18’ 6”, North 8’ and Elevation 17’ 2”.

19 Rotate the Nozzle using arrow keys. Make sure RFFE is at the bottom

20 Click to place the nozzle

21 Your View Should Resemble this


N1
E: 6'
N: 8'
EL:
27'
N2
E: 18' 6"
N: 8'
EL: 17' 2"

LAB-11: Placing Equipment from External modeler

Objective

After this lab students will be able to place and model Designed Equipment whose body comes from an external disk file. Also, Place a reference shape for nozzle locations

Lecture: Instructor Needs to show/explain placing equipment from external modeler

1 Open a session file and define a filter for your workspace that includes the Unit 2 and its coordinate system.

2 Activate PinPoint if not already active

3 Change the coordinate system to Unit 2 CS

4 Select Set target to origin option

5 Select Place Designed Equipment Command

6 From Catalog select \Equipment\Process\Horizontal Vessels\Horizontal Drum with Saddle

7 Key in East 15', North 30' and Elevation 0

8 Click to place the equipment

9 Change the System to Unit 2, Equipment

10 Change the name to DR-100

11 Select the place imported shape from file command on the vertical toolbar.

12 Select R-100 from the workspace explorer and then select the Tank_Shape.sat file from specified location

13 In the Display aspects dialog, select Simple Physical and click OK.

14 Key in East 15', North 30' and Elevation 0

15 Change the name of tank to Drum Body

16 Select place Nozzle Command

17 Select Drum Body as shape to add nozzle to

18 Define the following Properties, 8”, RFFE, Length 1’, Name N1 (Define Rest of the properties as previous labs)

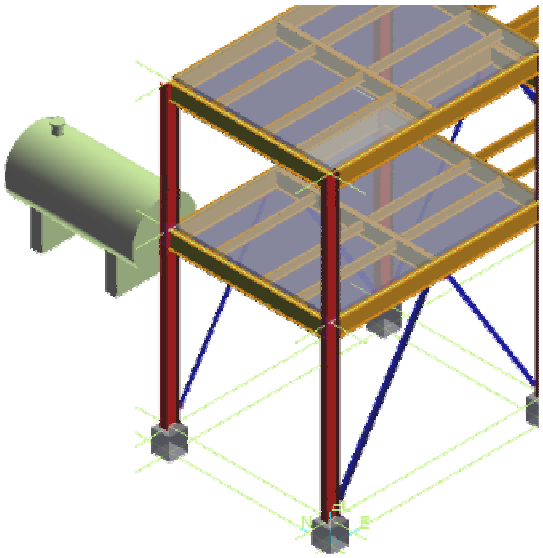
19 From Location Tab, select Position by point option. Ok on the form

20 Key in East 12’-6”, North 38’ and Elevation 9’.

21 Rotate the Nozzle so RFFE is on top

22 Click in the view to place the nozzle

23 Your View Should Resemble this

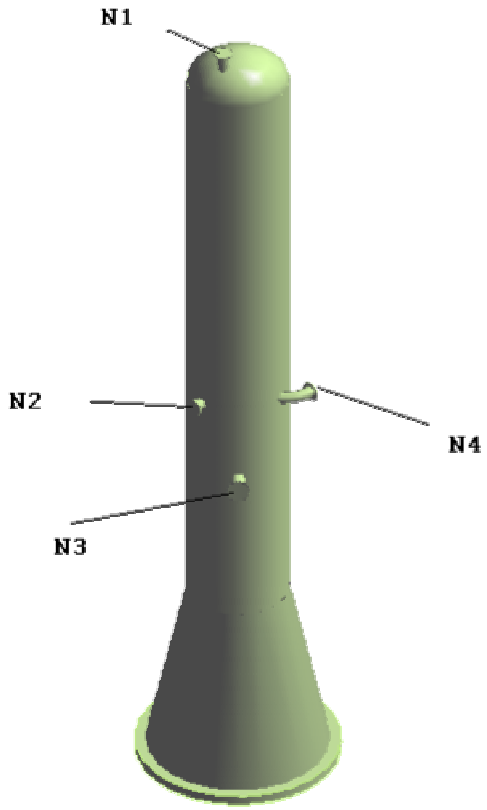


LAB-12: Placing Shapes to model a Vertical Vessel as Designed Equipment – (OPTIONAL LAB)

Objective

After this lab students will be able to place and model vertical vessel as Designed Equipment and will be able to add nozzles to that.

Lecture: Instructor Needs to show/explain placing Shapes to model Vertical Vessel using Shapes



NOTE: These are not detailed steps. Just an outline of things to consider

1 Open a session file and define a filter for your workspace that includes the Unit 2 and its coordinate system.

2 Activate PinPoint if not already active

3 Change the coordinate system to Unit 2 CS

4 Select Set target to origin option

5 Select Place Designed Equipment Command

6 Select \Equipment\Process\Vertical Vessels\Simple Vertical Vessel with Skirt and click OK.

7 Place the coordinate system at E -25, N - 15 and EL 2

8 Change the system to Unit 2 -> Equipment System

9 Name the Vessel as VS-102 using the ribbon bar.

10 Select Place Shape command. Select the cylinder shape.

11 Select VS-102 as designed equipment

12 Place a Cylinder as base with dimensions A=6” and B=10’

13 Place the shape at E -25, N - 15 and EL 2

14 Rotate the shape so that the place point is at the Bottom

15 Change the name to Base

16 Select Place Equipment component command.

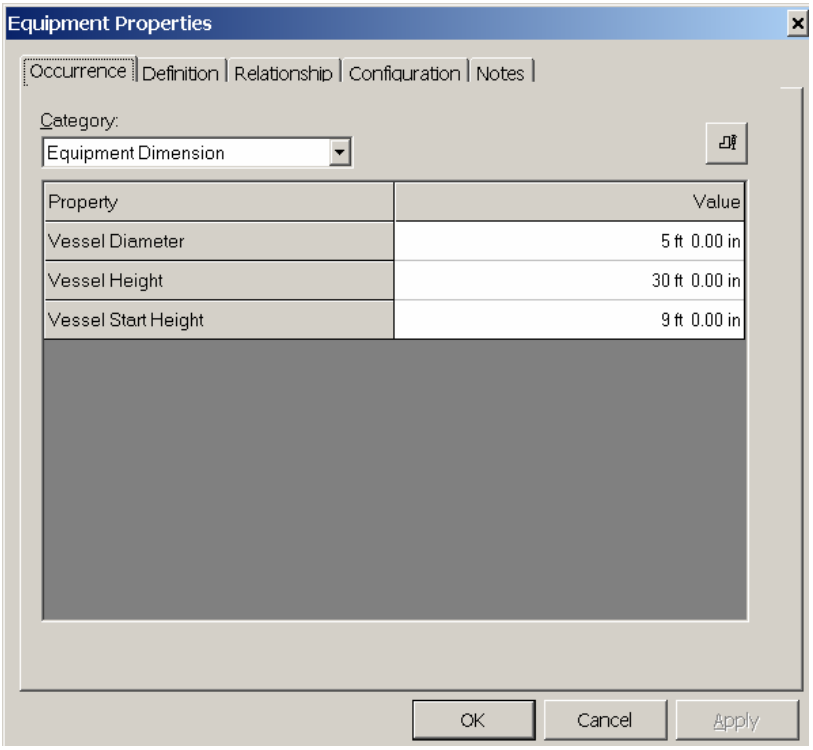
17 Select E(210)-Vertical tank under \Equipment Components\Process Components\Vessel & Equipment Bodies\Vertical Vessels and Tanks\Simple Vertical Cylindrical Equipment Skirt Component (E210)

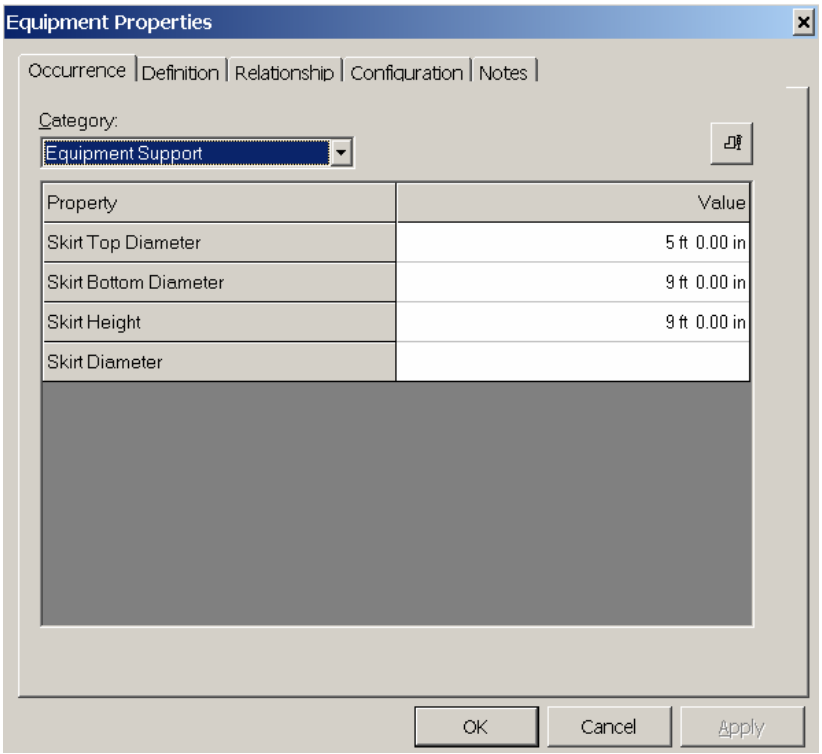
18 Using Connect relation ship, place the equipment on top of base plate

19 Change the name to Vertical Tank

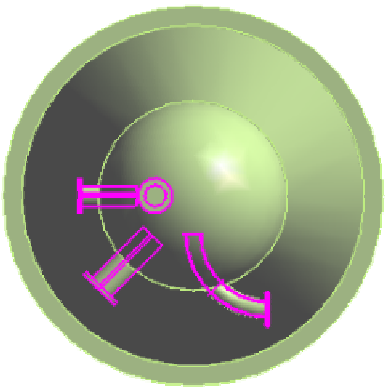
20 Select Vertical Tank and make following changes from property page

(You might see a different form from what is shown here)

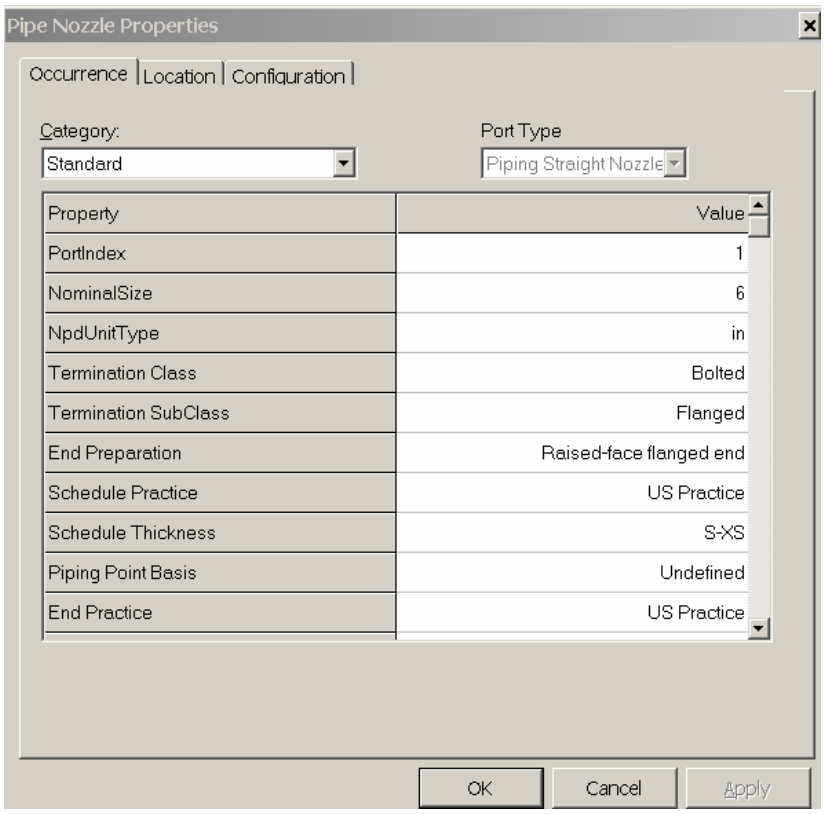


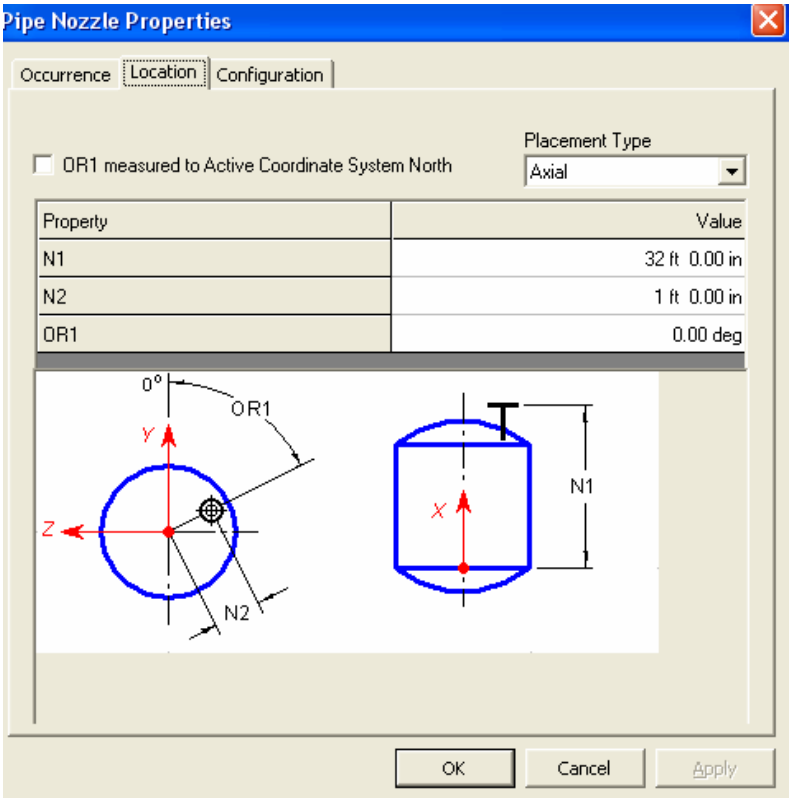


21 Place All nozzles by selecting DP2 under Vertical Tank. Nozzle Properties are detailed below



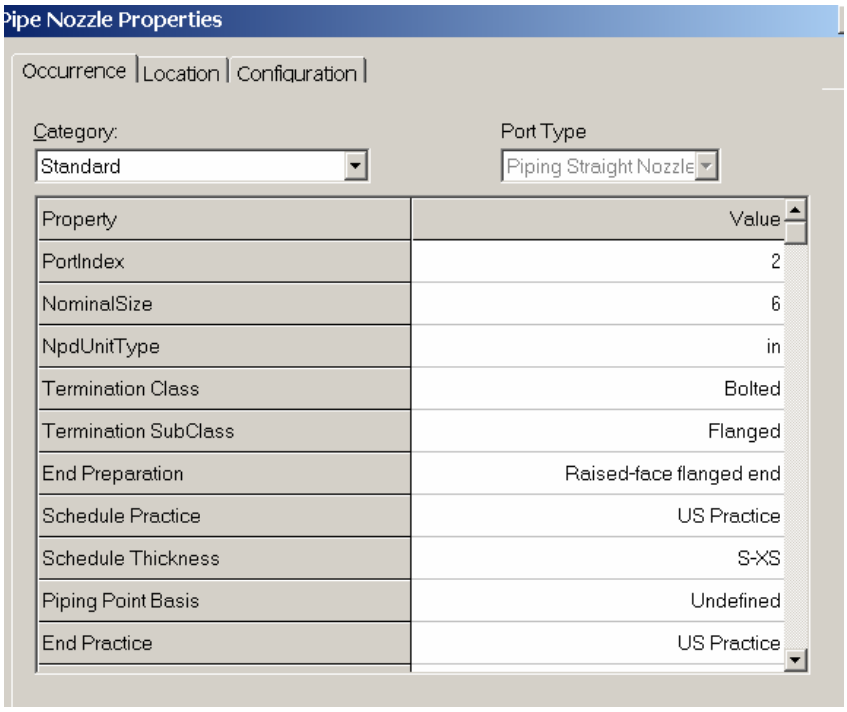
Nozzle: N1
Nozzle Length: 1’ Name: N1

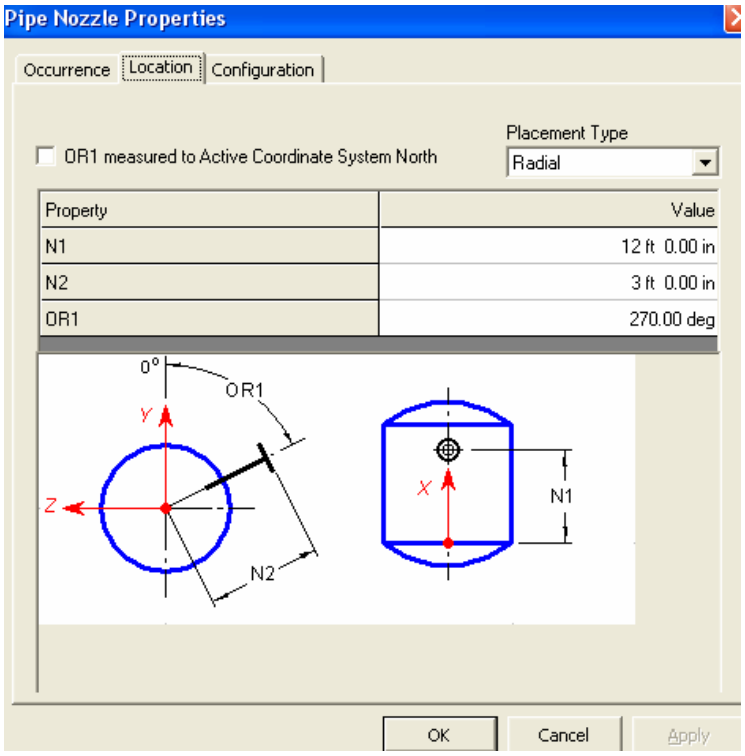

Pipe Nozzle Properties
Occurrence
Location
Configuration
Category:
Standard
Port Type
Piping Straight Nozzle
Property
Value
PortIndex
1
NominalSize
6
NpdUnitType
in
Termination Class
Bolted
Termination SubClass
Flanged
End Preparation
Raised-face flanged end
Schedule Practice
US Practice
Schedule Thickness
S-XS
Piping Point Basis
Undefined
End Practice
US Practice
OK
Cancel
Apply


Pipe Nozzle Properties
Occurrence
Location
Configuration
OR1 measured to Active Coordinate System North
Placement Type
Axial
Property
Value
N1
32 ft 0.00 in
N2
1 ft 0.00 in
OR1
0.00 deg
0°
OR1
Y
Z
N2
X
N1
OK
Cancel
Apply

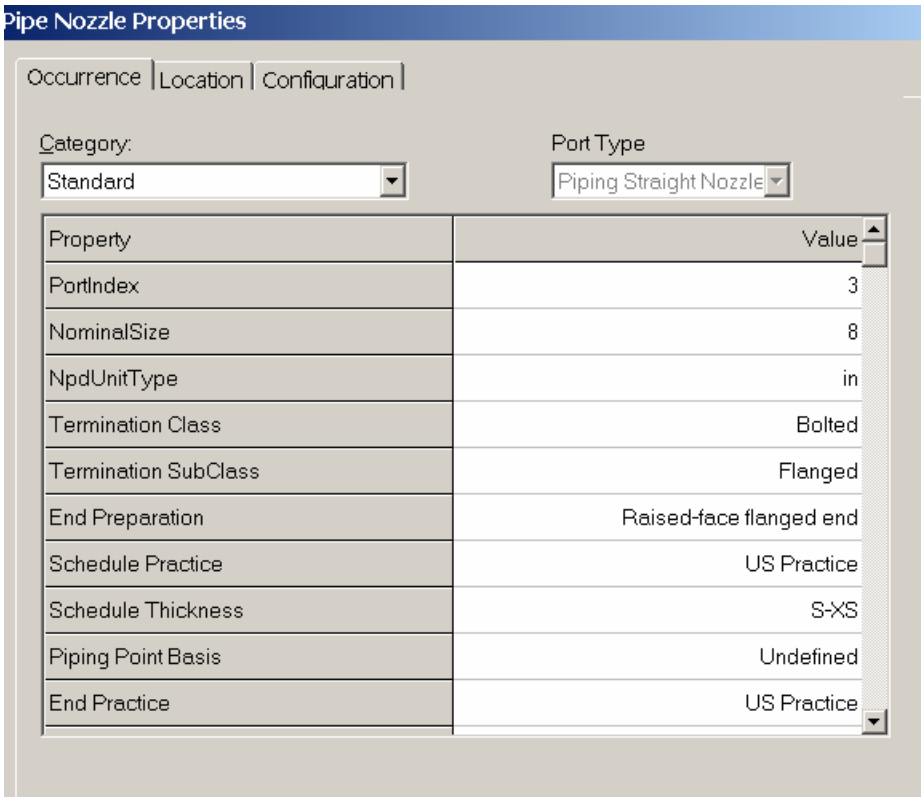
Nozzle: N2

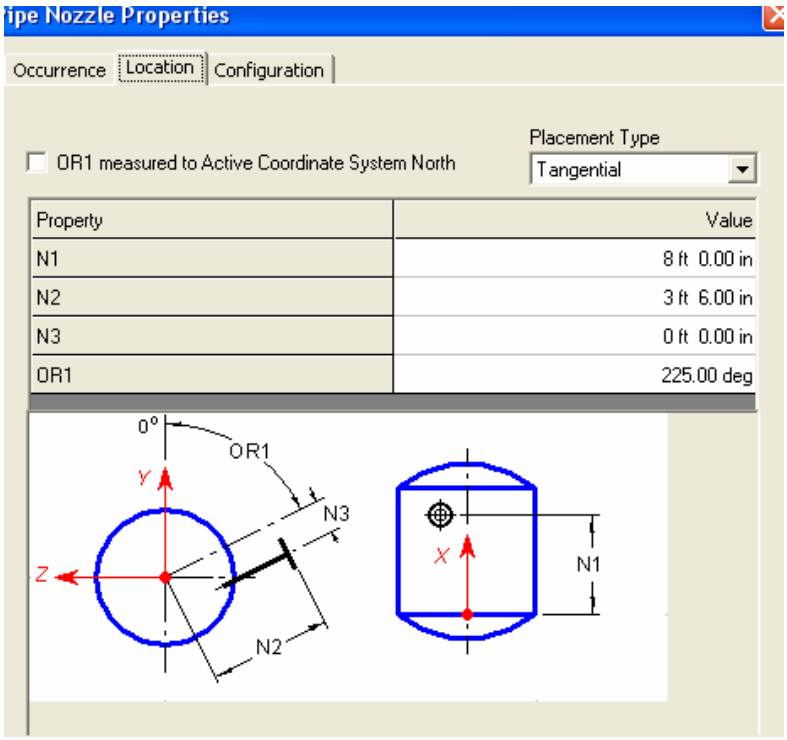
Nozzle Length: 1’ 6” Name: N2



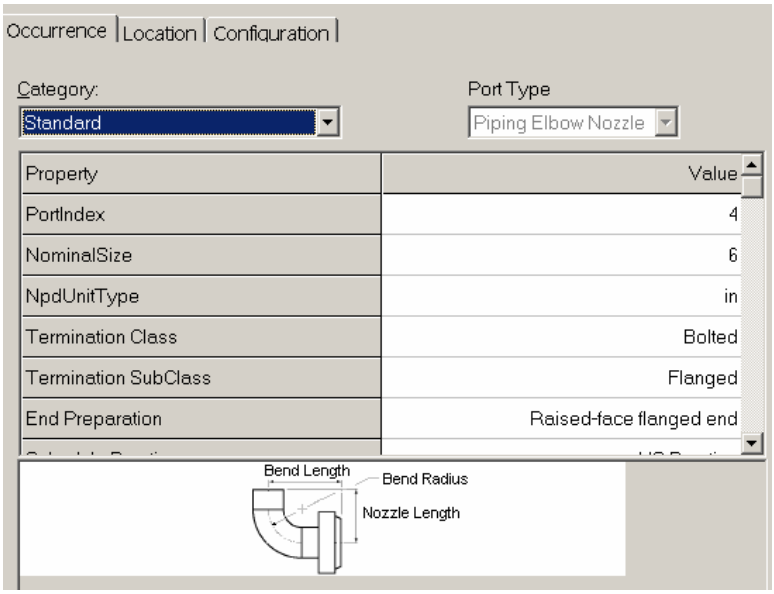


Nozzle: N3
Nozzle Length: 2’ Name: N3


Pipe Nozzle Properties
Occurrence
Location
Configuration
Category:
Standard
Port Type
Piping Straight Nozzle
Property
Value
PortIndex
3
NominalSize
8
NpdUnitType
in
Termination Class
Bolted
Termination SubClass
Flanged
End Preparation
Raised-face flanged end
Schedule Practice
US Practice
Schedule Thickness
S-XS
Piping Point Basis
Undefined
End Practice
US Practice


ipe Nozzle Properties
Occurrence
Location
Configuration
OR1 measured to Active Coordinate System North
Placement Type
Tangential
Property
Value
N1
8 ft 0.00 in
N2
3 ft 6.00 in
N3
0 ft 0.00 in
OR1
225.00 deg
0°
OR1
Y
N3
Z
N2
X
N1

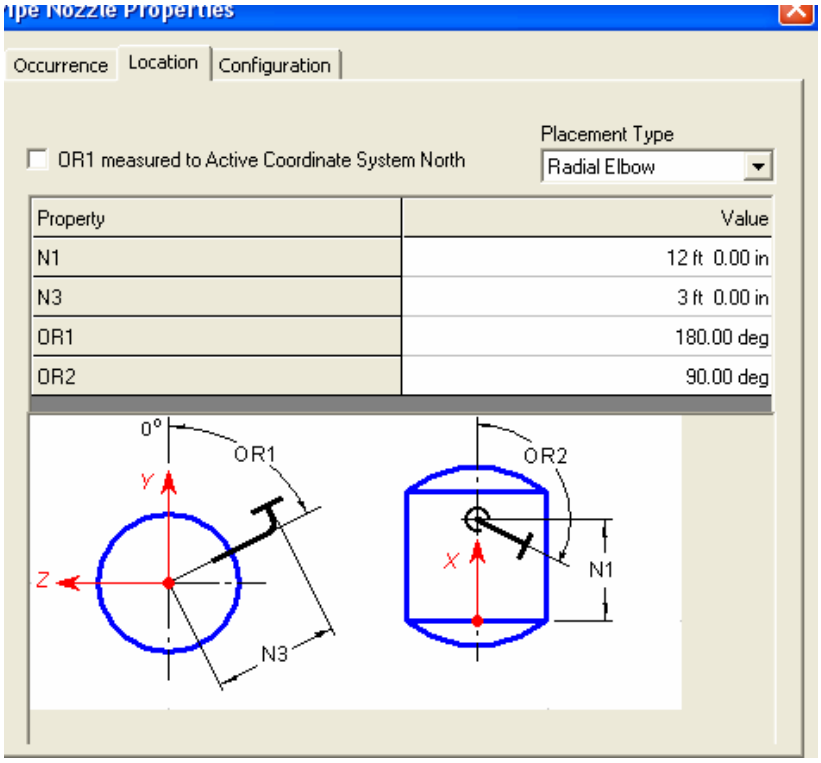
Nozzle: N4



Property	Value
Schedule Practice	US Practice
Schedule Thickness	S-XS
Piping Point Basis	Undefined
End Practice	US Practice
End Standard	Default
Rating Practice	US Practice

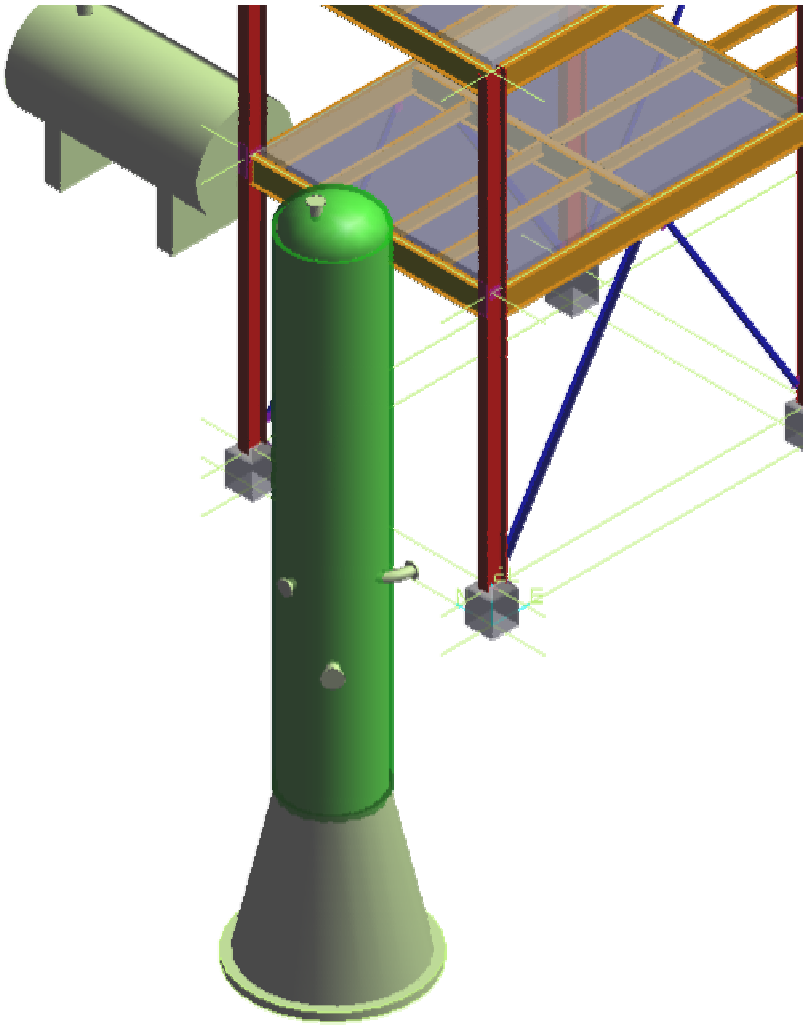
Property	Value
Pressure Rating	CL150
Flow Direction	Undefined
Flange Or Hub OutsideDiameter	0 ft 11.00 in
WallThickness Or GrooveSetback	0 ft 0.00 in
Raised Face Or Socket Diameter	0 ft 8.50 in
Flange Or HubThickness	0 ft 1.00 in

Property	Value
Nozzle Length	2 ft 0.00 in
Bend Length	2 ft 0.00 in
Bend Radius	2 ft 0.00 in
Name	N4
Correlation Status	Not correlated
Correlation Basis	Correlate object



Adding Insulation Aspect

Add 3” insulation to the main Vessel Body
Define a Surface Style Rule to make Insulation Translucent



LAB-13: Placing Equipment from PID

Objective

After this lab students will be able to place and model Designed Equipment by transferring Data from PID

Lecture: Instructor Needs to show/explain placing equipment and Nozzles from PID

1 Open a session file and define a filter for your workspace that includes the Unit 2 and its coordinate system.

2 Activate PinPoint if not already active

3 Change the coordinate system to Unit 2 CS

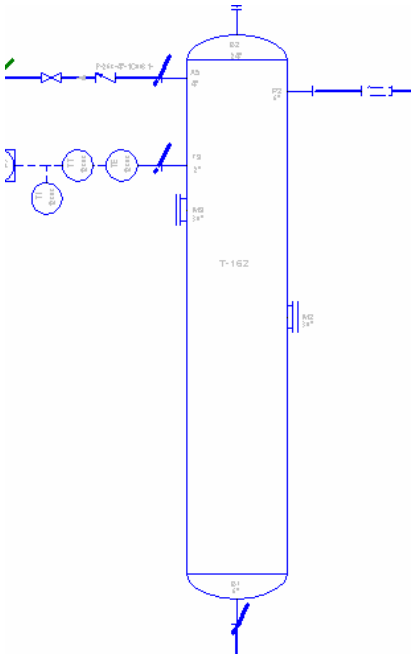
4 Select Set target to origin option

5 Go to Framework > View P&ID

6 Select INT01 from the PID list, Select open button

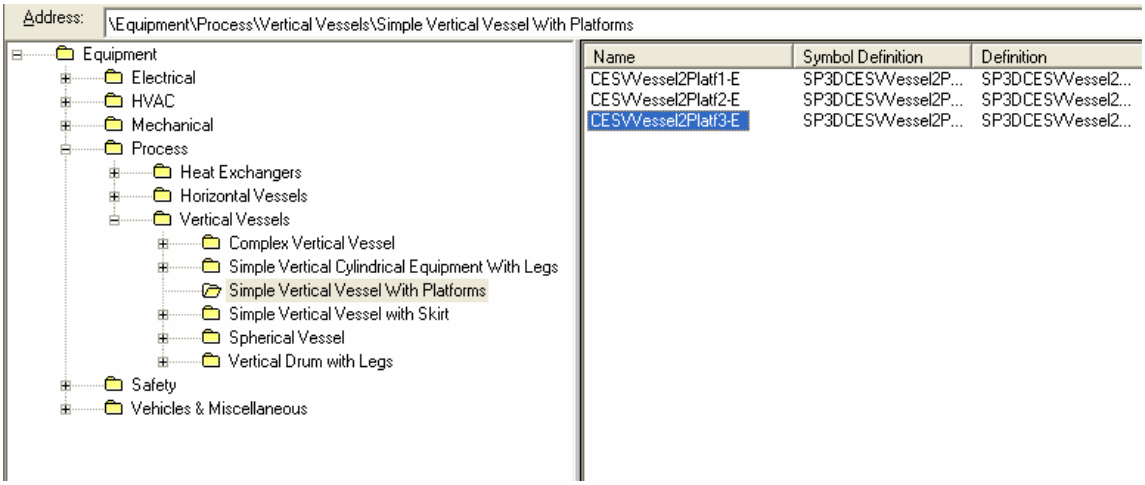
7 PID Viewer opens up in a Window

8 Select Equipment T-162 from PID

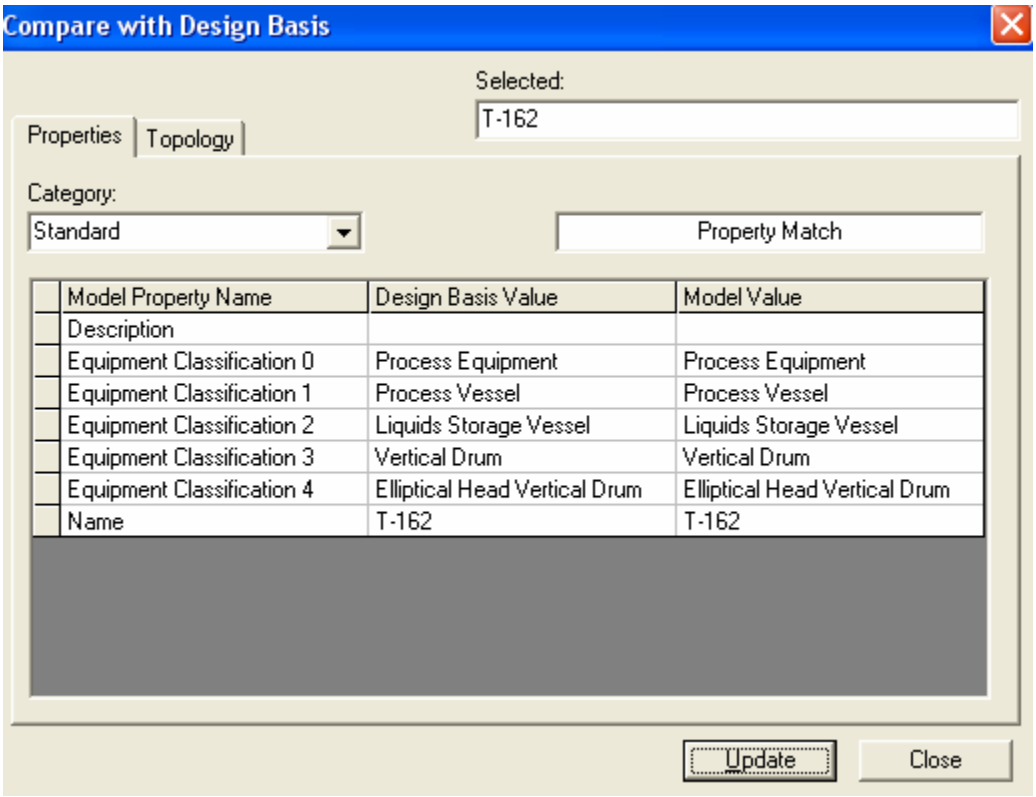


9 Select Place Equipment Command

10 System opens up the Catalog Browser, and Simple Vertical Vessel is selected. Ok on the form



11 System Opens up Compare design Basis form. This reflects difference between Model and PID



12 Select Update on the form. Click close

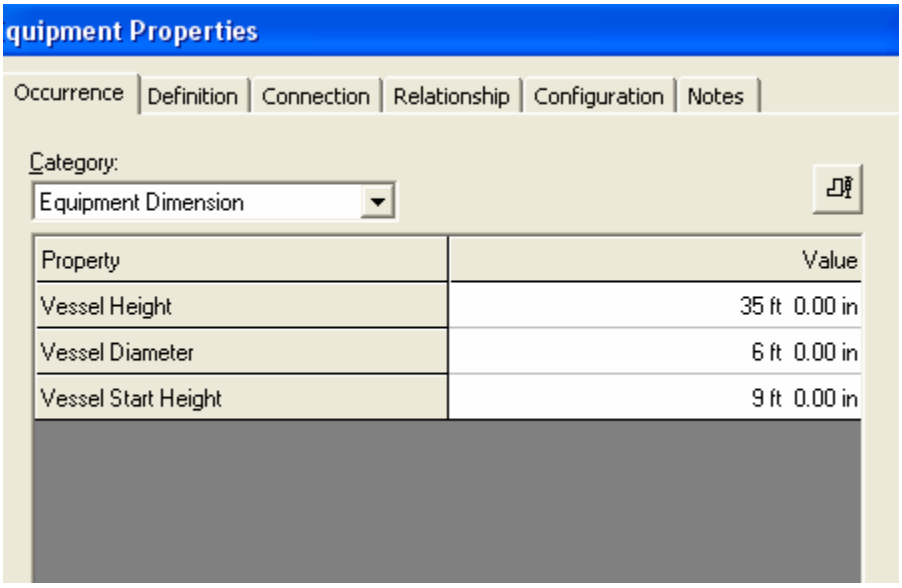
13 Change the system to Unit 2 > Equipment

14 Place the Equipment at E 10, N -35, EL 2 WRT Unit 2 CS.

15 System fills the name from PID (T-162)

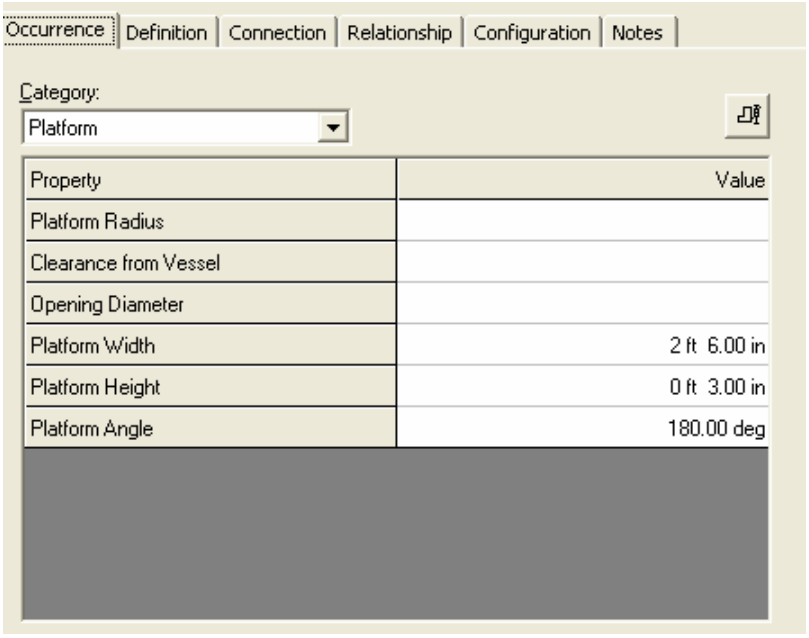
16 Open property page for T-162

17 Make following Changes on Equipment Dimension Category



18 Switch to Equipment Support Category, Skirt top Dia 6', Bottom Dia 11', Skirt height 9' .

19 Switch to Platform Category and make following changes

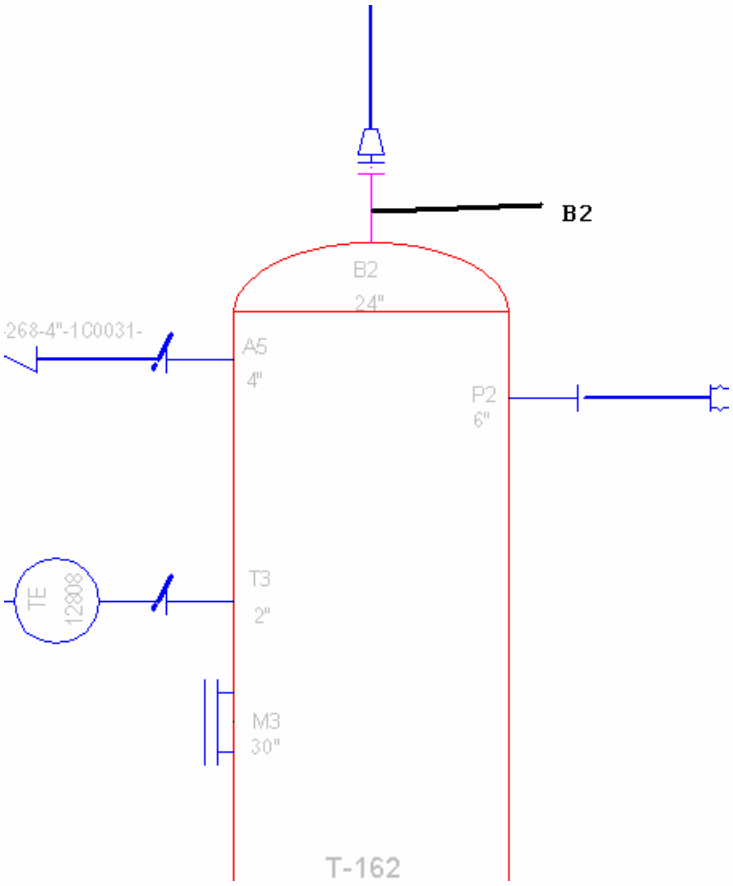


20 Select the Nozzle, Vessel Noz1 at the top of the Equipment T-162 in the model.

21 Select Framework, Correlate with Design Basis option

22 System prompts from Item from PID

23 Select Nozzle B2, at the top in PID Viewer



24 Select Update from Compare design basis form. This will change the nozzle properties in the model to match PID

25 Close the form

26 Select Nozzle B2 in WSE and open its properties page

27 Change its length to 1’ 6”

28 Select the Nozzle, Vessel Noz2 on Equipment T-162 in the model.

29 Select Framework, Correlate with Design Basis option

30 System prompts from Item from PID

31 Select Nozzle P2, in PID Viewer

32 Select Update from Compare design basis form. This will change the nozzle properties in the model to match PID

33 Close the form

34 Select Nozzle P2 in WSE and open its properties page

35 Change its length to 1’ 6”

36 Switch to location tab and change N1 to 33’. Ok on the form

37 Select the Nozzle, Vessel Noz3 on Equipment T-162 in the model.

38 Select Framework, Correlate with Design Basis option

39 System prompts from Item from PID

40 Select Nozzle A5, in PID Viewer

41 Select Update from Compare design basis form. This will change the nozzle properties in the model to match PID

42 Close the form

43 Select Nozzle P2 in WSE and open its properties page

44 Change its length to 1’ 6”

45 Switch to location tab and change N1 to 32’. Ok on the form

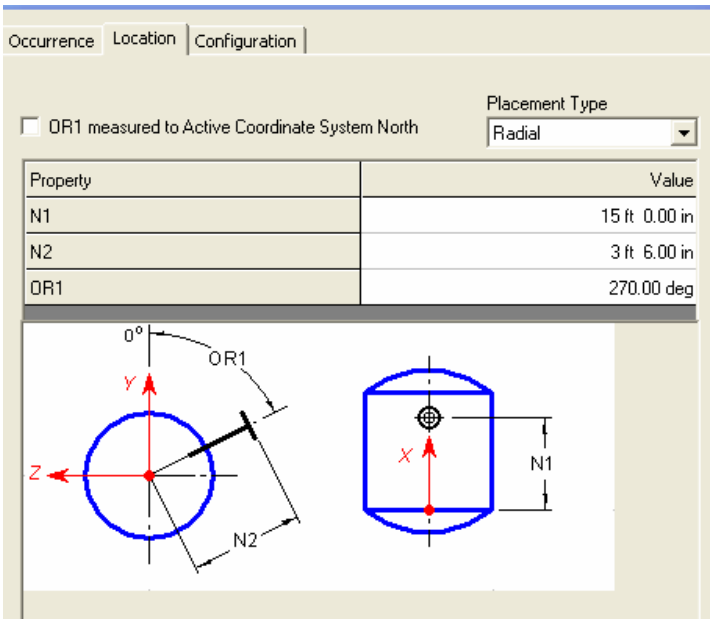
46 Select nozzle T3 in PID viewer

47 Select place nozzle command in the model

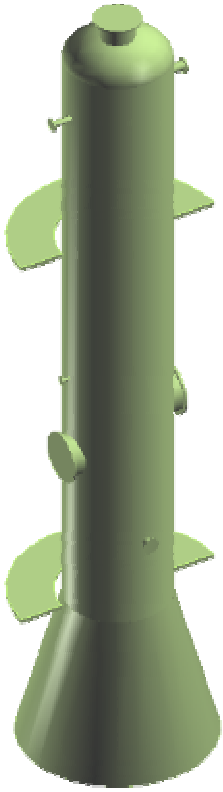
48 Select DP2, under T-162 in WSE, as the shape to add nozzle to.

49 Software displays Place Nozzle form with all Nozzle data already filled from PID. Change the length to 1’

50 Switch to Location tab, and make following changes



Place all the Nozzles from PID on EQP T-162.



51 Change your Workspace to Display all Filter

52 Expand Amines Unit, Equipment and select 41P-101A.

53 Select Copy command. Select Paste command.

54 For new parent System select Unit 2, equipment. OK on the form. Software pastes the equipment on top of original Pump.

55 Select New Equipment (copied equipment) if not already selected

56 Select its properties page, switch to position and orientation category

57 Make sure Coordinate system is set to Unit 2 CS

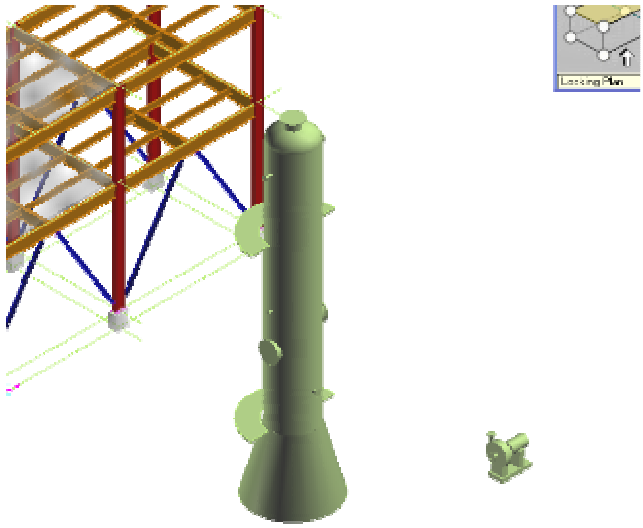
58 Change the coordinates to E 25, N -50 and EL 3 WRT Unit 2 CS

59 Select the copied equipment and go to Framework, Correlate with Design Basis.

60 System prompts for Select PID item to be correlated

61 In PID viewer select pump P-162. System displays Compare with Design Basis form. Select Update.

62 Correlate Both Nozzles in the same way. When done. The equipment and nozzles should turn green in the PID. If Equipment is not green, Select the equipment and select Compare with Design Basis. Select update. This will turn Equipment and Nozzles green in PID.



LAB-14: Inserting Control Points

Objective

After this lab students will be able to add/insert control points to designed equipments

Control Points: Control Points are used as Reference points (origin points) for Auto Dimensions in Drawings Task. It is important to Add Control Points to Design equipment at the desired Reference locations

Lecture: Instructor Needs to show/explain adding/inserting control points

1 Open a session file and define a filter for your workspace that includes the Amines Unit and its coordinate system.

2 Activate PinPoint if not already active

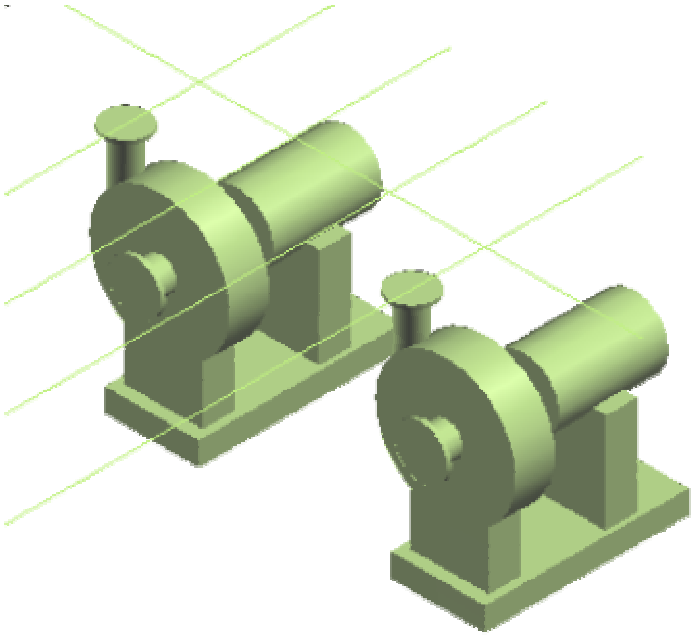
3 Window to Designed Equipment 41P-101A and 41P-101B

4 Go to Format , View and turn on Reference Geometry Aspect.

5 Go to Insert and Select Control Point

6 Select 41P-101A as Parent

7 Place the control point on Top of Discharge Nozzle.



Add Control Points to all Designed equipments.