Process, Power and Marine Division

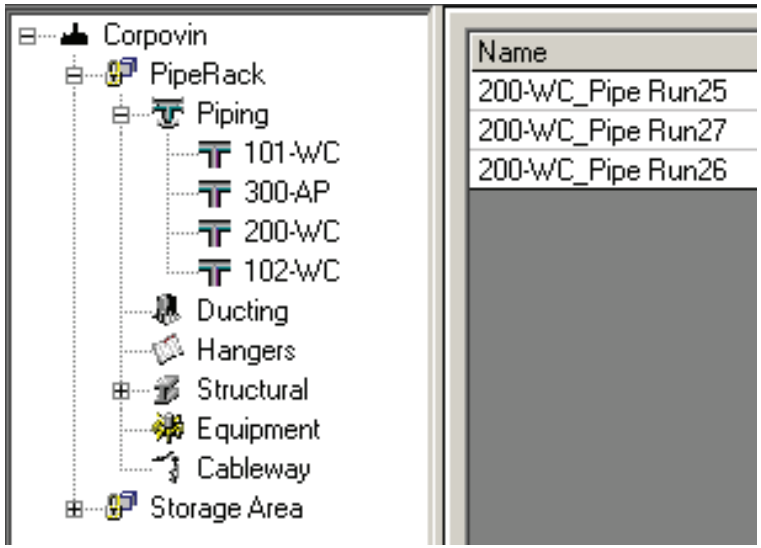
SP3D Piping Task

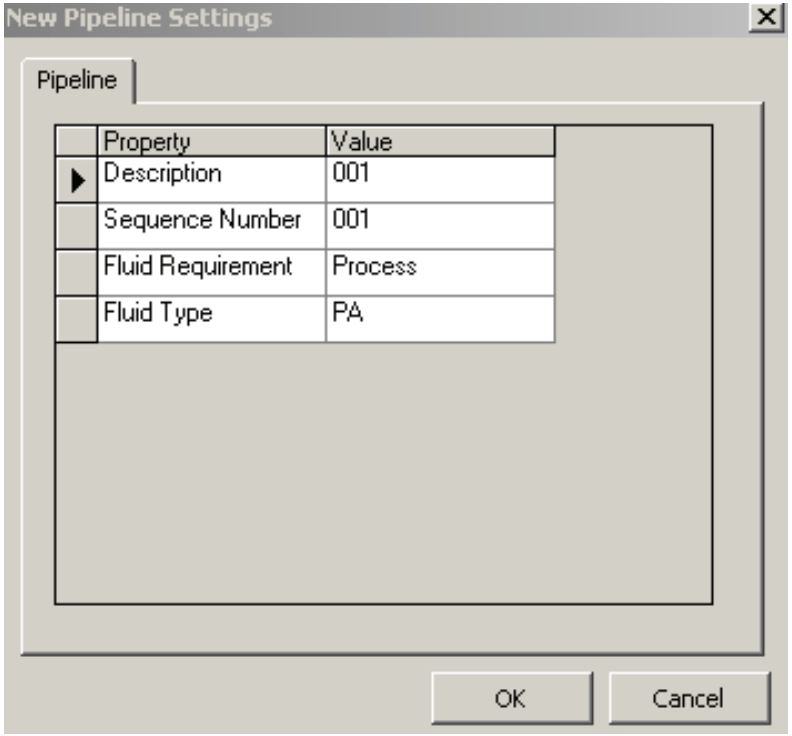


INTERGRAPH

Pipeline

Is a high-level grouping of Pipe Runs that is created in System and Spec Task environment.





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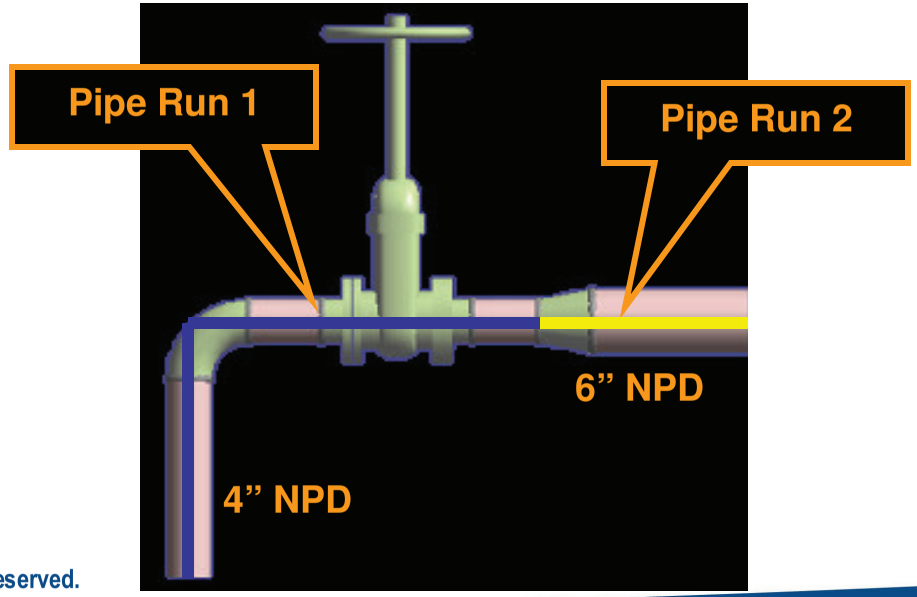
Pipe Run

A pipe run identifies one or more path features that share a common pipe specification, flow direction, size, temperature, pressure, etc…

One or more pipe runs make up a pipeline.



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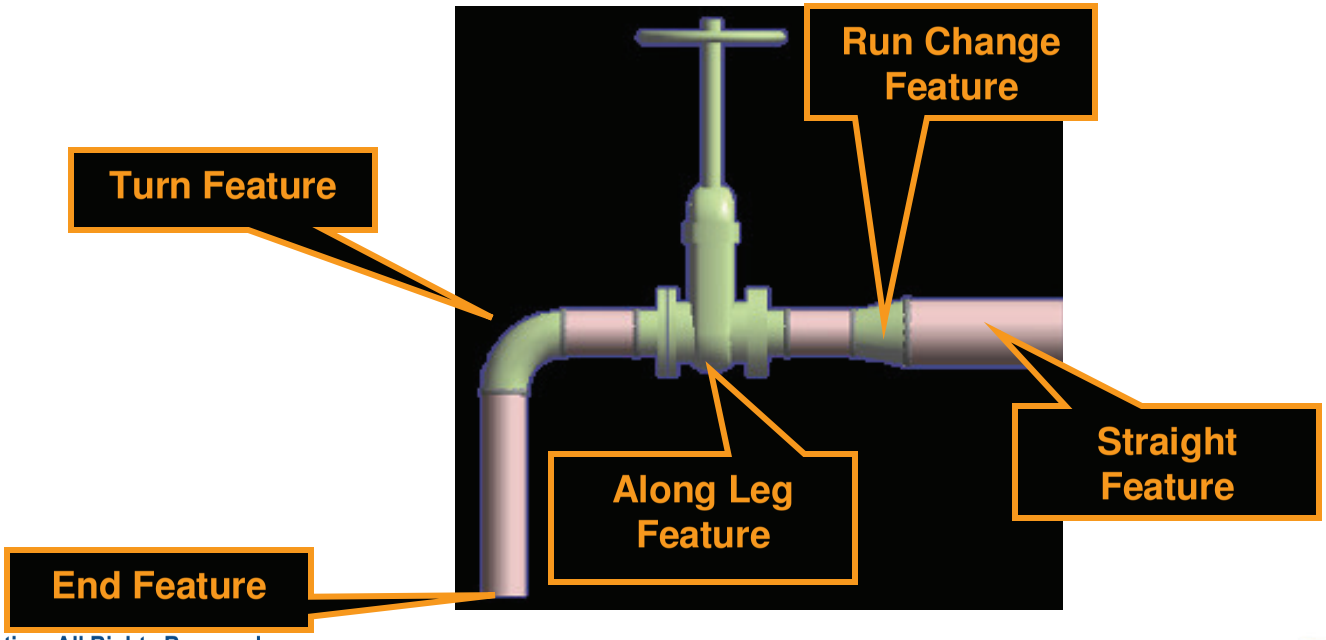
Features

Define the geometry path of the pipe run and your design intent that occur along the path.

When you route a pipe run, you place features.



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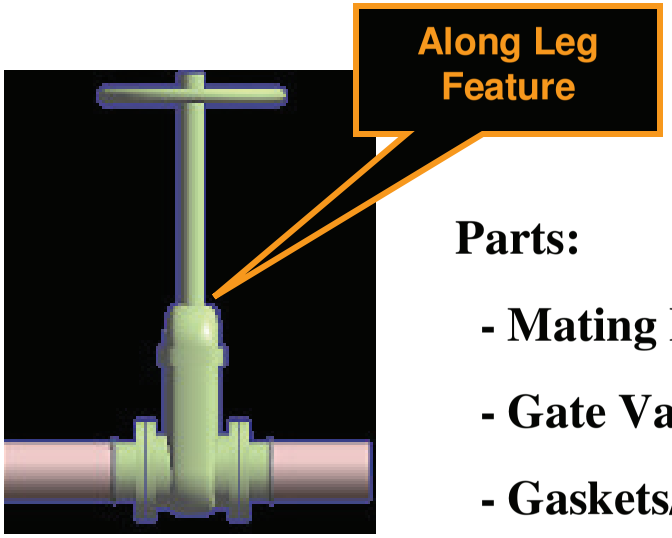
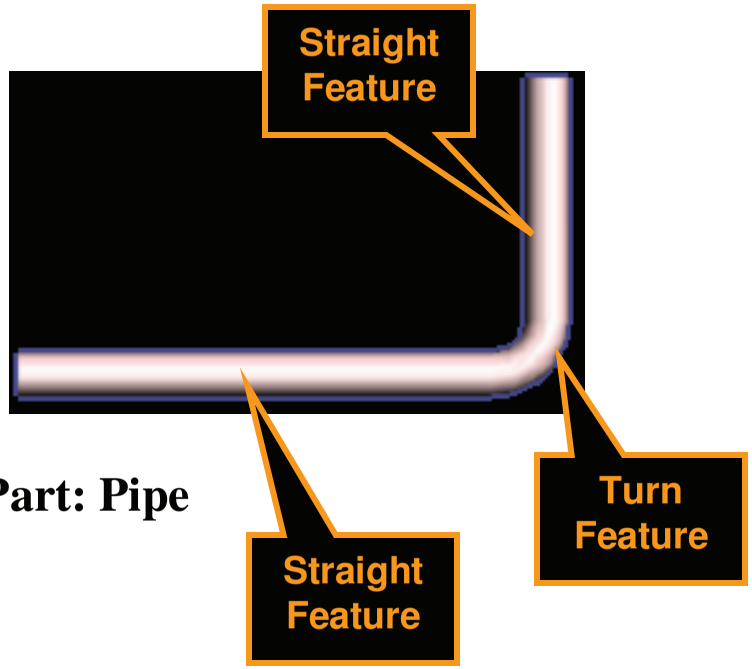
Parts

Are the physical components generated by the feature.



Parts:

- **Mating Flanges**
- **Gate Valve**
- **Gaskets/Bolts/Nuts**



Part: Pipe

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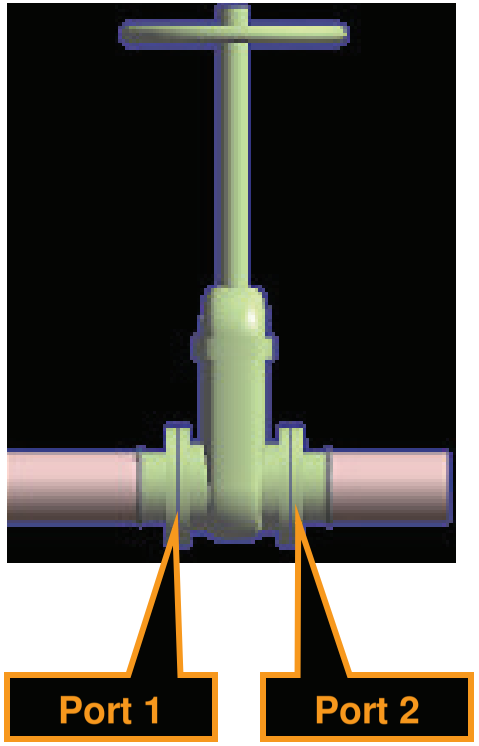
Port

Is the actual connection point for the part.



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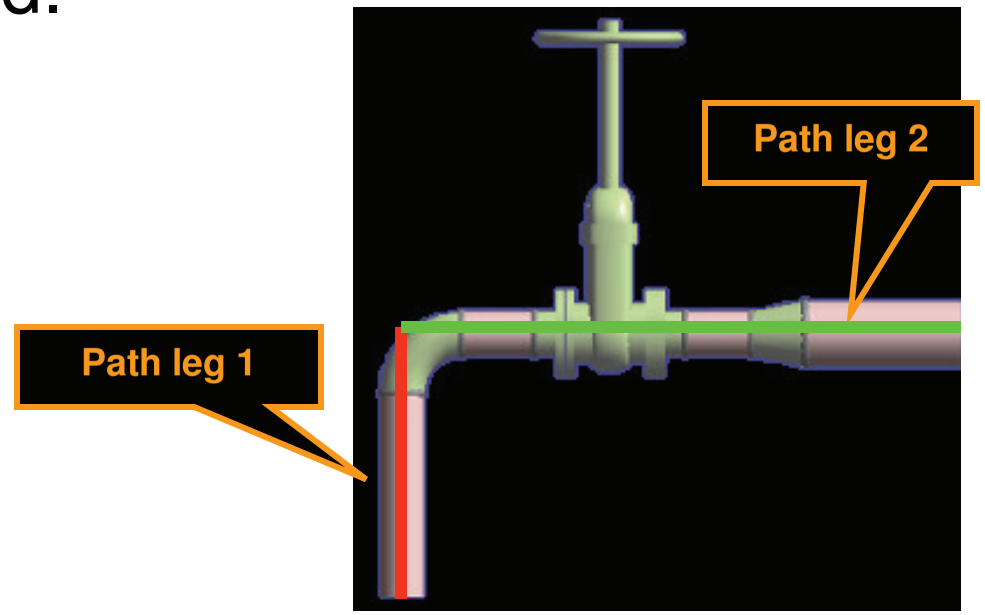
Path leg

Is a section of a pipe run maintaining one general direction between turns, branches and end.



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Piping Hierarchy

- Piping System { System and Spec Task
  - Pipeline System
    - Pipe Run
      - Features
        - Parts/Components
        - Ports
        - Connections

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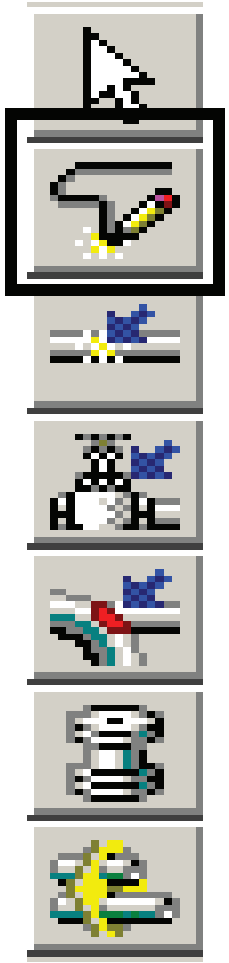
Route Pipe Command



Start routing a Pipe Run from

- a nozzle/component port
- a point in space
- an existing pipe run

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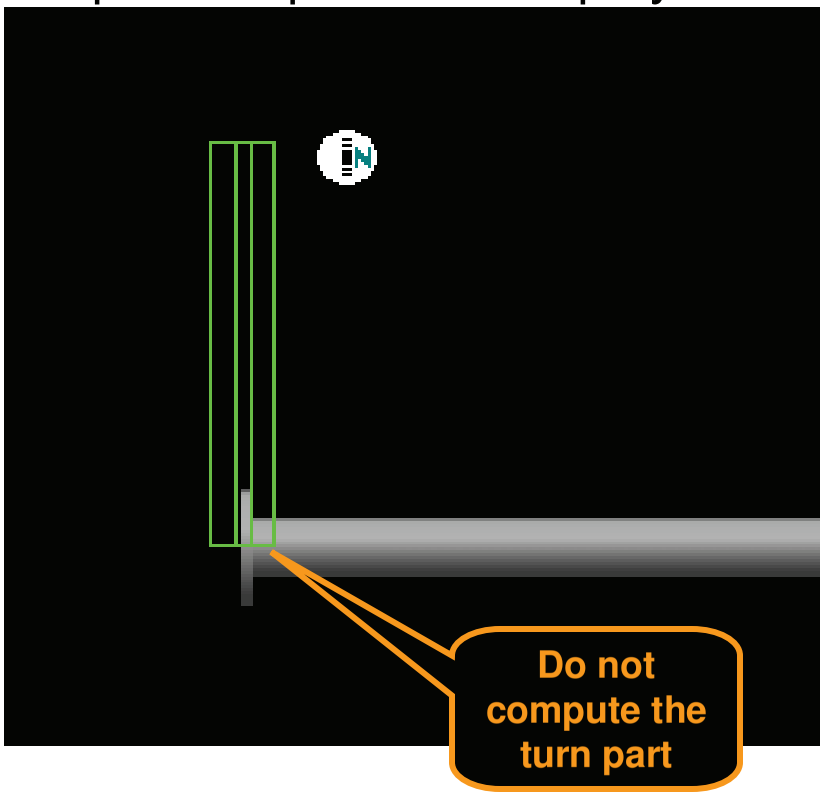
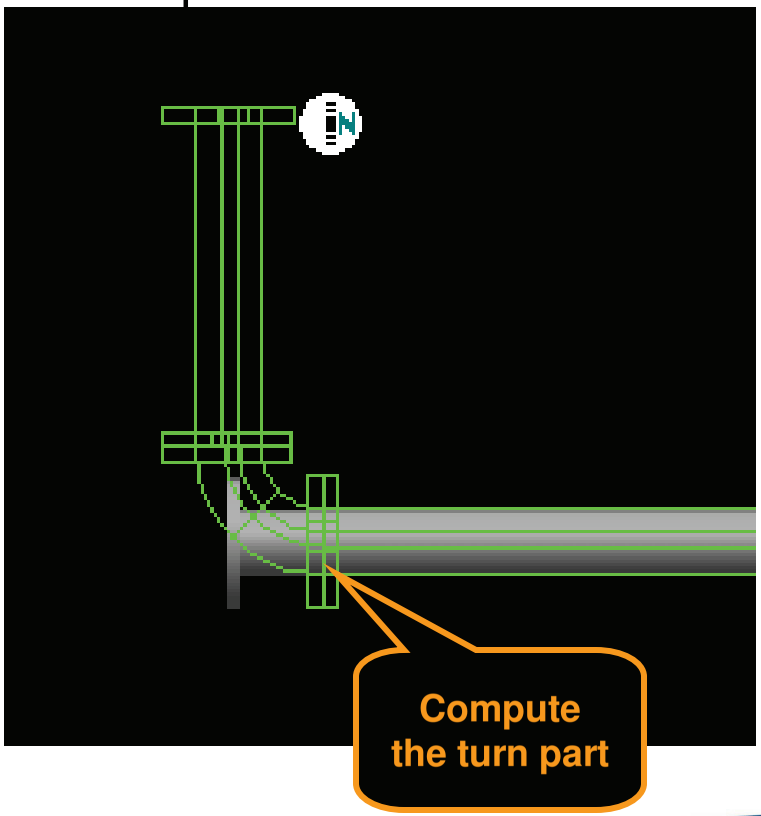
Route Pipe Command

- By default route command will only compute the turn part on commit (when pipe turns from wireframe to solid)
- Use Shift + F keys to toggle the compute modes. This allows a pre-compute and display of the turn feature prior to commit





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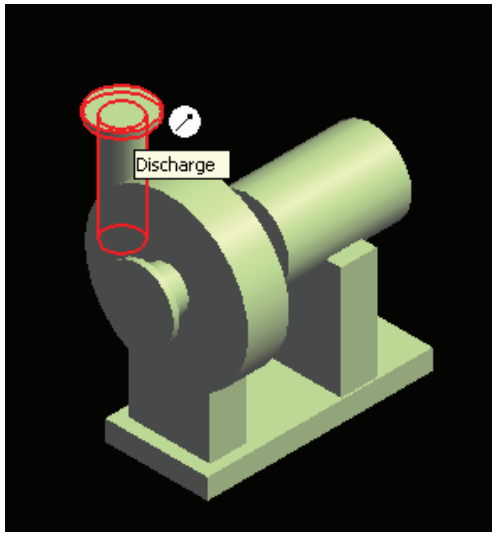
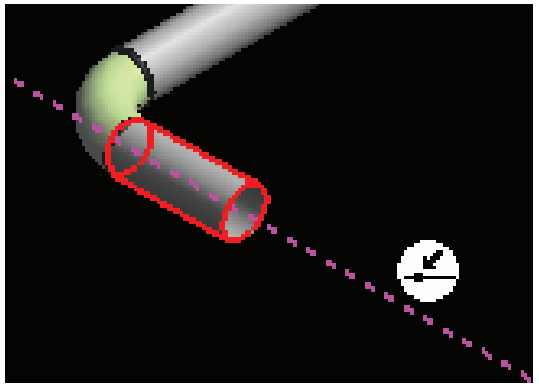
SmartSketch

Provides the user interface, relies on lock mechanisms common to CAD environments

- Parallel
- Perpendicular
- Angle
- Reference axis aligned
- Point on plane
- Offset
- Intersection
- Divisor
- Point on element
- Key point
- Add to stack





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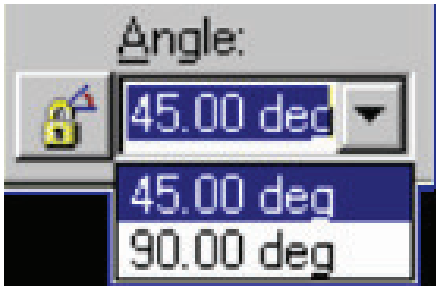
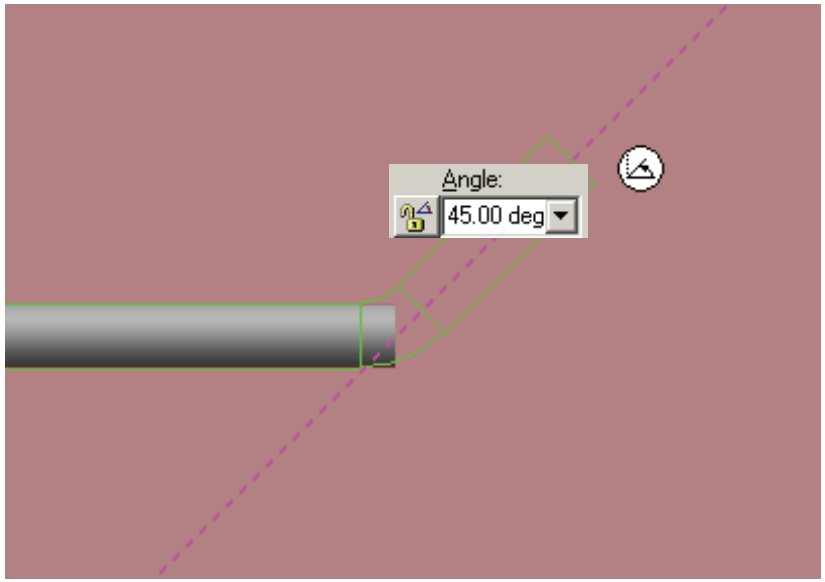
Angle Control Tool



Enter or select an angle for the current route path.

- Angle Lock: Lock or unlock the Angle field.
- By Default: Dynamic readout of the current bend angle as defined by the cursor.
- The angle field can only be 0 or 90 deg if the working plane is set to NO Plane.



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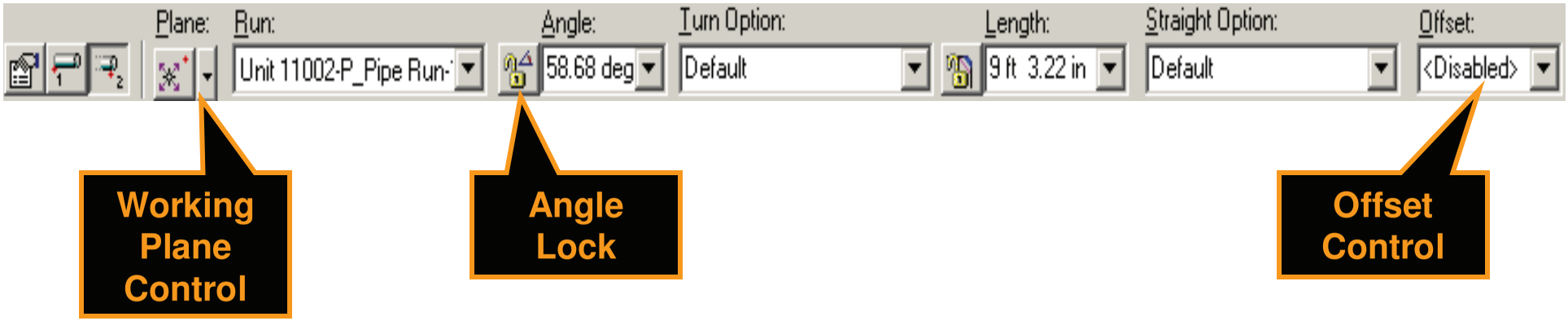
Pipe Run Smart Step Ribbon Bar

- **Angle lock** in Route command should remain locked until manually unlocked
- **Working plane** should be set to plan plane when sloped run is created
- **Compute offset** of piping from duct and cableway routes



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Working Plane Control Tool

Constrains the route path to a specific plane.

Ctrl + Keyboard

1 - Plane Plane

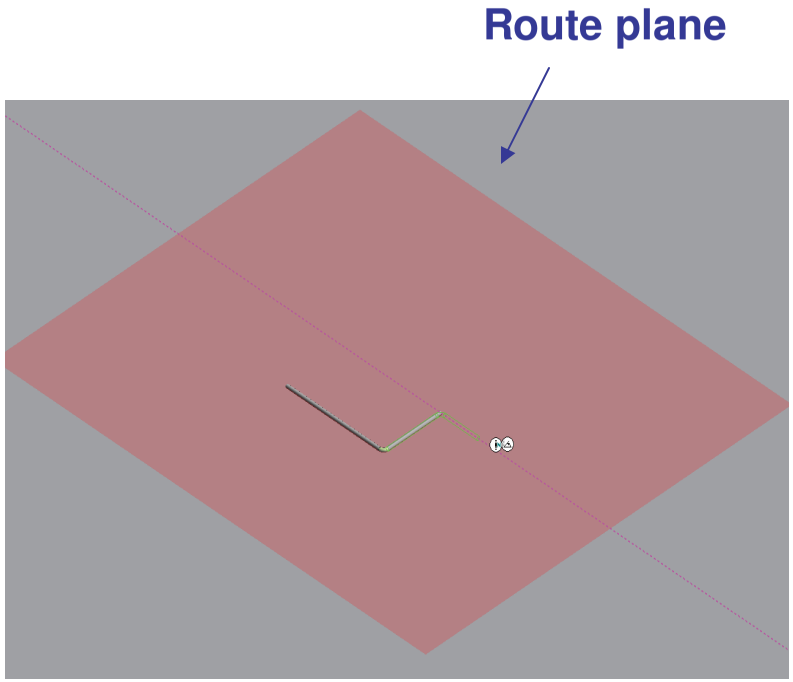
2 - Elevation Plane

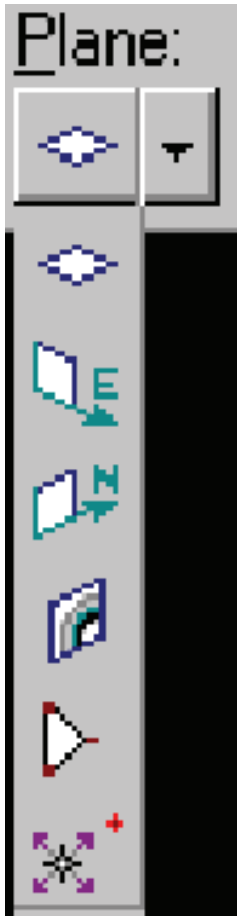
3 - Section Plane

4 - Plane by Turn/Branch

5 - Plane by Three Points

6 - No Plane





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Delete a Pipeline

Deleting a pipeline deletes all pipe runs, features, and parts associated with that pipeline. Do not use this option if you intend to keep the pipeline name to associate to future pipe runs.

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Delete a Pipe Run

 Deleting the run deletes all features (and thereby all parts) belonging to the run.

The software attempts to maintain the design integrity of the model by adjusting all previously connected features. Use this option to delete complete pipeline graphics without deleting the pipeline definition (which contains non-graphic info like fluid code)

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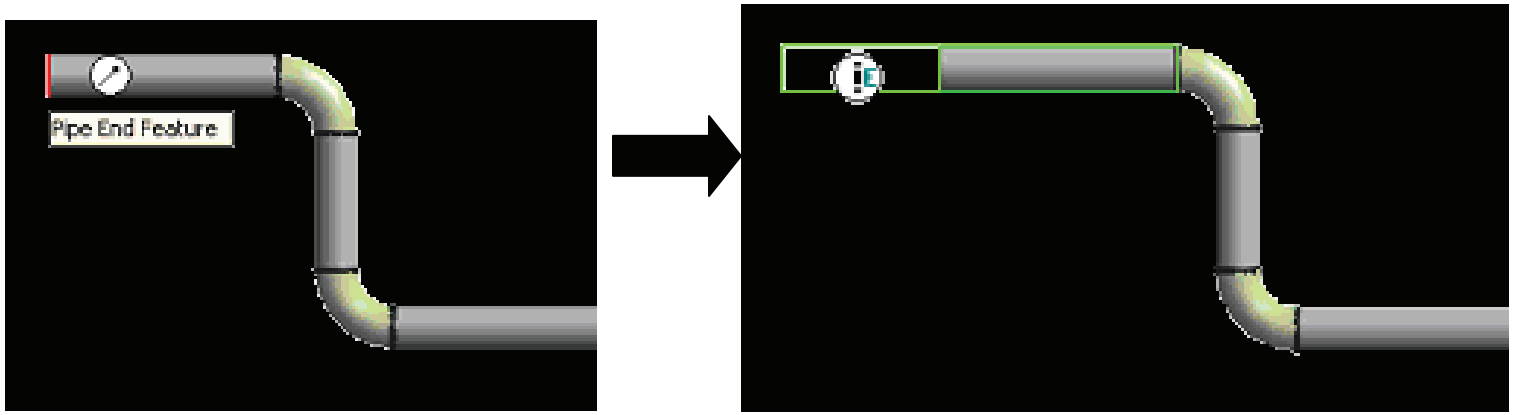
Run To or From End Features or Nozzle

When you select an end feature during the creation of a pipe run, the Route Pipe command joins the run with the end feature and inherits the properties of the run that the end feature belongs to.



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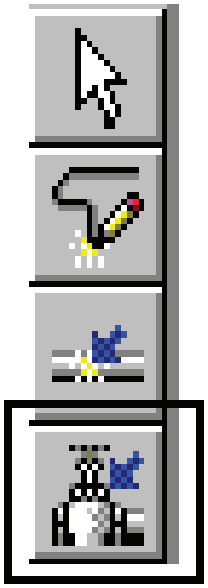
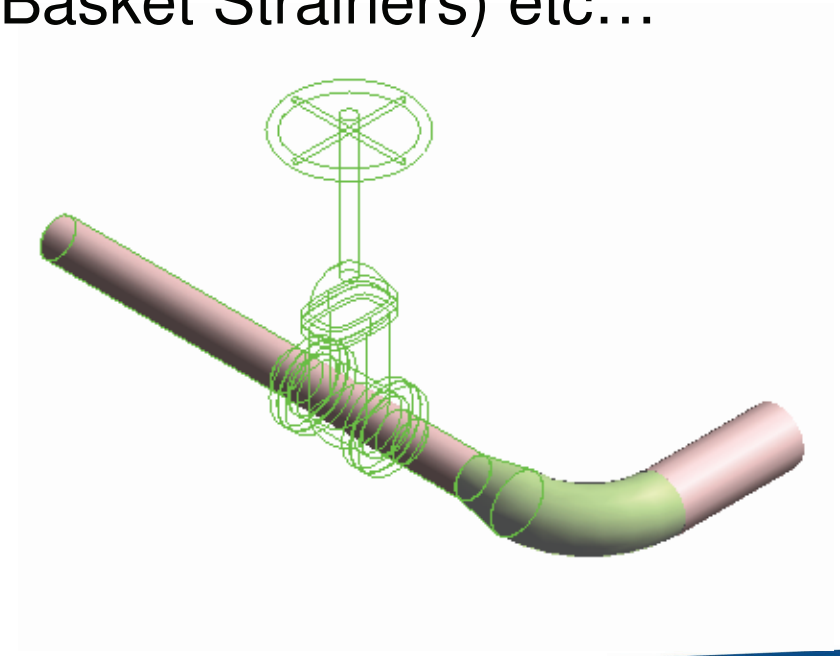
Insert Component

Insert command inserts a component interactively.



In-line components (Valves, Tees, Reducers); Change of direction (Elbows, Miters, Bends); End Components (caps and plugs); Strainers (Y-strainers, Basket Strainers) etc…



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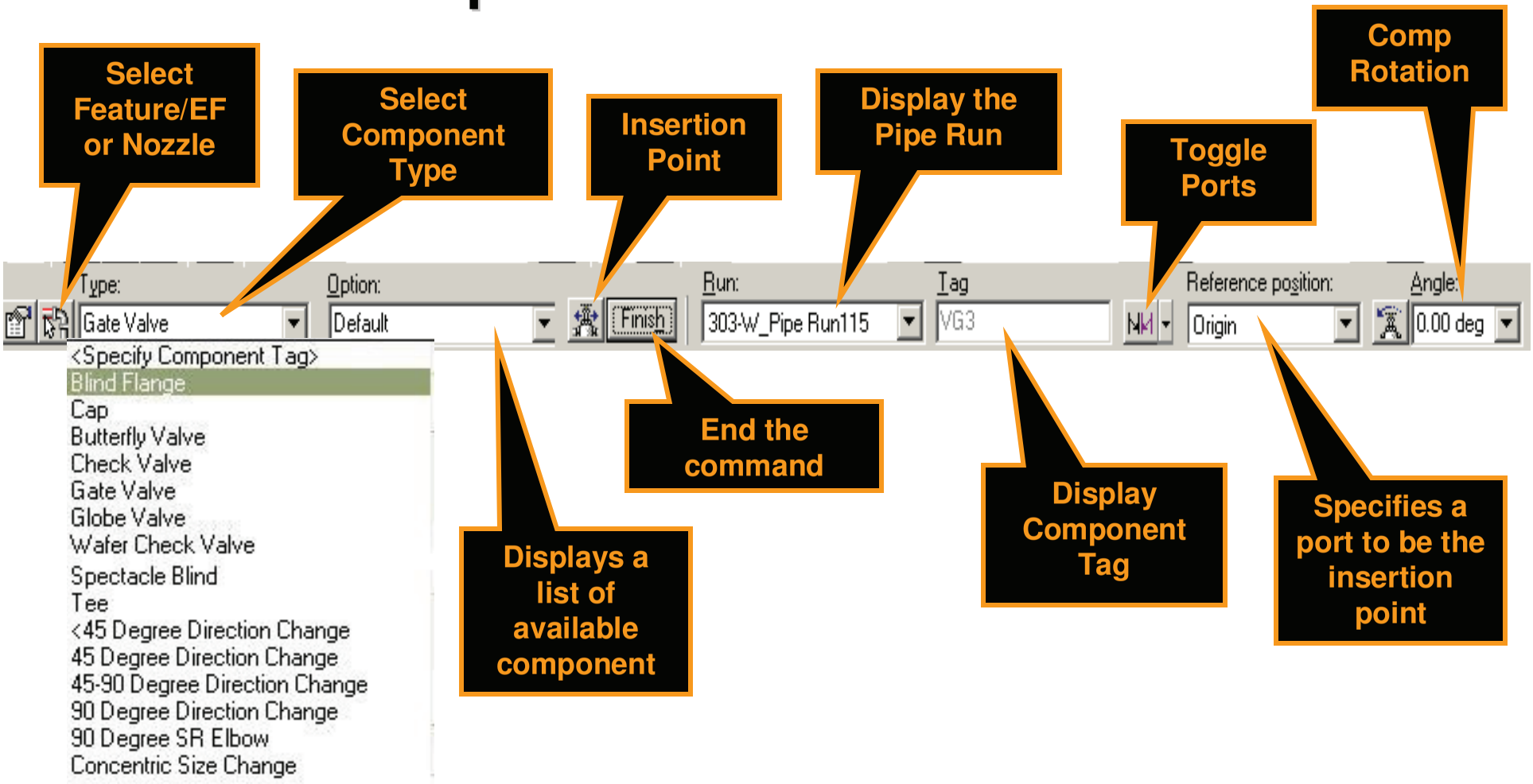
Insert Component Ribbon Bar



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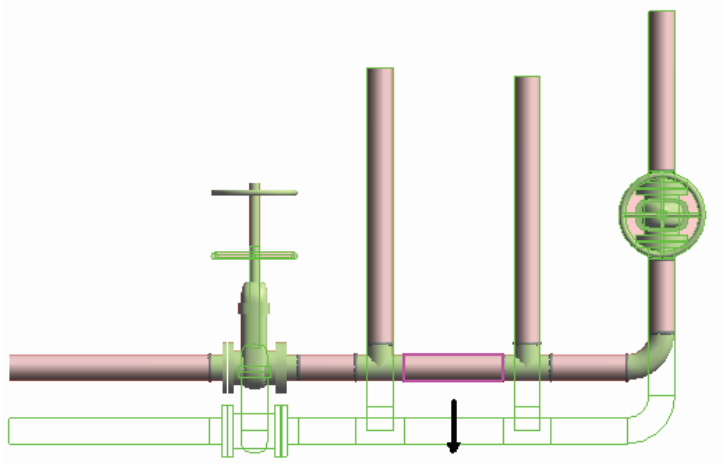
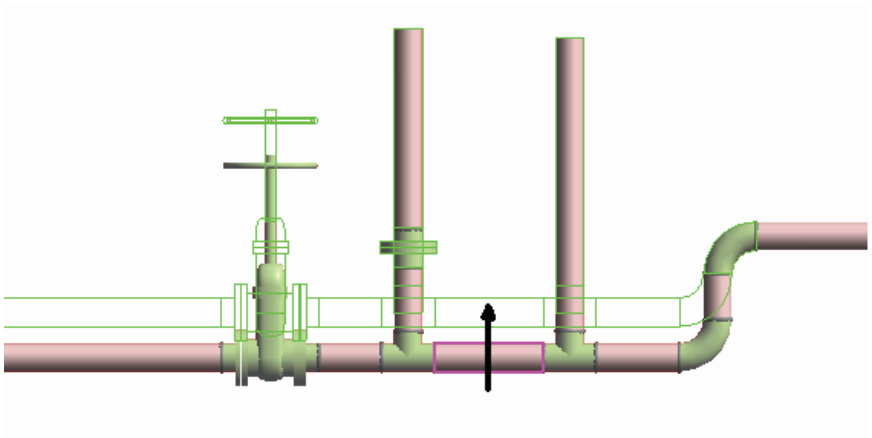
Edit Straight Features (SF)

- Moving a SF moves the entire leg to which the feature is connected.
- The move direction is always perpendicular to the axis of the SF.
- A branch feature (BF) connected to the moved leg maintains its original angle.
- Movement stops when parts on the associated leg overlap, or when they overlap with adjacent parts on connected legs.





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