



# REVIT MEP: Dimensions and Reference Planes

An Online Continuing Education Course for Engineers

**Course Number: BS-1025**

**Credit: 1 Hour / 1 PDH / 1 CPD**

# REVIT MEP: Dimensions and Reference Planes

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## DIMENSIONS

### WHAT IS A DIMENSION?

A **DIMENSION** is a drafting symbol used to define the **Length, Width, Depth, Thickness, Height**, or the degree of an **Angle** of a Geometric Figure.

There are four types of **DIMENSIONS** that will be discussed in this course that are commonly used when Modeling an Object or Objects in REVIT Families:

- 1) Aligned Dimensions
- 2) Angular Dimensions
- 3) Radial Dimensions
- 4) Diameter Dimensions

### TYPES OF DIMENSIONS AND DEFINITIONS

#### ALIGNED DIMENSION

A drafting symbol that runs parallel baseline-to-baseline and indicates the true distance between a beginning point and an ending point. There are two types of *ALIGNED* Dimensions: **Asymmetrical** and **Symmetrical**

#### ANGULAR DIMENSION

A drafting symbol that determines the amount of rotation needed to bring one line or plane into coincidence with another. An Angular Dimension has a ***DIMENSIONAL VALUE***.

#### RADIAL DIMENSION

A drafting symbol that measures the distance from the arc of an object to its center point. A Radial Dimension has a ***DIMENSIONAL VALUE***.

#### DIAMETER DIMENSION

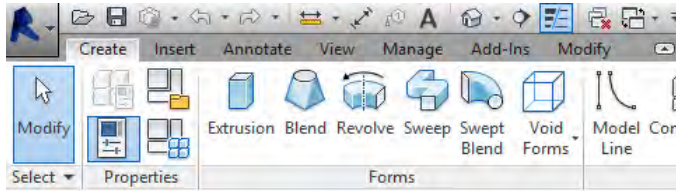
A drafting symbol that is a straight line passing through the center of a circle and meeting at each end in order to establish a measurement of the circle's thickness. A Diameter Dimension has a ***DIMENSIONAL VALUE***.

## INSERTING AN ASYMMETRICAL ALIGNED DIMENSION


To insert an **ASYMMETRICAL ALIGNED DIMENSION**, an Aligned dimension that does not allow *EQUAL* distance, when modeling an Object or objects in a REVIT Family, the user should perform the following *STEPS*:

STEP 1: Open a current version of a REVIT Family Template (Typical *GENERIC MODEL*)

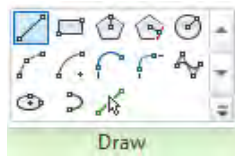
STEP 2: Locate the ANNOTATION TAB on the RIBBON in the REVIT Family template




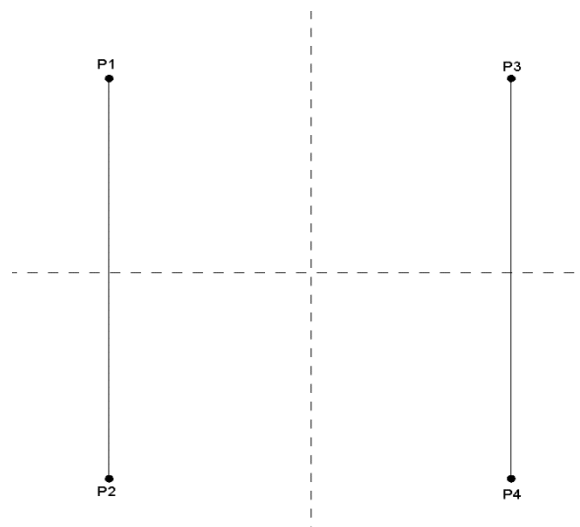
STEP 3: Left CLICK on the ANNOTATE TAB

STEP 4: Left CLICK on Symbolic Line 

STEP 5: Locate the Symbolic Line DRAW BOX.



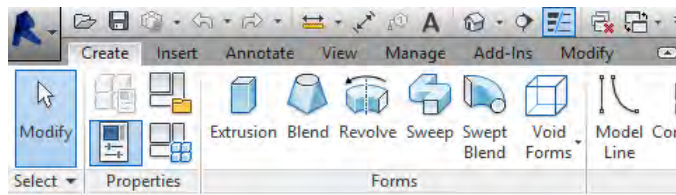
STEP 6: Left CLICK on the Line  See the *FIGURE* below.



**STEP 7:** Draw lines as shown in the *FIGURE* above.

- Left CLICK at P1
- Left CLICK at P2
- Press the *ESC* button twice to EXIT
- Left CLICK on the *LINE* in the *DRAW BOX*. See page 3, *STEP 5*.
- Left CLICK at P3
- Left CLICK at P4
- Press the *ESC* button twice to EXIT


**STEP 8:** Locate the MODIFY TAB on the RIBBON in the REVIT Family template.  
See the *FIGURE* below.

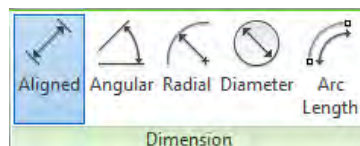


**STEP 9:** Left CLICK on the MODIFY TAB

**STEP 10:** Locate the MEASURE BOX. See *FIGURE* below.

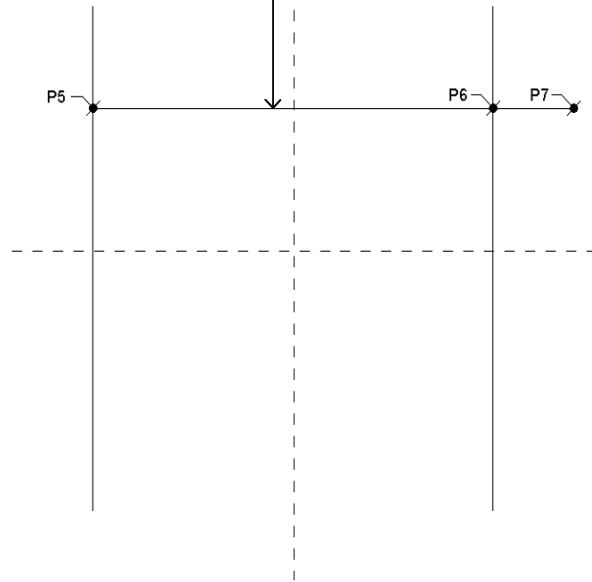


**STEP 11:** Left CLICK on the DIMENSION SYMBOL  The DIMENSION BOX appears.  
See the *FIGURE* below.



STEP 12: Left CLICK on the **ALIGNED DIMENSION**  located in the **DIMENSION BOX**.

THE **DIMENSIONAL VALUE**  
IS THE *DIMENSION* THAT  
APPEARS HERE



STEP 13: Insert an **ASYMMETRICAL ALIGNED DIMENSION** as shown in the *FIGURE* above.

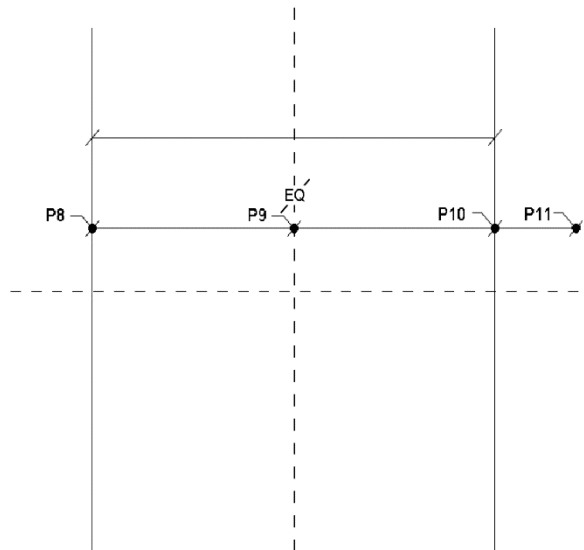
- Left CLICK at P5
- Left CLICK at P6
- Left CLICK at P7
- Press the ESC button twice to EXIT

**NOTE:** The **ASYMMETRICAL ALIGNED DIMENSION** has been inserted.  
An **ASYMMETRICAL ALIGNED DIMENSION** has a **DIMENSIONAL VALUE**.  
This means that an **ASYMMETRICAL ALIGNED DIMENSION** displays a  
dimension such as *4'-0"*

## **INSERTING A SYMMETRICAL ALIGNED DIMENSION**

To insert a ***SYMMETRICAL ALIGNED DIMENSION***, an Aligned Dimension that does allow *EQUAL* distance, when modeling an object or objects in a REVIT Family, the user should perform the following *STEPS*:

**STEP 1:** Perform ***STEPS 8-11***, page 3 and return to this page.



**STEP 2:** Insert a ***SYMMETRICAL ALIGNED DIMENSION*** as show in the *FIGURE* above.

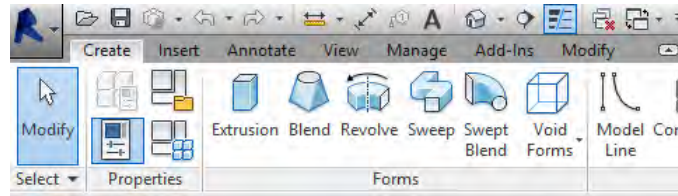
- Left CLICK at P8
- Left CLICK at P9
- Left CLICK at P10
- Left CLICK on the EQ and *DO NOT* Left CLICK on the *LOCKS* that appear.
- Press ESC button twice to EXIT

**NOTE:** The ***SYMMETRICAL ALIGNED DIMENSION*** has been inserted. A ***SYMMETRICAL ALIGNED DIMENSION*** must be inserted in conjunction with an ***ASYMMETRICAL ALIGNED DIMENSION*** because a ***SYMMETRICAL ALIGNED DIMENSION*** does not have a ***DIMENSIONAL VALUE*** to function. So, this means that a ***SYMMETRICAL ALIGNED DIMENSION*** must be ***INSERTED*** at the time an ***ASYMMETRICAL ALIGNED DIMENSION*** is inserted as shown in the *FIGURE* above.

## INSERTING AN ANGULAR DIMENSION

To insert an **ANGULAR DIMENSION** when modeling an objects or objects in a REVIT Family, the user should perform the following **STEPS**:

**STEP 1:** Locate the ANNOTATE TAB on the RIBBON in the REVIT Family template.



**STEP 2:** Left CLICK on the ANNOTATE

**STEP**

**STEP**

**STEP**

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