CorelCAD basics

How To:

Overview of CorelCAD

Welcome to CorelCAD - a sophisticated yet easy-to-use computer-aided design program that expands your ability to develop and communicate design ideas, and create accurate 2D and 3D drawings.

CorelCAD enables you to create drawings and 3D virtual models with a high level of productivity and precision. It gives you the power to quickly create comprehensive and accurate designs, then demonstrate what they look like and how they work.

If you've never used a CAD program before, you'll soon be able to create, edit, and print your designs in a fraction of the time it would take to create them manually. In addition to improving your productivity, CorelCAD will increase the accuracy of your drawings and the amount of information communicated by them.

With CorelCAD you can create and locate lines, shapes, and objects anywhere in 2D or 3D space by specifying coordinates. Anything you draw can be instantly duplicated and used again and again. Drawings can be easily modified, and predrawn objects from the CorelCAD symbol library can be imported and added to your drawings.

Scaling your CorelCAD drawings is not a problem. You work in "real world" units and then specify the scale for a drawing when you send it to the printer or plotter.

Because your drawings are in electronic format they are easy to store, organize, find, and use again. You can import files from other CAD and graphics programs and you can send your drawings anywhere in the world via modem.

CorelCAD's 3D modeling capabilities make it easy to explore your design ideas and communicate those ideas to others. 3D modeling allows you to explore every nook and cranny of your design and resolve every detail. You can quickly produce 3D perspectives of your drawings from any viewpoint and bring them to life with accurate and realistic rendering. This gives you the power to effectively communicate ideas to non-designers who might be unable to understand your project by looking at 2D drawings.

Solid-modeling features allow you to draw solid objects with surface and mass. After creating solid objects you can add them together or subtract one object from another. You can combine several objects to create a single object, slice through solids, or use one object to carve another.

CorelCAD calculates the volume, center-of-gravity, and surface area of objects. For a civil engineer this means being able to quickly calculate the volume of concrete required for a dam. For a mechanical engineer it means being able to locate the center-of-gravity of parts. And, for an architect it means being able to instantly determine the area of a roof.

CorelCAD takes the drudgery out of drawing. It eliminates boring repetitive drafting tasks and lets you put more time and energy into developing better designs.

{button ,AL(`OVR CorelCAD basics;',0,"Defaultoverview",)} Related Topics

Working with units and precision

CorelCAD allows you to work in metric or imperial units and provides automatic conversion between different types of units. This feature allows you to enter metric measurements into an imperial drawing or import imperial objects into a metric drawing. Because of the conversion feature, there is a limit to the size of the CorelCAD drawing area.

The CorelCAD drawing area is 100 million units wide, 100 million units deep, and 100 million units high. A unit in this case refers to the smallest unit of precision. For example, if you are working in inches and have set the level of precision to two decimal places, the largest object you can draw is one million inches and the smallest is 1/100th of an inch. If you change the precision to three decimal places the largest object you can draw is 100,000 inches. But you will now be able to draw an object as small as 1/1000th of an inch.

It is not likely that you will ever need to exceed the limits of the drawing area. For example, if you require 4 decimal places of precision (1/10,000th of an inch), it is unlikely that you will also have to draw an object that exceeds 10,000 inches.

The only time you might exceed the limit is if you zoom in to an object and then continue zooming in closer and closer. When you try to zoom in to an area smaller than the smallest possible unit, the zoom feature will not work properly.

If you exceed the upper or lower size limits determined by your Precision settings, one or more of the following things might happen:

- your cursor might disappear when you bring it over the drawing surface
- your cursor might jump around the screen when you zoom in close
- marquee selection might not work properly
- selection of objects might become difficult

Any of these problems can be solved by increasing or reducing the Precision specified in the Units and Angles dialog box. However, you can avoid exceeding the size limits by choosing a level of precision appropriate to your drawing.

{button ,AL(`OVR CorelCAD basics;',0,"Defaultoverview",)} Related Topics

How To:

Using the toolbox

The toolbox , which by default is at the left side of the screen, is a special toolbar containing CorelCAD's most frequently used drawing commands.

The toolbox differs from a standard toolbar in that it has flyouts - smaller toolbars that appear when you hold down their corresponding tools. Flyouts are marked with a small triangle in their lower right corner.

You can tear off and reposition flyouts just like any other toolbar. However, when you use a tool on a flyout, it becomes the default tool that appears in the toolbox.

For example, the Zoom In tool is the default tool for the Zoom flyout. It appears in the toolbox when you first start CorelCAD. When you hold down the Zoom In button, the rest of the Zoom flyout appears. If you then click the Zoom Out tool, that becomes the default for the Zoom flyout. When the flyout closes, the Zoom Out tool is the only tool visible from the toolbox.

Tip

- You can change how some of CorelCAD's tools behave by changing the appropriate settings in the Tool Properties dialog box, accessed by right-clicking on a tool.

{button ,AL(`OVR CorelCAD basics;',0,"Defaultoverview",)} Related Topics

How To:

Using roll-ups

Roll-ups are a quick and easy way to access frequently used functions. When you activate a roll-up, you can leave it on screen so that its functions are always available, or you can have it close after each use, like a dialog box.

The following roll-ups are available in CorelCAD:

- Dimension
- Insert Point
- Object
- Material

{button ,AL(`OVR CorelCAD basics;',0,"Defaultoverview",)} Related Topics

Using command boxes

A command box is an input box that appears when you use a command that requires more information than simple mouse clicks can supply.

Command boxes open when you run their corresponding command, and close when the command is executed. Some require input necessary for the command's execution, and some are optional supplements to your mouse actions.

{button ,AL(`OVR CorelCAD basics;',0,"Defaultoverview",)} Related Topics

How To:

Getting information about your drawing

The Status Bar

The Status Bar provides you with useful information that you will often need when you are drawing. It provides the coordinates of the pointer, gives information about selected objects, and displays the options you have enabled. The Status Bar also prompts you to carry out necessary actions during command procedures.

The information on the Status Bar is customizable - by right-clicking in each area of the Status Bar you can choose from several types of data to display. You can also choose the size and number of regions for the Status Bar.

Measure commands

CorelCAD can measure distances and angles having to do with existing objects, or with points you choose. The Engineering Properties command gives you detailed information about three-dimensional objects, including surface area, volume, center of gravity, and inertial properties. The Measure commands are accessed from the Tools menu.

Object Properties dialog box

The Object Properties dialog box provides useful information about the objects in your drawing, and even lets you edit some of these properties. Common layer, text, material, and dimension properties are accessible from this dialog as an alternative to the more extensive dialogs elsewhere in the application.

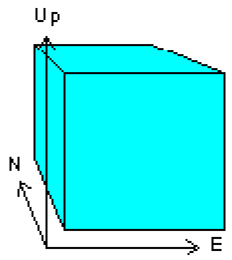
To open the Object Properties dialog box, right-click on any object and choose What's This? from the resulting menu.

{button ,AL(`OVR CorelCAD basics;',0,"Defaultoverview",)} Related Topics

Working with the three dimensions

Understanding coordinates

CorelCAD is based on a rectangular coordinate system. All points in space are defined by three distances from an arbitrary starting location. Let's use the three-foot cube, shown below, as an example. You are viewing the cube from a position slightly above, a little to the front, and a little to the left of it.



Let's say that our starting location, or origin, is the front lower left corner of the box. Motion to the right is to the east, and motion away from us is to the north. The terms up and down keep their usual meanings. To direct someone to the upper rear right corner of the box, you would give the following direction:

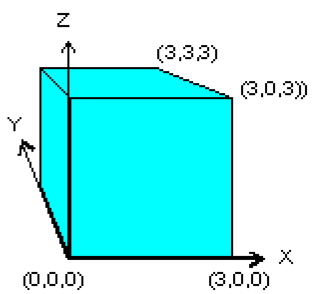
- From the origin (the lower left front corner) go three feet east, three feet north, and three feet up.

In mathematical terms, we've set up a three-dimensional coordinate system, with three perpendicular axes passing through an origin.

Think of an axis as a line through the origin which goes in a major direction of motion. In our example there is an East axis, a North axis, and an Up axis. To arrive at any point in space, you give a starting location and a distance to travel parallel to each of the three axes. (If you want to go west, you specify a negative distance along the East axis.) Every point in space is uniquely identified by an ordered set of three numbers, which are the distances of the point from the origin along the three axes. These three numbers are the coordinate. The coordinate of the top rear right corner of our box is (3,3,3), meaning "3 East, 3 North, and 3 Up."

Each corner of the box is identified by a unique coordinate. The coordinate for the front right top corner, for example, is (3,0,3) or "3 East, 0 North, 3 Up." The left rear bottom corner is at coordinate (0,3,0).

From this simple example, the terminology can be changed to make use of the Cartesian coordinate system, which CorelCAD uses. All you need to do is to rename the axes. East is X, North is Y, and Up is Z. Now look at the box again, with the axes properly labeled.



You can use this knowledge to build drawings in CorelCAD. Suppose you're building a house. You can place one corner of the house at the origin. Given the measurements of any other location in the house, you can find that location with a coordinate based on the distance from the corner.

For example, if the bottom of the door frame starts 12 feet to the right of the corner, its coordinate is (12,0,0). Assuming the door is 3 feet wide and 8 feet tall, with 4-inch thick walls (or 0.333 feet), the opposite corner of the frame is at (15,0.333,8). To arrive at these numbers, add 3 to the X value of the first corner, add 0.333 to the Y value, and add 8 to the Z value.

The X axis, when viewed from the front, shows movement from left to right. If the motion is from right to left, the distance is expressed as a negative number.

The Y axis goes deeper into the drawing. When viewed from the front, the Y axis moves away from you. Movement toward you is expressed as a negative number.

The Z axis indicates upward movement, relative to the front view. Downward motion along the Z axis is a negative distance.

Note

- Pay careful attention to the order of the numbers when specifying coordinates. The order for Cartesian coordinates is (X,Y,Z).

{button ,AL(`OVR Working with the three dimensions;',0,"Defaultoverview",)} Related Topics

How To:

Using absolute and relative XYZ coordinates

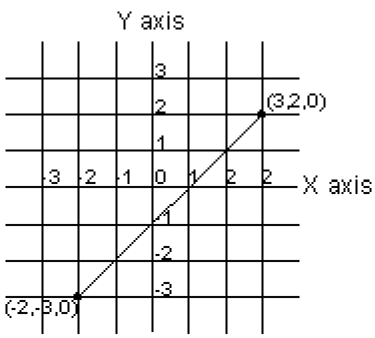
You can specify a point in a CorelCAD drawing using the Insert Point Roll-Up (see Related Topics). This roll-up provides fields for entering values for each of the X, Y and Z axes. It also provides three options for specifying a point. You can specify absolute values, relative values, or offset values.

Absolute coordinate

You specify an absolute coordinate by entering the XYZ values in the Insert Point Roll Up and clicking the Absolute button. Use an absolute coordinate when you know the precise XYZ location of the point.

When you are working on a 2D drawing, one of the XYZ values will always be left the same. For example, if you are using a top view and the drawing is positioned at zero on the Z axis, you will enter values for the X- and Y axis but always leave the Z field set to zero.

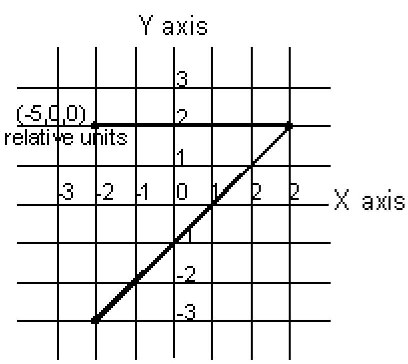
To draw a line beginning at an absolute coordinate of (-2,-3,0), you would first activate the Line tool. Then, in the Insert Point Roll-Up, you would type -2 in the X field, -3 in the Y field, and leave the Z field set to zero. If you specified the next absolute coordinate with an XYZ value of (3,2,0), the line would be drawn (in top view) like the line shown here.



Relative coordinates

You can also locate a point by specifying its relative XYZ value. Use relative values when you know the distance of a point relative to the previous point. To specify a relative coordinate use the same Insert Point Roll-Up as you used for an absolute coordinate, but click the Relative button.

To continue with the previous example, to draw another line 5 units to the left you could enter -5 in the X field and leave the other fields set to zero. The line would be drawn as shown below, from the previous absolute point of (3,2,0), back 5 units on the X axis, to the absolute point (-2,2,0).



To end the line command you would press CTRL + ENTER.

Offset coordinates

The other option in the Insert Point Roll-Up allows you to specify XYZ values that offset the point from a point that you select. Use this option when you want to specify a point relative to an existing point in your drawing. For example, to locate a doorway 3 feet to the right of a corner, specify XYZ values of (3,0,0) in the Insert Point Roll-Up and click the Offset button. The Status Bar then prompts you to select a point from your drawing. When you click on the corner, a point is set three feet to the right of the corner.

Tip

- The cursor coordinate is displayed on the Status Bar in the lower right part of the screen.

{button ,AL(`OVR Working with the three dimensions;Accurately defining points;',0,"Defaultoverview",)} Related Topics

How To:

Using polar or spherical coordinates

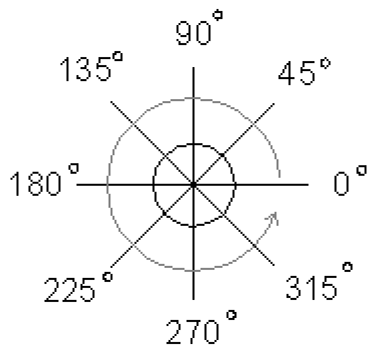
In addition to specifying Cartesian (or XYZ) coordinates, CorelCAD provides the option of specifying polar or spherical coordinates. Polar coordinates relate to 2D drawings and Spherical coordinates relate to 3D drawings.

To specify a polar or spherical coordinate, access the Insert Point Roll-Up, and click the polar coordinate tab.

For example, in a 2D top view drawing, to specify a point that is 5 units from the previous point and at an angle of 30 degrees, you would enter 5 in the length field, 30 in the X-Y angle field and leave the X-Z field set to zero. You'd then set the roll-up to Relative.

If you were working in 3D space you would specify two angles, one for the X-Y plane and one for the X-Z plane.

Angles are specified according to the following diagram.



For example, to specify a line 5 units long and straight down you would specify a length of 5 and an angle of 270. You can also use a negative value to define an angle. For example, instead of typing 270 degrees, you could type -90 degrees.

To draw a line 1 unit long along the x axis, you would specify a length of 1 and an angle of 0. To draw a line along the X axis in the opposite direction you could enter either a distance of -1 and an angle of 0, or a distance of 1 and an angle of 180.

Tip

- To determine the direction of positive rotation about an axis, point the thumb of your left hand in the positive direction of the axis. The fingers of your left hand will curl in the positive direction of rotation.

{button ,AL(`OVR Working with the three dimensions;Accurately defining points;',0,"Defaultoverview",)} Related Topics

How To:

Working with dimensions

All units and dimensioning features in CorelCAD are designed to simplify the input of accurate information and the extraction of that data for various requirements. To this end, CorelCAD supports dimension standards used throughout the world by professional designers.

Dimension types available in CorelCAD include

- continuous
- baseline
- angle
- radial and diameter

Dynamic dimensions

CorelCAD also supports dynamic dimensioning. When dynamic dimensions are enabled, the dimension line becomes attached to the two points that define its value. When those points are moved, the value of the dimension will change.

Dynamic dimensions are altered by the following commands:

- Move point
- Scale
- Rotate
- Stretch
- Extend

Tip

- CorelCAD's predefined templates include a variety of dimension styles. If you want to modify these styles, you can save the new dimension styles with your drawing, or with your own custom templates.

{button ,AL(`OVR Working with the three dimensions;OVR Adding text dimensions and symbols;',0,"Defaultoverview",)} Related Topics

Viewing your drawings

How To:

Changing the view

CorelCAD allows you to look at a drawing using different views. You can view your drawing in two dimensions from the top, front, sides, or bottom. Or you can view your work as a 3D perspective, isometric, or parallel drawing. You can dynamically change the viewpoint to the exact angle you want, and use the Save View command from the View menu to add your new view to the list of views.

When you switch from one view to another, your drawing will automatically be fit to the window. You can change this using the View Manager dialog box, accessed from the View menu. For example, if you have zoomed in to a portion of your drawing in Perspective view, you can specify that the zoom level be restored when you switch back to Perspective after using other views.

As you switch from one view to another, you may become confused about the direction of the axes. For example, when you change from a perspective view to a top view, the X axis is still left to right relative to the object you are drawing, and relative to the screen. However, since you are looking down, upward motion relative to the object (positive motion on the Z axis) seems to be coming out of the screen toward you. Movement deeper into the picture, or positive Y motion, actually goes toward the top of the screen. It is important to remember that the axes are fixed, but as you change your view angle, their apparent direction on the screen may change.

You can avoid confusion by using multiple views of the same drawing. For example, you can display three windows, one showing a perspective view, one showing a top view, and one showing a side view. As you draw in any view, the cursor moves simultaneously in all the views, making it easy to determine your position in 3D space.

{button ,AL(`OVR Viewing your drawings;',0,"Defaultoverview",)} Related Topics

How To:

Using the Perspective and Parallel views

When you look at an object in the real world, the farthest end appears smaller than the nearest end. If you look down to the end of a very long object, it seems to disappear in the distance. The Perspective View in CorelCAD includes this distortion in the drawing.

When you select Parallel View, the drawing is displayed in parallel projection. This means that all physically parallel lines are drawn on the screen as truly parallel. These drawings look a bit unnatural to the eye. For example, a box drawn with parallel projection will appear to be too wide at the back. Nevertheless, these drawings are useful for many design and engineering applications because they are mathematically more accurate than perspective drawings.

With CorelCAD, the true coordinates are maintained regardless of whether the screen is in parallel or perspective mode. Only the appearance of the object changes. Thus, you only need to be concerned about perspective or parallel projection when printing.

{button ,AL(`OVR Viewing your drawings;',0,"Defaultoverview",)} Related Topics

How To:

Using windows and window layouts

CorelCAD lets you set up several different views of the same drawing, all visible at the same time. For example, you can display three windows, one showing a perspective view, one showing a top view, and one showing a side view. As you draw in any view, the cursor moves simultaneously in all the views, making it easy to determine your position in 3D space.

You can also have multiple drawings open at once, each with several windows showing different views.

The Window commands help you manage your windows. You can

- Automatically resize your windows to make best use of available screen space
- Open new windows for an existing document, which you can then adjust to provide the desired view
- Choose from a variety of predefined window layouts and views
- Save and restore your own custom window layouts
- Quickly switch to one of a list of active windows

{button ,AL(`OVR Viewing your drawings;',0,"Defaultoverview",)} Related Topics

How To:

Shading objects

When working in Wireframe view, it is sometimes hard to tell how a finished drawing will look. The Shade command will fill in your objects, defining their surfaces in detail and making spatial relationships obvious.

Depending on the settings in the Shade dialog box, the Shade command will shade currently selected objects, a user-defined section, or all objects in your drawing. You can restrict the command to the active window, or expand it to include all windows showing your drawing. If you find the result is cluttered, you can temporarily remove the text labels and dimensions from the shaded drawing.

The Shade dialog box lets you choose from a list of seven types of shading. These range from simple flat shading, which provides a low quality image but requires little time, to Ray Tracing, which provides a high-quality photorealistic image but takes longer to generate. You can also define up to seven light sources at different angles and intensities.

You can add Shadows to drawings rendered with the higher quality rendering modes - from Preview to Ray-traced full render. Shadows will increase the realism of a rendered image but add to the time required to generate the image. Remember that shadows are only cast on surfaces - if your objects are simply hanging in space, their shadows might not be immediately apparent.

The Shade command gives you a very realistic preview of a drawing's three-dimensional appearance and texture. For a quicker, less detailed approximation, use the Hide command (see Related Topics).

Note

- When you render your image using the higher end rendering levels, some objects may not show up against very dark background colors.

{button ,AL(`OVR Shading and rendering your drawing;OVR Viewing your drawings;',0,"Defaultoverview",)} Related Topics

How To:

Removing hidden lines

When working in Wireframe view, it is sometimes difficult to tell where objects are in relation to each other. You can use the Hide command to remove hidden lines from the screen and make your drawing easier to read.

Depending on the settings in the Hide dialog box, the Hide command will conceal hidden lines for currently selected objects, for a section of the drawing that you specify, or for all objects in your drawing. You can restrict the command to the active window, or expand it to include all windows. If you find the result is too cluttered, you can temporarily remove the text labels and dimensions from the drawing. If you only need a general idea of how your drawing will appear, you can hide all interior lines and leave nothing but silhouettes.

The Hide command gives you a quick preview of a drawing's three-dimensional appearance. For a more realistic display, use the Shade command (see Related Topics).

{button ,AL(`OVR Viewing your drawings;',0,"Defaultoverview",)} Related Topics

Selecting and positioning objects

How To:

Selecting objects

Before you can do anything with an object, you need to select it with the Pick tool. Once selected, you can use the other drawing commands to change the object's appearance or position.

CorelCAD provides three techniques for selecting objects:

- Using the Pick tool, you can click the object you want to select, or shift-click to select multiple objects
- Also using the Pick tool, you can drag a marquee box around the object or objects you want to select. If you press the ALT key while dragging a marquee box, then all objects enclosed by the marquee box plus any objects intersected by it will be selected.
- Using the Select All command from the Edit menu, you can select all objects on any visible layer, as long as the layer is not locked.

Note

- When you select an object, its outline changes from a solid line to a dashed line.

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

How To:

Moving, copying, and deleting objects

Moving objects in a CAD program often requires more precision than in other types of applications. CorelCAD lets you specify an exact vector along which to move your object.

This vector can be defined by specifying XYZ or spherical coordinates or by clicking any point in your drawing area. It can be defined absolutely (from the 0,0,0 point of your drawing), relatively based on a point that you set, or offset a specified distance from any point in your drawing. In the Move dialog box you can enable the Leave Original checkbox to have a copy of the object moved while leaving the original object in the same place.

CorelCAD also supports the standard Windows cut-and-paste functions. These functions provide a quick way to move, duplicate, and delete selected objects.

Tip

- You can nudge an object a short distance with great accuracy by using the arrow keys. You can make larger steps by holding down the ALT key at the same time.

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

How To:

Grouping objects

CorelCAD lets you group objects together so that you can manipulate them as a single entity. This is useful when you want to move, rotate, or otherwise transform several objects as if they were a single object. Once a set of objects is grouped, you can select the entire group by selecting any object in that group. You only have to define a group once. The objects will remain grouped until you separate them with the Ungroup command.

You can also nest groups of objects into larger groups. For example, two groups of two objects can be grouped into a single group of four. When you Ungroup a nested group, the original group relationships remain. The nested group of four objects ungroup into two groups of two objects.

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

How To:

Working with layers

Layers are a tool for organizing and separating parts of your drawing. Layers replace the mylar or trace paper used in conventional drafting to overlay drawings. For example, if you are creating a floorplan on a drafting table, you might have one sheet showing just the walls, another sheet showing doors and windows, and others showing the electrical layout, fixtures, and so on.

You can keep the various parts of your drawing separate by using layers. In a floorplan, for example, you might want to keep the walls, fixtures, dimensions, notes, and wiring on separate layers. Then you can display or print them individually or in various combinations. As a drawing becomes more complex, you can make layers visible or invisible to provide a clear view of various elements.

The CorelCAD layering features let you

- create an unlimited number of layers with descriptive names and notes
- create, save, and recall individual layers or entire layer groups
- print only the layers you select
- lock layers to prevent accidental changes

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

How To:

Accurately defining points

When you are drawing objects to exact specifications, a simple mouse click on the screen is often not accurate enough. Whenever the status bar prompts you to choose a point when you move, transform, or create an object, you can use the Insert Point roll-up to define the new point precisely.

The Insert Point roll-up can define a point relative to the last point you set (Relative), relative to a point that you choose with a mouse click (Offset), or relative to the origin of the axes in your drawing (Absolute). You can define points using XYZ values, or by using a spherical coordinate consisting of a distance value and two angles.

Tip

- You can also use the Snap tools to accurately select points that already exist in your drawing (see Related Topics).

{button ,AL(`OVR Selecting and positioning objects;Accurately defining points;Using the Snap tools;',0,"Defaultoverview",)} Related Topics

How To:

Using the Snap tools

CorelCAD has a variety of Snap tools that make it easy to select points on existing objects with great precision. The available snaps are

- Endpoint
- Midpoint
- Intersection
- Implied Intersection
- Center of a Circle
- Quadrant of a Circle
- Tangent of a Circle
- Perpendicular
- Line
- Point
- Plane

Tip

- If you find you're using a particular Snap tool often, you can set it as a Running Snap. Any combination of Snap tools can be set as Running Snaps using the Tool Properties dialog box (accessed by right-clicking on a snap tool). Running snaps will remain active until you turn them off.

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

How To:

Working with grids

A grid can be a very helpful visual reference for floorplans and other diagrams. CorelCAD lets you set the grid spacing, color, origin, and orientation to whatever best suits your needs. You can also use the Snap to Grid function to help align objects to the grid.

Tip

- You can set the display grid and the Snap grid to different measurements. This is often useful if you want to use a narrow snap grid measurement, but don't want to clutter your screen with a dense visible grid.

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

How To:

Drawing in Orthogonal mode

When you work in Orthogonal mode, all point selections, object movements, rotations, and transformations are aligned with a set of axes at 90 degrees to one another. These axes can be set to whatever initial angle you like - they can be the same as the normal X,Y, and Z-axes, or they can be rotated in any direction.

{button ,AL(`OVR Selecting and positioning objects;',0,"Defaultoverview",)} Related Topics

Creating objects

How To:

Creating lines and arrows

CorelCAD allows you to draw a variety of lines:

Line Segment tool

The Line segment tool creates a straight line joining any two points you define. You can use this tool to create multiple line segments by defining more points after the first two. These additional segments touch at their endpoints, but are not actually connected, and can be manipulated independently

Polyline tool

The Polyline tool creates a continuous line made up of straight line segments joining the points you define. The individual line segments making up a Polyline are connected, and must be manipulated together.

Arrow tool

The Arrow tool creates a Polyline with an arrowhead on the final point.

Intersecting Line tool

The Intersecting line tool creates a line at the intersection of two existing planes.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating curves

CorelCAD allows you to draw a variety of curves:

Curve tool

The Curve tool joins the points you select with a smooth, continuous curve.

Bezier Curve tool

The Bezier Curve tool creates a similar curve, but lets you edit the angle and orientation of each curve segment as it is created. After defining each point on the curve, you must also define a control point defining a tangent for the curve to follow at that point.

Bezier Segment tool

the Bezier Segment tool creates a single segment of the bezier curve described above. You only need to define the two endpoints and their control points to create this curve.

Freehand tool

The Freehand tool creates a line that follows your movements when you click and drag, similar to the movements of a pencil on paper.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating arcs

CorelCAD allows you to draw a variety of both circular and elliptical arcs. The various arc tools differ only in the way you define the arcs. You can create similar arcs using the most convenient of the methods provided. For instance, if you want your arc to connect three existing points in your drawing, you would use the Arc Through 3 Points tool. If you want your arc to pass through two points along a given radius, you would use the Arc Center, Start, Angle tool.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating rectangular shapes and solids

The 2D Objects flyout in the Toolbox provides tools for creating 2D rectangles. You can create a 2D rectangle by specifying two points - a starting point at one corner of the rectangle, and another point at the opposite corner. You can also create a rectangle by specifying a starting point, a point to define one side of the rectangle, and a point to define another side.

The 3D Solids flyout in the Toolbox provides two tools for creating 3D solid boxes. The 3D Solid, Box, 2 Points tool defines a box using two points - a starting point at one corner of the box, and another point at the opposite corner. The 3D Solid, Box, 3 Points tool uses 3 points to define the base of the box, and another point to define the height.

You can also create 2D and 3D rectangular objects using the Object roll-up. Mathematically, all rectangular shapes are similar, whether they are two- or three-dimensional. Thus, CorelCAD treats all objects based on rectangular shapes in much the same way. The Rectangle tab of the Object roll-up lets you create a variety of two- and three-dimensional objects. The controls are very similar whether you are drawing a simple wireframe rectangle, a rectangular plane, a box, a solid box, or a pyramid.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating polygonal shapes and solids

There are three tools for creating 2D polygons. Each of these tools first prompts you to enter the number of sides for the polygon. The Polygon, Center and Vertex tool defines a polygon using two points - a center point, and another point at a vertex. The Polygon, 2 Points tool defines a polygon using two vertices to indicate the length of one edge. The Polygon, Center and Edge tool, which is accessible from the Customize dialog box, defines a polygon using the center point and the midpoint of an edge.

There are several tools for creating 3D solid polygonal objects. The 3D Solids flyout has a tool for creating prisms. In addition, the Customize dialog box provides tools for creating polygonal pyramids and polygonal frustums.

You can also create 2D and 3D polygonal objects using the Object roll-up. Mathematically, all regular polygons are similar, whether they are two- or three-dimensional. Thus, CorelCAD treats all objects based on polygons in much the same way. The Polygon tab of the Object roll-up lets you create a variety of two- and three-dimensional objects. The controls are very similar whether you are drawing a simple wireframe polygon, a polygonal plane, a cylinder with a polygonal base (prism), or a polygonal pyramid.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating circular shapes and solids

The 2D Objects flyout in the Toolbox provides tools for creating 2D circles. You can create circles by specifying a center and radius, two points on the circle, or three points on the circle.

The 3D Solids flyout in the Toolbox provides tools for creating 3D solid spheres, hemispheres, cylinders, cones, or circular frustums.

You can also create 2D and 3D circular objects using the Object roll-up. Mathematically, all circular shapes are similar, whether they are two- or three-dimensional. Thus, CorelCAD treats all objects based on circles in much the same way. The Circle tab of the Object roll-up lets you create a variety of two- and three-dimensional objects. The controls are very similar whether you are drawing a simple wireframe circle, a circular plane, a cylinder, a sphere, a cone or a hemisphere.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating elliptical shapes and solids

The 2D Objects flyout in the Toolbox provides tools for creating 2D ellipses. You can create ellipses by specifying a length for the ellipse and then a width.

You can also create 2D and 3D elliptical objects using the Object roll-up. Mathematically, all elliptical shapes are similar, whether they are two- or three-dimensional. Thus, CorelCAD treats all objects based on ellipses in much the same way. The Ellipse tab of the Object roll-up lets you create a variety of two- and three-dimensional objects. The controls are very similar whether you are drawing a simple wireframe ellipse, an elliptical plane, a cylinder with an elliptical base, or an elliptical cone.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Using the 3D Solid tools

The 3D Solid tools let you create common three-dimensional solids quickly and easily.

3D Solid, Box, 2 Points tool

The 3D Solid, Box, 2 Points tool creates a solid box defined by two opposite corners. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys while moving the mouse to define vertices in 3D space.

3D Solid, Box, 3 Points tool

The 3D Solid, Box, 3 Points tool creates a solid box defined by three base corners and a height. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys while moving the mouse to define the box's height.

3D Solid, Sphere, Center and Radius tool

The 3D Solid, Sphere, Center and Radius tool creates a solid sphere defined by its center point and a point on its circumference.

3D Solid, Prism, Center and Vertex tool

The 3D Solid, Prism, Center and Vertex tool creates a solid cylinder with a polygonal base. The base is defined by its center point and one vertex, and the height is defined by a simple drag-and-click maneuver, or by entering values in the Insert Point Roll-Up.

3D Solid, Hemisphere, Center and Radius tool

The 3D Solid, Hemisphere, Center and Radius tool creates a solid Hemisphere defined by the center and radius of its base.

3D Solid, Cone, Center and Radius tool

The 3D Solid, Cone, Center and Radius tool creates a solid cone. The cone's base is defined by its center point and a point on its circumference, and the height is defined by a simple drag-and-click maneuver, or by entering values in the Insert Point Roll-Up.

3D Solid, Frustum, Center and Radius tool

The 3D Solid, Frustum, Center and Radius tool creates a solid frustum. The base and apex are defined by their centers and radii.

3D Solid, Cylinder, Center and Radius tool

The 3D Solid, Cylinder, Center and Radius tool creates a solid Cylinder. The cylinder's base is defined by its center point and a point on its circumference, and the height is defined by a simple drag-and-click maneuver, or by entering values in the Insert Point Roll-Up.

3D Solid, Torus, Center and Radius tool

The 3D Solid, Torus, Center and Radius tool creates a solid torus defined by its center and two radii.

Object Roll-up

The Object Roll-up contains controls that let you precisely define almost any regular shape or solid. While the roll-up gives you great control over the objects you create, it is sometimes quicker or easier to use the tools on the 2D Objects flyout and 3D Solids flyout to create simple shapes.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;Accurately defining points;',0,"Defaultoverview",)} Related Topics

How To:

Using the 2D Object tools

The 2D Object tools let you create common two-dimensional shapes quickly and easily.

Rectangle, 2 Points tool

The Rectangle, 2 Points tool creates a rectangular wireframe or plane defined by two opposite corners.

Rectangle, 3 Points tool

The Rectangle, 3 Points tool creates a rectangular wireframe or plane defined by three corners.

Polygon, Center and Vertex tool

The Polygon, Center and Vertex tool creates a polygonal wireframe or plane defined by its center and a single vertex.

Polygon, 2 Points tool

The Polygon, 2 Points tool creates a polygonal wireframe or plane defined by two points forming one of its edges.

Circle, Center and Radius tool

The Circle, Center and Radius tool creates a circular wireframe or plane defined by its center and a point on its circumference.

Circle, 2 Points tool

The Circle, 2 Points tool creates a circular wireframe or plane defined by two points on its circumference.

Circle, 3 Points tool

The Circle, 3 Points tool creates a circular wireframe or plane defined by three points on its circumference.

Ellipse tool

The Ellipse tool creates an elliptical wireframe or plane defined by two axes.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating planes and surface models

A surface is a two- or three-dimensional object which has area, but no mass. You can create several different types of surfaces using the following tools:

Free Form tool

The Free Form tool creates a surface defined by three or more points that you specify.

Multiple Plane tool

The Multiple Plane tool creates a series of surfaces defined by three points that you specify. The planes touch along a common edge, and can either be connected to form a single object, or left as separate entities.

Perpendicular Plane tool

The Perpendicular Plane tool creates a rectangular surface normal to an existing line in your drawing.

Skin tool

The Skin tool creates a surface defined by two or more existing lines or curves. If the Skin is defined by more than two lines, it bends at each interior line, resembling a piece of sharply bent sheet metal.

Loft tool

The Loft tool creates a surface defined by two or more existing lines or curves. Lofts are like Skins that have been smoothed out. The interior lines still define bends, but these bends are gradual and continuous.

Tip

- When you draw objects in three-dimensional space, normal mouse movements only move the pointer along two of the three axes. To move the pointer along the third axis, hold down the SHIFT and CTRL keys while dragging with the mouse.

{button ,AL(`OVR Creating objects;',0,"Defaultoverview",)} Related Topics

Transforming objects

How To:

Scaling objects

You can scale any object by an absolute scale factor. To double an object's size, set the scale factor to 2. To halve its size, use a factor of 0.5.

The Scale command box also gives you the option of creating a duplicate of the original object after applying the scale.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Mirroring objects

CorelCAD's Mirror command lets you mirror objects in an existing plane, or a plane that you define. The Mirror command will either flip the object you select, or create a duplicate in the new position.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Rotating objects

CorelCAD's Rotate command lets you rotate an object through any angle, around any of the three axes, or around an axis you specify. The Rotate command will either move the object you create, or apply the rotation to a duplicate.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Creating offsets, duplicates, and arrays of objects

One of the great advantages of computer-aided drawing is the ability to easily duplicate parts of your drawing. Rather than laboriously re-drawing objects that appear many times, you can use one of the following commands to create as many copies as you like:

Offsets

CorelCAD's Offset command creates a user-specified number of parallel copies of an object in the current working plane. The Offset command will only create copies of two-dimensional wireframe objectssurfaces, solids, and three-dimensional wireframes cannot be offset.

Duplicates

The Duplicate command creates an exact copy of the currently selected object, and places it at a distance from the original object as specified in the Options dialog box (from the Tools menu).

Arrays

CorelCAD's Array commands will create multiple duplicates of objects along a path you specify. The path can be linear, multi-directional, circular, spiral, or even spherical.

Copy-and-paste

A simple way to duplicate an object is with the Windows Copy and Paste commands. Like in most Windows applications, you can copy an object to the clipboard, and then paste it back into the current document, or into another document.

Tip

- Many of the Transform commands include an option to keep the original object and apply the operation to a duplicate. This can be faster than creating a duplicate and then modifying it.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

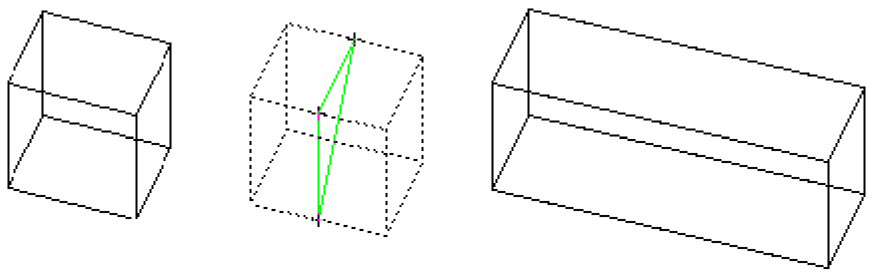
How To:

Stretching objects

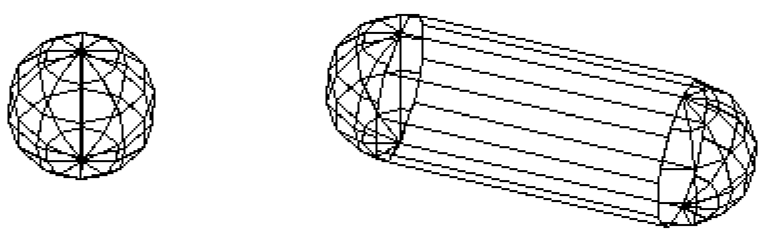
3D Stretch command

CorelCAD's Stretch command is a powerful tool that enables you to increase the length, width or height of objects, or create very complex shapes from simple objects. You stretch an object by defining a plane that bisects it, and a length along which to stretch. The object is sliced along the plane you define, and then extruded along a vector perpendicular to the plane. The two halves of the object remain unaltered, but are now joined by a new shape that is defined by the stretch.

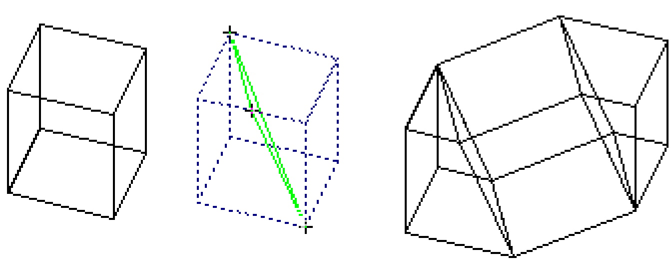
You can use this command to simply elongate a regular object along one of its normal axes, like this box:



You can also stretch a sphere across its diameter, to create a cylinder with round caps:



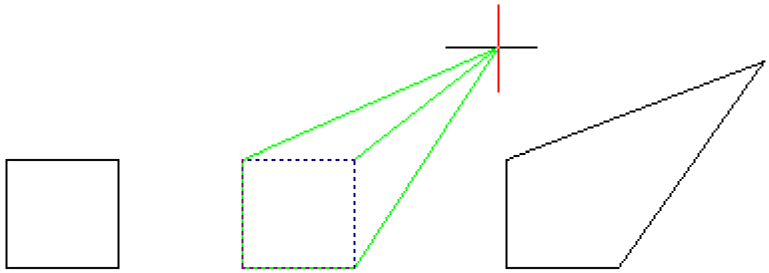
Or, you can create an entirely new solid by picking an odd plane:



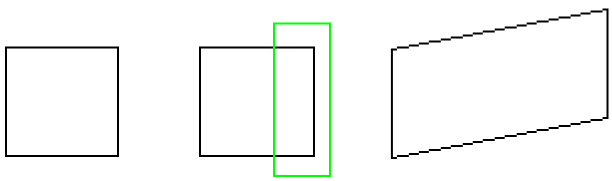
2D Stretch command

For two-dimensional objects, you can create similar, if less spectacular, effects with the 2D Stretch command. This command takes one or more points on a line or a plane and moves it to a new location, forcing the original object to conform to the new configuration.

You can use the command to stretch a single corner of an object:



Or, you can use it on two or more corners for a more regular stretch:



{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Extruding 2D objects into 3D objects

CorelCAD's Extrude command extends a two-dimensional object into three dimensions along a selected path or axis. Curved surfaces, solids, and any other multi-plane objects cannot be extruded.

When you extrude a two-dimensional object into a three-dimensional object, the extrusion becomes a part of the object, so that you can manipulate the new object as a single entity.

The Extrude commands are:

Extrude

The Extrude command extends the selected object along a path you select. You can also taper the extrusion by a set angle.

Extrude Normal

The Extrude Normal command extends the selected object along a path that is normal to the plane of the object. Lines, curves, and arcs extrude to form connected planes or surfaces, and planes extrude to form solids.

Circular Sweep

The Circular Sweep command extrudes the selected object along a circular path around an axis you select. You can specify the sweep to be perfectly circular, or faceted. You can also sweep the object through any angle up to a full 360 degrees.

Spiral Sweep

The Spiral Sweep command extrudes the selected object along a spiral path around an axis that you specify. This results in an object resembling a spring or threaded bolt. You can set the number of revolutions, and the total length of the sweep path.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Trimming and extending lines

While the CorelCAD line drawing tools are designed to create lines and curves to your precise measurements, sometimes it is necessary to modify your drawing at a later stage. The following commands let you manipulate line and curve objects after they have been created:

Trim command

The Trim command severs existing lines at their intersection points with other existing lines. The severed segments can be removed, or left in the drawing as separate objects.

Trim Both command

The Trim Both command removes the excess portion of each line where two lines intersect.

Extend Command

The Extend command stretches an existing line until it meets another object that you select.

Combine command

The Combine command welds two unconnected line segments into a single object. The line segments must be touching at their endpoints.

Join command

The Join command moves the endpoint of a line so that it touches the endpoint of a second line. The resulting lines are touching, but do not form a continuous object.

Fillet command

The Fillet command rounds a surface or wireframe corner. It replaces a corner with an arc of a radius that you specify. Depending on their location, and the fillet radius you select, the lines will be stretched or bent into the desired shape.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Slicing planes and 3D objects

While the CorelCAD drawing tools are designed to create objects to precise measurements, sometimes it is necessary to modify your drawing at a later stage. The following commands let you manipulate planes and three-dimensional objects after they have been created:

Slice Plane command

The Slice Plane command divides a continuous plane into two discrete sections by slicing it along an existing line.

3D Slice Command

The 3D Slice command divides a three-dimensional object along a plane you define, leaving the resulting pieces in your drawing. This command will also work on planes and other two-dimensional objects, as long as you select a plane that intersects the object you want to slice.

3D Trim command

The 3D Trim command performs identically to the 3D Slice command, but removes part of the sliced object from your drawing.

Section command

The Section command creates a plane within a three-dimensional object, but does not alter the original object in any way. The plane can be removed and used as a cross-section of the 3D object.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

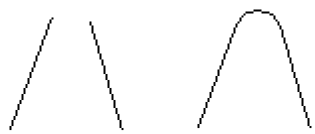
How To:

Rounding and cropping corners and edges

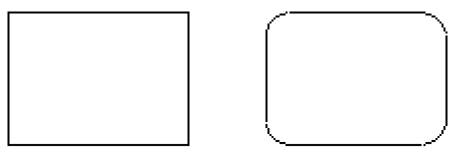
You are not limited to regular geometric shapes with CorelCAD. The Fillet and Chamfer commands let you round and crop otherwise sharp corners to accurately represent finished products.

Fillet

The Fillet command rounds the corners of a two-dimensional object using a curve radius that you specify. You can use it to join two lines together into a single curve:

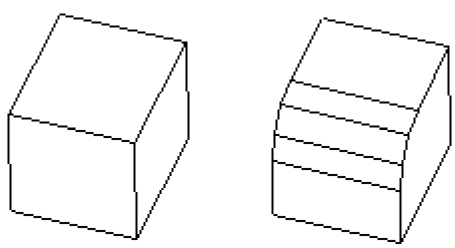


Or, you can round the corners of a square or other sharp-angled polygon:

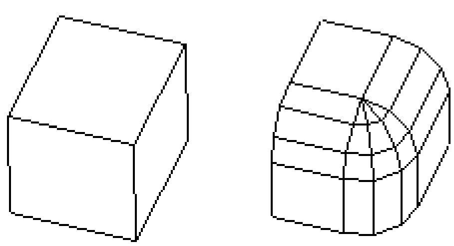


Fillet Edge

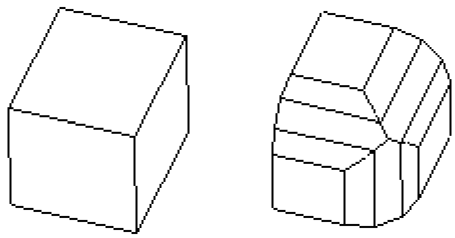
The Fillet Edge command rounds the edges of a solid:



If you fillet multiple edges that meet at a corner, you can round the corner as well:

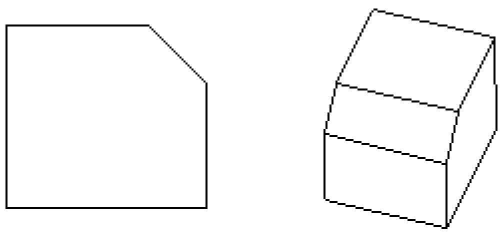


You can also leave it mitered:



Chamfer

The Chamfer and Chamfer Edge commands work much the same way as the Fillet commands, but rather than rounding corners and edges, it truncates them to create a bevel:



{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Adding and subtracting 3D objects

CorelCAD's Boolean commands let you define new solids by the interaction of existing solids. You can add solids together to make compound shapes. You can subtract one object from another, leaving a hole or indentation in the first object. You can define a new object from the area where two solids meet, or you can remove those parts of two solids that intersect with each other.

Creative use of the Boolean commands can create a wide variety of shapes that would be difficult to construct with the other drawing tools.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

How To:

Assembling and disassembling 3D objects

The Define Object command lets you turn groups of wireframes into surface models or groups of surface models into solids. The original objects must be grouped together and they must be in a configuration that can form the desired shape. Two or three unconnected lines cannot join together to make a plane, for example.

The Explode Object command does the exact opposite. It breaks solids down into surface models, and surface models into wireframe objects.

Note

- To create a solid from a wireframe, you must apply the Define Object command twice. First, to turn the wireframe into a surface model, and then to turn the surface model into a solid. The same applies for the Explode Object command.

{button ,AL(`OVR Transforming objects;',0,"Defaultoverview",)} Related Topics

Shading and rendering your drawing

Shading objects

(placeholder)

How To:

Working with colors and materials

The Materials roll-up allows you to apply photorealistic combinations of colors and textures to objects in your drawing. The roll-up contains a list of common materials that you can use as they are, or edit to your specific requirements.

Note

- An object's material type does not affect its appearance or redraw time in Wireframe View. To preview a rendered version of your drawing, use the Shade command (See Related Topics).

{button ,AL(`OVR Shading and rendering your drawing;',0,"Defaultoverview",)} Related Topics

How To:

Editing materials

CorelCAD comes with hundreds of pre-defined material types representing common manufacturing materials. If the material you want to use is not in the list, you can edit the attributes of an existing material to get the desired effect. If you want to create an entirely new material type, you can store it under a new name or in a new material category.

Each material is broken up into sets of Texture, Transparency, Reflectance, and Pattern attributes. Within each set, you can change the basic attribute model, and the specific parameters within that model.

Texture

These attributes change the apparent shape of surfaces to simulate textures such as brick or fabric. Click a Texture model to get a detailed description.

- Casting texture
- Rough texture
- Wrapped Bump Map texture
- Wrapped Dimple texture
- Wrapped Knurl texture
- Wrapped Tread Plate texture
- Wrapped Rough texture

Transparency

These attributes define areas in the surface where certain amounts of light can pass through, producing a variety of effects. Transparency is not visible when using Flat or Gouraud shading. Click a Transparency model to get a detailed description.

- Eroded transparency
- Plain transparency
- Wrapped Grid transparency
- Wrapped Image transparency

Reflectance

These attributes define the reflective characteristics of light and other objects in a model. Click a Reflectance model to get a detailed description.

- Chrome 2D reflectance
- Conductor reflectance
- Dielectric reflectance
- Glass reflectance
- Matte reflectance
- Metal reflectance
- Mirror reflectance
- Phong reflectance
- Plastic reflectance

Pattern

These attributes change the color of a surface by applying a scanned raster image to give it the appearance of a material such as wood or marble. Click a Pattern model to get a detailed description.

- Blue Marble pattern
- Chrome pattern
- Cubes pattern
- Marble pattern
- Simple Wood pattern
- Solid Clouds pattern
- Solid Polka pattern
- Wrapped Brick pattern
- Wrapped Checker pattern
- Wrapped Diagonal pattern
- Wrapped Grid pattern
- Wrapped Polka pattern
- Wrapped S Stripe pattern
- Wrapped T Stripe pattern
- Wrapped Textured Brick pattern

{button ,AL(`OVR Shading and rendering your drawing;',0,"Defaultoverview",)} Related Topics

Changing your rendering options

When you shade curved objects such as spheres and cones, you may find that they appear faceted rather than smooth. You can increase the level of surface and edge detail using the Refinements dialog box (from the View menu).

For example, a wireframe drawing of a sphere might appear to be a simple polygon at very low refinement settings. This approximation of the real shape will speed up redraw and rendering time, but it might not provide the necessary level of detail. By increasing the refinement settings, you can increase the surface detail of your objects at the cost of greater redrawing and rendering times.

{button ,AL(`OVR Shading and rendering your drawing;',0,"Defaultoverview",)} Related Topics

Adding text, dimensions, and symbols

How To:

Working with text

CorelCAD lets you add two dimensional text labels to make your drawing more readable. It also lets you add three-dimensional text to the drawing itself. Three-dimensional text will change aspect when viewed at different angles, while two-dimensional text always appears flat in order to be legible from any viewpoint.

You can add text using the 2D Text and 3D Text commands. Before you add text to your drawing, you can choose from a variety of character and paragraph attributes.

{button ,AL(`OVR Adding text dimensions and symbols;',0,"Defaultoverview",)} Related Topics

Working with dimensions

placeholder

How To:

Using the CorelCAD Symbol Library

CorelCAD comes with thousands of symbols used in various design fields. The symbols are stored as graphic files that you can bring into your drawing with the Import command (See Related Topics).

{button ,AL(`OVR Adding text dimensions and symbols;Importing files;',0,"Defaultoverview",)} Related Topics

Managing your files

How To:

Using templates

Before you start to draw, you'll   define the options that will apply to your drawing. CorelCAD provides templates that include settings for the following information:

- text and dimension defaults
- layer names and groups
- views
- drawing units and angles

If the templates supplied with CorelCAD don't meet your requirements, you can modify them to create your own templates.

{button ,AL(`OVR Managing your files;',0,"Defaultoverview",)} Related Topics

How To:

Working with files

CorelCAD supports the standard File New, Open, Save and Save As commands. You can also store notes and keywords with your files to help with organization.

{button ,AL(`OVR Managing your files;',0,"Defaultoverview",)} Related Topics

How To:

Printing your work

CorelCAD's integrated printing function gives you a quick and easy method of printing your drawing as it appears on the screen. By sizing the current window appropriately and applying Hide or Shade commands immediately before printing, you can produce fast and accurate representations of your drawings. The print command takes the image bounded by the active drawing window, and scales it to the size of the page selected in the Printer Properties dialog box.

If you require more detailed output, you can use Corel Print Space, an advanced printing application with its own rendering, viewing and drawing tools. Print space lets you

- Create multiple frames of your drawing that you can print on the same page.
- Render, scale, and rotate each of your drawing frames independently.
- Add text and vector graphics to supplement your CAD models.

{button ,AL(`OVR Managing your files;',0,"Defaultoverview",)} Related Topics

How To:

Importing files

Corel applications support various file formats, but CCD is native to the application. If you want to read a file that has a non-native format, you must import that file.

The Import command is located in the File menu. When you choose the command, a dialog box appears where you can choose the drive and folder containing the file. If you know the format of the file you want, you can choose it from the File As Type list to display only the files with that extension. To choose the file you want to import, double-click the filename in the display window. CorelCAD can import files in the following formats:

AutoCAD (.DXF, .DWG)

Windows Metafile (.WMF)

HPGL Files (.PLT, .HP)

ACIS Files (.SAT)

{button ,AL(`OVR Managing your files;',0,"Defaultoverview",)} Related Topics

How To:

Exporting files

Corel applications can save files in various file formats, but only CCD is native to the application. If you want to save a file in a non-native format, you must export that file.

The Export command is located in the File menu. When you choose the command, a dialog box appears where you can choose the drive and folder where you want to save the file. Use the list box to choose the export format. CorelCAD can export files in the following formats:

AutoCAD (.DXF, .DWG)

ACIS Files (.SAT)

Windows Metafile (.WMF)

JPEG Bitmap (.JPG)

Targa Bitmap (.TGA)

Scitex CT Bitmap (.SCT)

CompuServe Bitmap (.GIF)

Wavelet Compressed Bitmap (.WVL)

Windows Bitmap (.BMP)

TIFF Bitmap(.TIF)

PaintBrush Image (.PCX)

OS/2 Bitmap (.BMP)

Corel PHOTO-PAINT (.CPT)

MACPaint Bitmap(.MAC)

{button ,AL(`OVR Managing your files;',0,"Defaultoverview",)} Related Topics

How To:

Exchanging information with other applications

Importing and Exporting

CorelCAD includes a wide variety of file-format filters that allow you to exchange graphics between CorelCAD and other applications.

Importing gives you access to graphics created in other programs. Once a vector graphic has been imported, you can modify it using CorelCAD tools and features. A single drawing can consist of any number of imported graphics in any of the supported formats. You can also import objects from other CorelCAD files.

Exporting saves CorelCAD files in formats used by other programs. This feature lets you create drawings for use with many popular software packages.

Because each format handles information in a graphics file differently, it's not always possible to translate precisely the contents of one format to another. The amount of variation depends on the graphic and the format used to import or export it.

Using the Clipboard

The Clipboard is a temporary storage area used to transfer text, graphics, and other information between Windows applications. In CorelCAD, the Clipboard is a convenient way to move objects from one file to another.

You transfer information to and from the Clipboard using the Cut, Copy, and Paste commands in the Edit menu.

The information you place on the Clipboard remains on the Clipboard until you exit Windows or replace it with other information.

{button ,AL(`OVR Managing your files;',0,"Defaultoverview",)} Related Topics

Customizing CorelCAD

How To:

Customizing keyboard assignments

Shortcut keys give you quick access to commands that you use frequently.

You can change built-in keyboard assignments, or assign a shortcut key combination to any command. You can create several sets of keyboard assignments to use for different types of operations, saving and loading sets as you need them.

Note

- CorelCAD supports single keystroke shortcuts.

{button ,AL(`OVR Customizing CorelCAD;',0,"Defaultoverview",)} Related Topics

How To:

Customizing menus

The CorelCAD menus are completely customizable. You can add commands to existing menus, or you can add new menus to the menu bar. You can change the order of the menus and their commands to give you quick, easy access to the functions you use most.

Note

- When you customize your menus, remember that the help topics referring to those menus do not change.

{button ,AL(`OVR Customizing CorelCAD;',0,"Defaultoverview",)} Related Topics

How To:

Customizing toolbars

You have complete control over the commands on your toolbars. With simple mouse actions, you can dock, undock, resize, and move your toolbars anywhere on the screen.

You can also add and remove buttons to the built-in toolbars, or create your own toolbars containing only the commands you use most often.

Note

- When you customize your toolbars, remember that the help topics referring to those toolbars do not change.

{button ,AL(`OVR Customizing CorelCAD;',0,"Defaultoverview",)} Related Topics

How To:

Customizing the status bar

The status bar gives you constant, up-to-date information about your document. You can control the information it gives you so that you always know what you need to know about your work.

{button ,AL(`OVR Customizing CorelCAD;',0,"Defaultoverview",)} Related Topics

How To:

Changing your preferences

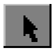
The Options dialog box lets you change the way CorelCAD behaves. You can use these controls to change cursor properties, backup options, the level of surface detail, background color, and various other aspects of the application.

Note

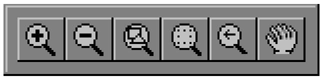
- When you render your image using the higher end rendering levels, some objects may not show up against very dark background colors.

{button ,AL(`OVR Customizing CorelCAD;',0,"Defaultoverview",)} Related Topics

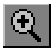
Toolbox



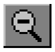
The Pick tool selects objects or groups of objects. Click on the tool, then click on the object you want to select. SHIFT + click to select multiple objects.



The Zoom flyout holds tools that let you change the view magnification of your drawing. The Toolbox always displays the last zoom tool you used. To access the rest of the zoom tools, hold down the visible tool until the flyout appears, then click the tool you want to use.

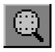


The Zoom In tool increases the view magnification to show the area you highlight with the marquee box.

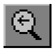


The Zoom Out tool decreases the magnification of the current view by 30%.

The Zoom To Selected tool increases or decreases the view magnification to fit all selected objects on the screen.

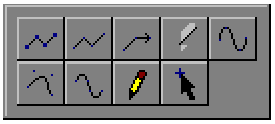


The Zoom To All Objects tool increases or decreases the view magnification to fit all objects on the screen.

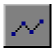


The Zoom Previous tool returns to the last view magnification setting.

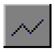
The Pan tool shifts the view by an amount and distance you specify. Click a point in your drawing, then click a second point to shift the view.



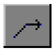
The Line flyout holds tools that let you draw lines and curves. The Toolbox always displays the last line drawing tool you used. To access the rest of the line tools, hold down the visible tool until the flyout appears, then click the tool you want to use.



The Line Segments tool draws a series of touching but unconnected line segments. Click the endpoints of the lines you want to draw. Double click or press the ENTER key to stop drawing.



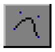
The PolyLine tool draws a series of connected line segments. Click the endpoints of the lines you want to draw. Double click or press the ENTER key to stop drawing.



The Arrow Line tool draws a series of connected line segments ending in an arrowhead. Click the endpoints of the lines you want to draw. Double click or press the ENTER key to stop drawing.

The Intersecting Line tool draws a line at the intersection of two planes that you select.

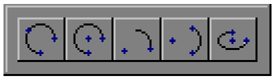
The Curve tool joins the points you select with a smooth, continuous curve. Double click or press the ENTER key to stop drawing.



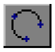
The Bezier Segments tool draws a series of draws a series of connected curves. You can edit the angle and orientation of each curve segment as it is created. Double click or press the ENTER key to stop drawing.

The Bezier Curve tool draws a single curved line segment. You can edit the angle and orientation of the curve segment as it is created.

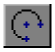
The Freehand tool draws a line that follows your movements when you click and drag, similar to the movements of a pencil on paper.



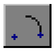
The Arc flyout holds tools that let you draw a variety of circular and elliptical arcs. The Toolbox always displays the last arc drawing tool you used. To access the rest of the arc tools, hold down the visible tool until the flyout appears, then click the tool you want to use.



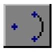
The Arc Through 3 Points tool connects the three points you select in a circular arc.



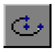
The Arc Center, Start, Angle tool draws an arc with a center, start, and plane that you select, and a length determined by the settings in the Tool Properties dialog box.



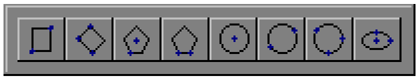
The Arc Radius, End Points tool draws an arc with end points that you select, and a radius determined by the settings in the Tool Properties dialog box.



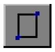
The Arc Center, Start, End tool draws an arc with a center and end points that you select.



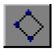
The Elliptical Arc tool draws a segment of an ellipse that you define by its major and minor axes.



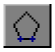
The 2D Objects flyout holds tools that let you create common two-dimensional shapes quickly and easily. The Toolbox always displays the last 2D object tool you used. To access the rest of the 2D object tools, hold down the visible tool until the flyout appears, then click the tool you want to use.



The Rectangle, 2 Points tool draws a rectangular wireframe or plane defined by two opposite corners.

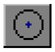


The Rectangle, 3 Points tool draws a rectangular wireframe or plane defined by three corners.

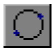


The Polygon, 2 Adjoining Vertices tool draws a polygonal wireframe or plane defined by two points forming one of its edges.

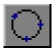
The Polygon, Center and Vertex tool draws a polygonal wireframe or plane defined by its center and a single vertex.



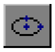
The Circle, Center and Radius tool draws a circular wireframe or plane defined by its center and a point on its circumference.



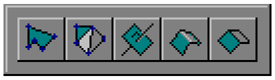
The Circle, 2 Points tool draws a circular wireframe or plane defined by two points on its circumference.



The Circle, 3 Points tool draws a circular wireframe or plane defined by three points on its circumference.



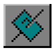
The Ellipse tool draws an elliptical wireframe or plane defined its major and minor axes.



The Surfaces flyout holds tools that let you create complex two or three dimensional objects that have area but no mass. The Toolbox always displays the last surface tool you used. To access the rest of the surface tools, hold down the visible tool until the flyout appears, then click the tool you want to use.

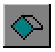
The Free Form tool creates a surface defined by three or more points that you specify.

The Multiple Plane tool creates a series of surfaces defined by three points that you specify. The planes touch along a common edge, and can either be connected to form a single object, or left as separate entities.

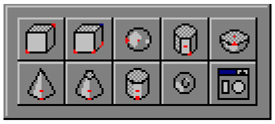


The Perpendicular Plane tool creates a rectangular surface normal to an existing line in your drawing.

The Loft tool creates a surface defined by two or more existing lines or curves. Lofts are like Skins that have been smoothed out. The interior lines still define bends, but these bends are gradual and continuous.



The Skin tool creates a surface defined by two or more existing lines or curves. If the Skin is defined by more than two lines, it bends at each interior line, resembling a piece of sharply bent sheet metal.



The 3D Solids flyout holds tools that let you create common three-dimensional solids quickly and easily. The Toolbox always displays the last 3D Solid tool you used. To access the rest of the 3D Solid tools, hold down the visible tool until the flyout appears, then click the tool you want to use.

The 3D Solid, Box, 2 Points tool creates a solid box defined by two opposite corners. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define vertices in 3D space.

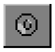
The 3D Solid, Box, 3 Points tool creates a solid box defined by three base corners and a height. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define the box's height.

The 3D Solid, Sphere, Center and Radius tool creates a solid sphere defined by its center point and a point on its circumference.

The 3D Solid, Hemisphere, Center and Radius tool creates a solid Hemisphere defined by the center and radius of its base.

The 3D Solid, Cone, Center and Radius tool creates a solid cone. The cone's base is defined by its center point and a point on its circumference, and the height is defined by a simple drag-and-click maneuver.

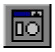
The 3D Solid, Cylinder, Center and Radius tool creates a solid Cylinder. The cylinder's base is defined by its center point and a point on its circumference, and the height is defined by a simple drag-and-click maneuver.



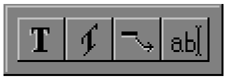
The 3D Solid, Torus, Center and Radius tool creates a solid torus defined by its center and two radii.

The 3D Solid, Prism, Center and Vertex tool creates a solid cylinder with a polygonal base. The base is defined by its center point and one vertex, and the height is defined by a simple drag-and-click maneuver.

The 3D Solid, Frustum, Center and Radius tool creates a solid frustum. The base and apex are defined by their centers and radii.



Opens the Object roll-up, where you can draw a variety of shapes and solids with great accuracy.



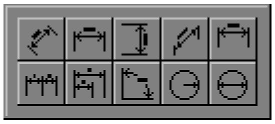
The Text flyout holds tools that let you add and edit text labels. The Toolbox always displays the last text tool you used. To access the rest of the text tools, hold down the visible tool until the flyout appears, then click the tool you want to use.

The Text 2D tool adds text that always appears flat in order to be legible from any viewpoint

The Text 3D tool adds text that changes aspect when viewed at different angles

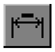
The Leader tool adds 3D text attached to a point in your drawing by a line.

The Edit Text tool lets you edit text that you have already entered into your drawing.

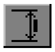


The Dimensions flyout holds tools that let you add labels to your drawing that measure distances. If dynamic dimensioning is enabled, these dimensions will update when your objects change. The Toolbox always displays the last dimension tool you used. To access the rest of the dimension tools, hold down the visible tool until the flyout appears, then click the tool you want to use.

The Free Dimension tool inserts a dimension measuring the direct distance between two points.

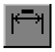


The X Linear Dimension tool inserts a dimension measuring the X-axis distance between two points.

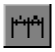


The Y Linear Dimension tool inserts a dimension measuring the Y-axis distance between two points.

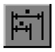
The Z Linear Dimension tool inserts a dimension measuring the Z-axis distance between two points.



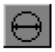
The Orthogonal Dimension tool inserts a dimension measuring the distance between two points along any orthogonal axis that you choose.



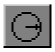
The Continuous Linear Dimension tool inserts a series of linear dimensions.



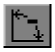
The Continuous Baseline Dimension tool inserts a series of cumulative linear dimensions.



The Diameter Dimension tool inserts a dimension the diameter of a circle.

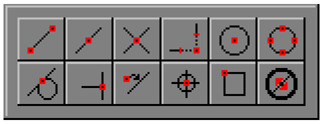


The Radius Dimension tool inserts a dimension measuring the radius of a circle.

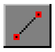


The Angle Dimension tool inserts a dimension measuring the angle between two lines.

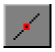
Opens the Materials roll-up, where you can assign materials to objects in your drawing.



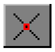
The Snap flyout holds tools that help you select existing points in your drawing. The Toolbox always displays the last snap tool you used. To access the rest of the snap tools, hold down the visible tool until the flyout appears, then click the tool you want to use.



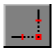
The Endpoint Snap tool snaps to the end point of the line nearest to where you click next.



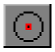
The Midpoint Snap tool snaps to the middle point of the line nearest to where you click next.



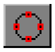
The Intersection Snap tool snaps to the intersecting point of two lines nearest to where you click next.



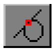
The Implied Intersection Snap tool snaps to the point where two unconnected lines would intersect, nearest to where you click next.



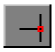
The Circle Center Snap tool snaps to the center of the circle nearest to where you click next.



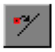
The Circle Quadrant Snap tool snaps to a quadrant of the circle nearest to where you click next.



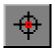
The Tangent Snap tool snaps to a tangent point on the circle nearest to where you click next.



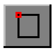
The Perpendicular Snap tool snaps a point perpendicular to the line nearest to where you click next.



The Line Snap tool snaps to the line nearest to where you click next.

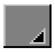


The Point Snap tool snaps to the point mark nearest to where you click next.



The Plane Snap tool snaps to the plane nearest to where you click next.

The Snap Off tool turns running snaps off for the next clicking operation.



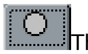
The Flyout triangle indicates a tool attached to a flyout.

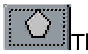
Object Roll-up screen shots

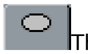
The Roll Wind button shrinks the roll-up into its title bar.

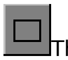
The Autoclose button causes a roll-up to close after a single use rather than staying on the screen.

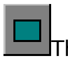
How To: The Rectangle tab contains controls for creating rectangular objects.

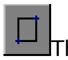
The Circle tab contains controls for creating circular objects.

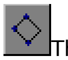
The Polygon tab contains controls for creating polygonal objects.

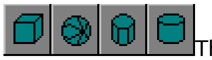
The Ellipse tab contains controls for creating elliptical objects.

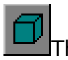
The Vector button creates a rectangle with no surface area, just a wireframe outline.

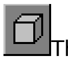
The Plane button creates a rectangular plane.

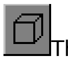
The Select Two Points button lets you create your rectangular object by specifying two points on its base. The resulting shape will be orthogonal to the working plane.

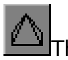
The rectangle Select Three Points button lets you create your rectangular object by specifying three points on its base. The resulting shape does not have to be orthogonal to the working plane.

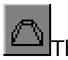
The Object Surface Model buttons create three-dimensional surface models based on one of the four basic shape types in the Object roll-up. These Surface models are hollow: they are three-dimensional, but have no volume.

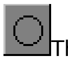
The Surface Model button creates hollow rectangular shapes. These shapes are three-dimensional, but have no volume.

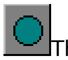
The Solid button creates solid, three-dimensional rectangular shapes.

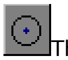
The Box button creates a box or cube. Either the Surface or Solid buttons must be enabled in order for this button to be active.

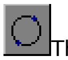
The rectangle Pyramid button creates a pyramid with a rectangular base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

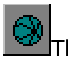
The rectangle Frustum button creates a truncated pyramid with a rectangular base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

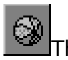
The Vector button creates a circle with no surface area, just a wireframe outline.

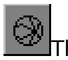
The Plane button creates a circular plane.

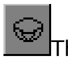
The Select Center and Radius button lets you create your circular object by specifying the center and a point on the circumference of its base.

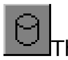
The circle Select Two Points button lets you create your circular object by specifying two points on the circumference of its base.

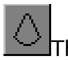
The Surface Model button creates hollow circular shapes. These shapes are three-dimensional, but have no volume.

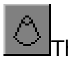
The Solid button creates solid, three-dimensional circular shapes.

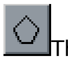
The Sphere button creates a sphere. Either the Surface or Solid buttons must be enabled in order for this button to be active.

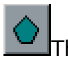
The Hemisphere button creates a hemisphere. Either the Surface or Solid buttons must be enabled in order for this button to be active.

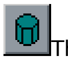
The circle Cylinder button creates a cylinder with a circular base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

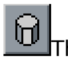
The Cone button creates a cone with a circular base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

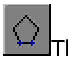
The circle Frustum button creates a frustum with a circular base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

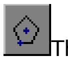
The Vector button creates a polygon with no surface area, just a wireframe outline.

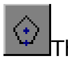
The Plane button creates a polygonal plane.

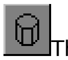
The Surface Model button creates hollow polygonal shapes. These shapes are three-dimensional, but have no volume.

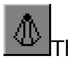
The Solid button creates solid, three-dimensional polygonal shapes.

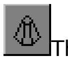
The Select Two Vertices button lets you create your polygonal object by specifying two adjacent vertex points on its base.

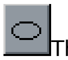
The Select Center and Vertex button lets you create your polygonal object by specifying the center and a single vertex on its base.

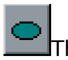
The Select Center and Edge button lets you create your polygonal object by specifying the center and a single edge point on its base.

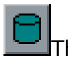
The Cylinder button creates a cylinder with a polygonal base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

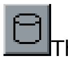
The Pyramid button creates a pyramid with a polygonal base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

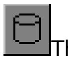
The Frustum button creates a truncated pyramid with a polygonal base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

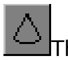
The Vector button creates an ellipse with no surface area, just a wireframe outline.

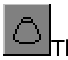
The Plane button creates an elliptical plane.

The Surface Model button creates hollow polygonal shapes. These shapes are three-dimensional, but have no volume.

The Solid button creates solid, three-dimensional elliptical shapes.

The Cylinder button creates a cylinder with an elliptical base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

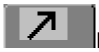
The Cone button creates a cone with an elliptical base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

The Frustum button creates a truncated cone with an elliptical base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

Other controls

The Color Palette is the long bar of colored squares at the bottom of the drawing window.

The Coordinates XYZ tab contains controls for specifying points using the Cartesian coordinate system.

Polar Coordinates tab contains controls for specifying points using the Polar coordinate system.

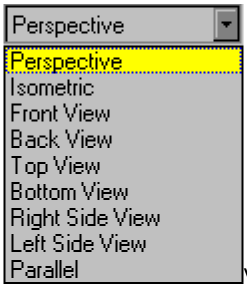
Drag these lines on the Status bar at the bottom of the screen to resize the display areas.

When this icon is active, the layer is visible. When the icon is grayed out, the layer is invisible.

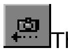
 When this icon is active, you can manipulate objects on the layer. When the icon is grayed out, the objects on the layer cannot be selected or otherwise manipulated.

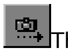
When this icon is active, the layer is printable. When the icon is grayed out, the layer will not print.

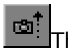
View button screen shots

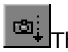


View list box

The Move Viewer Left button moves the position of the viewer to the left, causing the objects in your drawing to appear to shift to the right.

The Move Viewer Right button moves the position of the viewer to the right, causing the objects in your drawing to appear to shift to the left.

The Move Viewer Up button moves the position of the viewer up, causing the objects in your drawing to appear to shift down.

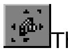
The Move Viewer Down button moves the position of the viewer down, causing the objects in your drawing to appear to shift up.

The Move Viewer Clockwise button rotates the viewer clockwise, causing the objects in your drawing to appear to rotate counter-clockwise.

The Move Viewer Counter Clockwise button rotates the viewer counter-clockwise, causing the objects in your drawing to appear to rotate clockwise.

The Move Viewer Closer button moves the viewpoint much closer to the objects in your drawing.

The Move Viewer Away button moves the viewpoint much farther away from the objects in your drawing.

The Rotate 3D View button dynamically adjusts the drawing view. Activate the button, then drag your drawing to the correct orientation.

CorelCAD basics

Using the toolbox

To change the active tool on a flyout

1. Click and hold down the currently active tool.
2. From the flyout, click the new tool.

Note

- Not all tools have flyouts. Tools with flyouts are marked with a small triangle in their lower right corner.

{button ,AL(`PRC Using the toolbox;',0,"Defaultoverview",)} Related Topics

To tear a flyout off the toolbox

1. Click and hold down the currently active tool.
2. Click one of the flyout's edges, and drag it to its new position.

Note

- Not all tools have flyouts. Tools with flyouts are marked with a small triangle in their lower right corner.

{button ,AL(`PRC Using the toolbox;',0,"Defaultoverview",)} Related Topics

To undo actions in a tool procedure

- Press the ESC key repeatedly until you reach the correct point in the procedure.

{button ,AL(`PRC Using the toolbox;',0,"Defaultoverview",)} Related Topics

To abort a tool procedure

- Press the ESC key repeatedly until you have aborted all the procedure steps.

{button ,AL(`PRC Using the toolbox;',0,"Defaultoverview",)} Related Topics

Using roll-ups

To minimize a roll-up

- Click the Roll Wind button.

{button ,AL(`PRC Using rollups;',0,"Defaultoverview",)} Related Topics

To get help on roll-ups

1. Right-click in the roll-up's title bar.
2. Click Help.

Tip

- Context-sensitive help on roll-up controls is also available using the What's this? option in the right-mouse-button menu.

{button ,AL(`PRC Using rollups;',0,"Defaultoverview",)} Related Topics

To have a roll-up close after a single use

- Toggle the roll-up's Autoclose button.

{button ,AL(`PRC Using rollups;',0,"Defaultoverview",)} Related Topics

Using command boxes

To get help on command boxes

1. Right-click on the control for which you need help.
2. Click What's this?

{button ,AL(`PRC Using command boxes;',0,"Defaultoverview",)} Related Topics

Starting a new drawing

Saving and opening your work

Undoing and repeating an action

To undo an action

- Click Edit, Undo.

Note

- If the Undo command is grayed out, then you cannot undo any of your actions.

{button ,AL(`PRC Undoing and repeating an action;',0,"Defaultoverview",)} Related Topics

To undo several actions at once

1. Click Edit, Undo List.
2. Click the actions you want to undo.

Note

- You can only undo lists of consecutive actions.

{button ,AL(`PRC Undoing and repeating an action;',0,"Defaultoverview",)} Related Topics

To redo an Undone action

- Click Edit, Redo.

Note

- If the Redo command is grayed out, then you cannot Redo any of your actions.

{button ,AL(`PRC Undoing and repeating an action;',0,"Defaultoverview",)} Related Topics

To repeat an action

- Click Edit, Repeat.

Note

- If the Repeat command is grayed out, the last action performed cannot be repeated using this command.

{button ,AL(`PRC Undoing and repeating an action;',0,"Defaultoverview",)} Related Topics

Using property sheets

To open a tool properties sheet

1. Right-click on the tool.
2. Click Properties.

{button ,AL(`PRC Using property sheets;',0,"Defaultoverview",)} Related Topics

Getting information about your drawing

To show or hide the status bar

- Click View, Status Bar.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

To measure the angle between two lines

1. Click Tools, Measure.
2. In the Dimensions flyout, click Angle.
3. Click a point on the first line.
4. Click a point on the second line.
5. Click a point enclosed in the angle you want to measure.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

To measure the distance between two points

1. Click Tools, Measure.
2. In the Dimensions flyout, click Distance.
3. Click the first point.
4. Click the second point.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

To determine the surface area of an object

1. Click Tools, Measure.
2. In the Dimensions flyout, click Engineering Properties.
3. Click the object you want to analyze.

Note

- Since wireframe objects have no surface area, they cannot be analyzed with the Measure command.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

To determine the volume of an object

1. Click Tools, Measure.
2. In the Dimensions flyout, click Engineering Properties.
3. Click the object you want to analyze.

Note

- Only solid objects have volume.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

To determine an object's center of gravity

1. Click Tools, Measure.
2. In the Dimensions flyout, click Engineering Properties.
3. Click the object you want to analyze.

Note

- Only solid objects have a center of gravity.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

To determine the inertial properties of an object

1. Click Tools, Measure.
2. In the Dimensions flyout, click Engineering Properties.
3. Click the object you want to analyze.

Note

- Only solid objects have inertial properties.

{button ,AL(`PRC Getting information about your drawing;',0,"Defaultoverview",)} Related Topics

Viewing system and program information

To view information about your computer

1. Click Help, About CorelCAD.
2. Click System Info.
3. From the Category list box, choose System.

Tip

- You can save system information in a text file by clicking the Save button.

{button ,AL(`PRC Viewing system and program information;',0,"Defaultoverview",)} Related Topics

To view information about your monitor

1. Click Help, About CorelCAD.
2. Click System Info.
3. From the Category list box, choose Display.

Tip

- You can save system information in a text file by clicking the Save button.

{button ,AL(`PRC Viewing system and program information;',0,"Defaultoverview",)} Related Topics

To view information about available printers

1. Click Help, About CorelCAD.
2. Click System Info.
3. From the Category list box, choose Printing.

Tip

- You can save system information in a text file by clicking the Save button.

{button ,AL(`PRC Viewing system and program information;',0,"Defaultoverview",)} Related Topics

To view general information about CorelCAD

- Click Help, About CorelCAD.

{button ,AL(`PRC Viewing system and program information;',0,"Defaultoverview",)} Related Topics

Working with dimensions

Using absolute and relative XYZ coordinates

To define a point using absolute XYZ coordinates

1. Click Tools, Insert Point Roll-Up.
2. Click the XYZ Coordinates tab.
3. Click Absolute.
4. Type your coordinates in the X, Y, and Z boxes.
5. Click Apply.

Tip

- You can use the Insert Point roll-up whenever you are prompted to select a point with the mouse. This gives you much greater control over the position of the resulting point. Press the INS key to quickly launch the roll-up.

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;',0,"Defaultoverview",)} Related Topics

To define a point using XYZ coordinates relative to a previous point

1. Select a point in your drawing.
2. Click Tools, Insert Point Roll-Up.
3. Click the XYZ Coordinates tab.
4. Click Relative.
5. Type your coordinates in the X, Y, and Z boxes.
6. Click Apply.

Tip

- You can use the Insert Point roll-up whenever you are prompted to select a point with the mouse. This gives you much greater control over the position of the resulting point. Press the INS key to quickly launch the roll-up.

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;',0,"Defaultoverview",)} Related Topics

To define a point using XYZ coordinates relative to a selected point

1. Click Tools, Insert Point Roll-Up.
2. Click the XYZ Coordinates tab.
3. Click Offset.
4. Type your coordinates in the X, Y, and Z boxes.
5. Click Apply.
6. Select the origin point for the offset.

Tip

- You can use the Insert Point roll-up whenever you are prompted to select a point with the mouse. This gives you much greater control over the position of the resulting point. Press the INS key to quickly launch the roll-up.

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;',0,"Defaultoverview",)} Related Topics

To define a point in 3D space using the mouse

1. Position the mouse at the correct coordinates in the current plane.
2. Hold down the CTRL and SHIFT keys, and drag the pointer into a new plane.

Tip

- To help visualize the position of your object, try switching view modes when you are defining 3D points (See Related Topics).

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;PRC Changing the view;',0,"Defaultoverview",)} Related Topics

Using polar or spherical coordinates

To define a point using absolute polar coordinates

1. Click Tools, Insert Point Roll-Up.
2. Click the Polar Coordinates tab.
3. Click Absolute.
4. Type the Length and angle coordinates in the appropriate boxes.
5. Click Apply.

Tip

- You can use the Insert Point roll-up whenever you are prompted to select a point with the mouse. This gives you much greater control over the position of the resulting point. Press the INS key to quickly launch the roll-up.

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;',0,"Defaultoverview",)} Related Topics

To define a point using polar coordinates relative to a previous point

1. Select a point in your drawing.
2. Click Tools, Insert Point Roll-Up.
3. Click the Polar Coordinates tab.
4. Click Relative.
5. Type the length and angle coordinates in the appropriate boxes.
6. Click Apply.

Tip

- You can use the Insert Point roll-up whenever you are prompted to select a point with the mouse. This gives you much greater control over the position of the resulting point. Press the INS key to quickly launch the roll-up.

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;',0,"Defaultoverview",)} Related Topics

To define a point using polar coordinates relative to a selected point

1. Click Tools, Insert Point Roll-Up.
2. Click the Polar Coordinates tab.
3. Click Offset.
4. Type the length and angle coordinates in the appropriate boxes.
5. Click Apply.
6. Select the origin point for the offset.

Tip

- You can use the Insert Point roll-up whenever you are prompted to select a point with the mouse. This gives you much greater control over the position of the resulting point. Press the INS key to quickly launch the roll-up.

{button ,AL(`PRC Using absolute and relative XYZ coordinates;PRC Using polar or spherical coordinates;',0,"Defaultoverview",)} Related Topics

Working with dimensions

To insert a dimension measuring the direct distance between two points

1. From the Dimensions flyout, click the Free Dimension tool.
2. Click the first point.
3. Click the second point.
4. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To insert a series of linear dimensions

1. From the Dimensions flyout, click the Continuous Linear Dimension tool.
2. Click the points defining the distances you want to measure.
3. Double-click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To insert a series of cumulative linear dimensions

1. From the Dimensions flyout, click the Continuous Baseline Dimension tool.
2. Click the points defining the distances you want to measure.
3. Double-click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To insert a dimension measuring the X-axis distance between two points

1. From the Dimensions flyout, click the X Linear Dimension tool.
2. Click the first point.
3. Click the second point.
4. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To insert a dimension measuring the Y-axis distance between two points

1. From the Dimensions flyout, click the Y Linear Dimension tool.
2. Click the first point.
3. Click the second point.
4. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions ;',0,"Defaultoverview",)} Related Topics

To insert a dimension measuring the Z-axis distance between two points

1. From the Dimensions flyout, click the Z Linear Dimension tool.
2. Click the first point.
3. Click the second point.
4. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions ;',0,"Defaultoverview",)} Related Topics

To insert a dimension measuring the angle between two lines

1. From the Dimensions flyout, click the Angle Dimension tool.
2. Click the intersection point of the two lines.
3. Click the endpoint of the first line.
4. Click the endpoint of the second line.
5. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To insert a dimension measuring the diameter of a circle

1. From the Dimensions flyout, click the Diameter Dimension tool.
2. Click a point on the circumference of the circle.
3. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To insert a dimension measuring the radius of a circle

1. From the Dimensions flyout, click the Radius Dimension tool.
2. Click a point on the circumference of the circle.
3. Click a location for the dimension text.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To change the dimension options

1. Click Dimension, Dimension Roll-up.
2. Edit the General, Units, and Fonts options.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

To turn dynamic dimensioning on and off

1. Click Dimension, Dimension Roll-up.
2. Click the General tab.
3. Enable or disable the Dynamic Dimensioning option.

Note

- When Dynamic Dimensioning is on, dimensions assigned to objects change when the objects change. When the option is turned off, dimensions are static.

{button ,AL(`PRC Working with dimensions;',0,"Defaultoverview",)} Related Topics

Viewing your drawings

Changing the view

To get a perspective view of your drawing

1. Activate the Standard 2 toolbar if it is not visible (see Related Topics).
2. From the View list box, Click Perspective.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To get an isometric view of your drawing

1. Activate the Standard 2 toolbar if it is not visible (see Related Topics).
2. From the View list box, Click Isometric.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To get a parallel view of your drawing

1. Activate the Standard 2 toolbar if it is not visible (see Related Topics).
2. From the View list box, Click Parallel.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To switch to a pre-set viewpoint

1. Activate the Standard 2 toolbar if it is not visible (see Related Topics).
2. From the View list box, Click the name of the viewpoint you want to use.

Note

- CorelCAD comes with six pre-set viewpoints: Front, Back, Top, Bottom, Right Side and Left Side. You can create custom viewpoints using the View Manager.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To adjust the viewpoint position

1. Activate the View toolbar if it is not visible (see Related Topics).
2. Use one of the following four buttons to adjust the viewpoint:
   The Move Viewer Left button shifts the viewpoint to the left.
   The Move Viewer Right button shifts the viewpoint to the right.
   The Move Viewer Up button shifts the viewpoint upwards.
   The Move Viewer Down button shifts the viewpoint downwards.

Tip

- You can change the viewpoint step rate from the Tool Properties dialog box. Right-click on one of the View tools to open the dialog box.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To adjust the viewpoint angle

1. Activate the View toolbar if it is not visible (see Related Topics).
2. Use the Move Viewer Clockwise button to rotate the viewpoint clockwise.
   Use the Move Viewer Counter Clockwise button to rotate the viewpoint clockwise.

Tip

- You can change the viewpoint step rate from the Tool Properties dialog box. Right-click on one of the View tools to open the dialog box.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To adjust the viewpoint distance

1. Activate the View toolbar if it is not visible (see Related Topics).
2. Use the Move Viewer Closer button to move the viewpoint closer to the objects in your drawing.
   Use the Move Viewer Away button to move the viewpoint away from the objects in your drawing.

Tip

- You can change the viewpoint step rate from the Tool Properties dialog box. Right-click on one of the View tools to open the dialog box.

{button ,AL(`PRC Changing the view;To display an existing toolbar;PRC Changing the view magnification;',0,"Defaultoverview",)} Related Topics

To adjust the viewpoint position in 3D space

1. Activate the View toolbar if it is not visible (see Related Topics).
2. Click the Rotate 3D View button.
3. Click a point in your drawing, and drag the working plane to the desired angle. Use the appearing axes for reference.

Tip

- You can change the distance from the viewed objects by holding down the ALT key while using this command.
- You can change the focal length by holding down the CTRL key while using this command.

{button ,AL(`PRC Changing the view;To display an existing toolbar;',0,"Defaultoverview",)} Related Topics

To save the current view settings

1. Click View, Save Current View.
2. Enter a name for the new view.

{button ,AL(`PRC Changing the view;',0,"Defaultoverview",)} Related Topics

To update a saved view with the current view settings

1. Click View, View Manager.
2. Select the view you want to update.
3. Click Update.

{button ,AL(`PRC Changing the view;',0,"Defaultoverview",)} Related Topics

To rename a saved view

1. Click View, View Manager.
2. Select the view you want to rename.
3. Click the name of the selected view.
4. Enter a new name for the current view in the box that appears

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{button ,AL(`PRC Changing the view;',0,"Defaultoverview",)} Related Topics

To delete a saved view

1. Click View, View Manager.
2. Select the view you want to delete.
3. Click Delete.

{button ,AL(`PRC Changing the view;',0,"Defaultoverview",)} Related Topics

Using windows and window layouts

To tile all open windows vertically

- Click Window, Tile Vertical.

{button ,AL(`PRC Using windows and window layouts;',0,"Defaultoverview",)} Related Topics

To tile all open windows horizontally

- Click Window, Tile Horizontal.

{button ,AL(`PRC Using windows and window layouts;',0,"Defaultoverview",)} Related Topics

To cascade all open drawing windows

- Click Window, Cascade.

{button ,AL(`PRC Using windows and window layouts;',0,"Defaultoverview",)} <u>Related Topics</u>

To activate an open drawing window

- Click Window, the desired drawing name.

{button ,AL(`PRC Using windows and window layouts;',0,"Defaultoverview",)} Related Topics

To save the current window layout

1. Click Window, Save Window Layout.
2. Enter a name for the new window layout.

{button ,AL(`PRC Using windows and window layouts;',0,"Defaultoverview",)} Related Topics

To restore a saved window layout

1. Click Window, Open Window Layout.
2. Choose the saved layout you want to restore.

{button ,AL(`PRC Using windows and window layouts;',0,"Defaultoverview",)} Related Topics

Shading objects

Removing hidden lines

To remove hidden lines from the current view

1. Click View, Hide.
2. Click Entire View.
3. If you want to preserve text or dimension labels, enable the appropriate Display options.
4. If you want to remove hidden lines from all open windows, enable the All windows option.

{button ,AL(`PRC Removing hidden lines;',0,"Defaultoverview",)} <u>Related Topics</u>

To remove hidden lines from the current selection

1. Click View, Hide.
2. Click Selection.
3. If you want to preserve text or dimension labels, enable the appropriate Display options.
4. If you want to remove hidden lines from all open windows, enable the All windows option.

{button ,AL(`PRC Removing hidden lines;',0,"Defaultoverview",)} Related Topics

To remove hidden lines from a section you define

1. Click View, Hide.
2. Click Section.
3. If you want to preserve text or dimension labels, enable the appropriate Display options.
4. Drag the marquee box around the area you want to preview.

{button ,AL(`PRC Removing hidden lines;',0,"Defaultoverview",)} Related Topics

To view a silhouette of your drawing

1. Click View, Hide.
2. Enable the Silhouette option.

{button ,AL(`PRC Removing hidden lines;',0,"Defaultoverview",)} Related Topics

Changing the view magnification

To magnify the view of the drawing

1. Open the Zoom flyout.
2. Click the Zoom In tool.
3. Drag a box around the area you want to magnify.

Tip

- You can also access the Zoom In tool by pressing the F2 key.

{button ,AL(`PRC Changing the view magnification;',0,"Defaultoverview",)} Related Topics

To reduce the current magnification

1. Open the Zoom flyout.
2. Click the Zoom Out tool.
3. Click the center of your drawing.

Tip

- You can also access the Zoom Out tool by pressing the F3 key.

{button ,AL(`PRC Changing the view magnification;',0,"Defaultoverview",)} Related Topics

To zoom in on selected objects

1. Open the Zoom flyout.
2. Click the Zoom To Selected tool.

{button ,AL(`PRC Changing the view magnification;',0,"Defaultoverview",)} Related Topics

To zoom in on all objects in the drawing window

1. Open the Zoom flyout.
2. Click the Zoom To All Objects tool.

Tip

- You can also access the Zoom To All Objects tool by pressing the F4 key.

{button ,AL(`PRC Changing the view magnification;',0,"Defaultoverview",)} Related Topics

To return to the previous magnification level

1. Open the Zoom flyout.
2. Click the Zoom Previous tool.

{button ,AL(`PRC Changing the view magnification;',0,"Defaultoverview",)} Related Topics

Selecting and positioning objects

Selecting objects

To select a single object

1. Click the Pick tool.
2. Click the object you wish to select.

Note

- You must click the edges of surfaces and solids in order to select them.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

To select several objects one at a time

1. Click the Pick tool.
2. Click the first object you wish to select.
3. SHIFT + click any other objects you wish to add to the selection.

Note

- You must click the edges of surfaces and solids in order to select them.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

To select a group of objects

1. Click the Pick tool.
2. Drag the marquee box around the objects you wish to select.
3. Release the mouse button when all desired objects are within the marquee.

Note

- You must drag the marquee box entirely around the objects. If any part of an object is outside the marquee box, it will not be selected.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

To select all objects on a given layer

1. Click Edit, Select by Layers.
2. Click an object on the layer you want to select.

Note

- You must click the edges of surfaces and solids in order to select them.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

To select all objects in a drawing

- Click Edit, Select All.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

To deselect an object from several selected objects

1. Click the Pick tool.
2. Select a group of objects (See Related Topics).
3. SHIFT + click the object you wish to deselect.

Note

- You must click the edges of surfaces and solids in order to select them.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

To deselect all objects

1. Click the Pick tool.
2. Click anywhere in the drawing window.

{button ,AL(`PRC Selecting objects;',0,"Defaultoverview",)} Related Topics

Moving, copying, and deleting objects

To move an object to new coordinates

1. Select the object you want to move.
2. Click Transform, Move.
3. Enable the Absolute option.
4. Type the appropriate values in the coordinate boxes.

   For example, if you are using XYZ coordinates, and you want to move your object to the origin, type 0 in all three coordinate boxes.
5. Click the point on your object that you want to align to the new location.
6. Click Apply.

Tip

- To more accurately select points on your object such as corners, centers, or line intersections, use the Snap tools (See Related Topics).

{button ,AL(`PRC Moving copying and deleting objects;PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To move an object an exact distance relative to its original position

1. Select the object you want to move.
2. Click Transform, Move.
3. Enable the Relative option.
4. Type the appropriate values in the coordinate boxes.
   For example, if you are using XYZ coordinates, and you want to move your object 1 inch up (along the Z axis), type 1 in the Z coordinate box.
5. Click Apply twice.

{button ,AL(`PRC Moving copying and deleting objects;',0,"Defaultoverview",)} Related Topics

To move an object to a new location relative to a point in your drawing

1. Select the object you want to move.
2. Click Transform, Move.
3. Click the point on your object that you want to align to the new location.
4. Enable the Offset option.
5. Type the appropriate values in the coordinate boxes.

   For example, if you are using XYZ coordinates, and you want to move your object to a point one inch above an existing object, type 1 in the Z coordinate box.
6. Click Apply.
7. Click the point in your drawing that you want to use as the origin for the offset.

Tip

- To more accurately select points on your object such as corners, centers, or line intersections, use the Snap tools (See Related Topics).

{button ,AL(`PRC Moving copying and deleting objects;PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To move an object using the mouse

1. Select the object you want to move.
2. Click Transform, Move.
3. Click a point on or near your object that is convenient to use as a handle.
4. Move the silhouette to the new location and click.

Tip

- To more accurately select points on your object such as corners, centers, or line intersections, use the Snap tools (See Related Topics).

{button ,AL(`PRC Moving copying and deleting objects;PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To move an object using the keyboard

1. Select the object you want to move.
2. Use the arrow keys to position the object. To move an object along the vertical axis, hold down the CTRL and SHIFT keys.

Tip

- You can make larger steps by holding down the ALT key at the same time.

{button ,AL(`PRC Moving copying and deleting objects;To change the cursor step rate;',0,"Defaultoverview",)} Related Topics

To move an object and leave a copy behind

1. Select the object you want to move.
2. Click Transform, Move.
3. Enable the Apply to Duplicate option.
4. Move the object to its new location (See Related Topics).

Tip

- You can toggle the Apply to Duplicate option by clicking the right mouse button while the Move command is active.

{button ,AL(`PRC Moving copying and deleting objects;',0,"Defaultoverview",)} Related Topics

To copy and paste an object to a new location

1. Select the object you want to copy.
2. Click Edit, Copy.
3. Click Edit, Paste.
4. Move the silhouette to the new location and click.

Tip

- You can create multiple copies of your object by repeating steps 3 and 4.

{button ,AL(`PRC Moving copying and deleting objects;',0,"Defaultoverview",)} Related Topics

To cut and paste an object

1. Select the object you want to move.
2. Click Edit, Cut.
3. Click Edit, Paste.
4. Move the silhouette to the new location and click.

{button ,AL(`PRC Moving copying and deleting objects;',0,"Defaultoverview",)} Related Topics

To delete an object

1. Select the object you want to delete.
2. Click Edit, Delete.

{button ,AL(`PRC Moving copying and deleting objects;',0,"Defaultoverview",)} Related Topics

Grouping objects

To group objects

1. Select the objects you want to group.
2. Click Transform, Group.

Note

- You can combine existing groups of objects into nested groups.

{button ,AL(`PRC Grouping objects;',0,"Defaultoverview",)} Related Topics

To ungroup objects

1. Select the group you want to break up.
2. Click Transform, Ungroup.

Note

- When you ungroup a nested group, only the last nesting level is ungrouped.

{button ,AL(`PRC Grouping objects;',0,"Defaultoverview",)} Related Topics

Working with layers

To add a new layer

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. Click New.
4. In the Layer Name box, type a name for the new layer.
5. In the Description box, type a description of the new layer.
6. Set the Visible, Printable, Locked, and Color Override options to reflect the way you want the layer to behave.
7. Select a Layer Color or Line Style to differentiate objects on the new layer from objects on other layers.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To delete a layer

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. From the Layer list, choose the layer you want to delete.
4. Click Delete.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To change the active layer

1. Click Tools, Layers.
2. From the Layers flyout, click Set Current Layer.
3. Click an object on the layer you want to activate.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To move an object to another layer

1. Select the object you want to move.
2. Click Tools, Layers.
3. From the Layers flyout, click Move To Layer.
4. Click an existing object on the new layer.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To copy an object to another layer

1. Select the object you want to copy.
2. Click Tools, Layers.
3. From the Layers flyout, click Copy To Layer.
4. Click an existing object on the new layer.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To identify objects on a layer

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. From the Layer list, choose the layer you want to edit.
4. Click Edit.
5. From the Layer Color flyout, choose a new color for the objects on your layer that will stand out in your drawing.

   or

   From the Line Style flyout, choose a new outline style for the objects on your layer.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To rename a layer

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. From the Layer list, choose the layer you want to edit.
4. Click the current name of the layer.
5. Type a new name for the layer.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To lock a layer

1. Click Tools, Layers.
2. From the Layers flyout, click Lock Layer.
3. Click an object on the layer you want to lock.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To unlock a layer

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. Disable the lock icon beside the layer you want to unlock.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To make a layer invisible

1. Click Tools, Layers.
2. From the Layers flyout, click Make Layer invisible.
3. Click an object on the layer you want to make invisible.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To make a layer visible

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. Enable the visible icon beside the layer you want to make visible.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To make a layer non-printable

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. Disable the printable icon beside the layer you want to make non-printable.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

To make a layer printable

1. Click Tools, Layers.
2. From the Layers flyout, click Layer Manager.
3. Enable the printable icon beside the layer you want to make printable.

{button ,AL(`PRC Working with layers;',0,"Defaultoverview",)} Related Topics

Accurately defining points

Using the Snap tools

To snap to the end point of a line

1. From the Snap flyout, click the Endpoint Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to the middle point of a line

1. From the Snap flyout, click the Midpoint Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to the intersection point of two lines

1. From the Snap flyout, click the Intersection Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to the point where two unconnected lines would intersect if they met

1. From the Snap flyout, click the Implied Intersection Snap tool.
2. Click the first line.
3. Click a second line that angles towards the first.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to the center of a circle

1. From the Snap flyout, click the Circle Center Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to a quadrant of a circle or ellipse

1. From the Snap flyout, click the Circle Quadrant Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to a tangent

1. From the Snap flyout, click the Tangent Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to a perpendicular

1. Start one of the drawing commands, such as Line Segment. Draw the object, but leave one point undefined.
2. From the Snap flyout, click the Perpendicular Snap tool.
3. Move the cursor over a second object until a box appears around a point that will make your partially drawn object perpendicular to the existing object.
4. Click anywhere on the existing object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to a line

1. From the Snap flyout, click the Line Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to a point mark

1. From the Snap flyout, click the Point Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To snap to a plane

1. From the Snap flyout, click the Plane Snap tool.
2. Move the cursor over the object until a box appears around the desired point.
3. Click anywhere on the object while the box is active.

Tip

- If the snap location box does not appear, you might have to change the settings in the Tool Properties dialog box (See Related Topics).

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To set running snaps

1. Right-click on any of the Snap tools.
2. Click Properties.
3. Enable the Snap tools you want to use as running snaps.

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

To show snap location marks

1. Right-click on any of the Snap tools.
2. Click Properties.
3. Enable the Show Snap Location Marks option.

{button ,AL(`PRC Using the Snap tools;',0,"Defaultoverview",)} Related Topics

Working with grids

To change the visible grid spacing

1. Click Tools, Layout.
2. From the Layout flyout, click Grid Setup.
3. Type the new grid width in the Grid Spacing box.

Note

- Changing this value has no effect on the snap grid.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

To change the snap grid spacing

1. Click Tools, Layout.
2. From the Layout flyout, click Grid Setup.
3. Type the new grid width in the Snap Spacing box.

Note

- Changing this value has no effect on the visible grid.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

To change the orientation of the grid

1. Click Tools, Layout.
2. From the Layout flyout, click Grid Setup.
3. From the Grid Plane list, choose the new orientation. The default orientation is the X-Y plane.
4. Type an new origin in the number box. The default origin is 0.

Tip

- If you have trouble visualizing the objects in your drawing, try the Real Time grid orientation.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

To change the origin of the grid

1. Click Tools, Layout.
2. Click Set Grid Origin.
3. Click the new grid origin point.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

To change the color of the grid

1. Click Tools, Layout.
2. From the Layout flyout, click Grid Setup.
3. Click the Grid color button.
4. Choose a new grid color from the palette.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

To enable or disable the grid snap

1. Click Tools, Layout.
2. Click Snap To Grid.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

To display or hide the grid

1. Click Tools, Layout.
2. Click Show Grid.

{button ,AL(`PRC Working with grids;',0,"Defaultoverview",)} Related Topics

Drawing in Orthogonal mode

To turn on and off the orthogonal mode

1. Click Tools, Layout.
2. Click Orthogonal Mode.

Tip

- You can change the orientation of the orthogonal axes in the Options dialog box (See Related Topics).

{button ,AL(`PRC Drawing in Orthogonal mode;To change the orthogonal axes;',0,"Defaultoverview",)} Related Topics

Creating objects

Creating lines and arrows

To draw a straight line

1. In the Line flyout, click the Line Segments tool.
2. Click the starting point of the line.
3. Click the ending point of the line.
4. Press the ENTER key.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

To draw a series of unconnected lines

1. In the Line flyout, click the Line Segments tool.
2. Click the starting point of the line.
3. Click the ending point of the line.
4. Continue drawing lines until you have the desired shape.
5. Press the ENTER key.

Note

- The lines drawn with this tool are individual segments touching, but not joined, at their end points. You can select and manipulate each line as a separate entity.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

To draw a series of joined lines

1. In the Line flyout, click the PolyLine tool.
2. Click the starting point of the line.
3. Click the ending point of the line.
4. Continue drawing lines until you have the desired shape.
5. Press the ENTER key.

Note

- The lines drawn with this tool form a single, continuous object that you can select and manipulate as a single entity.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

To draw a straight line with an arrowhead

1. In the Line flyout, click the Arrow Line tool.
2. Click the starting point of the line.
3. Click the ending point of the line.
4. Press the ENTER key.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

To draw a series of joined lines ending in an arrowhead

1. In the Line flyout, click the Arrow Line tool.
2. Click the starting point of the line.
3. Click the ending point of the line.
4. Continue drawing lines until you have the desired shape.
5. Press the ENTER key.

Note

- The lines drawn with this tool form a single, continuous object that you can select and manipulate as a single entity.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

To draw a line at the intersection of two existing planes

1. In the Line flyout, click the Intersecting Line tool.
2. Click a point on an existing plane.
3. Click a point on a second plane that intersects the first.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

To change the arrowhead size and style

1. In the Line flyout, click the Arrow Line tool.
2. Right-click the Arrow Line tool.
3. Click Properties.
4. Type the new arrow size in the Arrow size box.
5. Choose a new arrow style from the Style list.

{button ,AL(`PRC Creating lines and arrows;',0,"Defaultoverview",)} Related Topics

Creating curves

To draw a curved line joining a series of points

1. In the Line flyout, click the Curve tool.
2. Click at least three points for the curve to follow.
3. Press the ENTER key.

{button ,AL(`PRC Creating curves;',0,"Defaultoverview",)} Related Topics

To draw a Bezier curve

1. In the Line flyout, click the Bezier Segments tool.
2. Click the starting point of your curve.
3. Click a control point for this part of the curve.
4. Click the ending point of your curve.
5. Click a control point for this part of the curve.
6. Press the ENTER key.

{button ,AL(`PRC Creating curves;',0,"Defaultoverview",)} Related Topics

To draw a series of unconnected Bezier curves

1. In the Line flyout, click the Bezier Segments tool.
2. Click the starting point of your curve.
3. Click a control point for this part of the curve.
4. Click the ending point of your curve.
5. Click a control point for this part of the curve.
6. Continue drawing curves until you have the desired shape.
7. Press the ENTER key.

Note

- The curves drawn with this tool are individual segments that touch, but are not joined, at their end points. You can select and manipulate each curve as a separate entity.

{button ,AL(`PRC Creating curves;',0,"Defaultoverview",)} Related Topics

To draw a series of joined Bezier curves

1. In the Line flyout, click the Bezier Curve tool.
2. Click the starting point of your curve.
3. Click a control point for this part of the curve.
4. Click the ending point of your curve.
5. Click a control point for this part of the curve.
6. Continue drawing curves until you have the desired shape.
7. Press the ENTER key.

Note

- The curves drawn with this tool form a single, continuous object that you can select and manipulate as a single entity.

{button ,AL(`PRC Creating curves;',0,"Defaultoverview",)} Related Topics

To create a freehand curve

1. In the Line flyout, click the Freehand tool.
2. Hold down the mouse button and draw in the window. Release the mouse button to stop drawing.

{button ,AL(`PRC Creating curves;',0,"Defaultoverview",)} Related Topics

Creating arcs

To create an arc along three points

1. In the Arc flyout, click the Arc Through 3 Points tool.
2. Click the start point of the arc.
3. Click a point along the arc.
4. Click the end point of the arc.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

To create an arc by defining its center, starting point, and angle

1. In the Arc flyout, click the Arc Center, Start, Angle tool.
2. Type the angle through which you want the arc to traverse.
3. Click the center point of the arc.
4. Click the starting point of the arc.
5. Click a point on the arc's plane of orientation.

Tips

- To position the arc on a plane other than the working plane, use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to drag the arc into a new plane (See Related Topics).

{button ,AL(`PRC Creating arcs;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To create an arc by defining its end points and radius

1. In the Arc flyout, click the Arc Radius, End Points tool.
2. Type the radial length of the arc.
3. Click the starting point of the arc.
4. Click the ending point of the arc.
   The two points must be close enough to fall on a circle with the specified radius
5. Click the side of the arc nearest to where the center should be located.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

To create an arc by defining its center and end points

1. In the Arc flyout, click the Arc Center, Start, End tool.
2. Click the center point of the arc.
3. Click the starting point of the arc.
4. Click the ending point of the arc.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

To create an elliptical arc

1. In the Arc flyout, click the Elliptical Arc tool.
2. Click the center of the ellipse.
3. Click the end point of the ellipse's major axis.
4. Adjust the silhouette and click when the ellipse is the correct shape.
5. Click the starting point of the arc.
6. Click the ending point of the arc.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

To draw a simple wire arc

1. Right-click on any of the arc tools.
2. Click Properties.
3. Enable the Wire option.

Note

- This option sets the default for arcs drawn with any of the arc tools.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

To draw a wedge arc

1. Right-click on any of the arc tools.
2. Click Properties.
3. Enable the Surface center option.

Note

- This option sets the default for arcs drawn with any of the arc tools.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

To draw a truncated arc

1. Right-click on any of the arc tools.
2. Click Properties.
3. Enable the Surface End Points option.

Note

- This option sets the default for arcs drawn with any of the arc tools.

{button ,AL(`PRC Creating arcs;',0,"Defaultoverview",)} Related Topics

Creating rectangular shapes and solids

To draw a two-dimensional rectangle

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Rectangle tab.
3. Click the Vector button if you want a wireframe rectangle, or click the Plane button if you want a rectangular plane.
4. Click the Select Two Points button.
5. Click the first corner point of the rectangle.
6. Click the second corner point of the rectangle.

Tip

- You can define an exact width or length by enabling the Width and Length options and typing the measurements.

{button ,AL(`PRC Creating rectangular shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a rectangular box

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Rectangle tab.
3. Click the Surface Model button if you want a hollow box with no volume, or click the Solid button if you want a solid box or prism.
4. Click the Select Two Points button.
5. Click the Box button.
6. Click the first corner point of the box.
7. Click the second corner point of the box. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space (See Related Topics).

Tip

- You can define an exact width or length by enabling the Width and Length options and typing the measurements.
- You can also define an exact height by selecting the Height option from the Set list and typing a measurement.

{button ,AL(`PRC Creating rectangular shapes and solids;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To draw a pyramid with a rectangular base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Rectangle tab.
3. Click the Surface Model button if you want a hollow pyramid with no volume, or click the Solid button if you want a solid prism.
4. Click the Select Two Points button.
5. Click the Pyramid button.
6. Click the first corner point of the pyramid's base.
7. Click the second corner point of the pyramid's base.
8. Click the vertex of the pyramid. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space (See Related Topics).

Tip

- You can define an exact width or length for the pyramid's base by enabling the Width and Length options and typing the measurements.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating rectangular shapes and solids;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To draw a truncated pyramid with a rectangular base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Rectangle tab.
3. Click the Surface Model button if you want a hollow frustum with no volume, or click the Solid button if you want a solid prism.
4. Click the Select Two Points button.
5. Click the Frustum button.
6. Click the first corner point of the frustum's base.
7. Click the second corner point of the frustum's base.
8. Adjust the height. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space (See Related Topics).
9. Adjust the size of the frustum's peak.

Tip

- You can define an exact width or length for the frustum's base by enabling the Width and Length options and typing the measurements.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating rectangular shapes and solids;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

Creating circular shapes and solids

To draw a two-dimensional circle

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Circle tab.
3. Click the Vector button if you want a wireframe circle, or click the Plane button if you want a circular plane.
4. Click the Select Center and Radius button.
5. Click the center of the circle.
6. Click a point on the circumference of the circle.
7. If you want to tilt the circle off the default working plane, hold down the CTRL and SHIFT keys and drag the circle to the correct angle.

Tip

- You can define an exact radius by enabling the Radius option and typing a measurement.

{button ,AL(`PRC Creating circular shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a sphere

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Circle tab.
3. Click the Surface Model button if you want a hollow sphere with no volume, or click the Solid button if you want a solid sphere.
4. Click the Select Center and Radius button.
5. Click the Sphere button.
6. Click the center of the sphere.
7. Click a point on the circumference of the sphere.

Tip

- You can define an exact radius by enabling the Radius option and typing a measurement.

{button ,AL(`PRC Creating circular shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a hemisphere

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Circle tab.
3. Click the Surface Model button if you want a hollow hemisphere with no volume, or click the Solid button if you want a solid hemisphere.
4. Click the Select Center and Radius button.
5. Click the Hemisphere button.
6. Click the center of the hemisphere's base.
7. Click a point on the circumference of the hemisphere's base.
8. Click a point on the side of the base where you want the hemisphere to protrude.

Tip

- You can define an exact radius by enabling the Radius option and typing a measurement.

{button ,AL(`PRC Creating circular shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a cylinder

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Circle tab.
3. Click the Surface Model button if you want a hollow cylinder with no volume, or click the Solid button if you want a solid cylinder.
4. Click the Select Center and Radius button.
5. Click the Cylinder button.
6. Click the center of the cylinder's base.
7. Click a point on the circumference of the cylinder's base.
8. Drag the cylinder to the correct height, and click.

Tip

- You can define an exact radius for the cylinder's base by enabling the Radius option and typing a measurement.
- You can also define an exact height by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating circular shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a cone

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Circle tab.
3. Click the Surface Model button if you want a hollow cone with no volume, or click the Solid button if you want a solid cone.
4. Click the Select Center and Radius button.
5. Click the Cone button.
6. Click the center of the cone's base.
7. Click a point on the circumference of the cone's base.
8. Drag the cone to the correct height, and click.

Tip

- You can define an exact radius for the cone's base by enabling the Radius option and typing a measurement.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating circular shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a truncated cone

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Circle tab.
3. Click the Surface Model button if you want a hollow cone with no volume, or click the Solid button if you want a solid cone.
4. Click the Select Center and Radius button.
5. Click the Frustum button.
6. Click two points forming the center and diameter of the cone's base.
7. Drag the cone silhouette to the correct height, and click.
8. Adjust the peak diameter for the frustum, and click.

Tip

- You can define an exact radius for the frustum's base by enabling the Radius option and typing a measurement.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating circular shapes and solids;',0,"Defaultoverview",)} Related Topics

Creating polygonal shapes and solids

To draw a two-dimensional polygon

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Polygon tab.
3. Click the Vector button if you want a wireframe polygon, or click the Plane button if you want a polygonal plane.
4. Click the Select Center and Vertex button.
5. Type the number of sides for the polygon in the Number of Edges box.
6. Click the center of the polygon.
7. Click one of the polygon's vertices.
8. Click the polygon's plane of orientation. Hold down the Control and Shift keys to pick a plane other than the working plane.

Tip

- You can define an exact dimension by enabling the Distance option and typing a measurement.

{button ,AL(`PRC Creating polygonal shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a cylinder with a polygonal base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Polygon tab.
3. Click the Surface Model button if you want a hollow cylinder with no volume, or click the Solid button if you want a solid cylinder.
4. Type the number of sides for the cylinder's base in the Number of Edges box.
5. Click the Cylinder button.
6. Click the center of the cylinder's base.
7. Click a vertex point for the cylinder's base.
8. Drag the cylinder to the correct height, and click.

Tip

- You can define an exact dimension for the cylinder's base by enabling the Distance option and typing a measurement.
- You can also define an exact height by selecting the Height option from the Set list and typing a measurement.

{button ,AL(`PRC Creating polygonal shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a pyramid with a polygonal base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Polygon tab.
3. Click the Surface Model button if you want a hollow pyramid with no volume, or click the Solid button if you want a solid pyramid.
4. Type the number of sides for the pyramid's base in the Number of Edges box.
5. Click the Pyramid button.
6. Click the center of the pyramid's base.
7. Click a vertex point for the pyramid's base.
8. Drag the pyramid to the correct height, and click.

Tip

- You can define an exact dimension for the pyramid's base by enabling the Distance option and typing a measurement.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating polygonal shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a truncated pyramid with a polygonal base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Polygon tab.
3. Click the Surface Model button if you want a hollow pyramid with no volume, or click the Solid button if you want a solid pyramid.
4. Type the number of sides for the pyramid's base in the Number of Edges box.
5. Click the Frustum button.
6. Click the center of the frustum's base, and one vertex point.
7. Drag the cone silhouette to the correct height, and click.
8. Adjust the peak diameter of the frustum, and click.

Tip

- You can define an exact dimension for the frustum's base by enabling the Distance option and typing a measurement.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating polygonal shapes and solids;',0,"Defaultoverview",)} Related Topics

Creating elliptical shapes and solids

To draw a two-dimensional ellipse

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Ellipse tab.
3. Click the Vector button if you want a wireframe ellipse, or click the Plane button if you want a elliptical plane.
4. Click the center of the ellipse.
5. Click the endpoint of the ellipse's major axis.
6. Adjust the silhouette and click when the ellipse's minor axis is the correct length.

   Or,

   Enable the Axis options, and type the exact dimensions.

{button ,AL(`PRC Creating elliptical shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw an elliptical cylinder

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Ellipse tab.
3. Click the Surface Model button if you want a hollow cylinder with no volume, or click the Solid button if you want a solid cylinder.
4. Click the Cylinder button.
5. Click the center of the cylinder's base.
6. Click the endpoint of the base's major axis.
7. Adjust the silhouette and click when the base's minor axis is the correct length.
8. Hold down the CTRL and SHIFT keys, and drag the cylinder to the correct height.

Tip

- You can define exact dimensions for the cylinder's base by enabling the appropriate options and typing the measurements.
- You can also define an exact height by selecting the Height option from the Set list and typing a measurement.

{button ,AL(`PRC Creating elliptical shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a cone with an elliptical base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Ellipse tab.
3. Click the Surface Model button if you want a hollow cylinder with no volume, or click the Solid button if you want a solid cylinder.
4. Click the Cone   button.
5. Click the center of the cone's base.
6. Click the endpoint of the base's major axis.
7. Adjust the silhouette and click when the base's minor axis is the correct length.
8. Hold down the CTRL and SHIFT keys, and drag the cone to the correct height.

Tip

- You can define exact dimensions for the cone's base by enabling the appropriate options and typing the measurements.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating elliptical shapes and solids;',0,"Defaultoverview",)} Related Topics

To draw a truncated cone with an elliptical base

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the Ellipse tab.
3. Click the Surface Model button if you want a hollow cylinder with no volume, or click the Solid button if you want a solid cylinder.
4. Click the Frustum button.
5. Click the center of the frustum's base.
6. Click the endpoint of the base's major axis.
7. Adjust the silhouette and click when the base's minor axis is the correct length.
8. Hold down the CTRL and SHIFT keys, and drag the cone silhouette to the correct height.
9. Adjust the peak diameter for the frustum, and click.

Tip

- You can define exact dimensions for the frustum's base by enabling the appropriate options and typing the measurements.
- You can also define an exact height or taper angle by choosing the appropriate option in the Set list.

{button ,AL(`PRC Creating elliptical shapes and solids;',0,"Defaultoverview",)} Related Topics

Using the 3D Solid tools

To draw a solid box by defining two corners

1. In the 3D Solids flyout, click the 3D Solid, Box, 2 Points tool.
2. Click the first corner of the box.
3. Click the second corner of the box. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space (See Related Topics).

{button ,AL(`PRC Using the 3D Solid tools;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To draw a solid box by defining three base points

1. In the 3D Solids flyout, click the 3D Solid, Box, 3 Points tool.
2. Click the first corner of the box.
3. Click the second corner of the box.
4. Drag the box outline until it is the correct width, then click.
5. Holding down the CTRL and SHIFT keys, drag the outline until it is the correct height, then click.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a solid sphere by defining its center and radius

1. In the 3D Solids flyout, click the 3D Solid, Sphere, Center and Radius tool.
2. Click the center of the sphere.
3. Click a point on the circumference of the sphere.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a solid cylinder with a polygonal base

1. In the 3D Solids flyout, click the 3D Solid, Prism, Center and Vertex tool.
2. Click the center of the cylinder's base.
3. Click a vertex of the base.
4. Drag the top of the prism to the correct height, then click.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a solid hemisphere by defining its center and radius

1. In the 3D Solids flyout, click the 3D Solid, Hemisphere, Center and Radius tool.
2. Click the center of the hemisphere's base.
3. Click a point on the circumference of the hemisphere's base.
4. Drag the preview of the hemisphere to the correct orientation, then click.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a solid cone by defining its center, radius, and height

1. In the 3D Solids flyout, click the 3D Solid, Cone, Center and Radius tool.
2. Click the center of the cone's base.
3. Click a point on the circumference of the cone's base.
4. Drag the cone's apex to the correct height, then click.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a solid frustum by defining its center, radius, and height

1. In the 3D Solids flyout, click the 3D Solid, Frustum, Center and Radius tool.
2. Click the center of the frustum's base.
3. Click a point on the diameter of the frustum's base.
4. Drag the cone silhouette to the correct height, and click.
5. Adjust the peak diameter for the frustum, and click.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a solid cylinder by defining its center, radius, and height

1. In the 3D Solids flyout, click the 3D Solid, Cylinder, Center and Radius tool.
2. Click the center of the cylinder's base.
3. Click a point on the circumference of the cylinder's base.
4. Drag the cylinder to the correct height, then click.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

To draw a torus

1. In the 3D Solids flyout, click the 3D Solid, Torus, Center and Radius tool.
2. Click the absolute center of the torus.
3. Click the center of the torus' tube.
4. Drag the torus to the correct orientation, and click. Change the view to get an accurate idea of the torus' alignment.
5. Click a point defining the radius of the tube.

{button ,AL(`PRC Using the 3D Solid tools;',0,"Defaultoverview",)} Related Topics

Using the 2D Object tools

To draw a rectangle by defining two corners

1. In the 2D Objects flyout, click the Rectangle, 2 Points tool.
2. Enable the Wire option if you want a wireframe rectangle, or the Surface option if you want a rectangular plane with measurable surface area.
3. Click the first corner of the rectangle.
4. Click the second corner of the rectangle.

Tip

- To draw a rectangle that is not orthogonal, use the Rectangle, 3 Points tool (See Related Topics).

{button ,AL(`PRC Using the 2D Object tools;',0,"Defaultoverview",)} Related Topics

To draw a rectangle by defining three corners

1. In the 2D Objects flyout, click the Rectangle, 3 Points tool.
2. Enable the Wire option if you want a wireframe rectangle, or the Surface option if you want a rectangular plane with measurable surface area.
3. Click the first corner of the rectangle.
4. Click the second corner of the rectangle.
5. Click the third corner of the rectangle.

Tip

- To draw an orthogonal rectangle, use the Rectangle, 2 Points tool (See Related Topics).

{button ,AL(`PRC Using the 2D Object tools;',0,"Defaultoverview",)} Related Topics

To draw a polygon by defining two edge points

1. In the 2D Objects flyout, click the Polygon, 2 Adjoining Vertices tool.
2. Enable the Wire option if you want a wireframe polygon, or the Surface option if you want a polygonal plane with measurable surface area.
3. Type the number of sides in the Sides box.
4. Click the first vertex of the polygon.
5. Click the second, adjacent vertex.
6. Drag the polygon to the correct orientation, and click. Hold down the CTRL and SHIFT keys to tilt the object into another plane (See Related Topics).

{button ,AL(`PRC Using the 2D Object tools;To define a point in 3D space using the mouse;',0,"Defaultoverview",)} Related Topics

To draw a polygon by defining its center and the distance to its corners

1. In the 2D Objects flyout, click the Polygon, Center and Vertex tool.
2. Enable the Wire option if you want a wireframe polygon, or the Surface option if you want a polygonal plane with measurable surface area.
3. Type the number of sides in the Sides box.
4. Click the center of the polygon.
5. Click one of the vertices of the polygon.
6. Drag the polygon to the correct orientation, and click. Hold down the CTRL and SHIFT keys to tilt the object into another plane (See Related Topics).

{button ,AL(`PRC Using the 2D Object tools;To define a point in 3D space using the mouse;',0,"Defaultoverview",)} Related Topics

To draw a circle by defining its center and radius

1. In the 2D Objects flyout, click the Circle, Center and Radius tool.
2. Enable the Wire option if you want a wireframe circle, or the Surface option if you want a circular plane with measurable surface area.
3. Click the center of the circle.
4. Click a point on the circle's circumference.
5. Drag the circle to the correct orientation, and click. Hold down the CTRL and SHIFT keys to tilt the object into another plane (See Related Topics).

{button ,AL(`PRC Using the 2D Object tools;To define a point in 3D space using the mouse;',0,"Defaultoverview",)} Related Topics

To draw a circle by defining two points on its circumference

1. In the 2D Objects flyout, click the Circle, 2 Points tool.
2. Enable the Wire option if you want a wireframe circle, or the Surface option if you want a circular plane with measurable surface area.
3. Click a point on the circle's circumference.
4. Click a second point on the circle's circumference.
5. Drag the circle to the correct orientation, and click. Hold down the CTRL and SHIFT keys to tilt the object into another plane (See Related Topics).

{button ,AL(`PRC Using the 2D Object tools;To define a point in 3D space using the mouse;',0,"Defaultoverview",)} Related Topics

To draw a circle by defining three points on its circumference

1. In the 2D Objects flyout, click the Circle, 3 Points tool.
2. Enable the Wire option if you want a wireframe circle, or the Surface option if you want a circular plane with measurable surface area.
3. Click a point on the circle's circumference.
4. Click a second point on the circle's circumference.
5. Click a third point on the circle's circumference.

{button ,AL(`PRC Using the 2D Object tools;',0,"Defaultoverview",)} Related Topics

To draw an ellipse by defining its center and axes

1. In the 2D Objects flyout, click the Ellipse tool.
2. Enable the Wire option if you want a wireframe ellipse, or the Surface option if you want a elliptical plane with measurable surface area.
3. Click the center of the ellipse.
4. Click the endpoint of the ellipse's major axis.
5. Adjust the silhouette and click when the ellipse's minor axis is the correct length.

{button ,AL(`PRC Using the 2D Object tools;',0,"Defaultoverview",)} Related Topics

Creating planes and surface models

To create a surface model based on a regular shape

1. In the 3D Solids flyout, click the Object roll-up button.
2. Click the tab corresponding to the shape you want.
3. Click the Surface Model button.
4. Draw your shape.

{button ,AL(`PRC Creating planes and surface models;',0,"Defaultoverview",)} Related Topics

To create a continuous plane defined by multiple points

1. In the Surfaces flyout, click the Free Form tool.
2. Enable the Wire option if you want an empty outline of your plane, or the Surface option if you want a plane with measurable surface area.
3. Click at least three points defining the corners of your plane. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space (See Related Topics).
4. When you have finished selecting points, press the ENTER key.

Note

- Enabling the Surface option creates a plane that attempts to join your points with a smooth surface. Defining multiple points in 3D space can create very complicated shapes.

{button ,AL(`PRC Creating planes and surface models;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To create a series of touching planes

1. In the Surfaces flyout, click the Multiple Plane tool.
2. Enable the Wire option if you want an empty outline of your plane, or the Surface option if you want a plane with measurable surface area.
3. Disable the Connected option if you want each section of the plane to be a separate object.
4. Click at least three points defining the corners of your plane. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space (See Related Topics).
5. When you have finished selecting points, press the ENTER key.

Note

- Enabling the Surface option creates a plane that attempts to join your points with a smooth surface. Defining multiple points in 3D space can create very complicated shapes.

{button ,AL(`PRC Creating planes and surface models;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To create a plane perpendicular to an existing line

1. In the Surfaces flyout, click the Perpendicular Plane tool.
2. Click the existing line that you want to use to define the plane.
3. Click a point on the line from which you want the plane to originate.

Tip

- You can change the default size of Perpendicular Planes from the Tool Properties dialog box.

{button ,AL(`PRC Creating planes and surface models;',0,"Defaultoverview",)} Related Topics

To create a smooth loft connecting existing lines or curves

1. In the Surfaces flyout, click the Loft tool.
2. Click at least two lines that define the surface.
3. When you have finished selecting lines, press the ENTER key.

{button ,AL(`PRC Creating planes and surface models;',0,"Defaultoverview",)} Related Topics

To create a skin connecting existing lines or curves

1. In the Surfaces flyout, click the Skin tool.
2. Click at least two lines that define the surface.
3. When you have finished selecting lines, press the ENTER key.

{button ,AL(`PRC Creating planes and surface models;',0,"Defaultoverview",)} Related Topics

Transforming objects

Scaling objects

To scale an object

1. Select the object you want to scale.
2. Click Transform, Scale.
3. Enter the scale factor in the Scale box. To double the object's size, enter 2. To halve its size, enter 0.5.
4. If you want to leave the original object the way it was and Scale a duplicate instead, enable the Leave Original option.
5. Click a point on or around the object that you want to use as a reference for the scale.

Note

- The point you choose as a reference will remain constant when the object scales. If you choose a point that is not on the object, the object will be moved to a new position (as a result of scaling the distance between the object and the reference point). If you click Apply rather than a reference point, the object will scale from the origin (0,0,0).

{button ,AL(`PRC Scaling objects;',0,"Defaultoverview",)} Related Topics

Mirroring objects

To mirror a 2 dimensional object

1. Select the object you want to mirror.
2. Click Transform, Mirror.
3. Enable the 2 Points option.
4. If you want to leave the original object the way it was and Mirror a duplicate instead, enable the Leave Original option.
5. Click the starting point of the line through which you want to mirror your object.
6. Click the ending point of the line.

{button ,AL(`PRC Mirroring objects;',0,"Defaultoverview",)} Related Topics

To mirror a 3 dimensional object through an orthogonal plane

1. Select the object you want to mirror.
2. Click Transform, Mirror.
3. Enable the Parallel To option.
4. Choose one of the orthogonal planes from the drop-down list. The mirror plane will be parallel to the plane you select.
5. If you want to leave the original object the way it was and Mirror a duplicate instead, enable the Leave Original option.
6. Click a point on the plane through which you want to mirror your object.

Tip

- Click Apply if you want to mirror the object through the orthogonal plane itself, rather than a plane parallel to it.

{button ,AL(`PRC Mirroring objects;',0,"Defaultoverview",)} Related Topics

To mirror a 3 dimensional object through a plane defined by three points

1. Select the object you want to mirror.
2. Click Transform, Mirror.
3. Enable the 3 Points option.
4. If you want to leave the original object the way it was and Mirror a duplicate instead, enable the Leave Original option.
5. Click three points defining the plane through which you want to mirror your object. Use the Insert Point roll-up, or hold down the Shift and Control keys to define a point in 3D space (See Related Topics).

{button ,AL(`PRC Mirroring objects;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To mirror a 3 dimensional object through a plane defined by a normal line

1. Select the object you want to mirror.
2. Click Transform, Mirror.
3. Enable the Plane Normal to 2 Points option.
4. If you want to leave the original object the way it was and Mirror a duplicate instead, enable the Leave Original option.
5. Click two points defining a line normal to the plane through which you want to mirror your object. Use the Insert Point roll-up, or hold down the Shift and Control keys to define a point in 3D space (See Related Topics).

{button ,AL(`PRC Mirroring objects;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

Rotating objects

To rotate a two-dimensional object

1. Select the object you want to rotate.
2. Click Transform, Rotate.
3. Enable the One Point option.
4. If you want to leave the original object the way it was and Rotate a duplicate instead, enable the Leave Original option.
5. Enter the angle of rotation in the Angle box.
6. Click the point around which you want to rotate the object.

{button ,AL(`PRC Rotating objects;',0,"Defaultoverview",)} Related Topics

To rotate a three-dimensional object around an orthogonal axis

1. Select the object you want to rotate.
2. Click Transform, Rotate.
3. Enable the About Axis option.
4. Choose one of the orthogonal axes from the drop-down list. The axis of rotation will be parallel to the axis you select.
5. If you want to leave the original object the way it was and Rotate a duplicate instead, enable the Leave Original option.
6. Enter the angle of rotation in the Angle box.
7. Click Apply.

{button ,AL(`PRC Rotating objects;',0,"Defaultoverview",)} Related Topics

To rotate a three-dimensional object around a line

1. Select the object you want to rotate.
2. Click Transform, Rotate.
3. Enable the 2 Points option.
4. If you want to leave the original object the way it was and Rotate a duplicate instead, enable the Leave Original option.
5. Enter the angle of rotation in the Angle box.
6. Click two points define the axis of rotation. Use the Insert Point roll-up, or hold down the Shift and Control keys to define a point in 3D space (See Related Topics).

{button ,AL(`PRC Rotating objects;PRC Accurately defining points;',0,"Defaultoverview",)} Related Topics

To rotate a three-dimensional around an axis normal to a plane

1. Select the object you want to rotate.
2. Click Transform, Rotate.
3. Enable the Axis Normal to a Plane option.
4. If you want to leave the original object the way it was and Rotate a duplicate instead, enable the Leave Original option.
5. Enter the angle of rotation in the Angle box.
6. Click three points to define a plane.
7. Click a point on the plane through which you want the normal axis to pass.

{button ,AL(`PRC Rotating objects;',0,"Defaultoverview",)} Related Topics

Creating offsets, duplicates, and arrays of objects

To offset a two-dimensional wireframe object

1. Click Transform, Offset.
2. Enter the distance between offsets in the Offset box.
3. Enter the number of offset duplicates in the Copies box.
4. Click the object you want to offset.
5. Click a point to the side of the object where you want the offsets to appear.

Note

- The Offset command will only create copies of two-dimensional wireframe objects: surfaces, solids, and three-dimensional wireframes cannot be offset.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To duplicate an object

1. Select the object.
2. Click Edit, Duplicate.

Tip

- You can change the default duplicate position in the Units & Angles dialog box (See Related Topics).

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;To change the default offset for the duplicate command;',0,"Defaultoverview",)} Related Topics

To duplicate an object using a transform command

1. Select the object.
2. Activate the appropriate transform command.
3. Enable the Leave Original option.
4. Perform the rest of the operation as usual.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To duplicate an object using copy and paste

1. Select the object.
2. Click Edit, Copy.
3. Click Edit, Paste.
4. Position the duplicate, and click.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To create a line of duplicate objects

1. Select the object you want to duplicate.
2. Click Edit, Array.
3. From the Array flyout, click Linear Array.
4. Type the number of copies you want to make in the Number of Copies box.
5. If you want to define the length of the array using the distance between objects, enable the Increment option. If you want to define an absolute length for the array, enable the Overall option.
6. Click a point on the object to use as an origin for the array.
7. Click a point defining the direction and length of the array.

Tip

- If you are creating arrays of more than one object at a time, you can speed up the array process by enabling the Group Entities Before Arraying option in the Options dialog box (available from the Tools menu). This will group your objects together before creating the array.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To create a two-dimensional grid of duplicate objects

1. Select the object you want to duplicate.
2. Click Edit, Array.
3. From the Array flyout, click Two Directional Array.
4. Type the number of copies you want along the first side of the grid in the Direction 1 box.
5. Type the number of copies you want along the second side of the grid in the Direction 2 box.
6. If you want to define the size of the array using the distance between objects, enable the Increment option. If you want to define an absolute size for each dimension of the array, enable the Overall option.
7. Click a point on the object to use as an origin for the array.
8. Click a point defining the direction and length of the first side of the array.
9. Click a point defining the direction and length of the second side of the array.

Tip

- If you are creating arrays of more than one object at a time, you can speed up the array process by enabling the Group Entities Before Arraying option in the Options dialog box (available from the Tools menu). This will group your objects together before creating the array.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To create a three-dimensional grid of duplicate objects

1. Select the object you want to duplicate.
2. Click Edit, Array.
3. From the Array flyout, click Three Directional Array.
4. Type the number of copies you want along the each side of the grid in the Direction boxes.
5. If you want to define the size of the array using the distance between objects, enable the Increment option. If you want to define an absolute size for each dimension of the array, enable the Overall option.
6. Click a point on the object to use as an origin for the array.
7. Click three points defining the direction and length of the each side of the array. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space.

Tip

- If you are creating arrays of more than one object at a time, you can speed up the array process by enabling the Group Entities Before Arraying option in the Options dialog box (available from the Tools menu). This will group your objects together before creating the array.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To create a circular array of duplicate objects

1. Select the object you want to duplicate.
2. Click Edit, Array.
3. From the Array flyout, click Circular Array.
4. Type the number of copies you want to make in the Copies box.
5. Type the span array in the Angle box. A span angle of 360 degrees will create copies of the object along a complete circle.
6. Enable the Rotate Object option if you want the duplicates to be rotated along a tangent to the array path.

   Or

   Disable the Rotate Object option, and select a point on your object that will follow the array path. The object will maintain its aspect as it traverses the path.
7. Click two points defining the axis around which you want the duplicates to circle. The axis must not intersect the original object.

Tip

- If you are creating arrays of more than one object at a time, you can speed up the array process by enabling the Group Entities Before Arraying option in the Options dialog box (available from the Tools menu). This will group your objects together before creating the array.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To create a spiral array of duplicate objects

1. Select the object you want to duplicate.
2. Click Edit, Array.
3. From the Array flyout, click Spiral Array.
4. Type the number of copies you want to make in the Copies box.
5. Type the number of revolutions you want the array to complete in the Revolutions box.
6. Enable the Offset option, and type the total length of the array in the Offset box
7. Enable the Rotate Object option if you want the duplicates to be rotated along a tangent to the array path.

   Or

   Disable the Rotate Object option, and select a point on your object that will follow the array path. The object will maintain its aspect as it traverses the path.
8. Click two points defining the axis around which you want the duplicates to spiral. The axis must not intersect the original object.

Tip

- If you are creating arrays of more than one object at a time, you can speed up the array process by enabling the Group Entities Before Arraying option in the Options dialog box (available from the Tools menu). This will group your objects together before creating the array.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

To create a spherical array of duplicate objects

1. Select the object you want to duplicate.
2. Click Edit, Array.
3. From the Array flyout, click Spherical Array.
4. Type the number of duplicates of your object you want along the array's equatorial plane in the Copies at the Equator box.
5. Enter the number of duplicates of your object you want around the array's poles in the Copies at the Poles box.
6. Enter the total number of planes of duplicates you want in the array in the Number of Rows box.
7. Click a point in your drawing where you want the center of the sphere to originate. Note that the original object will be moved to a position at the equator of the array.
8. Drag the axis line so that it points in the direction you want the north pole of the sphere.

Tip

- If you are creating arrays of more than one object at a time, you can speed up the array process by enabling the Group Entities Before Arraying option in the Options dialog box (available from the Tools menu). This will group your objects together before creating the array.

{button ,AL(`PRC Creating offsets duplicates and arrays of objects;',0,"Defaultoverview",)} Related Topics

Stretching objects

To stretch a two-dimensional object

1. Select the object you want to stretch.
2. Click Transform, 2D Stretch.
3. Drag the marquee box around the points you want to move.
4. Click two points defining the vector along which you want to move the selected points.

{button ,AL(`PRC Stretching objects;',0,"Defaultoverview",)} Related Topics

To stretch a three-dimensional object

1. Select the object you want to stretch.
2. Click Transform, 3D Stretch.
3. Click three points defining a plane that cuts through the object.
4. Click a point on the part of the object you want to move.
5. Click a second point to define a line representing the length of the stretch.

Note

- A 3D stretch is always in a direction perpendicular to the slicing plane. The length vector does not change the stretch direction.

{button ,AL(`PRC Stretching objects;',0,"Defaultoverview",)} Related Topics

Extruding 2D objects into 3D objects

To extrude an object along a straight path

1. Select the object you want to extrude.
2. Click Draw, Extrude.
3. From the Extrude flyout, click Extrude.
4. Click Normal to Path if you want the object to rotate to follow the path, or Rigid Extrude if you want the object to maintain its aspect as it extrudes.
5. Click a point to define the beginning of the extrusion path. This point must be on the same plane as the original object.
6. Click a second point to define the end of the extrusion path. Unless the extruded object is a line, this point cannot be in the same plane as the original object. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space.
7. Press the ENTER key.

Tip

- If you want to taper the object as it extrudes, enable the Taper Angle option and type a value in the Angle box.

{button ,AL(`PRC Extruding 2D objects into 3D objects;',0,"Defaultoverview",)} Related Topics

To extrude an object along a series of straight paths

1. Select the object you want to extrude.
2. Click Draw, Extrude.
3. From the Extrude flyout, click Extrude.
4. Click Normal to Path if you want the object to rotate to follow the path, or Rigid Extrude if you want the object to maintain its aspect as it extrudes.
5. Click a point to define the beginning of the extrusion path. This point must be on the same plane as the original object.
6. Click a second point to define the end of the first extrusion path. Unless the extruded object is a line, this point cannot be in the same plane as the original object. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space.
7. Click a series of points to define the rest of your extrusion paths.
8. Press the ENTER key.

Tip

- If you want to taper the object as it extrudes, enable the Taper Angle option and type a value in the Angle box.

{button ,AL(`PRC Extruding 2D objects into 3D objects;',0,"Defaultoverview",)} Related Topics

To extrude an object along a path normal to its plane

1. Select the object you want to extrude.
2. Click Draw, Extrude.
3. From the Extrude flyout, click Extrude Normal.
4. Type the length of the extrusion in the Height box.
5. Click a point above or below the object to define the direction of the extrusion.
6. Press the ENTER key.

Tip

- If you want to taper the object as it extrudes, enable the Taper Angle option and type a value in the Angle box.

{button ,AL(`PRC Extruding 2D objects into 3D objects;',0,"Defaultoverview",)} Related Topics

To extrude an object along a curved path

1. Use one of the curve or line tools to draw the extrude path. The path must be perpendicular to the object at the point where they connect.
2. Select the object you want to extrude.
3. Click Draw, Extrude.
4. From the Extrude flyout, click Extrude.
5. Select the curve defining the extrusion path.
6. Press the ENTER key.

Tip

- If you want to taper the object as it extrudes, enable the Taper Angle option and type a value in the Angle box.

{button ,AL(`PRC Extruding 2D objects into 3D objects;',0,"Defaultoverview",)} Related Topics

To extrude an object along a circular path

1. Select the object you want to extrude.
2. Click Draw, Extrude.
3. From the Extrude flyout, click Circular Sweep.
4. Enable the Continuous option.
5. Type the span of the sweep in the Span Angle box. A span angle of 360 degrees will rotate the object in a complete circle.
6. Click two points defining the axis around which you want to sweep your object. The sweep axis must be in the same plane of the original object and cannot intersect it.

Tip

- If you do not want a continuous extrusion path, enable the Discrete option and type the number of straight-line extrusion paths in the Copies box. This option will create a polygonal path rather than a circular one.

{button ,AL(`PRC Extruding 2D objects into 3D objects;',0,"Defaultoverview",)} Related Topics

To extrude an object along a spiral path

1. Select the object you want to extrude.
2. Click Draw, Extrude.
3. From the Extrude flyout, click Spiral Sweep.
4. Type the number of revolutions you want the sweep path to complete in the Revolutions box.
5. Type the distance between each revolution in the Offset box.
6. Type the number of refinement steps for each revolution in the Steps box.
7. Click two points defining the axis around which you want to sweep your object. The sweep axis must be in the same plane of the original object and cannot intersect it.

{button ,AL(`PRC Extruding 2D objects into 3D objects;',0,"Defaultoverview",)} Related Topics

Trimming and extending lines

To trim a line where it intersects another line

1. Click Transform, Trim.
2. Enable the Remove Segments option if you want to delete the trimmed part of the line,
   Or
   Enable the Keep Segments option if you want to keep the trimmed part of the line as a separate object.
3. Select the line that defines the trimming point, and press the ENTER key.
4. Select the segment you want to trim, and press the ENTER key.

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

To trim a line segment between two intersecting lines

1. Click Transform, Trim.
2. Enable the Remove Segments option if you want to delete the trimmed part of the line,
   Or
   Enable the Keep Segments option if you want to keep the trimmed part of the line as a separate object.
3. Select the first line defining the segment you want to trim.
4. SHIFT + Select the second line defining the segment you want to trim, and press the ENTER key.
5. Select the segment you want to trim, and press the ENTER key.

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

To trim two lines where they intersect

1. Click Transform, Trim Both.
2. Select the first line to be trimmed. Make sure you click a point on the side that you want to delete.
3. Select the second line to be trimmed. Make sure you click a point on the side that you want to delete.

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

To extend a line to an existing boundary

1. Click Transform, Extend.
2. Select the boundary defining the extension, and press the ENTER key.
3. Select the line you want to extend, and press the ENTER key.

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

To move one endpoint of a line so that it touches an existing boundary

1. Select the line you want to adjust.
2. Click Transform, Join.
3. From the Join flyout, click Join.
4. Click a point on the boundary where you want the line to touch.

Tip

- Use the Snap commands to accurately place the joining point.

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

To combine two lines that touch at their endpoints into a single object

1. Click Transform, Join.
2. From the Join flyout, click Combine.
3. Select the first line.
4. Select the second, touching line.
5. Press the ENTER key

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

To join two lines into a curve

1. Click Transform, Fillet.
2. From the Fillet flyout, click Fillet.
3. Type the radius of the joining curve in the Radius box.
4. Select the first line.
5. Select the second line.

{button ,AL(`PRC Trimming and extending lines;',0,"Defaultoverview",)} Related Topics

Slicing planes and 3D objects

To slice a plane along a line

1. Use the Line Segments tool to draw a line across the plane.
2. Click Transform, Slice.
3. From the Slice flyout, click Slice Plane.
4. Select the line.
5. Select the plane.

{button ,AL(`PRC Slicing planes and 3D objects;',0,"Defaultoverview",)} Related Topics

To slice a 3D object along a plane

1. Select the object you want to slice.
2. Click Transform, Slice.
3. From the Slice flyout, click 3D Slice.
4. Click three points on the object defining a plane that cuts through the object.

Tip

- Use the Snap tools to help select points on the object.

{button ,AL(`PRC Slicing planes and 3D objects;',0,"Defaultoverview",)} Related Topics

To trim a 3D object along a plane

1. Select the object you want to trim.
2. Click Transform, Slice.
3. From the Slice flyout, click 3D Trim.
4. Click three points on the object defining a plane that cuts through the object.
5. Click a point on the side of the object you want to delete.

Tip

- Use the Snap tools to help select points on the object.

{button ,AL(`PRC Slicing planes and 3D objects;',0,"Defaultoverview",)} Related Topics

To insert a plane divider into a 3D object

1. Select the object you want to section.
2. Click Transform, Slice.
3. From the Slice flyout, click Section.
4. Click three points on the object defining a plane that cuts through the object.

Tip

- Use the Snap tools to help select points on the object.

{button ,AL(`PRC Slicing planes and 3D objects;',0,"Defaultoverview",)} Related Topics

Rounding and cropping corners and edges

To round one corner of a two-dimensional object

1. Click Transform, Fillet.
2. From the Fillet flyout, click Fillet.
3. Enter the rounding radius in the Radius box.
4. Click the edges to either side of the corner you want to round.

{button ,AL(`PRC Rounding and cropping corners and edges;',0,"Defaultoverview",)} Related Topics

To crop one corner of a two-dimensional object

1. Click Transform, Fillet.
2. From the Fillet flyout, click Chamfer.
3. Enter the cropping distance along the first edge in the First Distance box.
4. Enter the cropping distance along the second edge in the Second Distance box.
5. Click the edges to either side of the corner you want to crop.

{button ,AL(`PRC Rounding and cropping corners and edges;',0,"Defaultoverview",)} Related Topics

To round one edge of a three-dimensional object

1. Click Transform, Fillet.
2. From the Fillet flyout, click Fillet Edge.
3. Enter the rounding radius in the Radius box.
4. Select the edge you want to round.
5. Click Apply.

{button ,AL(`PRC Rounding and cropping corners and edges;',0,"Defaultoverview",)} Related Topics

To round one corner of a three-dimensional object

1. Click Transform, Fillet.
2. From the Fillet flyout, click Fillet Edge.
3. Enter the rounding radius in the Radius box.
4. Enable the Round option.
5. Select the edges around the corner you want to round.
6. Click Apply.

{button ,AL(`PRC Rounding and cropping corners and edges;',0,"Defaultoverview",)} Related Topics

To crop one edge of a three-dimensional object

1. Click Transform, Fillet.
2. From the Fillet flyout, click Chamfer Edge.
3. Enter the cropping distance along the first side in the First Distance box.
4. Enter the cropping distance along the second side in the Second Distance box.
5. Click the edge you want to crop.
6. Click Apply.

{button ,AL(`PRC Rounding and cropping corners and edges;',0,"Defaultoverview",)} Related Topics

Adding and subtracting 3D objects

To combine two or more solid objects together

1. Click Transform, Boolean.
2. In the Boolean flyout, click Add.
3. Click two or more overlapping solids.
4. When you have finished selecting objects, press the Enter key.

{button ,AL(`PRC Adding and subtracting 3D objects;',0,"Defaultoverview",)} Related Topics

To subtract one solid from another

1. Click Transform, Boolean.
2. In the Boolean flyout, click Subtract.
3. Click an object.
4. Click the overlapping object you want to subtract from the first object.
5. Press the Enter key.

{button ,AL(`PRC Adding and subtracting 3D objects;',0,"Defaultoverview",)} Related Topics

To remove everything except the intersecting volume of two or more solid objects

1. Click Transform, Boolean.
2. In the Boolean flyout, click Intersect.
3. Click two or more overlapping solids.
4. When you have finished selecting objects, press the Enter key.

{button ,AL(`PRC Adding and subtracting 3D objects;',0,"Defaultoverview",)} Related Topics

To remove the intersecting volume of two or more solid objects

1. Click Transform, Boolean.
2. In the Boolean flyout, click Interfere.
3. Click two or more overlapping solids.
4. When you have finished selecting objects, press the Enter key.

{button ,AL(`PRC Adding and subtracting 3D objects;',0,"Defaultoverview",)} Related Topics

Assembling and disassembling 3D objects

To transform a wireframe into a surface model

1. Select the wireframe object or objects you want to convert.
2. Click Transform, Define Object.

Note

- The wireframe object can consist of a series of connected lines. The lines do not have to be continuous, but they must be connected at their endpoints, and form an enclosed shape.

{button ,AL(`PRC Assembling and disassembling 3D objects;',0,"Defaultoverview",)} Related Topics

To transform a surface model into a wireframe

1. Select the surface model object you want to convert.
2. Click Transform, Explode object.

{button ,AL(`PRC Assembling and disassembling 3D objects;',0,"Defaultoverview",)} Related Topics

To transform a surface model into a solid

1. Select the surface model object you want to convert.
2. Click Transform, Define Object.

Note

- The surface model object must form an enclosed solid.

{button ,AL(`PRC Assembling and disassembling 3D objects;',0,"Defaultoverview",)} Related Topics

To transform a solid into a surface model

1. Select the solid object you want to convert.
2. Click Transform, Explode Object.

Note

- The resulting object will still have a continuous surface area, but will not have volume.

{button ,AL(`PRC Assembling and disassembling 3D objects;',0,"Defaultoverview",)} Related Topics

Shading and rendering your drawing

Shading objects

To shade the current view

1. Click View, Shade.
2. Click Entire View.
3. From the Shading Mode list, choose the type of shading you want to use.
4. If you want to preserve text or dimension labels, enable the appropriate Display options.
5. If you want to shade all open windows, enable the All windows option.

Note

- When you render your image using the higher end rendering levels, some objects may not show up against very dark background colors.

{button ,AL(`PRC Shading objects;',0,"Defaultoverview",)} Related Topics

To shade the current selection

1. Click View, Shade.
2. Click Selection.
3. From the Shading Mode list, choose the type of shading you want to use.
4. If you want to preserve text or dimension labels, enable the appropriate Display options.
5. If you want to shade all open windows, enable the All windows option.

Note

- When you render your image using the higher end rendering levels, some objects may not show up against very dark background colors.

{button ,AL(`PRC Shading objects;',0,"Defaultoverview",)} Related Topics

To shade a section that you define

1. Click View, Shade.
2. Click Section.
3. From the Shading Mode list, choose the type of shading you want to use.
4. If you want to preserve text or dimension labels, enable the appropriate Display options.
5. If you want to shade all open windows, enable the All windows option.

Note

- When you render your image using the higher end rendering levels, some objects may not show up against very dark background colors.

{button ,AL(`PRC Shading objects;',0,"Defaultoverview",)} Related Topics

To modify the light source for shading

1. Click View, Shade.
2. Click the Lights tab.
3. In the Active Lights list, click the light source you want to modify. To enable a new light source, enable the lightbulb next to it.
4. Using the angle sliders, set the horizontal and vertical angles of the light source.
5. Using the Intensity slider, set the intensity of the light source.
6. Click the Color button, and choose a color for the light source.

{button ,AL(`PRC Shading objects;',0,"Defaultoverview",)} Related Topics

To add shadows to a shaded drawing

1. Click View, Shade.
2. Click the Shading tab.
3. Enable the Render Shadows option.
4. Click the Shadows tab.
5. Using the sliders, set the Quality and Softness parameters.

{button ,AL(`PRC Shading objects;',0,"Defaultoverview",)} Related Topics

Working with colors and materials

To assign a color to an object

1. If the Color Palette is not visible, click View, Color Palette.
2. Select the object you want to color.
3. Click the new object color. To reveal more of the palette, click one of the arrow buttons at either end.

{button ,AL(`PRC Working with colors and materials;',0,"Defaultoverview",)} Related Topics

To assign a material to an object

1. Select the object.
2. Click the Material Roll-up tool.
3. From the Category list, choose the category containing the material you want to use.
4. From the Material list, choose the material you want to use.
5. Click Apply.

{button ,AL(`PRC Working with colors and materials;',0,"Defaultoverview",)} Related Topics

To edit an existing material style

1. Click the Material Roll-up tool.
2. Click Edit.
3. From the Category list, choose the category containing the material you want to edit.
4. From the Material list, choose the material you want to edit.
5. Edit the Texture, Transparency, Reflectance, Pattern, and Color attributes to obtain the effect you want. Click the Preview button to see what a material with the current settings will look like.
6. Click Update Material.

{button ,AL(`PRC Working with colors and materials;',0,"Defaultoverview",)} Related Topics

To create a new material style

1. Click the Material Roll-up tool.
2. Click Edit.
3. From the Category list, choose the category where you want to store the new material. Click New to make a new category.
4. Enter a name for the new material in the Material box.
5. Click the New button beside the Material box.
6. Edit the Texture, Transparency, Reflectance, Pattern, and Color attributes to obtain the effect you want. Click the Preview button to see what a material with the current settings will look like.
7. Click Update Material.

{button ,AL(`PRC Working with colors and materials;',0,"Defaultoverview",)} Related Topics

To delete a material style

1. Click the Material Roll-up tool.
2. Click Edit.
3. From the Category list, choose the category containing the material you want to delete.
4. From the Material list, choose the material you want to delete.
5. Click the Delete button beside the Material box.

{button ,AL(`PRC Working with colors and materials;',0,"Defaultoverview",)} Related Topics

Adding text, dimensions, and symbols

Working with text

To add flat text

1. From the Text flyout, click the Text 2D tool.
2. Type your text in the Text box.
3. From the Font lists, choose the font type and size.
4. Enable the appropriate Bold, Italic or Underline options.
5. Use the Placement options to place your text to the left, right, or center of the insertion point.
6. Click OK.
7. Position the text, and click.
8. Adjust the slant angle of the text, and click.

{button ,AL(`PRC Working with text;',0,"Defaultoverview",)} Related Topics

To add 3D text

1. From the Text flyout, click the Text 3D tool.
2. Type your text in the Text box.
3. From the Font lists, choose the font type and size.
4. Enable the appropriate Bold, Italic or Underline options.
5. Use the Placement options to place your text to the left, right, or center of the insertion point.
6. Click OK.
7. Click three points defining the plane on which you want to place your text. Use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define a point in 3D space.

{button ,AL(`PRC Working with text;',0,"Defaultoverview",)} Related Topics

To add 3D text with leader lines

1. From the Text flyout, click the Leader tool.
2. Type your text in the Text box.
3. From the Font lists, choose the font type and size.
4. Enable the appropriate Bold, Italic or Underline options.
5. Click OK.
6. Click the point where you want the arrowhead of the leader line to appear.
7. Click two points defining the leader line you want attached to your text. Your leader will be two joined lines ending in an arrowhead.

   Or,

   Double click the point where you want the text to appear. Your leader will be a single straight line.
8. Position the text, and click.

{button ,AL(`PRC Working with text;',0,"Defaultoverview",)} Related Topics

To edit text

1. Select the text you want to edit.
2. From the Text flyout, click the Edit Text tool.

{button ,AL(`PRC Working with text;',0,"Defaultoverview",)} Related Topics

To check the spelling of your text

1. Select the text you want to check.
2. From the Text flyout, click the Edit Text tool.
3. Click Spelling.

{button ,AL(`PRC Working with text;',0,"Defaultoverview",)} Related Topics

Working with dimensions

Using the CorelCAD Symbol Library

To add a symbol to your drawing

1. Click File, Import.
2. From the Files of Type list, choose CorelCAD Files.
3. Use the folder pane to open the folder containing the symbol you want.
4. Type the file name of the symbol you want.

{button ,AL(`PRC Using the CorelCAD Symbol Library;',0,"Defaultoverview",)} Related Topics

To remove a symbol from your drawing

1. Select the symbol.
2. Click Edit, Delete.

{button ,AL(`PRC Using the CorelCAD Symbol Library;',0,"Defaultoverview",)} Related Topics

Managing your files

Starting a new drawing

To create a new drawing based on the default template

1. Click File, New.
2. In the New flyout, click Drawing.

{button ,AL(`PRC Starting a new drawing;',0,"Defaultoverview",)} Related Topics

To create a new drawing from a template

1. Click File, New.
2. In the New flyout, click From Template.
3. Choose the template on which you want to base the new drawing.

{button ,AL(`PRC Starting a new drawing;',0,"Defaultoverview",)} Related Topics

To create a template

1. Configure the defaults, layer names, and views you want to save.
2. Click File, Create Template.
3. Choose a location and type a name for the new template.

Tip

- If you want the objects in the current drawing to appear in all drawings based on the new template, enable the Save objects with template option.

{button ,AL(`PRC Starting a new drawing;',0,"Defaultoverview",)} Related Topics

Working with files

To open a drawing

1. Click File, Open
2. Choose the drawing file you want to open.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To save a drawing

- Click File, Save.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To save a drawing under a new name

1. Click File, Save As.
2. Choose a location and type a new name for the drawing file.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To save only selected objects

1. Select the objects you want to save.
2. Click File, Save As.
3. Enable the Selected objects only option.
4. Choose a location and type a name for the new drawing file.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To save all objects on the current layer

1. Click File, Save As.
2. From the Save As Type list, choose a file format.
3. Enable the Current Layer Only option.
4. Choose a location and type a name for the new drawing file.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To save all objects in the current layer group

1. Click File, Save As.
2. From the Save As Type list, choose a file format.
3. Enable the Current Layer Group Only option.
4. Choose a location and type a name for the new drawing file.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To assign keywords to a file

1. Click File, Save As.
2. Type your keywords in the Keywords box.
3. Choose a location and type a name for the drawing file.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

To add notes to a file

1. Click File, Save As.
2. Type your notes in the Notes box.
3. Choose a location and type a name for the drawing file.

{button ,AL(`PRC Working with files;',0,"Defaultoverview",)} Related Topics

Printing your work

To print the current view of your drawing

1. Arrange the active drawing window so that it displays the objects you want to print. If you want to print a shaded version of your drawing, use the Hide and Shade commands immediately before printing.
2. Click File, Print.
3. From the Printer Name box, choose a printing device.
4. Type the number of printout copies you want in the Number of Copies box.

{button ,AL(`PRC Printing your work;',0,"Defaultoverview",)} Related Topics

To set the printing device properties

1. Click File, Print.
2. From the Printer Name box, choose the printing device that you want to configure.
3. Click Properties.
4. Set the appropriate device options.

Note

- The properties you set will remain active for the rest of your CorelCAD session.

{button ,AL(`PRC Printing your work;',0,"Defaultoverview",)} Related Topics

To print to a file

1. Arrange the active drawing window so that it displays the objects you want to print. If you want to print a shaded version of your drawing, use the Hide and Shade commands immediately before printing.
2. Click File, Print.
3. Enable the Print to File option.

{button ,AL(`PRC Printing your work;',0,"Defaultoverview",)} Related Topics

To open Corel Print Space

- Click File, Print Space.

{button ,AL(`PRC Printing your work;',0,"Defaultoverview",)} Related Topics

Importing and exporting files

To export a drawing

1. Click File, Export.
2. Choose a location and type a name for the new file.
3. From the Save As Type list, choose an export format.

{button ,AL(`PRC Importing and exporting files;PRC Exchanging information with other applications;',0,"Defaultoverview",)} Related Topics

To export only selected objects in your drawing

1. Select the objects you want to export.
2. Click File, Export.
3. Choose a location and type a name for the new file.
4. From the Save As Type list, choose an export format.
5. Enable the Selected Objects Only option.

{button ,AL(`PRC Importing and exporting files;PRC Exchanging information with other applications;',0,"Defaultoverview",)} Related Topics

To export all objects on the current layer

1. Click File, Export.
2. Choose a location and type a name for the new file.
3. From the Save As Type list, choose an export format.
4. Enable the Current Layer Only option.

{button ,AL(`PRC Importing and exporting files;PRC Exchanging information with other applications;',0,"Defaultoverview",)} Related Topics

To export all objects in the current layer group

1. Click File, Export.
2. Choose a location and type a name for the new file.
3. From the Save As Type list, choose an export format.
4. Enable the Current Layer Group Only option.

{button ,AL(`PRC Importing and exporting files;PRC Exchanging information with other applications;',0,"Defaultoverview",)} Related Topics

To import graphics in other formats

1. Click File, Import.
2. From the Files of Type list, choose the type of graphic you want to import.
3. Use the folder pane to choose the file you want to import.

{button ,AL(`PRC Importing and exporting files;PRC Exchanging information with other applications;',0,"Defaultoverview",)} Related Topics

Exchanging information with other applications

To place a copy of an object on the Clipboard

1. Select the object.
2. Click Edit, Copy.

{button ,AL(`PRC Exchanging information with other applications;PRC Importing and exporting files;',0,"Defaultoverview",)} Related Topics

To cut an object from a drawing and place it on the Clipboard

1. Select the object.
2. Click Edit, Cut.

{button ,AL(`PRC Exchanging information with other applications;PRC Importing and exporting files;',0,"Defaultoverview",)} Related Topics

Customizing CorelCAD

Customizing keyboard assignments

To assign a shortcut key to a command

1. Click Tools, Customize.
2. Click the Keyboard tab.
3. In the Commands box, double-click the command category folder containing the command you want to customize.
4. Click the command.
5. Click in the Press new shortcut key box.
6. Press the keyboard combination that you want to assign to the command. If you need to make a correction, press the BACKSPACE key.

   You can have up to four layers of keystrokes. For example, the key combination CTRL+ALT+1, 2, 3, 4 is accomplished by holding down the CTRL and ALT keys, then pressing the 1, 2, 3, and 4 keys in succession. You can also have shortcuts composed of a single keystroke.
7. Click Assign.
8. Click Save As.
9. Type the name of the accelerator file where you want to store the new shortcut. The default file is "CADDEF.ACL".

Tip

- To automatically resolve shortcut conflicts, enable the Go to conflict on assign option.

{button ,AL(`PRC Customizing keyboard assignments;',0,"Defaultoverview",)} Related Topics

To remove a shortcut key from a command

1. Click Tools, Customize.
2. Click the Keyboard tab.
3. In the Commands box, double-click the command category folder containing the command you want to customize.
4. Click the command.
5. In the Current shortcut keys box, choose the key combination you want to remove.
6. Click Delete.

{button ,AL(`PRC Customizing keyboard assignments;',0,"Defaultoverview",)} Related Topics

To restore all keyboard assignments to their original settings

1. Click Tools, Customize.
2. Click the Keyboard tab.
3. Click Reset All.

{button ,AL(`PRC Customizing keyboard assignments;',0,"Defaultoverview",)} Related Topics

To save a set of customized keyboard assignments

1. Click Tools, Customize.
2. Click the Keyboard tab.
3. Click Save As.
4. Choose the Shortcut File in which you want to save your assignments.

Tip

- To change the default settings, save your custom shortcut set over the file CADDEF.ACL.

{button ,AL(`PRC Customizing keyboard assignments;',0,"Defaultoverview",)} Related Topics

To load a set of customized keyboard assignments

1. Click Tools, Customize.
2. Click the Keyboard tab.
3. Click Load.
4. Choose the Shortcut File you want to load.

{button ,AL(`PRC Customizing keyboard assignments;',0,"Defaultoverview",)} Related Topics

To determine the key combination assigned to a command

1. Click Tools, Customize.
2. Click the Keyboard tab.
3. In the Commands box, double-click the command category folder containing the command you want to customize.
4. Click the command.
5. Any keyboard assignments for that command are listed in the Current Shortcut Keys box.

{button ,AL(`PRC Customizing keyboard assignments;',0,"Defaultoverview",)} Related Topics

Customizing menus

To change the order of menus and menu commands

1. Click Tools, Customize.
2. Click the Menu tab.
3. In the Menu box, click the menu or menu command you want to move. Double-click to open a menu or sub-menu.
4. Click Move Up or Move Down.

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

To add a command to a menu

1. Click Tools, Customize.
2. Click the Menu tab.
3. In the Commands box, double-click the command category folder containing the command you want to add.
4. Click the command.
5. In the Menu box, click the menu or sub-menu where you want to add the command.
6. Click Add.

Tip

- Use the Separator button to add organizational lines to your menus.

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

To remove a menu or menu command

1. Click Tools, Customize.
2. Click the Menu tab.
3. In the Menu box, click the menu or menu command you want to remove. Double-click to open a menu or sub-menu.
4. Click Remove.

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

To customize a context sensitive menu

1. Click Tools, Customize.
2. Click the Menu tab.
3. Choose one of the context-sensitive menus (Nothing Selected, Object Selected, Text Selected, or Color Palette) from the Menu list.
4. Edit the menu entries normally (See Related Topics).

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

To rename a menu

1. Click Tools, Customize.
2. Click the Menu tab.
3. In the Menu box, click the menu or menu command you want to rename. Double-click to open a menu or sub-menu.
4. Click the command's name tag, and type the new name.

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

To change a menu command's shortcut key

1. Click Tools, Customize.
2. Click the Menu tab.
3. In the Menu box, click the menu or menu command you want to rename. Double-click to open a menu or sub-menu.
4. Click the command's name tag, and insert an ampersand (&) before the letter you want to use as a shortcut.
5. Remove all unnecessary ampersands.

Tip

- For instructions on how to assign shortcut keys to commands that don't appear in any of the standard menus, see Related Topics.

{button ,AL(`PRC Customizing menus;PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To add a new menu

1. Click Tools, Customize.
2. Click the Menu tab.
3. Click Add Menu.
4. Type a name for the new menu.

Tip

- You can add a sub-menu to an existing menu by first double-clicking the existing menu.

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

To restore the original menu settings

1. Click Tools, Customize.
2. Click the Menu tab.
3. Click Reset.

Note

- You will lose all changes to the menu settings.

{button ,AL(`PRC Customizing menus;',0,"Defaultoverview",)} Related Topics

Customizing toolbars

To move a toolbar

1. Click the border of the toolbar.
2. Drag it to its new location. Right-click to cancel the movement.

Tip

- Double-click a toolbar's title or border to dock and undock it.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To resize a toolbar

1. Move the cursor to the edge of a floating toolbar.
2. Drag the edge until the toolbar is the correct size. Right-click to cancel the movement.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To display an existing toolbar

1. Click View, Toolbars.
2. Click the check box next to the toolbar that you want to activate.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To create a custom toolbar

1. Click View, Toolbars.
2. Click New.
3. Type a name for the new toolbar.
4. Use the Customize command to add commands buttons to the new toolbar (See Related Topics).

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To add a button to a toolbar

1. Activate the toolbar you want to edit (See Related Topics).
2. Click View, Toolbars.
3. Click Customize.
4. In the Commands box, click the command category folder containing the command you want to add.
5. Drag the appropriate command button to the toolbar. Right-click to cancel the movement.

Tip

- Click a button to see its description.
- You can also hold down the CTRL and ALT keys and drag a button to copy it to another toolbar without opening the dialog box.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To remove a button from a toolbar

1. Activate the toolbar you want to edit (See Related Topics).
2. Click View, Toolbars.
3. Click Customize.
4. Drag the button off the toolbar. Right-click to cancel the movement.

Tip

- You can also hold down the ALT key and drag a button off a toolbar to delete it without opening the dialog box.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To rename a toolbar

1. Click View, Toolbars.
2. Click the toolbar you want to rename.
3. Click the toolbar's name tag.
4. Type the new name.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To move a toolbar button

1. Activate the toolbar you want to edit (See Related Topics).
2. Click View, Toolbars.
3. Click Customize.
4. Drag the button to another toolbar, or to another spot on the same toolbar. Right-click to cancel the movement.

Tip

- To add space between two toolbar buttons, drag the right-most button slightly further to the right.
- You can also hold down the ALT key and drag a button to move it without opening the dialog box.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To delete a custom toolbar

1. Click View, Toolbars.
2. Click the custom toolbar you want to delete.
3. Click Delete.

Note

- You cannot delete a built-in toolbar.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To restore the original configuration of a built-in toolbar

1. Click View, Toolbars.
2. Click the built-in toolbar you want to reset.
3. Click Reset.

{button ,AL(`PRC Customizing toolbars;',0,"Defaultoverview",)} Related Topics

To change the properties of a tool

1. Activate the tool, or tear off the appropriate flyout (See Related Topics).
2. Right-click on the tool.
3. Click Properties.
   If there is no Properties option, then the tool you have selected does not have editable properties.
4. Change the settings in the Tool Properties dialog box.

Tip

- You can use the Tools list box at the top of the dialog to reveal options for other tools.

{button ,AL(`PRC Customizing toolbars;PRC Using the Toolbox;',0,"Defaultoverview",)} Related Topics

Customizing the status bar

To move the status bar

1. Right-click the status bar.
2. In the Status Bar menu, click Place at Top or Place at Bottom.

{button ,AL(`PRC Customizing the status bar;',0,"Defaultoverview",)} Related Topics

To change the number of status bar display regions

1. Right-click the status bar.
2. In the Status Bar menu, click Number of Regions.
3. Click the number of regions you want displayed.

Tip

- You can have up to six regions displaying different information on a small status bar. When you use a large status bar, you have space for double that amount (see Related Topics).

{button ,AL(`PRC Customizing the status bar;',0,"Defaultoverview",)} Related Topics

To change what the status bar displays

1. Right-click the area of the status bar you want to change.
2. In the Status Bar menu, click Show.
3. Click the type of information you want to display.

Tip

- To clear the current region, click None.

{button ,AL(`PRC Customizing the status bar;',0,"Defaultoverview",)} Related Topics

To resize the status bar

1. Right-click the status bar.
2. In the Status Bar menu, Click Large Status Bar or Small Status Bar.

{button ,AL(`PRC Customizing the status bar;',0,"Defaultoverview",)} Related Topics

To resize a region of the status bar

- Click and drag the vertical separator lines on the status bar.

{button ,AL(`PRC Customizing the status bar;',0,"Defaultoverview",)} Related Topics

Changing your preferences

To change the material file for your project

1. Click Tools, Options.
2. Click the General tab.
3. Click Locate Project Material File.
4. Select the new material file.
5. Click Open.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To change the default offset for the duplicate command

1. Click Tools, Layout.
2. From the flyout, click Units and Angles.
2. Click the Displacements tab.
3. In the Place Duplicate boxes, enter the distance along each axis relative to the original object that you want the duplicate to appear.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To change the background color

1. Click Tools, Options.
2. Click the General tab.
3. Click Background Screen Color.
4. Choose a new color from the palette.

Note

- When you render your image using the higher end rendering levels, some objects may not show up against very dark background colors.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To change the cursor size

1. Click Tools, Options.
2. Click the View tab.
3. Enable the Fixed Cursor option.
4. Type the new cursor size in the Fixed Cursor Size box.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To change the cursor step rate

1. Click Tools, Layout.
2. From the Layout flyout, click Units and Angle.
3. Click the Displacements tab.
4. Enter the new step rates in the Step Size boxes.

Note

- The Small Step Size box controls the normal step rate. The Large Step Size box controls the step that occurs when you hold down the ALT key.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To change the selection tolerance of the pick tool

1. Click Tools, Options.
2. Click the View tab.
3. Enter the new tolerance factor in the Selection Tolerance box.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To automatically backup your work when you save

1. Click Tools, Options.
2. Click the Backup tab.
3. Enable the Create Backup Copy on Save option.
4. Click Select Directory.
5. Select a directory where you want your backup copies to be saved.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To automatically backup your work after a set time period

1. Click Tools, Options.
2. Click the Backup tab.
3. Enable the Auto-backup option.
4. Enter the number of minutes between saves in the Auto-Backup box.
5. Select a directory where you want your backup copies to be saved.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} Related Topics

To change object detail

1. Click View, Refinements.
3. Use the Surfaces slider to adjust the detail of curved surfaces.
4. Use the Edge slider to adjust the detail of curved edges.

{button ,AL(`PRC Changing your preferences;',0,"Defaultoverview",)} <u>Related Topics</u>

To change the orthogonal axes

1. Click Tools, Options.
2. Click the Ortho Settings tab.
3. From the Plane list, choose the orthogonal plane you want to adjust.
4. In the Primary Rotation box, enter the rotation about the normal axis to the orthogonal plane.
5. In the Secondary Rotation box, enter the tilt rotation. Use the Axis list to change the axis you want to tilt.

{button ,AL(`PRC Changing your preferences;PRC Drawing in Orthogonal mode;',0,"Defaultoverview",)} Related Topics

To show the Welcome Screen at start up

1. Click Tools, Options.
2. Click the General tab.
3. From the On Application Start-up list, choose Welcome Screen.

Tip

- You can also enable any of the Welcome Screen start-up options from the same list.

{button ,AL(`PRC Changing your preferences;PRC Drawing in Orthogonal mode;',0,"Defaultoverview",)} Related Topics

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How To:

Recording CorelCAD commands

The simplest way to automate a sequence of actions in CorelCAD is to record them. CorelCAD keeps track of most of the actions and stores them in a special area of memory called a "recording." The recording exists as long as CorelCAD is running. If you want to be able to use the recording each time you run CorelCAD, then you must save it as a Corel SCRIPT script file.

A Corel SCRIPT script is a separate file of commands. It exists on your hard disk in a directory with other scripts. It is loaded in memory only when you run the script. As soon as the script stops running, it is unloaded from memory, but remains on your hard disk until it is needed again.

You "play back" a recording and "run" a script. In many cases, the results are identical. The difference is that a script is a separate file (much like an external application program) that must be executed.

Use recordings when you need a quick way to remember a series of actions so that you can play them back. You can also use recordings as a launching pad for writing your own scripts. After you have recorded the steps, you can edit the recording, save it in a script file, and customize it.

Note

- To modify a recording after you save it, use the Corel SCRIPT Editor. The Script Editor displays the saved recording as script instructions.
- Most large computer applications have a built-in programming language of some form but some call their programs **macros** instead of **scripts**.
- If you run a script frequently, you can assign the script to a keystroke, menu, or Toolbox button.
- You can share scripts with other CorelCAD users by copying script files to floppy disks or shared network directories. When you create a script, include comment lines at the beginning of the script with a description of the script and your name.

Click the Corel SCRIPT icon to open Corel SCRIPT online help.

{button ,AL(`script_cad_overview;;;;;',0,"Defaultoverview",)} Related Topics

How To:

CorelCAD recording and scripting limitations

The recorder is a powerful feature of CorelCAD but it has some limitations. You can record almost every keystroke, toolbar, menu, and mouse command except for the following:

- page setting commands
- window display commands
- customization commands
- help access commands
- print preview commands
- script commands
- find and replace commands
- Although Corel SCRIPT is a powerful programming language, you cannot use a script to call another script.

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`script_cad_overview;;;;;',0,"Defaultoverview",)} Related Topics

How To:

Introduction to Scripts and Corel SCRIPT

A script is a computer program that executes a series of instructions with a single command. Generally, scripts are used to automate repetitive tasks or simplify complicated actions, but they can also prompt for user input, display messages, and interact with other applications.

Scripts can significantly increase your productivity with Corel applications by automating repetitive tasks. For example, a script could be used to open a group of files, perform a set of editing actions, or set an application's default properties. In their simplest form, scripts replicate a Corel application's keystrokes, toolbar, menu, and mouse commands. In a more complex form, scripts can include the commands and constructs of a programming language. For example, you could create a script that only replicates an application's commands once a series of logical requirements have been met.

A Corel script is a Windows text file that lists the Corel SCRIPT commands that will perform a particular task. These instructions are all part of the Corel SCRIPT programming language, which is partially based on Corel applications' menu commands. For example, the **File, Close** command corresponds to the menu command (click File, Close) on an application's menu system.

The rest of the Corel SCRIPT programming language is based on the BASIC programming language. If you're already familiar with a version of BASIC, you'll find the Corel SCRIPT programming language easy to read and understand.

Computer programming experience isn't a prerequisite for using Corel SCRIPT to create and edit scripts. However, the more knowledge, experience, and desire you have to delve into the mechanics of your Corel application, the more you'll be able to take advantage of the power of Corel SCRIPT.

Your Corel SCRIPT online Help file contains information covering instructions for novice script writers to reference material for experienced script writers and programmers. The following information categories are available in this online Help file:

- Corel SCRIPT introduction and overview
- Programming and running Corel SCRIPT scripts
- Debugging scripts
- Using the Corel SCRIPT Editor
- Using dialog boxes and the Corel SCRIPT Dialog Editor
- Advanced Corel SCRIPT techniques and OLE Automation
- Corel SCRIPT programming language syntax reference
- Corel SCRIPT reference information

The amount of information you'll need to know about scripting will depend on the complexity of your scripts.

Note

- Most large computer applications have a built-in programming language of some form but some call their programs macros instead of scripts.

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`script_cad_overview;;;;;',0,"Defaultoverview",)} Related Topics

CorelCAD and OLE automation

Any Corel application, including CorelCAD, that supports Corel SCRIPT provides a programmable OLE automation object (**CorelCAD.Automation.1**) . The object is used by OLE automation controllers to send Corel SCRIPT application commands to their respective Corel application. For example, Corel SCRIPT CAD application commands are sent to CorelCAD.

You can use OLE automation controllers such as Microsoft Visual Basic, Microsoft Excel Visual Basic, and Microsoft Visual C++ (with the Microsoft Foundations Classes) to send commands to CorelCAD, and to develop applications using Corel application components.

For example, you can link a CorelCAD diagram to spreadsheet data and a word processing document. When your spreadsheet data is changed, the CAD diagram reflects the updated information and in turn the Word Processing document containing the CAD diagram is updated.

The Corel SCRIPT online Help provides a reference of all available commands and functions in CorelCAD. The commands and functions are a part of automation-enabled objects. The online Help provides only overview, procedural, and reference information about programming with OLE automation. For more information about OLE automation, see the following reference sources:

- Microsoft Visual Basic Programmer's Guide
- Microsoft Excel Visual Basic User's Guide
- Microsoft Windows Developer's Kit
- Microsoft Office Developer's Kit

Note

- The advanced Corel SCRIPT programming feature described above is intended for experienced Windows programmers, and not for beginner script writers.
- See Corel SCRIPT advanced programming features in the Corel SCRIPT online Help for more information about using CorelCAD as an OLE automation server.

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`script_cad_overview;;;;;',0,"Defaultoverview",)} Related Topics

How to record CorelCAD commands

- Click Tools, Start Recording. Your commands continue to record until you click Tools, Stop Recording

Note

- You can record all your commands in CorelCAD except for the following:
- window display commands
- customization commands
- help access commands
- print preview commands
- script commands
- If a recording exists in your computer's CorelCAD memory, you will be prompted to save or overwrite the recording before you can record another set of commands.

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

How to stop recording CorelCAD commands

- Click Tools, Stop Recording.

Note

- You can record all your commands in CorelCAD except for the following:
- window display commands
- customization commands
- help access commands
- print preview commands
- script commands

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

How to play a recording

- Click Tools, Playback Recording.

Note

- Recordings are played back in the active CorelCAD   diagram.

How To:

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD   application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

How to save a recording

1. Click Tools, Save Recording.
2. In the Corel SCRIPT Editor, click File, Save As.
3. Type a name in the File Name box.

Note

- Recordings are saved as Corel SCRIPT script files.
- You can enter a brief description (maximum of 44 characters)of the script in the Description text box. The description is saved in the script's first line as a remark statement (**REM**) and will also appear in the Open Script or Run Script dialog boxes when the script is selected.
- Additionally, if a script with a description is assigned to a CorelCAD   toolbar, the description will appear in the status bar when you point to the toolbar button.
- Saved recordings, in addition to recorded commands and a description, include other Corel SCRIPT syntax. The second line is a remark statement (**REM**) that notes the date the script was saved and some other system information.
- Recorded commands are enclosed by the **WITHOBJECT** and the **END WITHOBJECT** statements. These statements direct Corel SCRIPT to the application the recorded commands are executed with.

How To:

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

How to start the Corel SCRIPT Editor

- Click Tools, Corel SCRIPT Editor.

How To:

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

How to run a Corel SCRIPT script (or a saved recording)

1. Click Tools, Run Script.
2. If the Corel SCRIPT script is not in the default folder, choose the drive and folder where the Corel SCRIPT script is stored.
3. Double-click the Corel SCRIPT script you want to run.

Note

- You can use wild cards (* and ?) if you're not sure of the name of the file you want to run. For example, typing **script*.csc** in the File Name box and clicking OK lists all CSC files in the selected folder beginning with **script**. Typing **sc?.csc** in the File Name box and clicking OK lists all CSC files in the selected folder that begin with **sc** and are followed by only one character.

How To:

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. The Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

How to access Corel SCRIPT online help

How To:

Click the Corel SCRIPT icon to open Corel SCRIPT online Help. Corel SCRIPT online Help provides detailed information for both Corel SCRIPT and CorelCAD application scripting commands.

{button ,AL(`howto_cad_script;;;;;',0,"Defaultoverview",)} Related Topics

Use the Start Recording command to start recording your actions. You can record most keystrokes, mouse, toolbar, and menu actions. When you have finished performing the actions you want to record, choose Stop Recording. You can then use the Playback Recording command to replay your actions.

When you click Start Recording, the command is grayed until you click Stop Recording.

Use the Playback Recording command to replay the actions you recorded with the Start and Stop Recording commands. If no actions have been recorded during the current CorelCAD session, the command is grayed.

Opens the Save Recording dialog box that saves the current recording as a Corel SCRIPT. Once you save a recording as a script, you can edit it with the Corel SCRIPT Editor. When your recorded actions are saved as a script, they are translated into Corel SCRIPT application commands.

If you intend on using your recorded script often, you can assign it to the CorelCAD menu, the toolbar or a keystroke.

If no actions have been recorded during the current CorelCAD session, the command is grayed.

When you have finished performing the actions you want to record, click Stop Recording. You can then use the Playback Recording command to replay your actions.

The Stop Recording command is grayed until you click Start Recording.

Opens the Run Script dialog box. Click the saved Corel SCRIPT script or wizard you want to execute. The default folder and drive are shown but you can execute a script or wizard from any drive or folder. The script or wizard is executed from the active diagram window.

Remember that you can also assign a keystroke, add a menu item, or add a button to the toolbar to run a script or a wizard.

Opens the Corel SCRIPT Editor. The Corel Script Editor is a tool you use to create and edit Corel SCRIPT script files (or saved recordings).

Displays a description for the selected Corel SCRIPT script. The description is stored in a script's first two lines as remark (REM) statements.

To save a description of the Corel SCRIPT script, type in this text box. The description is stored in a script's first line as a remark (REM) statement.

Toolbox defaults

The Pick tool selects objects or groups of objects. Click on the tool, then click on the object you want to select. SHIFT + click to select multiple objects.

The Zoom In tool increases the view magnification to show the area you highlight with the marquee box.

The Zoom Out tool decreases the magnification of the current view by 30%.

The Zoom To All Objects tool increases or decreases the view magnification to fit all objects on the screen.

The Zoom To Selected tool increases or decreases the view magnification to fit all selected objects on the screen.

The Zoom Previous tool returns to the last view magnification setting.

The Pan tool shifts the view by an amount and distance you specify. Click a point in your drawing, then click a second point to shift the view.

The Line Segments tool draws a series of touching but unconnected line segments. Click the endpoints of the lines you want to draw. Double click or press the ENTER key to stop drawing.

The PolyLine tool draws a series of connected line segments. Click the endpoints of the lines you want to draw. Double click or press the ENTER key to stop drawing.

The Arrow Line tool draws a series of connected line segments ending in an arrowhead. Click the endpoints of the lines you want to draw. Double click or press the ENTER key to stop drawing.

The Intersecting Line tool draws a line at the intersection of two planes that you select.

The Curve tool joins the points you select with a smooth, continuous curve. Double click or press the ENTER key to stop drawing.

The Bezier Segments tool draws a series of connected curves. You can edit the angle and orientation of each curve segment as it is created. Double click or press the ENTER key to stop drawing.

The Bezier Curve tool draws a single curved line segment. You can edit the angle and orientation of the curve segment as it is created.

The Freehand tool draws a line that follows your movements when you click and drag, similar to the movements of a pencil on paper.

This tool shouldn't be here.

The Arc Through 3 Points tool connects the three points you select in a circular arc.

The Arc Center, Start, End tool draws an arc with a center and end points that you select.

The Arc Center, Start, Angle tool draws an arc with a length, center, and starting point that you select.

The Arc Radius, End Points tool draws an arc with a radius and end points that you select.

The Elliptical Arc tool draws a segment of an ellipse that you define by its major and minor axes.

The Free Form tool creates a surface defined by three or more points that you specify.

The Skin tool creates a surface defined by two or more existing lines or curves. If the Skin is defined by more than two lines, it bends at each interior line, resembling a piece of sharply bent sheet metal.

The Loft tool creates a surface defined by two or more existing lines or curves. Lofts are like Skins that have been smoothed out. The interior lines still define bends, but these bends are gradual and continuous.

The Perpendicular Plane tool creates a rectangular surface normal to an existing line in your drawing.

The Multiple Plane tool creates a series of surfaces defined by three points that you specify. The planes touch along a common edge, and can either be connected to form a single object, or left as separate entities.

The Snap Off tool turns running snaps off for the next clicking operation.

The Endpoint Snap tool snaps to the end point of the line nearest to where you click next.

The Midpoint Snap tool snaps to the middle point of the line nearest to where you click next.

The Intersection Snap tool snaps to the intersecting point of two lines nearest to where you click next.

The Implied Intersection Snap tool snaps to the point where two unconnected lines would intersect, nearest to where you click next.

The Circle Center Snap tool snaps to the center of the circle nearest to where you click next.

The Circle Quadrant Snap tool snaps to a quadrant of the circle nearest to where you click next.

The Tangent Snap tool snaps to a tangent point on the circle nearest to where you click next.

Shifts a partially drawn object so it is perpendicular to an existing object.

This command is only available when a drawing command is active.

The Line Snap tool snaps to the line nearest to where you click next.

The Point Snap tool snaps to the point mark nearest to where you click next.

The Plane Snap tool snaps to the plane nearest to where you click next.

Opens the Object roll-up, where you can draw a variety of shapes and solids with great accuracy.

Opens the Materials roll-up, where you can assign materials to objects in your drawing.

The Rectangle, 2 Points tool draws a rectangular wireframe or plane defined by two opposite corners.

The Rectangle, 3 Points tool draws a rectangular wireframe or plane defined by three corners.

The Polygon, 2 Adjoining Vertices tool draws a polygonal wireframe or plane defined by two points forming one of its edges.

The Polygon, Center and Vertex tool draws a polygonal wireframe or plane defined by its center and a single vertex.

The Circle, Center and Radius tool draws a circular wireframe or plane defined by its center and a point on its circumference.

The Circle, 2 Points tool draws a circular wireframe or plane defined by two points on its circumference.

The Circle, 3 Points tool draws a circular wireframe or plane defined by three points on its circumference.

The Ellipse tool draws an elliptical wireframe or plane defined its major and minor axes.

The 3D Solid, Box, 2 Points tool creates a solid box defined by two opposite corners. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define vertices in 3D space.

The 3D Solid, Box, 3 Points tool creates a solid box defined by three base corners and a height. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define the box's height.

The 3D Solid, Sphere, Center and Radius tool creates a solid sphere defined by its center point and a point on its circumference.

The 3D Solid, Hemisphere, Center and Radius tool creates a solid hemisphere defined by the center and radius of its base.

The 3D Solid, Cone, Center and Radius tool creates a solid cone. The cone's base is defined by its center point and a point on its circumference, and the height is defined by a simple drag-and-click maneuver.

The 3D Solid, Frustum, Center and Radius tool creates a solid frustum. The base and apex are defined by their centers and radii.

The 3D Solid, Cylinder, Center and Radius tool creates a solid cylinder. The cylinder's base is defined by its center point and a point on its circumference, and the height is defined by a simple drag-and-click maneuver.

The 3D Solid, Prism, Center and Vertex tool creates a solid cylinder with a polygonal base. The cylinder's base is defined by its center point and one of its vertex points, and the height is defined by a simple drag-and-click maneuver.

The 3D Solid, Torus, Center and Radius tool creates a solid torus defined by its center and two radii.

The Text 2D tool adds text that always appears flat in order to be legible from any viewpoint

The Text 3D tool adds text that changes aspect when viewed at different angles

The Edit Text tool lets you edit text that you have already entered into your drawing.

The Leader tool adds 3D text attached to a point in your drawing by a line.

The Free Dimension tool inserts a dimension measuring the direct distance between two points.

The X Linear Dimension tool inserts a dimension measuring the X-axis distance between two points.

The Y Linear Dimension tool inserts a dimension measuring the Y-axis distance between two points.

The Z Linear Dimension tool inserts a dimension measuring the Z-axis distance between two points.

The Orthogonal Dimension tool inserts a dimension measuring the distance between two points along any orthogonal axis that you choose.

The Continuous Linear Dimension tool inserts a series of linear dimensions.

The Continuous Baseline Dimension tool inserts a series of cumulative linear dimensions.

The Angle Dimension tool inserts a dimension measuring the angle between two lines.

The Radius Dimension tool inserts a dimension measuring the radius of a circle.

The Diameter Dimension tool inserts a dimension the diameter of a circle.

Other toolbar controls

Sends the current drawing through electronic mail.

Opens the Line Style dialog box, where you can change the style of lines throughout your drawing.

Opens the Layer Groups dialog box, where you can organize your layers into groups.

Displays controls that let you manipulate objects between layers.

Saves the active drawing settings as a template. You can save the objects in your drawing with the template, or leave it blank.

Imports files in other formats into your drawing. You can also use this command to merge two CorelCAD drawings together.

Exports elements of you drawing to other file formats. You can also use this command to create symbols for use in CorelCAD drawings.

Prints the active drawing.

Shows a list of reversible operations that you have performed.

Duplicates the selected objects. The duplicates are offset from the originals by an amount you can change in the Options dialog box.

Selects all objects in the current drawing.

Selects all objects on a layer you select.

Duplicates the selected objects in a line.

Duplicates the selected objects in a two-dimensional grid.

Duplicates the selected objects in a three-dimensional grid.

Duplicates the selected objects in a circular array.

Duplicates the selected objects in a spiral array.

Duplicates the selected objects in a spherical array.

Refreshes the current drawing.

Refreshes all open windows.

Zooms the drawing to fit the current window.

Zooms all open drawings to fit their windows.

Displays the current drawing in a wireframe view.

Processes the drawing with the current hidden line settings. Right-click to open the Hide dialog box.

Shades the drawing with the current shade settings. Right-click to open the Shade dialog box.

Dynamically adjusts the viewpoint position around any of the 3D axes.

Sets the target and viewer position.

Saves the current custom viewpoint position.

Toggles the display of the Rulers. The rulers are only available in the Front, Back, Top, Bottom, Right Side, and Left Side views.

The Horizontal and Vertical Rulers. Rulers can help you when you size and position objects in a drawing. The rulers are only available in the Front, Back, Top, Bottom, Right Side, and Left Side views.

Opens the Toolbars dialog box, where you can activate or edit your toolbars.

Toggles the display of the Standard toolbar.

Toggles the display of the Toolbox.

Toggles the display of the Zoom tools.

Toggles the display of the Line tools.

Toggles the display of the Arc tools.

Toggles the display of the Standard 2 toolbar.

Toggles the display of the Surface tools.

Toggles the display of the Text tools.

Toggles the display of the Dimension tools.

Toggles the display of the Snap tools.

Toggles the display of the View toolbar.

Toggles the display of the Workspace toolbar.

Toggles the display of the 2D Objects tools.

Toggles the display of the 3D Solids tools.

Toggles the display of the Extrude toolbar.

Toggles the display of the Solid Tools toolbar.

Toggles the display of the Recorder toolbar.

Toggles the display of the Layers toolbar.

Moves the position of the viewer to the left, causing the objects in your drawing to appear to shift to the right.

Moves the position of the viewer to the right, causing the objects in your drawing to appear to shift to the left.

Moves the position of the viewer up, causing the objects in your drawing to appear to shift down.

Moves the position of the viewer down, causing the objects in your drawing to appear to shift up.

Rotates the viewer clockwise, causing the objects in your drawing to appear to rotate counter-clockwise.

Rotates the viewer counter-clockwise, causing the objects in your drawing to appear to rotate clockwise.

Moves the viewpoint much closer to the objects in your drawing.

Moves the viewpoint much farther away from the objects in your drawing.

Creates a new drawing based on the default template.

Opens an existing drawing file.

Closes the active drawing.

Saves the active drawing.

Saves the active drawing under a new name.

Opens Print Space.

Opens the named file.

Reverses the last operation.

Reverses the last Undo operation.

Cuts selection and places it on the clipboard.

Copies selection and places it on the clipboard.

Inserts clipboard contents into the document.

Exits CorelCAD and prompts to save the open drawings.

Opens the Help table of contents.

Invokes the context-sensitive help cursor. Click any item with the cursor to get help.

Prints the active drawing.

Extends the selected object along a path you select. You can also taper the extrusion by a set ratio.

Extends the selected object along a path that is normal to the plane of the object. Lines, curves, and arcs extrude to form connected planes or surfaces, and planes extrude to form solids.

Extends the selected object along a path you select. You can modify the scale of the object at any point along the extrusion.

Extrudes the selected object along a circular path around an axis you select. You can specify the sweep to be perfectly circular, or faceted. You can also sweep the object through any angle up to a full 360 degrees.

Extrudes the selected object along a spiral path around an axis that you specify. This results in an object resembling a spring or threaded bolt. You can set the number of revolutions, and the total length of the sweep path.

Moves the selected objects to another location in the drawing.

Scales the selected object, increasing or decreasing its size.

Mirrors the selected object in an existing plane, or a plane that you define. The command will either flip the object you select, or create a duplicate in the new position.

Rotates an object through an angle, around any of the three axes, or around an axis you specify.

The Stretch command is a powerful tool that can create very complex shapes from simple objects. You stretch an object by defining a plane that bisects it, and a vector along which to stretch. The object is sliced along the plane you define, and then extruded along the vector. The two halves of the object remain unaltered, but are now joined by a new shape that is defined by the stretch.

Takes one or more points on a line or a plane and moves it to a new location, forcing the original object to conform to the new configuration.

Creates a series of parallel copies of an object in the current working plane. The Offset command will only create copies of two-dimensional wireframe objects: surfaces, solids, and three-dimensional wireframes cannot be offset.

Moves points on your object. You can edit Bezier curves using this command.

Trims lines, curves, or arcs within boundaries you set. Select the boundaries first, then select the line to be cut.

Trims lines, curves, or arcs, removing both segments you select.

Extends lines, curves, or arcs until they meet a boundary you select. Select the boundaries first, then select the line to be extended.

Rounds the corners of a two-dimensional object using a curve radius that you specify. You can also use the command to join two lines together into a single curve.

Bevels, or crops the corners of two-dimensional objects.

Rounds the edges of a three-dimensional object using a curve radius that you specify. You can also round corners by filleting the three edges surrounding the corner.

Bevels, or crops the edges of a three-dimensional object. You can also bevel corners by chamfering the three edges surrounding the corner.

Welds two unconnected line segments into a single object. The line segments must be touching at their endpoints.

Moves the endpoint of a line so that it touches the endpoint of a second line. The resulting lines are touching, but do not form a continuous object.

Divides a continuous plane into two discrete sections by slicing it along an existing line.

Divides a three-dimensional object along a plane you define, leaving the resulting pieces in your drawing. This command will also work on planes and other two-dimensional objects, as long as you select a plane that intersects the object you want to slice.

Creates a plane that divides a three-dimensional object, but does not alter the original object in any way.

Adds two or more solids together to create a new solid.

Subtracts one or more solids from another solid. The solids must have intersecting volumes.

Removes everything except the intersecting volume of two or more solids, creating a single new solid.

Checks two or more solids to see if they intersect, then prompts you to create a new solid defined by the intersecting volume. The original objects are not altered.

Turns groups of wireframes into surface models or groups of surface models into solids. The original objects must be grouped together and they must be in a configuration that can form the desired shape.

Breaks solids up into surface models, and surface models into wireframe objects.

Groups objects together so that you can manipulate them as a single entity.

Breaks Grouped objects into their components, so you can manipulate them as separate entities.

Groups the selected objects together, or ungroups the selected group.

Opens the Options dialog box, where you can set a variety of CorelCAD defaults.

Opens the Customize dialog box, where you can configure your toolbars, menus, and shortcut keys.

Sets the reference point for the Import command.

Opens the Units & Angles dialog box, where you can set the units and style of measurements in your drawing.

Opens the Grid Setup dialog box, where you can set the spacing, color, origin, and orientation of both the Visible and Snap grids.

Sets the origin of the grid to the point you select.

Scales your entire drawing by a value you specify.

Toggles Orthogonal mode. When Orthogonal mode is active, objects you create will be limited to the axes defined in the Options dialog box.

Toggles the display of the Visible grid.

Toggles the Snap grid. When the Snap grid is active, your point selections will be limited to the spacing specified in the Grid Setup dialog box.

Toggles Orthogonal mode. When Orthogonal mode is active, objects you create will be limited to the axes defined in the Options dialog box.

Opens the Layers Manager, where you can create and edit layers.

Hides the layer containing the next object you select.

Activates the layer containing the next object you select.

Moves objects to the layer containing the next object you select.

Copies objects to the layer containing the next object you select.

Locks the layer containing the next object you select. Objects on a locked layer cannot be selected or otherwise manipulated.

Launches Corel Multimedia Manager.

Measures the angle between two lines.

Measures the distance between two points.

Measures the surface area contained by a series of points you select.

Measures the volume, center of gravity, and other engineering properties of a selected solid.

Opens a saved window layout.

Saves the current layout of open windows.

Displays information about your drawing.

Opens the Dimension roll-up, where you can create detailed dimension styles and add them to your drawing.

Opens the Insert Point roll-up, where you can define points for command procedures using Cartesian or Polar coordinates. Use the roll-up when you require greater accuracy than can be provided with mouse clicks.

Displays information about CorelCAD, and about your computer system.

Draws a polygonal plane or wireframe defined by its center and the distance to its edges.

Draws a solid rectangular pyramid using two points to define the base. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define the height.

Draws a solid rectangular pyramid using three points to define the base. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define the height.

Draws a solid rectangular frustum using two points to define the base. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define the height.

Draws a solid rectangular frustum using three points to define the base. You can use the Insert Point roll-up, or hold down the CTRL and SHIFT keys to define the height.

Draws a solid prism using two endpoints to define a single edge of the base.

Draws a solid prism using a center and vertex point to define the base.

Draws a solid prism using a center and edge point to define the base.

Draws a solid polygonal pyramid using two endpoints to define a single edge of the base.

Draws a solid polygonal pyramid using a center and vertex point to define the base.

Draws a solid polygonal pyramid using a center and edge point to define the base.

Draws a solid polygonal frustum using two endpoints to define a single edge of the base.

Draws a solid polygonal frustum using a center and vertex point to define the base.

Draws a solid polygonal frustum using a center and edge point to define the base.

Draws a solid sphere defined by two points on its circumference.

Draws a solid sphere defined by three points on its circumference.

Draws a solid hemisphere defined by two points on the circumference of its base.

Draws a solid hemisphere defined by three points on the circumference of its base.

Draws a solid cone defined by two points on the circumference of its base.

Draws a solid cone defined by three points on the circumference of its base.

Draws a solid circular frustum defined by two points on the circumference of its base.

Draws a solid circular frustum defined by three points on the circumference of its base.

Draws a solid cylinder defined by two points on the circumference of its base.

Draws a solid cylinder defined by three points on the circumference of its base.

Draws a solid elliptical cylinder defined by the major and minor axes of its base.

Draws a solid elliptical pyramid defined by the major and minor axes of its base.

Draws a solid elliptical frustum defined by the major and minor axes of its base.

Other screen stuff

The Color Palette. Click a color swatch to change the color of the selected object. Click the From Layer button to the left of the palette to assign the default layer color to the object. Click the arrows to either side of the palette to reveal more colors.

A toolbar. You can click this point on the toolbar and drag it to a new location. Double-click this point to dock or undock the toolbar.

Creates a new drawing from a template you choose.

Deletes the currently selected object.

Opens the Hide dialog box, where you can set the options for the Hidden line view.

Opens the Shade dialog box, where you can set options for shaded and rendered previews.

Toggles the display of the color palette.

Inserts point markers in your drawing. You can use point markers for reference, or to make custom Snap points on your objects.

Arranges all open drawing windows in a cascade with the active window on top.

Opens a new window on the current drawing, with the current view options.

Toggles the display of the Status bar.

Repeats your last operation.

Arranges all open drawing windows in a series of horizontal tiles.

Arranges all open drawing windows in a series of vertical tiles.

Opens the Viewer Settings dialog box, where you can precisely set the viewpoint position, target position, and the view focal length.

Opens the Layer Groups dialog box, where you can organize your layers into groups.

Measures the volume, center of gravity, and other engineering properties of a selected solid.

Divides a three-dimensional object along a plane you define, and removes one of the resulting pieces. This command will also work on planes and other two-dimensional objects, as long as you select a plane that intersects the object you want to slice.

Draws lines parallel to the next line you select.

Displays the current layer and its properties. You can switch to a new layer by selecting it from the list.

Displays the current layer group. You can switch to a new layer group by selecting it from the list.

Displays the current view mode. You can switch to a new view mode by selecting it from the list.

Object Entries

No objects are selected. Right-click on an object and choose What's This? from the menu to get the object type.

You have selected multiple objects. Right-click on a single object and choose What's This? from the menu to get the object type. Click Transform, Group to combine these objects into a group that you can manipulate as a single entity.

The selected object is a three-dimensional solid. Use the Solid tools to manipulate this object.

The selected object is a wireframe. Wireframe objects are outlines; they have no surface area or volume.

The selected object is a surface model. Surface models have area, but no volume.

You have selected a group of objects. You can manipulate these objects as a single entity. Click Transform, Ungroup to manipulate individual objects in this group.

This text is three-dimensional, and will change aspect as your viewpoint changes. Click Text, Edit Text to change this text.

This text is two-dimensional, and will always appear flat no matter how your viewpoint changes. Click Text, Edit Text to change this text.

This text is three-dimensional, and will change aspect as your viewpoint changes. Click Text, Edit Text to change this text.

This dimension measures the angle between two lines. If Dynamic Dimensioning is active, dimensions will automatically update when you manipulate the objects they measure. Click Dimension, Dimension Roll-up to edit the dimension style.

This dimension measures a linear distance. If Dynamic Dimensioning is active, dimensions will automatically update when you manipulate the objects they measure. Click Dimension, Dimension Roll-up to edit the dimension style.

This dimension measures the diameter of a circle. If Dynamic Dimensioning is active, dimensions will automatically update when you manipulate the objects they measure. Click Dimension, Dimension Roll-up to edit the dimension style.

This dimension measures the radius of a circle. If Dynamic Dimensioning is active, dimensions will automatically update when you manipulate the objects they measure. Click Dimension, Dimension Roll-up to edit the dimension style.

Displays the available line styles. Click a style to apply it to the current object. Click By Layer if you want to set the object's line style to the default style of the current layer.

Minimizes the current window to an icon, and places it at the bottom of the screen.

Activates the last window you used.

Moves the current window to a new position. You can move the window with the arrow keys, or with the mouse.

Resizes the current window. You can resize the window with the arrow keys, or with the mouse.

Closes the current window. If the window contains the only open view of an unsaved drawing, you will be prompted to save the drawing before the window closes.

Resizes the current window to take up all available screen space.

Restores the current window to its previous size and position.

Opens the View Manager, where you can create and save new view modes and positions.

Activates the next available window.

Activates the highlighted window.

The Status Bar. Right-click on any of the status bar areas to customize the information display. Drag the divider lines to resize the areas.

Opens the Refinements dialog box, where you can alter the refinement settings for rendering curved objects.

Toggles the display of the Measure toolbar.

Opens the Edit Material dialog box, where you can edit existing material styles, or create new ones.

Modeless dialogs and other screen stuff

Right-click and choose What's This? from the resulting menu to get help on this control.

The CorelCAD drawing window. To view an object's properties, right-click on it and choose What's This? from the resulting menu.

Object Roll-up controls

Creates a circle with no surface area, just a wireframe outline.

Creates a circular plane.

Creates hollow circular shapes. These shapes are three-dimensional, but have no volume.

Creates solid, three-dimensional circular shapes.

Lets you create your circular object by specifying the center and a point on the circumference of its base.

Lets you create your circular object by specifying two points on the circumference of its base.

Lets you create your circular object by specifying three points on the circumference of its base.

Creates a sphere. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a hemisphere. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a cylinder with a circular base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a cone with a circular base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a frustum with a circular base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a rectangle with no surface area, just a wireframe outline.

Creates a rectangular plane.

Creates hollow rectangular shapes. These shapes are three-dimensional, but have no volume.

Creates solid, three-dimensional rectangular shapes.

Lets you create your rectangular object by specifying two points on its base. The resulting shape will be orthogonal to the working plane.

Lets you create your rectangular object by specifying three points on its base. The resulting shape does not have to be orthogonal to the working plane.

Creates a box or cube. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a pyramid with a rectangular base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a truncated pyramid with a rectangular base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a polygon with no surface area, just a wireframe outline.

Creates a polygonal plane.

Creates hollow polygonal shapes. These shapes are three-dimensional, but have no volume.

Creates solid, three-dimensional polygonal shapes.

Lets you create your polygonal object by specifying two adjacent vertex points on its base.

Lets you create your polygonal object by specifying the center and a single vertex on its base.

Lets you create your polygonal object by specifying the center and a single edge point on its base.

Creates a cylinder with a polygonal base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a pyramid with a polygonal base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates a truncated pyramid with a polygonal base. Either the Surface or Solid buttons above must be enabled in order for this button to be active.

Creates an ellipse with no surface area, just a wireframe outline.

Creates an elliptical plane.

Creates hollow polygonal shapes. These shapes are three-dimensional, but have no volume.

Creates solid, three-dimensional elliptical shapes.

Creates a cylinder with an elliptical base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

Creates a cone with an elliptical base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

Creates a truncated cone with an elliptical base. Either the Surface or Solid buttons must be enabled in order for this button to be active.

Switches between the object tabs. The four tabs are: Rectangle, Circle, Polygon, and Ellipse.

Specifies a fixed radius or diameter for your circle. Enable the option, then type a value in the box.

Specifies a fixed radius or diameter for your circle. Enable the option, then type a value in the box.

Specifies a fixed length for your ellipse's major axis. Enable the option, then type a value in the box.

Specifies a fixed length for your ellipse's minor axis. Enable the option, then type a value in the box.

Specifies a fixed rotation angle for your ellipse's major axis. Enable the option, then type a value in the box.

Specifies a fixed length for your ellipse's major axis. Enable the option, then type a value in the box.

Specifies a fixed rotation angle for your ellipse's major axis. Enable the option, then type a value in the box.

Specifies a fixed length for your ellipse's minor axis. Enable the option, then type a value in the box.

Specifies a fixed radius or edge length for your polygon. Enable the Distance option, then type a value in the box.

Specifies the number of sides for your polygon.

Specifies a fixed radius or edge length for your polygon. Enable the Distance option, then type a value in the box.

Specifies a fixed height for your 3D object. Choose Height from the Set list, then type a value in the Height box.

Specifies a fixed length for your rectangle. Enable the Length option, then type a value in the Length box.

Specifies a fixed length for your rectangle. Enable the Length option, then type a value in the Length box.

Specifies a fixed taper angle for your cone, pyramid or frustum. Choose Taper from the Set list, then type a value in the Taper box.

Specifies a fixed width for your rectangle. Enable the Width option, then type a value in the Width box.

Specifies a fixed width for your rectangle. Enable the Width option, then type a value in the Width box.

Specifies a fixed height or taper angle for your 3D object. Choose an option from the Set list, then type a value in the appropriate box. Choose None if you want to define your object with the mouse.

These controls specify the type of object you want to draw. You can create a wireframe, a plane, a surface model, or a solid.

These controls specify the dimensions of a two-dimensional object, or the base of a three-dimensional object.

These controls specify the type of 3D object you want to create, and, optionally, its height. Either the Surface or Solid buttons above must be enabled in order for these controls to be active.

Dimension Roll-up Controls

Displays the font of the dimension text. To change the appearance of your text, select a new font from the list.

Displays the arrowhead that appears at the end of the dimension.

Displays the arrowhead that appears at the beginning of the dimension.

Enables or disables Dynamic Dimensioning. When the option is enabled, dimension entries will adjust when objects are modified.

Specifies the distance from the measured points you want the dimension markers to start.

Specifies the distance from the measured points you want the dimension markers to start.

Specifies the length of the dimension markers you want to extend past the dimension text.

Specifies the length of the dimension markers you want to extend past the dimension text.

Specifies the alignment of the dimension. You can have the dimension only measure the distance along one axis, or you can have it measure the direct distance between two points.

Specifies the precision of the current units. You can choose a new precision setting from the list.

Contains any text that you want to appear before the measurement in the dimension text.

Specifies the current unit style. You can choose a new style from the list.

Contains any text that you want to appear after the measurement in the dimension text.

Specifies the current unit type as it appears in the dimension text. You can choose a new unit type from the list.

Toggles the display of the unit name in the dimension text.

Specifies the height of the dimension text. You can change the units by right-clicking on the box, and choosing a new option from the Units list.

Specifies the style of the dimension text. You can choose from Normal, Bold, Italic, or Bold Italic.

Switches from linear to angular dimensions.

Applies the current dimension settings to any dimensions you have selected.

Applies the current dimension settings to all dimensions in the current drawing.

Deletes the current dimension style.

Displays the name of the current dimension style. To create a new style, type a new name, then click New.

Switches between the Dimension roll-up tabs.

Updates the current dimension style with any changes you have made.

Switches from angular to linear dimensions.

Creates a new dimension style with the name you type in the Style box.

Insert Point Roll-up Controls

Lets you define your new point in terms of its distance from the origin (0,0,0).

Applies the current settings.

Switches between the coordinate tabs. The two tabs are Cartesian (XYZ), and Polar.

Lets you define your new point relative to the next point you select.

Lets you define your new point relative to the last point you selected.

Defines the length of the polar vector.

Defines the direction of the polar vector in the XY plane.

Defines the direction of the polar vector in the XZ plane.

Specifies the position along the X-axis. The X-axis is the black line that helps form the 3D cursor.

Specifies the position along the Y-axis. The Y-axis is the red line that helps form the 3D cursor.

Specifies the position along the Z-axis. The Z-axis is the green line that helps form the 3D cursor.

Specifies the position along the X-axis. The X-axis is the black line that helps form the 3D cursor.

Specifies the position along the Y-axis. The Y-axis is the red line that helps form the 3D cursor.

Specifies the position along the Z-axis. The Z-axis is the green line that helps form the 3D cursor.

Material Roll-up controls

Applies the current settings.

Displays the current material category.

Displays the current material style.

Opens the Edit Materials dialog box, where you can edit existing material styles, or create new ones.

Displays a preview of the current material style as it would appear applied to a three-dimensional object.

Copies the material attributes from the next object you select into the Materials roll-up. This provides a quick way to copy material styles between objects.

OPEN DIALOG

Lists the folders and files in the selected location. To see what’s inside a folder, double-click it. You can also use the Look In box to see the hierarchy of folders.

Lists the available folders and files. To see how the current folder fits in the hierarchy on your computer, click the down arrow. To see what’s inside a folder, click it. The box below shows the folders and files in the selected location. You can also double-click a folder or file in that box to open it.

Provides a space for you to type the name of the file. You can use ***** as a wildcard. For example, you can type ***.*** to see a list of all files.

Lists the type of files to display. This is useful for narrowing the list of files displayed to only those files you’re interested in.

Opens the file with the name, file type, and location you have specified.

Closes this dialog box without saving any changes you have made.

Displays a thumbnail image of the currently selected graphics file. If a non-graphics file is selected, the Preview window is de-activated and appears crossed through with an X.

- **Note**

You must enable the Preview check box to display graphics files in the Preview window. If this check box is disabled, the Preview window appears crossed through with an X.

Displays the progress of the selected file as it loads into the Preview window.

Use the scroll bar to visually scroll through a file containing more than one graphic item. Executable (EXE) files, for example, often contain icons and cursors which may be viewed in the Preview window.

Only graphics files will appear in the Preview window. Non-graphics files are not displayed.

Click the Preview check box (if it is not already enabled) to see a thumbnail of your image. When Preview is disabled an X appears in the Preview window. Also, vector files that do not have a BMP header associated with them cannot be previewed and appear as an X.

Click the down arrow to display a drop-down box listing several different methods of opening files. You can load files as:

- **Full Image**

Loads the entire file. If the file you are opening is too large for your system resources, "not enough memory" is displayed. The file is loaded as a partial area.

- **Crop**

Loads a cropped area. The Crop Image dialog box opens. Crop an area.

- **Resample**

Loads a resampled version of the file. The Resample dialog box opens. Resample an area.

- **Partial Load**

Loads a partial area. The Partial Area dialog box opens. Select an area.

Click to view file information such as image size, file format, keywords, notes, and suppress filter.

Click to open the About Import Filter dialog box that displays information about the currently selected file/filter type (i.e., Corel PHOTO-PAINT Image, CPT).

Select filter.

Displays the image dimensions (in pixels) and image color mode.

Displays the file format of the currently selected image (e.g., Corel PHOTO-PAINT Image (CPT) Uncompressed).

Displays a list of all notes that are attached to the currently selected file.

Provides a space for you to type file keywords. These keywords are used to find files stored on your system. You can type single words, phrases, or combinations of both. Use commas to separate each keyword.

To use OPI links, you must enable the "Link to high resolution file for output using OPI" option when importing your TIFF (or CT) files. These TIFF (or CT) images become known as OPI images. When your service bureau receives your print file, the OPI server substitutes the high-resolution images for the low-resolution images. If there are no OPI images in your file, the Maintain OPI Links option will not be available at print time.

Enable the radio button to import the file onto a new slide.

Enable the radio button to import the file onto the current slide.

When enabled, suppresses the dialog box that lets you specify options for opening, importing, exporting, or saving a file to or from the specified file format. The program automatically assigns default settings.

Enable this check box when importing vector formats only. If turned on, CorelDRAW eliminates redundant points in the imported graphic. Set the tolerance value in the number box. This value controls how much the curve can vary from the original. A small value forces high accuracy, but will result in more points.

SAVE DIALOG

Lists the folders and files in the selected location. To see what's inside a folder, double-click it. You can also use the Look In box to see the hierarchy of folders.

Lists the available folders and files. To see how the current folder fits in the hierarchy on your computer, click the down arrow. To see what’s inside a folder, click it. The box below shows the folders and files in the selected location. You can also double-click a folder or file in that box to open it.

Provides a space for you to type the name of the file.

Lists the type of files to display. This is useful for narrowing the list of files displayed to only those files you're interested in.

Closes this dialog box and saves any changes you have made.

Closes this dialog box without saving any changes you have made.

Click to displays an overview of this dialog box. For help on an item, click the **?** button at the top of the dialog box, and then click the item.

Click to open the About Import Filter dialog box that displays information about the currently selected file/filter type (i.e., Corel PHOTO-PAINT Image, CPT).

Displays a list of all keywords that are attached to the currently selected file.

Displays a list of all notes that are attached to the currently selected file.

Note

Notes are not supported in the following formats:

- TIFF JPEG (JTIF)
- GIF (87a)
- TGA (Normal)

Displays a drop-down box listing the available compression types. The compression types vary with the file/filter type selected in the Save as type: drop-down box. Click to select a compression type before saving.

When enabled, suppresses the dialog box that lets you specify options for opening, importing, exporting, or saving a file to or from the specified file format. The program automatically assigns default settings.

Enable to create a backup copy of the file when saved.

Enable to save only selected objects.

How To: **Note**

Ensure that you have selected the desired objects before choosing Save, otherwise this option will be grayed out.

CROP DIALOG

Overview info

Crop Image dialog box

The Crop Image dialog box allows you to crop an image before loading. The cropping is permanent and creates a new, smaller image.

How To: For more information on the options included in this dialog box, use the What's This? online Help tool.

What’s This?

Displays the path, file name, and file extension of the image to be cropped.

Displays the image with a bounding box. Move the nodes on the bounding box to crop the image. Use the Hand cursor to move the bounding box to a specific area of the image.

Enter a number or use the scroll arrows to select the height of the cropped area.

Enter a number or use the scroll arrows to select the width of the cropped area.

Enter a number or use the scroll arrows to position the top of the cropped area.

Enter a number or use the scroll arrows to position the left side of the cropped area.

Click to select the entire image or to resize the bounding box to cover the entire area and reselect the cropped area.

Displays a drop-down box listing a number of image measurement units. The values displayed in the Width and Height number boxes will reflect the measurement unit selected here.

Displays the size of the new, cropped image in bytes.

RESAMPLE

Overview

Resample dialog box

The Resample dialog box creates a new image, resampled to a smaller size.

How To: For more information on the options included in this dialog box, use the What's This? online Help tool.

What's This?

Displays the path, file name, and file extension of the image to be resampled.

Enter a number or use the scroll arrows to select the width of the resampled image.

Enter a number or use the scroll arrows to select the height of the resampled image.

Displays a drop-down box displaying a number of measurement units by which you can resample an image. The values displayed in the Width and Height boxes reflect the chosen unit of measurement.

Displays the width of the original file according to the measurement unit selected in the Units drop-down box.

Displays the height of the original file according to the measurement unit selected in the Units drop-down box.

Controls the horizontal resolution of the image currently being resampled. Resolution refers to the fineness of image detail and the amount of information required to record, store, display and print an image. Resolution is measured in dots per inch (dpi), referring to the number of pixels used to construct an image. Choose a resolution in keeping with the resolution of both your monitor and (if you plan to print an image) printer. When you work with an image that you want to print, choose a resolution close to the maximum dpi output value of your printer, otherwise you may not be able to print much of what you see on screen. If you do not plan to print an image, you can freely choose a higher resolution to maximum image detail.

Displays the horizontal resolution of the original image prior to resampling.

Displays the vertical resolution of the original image prior to resampling.

Controls the vertical resolution of the image currently being resampled. Resolution refers to the fineness of image detail and the amount of information required to record, store, display and print an image. Resolution is measured in dots per inch (dpi), referring to the number of pixels used to construct an image. Choose a resolution in keeping with the resolution of both your monitor and (if you plan to print an image) printer. When you work with an image that you want to print, choose a resolution close to the maximum dpi output value of your printer, otherwise you may not be able to print much of what you see on screen. If you do not plan to print an image, you can freely choose a higher resolution to maximum image detail.

Enable to maintain equal horizontal and vertical resolution values. Any value entered in one box will cause the other box to change automatically.

Enable to maintain the image aspect ratio (the image width and height proportions rated in percentage values). Any value entered in one box will cause the other box to change automatically.

Displays the original image size in bytes prior to resampling.

Displays the new image size in bytes based on the current resampling settings.

BITMAP

Displays a drop-down list box where you choose a color mode. Choose the number of shades of gray or the number of colors you want.

The greater the number of colors, the larger the file.

- Black and white = 1 bit
- 16 shades of gray = 4 bits
- 256 shades of gray = 8 bits
- 16 colors = 4 bits
- 256 colors = 8 bits
- 16 million colors = 24 bits
- CMYK image = 32 bits

Not all levels of color or grayscale are supported by all the bitmap formats. If you have chosen a bitmap format that does not support a gray or color format, the option will not appear in the list box. For example, SCITEX CT is only exportable in CMYK, 32-bit format.

Dithers the colors and gray shades in the file. Dithering may produce better results when you use fewer colors than the original image. If the image contains fountain fills or color blends, dithering can cause obvious banding. Here are some guidelines to help you decide whether to dither the bitmap:

How To: When you are importing 16 or 256 colors or grays, use dithering.

How To: When you intend to scale the bitmap in another application, dithering is not recommended.

Specifies the resolution (in dots per inch) for bitmaps. Choose one of the preset resolutions from the list box or choose Custom and type or choose the resolution in the DPI box.

How To:

Note

As the resolution increases, so does the size of the file and the time required to print the image.

Specifies the dimensions of the bitmap. Choose one of the preset sizes from the list box or choose Custom and type the dimensions in the Width and Height boxes. If a size is not selected, the original size of the image is used.

Compresses the imported file so that it takes less disk space. Compressed files take more time to save and load. Compression is optional for some bitmap formats; for others, compression is always performed.

Shows the estimated size of the imported file before it is compressed. Compressed files will be smaller than the value displayed.

Returns to the settings that were in effect when you opened the dialog box.

Enable to maintain equal horizontal and vertical resolution values. Any value entered in one box will cause the other box to change automatically.

Controls the width of the file in pixels. To change the file width, type (or use the scroll arrows to select) a new value.

Controls the height of the file in pixels. To change the file height, type (or use the scroll arrows to select) a new value.

Type (or use the scroll arrows to select) a new vertical resolution (dpi) value. Resolution refers to the fineness of image detail and the amount of information required to record, store, display and print an image. Resolution is measured in dots per inch (dpi), referring to the number of pixels used to construct an image. Choose a resolution in keeping with the resolution of both your monitor and (if you plan to print an image) printer. When you work with an image that you want to print, choose a resolution close to the maximum dpi output value of your printer, otherwise you may not be able to print much of what you see on screen. If you do not plan to print an image, you can freely choose a higher resolution to maximum image detail. Enter a value in the number box or use the scroll arrows to select a dpi value.

How To:

Note

High resolutions require large amounts of disk space.

Type (or use the scroll arrows to select) a new horizontal resolution (dpi) value. Resolution refers to the fineness of image detail and the amount of information required to record, store, display and print an image. Resolution is measured in dots per inch (dpi), referring to the number of pixels used to construct an image. Choose a resolution in keeping with the resolution of both your monitor and (if you plan to print an image) printer. When you work with an image that you want to print, choose a resolution close to the maximum dpi output value of your printer, otherwise you may not be able to print much of what you see on screen. If you do not plan to print an image, you can freely choose a higher resolution to maximum image detail. Enter a value in the number box or use the scroll arrows to select a dpi value.

How To:

Note

High resolutions require large amounts of disk space.

Anti-aliasing creates a smooth bitmap graphics file by removing jagged edges from the original. Choose Normal or Super-sampling.

Normal

Provides standard anti-aliasing functionality. Use this option primarily for images composed of straight lines — curves and text are excluded from the process. Normal anti-aliasing requires less memory than Super-sampling.

Super-sampling

Provides superior anti-aliasing functionality. This option anti-aliases both curves and text but requires more memory to perform the operation. **Note:** Ensure that you have sufficient memory available (relative to the system you are using) before choosing this option and clicking OK.

Gives a short description of the selected command.

Displays any existing shortcut keys for the current command.

Displays any existing shortcut keys for the current command.

Assigns the new keyboard combination to the current command.

Displays any commands assigned to the keyboard combination you typed. You cannot have the same combination for more than one command.

Displays any commands assigned to the keyboard combination you typed. You cannot have the same combination for more than one command.

Displays the available commands. Double-click a command category to open it.

Displays the available commands. Double-click a command category to open it.

Automatically resolves conflicts by erasing the old keyboard assignment, and prompting you to assign a new combination to the old command.

Deletes the selected shortcut keys.

The name of the current keyboard assignment set.

Loads a new keyboard assignment table.

Holds the new keyboard combination that you want to assign to the command. If you need to make a correction, press the Backspace key.

Resets the keyboard assignments to their original configuration.

Saves the current keyboard assignment table.

Holds the new keyboard combination that you want to assign to the command. If you need to make a correction, press the Backspace key.

Gives a short description of the selected command.

Adds the selected command to the menu.

Adds a new menu.

Displays the available commands. Double-click a command category to open it.

Displays the menu you are currently editing. In addition to the main menus, you can also edit the menus that appear when you right-click. You can edit a menu by choosing it from the list.

Displays the current menu structure. Double-click a menu or sub-menu to open it.

Moves the current menu or menu entry down.

Moves the current menu or menu entry up.

Removes the selected command from the menu.

Resets the menu assignments to their original configuration.

Adds a separating line to a menu below the current selection.

Gives a short description of any toolbar button you click.

Click on a button to see its description. Drag a button to any toolbar on the screen.

Displays the available command categories. Click a category to display its command buttons.

Displays the command buttons for the current command category. Click a button to see its description, or drag it to add it to any toolbar on the screen.

Click this to display an overview of this dialog box.

For Help on an item, click the question mark button at the top of the dialog box, then click the item.

Opens the Customize dialog box, where you can change the configuration of your toolbar buttons.

Deletes a custom toolbar, or resets a built-in toolbar.

Displays the available toolbars. Enable the checkbox next to a toolbar to activate it. Click the toolbar's name tag to rename it.

Creates a new toolbar. Click Customize to add buttons to the new toolbar.

Changes the width of the toolbar borders.

Reveals or hides the toolbar size controls.

Changes the size of the toolbar buttons.

Enables or disables the display of toolbar titles. Toolbar titles only appear when a toolbar is undocked.

No Help topic is associated with this item.

Closes this dialog box and saves any changes you have made.

Closes this dialog box without saving any changes you have made.

Opens the Help to a topic dealing with this dialog box.

Applies any changes you have made without closing the dialog box.

Startup screen

Opens the CorelCAD drawing file you worked on most recently.

Starts a new drawing using the current default settings.

Starts a new drawing based on one of the predefined templates.

Opens an existing CorelCAD drawing file.

Disables the Welcome Screen. When you disable this option, CorelCAD will start up with a document determined by the settings in the Options dialog box. You can also re-enable the Welcome Screen from the Options dialog box.

File dialogs

Displays any key words associated with the file you have selected.

Displays any notes about the file you have selected.

Opens the file you have selected.

Displays a preview of the file you have selected. If the preview window is grayed out, enable the Preview option beneath it.

Enables or disables the file preview window above.

Specifies the name of the file you want to open. You can type a full path name, or use wildcards (*) to select a file.

Displays the files in the current folder.

Specifies the type of file you are opening. The list includes all the available file types that CorelCAD can recognize.

Displays the sub-folders in the current folder.

Displays the available drives.

Exports the selected files or items.

Specifies the compression type for compressible export formats.

Exports all objects in the current drawing.

Exports only those objects on the current layer.

Exports only those objects on layers in the current layer group.

Exports only selected objects.

Specifies the name of the file you want to export. You can type a full path name for the new file.

Specifies the type of file you are exporting. The list includes all the available file types that CorelCAD can create.

Imports the selected file into your drawing.

Specifies the name of the file you want to import. You can type a full path name, or use wildcards (*) to select a file.

Specifies the type of file you are importing. The list includes all the available file types that CorelCAD can recognize.

Opens the Import Options dialog box when you have selected the file you want to import. The dialog box contains controls for specifying how the imported file is merged into your drawing.

Saves the current drawing with the filename you have entered.

Saves only selected objects.

Saves only those objects on the current layer.

Saves only those objects on layers in the current layer group.

Saves all objects in your drawing.

Specifies the type of file you are exporting. The list includes all the available file types that CorelCAD can create.

Saves the objects in the current drawing with the template.

Specifies the name of the file you want to save. You can type a full path name for the new file.

Includes any objects in the template when creating the new drawing.

Array (Edit) dialogs

Specifies the number of objects in the array, including the original object.

Rotates the objects in your array to align with the array path. If this option is disabled, the duplicates will maintain the original aspect.

Specifies the total angle through which you want the array to rotate. 360 degrees will create a full circle of duplicates, 180 degrees will create a half circle.

Defines the length of the array using the vector you specify as the distance between each object.

Specifies the number of objects in the array, including the original object.

Defines the length of the array using the vector you specify as the total distance from the original object to the final duplicate.

Defines the length of each side of the array grid using the vector you specify as the total distance from the original object to the final duplicate.

Specifies the number of objects along the first array vector, including the original object. Multiply the two Direction values to get the total number of objects in the array.

Specifies the number of objects along the second array vector, including the original object. Multiply the two Direction values to get the total number of objects in the array.

Defines the length of each side of the array grid using the vector you specify as the distance between each object.

Defines the length of each side of the array grid using the vector you specify as the total distance from the original object to the final duplicate.

Specifies the number of objects along the first array vector, including the original object. Multiply the three Direction values to get the total number of objects in the array.

Specifies the number of objects along the second array vector, including the original object. Multiply the three Direction values to get the total number of objects in the array.

Specifies the number of objects along the third array vector, including the original object. Multiply the three Direction values to get the total number of objects in the array.

Defines the length of each side of the array grid using the vector you specify as the distance between each object.

Specifies the total number of objects in the circular path around the equator of the sphere.

Specifies the total number of objects in the circular paths nearest the poles of the sphere.

Specifies the number of horizontal circular rows of duplicates in each hemisphere of the array path.

Rotates the objects in your array to align with the array path. If this option is disabled, the duplicates will maintain the original aspect.

Specifies the total height of the array.

Specifies the total height of the array.

Specifies the number of complete revolutions you want the array to make.

Specifies the number of objects in the array, including the original object.

Rotates the objects in your array to align with the array path. If this option is disabled, the duplicates will maintain the original aspect.

Hide

Resolves overlapping solids in greater detail. When this option is enabled, the Hide operation will calculate the points where overlapping solids would intersect, and then hide the internal lines to that point. When the option is disabled, the Hide command will take less time, but overlapping solids will not be calculated so precisely.

Applies the Hide operation to all objects in your drawing.

Applies the Hide operation to the currently selected object or objects.

Applies the Hide operation to an area of your drawing that you define with a marquee box.

Restricts the Hide operation to the active window.

Applies the Hide operation to all open windows that hold a view of your drawing.

Toggles display of the colors assigned to the objects affected by the Hide operation.

Toggles display of dotted lines on objects affected by the Hide operation. If this option is enabled, the operation replaces the hidden lines with dotted ones, rather than removing them entirely.

Hides all interior lines in your drawing, producing a silhouette effect.

Toggles display of any 2D and 3D text in the part of the drawing affected by the Hide operation.

Toggles display of any dimension lines or text in the area affected by the Hide operation.

Shade

Specifies the color of the current light source. Click the button, then choose a new color from the palette.

When enabled, generates shadows in the shaded image.

Switches between the Shading, Light, and Shadows tabs.

Adjusts the horizontal angle of the selected light source.

Adjusts the intensity of the selected light source.

Displays seven light sources that you can apply to the shaded drawing. Lights with a yellow bulb next to them are enabled. Click the bulb next to a light to enable or disable it.

Displays a preview of the current lighting setup.

Adjusts the vertical angle of the selected light source.

Shades only the active window.

Shades all open windows that hold a view of your drawing.

Toggles display of any dimension lines or text in the area affected by the Shade operation.

Toggles display of any 2D and 3D text in the part of the drawing affected by the Shade operation.

Shades all objects in your drawing.

Shades an area of your drawing that you define with a marquee box.

Shades the currently selected object or objects.

Displays the type of shading you have selected. You can choose from several types in the list.

Controls shadow resolution. Enable the Render Shadows option on the Shading tab to include shadows in the shaded drawing.

Controls shadow quality. Enable the Render Shadows option on the Shading tab to include shadows in the shaded drawing.

Controls shadow softness. Enable the Render Shadows option on the Shading tab to include shadows in the shaded drawing.

Save Current View

Specifies the name under which you want to save the custom view configuration.

View Manager

Deletes the selected custom view mode.

Displays the available view modes. Click the white box beside a view mode to switch to it. Use the other box to toggle between constant zoom magnification and automatic zooming.

Creates a custom view mode with the current view settings.

Updates the selected view mode with the current view settings.

Viewer settings.

Specifies the focal length of the view, much like the focal length of a camera lens.

Specifies the X-axis coordinate of the virtual position from where you want to view your drawing.

Specifies the Y-axis coordinate of the virtual position from where you want to view your drawing.

Specifies the Z-axis coordinate of the virtual position from where you want to view your drawing.

Specifies the X-axis coordinate of a point in your drawing that you want to appear at the center of the view.

Specifies the Y-axis coordinate of a point in your drawing that you want to appear at the center of the view.

Specifies the Z-axis coordinate of a point in your drawing that you want to appear at the center of the view.

Shape CBs

Creates a surface or plane, rather than a wireframe outline.

Creates a wireframe outline of your shape with no surface area.

Toggles between attached and separate surfaces. If the option is disabled, each surface can be manipulated individually.

Specifies the number of sides for your polygon.

Specifies the number of sides for the base polygon.

Extrude CBs

Enables or disables scaled extrusions. When this option is enabled, the final face of the extrusion will be scaled by the amount in the number box.

Specifies the scale factor for the extrusion. The final face of the extrusion will be scaled by this amount.

Keeps the object perpendicular to the path as it extrudes. To have the object maintain its aspect as it extrudes, click Rigid Extrude.

Maintains the object's aspect as it extrudes. To have the object tilt or rotate to follow the extrusion path, click Normal to Path.

Specifies the scale factor for the extrusion. The final face of the extrusion will be scaled by this amount.

Enables or disables scaled extrusions. When this option is enabled, the final face of the extrusion will be scaled by the amount in the number box.

Specifies the length of the extrusion path.

Specifies the number of complete revolutions you want the extrude path to take.

Specifies the distance between each revolution path.

Specifies the number of discrete steps in each revolution. If this number is very high, the extrusion path will be quite smooth, but the operation will take longer. If the number is low, the operation is faster, but the exterior edge of the spiral will be noticeably faceted.

Creates a smooth, continuous sweep path. The exterior edge of the final object will be a smooth curve.

Creates a sweep path with straight-line paths between each of its sections. The final object will be a continuous solid, but its exterior edge will be faceted.

Specifies the angle through which you want to sweep the object. A Span Angle of 360 degrees will create a full circle, while an angle of 180 degrees will create a semi-circle.

Specifies the number of discrete copies of the original object to create along the extrusion path. The final object will be a continuous solid, but its exterior edge will be faceted.

Point markers

Displays the available marker shapes. The active shape is marked with a box.

Specifies the width of the point marker.

Creates a point marker with a width relative to the current view magnification. The marker will appear to be the same size at all zoom levels.

Creates a point marker with an absolute size measured in the current units. For example, a marker that is 1 inch wide would appear very small at low magnification.

Move

Defines the new point by applying the coordinate values relative to the origin.

Applies the Move operation to the selected object.

Applies the Move operation to a copy of the object without altering the original.

Switches between the Cartesian and Polar coordinate tabs.

Defines the new point by applying the coordinate values relative to the next point you select.

Defines the new point by applying the coordinate values relative to the last point you selected.

Scale

Applies the Scale operation to the selected object.

Applies the Scale operation to a copy of the object without altering the original.

Specifies the scale factor of the final object. A scale factor of 2 will double the size of an object, while a scale factor of 0.5 will halve it.

mirror

Applies the Mirror operation to the selected object.

Applies the Mirror operation to a copy of the object without altering the original.

Mirrors the selected object across a plane that you define by clicking two points that form a normal to the plane.

Mirrors the selected object across a plane that you define by clicking two points that form a normal to the plane.

Mirrors the selected two-dimensional object across a line that you define by clicking two points.

Mirrors the selected object across a plane that you define by clicking three points.

Mirrors the selected object across a plane parallel to one of the XY, XZ, or YZ planes.

Rotate

Rotates the selected object about an axis you define by clicking two points.

Rotates the selected object about the X, Y, or Z axis.

Rotates the selected two-dimensional object about a point you click.

Rotates the selected object about an axis normal to a plane you select.

Rotates the selected object about the X, Y, or Z axis.

Specifies the angle through which you want to rotate the object.

Applies the Rotate operation to the selected object.

Applies the Rotate operation to a copy of the object without altering the original.

Offset

Specifies the distance between each offset.

Specifies the number of offsets to create.

Fillet/chamfer commands

Specifies a radius for the fillet's curve.

Specifies the distance back from the corner where you want to crop the first line.

Specifies the distance back from the corner where you want to crop the second line.

Specifies the distance back from the edge where you want to crop the first side.

Specifies the distance back from the edge where you want to crop the second side.

Applies the Chamfer operation to the selected object.

Applies the Fillet operation to the selected object.

Crops the corners of the filleted object instead of rounding them. This function only works if all three edges surrounding the corner are selected for the same fillet operation.

Specifies a radius for the fillet's curve.

Rounds the corners of the filleted object instead of cropping them. This function only works if all three edges surrounding the corner are selected for the same fillet operation.

Specifies the distance back from the corner where you want to start rounding.

Text

Specifies the font of your text. You can choose from any of the installed fonts in the list.

Toggles your text from regular to underlined.

Specifies the height of your text.

Centers your text on the point you choose.

Checks the spelling of the text you have typed.

Places your text on the left side of the point you choose.

Specifies a slant angle for your text.

Toggles your text from regular to bold.

Specifies the units with which you measure the height of your text.

Toggles your text from regular to italic.

Holds the text that will appear in your drawing.

Places your text on the right side of the point you choose.

Options

Switches between the General, View, Backup, and Ortho Settings tabs.

Determines CorelCAD's behavior on start-up. These options are identical to those that appear in the Welcome Screen.

Specifies the default background color of the CorelCAD drawing window. Click the button and choose a new color from the palette.

Specifies the default offset of objects created with the Duplicate command. This value represents the distance along the X-axis from the original object where you want duplicates to appear.

Specifies the default offset of objects created with the Duplicate command. This value represents the distance along the Y-axis from the original object where you want duplicates to appear.

Specifies the default offset of objects created with the Duplicate command. This value represents the distance along the Z-axis from the original object where you want duplicates to appear.

Enables or disables Tooltips, the brief Help that appears when you rest your cursor over a toolbar button.

These controls modify CorelCAD's general appearance and behavior. Right-click on an individual control to find out what it does.

Opens the Project Material File dialog box, where you can change the default Material lists for your project.

Smoothes corners and irregularities on objects created with the Offset command.

Specifies the degree of precision for defining two points as coincident. You can relax this precision as needed in order to define pieces that are only loosely connected.

Groups objects together before performing an array command on them. Enabling this option will greatly speed up the array process for multiple objects.

Increases or decreases the apparent size of the 3D cursor with the Zoom magnification. The cursor will appear to be larger at greater magnifications, and smaller at lower magnifications.

Retains the apparent size of the 3D cursor despite the Zoom magnification.

Specifies a custom length for the lines of the 3D cursor. This control is only available when the Fixed Cursor option is enabled.

These controls modify the type of cursor that appears when you are prompted to select a point in your drawing.

These controls modify the distance your cursor moves with each press (or ALT + press) of the arrow keys.

Changes the cursor to its default state; a color-coded set of long, orthogonal lines that you can use to line up objects in your drawings.

Increases the length of the lines of the 3D cursor so that they extend to the limits of the drawing window.

Specifies a custom length for the lines of the 3D cursor. Enter the new length in the Fixed Cursor Size box.

Modifies the tolerance of the Pick tool. The tool will select any object within the specified distance from the point you click.

Specifies the distance your cursor moves when you hold down the ALT key and press one of the arrow keys.

Specifies the distance your cursor moves when you press one of the arrow keys.

Specifies the distance your cursor moves when you hold down the ALT key and press one of the arrow keys.

Specifies the distance your cursor moves when you press one of the arrow keys.

Modifies the precision of data produced by the Measure commands.

Creates a backup copy of your drawing after the time period specified in the adjacent box.

Creates a backup copy of your drawing each time you save.

Opens the Select Directory dialog box, where you can choose a directory for your backup files.

Creates a backup copy of your drawing at the specified time periods. This control is only available when the Auto-backup option is enabled.

Specifies the orthogonal plane that you want to modify.

Specifies the angle through which you want to rotate the selected orthogonal plane.

Specifies the angle through which you want to rotate the selected orthogonal plane.

Specifies the axis around which you want to rotate the selected orthogonal plane.

Units and Angles

Switches between the Units, Angles, and Displacements tabs.

Specifies the style of digit grouping for large numbers.

Enables or disables the display of leading zeroes.

Specifies the number of digits in each digit group or a large number.

Specifies the units you are using in your drawing. When you change this value, the default units change throughout the CorelCAD interface.

Specifies the precision of any measurement data provided for your drawing.

Specifies the style of any measurement data provided for your drawing.

Specifies the style of angle measurements in your drawing.

Grid

Specifies the width of each sector of the Visible grid.

Displays the color of the visible grid lines. To change the color, click the button and select a new color from the palette.

Specifies the distance from the origin along the specified axis you want the grid to appear. If you have chosen an XY grid, for example, you could have it appear higher up along the Z-axis.

Enables or disables the Visible grid. You can also change this option by clicking Tools, Layout, Show Grid.

Specifies the width of each sector of the Snap grid.

Specifies the orthogonal plane to which the grid is parallel.

Enables or disables the Snap grid. You can also change this option by clicking Tools, Layout, Snap To Grid.

Specifies the width of each sector of the Snap grid.

Layer manager

Displays the available layers. The icons to the left of the display are (from left to right): Visible, Printable, Locked, Color, Linestyle, and Active. If there is an arrow in the Active row, then the indicated layer is the active one.

When enabled, applies the layer changes to the current group only. If the layer you have changed belongs to more than one group, the changes will not apply to the layer as it appears in other groups. If you want the changes to apply in all groups, disable the option.

Deselects all selected layers.

Enables or disables multiple-layer editing. When this option is enabled, you can select multiple layers and then use the Edit function to change settings across all of the selected layers.

Deletes the selected layer.

Opens the Edit Layer dialog box, where you can customize the attributes of the selected layer.

Opens the New Layer dialog box, where you can create a new layer with custom attributes.

Displays the layer groups to which the new layer will belong.

Selects all of the layers in the dialog box.

Layer editor

Determines the color of objects on the layer. Using unique layer colors provides an easy way to distinguish objects on each layer. Click the button to choose a new color from the palette.

Determines the line style of objects on the layer. Using unique line styles provides an easy way to distinguish objects on each layer.

Holds a short description of the layer and its properties.

Displays the available layer groups. To add the layer to a group, enable the checkbox beside the group's name.

Displays the name of the current layer.

Enables or disables layer editing. When this option is enabled, the layer cannot be edited.

When enabled, overrides any color assignments for objects on the layer. All objects will be colored by layer, despite their individual color and material assignments.

Enables or disables layer printing. When this option is disabled, the layer will not print.

Switches the layer from a visible to an invisible state.

Layer Groups

Adds the selected layers to the Target group. Added layers are not removed from the Source group.

Deletes the group you have chosen from the Target list.

Deselects all of the currently selected layers.

Opens the Edit Layer Group dialog box, where you can change the name and description of the group you have chosen from the Target list.

Opens the Edit Layer dialog box, where you can change the name and properties of the currently selected layer.

Contains a short description of the current Target group. You can edit this description by clicking Edit Group.

Contains a short description of the currently selected layer in the Target group. You can edit this description by clicking Edit Layer.

Opens the New Layer Group dialog box, where you can enter a name and description of a new layer group.

Removes the currently selected layer from the Target group.

Selects all of the layers in the current Source group.

Activates the current Target group.

When enabled, hides those layers which do not contain objects in the current drawing.

Specifies the group containing the layer you want to move into your group. Choose All Layers to get a list of every available layer.

Displays the layers available in the group you have chosen from the Source list.

Specifies the Target group into which you want to move the selected layer.

Holds a short description of the layer group.

Specifies the name of the layer group.

Small layer dialog

Closes the flyout.

Copies the currently selected object to the layer you click.

Opens the Layers Manager, where you can create and edit layers.

Moves the currently selected object to the layer you click.

Drawing Info

These values describe the total dimensions of your drawing. If you created a box surrounding every object in your drawing, the box would have the listed length, width, and height.

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Line style

Displays the available line styles. Click a style to apply it to the current object. Click By Layer if you want to set the object's line style to the default style of the current layer.

Edit Material

Specifies the category containing the material you want to edit. Click New to make a new category, or Delete to remove a category from the list.

Deletes the current category from the category list.

Deletes the current material from the material list.

Generates a rendered image of an object with the current material settings.

Specifies the material type you want to edit. Click New to make a new material type, or Delete to remove a material type from the list.

Displays a rendered image of an object with the current material settings. Click Preview to update the image.

Adds a new category to the category list.

Adds a new material type to the material list.

Specifies the primary color of one, two, or three-tone materials.

Specifies the primary color of one, two, or three-tone materials.

Specifies the secondary color of two or three-tone materials.

Specifies the secondary color of two or three-tone materials.

Specifies a basic model for the texture, transparency, reflectance or pattern of the material. Depending on the model you choose, different parameter controls will appear below. Changing the model or any of the model parameters will alter the appearance of your material type. To see the effect of your changes, click the Preview button.

Modifies the appearance of your material type. Depending on the model you choose from the Type list above, different parameter controls become available. Changing the model or any of the model parameters will alter the appearance of your material type. To see the effect of your changes, click the Preview button.

Specifies the tertiary color of three-tone materials.

Specifies the tertiary color of three-tone materials.

Saves your changes to the current material type.

Object Properties

Switches between the General, Detail, and Material tabs.

Displays the font of the selected text. To change the appearance of your text, select a new font from the list.

Applies any changes made on the current tab to the selected object.

Applies any changes made on the current tab to the selected object.

Specifies the category containing the material assigned to the current object.

Specifies the material assigned to the current object.

Displays a preview of the current material style as it would appear applied to a three-dimensional object.

Applies any changes made on the current tab to the selected object.

Shows how many objects you currently have selected.

Describes the type of object you currently have selected.

Displays the name of the current layer.

Displays the object's physical properties. The properties displayed will change depending on the type of object you have selected.

Applies any changes made on the current tab to the selected object.

Specifies a unique name for the selected object.

When enabled, applies the tag name to every object in the current group.

Specifies the layer that contains the object you have selected. To move the object to another layer, select the new layer from the list.

Gives a short description of the layer on which your object rests.

Specifies the color of the currently selected object. Click a color from the palette to apply it to the current object. Click By Layer if you want to set the object's color to the default color of the current layer.

Specifies the line style of the currently selected object. Click a style to apply it to the current object. Click By Layer if you want to set the object's line style to the default style of the current layer.

Toggles the selected text from regular to italic.

Toggles the selected text from regular to bold.

Applies any changes made on the current tab to the selected object.

Toggles the selected text from regular to underlined.

Specifies the height of the currently selected text.

Opens a dialog containing a brief description of the current layer.

Arc Properties

Specifies the fixed angle of the Arc Center, Start, Angle tool.

Specifies the fixed radius of the Arc Radius, End Points tool.

Specifies a surface model for the default arc created by the arc tools. The resulting arc will form a wedge radiating from its center to its endpoints.

Specifies a wireframe outline for the default arc created by the arc tools.

Specifies a surface model for the default arc created by the arc tools. The resulting arc will have a straight edge between its end points.

Displays the type of tool properties you want to edit.

No Help topic is associated with this item.

Arrow Line props

Specifies the style of the arrowhead.

Specifies the size of the arrowhead.

Running snap props

When enabled, displays a box around running snap points when the cursor is in a position to use them.

Enables or disables running snaps at the endpoints of lines.

Enables or disables running snaps at the intersection points of lines.

Enables or disables running snaps to lines.

Enables or disables running snaps at the midpoints of lines.

Enables or disables running snaps to points perpendicular to the lines you click.

Enables or disables running snaps to planes.

Enables or disables running snaps to point marks.

Enables or disables running snaps to circle quadrants.

Enables or disables running snaps to tangent points on circles.

Modifies the distance the cursor can be from lines and other objects before the running snaps take effect.

Enables or disables running snaps to circle centers.

Surface Props

Deletes the original object after performing an Extrude operation.

Specifies the width of planes created with the Perpendicular Plane tool.

Text props

Changes the default font of text created with the text tools.

Toggles your text from normal to bold.

Toggles your text from normal to italic.

Toggles your text from normal to underlined.

Specifies the default size of text created with the text tools.

Specifies the style of arrowheads on text with leader lines.

Specifies the size of arrowheads on text with leader lines.

View Props

Specifies the change in the viewpoint position made with each click of the Move Viewer Closer To Objects and Move Viewer Away From Objects buttons on the View toolbar.

Specifies the change in the viewpoint position made with each click of the Move Viewer Right and Move Viewer Left buttons on the View toolbar.

Specifies the change in the viewpoint position made with each click of the Move Viewer Up and Move Viewer Down buttons on the View toolbar.

Specifies the angle through which the view rotates with each click of the Move Viewer Clockwise and Move Viewer Counter-Clockwise buttons on the View toolbar.

Refinements

Controls the rendering detail of objects with curved edges.

Controls the rendering detail of objects with curved surfaces.

Export options

Specifies the precision of data exported from your drawing. This option is only available when exporting to the DXF file format.

Exports polylines with closed paths as a continuous object. This option is only available when exporting to the DXF file format.

Exports each object in your drawing to a different layer. This option is only available when exporting to the DXF file format.

Exports any surface models in your drawing. If this option is disabled, no surface models will appear in the exported file.

Exports any three-dimensional solids in your drawing. If this option is disabled, no solids will appear in the exported file.

Exports any dimension entries in your drawing. If this option is disabled, no dimensions will appear in the exported file.

Exports any text entries in your drawing. If this option is disabled, no text will appear in the exported file.

Exports any wireframe objects in your drawing. If this option is disabled, no wireframes will appear in the exported file.

Saves the color of the objects you export as an entity attribute. This option is only available when exporting to the SAT file format.

Specifies the SAT version of the exported file. This option is only available when exporting to the SAT file format.

Import options

When disabled, imports planar objects as wireframes. Disabled, this option optimizes screen redraws and file sizes, but imported files might not render properly.

Places all imported objects on a layer you specify.

Places all imported objects on a layer you specify.

Places the imported objects on layers corresponding to those in the original file.

Adds new layers to your drawing that correspond to those in the imported file.

Places all imported objects on a new layer.

Uses the selected units to measure objects in the imported drawing.

Uses the selected units to measure objects in the imported drawing.

Uses the selected units to measure objects in the imported drawing.

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Uses the selected units to measure objects in the imported drawing.

Switches between the Layer Merge, General, and Units tabs of the Import Options dialog.

Creates a new layer group for the layers created by the Import To New Layers option.

Creates a new layer group for the layers created by the Import To New Layers option.

Various measure commands

The angle between the two lines you have selected, measured in degrees.

Displays the appropriate engineering properties for the object you have selected. Different engineering properties will be available depending on whether the object is a surface model or a solid.

The distance between the two points you have selected.

Undo list

Displays a list of the last twenty actions that you have performed. Click on an action to undo all of the actions to that point.

Change Drawing scale

Specifies the new scale of your drawing. The distance you selected will be scaled to the new value, along with the rest of your drawing.

Trim command

Keeps the trimmed line segments in your drawing as independant objects.

Deletes the trimmed line segments from your drawing.

Open window layout

Specifies the name of the file. You can use wildcards (*) to narrow the file list, or you can type a complete path name.

Lists the types of files to display. This is useful for narrowing the list of files displayed to only those files you're interested in.

Opens a single window in Perspective view.

Opens windows in Perspective, Top, Front, and Right Side views, arranged as pictured on the icon.

Opens windows in Front, Top, Right Side, and Perspective views, arranged as pictured on the icon.

Opens windows in South-East, Front, Top, and Right Side views, arranged as pictured on the icon.

Opens windows in Top, Front, and Perspective views, arranged as pictured on the icon.

Opens windows in South-East, Top, and Front views, arranged as pictured on the icon.

Opens windows in Top, Front, Right Side, Left Side, Back, Bottom, and Perspective views, arranged as pictured on the icon.

Opens windows in South-East, Top, Front, Right Side, Left Side, Back, and Bottom views, arranged as pictured on the icon.

Opens windows in Perspective, Bottom, Back, and Right Side views, arranged as pictured on the icon.

A
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Absolute coordinate

A coordinate consisting of values based on the origin of the axes. For example, the absolute coordinate (5,0,0) represents a point 5 units to the right of the point (0,0,0)

Add

The Boolean operation in which one solid or surface object is added to another to create one object.

Algorithm

A step-by-step methodology for solving a mathematical problem.

Ambient light

Background light that makes objects visible but does not come from a particular direction. It generates shadowless, uniform, diffuse illumination.

Array

A specified number of copies of an object in a linear or circular pattern. With CorelCAD you can create 2 or 3 directional linear arrays, as well as circular, spiral, or spherical arrays.

Axis

One of the reference lines of a coordinate system. CorelCAD uses a coordinate system based on three axes, the X,Y and Z axes.

Bezier curve

A curve defined by a start and end point and a start and end tangent. It is created using a set of control points that can be moved interactively.

Bitmap

A data file that provides a digital representation of an image displayed on a screen.

Boolean operations

Three mathematical operations named for the 19th Century mathematician George Booles. They include adding solids, subtracting solids, and determining the overlapping areas of solids.

Cartesian coordinate system

A system for locating points in 3D space, based on three perpendicular axes, X, Y, and Z.

CCD file

CorelCAD Drawing file format. This is the file format used by CorelCAD drawings and symbols.

Chamfer

A beveled corner or edge between two lines or surfaces

Circular array

A command that copies a selected object a specified number of times in a circular pattern around a specified axis.

Circular sweep

A modeling command that defines a surface or solid by rotating a shape about a specified axis.

Color palette

A bar on the CorelCAD screen that displays predefined colors. You can apply a color to a selected CorelCAD object by clicking a color in the color palette.

Cone

An object whose base is a circle and whose sides taper up evenly to a point.

Control points

Points that can be moved interactively to control the creation and modification of a Bezier curve.

Coordinate

A set of values, based on a coordinate system, that specifies the location of a point.

Coordinate system

A system that uses values to specify locations in space.

Corel DREAM 3D

A three dimensional color illustration program. You can import CorelCAD models into CorelDREAM 3D and render them to create photorealistic illustrations.

Corel MULTIMEDIA MANAGER

A program for organizing and managing files. You can organize your files in Albums and view thumbnail previews of the contents of each album.

Corel SCRIPT

A program for recording commands, keystrokes, and mouse movements in a script (macro). The script can then be replayed to repeat the actions exactly as they were recorded. CorelSCRIPT allows you to automate repetitive tasks, or simplify complex tasks.

Cursor

The pointer on a computer screen that is moved by a pointing device such as a mouse or by the keyboard. It allows you to select commands and to position text and other objects.

Cylinder

A solid object whose base is a circle and whose sides are joined to another parallel circle of equal radius.

Define Object

The Define Object command changes the state of a selected object. If you define a wireframe object it becomes a surface model. If you define a surface model, it becomes a solid model. This command works in the opposite direction to the Explode command.

Digitizer

A pointing device for controlling the cursor and locating points in space by using a stylus or puck. It is used as an alternative to a mouse.

Dimension line

A line that shows the dimensions of an object in a 2D drawing or 3D model. It shows where a measurement begins and where it ends.

Display grid

A grid that is displayed on the screen as a visual aid for locating objects.

Dithering

A technique used by computers to create additional colors and shades from a color palette by mixing pixels of different colors.

DXF

Data Exchange Format. A standard file format, developed by Autodesk Inc for communicating CAD data between different computer applications.

Ellipse

An oval-shaped 2D object.

Explode

The Explode command changes the state of a selected object. If you explode a solid model it becomes a surface model. If you explode a surface model, it becomes a wireframe model. The Explode command performs the opposite operation to the Define Object command.

Extrude

The extrude command extends a 2D object into three dimensions, connecting it from one point to another with surfaces. For example, you can extrude a two-dimensional rectangle to create a three-dimensional box. A surface extrudes into a solid and a wire extrudes into a surface.

Extrude normal

The extrude normal command extrudes a 2D object into a 3D object, along an axis that is normal (perpendicular) to the plane of the object.

Faceted surface

A surface made up of a series of planes that approximate the curved surface of an object. By increasing the number of surfaces you make a curved surface appear smoother.

Fillet

The fillet command replaces a corner by joining two lines with an arc of a radius that you specify.

Fillet Edge

The Fillet Edge command replaces an edge on a solid object by joining two surfaces using an arc of a radius that you specify.

Flat shading

The fastest method for producing shaded images in CorelCAD. It produces images very quickly but provides relatively low image quality. This method of shading is useful for visualizing spatial relationships during the early stages of the design process.

Font

A set of characters in a particular size and style (typeface). A font includes letters, numbers, punctuation marks, and other characters.

Frustum

The solid object that remains of a cone or pyramid after you cut off the upper part along a plane parallel to the base.

Geographical angles

A system for determining the value of angles in a spherical or polar coordinate system. They differ from the standard mathematical angles used in CorelCAD. Geographical angles start with zero at the top and are rotated in a clockwise direction around an axis. Geographic angles can be specified in the Units and Angles dialog box, accessed from the Tools menu.

Gouraud shading

A method of shading developed by University of Utah student, H. Gourard. It supports smooth shading and transparency but not highlights, textures, environments, shadows, refraction, or reflections of objects. It provides a higher quality image than flat shading with a slight decrease in speed.

Grid

A series of regularly spaced lines on the drawing area. The distance between lines is determined by the user. The grid can be displayed or hidden, and you can specify that the cursor snap to the grid.

Group

A composite of objects that act as one object. When you group objects in CorelCAD using the Group command, you can select and manipulate them as one object. Use the Ungroup command to return them to separate objects.

Hidden line view

Hidden line view generates images in which edges that are hidden by surfaces are not displayed. It allows you to see the structure of a model and the relationships between the components that make up the model.

Interfere

The Interfere command checks two surfaces or solids to see if they overlap one another at any point.

Intersection

A Boolean operation in which one object is combined with another such that only the volume common to both remains.

Isometric view

A view that provides a 3D representation of an object such that all three axes make equal angles with the picture plane, and measurements on all three axes are made to the same scale. The isometric view is always oriented 30 degrees from the horizontal.

Layers

Layers are used to organize and separate parts of your drawings. They function in the same way that mylar or trace paper is used in conventional drafting to overlay drawings.

Leader

A line that relates text to an element in a drawing. For example, you can type a note followed by a leader that points to a location in your drawing.

Leader text

The Leader Text command allows you to enter text, then create a line (leader) pointing to a location in your drawing. It is used mainly for entering notes on your drawing.

Line type

The line type defines the style and thickness of lines in your drawing. A line can be thick or thin, dashed in a variety of styles, or solid. You define a line type for each layer, and you can also override the line type for a particular line using the Line Type box in the Standard 2 Toolbar.

Linear Array

A command that copies a selected object a specified number of times in a linear pattern. Objects are equally spaced either at increments that you specify or within a distance you specify.

Loft

The Loft command creates a surface between 2 or more curves and applies smoothing to the surface.

Macro

See Script.

Major axis

The longer axis of an ellipse.

Marquee box

A box for selecting objects in a drawing. It is created by clicking and dragging an outline with the Pick tool. All objects enclosed within a marquee box are selected. If you press the ALT key while drawing a marquee box, all objects enclosed within the box, and also any objects intersected by the marquee box are selected.

Minor axis

The shorter axis of an ellipse.

Mirror

The Mirror command is used to create a mirror image of an object.

Modeling

Creating wireframe, surface, or solid computer representations of objects.

Move

The Move command, allows you to move a selected object from one location to another. It is accessed from the Transform menu.

NE Isometric view

An isometric view with the viewpoint to the North East of the object, where North represents positive direction on the Y axis and East represents positive direction on the X axis. See Isometric.

Nested groups

A group of groups. When you apply the Group command to several objects that are already part two or more discrete groups, the resulting group is nested. When you apply the Ungroup command to a nested group, only the last level of grouping is removed.

Normal

A path that is perpendicular to a plane or surface at the point where it meets the plane or surface.

NW Isometric view

An isometric view with the viewpoint to the North West of the object, where North represents positive direction on the Y axis and West represents negative direction on the X axis. See Isometric.

Object

Any element in a drawing, that can be selected as one entity. Objects include such entities as lines, curves, 2D shapes, 3D solids, or text.

Offset command

The Offset command creates one or more lines, curves, or 2D shapes that are the same as the one you select, but are offset to a specified side at a specified distance. For example, if you apply the Offset command to a circle, you can make larger concentric circles to the outside of it, or smaller ones to the inside.

Offset coordinate

Offset coordinates consist of values that are measured from a selected point in your drawing. Offset coordinates are specified by enabling the Offset button at the bottom of the Insert Point Roll-Up. After you enter values for an Offset coordinate, and click Apply, you are prompted to select the point from your drawing that will be used as the base point from which to offset.

Origin

In a Cartesian coordinate system, the origin is the point at which the X, Y, and Z axes meet (0,0,0).

Orthogonal

Perpendicular to. A line protruding from a plane at a 90 degree angle is said to be orthogonal to that plane.

Orthogonal axis

The axis that define Cartesian (X,Y,Z) coordinates.

Orthogonal mode

When orthogonal mode is turned on, all point selections, object movements, rotations, and transformations are aligned with a set of axes at 90 degrees to one another. These axes can be set to whatever initial angle you like — they can be the same as the X, Y, and Z-axes, or they can be rotated in any direction. You can change the Ortho Settings in the Tools, Option menu.

Orthogonal plane

A plane parallel to one of the planes formed by the orthogonal axes. The XY plane is formed by the X and Y axes, the XZ plane by the X and Z axis, and the YX plane by the Y and Z axes.

Pan

The Pan tool, allows you to change the view of your drawing by moving the entire drawing within the drawing area.

Pattern

A material attribute that changes the color of a surface by applying a scanned raster image to give it the appearance of a material such as wood or marble.

Parallel view

A 3D view in which lines are displayed in parallel projection, meaning that all physically parallel lines are drawn as truly parallel, even as they recede into the distance.

Perspective view

A 3D view in which parallel lines converge as they recede into the distance.

Preview shading

A method of shading that provides a fast preview for fully textured, shaded images. It provides a higher quality than flat, Gouraud, or Phong shading but takes longer to generate. It is faster than Full Render shading but provides a slightly lower quality image.

Phong shading

A method of shading, named for University of Utah student Bui-Tuong Phong, that supports highlights, textures, and shadows but not reflection or refraction. It produces a more realistic shaded image than flat, or Gouraud shading but takes more time.

Pixel

The smallest resolvable element of a computer image. A pixel is rectangular and is either on a screen or stored in memory.

Plane

A surface that exists on a single plane. That is, the normal at each point on the surface is the same. A plane has length and breadth but not thickness.

Point Markers

The Point Markers command, from the Draw menu, marks a point in your drawing using a symbol that you select.

Polar coordinate system

A coordinate system that defines points in 2D space by providing two values a length, and an angle.

Polygon

A closed plane figure with three or more sides.

Polyline

The polyline tool draws a series of connected line segments. After the line segments have been drawn, they can be selected and manipulated as a single object.

Prism

A solid object with two faces that are polygons in parallel planes and the other faces parallelograms.

Pyramid

A solid object having for its base a polygon and for faces triangles with a common vertex.

Radius

A line segment extending from the center of a circle or sphere to the curve or surface

Ray tracing

A method of rendering that produces the most realistic images but also takes the greatest amount of time.

Redo

The Redo command allows you to repeat commands that were previously undone by the Undo command.

Refinements

The Refinements setting in CorelCAD determines the numbers of edges and surfaces displayed for objects on your screen. Higher refinement settings provide smoother curved surfaces, but a lower setting results in faster redraw of the screen.

Reflectance

A set of material attributes that define the reflective characteristics of light and other objects in a model.

Refresh

The Refresh command redraws the screen.

Relative coordinate

A relative coordinate defines a location that is relative to the previous point. You specify a relative coordinate by activating the Relative button in the Insert Point Roll-Up. For example to draw a line 5 units long to the right, you could activate a line tool, click on a starting location, then in the Insert Point Roll-Up, enter XYZ values of (5,0,0) and press Apply.

Rendering

The application of light, texture, and color to a model.

Resolution

the maximum number of pixels that can be displayed on a monitor, expressed as (number of horizontal pixels) x (number of vertical pixels), for example, 1024x768. The ratio of horizontal to vertical resolution is usually 4:3.

Rotate

The Rotate command, allows you to rotate an object by a value that you select, around an axis that you specify

Running snaps

Running snaps allow you to specify that selected snap tools be enabled for every command. For example, if you select Endpoint as a running snap, then every time you set a point by clicking near the end of a line, the point will be set precisely on the line end. You set running snaps in the Tool Properties dialog box, accessed by clicking with the right mouse button on any snap tool.

Script

A script (macro) is a computer program that executes a series of instructions with a single command. Generally, scripts are used to automate repetitive tasks or simplify complicated actions, but they can also prompt for user input, display messages, and interact with other applications.

SE Isometric view

An isometric view with the viewpoint to the South East of the object, where South represents negative direction on the Y axis and East represents positive direction on the X axis. See Isometric.

Shade

The Shade command, accessed by clicking the Shade tool from the Standard Toolbar, or by clicking Shade from the View menu, displays surface or solid models with light, color, and any material attributes you have assigned to them.

Skin

The Skin command creates a surface between two or more curves with no tangent continuity at the curves.

Snap grid

An invisible, three-dimensional grid that controls point selection. When the Snap grid is enabled, any new points you define will conform to the grid. The Snap grid may or not align with the Visible grid.

Snap Location Mark

A mark that's displayed to indicate the point to which the cursor will snap when you click the left mouse button. Snap Location marks are turned on or off in the Tool Properties dialog box, accessed by right clicking on a snap tool.

Snap tools

The Snap tools force the pointing device to select specified points on a drawing. For example, if you enable the Endpoint snap tool, the cursor will snap to the endpoint of lines.

Solid model

A three dimensional model that has volume and mass.

Spherical coordinate system

A coordinate system that defines points in 3D space by providing three values a length, an angle in the X-Y plane, and an angle on the X-Z plane.

Spiral Sweep

The Spiral Sweep command is used to create a spiral shaped object, such as a spring or a screw, by sweeping a 2D object around an axis.

Spline curve

a type of curve used in computer graphics systems to describe irregular shapes.

Standard toolbar

CorelCAD has two Standard toolbars that provide quick, one-step access to commonly used features. By default they are displayed at the top of the screen but can be moved to any position.

Subtract

The Boolean operation in which one solid is taken away from another, leaving a void.

Surface

A face of an object that can be rendered. It has length and breadth but not thickness.

Surface model

A three dimensional representation of an object made up of planes. The surface can be rendered, but the object has no volume or mass.

SW Isometric view

An isometric view with the viewpoint to the South West of the object, where South represents negative direction on the Y axis and West represents negative direction on the X axis. See Isometric.

Sweep

A modeling command that defines a surface or solid by dragging one or more cross-sections along one or more curves.

Symbols

Predrawn objects that can be imported into a CorelCAD drawing. CorelCAD has a symbol library that includes architectural, engineering, electrical, and many other types of symbols. Filters are provided for importing symbols created in other CAD and drawing programs.

Template

A set of settings that can be loaded before you start a drawing. A template specifies such things as the units used, dimension styles, layer names and groups, default text, and views.

Texture

A material attribute that changes the apparent shape of surfaces to simulate textures such as brick or fabric.

Toolbar

A toolbar provides quick, one-step access to commonly used features. CorelCAD has two Standard toolbars displayed by default at the top of the screen. Other toolbars can be displayed by right-clicking on a toolbar and selecting from a list of available toolbars.

Toolbox

The toolbox gives you quick access to tools and flyouts. You can move the toolbox anywhere on the screen by clicking the area that surrounds the tools, and dragging it. Placing the toolbox on the drawing window turns it into a floating toolbox with a title bar. Placing the toolbox on any of the four sides of the window docks it there, making it part of the window border.

Top view

A top view (plan view) provides a 2D view of a drawing from above. A top view drawing appears on the X-Y plane.

Torus

A doughnut-shaped object generated by a circle rotated about an axis in its plane that does not intersect the circle.

Transparency

A material attribute that defines the amount of light that can pass through a surface. Transparency is not visible when using Flat, Gouraud, Phong, or Preview shading, but is supported by the higher quality rendering methods, such as Full Render or Ray Traced.

Undo

The Undo command removes the effect of the previous CorelCAD command. By clicking the Undo command, you can move back through your drawing process one step at a time.

Unit

A standard quantity used for measurement, for example, feet, inches or millimeters.

Vector data

Geometric elements with explicit mathematical definitions, such as lines, arcs, polygons, curves, surfaces, and solids. Vector images are stored as algebraic equations defining the various lines and curves of the drawing.

Vertex

The point of intersection of the sides of a polygon. For example, the vertices of a triangle are the three points where the lines of the triangle meet. A rectangle has four vertices, one at each corner.

Viewer

The viewer is the point from which you view a 3D model. The viewer can be moved to any position around the model.

Visible grid

A two-dimensional plane marked with a grid pattern that appears in your drawing to help you visualize the position of your objects. The Visible grid does not have any further affect on your drawing, although it may align with the Snap grid.

Wireframe model

A 3D model that is defined by lines. It has no surface, volume, or mass.

XYZ coordinate

A Cartesian coordinate that defines a point in space. It consists of three values, one for each of the X, Y, and Z axes.

Zoom tools

The tools that allow you to move your viewpoint closer to or farther from your drawing.

AutoCAD file format

Vector file formats native to AutoCAD, a computer aided design application. Supported by MS-DOS platform Supports 256 colors. Can store three-dimensional objects. Cannot be compressed. Supported by many other CAD programs and some drawing programs, including CorelDRAW.

Windows Metafile

Microsoft Windows Metafile. Vector file format developed by Microsoft Corporation. Supported by Windows platform and several Windows-based graphics applications. Supports 24-bit color. Widely used to store and exchange vector and bitmap data between Windows-based applications.

Joint Photographic Experts Group file format

Also known as JPEG or JFIF (for JPEG File Interchange Format). Bitmap file format developed by C-Cube Microsystems. Supported by all platforms. Supports 24-bit color. Maximum image size is 64,000 pixels by 64,000 pixels. Supports JPEG compression. Used as a storage and exchange format for files containing data that has been compressed with JPEG.

Targa file format

Targa Image File. Bitmap file format developed by Truevision Inc. Supported by MS-DOS, Windows, UNIX, Atari, Amiga and other platforms. Supported by numerous applications. Supports 32-bit color. No maximum image size. Supports RLE compression. Used widely in paint, graphics and imaging applications. Also widely used for still video editing.

Scitex file format

Bitmap file format. Supported by PC platform. Supported by most applications. Supports grayscale and CMYK (32-bit) color. Does not support compression. Used primarily for color separations.

CompuServe Graphics Interchange file format

Graphics Interchange Format. Bitmap file format created by CompuServe Inc. Supported by MS-DOS, Macintosh, UNIX, Amiga, and other platforms. Supports 256 colors. Maximum image size is 64,000 pixels by 64,000 pixels. Supports LZW compression. Mainly used as an exchange format, but is supported by many applications. Can store multiple bitmap images in a single file.

Wavelet file format

Bitmap file format. Supports 24-bit color. Supports Wavelet compression. Used to store bitmap information at high compression levels.

Windows Bitmap file format

Microsoft Windows Bitmap. Bitmap file format developed by Microsoft Corporation. Supported by Microsoft Windows and Windows NT platforms on Intel machines. Supported by many applications. Supports 1-, 4-, 8-, 16-, 24- and 32-bit color. Unlimited image size. Supports RLE compression. Used widely to exchange and store bitmap information.

Tag Image File Format

Tagged Image File Format (TIFF). Bitmap file format developed by Aldus. Supported by MS-DOS, Macintosh, UNIX and other platforms and most paint, imaging, and desktop publishing applications. Supports 24-bit color. Supports RLE, LZW, CCITT Group 3 and Group 4, and JPEG compression. Very widely used format for storing and exchanging graphics information among platforms and applications.

Paintbrush file format

Bitmap file format native to PC Paintbrush and Microsoft Paintbrush for Windows. Supported by MS-DOS, Windows, UNIX and other platforms, and numerous applications. Supports 24-bit color. Maximum image size is 64,000 by 64,000 pixels. Supports RLE compression. Widely used as a storage and exchange format for Windows-based applications.

OS/2 Bitmap file format

Bitmap file format developed by Microsoft Corporation and IBM. Supported by Intel machines running OS/2, MS-DOS, Windows and Windows NT. Supported by numerous applications, including non-OS/2 and non-PC applications. Supports 1-bit, 4-bit, 8-bit and 24-bit color. Supports RLE compression. Maximum image size 64,000 pixels by 64,000 pixels. Used to store bitmap information.

Corel PHOTO-PAINT file format

Bitmap file format. Supported by Windows platform and various image editing applications. Supports 1-, 2-, 4-, 8-, 16-, 24-, and 32-bit color, and 8-bit grayscale images. Can store masks and objects created in PHOTO-PAINT.

Macintosh Paint file format

Macintosh Paint, MacPaint. Bitmap file format developed by Apple Computer Inc. Supported by Macintosh platform. Supports monochrome artwork only. Maximum image size is 576 pixels by 720 pixels. Supports RLE compression. Used mainly by Macintosh graphics applications to store black and white graphics and clipart.

Hewlett Packard Graphics Language file format

Vector file format developed by Hewlett Packard. Supported by PC and Macintosh platforms. Supported by all illustration applications. Widely used as a page description language.

ACIS file format

Developed by Spatial Technology Inc., the ACIS solid modeling format stores accurate mathematical representations of your objects.

Definition of Material Attribute Terms

Texture

Casting texture

Provides a cast iron-like finish with an irregular casting pattern. Use it for any surface where an irregular roughness is required.

Rough texture

Provides a rough, undulating finish. Use it for any surface where an uneven appearance is required.

Wrapped Bump Map texture

A bump-map displacement derived from an image file.

Wrapped Dimple texture

Provides a regular dimpled appearance much like the surface of a golf ball.

Wrapped Knurl texture

Provides a knurled pattern similar to grips used on tool handles.

Wrapped Rough texture

Provides a wrapped rough, cast metal-like finish. Use it for any surface where an uneven appearance is required.

Wrapped Tread Plate texture

Provides a tread-plate pattern. The indentations to the material may be thought of as cylinders with rounded (spherical) ends that protrude above the surface of the material.

Transparency

Eroded transparency

Creates the illusion of surface erosion by making parts of the surface's edges transparent.

Plain transparency

Provides a plain, uniform transparency.

Wrapped Grid transparency

Provides a grid pattern in texture space for transparency shading.

Wrapped Image transparency

Maps an image onto your surface, then makes parts of that image transparent. You can specify which colors in the image to render transparent.

Reflectance

This set of material attributes defines the reflective characteristics of light and other objects in a model.

Chrome 2D reflectance

Provides a chrome-like reflection pattern from a 2D array of colors. Use it for shiny or highly polished chrome-like materials.

Conductor reflectance

Provides a physically accurate metallic simulation using ray tracing, supporting reflection. Use it for simulating metallic surfaces.

Dielectric reflectance

Provides a physically accurate simulation of glass-like materials that have both reflective and transmissive properties, using ray tracing, supporting reflection and refraction. Use it for simulating glass surface finishes.

Glass reflectance

Provides an approximation of glass-like materials that have both reflective and transmissive properties, using ray tracing, supporting reflection and refraction. Use it for approximating glass-surface finishes.

Matte reflectance

Provides a dull matte-like reflectance. Use it for non-glossy materials such as brick or fabric.

Metal reflectance

Provides a shiny metallic appearance. Use it for most metallic materials such as steel or brass.

Mirror reflectance

Provides an approximation of mirror reflecting materials. It supports secondary mirrored views through ray tracing, supporting reflection. Use it for mirror-like surface finishes.

Phong reflectance

Provides reflectance based on the Phong model, in which reflections are greatest in the mirror direction of a surface opposite the viewing direction with respect to the face normal. Use it for shiny or highly-polished materials, such as ceramic or glass.

Plastic reflectance

Provides a glossy plastic-like reflectance. Use it for shiny or highly polished materials such as plastic or varnished surfaces.

Pattern

Blue Marble pattern

Provides a solid texture that gives a blue marble appearance.

Chrome pattern

Provides simple chrome-like reflections.

Cubes pattern

Creates a 3D lattice of cubes with alternating colors

Marble pattern

Creates a pattern with a veined marble appearance.

Simple Wood pattern

Creates a simple wood pattern with concentric rings of light and dark wood

Solid Clouds pattern

Provides a cloudy appearance.

Solid Polka pattern

Creates a solid polka dot pattern.

Wrapped Brick pattern

Provides a simple, solid brick pattern.

Wrapped Checker pattern

Provides a wrapped checker-board pattern. The squares of the pattern have alternate colors.

Wrapped Diagonal pattern

Provides a pattern giving a line across the leading diagonal of the texture space.

Wrapped Grid pattern

Provides a grid color pattern.

Wrapped Polka pattern

Provides a wrapped polka-dot pattern.

Wrapped S Stripe pattern

Creates a pattern giving a line along the s-axis of the texture space.

Wrapped T Stripe pattern

Creates a pattern giving a line along the t-axis of the texture space.

Wrapped Textured Brick pattern

Creates a wrapped textured brick pattern.

Enables you to choose between checking the current text object or the full document if necessary.

Highlights unrecognized words. Click the word and make your changes as you would in the document window.

Describes errors when found. The type of rule shown depends on the proofreading level you choose.

Opens a dialog box you can use to add words to your personal dictionary.

Displays a menu you can use to undo changes you make to errors highlighted in the Sentence box, explain errors, set advanced options or formality levels, open the Rule Manager, or create or apply personal dictionaries.

Lists all alternative spelling words found in the International Proofreader's databases.

Opens a dialog box you can use to add words to your personal dictionary.

Replaces the currently flagged error with the word or phrase in the Change To box.

Replaces all instances of the currently flagged error and continues the proofreading session.

Lists all alternative spelling words found in the International Proofreader's databases.

Stops the checking session and closes the International Proofreader.

Describes errors when found. The type of rule shown depends on the proofreading level you choose.

Leaves the current word unchanged and continues checking.

Ignores all subsequent words or phrases during the current proofreading session.

Moves the International Proofreader to the next sentence.

Enables you to choose between checking the current text object or the full document if necessary.

Highlights unrecognized words. Click the word and make your changes as you would in the document window.

How To:

Using the Undo list

CorelCAD maintains a list of the last twenty actions that you have performed. You can use this list to help you correct errors in long procedures. Using the list, you can examine the commands to determine how far back the mistake occurred, then undo all of your actions to that point.

Tip

- You can also undo actions one at a time using the Undo command from the Edit menu.

How To:

Changing your units

The Units & Angles dialog box controls the default unit types used throughout CorelCAD. When you use this dialog to change the default units, all measurements in your drawing will be converted to the new units without altering the actual dimensions. For example, a 1 inch line will still be an inch long, but the Measure Distance command might return a value of 25.40 millimeters.

You can also change the Displacement distance from this dialog. The Displacement distance is the step your cursor takes when you press one of the arrow keys.

Changing the drawing scale

The Change Drawing Scale command alters every object in your drawing to conform to a new drawing scale that you define. The command prompts you for two points in your drawing, then lets you enter a new measurement for the distance between the two points. Your entire drawing will be altered to fit the new scale.

Using the Object roll-up

The Object roll-up lets you create a variety of two- and three-dimensional objects with great accuracy and versatility. Unlike the 2D Objects and 3D Solids toolbars, the roll-up does not limit you to specific geometric shapes. You can work within the four basic frameworks to create almost any shape to exact dimensions.

For detailed instructions on creating objects with the roll-up, click one of the object types below.

{button ,JI(`',`Creating rectangular shapes and solids')} **Rectangular objects**

{button ,JI(`',`Creating polygonal shapes and solids')} **Polygonal objects**

{button ,JI(`',`Creating circular shapes and solids')} **Circular objects**

{button ,JI(`',`Creating elliptical shapes and solids')} **Elliptical objects**

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VCET (Viewing and Conversion Enabling Technology) is the core technology in AutoVue available for licensing.

EDAT (Engineering Data Access Technology) offers Read and Read/Write functionality for AutoCAD and Intergraph/Microstation formats.

Opens the System Info dialog box where you can get information about your system, display, printing, Corel EXEs & DLLs and system DLLs.

Displays the disk space available on the drive where the program is installed.

Displays the name of the registered user and the serial number.

Displays copyright information.

Displays the version of the product currently installed.

Displays the name of the product.

Double-click to open the credits window. To exit the credits and return to your program, click the ESC button.

Provides a list of system information categories. Click one of the following:

System	Displays information about your computer For example, Windows version or processor.
Display	Displays information about your monitor. For example, driver or driver version.
Printing	Displays information about installed printers.
Corel EXEs and DLLs	Displays information all of the Corel EXEs and DLLs.
System DLLs:	Displays all of the system DLLs.

Displays the system information for the chosen category.

Saves all system information as SYSINFO.TXT. Once it's saved, a message box appears informing you of the location of the saved file.

Double-click to open the credits window. To exit the credits and return to your program, click the ESC button.

Displays information about the contents of the file.

Welcome to CorelCAD 30 Day Trial Version

Thank you for installing this 30 day trial version of CorelCAD. CorelCAD is a 32-bit design tool that allows easy, accurate modeling of real world objects in 3D. A fully customizable interface and the industry-standard ACIS solid modeling system will give you the flexibility to conceptualize, construct, and revise product models and prototypes on the PC. Powerful Boolean operations, as well as blending, extrusion and 2D drafting features will help make your ideas a reality. Advanced rendering capabilities let you render models with realistic shading and textures.

This trial version was designed to give you, the CorelDRAW user, an introduction to the powerful tools in CorelCAD. You will have full access to CorelCAD, Corel Print Space, CorelSCRIPT, the help files, sample drawings, and sample scripts for a period of 30 days from the time you installed this version. After this time, the program will be disabled. This trial version can only be installed once on a system. We hope you will take the opportunity to see what CorelCAD can do for you.

To order the full version of CorelCAD, please contact our Customer Service department at the numbers printed on the top surface of the CorelCAD Trial Version CD.

Why use CorelCAD?

If you’re an experienced CorelDRAW user, you know the quality of art that can be produced using the program. With CorelDRAW you can create all kinds of illustrations, including technical drawings. You might feel that CorelDRAW meets all of your needs, and wonder what CorelCAD can add.

Use CorelCAD to create precise 3D models

CorelDRAW is a 2D drawing program. With it you can create art that appears to be 3 dimensional by using drawing, light, and shading effects to give the appearance of depth. Your finished product is the printed drawing.

CorelCAD is a precision 3D modeling program. With CorelCAD, you are not creating drawings, you are creating virtual models. You can create solid models that have volume and mass, then view them from any perspective. You can apply materials to a model and then, with a click of the mouse, have it rendered with light, reflection, transparency, and shadows. For example, if you apply a wood material to an object, it will be rendered with the color, grain, texture, and reflective qualities for the wood you selected. Although you can create impressive illustrations with CorelCAD, your finished product is not an illustration, but a 3D computer model.

If you are designing objects that ultimately will be manufactured, CorelCAD provides you with more information about your design and a testable model. It provides data that can be used in Computer Aided Manufacturing to produce the final product.

Let CorelCAD help you with your CorelDRAW art

CorelDRAW objects can be moved into CorelCAD using Copy and Paste, or by exporting to WMF, DXF or other file format that can be imported by CorelCAD. Once the object is moved to CorelCAD it can be scaled, converted from a wireframe to a surface model, and extruded to create a 3D solid model.

You can export a CorelCAD model as a WMF file (Windows Metafile) then import it to CorelDRAW as either a wireframe or hidden line drawing. You can then ungroup it and change any of the lines in the drawing. Therefore, if you want to create a perspective drawing of an object, you can quickly create an accurate model of the object in CorelCAD, then move it to your CorelDRAW drawing.

You can also apply photo-realistic rendering to a CorelCAD model, and export it as a bitmap. You can then import the bitmap to CorelDRAW where you can crop it, size it, and apply filters.

If you know CorelDRAW it is easy to learn CorelCAD

When you start CorelCAD, you'll notice it has the same look and feel as CorelDRAW. You'll see familiar features such as the Color Palette, tool bars, flyouts, the Status Bar, and Roll-Ups. The following table summarizes some of the differences between CorelDRAW and CorelCAD

CorelDRAW	CorelCAD
A drawing program for creating illustrations. The illustration is the final product.	A 3D precision modeling program for creating virtual models. Although the model can be viewed or printed from any perspective, the final product is a 3D model that exists on the computer.
You create your drawings in 2D space. Although you can create the illusion of 3 dimensions, you always work on only two axes, the x and y.	You work in 3D space using the x (width), y (depth), and z (height) axes. To move the cursor on the Z axis when you are in Perspective or another 3D view, hold CTRL + SHIFT while moving the mouse.
Your drawing can be viewed only from one perspective. If you want to show another perspective you must create another drawing.	You can view your model from any perspective. For example, you can create a printout showing the front of your 3D model, then change the view and create a printout showing the back, side, or any other perspective.
To render your drawing you work with lines and fills.	To render your model you apply materials, then use the Shade command to display it with texture, light, shadow, and reflection. For example, if you apply the material "Mahogany" to an object, it will be shaded with the texture, grain, and reflective qualities of mahogany wood. If you apply the material "Glass Frosted" to an object, it will be shaded with all the qualities of frosted glass, including transparency.
To move an object, click and drag it to another location in the drawing area.	To move an object, select it, click Move from the Transform menu, then define the distance and direction of the move by entering coordinates. This allows you to specify a precise location for the object. You can also drag the object and use a snap tool to locate it relative to another existing object.
To snap to an object, click Layout, then enable the Snap to Objects option. Now, when you activate a drawing tool and move close to an object, the cursor will snap to the nearest predefined snap point.	To snap to an object, click one of the snap tools to specify a snap point. Snapping allows you to set precise points based on existing objects.
Using the Extrude command you can apply a 3D look to a 2D drawing.	Using any of the Extrude commands, you can create a 3D surface or solid model from a 2D drawing.

How to learn CorelCAD

Learning CorelCAD is easy. An online version of the CorelCAD Tutorial is available in the CorelCAD program group (accessed in Windows 95 by clicking Start, Programs). This version is identical in content to the printed tutorial that is included in the full CorelCAD package. Created in Envoy format, the embedded viewer will allow you to page through the document on screen, or print a copy to your printer (if you are using Windows NT, you will be able to view the tutorial but will not be able to print it). Online help is available in Envoy if you require assistance using the viewer. The 13 lessons in the tutorial will take you on a tour of CorelCAD, and give you practical hands-on lessons in learning the tools and commands.

To start the CorelCAD tutorial, click the Tutorial icon from the CorelCAD program group in Windows.

Online help is available in CorelCAD to help you with any questions you may have while using the program. Under the Help menu, select Help Topics to search for a topic, or use the What's This? help that's accessed by right-clicking on a screen item.

Using the Script Toolbar

This trial version of CorelCAD has been modified to display a script toolbar when you first enter the program. The scripts contained in this toolbar will help illustrate how certain commands are executed. Clicking on one of the buttons in the Script Toolbar will show you the steps required to perform certain commands. To clear the toolbar from your screen, click the Close button at the top of the toolbar.

Other scripts are available in the \COREL\CAD1\CAD folder. The Scripts section in the Readme file, accessed from the CorelCAD program group, provides more information about these scripts. To run any script in CorelCAD, click Tools, Scripts, Run Script, then locate the desired script.