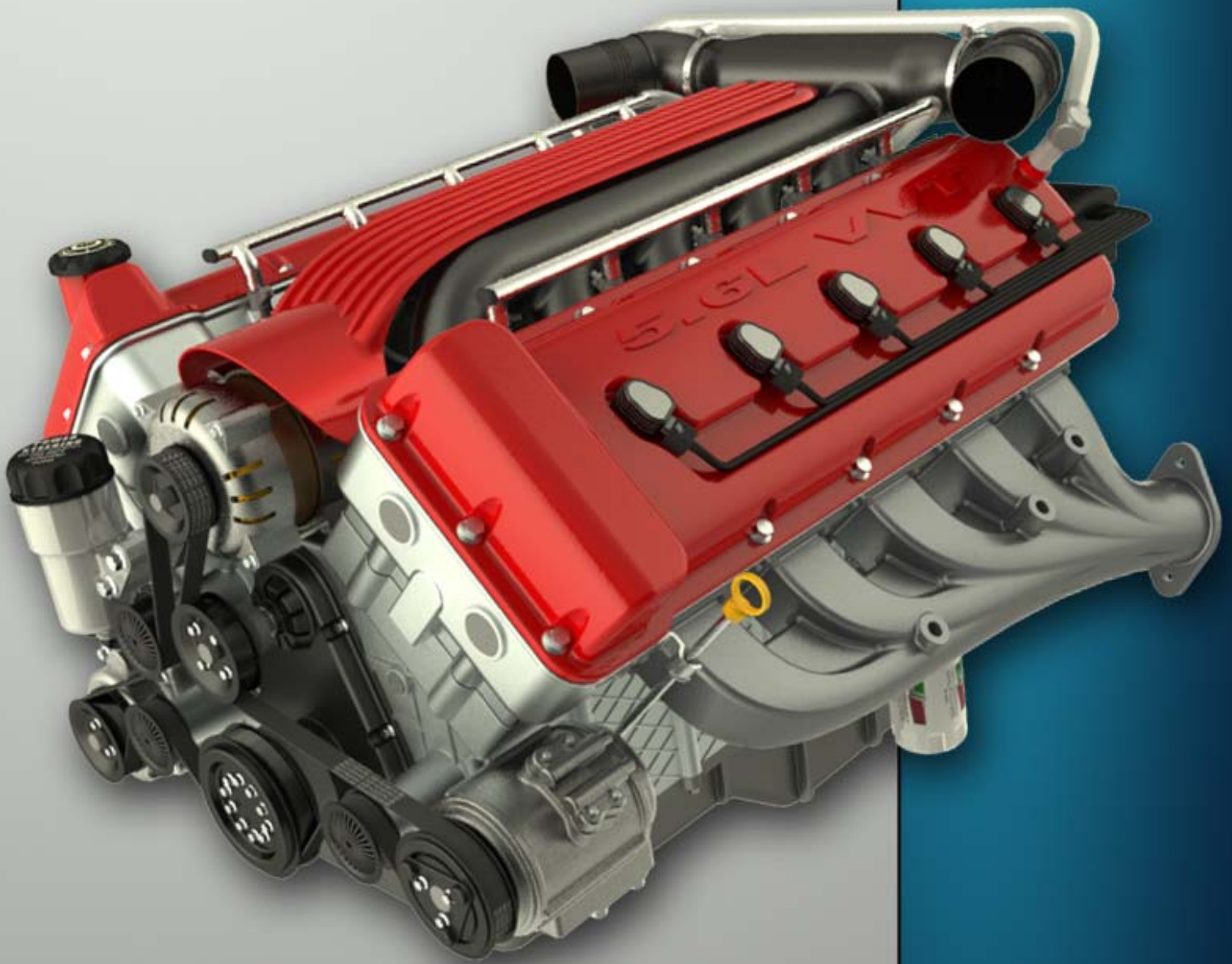




# KEYCREATOR®

TIPS AND  
TRICKS



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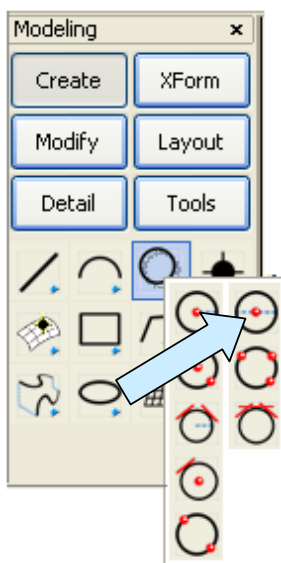
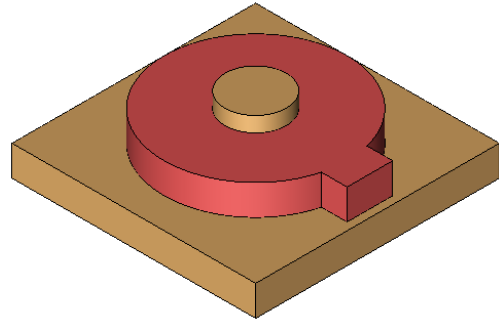
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## Doctor Walt's Tips and Tricks # 36

### Creating and Using an Animation Motor

Many KeyCreator users are not aware of the neat animations that can be created in KeyCreator. While we don't have a formal suite of animation tools, we do have some very unique capabilities for leveling your presentations.



In this exercise, we'll learn how to quickly create an animation macro that can be used in any file to jog rotate or continuously spin a single part or complete rotor assembly.

The secret lies in the power of groups and KXL Macros. I've included a KXL macro called "Spin.kxl" for download.

Let's get started by building a simple base and turntable for our demonstration. Click on the **CREATE CIRCLE BY DIAMETER** Icon.

Type 3 for the Diameter. Using the **KeyIn** Option, hit the **ENTER** Key three times to locate the circle at the origin.

Next, Click on the **CREATE RECTANGLE BY WIDTH HEIGHT** Icon.

Use the **MidCtr** Anchor Option.

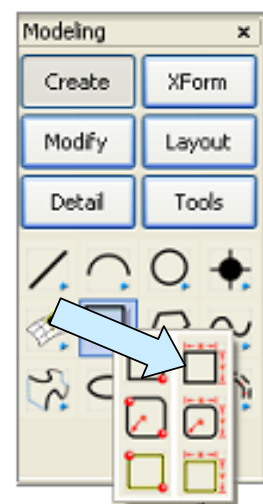
Type 0.75 for the Width and 0.75 for the Height. Using the **EndEnt** Option, click on the right side of the circle.

Now, select a different construction color.

Click on the **BACKUP** Button.

Type 4 for the Width and 4 for the Height.

Use the **KeyIn** Option and hit the **ENTER** Key three times to place the square centered at the origin.





Now, click on the EXTRUDE Icon.

A Dialog Box appears.

Type 0.5 for the Length and use 0 for the Draft Angle.

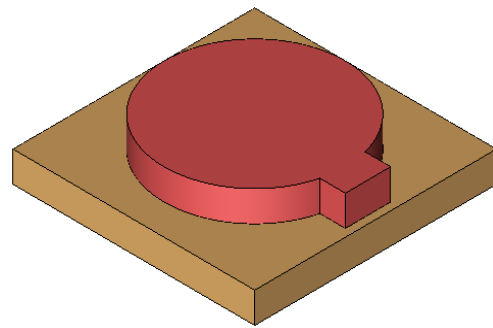
Select the circle and smaller square and hit the ENTER Key.

Click on the upward-facing vector.

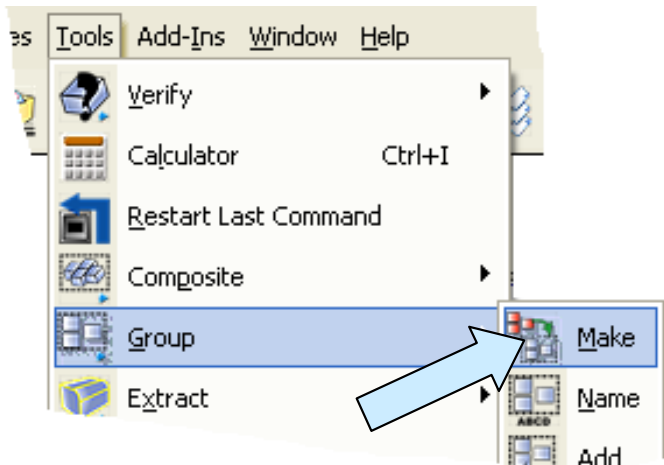
Now, select the large square and hit the ENTER Key.

Select the downward-facing vector.

Your screen should now look like this:



You can make your assembly fancier by drilling a hole in the rotor and extending a cylinder up from the square base through it so it looks like the illustration at the beginning of this lesson or you can leave it just as is.



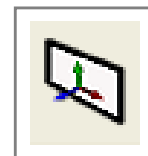
Now, click on the TOOLS Pulldown Menu, then on the GROUPS Option.

Finally, click on the MAKE Option.

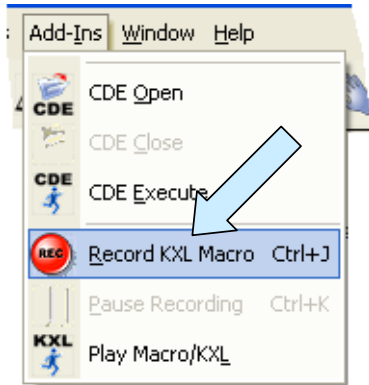
Type "rotor" for the group name and hit the ENTER Key.

Then, select the rotor piece on your screen and hit the ENTER Key.

We are now going to make a macro that will rotate only the group named "rotor" in any file that is open when the macro is played. To properly orient the axis for revolution, click on the CONSTRUCTION PLANE Icon.



Then, type 1 for the View and hit the ENTER Key.



Now, let's create the animation macro.

Click on the ADD-INS Pulldown and then on RECORD KXL Macro.

A Dialog Box appears. Type "Spin" for the name of the macro and then click on the SAVE Button.

You are now in recording mode. (Notice that the REC at the bottom right corner of your screen has gone from grayed out to dark black.)

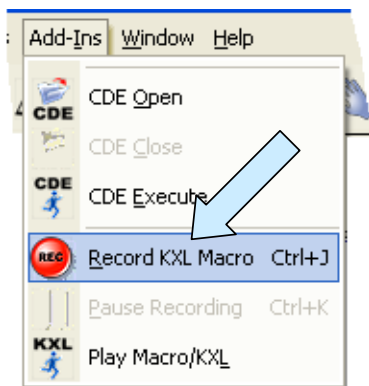
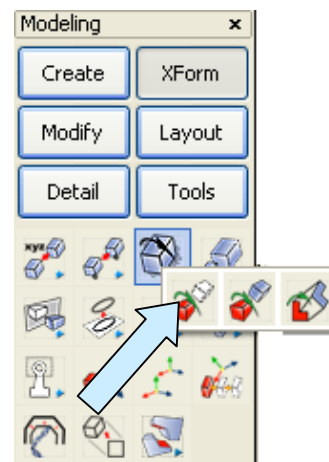
Click on the XFORM ROTATE MOVE Icon.

Click on the GROUP Option on the Conversation Bar and then on the BY NAME Option.

Type "rotor" and hit the ENTER Key twice.

You are now prompted to define the axis for rotation. Hit the ENTER Key three times. This selects the origin of the file for the first end of the axis.

Then, hit the ENTER Key twice, type 1, and hit the ENTER Key once more. This sets the other end of the axis. (Perpendicular to the plane of the rotor.)



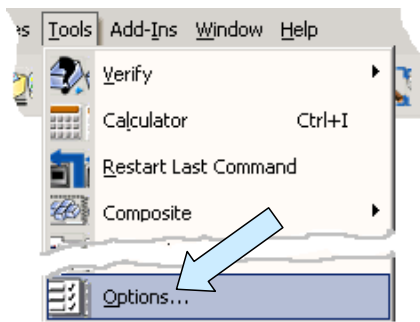
Type 1 for the angle and hit the ENTER Key. (Notice that the rotor revolves one degree.) Hit the ESC Key.

Now, click on the RECORD KXL MACRO Icon to stop recording.

Because we created this macro to rotate a group named "rotor", you can use it to create spinning animations in any design file.

The only requirements are that the file have a part belonging to a group named "rotor" and that a construction plane is assigned perpendicular to the axis of the rotor.

## Binding the Macro

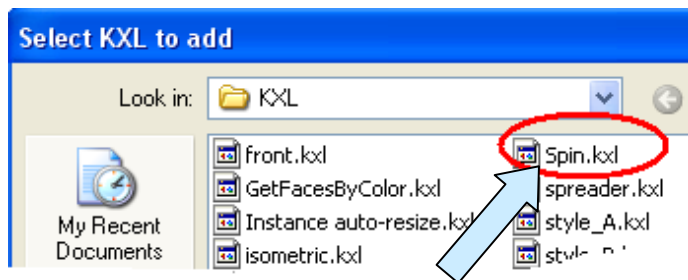
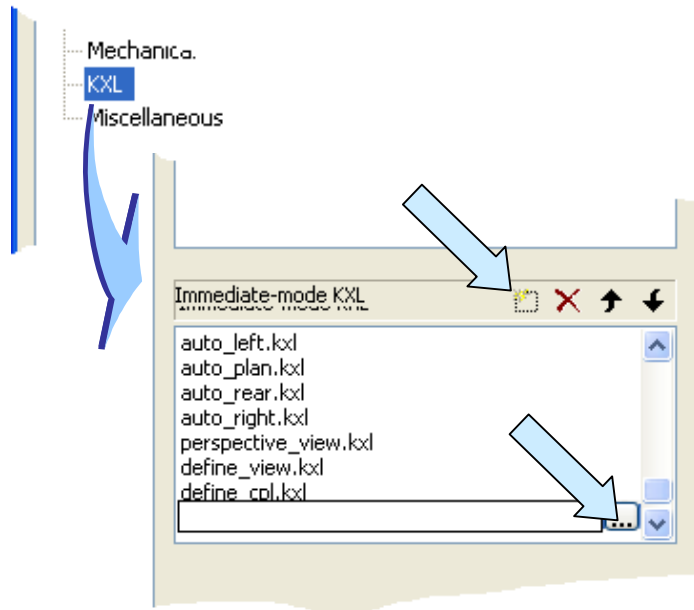


To make the spin macro useful, we have to bind it to a key. Then, whenever we touch the key the rotor will revolve one degree. If we hold the key down, the rotor will spin. (Later on when you get more profficient at this, you'll realize that a larger number of degrees recorded in the macro will result in a faster spin rate for the same clock speed computer.)

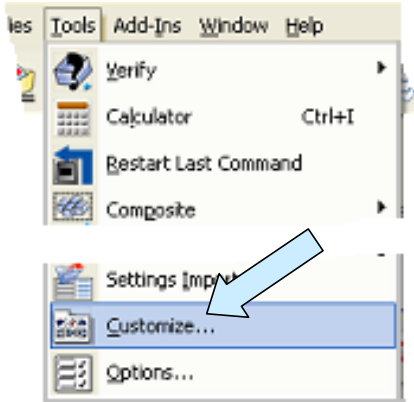
Click on the TOOLS Pulldown Menu and then on OPTIONS.

Click on the KXL Option on the left side of the large Dialog Box that appears.

Next, click on the NEW Icon in the Immediate Mode Section and then on the Ellipsis



Click on the spin.kxl file and then on the OPEN Button. This places the macro in the immediate mode group. Then, click on the OK Button at the bottom of the Dialog Box.

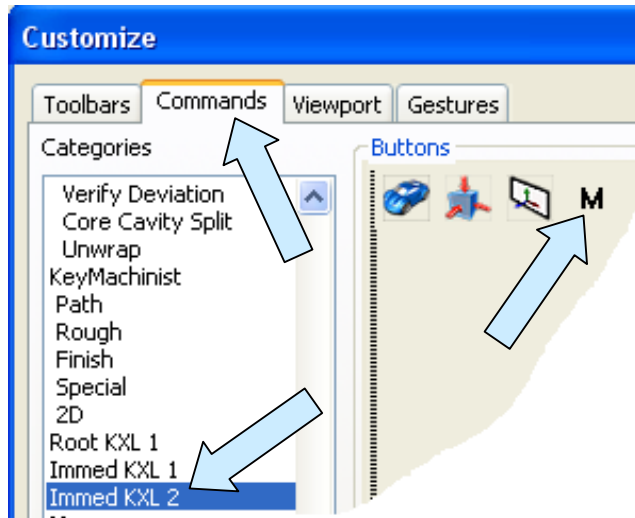


Now, click on the TOOLS Pulldown Menu and then on CUSTOMIZE.

A Dialog Box appears. Click on the COMMANDS Tab.

Scroll down and click on the Immed KXL 2 entry.

Notice that an Icon with the letter "M" on it is at the end of the current list. This represents the macro that you just recorded.



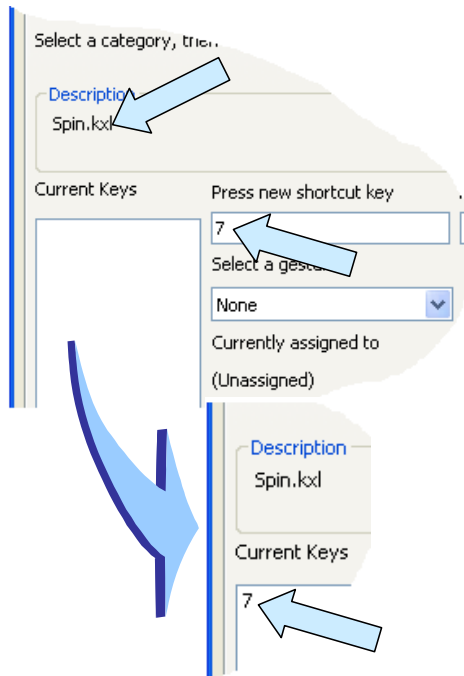
Click on the "M" Icon.

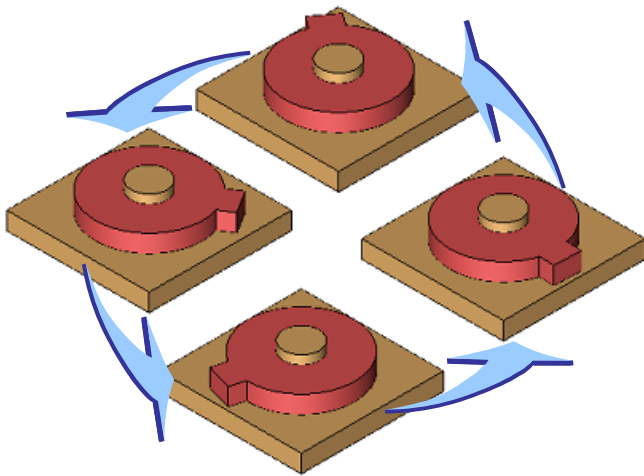
Now, notice that the Spin.kxl macro is shown under Description.

Click on the Press New Shortcut Key Field and type 7. Then, click on the ASSIGN KEY Button at the bottom of the Dialog Box.

Notice that the Key Assignment is now shown in the Current Keys Field. (Note: If 7 was already used, KeyCreator would alert you. You would then hit the CLEAR Key Button and select another key.)

Click on the OK Button at the bottom of the Dialog Box.





Now if you hit the 7 key once, the rotor indexes one degree.

Hold the 7 key down, and the rotor spins.

Now in this file, we assigned the simple cylindrical solid to the group “rotor.”

We could have just as easily created an entire assembly of parts that we wanted to move and assigned the whole collection to the group “rotor.”

An alternative approach is to simply assign the drive cylinder to the group “rotor” as we did here. Then, use mating relationships to constrain additional parts to the drive cylinder. If you completely constrain each part, the entire assembly will rotate when the rotor rotates!