

TooLOK User Manual

Revision D

1. Application

TooLOK uses three conical seats on an object to identify the object, align to the part, and to open the correct PowerINSPECT file to inspect the object.

TooLOK can also be used to move the CimCore arm to another area on the part that is unreachable from the initial starting position.

2. Minimum System Requirements

- a. PowerINSPECT 3.050 FULL VERSION (LITE version will not work)
- b. Romer / CimCore dongle for TooLOK – Will have T option.
- c. PI3TooLOKAddIn.dll file for PowerINSPECT 3.0XX
- d. PI4TooLOKAddIn.dll file for PowerINSPECT 4.0XX
- e. WinRDS 2.3.5 or higher.

3. Installation

Install the TooLOK File Wizard.

Note: The CIMCORE PowerINSPECT 4.0 Release CD puts a TooLOK Rev-F installation image at: C:\Program Files\Cimcore\PI4 Support files

- a. Insert the CD into your CD drive; it should automatically start the installation. If it does not start, open Windows Explorer, navigate the CD drive, and double click the Setup.exe file on the root directory of the CD.
- b. Choose Next> at the Welcome Screen
- c. Choose Next> at the Choose Destination Screen
- d. Press Finish

Install the TooLOK Add-In in PowerINSPECT

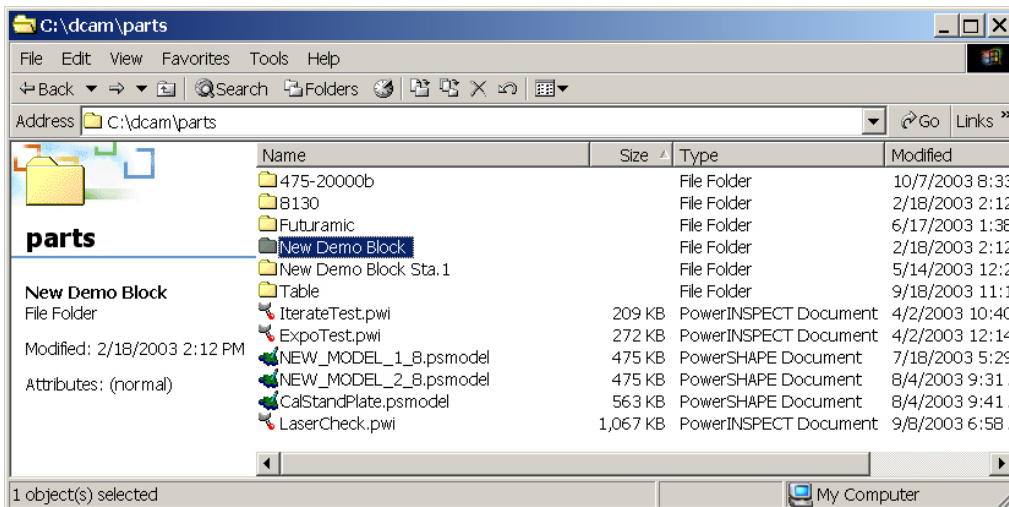
- a. Open PowerINSPECT
- b. From the Menu at the top of the page select Tools, Add In Manager



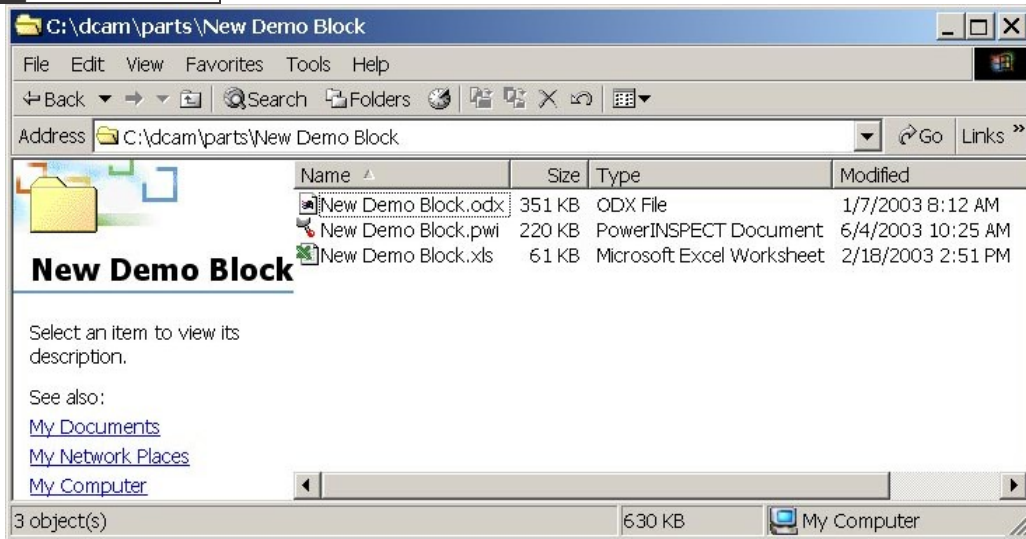
- c. Choose Browse and go to C:\Program Files\Cimcore\TooLOK\
- d. Highlight PI3TooLOKAddIn.dll, or PI4TooLOKAddIn.dll, depending on what version of PowerINSPECT you are using, and choose Open.
- e. Choose OK to close the Add-In Manager

4. Part File Setup

- a. TooLOK looks for a directory called Parts. The path should be C:\Dcam\Parts
NOTE: If when you start TooLOK the Parts directory cannot be found, you will be asked to locate it.
- b. The file organization structure is key to TooLOK working correctly. In the Parts directory there should be a folder with the same name as the part that you want to open.



In the folder with the part name there needs to be a PowerINSPECT (.pwi) file with EXACTLY the same name as the folder name.



5. Using the TooLOK File Wizard

Application. The TooLOK File Wizard is a tool that generates the GridFile.dat file for TooLOK. Typically the part that is to have the TooLOK points put on it will be aligned to in PowerINSPECT and three candidate points, with associated vectors, will be measured/created by the user. The points and vectors are entered into the TooLOK File Wizard and evaluated.

The data set (three points with vectors) are evaluated for three things.

- a. Repetitive Lengths – No two lengths can be the same.
- b. Right Hand Rotation – The three points must have a counterclockwise rotation with respect to the average vector of the three entered vectors.
- c. Ample Spread – The three points must define, in a planar view, an equilateral triangle, within a certain tolerance. To say this another way, If Point 1 and Point 2 were one meter apart, and point 3 was 10mm from a line between point 1 and 2 the pattern would be rejected because the triangle formed is inadequate to lock the part into a coordinate system. There would not be enough spread. This check can be overridden.

If these three tests pass, then the operator is able to either make a new file, or to add the data to the existing, installed file. If the operator chooses to add the points to the existing file, the distances between points will be evaluated to be sure that they do not match any of the patterns already in the Gridfile.dat file.

The new, or added to, file will be located in the active WinRDS Armdata directory.

6. Building a New File with the Wizard.

The TooLOK File Wizard application can be started from the Desktop or Start, Programs, Cimcore, TooLOK File Wizard.

- a. Select New from the Wizard's File Menu, or press the new file button on the ToolBar.
- b. Enter a name for the Part.
- c. Enter the Probe Diameter used to measure the seat locations.
- d. Enter the three points and vectors into the text Boxes
- e. Press the Check Pattern Button

	X	Y	Z	I	J	K
Point 1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Point 2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Point 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

If the pattern is good you will get a success message that looks like:




If there is something wrong with the pattern you will be alerted. You must fix the problem before you will be allowed to make a new GridFile.dat file or add to an existing file.

If your pattern is good press the Make GridFile button and a new file will be written in the active WinRDS armdata directory. If a file is already there you will be asked if you want to over write the existing file.



If your pattern is good you can also choose to add the part (pattern) to the existing gridfile. If you choose to do this the lengths in your pattern will be compared to all of the lengths in the GridFile.dat file in the active Armdata directory. If none of the lengths are closer than 3mm the pattern will be added to the existing Gridfile.

If you would like to see the file gridfile.dat file choose the T  button, or choose File, Open Existing File.

If you would like to view another file choose File, Open and browse to the file.

Notes:

The seats must be 90° cones. Generally they will be drilled into the surface with a 90° countersink.

The diameter of the probe used to measure the position of the seat must be the same for all of the parts in a gridfile. If you use a 6mm probe to measure the first pattern you must use a 6mm probe for all of the parts in the file.

If the name of the part is "move" (no quotation marks) then no file will be opened when the pattern is found. The arm will be re-referenced to the new pattern and no further action will be taken.

This is useful for measuring large parts. Typically the first location on the part will have a name that will open up the PowerINSPECT file, the rest of the locations on the part will be named "move" so that the operator can move around the part while measuring in the same PowerINSPECT file.

7. Using TooLOK

- a. Open PowerINSPECT
- b. Connect to the CimCore arm.
- c. Touch three TooLOK points on the object that you want to measure.

NOTE: Probe the TooLOK points in a Counter Clockwise rotation for best results.

d. If the pattern is recognized the appropriate PowerINSPECT file will be opened after the TooLOK result dialog box goes away. (about 10 seconds) and measurement will begin.

For questions, call CimCore Technical Support 800/218-7125 or email at techsupport@romer.com



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