

# COBOTTA

## Camera

## Calibration

**\*\*Attention\*\***

Read this resource material carefully and in its entirety before use, to ensure it is understood and used properly. Failure to properly follow the instructions in the resource materials DPAM provides may result in damage to your equipment. As a result, by using the resource materials, you are assuming the risks associated with modifying your equipment. DENSO holds no liability, implied or otherwise, for damage, injury or any legal responsibility incurred, directly or indirectly from the use of the resource materials, including any loss of data or damage to property which may occur by your use of the resource materials. The use of the resource materials are not recommended unless you have technical knowledge and functional experience with the equipment and related software. DENSO is unable to provide support, remote or otherwise, for the information included in the resource material, nor for the ancillary topics relating to the information included in the resource materials. Therefore, if you are not fully comfortable with it, we strongly recommend that you send your unit to one of our Regional Support Centers for repair. The information contained in the resource materials are subject to change at the sole discretion of DPAM.

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## 1.1 Overview of COBOTTA Camera Calibration

Secure the COBOTTA to the camera calibration jig.



Connect the COBOTTA, PC and POE hub with LAN cables.



Reset the IP address of the COBOTTA (If needed).



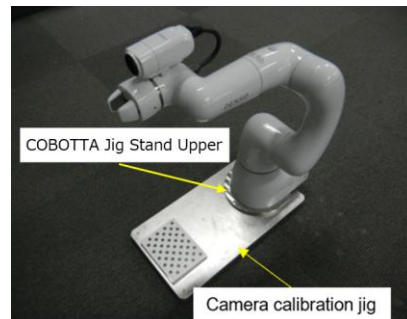
Connect to the COBOTTA using Virtual Teach Pendant



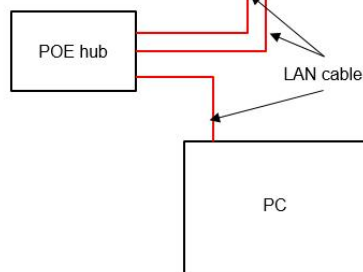
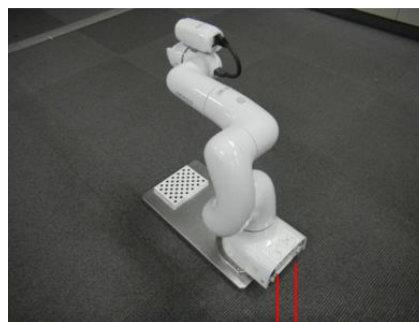
Perform Camera Calibration using HandyEyeCalWiz.exe

**Step 1.** Secure the COBOTTA onto the camera calibration jig as pictured below using thru bolts from the bottom of the Calibration Jig. Both part numbers below are required.

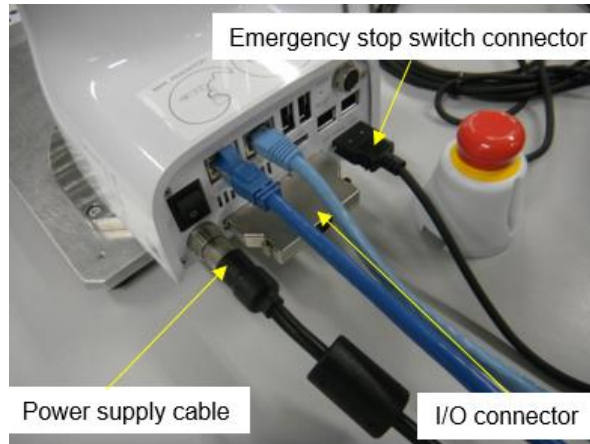
The Denso Part # for the Camera Calibration Jig is **998994-5050**.  
The Denso Part # for the Cobotta Jig Stand Upper is **410365-6190**.



**Step 2.** Connect the COBOTTA, PC, and a POE hub with LAN cable as pictured below.

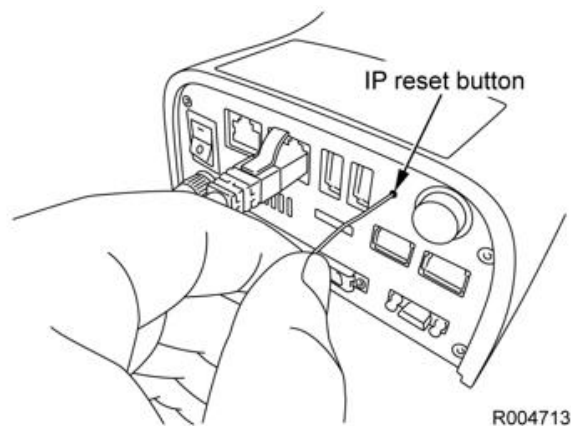


**Step 3.** Connect the Power Cable, Emergency Stop Switch and I/O Connector to the COBOTTA.

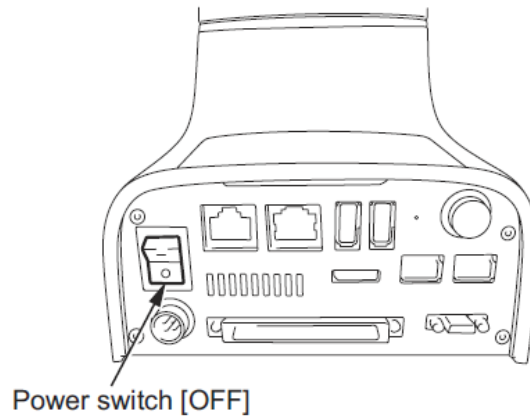


**Step 4.** If you do not know the IP address of the COBOTTA robot you will need to reset it to the default address of 192.168.0.1. \*(If you already know the IP address of the COBOTTA skip to **Step 6**).

To reset the IP address, turn on the COBOTTA and press and hold the IP reset button 2 to 3 seconds, allow the COBOTTA complete the boot up sequence.

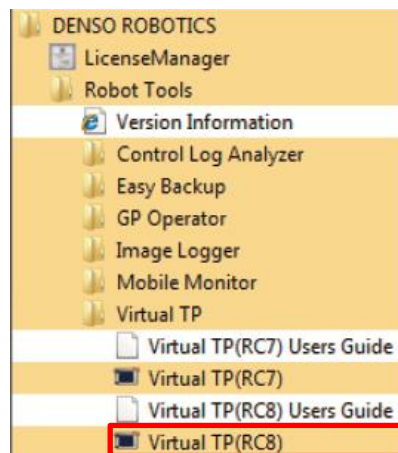


**Step 5.** Turn “Off” the power to the COBOTTA, wait at least 6 seconds before turning back “On”.

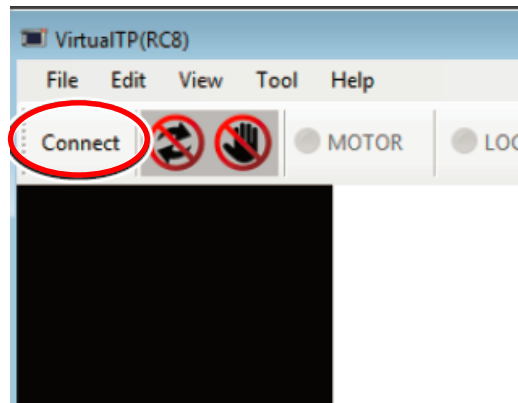


**Step 6.** Turn “On” the COBOTTA and your PC. Next start **Virtual TP**.

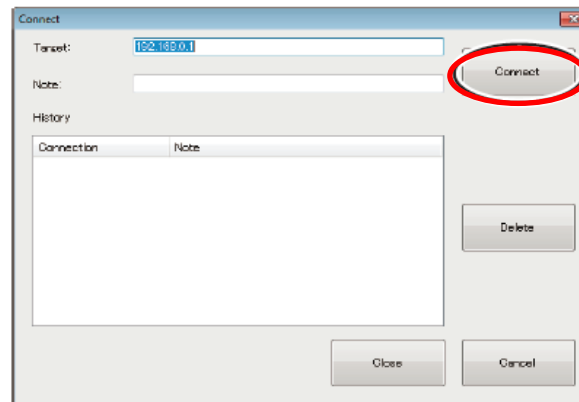
Operation Path: [START] → [All program data] →[DENSO ROBOTICS] →[Robot Tools] →[Virtual TP] →[Virtual TP (RC8)]



**Step 7.** Choose [Connect].

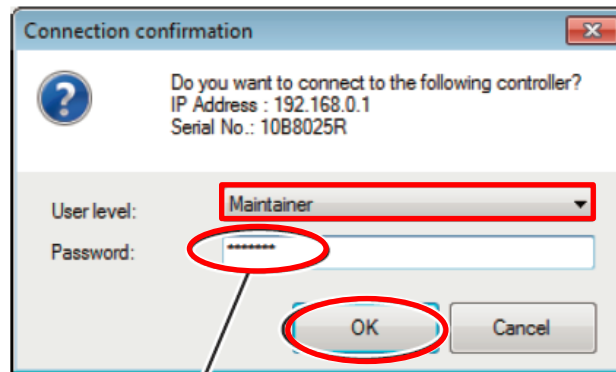


**Step 8.** Enter the Target IP Address of the COBOTTA and then choose [Connect]



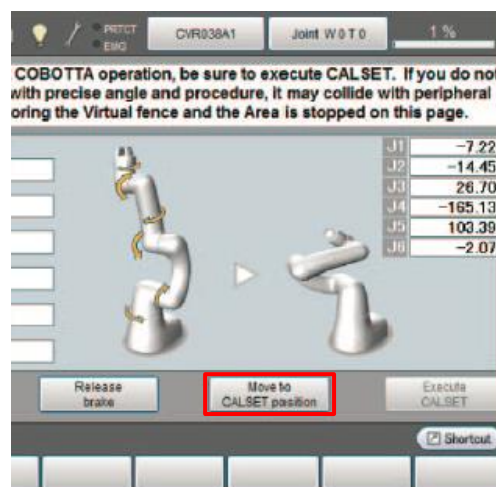


**Step 9.** Select “**Maintainer**” as the user level of the Virtual TP and enter “**5593589**” as the password.

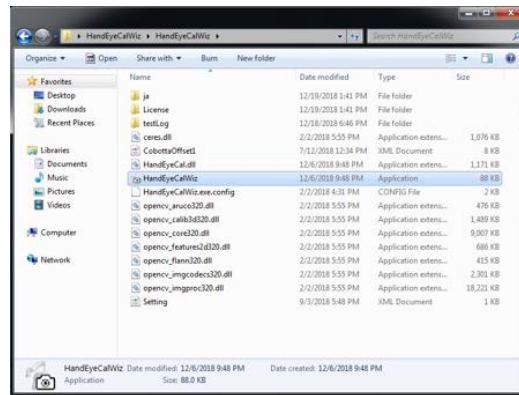


Enter password: 5593589.

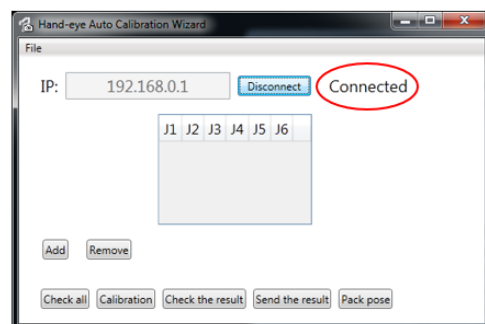
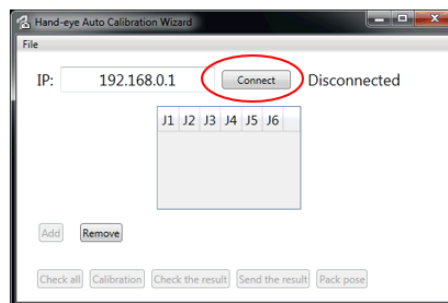
**Step 10.** Execute an all axis *Calset*, choose “**Move to Calset Position**” then choose “**Execute Calset**”.



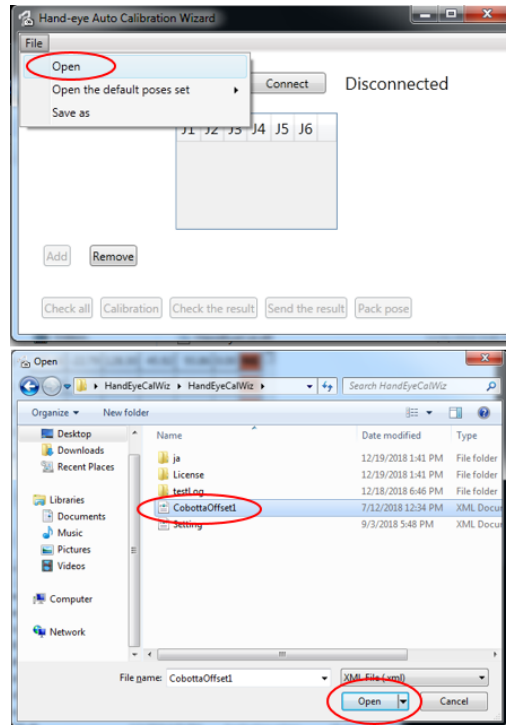
**Step 11.** Run the “HandyEyeCalWiz.exe” in the “HandyEyeCalWiz” folder.



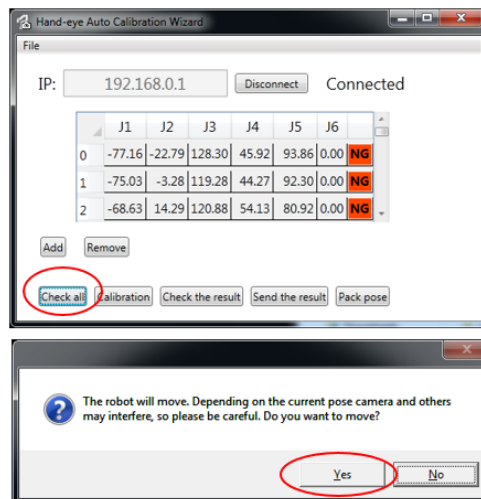
**Step 12.** Choose the “Connect” button and confirm that the status changes to “Connected”.



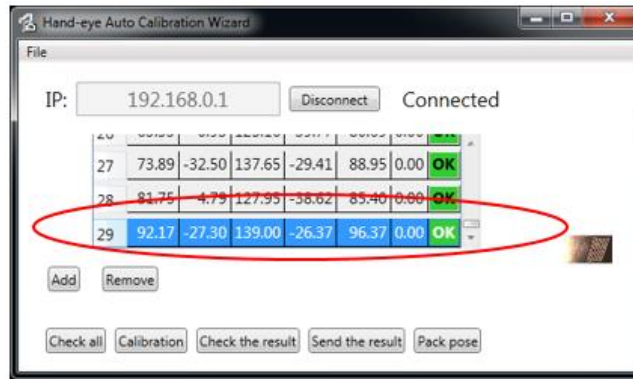
Step 13. Open "CobottaOffset1" in the "HandEyeCalWiz" folder.



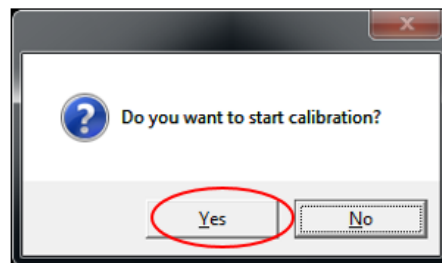
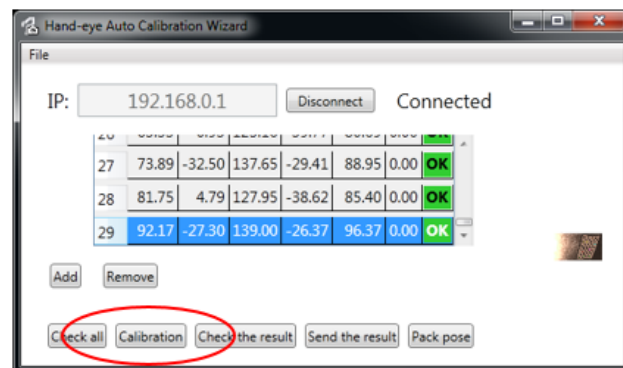
Step 14. Choose the "Check all" button and then click "Yes". \*Be careful as robot will move.



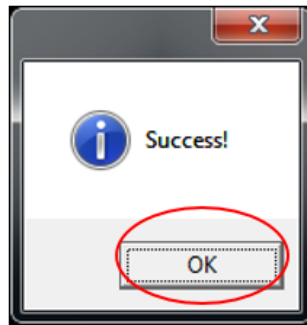
**Step 15.** Confirm that 30 images were taken (0 thru 29).



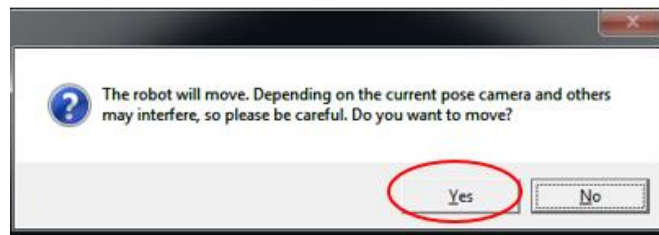
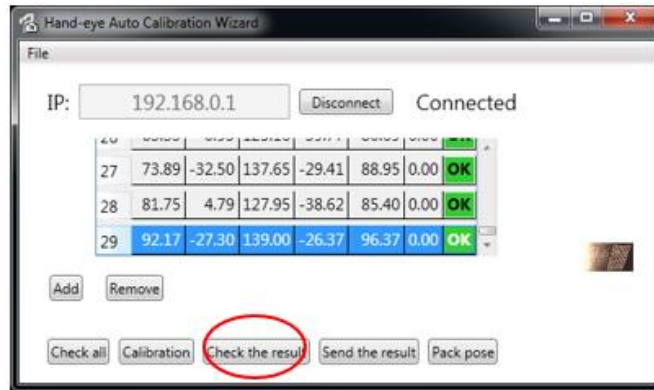
**Step 16.** Choose the “Calibration” button and then choose click “Yes” when asked if you want to start the calibration.



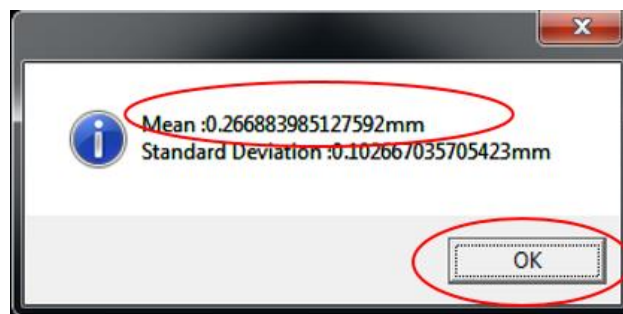
**Step 17.** After the Calibration is completed you should see the Success dialog box appear, choose “OK”.



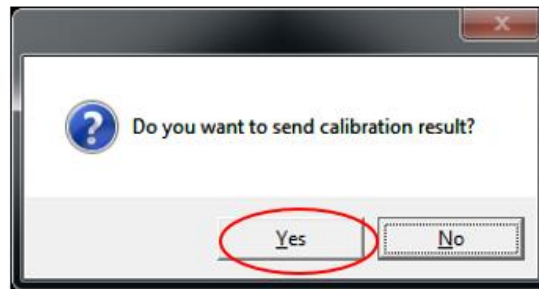
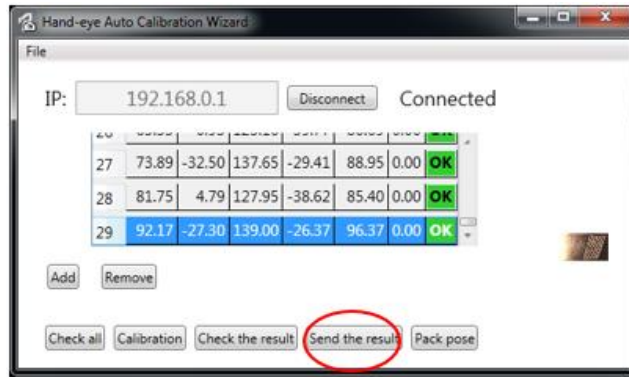
**Step 18.** Now choose the “Check the result” button and then click “Yes”. \*Caution the robot will begin to move.



**Step 19.** Confirm that the average value (Mean) is under 2mm. If the value is 2mm or more there is an error. Click “OK”.



**Step 20.** Choose the “Send the Result” button, then click “Yes”.



**Step 21.** Click "OK" to complete the procedure.

\*Make a backup of the COBOTTA using WINCAPS III after the camera calibration is complete.

