CICAPP-0019 (V1.0) September 14, 2021 IM-II Customer Encoder Calibration



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## Purpose

This note explains how to calibrate the IM-II robot if the battery backup for the encoders dies.

## Procedure

- 1. Attach all cables to the robot and power on.
- 2. Sign on to your controller via the Precise Automation software by typing the IP address of the controller into the URL of Internet Explorer and click **Admin**



- 3. Click **Control Panels**.
- 4. On the **Control Panels** tab, click **Virtual Pendant** to control your robot.



| Control Panels - Internet Explorer  | te 🧖 Control Banalo  |                  |
|---|--|------------------|
| File Edit View Eavorites Tools Help   |  |                  |
| Sugar Charles and the state of | ested Sites 🔻 🍘 Web Sice Galery 🔻 🐰 Maps 📌 CIC 🗼 Algorithms 🔻 🗼 CAMS 💌 🗼 News 💌 🍘 MM 阉 AW 🕴 Supp | ort »            |
|   | : CoreStar Controller 0058-0821  | Disable<br>Power |
| Control Panels Setup MotionBlocks Ut  | ilities Application Web Logout Help  |                  |
| Update Auto No Auto Control Panels  | Position: CoreStar IM-II Robot   |                  |
| Victual Pendant   | Cartesian Hide Joint Show Tool   |                  |
| Web Dialog  | X Y Z yaw pitch roll   |                  |
| Virtual Robots  | 73.026 -312.200 0.000 0.000 180.000 -63.126  |                  |
| Communication   | Jt 1/7 Jt 2/8 Jt 3/9 Jt 4/10 Jt 5/11 Jt 6/12   |                  |
| ▪ Local I/O   | 8.828 -125.702   |                  |
| Remote I/O  |  |                  |
| E System Information  | Robot Status Robot 1   |                  |
|   | System state: Jog Mode Active Enable E-Stop  |                  |
|   | Jog Control  |                  |
|   | Computer World Tool Joint Free   |                  |
|   | Select Axis/Joint Jog Axis   |                  |
|   | Joint 1<br>Joint 2   |                  |
|   |  |                  |
|   | Jog Speed 10 % Set   |                  |
| http://192.168.7.61/ROMDISK/web/Opr/jog/jogfs.html  | *  | 163% 🔻 //        |

- a. Under Robot Status, click Enable to the right of System State.
- b. Click Joint tab under Jog Control
- c. Selecting a joint allows control of that joint
- 5. Move robot into the park position (or at lease close).
  - a. Joint 1 does not matter, only Joint 2's position relative to Joint 1
  - b. Fold Joint 2 over Joint 1
- 6. Fine-tune park position
  - a. Using a straight-edge, align the top and bottom halves of the second motor housing.
  - b. Use the smaller increments to fine-tune the position of Joint 2







- 7. Cycle the Controller power and return to the Virtual Pendant screen
- 8. Rotate Joint 2 until it is exactly 180.000 ° from its original position.





- 9. (Optional) Disable the controller power and replace the encoder batteries at this time.
- Under the Setup Tab in the Precise Automation Software, go to Parameter Database > Robot: 2-Axis Motion Device > Calibration parameters > Servo Settings.
  - a. Replace the contents of the yellow box to the right of 16120 with 0,0



- b. Click Set new values
- c. Click Save All to Flash.
- 11. Open the Operator Control Panel under the Control Panels tab



| Control Panels - Internet Explorer                      |  |                  |
|---|--|------------------|
| • http://192.168.7.61/ROMDISK/  •                       | 🛨 🥔 Control Panels 🛛 ×   |                  |
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| AUTOMATION System:                                      | CoreStar Controller 0058-0821  | Disable<br>Power |
| Control Panels Setup MotionBlocks Utiliti               | ies Application Web Logout Help  |                  |
| Update Auto No Auto                                     |  | ^                |
| Control Panels  |  |                  |
| Operator Control Panel                                  | System Messages  |                  |
| Virtual Pendant   | GPI · " Connection Closed Robot: 1"  |                  |
| Web Dialog  | GPL: "10 Connection request Robot: 1"  |                  |
| Uirtual Robots  | GPL: " Connection Closed Robot: 1"<br>GPI: " Connection Closed Robot: 1"               |                  |
| + Communication   | -1600, "*Power off requested*" 09-14-2021 18:11:56.204                                 |                  |
| ± Local I/O   | GPL: "6 Connection request Robot: 1"   |                  |
| Hemote I/O  |  |                  |
| E System Information                                    | Robot Status Clear Messages  |                  |
|   | System state: log Mode Active Enable   |                  |
|   | E-Stop   |                  |
|   | Robot homed: Yes Home  |                  |
|   | Select Operation Mode - GPL:CoreStar Tcp cmd server                                    |                  |
|   |  |                  |
|   | Start Stop   |                  |
|   | Load Pause Contraction Coop  |                  |
|   | Unload Continue  |                  |
|   | System Rummig  |                  |
|   | System Speed 100 % Set   |                  |
|   | <b>-</b> 10 20 30 40 50 60 70 80 90 100 <b>+</b>                                       |                  |
|   |  |                  |
|   |  |                  |
|   |  | ~                |
| http://192.168.7.61/ROMDISK/web/Opr/master/masterfs.htm | 1  | € 138% ▼         |

- 12. Using the Select Operation section of the control panel, perform the following
  - a. Select "Stop application", click Perform Operation
  - b. Select "Unload", click Perform Operation
  - c. Select "Load", click Perform Operation
  - d. Select "CoreStar\_Cal\_pp\_rev1", click Select
  - e. Select "Start application", click Perform Operation
  - f. A new GPL dialog box should appear. Click on Factory Calibration
  - g. Click **Continue** on the Encoder Warning box
  - h. Click Clear multi-turn counters and set axis zero positions
  - i. Click Execute
  - j. Click Finish
  - k. Click on Exit
- 13. Cycle power to the controller box.