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Verifying the HUMAC2015 Servo Settings

1. Introduction

1.1. The HUMAC System is compatible with a number of different isokinetic testing machines and servo amplifiers. This document describes the procedure to set the HUMAC program for the correct machine and servo amplifier.

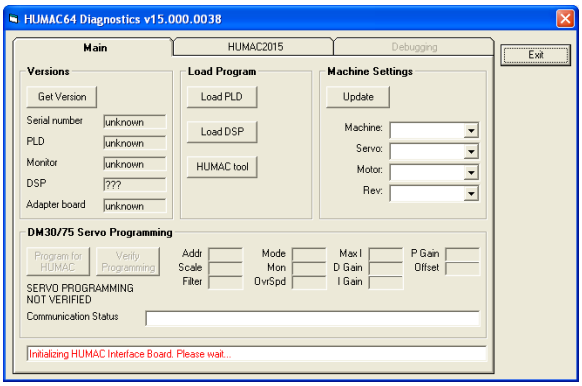
1.2. After installing the HUMAC on a new computer you must start and exit the HUMAC program one time before running this procedure.

2. 64-bit HUMAC Interface - NORM

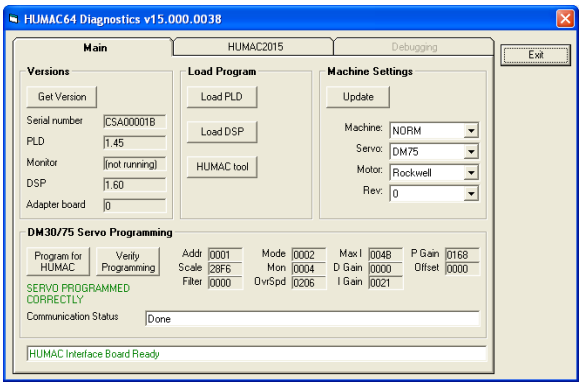
2.1. From the **Windows Task Bar**, select **Start**, **All Programs**, **HUMAC2015**, **Utilities**, **Diagnostics64**.

2.2. From the **Startup Screen**, enter **CSMIDIAG** as the password and click the **Proceed with Caution** button.

2.3. The HUMAC will display the **HUMAC64 Diagnostics** form. The message *"Initializing HUMAC Interface Board. Please wait…"* will be displayed at the bottom of the page. During this time the HUMAC is loading the **PLD** and **DSP**, and reading the **MACHINE**, **SERVO**, and **MOTOR** settings.



2.4. When the procedure is complete, the **MACHINE SETTINGS** area will display the **MACHINE**, **SERVO**, **MOTOR** and **REV** values.



2.5. Click the **EXIT** button to save the settings.

3. 32-bit HUMAC Interface.

3.1. From the **Windows Task Bar**, select **Start**, **All Programs**, **HUMAC2015**, **Utilities**, **Diagnostics**.

3.2. From the **Startup Screen**, enter **CSMIDIAG** as the password and click the **Proceed with Caution** button. The HUMAC will display the **USB-DSP-PLD monitor** form.

3.3. The **USB-DSP-PLD monitor** form will display the current Machine, Servo, Motor and Rev settings.

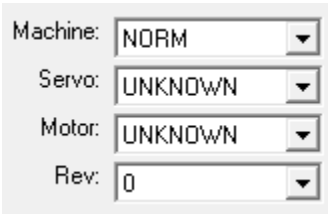
3.4. Follow the appropriate section for the NORM, 6000, Biodex System2 and System3 machines.

Machine	Section
NORM	4
SYSTEM2	5
SYSTEM3	6

4. NORM

4.1. Set the Machine to NORM.

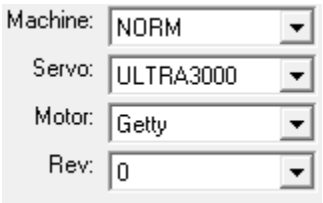
4.2. Leave the Rev set to 0.



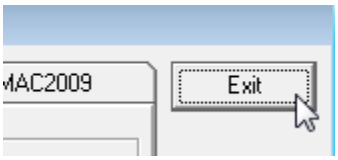
4.3. In the **HUMAC Tools** area, click the **Load PLD** button. The HUMAC will load the PLD. This takes about 10 seconds.

4.4. In the **Servo Programming** area, click the **Get Servo** button. This procedure will take about 10 seconds.

4.5. The HUMAC will display the current Machine, Servo and Motor settings. In this case the **NORM**, **ULTRA3000** and **Getty**.



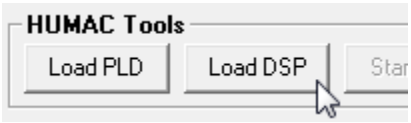
4.6. If the system displays **DM-30**, **DM-75** or **Ultra3000**, the procedure is completed. Click the **Exit** button to end the procedure.



4.7. If the system displays "**UNKOWN**", repeat step 4.4 through 4.6 one more time. If the system still displays "**UNKOWN**", proceed to the section titled "**Manually Setting the NORM Servo Amplifier"**.

4.8. Manually Setting the NORM Servo Amplifier

4.8.1. In the **HUMAC Tools** area, click the **Load DSP** button. This will take about 5 seconds.



4.8.2. Click the **Start DSP** button.

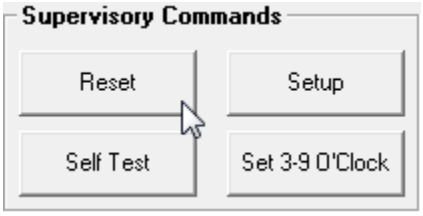
4.8.3. Click the **HUMAC Tool** button.

4.8.4. Remove all input adapters from the NORM.

4.8.5. Open both ROM stops.

4.8.6. Position the input adapter with the arm at 6:00 (Straight Down).

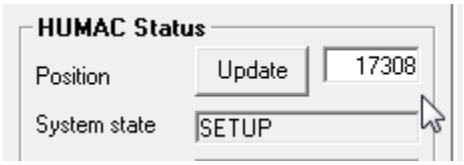
4.8.7. In the **Supervisory Commands** area, click the **Reset** button.



4.8.8. Wait 5 seconds and click the **Self Test** button.

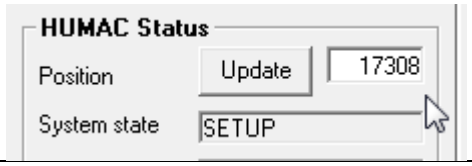
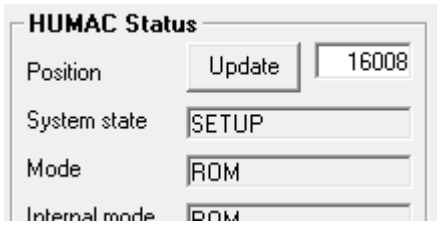
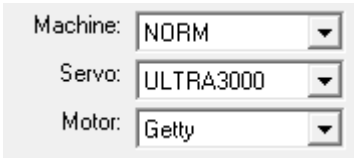
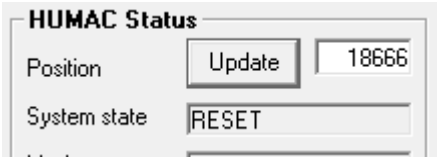
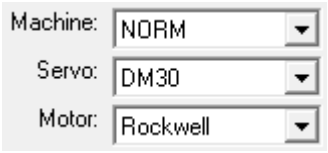
4.8.9. Rotate the dynamometer arm three complete revolutions in the clockwise direction, ending at the 6:00 position.

4.8.10. Record the **Position** value displayed (17308 in this case).

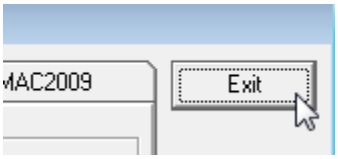


4.8.11. Click the "**X**" in the Upper-Right-Hand corner to close the **HUMAC Tool**.

4.8.12. On the right-hand side, you will see three pull-down lists. Set them as follows.

Recorded Position Value	*Action Required*
Near 17300 	System is set correctly.
Near 16000 	System is using an ULTRA3000/Getty but is incorrectly set to.DM30 or DM 75 and Rockwell. 1. Select the following options Ultra 3000 and Getty.  2. Repeat steps 4.8.3 thru 4.8.10 to confirm the position value is now near 17300.
Near 18888 	System is using a DM30 or DM 75 but is incorrectly set to ULTRA3000/Getty. 1. Open the Servo Housing and determine if the NORM has a DM30 (4” wide) or DM75 (5-1/2” wide) installed. 2. Select the correct servo and set the Motor to Rockwell.  3. Repeat steps 4.8.3 thru 4.8.10 to confirm the position value is now near 17300.

4.8.13. If the value near 17300 is displayed, click the Exit button to end the procedure.



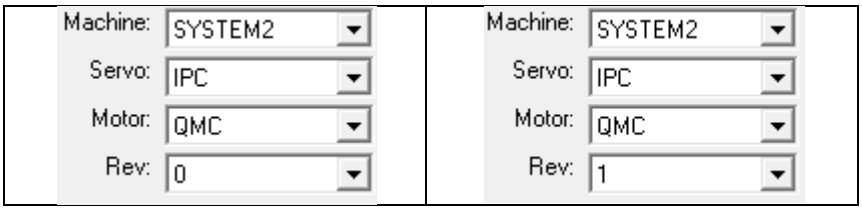
5. Biodex System2

5.1. Set the **Machine** to **System2**.

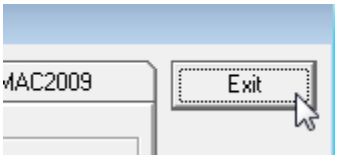
5.2. The **Servo** and **Motor** will be set to **IPC** and **QMC**.

5.3. Set the **Rev** as follows:

Double Chair (Rev 0)	**Single Chair (Rev 1)**



5.4. The procedure is completed. Click the **Exit** button to end the procedure.



6. Biodex System3

6.1. Set the **Machine** to **System3**.

6.2. The **Servo** and **Motor** will be set to **IPC** and **QMC**.

6.3. Set the **Rev** as follows:

Red dot on Knee/Hip Adapter is in-line with adapter post (Rev 0)	**Red dot on Knee/Hip Adapter is rotated 90 degrees from adapter post (Rev 1)**
Machine: SYSTEM3 Servo: IPC Motor: QMC Rev: 0	Machine: SYSTEM3 Servo: IPC Motor: QMC Rev: 1

6.4. The procedure is completed. Click the **Exit** button to end the procedure.