Step By Step Check List for Operating Hubo KHR2

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Setup and Zeroing:

1. Make sure Hubo is lifted off the ground with the powered lifter and is still
2. Connect to Hubo via Remote Desktop (Body Computer)
3. Start the Hubo program
4. Press CAN Start
   a. Put Hubo’s body in the home position, be sure to spread his legs and keep them spread
5. Press Encoder Zero
6. Press Third button in the Robot Test Group
   a. Make sure legs are still in home position
7. Press Encoder Zero again
8. Put your hand between Hubo’s legs to make sure legs are still in home position

From this step forward New Hubo will be different:

9. Press Home Using Z to set the home position
   a. Press Search Z Phase to find the encoders closest Z phase
   b. Press Go Offset in order to the pre set offset from previous calibrations
   c. If the lines on legs and knees do not match up press +Rev or –Rev
      i. This will move the motor one encoder revolution according to Z
   d. Repeat a through c for each of the leg joints
   e. Press OK when finished
10. Lower Hubo Down so he has his feet firmly on the floor
    a. This will allow the feet to be perfectly aligned with the ground
11. Lift Hubo Back up
12. Press Encoder Zero again to accept the newly found flattened feet values

Check Sensors:

13. Press Nulling FT Sensor
14. Press Read FT
    a. Make sure that the feet give an output when a force is applied to them
    b. This should be centered around zero
15. Press Read Tilt Sensor
    a. Check each pitch, roll, and yaw of accelerometer has an output
b. Press Reset
c. Press Start
16. Press Read Foot Acc
   a. Make sure that the foot accelerations read
17. Press Walk Ready
   a. Hubo will move into his walk ready position
18. Lower Hubo onto the ground
19. Press ZMP Zero Searching
   a. Wait until the Acc(Roll Row), Acc(Pitch Row) are settled to zero
   b. Press Set
   c. Press OK
20. Press Walk
21. Press Reset
22. Put a Check in the box called Roll Positive Feedback
23. Press Mark
24. Disconnect Hubo from his protective harness

Moving:

25. Press Forward to go forward
26. Press Stop to stop
   a. Note that Hubo will not stop until you tell him to
27. Press “Enter Movement Name Here” to perform the desired movement
28. Press Stop to stop

Gestures:

29. Press Gestures to enter the gestures page
30. Press “Enter Gesture Name Here” to perform the gesture

Shutting Down Hubo:

31. Reconnect Hubo’s protective harness
32. Lift Hubo off the ground
33. Press Home
   a. Hubo will straighten his body and move to his home position as set previously
34. Press Control Off
35. Press CAN Stop
36. Power Hubo down