

# ***ErgoReJoy*<sup>™</sup> Drive Control Positioning Methodology**

## **Joystick Baseline Armrest Location**

1. Ask client their hand preference for joystick operation, and note their choice on the baseline driving assessment form. Observe the client in a resting seated posture with bilateral arm support, observing any left vs. right shoulder-height discrepancies.
2. Confirm that the 3" extension arm is installed on the underside of the platform assembly to connect the two large rubber-coated balls together, and that the excess joystick cable is neatly secured to the underside of the joystick platform. Confirm that the receiver socket is in the lowest position on the slotted socket bracket.
3. Insert the *ErgoReJoy* platform and joystick in left or right armrest receiver socket in the "standard" armrest driving location, in line with the armrest, and without the removable *JoyPad*<sup>™</sup> gel wrist support. Position the joystick as you would for any client. The joystick's proximity to the armrest can be changed by adjusting the lateral location of the socket (refer to figure C), or the height adjusted by raising or lowering the socket (refer to figure D).
4. Initiate the PWC test drive at a low speed setting of approximately 2 mph. **Video the test drive** while observing the upper body posture, from a posterior and anterior view, observing any left vs. right shoulder-height discrepancies that differ from their baseline.

The PWC user's trunk, if well-positioned, should appear perpendicular to the floor (not leaning laterally).

Observe the following postural positions in the sagittal plane from the driving side of the PWC user during the test-drive (refer to the figures of postural positions in the Introduction):

- Bilateral shoulder height should be parallel to the floor.
- Shoulder and proximal upper extremity should be perpendicular to the floor.
- Elbow flexion of driving arm should be approximately 70-90°.
- Wrist and hand to be aligned while operating joystick.
- Distal arms, wrists and hands to be aligned and parallel to the floor.

**Do not try to correct the postural positions if misaligned but record them on the Baseline Form.**

### ***TURN POWER OFF TO THE JOYSTICK***

5. Score the driving ability on a scale of 1 - 5 (1 = unsafe, 5 = proficient) on the Baseline Armrest Location Assessment form.

After the test drive, with the client gripping the joystick in the posture you observed and recorded during the test-drive, photograph the client's upper body from the front. Next photograph the shoulder, elbow and wrist/hand positions from the side. Refer to the Neutral Postures vs. Misaligned Postures diagram in the Introduction and complete the postural results on the Baseline Armrest Driving Assessment form. If appropriate, share the photographs and assessment results with your client so they are comfortable with the first step of the Protocol.

## **ErgoReJoy™ Drive Control Positioning Methodology**

### **Joystick Midline Location**

1. Raise the height of the socket to the top of the slot of the socket bracket by loosening the two adjustment handles. Once the socket is secured in place, tighten handles firmly (refer to figure I).
2. Remove the 3" extension arm. Remove 8" of additional joystick cable from the cable holders under the platform (refer to figure J). Ask the client or an assistant to hold the joystick and platform. Attach the 8" arm to the mini-mast and joystick platform ball. Allow clearance of 1"-2" over the top of the client's thighs (refer to figure K). Tighten the 8" arm lightly.
3. Ask the client to move the joystick in a position about 3" - 4" in front of their core (or bellybutton for a familiar reference point). While evaluator is holding the joystick, ask the client to grasp the joystick knob. Confirm their elbow is supported by the armrest and the shoulder and upper arm are in a neutral posture. Make final adjustments to the joystick position and tighten 8" arm.
4. Positioning the wrist support - Referring to figure (G), install the JoyPad's small 3" extension arm on the 1" ball at the top rear part of the platform. Position the JoyPad and gel wrist support in line with the forearm and under the wrist of the client, with the elbow remaining on the armrest. Tighten the JoyPad's extension arm adjustment knob enough to hold it in place with the client's wrist on top (refer to figure H). Solicit input from the client regarding where the joystick and wrist support are most comfortable. Firmly tighten both the JoyPad adjustment arm and the 8" joystick extension arm.
5. Assure that the client's elbow is supported on the armrest. If the client is unable to reach the joystick because of their biometrics, position a pillow between the armrest and the client's side, allowing the elbow to rest at the same height as the armrest pad (refer to figure L). Confirm the client's postural positions are neutral as the joystick is grasped.
6. Turn on power to the joystick. Initiate the test drive while observing the user's posture and driving performance. If the client prefers the midline positioning of the joystick and JoyPad wrist support, and feels that it helps them to better operate the PWC, **Video the test drive** while observing the upper body posture by looking for any shoulder height discrepancies from a posterior and anterior view while the client is driving. The PWC user's trunk, if well-positioned, should appear perpendicular to the floor (not leaning laterally).

While continuing to record, observe the following postural positions in the sagittal plane from the joystick side of the PWC user during the test-drive:

- Bilateral shoulder height should be parallel to the floor.
- Shoulder and proximal upper extremity should be perpendicular to the floor.
- Elbow flexion of driving arm should be approximately 70-90°.
- Wrist and hand to be aligned while operating joystick.
- Distal arms, wrists and hands to be aligned and parallel to the floor.

**If any of the postural positions are misaligned, turn power off to the joystick. Ask the client to reposition the part of the arm to a neutral posture, then reposition the joystick and JoyPad™ to the new location. Repeat test-drive after turning the joystick on.**

7. After the recording is completed, turn power off to the joystick. Score the driving ability on a scale of 1 - 5 (1 = unsafe, 5 = proficient) on the Midline Driving Assessment form.

After the test drive, with the client gripping the joystick in the posture you observed and recorded during the test-drive, photograph the client's upper body from the front. Next, photograph the shoulder, elbow and wrist/hand positions from the side. Refer to the Neutral Postures vs. Misaligned Postures Diagram on the cover page, and complete the postural results on the Midline Driving Assessment form.

If appropriate, share the photographs and assessment results with your client to increase their understanding and comfort with the midline assessment step of the protocol.

(If it was necessary to support the elbow when accessing the midline location, and the PWC seat width is adequate, continue the assessment by positioning the joystick in the Intermediate Location).

8. Ask the user which of the two locations felt most comfortable and provided them the greatest confidence while operating the PWC. If the midline location was preferred, and there is no need to assess another location, proceed to the summary.

## **ErgoReJoy™ Drive Control Positioning Methodology**

### **Joystick Intermediate Location (Optional)**

1. If the armrest location was preferred, or there is no definitive preferred location, then assess an intermediate location between the armrest and midline, and repeat the assessment at this new location, completing the Intermediate Driving Assessment form. Turn power off to the joystick prior to adjusting the position of the joystick replacing the 8" extension arm with the 5" extension arm. Position the joystick with the help of the client 2" - 3" from the client and in a position 1" - 2" above their thigh.
2. Positioning the wrist support - referring to figure M, install the JoyPad's small 3" extension arm on the 1" ball at the rear of the platform. Positioning the wrist support - referring to figure (G), install the JoyPad's small 3" extension arm on the 1" ball at the top rear part of the platform. Position the JoyPad and gel wrist support in line with the forearm and under the wrist of the client, with the elbow remaining on the armrest. Tighten the JoyPad's extension arm adjustment knob enough to hold it in place with the client's wrist on top (refer to figure H). Solicit input from the client regarding where the joystick and wrist support are most comfortable, then, firmly tighten both the JoyPad adjustment arm and the 5" joystick extension arm.
3. Turn on power to the joystick. Initiate test drive while observing user's posture and driving performance. If the client prefers the intermediate positioning of the joystick and JoyPad wrist support, and feels that it helps them to better operate the PWC, **Video the test drive** while observing the upper body posture by looking for any left vs. right shoulder height discrepancies from a posterior and anterior view while the client is driving. The PWC user's trunk, if well-positioned, should appear perpendicular to the floor (not leaning laterally).

While continuing to record, observe the following postural positions in the sagittal plane from the joystick side of the PWC user during the test-drive:

- Bilateral shoulder height should be parallel to the floor.
  - Shoulder and proximal upper extremity should be perpendicular to the floor.
  - Elbow flexion of driving arm should be approximately 70-90°.
  - Wrist and hand to be aligned while operating joystick.
  - Distal arms, wrists and hands to be aligned and parallel to the floor.
4. After the recording has ended, turn power off to the joystick. Score the driving ability on a scale of 1 - 5 (1 = unsafe, 5 = proficient) on the Intermediate Driving Assessment form.

After the test drive, with the client gripping the joystick in the posture you observed and recorded during the test-drive, photograph the client's upper body from the front. Then, photograph the shoulder, elbow and wrist/hand positions from the side. Refer to the Neutral Postures vs. Misaligned Postures Diagram on cover page and complete the postural results on the Intermediate Driving Assessment form.

If appropriate, share the photographs and assessment results with your client so they are comfortable with the intermediate assessment step of the protocol.

5. Ask the client which of the three locations felt most comfortable and provided the greatest confidence while driving the PWC. If the Intermediate location was preferred, proceed to the summary.

## **Summary**

1. To assure decision making confidence when prescribing the *ErgoReJoy* joystick platform for the Midline or Intermediate locations, photograph the position of the joystick platform and wrist support pad while the user is seated in the PWC with and without their hand on the joystick (refer to figures P & Q).

2. Remove the *ErgoReJoy* platform and joystick assembly from the PWC and place it in the receiver socket on the opposite PWC armrest to transfer the client.

Note: A common question from the end user is where to put the *ErgoReJoy* during the transfer to the PWC. The mounting system for the end user includes a "holster" socket and bracket which can be installed in the same location as the socket on the opposite armrest of the PWC, or in any other selected locations.

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