Biodex
User Guide

Initial Set-Up

- Power on the Biodex system by turning on the black switch on the back first (located bottom left)

- Then turn on the green switch with the Biodex image next to it (located botton control unit)


- Remove the attachment arm

Initial Set-Up

- Press the start button on the Biodex console

- This will allow the Biodex to initialise. Watch the small screen on the Biodex for the next instruction which will be to press start again

- It will then ask to set the range of motion (ROM), ignore this

- Turn on the second green switch (bottom right) and turn on the PC

- Press the 'Computer Control' button on the Biodex console

- The PC will load the System 3 software automatically
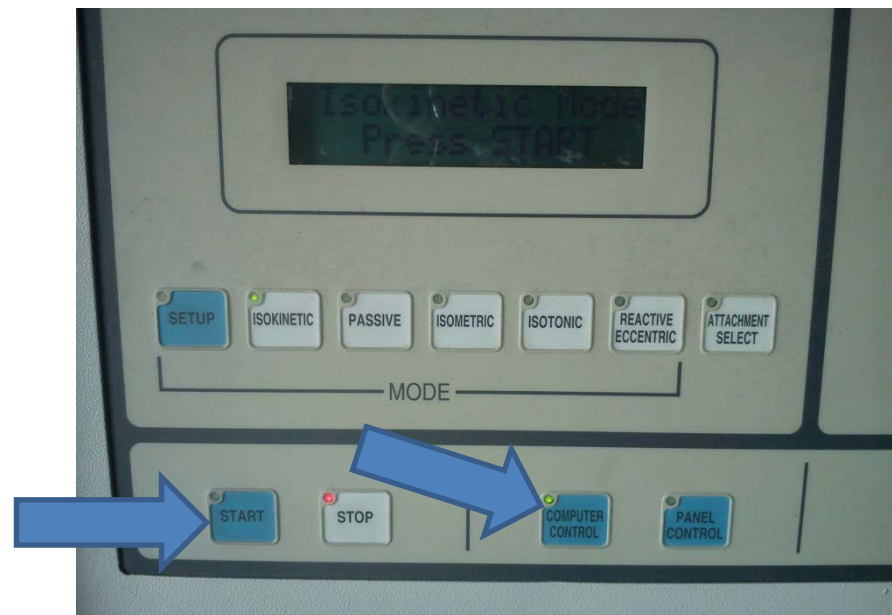
Attachment set-up (Leg)

- Get the subject to sit in the chair
- Use the adjustment levers (up, down, forward back, rotate etc) to line up the medial condyle of the knee with the centre of the attachment arm

1. Seat Rotation Handle
2. Chair Foot Pedals
3. Seat Height Foot Switches
4. Cervical Support Adjustment Knob
5. Seatback Tilt Handle
6. Seatback Fore/Aft Handle
7. Stabilization Handles

4

7

5

6 (behind chair)

1

3

2
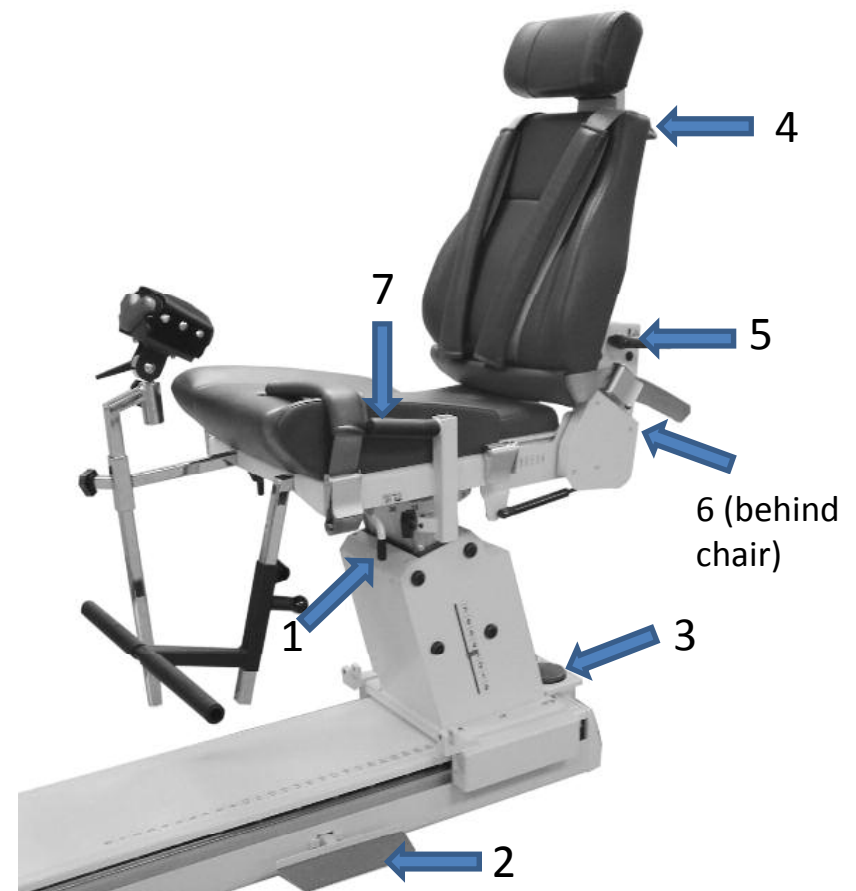
Attachment set-up (Leg)

- Attach the leg attachment
- Lock in with locking bolt

- Ensure that there is little or no gap behind the knee being tested and the edge of the seat
- Line up the medial condyle of the knee with the centre of the locking bolt holding in the attachment arm
- The padding should be strapped as far down the lower leg as possible and that is comfortable
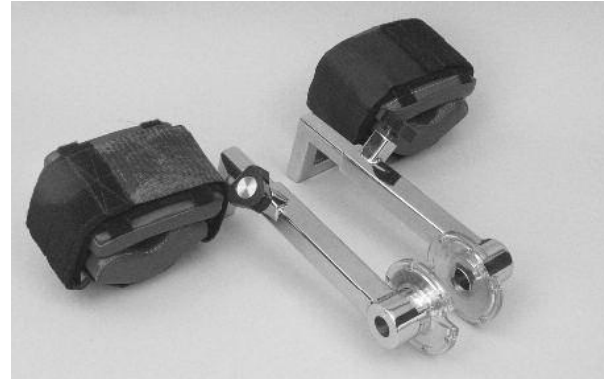
Entering Subjects details

- Select the first picture on the left hand side
- Select 'Add patient' and enter details highlighted in red or if a subject has been entered before, select 'Open'
- IMPORTANT: Make sure you click NEW when opening a subject. You will also need to re-select the subject and click NEW if you are repeating the same measurement back to back. If this is not done the 'GO' button will be greyed out.
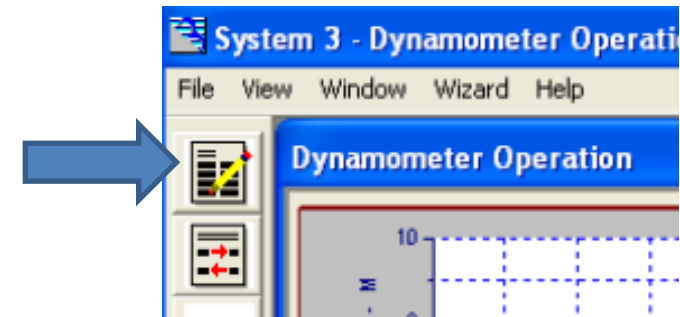
Creating a Protocol

- Select the second icon on the left of the screen
- There is also an option to create a new protocol by selecting Add select either unilateral (just one side e.g. right arm only) or bilateral (both sides e.g. both arms).
- Then choose the speed away and toward (this will normally be the same but depends on the testing protocol that is being used)
- Then select the joint, pattern, contraction type and name the protocol (e.g. Ben concentric 1)
- Select how many reps you require at each speed away and toward.
- Select save and then close.
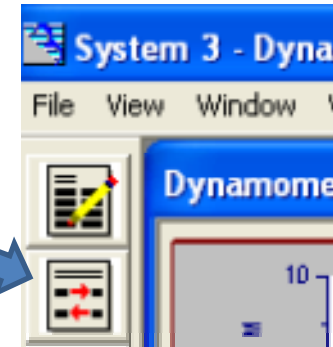
Final Set- Up – Range of Motion

- Select the fifth image
- Select which side you are testing (i.e. right or left leg)
- Click 'Clear Limits'
- Get the subject the extend their leg out but not to hyperextension, press the black 'Hold' button
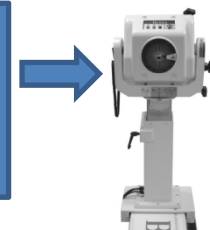- Click set for AWAY limit
- Press hold again and bring the leg back down to 90 degrees, press hold once more and press set TOWARD limit. Press continue

Dynamometer Range of Motion

Side Selected
- ○ Left
- ● Right

Use Previous ROM

Define New ROM

AUTO SET ROM

CLEAR LIMITS

AWAY Limit
SET   RESET

TOWARD Limit
SET   RESET

Legends

Patient ROM (Previous)

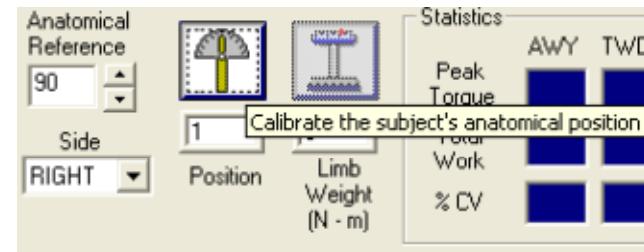Patient ROM (Verified)

View Setup   Continue
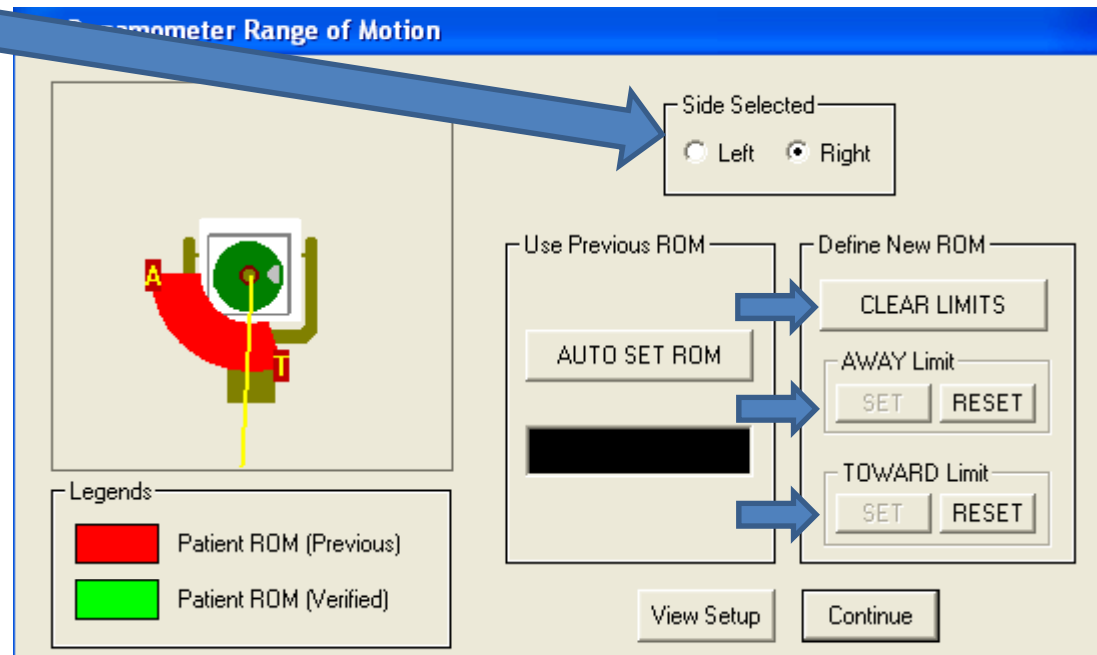
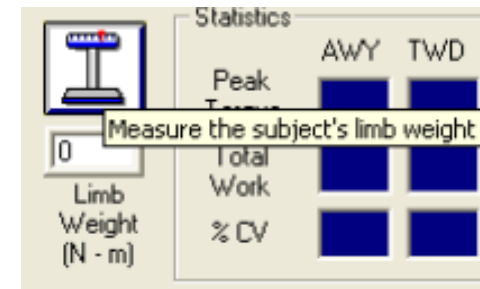The hold button is the black button on the arm unit

Final Set-Up – Anatomical Position and Limb weight

- Click on the image of the goniometer when the knee is at 90 degrees

- Then extend the leg out, press hold, get the subject to relax their leg and click on limb weight. Press hold again and allow the leg to go back to the seated position
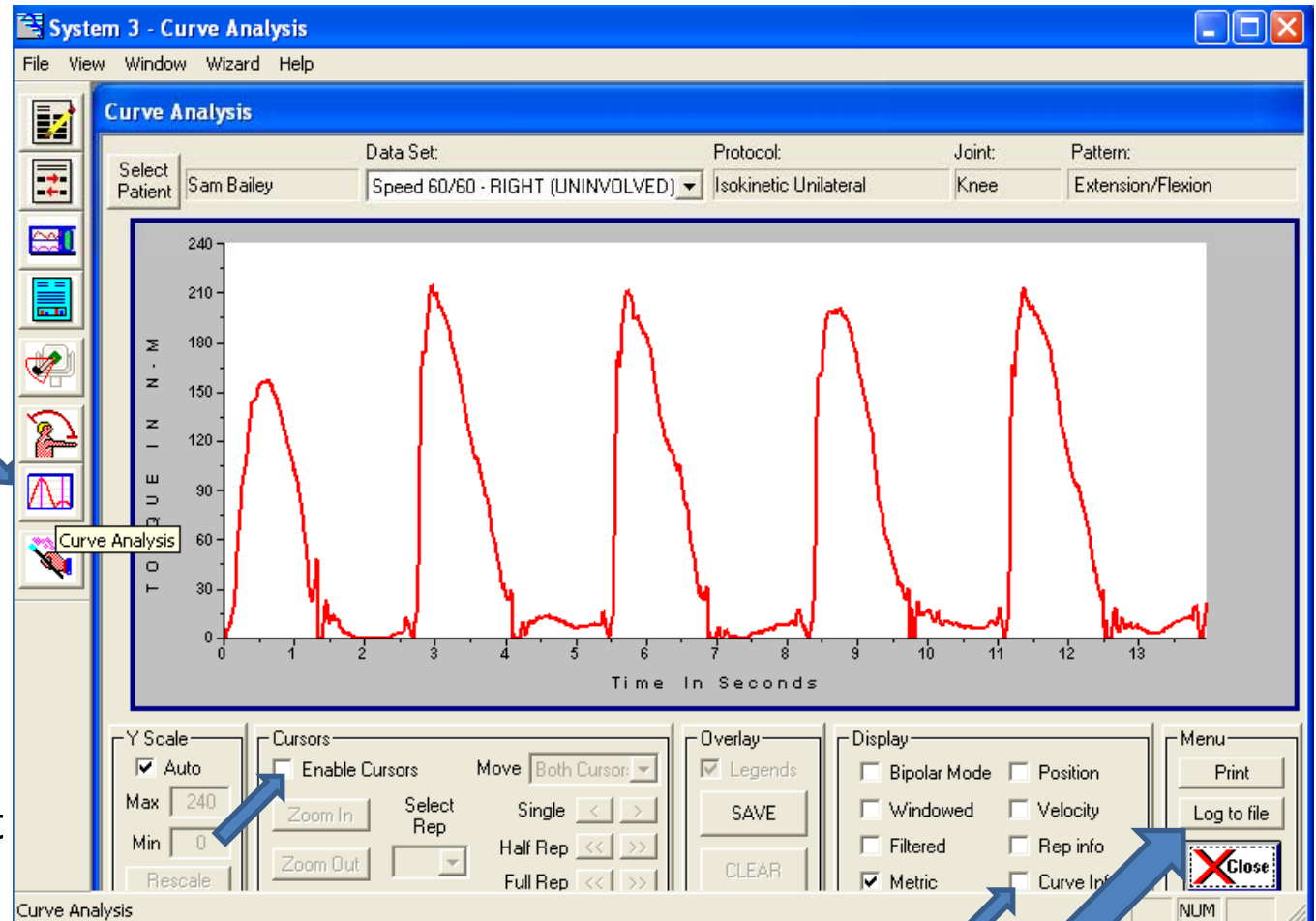
Starting the test

- The green 'GO' button will now illuminate (not shown in picture)

- The subject will then be allowed to do some trial reps

- Once they are happy, either close the box that appears or get them to stay still and the test will then start
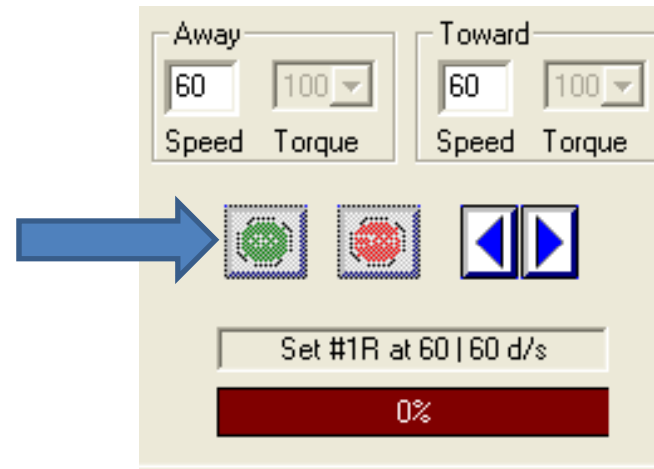
Data Analysis

- To get a copy of your data select the sixth picture on the left hand side
- Select enable cursors and 'curve info' to select certain parts of the data
- To save a wordpad document with numerical data, select 'log to file'

Probably the most important!

Report Generation

- To see a general report of the data, select the fourth image of the left

- Select Comprehensive evaluation

- Select preview. This will present a table of averages. Note you won't be able to save this

Troubleshooting - Simulation Mode

- If the software doesn't appear to be working, check that it is not in simulation mode (the graph will keep repeating on screen and simulation will appear in the top right hand corner)

- To change this, select File, then Setup

- Simply un-tick the simulation box and press OK
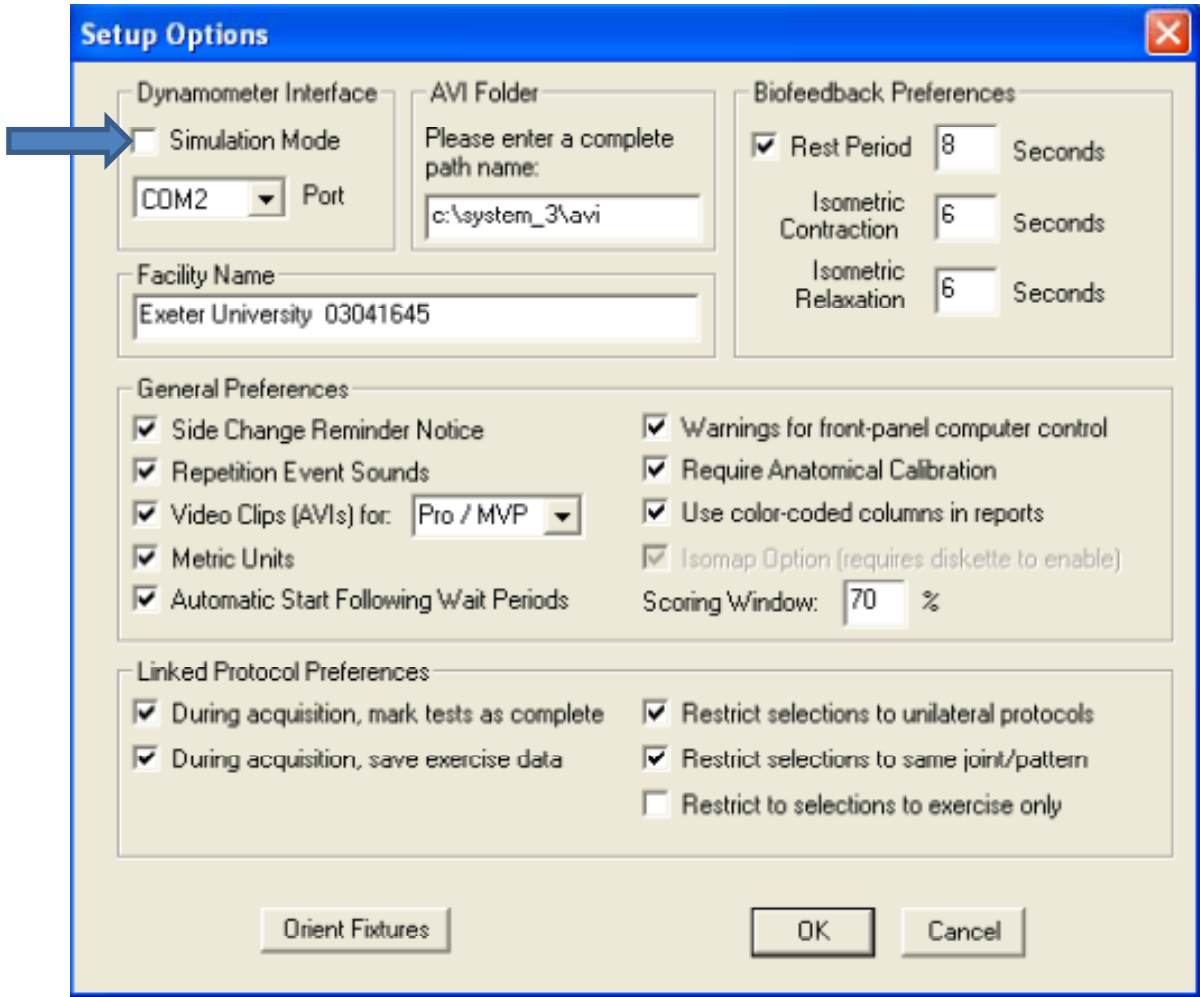
Arm Attachment - Bicep

- The chair will need to be rotated 90 degrees
- The arm rest attachment needs to be fitted into the slot at the side of the chair
- The arm attachment unit needs to be rotated 90 degrees and adjusted accordingly

Notes on Defining Protocols for Eccentric Mode

- Speed – sets the speed at which the attachment arm will move the limb.

- Torque:

- - sets the upper limit of the torque which the participant can exert before the attachment arm locks and

- - also sets the lower limit of torque measurement. The participant must exert a torque of 10% or more of the set value before the attachment arm will move, and it will stop as soon as the exerted torque drops below this value.