Inertia Documentation

Introduction / Login

NOTICE: The prior Inertia application has been replaced with an Internet based on-line version.

The application requires a license key to operate, and it can be found at http://inertia.c-motion.com

The login screen only requires the license key, which is provided by C-Motion when access to the application is purchased. The license is only saved on the PC as a web cookie for a few hours, so save it carefully to keep running the application.

Subject Buttons

The Inertia program has two major sections. On the left of the screen is the Subject Data section which allows the user to load and save the subject data that is entered and used on the right side of the screen. Sample data is provided by default. The buttons with subject identifiers (like “Sample Subject”) load the data into the form on the right for all 3 data entry tabs. The “Clear Subject Data” button simply clears out the form. The blue “Save” button on the right side will create a cookie and and add a button on the left with whatever Name/Identifier you have specified. This lets you load and then modify data as needed.

The import/export sections let you keep your data off-line in comma-delimited text files. Subject data is stored as cookies while you use the application, so saving data can avoid the chore of re-entering the data each time. The application requires that ALL data fields in the first 3 tabs be filled in.

On the right of the screen are a set of three tabs which allow the user to input subject information, subject metrics and retrieve calculated metrics. Hover the mouse over the pointer finger icons to see an illustration of each measurement field.

Subject Data

The right side of the screen is used to input the measurements that you have taken of a subject.

The fields at the top are critical, and the 3 tabs (Torso, Arms, Legs) are for the input of anthropometric measurements. All fields must be filled in for the calculations to work.

The forth tab shows the resulting inertial properties once you click the “Calculate Inertial Values” button. The export buttons save the results as text files, in the same format(s) as the earlier application.

The pink area at the top is where warning or error messages about the data you've entered. Any system errors appear here too.

Measurements and Ranges

This application is for use with adults (post-pubescent) and is not intended for use with children.

Mass: need to be able to enter to one decimal place e.g. 75.2 kg Default: Range Mass 70: 40 – 130 Standing Height: 1700: 1300 – 2100 HEADING: TORSO LENGTHS Acromion to Hip Center 550: 400 – 700 Acromion to Apex of Head 270: 170 – 370 HEADING: TORSO PERIMETERS Hip Perimeter 900: 700 – 1300 Umbilicus Perimeter 800: 500 – 1300 Lower Ribcage Perimeter 800: 500 – 1300 Nipple Level Perimeter 900: 600 – 1200 Neck Perimeter 350: 250 – 500 Top of Ear Perimeter 570: 450 – 700 HEADING: TORSO WIDTHS Hip Width 350: 200 – 500 Umbilicus Width 300: 200 – 500 Lower Ribcage Width 300: 200 – 500 Nipple Level Width 320: 200 – 500 Shoulder Center Width 350: 250 – 500 HEADING: LEFT ARM LENGTHS Shoulder to Wrist Center 500: 400 – 650 Wrist Center to Finger End 180: 140 – 250 HEADING: LEFT ARM PERIMETERS Upper Arm Perimeter 280: 180 – 500 Elbow Perimeter 270: 170 – 400 Max Forearm Perimeter 270: 170 – 400 Wrist Perimeter 170: 120 – 250 Knuckle Perimeter 200: 140 – 300 HEADING: RIGHT ARM LENGTHS Use same default and ranges as for left arm HEADING: RIGHT ARM PERIMETERS Use same default and ranges as for left arm HEADING: LEFT LEG LENGTHS Hip to Ankle Center 850: 650 – 1100 Ankle Center to Toe End 200: 150 – 330 HEADING: LEFT LEG PERIMETERS Crotch Perimeter 600: 300 - 900 Mid-Thigh Perimeter 530: 300 – 900 Knee Perimeter 380: 200 – 600 Max Calf Perimeter 370: 200 – 600 Min Ankle Perimeter 230: 150 – 350 Heel Perimeter 330: 200 – 500 Ball of Foot Perimeter 240: 150 – 350 HEADING: RIGHT LEG LENGTHS Use same default and ranges as for left leg HEADING: RIGHT LEG PERIMETERS Use same default and ranges as for left leg Fred Yeadon, May 2013

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