

Minimum Adjustable Range of Seat Height, Handlebar Height, and Handlebar Angle

Ranges must accommodate patient sizes from the 5th percentile Female to the 95th percentile Male. Calculations are expressed as a ratio of the following body height data obtained from ANSUR (anthropometric study of US Army personnel in 1988):

5th percentile Female: 60.2 inches
 95th percentile Male: 73.5 inches

Seat Height - Straight Line Distance from top of seat to pedal at lowest position

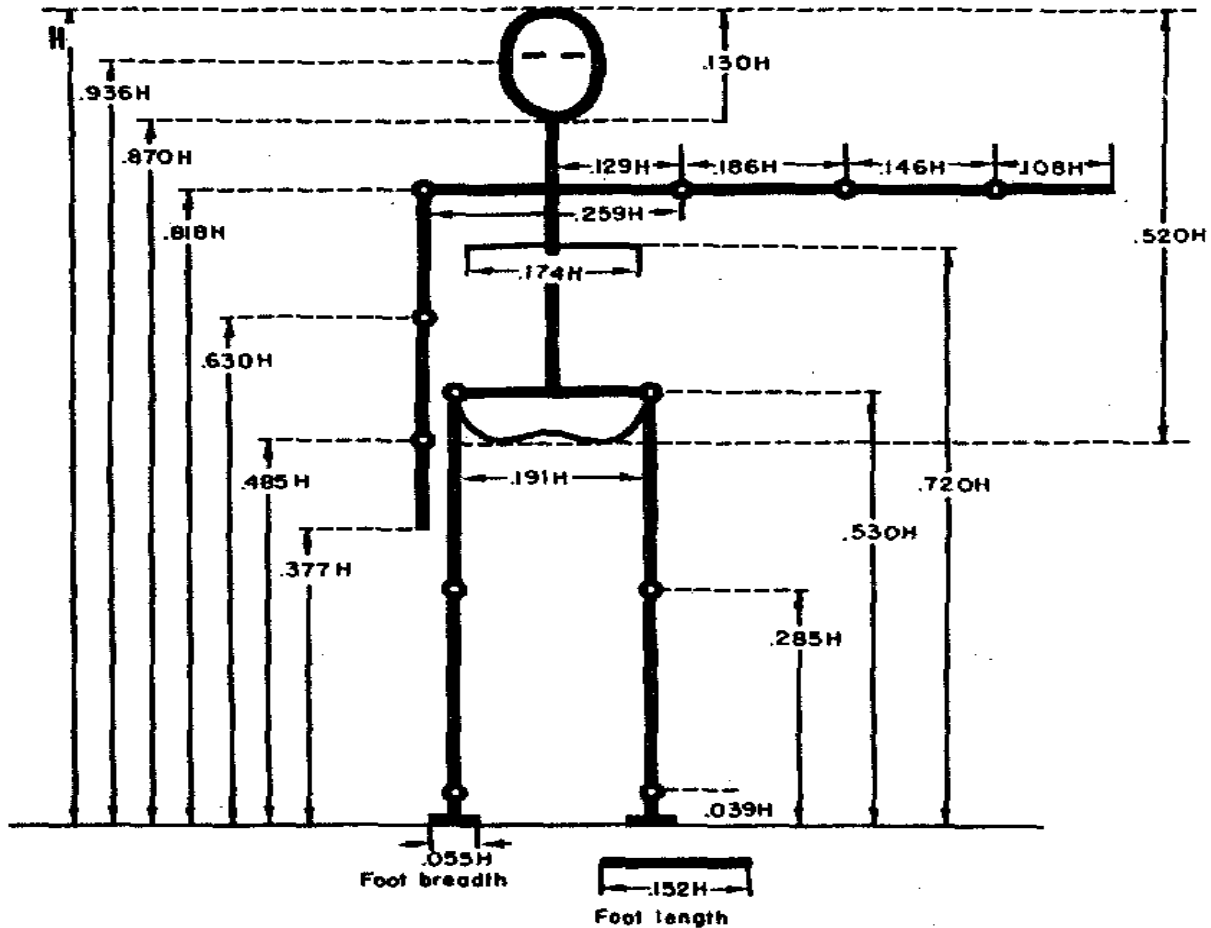
Range: 27 inches to 34 inches
 $=0.53*60.2 - 5$ $=0.53*73.5 - 5$

Handlebar Height - Vertical Distance from seat height to handlebar height

Range: 9 inches to 10 inches (add to lowest seat height and highest seat height)
 $=0.63*60.2-0.53*60.2 + 3$ $=0.63*73.5-0.53*73.5 + 3$

Handlebar Angle - Horizontal Distance from center of seat to front edge of handlebars

Range: 15 inches to 19 inches
 $=0.186*60.2+0.146*60.2 - 5$ $=0.186*73.5+0.146*73.5 - 5$



SEGMENT LENGTH EXPRESSED AS RATIO OF BODY HEIGHT

Drillis R, Contini R. Body Segment Parameters. New York, New York: Office of Vocational Rehabilitation; 1966. Report No.

Recommended Weight Limit

Based on NIOSH Lifting Equation:

$$RWL = LC \times HM \times VM \times DM \times AM \times FM \times CM$$

Max Weight PT should be lifting to transport bicycle

LC:	51 pounds
HM:	1 =10/10
VM:	0.775 =1-0.0075*ABS(0-30)
DM:	0.889 =0.82+1.8/26
AM:	1 =1-0.0032*0
FM:	1
CM:	1

RWL = 35.15 pounds

Max weight PT should be lifting to bring patient to Upright Position

LC:	51 pounds
HM:	1
VM:	1
DM:	1
AM:	1
FM:	1
CM:	1

RWL = 51 pounds