



# Standard Terminology Relating to Body Dimensions for Apparel Sizing<sup>1</sup>

This standard is issued under the fixed designation D5219; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

## 1. Scope

1.1 This standard is a compilation of terminology related to the body dimensions for apparel sizing.

1.2 For definitions of other textile terms, refer to Terminology [D123](#).

1.3 The terms are listed in alphabetical order regardless of whether they are horizontal or vertical measurements. The three dimensional Avatars were created by Alvanon Inc. See [Figs. 1-19](#).

1.4 The term “height” has been designated for vertical measurements.

1.5 The term “length” has been designated for contour measurements.

## 2. Referenced Documents

2.1 *ASTM Standards*:<sup>2</sup>

[D123 Terminology Relating to Textiles](#)

2.2 *ISO Standards*:<sup>3</sup>

[ISO 3635 Size Designation of Clothes, Definitions and Body Measurement Procedures](#)

[ISO 8559 Garment Construction and Anthropometric Surveys—Body Dimensions](#)

## 3. Terminology

3.1 *Anatomy*:

**acromion**, *n*—that part of the shoulder blade located at the end of the spine, which articulates with the collarbone. (See also **shoulder joint**.) (See [Fig. 2](#).)

**ankle**, *n*—the joint between the foot and the lower leg. (See [Fig. 1](#).)

<sup>1</sup> This terminology is under the jurisdiction of ASTM Committee [D13](#) on Textiles and is the direct responsibility of Subcommittee [D13.55](#) on Body Measurement for Apparel Sizing.

Current edition approved Feb. 15, 2015. Published April 2015. Originally approved in 1992. Last previous edition approved in 2009 as D5219 – 09<sup>e1</sup>. DOI: 10.1520/D5219-15.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

<sup>3</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

**apex**, *n*—the greatest protrusion of the breast as seen from the side.

**armpit**, *n*—the hollow under the junction of the arm and the shoulder. (See [Fig. 1](#).)

**back-break point**, *n*—the location on the back of the torso where the arm separates from the body (See [Fig. 2](#).)

**cervicale**, *n*—the prominent point of the seventh or lowest neck vertebra at the back of the torso.

DISCUSSION—The cervicale is identified by being more prominent when the head is bent forward. However, cervicale height measurements are made only when the head is erect. (See [Fig. 2](#).)

**crotch**, *n*—the lowest point of the torso where the legs separate. (See [Fig. 1](#).)

**crown**, *n*—the top of the head. (See [Fig. 1](#).)

**elbow**, *n*—the joint that articulates between the upper arm and the lower arm. (See [Fig. 1](#).)

**forearm**, *n*—The distal region of the arm between the elbow and the wrist. (See [Fig. 1](#).)

**front-break point**, *n*—the location on the front of the torso where the arm separates from the torso. (See [Fig. 1](#).)

**hip**, *n*—the laterally projecting region formed by the lateral parts of the pelvis and the upper part of the femur together with the flesh covering them. (See [Fig. 1](#).)

**knee**, *n*—the joint between the lower and upper leg. (See [Fig. 1](#).)

**shoulder joint**, *n*—the juncture of the collarbone and the shoulder blade.

DISCUSSION—The outer end of the collarbone or clavicle pivots against the acromion that in turn pivots against the humerus or upper arm bone in the arm. These bones form the shoulder girdle. (See also **acromion**.) (See [Fig. 2](#).)

**waist**, *n*—the part of the torso at the location between the lowest rib and hip identified by bending the torso to the side. (See [Fig. 1](#).)

*preferred waist*, *n*—the part of the torso as identified as the waist by the wearer as applicable to bottom garments. (See [Fig. 1](#).)

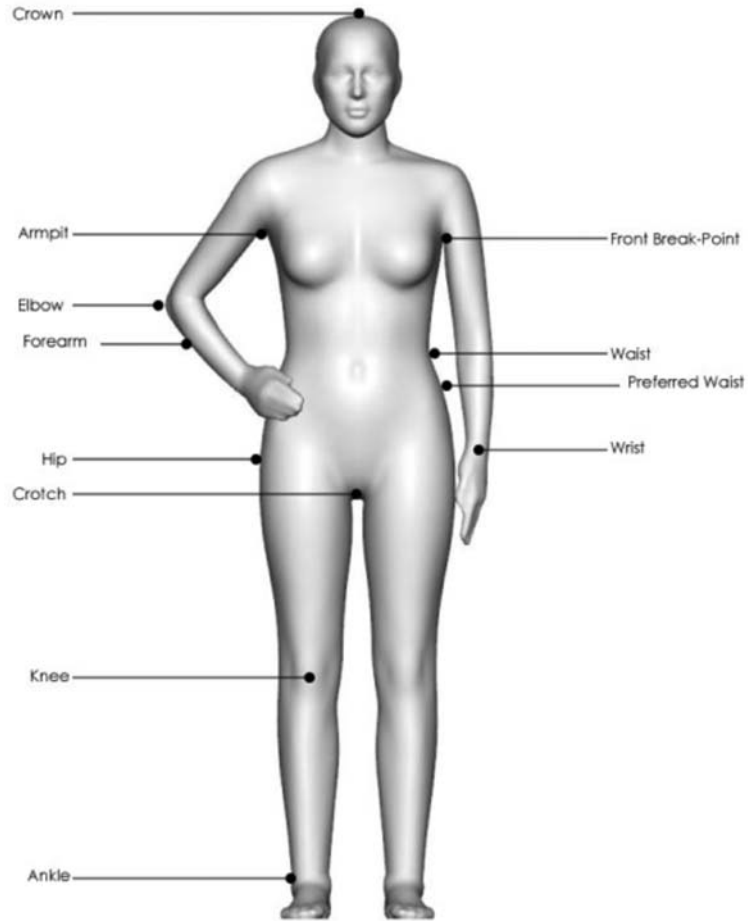


FIG. 1 Anatomy

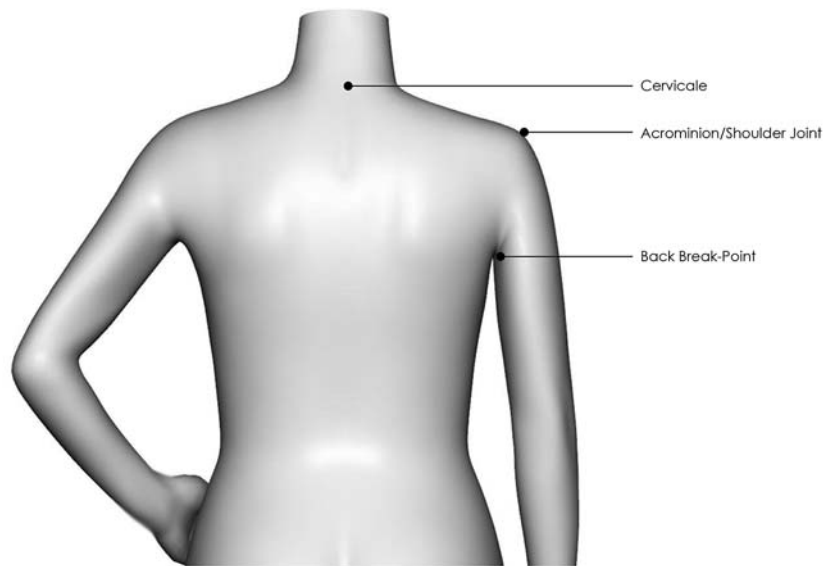


FIG. 2 Upper Back Anatomy

**wrist, n**—the joint that articulates between the end of the lower arm and the hand. (See Fig. 1.)

3.2 Anthropometry:

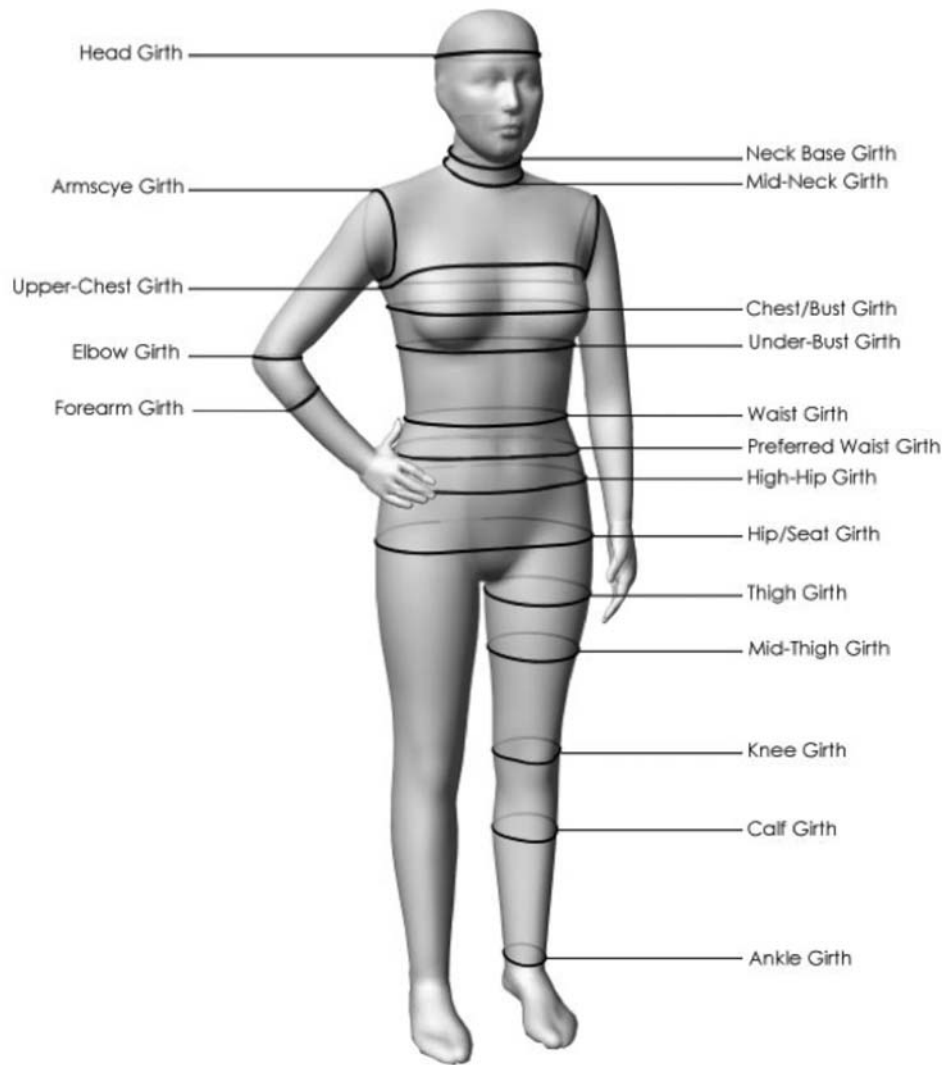


FIG. 3 Body Measurements

**body measurements,  $n$** —a standardized distance between two specified points on the human anatomy.

DISCUSSION—Body measurements generally are based on standardized values from statistical studies of large populations.

3.3 *Body Measurements:*

**across back shoulder width,  $n$** —the horizontal distance across the back from the top of one shoulder joint to the top of the other shoulder joint, taken with the arms down. (See Fig. 11.)

**across front shoulder width,  $n$** —the horizontal distance across the front from the top of one shoulder joint to the top of the other shoulder joint, taken with the arms down. (See Fig. 12.)

**ankle girth,  $n$** —the maximum horizontal circumference of the ankle, taken over the greatest prominence of the anklebones. (See Fig. 3.)

**ankle height,  $n$** —the vertical distance from the prominence of the outer ankle bone to the floor, taken with subject standing and without shoes. (See Fig. 7.)

*ankle height (infant special case),  $n$* —the straight distance from the prominence of the outer ankle bone to the soles of the feet, taken with subject lying down flat with legs extended and the foot positioned at 1.57 rad (90°) to the leg.

**arm length,  $n$** —the distance from the top of the shoulder joint along the outside of the arm over the elbow to the prominent wrist bone, taken with the arm bent (1.57 rad or 90°) and the hand placed on the hip. (See Fig. 15.)

**armscye girth,  $n$** —the circumference taken from the shoulder joint through the front break-point, the armpit, the back break-point and to the starting point, taken with the arms down. (See Fig. 3.)

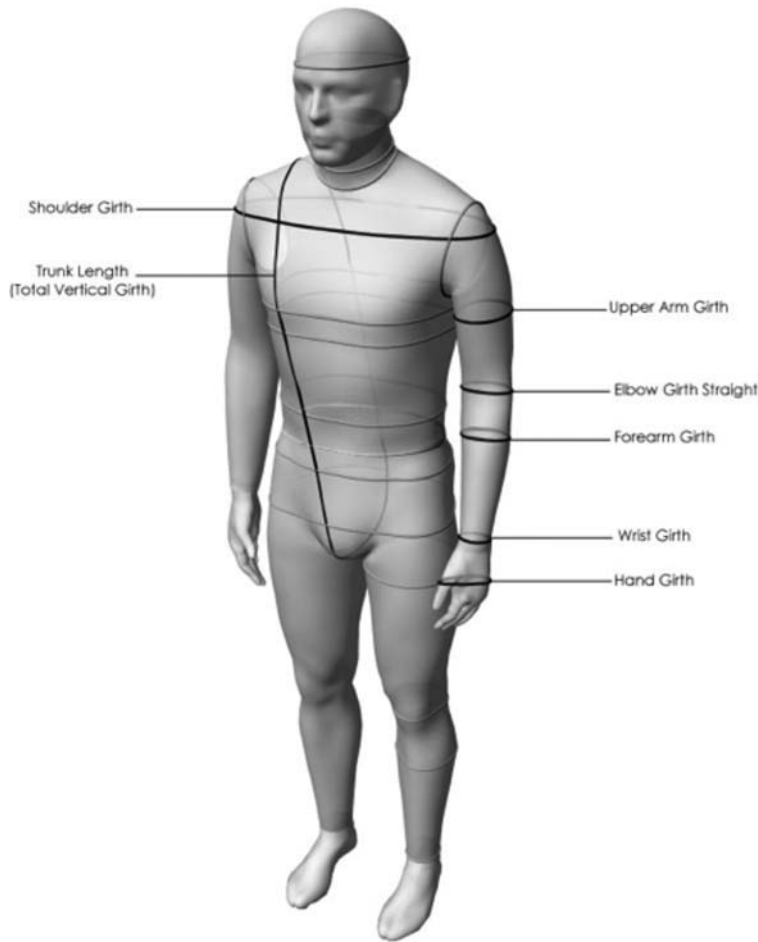


FIG. 4 Upper Body Measurements

**back width,  $n$** —the horizontal distance across the back from back break-point to back break-point over the shoulder blades, taken with the arms down. (See Fig. 11.)

**body weight,  $n$** —the weight as measured on a calibrated scale taken with the subject in undergarments.

**calf girth,  $n$** —the maximum horizontal circumference of the lower leg, taken between the knee and the ankle. (See Fig. 3.)

**center back waist length,  $n$** —the distance from the cervicale to the center back waist level, taken along the spine (contour). (See Fig. 9.)

**center front waist length,  $n$** —the distance from the center front neck base line to the center front waist level (contour). (See Fig. 8.)

**cervicale height,  $n$** —the vertical distance from the cervicale to the floor, taken with subject standing and without shoes. (See Fig. 7.)

*cervicale height (infant special case),  $n$* —the straight distance from the cervicale to the soles of the feet, taken with subject lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

**cervicale to crotch height,  $n$** —the vertical distance from the prominent point of the seventh or lowest neck vertebra at the back of the torso to the lowest point of the torso where the legs separate. (See Fig. 7.)

**cervicale to knee height,  $n$** —the vertical distance from the cervicale to a point level with the midpoint of the back of the knee (or crease). (See Fig. 7.)

*cervicale to knee height (infant special case),  $n$* —the straight distance from the cervicale to a point level with the midpoint of the back of the knee (or crease), taken with subject lying down flat with legs extended.

**cervicale to wrist length,  $n$** —the distance from the cervicale over the top of the shoulder joint, along the outside of the arm, over the elbow to the prominent wrist bone, taken with the arm bent 1.57 rad (90°) and the hand placed on the hip. (See Fig. 13.)

**chest/bust point to bust point (halter),  $n$** —the horizontal distance from chest/bust apex around the back of the neck to bust apex, taken with the arms down. (See Fig. 10.)

**chest/bust point to bust point,  $n$** —the horizontal distance from chest/bust apex to chest/bust apex, taken with the arms down. (See Fig. 10.)

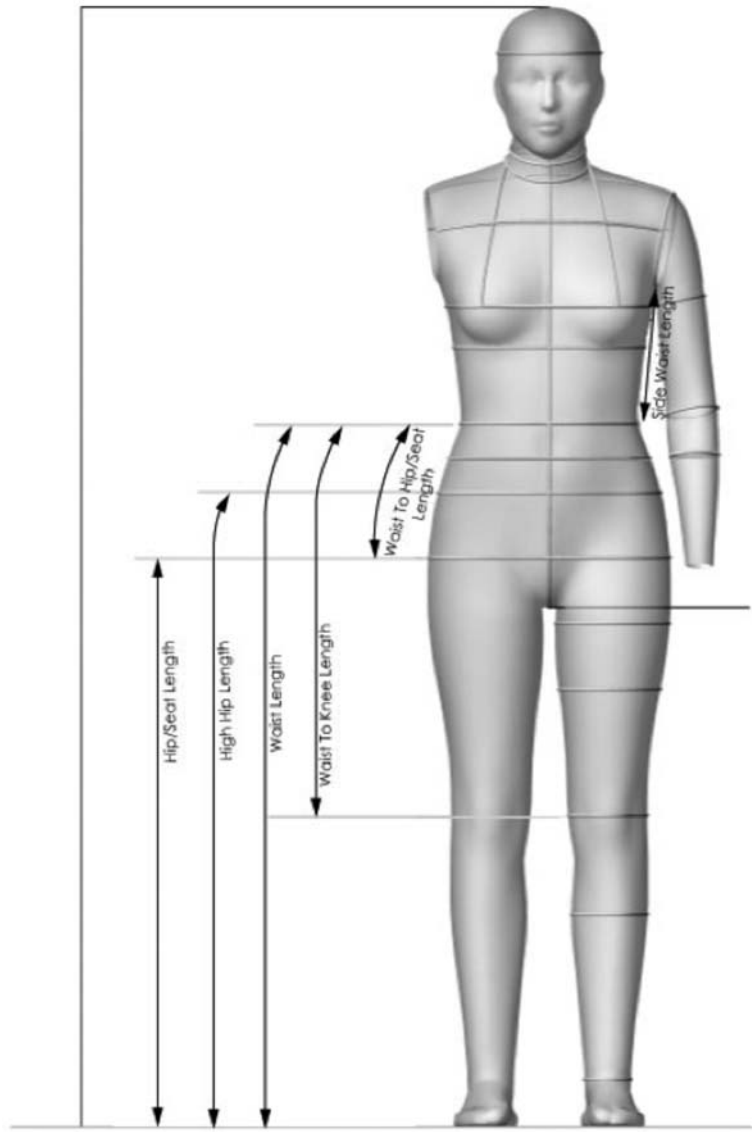


FIG. 5 Contour Body Measurements

**chest/bust girth**,  $n$ —the horizontal circumference around the torso, taken under the arms and across the fullest part of the chest/bust apex including the lower portion of the shoulder blades. (See Fig. 3.)

**crotch height**,  $n$ —the vertical distance from the midpoint of the crotch to the floor, taken with the subject standing and without shoes. (See Fig. 6.)

*crotch height (infant special case)*,  $n$ —the straight distance from the midpoint of the crotch to the soles of the feet, taken with subject lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

**crotch length (total)**,  $n$ —the distance from waist level at the center front, through the crotch and to the waist level at the center back, avoiding constriction at the crotch. (See Fig. 16.)

**elbow girth**,  $n$ —the maximum circumference of the elbow, taken over the outer prominence of the elbow bone with the arm bent 1.57 rad (90°). (See Fig. 3.)

**foot length**,  $n$ —the straight distance from the prominence of the back of the heel to the prominence of the longest toe, taken with the foot on a flat surface without shoes (use stable, flat ruler). (See Fig. 19.)

**foot width**,  $n$ —the straight distance from one side of the foot to the other side at the widest part, taken with the subject standing and without shoes (use stable, flat ruler). (See Fig. 19.)

**forearm girth**,  $n$ —the maximum circumference of the arm, taken between the elbow and the wrist. (See Fig. 3.)

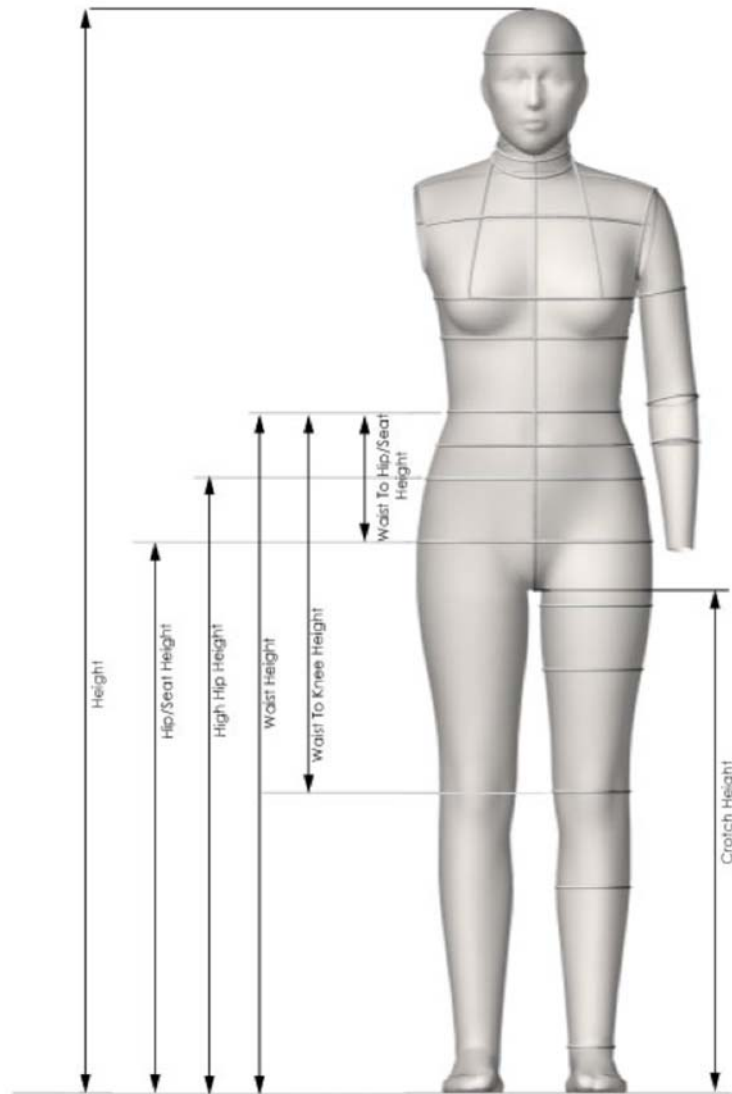


FIG. 6 Vertical Body Measurements

**front chest width,  $n$** —the horizontal distance across the chest from front break-point to front break-point, taken with the arms down. (See Fig. 10.)

**hand girth,  $n$** —the maximum circumference of the hand around the knuckles excluding the thumb, taken with the fingers together. (See Fig. 18.)

**hand length,  $n$** —the straight distance from the prominence of the longest finger to the inner wrist bone, taken across the palm of the hand with fingers together and palm flat (use a stable, flat ruler). (See Fig. 17.)

**hand width,  $n$** —the maximum width across the palm of the hand excluding the thumb, taken with fingers together and palm flat (use a stable, flat ruler). (See Fig. 17.)

**head and neck height,  $n$** —the vertical distance from the crown of the head to the cervicale taken with the head erect and the neck unbent. (See Fig. 7.)

**head and neck length (infant special case),  $n$** —the distance from the crown of the head to the cervicale (contour), taken with the head erect and the neck unbent, with subject lying down flat with legs extended.

**head girth,  $n$** —the maximum horizontal circumference of the head above the ears. (See Fig. 3.)

**height,  $n$** —the vertical distance from the crown of the head to the floor, taken with subject standing and without shoes. (See Fig. 6.)

**height (infant special case),  $n$** —the straight distance from the top of the head to the soles of the feet, taken while subject is lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

**high-hip girth,  $n$** —the maximum horizontal circumference around the torso, taken at a specified distance below the waist level including the abdominal extension. (See Fig. 3.)

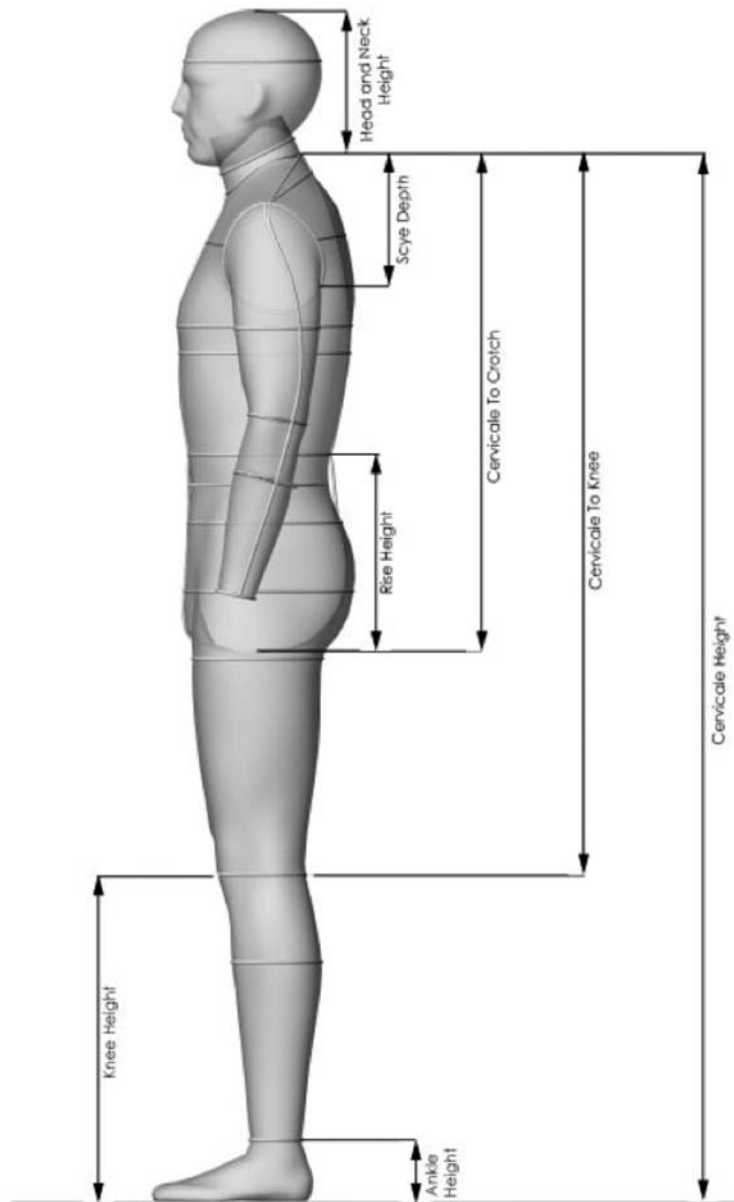


FIG. 7 Vertical Body Measurements

**high-hip height**,  $n$ —the vertical distance from the high-hip girth level to the hip girth level along the side of the body (plumb) taken with subject standing and without shoes. (See Fig. 6.)

**high-hip length**,  $n$ —the distance from the high-hip girth level to the hip girth level along the side of the body (contour) then vertically to the floor, taken with the subject standing and without shoes. (See Fig. 5.)

**hip height (infant special case)**,  $n$ — the straight distance from the hip girth level to the soles of the feet along the side of the

body, taken with subject lying down flat with legs extended and foot positioned at 1.57 rad ( $90^\circ$ ) to the leg.

**hip/seat girth**,  $n$ —the maximum horizontal circumference around the torso taken at the greatest protrusion of the buttocks as seen from the side. (See Fig. 3.)

**hip/seat height**,  $n$ —the vertical distance from the hip/seat girth level to the floor along the side of the body (plumb) taken with subject standing and without shoes. (See Fig. 6.)

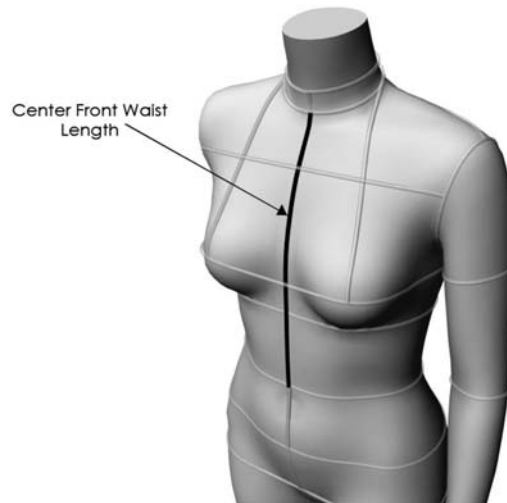


FIG. 8 Center Front Waist Length

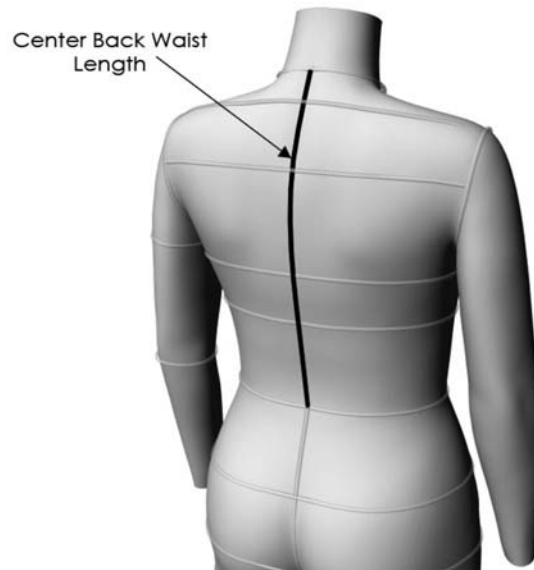


FIG. 9 Center Back Waist Length

**hip/seat length,  $n$** —the vertical distance from the hip/seat girth level to the floor along the side of the body taken with subject standing and without shoes (contour). (See Fig. 5.)

**knee girth,  $n$** —the maximum horizontal circumference of the knee, taken over the kneecap with the leg straight. (See Fig. 3.)

**knee height,  $n$** —the vertical distance from the midpoint of the back of the knee (or crease) to the floor, taken with subject standing and without shoes. (See Fig. 7.)

*knee height (infant special case),  $n$* —the straight distance from the midpoint (or crease) of the knee to the soles of the feet, taken with subject lying down flat with legs extended and the foot positioned at 1.57 rad (90°) to the leg.

**mid-neck girth,  $n$** —the horizontal circumference of the neck, taken approximately 25 mm (1 inch) above the neck base level. (See Fig. 3.)

**mid-thigh girth,  $n$** —the maximum horizontal circumference of the upper leg, taken midway between the hip/seat girth level and the mid-point (or crease) of the knee. (See Fig. 3.)

**neck base girth,  $n$** —the circumference of the neck, taken over the cervicale at the back and the top of the collarbone at the front. (See Fig. 3.)

**neck to chest/bust point,  $n$** —the distance from the side of the neck base to the chest/bust apex (contour), taken with the arms down. (See Fig. 14.)



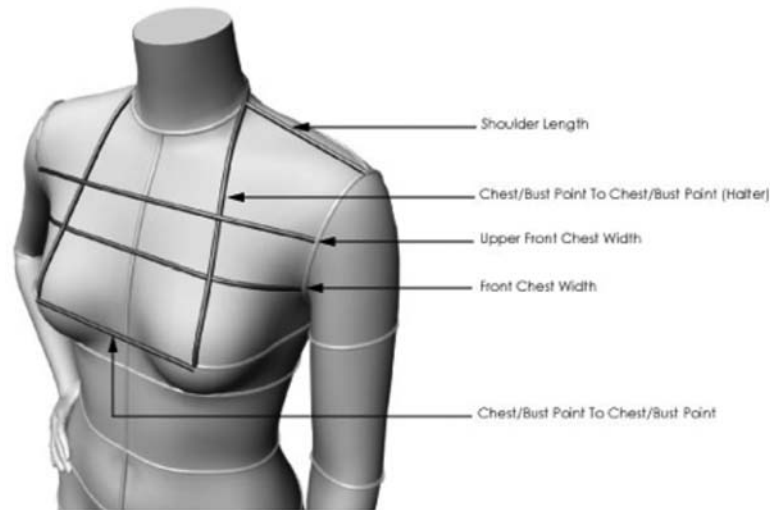


FIG. 10 Upper Body Measurements

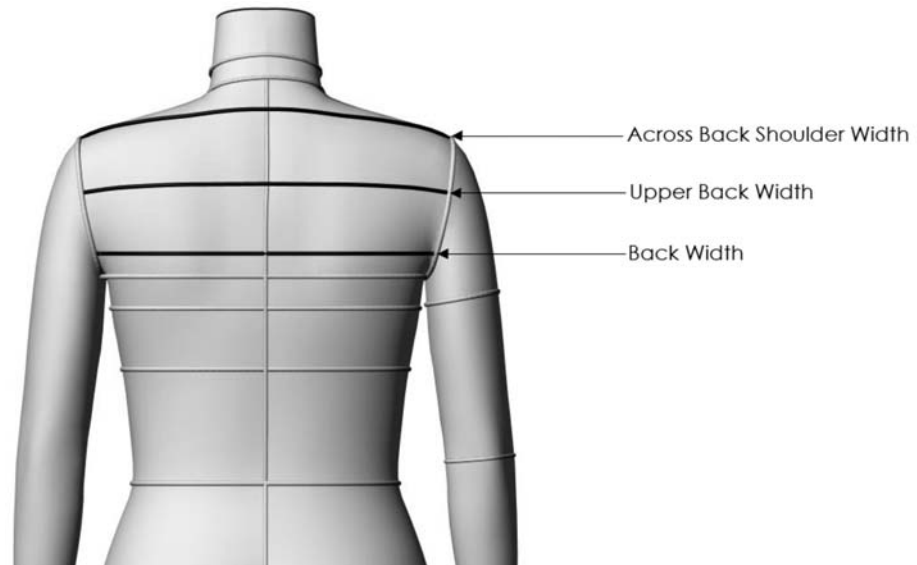


FIG. 11 Upper Back Measurements

**rise height,  $n$** —the vertical distance from the waist level at the side of the torso to the crotch level, taken with subject standing (See Fig. 7.)

**scye depth,  $n$** —vertical distance from the cervicale to the back break-point level, taken with the arms down. (See Fig. 7.)

**shoulder and arm length,  $n$** —the distance from the side of the neck base across the shoulder joint and along the outside of the arm over the elbow to the prominent wrist bone, taken with the arm bent 1.57 rad (90°) and the hand placed on the hip. (See Fig. 12.)

**shoulder drop,  $n$** —the vertical distance from the side neck base level to the shoulder joint level (See Fig. 12.)

**shoulder girth,  $n$** —the horizontal circumference around the shoulders, taken at the front break-point level with the arms down. (See Fig. 4.)

**shoulder length,  $n$** —the distance from the side of the neck base to the top of the shoulder joint, taken with the arm down. (See Fig. 10.)

**shoulder slope,  $n$** —the degree of difference between the shoulder slant and the horizontal line that originates at the side neck base, taken with a goniometer positioned on the shoulder and moved until the baseline is parallel to the floor (See Fig. 12.)

**shoulder to elbow length,  $n$** —the distance from the top of the shoulder joint along the outside of the arm to the prominent point of the elbow, taken with the arm bent 1.57 rad (90°) and the hand placed on the hip. (See Fig. 14.)

**side waist length,  $n$** —the distance from the mid-underarm point of the armscye to the waist level, taken along the side of the torso (contour). (See Fig. 5.)

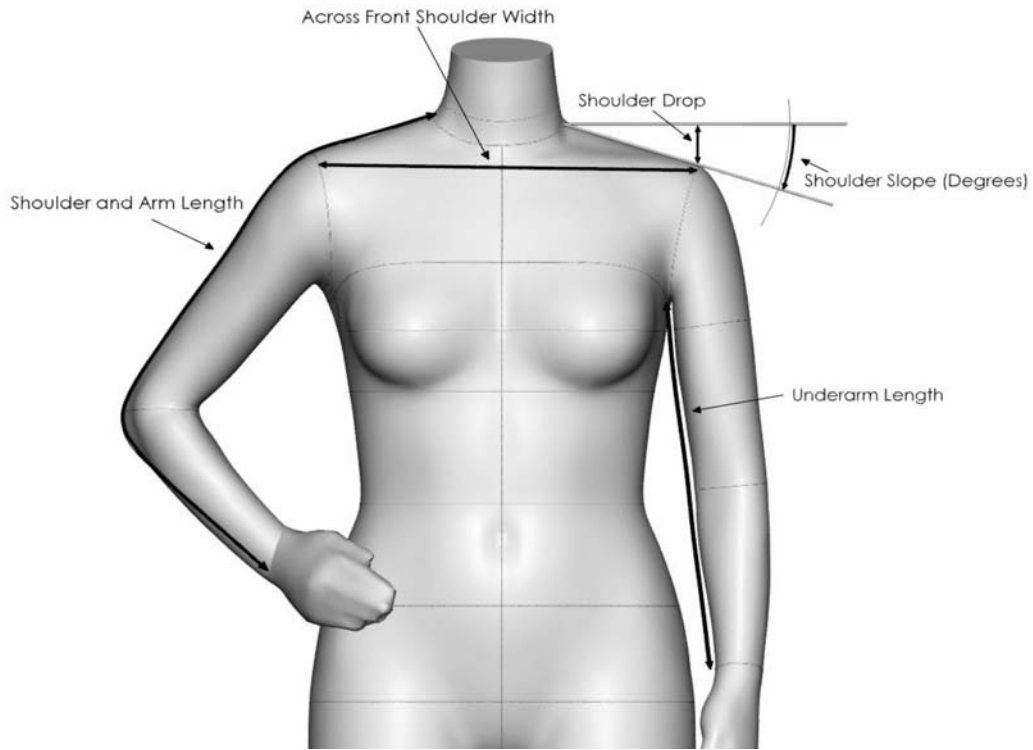


FIG. 12 Upper Body Measurements

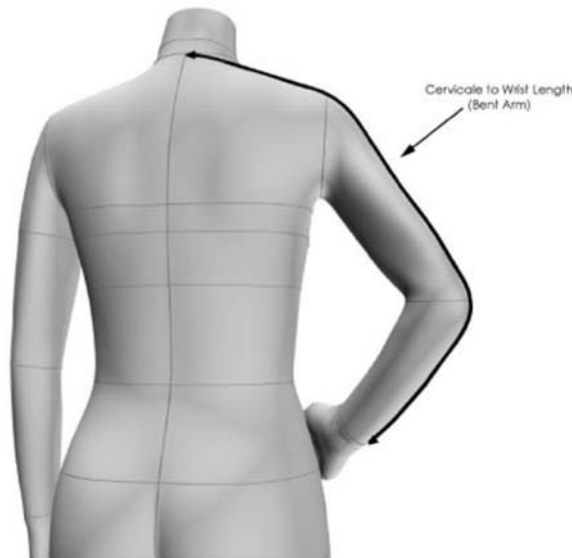


FIG. 13 Cervicale to Wrist Length

**thigh girth,  $n$** —the maximum horizontal circumference of the upper leg, taken close to the crotch. (See Fig. 3.)

**true rise,  $n$** —the vertical distance from the waist level at the side of the torso to the flat surface, taken with subject sitting on hard, flat surface (crotch depth).

**trunk length (total vertical girth),  $n$** —the circumference taken from a point on the right shoulder midway between the

neck base and the shoulder joint, down the back through the crotch and up over the prominence of the right chest/bust apex to the starting point, avoiding constriction at the crotch. (See Fig. 4.)

**underarm length,  $n$** —the distance from the mid-underarm point of the armscye to the inner wrist bone, taken with the arm down. (See Fig. 12.)

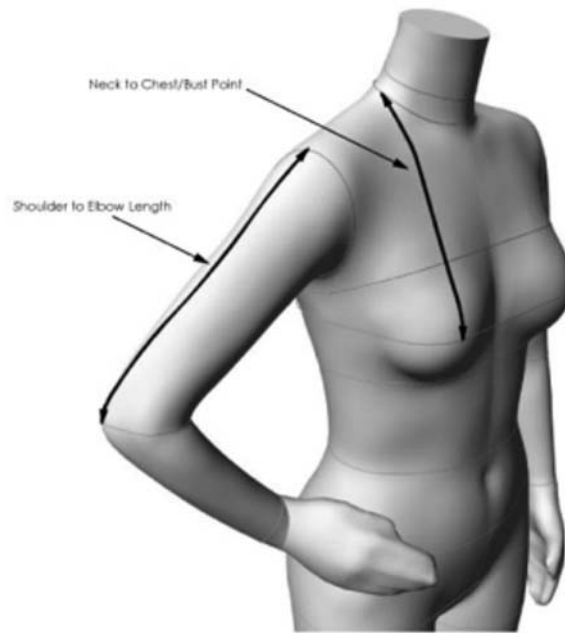


FIG. 14 Upper Body Measurements

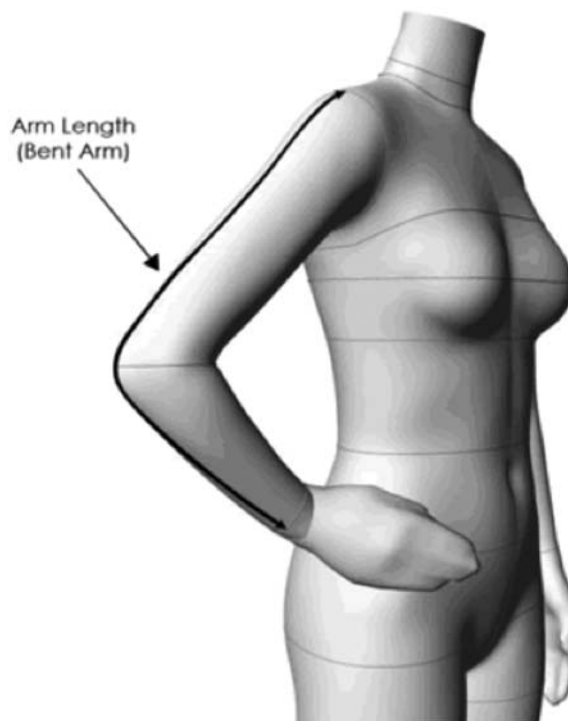


FIG. 15 Arm Length (Bent Arm)

**under-chest/bust girth (missy special case)**,  $n$ —the horizontal circumference around the torso under the arms and bust. (See Fig. 3.)

**upper-arm girth**,  $n$ —the maximum circumference of the arm, taken midway between the elbow and the shoulder joints with the arm down. (See Fig. 4.)

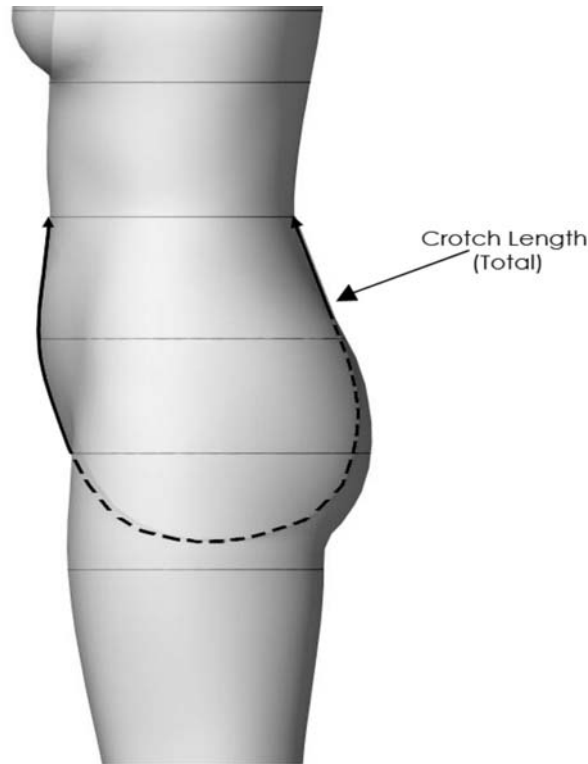


FIG. 16 Crotch Length (Total)

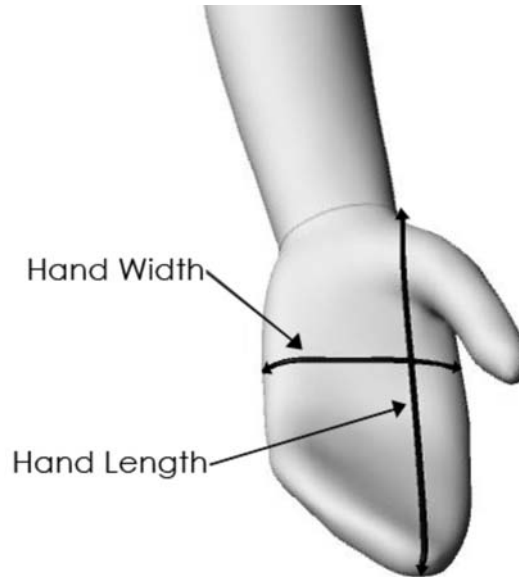


FIG. 17 Hand Width/ Hand Length

**upper-back width,  $n$** —the horizontal distance across the back at the mid-point between the top of the shoulder joint and the back break-point level, taken with the arms down (See Fig. 11.)

**upper-chest girth,  $n$** —the horizontal circumference around the torso, taken under the arms and above the fullest part of the chest including the lower portion of the shoulder blades. (See Fig. 3.)

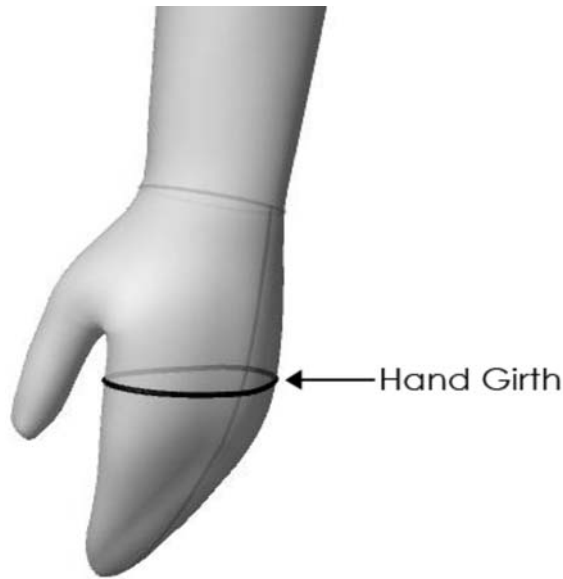


FIG. 18 Hand Girth

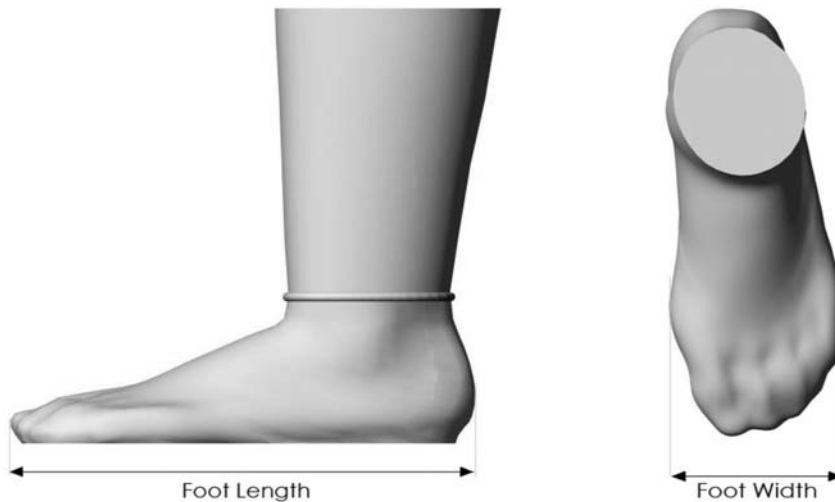


FIG. 19 Foot Length/Width

**upper-front chest width,  $n$** —the horizontal distance across the front of the chest at the mid-point between the top of the shoulder joint and the front break-point level, taken with the arms down (See Fig. 10.)

**waist girth,  $n$** —the horizontal circumference around the torso taken at the waist (See Fig. 3.)

*preferred waist girth,  $n$* —the circumference around the torso as identified as the waist by the wearer as applicable to bottom garments. (See Fig. 3.)

**waist height,  $n$** —the vertical distance from the waist level to the hip girth level (plumb) taken with subject standing and without shoes. (See Fig. 6.)

*waist height (infant special case),  $n$* —the straight distance from the waist level to the soles of the feet along the side of the body, taken with subject lying down flat with legs extended and foot positioned at 1.57 rad (90°) to the leg.

**waist length,  $n$** —the distance from the waist level to the hip girth level along the side of the body (contour) then vertically to the floor, taken with subject standing and without shoes. (See Fig. 5.)

**waist to hip/seat length,  $n$** —the distance from the waist level to the hip girth level, taken along the side of the torso (contour). (See Fig. 5.)

**waist to hip/seat height,  $n$** —the vertical distance from the waist level to the hip girth level, taken plumb. (See Fig. 6.)

*waist to hip/seat height (infant special case),  $n$* —the straight distance from the waist level to the hip girth level, taken along the side of the torso with subject lying down flat with legs extended.

**waist to knee height,  $n$** —the vertical distance from the waist level to a point level with the midpoint of the back of the knee (or crease), taken plumb. (See Fig. 6.)

**waist to knee length**, *n*—the distance from the waist level to a point level with the midpoint of the back of the knee (or crease), taken along the side of the torso (contour). (See Fig. 5.)

*waist to knee height (infant special case)*, *n*—the straight distance from the waist level to a point level with the midpoint of the back of the knee (or crease), taken along the side of the torso with subject lying down flat with legs extended.

**wrist girth**, *n*—the maximum circumference of the wrist, taken over the inner and outer prominence of the wrist bones. (See Fig. 4.)

### 3.4 *Garment Construction:*

**armhole**, *n*—the area of a garment through which the arm passes or into which a sleeve is fitted.

DISCUSSION—The armhole is not necessarily the same shape or location as the armseye.

**armseye**, *n*—the opening in a garment for the attachment of a fitted sleeve.

DISCUSSION—Armseye is a tailor’s term for armhole. The opening follows a line passing over the shoulder joint, front- and back-break points and armpit area.

**body dimension**, *n*—a body measurement that can be used to build a sizing system or to select an appropriately sized garment.

**preferred pant waist**, *n*—the circumference of the pant waist at the level below the natural waist.

**pitch, bottoms**, *n*—the difference between the preferred pant waist at the side and the preferred pant waist at the center front.

**sizing system**, *n*—a method of designating garment sizes.

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