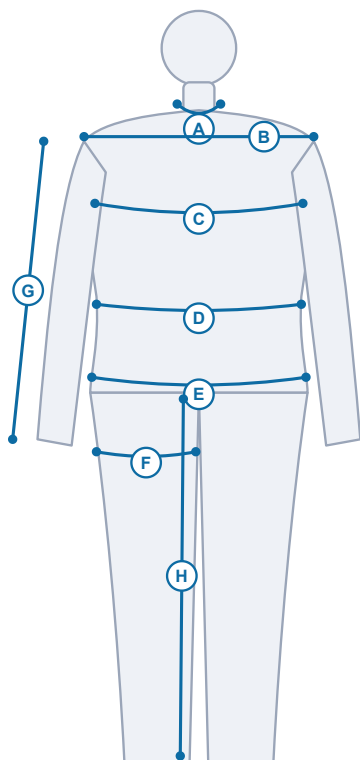


TAKING BODY MEASUREMENTS



BEFORE YOU START

- Use a soft, flexible tape. Wear light, close-fitting clothes or underwear.
- Stand relaxed and upright, feet together, looking straight ahead. Breathe normally.
- Keep the tape level and snug, not tight. You should be able to slide a finger under it.
- Ask a helper if you can. Measure twice and write down both numbers.
- Record in centimeters or inches and say which. Round to the nearest 0.5 cm (1/4 in).

THE EIGHT POINTS

A	Neck	Around the base of the neck, where a crew neck would sit.
B	Shoulder width	Across the back from one shoulder point (end of the shoulder bone) to the other.
C	Chest / bust	Around the fullest part, tape level across the shoulder blades and under the arms.
D	Waist	Around the natural waist, the narrowest part of the torso. Do not pull in.
E	Hip	Around the fullest part of the hips and seat, feet together.
F	Thigh	Around the fullest part of the upper thigh.
G	Arm length	From the shoulder point to the wrist bone, arm relaxed at the side.
H	Inseam	From the crotch to the ankle bone, along the inside of the leg.

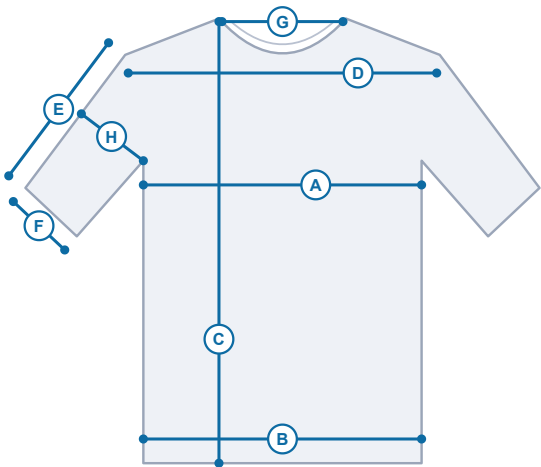
RECORD THE BODY MEASUREMENTS

REF	POINT	MEASUREMENT 1	MEASUREMENT 2	FINAL (AVERAGE)	NOTES
A	Neck				
B	Shoulder width				
C	Chest / bust				
D	Waist				
E	Hip				
F	Thigh				
G	Arm length				
H	Inseam				

Body measurements are not garment measurements. A body measurement is what the person measures. A garment measurement is the finished piece laid flat. The difference between them is called ease, and it depends on the fit you want: loose for a relaxed tee, close to none for compression wear. Always write on your size chart which kind each number is.

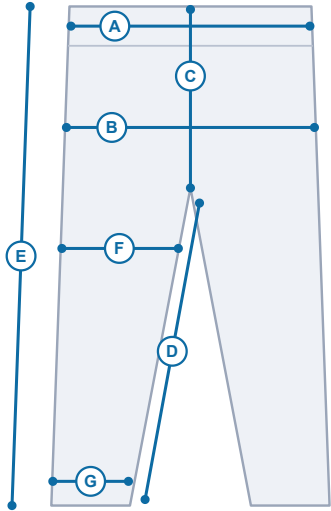
TAKING GARMENT MEASUREMENTS

T-SHIRT, JERSEY, TOP



A	Chest width	Straight across, 2.5 cm (1 in) below the underarm seam.
B	Hem width	Straight across the bottom edge, relaxed.
C	Body length	High point of shoulder at the neck down to the hem.
D	Shoulder width	Shoulder point to shoulder point.
E	Sleeve length	Shoulder point along the sleeve edge to the hem.
F	Sleeve opening	Across the sleeve hem, relaxed.
G	Neck width	Seam to seam across the neck opening.
H	Bicep width	Across the sleeve, 2.5 cm (1 in) below the underarm.

SHORTS, LEGGINGS, TROUSERS



A	Waist	Across the top of the waistband, relaxed (and stretched).
B	Hip	Across at a stated distance below the waistband top.
C	Front rise	Waistband top down the front seam to the crotch seam.
D	Inseam	Crotch seam down the inner leg to the hem.
E	Outseam	Waistband top down the side to the hem.
F	Thigh	Across the leg, 2.5 cm (1 in) below the crotch seam.
G	Leg opening	Across the hem, relaxed.

GROUND RULES FOR GARMENT MEASURING

- Lay the garment flat on a hard table. Smooth it out without stretching it.
- Measure across the flat garment, edge to edge. Double the width to compare it with a body circumference.
- Measure relaxed first. For waistbands, cuffs and hems, add a second, stretched reading and say how far you pulled.
- Use the same points on the reference garment, the tech pack and the sample so numbers can be compared line for line.
- Measure a finished, washed garment if you want to know how it behaves in use.
- Photograph the tape on the garment so the point is clear to anyone reading your notes.

HOW SIZE GRADING WORKS

Grading turns one approved base-size pattern into the other sizes by adding or removing a set step at each point of measure. The steps are not the same everywhere: width grows faster than length, and sleeves, necks and rises each follow their own rule. That is why a size chart should always list the grade next to the measurement.

TYPICAL STEPS: TOPS

POINT OF MEASURE	TYPICAL STEP	IN INCHES
Chest / bust width (flat)	2.0 - 3.0 cm	3/4 - 1 1/4 in
Hem width (flat)	2.0 - 3.0 cm	3/4 - 1 1/4 in
Body length	1.0 - 2.0 cm	3/8 - 3/4 in
Shoulder width	0.8 - 1.5 cm	3/8 - 5/8 in
Sleeve length	0.5 - 1.5 cm	1/4 - 5/8 in
Bicep width	0.8 - 1.5 cm	3/8 - 5/8 in
Neck width	0.3 - 0.8 cm	1/8 - 3/8 in

TYPICAL STEPS: BOTTOMS

POINT OF MEASURE	TYPICAL STEP	IN INCHES
Waist (flat, relaxed)	2.0 - 3.0 cm	3/4 - 1 1/4 in
Hip (flat)	2.0 - 3.0 cm	3/4 - 1 1/4 in
Thigh	1.0 - 1.8 cm	3/8 - 3/4 in
Front and back rise	0.5 - 1.0 cm	1/4 - 3/8 in
Inseam	0.5 - 1.5 cm	1/4 - 5/8 in
Leg opening	0.3 - 1.0 cm	1/8 - 3/8 in

Typical ranges for adult regular sizing, per full size step (for example M to L), on flat garment measurements. Individual brands, fits and stretch fabrics grade differently. These are starting points to discuss, not rules. Confirm your grade with the factory on a sample.

WORKED EXAMPLE (ILLUSTRATIVE ONLY)

A base size M tee with a 52.0 cm flat chest, graded with a 2.5 cm chest step, gives these finished measurements in cm. The numbers are an example, not a recommended size chart.

POINT OF MEASURE (STEP)	XS	S	M (BASE)	L	XL
Chest width (grade 2.5 cm)	47.0	49.5	52.0	54.5	57.0
Body length (grade 1.5 cm)	68.0	69.5	71.0	72.5	74.0
Sleeve length (grade 1.0 cm)	19.0	20.0	21.0	22.0	23.0

The same method applies to bottoms. Here a base size M pair of leggings, again with illustrative numbers in cm:

POINT OF MEASURE (STEP)	XS	S	M (BASE)	L	XL
Waist, flat relaxed (grade 2.5 cm)	28.0	30.5	33.0	35.5	38.0
Thigh (grade 1.5 cm)	26.0	27.5	29.0	30.5	32.0
Inseam (grade 1.0 cm)	70.0	71.0	72.0	73.0	74.0

GRADING CHECKLIST

- Fix the base size first and approve it on a sample.
 - List every point of measure and its grade, not just chest and length.
 - Check that grade steps are consistent (no size jumping twice as far as its neighbour).
- Remember that stretch fabric may use smaller garment steps for the same body step.
 - Measure the sample in at least the base size and one size either side.
 - Keep the graded chart with the tech pack so reorders match.

TOLERANCES, YOUTH AND CAUTIONS

TYPICAL TOLERANCES

POINT	TYPICAL TOLERANCE	IN INCHES
Chest / bust width	+/- 1.0 cm	3/8 in
Hem width	+/- 1.0 cm	3/8 in
Body length	+/- 1.0 to 1.5 cm	3/8 - 5/8 in
Shoulder width	+/- 0.5 to 1.0 cm	1/4 - 3/8 in
Sleeve length	+/- 0.5 to 1.0 cm	1/4 - 3/8 in
Neck width	+/- 0.5 cm	1/4 in
Waist, hip (relaxed)	+/- 1.0 cm	3/8 in
Inseam, outseam	+/- 0.5 to 1.0 cm	1/4 - 3/8 in
Rise	+/- 0.5 to 1.0 cm	1/4 - 3/8 in
Leg or sleeve opening	+/- 0.5 cm	1/4 in

Typical finished-garment tolerances for knit activewear. Agree your own numbers with the factory and write them in the tolerance column of the tech pack before the first sample.

How to use tolerance

- A measurement passes if it lands inside spec plus or minus the tolerance.
- Tighter is not always better. Very tight tolerances on stretch fabric are hard to hold and can add cost or time.
- Tolerances apply per size, measured the same way every time.

COMMON SIZE-CHART MISTAKES

- Mixing body and garment measurements in one chart.
- Leaving out the unit, or switching between cm and inches.
- Charting only chest and length and leaving every other point to chance.
- Not naming a base size, so nobody knows which size the sample represents.
- Changing the chart after the sample is approved without a new sample.
- Copying another brand's chart instead of measuring your own garment.

YOUTH VERSUS ADULT CAUTIONS

- **Do not shrink an adult block.** Children are not small adults. Proportions between height, width, rise and sleeve length differ and change quickly with age.
- **Define youth sizes clearly.** Age labels differ between brands. State the height and chest range each size is meant to fit.
- **Grade youth from a youth base size.** Steps between youth sizes are not the same as adult steps, so use a youth pattern block.
- **Allow for movement and growth.** Many buyers choose a little more room in youth fits, especially in length and rise.
- **Check safety and labelling rules.** Many markets restrict drawcords near the neck and have special label rules for children's clothing. Check the requirements for your market.
- **Measure real children if you can.** A handful of fit models around each target size is worth more than a chart.

Stretch and compression garments

- State relaxed and stretched measurements for waistbands, cuffs and hems.
- Check opacity and recovery at the largest and smallest sizes, not just the base size.
- Close-fitting garments are sized to the body, so body measurements matter more than garment ones.

Always confirm on a sample. The ranges in this guide are typical, common starting points and not True Fit Sportswear specifications. Order a sample in your base size, measure it point by point against your chart, and approve the fit before bulk production.

BASE SIZE	MEASUREMENTS ARE: GARMENT OR BODY	FABRIC (COMPOSITION, GSM)	DATE

[illegible]

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