



# GIMA

PROFESSIONAL MEDICAL PRODUCTS

## **PLICOMETRO DIGITALE DIGITAL SKINFOLD CALIPER PLICOMÈTRE NUMÉRIQUE**

**ATTENZIONE:** Gli operatori devono leggere e capire completamente questo manuale prima di utilizzare il prodotto.

**ATTENTION:** The operators must carefully read and completely understand the present manual before using the product.

**AVIS:** Les opérateurs doivent lire et bien comprendre ce manuel avant d'utiliser le produit.

**REF** 70206 (GIMA 27346)



Metrica S.p.A.,  
Via A. Grandi 18, 20097  
San Donato Milanese (MI) - Italy  
Made in Italy



Distribuito da / Distributed by / Distribué par:

**Gima S.p.A.**

Via Marconi, 1 - 20060 Gessate (MI) Italy  
gima@gimaitaly.com - export@gimaitaly.com

[www.gimaitaly.com](http://www.gimaitaly.com)



## **FOREWORD**

The purpose of this manual is to provide the Customer with all possible information about the SKINFOLD CALIPERS, as well as the use and maintenance instructions to help maintain its performance and efficiency over time.

The user manual must be kept in good condition and stored in a place where it is accessible for quick reference.

## **INTENDED USE**

Skinfold calipers are an instrument for measuring the thickness of a fold of skin and the subcutaneous fat in mm or inches with a pressure of 10g/mm<sup>2</sup> (pressure spring tolerance  $\pm 10\%$ ).

## **INSTRUCTIONS FOR USE**

Before using the skinfold calipers, their operating pressure must be checked using the dynamometrical shell supplied, in the following way:

- a) place the dynamometrical shell with the elastic part between the two sides of the clamp, holding the end of it flush to the inner edge of the skinfold caliper clamp, after resetting the instrument by pressing the "ZERO" button.
- b) the sides of the skinfold calipers with the shell inserted must be  $2 \pm 0.2$  apart (measurement in mm indicated on the dial); if this measurement is not the same, the hex screw on the caliper spacer must be adjusted so that the spring is tightened until the measurement of  $2 \pm 0.2$  is indicated on the dial.
- c) The skinfold calipers are ready to use.

NB: we recommend repeating this operation daily to ensure correct use. The skinfold calipers are applied on the fold of skin after the two edges of the skinfold with the subcutaneous fat to be measured have been drawn together. Then, hold the fold of skin firmly between two sides of the clamp and read the measurement indicated on the dial.

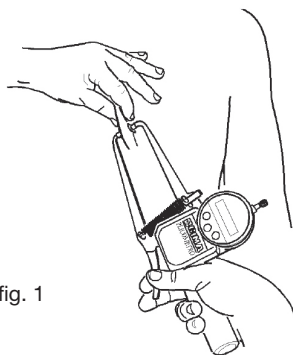


fig. 1

## **HOW TO MEASURE SKINFOLDS (Fig. 2)**

The skinfold calipers are applied on the skinfold after bringing the two edges of the skinfold close to the fat substrate to be measured



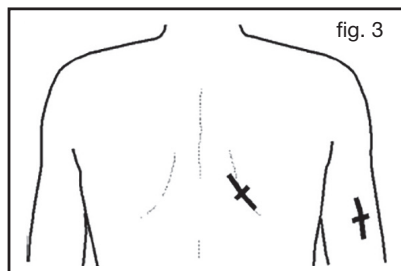
fig. 2

- 1- To measure skinfolds, firmly grasp a skinfold between the tip of the thumb and index finger of your non-dominant hand and lift it. In this way, the skin and the subcutaneous fat will be lifted and separated from the underlying muscles.
- 2- Take the skinfold calipers with your other hand and open the clamps by squeezing the handle, then place them on the skinfold just below (about 1 centimetre) the fingers holding the skin so that the thickness can be measured. The values are read in millimetres directly on the graduated scale (dial) of the skinfold calipers right after the skinfold calipers have been released, in order not to cause a progressive and excessive crushing of the soft parts
- 3- The value to be recorded will be an arithmetic average of two successive measurements if the difference between them is not greater than 5%; if the difference is greater, it is necessary to make a third accurate measurement and calculate the average between the latter and the closest of the previous ones; in case of doubt, it is possible to carry out a greater number of counter-tests.

Sometimes, especially in women, it may be difficult to lift the skinfolds due to the fact that the subcutaneous tissue is often integral with the underlying muscle, to which it adheres firmly. In this case, it is advisable to pinch and release the skin fold several times before using the skinfold calipers.

**SKINFOLDS TO BE MEASURED**

- Tricipital and subscapular in men (fig.3)
- Tricipital and front thigh in women (fig.4-5)



(fig. 3)

**Tricipital:**

Vertical skinfold measured along the medio-tricipital line halfway between the olecranon (elbow) and coracoid apophysis (shoulder).

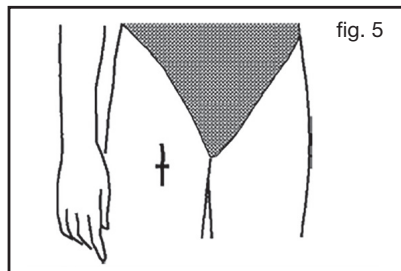
**Subscapular:** Oblique skinfold at 45°, in the direction from the upper-medial to the lower-lateral, measured just below the tip of the scapula (shoulder).



(fig. 4)

**Tricipital:**

Vertical skinfold measured along the medio-tricipital line halfway between the olecranon (elbow) and coracoid apophysis (shoulder).



(fig. 5)

**Front thigh:**

Vertical skinfold on the front midline of the thigh, halfway between the kneecap and the upper margin of the iliac crest.

**TABLE FOR ESTIMATING FAT PERCENTAGES IN MEN**

- 1) Add up the thicknesses of the TRICIPITAL and SUBSCAPULAR skinfolds after measuring them with the skinfold calipers
- 2) In the column indicating the patient's age, slide down until you find the value measured.
- 3) Using a ruler, move to the right towards the OBESITY and DIAGNOSIS columns and determine the values.

<b>AGE &lt;35 aa</b>	<b>AGE 35-50 aa</b>	<b>AGE &gt;50 aa</b>	<b>FAT %</b>	<b>Fat level DIAGNOSIS</b>
8-12	7-11	6-10	4	very thin
13-18	12-17	11-16	8	thin
19-25	18-23	17-22	12	normal
26-32	24-30	23-29	16	overweight
33-40	31-37	30-35	20	oxcessively overweight
41-49	38-46	36-43	24	obese
50-58	47-54	44-50	28	morbidly obese

### TABLE FOR ESTIMATING FAT PERCENTAGES IN WOMEN

- 1) Add up the thicknesses of the TRICIPITAL and FRONT THIGH skinfolds after measuring them with the skinfold calipers
- 2) In the column indicating the patient's age, slide down until you find the value measured.
- 3) Using a ruler, move to the right towards the OBESITY and DIAGNOSIS columns and determine the values.

<b>AGE &lt;35 aa</b>	<b>AGE 35-50 aa</b>	<b>AGE &gt;50 aa</b>	<b>FAT %</b>	<b>Fat level DIAGNOSIS</b>
17-24	16-22	15-20	13	very thin
25-33	23-31	21-29	17	thin
34-43	32-40	30-38	21	normal
44-52	41-49	39-47	25	overweight
53-61	50-58	48-55	29	oxcessively overweight
62-71	59-67	56-64	33	obese
72-84	68-79	65-74	37	morbidly obese

### REPLACING THE BATTERIES

Turn the ring of the dial to 11 o'clock so that the dial opening is in line with the opening where the battery is seated, or raise the tab, remove the battery from the seat with a small screwdriver and replace the battery with another battery of the same type (cr2025 3V), taking care to match the poles of the battery (the + pole indicated on the battery should be facing upwards when looking at the instrument).

*N.B. THE VALUES DETECTED ON THE INSTRUMENT DIAL MUST BE READ WITH THE TABLE ATTACHED TO THE INSTRUCTIONS*

**WARNINGS/MAINTENANCE**

The SKINFOLD CALIPERS must be used by qualified personnel only. Do not use the device if it is damaged. Do not repair it yourself; contact the manufacturer if necessary.

The skinfold calipers must be cleaned using a cloth dampened with substances that do not damage steel and it must always be stored in its case in a dry place. Substances, such as alcohol and/or window cleaner can be used for cleaning. These SKINFOLD CALIPERS are designed to last: it is resistant to most chemicals, except for methyl ethyl ketones (M.E.K.), thinners and nail polish removers. The instrument must be sent to our offices if the components need replacing

**SCALE CONVERSION FROM ANALOG TO DIGITAL SCALE**











<b>Analog scale</b>	<b>MM digital</b>	<b>INCH digital</b>	<b>Analog scale</b>	<b>MM digital</b>	<b>INCH digital</b>
0	0	0	21	2.73	.105
1	.12	.005	22	2.85	.110
2	.25	.010	23	2.99	.115
3	.38	.015	24	3.12	.120
4	.50	.020	25	3.24	.125
5	.64	.025	26	3.38	.130
6	.76	.030	27	3.49	.135
7	.89	.035	28	3.62	.140
8	1.02	.040	29	3.76	.145
9	1.16	.045	30	3.90	.150
10	1.29	.050	31	4.03	.155
11	1.41	.055	32	4.16	.160
12	1.54	.060	33	4.29	.165
13	1.66	.065	34	4.42	.170
14	1.80	.070	35	4.55	.175
15	1.93	.075	36	4.68	.180
16	2.06	.080	37	4.81	.185
17	2.18	.085	38	4.94	.190
18	2.32	.090	39	5.07	.195
19	2.44	.095	40	5.20	.200
20	2.58	.100			



**Disposal:** *The product must not be disposed of along with other domestic waste. The users must dispose of this equipment by bringing it to a specific recycling point for electric and electronic equipment.*

## GIMA WARRANTY TERMS

The Gima 12-month standard B2B warranty applies.

 REF	Product code	 LOT	Lot number		WEEE disposal
	Keep away from sunlight		Keep in a cool, dry place	 SN	Serial number
	Medical Device complies with Directive 93/42/EEC		Manufacturer	 i	Consult instructions for use
	Date of manufacture				