

SAEHAN **SH5005-1 Mechanical Pinch Gauge**

Instruction / Operator's Manual



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SAEHAN[®]
www.saehanmedical.com

SH5005-1 Mechanical Pinch Gauge

The Mechanical Pinch Gauge is used for hand-strength testing by measuring tip, key and palmar pinch force. This model is newly developed by SAEHAN. It is made of durable painted stainless steel. The mechanical properties of the gauge will not degrade over time and the absence of hydraulic fluid eliminates leakage problems.

The Pinch Gauge can be used as a diagnostic tool, or for monitoring the progress of rehabilitation.

Pinch Gauge force is measured in pounds and kilograms (0-45 lbf and 0-20 kgf) on a dual scale. It is recommended that the Pinch Gauge be held by the therapist, not the patient.

The therapist must rotate the knob on the dial face counter clockwise to position the red tipped pointer to zero, prior to each measurement.

The patient should apply pinch force to the handles located behind the dial, with the finger and thumb pads in the handle grooves. The black pointer pushes the red-tipped pointer so that it will remain at the maximum reading.

The position of the upper extremities can significantly affect pinch-strength measurement. The American Society of Hand Therapists recommends the following testing position.

1. Patient should be seated.
2. Shoulders should be adducted and neutrally rotated.
3. Elbow should be flexed at 90 degrees.
4. Forearm and wrist should be in a neutral position.

Pinch styles

1. Tip Pinch - thumb tip to index fingertip.
2. Key Pinch - thumb pad to lateral aspect of middle phalanx of index finger.
3. Palmar Pinch -- thumb pad to pads of index and middle fingers.

Maintenance

Clean exterior surfaces with a clean damp cloth. Do not use any solvent or chemical cleaners. Make every effort to prevent the SH5005-1 from hitting a hard surface.

Calibration

Calibration is recommended every two years on a certified accurate Digital Force Gauge. Saehan recommends SH7000 Calibration Unit as an accurate Digital Force Gauge.

Limited two-year warranty

SAEHAN warrants this Mechanical Pinch Gauge to be free from defects in workmanship and materials for two years from the date of purchase. If this instrument is found to be defective during the two-year period, SAEHAN will repair or replace at its discretion.

If a defect occurs after the warranty period, there will be a service charge for repairs. This warranty gives you specific legal rights.

TRANSPORTATION & STORAGE CONDITION : Environment

1. General :

- It is not aimed to be used in households.
- It is used in physical therapy rooms, doctors' offices and patients' rooms, etc.
- Equipment can be damaged when dropped to the floor.
Impossible to expect to work properly any more
If it works properly, calibration / exactitude should be maintained.













2. Conditions of visibility :

- Ambient luminance range : 100 lux – 1,500 lux
- Viewing distance : 20 cm – 40 cm
- Viewing angle : normal to the display $\pm 20^\circ$

3. Physical :

- Temperature range : 10°C ~ 40°C
- Relative humidity range : 10 % ~ 90 %
- Ambient pressure range : 700 hPa – 1,060 hPa

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Symbols	Meaning
	Manufacturer
	Date of manufactured
	Authorized representative in the European Community
	Medical device
	Serial number
	Batch code
	Catalogue number
	Caution
	Fragile, handle with care
	Keep dry
	Keep away from sunlight
	Consult instructions for use

WARNING ;

The worst damaged is occurred by dropping down to the floor.

When using, wear the strap on the wrist

Pinch Strength Norms for Ages 6-19

Average Performance of Normal Subjects on Key Pinch (lb)

AGE	HAND	Males			Females		
		Mean	SD	Range	Mean	SD	Range
6-7	R	11.3	2.0	7-16	9.6	1.5	6-12
	L	10.6	2.1	4-15	9.1	1.5	5-11
8-9	R	13.1	2.6	9-18	11.6	2.6	8-23
	L	12.2	2.5	8-20	11.3	2.1	8-20
10-11	R	15.3	3.1	9-22	14.2	2.1	11-21
	L	14.5	2.9	9-22	13.3	2.0	11-19
12-13	R	16.6	2.9	11-22	15.2	2.6	11-22
	L	15.6	2.8	10-21	14.1	3.0	10-23
14-15	R	20.9	3.8	14-32	15.6	2.5	12-22
	L	19.9	3.7	12-26	14.8	2.7	7-22
16-17	R	23.3	3.4	14-31	17.3	3.0	12-27
	L	21.8	3.6	13-30	16.6	3.1	11-25
18-19	R	23.5	4.1	17-34	18.1	2.4	12-23
	L	22.9	4.0	14-33	17.2	2.5	12-22

Mathiowetz V, Wiemer D, Fedeman S: Grip and Pinch Strength: Norms for 6-to 19-Year Olds. American Journal of Occupational Therapy pp.705-711, 1986.

The B&L Engineering PG-60 was used to measure the pinch strength of normal subjects in that research paper.

Pinch Strength Norms for Adults

Average Performance of Normal Subjects on Key Pinch (lb)

AGE	HAND	Males			Females		
		Mean	SD	Range	Mean	SD	Range
20-24	R	26.0	3.5	21-34	17.6	2.0	14-23
	L	24.8	3.4	19-31	16.2	2.1	13-23
25-29	R	26.7	4.9	19-41	17.7	2.1	14-22
	L	25.0	4.4	19-39	16.6	2.1	13-22
30-34	R	26.4	4.8	20-36	18.7	3.0	13-25
	L	26.2	5.1	17-36	17.8	3.6	12-26
35-39	R	26.1	3.2	21-32	16.6	2.0	12-21
	L	25.6	3.9	18-32	16.0	2.7	12-22
40-44	R	25.6	2.6	21-31	16.7	3.1	10-24
	L	25.1	4.0	19-31	15.8	3.1	8-22
45-49	R	25.8	3.9	19-35	17.6	3.2	13-24
	L	24.8	4.4	18-42	16.6	2.9	12-24
50-54	R	26.7	4.4	20-34	16.7	2.5	12-22
	L	26.1	4.2	20-37	16.1	2.7	12-22
55-59	R	24.2	4.2	18-34	15.7	2.5	11-21
	L	23.0	4.7	13-31	14.7	2.2	12-19

Pinch Strength Norms for Adults

Average Performance of Normal Subjects on Key Pinch (lb)

AGE	HAND	Males			Females		
		Mean	SD	Range	Mean	SD	Range
60-64	R	23.2	5.4	14-37	15.5	2.7	10-20
	L	22.2	4.1	16-33	14.1	2.5	10-19
65-69	R	23.4	3.9	17-32	15.0	2.6	10-21
	L	22.0	3.6	17-28	14.3	2.8	10-20
70-74	R	19.3	2.4	16-25	14.5	2.9	8-22
	L	19.2	3.0	13-28	13.8	3.0	9-22
75+	R	20.5	4.6	9-31	12.6	2.3	8-17
	L	19.1	3.0	13-24	11.4	2.6	7-16

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※ If there has been occurred any serious accident in relation to the our device released in market, the quality management representative of our company will notify the Notified Body & the competent authority of any serious accident in accordance with the vigilance procedure.