

CE

# BACK-LEG-CHEST DYNAMOMETER(SH5007)

## User Manual



Grip **SAEHAN**<sup>®</sup>

## INSTRUCTIONS FOR USE

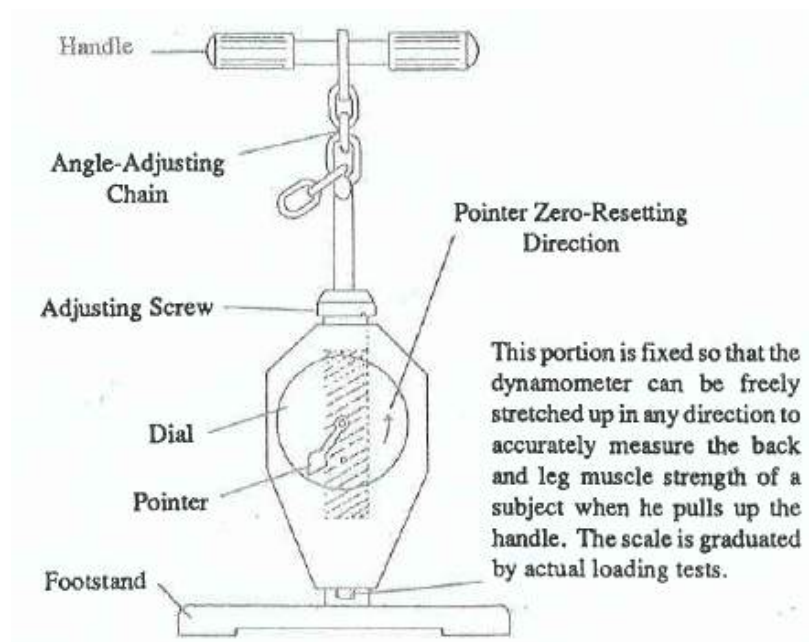
### SAEHAN BACK-LEG-CHEST DYNAMOMETER

#### SH5007

#### GENERAL:

This Back-Leg-Chest Dynamometer is designed to accurately measure the isometric force produced by musculature of the back, leg, chest and shoulders. This device allows medical staff to test a patient's fitness status and to carry out controlled training during the rehabilitation process. The appliance should be checked for correct condition prior to each usage by a person familiar with proper operation of the balance.

#### INFORMATION ON COMPONENTS, PACKAGE CONTENT :



No.	Name	Function
1	Body	All-metal construction
2	Dial	Scale measures up to 300 kg (660 lbs)
3	Pointer	The pointer on the dial indicates the force exerted.
4	Footstand	Stable base for footing
5	Hand grip	Contoured handles for solid grip Subject should lift in a gradual vertical motion.
6	Chain	Chain length is adjusted to accommodate for height differences or to vary the point of force application



**Scope of supply :**

- Device
- Operating instructions

**ASSEMBLY :**

Attach the Chain to the Hook at the top of the Body by threading the Hook through a link in the Chain.

**SAFETY PRECAUTION :**

Carefully read this operation manual before setup and commissioning, even if you are already familiar with SAEHAN balances.

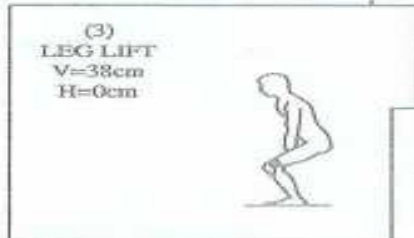
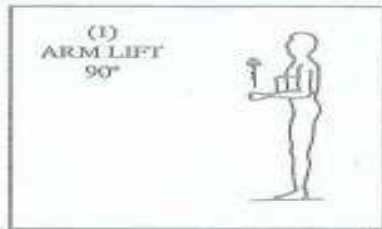
**Precautions for use**

- Do not drop the device, otherwise, it may be damaged, Handle it with great care.
- Do not use or keep the device in areas of high temperature, especially in places near heating equipment, in moist or dusty places, or where it will be directly exposed to water.
- If the device is dirty, wipe it with a soft, dry cloth, if very dirty, use a cloth wet with a neutral detergent. Do not use thinner, alcohol, or similar liquids. They will damage the surface of the device.
- Do not use this test if you have arm, shoulder or spine pain, or high, uncontrolled blood pressure.
- Use the proper technique as described below for accurate and consistent results. If needed, ask for a demonstration.
- Adjust the chain length for the subject to test comfortably.

- Make a maximal pull. Avoid sudden thrusts or jars, which can make the reading inaccurate.
- When Pulling, breathe out or exhale during contraction to prevent high intrathoracic pressure. Do not hold your breath and strain.
- Measure three tries, and take the best score. Record test results in kilograms.

## **OPERATING INSTRUCTION :**

1. Have the subject stand with both feet on the base, straddling the Body.
2. Adjust the length of the chain for the lift desired(see illustration). Be sure to hang the extra length of chain behind the Body. This insures that it does not interfere with the movement of the Pointer during the trial.
  - (1) Arm Lift
  - (2) Torso Lift
  - (3) Leg Lift
  - (4) High Far Lift
  - (5) Floor Lift
  - (6) High Near Lift
3. Have the subject hold the Grip in a comfortable, relaxed fashion. The knees should not be bent.  
Do not distract the subject during a trial.
4. Have the subject exert a maximal vertical lift effort by pulling upward gradually, not abruptly.
5. The force generated will be indicated by the Pointer on the Dial on the face of the Dynamometer.
6. Three trials are recommended at each lift setting. Reset the Pointer between trials by gently moving the Pointer back to the zero position on the Dial. Do not move the Pointer while the trial is in progress.



## STRENGTH NORMS :

Test	Assumed Distribution	Sample Size	Coeff. of Variation	Males					Reset		Females				
				Population Percentile					Sample Size	Coeff. of Variation	Population Percentile				
				10	25	50	75	90			10	25	50	75	90
1. Arm Lift	Normal	1052	.07	23	31	39	48	56	187	.08	9	15	22	28	34
2. Torso Lift	Log Normal	1052	.09	26	34	45	60	77	187	.10	13	17	24	33	44
3. Leg Lift	Normal	638	---	49	69	91	114	134	133	---	5	27	40	53	64
4. High Far Lift	Log Normal	309	.09	16	19	23	28	34	35	.12	9	11	13	16	19
5. Floor Lift	Normal	309	.08	59	74	91	108	123	35	.08	32	44	56	69	80
6. High Near Lift	Normal	309	.08	35	44	55	66	76	35	.11	16	12	29	36	42

<sup>1</sup> Keyserling, W.M., Herrin, G.D. and Chaffin, D.B. "An Analysis of Selected Work Muscle Strength." Proceedings of the Human Factors Society 22nd Annual Meeting, Detroit, 1978.

Lift strength, measured with Back-Leg-Chest Dynamometer, correlates with overall body strength and is an easy, safe test to perform.

Compare your test results with the norms shown above.

## WARNING :

Changes to the unit's design are not permitted. This may lead to incorrect measuring results, safety-related faults and destruction of the device.

The device may only be operated in accordance with the described default settings. Other areas of use must be released by SAEHAN.

## SPECIFICATIONS :

Measurement range	0 to 300 kg / 0 to 660 lbs
Minimum unit	1kg
Accuracy	300 kg $\pm$ 10%
Dimension	Approx. 340(W) x 340(L) x 1,070(H) mm
Weight	Approx. 6.4 kg (14.1 lbs)

## **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

## **STORAGE CONDITION :**

### **Environment :**

- 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.

## **SERVICE, MAINTENANCE, DISPOSAL :**

### **Cleaning :**

Do not use aggressive detergents (solvents etc.). Apply soapy water to moist cloth or use household detergent. Prevent fluid from penetrating into device. Finish by polishing with dry soft cloth. Remove dirt immediately.

### **Service, maintenance :**

The appliance may only be opened by trained service technicians who are authorized by SAEHAN.

### **Annual Calibration and Repair :**

It is recommended that this instrument be checked for accurate calibration annually. If the instrument has been dropped or there is reason to suspect that calibration is required, the instrument should be serviced immediately. Contact your supplier or call SAEHAN at +82-55-294-

0381, 24-hour phone support at +82-10-5282-0161, or send email to saehancorp@naver.com. Additional product and service information can be obtained at [www.saehanmedical.com](http://www.saehanmedical.com).

**Disposal :**

Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.













**Warranty : Warranty claims shall be voided in case**

- Our conditions in the operation manual are ignored.
- The appliance is used outside the described uses
- The appliance is modified or opened
- Mechanical damage and damage caused by media, liquids
- Natural wear and tear
- Non-intended use or electric installation
- The measuring system is overloaded
- Dropping the balance
- One year warranty. Any defective unit caused by workmanship will be replaced with new unit.



## Symbol description :

### Definition of using symbols

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

※ 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.

[SH-UM-001, Rev.5, 2022.06.01]

<b>Manufacturer</b>	<b>EC Representative</b>
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