SIMPSON
A Norican Technology

Operating Instructions

Core Hardness Tester Type

Model PKH

Type:	Core Hardness Tester Type
Model:	PKH
Part No.:	582-000-578
Serial No.:	

Name and address of manufacturer:

Simpson Technologies GmbH
Thomas-Eßer-Str. 86
D - 53879 Euskirchen,
Germany

For other Simpson Technologies offices around the world and for our contact information please visit us on the internet at simpsongroup.com on the Contacts page.

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1 Introduction

Congratulations, you have just purchased an extremely reliable sand testing instrument that is backed by the professional technical support and years of proven sand technology experience of Simpson Technologies .

This laboratory equipment is constructed of quality materials and is the result of unsurpassed craftsmanship. The Core Hardness Tester Type should be operated only when it is in perfect condition, in accordance with its designed purpose and being aware of possible hazards. Observe the safety instructions in Section 2 and operating instructions in Section 5.

1.1 Application and Designated Use

The Core Hardness Tester Type, Model PKH, is intended exclusively for measuring the strength of foundry sands mixed with clay binders. Usage of other materials may be possible upon consultation with the Technical Service Department of Simpson Technologies.

Any other application outside the intended usage will be regarded as use not in accordance with its purpose, and, therefore, the manufacturer/supplier will not be held liable for any damage that might arise hereunder. The risk in this case will be exclusively that of the user.

1.2 Organizational Measures

The operating instructions should be readily available at the place of operation. In addition to the operating instructions, the general legal regulations or other mandatory rules for prevention of accidents and environmental protection should be made known and be observed!

The personnel instructed to use this apparatus, before beginning work, should have studied and fully understood these Operating Instructions, in particular the “Safety” chapter.

No modifications, extensions or changes of design of the device that would impact safety requirements should be put into effect without prior consent of the supplier! Spare parts must conform to the technical specifications defined by the manufacturer. This is always guaranteed when using original spares.

2 Safety

Before operating and/or performing maintenance or repair on Simpson Technologies designed and/or manufactured equipment, it is required that all personnel have read and understood the entire Operation Maintenance manual. If any questions exist, you must contact your supervisor or Simpson Technologies before taking further action.

If properly operated and maintained, your Simpson Technologies supplied equipment can provide many years of dependable and safe operation. Please follow all recommended safety, operating, and maintenance instructions. Furthermore, the introduction of any non-Simpson Technologies manufactured and/or approved parts to the equipment may create a hazardous situation. Never alter the equipment without prior consultation with Simpson Technologies.

DO NOT use this machine for purposes other than that for which it is intended. Improper use could result in death or serious injury.

2.1 Safety Alert Symbols

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. OBEY all safety messages that follow this symbol to avoid possible injury or death.

DANGER! *Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.*

The safety alert symbol used without a signal word to call attention to safety messages indicates a potentially hazardous situation which, if not avoided, could or may result in death or minor injury.

NOTICE indicates information used to address practices not related to personal injuries but may result in property damage.

This symbol indicates information containing important instructions concerning the use of the machine or directions for further procedures. Ignoring this information can lead to malfunction of the machine.

3 Short Description & Specifications

3.1 Application

The Core Hardness Tester Type, Model PKH, is used to measure the surface hardness of the core. The measurement is accomplished by removing material on the surface of the core and measuring the depth of penetration. The core hardness is determined via penetration depth of the milling cutter.

3.2 Description

Simply place the Core Hardness Tester, Model PKH firmly at a flat surface of the core. This allows the measured force to correspond to actual penetration resistance.

3.3 Specifications, Dimensions and Weights (Approximate)

Specifications	Core Hardness Tester Type, Model PKH
Length	155 mm (6.1 in.)
Diameter	22 mm (18.7 in.)
Weight	0.3 kg (0.66 lbs.)

4 Unpacking and Installation

4.1 Unpacking

NOTICE

Your new equipment has been closely inspected before being shipped to your plant. However, damage can occur in route, so it is wise to inspect all equipment on arrival. Notify both the carrier and Simpson Technologies of any damage at once. Damage should be noted on the shipper's receipt before signing for receipt of the shipment.

The Core Hardness Tester Type, Model PKH, is shipped in one piece and is intended to be used as received; no further assembly/disassembly is required. No lifting equipment is required for handling. The Core Hardness Tester Type weighs only 0.3 kg (0.66 lbs.).

4.2 Components

Included in your new Core Hardness Tester Type are the following:

- Core Hardness Tester Type
- Operating Instructions Manual
- Milling Cutter (3)
- Flat Spinner (2)

If any of the above components are missing, contact your local Simpson Technologies office. See Section 7 for apparatus layout and components.

NOTICE

Do not store the device in the open and unprotected from atmospheric conditions. If this instruction is not followed, claims under guarantee will no longer be considered.

4.3 Airborne Noise Emission

Regarding airborne noise emission by the Core Hardness Tester Type, Model PKH, there is no motor or other noise emitted by this equipment. As such, the equivalent continuous A-weighted sound pressure level at the workstation does not exceed 70dB(A).

5 Operating Instructions

For more information on how to use and care for your Simpson Analytics equipment and accessories visit our Simpson Technologies channel on YouTube and search our library of videos. Subscribe to our channel to keep updated on new releases.

5.1 Zeroing the Core Hardness Tester

The device should be calibrated to a zero reading before each test. Set the milling cutter of the Core Hardness Tester firmly on a hard flat surface and hold. The apparatus must show on the micrometer scale the penetration depth “zero.”

If the “zero” position is out of tolerance (more than +/- 0.2 mm), proceed with Section 5.2.

5.2 Adjusting the Unit of Measure

To adjust, loosen the small threaded pin (Figure 5.3.1, Item 3) and remove the cover of the knob handle (Figure 5.3.1, Item 4), then push the penetrator head fully into the apparatus and hold. By turning the lock nut inside the knob handle the reading can be adjusted to “zero.” An accurate test can now be executed. Assemble back the knob handle and the small threaded pin in place.

5.3 Performing a Core Strength Test

1. Check whether the Core Hardness Tester is unblocked, and if the knob handle is in stop position.
2. Ensure that the test device is “zero” (See Section 5.1)
3. Place the milling cutter (Figure 7-1, Item 3) on a flat core surface maintaining it perpendicular and firmly against the core being tested.
4. Turn the knob handle (Figure 7-1, Item 2) five (5) times back and forth to the stops thus scratching with the milling cutter into the core.

5. Hold and read the penetration depth in mm on the micrometer scale (Figure 5.3.1, Item 2).

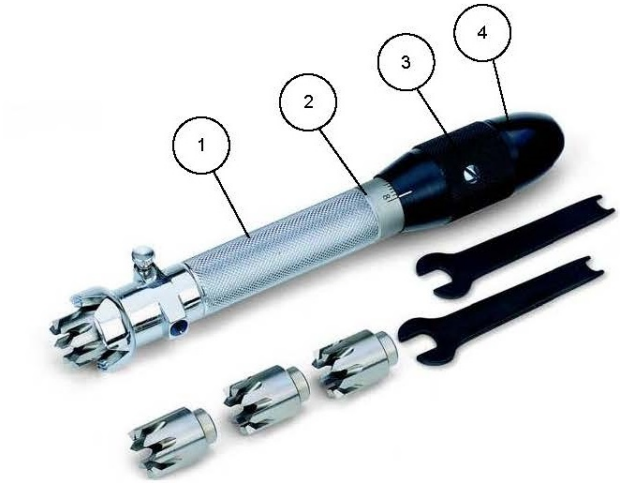

Figure 5.3.1

Item	Description
1	Body
2	Micrometer Scale
3	Small Threaded Pin
4	Cover Knob Handle

6 Maintenance

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Despite its robust construction, the Core Hardness Tester Type, Model PKH, is a precise mechanical measurement device and needs appropriate care.

6.1 Daily Maintenance

- Keep the Core Hardness Tester Type surface clean so that buildup of sand does not occur.

7 Apparatus Layout

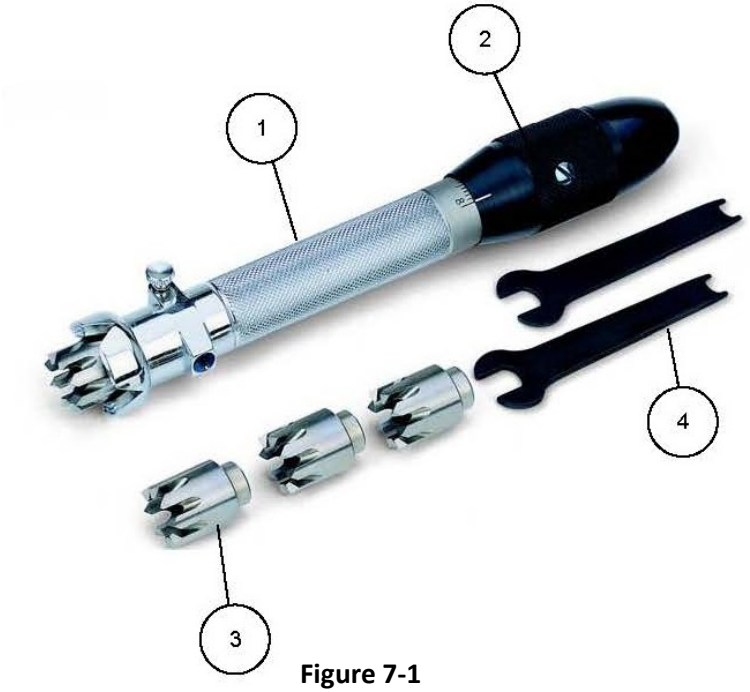

Figure 7-1

Item	Description
1	Body
2	Knob Handle
3	Penetrator Head
4	Flat Spanner

8 Parts List / Ordering Parts / Returns

8.1 Spare Parts List

Part No.	Description
-	Body
-	Knob Handle
9293-4016	Penetrator Head
9293-4190	Flat Spanner

8.2 Ordering Replacement / Spare Parts

The source of replacement parts for your Simpson Analytics equipment is just as important as the make of the equipment you purchase. ALWAYS order parts for your Simpson Analytics equipment directly from Simpson Technologies. To find the Simpson office closest to you please visit us on the internet at simpsongroup.com on the "Contact" page.

Contact our sales department to obtain a quotation on replacement parts or service please always include the equipment serial number, the description of the part and the part number. Your Simpson Technologies sales team representative will provide you with a quote on the items with current price and delivery times. When ordering, please always refer to the quote number on your order.

To arrange for calibration support or repair assistance please contact our customer service department at service@simpsongroup.com:

8.3 Return Goods Policy

Simpson Technologies strives to provide their customers with maximum follow up support and, in order to offer the most practical flexibility, the following conditions apply to returned goods. Adherence to these procedures will assure the most prompt and efficient service.

RETURNS WILL BE CONSIDERED IN THE FOLLOWING SITUATIONS:

- Products ordered in error by customer (subject to a restocking charge).
- Incorrect or defective products shipped to customer.
- The return of existing products for factory repair or upgrade.
- Products ordered correctly but which are unwanted or unsuitable (subject to a restocking charge).
- A Safety Data Sheet (SDS) must accompany material that is sent to Simpson Technologies for testing purposes. Simpson Technologies will NOT authorize the return of hazardous materials.

RETURN PROCEDURE:

- **The customer must obtain a Return Material Authorization Number (RMA#) from Simpson Technologies prior to returning the goods.**
- To obtain an RMA#, the customer should contact the Customer Service department by phone, fax, e-mail to service@simpsongroup.com. The material being returned must be identified and the reason for its return clearly specified. Once approved for return, Simpson Technologies will issue the customer an RMA form to be included with the shipment and with instructions on where and how to ship the goods.
- All returned goods are to be shipped with transportation charges PREPAID, unless otherwise agreed when the RMA# is assigned. If it has been predetermined that return goods are to be shipped COLLECT, Simpson Technologies will specify the desired routing.
- All returned shipments will be subject to inspection upon arrival at Simpson Technologies.
- Material returned without an RMA# may be refused and returned at customer's expense.

9 Decommissioning

Before doing any work, review the Safety Procedures in Section 2.

Failure to follow safety procedures could result in serious injury

Use qualified personnel and follow safety procedures, applicable local policies and regulations in decommissioning the Core Hardness Tester Type, Model.

WASTE DISPOSAL

The Machinery and Controls Consists of:

- Aluminum
- Copper
- Plastic
- Electronic Components and Circuit Boards

Dispose of the parts in accordance with the applicable regulations.

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