

Product Data

Applications

- Telephone handset testing
- Telephone handset Research & Development
- Designed for mounting onto G.R.A.S. KEMAR Manikin with Mouth Simulator Type 45BM - as shown in Fig. 1

Standards

- ANSI S3.36/ASA58-1985
- ANSI S3.25/ASA80-1989
- IEC 60959:1990
- IEC 60711 Ear Simulator
- ITU-T Rec. P.51, P.58, and P.57 Type 3.3

Features

- Multi-adjustable in three planes (nine moving segments), thus allowing handsets to be exactly positioned according to requirements and standards
- Simulating arm, wrist, palm, and fingers
- Handset fixture featuring a spring arrangement for easily attaching/detaching practically any mobile/cordless handset
- Adjustable force (pinna leakage pressure)
- Graduated scales at all positioning and force adjustments to ensure that any handset position / force adjustment is entirely defined for repeated measurements.
- Options for pinna size and hardness
- Applicable for both right and left ear
- Easy to retrofit
- Jig for ERP-positioning of handsets

Description

The Handset Positioning System Type 45EA positions handsets onto KEMAR Manikin Type 45BM (Fig. 1).

The system features nine moving segments that simulate the human arm, wrist, palm, and fingers holding a handset in the speaking-listening position.



Fig. 1 Handset Positioning System Type 45EA, holding a mobile phone mounted on the KEMAR Manikin Type 45BM.

This includes a handset fixture with a spring arrangement allowing different-sized handsets to be easily attached and detached.

All moving segments are provided with graduated scales to be read off for repeated measurements.

The system also permits the pinna leakage pressure to be adjusted over a wide range (3-18 Newton) and read off accurately using the force gauge supplied. For force exceeding 18 Newton, extra springs can be ordered.

The positioning system acoustically simulates the naturally hand-held situation under free-field conditions, not influencing the head-related transfer function in any unrealistic way. It is designed for use at both right and left ear.

A special gauge for easily setting up a hand-held communication device relative to the ITU-T Rec. P.57 Type 3.3 and a table are supplied for writing down all variable settings. Extensions are provided for use on large-size devices and to avoid interference with the fingers and push-buttons on the device under test.

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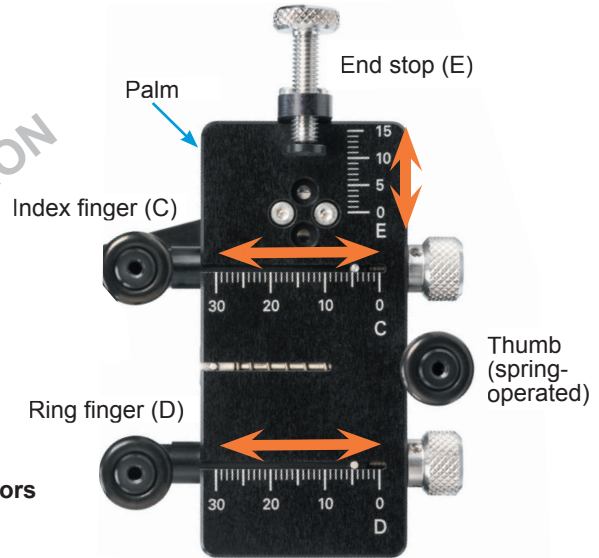
Adjustments via Reference Scales

Fig. 2 illustrates the moving segments and their graduated scales, each allocated a reference letter for unambiguous documentation reference:

- Arm position simulators (scale A-B1/B2)
- Finger simulators allowing the handset fixture to adapt to different-sized handsets (scale C-D-E).
- Wrist simulators (scale F-G-H)
- Applied pressure force (scale J)
- Pinna leakage control (Adjustment screw K).

See also the section Specifications.

Handset Fixture. Finger and Palm Simulators



Positioning and Force Segments: Wrist and Arm Simulators

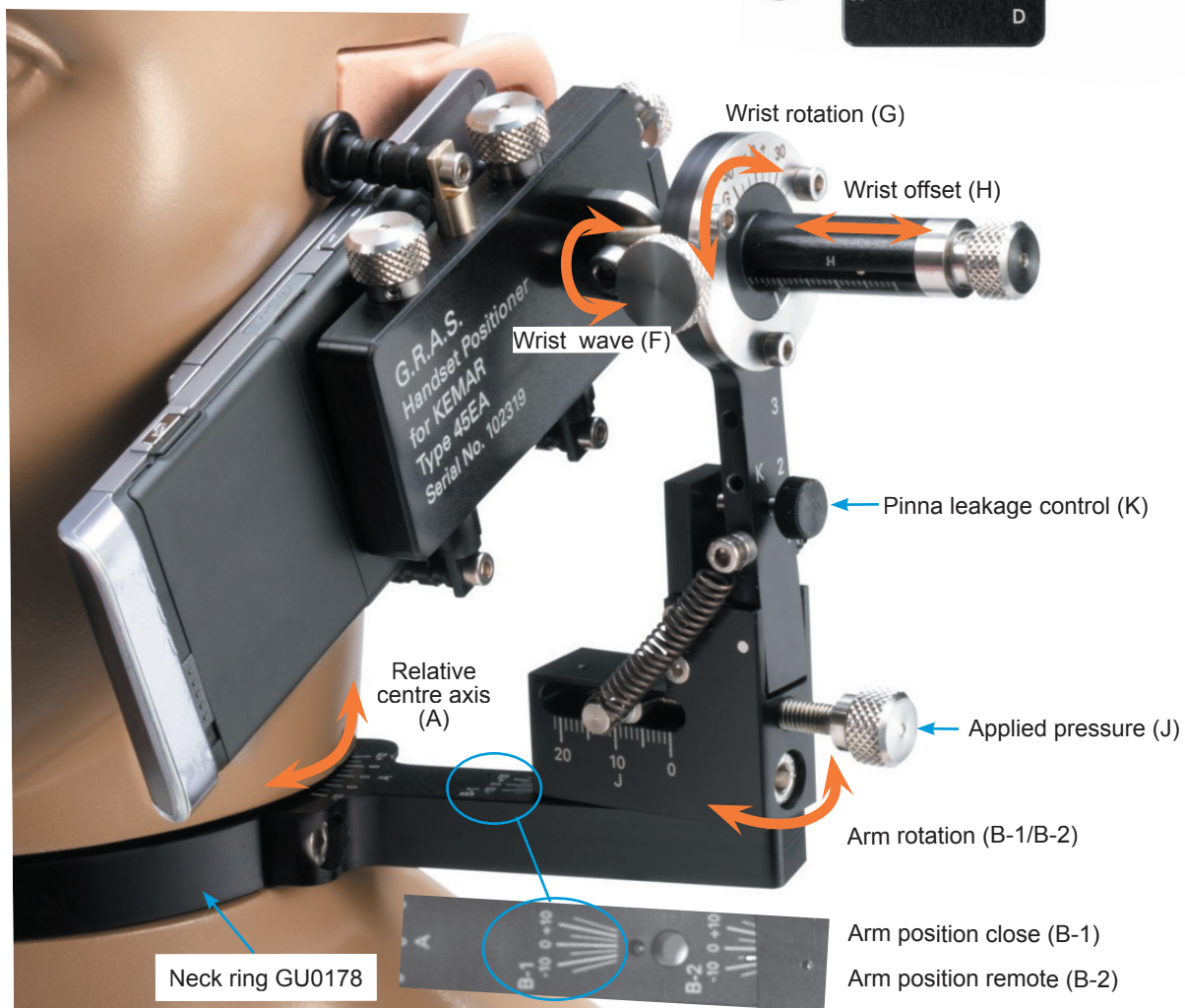


Fig. 2 Illustrating adjustable segments of Handset Positioning System Type 45EA. The letters refer to the graduated scales printed on the positioning system.

Specifications

Complies with:

- ANSI S3.36/ASA58-1985
- ANSI S3.25/ASA80-1989
- IEC 60711
- IEC 60959: 1990
- ITU-T Recommendations:
 - P.51 (Artificial Mouth)
 - P.57 (Artificial Ears)
 - P.58 (HATS)

when mounted on KEMAR Manikin with Mouth Simulator Type 45BM.

Handset Adjustability

Letters (A-H and J-K) refer to the adjustment scales handset positioning system for unique documentation reference.

Arm Simulator

- Relative centre axis (A) -10° to +10°
- Arm position close (B-1) -15° to +15°
- Arm position remote (B-2) -15° to +15°

Finger Simulator (Handset Fixture)

- Width of mounted handset:
 40 mm to 90 mm (1.57" to 3.54")
 determined by index/ring-thumb finger distance:
 Index finger (C) 0 to 30 mm (0 to 1.18")
 Ring finger (D) 0 to 30 mm (0 to 1.18")
 Thumb (spring-operated) . . 0 to 20 mm (0 to 0.79")

- Length of mounted handset:
 Determined by ear-mouth distance
 End stop (E) 0 to 15 mm (0 to 0.59")

Wrist Simulator

- Wrist wave (F) -20° to +20°
- Wrist rotation (G) -30° to +30°
- Wrist offset (H) 0 to 25mm (0 to 0.98")

Handset Pinna Leakage Pressure

- Spring position 1 3 to 8 Newton
- Spring position 2 7 to 16 Newton
- Spring position 3 11 to 18 Newton

What to Order

Handset Positioning System Type 45EA includes:

- Handset Positioning System Type 45EA
- ITU-T ERP Gauge GU0178
- Force Gauge RA0184
- Reference Obstacle GR1186
- Allen key, ball-headed, 2.5 mm, ergonomic YY0023
- Allen key, ball-headed, 3.0 mm, ergonomic YY0026
- Allen key, ball-headed, 4.0 mm, ergonomic YY0025
- Allen key, 1.27 mm, angled YY0010
- Allen key, 2.0 mm, angled YY0018
- 3 x Allen screw M3x6 SK1509
- 3 x Extension for handset positioner GR1188

The neck ring RA0188 (required for mounting the Handset Positioning System Type 45EA onto the KEMAR with Mouth Simulator Type 45BM) is supplied with the KEMAR.

Optional Accessories

For optional accessories, refer to manual for KEMAR Manikin with Mouth Simulator Type 45BM.