

# GRAS 45BC

KEMAR



0 V/CCP 200 V/LEMO

2

ANSI: S3.36, S3.25

IEC: 60318-7

45BC KEMAR

[GRAS 45BB KEMAR](#)



KEMAR Knowles 1972  
[KEMAR.us](#) GRAS KEMAR 1972 KEMAR  
100%

IEC 60318-4 KEMAR  
KEMAR 45BC KEMAR  
45BB KEMAR 45BC KEMAR  
45BC KEMAR IEC 60318-7 ANSI S3.36 S3.25  
ITU-T P 58

45BB KEMAR 45BB KEMAR



IEC 60318-4 (HATS) KEMAR  
KEMAR  
KEMAR



ITU-T Rec. P.58. MRP 25  
100 Hz 10 kHz 100 dB re. 20 Pa 10  
dB



IEC 60318-4

IEC 60318-4 GRAS IEC  
60318-4:2007 " ITU-T P. 57  
(08/96) "P"

[RA0045](#) GRAS [40AG](#) 1/2" 200 V  
7-pin LEMO  
[RA0045-S1](#) GRAS [40AO](#) 1/2" CCP  
BNC

-

43BB

43BB IEC 60318-4 (711) 40AH

10.5 dB(A) GRAS 40AG 1/2"  
IEC 60318-4 (711) 24.2 dB(A)

43BB



IEC 60318-4 13.5 kHz 8-10 kHz  
IEC 60318-4 /

IEC 60318-4 20 kHz [RA0401](#)  
GRAS [40AG](#) 1/2" 200 V 7-pin LEMO  
[RA0402](#) GRAS [40AO](#) 1/2" CCP BNC

IEC 60318-4 50 kHz [RA0403](#)  
GRAS [40BP](#) 1/4" 200 V 7-pin  
LEMO [RA0404](#) GRAS [40BD](#) 1/4"  
CCP BNC



KEMAR 55 Shore 00  
(IEC 60959) 35 Shore 00 VA 55 Shore 00 35  
Shore 00 KEMAR

KEMAR  
35 Shore 00



GRAS POM IEC  
60318-4 POM

GRAS RA0237

Ear Canal Extension Kit with standard pinna-extension  
tube, Ø 7.5 mm, 8.3 mm long. Standardized according  
to IEC60318-7. 2 pcs, O-rings included.

GRAS RA0238	Ear Canal Extension Kit with tapered pinna-extension tube. Ø 9.85 tapering down to Ø 7.5 mm, 7.4 mm long. 2 pcs, O-rings included.
GRAS RA0239	Ear Canal Extension Kit with silicone rubber lining, Ø 7.5 mm, 14 mm long. Standardized according to ANSI S12.42. 2 pcs, O-rings included.
GRAS RA0249	Straight Ear Canal Extension Kit for KEMAR, Ø 7.5 mm, 8.3 mm long. Made of POM*. Standardized according to IEC60318-7. 2 pcs. O-rings are included.
GRAS RA0250	Tapered Ear Canal Extension Kit for KEMAR. Made of POM*. Ø 9.85 tapering down to Ø 7.5 mm, 7.4 mm long. 2 pcs. O-rings are included.

\* KEMAR GRAS RA0251  
RA0249 RA0250

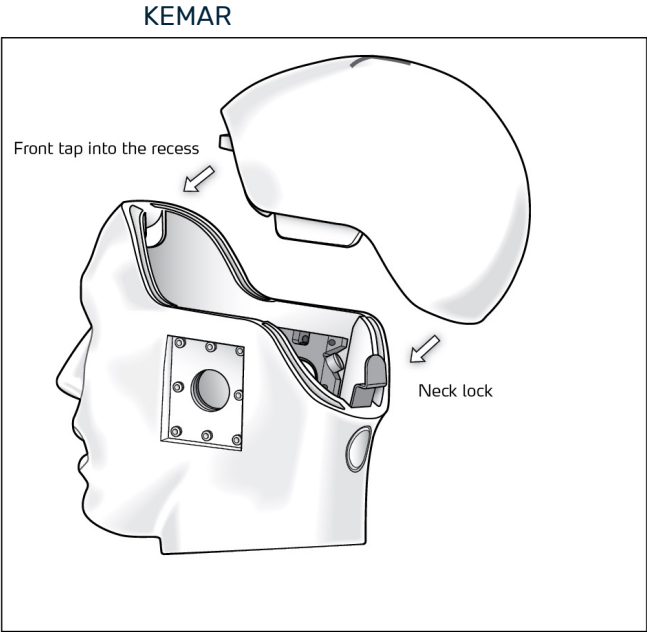
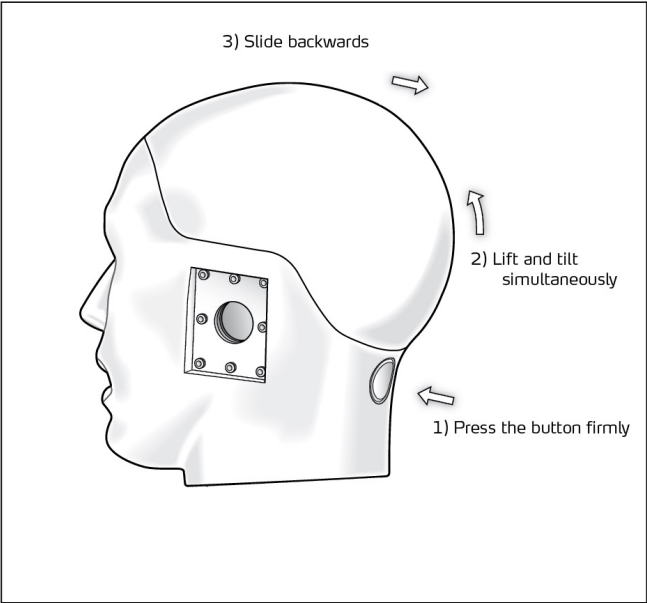
□□□□□□□□□□  
KEMAR KEMAR GRAS  
40 KEMAR

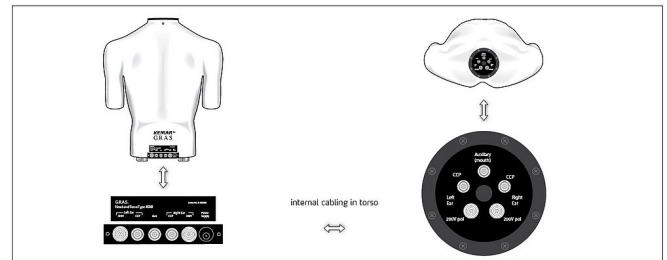
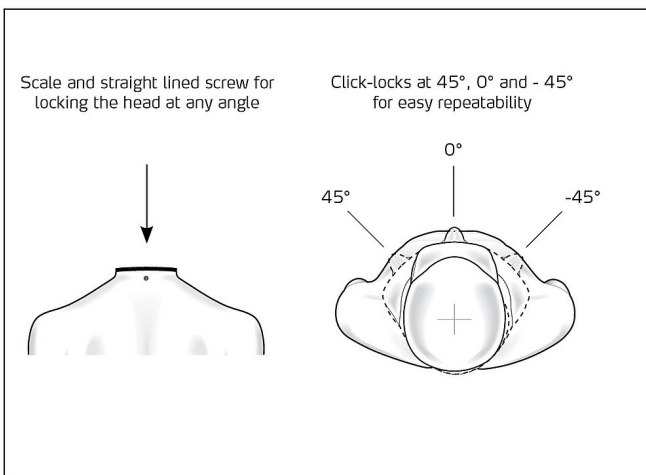
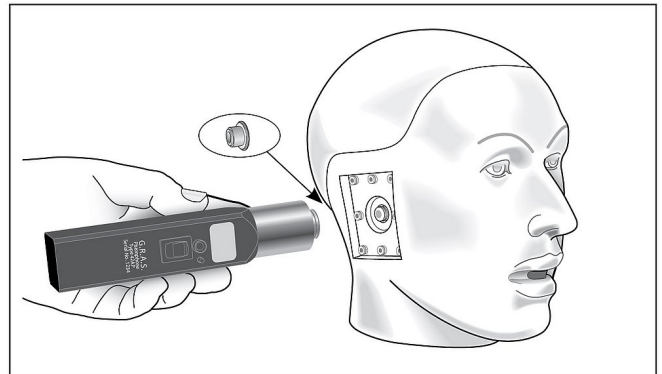
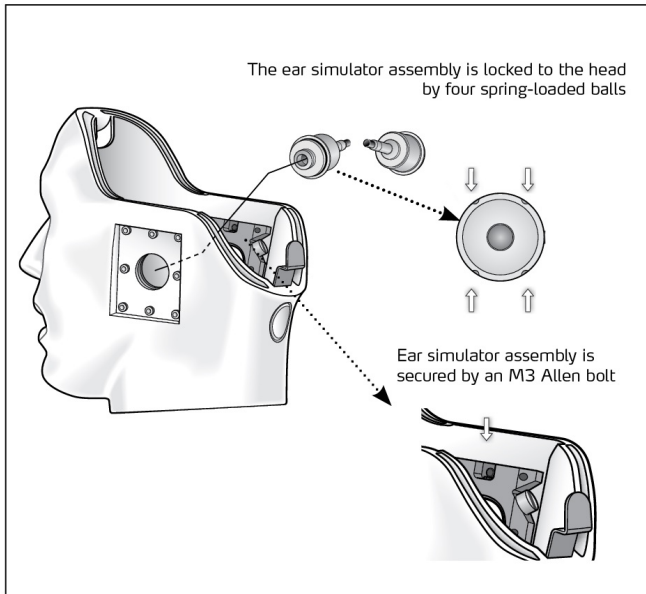
GRAS KEMAR —  
KEMAR

2013 KEMAR KEMAR  
KEMAR

□□□  
KEMAR

- KEMAR
- 
- 
- KEMAR





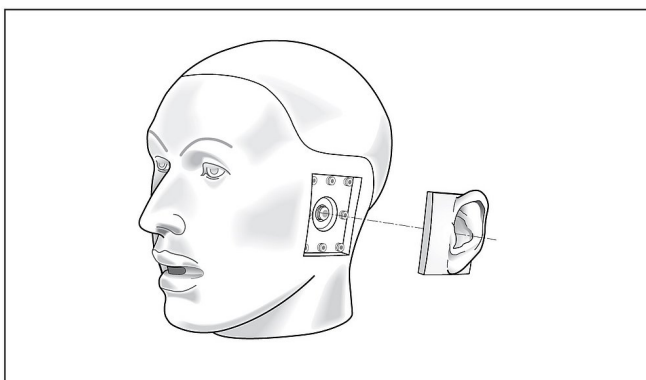
KEMAR 3/8" ø35



45BC KEMAR KEMAR KEMAR  
KEMAR 45BC KEMAR

- 60318-4
- 
- 1/2 1/4
- 

KEMAR



- 
- POM
- 12 VA
- 2
- 

KEMAR  
KEMAR

- 
- 
- 
- 
- 

KEMAR

□□□□  
6

45BC-1 2

60318-4 LEMO CCP 60318-4  
55 Shore 00

[GRAS 45BC-1 KEMAR for Headset Test, 2-Ch LEMO](#)

[GRAS 45BC-2 KEMAR for Headset Test, 2-Ch CCP](#)

45BC-9 10

60318-4

[GRAS 45BC-9 KEMAR with Mouth Simulator and Anthropometric Pinnae for Headset Test, 2-Ch LEMO](#)

[GRAS 45BC-10 KEMAR with Mouth Simulator and Anthropometric Pinnae for Headset Test, 2-Ch CCP](#)

45BC-11 12

KEMAR

LEMO

[GRAS 45BC-11 KEMAR with Mouth Simulator and Anthropometric Pinnae for Low-noise Headset Test, 1-Ch LEMO](#)

[GRAS 45BC-12 KEMAR with Mouth Simulator and Anthropometric Pinnae for Low-noise Headset Test, 2-Ch LEMO](#)

45BC-13 14

35 Shore 00 KEMAR 20  
kHz LEMO CCP

[GRAS 45BC-13 KEMAR for High-Frequency Test of Headsets, 2-Ch LEMO](#)

[GRAS 45BC-14 KEMAR for High-Frequency Test of Headsets, 2-Ch CCP](#)

45BC-15 16

KEMAR 35 Shore 00 50  
kHz LEMO CCP

[GRAS 45BC-15 KEMAR for High-Frequency Test of Headsets, 2-Ch LEMO](#)

[GRAS 45BC-16 KEMAR for High-Frequency Test of Headsets, 2-Ch CCP](#)

□□□□

45EA

[GRAS 45BC-3 KEMAR for Telephone Test, 1-Ch LEMO](#)

[GRAS 45BC-4 KEMAR for Telephone Test, 1-Ch CCP](#)

□□□□□ KEMAR

45BB KEMAR KEMAR KEMAR 16



KEMAR

2

KEMAR

5

6



Connector type		3 m 7-pin LEMO/BNC
Resonance frequency	kHz	Complex
Temperature range, operation	°C / °F	-30 to 60 / -22 to 140
Temperature range, storage	°C / °F	-40 to 65 / -40 to 149
Humidity range non condensing	% RH	0 to 95%
ANSI standard		S3.36, S3.25
IEC standard		60318-7
ITU-T recommendations		P. 58
Weight	g / oz	13 k / 459
MOUTH SIMULATOR		.
Output impedance	$\Omega$	8
Maximum power, continuous	W	10
Maximum power, pulsed 2 sec.	W	50
Input impedance	k $\Omega$	20
Gain	dB	10
Input signal, max.	Vrms	2
Power supply, external	Vdc	24

## GRAS Sound & Vibration



GRAS 45BH-S1	KEMAR Head & Torso with GRAS mouth simulator, non-configured
GRAS 45BT-S1	KEMAR Torso
GRAS GR1589	Neck Extension Ring, 11 mm, 2 pcs
GRAS KB0010	T-Shirt
GRAS SW0005	USB Flash Drive with HRTF and Free-field corrections data
GRAS RA0188	Mouth Calibration Jig for KEMAR
GRAS AA0032	BNC-BNC Cable, 50 cm
GRAS AA0035	BNC-BNC Cable, 3 m
GRAS AB0012	Power supply for mouth simulator amplifier
GRAS KB0000	KEMAR Book
GRAS YY0018	Allen key, 2 mm
GRAS YY0013	Allen key, 4 mm
GRAS YY0039	Screwdriver, 5.5 mm
GRAS GR1573	Bottom plate with 3/8" thread for tripod
GRAS GR1602	Bottom plate with 35mm hole for loudspeaker stand (AL0026)



<a href="#">GRAS 12AK</a>	1-Channel Power Module with gain, filters and SysCheck generator
<a href="#">GRAS 12AD</a>	1-Channel Power Module
<a href="#">GRAS 12AA</a>	2-Channel Power Module with gain, filters and SysCheck generator
<a href="#">GRAS 12AR</a>	2-Channel Power Module
<a href="#">GRAS 12AQ</a>	2-Channel Universal Power Module with signal conditioning and PC interface





<a href="#">GRAS 12AL</a>	1-Channel CCP Power Module with A-weighting filter
<a href="#">GRAS 12AQ</a>	2-Channel Universal Power Module with signal conditioning and PC interface

□□□□□□

<a href="#">GRAS 42AP</a>	Intelligent Pistonphone (250 Hz or 251.2 Hz, 114 dB +/- 0.05 dB)
<a href="#">GRAS 42AA</a>	Pistonphone (250 Hz, 114 dB +/- 0.08 dB)
<a href="#">GRAS RA0157</a>	1/2" Calibration Adapter for KEMAR Pinna

□□□□

<a href="#">GRAS KB0060</a>	KEMAR Small Right Ear 55 Shore 00
<a href="#">GRAS KB0061</a>	KEMAR Small Left Ear 55 Shore 00
<a href="#">GRAS KB0065</a>	KEMAR Large Right Ear 55 Shore 00
<a href="#">GRAS KB0066</a>	KEMAR Large Left Ear 55 Shore 00
<a href="#">GRAS KB1060</a>	KEMAR Small Right Ear, 35 Shore 00
<a href="#">GRAS KB1061</a>	KEMAR Small Left Ear 35 Shore 00
<a href="#">GRAS KB1065</a>	KEMAR Large Right Ear 35 Shore 00
<a href="#">GRAS KB1066</a>	KEMAR Large Left Ear 35 Shore 00
<a href="#">GRAS KB0090</a>	KEMAR Large Right Ear (VA-Style/SQ) 55 Shore 00
<a href="#">GRAS KB0091</a>	KEMAR Large Left Ear (VA-Style/SQ) 55 Shore 00
<a href="#">GRAS KB1090</a>	KEMAR Large Right Ear (VA-Style) 35 Shore 00
<a href="#">GRAS KB1091</a>	KEMAR Large Left Ear (VA-Style) 35 Shore 00
GRAS KB5000	KEMAR Large Right Anthropometric Pinna 35 Shore 00
<a href="#">GRAS KB5001</a>	KEMAR Large Left Anthropometric Pinna 35 Shore 00

## Ear Mould Simulators

<a href="#">GRAS KB0110</a>	Ear Mould Simulator for 2 mm Inner diameter tubing
-----------------------------	----------------------------------------------------

[GRAS KB0111](#)

Ear Mould Simulator for 3 mm Inner diameter tubing

## □□□□□□□□□□ (kits with 2 pcs and O-rings)

GRAS RA0237	Straight Ear Canal Extension Kit for KEMAR
<a href="#">GRAS RA0238</a>	VA-tapered Ear Canal Extension Kit for KEMAR
GRAS RA0239	Ear canal Extension Kit w. silicone lining for KEMAR
GRAS RA0240	Holder for long 1/2" microphone Kit for KEMAR
GRAS RA0241	Holder for short 1/2" microphone Kit for KEMAR
GRAS RA0243	Holder for 1/2" microphone Kit for KEMAR
GRAS RA0244	O-ring kit for KEMAR, 2 pcs.
GRAS RA0249	Straight Ear Canal Extension Kit for KEMAR, made of POM, for binaural hearing aid test
GRAS RA0250	Tapered Ear Canal Extension Kit for KEMAR, made of POM, for binaural hearing aid test

## KEMAR □□□□□□□□□□

[GRAS RA0251](#)

KEMAR Retrofit Kit for Binaural Hearing Aid Test:  
The Kit includes Ear Holder Plates, mounting bolts and the RA0249 and RA0250 Ear Canal Extension Kits. Included items are made of POM, Nylon and Teflon.

## □□□□

<a href="#">GRAS AA0008</a>	LEMO 7-pin - LEMO 7-pin Cable, 3 m
<a href="#">GRAS AA0009</a>	LEMO 7-pin - LEMO 7-pin Cable, 10 m
GRAS AA0034	BNC-BNC Cable, 2 m
<a href="#">GRAS AA0035</a>	BNC-BNC Cable, 3 m
GRAS AA0036	BNC-BNC Cable, 5 m
<a href="#">GRAS AA0037</a>	BNC-BNC Cable, 10 m

## □□□

GRAS KM0094	PELI Case for KEMAR
-------------	---------------------

## Simulation Model of KEMAR

GRAS KB3000	Simulation Model of KEMAR with large pinnae
GRAS KB3001	Simulation Model of KEMAR with small pinnae

## KEMAR ☐☐

GRAS AL0026	Loudspeaker stand for KEMAR, Ø 35 mm
-------------	--------------------------------------

## ☐☐

GRAS KB0000	KEMAR Handbook
GRAS KB0010	T-Shirt for KEMAR

GRAS Sound & Vibration

# GRAS Worldwide

Subsidiaries and distributors in more  
than 40 countries

**HEAD OFFICE, DENMARK**  
**GRAS SOUND & VIBRATION**  
Skovlytoften 33  
2840 Holte  
Denmark  
Tel: +45 4566 4046  
[www.GRASacoustics.com](http://www.GRASacoustics.com)  
[gras@grasacoustics.com](mailto:gras@grasacoustics.com)

**USA**  
**GRAS SOUND & VIBRATION**  
9290 SW Nimbus Avenue  
Beaverton, OR 97008  
Tel: 503-627-0832  
Toll Free: 800-231-7350  
[www.GRASacoustics.com](http://www.GRASacoustics.com)  
[sales-usa@grasacoustics.com](mailto:sales-usa@grasacoustics.com)

**UK**  
**GRAS SOUND & VIBRATION**  
Unit 115, Gibson House,  
Ermine Business Park, Huntingdon,  
Cambridgeshire, PE29 6XU  
Tel: +44 (0) 7762 584 202  
[www.GRASacoustics.com](http://www.GRASacoustics.com)  
[sales-uk@grasacoustics.com](mailto:sales-uk@grasacoustics.com)

**CHINA**  
**GRAS SOUND & VIBRATION**  
Room 315, RuiBo Center(T1)  
Lane683, Shenhong Rd,  
Minhang District,  
Shanghai, China, 201107  
Tel: +86 21 64203370  
[www.GRASacoustics.cn](http://www.GRASacoustics.cn)  
[cnsales@grasacoustics.com](mailto:cnsales@grasacoustics.com)



## About GRAS Sound & Vibration

GRAS is a worldwide leader in the sound and vibration industry. We develop and manufacture state-of-the-art measurement microphones and related equipment for industries where acoustic measuring accuracy and repeatability are of the utmost importance. This includes applications and solutions for customers within the fields of aerospace, automotive, audiology, consumer electronics and other highly demanding industries. GRAS microphones are designed to live up to the high quality, durability and accuracy that our customers have come to expect, trust and require.

GRAS Sound & Vibration is represented through subsidiaries and distributors in more than 40 countries and is part of Axiometrix Solutions, a leading test solutions provider comprised of globally recognized measurement brands. Read more at [www.grasacoustics.com](http://www.grasacoustics.com)

[grasacoustics.com](http://grasacoustics.com)

**GRAS**  
An Axiometrix Solutions Brand