

NBS 9-A Coupler Type RA0075

Product Data and Specifications

Features/Uses

- *Complies with ANSI S 3.7 - 1995*
- *Simple, robust construction*
- *Audiometer calibration*
- *Earphone calibration*

The G.R.A.S. Type RA0075 is a coupler for testing earphones. It uses a 1-inch condenser microphone with preamplifier.

It complies with the requirements of:

ANSI S 3.7 – 1995 – American National Standard for Testing Earphones.

It is also part of the G.R.A.S. Artificial Ear Type 43AF.

Components

The Type RA0075 comprises the following components:

- RA0075 NBS 9-A Coupler
- GR0572 Stop Collar

The Type RA0075 is delivered as shown in Fig. 1. It uses a 1-inch pressure condenser microphone with preamplifier. Fig. 2 shows an exploded view of RA0075 together with a suitable preamplifier and microphone. The Stop Collar is used to maintain a consistent coupler-volume.

Preamplifiers

The Type RA0075 can use a ½-inch preamplifier with a ½ - 1-inch adapter.



Fig. 1 The NBS 9-A Coupler Type RA0075 with Stop Collar GR0572

The example in Fig. 2 shows:

- Type 26AK G.R.A.S. ½-inch Preamplifier
- RA0073 G.R.A.S. ½ - to 1-inch Adapter

Microphones

The Type RA0075 uses primarily a 1-inch pressure condenser microphone (of the type WS1P) with the normal protection grid replaced by a special coupler-adapter ring. The example in Fig. 2 shows the Type L¹ (W.E. 640 AA) configuration of:

- Type 40EN G.R.A.S. 1-inch Pressure Condenser Microphone fitted with
- RA0074 Coupler-adapter ring (included with the Type 40EN)

Use with ½-inch Microphone

The RA0075 can also be used with the G.R.A.S. ½-inch Microphone Type 40AG. In this case, the optional Adapter RA0077 should replace the protection grid of the Type 40AG. This combination will allow measurements to frequencies higher than those with a 1-inch microphone.

¹ ASA Z 24.8-1949.

NBS 9-A Coupler Type RA0075

Characteristics of a NBS 9-A Coupler

Main Purpose: ANSI specifies the NBS 9A Coupler for calibrating the earphones of audiometers. It has been chosen because of its simple construction and because the threshold transfer data² of so many different earphones have already been determined.

Volume: it has a volume of 5.6 cm³ which approximates the volume of 6 cm³ when enclosed by a supra-aural earphone on a human ear.

Frequency: the output level of an earphone on a real ear measured below 500Hz is lower because of leakage and flesh compliance. From 500Hz to 1500Hz, it is about the same for both ear and coupler.

Between 1500Hz and 8000Hz, the response of the coupler is a fair indication of the earphone's performance. However this cannot necessarily be used as a precise indication of the relationship between coupler and ear because of complex interactions between the earphone and its acoustic load.

² Earphone coupler sound pressure level produced when earphone is excited by a voltage corresponding to hearing threshold. See also ANSI S3.6-1989 and ISO R 389-1985, Standard Reference Zero for the Calibration of Pure Tone Air Conduction Audiometers, and Addendum 1-1983 to ISO R389-1975.

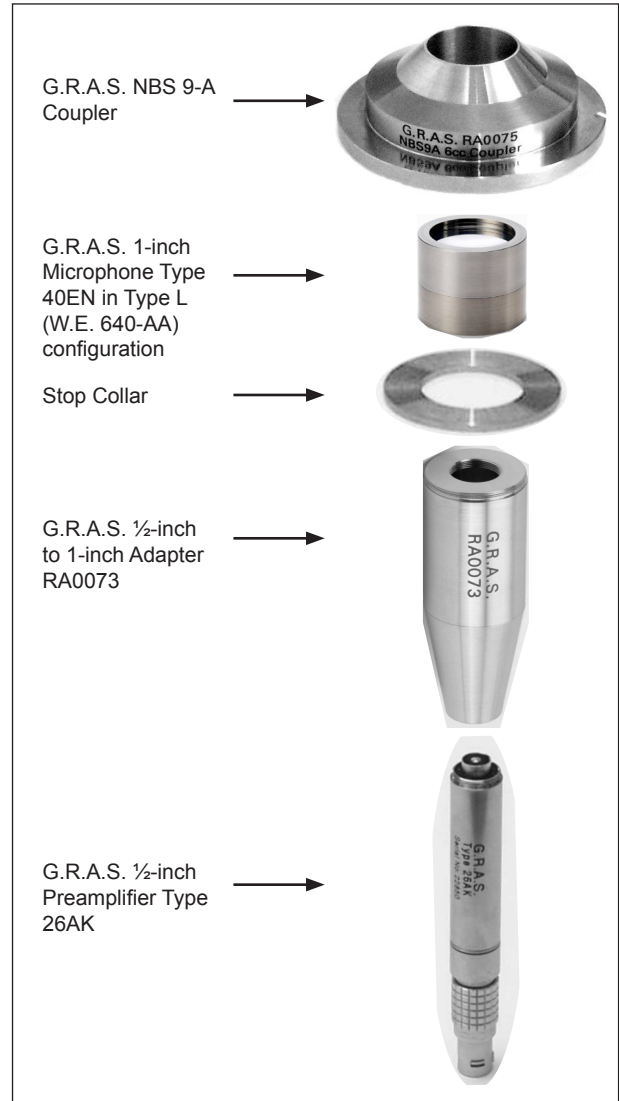


Fig. 2 Exploded view of Type RA0075 components with a 1-inch microphone and a 1/2-inch preamplifier

Specifications

<p>Standards: ANSI S 3.7 – 1995 – American National Standard for Testing Earphones.</p> <p>Dimensions: Diameter: flange: 73.0 mm body: 57.2 mm Height: 30.35 mm</p>	<p>Accessories included: Coupler: RA0075 Stop Collar: GR0572</p> <p>Accessories available (see Fig. 2): 1-ich Microphone: Type 40EN 1/2-inch Pre-amplifier: Type 26AK 1/2 - 1-inch Adapter: RA0073</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

G.R.A.S. Sound & Vibration reserves the right to change specifications and accessories without notice

G.R.A.S.
Sound & Vibration

Skovlytoften 33
2840 Holte, Denmark
Tel +45 45 66 40 46 Fax +45 45 66 40 47
e-mail: gras@gras.dk www.gras.dk