GRAS RA0020

1/2" Nosecone



Length: 54.0 mm
Outer diameter: 13.2 mm
Threading (mic. protection grid threading): 12.70-60 UNS-2
Material: Stainless steel
Weight: 45 g

The RA0020 is specially designed and optimized for use with 1/2" microphones for sound pressure measurements, when high speed wind comes from one known direction e.g. in a wind tunnel.

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Introduction

Proper use of a microphone with a nosecone is to aim the nosecone towards the air flow. The nosecone has an inner threading and is installed by replacing the protection grid with the nosecone.

Design

When a microphone is placed in a laminar flow, turbulence is created which in turn results in unwanted pressure variations on the diaphragm. By installing a nosecone, the pressure variations, caused by the turbulence starting at the stagnation point, are moved as far away from the diaphragm as possible. Theoretically this supports a “longer-the-better design”, but in practice it is a compromise between practical size and obtaining a streamlined shape.

The design of our nosecones is based on requirements from the National Aeronautical Laboratory of the Netherlands (NLR), who investigated the classical sharp-tipped nosecone and concluded that with this design, the stagnation point is unpredictable i.e. the turbulence could emerge at any point on the surface and cause unwanted pressure variations, which could reach the diaphragm.

A new design with a blunt tip was developed. This forces a predictable stagnation point already at the tip. As this turned out to be a success and a great improvement compared to the classical design with a sharp tip, this is now specified in the NLR requirement TP 96320. The surface is high-gloss polished to further improve the aerodynamic performance.

If the turbulence reduction obtained by the nosecone is not sufficient or you have space restrictions, we suggest that you look for GRAS surface microphones and our new flush-mount microphone concept. These alternatives are also relevant if you experience flutter problems with microphones provided with nosecones.

If you need to make sound pressure measurements in a free-field with air coming from many different directions, we suggest you look for GRAS windscreens.

Alternatives

An aluminum version GRAS RA0020-A is available for use where weight is an issue.

Quality & Warranty

GRAS accessories are made of stainless steel, alloys and high-quality composites. These items are covered by a 2 year warranty respecting their intended use.

On wear products like cables and windscreens, we offer a 6 month warranty.

GRAS Worldwide

Subsidiaries and distributors in more than 40 countries

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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

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