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# Datasheet

## Acoustic Noise Shield

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### Description

The Type 7965 Acoustic Noise Shield has been designed to reduce the effects of ROV generated noise on the performance of Long Baseline (LBL) acoustic positioning systems.

The LBL positioning method involves measuring ranges from an ROV mounted acoustic transceiver to a seabed array of transponders. ROVs and tether management systems often create substantial amounts of ultrasonic underwater noise from hydraulic power packs and thrusters. If the reply signals from the seabed transponders are swamped by this noise, acoustic navigation becomes problematic and may be impossible.

An ROV's buoyancy pack can provide some 'natural' protection against this unwanted noise providing the acoustic transceiver is placed in the correct location and the buoyancy material itself is of the

correct type. Shallow water (<600m) buoyancy provides the best noise shielding whilst deepwater syntactic foam (microspheres in a solid matrix) is acoustically transparent and thus provides little, if any, shielding.

The Sonardyne noise shield rejects noise signals from a  $\pm 45^\circ$  cone below the ROV's transceiver in favour of ranges coming from MF seabed transponders out to the side.

The unique shape is optimised to preserve the hemispherical Beamshape of the transducers required for reliable LBL positioning whilst maintaining a clear acoustic path to the array.

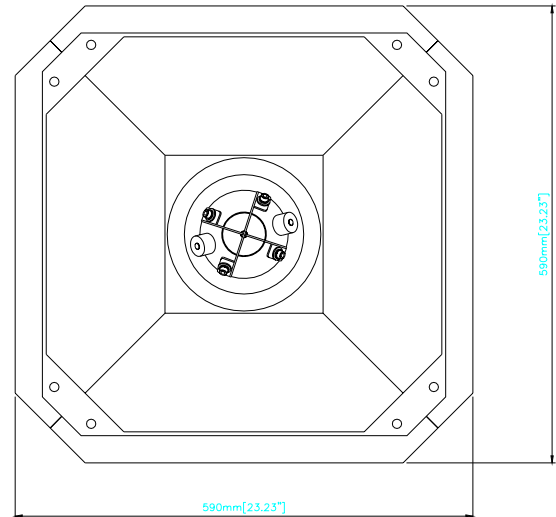
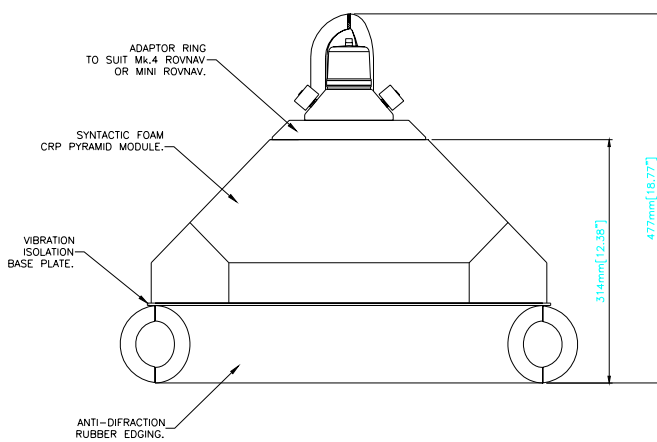
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### Key features

- Increases acoustic ranges by over 10 times in noisy conditions
  - Depth rated to 3,000 Metres
  - Designed for Mini RovNav, RovNav Mk4 & Mk5 and MF 'Flowerpot' transducer
  - Rejects noise from directly below the transceiver whilst maintaining hemispherical acoustic coverage
  - Compact design for easy fitting to most types of ROV
  - Approximately neutrally buoyant when fitted with Mini RovNav or RovNav Remote Transducer
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# Specification

## Acoustic Noise Shield



### Example

Sonardyne has built up a database of ROV noise measurements over the last decade which can be used to estimate the likely effects of ROV noise on operations and the reduction in LBL transponder ranges that can be expected.

For example, an ROV with a typical power pack will create noise which will swamp any received signal less than 150 dB re 1 $\mu$ Pa unless shielded. This limits the range of a Sonardyne Type 7800 COMPATT (source level 194 dB re 1 $\mu$ Pa @ 1 metre) to less than 158 metres.

A suitable noise shield will reduce the noise energy by a factor of 100 - 1000 (20-30dB), and the ranges will then increase by a factor 10 - 20 (up to 3km). Clearly in this example, the lack of a noise shield would severely limit operations and cause considerable downtime