

Cost of Installation and Ownership

The following table assumes a typical installation of two Balise per location.

Mounting Method	Installation Time	Removal Time	Possession Required
Vortok Balise Beam	2 minutes	2 minutes	No – Can be placed on track between traffic!
Drilling Concrete Sleepers	2 hours	3 minutes	Yes – 2 hours
Steel Band System (When ballast not frozen)	1 ½ - 2 hours	1 - 1 ½ hours	Yes – 1 ½ - 2 hours

A great advantage of the Vortok system is the zero requirement for possession.

Typical Beam Specifications

Main mounting arm beam: manufactured in GRP Modar.

865 grade Modar used for the combination of both strength and fire resistant properties, it is safe to use in underground applications and acts as an insulator so will not interfere with track circuits etc.



Wall thickness:	5mm
Profile:	80mm x 20mm
Weight without Balise:	3.11kg
Yokes and Mounting Points:	2 or 3mm Stainless Steel with 12mm diameter Stainless steel bolts with vibration proof washers.
Torque:	To 38Nm (Maximum allowable for Eurobalise)
Time to fit Beam:	2 minutes or quicker (remove fastening, place beam in position and refasten) .
Time to fit Balise to Beam:	2 minutes or quicker
Maintenance Schedule:	Only visual inspection required to coincide with regular track maintenance.

Vortok International

Innovation House
3 Western Wood Way
Langage Science Park
Plymouth, Devon, UK
PL7 5BG

Phone: +44 (0)1752 349200
Fax: +44 (0)1752 338855
E-mail: sales@vortok.co.uk
Website: www.vortok.co.uk

Vortok Balise Mounting System

The Rapid Balise Installation System
Mounting Balise in Seconds!!!!!!



Technical Summary

Product Description

The Vortok Balise mounting system can be installed onto any combination of rail fastening and sleeper type. The system removes the requirement for drilling into concrete sleepers, or digging out ballast for the steel band type of fixing, by making use of the existing rail fastenings making the installation process very fast and simple whilst using a minimal number of standard rail tools.

Manufactured from very strong, yet lightweight, GRP material the mounts are resistant to changes in climatic conditions and have a very long life in track. They will not corrode, nor are they affected by chemical spillages or corrosive environments found near mining areas for example.

The system is completely insulated and will not interfere with track circuits and by design it is able to withstand the vibration forces generated from passing of high speed trains.

The Vortok mounting system is suitable for all the various Balise types with **170,000+ installed** all over the world supporting ABB, Alstom, Ansaldo, Bombardier, Siemens and Thales Balise variants as well as other inductive aerial systems, sensors and safety devices.

Product History

The Vortok Balise mounting arm was originally developed by Vortok for the nationwide installation of the Train Protection and Warning System (TPWS) developed for the United Kingdom network by Thales.

When the TPWS aerial panels were being installed, particularly upon concrete sleepers, it was taking up to 2 hours per location. Vortok developed the Balise mounting arm for Thales to vastly speed up installation time removing both the need for special fastenings and any requirement to drill into concrete sleepers. The initial roll out of this system in the UK called for the installation of 53,000 panels, this was accomplished using the Vortok Balise Mount System on all sleeper and fastening types throughout the UK.

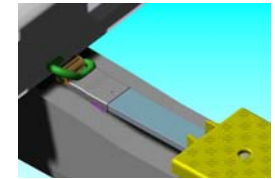
Vortok have since developed a number of Beams suitable for the mounting of all Balise types and many other device types to any combination of sleeper and fastening type found worldwide.

Adapting to Local Conditions and Variations

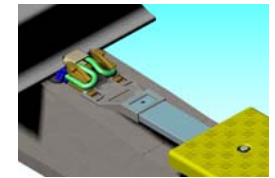
Wide variety of sleeper and fixation combinations, **all meeting UNISIG criteria**. All our designs remain true to the original design concept of providing a secure method of fixing Balise in track quickly and easily.



Picture courtesy of SBB



Pandrol e-clip



Fastclip



Nabla



K Plate / Vossloh

Robust

Vibration tested with load of 35kg meeting EN 50125-3 standard and beyond

Typical Euro-Balise weighs just 6.1kg.

Ice impact tested - 4.5kg @ 350 Km/hour.

Insulated to minimum 750 VDC