



## Bender Element Core Holder (GDSBCH)

**Overview:** The GDS Bender Element Core Holder is designed to facilitate an aligned measurement of S-waves and P-waves through a cylindrical soil sample. The core holder helps to accurately locate vertical and horizontal Bender Elements around the sample and to provide a slight engagement load to them to ensure proper sample-element contact. The core holder also ensures that the elements are held rigidly so less noise is seen in the output compared to when elements are held manually against a sample.

### Key Features:

Core Holder ensures that the elements are held very statically so less noise is seen in the output compared to when elements are held manually against a sample.

The USB interface of the Acquisition System allows the easy connection of the system to any PC system in the lab.

The Bender Element Core Holder system allows the easy measurement of S-waves and P-waves from cohesive soil cores extracted from boreholes or any other cohesive sample.

The Bender Element Acquisition system is capable of recording up to 2,000,000 samples per second for the source and received signals with data acquisition resolution of 16 Bits.

### Overview

The bender element core holder system allows the easy measurement of S-waves and P-waves from cohesive soil cores extracted from boreholes or any other cohesive sample.

The high accuracy resolution of the bender elements system permits the measurement of the shear modulus properties of the sample. The bender Element core holder is designed to hold cylindrical samples of up to 4 inches of Diameter and dimension ratios between 1:1 to 1:2. The lateral and top elements can be retracted and locked in place to facilitate core placement and removal. The horizontal elements are sprung loaded and guided to ensure good sample contact is achieved. The horizontal elements can also be retracted and rotated to allow horizontally propagating waves to be used with either vertical or horizontal polarisation.

The Bender Element Acquisition System is designed to generate frequencies between 100 Hz and 10 kHz. The Bender Element Acquisition system is capable of recording up to 2,000,000 samples per second for the source and received signals with data acquisition resolution of 16 Bits.

The USB interface of the Bender Element System allows for easy connection to any PC system in the lab, and so can be 'hot swapped' around the laboratory. Also, the software allows the user to set up sinusoidal, square and user defined waves. The Data Acquisition system is the same as that used for GDS in-cell bender element systems so a single acquisition system can be used for multiple purposes, such as triaxial or simple shear. Please contact GDS for further information on these applications.

### Technical Specification:

For use with sample diameters:	25mm to 101.6mm (1" to 4")
For use with sample heights:	50mm to 203.2mm (2" to 8")
Data acquisition speed:	2,000,000 samples/second, simultaneous sampling of both source and received signals
Resolution of data acquisition (Bits):	16 bit
Connectivity of control box:	USB
Available gain ranges for data acquisition:	from x 10 to x 500
Titanium inserts for reduced weight:	Particularly important for the top cap

## Why Buy GDS?

### GDS have supplied equipment to over 86% of the world's top 50 Universities:

GDS have supplied equipment to over 86% of the world's top 50 Universities who specialise in Civil & Structural Engineering, according to the "QS World University Ranking 2020" report.

GDS also work with many commercial laboratories including BGC Canada, Fugro, GEO, Geolabs, Geoteko, Golder Associates, Inpijn Blokpoel, Klohn Crippen, MEG Consulting, Multiconsult, Statens Vegvesen, NGI, Ramboll, Russell Geotechnical Innovations Ltd, SA Geolabs, SGS, Wiertsema and Partners to name a few.



**TOP  
50**

### Would you recommend GDS equipment to your colleague, friend or associate?

**100% of our customers answered "YES"**

Results from our post-delivery survey asked customers for feedback on their delivery, installation (if applicable), supporting documentation, apparatus and overall satisfaction with GDS. The survey ran for two years.



### Made in the UK:

All GDS products are designed, manufactured and assembled in the UK at our offices in Hook. All products are quality assured before they are dispatched.

GDS are an ISO9001:2015 accredited company. The scope of this certificate applies to the approved quality administration systems relating to the "Manufacture of Laboratory and Field Testing Equipment".

**40 YEARS OF  
BRITISH  
INNOVATION**



### Extended Warranties:

All GDS apparatus are covered by a 12 month manufacturers warranty. In addition to the standard warranty, GDS offer comprehensive extended warranties for 12, 24 and 36 months, for peace of mind against any repairs in the future. The extended warranties can be purchased at any time during the first 12 months of ownership.



### GDS Training & Installation:

All installations & training are carried out by qualified engineers. A GDS engineer is assigned to each order throughout the sales process. They will quality assure the apparatus prior to shipping, if installation has been purchased, install the apparatus on the customers site & provide the training.



### Technical Support:

GDS understand the need for ongoing after sales support, so much so that they have their own dedicated customer support centre. Alongside their support centre GDS use a variety of additional support methods including remote PC support, product helpsheets, video tutorials, email and telephone support.

