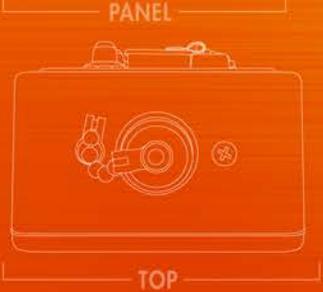
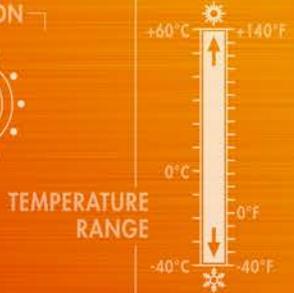
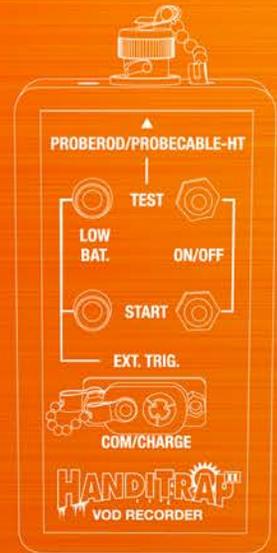
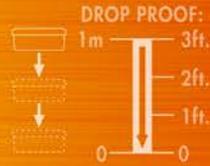


## HANDITRAP II™ VOD RECORDER

- RESOLUTION: 12 BITS, 1 PART IN 4,096.
- CHANNELS: 1 VOD CHANNEL.
- RECORDING RATE: 1MHz.
- RECORDING TIME: 131 MILLISECONDS (131,072 DATA POINTS).
- EXPLOSIVES SAMPLES: 1 SAMPLE PER TEST.
- EXPLOSIVES IN BLASTHOLES: 1 BLASTHOLE PER TEST.



# HANDITRAP II

## VOD RECORDER

Velocity of detonation (VOD) is cited as the performance specification for explosives. If you are not measuring VOD then you cannot be sure that your explosives are performing properly.

If you want to profile the VOD continuously along a sample of explosives or along an explosives column in a single blasthole, the World's most affordable and easiest to use recorder is the HandiTrap II™ VOD Recorder.

### EXPLOSIVES CONSUMERS

You are paying for explosives to provide you with the energy your blasts need under your specific blasting conditions. The HandiTrap II™ VOD Recorder is used by mines and quarries to perform spot checks of explosives performance during blasts to compare the actual VOD results to the VOD specification published by the explosives manufacturer.

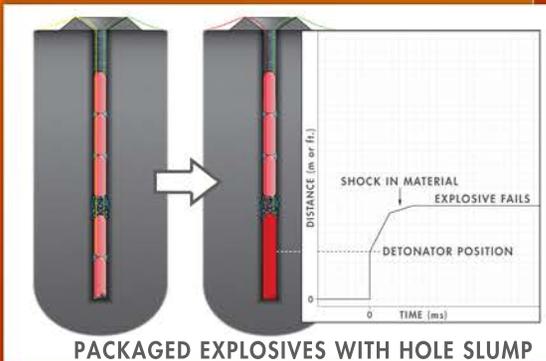
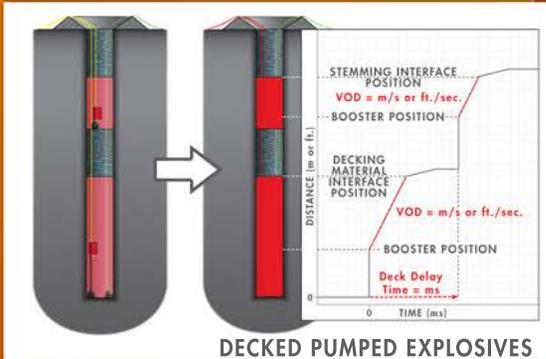
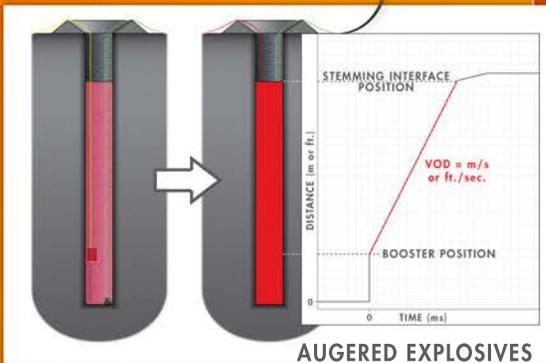
### EXPLOSIVES MANUFACTURERS

Your customers depend on you for their explosives. At explosives plants, the HandiTrap II™ VOD Recorder is used as part of the quality control process to test the VOD performance of samples of explosives including cartridges, boosters, detonating cord, bulk explosives of all types, and military explosives. At the customer's blast site, technicians providing in-hole delivery of explosives use the HandiTrap II™ VOD Recorder to proactively document the VOD performance of the explosives being sold to the customer.

- Affordable, easy to use and extremely portable.
- 1 MHz recording rate, 12 bit resolution.
- Outstanding operational temperature range.
- Long operational battery life.
- Unmatched durability - rain, snow, and dust proof.
- HandiTrap II™ Advanced Analytical Software for Windows™.
- MREL's 1 year Comprehensive Parts & Labour Warranty.

MREL Group of Companies Limited  
5-779 Sir John A MacDonald Blvd. / Kingston, Ontario K7L 1H3 / Canada  
Tel: +1.613.545.0466  
www.mrel.com

## HANDITRAP II™ CONNECTIONS:



## TEST EXPLOSIVES IN ONE BLASTHOLE

Tape the shorted end of the 30 m (100 ft.) long spool of VOD PROBECABLE-HT to a rock and lower it to the bottom of the hole. Connect the other end of VOD PROBECABLE-HT to coaxial cable by twisting the bare wires and insulating with electrical tape. Load the blasthole with explosives as per normal procedure. Run coaxial cable up to 101 m (333 ft.) and plug into the BNC connector on the HandiTrap II™ VOD Recorder.

Turn ON the HandiTrap II™ VOD Recorder, press the TEST button to test the VOD circuit, and press the START button. Retreat from the blasting area and fire the blast at any time. The HandiTrap II™ VOD Recorder will record the explosives performance in the blasthole automatically without operator assistance.

After the blast, download the VOD data from the HandiTrap II™ VOD Recorder to a PC and view the graph. Point and click to zoom in on the graph and point and click on the graph to calculate and display the VODs anywhere along the explosives column.

Contact MREL to request a link to download a presentation showing a variety of typical VOD results from augered, pumped, cartridge, and decked explosives in dry and wet blastholes.

## TEST ONE SAMPLE OF EXPLOSIVES

The procedure is essentially the same as for a blasthole test, except that a 0.9 m (3 ft.) long VOD PROBEROD is inserted into the explosives sample or taped to the outside of the sample instead of loading VOD PROBECABLE-HT into a blasthole. Cable connections, HandiTrap II™ VOD Recorder operation, downloading data, and analysis procedures are the same as in a blasthole test.

Contact MREL to request a link to download a VOD graph of two cartridges of explosives taped together end-to-end and the position of the tape can be seen on the VOD graph.

## HANDITRAP II™ VOD RECORDER SPECIFICATIONS:

**Number of Channels:** 1 VOD channel.

**Resolution:** 12 bits, 1 part in 4,096.

**Recording Rate:** 1 MHz.

**Recording Time:** 131 milliseconds (131,072 data points).

**Pre-Trigger Time:** 32.8 milliseconds (32,768 data points).

**Trigger Mode:** Can be triggered automatically on the VOD signal from the blast. Can be triggered externally from a break-wire, which also allows multiple HandiTrap II™ VOD Recorders to be time-synchronized for determining delay times between holes up to 95 ms.

**Power:** Internal rechargeable NiCad batteries which provide 8 hours of active operation on a full charge. Charger provided.

**Size and Weight:** 12 x 6.5 x 4 cm (4.7 x 2.6 x 1.6 in.) 0.3 kg (0.7 lbs.).

**Environmental:** Fully operational at -40 to +60 °C (-40 to +140 °F).

Snow, rain, dust and sand proof. Drop proof from a height of at least 1 m (3 ft.).

**PC Connection:** At any time after recording, the operator can connect the HandiTrap II™ to a computer's USB port or serial (COM) port to download data.

**Software:** The HandiTrap II™ Advanced Analytical Software operates under Windows XP™ and later.

**System Components Provided:** HandiTrap II™ VOD Recorder, 120 or 230 VAC Battery Charger, Communications Cable with USB Adapter, External Trigger Adapter, padded carry case, colour Operations Manual, HandiTrap II™ Advanced Analytical Software for Windows XP™ and later.

**VOD Excitation and Safety:** The HandiTrap II™ VOD Recorder is physically unable to output as much as 50 mA of current to a VOD PROBEROD or PROBECABLE-HT.

**Warranty:** MREL's 1 year Comprehensive Parts and Labour Warranty.

**Technical Support:** MREL's Unlimited Technical Support Program by secure customer portal, email, and telephone.

## ACCESSORIES:

**VOD PROBEROD:** 0.9 m (3 ft.) long calibrated resistance probe for use in an explosive sample with the HandiTrap II™ VOD Recorder.

**VOD PROBECABLE-HT:** 30 m (100 ft.) long calibrated resistance cable for use in blastholes with the HandiTrap II™ VOD Recorder.

**COAXIAL CABLE REEL:** 101 m (333 ft.) coaxial cable with plastic hand-held reel to carry the VOD signal from the VOD PROBE to the HandiTrap II™ VOD Recorder.

MREL is committed to product innovation; accordingly product may undergo specification improvements without notice.

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