MICROTRAP +™
VOD RECORDER

MREL
GROUP OF COMPANIES

The world's most popular, affordable, and high-performance VOD recorder, redefined for the modern blast engineer.

MicroTrap +™
VOD RECORDER

Velocity of Detonation (VOD) is the most critical indicator of an explosive's performance. Without measuring VOD, it is impossible to confirm whether an explosive is meeting its specifications or to ensure consistent quality in its performance.
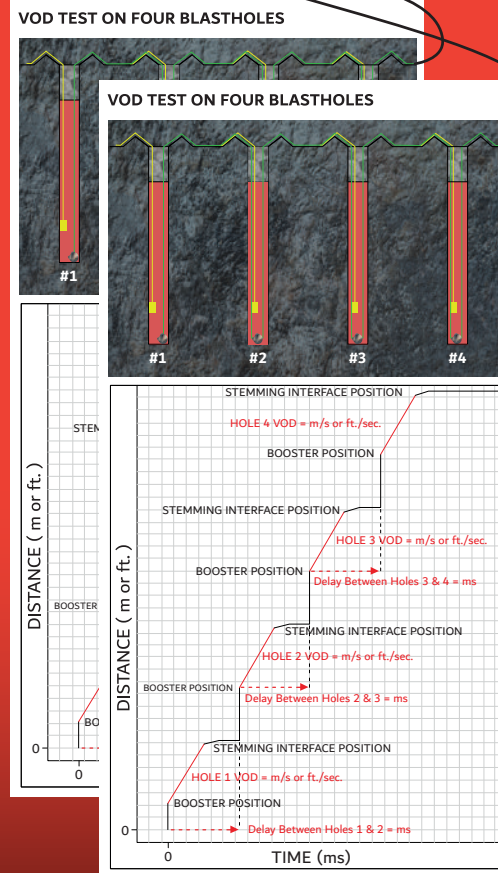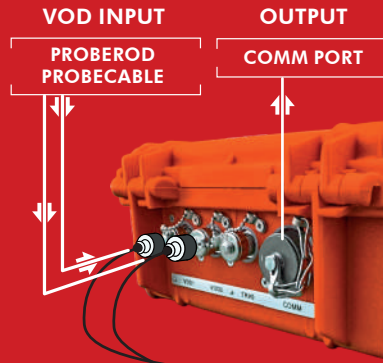
APPLICATIONS

■ **EXPLOSIVES CONSUMERS**

You invest in explosives to deliver the energy your blasts require under specific conditions. The MicroTrap +™ VOD Recorder allows mines and quarries to perform spot checks on explosive performance, comparing actual in-hole VOD results with the manufacturer's specified VOD.

■ **EXPLOSIVES MANUFACTURERS**

The MicroTrap +™ VOD Recorder is a key quality control tool, measuring VOD performance in cartridges, boosters, cords, bulk explosives, and military products. At blast sites, it verifies and documents performance, ensuring reliability and customer trust.

MICROTRAP +™ CONNECTIONS:

VOD INPUT
PROBEROD
PROBECABLE

OUTPUT
COMM PORT

VOD TEST ON FOUR BLASTHOLES

#1

VOD TEST ON FOUR BLASTHOLES

#1   #2   #3   #4

STEMMING INTERFACE POSITION
HOLE 4 VOD = m/s or ft./sec.
BOOSTER POSITION
STEMMING INTERFACE POSITION
HOLE 3 VOD = m/s or ft./sec.
BOOSTER POSITION
Delay Between Holes 3 & 4 = ms
STEMMING INTERFACE POSITION
HOLE 2 VOD = m/s or ft./sec.
BOOSTER POSITION
Delay Between Holes 2 & 3 = ms
STEMMING INTERFACE POSITION
HOLE 1 VOD = m/s or ft./sec.
BOOSTER POSITION
Delay Between Holes 1 & 2 = ms

DISTANCE (m or ft.)
TIME (ms)
0
0

ACCESSORIES

The MicroTrap +™ VOD Recorder is designed to work seamlessly with a range of MREL VOD sensors and accessories:

VOD PROBEROD:

Calibrated resistance probes for accurate VOD measurements in explosive samples.

VOD PROBECABLE:

Calibrated resistance cables providing reliable VOD measurement in blastholes.

Coaxial Cable Reels:

Available in various lengths to transmit signals from the VOD Sensors to the recorder with precision and reliability.

Contact:

📞 +1.613.545.0466

✉ sales@mrel.com

📷 in f 𝕏 /mrel

Visit our website:

🌐 www.mrel.com

■ TEST EXPLOSIVES IN ONE OR MORE BLASTHOLES

To evaluate explosive performance, insert a continuous length of VOD PROBECABLE into each blasthole to be tested. You may choose to measure velocity of detonation (VOD) using either one or two channels, depending on your test requirements. The MicroTrap +™ VOD Recorder supports recording up to 900 meters (3,000 feet) of VOD PROBECABLE per channel, per blast with multiple holes.

Load the blastholes with explosives as per standard procedures. Connect the VOD PROBECABLE to the MicroTrap +™ VOD Recorder, power it on, press NEXT TEST to verify the circuit, then START to begin recording. Leave the blast area and initiate the blast; the recorder will automatically capture VOD and delay times. After the blast, download the data to a PC and use the software to visualize the detonation graph, zoom, inspect segments, and calculate VOD values and delays.

■ TEST ONE SAMPLE OF EXPLOSIVES

The procedure for testing a single or two explosives sample closely follows that of a standard blasthole test, with the primary difference being the use of a 0.9 m (3 ft.) VOD PROBEROD. The PROBEROD should be either inserted directly into the explosive sample or securely taped to its exterior, depending on the test setup and explosive type. Custom VOD PROBEROD lenghts and material types are available upon request.

All cable connections, MicroTrap +™ VOD Recorder operations, data download, and analysis procedures are identical to those used in a blasthole tests. The system also supports simultaneous testing of two explosive samples, using the same dual-channel capability as with multiple blasthole configurations.

■ SOLVING INDUSTRY CHALLENGES

Mining operators, quarries, and explosive manufacturers demand accuracy and reliability where single-channel recorders fall short. The MicroTrap +™ VOD Recorder offers:

✔ Dual-channel flexibility when blastholes are distant or staggered.

✔ High sampling rate and more memory for critical measurements.

✔ A simple, user-friendly interface for fast setup and review.

✔ Seamless support and training for confident operation.

■ TECHNICAL DATA SHEET

Number of Channels: 2 VOD channels.

Resolution: 14 bits, 1 part in 16,384.

Recording Rates: Selectable from 500 kHz to 2 MHz.

Rates: 500 kHz, 1 MHz, 2 MHz.

Non-Volatile Memory: 50 GB.

Recording Time (@ 2 MHz Recording Rate): Standard = 5 seconds. Adjustable from 128 ms to 5 seconds for file size control.

Trigger Mode: Trigger internally on the signal from the event (70 to 95%) or trigger externally from a trigger wire.

Multiple Event Storage: 32 tests can be stored in the internal memory.

Power: AC mains or internal rechargeable NiMH battery which provides 12 hours of active operation on a full charge. Charger provided.

Size and Weight: 21 x 17 x 9 cm (8.3 x 6.7 x 3.5 in.) 2 kg (4.4 lbs.).

Environmental: Fully operational at -20 to +60 °C (-20 to +140 °F). Snow, rain, dust and sand proof. Drop proof from a height of at least 1 m (3 ft.). IP68

PC Connection: At any time after recording, the operator can connect the MicroTrap +™ VOD Recorder to a computer's USB port.

Software: The MicroTrap +™ Advanced Analytical Software operates under Windows 10™ and 11™.

System Components Provided: MicroTrap +™ VOD Recorder, 120 or 230 VAC Battery Charger, USB-C Cable, padded carry case, colour Operations Manual, MicroTrap +™ VOD Recorder Advanced Analytical Software for Windows 10™ and later.

VOD Excitation and Safety: The MicroTrap +™ VOD Recorder is physically unable to output more than 50 mA of current to a VOD PROBEROD or VOD PROBECABLE.

Warranty: MREL's 1 years Comprehensive Parts and Labour Warranty.

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