

eDev™ Electronic Tunnelling System



Description

The eDev™ Electronic Tunnelling System is specifically designed for tunnelling, providing the accuracy and flexibility of electronic timing at a reasonable price with rapid and easy operations at the tunnel face. The system consists of eDev™ programmable electronic detonators and eDev™ hardware to identify, test, program and fire the detonators (Scanner, Network Tester and Blast Box). The system is supported by SHOTPlus®-T blast design software to design tunnel rounds and download the timing design for implementation at the face.

System Features

- Simple and straightforward to operate.
- Rugged, field proven technology and equipment.
- System capacity of 500 detonators per blast.
- A range of useful lengths from 2 m to 8 m.
- Uses a barcode Scanner to passively and safely read detonator ID numbers on the blast pattern.
- A dedicated Blast Box 610 programs, arms and fires the detonators with full 2-way communications.
- High strength detonators for use with boosters or cap-sensitive cartridges.

Key Benefits

- The new "time by numbers" feature allows blasters to operate in a familiar way but with the great convenience of all detonators being the same.
- eDev™ offers the users significant reduction in inventory logistics and costs.
- Easy to learn and quick and easy to use.
- Electronic timing can drastically reduce vibration by ensuring single hole firing.
- Advance per round can be improved due to (a) better accuracy (b) a wider choice of delay schemes, and (c) guaranteed in-sequence firing.
- Depending on ground conditions reduced over break can limit the amount of material to be hauled and / or limit the amount of concrete lining needed.

Recommendations for Use

- Not for use in mines with a risk of coal dust or methane explosion.
- eDev™ Detonators can only be tested, programmed and fired using dedicated eDev™ equipment. Do not use any other programming or blasting equipment.
- eDev™ Detonators are explosive devices and should be handled with care.
- The eDev™ Scanner and eDev™ Blast Box are designed for tough environments, but submersion in water and excessive impact must be avoided.



Technical Properties

Lead Wire (mm)	0.6 Steel
Form, Insulation	Duplex, polypropylene insulation
Wire Tensile Strength (N)	200
Base Charge	PETN
Primary Charge	Lead Azide
Delay Time Range	Minimum = 0 ms Maximum = 10 000 ms

System Specification

eDev™ Detonators	Fully programmable from 0 to 10.000 ms in 1ms increments. Precision (standard deviation) of 0.1 % of programmed delay.
eDev™ Scanner 120	Non-volatile memory for det ID's and delay times. Interfaces with SHOTPlus®-Tunnel software.
eDev™ Network Tester	Inherently safe hand-held testing device. Tests for continuity, short circuits, and leakage.
eDev™ Blast Box 610	Capacity to fire the biggest tunnel rounds. 2-way communication with eDev™ Detonators.
Harness wire	Harness wire supplied by Orica is recommended.

eDev™ Electronic Tunnelling System

Product Classification

Authorised Name: *eDev™ Detonator*
 Proper Shipping Name: Detonators, electric
 UN No.: 0030 0456
 Classification: 1.1B 1.4S
 EC Type Certificate: ENB/D/162/11

Authorised Name: *eDev™ Network Tester*
 Approval Number: -

Authorised Name: *eDev™ Blast Box 610*
 Approval Number: -

Storage and Handling

- *eDev™ Detonators* should be stored in a licensed detonator magazine or underground storage box.
- Transport temperature range -40 °C to +65 °C.
- Storage temperature range -20 °C to +50 °C.
- Operating temperature range -20 °C to +65 °C.
- Stacks of cases should be no more than 2 m high.
- *eDev™* control equipment should be kept in an environment that is not subject to excessive temperatures or humidity.
- *eDev™* detonators have a storage life of 3 years in stable, temperate storage conditions.

Disposal

Disposal of explosive materials can be hazardous. Methods for safe disposal of explosives may vary depending on the user's situation. Please contact a local Orica representative for information on safe practices.

Packaging Details

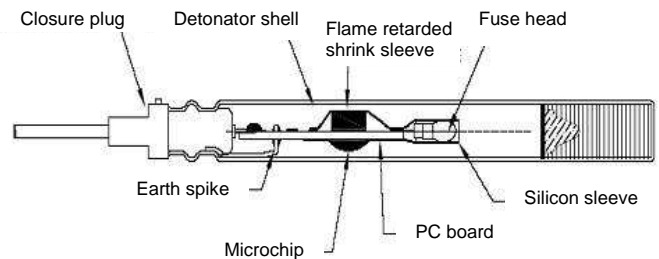
eDev™ Detonators are classified 1.1B or 1.4S, which may be air freighted. All detonator wires are wound in a figure eight configuration.

eDev™ Detonators packed as 1.4S have a plaster and cardboard attenuator over the explosive end to prevent mass detonation:

Lead Length (m)	1.1B		1.4S	
	Units per Case	Weight per Case (kg)	Units per Case	Weight per Case (kg)
2	180	6.8	-	-
3	150	6.9	-	-
4	140	7.5	-	-
5	130	7.9	-	-
6	120	8.2	70	10.0
7	110	-	-	-
8	100	8.4	60	9.6

Safety

The *eDev™* System is designed with the principal of Inherent Safety. Barcode scanning enables each detonator's unique identity to be attained without any electrical current being introduced into the detonator. The hand-held *Network Tester* is also inherently safe and does not have enough current or enough voltage to fire the fusehead even under fault conditions.



The only time there is sufficient current or voltage applied to the blast circuit to fire the detonators is from the *Blast Box* at a point of safety with the blast area cleared.

eDev™ Detonators have protection structures in the electronic circuitry, which give a high level of resistance to stray currents, over voltage, static electricity and electromagnetic radiation.

Care should be taken as with all detonators not to cause initiation by intense impact, friction or heat.

Training

This Technical Data Sheet is for information only. The *eDev™* System should only be used by personnel who have been properly trained to use this system.

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