



DeltaLancer™ - Gas Gun (GG)

DeltaLancer is an advanced modular avalanche control system designed by Delta K Explosive Engineering Systems Ltd. based in the UK, to meet the varied requirements of worldwide avalanche mitigation programmes. The modular design enables common components to be interfaced by adaptors enabling the system to support Gas Gun (GG), Hand Charge (HC) and Helibombing (HB) operations. In addition to the base-line Blast Charge option, the explosive Forebody component can also embody a patented Shaped Charge technology offering a unique level of directionality to enhance release performance. The DeltaLancer system also offers a patented shock tube Tether and Fire Control System, as an alternative to Safety Fuze for hand charge operations. The Gas Gun projectile is designed to be compatible with a wide range of compressed gas launcher systems based on 82.6mm (3.25") calibre barrels.

The DeltaLancer™ Gas Gun Projectile Variant

Forebody Assembly:

The Forebody assembly is a self contained booster charge common to optional Gas Gun, Hand Charge or Helibombing configurations containing up to 1.2kg of cast explosive compositions. The current EX No covers 1kg of Pentolite, Ex No application for 1.2kg of RDX based compositions is pending. The Forebody has a removable multi-role nose cone moulding offering additional fuze functions.

Fin Assembly:

The Fin Assembly carries a sensitive high speed impact fuze and turbine activated Safe Arming System and is supplied separately as an "inert" assembly, without the Primer Cap Housing (PCH) or detonator. The PCH is loaded with a Shot Shell Primer and shipped separately with the Forebody. The PCH has been designed for use with a plain pyrotechnic detonator cap or an instant NPED type shock tube detonator.



Delta K

Technical Data Sheet (NA)

Explosive Engineering Systems Ltd.

(Delta-k.co.uk)

Key Features Include:

- Nose-cone, Body and Fin exterior features designed to collectively minimise adverse spin characteristics, aerodynamic drag, cross wind effects and minimise pitch and yaw at impact.
- Forebody is sealed by a forward self expanding/adjusting “Obturating Ring”; and not base pushed.
- Forebody has a wide forward mouth to facilitate various HE loading options and can accommodate a proprietary shaped charge liner optimised for effect against snow and ice.
- Quick-lock Fin/Forebody joint mechanism to facilitate rapid assembly, local one piece transit and easy detonator insertion/ removal at the firing point.
- Rapid fuze function to optimise performance against powder, low density snow pack and to minimise crush failure duds arising from direct rock impacts.
- Plastic arming turbine to negate risk of in-bore release of Slip-pin type arming systems and to “regulate” the post muzzle arming distance to 14 to 16 metres, which is outside the Forebody’s lethal blast radius
- Turbine “transit strap” locks turbine during shipping, storage and local transit.
- Separate PCH in sealed trays improves long term storage, avoids entire fin assembly assignment as “hazardous materials”, thus maximising magazine storage space.

Properties:

DeltaLancer (GG) – Forebody Assembly	
Calibre (parallel section to “Land” peaks)	82.6mm (3.25”)
Length (Nacelle and Forebody Assy)	345mm
Weight Loaded (Pentolite)	1.185kg - (1.0kg NEW)
Max practicable HE Load (Pentolite)	1.25kg - (NEW)
Pentolite Filling Density	1.65g/cc
Pentolite velocity of detonation (open cast)	7600m/s (25,000ft/s)
Cap Well depth	48mm
DeltaLancer (GG) – Fin assembly	
Calibre (across Fin vanes)	81.8mm (3.22”)
Length (Fin Assy. + Transit Strap)	194mm
Weight (With Primer Cap Housing (PCH))	120g
Initiator	209 Shot Shell Primer
Detonator	Plain Pyrotechnic Cap (Blasting Cap)
Detonator Option - PCH accepts shock tube	Instant Shock Tube NPED type detonator
Joint Method	Tapeless pegged splice joint
Assembly launch weight (1.0kg NEW)	1.319kg



Packaging:

Inert Forebody Components Assembly	
Body & Joint Ferrule	Qty 140 - Cardboard Carton - lwh 60x40x50 – Gross Wt 26.4kg
Nacelles (Nose Cone - Qty 700)	Qty 700 - Cardboard Carton - lwh 60x40x50 – Gross Wt 20.85kg
Nacelles (Nose Cone – Qty 370)	Qty 370 - Cardboard Carton - lwh 40x40x40 – Gross Wt 11.0kg

Inert Fin Assembly Components	
Fin Assembly (without PCHs)	Qty 84 - Cardboard Carton – lwh (cm) 40x40x40 – Gross Wt 11.16kg
Primer Cap Housing moulding (WO Primer)	Qty 1000 - Cardboard Carton – lwh (cm) 30x30x30 – Gross Wt 4.2kg

Explosive Loaded Forebody	
Qty 9 per carton	Qty 9 - Cardboard Carton – lwh (cm) 26.7x26.7x37.5 – Gross Wt 11.6kg

Loaded Primer Cap Housing	
4 layers sealed individually @ 42/layer	Max Qty 168 - Cardboard Carton – lwh (cm) 29.2x29.2x19.1 – Gross Wt 2.2kg

Storage and Handling:

Loaded Forebody Assembly	
Authorised Name:	DeltaLancer, 1kg Forebody Assembly
Proper Shipping Name:	Boosters, Without Detonator
Classification:	1.1D
UN No:	UN 0042
Packing Group	N/A
EX Number	EX-2005010015

Loaded Primer Cap Housing	
Authorised Name:	Assembly, Primer Cap Housing
Proper Shipping Name:	Primers, Cap Type
Classification:	1.4S
UN No:	UN 0044
Packing Group	N/A
EX Number	EX-2016090896



The DeltaLancer system is predominantly fabricated from plastics materials and no special storage conditions are required. In general components, assemblies and sub-assemblies should be stored under moderate temperatures and dry conditions.

Unfired ammunition, that has become wet, should be dried thoroughly and used in the next available operation. All associated energetic materials should be stored in accordance with all local state and federal regulations and IAW manufacturer's instructions.

All explosive components should be stored in an approved magazine under dry and moderate temperature conditions.

Assembly and Preparation for Firing:

General handling and deployment of explosives and explosive systems should be conducted in accordance with all local state and federal regulations. Preparation for firing of the DeltaLancer GG system should be conducted in accordance with DeltaLancer Operating Instructions DK04/17.

Support with training in handling will be provided by Delta K EES Ltd. and/or ACL.

Shelf Life:

Storage shelf life for Loaded Forebodies is 18 months from date of delivery.

Storage shelf life for Loaded PCHs in **sealed trays** is 3 years from date of delivery.

Storage shelf life for Loaded PCHs in **opened trays** is 18 months from date of delivery; provided an open tray is **sealed** into a polyethylene bag along with a desiccant pouch.

Storage shelf life for inert plastic DeltaLancer components and assemblies is 2 years.

Disposal:

DeltaLancer components, assemblies and sub-assemblies are "**Controlled**" exports regulated by the United Kingdom's Export Control Organisation. Disposal of Loaded Forebody assemblies and loaded PCHs must be conducted under the direct control of the federally licensed recipients of the product and in accordance with local state and federal procedures. All inert components, assemblies and sub-assemblies that are surplus to requirement must be returned to the US Distributor (ACL). Under no circumstances are complete DeltaLancer munitions, components or sub-assemblies authorised for transfer to 3rd parties or export outside the US.

Disclaimer:

Information contained in this TDS is based on Delta K's extensive experience in the field of explosive engineering and terminal effects together with the support of over 4000 successful research and development firings carried out in the UK, US and Canada. Uses and conditions of use are not within the manufacturer's control and users are required to determine the suitability of this product for their intended application. **At all times the launcher operator must fire from a suitably protected position and wear appropriate eye and ear protection. Suitable protection specifications are available free from Delta K EES Ltd.**



Delta K

Technical Data Sheet (NA)

Explosive Engineering Systems Ltd.

(Delta-k.co.uk)

Neither Delta K EES Ltd. nor their local distributor makes any warranties of any kind expressed or implied, statutory or otherwise, except that the product described herein shall conform to the Specifications of Delta K EES Ltd. Delta K EES Ltd. and their NA distributor ACL disclaim all other warranties concerning merchantability or fitness for a particular purpose. Delta K EES Ltd. and their local distributor shall not be liable for indirect, special, consequential, or incidental damages without limitation, damages for lost or anticipated profits.

Emergency Contact Numbers:

Avalanche Control Logistics (ACL), USA:

Daniel Dobrowolski

Cell: 434 960-0558

Fax: 434 481-3158

Delta K EES Ltd. (UK):

Kevin Powell

Office: +44 (0)1732 779018

Lost, stolen or misplaced DeltaLancer components equipped with energetic materials must be reported to the local US BATF&E immediately upon discovery, with subsequent notification to Delta K EES Ltd. Lost, stolen or misplaced inert components, assemblies or sub-assemblies must be reported to Delta K EES Ltd. or ACL LLC in a timely manner.

