

**PROCUREMENT SPECIFICATION
DELTA MODEL IP500(M) TRANSPORTABLE CRASH CERTIFIED
BARRIER SYSTEM**

SYNOPSIS

This Procurement Specification defines a CRASH CERTIFIED - TRANSPORTABLE BARRIER SYSTEM - DELTA Model IP500(M). The system is modular in construction and configured for expedited deployment and, as needed, retrieval and relocation.

This Barrier System can be sited on existing concrete or asphalt roadways or verges, level compacted soils or some combination of these. No excavation or sub-surface preparation is required.

A Drop Arm Crash Beam is mounted on multiple Inertial Pods located on either side of the roadway to be protected. The Pods consist of a permanent steel housing filled with locally obtained concrete. After positioning they are interlocked with quick lock - unlock pins. Each Pod has both lifting eyes and fork-lift slots for moving and positioning.

The Drop Arm Crash Beam is raised and lowered into position utilizing a hydraulic cylinder driven by a DELTA Manual Operating System (the weight of the drop arm being balanced by a Hydraulic-pneumatic balance system; U.S. Patent # 5,560,733 dated 10/1/96). No out side power source is required.

SPECIFICATION

1.0 PATENT LICENSE.

The CRASH CERTIFIED DROP ARM BEAM BARRIER SYSTEM shall be fully licensed for manufacture under U.S. Patent Number 4,844,653 dated July 4, 1989, U. S. Patent # 5,560,733 and others pending.

2.0 SYSTEM CONFIGURATION

- 2.1 Barrier Construction. Barrier shall be an above grade, transportable assembly containing a rigid crash beam hinged at one end, raised and lowered by means of a Hydraulic Power Unit. When in the down locked position the beam shall present a formidable obstacle to approaching vehicles. Upon vehicle impact, the force shall first be absorbed by the beam assembly and then transmitted to the Initial Pods.
- 2.2 Barrier Height. Height of the Barrier shall nominally be 34 inches (0,86 M) as measured from the roadway surface to the center line of the crash beam.
- 2.3 Barrier Clear Opening. The standard clear opening shall be 144 inches (3,66 M) as measured inside to inside of the Inertial Pods. (Barrier can be specified with a clear opening from 120 inches [3,05 M] to 240 inches [6.1 M]).*

- 2.4 Finish. All external surfaces of the Inertial Pods and the Drop Arm support mechanism shall have a rust inhibiting painted surface. The insides of the Inertial Pods shall be asphalt emulsion coated for corrosion protection. The drop arm beam shall be furnished with red reflective tape sufficient to provide alternate 20 inch (0,5 M) bands on the Barrier tube and Barrier Yoke.
- 2.5 Configuration Drawing. Delta Drawing 90030

3.0 OPERATION

- 3.1 The manual operating system shall be charged in the field to lift the beam to 70 degrees above horizontal.
- 3.2 If it becomes necessary to raise the gate above 70 degrees to allow an unusually tall vehicle through the operating system shall be able to be temporarily hand pumped to raise the gate to a maximum of 85 degrees.
- 3.3 The Barrier system shall be equipped with a descent control. It will prevent the rapid descent of the crash beam in the event the hydraulic pressure line is ruptured or sabotaged.

4.0 BEAM LOCKING METHOD. The following Barrier Beam locking device(s) may be selected:

- 4.1 Manual Locking Pin. The Barrier shall be provided with a locking pin with padlock locking point to secure the Barrier in the guard position. Padlock to be furnished by others.
- 4.2 *Maglock. The Barrier shall be provided with an electrically operated maglock to secure the Barrier in the down position. The maglock shall be synchronized by the control circuit to lock and unlock the Barrier at the proper operating points. In the event of a power outage, it shall be possible to manually release the Barrier.

5.0 PERFORMANCE

- 5.1 Experience. Barrier and auxiliary equipment shall be of a proven design. Manufacturer shall have 10 years documented experience with similar vehicle Barriers.
- 5.2 Qualification Tests. Barrier design shall have been successfully tested in full scale configuration in accordance with the Department of State Specification SD-STD-02.01 dated April, 1985 - with a certified rating of K4/L2***.

*** Full scale crash test in accordance Department of State Specification SD-STD-02.01, dated April 1985, was conducted on June 11, 1999 at KARCO Engineering, Adelanto, California.

6.0 ENVIRONMENTAL DATA (Please supply the following):

Barricade shall operate satisfactorily under the following environmental conditions:

6.1 Extremes in temperature

Yearly maximum drybulb temp _____ f/c

Yearly minimum drybulb temp _____ f/c

6.2 Rainfall

Yearly average _____ inches

Maximum expected hourly rate _____ inches/hour

6.3 Snowfall

Maximum expected hourly rate _____ inches/hour

Roadway will be (mechanically/manually/chemically) cleared _____.

7.0 QUALITY ASSURANCE PROVISIONS

7.1 Testing. Upon completion, the Barrier system will be fully tested in the manufacturer's shop. The following checks shall be made:

7.1.1 Identification. A nameplate with manufacturer's name, model number, serial number and year built shall be located at the hinged end structure.

7.1.2 Workmanship. The Barrier shall have a neat and workmanlike appearance.

7.1.3 Dimensions. Principle dimensions shall be checked against drawings and ordering information.

7.1.4 Finish. Coatings shall be checked against ordering information and shall be workmanlike in appearance.

8.0 PREPARATION FOR SHIPMENT

8.1 The Barrier system shall be crated or mounted on skids as necessary to prevent damage from handling. The shipping container(s) shall be of sufficient structural integrity to enable the assembly to be lifted and transported by overhead crane or forklift without failure.

9.0 DISCLAIMER

Please note - careful consideration must be devoted to the selection, placement and design of a Drop Arm Barrier System installation. Just as in the case of any Barricade system, perimeter security device or security gate that blocks a roadway or drive, care must be taken to ensure that approaching vehicles as well as pedestrians are fully aware of the Barriers and their operation. Proper illumination, clearly worded warning signs, auxiliary devices such as semaphore gates, stop-go signal lights, audible warning devices, speed bumps, flashing lights, beacons, etc. should be considered. Delta has information available on many such auxiliary safety equipment not specifically listed herein. It is strongly recommended that an architect and or a traffic and or safety engineer be consulted prior to installation of a Barricade system. Delta will offer all possible assistance in designing the operating equipment, controls and the overall system but we are not qualified nor do we purport to offer either traffic or safety engineering information.

12.0 PROCUREMENT SOURCE

The **Model IP500(M)** Transportable Drop Arm Barrier System shall be purchased from:

DELTA SCIENTIFIC CORPORATION

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Palmdale, California, 93551, USA
Phone (661)575-1100
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email info@deltascientific.com
www.deltascientific.com

* Optional Feature

** Customer Specified