

**PROCUREMENT SPECIFICATION  
DELTA MODEL DSC900 TRANSPORTABLE CRASH CERTIFIED  
RISING PLATE BARRIER SYSTEM**

**SYNOPSIS.** This Procurement Specification defines a CRASH CERTIFIED - TRANSPORTABLE BARRIER SYSTEM - DELTA Model DSC 900. 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 Phalanx\*\*\* Type Rising Plate Barrier is mounted in multiple Inertial Pods located on either side of the roadway to be protected. The Pods consist of a permanent steel housing back-filled with local materials (concrete, sand, gravel or other dense material) either in situ or remotely. After positioning they are interlocked with quick lock- unlock pins. Each Pod has fork-lift slots for moving and positioning.

The Plate Barrier is raised and lowered into position utilizing a hydraulic cylinder driven by a DELTA Hydraulic Power Unit or manually operated, with the weight of the Plate Barrier being balanced by a Hydraulic-pneumatic balance system (U.S. Patent # 5,560,733 dated 10/1/96).\* The Hydraulic Pumping Unit can be sized to provide pass-through rates suitable for most inspection and identification station requirements.

Operating modes include, full automatic, remote- hard line, remote-radio, card reader, key switch or by local guard push button station...etc. - or by combinations thereof.

**SPECIFICATION**

**1.0 PATENT LICENSE.**

The TRANSPORTABLE CRASH CERTIFIED RISING PLATE 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 Rising Plate Barrier, raised and lowered by means of a Hydraulic Power Unit. When in the raised position the Plate Barrier shall present a formidable obstacle to approaching vehicles. Upon vehicle impact, the force shall first be absorbed by the plate assembly and then transmitted to the Inertial Pods.

\* Optional Feature

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2.2 Barrier Height. Height of the Barrier shall nominally be 22 inches (0,56 M) with the Blade Barrier in the full up (guard) position.

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 180 inches [4,57 M]).\*

2.4 Finish. All external surfaces of the Inertial Pods and the Rising Plate Barrier shall have rust inhibiting painted surface. The insides of the Inertial Pods shall be asphalt emulsion coated for corrosion protection. The Rising Plate shall be furnished with alternate yellow / white stripes on both upper and lower surfaces.

2.5 Configuration Drawing. Delta Drawing 8488

2.6

### **3.0 OPERATION**

3.1 Hydraulic Operation. The Standard Barrier shall be capable of being raised or lowered in 3 seconds.

3.1.2 Adjusting means shall be incorporated in the HPU to allow field adjustment of operating speed. The range shall be from 3 to 15 seconds for either open or close operation.

3.1.3 Barrier direction shall be instantly reversible at any point in its cycle from the control station(s).

### **4.0 PERFORMANCE**

4.1 Experience. Barrier and auxiliary equipment shall be of a proven design. Manufacturer shall have 10 years documented experience with similar vehicle Barriers.

4.2 Certifications. Barrier shall have a Certified rating of K4 / L2. The Plate Barrier System shall have been shown by certified dynamic non linear analysis to be capable of stopping and immobilizing a non-armored or non tracked vehicles weighing 15,000 pounds (gvw) traveling at 40 mph (64.3 kph) within 20 ft. (6.1m).

### **5.0 HYDRAULIC POWER UNIT**

5.1 Hydraulic Circuit. Unit shall consist of an electrically driven hydraulic pump which shall be connected to electrically actuated valves installed on a manifold to allow oil to be driven to raise or lower the Barrier. The hydraulic circuit shall include all necessary control logic, interconnect lines and valves.

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- 5.2 Main Power. The electric motor driving the hydraulic pump shall be fed from (site voltage, phase and frequency, i.e. 230/3/60).\*\* Motor shall be sufficiently sized for the expected number of Barrier operations.
- 5.2.1 Frequency of Operation. Barrier shall be capable of 120 complete up/down cycles per hour.
- 5.3 Power Off Operation. The Hydraulic Power Unit shall be capable of operating the Barrier System for \_\_\_\_\_cycles in the event of a power interruption.
- 5.4 The Hydraulic Power Unit shall be provided with a high output hand pump which shall be sized to operate the Barrier System in those cases where the reserve pressurized hydraulic fluid in the system accumulators (as defined in 5.3) has been expended.
- 6.0 CONTROL AND LOGIC CIRCUITS** - The following control circuits and stations shall be furnished:
- 6.1. Control Circuit. A control circuit shall be provided to interface between all Barrier control stations and the hydraulic power unit. This circuit shall contain all PLCs, relays, timers and other devices necessary for the Barrier operation.
- 6.1.1 Voltage. The control circuit shall operate from a (120 volt, 50/60 Hz supply 240 volt, 50/60 Hz or 24 VDC \*\*). An internally mounted transformer shall reduce this to 24 VAC (24 VDC) for all external control stations.
- 6.1.2 Power Consumption. The control circuit power consumption shall not exceed 250 watts basic load, plus 200 watts for each Barrier in the system.
- 6.1.3 Construction. The control circuit shall be mounted in a general purpose enclosure. All device interconnect lines shall be run to terminal strips.
- 6.2 Standard Remote Control Station. A standard remote control station shall be supplied to control the Barrier operation. This panel shall have a key lockable main switch. Buttons to raise or lower the barrier shall be provided.
- 6.2.1 Construction. The control station shall be mounted in a weather resistant, minimum rating NEMA 4 (IEC IP65), electrical enclosure. All connection points shall be clearly identified and coded to the applicable Delta drawing.
- 6.2.2 Voltage. The remote control panel shall operate on 24 volts.

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- 6.2.3 \*Panel shall be equipped with a timer circuit to notify the operator via an annunciator "squealer" that the Barrier has been left in the up position for too long a time period. The time interval shall be customer selectable.
- 6.3 Position Indicating Lights. The Barrier shall be supplied with a limit switch to actuate when the Barrier is securely down. The limit switch shall operate panel lights to indicate the Barrier secure and not secure condition.

(For Full Manual Systems substitute section 7.0 for sections 3.0, 4.0, 5.0 and 6.0 )

## **7.0 MANUAL OPERATION.**

- 7.1 The Rising Plate Barrier System shall have a hydraulic-pneumatic balance system that will counter-balance the weight of the Plate Barrier to facilitate the manual opening and closing of the Barrier.
- 7.2 Barrier Latches/ Locks. Provisions for holding the Plate Barrier in either the full up or full down position shall be located for easy access by authorized personnel. Vandal resistant padlock hasps for locking the holding devices shall be provided.
- 7.3 The Counter Balance System will be factory adjusted to raise the Plate Barrier from the down position to the up position when the Plate Barrier is unlatched/ unlocked. Minimum force will be required to lower the Plate Barrier.
- 7.4 Field Adjustments. The hydraulic-pneumatic balance system can be field adjusted to compensate for sloping or uneven roadway conditions or to meet other specific operational or site conditions.

## **8.0 QUALITY ASSURANCE Provisions**

- 8.1 Testing. Upon completion, the Barrier system will be fully tested in the manufacturer's shop. The following checks shall be made:
- 8.1.1 Identification. A nameplate with manufacturer's name, model number, serial number and year built shall be permanently attached to the barrier.
- 8.1.2 Workmanship. The Barrier shall have a neat and workmanlike appearance.
- 8.1.3 Dimensions. Principle dimensions shall be checked against drawings and ordering information.

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

## **9.0 PREPARATION FOR SHIPMENT**

9.1 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.

## **10.0 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.

## **11.0 PROCUREMENT SOURCE**

The **Model DSC 900** Transportable Rising Plate Barrier System shall be purchased from:

### **DELTA SCIENTIFIC CORPORATION**

24901 West Avenue Stanford  
Valencia, California, 91355, USA  
Phone (661)257-1800  
FAX (661)257-1081  
Email [info@deltascientific.com](mailto:info@deltascientific.com)

[www.deltascientific.com](http://www.deltascientific.com)

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