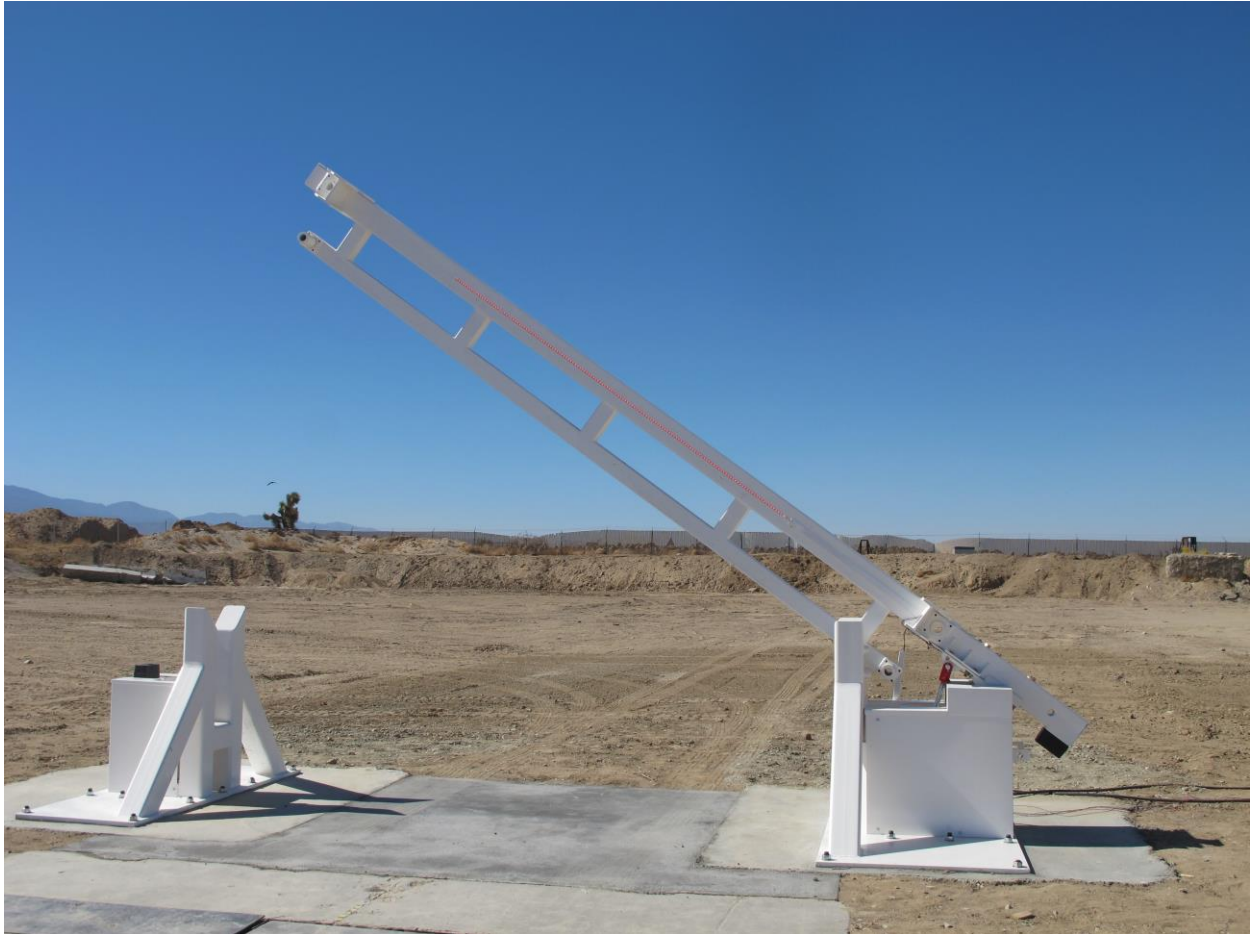


DELTA SCIENTIFIC CORPORATION
PALMDALE, CALIFORNIA 93551-U.S.A.
WWW.DELTASCIENTIFIC.COM

**MODEL DSC 7090 M30
CRASH TESTED DROP ARM BEAM BARRIER SYSTEM
HYDRAULIC POWERED**



SYNOPSIS

- The DSC 7090 M30 Drop Arm Beam Barrier System incorporates a unique binary crash resistant arm that is comprised of a special high strength alloy steel shell and a series of high strength composite elastic elements. The strength to weight ratio of the binary beam makes it highly effective as a powered Barrier system, DSC 7090 M30.
- The DSC 7090 M30 Barrier System shall have been tested in full scale configuration in accordance with ASTM F2656-15 Standard Test Method, receiving an M30, P1 rating. Actual Penetration negative -6.3 feet, (-1.9 M).
- The DSC 7090 M30 version of this system is operated remotely by means of an integral Hydraulic Pumping Unit (HPU) that is wholly enclosed in the hinge end enclosure. The HPU can be powered from a local single or three phase power source.
- DELTA has been manufacturing Deployable Arm Barrier Systems for over 35 years and has more than 8,000 in service worldwide. These include fully automated and manual systems.
- A complete range of Prime Movers, Control Options, Interface Packages, Sensors, Signal Lights, Strobes Safety Provisions etc. is available.
- DSC 7090 M30 shall be surface mounted via bolts to an embedded foundation. The unique bolt down foundation modules allow the installer to form and pour the foundation of the barrier up to surface grade level, and return after concrete cure time to bolt the barrier to the supplied bolt down holes in the modules.
- The beam shall be a dual beam structure utilizing Delta Scientific's dual composite elements.
- The DSC 7090 M30 shall be capable of operational speeds of five seconds up and two seconds down, adjustable.
- The DSC 7090 M30 shall have an opening angle of +90 degrees.
- The system shall have Delta smart control logic for heavy vehicle traffic in both directions.

1.0 SCOPE

- 1.1 This specification defines the procurement of a hydraulically operated CRASH CERTIFIED DROP ARM BEAM BARRIER SYSTEM, Model DSC 7090 M30. The system consists of a crash beam, bearing assembly, hinge end support buttress and the hydraulic actuator, power unit, locking bolt with padlock provision, mounting hardware and other options as defined herein.

2.0 BARRIER CONFIGURATION

- 2.1 Barrier Construction. Barrier shall be a structural assembly containing a crash beam hinged at one end – lockable at the other, which can be raised and lowered hydraulically. When in the down locked position the beam shall present a formidable obstacle to vehicles moving in either direction.
- 2.2 Beam Locking Method. The DSC7090 will withstand an M30 impact without the use of a manual or automated locking device such as a locking pin or maglock.
- 2.3 Manual Locking Pin. For unattended use such as afterhours, 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.
- 2.4 ACTUATION. The Drop Arm Barricade shall be raised and lowered by means of a hydraulic cylinder driven by a Hydraulic Power Unit located within the cabinet at the hinge end buttress.
- 2.5 CONTROL. The Barricade shall be controlled from a push button control station, touch screen control station, or customer supplied control station. Controls may be integrated with the barrier control circuit located in the barrier hydraulic power unit via low voltage control wire up to 1500 feet away (greater when integrated with fiber optic network).
- 2.6 Barrier Height. Height of the Barrier shall nominally be 36 inches (0,91 M) as measured from the roadway surface to the centerline of the crash beam. Height can be varied during installation to suit local security requirements. Please consult factory.
- 2.6.1 Dual Beam Height. Height of the lower beam of the barrier shall be nominally 20 inches from the roadway surface to the centerline of the crash beam. This dual beam design allows for protection against low profile passenger type vehicles. Height can be varied during installation to suit local security requirements. Please consult factory.
- 2.7 Barrier Clear Opening. The standard clear opening shall be 144 inches (3,66 M) as measured inside to inside of the hinge and locking buttress. The Barrier can be specified

with a clear opening up to 240 inches [9,14 M].

- 2.8 Finish. The foundation base of the Barrier shall be asphalt emulsion coated for corrosion protection. Exposed barrier surfaces shall be painted with a gloss white, two-part epoxy high weather resistant paint (or optional galvanized finish). The drop arm beam shall be furnished with red reflective tape sufficient to provide alternate 20 inch (0,5 M) bands.

3.0 HYDRAULIC POWER UNIT

- 3.1 Hydraulic Circuit. Circuit shall incorporate the design concepts as described by US Patent # 4,490,068. Unit shall consist of an electrically driven hydraulic pump, which shall pressurize a high-pressure manifold connected to a hydraulic accumulator. Electrically actuated valves shall be installed on the manifold to allow oil to be directed to the hydraulic cylinders to raise and lower the drop arm.
- 3.2 Main Power. The electric motor driving the hydraulic pump shall be fed from (specify actual site voltage, phase and frequency, i.e. 230/3/60). Motor shall be sufficiently sized for the expected number of Barricade operations.
- 3.2.1 Frequency of Operation. Barrier shall be capable of ____ complete up/down cycles per hour (specify up to 240 cycles per hour).
- 3.3 Manual Operation. A hand pump shall be furnished to allow the Barricades to be raised manually in the event of a power interruption.
- 3.4 Construction. The hydraulic power unit and accessories shall be mounted and wired and mounted within the hinge end enclosure.
- 3.5 Manual Locking Pin. The Barrier beam shall be provided with a locking pin with padlock locking point to secure the Barrier in the guard position. Padlock (7/16 inch [11 mm] or smaller shackle) to be furnished by others.

4.0 CONTROL AND LOGIC CIRCUITS

- 4.1 Standard Control Station: A standard control station shall be supplied to control the Barrier operation. This station shall have a key lockable main switch. Buttons to raise or lower the Barrier shall be provided. Alternatively, the Barricade shall be controlled from a touch screen control station or customer supplied control station. Controls may be integrated with the barrier control circuit located in the barrier hydraulic power unit via low voltage control wire up to 1500 feet away (greater when integrated with fiber optic network).

- 4.2 **CONFIGURATION OPTIONS.** A wide range of options such as Prime Movers, Control Options, Interface Packages, Sensors, Signal Lights, Safety Provisions etc. is available. These include the following:
- 4.2.1 Hydraulic Power Unit – Multiple Barriers. The HPU shall be configured to operate two (three), (or four) Drop Arm Barriers.
 - 4.2.2 Remote Location (HPU). The HPU for the Drop Arm Beam Barrier(s) shall be located at a point remote from the Barrier(s).
 - 4.2.3 Battery Powered Hydraulic Power Unit (BHPU). The BHPU shall be configured to operate one, (two), (three), (or four) Drop Arm Barriers. The use of generator or solar panel may be employed to tend the batteries.
 - 4.2.4 Control Circuits. A control circuit shall be provided to interface between one, (two), (three), (or four) Drop Arm Beam Barrier control station(s), HPU (BHPU), timers, relays and other devices necessary for the Barrier operation.
 - 4.2.5 Remote Control Panels – Master and Slave. Master and Slave(s) panels shall be provided to operate the Barrier(s) from a single (or multiple) location(s).
 - 4.2.6 Weather Resistant HPU Enclosure. A lockable weather resistant enclosure shall be provided for the HPU. The design shall provide for easy access to the HPU for maintenance and emergency operation of the hydraulic system.
 - 4.2.7 Heavy Duty Weather Resistant HPU Enclosure. A lockable weather resistant enclosure shall be provided for the HPU fabricated from not less than 0.25 inch [6,35 mm] steel plate. The design shall provide for easy access to the HPU for maintenance and emergency operation of the hydraulic system.

5.0 EXPERIENCE AND CERTIFICATION

- 5.1 Experience. Barrier and auxiliary equipment shall be of a proven design. Manufacturer shall have 30 plus years documented experience with similar vehicle Barriers.
- 5.2 Qualification Tests. The Model DS7090 Barrier System has have been tested in full scale configuration in accordance ASTM F2656-15 Standard Test Method, receiving an M30, P1 rating

6.0 QUALITY ASSURANCE PROVISIONS

- 6.1 Testing. Upon completion, the Barrier system will be fully function tested in the manufacturer's production facility. The following additional checks shall be made:
- 6.1.1 Identification. A nameplate with manufacturer's name, model number, serial number and year built shall be located at the hinged end structure.
 - 6.1.2 Workmanship. The Barrier shall have a neat and workmanlike appearance.
 - 6.1.3 Dimensions. Principle dimensions shall be checked against drawings and ordering information.
 - 6.1.4 Finish. Coatings shall be checked against ordering information and shall be workmanlike in appearance.

7.0 SHIPPING AND CRATING

- 7.1 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.

8.0 DISCLAIMER

- 8.1 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 vehicle 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.

9.0 PROCUREMENT SOURCE

- 9.1 The **Model DSC 7090 M30** Drop Arm Barrier System shall be purchased from:

DELTA SCIENTIFIC CORPORATION
PALMDALE, CALIFORNIA 93551-U.S.A.
WWW.DELTASCIENTIFIC.COM

DELTA SCIENTIFIC CORPORATION

40355 Delta Lane
Palmdale, California, 93551, USA
Phone 661-575-1100
FAX 661-575-1109
Email info@deltascientific.com
www.deltascientific.com

