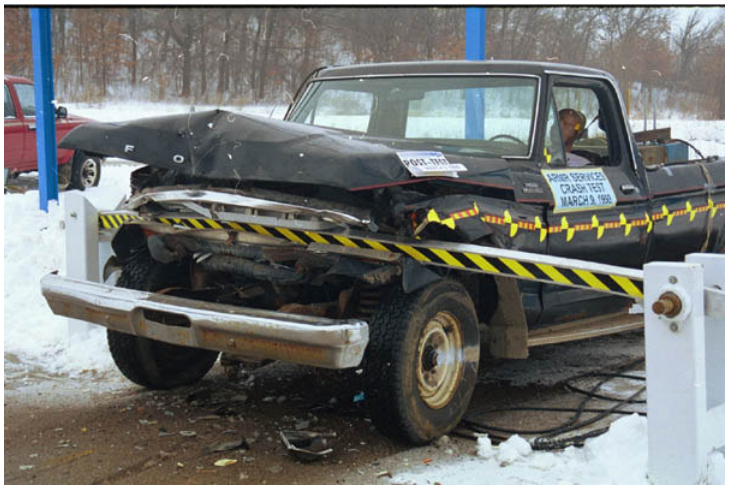
Model 714 Cable Crash Beam Vehicle Barrier

INSTALLATION AND OPERATIONS MANUAL



B&B ARMR CORPORATION
Corporate Office & Technical Support:
2009 Chenault Drive
Carrollton, Tx 75006
Suite 114
Phone: (800) 367-0387
Fax: (972) 385-9887
Technical Support: techsupport@bb-armr.com
website: http://www.bb-armr.com/
MADE IN THE USA

INTRODUCTION

Welcome

Congratulations on your purchase of a B&B ARMR vehicle barrier. We have years of experience in all aspects of perimeter security and related disciplines, and our products are used throughout the world to control access and to protect people, equipment, and facilities. Your vehicle barrier is designed to give you years of smooth, trouble-free operation.

In addition to providing detailed operating instructions, this manual describes how to install, maintain, and troubleshoot your vehicle barrier. To make it easy to locate the information you need, we've included a detailed Table of Contents immediately following this Introduction. All of this is important information, so be sure to keep the manual available for reference.

If you need help with any aspect of your vehicle barrier's installation or operation, please contact us. We offer a broad range of vehicle barrier and related security services, so you can also call on us for:

- Turnkey installations
- Routine barrier preventative maintenance or emergency repairs (including work on non-B&B ARMR products)
- Spare or replacement parts
- Custom designs or special installations
- Equipment upgrades (modernize your old equipment with state-of-the-art hydraulics and control systems)
- Ancillary security equipment (such as security guard enclosures, card readers, security lighting, and so on)

Safety

Your safety is important to us. If you have any questions or are in doubt about any aspect of the equipment, please contact us. While B&B ARMR does not assume responsibility for injury to persons or property during installation, operation, or maintenance, we can provide verbal guidance, additional written instructions, or the services of a factory engineer. We're here to help you operate your vehicle barrier safely and effectively.

As the user, you are responsible for correct and safe installation, operation, and maintenance of this equipment. Users must follow the specific instructions and safety precautions located in this manual. In addition they must:

- Be aware of and follow the safety standards of the Occupational Safety and Health Administration (OSHA), as well as other applicable federal, state, and local safety regulations and industry standards and procedures. For installation outside the United States, users must also follow applicable international, regional, and local safety standards.
- Engage only experienced staff, properly trained, to install, operate, and maintain the equipment.
- Ensure that all repairs are performed correctly, using properly trained staff and the right tools and equipment.

Warranty

B&B ARMR vehicle barriers are guaranteed against defects in materials and workmanship for one year. The warranty applies when the barrier is installed, operated, and maintained according to the instructions in this manual, and when it is operated within the service conditions for which it was specifically sold. The user must prevent potentially damaging conditions, such as mechanical overloading or unauthorized modifications. In the event of a malfunction during the warranty period, contact B&B ARMR and we will pursue prompt corrective action.

This is a warranty summary only. The specific warranty supplied with your equipment is the governing document.

How To Contact Us

If you have any questions or experience any problems with your vehicle barrier, or if we can help you with any other facility security issues, please contact us:

Corporate Office & Technical Support:
2009 Chenault Drive
Carrollton, TX 75006
Suite 114
Phone: (800) 367-0387
Fax: (972) 385-9887

Field Support Office:
1934 Old Gallows Road
Vienna, VA 22182

Phone: (703) 752-6108
Fax: (703)752-6288

http://www.bb-armr.com/support/index.html

E-mail: info@bb-armr.com
techsupport@bb-armr.com

Table of Contents

1. ORIENTATION

1.1 Overview

The formal name for this vehicle barrier—illustrated on the cover of this manual—is the *B&B ARMR Model 714 Cable Crash Beam*. It is a beam-type barrier hinged at one side so that the beam can be raised and lowered to restrict and control vehicle access. The beam is reinforced with an interior steel cable, which significantly increases the barrier's vehicle stopping power (see specifications below).

1.1.1 Beam

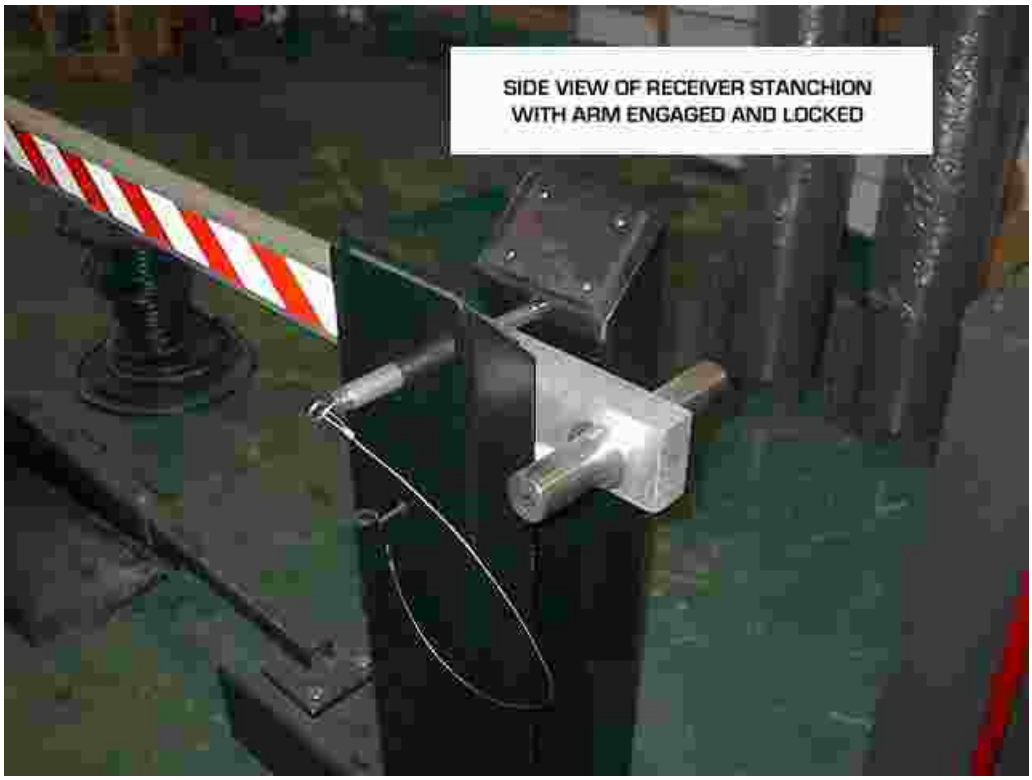
The beam is a rectangular aluminum extrusion. The beam retains its mill aluminum finish and is marked with red and white safety tape. The steel cable is contained inside the beam and anchored with two stainless steel rods at either end. These rods hold the cable during vehicle impact. The cable and its anchor rods substantially increase the barrier's stopping power compared to a beam barrier without these components. The impact energy is absorbed first by stretching the cable, then the energy is transferred to the foundation through the hinge and receiver assemblies.

1.1.2 Posts

The hinge and receiver posts are steel. The hinge post operates with internal bearings on a stainless steel axle that allows the beam to move in an arc of 85°-87°. The receiver post has a stanchion constructed of two steel weldments. The weldments direct and capture the beam when it is lowered, and securely contain the beam during a vehicle impact. The receiver post has a security latching pin that can be padlocked to prevent unauthorized operation when the barrier is unattended (see Figure 1-1 below).

The barrier has a self-contained, exterior-mounted, automatic damping device. When the barrier operates at the design speed, this damper reduces any whipping action by the beam as it comes to the full, raised position.

Figure 1-1: Receiver Post Stanchion and Security Latching Pin



Both the hinge post and receiver post are cast in place in a subterranean concrete pour. Both posts have elevation grade locators to aid the installation. The installation requires no above-grade concrete. The portions of the hinge and receiver posts that are imbedded are coated to prevent deterioration due to cement contact. The aboveground portions of the posts are primed and finish painted in black.

1.2 Options

The *B&B ARMR Model 714 Cable Crash Beam* is available with the following options. Consult your purchase order or other ordering documentation to determine whether your unit has the optional equipment.

- Manually operated hydraulic unit with handwheel
- Traffic lights (red and amber stop/go lights to signal the vehicle)
- Steel crash arm

1.3 Specifications

Key specifications for the *B&B ARMR Model 714 Cable Crash Beam* are as follows.

- Meets or exceeds US Navy Specification OR098-09-88
- Certified vehicle-stopping power is 10,000 pounds at 15 mph.

2. INSTALLATION

2.1 Introduction

We designed the Model 714 for quick and easy installation. However, every site is different and each Model 714 will vary due to the choice of options or special design features. Accordingly, the instructions below may have to be varied slightly for your particular installation. If you need help, or are unclear about any of these instructions, please contact B&B ARMR for assistance.

Your safety is extremely important to us. Be sure to follow the specific instructions presented below. You are responsible for the correct and safe installation, operation, and maintenance of this equipment.

2.2 Preliminary Considerations

Before beginning site excavation and barrier installation, note the following important considerations.

- Inspect the site and verify there are no underground utilities or overhead wires or obstructions in the excavation area.
- If possible, locate the installation away from routine foot traffic to reduce the chance for pedestrian injury from the barrier's moving arm.

2.3 Installing the Hinge and Receiver Posts

Perform the following steps.

2.3.1 Excavate the hole for the hinge post as shown in the engineering drawing titled *Model 714 General Layou*t (see the Engineering Drawings section at the end of this manual). Place supporting timbers over the excavation and parallel to the roadway. Place the hinge post in the excavation supported by these timbers, using the grade locators on the post to ensure the hinge post is set to the proper depth. There are 3/8" nuts welded to the grade locators. Insert all-thread in

these nuts and through the supporting timbers and use the all-thread to adjust the hinge post so it is plumb and level.

2.3.2 Place string lines on either side of the hinge post and run the lines across the roadway to determine the receiver post's location. Keep the string lines parallel and accurately measure the *clear opening length*. This length (see *Model 714 General Layout* drawing) is the distance between the inside (side facing the road) faces of the hinge post and the receiver post. Once the receiver post location is determined, excavate the receiver post's hole and position and plumb the receiver post as described above.

2.3.3 Verify the posts are positioned correctly by running a string line between the two. Pull the string from the center of the hinge post and perpendicular to the axle and verify it falls directly on the center of the receiver post, and the distance between the two is exactly the specified clear opening length for your barrier.

2.4 Emplacement

2.4.1 Fill the hinge post and receiver post excavations with concrete and finish the concrete surface. Remove any splattered concrete from the posts. Verify the posts did not move out of alignment during the pour by repeating step 2.3.3 above. Allow the concrete to cure.

2.4.2 Pour the pad for the hydraulic unit, and finish the concrete surface. Remove any concrete that might have splattered inside the exposed conduits. Allow the concrete to cure.

2.5 Final Installation Steps

2.5.1 Attach the beam to the hinge post using the stainless steel axle, sliding the axle through the flange-mounted bearing, through the bronze bushing on the beam, and into the second bearing. Use the setscrews on the bearings to lock the axle in place. In addition, there are shaft collars on either side of the beam. Tighten these collars to lock the beam in place.

3. OPERATION

3.1 Preliminary Steps

Before operating the barrier, go through the checklist below and verify that each of these steps has been completed.

For your safety, complete each of these steps before operating the barrier!

- ❑ All traffic and pedestrians are clear of the barrier.
- ❑ The beam is attached to the hinge post with the axle, and the setscrews securing the axle to the bearings are tight.

3.2 Initial Operation

Perform the following steps the first time you operate the vehicle barrier.

3.2.1 Make sure the beam arm stops smoothly in the up position and there is minimal oscillation or whipping action. If necessary, adjust the position of the damping plunger by screwing it in or out. The plunger must strike the beam while the beam is still in motion, but the plunger must not bottom out when the beam arm is fully up. After adjustment, lock the position of the damping plunger by tightening the lock nut.

3.2.2 Make sure the beam arm stops smoothly in the receiver post and does not oscillate, contact hard, or make excessive noise.

4. MAINTENANCE

Do not attempt repairs unless you are trained and qualified. This vehicle barrier can cause equipment damage and severe injury if it is operated or maintained improperly.

4.1 Introduction

The *B&B ARMR Model 714 Cable Crash Beam* is designed to be largely maintenance free. It must be regularly inspected to ensure it is operating correctly. We recommend a simple monthly visual inspection and a more thorough biannual inspection as described below. Remember, you may contact B&B ARMR for assistance with inspections, maintenance, or repairs.

Component damage is likely if a vehicle strikes the barrier. If this occurs, contact B&B ARMR, we will help you assess the damage and make sure there is no hidden damage that will compromise safety or effectiveness. We will help you determine which components should be replaced, and will provide guidance on the repairs.

4.2 Monthly Inspections

We recommend you perform the following visual inspections monthly.

4.2.1 Raise and lower the barrier and observe its motion. Verify the beam does not hit with excessive force when lowered.

4.2.2 Raise and lower the barrier and observe its motion. Verify the damping device is working properly and there is minimal whipping or oscillating action as the beam stops in its raised position. If the damping device requires adjustment, see the instructions in section 3.2.5 in the *Operation* section of this manual. The damping cylinder is sealed, so if the adjustment procedure does not eliminate the problem, contact B&B ARMR for a replacement.

4.2.3 Inspect the condition of the paint. If rust is present, wire brush and sand the area then paint with a primer and the matching color.

4.2.4 Inspect the nylon pads on the beam arm and the receiver post for damage or excessive wear. Replace the individual pads as necessary.

4.3 Six-Month Inspections

We recommend you perform the following inspections every six months.

4.3.1 Repeat the visual inspections in steps 4.2.1 through 4.2.4 above.

4.3.2 Inspect the brushes that protect the hinge-side of the vehicle barrier. If they are worn to the point they have lost their function they should be replaced. The original brushes are held by rivets, which will have to be removed.

4.3.3 Through the top of the hinge post, access the pillow block bearings that hold the stainless steel axle. Grease these bearings through their zerk fittings using a high quality, multi-purpose bearing grease.

4.3.4 Setscrews on the bearings hold the stainless steel axle in place. Verify these setscrews are tight.

5. TROUBLESHOOTING

The table below provides guidance on identifying and correcting any problems with your *B&B ARMR Model 714 Cable Crash Beam* vehicle barrier. If you encounter problems that you cannot fix, contact B&B ARMR and we will gladly work with you to correct them.

Model 714 Troubleshooting Guide

Symptom	Actions
Beam arm whips excessively	1. Check that dampening piston works and is adjusted properly
Beam arm makes noise	1. Check that bearings are greased 2. Check that beam arm is not moving too fast
Beam arm strikes receiver post	1. Check that strike pads are present 2. Check that hinge and receiver post are aligned correctly

