# MBA Mobile Bridge Adapter
# Operations & Parts Manual

Maintenance Schedule



| | |
|---|---|
| Keith Consolidated Industries<br>www.kcigse.com | 541-830-8678<br>1718 Antelope Rd.<br>White City, OR 97502 |

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# • Overview •


Jet Bridges are generally not compatible with regional aircraft. There are many challenges that prevent jet bridges from being able to work with smaller planes. Problems arise due to the size and height of the fuselage, the use of air stairs and handrails, and the proximity to wings, propellers and jet engines.

Passengers are accustomed to the comfort and security of jet bridges. Many airports are not designed to handle passengers if they don't have access to jet bridges.

KCI Inc. manufacturers the Mobile Bridge Adapter (MBA) with all these factors in mind. This is an opportunity to increase customer service, safety and security with a simple, yet ingenious device. MBA's are available to fit most common regional aircraft with no need for jet bridge modification.

Since its introduction to the market, the MBA has also been used with mainline aircraft to reduce the likelihood of contact damage between jet bridges and aircraft.

Along with the MBA, came the need to position jet bridges safely and consistently. This resulted in the development of the JET BRIDGE POSITIONING Guide. One guide is provided with each MBA. ***If the MBA is being used with multiple gates or with different types of aircraft at the same gate, more than one Guide will be needed.***

Before using the MBA, the Jet Bridge Positioning Guide must be calibrated by carefully placing the jet bridge in position adjacent to the aircraft and adjusting the guide's length and height to "record" the position.

**This manual covers 3 different MBA models, MBA 46, MBA 56 and MBA 63. Each model functions the same way, but has differing length and width characteristics to match those of different aircraft.**

# • MBA-46 •


## *• Specifications •*

| | |
|---|---|
| Weight | 75 lbs. |
| Length | 46” |
| Overall Length | 56” |
| Height | 39” |
| Width | 34” Back, 16” Front |
| Storage Size | 56”L x 39.5”H x 11”W |
| Load Capacity | 1000 lbs. |

## *• Compatible Aircraft •*

***CRJ***
***BAe 146***
***ERJ 135/145 (with Plug Door)***

# • MBA-56 •


## *• Specifications •*

| | |
|---|---|
| Weight | 77 lbs. |
| Length | 56” |
| Overall Length | 65” |
| Height | 39” |
| Width | 34” Back, 16” Front |
| Storage Size | 65”L x 39.5”H x 11”W |
| Load Capacity | 1000 lbs. |

## *• Compatible Aircraft •*

***CRJ***
***BAe 146***
***ERJ 135/145 (with Airstair Door Non Folding Handrail and Plug Door)***
***Mainline Aircraft***

# • MBA-63 •

## *• Specifications •*

| | |
|---|---|
| Weight | 79 lbs. |
| Length | 63” |
| Overall Length | 72” |
| Height | 39” |
| Width | 34” Back, 16” Front |
| Storage Size | 72”L x 39.5”H x 11”W |
| Load Capacity | 1000 lbs. |

## *• Compatible Aircraft •*

***CRJ***
***BAe 146***
***ERJ 135/145 (with Airstair Door Non Folding Handrail and Plug Door)***
***Dash 8***
***Q-400***
***Donier 328***
***Mainline Aircraft***

# • Features •

- Easily operated by single person
- Folding handrails reduce storage requirements
- Storage wheels on the side make it easy to “tuck away” in confined locations
- An anti-slip material that provides a safe walking surface
- “Normally On” brakes prevent movement while unattended
- Guard canvas to guide passengers and anchor MBA to the jet bridge
- Wheelchair accessible
- Level-adjusting mechanism compensates for non-level jet bridge
- Jet Bridge Positioning Guide enables consistent positioning

1. The Mobile Bridge Adapter is intended to bridge the gap between a jet bridge and an aircraft door.

2. The MBA can be deployed by one person in about 30 seconds and folds down for storage.

3. The MBA is designed for full crowd loading of one hundred pounds per square foot, but a single line of passengers is recommended.

4. Safety feet provide a final level of safety for the MBA, in the extreme case that two simultaneous operating errors occur, that is if:

    - The jet bridge is pulled back while the MBA is in use ***and***.
    - The MBA’s curtains have not been properly secured.

    In this case, the safety feet catch on the sill of the jet bridge, causing the MBA to tilt. This tilting action warns operators not to retract the jet bridge any further.

5. The underside of the MBA is equipped with a safety guard to protect the aircraft. The flange angle is set so if the jet bridge is powered against the aircraft, the MBA will ride up over the nose of the jet bridge before putting too much load on the aircraft. (This arrangement does not guarantee to protect the aircraft, but does reduce the likelihood of damage)

6. A cross-slope adjusting mechanism ensures stable, 4 point grounding even on non-level jet bridges.

# • Features Continued•

## • *Materials* •

- 6001 T-6, 6063 T-54, 5052 H-32 Aluminum
- Protective handrail covers
- Jessup 3200 Safety Track (anti-slip walking surface)
- Safeguard  Anti-Slip Walking Surface (optional)
- Decals / instructions to customer's satisfaction (optional)

## • *Comprehensive Two Year Warranty* •

- KCI Inc. warrants the Mobile Bridge Adapter (MBA) to be free from manufacturing or material defects for two years from the date the product is put into service.
- Damage caused by vandalism or abuse is not covered by this warranty.

## • *Assembly* •

- The Mobile Bridge Adapter is delivered completely assembled.
- If the storage wheels cause a clearance problem while in use, they can be placed on the opposite side of the MBA.

# • Warnings and Cautions •

## ***• Please read and understand the following prior to usage of the MBA •***

- Each model of the MBA is compatible with specific aircraft. Do not use the MBA with incompatible aircraft.

- During use of this product on Q400 type aircraft, it is imperative that the positioning gauge is properly used as described in this manual. Failure to do may result in damage to the aircraft.

- Do not use the auto-leveler feature of the jet bridge while using the MBA.

- The gap distance between the edge of the jet bridge and the edge of the top step must be close enough for safe use of the MBA but far enough to avoid contact damage.
  ***Contact damage can occur between the jet bridge and air stairs, handrails, or fuselage.***

- Operating procedures must ensure that the jet bridge is properly positioned ***AND IS NOT MOVED WHILE THE MBA IS IN USE***. Jet bridge movement could cause aircraft damage or passenger injuries, as is the case in any jet bridge operation.

- The MBA is equipped with wheels on the underside and on one side of the unit. Do not stand on the MBA unless it is deployed across the gap because it may be unstable.

- The curtains must be secured to the jet bridge walls to keep passengers away from the edge of the jet bridge and to anchor the MBA.

- Curtains should have enough slack to allow the MBA to pivot freely as the aircraft's height changes.

- Incorrect calibration or use of the Positioning Guide or the MBA may result in damage to the aircraft (by positioning the jet bridge too close) or may result in harm to passengers or employees (in the event that the MBA is unstable or not properly positioned).

- Never rely on a Positioning Guide that has been bent or damaged since it may be out of calibration.

- It is not possible for KCI Inc., to anticipate all possible combinations of aircraft and jet bridge configurations. For this reason, users of the MBA and the Positioning Guide are ultimately responsible for the safety of the aircraft and passengers.

- Ground spotters are recommended when positioning the jet bridge to reduce the likelihood of contact damage to the aircraft.

THE MANUFACTURER IS NOT RESPONSIBLE FOR UNAUTHORIZED OR IMPROPER USE OF THIS EQUIPMENT.

# • Initial Calibration •

Before using the MBA, the Jet Bridge must be properly positioned. **Each MBA includes a Jet Bridge Positioning Guide that requires calibrating and testing before the MBA can be used.**

Once the Jet Bridge Positioning Guide is calibrated, it must be used to achieve consistent jet bridge position with respect to the aircraft.

**Calibrating the Jet Bridge Positioning Guide**

**1. Determine the height difference between a fully loaded aircraft (passengers + baggage + fuel) and an unloaded aircraft (no passengers + no baggage + minimal fuel).**

Unloaded Floor Height = _____
Loaded Floor Height = _____

HEIGHT DIFFERENCE = _____

2. **Carefully position the jet bridge following the guidelines on pages 12-15.**

1. _____ The jet bridge does not contact, or come within "height difference" distance from air stair, handrails, plug door, etc.

2. _____ The jet bridge floor is the correct height above the aircraft's floor.

3. _____ The nose of the jet bridge is the correct horizontal distance from the aircraft's doorsill:

4. _____ The MBA achieves a minimum overlap of 3" over the door sill of the aircraft and the floor of the jet bridge.

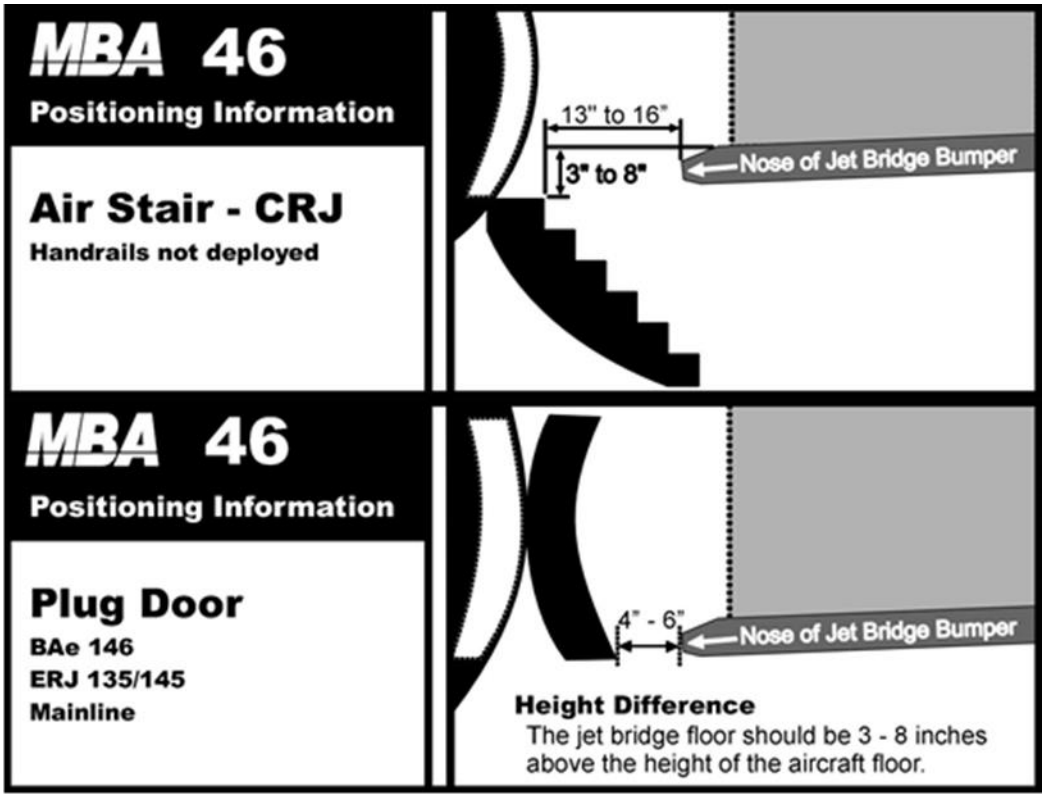
5. _____ If the jet bridge canopy is extended, it must be at least the "HEIGHT DIFFERENCE" from any sensitive or fragile components on the aircraft's fuselage (aerials, Pitot tube, etc.)

# • MBA Compatibility and Jet Bridge Positioning Chart •

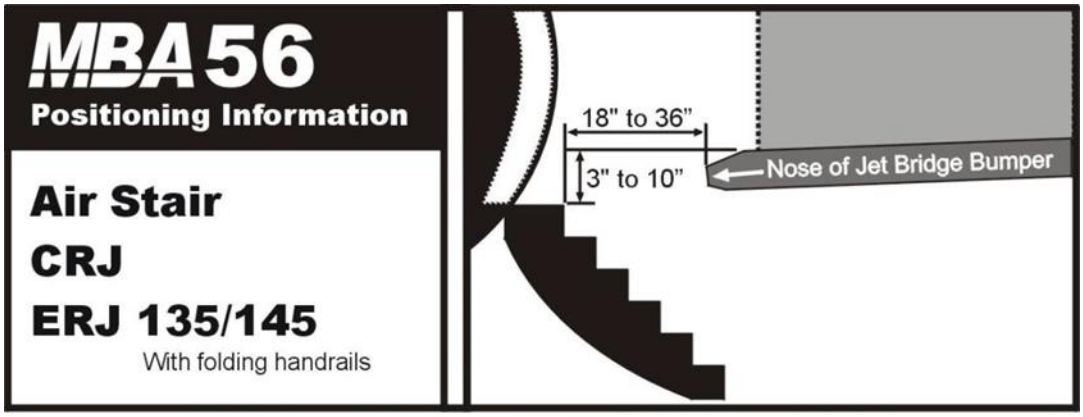
| | Aircraft | Compatibility | Stair Configuration | Horizontal Distance | Vertical Distance |
|---|---|---|---|---|---|
| **MBA 46** | CRJ | Good | Handrails not deployed | 13” to 16” | 3” to 8” |
| | BAe 146 | Optimal | Plug door | 4” to 6” | 3” to 8” |
| | ERJ 135/145 | Optimal | Plug door | 4” to 6” | 3” to 8” |
| | Mainline | OK | Plug door | 4” to 6” | 3” to 8” |
| **MBA 56** | CRJ | OK | Handrails not deployed | 18” to 36” | 3” to 10” |
| | ERJ 135/145 | Optimal | Fixed Handrails | 36” to 44“ | 3” to 10” |
| | ERJ 135/145 | OK | Plug door or airstair with folding handrails | 18” to 36” | 3” to 10” |
| | BAe 146 | OK | Plug door | 18” to 36” | 3” to 10” |
| | Mainline | OK | Plug door | Not yet determined | 3” to 10” |
| **MBA 63** | CRJ | OK | Handrails not deployed | 18” to 40” | 3” to 10” |
| | ERJ 135/145 | OK | Fixed Handrails | 36” to 44“ | 3” to 10” |
| | ERJ 135/145 | OK | Plug door or airstair with folding handrails | 18” to 40” | 3” to 10” |
| | BAe 146 | OK | | 18” to 40” | 3” to 10” |
| | Dornier 328 | Optimal | Airstair Handrails | 48” | 3” to 10” |
| | Mainline | OK | Plug door | Not yet determined | 3” to 10” |
| | Dash 8 (Q-400) | Optimal | Fixed Handrails | 48” | 3” to 10” |

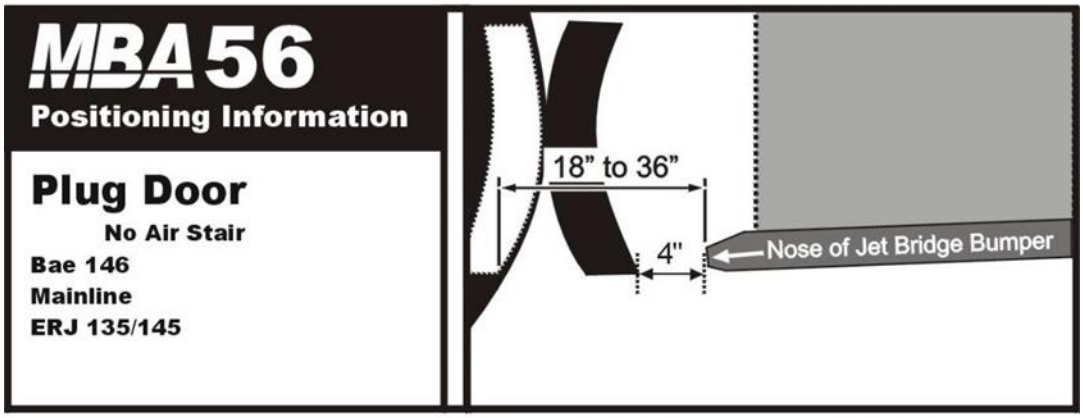
• Jet Bridge Positioning •

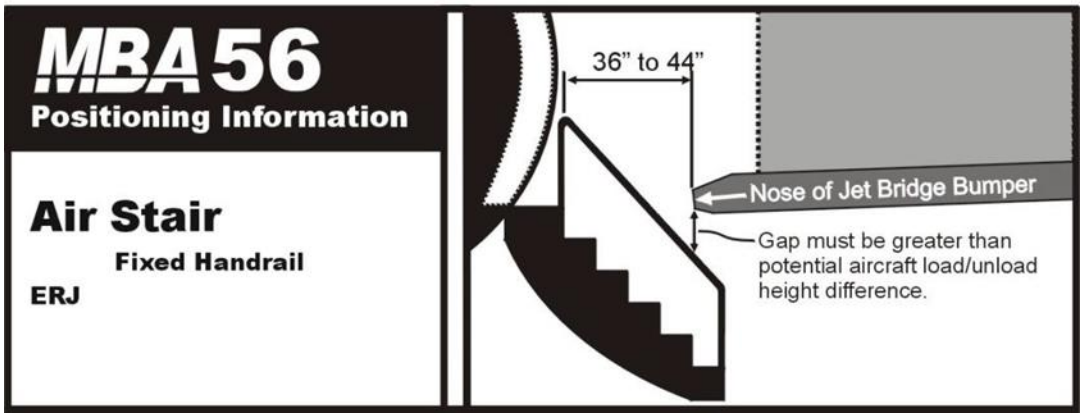
## • *MBA-46*•



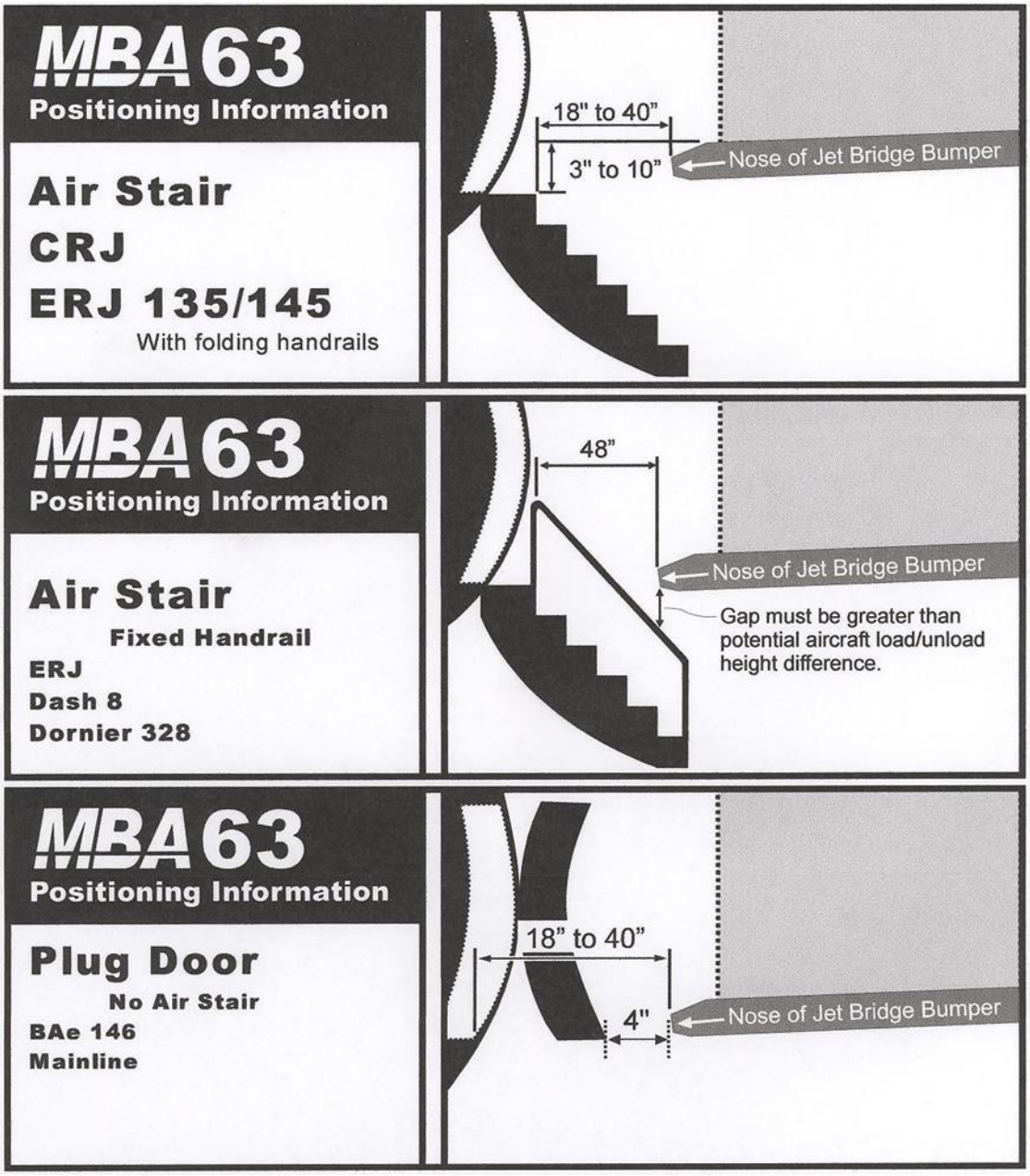
## • *MBA-56* •


MBA 56
Positioning Information
Air Stair
CRJ
ERJ 135/145
With folding handrails
18" to 36"
3" to 10"
Nose of Jet Bridge Bumper


MBA 56
Positioning Information
Plug Door
No Air Stair
Bae 146
Mainline
ERJ 135/145
18" to 36"
4"
Nose of Jet Bridge Bumper


MBA 56
Positioning Information
Air Stair
Fixed Handrail
ERJ
36" to 44"
Nose of Jet Bridge Bumper
Gap must be greater than potential aircraft load/unload height difference.

## • *MBA-63* •


MBA 63
Positioning Information
Air Stair
CRJ
ERJ 135/145
With folding handrails
18" to 40"
3" to 10"
Nose of Jet Bridge Bumper
MBA 63
Positioning Information
Air Stair
Fixed Handrail
ERJ
Dash 8
Dornier 328
48"
Nose of Jet Bridge Bumper
Gap must be greater than potential aircraft load/unload height difference.
MBA 63
Positioning Information
Plug Door
No Air Stair
BAe 146
Mainline
18" to 40"
4"
Nose of Jet Bridge Bumper

# • Adjusting the Jet Bridge Positioning Guide •

Once the jet bridge is positioned meeting all the above listed requirements, the Positioning Guide must be adjusted to "record" the jet bridges alignment. At this stage, the goal is to set the positioning guide's "gap" and "height" adjustment so as to line up the white marker ball with a standard feature (guide point) around the top step of the aircraft.

1. Place the Positioning Guide on the nose of the jet bridge as in figure 1.

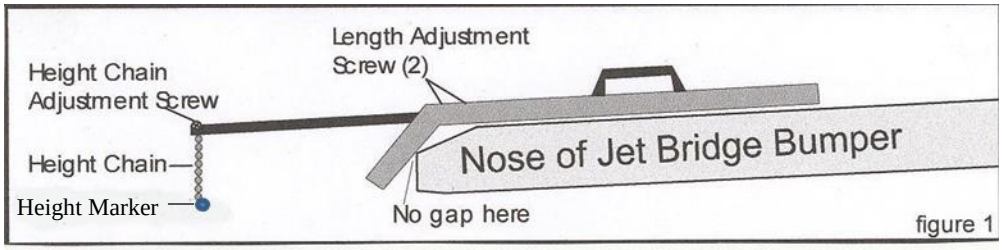


figure 1

2. Look for a possible "guide point". Typical "guide point" locations are: edge of top step, edge of first step, top of handrail etc.

3. Adjust the length and height of the white marker with the appropriate adjustment screw. The white marker should contact the "guide point" as in figure 2.

**Example: Calibrated Positioning Guide Edge of Top Stair is Guide Point**

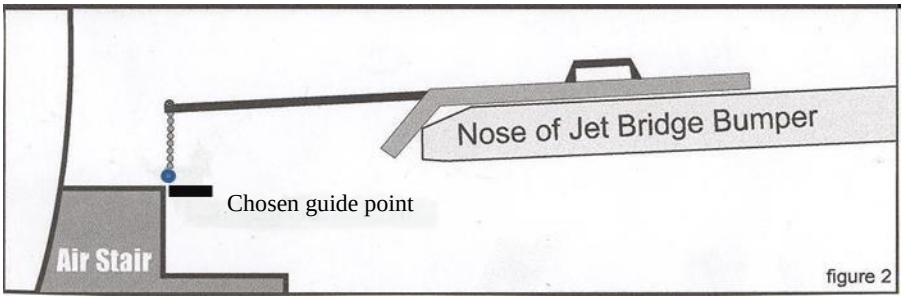


figure 2

4. Check that the gap and height adjustment screws are tight and record the aircraft type, gate number and guide point location on the Positioning Guide.

# • Adjusting the Jet Bridge Positioning Guide •

Once the Positioning Guide is calibrated, it should be stored in the jet bridge for easy access. This guide will allow for safe and consistent positioning of the jet bridge with the designated aircraft type (the type aircraft for which the Positioning Guide is Calibrated for).

**NOTE:**
Use the Jet Bridge Positioning Guide and a ground based spotter to eliminate the chance of contact between the jet bridge and the aircraft.

Do not use the Positioning Guide for other jet bridges or any aircraft types other than the type it has been calibrated for. Obtain extra Positioning Guides if the jet bridge is used with more than one aircraft type.

To obtain more Jet Bridge Positioning Guides, call KCI Inc. at **(541) 830-4877**

# • *Deployment* •

## • *Preparing the MBA for Use* •

1. Place the MBA on the floor on its main wheels.
2. Release the Velcro securing strap on the handrails.
3. Lift the folded handrails until they snap into the vertical position.
4. Pull the brake lever at each push handle to release the parking brakes.
5. Push down on the handles until the MBA is balanced on its wheels.

## • *Positioning the MBA* •

1. Push the MBA until the wheels drop over the edge of the jet bridge.
2. Lower the nose of the platform onto the aircraft's floor (not the top step).
3. Move the MBA forward until the front of the platform is a minimum of THREE inches into the doorway.
4. Check that the rear end of the MBA's platform overlaps the FLOOR (not the bumper) of the jet bridge by a minimum of 3 inches.

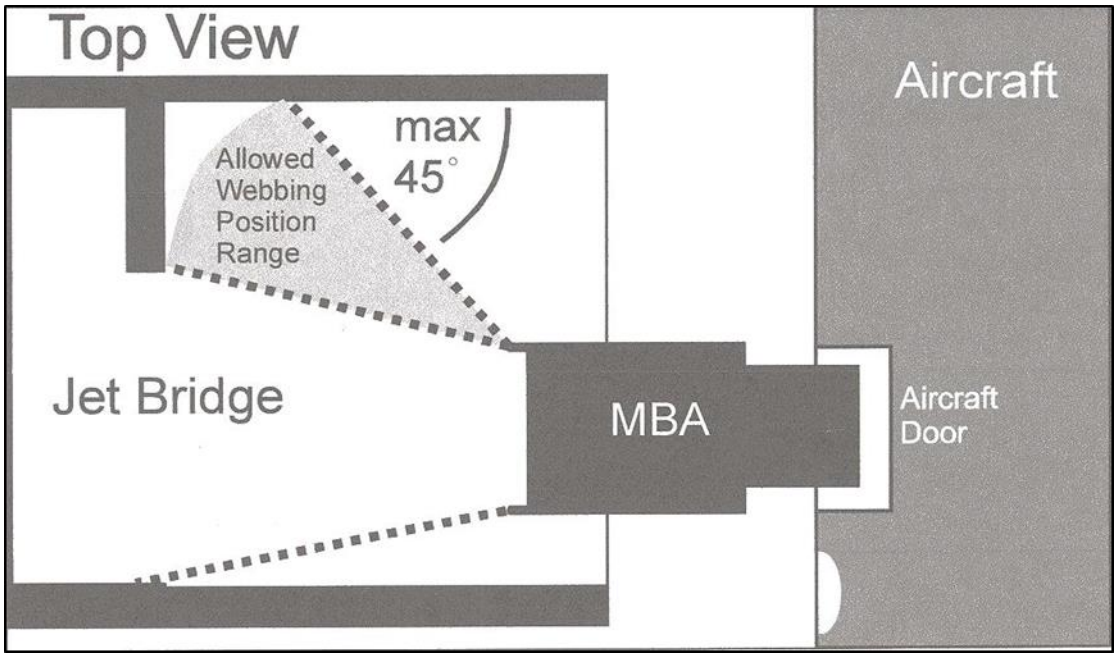
**Figure 3 – Side View of Set-up, Air Stair with folding handrails.**


Check the stability of the MBA. If there is any side-to-side instability, use the cross-slope adjusting mechanism to stabilize the unit.

- Step on the cross-slope adjusting flap (located on the jet bridge side of the unit) to set its position (the adjusting mechanism will hold it in place)
- The unit should feel stable and not rock side to side when the flap is adjusted correctly.
- If the cross-slope adjusting flap has been set too low, release the adjusting mechanism by stepping on the metal tab to the right of the Flap

5. Attach the curtain (snap hooks) to both inside walls of the jet bridge (eyebolts). (See Figure 4) The curtain is very important because:
    - The curtain guides passengers onto the Mobile Bridge Adapter.
    - The curtain acts as a restraining device by preventing the MBA from moving too far forward.
    - Curtains should have enough slack to allow the MBA to pivot freely as the aircraft's height changes.

Figure 4 – Top View of MBA Ready for Use.



# • Operations •

## *• Removing and Storing the MBA •*

1. Lift and pull on the handles until the wheels are on the floor of the jet bridge.
2. Push down on the Handles while holding the brake levers to move the MBA.
3. Release the cross-slope adjusting mechanism (if desired) by stepping on the metal tab located on the right hand side of the adjusting flap.
4. Release the curtains from the jet bridge walls.
5. Lift the "Handrail Release Bar" up to fold the handrails. The Handrail release Bar is found at the base of the handrails, on the outside of the platform.
6. Fold the handrails down with the curtains underneath. Always fold the right side handrail first.
7. Use the Velcro securing straps to hold the handrails in the folded position.
8. With the MBA in the folded position, move it on the side mounted Storage wheels into a storage location.

***NOTE:***

Side mounted Storage Wheels are not equipped with brakes. Never store the MBA on its Storage Wheels on a sloped surface.

Storage Wheels can be positioned on either side of the MBA if needed

## *• Maintenance •*

1. The MBA does NOT require any lubrication.
2. Monthly inspections should be carried out to check that:
    a. All fasteners are secure
    b. Handrails latch positively
    c. Structure has not been damaged

**If parts or service are required, please contact KCI Inc. Phone: (541) 830-4877**

## *• Feedback •*

At KCI Inc., we wish to provide products that are safe, high quality, and easy to use. Customer satisfaction is of great importance to us. To continue our tradition of quality and response to customer needs, we welcome any comments or suggestions. Please feel free to call us at **(541) 830-8678** or visit our website at **www.kcigse.com**.

# • Preventative Maintenance Checklist •

The following is a general maintenance checklist which covers the major components of your Mobile Bridge Adapter. It is recommended that the following be checked regularly as scheduled to ensure proper function, and the longevity, and safety of your Mobile Bridge Adapter.

| COMPONENT | SUGGESTED ACTION | SCHEDULE | | |
|---|---|---|---|---|
| | | Monthly | Quarterly | Bi-Annually |
| **WHEELS** | Grease wheels | N/A | N/A | N/A |
| **STRUCTURAL** | General Check: Loose bolts, etc. tightened. Cracks, broken areas. | | | |
| **HANDRAILS** | General Check: cracks | | | |
| **WALKING SURFACES** | General Check: Anti slip panels are secure. | | | |

# • How to Order Replacement Parts •

## Please have the model number and serial number available when ordering replacement parts

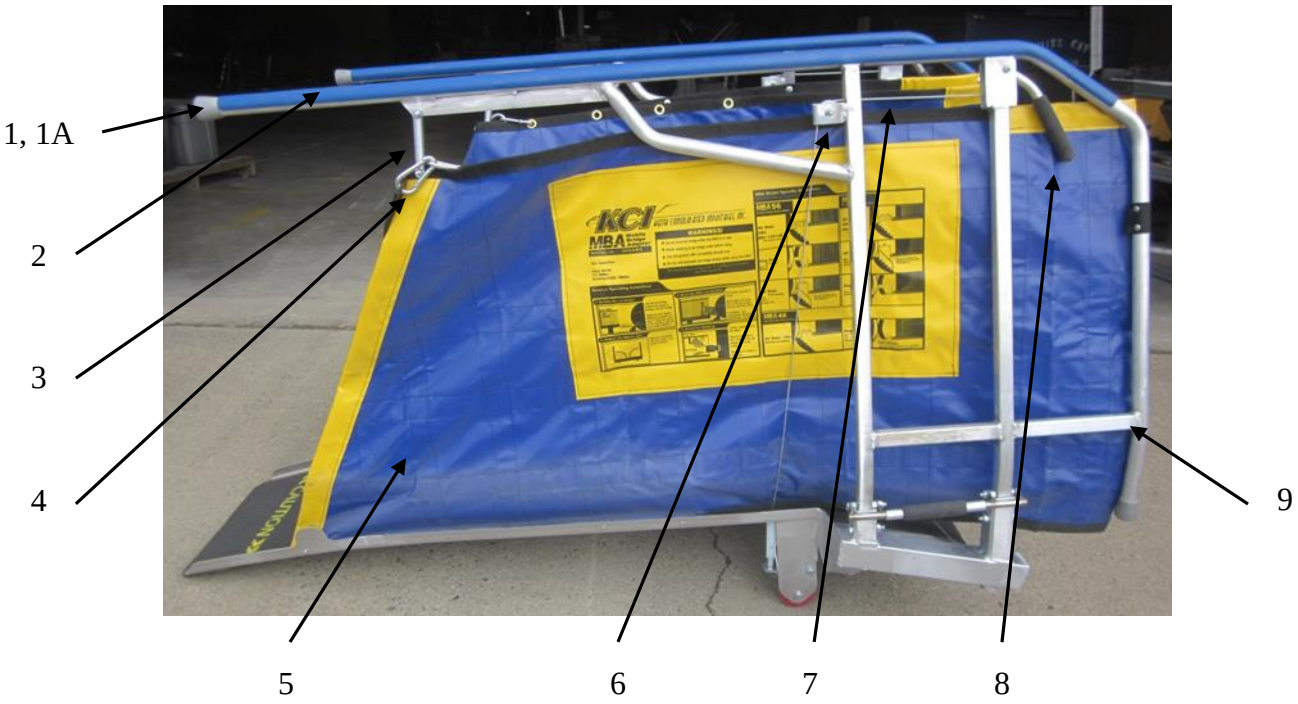
When ordering replacement parts:

a. Contact the KCI parts dept. at (541) 830-4877 or email msankey@kci.nu
b. Give the Model Number, Serial Number, and Mfg. Date) to the parts representative.
c. If possible, give the part number and a description from the parts list. Or describe the needed part(s) to the best of your ability.
d. If you are in a breakdown situation, please tell us, we will try to get your unit operational as soon as possible.


Serial Number
(The ID Plate is located on the frame.)

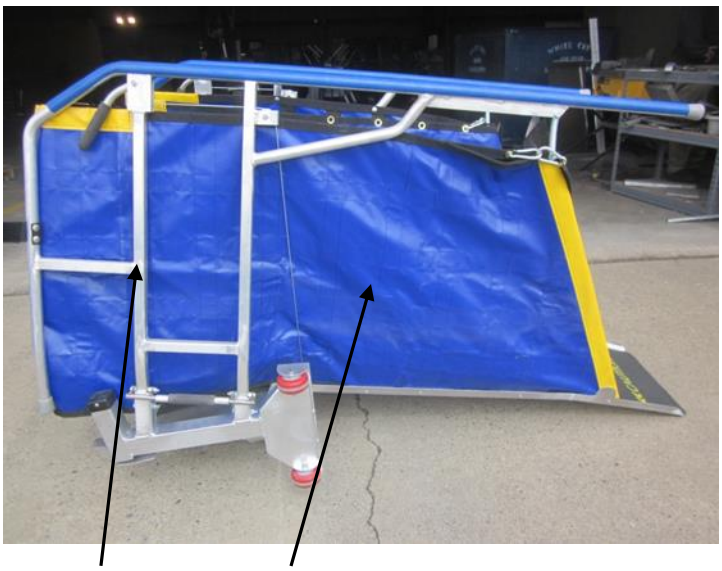
Mfg. Date
(You may be asked the Mfg. Date of your unit, have it ready if you are asked for it)

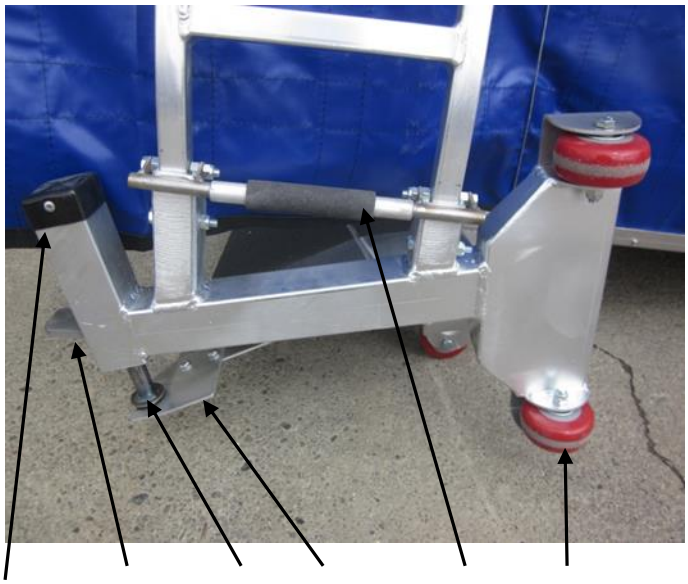
# • Parts Breakdown •




| *Item* | *Description* | *Part Number* |
|---|---|---|
| 1 | Crutch Tip | P00067-001 |
| 1A | Black End Cap | 9283K14 |
| 2 | Blue Handrail Cover | MBA-3835 |
| 3 | Curtain Spring | P00034 |
| 4 | Spring Link | P00352 |
| 5 | Curtain (Left Side) | P00287 |
| 6 | Brake Pulley | BP4100 |
| 7 | Brake Cable | MBA-BC60 |
| 8 | Brake Handle | MBA-BH0775 |
| 9 | Handrail Assembly (Left Side) | 003086 |

# • Parts Breakdown •

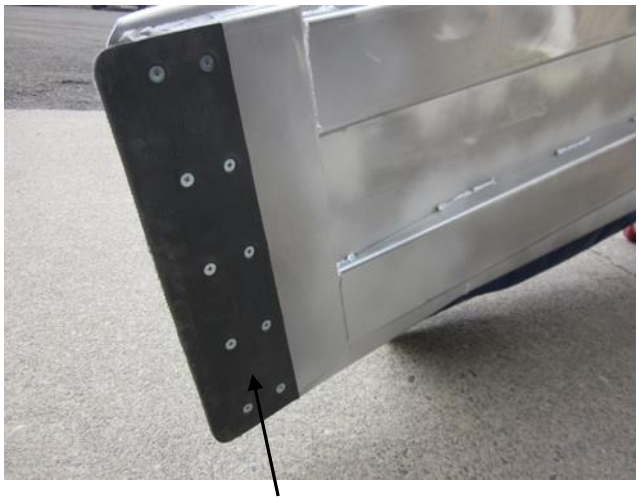




10 11 12 13 14 15 16 17

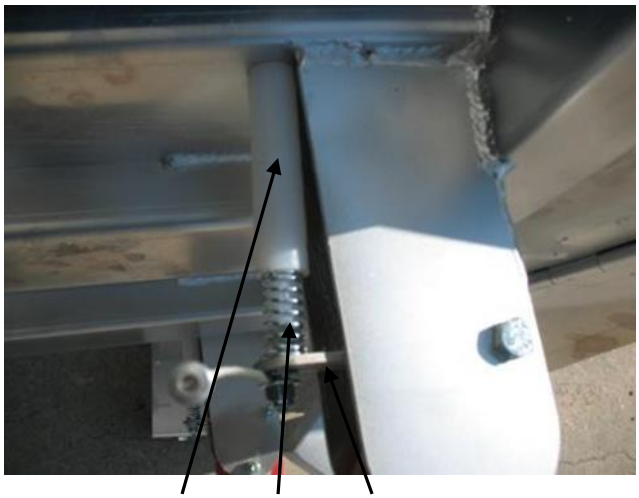
| *Item* | *Description* | *Part Number* |
|---|---|---|
| 10 | Handrail Assembly (Right Side) | 003075 |
| 11 | Curtain (Right Side) | P00286 |
| 12 | Black Cap | 9092K62 |
| 13 | Rod Release Plate | 022670 |
| 14 | Adjustable Rod with Spring | MBA-001149 |
| 15 | Adjustable Rod Guide Plate | WJ-022677 |
| 16 | Handrail Safety Latch Assembly | 004114-A |
| 17 | 3” Red Wheel | P00076 |

# • Parts Breakdown •

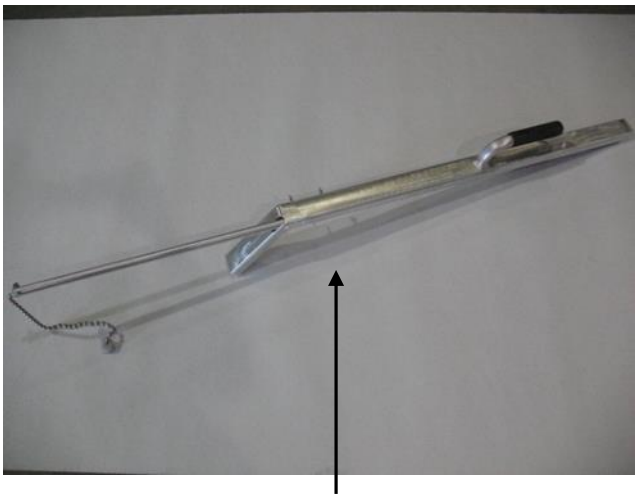


18*

19*



20* 21 22



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| ***Item*** | ***Description*** | ***Part Number*** |
|---|---|---|
| 18* | Rubber Pad (MBA-46) | 022275-46 |
| 18* | Rubber Pad (MBA-56, 63) | 022275-63 |
| 19* | Skid Plate (MBA-46,56) | SP0406 |
| 19* | Skid Plate (MBA-63) | SP02508 |
| 20* | Brake Spring Guide (MBA-46,56) | 004169 |
| 20* | Brake Spring Guide (MBA-63) | 022283 |
| 21 | Brake Spring | P00215 |
| 22 | Brake Plate | WJ022809 |
| 23 | Positioning Guide | 022158 |

# • Warranty Information •

This warranty is in lieu of all other warranties, either expressed or implied.

**What is Covered:**

This warranty covers equipment manufactured by KCI, Inc. from any defects in materials, workmanship and/or installations performed.

**Period of Coverage:**

This warranty lasts for a period of two years, electrical component coverage is for one year from the date the product ships, or until the original ownership of the ramp is transferred to another party, whichever comes first. Any repairs or modifications without the express written consent of KCI, Inc. will be grounds to immediately void all or part of this warranty.

**What is Not Covered:**

This warranty does not cover the following:

1. Accidental damage.
2. Misuse or abuse.
3. Damage caused by adverse weather, disasters, or other forces of nature.
4. Worn out adhesive skid walk.
5. Worn out tires/wheels.
6. Worn out/faded canvas canopies.
7. Any other wear or damage caused by the MBA's general use.
8. Any consequential or incidental damages to include:
    a. Any loss of profit.
    b. Loss by reason of airport or flight line shutdown.
    c. Non-operation or increased expense of operation.
    d. Loss of passengers or business.

**What KCI Will Do:**

Repair or replace any original part, component or piece of equipment that is found to have defects from time of shipment through the end of the period of coverage.

**How to Make a Service Claim:**

Provide a claim in writing within the period of coverage to the address listed below or email to msankey@kci.nu. We will then determine if the problem is a defect with the product. Once the nature of the problem is ascertained, we will notify the buyer of our planned resolution. This may include an on-site visit by KCI, Inc. for repairs, or that the buyer ships the defective part or component to us for inspection and replacement at KCI's expense.

KCI GSE Inc.
1718 Antelope Road
White City, Oregon 97503