



## **Crystaplex® 6A Series**

**Athletica IOM manual**

## **Thank you for purchasing the Crystaplex® 6A dasher board system.**

For your safety, please ensure you read these instructions carefully.

This manual details the installation / removal, storage and recommended maintenance schedule for the Crystaplex® 6A series system.

### **Warranty**

This Athletica Sport Systems product is warranted to be free of defects in materials and workmanship for a period of 1 year from the date of purchase. Please contact Athletica Sport Systems with any questions about the performance of this product.

### **Contact Us**

#### **Canada and International**

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### **Replacement parts available.**

## Installation of Crystaplex® Series 6A Rink System

### Tools list

The following is a list of items that should be found on the job site, during the installation process, to help eliminate any delays.

Item	Quantity
5000 lb. forklift – type and style depend on site conditions	1
5000 watt generator if power outlets are not available	1
100' extension cord	4
Rotom hammer drill with 1" bit - hole depth will be 3-1/2"	1
1" diameter nylon brushes for cleaning inside of holes	1
Circular saw for helping to cut in gates	1
1/2" drive electric impact guns	2
1/2" drive sockets: 15/16"	2
Open end wrenches: 9/16", 15/16"	2
Ratchet set complete with sockets: 7/16", 1/2", 9/16", etc.	2
3/8" electric drills	2
Flat pry bars	2
Chalk box with extra chalk	1
Marking crayons or "Sharpies"	2
100' steel tape measure (not fabric/nylon due to stretching)	1
30' tape measure	1
Drill bits: 13/64", 3/8"	2
#3 Phillips screw tips for drills	2
1/2" counter sink bit	1
Push brooms	2
4' level	1
Claw hammers	2
2 lb. rubber mallets	2

Tin snips or banding cutters	1
Electric hand planer	1
Utility knife	1
2-1/8" forstner counter boring bit	1
3/4" paddle bit	1
8' step ladders (for all glass over 5' in height)	2

The following tools may be needed if modifications need to be made to the board system. These tools should be sourced out and available, however, not necessarily on site.

Item	Quantity
Saws-all with metal cutting blades	1
Router with flush routing bit and 1/4" rounding bit	1
Portable band saw with metal cutting blade	1
Local weld shop or portable welding service capable of aluminum welding	1
5000 lb. Pallet jack depending on site conditions	1

The following tools will be needed if protective netting will be installed.

Item	Quantity
Adjustable man/scissors lift (size is determined by ceiling height)	1
Saws-all with metal cutting blades	1
13/64" drill bit	1
Wrench sets: 7/16", 1/2", 9/16"	1
1/8" aircraft cable cutters	1
5/16" deepwell socket w/ driver	1
Snips or pliers for cutting plastic zip ties	1
#3 Phillips screwdriver for conduit clamps	1

**NOTE:** All safety gear (ie safety glasses, ear plugs, hard hats, etc.) is the responsibility of the customer.

## **Suggested installation procedure for the 6A Series aluminum framed ice dasherboard system**

**General note:** This suggested installation procedure is to be used as a guideline for assembling the indoor Series 6A aluminum frame dasher board system.

Upon familiarity with the system, there may be other sequences or procedures which could be utilized to expedite this process.

Should you have any questions concerning an acceptable procedure or practice, please call us.

### **Dasher Panels**

1. Distribute Dasher panels around the rink perimeter into their appropriate location. This location can be determined by reviewing the dasher board shop drawings and identifying the individual panel numbers.
2. Snap chalk lines for the straight areas of the sides and ends on the slab. Locate these lines approximately 4" inside the center line of existing anchors. This line will serve as a guide line for locating the front edge of the panels, and by holding the edge of the kick plate on this line will result in a straight dasher wall when complete. Also, make special note that when anchoring onto a perimeter slab, it is critical that this snapped line is inside the refrigerated slab edge by a minimum of 1/2" for the ability to make good ice once the slab is chilled. If the dashers do not properly cover the expansion joint, soft ice may occur around the edges of the rink once the ice is put in.
3. Locate the center of the rink at the 12" red line location.
4. Start the installation of the dasher board system at the rink center line.
5. Identify the first two panels at the center of the rink. Stand these panels up together, side-by-side and loosely bolt the panels together.
6. Loosely install the anchor bolts into the existing precast anchors and ensure that the 1/2" anchor

plates, a flat washer and a lock washer are utilized with each anchor.

7. Snugly tighten the panel connecting bolts on the panel ends (three 5/8" bolts, a flat washer on each side, a lock washer and a hex nut) and ensure that the facing of each panel is aligned at the joints from top to bottom when tightening. Also, make sure to check that the top of each cap rail at the joints are flush with the panels next to it.



### **IMPORTANT!**

**When tightening panel connecting bolts, stop tightening immediately once the polyethylene facing is tight. Additional tightening beyond this point will lead to deforming of the panel| end plates, which will cause future tightening| problems and gaps.**

8. Finish tightening the anchors and aligning the panels by holding the kick plate of each panel flush with the snapped chalk line when tightening the anchor bolts.
9. Continue standing, bolting, aligning and anchoring the straight panels down both sides of the rink until complete. Once the rink sides are completely stood up and anchored, the rink ends are next.
10. Loosely bolt together the curved panels in each corner.
11. Once the corners are stood up and connected together, loosely start the anchor bolts into the existing precast anchors, again making sure that the 1/2" anchor plate, a flat washer and a lock washer are used at each anchor.
12. After erecting the corners, loosely bolt together the remaining straight panels at the rink ends. Connect the straight panels to the curve panels when complete.

It is possible to allocate the proper amount of space required for the straight panels at the rink ends by adjusting the curve panels – i.e. push the curve panels out if extra space is required in the straight areas, or pull the curve panels in to cut down on the space available on the straight ends. By working these panels

together, problems can be avoided such as excessive gaps or the last panel being too large for the opening.

13. Once the straight end panels are connected loosely, start the remaining anchor bolts.
14. Once all of the anchors are started, finish tightening the remainder of the panel connecting bolts.
- As mentioned in step #7, do not over tighten the panel connecting bolts at end plates.**
15. After tightening the panel connections, align panels by holding the base of the panels on the chalk line at the kick plate edge and tightening the anchors to hold in place.
16. Align and anchor the curved panel areas by adjusting the panels in or out at the joints to form a uniform arc and then tighten the anchor bolts accordingly.
17. Now, start at the rink sides and stretch a dry string line from one end of each long straight section to the other end of that same long straight section. The string line should be attached to the boards at the cap rail height.

18. At each end panel where the string line is attached, plumb the dasher panels using a carpenter's level and by shimming beneath the bottom sill of the panel.

When shimming, loosen the anchor and place shims either ahead or behind the anchor in sufficient quantity to plumb the panel. Typically, it works best if these shims are placed either underneath or as close as possible to the vertical end channels and/or the vertical center tubes of the panels. After the proper number of shims have been placed beneath the boards, then simply re-tighten the anchors.

Once the string line has been plumbed at each end it will serve as a guideline for plumbing the remainder of the dasher board wall.

19. Once the string line has been set, continue plumbing the panels by starting at one end and shimming beneath the panels until they are in line at the caprail with the string line. After shimming ensure that all anchors are tightened securely.

20. Continue plumbing all panels as described in all straight areas on rink sides and at the end straight areas as well.

21. After completing the straight areas, the plumb of the curve panels needs to be checked with a carpenter's level at each joint location. Adjust each of the curve panels and shim as required.

Now that the rink has been fully plumbed, it is now time to install the shielding.

### **Shielding Installation**

22. Identify the appropriate location for each piece of shielding to be installed by reviewing the dasher board glass layout shop drawings. Also, note that at the bottom portion of each piece of glass will be an "Athletica" and an "NHL preferred rink supplier" logo. These logos should be installed all in the same manner, facing the outside portion of the rink.

**Note: Typically, the shielding installation is started next to gate openings, box corners or shielding termination points**

### **Seamless Glass**

23. Before installing the seamless shielding, make sure that each bottom edge has a "U" shaped rubber gasket attached over the bottom edge. The thickness of the shielding will determine if a 1/2" or 5/8" thick gasket will be used. Also note that typically the gaskets should be installed with the thicker portion of the gasket towards the outside of the rink, and the beveled portion of the gasket facing the inside of the rink.
24. Once the gaskets are installed, lift the shielding into the seamless aluminum channel on top of the caprail.
25. When placing shielding into the seamless channel, please make sure that the 1/4" spacers are used between each piece. These consist of the hair-pin seamless Lexan clip that holds the top edges of the glass in proper alignment, and also the clear spacer clips for the bottom edge that hold each piece of glass 1/4" apart from one another. Both clips are designed to be used either with the 1/2" or the 5/8" shielding.



26. Once the first piece of shielding is seated in the channel, proceed to add another piece and install using the same steps as mentioned in step 25. Typically, the lower spacer clip is put on before the second piece of glass is slid into place. When installing the second piece, a full-height piece of 1/4" poly should be used to prevent either of the two glass vertical edges from touching one another. The 1/4" poly is typically a drop piece of 8" wide kick plate that, again, should basically extend the full height of the glass. Keep the poly in place until the second piece of glass has been fully slid into position.
27. Once two pieces of shielding are seated side-by-side in the channel, place a hair-pin seamless glass clip over the top two adjoining corners and tighten to ensure that the clip fits tightly over the shielding.
28. If installed properly, the shielding will be perfectly plumb with the dashboard panel. If not plumb, ensure proper seating in channel and/or shim as needed.
29. Proceed in this manner with the shielding until all of the pieces are in place.

### **Supported Glass**

30. Begin installing the aluminum glass support posts. Install the aluminum post by sliding it through the pre-cut holes in the cap rail until it fully embeds over the j-fitting located on the middle tube of the frame. Repeat this process around the entire rink using the long aluminum posts where specified (radius and ends). You are now ready to start setting glass.
31. Setting the glass is a three-man operation. Two people will be on the inside of the rink and one person on the outside. The two inside people will handle the glass. The outside person will make sure the glass doesn't slip off the back edge during installation. To begin installation, remove one aluminum support and set it aside. This will allow you to install the glass in a systematic, easy way. Next, take 2 gaskets and apply them to both vertical edges of the glass. Use the 1/2", B110 crème-colored gaskets on the 1/2" shielding and the 5/8", B94 black colored gaskets on the 5/8" shielding. Now, with one person on each side, pick up the glass with hands spread shoulder width apart. Set the bottom edge on top of the caprail. Keeping the hand closest to the cap rail positioned where it's at, slide the opposite hand out towards the top of the glass. Begin tilting the glass upright until the glass is vertical on the caprail. Carefully slide the glass sideways into the upright support. At this point you will have one side of the glass fully engaged into the support. On the other side of the glass the support will be missing (the piece you removed earlier). Move to the next support post and remove it from its hole. Slide it over the exposed edge of the piece of glass just set through the hole and over the j-fitting. Make sure the support post is fully engaged onto the j-fitting. Repeat this process for the remainder of the rink. You are now ready to install your corner pads in the player bench areas.
32. Remove the appropriate aluminum support post wherever the shielding terminates. Typically, at each edge of the player box or on any box dividers that do not have shielding in front of them on the rink perimeter boards. Slide the corner pad over the support post and re-install the aluminum post with the corner pad. The vinyl on the pad will now be between the gasket and the inside edge of the support. Repeat where necessary. You are now ready to adjust your gates.
33. Make sure your gates swing freely and close easily. To do this you may need to sand/grind down the poly on the edge of the door, shim underneath panels to twist the panel frame into the proper alignment and lubricate all of the moving parts to allow them to operate more smoothly.
34. Once the gates are properly aligned, it is now time to double check the gaps that are between the termination 2C supports. After the original installation, these should have poly gap closure strips attached to them, which are used at both the hinge and latch portion of the doors whenever the vertical gap between the two

adjoining support posts is greater than 1/2". These are meant to help ensure both safety and to protect the players/spectators from gaps that are too large. After the gates are reinstalled, check the vertical gaps to ensure that the finished gap is no more than 1/2" wide from top to bottom. If so, please attach strips of either the 1/2" or 1" thick poly at 2-1/4" wide x 96" long that would have been supplied with the rink system. Simply cut them to the length of each support after its fully engaged in the panel, then drill through, countersink and attach the strips to the 2C supports by use of the type "F" thread-forming screws that have been supplied.

You are now ready to begin installing the bench/box areas, poly machine gate thresholds and/or any protective netting that you may have. Due to the complexity of these items, and because these may vary so much from a job by job basis, we ask that you please contact your Athletica Project Manager to get further details and helpful tips relating to your particular rink system. Once again, please feel free to contact your Athletica Project Manager at 800-809-7465.



### **IMPORTANT!**

**Once your rink system is completely installed, it is critical that you properly maintain it over time and continued use. As with buying a car, your new rink will perform better and last much longer if it is properly maintained. Please refer to our suggested maintenance tips, and consult your Athletica Project Manager for any additional tips that might pertain to your individual rink system.**

## **Suggested removal procedure for the 6A Series aluminum dasherboard system**

**General note:** This suggested removal procedure is to be used as a guideline for removing the indoor Series 6A aluminum frame dasher board system.

Upon familiarity with the system, there may be other sequences or procedures which could be utilized to expedite this process.

Should you have any questions concerning an acceptable procedure or practice, please call us.

## **Getting Started**

1. Before removing any glass or supports, go around the rink and number, with a marker or tape, the glass and the shielding supports. By referring to the rink layout drawings, you can determine what each panel number is and therefore number the shielding and supports to match the panels that they came from. By doing this, this will help ensure that the re-installation process goes smoothly and that the materials will fit back together the way they were originally installed.

## **Protective Netting**

2. If the rink system has protective netting, please start by removing the cable assembly at the top of the shielding. This would include removing the clear suction cups that hold the cable to the top of the actual glass itself.
3. Determine if the protective netting will also need to be removed. If so, simply cut the plastic zip ties that hold the net to the cable and conduit system at all four sides of the net. Please note that it is highly recommended that the conduit system at the tops of the net remain in place even though the board system must come out. This will ensure that the netting is rehung at the proper elevation, and that the reinstallation process is that much easier. When taking down the netting, a man-lift/scissors-lift will be needed. The actual size of the lift used will be determined by the ceiling height of the building and,

therefore, the height at which the top of the nets is actually hung.

### **Shielding & Support Posts**

4. Now start at one of the termination support locations, such as the box area, or at the door jam of any gate.
5. Remove the terminating shielding support post called a 2C.
6. At this time, the removal of the actual glass can begin. Please make sure that once the glass is removed from the panels that the staging area that is set up to store the glass will be safe and secure for the entire period of time that the rink is removed. Ideally, glass storage carts should be used to make the process safe and easy to transport the glass from point "A" to point "B". If you don't have access to them, and the glass will be transferred directly into a storage room, make sure that the proper precautions are taken. It is highly recommended that glass is kept or stored in the vertical position. Simply lay rubber matting on the floor underneath the bottom glass edge and also between the top edge of the first piece and the wall surface that it will be leaned up against.
7. For seamless glass rinks, remove the hair-pin Lexan clip from the top joint of the first and second piece. When taking the glass out, have 2 guys on the inside of the rink and 2 guys on the outside of the rink. Carefully lift the glass out of seamless channel and either place it directly onto the glass storage cart, or lean it up against a wall temporarily until it can be taken to its final storage location. Take the clear Lexan spacer clip off of the bottom edge of the glass, and then proceed to the next piece, following the same procedure. Note, it is suggested that the bottom "U"-shaped gasket is left on the glass when in storage simply to offer further protection.
8. For supported glass rinks, have one person place their hands on the vertical edge of the glass at the termination side which will help hold it in place, while a second person loosens the screws of the face-plate of the support post

located between the first and second piece. Please do not remove the screws the entire way as the glass would be then be unsupported. Now, with one person on the outside of the rink and two people on the inside of the rink, slowly and carefully pull the glass out of the support and tip it into the rink. The person on the outside of the rink is to keep their hands at the bottom of the glass to ensure it does not kick off the back of the caprail. Once the glass is lowered down, lift it off the caprail, carrying it flat to the glass storage cart, or lean it up against a wall temporarily until it can be taken to its final storage location. The vertical gaskets on each edge can be removed, then proceed to the next piece. Take out the support that already has the face plate loosened up, then loosen up the screws on the next support.

9. In regards to the shielding supports, these can either be stored on the inside of the glass storage carts, or can be placed on a pallet. If stacked in bundles, it is recommended that cardboard be placed between the different rows of supports to eliminate any unnecessary scratching that may occur. The vertical gaskets can also be placed on a pallet as well, and no extra storage measures need to be taken for them. They can simply be piled in bundles due to the material that they are made from.

### **Dasher Panels**

10. Before removing any of the dasher boards, mark the floor inside of the rink with the exact location that the boards are currently in. Note, if the expansion joint is exposed at all, then, obviously, those boards should be slid forward once reinstalled so that they properly cover the joint. Also be sure to mark centerlines of the rink and the tangent points for each radius corner. These marks will be the guidelines for the re-installation of the boards. Finally, when starting to take the panels apart, make sure that every panel is properly numbered and corresponds to the location that they are shown on the rink layout drawings.



11. It is a good idea to have buckets, a cart or boxes to store all of the connecting hardware. This will help avoid losing any of the miscellaneous nuts, bolts, washers, etc. that are used.
12. Start by removing the equipment gate doors. To do this, simply remove the center pin of the heavy-duty adjustable hinges.
13. Next, begin working around the rink and remove the 3 panel-to-panel connector bolts in the vertical end channels. Note that a 15/16" wrench socket will be needed for the 5/8" connector bolts used. Obviously, an electric impact wrench will greatly speed up this process.
14. After the connector bolts have been removed, begin removing the anchor bolts that hold the panels to the floor. A 15/16" socket will be needed and, again, an electric impact wrench will greatly speed up this process. **Please note that once the anchor bolts are removed, the panels will be completely loose. Use caution not to knock the panels over and always be cautious of those working around you as the panels become loose.**
15. Continue to work around the rink taking the panels down. Please refer to the recommended Storage Procedure for tips on storing your dasher board panels.

## **Storage Procedure**

**If for any reason you should have to remove the panels from the rink for any extended amount of time the following storage procedure should be followed to minimize damage:**

### **Dasher Board Storage**

Dasher board panels can be stored either vertically or horizontally. Vertical storage is preferred as it minimizes the weight load and potential for deforming of the aluminum framework. To help eliminate any unnecessary scratching of the polyethylene materials, please also try and store all straight panels either face-to-face or back-to-back whenever possible.

Dasher panels should be stored indoors, out of direct sunlight. By storing indoors this will eliminate the exposure to the ultra-violet rays which will break down the polyethylene materials.

Additionally, it is beneficial to minimize exposure to temperature extremes above 80 degrees Fahrenheit and below 10 degrees Fahrenheit. When subjected to wider temperature variations for extended time there will be undue stress on the facing attachments.

### **Horizontal Dasher Storage**

While storing horizontally, the same guidelines should be utilized as with the vertical storage, with the following two additional notes.

While storing horizontally, insert a spacer strip of suitable material between the panels to minimize scratching of the facing materials.

While horizontally stacking the curve panels facing side down, it is important to install proper blocking beneath the first panel, at the center of the panel for the full height, to prevent flattening of the curve aluminum frames from the weight of the stack.

## Maintenance Schedules

### Dasherboard Panels

	Weekly	Monthly	Seasonal
Check torque of floor anchors. Tighten as required.		◆	◆
Visually inspect plumb of dasher wall. Replumb as required.		◆	◆
Visually inspect aluminum framing for deformation or cracks. Repair or replace as required.		◆	◆
Check attachment of polyethylene facing, kickplate and caprail to aluminum framing. Tighten/refasten as required.	◆		◆
Inspect panel joints (ice side) for facing alignment. Re-adjust and tighten as required.		◆	◆
Check torque of panel connection bolts. Re-tighten as required.		◆	◆
Cleaning of polyethylene facing/kickplate.		◆	◆

### Gates

	Weekly	Monthly	Seasonal
Inspect gate swing for proper clearance. Adjust as required.	◆		◆
Inspect any steel hardware for start of corrosion. Clean off rust and spray galvanize as required.		◆	
Inspect gate latches for proper operation. Adjust as required.	◆		◆
Inspect door/panel frame facing alignment (surface side).	◆		◆
Lubricate gate hinges.		◆	◆
Lubricate adjustable caster.		◆	◆
Check torque of hardware fasteners. Tighten as required.		◆	
Inspect threshold covers for wear. Replace as required,		◆	◆
Inspect threshold covers for proper attachment. Tighten/fasten as required.		◆	◆

### Shielding / Shielding Support System

	Weekly	Monthly	Seasonal
Visual inspection of shielding for chips/cracks. Replace as required.	◆	◆	◆
Visual inspection of shielding for proper engagement in its support system. Tighten/reposition as required.	◆		◆
Visual inspection for proper seating of shielding support post.	◆		◆
Cleaning of shielding.		◆	◆



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