

American Seating Co.
STADIUM CHAIRS

| Installation
| Instructions



 **AMERICAN SEATING**
Grand Rapids, Michigan

Stadium Chairs



406 Floor
Mount



408 Riser
Mount



505 Floor
Mount



507 Riser
Mount

General Instructions

Read this manual fully prior to starting installation. Call American Seating Customer Service with any questions.

What you need to know prior to installing **STADIUM** chairs:

1. Note project specific instructions on seating plan.
2. In laying out aisle lines and chair sizes, always work from centerline of building or room toward walls.
3. All parts of chair are specified “right” or “left” as a person would sit in the chair.
4. Do not unpack parts until ready to distribute them.
5. Keep various kinds of hardware separate in their individual packages.
6. Each person should perform and complete operations in sequence, instead of other unrelated operations.

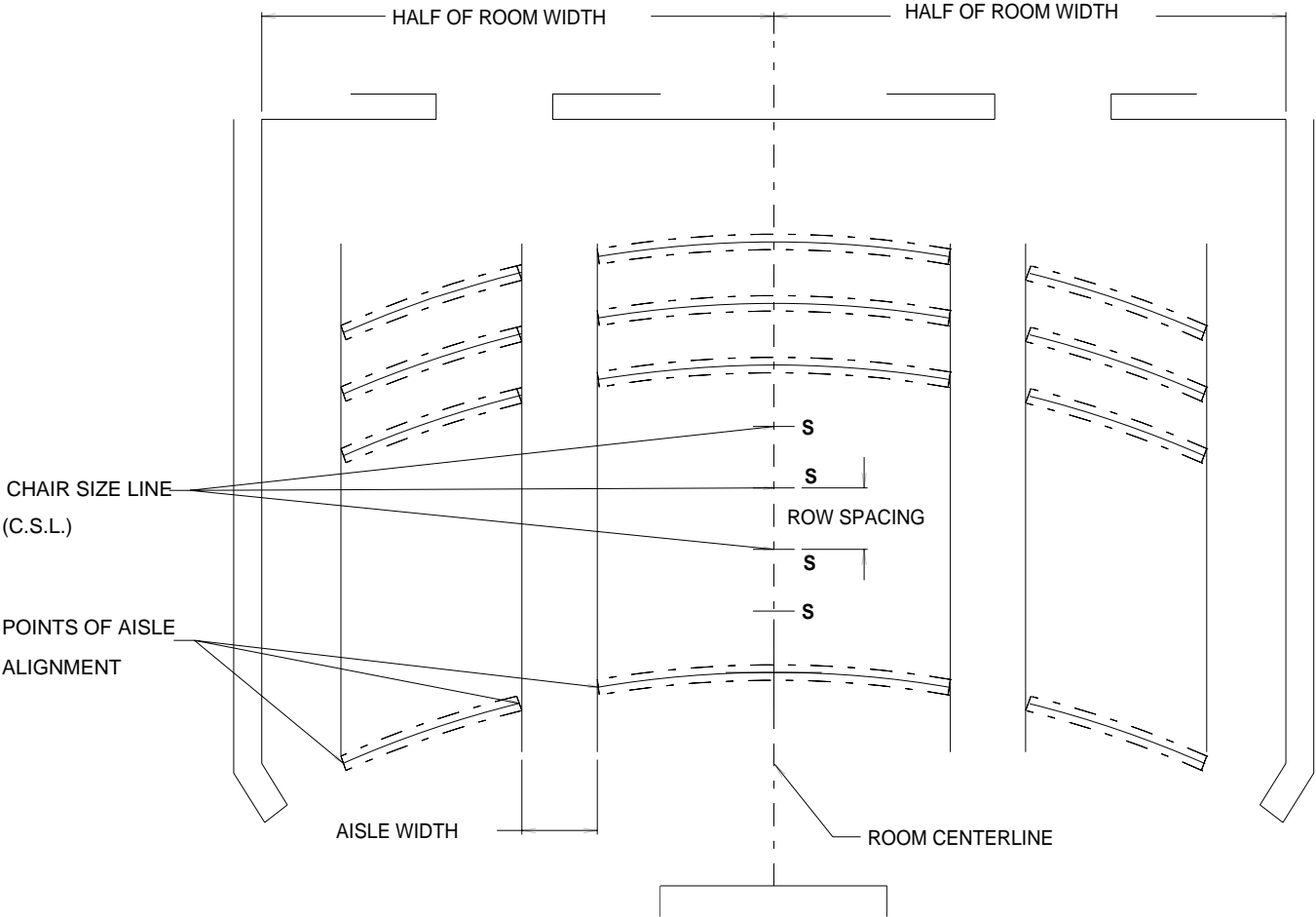
A. Floor Layout

NOTE:

This example shows a room with a radial layout of seating rows. If seating rows are straight rather than radial, floor layout method is the same, except chair size lines are straight.

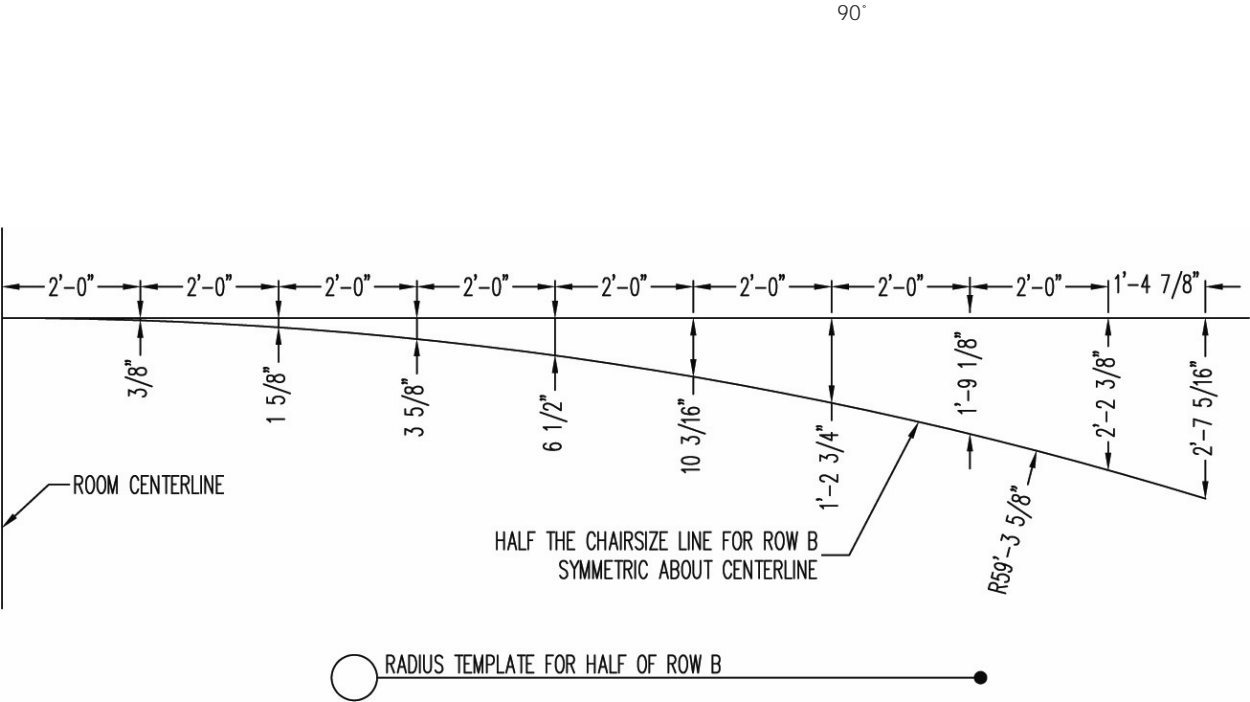
1. Locate and mark a centerline of the building or room by centering between side walls at the rear and the front of the room or building. (see **Figure 1**).
2. Spacing of chair rows. Reference the seat plan to determine the location of each chair size line and mark these points on the centerline. (see **Figure 1**)

FIGURE 1



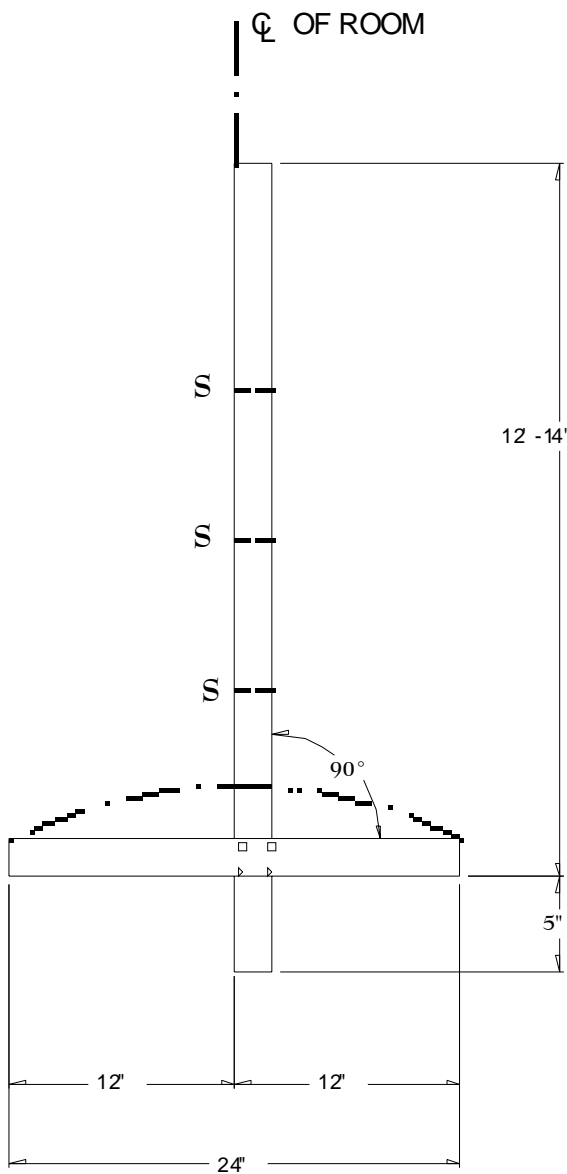
3. Scribe the radius layout arc for the chair size line of the first row or layout row. See the seating plan for the information to construct the radius and check to see on the plan what row is given as the layout row. (See **Figure 2**)

FIGURE 2



4. Lay out chair size lines.
 - a. Construct T-square as shown in **Figure 3**.
 - b. Mark "S" points on the T-square by placing the T-square on the centerline of the room and transferring the row to row chair size line spacing onto the long leg of the T-square. ("S" points coincide with chair size lines indicated on seating plan.)

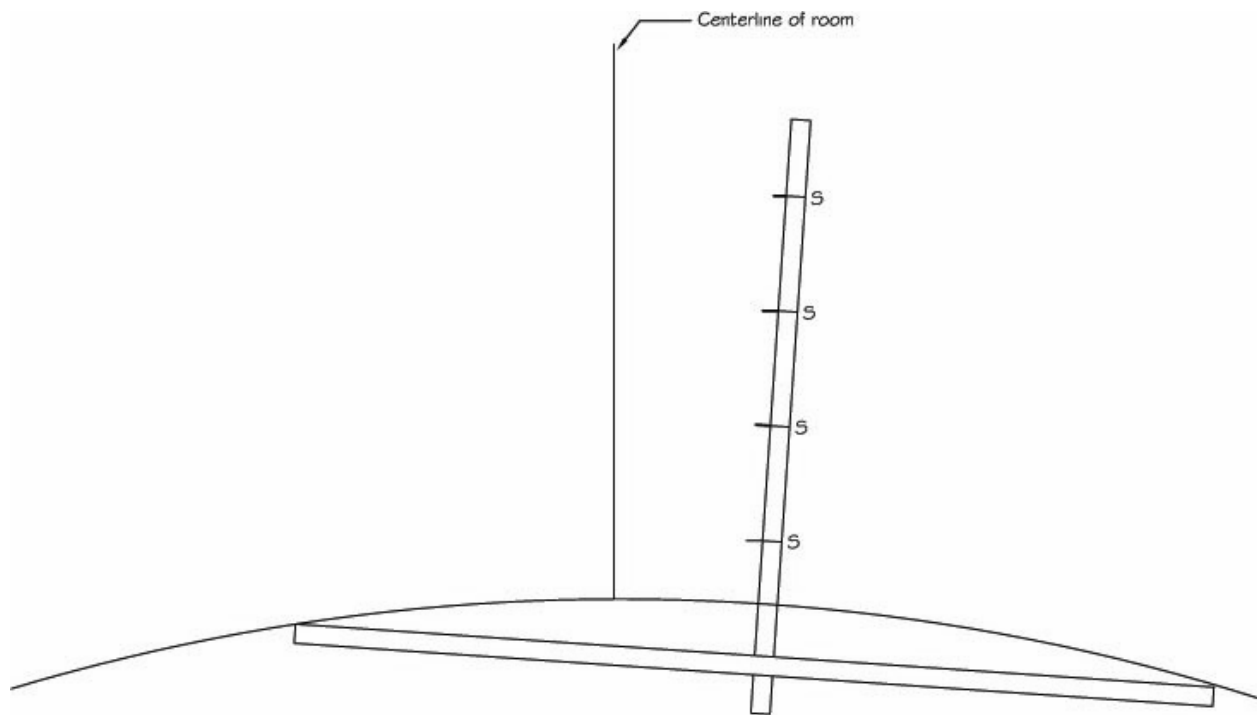
FIGURE 3



- c. Place T-square on base circle so working edge is along centerline and two corners (A) of cross piece touch base circle as shown in **Figure 4**.
- d. Move T-square along base circle as in **Figure 4** and mark floor opposite Points "S" for that row at about 18" intervals.
- e. Draw an arc through marked points, using flexible strip about 12' long. Have a person hold one end of the strip while another person bends the strip into position and marks the arc. Continue down the arc but overlap about three feet of previous arc to create a smooth curve.
- f. Repeat steps 4b, 4c, & 4d for the successive rows until the room is complete.

NOTE: In working toward rear, arcs of successive rows flatten slightly. (Always refer to seating plan for clarification) For uniform row spacing, occasionally check distance between rows and relocate point "S" on T-square if necessary.

FIGURE 4



5. Aisle alignment and width layout
 - a. On chair size line, lay out points of aisle alignment at the chair size line (see **Figure 1**) according to seating plan, starting at centerline of building or room.
 - b. Using the points of aisle alignment (at the front and rear rows), snap a chalk line to create one side of the aisle.
 - c. For the other side of the aisle, again mark the points of aisle alignment as indicated and snap a chalk line to establish the aisle width. (see **Figure 1**)
6. The centerline location of the standard on the chair size line, starting at any aisle, is determined as follows:
 - a. Dimension from aisle line to the center line of the first standard. This distance is referred to as the end allowance. This value may vary due to the addition of aisle lights, tablet arms etc. Always refer to the seating plan for clarification.
 - b. Dimension from the first standard center line to the center line of the second standard. Reference the seating plan to find correct seat width at any given location. Be certain the dimension is at correct seat width $\pm 1/4$ inch.
 - c. Using the T-square or a smaller T-square, draw radial line (Toward the center point of arc) for each standard perpendicular to the chair size line.

NOTE: In case of a slight variation in row length between plan and building or room, adjust difference by dividing it between aisles (aisles must meet code requirements).

Chair Standard Installation

For chairs to install on projects without tablet arms; skip to **Installation of Chair Standards**.

For standards on projects that have tablet arms note the following information:

Standards are factory drilled with mounting holes for tablet arm attachment. Both standards with holes and standards without holes will be supplied.

If a project has tablet arms for all chairs locations then right hand tablet arms are not noted on the seating plan. For project that has only a portion of chairs with tablet arms those locations will be noted on the plan. Left hand tablet arm locations will always be noted on the plan.

A right hand tablet arm mounts to the right hand standard for a chair. The left hand mounts to the left hand standard for a chair.

Standards without holes are located in any of these three locations;

In a seating run without left hand tablet arms the standard without holes is located as the left end standard.

In a seating run with left hand tablet arms the standard without holes is the right hand standard of the first chair equipped with a left hand tablet arm.

Where the project has only a portion of the chairs with tablet arms standards without holes are located where ever there is not a symbol noting tablet arm on the seating plan.

Installation of Chair Standards (Floor Mount)

1. Concrete Flooring

- a. Using the standard as a guide, place the standard on the centerline location previously marked.
- b. Securement of the standard requires two (2) bolts set diagonally across the foot of the standard. For most installations reference American drive anchor installation instructions on the following page. Check project seating plan for anchor type, hole size and depth.
- c. Check each anchor is securely set before installing remaining chair components. Place standard on installed anchors and tighten to only finger tight until chair backs are installed. After chair backs are installed fully tighten.

2. Wood Flooring

- a. Using the standard as a guide, place the standard on the centerline location previously marked.
- b. Mark the center point of each hole from the standard foot on the floor. Wood flooring will require use of four holes for proper attachment.
- c. Use a 5/32" drill in soft wood or 3/16" drill for hard wood and drill the four (4) points created in the previous step.
- d. Place standard over drilled holes. Each standard is attached to the floor using four (4) 1/4" x 1 3/4" hex head sheet metal screws. Tighten to only finger tight until chair backs are installed. After chair backs are installed fully tighten the anchors.

American Drive Anchor Installation Instructions

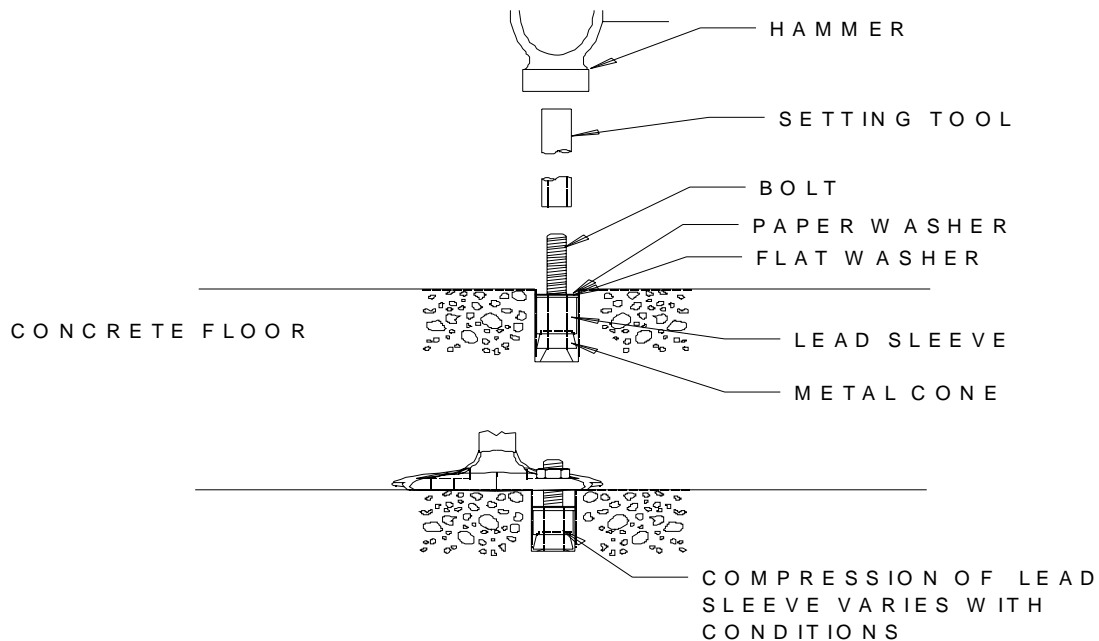


Figure 5

1. Drill holes. Use 17/32 bits (never larger) and drill holes to a minimum depth of 1 1/2" - maximum depth of 1 3/4" for standard length floor anchor.
2. Clean out dust thoroughly.
3. Insert completely assembled anchor into hole. (See Figure 5)
4. Drive down lead sleeve with setting tool and hammer, expanding it. Start with light taps to make sure the anchor is at the bottom of the hole and finish with heavier blows until no further compression can be felt.
5. Place Standard over projecting bolts, slip on lock washers and turn down nuts sufficiently to hold standard erect but allowing sidewise motion of standard.
6. When final tightening after installing chair backs, nuts should be tightened to snug tight, typically 10-14 ft-lbs. Take care not to break the bolt. It is important that the nuts be tightened sufficiently to hold the article firmly to the floor.

Installation of Chair Standards (Riser Mount)

General Notes regarding installation of riser mount standards:

1. Refer to the installation plans constantly for identifying marks, and special instructions, etc.
 2. Refer to printed installation forms for material list showing where hardware is used, and other instructions of importance.
 3. Actually install a few chairs to test the accuracy of the following instructions before the layout and drill work of the entire job.
- A. Layout the center lines of standards on the face of the riser. (**EXCEPTION:** At riser breaks, the center lines are laid out on the chair size line and projected perpendicularly onto the riser.)
- i. Check riser dimensions against the seating plan, making adjustments where any discrepancies might exist.
 - ii. Spot location of holes on the face of the riser, and equalize any surplus space at both ends of the rows to insure proper aisle alignment.
 - iii. Check out the riser height, and if it is not uniform throughout its length, select the high point of the tread and lay out the chair size lines from this point. This is necessary to prevent crowding the clearance between the standard and the tread. Scribe a chalk line along the face of the riser at a height equal to the distance of the hole above the tread. Then mark off the chair sizes on this chalk line. Mark the hole locations for the middle and ends.
- B. Drill risers, never using larger than an 11/16" drill bit. Clean out the holes thoroughly.

- C. Insert the anchors.
 - i. Drive down lead sleeves with setting tool and hammer, expanding it. Start with light taps to make sure the anchor is at the bottom of the hole and finish with heavier blows until no further compression can be felt.
- D. Erect Standards
 - i. Place Standard over projecting bolts, slip on lock washers and turn down nuts sufficiently to hold standard erect but allowing sidewise motion of standard.
 - ii. When final tightening after installing chair backs, nuts should be tightened to snug tight, typically 10-14 ft-lbs. Take care not to break the bolt. It is important that the nuts be tightened sufficiently to hold the article firmly to the floor.

Installation of Chair Standards (Stainless Steel Hardware – Epoxy Anchoring)

General Notes of Epoxy Anchoring:

Layout and Drill procedure is the same as suggested for the drive anchoring system. (Please refer to the Manufacturer's Installation Instructions for suggested hole diameters.)

1. Once the hole has been thoroughly brush cleaned and blown out, fill the hole 3/4 full of epoxy. (Note: please be sure that the epoxy has fully mixed prior to the filling of holes.)
2. Insert the specified length threaded rod while slightly turning in a clockwise direction.
3. After waiting the specified cure time suggested by the manufacturer, the erection of iron may start. Bring the casting that is specific to that location. Once it is placed in the appropriate location, apply a plain washer, lock washer, and the stainless steel nut. Hand tighten nuts sufficiently to hold the standard erect but still allowing sidewise motion.
4. When final tightening after installing chair backs, nuts should be tightened to snug tight, typically 10-14 ft-lbs. Take care not to break the bolt. It is important that the nuts be tightened sufficiently to hold the article firmly to the floor.

Assembly of *STADIUM* Backs to standards (Figure 8)

General Notes regarding back component installation:

1. Insert aluminum step bolts into the four holes in the back, and slip plastic spacer over each bolt at the rear of the back.

2. Insert back between standards and set bolt shank firmly in plastic by striking with mallet.
3. Run on aluminum flange nuts loosely with fingers, but do not tighten.
4. Repeat this operation across complete row of each section.
5. Center backs between standards and tighten nuts securely, using caution as over tightening will break an aluminum bolt.
6. Break off excess bolt protruding beyond nut, and peen end of bolt to eliminate sharp edges

Tighten Floor Attachments

Assembly of 408 Style Backs to Standards

[408 style backs do not use plastic spacers.]

1. Insert the chair back between the loosely set cast iron standards.
2. Align back holes with slots in standards. Insert aluminum step bolts into the holes in the back and through the slotted holes in the standards. Repeat for all four back holes. (If cup holders are included hang them from the bolts at the rear prior to installing nuts.)
3. Run flange nuts onto the aluminum bolts loosely, until nut just contacts standards (or cup holder).
4. Repeat operation for each seat along the row in the section.
5. Center backs between the standards and ensure standards are plumb, and tighten nuts to 110 in-lbs torque.
6. Break off protruding threads on step bolt if protruding greater than 3/16". Check for sharp projection and eliminate if it occurs.

Assembly of *STADIUM* Seats to Seat Arms (Figure 6)

1. Insert aluminum step bolts and slip the plastic spacer over each bolt in the bottom of the seat.
2. Place the seat on the seat arms and set the bolt shanks firmly in plastic by striking with a mallet.
3. Run on aluminum flange nuts, loosely with fingers but do not tighten.
4. Repeat this operation across complete row of each section.
5. Turn up the seat and 'square' the seat arms. The clearance between the seat arm and the edge of the seat should be equal from the front to the rear – also on both sides of the seat.

6. Tighten nuts securely; using caution as over tightening will break the aluminum bolt.
7. Break off the excess bolt protruding beyond the nut, and peen the end of the bolt to eliminate sharp edges.
8. Adjust the self rise function of the seat to operate freely by tightening or loosening the lock nut on the hinge assembly.

Assembly of 408 Style Seats to Seat Arms

[408 style seats are the only model seats that use factory installed jacknuts.]

1. Place seat on seat arms. Align front hole in seat arm with respective hole in seat and then insert hex machine screw into nut and hand tighten for engagement. Repeat for other seat arm.
2. Align rear slots in seat arm with rear holes in seat. Insert hex machine screw into nut and hand tighten for engagement. Repeat for other seat arm.
3. Run in machine screws into nuts until head just contacts seat arms.
4. Repeat operation for each seat along the row in the section.
5. With seat in up position check alignment and spacing of seat with the standards. The clearance between the seat arms and the edge of the seats should be uniform front to rear and along both sides of the seat. Align to uniform spacing.
6. Tighten machine screws securely to 35 in-lbs. DO NOT EXCEED 70 in-lbs or the jacknut may break.
7. Adjust self rise hinge nut - bolt at the standard for free operation of the chair.

Accessory Installation

The following accessories are or will be available for **STADIUM** chairs:

- ❖ Row and Seat Designation Tags (Figure 7)
- ❖ ADA Arms
- ❖ Tablet Arms
- ❖ Cup holders; front and rear mount

Consult the accessory installation sheet for instruction to add that accessory to the **STADIUM** chairs.

Trim components and Finishing Installation

Tighten any loose nuts. Reset or replace loose anchors.

On a fully tight connection snap off the excess bolt thread flush with the nut. Push the cover caps on to the nuts then tap them down to fully cover the nut (if applicable).

Finish installation by cleaning any installation debris and removing excess materials from the room. Walk each row to perform a visual check that each chair seat is sitting in the proper upright position. Dissimilarities between chairs may indicate loose fasteners; investigate any irregularities and correctly resolve any problems found.

NOTE: Any damage to the finish of the standards must be touched up. This occurs usually around the attachment hardware or anywhere the paint has been chipped. Air dry acrylic enamel can be supplied for this purpose.

Plastic Seat to Seat Arm Attachment



Figure 6

Number tag to back attachment



Figure 7

Back to Standard Attachment



Figure 8