

Installation Manual

Frameworkx Furniture

April 2007 / 53-900270-000

Brunswick[®] 

CUSTOMER SERVICE

A tradition in excellence.

Frameworkx Furniture Installation Manual

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Reorder Part No. 53-900270-000

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SAFETY

Throughout this publication, “Warnings”, and “Cautions” (accompanied by one of the International HAZARD Symbols) are used to alert the mechanic to special instructions concerning a particular service or operation that may be hazardous if performed incorrectly or carelessly. They are defined below. **OBSERVE AND READ THEM CAREFULLY!**

These “Safety Alerts” alone cannot eliminate the hazards that they signal. Strict compliance to these special instructions when performing the service, plus training and “Common Sense” operation are major accident prevention measures.



NOTE or IMPORTANT!:

Will designate significant informational notes.



WARNING!

Will designate a mechanical or nonelectrical alert which could potentially cause personal injury or death.



WARNING!

Will designate electrical alerts which could potentially cause personal injury or death.



CAUTION!

Will designate an alert which could potentially cause product damage.



Will designate grounding alerts.

SAFETY NOTICE TO USERS OF THIS MANUAL

This manual has been written and published by the Service Department of Brunswick Bowling and Billiards to aid the reader when servicing or installing the products described.

It is assumed that these personnel are familiar with, and have been trained in, the servicing or installation procedures of these products, which includes the use of common mechanic's hand tools and any special Brunswick or recommended tools from other suppliers.

We could not possibly know of and advise the reader of all conceivable procedures by which a service might be performed and of the possible hazards and/or results of each method. We have not attempted any such wide evaluation. Therefore, anyone who uses a service procedure and/or tool, which is not recommended by Brunswick, must first completely satisfy himself that neither his nor the products safety will be endangered by the service procedure selected.

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication.

It should be kept in mind, while working on the product, that the electrical system is capable of violent and damaging short circuits or severe electrical shocks. When performing any work where electrical terminals could possibly be grounded or touched by the mechanic, the power to the product should be disconnected prior to servicing and remain disconnected until servicing is complete.

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Warranty and Service Policy

If any defects in material or workmanship appear during the first three months after installation, the defective part will be repaired or replaced, at Brunswick's option, with no charge to the Customer.

If any defects in material appear during the nine months following the initial three-month warranty period, the defective part will be repaired or replaced at Brunswick's option, with no charge to the Customer for parts. The customer must assume all the other costs in making the repair or replacement.

All service calls during the first three months of the warranty period, resulting from the inability of the Customer's mechanic to perform required adjustments or maintenance, will be billed directly to the Customer.

Brunswick reserves the right to change the design of any product, but assumes no responsibility to incorporate such design changes on products already sold.

The warranty applies only to new products installed by Brunswick and extends only to the original purchaser. Repairs or replacement made by anyone not approved by Brunswick void the warranty.

Under no circumstances shall the Seller or Manufacturer be liable for loss of profits or other direct or indirect costs, expenses, losses or damages arising out of defects in or failure of parts.

Important Pre-Installation Information

- Minimum space between table arrangement is 33" (838 mm).
- Space between tops when mod wall sections are installed next to each other is recommended to be 3/4" (19 mm).
- When installing table tops, finger start all bolts 4 or 5 threads prior to using any tools.
- The torque requirement for the bolts which secure a table top to a frame assembly is 15 foot lbs. (20 nm).
- The torque requirements for securing seat buckets is 25 inch lbs. (2.8 nm).
- Finger start all bolts going into the floor fasteners.
- The torque requirement for all floor fasteners is 25 foot lbs. (34 nm).
- When installing seat rails back to back, minimum spacing is 5" (127 mm), and 3" (76 mm) if installing against a wall.
- Finger start all bolts going into the fasteners in the mod wall and seat rail tubes.
- When installing AVK fasteners (rib nuts), the torque requirement is 25 foot lbs. (34 nm).
- Free standing seats require a small amount of lubricant (preferably white lithium grease) be applied to the plastic bushing.



Packaging for Frameworkx Seating

* Denotes quantity of one per center

Frameworkx Color Codes

-220	Blueberry
-221	Kiwi
-222	Cranberry
-223	Grape
-224	Banana
-225	Strawberry

53-861100-000 Table Frame Assembly for Fixed Arm/Fixed Seat

Qty.	Part Number	Description
1	53-400454-000	Frame, Table, Fixed/Fixed
6	53-400109-000	Cap, Tube, 3"
1	53-861100-001	Package, Hardware, Floor Mounting

53-861100-001 Hardware Package for Table Top Seating

Qty.	Part Number	Description
4	11-111456-000	Stud, Concrete, 3/8-16 x 3 1/2"
4	11-195016-001	Lockwasher, 3/8"
4	11-191014-001	Washer, 3/8"
4	11-194140-001	Washer, Belleville, 3/8"
10	53-400227-000	Washer, Stainless Steel, 3/8"

53-861072-000 Table Frame Assembly for Swing Arm/Swivel Seat

Qty.	Part Number	Description
2	53-400462-000	Frame, Table, Swing/Swivel
1	53-400464-000	Support
4	11-006345-000	Screw, Button Hd., 3/8-16 x 1"
4	53-400109-000	Cap
1	53-861100-001	Package, Hardware

53-861073-000 Table Frame Assembly for Swing Arm/Swivel Seat

Qty.	Part Number	Description
1	53-861073-700	Packing List, Triangular S/S table Weldment
2	53-400468-000	Assembly, Triangular S/S Table Weldment with 60° Seat swivel
1	53-400470-000	Assembly, S/S Table Weldment Support
1	11-006345-000	Screw, Button Hd., 3/8-16 x 1"
4	53-400109-000	Cap
1	53-861100-001	Package, Hardware

53-860942-000 Mod Wall Supports

Qty.	Part Number	Description
2	53-400325-000	Assembly, Leg, Mod Wall
1	53-860942-001	Package, Hardware

53-860942-001 Hardware Package for Mod Wall Support

Qty.	Part Number	Description
4	53-400301-003	Screw, Special, 3/8-16 x 3/4"
20	53-400302-000	Plug, Hole
4	11-111560-000	Anchor, Concrete, Hilti

53-860943-000 Modesty Panel

Qty.	Part Number	Description
1	53-400335-000	Panel, Modesty

53-860944-000 Mod Wall Accessory

Qty.	Part Number	Description
1	53-400329-000	Frame, Ball Rack/Shelf
1	53-860944-001	Package, Hardware

53-860944-001 Hardware Package for Mod Wall Accessory

Qty.	Part Number	Description
2	11-006345-000	Screw, Button Head, 3/8"-16 x 1"

53-860945-000 Shelf Insert

Qty.	Part Number	Description
1	53-400334-000	Insert, Shelf

53-860946-000 Mod Wall for Fixed Arm/Swivel Seat

Qty.	Part Number	Description
1	53-400344-000	Accessory, Chair, Mod Wall
1	53-860944-000	Package, Mod Wall Accessory
1	53-860946-001	Package, Hardware

53-860946-001 Hardware Package for Mod Wall

Qty.	Part Number	Description
2	11-111560-000	Anchor, Concrete, 3/8-16
2	11-095014-000	Insert, Wood, 3/8-16
4	53-400301-003	Screw, Table Mounting, 3/8-16 x 3/4"

53-860947-000 Trash Receptacle

Qty.	Part Number	Description
1	53-400337-000	Trash Receptacle
1	53-400338-000	Cover, Trash Receptacle
1	53-400219-000	Template
1	53-860947-001	Package, Hardware
1	53-400343-000	Ballast (Sand Bag)

53-860947-001 Hardware Package for Trash Receptacle

Qty.	Part Number	Description
3	11-111560-000	Floor Anchor, Concrete
3	11-001342-001	Screw, Hex Hd., Cap, 3/8-16 x 3/4"
1	53-400339-000	Plate, Base, Trash Receptacle

53-861070-000 Mod Wall Swing Arm/Swivel Seat

Qty.	Part Number	Description
1	53-400444-000	Lower T-Post Assembly
1	53-400445-000	Upper T-Post Assembly
1	53-400329-000	Accessory Shelf Assembly
4	11-006345-000	Screw, Button Head, 3/8-16 x 1"
1	53-860946-001	Package, Hardware

53-860949-000 Triangle Table Bracket

Qty.	Part Number	Description
2	53-400350-000	Bracket, Triangle Table
1	53-860949-001	Package, Hardware

53-860949-001 Hardware Package for Triangle Table Bracket

Qty.	Part Number	Description
16	53-400301-003	Screw, Table Mounting, 3/8-16 x 3/4"
16	11-095014-000	Insert, Wood, 3/8-16 x .984"

53-860950-000 Wall Ball Rack with Top

Qty.	Part Number	Description
1	53-400316-000	Ball Rack, Wall, with Top
1	53-860963-001	Package, Hardware

53-861020-000 Two Seat Rail, Short (Reduced)

Qty.	Part Number	Description
1	53-400414-000	Rail, Two Seat, Short (Reduced)
2	53-400109-000	Cap, Tube, 3"
1	53-861020-001	Package, Hardware

53-861020-001 Hardware Package

Qty.	Part Number	Description
3	53-400302-000	Hole Plug, Mod Wall
4	53-400301-003	3/8-16 x 3/4" Special Screw
4	11-111560-000	Anchor 3/8-16 x 1-9/16" (Concrete)

53-860956-000 Ashtray/Drink Holder for Seating

Qty.	Part Number	Description
1	53-400178-000	Ashtray/Drink Holder
1	53-400179-000	Bracket, Mounting
1	53-860956-001	Package, Hardware

53-860956-001 Hardware Package for Ashtray/Drink Holder

Qty.	Part Number	Description
4	11-082703-001	Screw, Tapping, "B", Pan Hd., #12-14 x 1/2"
1	11-001344-001	Screw, Hex Hd., Mach., 3/8-16 x 1"
1	11-195016-001	Lockwasher, 3/8"
4	11-082122-001	Screw, P.H., Tap, "AB", #12 x 1/2"

53-860958-000 End Table Frame

Qty.	Part Number	Description
1	53-400186-000	Frame, End Table
1	53-860958-001	Package, Hardware

53-860958-001 Hardware Package for End Table Frame

Qty.	Part Number	Description
1	11-006345-000	Screw, Button Hd., Cap, 3/8-16 x 1"
4	11-001182-001	Screw, Hex Hd., Mach., 1/4-20 x 3/4"
4	11-195014-001	Lockwasher, 1/4"

53-860959-000 Contour Seats

Qty.	Part Number	Description
1	53-400110-000	Seat, Contour
1	53-860959-001	Package, Hardware

53-860959-001 Hardware Package for Contour Seats

Qty.	Part Number	Description
4	11-082862-001	Screw, Self Tapping, #14-10 x 1"
4	11-198005-001	Washer, Star, 1/4"

53-860960-xxx Insert Color Kit for Contour Seats

Qty.	Part Number	Description
1	53-400103-xxx	Decal, Front
1	53-400111-xxx	Decal, Rear
1	53-400112-xxx	Insert, Front
1	53-400113-000	Insert, Rear
6	53-400122-xxx	Fastener, Plastic

53-860963-000 Round Ball Rack

Qty.	Part Number	Description
1	53-400368-000	Ball Rack, Round
1	53-860963-001	Package, Hardware

53-860963-001 Hardware Package for Round Ball Rack

Qty.	Part Number	Description
4	53-400301-003	Screw, Mounting, 3/8-16 x 3/4"
4	11-111560-000	Floor Anchor, Concrete

53-860964-000 Round Table Frame

Qty.	Part Number	Description
1	53-400373-000	Frame, Round Table
1	53-860963-001	Package, Hardware

53-860966-000 Triangle Table Frame

Qty.	Part Number	Description
1	53-400358-000	Frame, Triangle Table
1	53-860963-001	Package, Hardware

53-860967-000 Triangle Table Arm Rail

Qty.	Part Number	Description
1	53-400362-000	Arm Rail
1	53-860967-001	Package, Hardware

53-860967-001 Hardware Package for Triangle Table, Arm Rail

Qty.	Part Number	Description
2	53-400356-000	Cup, Arm Rail
2	11-001354-001	Screw, Hex Hd., 3/8-16 x 2-1/2"
2	11-191014-001	Washer, Flat, 3/8"
2	11-095016-001	Lockwasher, 3/8"

53-861102-xxx Oval Table Top with Slot

Qty.	Part Number	Description
1	53-400459-xxx	Table Top, Oval with Slot
1	53-861014-000	Package, Hardware

53-861114-xxx Triangular Table Top

Qty.	Part Number	Description
1	53-400467-xxx	Table Top, Triangular
1	53-861014-000	Package, Hardware, Table Top

53-861014-000 Hardware Package for Table Tops

Qty.	Part Number	Description
4	11-006345-000	Screw, Button Head, 3/8-16 x 1"
4	11-191012-001	Washer - 5/16 Plain

53-860969-xxx Triangle Table Top

Qty.	Part Number	Description
1	53-400355-xxx	Table Top, Triangle
1	53-861014-000	Package, Hardware

53-860970-xxx Round Table Top

Qty.	Part Number	Description
1	53-400354-xxx	Table Top, Round
1	53-861014-000	Package, Hardware

53-860971-xxx Round End Table Top

Qty.	Part Number	Description
1	53-400300-xxx	Table Top, Round End
1	53-861014-000	Package, Hardware

53-860972-xxx Trapezoidal Table Top

Qty.	Part Number	Description
1	53-400310-xxx	Table Top, Trapezoidal
1	53-861014-000	Package, Hardware

53-860973-xxx Rectangular Table Top

Qty.	Part Number	Description
1	53-400305-xxx	Table Top, Rectangular
1	53-861014-000	Package, Hardware

53-860974-xxx Wall Ball Rack Top

Qty.	Part Number	Description
1	53-400315-xxx	Table Top, Wall, Ball Rack
1	53-861014-000	Package, Hardware

53-860975-xxx End Table with Holes

Qty.	Part Number	Description
1	53-400185-xxx	Table, End with Holes

53-860947-000 Frameworx Waste Receptacle - Mod Wall

Qty.	Part Number	Description
1	53-400337-000	Waste Receptacle, Bottom
1	53-400338-000	Waste Receptacle, Cover
1**	53-400339-000	Plate, Base
1	53-400219-000	Template, Mounting
1	53-400343-000	Ballast, 15 lb Sand Bag
2**	11-001342-001	Screw - 3/8-16 x 3/4" Hex Hd. Machine
2**	11-111560-000	Expanding Concrete Anchor - Hilti, 3/8-16 x 1-9/16"

53-860981-000 Table Mounting Hardware Package

Qty.	Part Number	Description
4	53-400301-003	Screw, Mounting, 3/8-16 x 3/4"

53-860986-xxx Custom Decals for Contour Seats

Qty.	Part Number	Description
1	53-400216-xxx	Decal, Custom

53-860989-000 Hardware Package for Table Mounting

Qty.	Part Number	Description
4	53-400309-000	Stud, 3/8-16 x 3"
4	11-125104-001	Nut, 3/8-16
6	11-095011-000	Insert, Wood, 3/8-16

53-860990-000 Wood Floor Mounting Hardware

Qty.	Part Number	Description
4	11-095011-000	Insert, Wood

53-861018-000 Short Free Standing Chair

Qty.	Part Number	Description
1	53-400225-xxx	Weldment Assembly, Seat Plate
1	53-400194-xxx	Base, Chair
5	53-400195-000	Glide
2	53-400164-000	Bearing
1	53-400258-xxx	Cover, Tube, (Reduced)
1	53-400422-000	Assembly, Column (Reduced)
1	5.-900279-000	Instruction Sheet

S5-200053-000 Tool Kit for Table and Seating Installation**53-861007-000 Installation Tool Kit (Required Item)**

Qty.	Part Number	Description
1	53-861-007-001	Canvas Bag
1	53-861007-003	Torque Wrench, MR-2, 25 FOOT LBS
1	53-861007-005	Torque Driver BT-1R, 25 INCH LBS
1	53-861007-006	Insert Bit, APEX, 440-2X
1	53-861007-007	Adapter, Drive Socket, T10-SK, 1/4"
1	53-861007-008	Driver Bit, Hex, SK, 5/16"
1	53-861007-009	Adapter 9/16", Socket, Drive 1/2"
1	53-861007-010	Socket 9/16", Drive 1/2"
1	53-861007-011	Special Torque Wrench, Box/Open End, 9/16" - 25 foot pounds (34 nm).
1	53-861038-000	Installation Tool A.V.K. Fastener

***S5-900006-000 Setting Tool and Installation Manual**

Qty.	Part Number	Description
4	57-861-416-000	Setting Tool
1	53-900270-000	Frameworkx Seating Installation Manual

Model Number S5-210010-XXX Bar Height With Bucket

Qty.	Part Number	Description
8	11-008148-001	Flat Head Counter Sunk Screw with Nylock, 1/4-20 x 3/4"
8	11-051744-001	Hex Locknut, M8
2	53-100293-000	Assembly, Seat Adapter, FX Fixed
2	54-861017-100	Package, Silver Seat Base
1	54-861046-xxx	Package, Bucket Seat, #830B Voltaire

53-861017-000 Tall Free Standing Chair

Qty.	Part Number	Description
1	53-400225-xxx	Chair Weldment, Tall
1	53-400194-xxx	Base, Chair
5	53-400195-000	Glide
4	53-400164-000	Bearing
1	53-400256-xxx	Tube, Lower Cover
1	53-400257-xxx	Tube, Upper Cover
1	53-400193-000	Assembly Column (26-11/16")
1	53-400196-xxx	Foot Rest Assembly (2" Dia.)
1	53-900280-000	Assembly Instructions

Model Number S5-210011-xxx Free Standing Chair with Blow Molded Seat

Qty.	Part Number	Description
8	11-008148-001	Flat Head Counter Sunk Screw with Nylock, 1/4-20 x 3/4"
8	11-051744-001	Hex Locknut, M8
2	53-100293-000	Assembly, Seat Adapter, FX Fixed
1	53-861018-000	Package, Free Standing Chair
1	54-861046-xxx	Package, Bucket Seat, #830B Voltaire

53-861018-000 Short Free Standing Chair

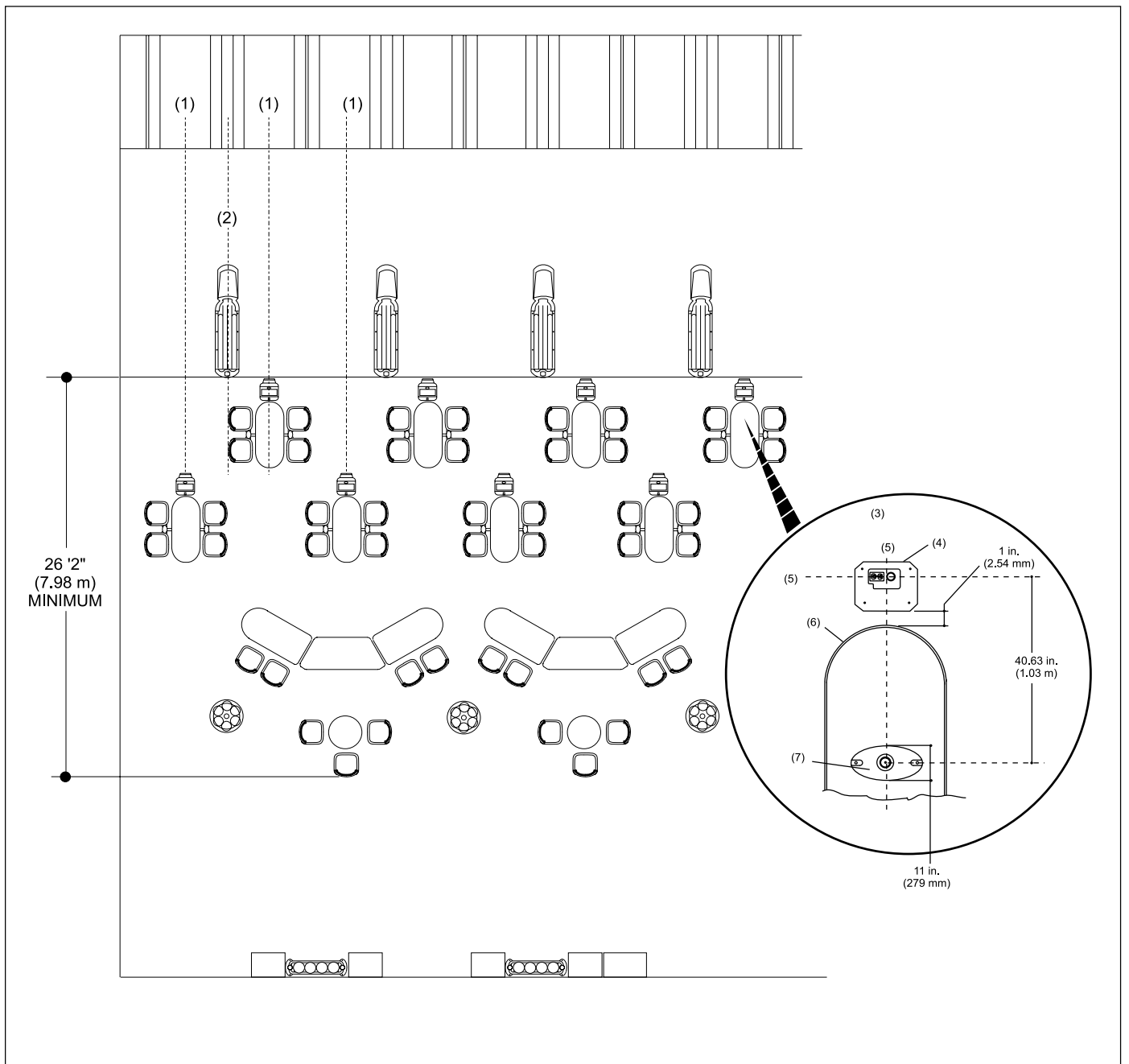
Qty.	Part Number	Description
1	53-400225-xxx	Assembly Weldment, Seat Plate
1	53-400194-xxx	Base, Chair
5	53-400195-000	Glide
2	53-400164-000	Bearing
1	53-400258-xxx	Tube, Cover
1	53-400422-000	Assembly Column
1	53-900279-000	Assembly Instructions

54-861046-xxx Voltaire Wood Bucket Seats & Hardware

Qty.	Part Number	Description
8	11-002002-013	Screw, Hex Head, 1/4-20 x 3/4"
8	11-191010-001	Washer, Plain, 1/4
2	54-200066-xxx	#830B Voltaire Style Bucket Seats

Sample Seating and Concourse Furniture Layouts

The following section includes several arrangements of the bowler area and concourse seating. Each of the arrangements contain a combination of bowler area seating, table top shapes, table with chair assembles, mod wall units and Wall Ball racks. The arrangements shown cover a variety of bowler's area and concourse sizes. If none of the arrangements shown fit in the space available, you can custom design an arrangement which best suits your center.

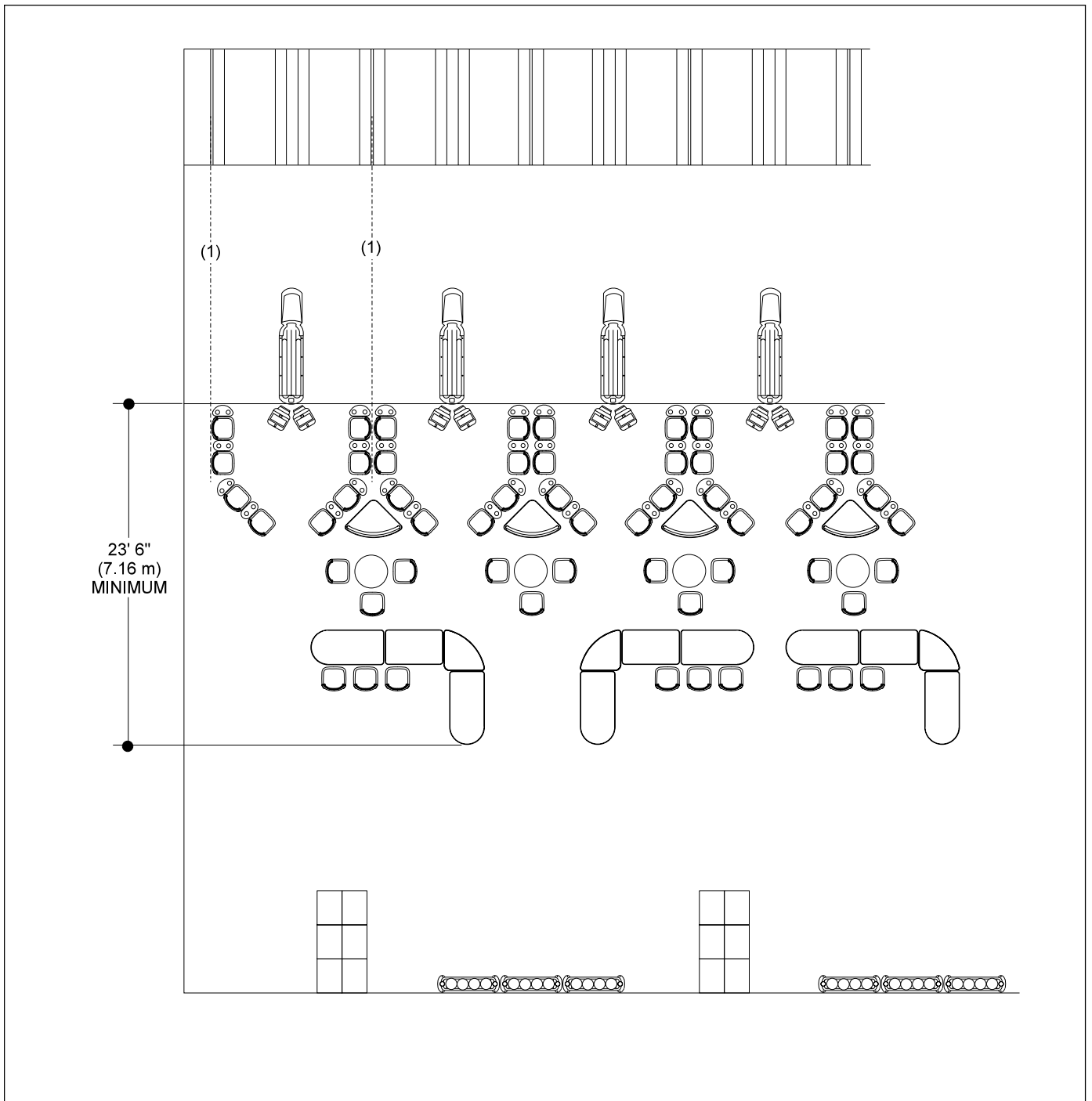


Layout 1

- (1) CENTER LINE OF LANE
- (4) CONSOLE
- (7) TABLE TOP MOUNTING PLATE

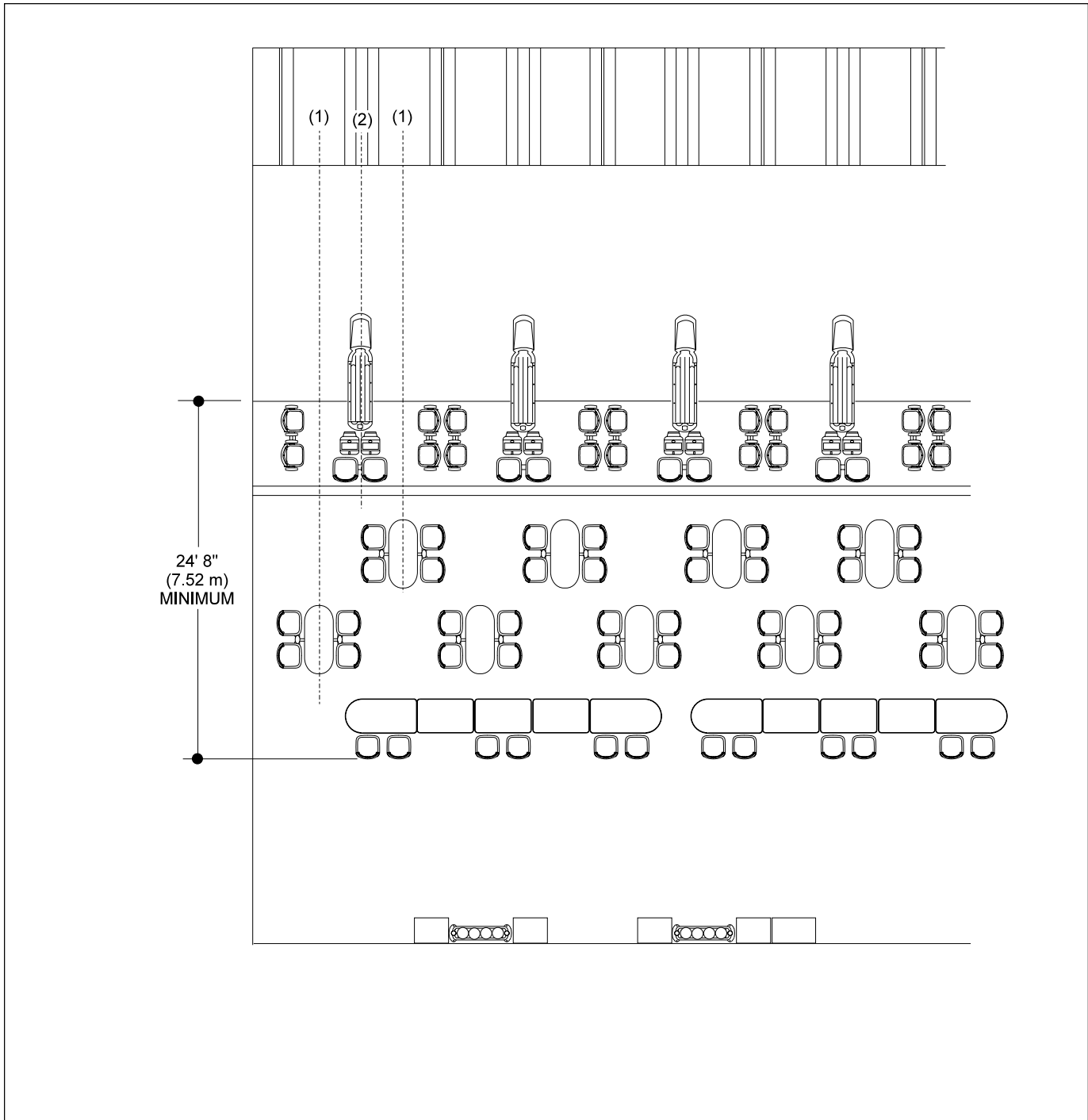
- (2) CENTER LINE OF BALL RETURN
- (5) CENTER LINE

- (3) TOP VIEW
- (6) FIXED/SWIVEL TABLE



Layout 2

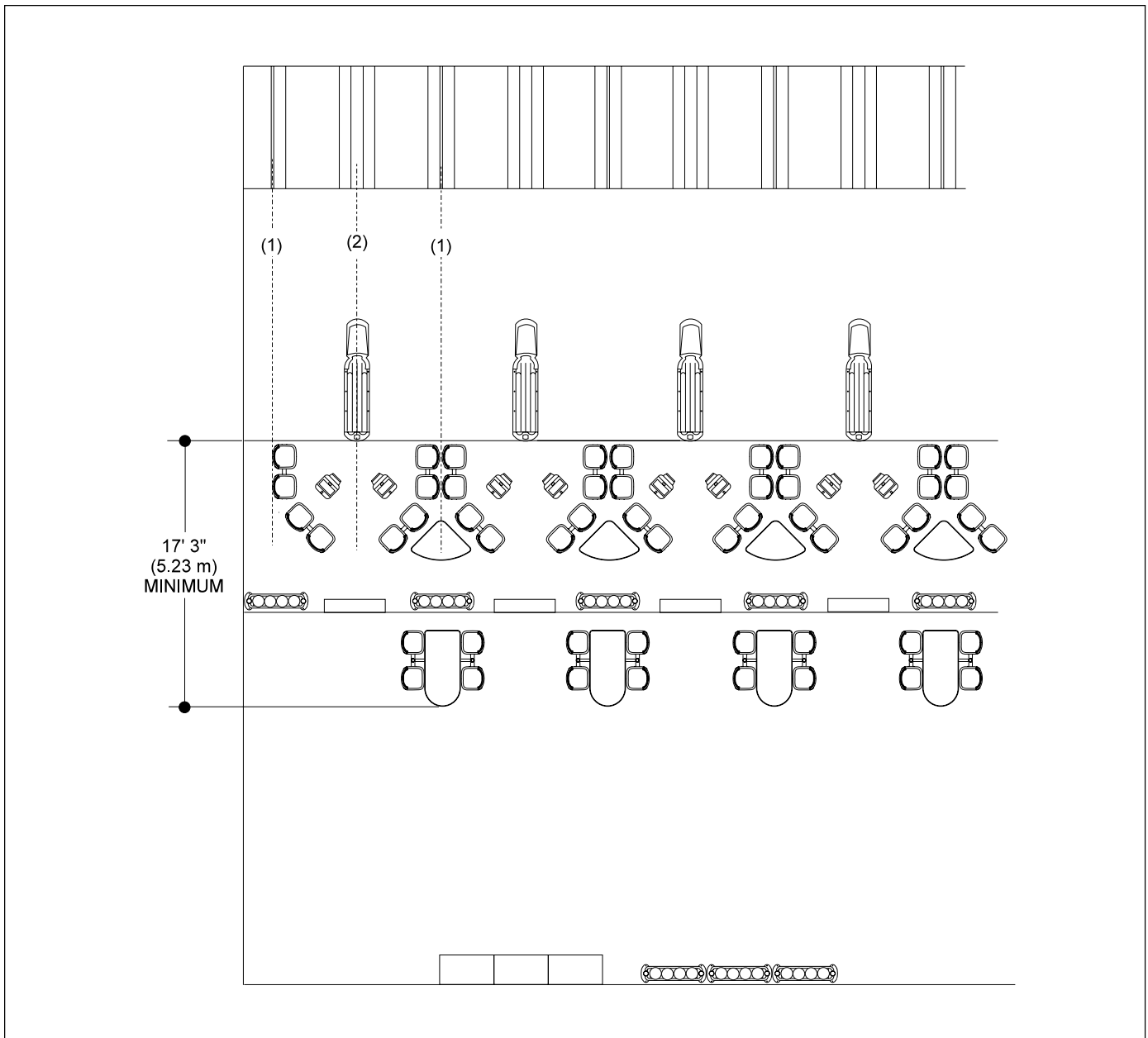
(1) CENTER LINE OF DIVISION CAPPING



Layout 3

(1) CENTER LINE OF LANE

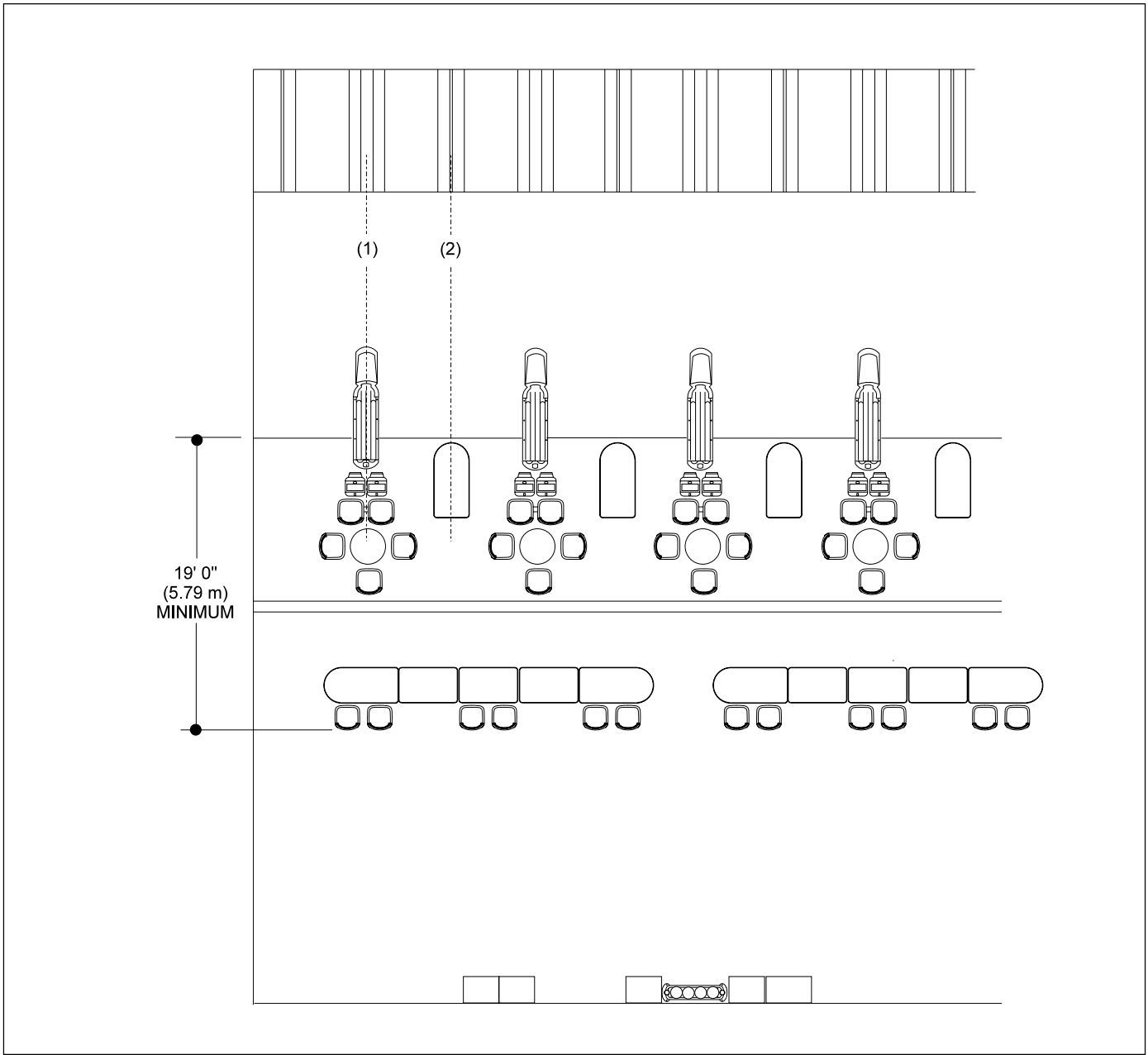
(2) CENTER LINE OF BALL RETURN



Layout 4

(1) CENTER LINE OF CAPPING

(2) CENTER LINE OF BALL RETURN



Layout 5

(1) CENTER LINE OF BALL RETURN

(2) CENTER LINE OF DIVISION CAPPING

Locating and Installing Seating and Concourse Furniture Fasteners

All bowler area seating and concourse furniture is located (in most cases) off of the center line of the division capping. These are the dimensions that are used in the typical bowling center layouts shown in the seating installation manual.

Concrete Floors (Except for Table with Four Seats)

1. Place the seating or concourse furniture in the desired positions as shown on the layout chosen for the center. Make the location of the attaching holes for the leg assembly on the floor. Move the furniture to obtain access to the marked fastener holes.



NOTE:

If the area where the seating is to be installed is carpeted, it will be necessary to remove the carpet at the fastener location.

2. Drill a 1/2" (13 mm) hole 1-5/8" (41 mm) deep at the attaching hole locations marked on the floor. Refer to *Figure 1*.

- (1) HILTI FASTENER
- (2) CONCRETE
- (3) THE TOP OF THE INSTALLED FASTENER MUST BE FLUSH WITH THE TOP SURFACE OF THE CONCRETE FLOOR.

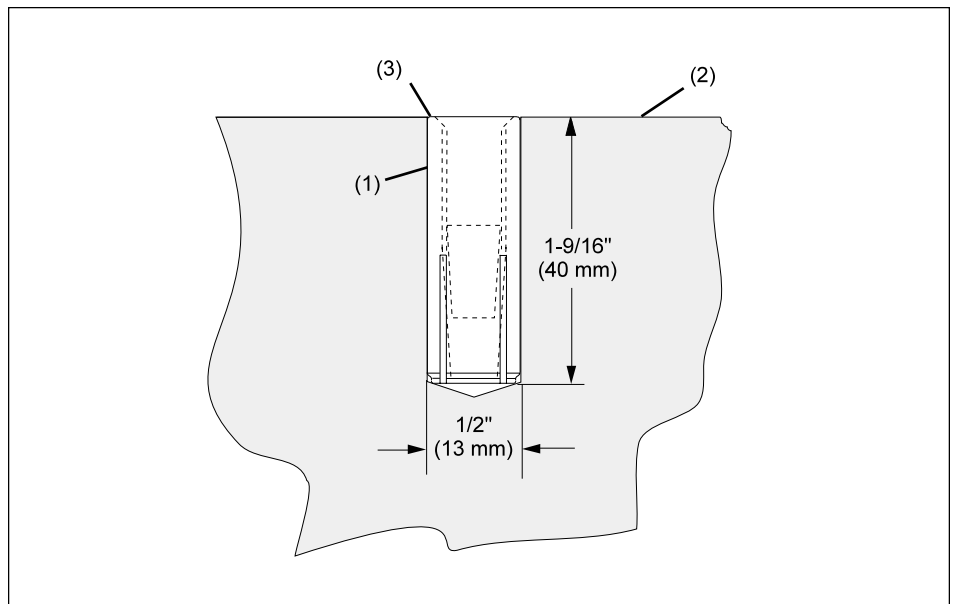


Figure 1. Drill Hole for Concrete Fastener



- Adjust depth gauge so anchor will be flush with the base material surface. Refer to *Figure 2-A*.

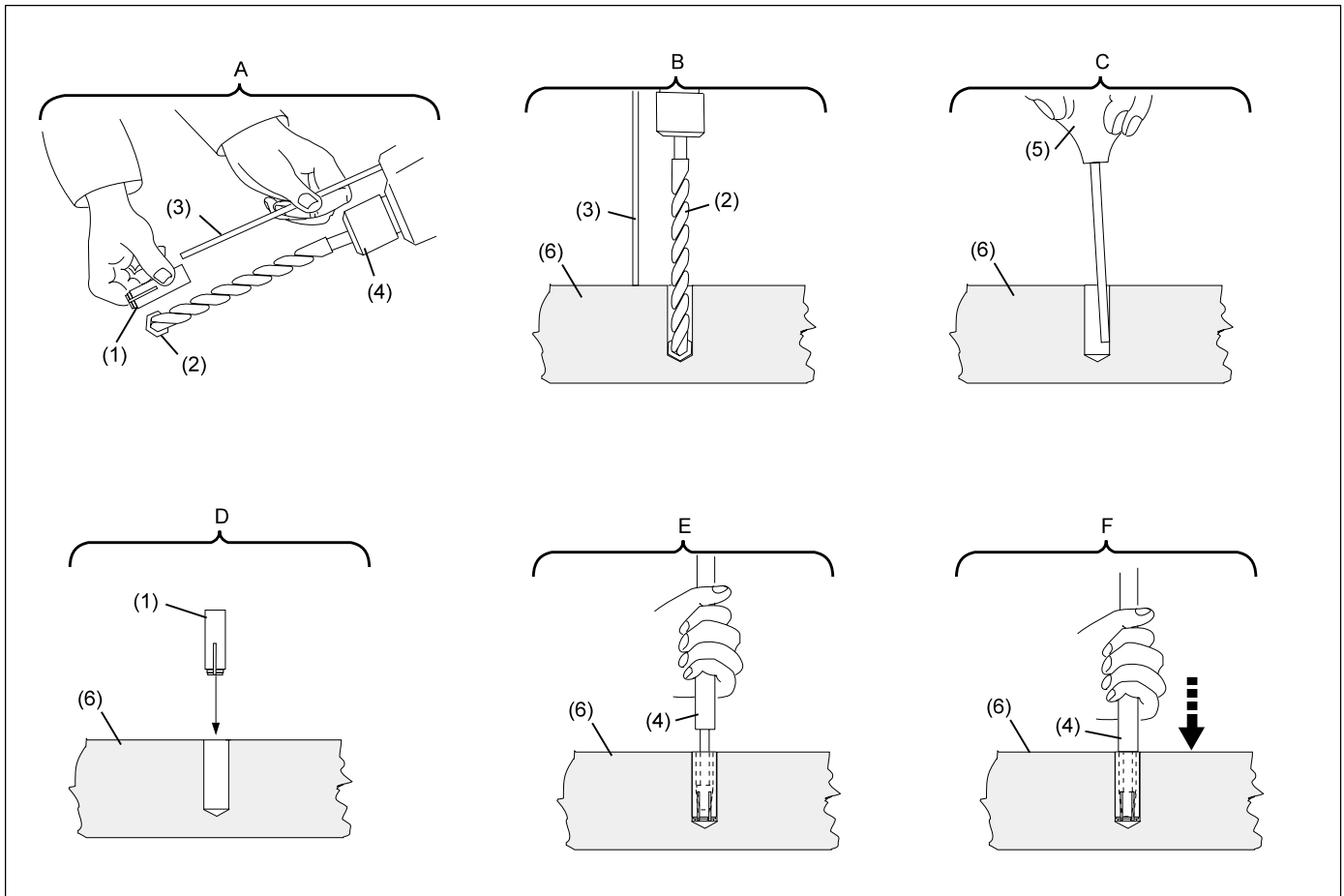


Figure 2. Install Concrete Hilti Fastener

- (1) HILTI FASTENER
- (4) HILTI HAND SETTING TOOL

- (2) 1/2" CONCRETE DRILL BIT
- (5) BLOW OUT BULB

- (3) DEPTH GAUGE
- (6) CONCRETE

- Hammer drill the hole. Refer to *Figure 2-B*.
- Clean hole with blowout bulb. Refer to *Figure 2-C*.
- Place fastener in hole with threaded end up until flush with concrete. Refer to *Figure 2-D*.
- Install anchor using Hilti hand setting tool included in model number S5-200060-000 which was included in your shipment. Setting tool to be driven into anchor until setting tool shoulder meets top of anchor. Refer to *Figures 2-E and F*.

Concrete Floors for Table with Four Seats

1. Drill a 3/8" diameter hole at the locations marked on the floor. The holes are to be drilled deep enough so at least six threads can be below the top surface of the concrete without bottoming the fastener.
2. Clean out the hole and insert the fastener until approximately six threads are below the top surface of the concrete.
3. Install a flat washer and 3/8-16 nut on the fastener and tighten the nut to a torque of **25 foot pounds (34 nm)**. Refer to *Figure 3*.

- (1) 3/8 FLAT WASHER
- (2) 3/8-16 HEX NUT
- (3) 3/8-16 X 3" THREADED STUD
- (4) LARGE FLAT WASHER

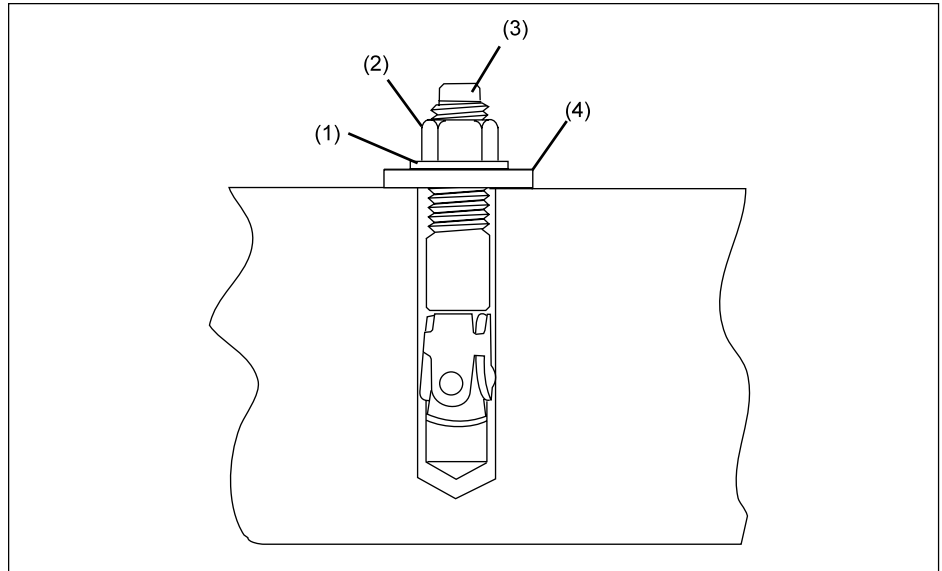


Figure 3. Install Fastener

Wood Floors (Except for Table with Four Seats)

1. Place the seating and concourse furniture in the positions as shown on the layout shown for the center. Mark the location of the attaching holes for the leg assembly on the floor.
2. Drill 5/8" (16 mm) holes 1-5/16" deep at the attaching holes marked at the floor. The hole must be slightly deeper than the length of the fastener. Refer to *Figure 4*.

- (1) STAFAST FASTENER
(2) WOOD FLOOR

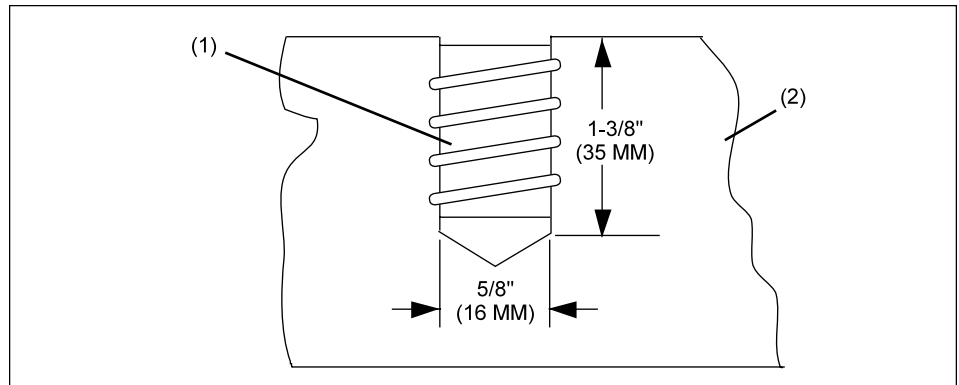


Figure 4. Drill Holes at Attaching Locations

i **NOTE:**

If the area where the fasteners are being installed is carpeted, it will be necessary to remove the carpeting at each fastener location.

3. Align the fastener with the drilled hole and using a 10 mm hex drive wrench, screw the fastener into the wood floor until its top surface is slightly below the top surface of the floor. Refer to *Figure 4*.

Wood Floors for Table with Four Seats

1. Place the seating and concourse furniture in the positions as shown on the layout shown for the center. Mark the location of the attaching holes for the leg assembly on the floor.
2. Drill 5/8" (16 mm) holes 1-5/16" deep at the attaching holes marked at the floor. The hole must be deeper than the length of the fastener. Refer to *Figure 5*.

- (1) STAFAST FASTENER
(2) 3/8-16 THREADED STUD

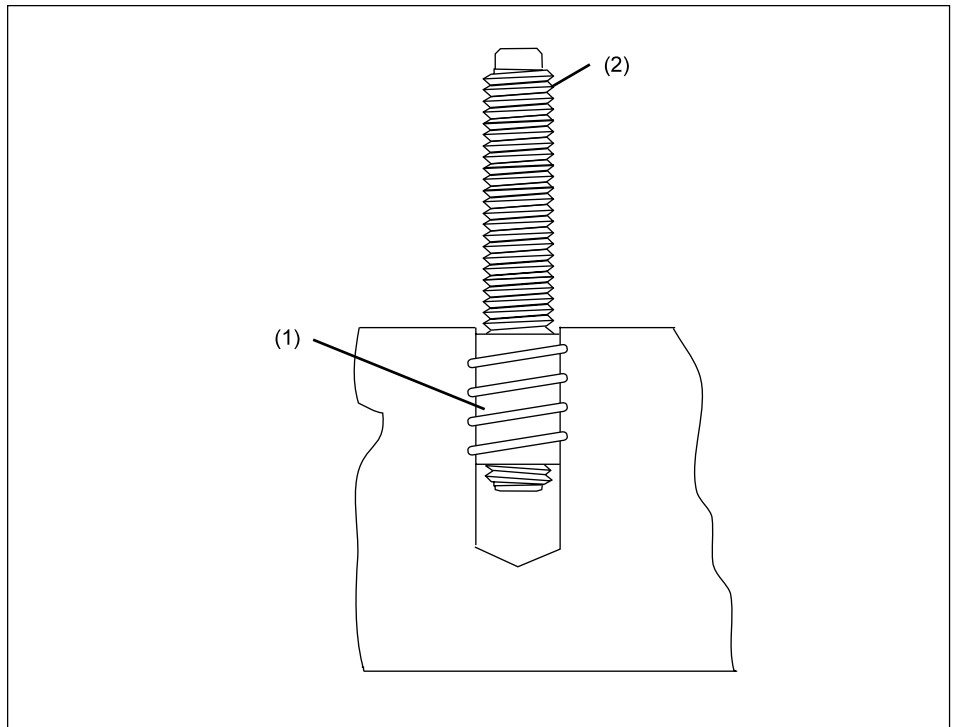


Figure 5. Install Stafast Fastener

i **NOTE:**

If the area where the fasteners are being installed is carpeted, it will be necessary to remove the carpeting at each fastener location.

3. Align the fastener with the drilled hole and using a 10 mm hex drive wrench screw, the fastener into the wood floor until its top surface is slightly below the top surface of the floor. Refer to *Figure 5*.
4. Thread stud into fastener. Refer to *Figure 5*.

Plastic Seat Assembly and Installation

Plastic Seat Insert and Decal Assembly

1. Align the holes in the oval shaped seat insert with the holes in the recessed area on the front side of the seat back. Secure the insert to the seat with three push-in plastic fasteners. Refer to *Figure 6*.

- (1) BRUNSWICK DECAL
- (2) PLASTIC FASTENERS
- (3) REAR INSERT
- (4) RECTANGULAR RECESSED AREA
- (5) OVAL INSERT
- (6) BRUNSWICK "B" DECAL

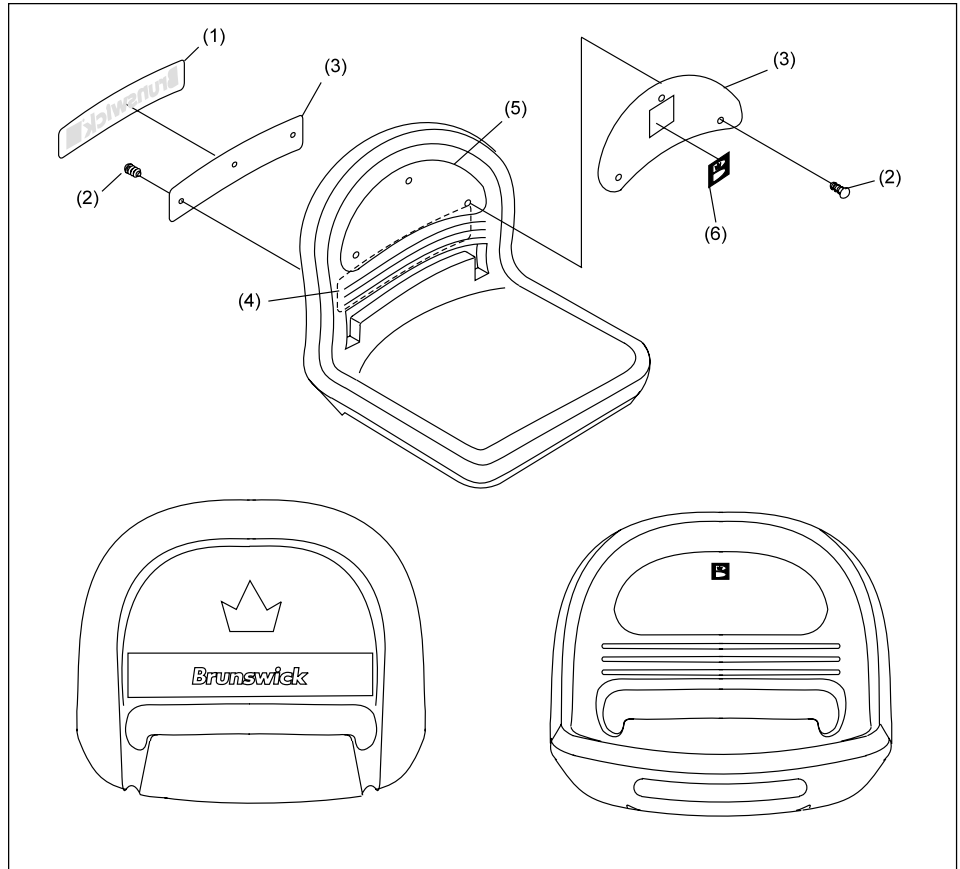


Figure 6. Secure Inserts and Decals

2. Align the rectangular insert with recessed area on the back side of the seat back. Secure it to the seat bucket with push-in plastic fasteners. Refer to *Figure 6*.

i NOTE:

Make sure plastic fasteners are fully inserted into seat.

3. Remove the backing from the Brunswick "B" decal. Align the decal with the recessed area in the oval shaped insert and press it into place. Refer to *Figure 6*.
4. Remove the backing from the rectangular Brunswick decal. Align the decal with the recessed area on the rectangular insert and press it into place. Refer to *Figure 6*.

Plastic Seat Bracket Assembly Installation

The seat bracket assembly used with all Frameworkx swivel seats is designed with a safety bracket that will prevent the seat bucket from falling backward in the unlikely event that the seat bearing should fail. In order to function properly, this bracket must be positioned toward the front of the seat and be facing the table top.

Refer to *Figure 7* below which shows seat bracket assemblies with safety brackets that are properly oriented.

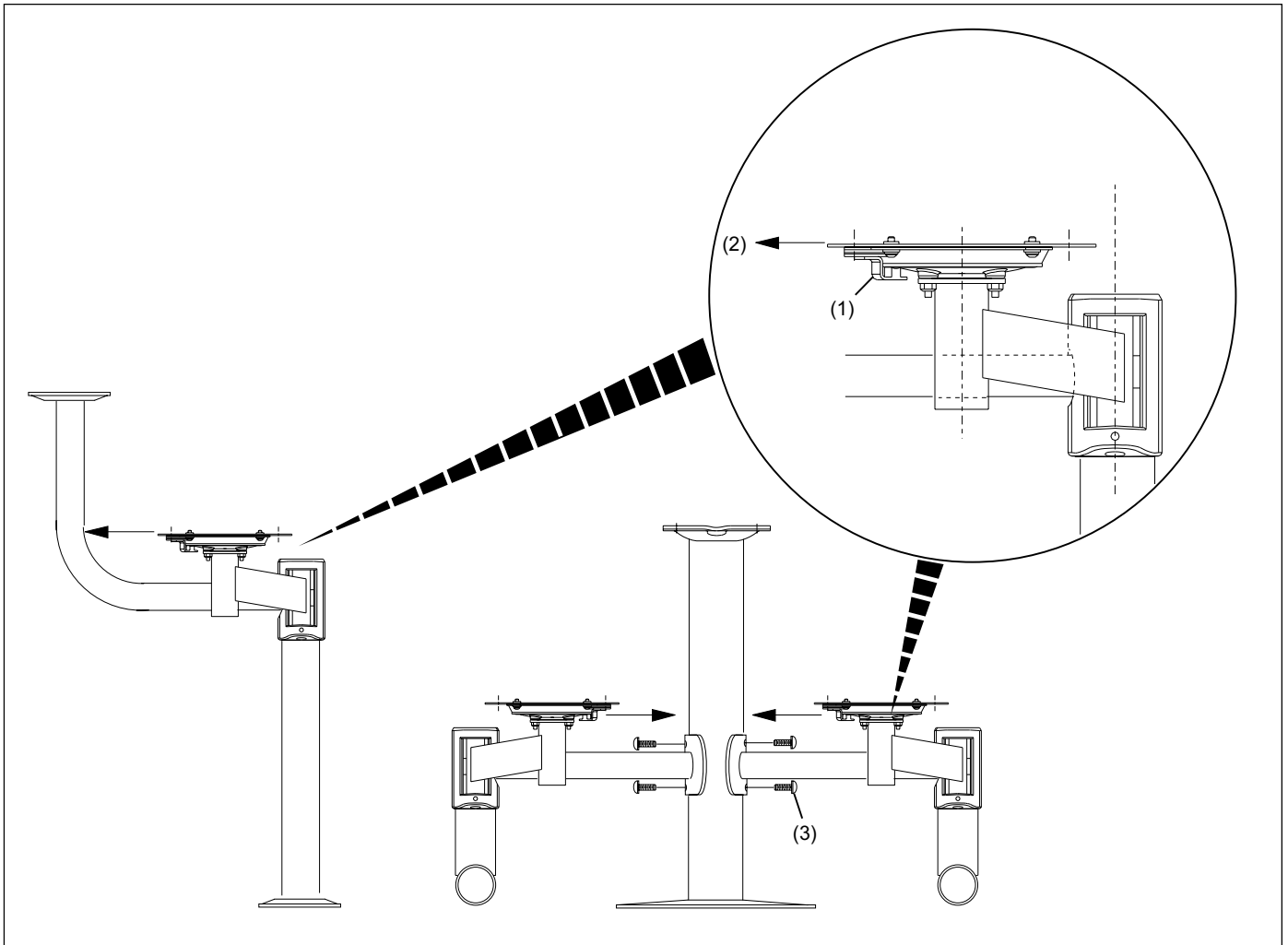


Figure 7. Properly Oriented Safety Brackets

(1) SAFETY DEVICE

(2) TOWARD FRONT OF CHAIR

(3) BUTTON HEAD CAP SCREW

Plastic Seat Installation



CAUTION!

Do not use power tools for this procedure. Use the special torque tools contained in tool kit part number 53-861007-000. Using these tools will ensure that the hardware has been properly installed.

1. Align the holes in the seat weldment with the four factory drilled holes in the seat bucket. Secure the seat weldment to the seat bucket with four each 1/4-10 x 1" hex head self tapping screw and star washer. Refer to *Figure 8*.

- (1) CONTOUR SEAT
- (2) FRAME MOUNTING PLATE
- (3) STAR WASHER
- (4) #14-10 X 1" SELF TAPPING SCREW
- (5) SAFETY DEVICE

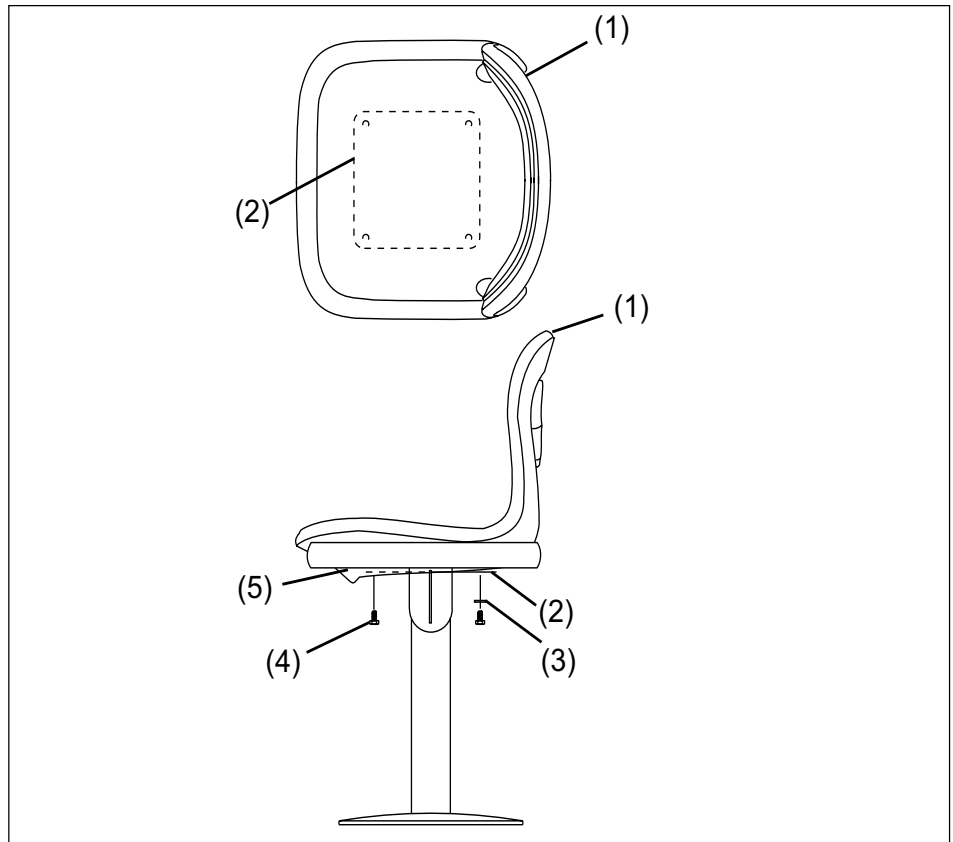


Figure 8. Secure Seat Bucket to Seat Weldment



CAUTION!

Do not overtighten the attaching screws. The required torque is 25 inch lbs. (2.8 nm).

Round Ball Rack Assembly and Installation

Ball Rack Assembly

1. Align the threaded insert in the table top with the holes in the table mounting plate. Secure the table top to the table mounting plate with four 3/8-16 x 3/4" button head hex socket cap screws. Refer *Figure 9*.

- (1) TABLE TOP
- (2) THREADED INSERT
- (3) 3/8-16 X 3/4" BUTTON HEAD CAP SCREW (FOUR REQUIRED)
- (4) CONCRETE FLOOR ANCHOR (FOUR REQUIRED)

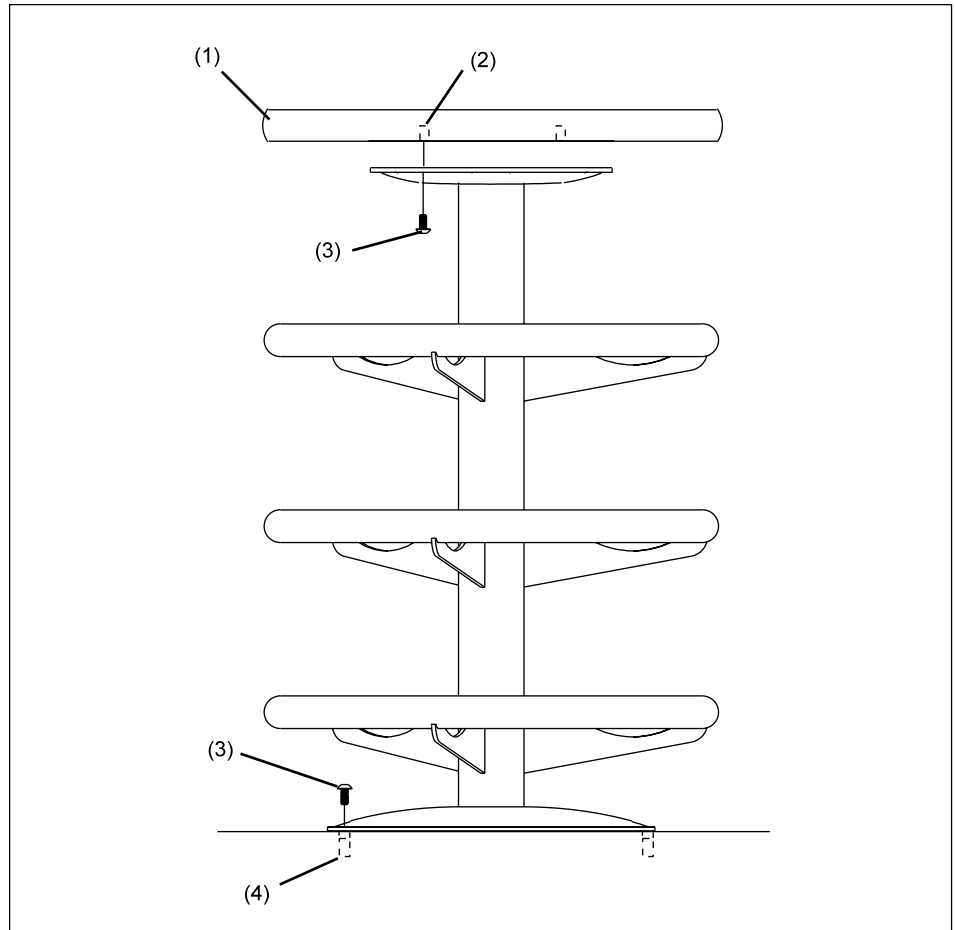


Figure 9. Align Round Table Top to Mounting Plate and Secure

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

Ball Rack Installation

1. Place the ball rack at its chosen location and mark the four attaching holes for the base on the floor. Following the instructions in the floor attaching section, install the proper fastener for your floor material; wood or concrete.
2. Secure the base of the ball rack pedestal to the floor with four 3/8-16 x 3/4" button head hex socket cap screws. Refer to *Figure 9*.

i NOTE:

Tighten the button head cap screws to 25 foot lbs (34 nm), when fastening furniture frames to the floor. Tighten the button head cap screws to 15 foot pounds (20 nm), when securing table tops to frame assemblies.

Wall Ball Rack with Top Assembly and Installation

Ball Rack with Top Assembly

1. Align the threaded insert in the table top with the mounting holes in the table mounting plate. Secure the table top to the two table mounting plates using 3/8-16 x 3/4" button head cap screws. Refer to *Figure 10*.

- (1) 3/8-16 X 3/4" BUTTON HEAD CAP SCREW (EIGHT REQUIRED)
- (2) 3/8-16 FLOOR FASTENER (FOUR REQUIRED)

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

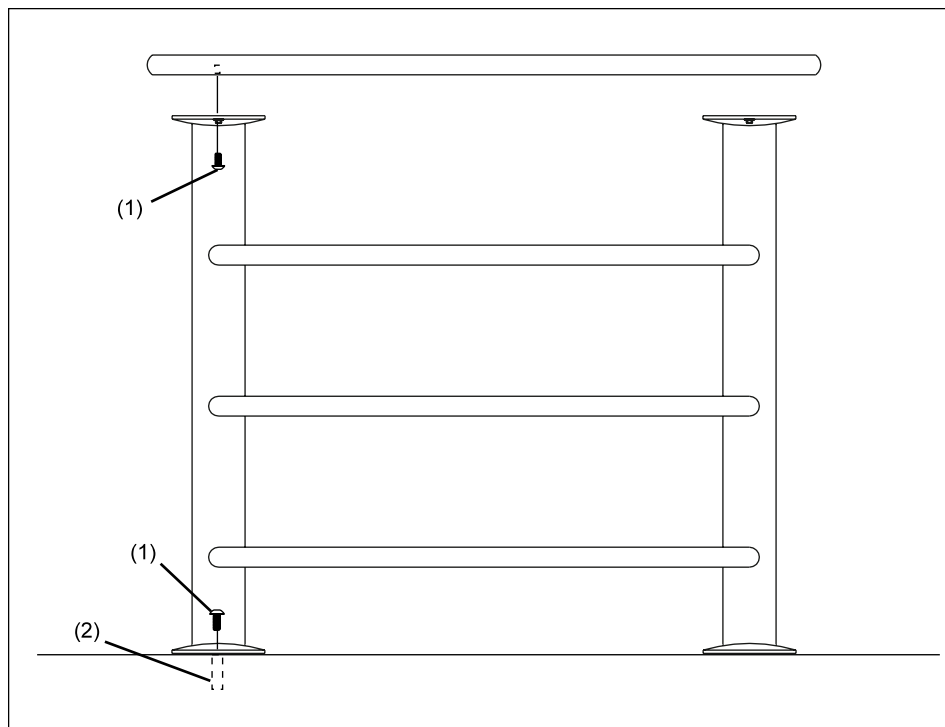


Figure 10. Align Table Top to Mounting Plate and Secure

Ball Rack with Top Installation

1. Place the ball rack at the chosen location. Mark the location of the two mounting holes in each pedestal base on the floor. Following the instructions in the floor attaching section, install the proper fastener for your floor material; wood or concrete.
2. Secure the base of each ball rack pedestal with two 3/8-16 x 3/4" button head hex socket cap screws. Reference *Figure 10*.

i NOTE:

Tighten the button head cap screws to 25 foot lbs (34 nm), when fastening furniture frames to the floor. Tighten the button head cap screws to 15 foot pounds (20 nm), when securing table tops to frame assemblies.

Modular Wall Base Unit and Optional Storage Rack Assembly and Installation

Modular Wall Base Unit Assembly

The mod wall uses a combination of table shapes to obtain the arrangement that best meets a customer's preferences and needs. A variety of possible layouts are shown in the layout section of this manual. The assembly of one section of an arrangement is described below. The others will be essentially the same. The illustrations for combining various mod wall shapes detail additional hardware required when assembling a right angle layout.

Refer to *Figure 13*.

When assembling table arrangements, the recommended spacing between table tops is 3/4". Allow for this spacing when marking the location of the floor attaching fasteners on the floor.



NOTE:

When using a triangular table top in a Mod Wall arrangement, it will be necessary to perform the following steps prior to securing the leg assemblies to the floor:

(1) LARGE FLAT WASHER

(2) 3/8-16 X 1/2" HEX HEAD SCREW
(FOR INSTALLING FASTENER)

(3) 3/8-16 INSERT (.984") INSERTED
FROM BOTTOM

(4) INSERT MUST BE FLUSH WITH
BOTTOM OF TABLE TOP.
**INSTALLING TOO DEEP COULD
DAMAGE TOP SURFACE OF TABLE
TOP**

- Install 3/8-16 threaded inserts into the eight attaching holes drilled in the triangular table top at the factory as shown in *Figure 11*.

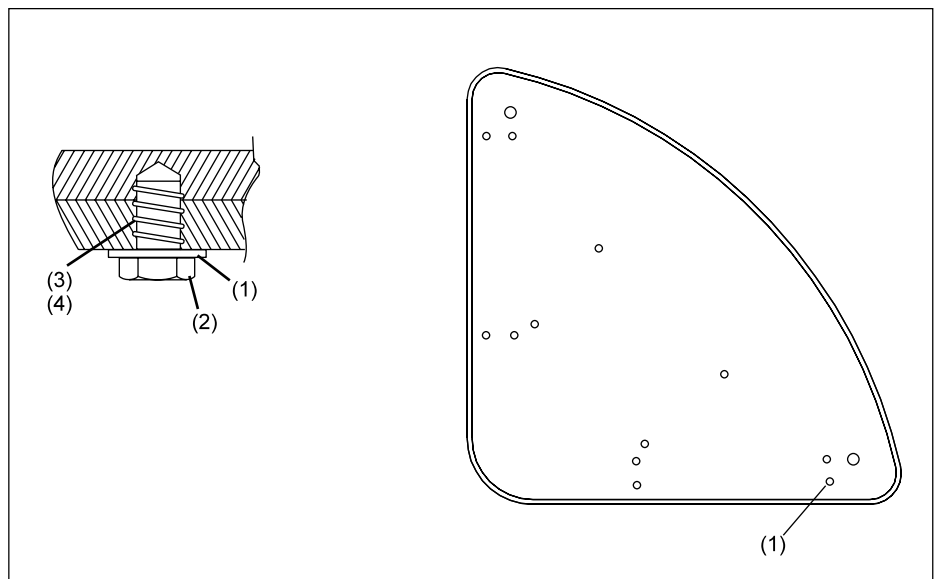


Figure 11. Install Threaded Inserts

- Align the two table mounting plates with the threaded inserts and secure them to the table top with eight 3/8-16 x 3/4" button head cap screws. Refer to *Figure 11*.

1. Slide the modesty panel into the frames on the leg assembly,
2. Secure the appropriate table top to the table leg assembly with four 3/8-16 x 3/4" button head cap screws. Refer to *Figure 12*.

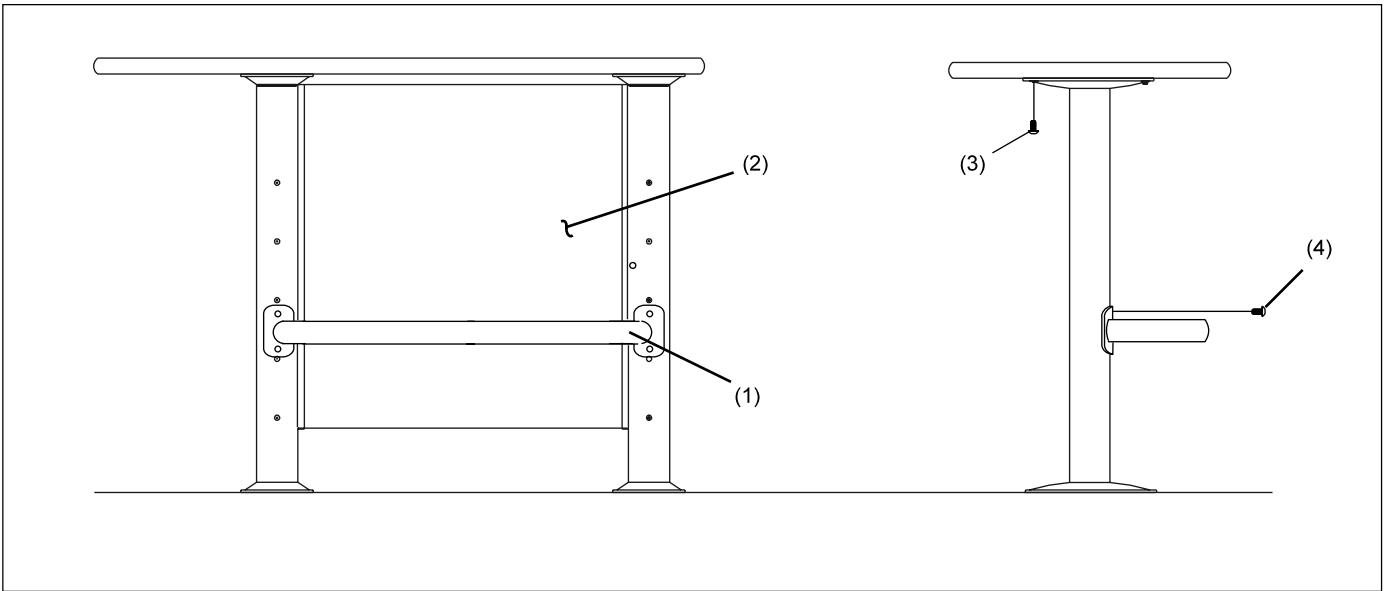


Figure 12. Secure Table Top to Leg Assembly

(1) SHELF ASSEMBLY

(2) MODESTY PANEL

(3) SPECIAL 3/8-16 X 3/4"
BUTTON HEAD CAP SCREW

(4) STANDARD BUTTON HEAD CAP
SCREW 3/8-16 X 1"

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

3. Secure each shelf to the leg assemblies with two standard 3/8-16 x 1" button head cap screws. Refer to *Figure 12*. The shelf locations, depending on their use, are listed below:

Foot Rest - One Shelf - Hole Number Two

Storage - Two Shelves - Hole Numbers One and Four

Ball Rack - Three Shelves - Hole Numbers One, Three and Five

4. If you are using a triangular top in a the mod wall, perform step (a), if not, proceed to step 5.

i **NOTE:**

Standard button head has smaller diameter head than the special button head used to secure table tops and for floor mounts.

- a. Install 3/8-16 threaded inserts into the four holes of table tops which will be adjacent to the triangle top as shown in *Figure 13*. Secure these tops to the mounting plates with 3/8-16 x 3/4" button head cap screws. Reference *Figure 13*.

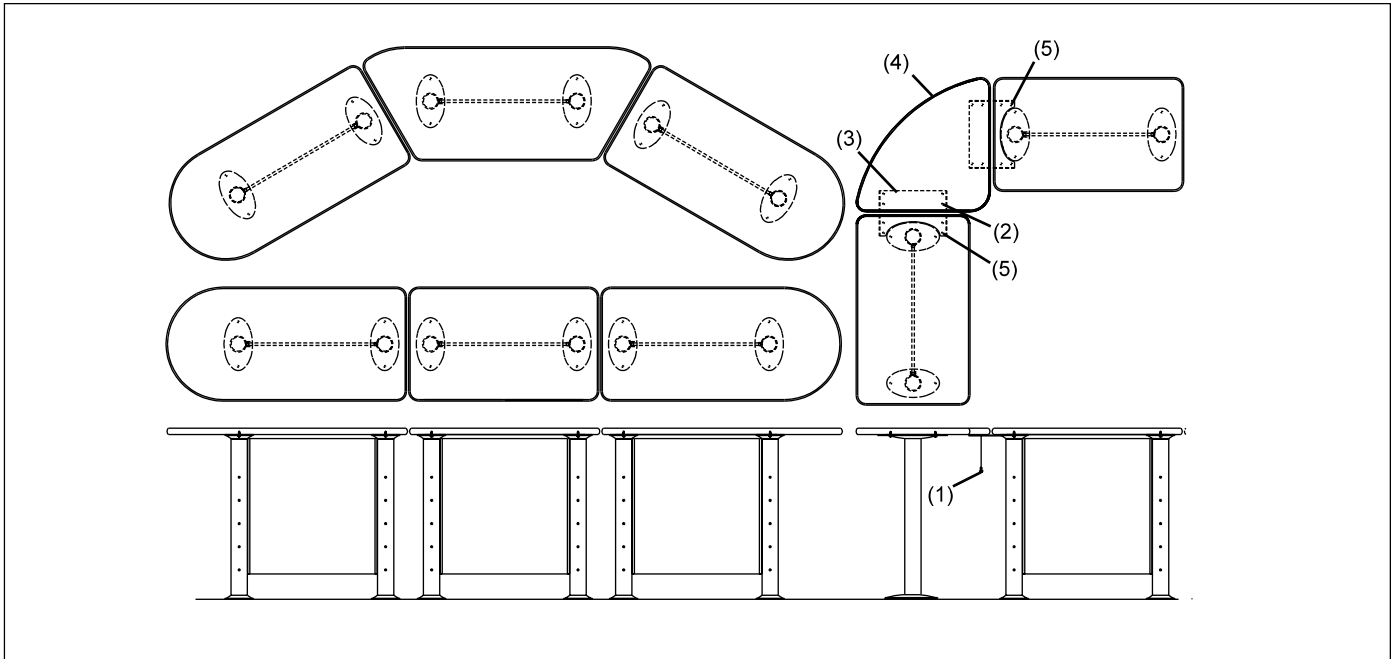


Figure 13. Install Insert in the Table Tops Adjacent to the Triangle Top

- | | | |
|------------------------------------------|----------------------------|--------------------|
| (1) 3/8-16 X 3/4" BUTTON HEAD CAP SCREWS | (2) THREADED INSERT | (3) MOUNTING PLATE |
| (4) TRIANGLE TABLE TOP | (5) HOLES IN ADJACENT TOPS | |

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

Modular Wall Base Unit Installation

1. Place the table assembly at the chosen location. Mark the location of the floor fastener on the floor. Following the instructions in the floor attaching section, install the proper fastener for your floor material; wood or concrete.
2. Secure the table bases to the floor with four 3/8"-16 x 3/4" button head cap screw. Refer to *Figure 14*.

- (1) FLOOR ANCHOR
- (2) 3/8-16 X 3/4" BUTTON HEAD CAP SCREW

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

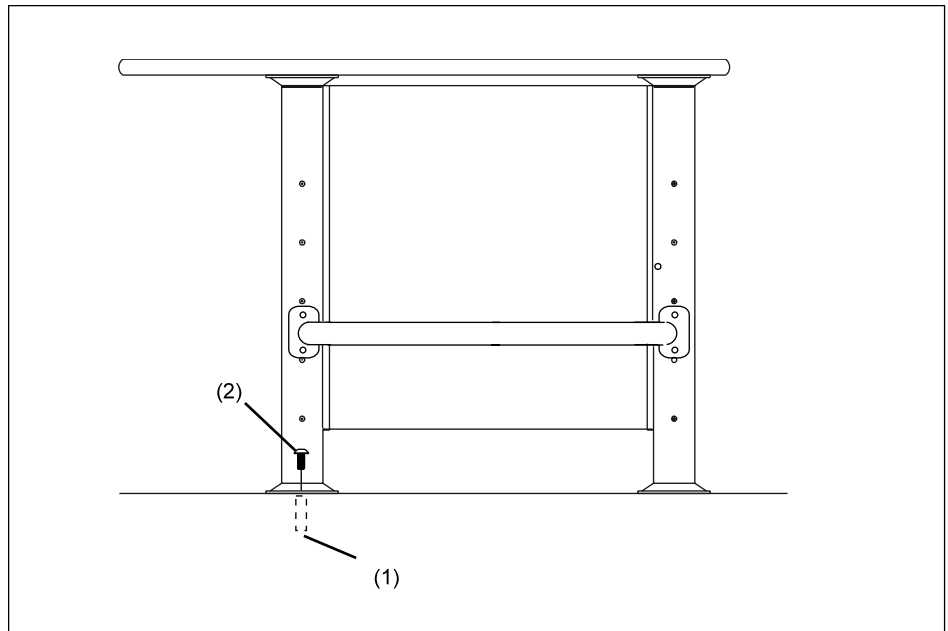


Figure 14. Secure Bases to Floor

i NOTE:

Tighten the button head cap screws to 25 foot lbs (34 nm), when fastening furniture frames to the floor. Tighten the button head cap screws to 15 foot pounds (20 nm), when securing table tops to frame assemblies.

Optional Storage Rack Installation

1. If the modular wall is to be as a storage rack, it will be necessary to install a shelf insert in each shelf assembly. The shelf insert is a snap in unit, no attaching hardware is required. Align the shelf insert with the opening in the shelf assembly and snap it into place. Refer to *Figure 15*.

- (1) SHELF ASSEMBLY
- (2) SHELF

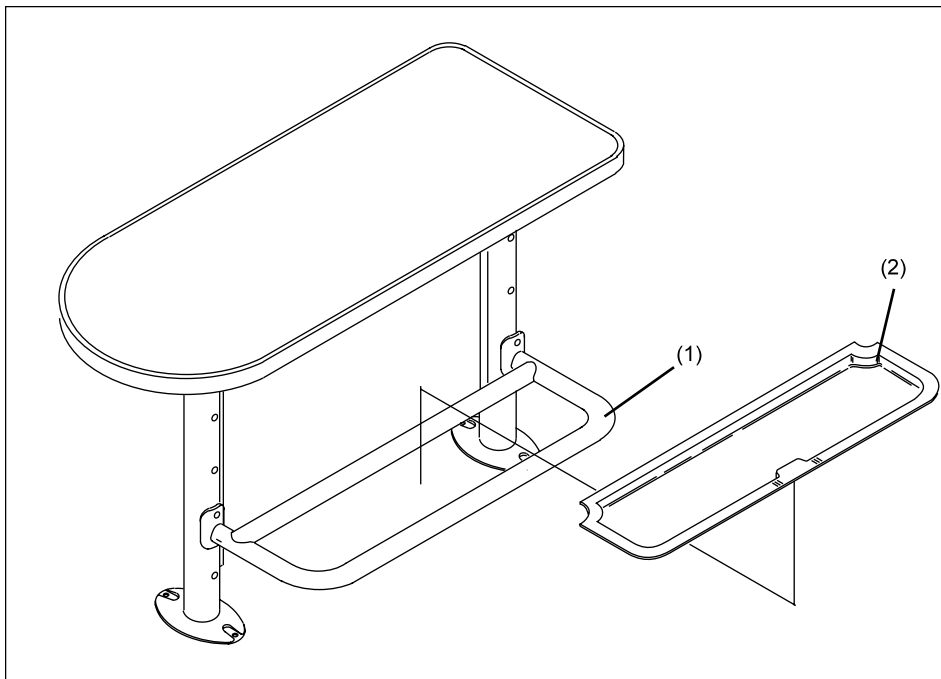


Figure 15. Snap Shelves Into Place

2. An out of level floor will cause the table tops to be noticeably not level. It may be necessary to shim between the table tops and their mounting plates. Special shims are provided if shimming is required.

Modular Wall Waste Receptacle Installation

1. Place the 15lb sand bag (P/N 53-400343-000) in the bottom of the waste receptacle. Refer to *Figure 16*.

(1) SAND BAG (P/N 53-400343-000)

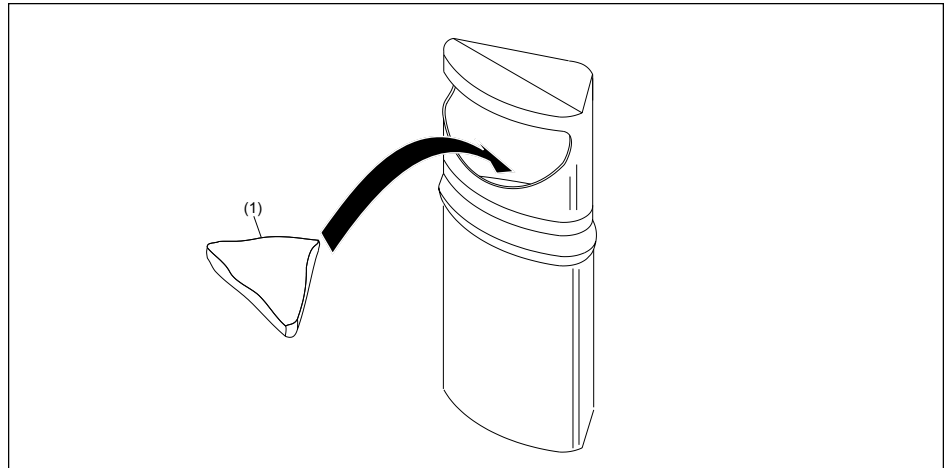


Figure 16. Place Sandbag in Receptacle

2. To secure the base plate (P/N 53-400339-000) to the floor align base plate template (P/N 53-400219-000) against mod wall leg. Drill holes in the floor as indicated by the template.

- (1) TEMPLATE (P/N 53-400219-000)
- (2) TOWARD APPROACH
- (3) MARK TEMPLATE HOLES

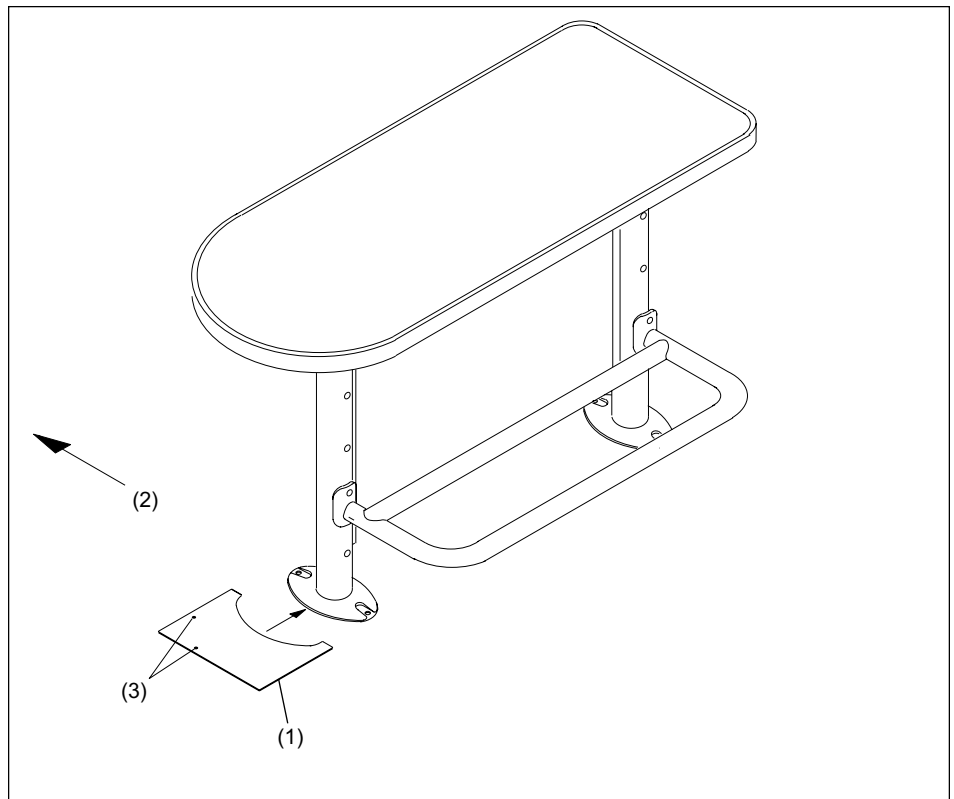


Figure 17. Align Base Plate Template



NOTE:

Before Drilling make sure holes in template are facing toward approach of lane. Refer to *Figure 17*.

- Secure the base plate (P/N 53-400339-000) to the floor with hardware provided. Refer to *Figure 18*.

- (1) BASE PLATE (P/N 53-400339-000)
- (2) TOWARD APPROACH
- (3) SCREW 3/8-16 X 3/4"
(P/N 11-001342-001)
- (4) HILTI FASTENERS
(P/N 11-111560-000)

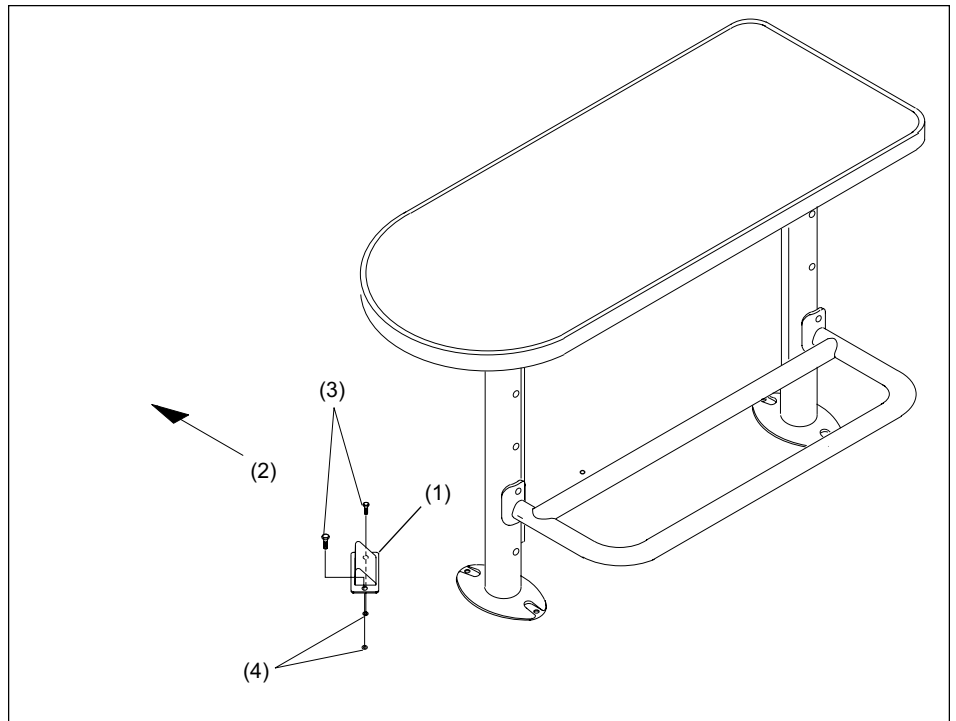


Figure 18. Secure Base Plate



NOTE:

Verify base plate is positioned correctly before securing to floor.

- Place waste receptacle on base plate.

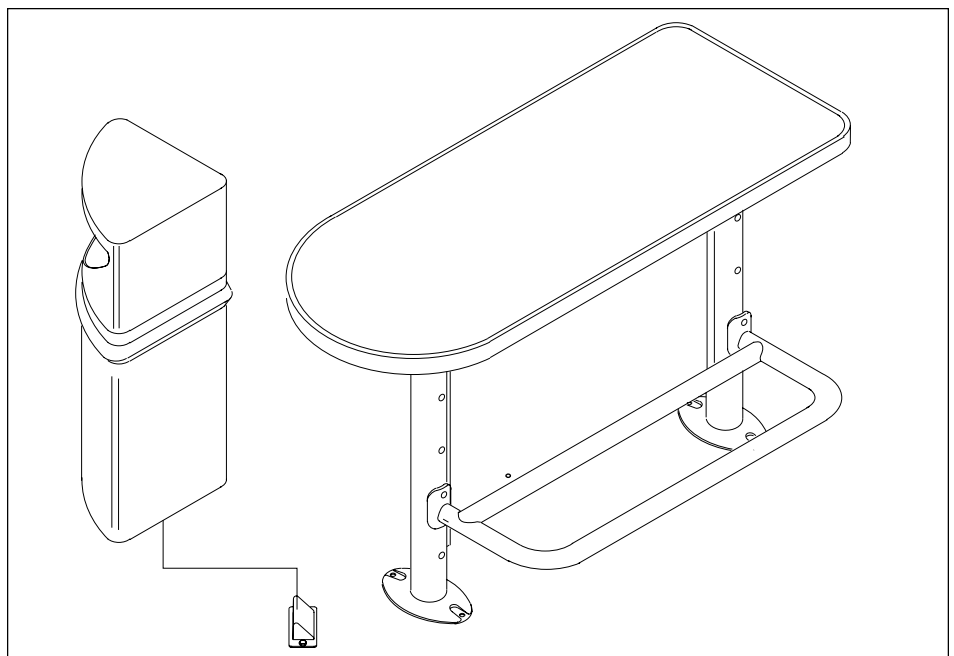


Figure 19. Place Receptacle on Base Plate

Modular Wall Unit with Seats Assembly and Installation

Modular Wall Unit with Seats Assembly

1. Slide the modesty panel into the frames on the leg assembly. The closed ends of the modesty panel frames must be towards the floor.
2. Install two 3/8-16 threaded inserts in the table top for securing the mod wall chair assembly. Refer to *Figure 20*.

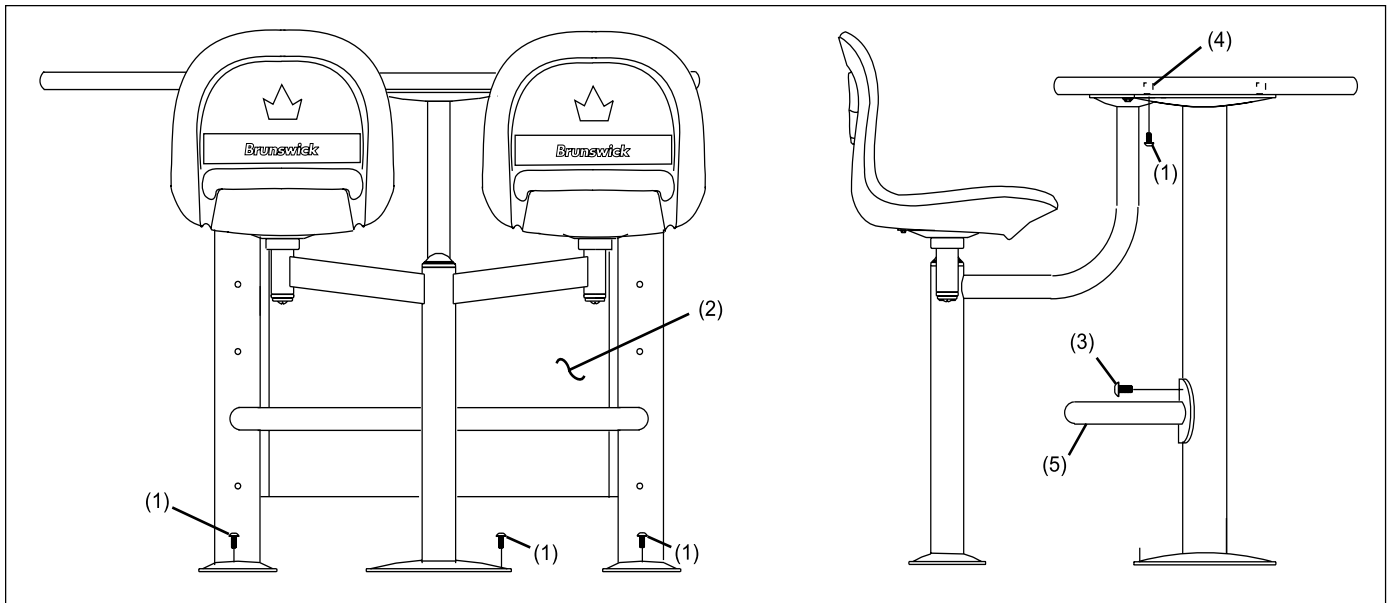


Figure 20. Install Threaded Insert Into Table Top

- | | | |
|-----------------------------------------|-------------------|---------------------------------------|
| (1) 3/8-16 X 3/4" BUTTON HEAD CAP SCREW | (2) MODESTY PANEL | (3) 3/8-16 X 1" BUTTON HEAD CAP SCREW |
| (4) 3/8-16 THREADED INSERT | (5) FOOT REST | |



NOTE:

Do not install threaded insert too deep or damage to the top surface will occur.

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

3. Secure the appropriate table top to the mod wall leg assembly with four 3/8-16 x 3/4" button head cap screws. Refer to *Figure 20*.
 - a. Rounded End
 - b. Rectangular
 - c. Trapezoidal
4. Secure the foot rest to the leg assemblies at the second set of holes from the bottom with two 3/8-16 x 1" button head cap screws. Refer to *Figure 20*.
5. Secure the modular wall chair assembly to the table top with two 3/8-16 x 3/4" button head cap screws. Refer to *Figure 20*.

Modular Wall Unit with Seats Installation

1. Place the assembly at the desired location and mark the location of the studs.
2. Following the instructions in the floor attaching section, install the proper floor fasteners for your floor material; wood or concrete.
3. After installing the floor fasteners, reposition the table and chair assembly over the floor fasteners and secure the assembly to the floor with six 3/8-16 x 3/4" button head hex socket cap screws. Refer to *Figure 20*.
4. Following the instructions in the seat installation manual, install the plastic seat.

Plastic Seat Installation



CAUTION!

Do not use power tools for this procedure. Use the special torque tools contained in tool kit part number 53-861007-000. Using these tools will ensure that the hardware has been properly installed.

1. Align the holes in the seat weldment with the four factory drilled holes in the seat bucket. Secure the seat weldment to the seat bucket with four each 1/4-10 x 1" hex head self tapping screw and star washer. Refer to *Figure 21*.

- (1) CONTOUR SEAT
- (2) FRAME MOUNTING PLATE
- (3) STAR WASHER
- (4) #14-10 X 1" SELF TAPPING SCREW
- (5) SAFETY DEVICE

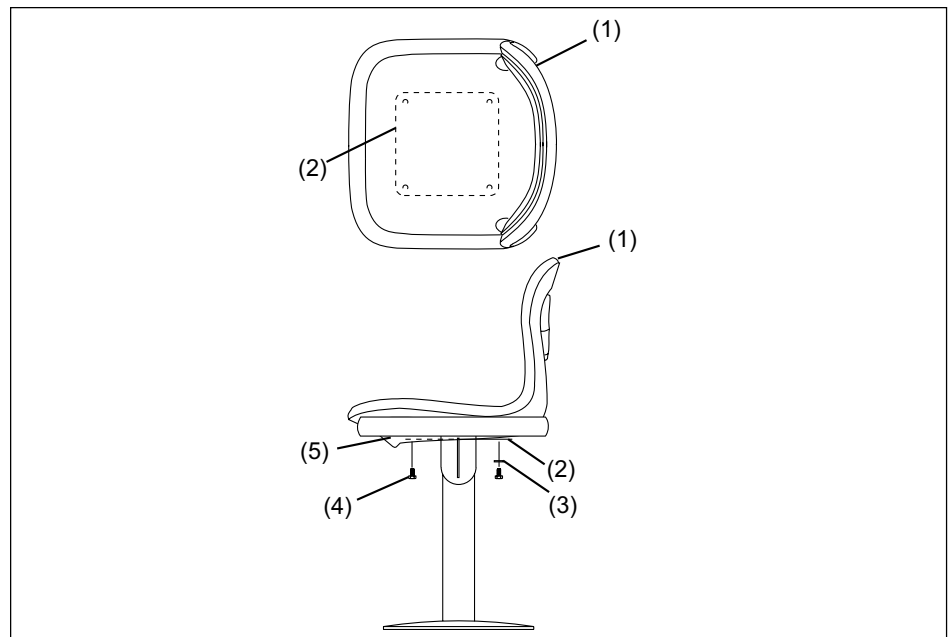


Figure 21. Secure Plastic Seat to Weldment



NOTE:

Do not overtighten the attaching screws. The required torque is 25 inch lbs. (2.8 nm).

Tall Free Standing Chair Assembly

1. Insert glide into base. Refer to *Figure 22*.

- (1) BEARING (P/N 53-400164-000)
- (2) OUTER TUBE - UPPER
(P/N 53-400257-XXX)
- (3) BEARING (P/N 53-400164-000)
- (4) FOOT REST (P/N 53-400196-000)
- (5) OUTER TUBE - LOWER
(P/N 53-400256-XXX)
- (6) INNER COLUMN
(P/N 53-400193-000)
- (7) BASE (P/N 53-400194-XXX)

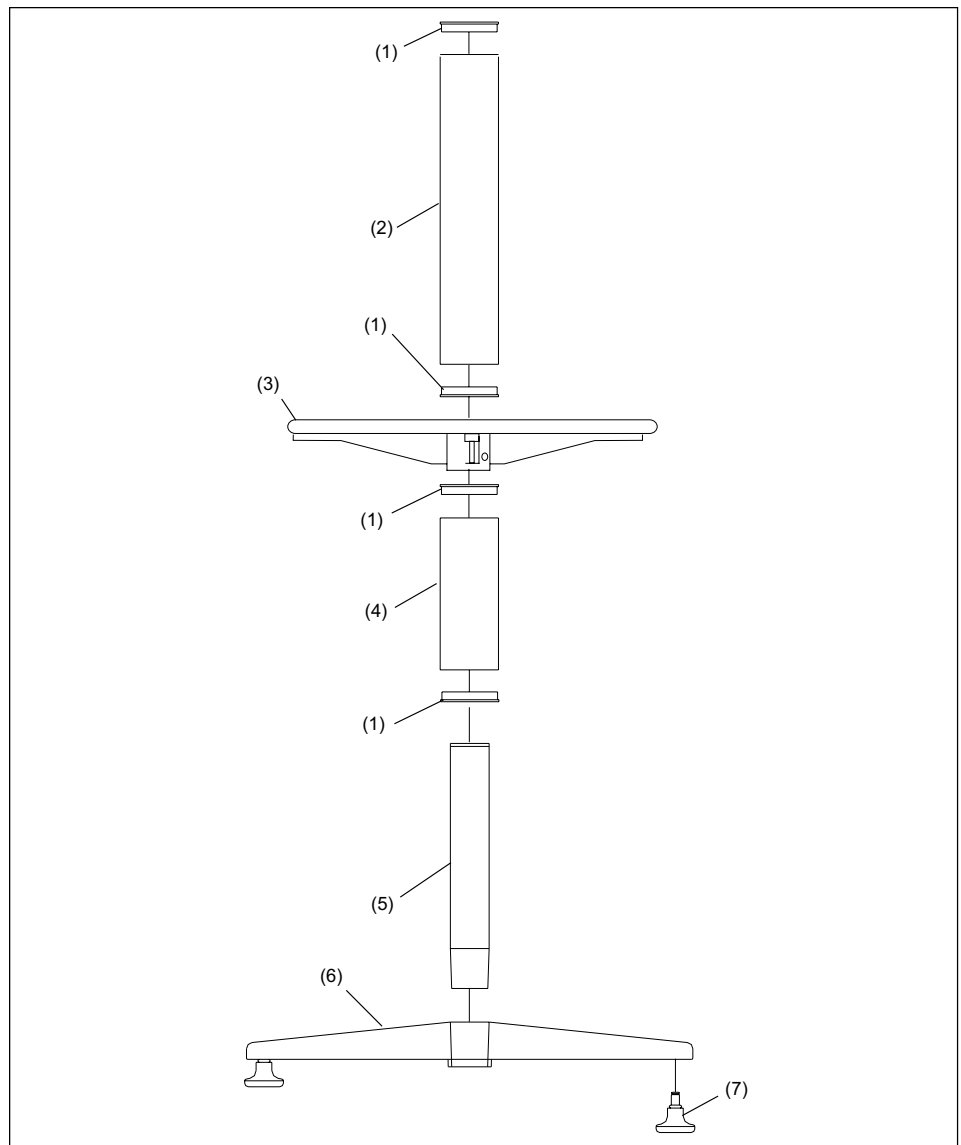


Figure 22. Tall Free Standing Chair Assembly

2. Insert tapered end of inner column into base. Refer to *Figure 22*.
3. Insert bearings into each end of short outer tube. Refer to *Figure 22*.
4. Slide outer (lower) tube over inner column and rest on base. Refer to *Figure 22*.
5. Slide foot rest on inner column and rest on outer (lower) tube and tighten set screw. Refer to *Figure 22*.
6. Insert bearings into each end of outer tube. Refer to *Figure 22*.
7. Slide outer (upper) tube on inner column and rest on foot rest. Refer to *Figure 22*.

Short Free Standing Chair Assembly

1. Insert glide into base. Refer to *Figure 23*.

- (1) BEARING (P/N 53-400164-000)
- (2) OUTER TUBE - UPPER
(P/N 53-400258-XXX)
- (3) INNER COLUMN
(P/N 53-400422-000)
- (4) BASE (P/N 53-400194-XXX)
- (5) GLIDE (P/N 53-400195-000)

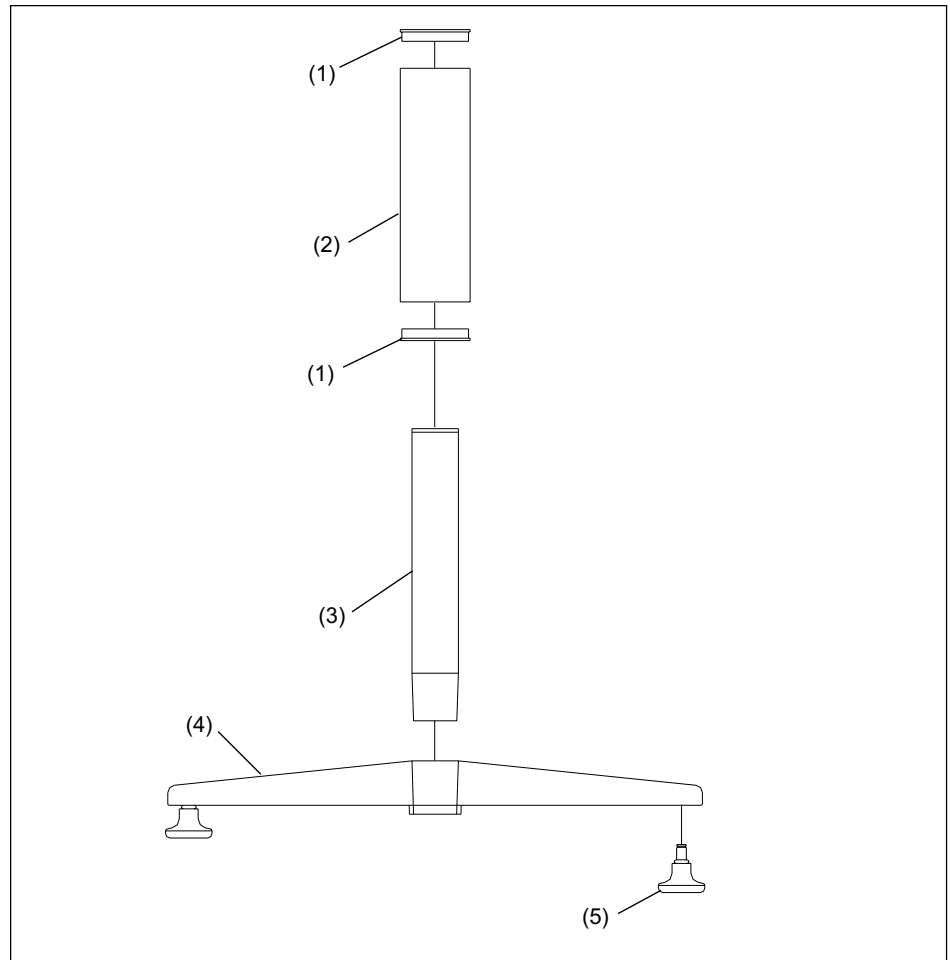


Figure 23. Short Free Standing Chair Assembly

2. Insert tapered end of inner column into base. Refer to *Figure 23*.
3. Insert bearings into each end of outer tube. Refer to *Figure 23*.
4. Slide outer tube over inner column and rest on base. Refer to *Figure 23*.

Seat Options

Plastic Seat Installation

1. Assemble seat plate to seat and tighten screws (part # 11-082862-001) with star washers supplied with seat to 25 in/lbs **maximum torque**. Refer to *Figure 24*.



CAUTION!

Do not use power tools to tighten screws. Do not over tighten the attaching screws! Use torque wrench making sure not to exceed the maximum torque of 25 inch lbs. (2.7 nm).

- (1) SEAT
- (2) SEAT PLATE (P/N 53-400225-XXX)
- (3) COLUMN
- (4) SCREW (P/N 11-082862-001)
- (5) STAR WASHER

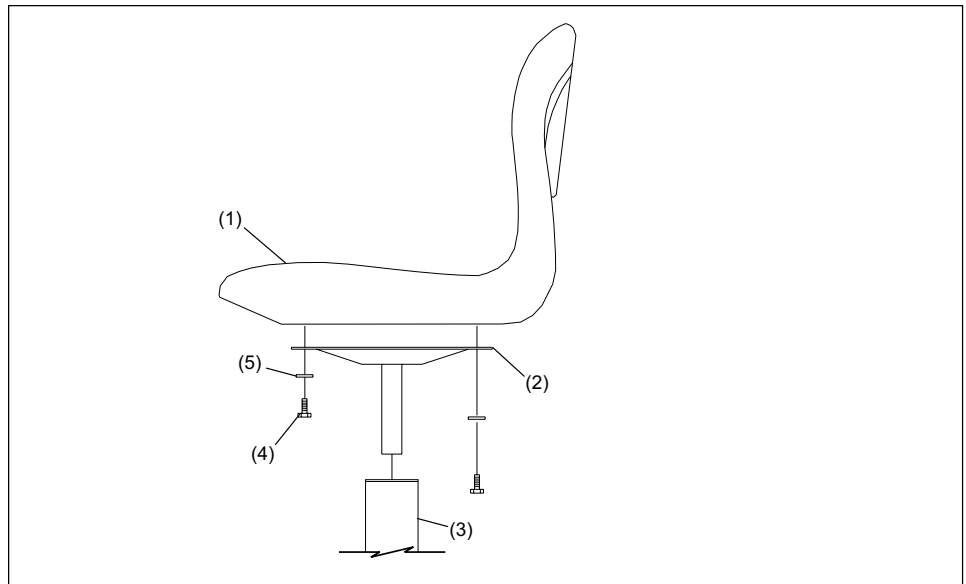


Figure 24. Plastic Seat

2. Slide seat plate into inner column and snap into place making sure there is no gap between seat plate and bearing.



NOTE:

The seat plate shaft must be greased. They should arrive from the supplier pre-greased, but if they do not or if the grease gets wiped off, apply a thin coat of white lithium grease to the shaft before installation.

Wood Seat Installation

1. Assemble seat adapter plate (P/N 53-100293-000) to wood seat with screw (P/N 11-008148-000). Torque screws to 75 inch lbs (8.48 nm). Refer to *Figure 25*.



CAUTION!

Do not use power tools to tighten screws. Do not overtighten screws. Using torque wrench make sure not to exceed the maximum torque of 75 inch lbs (8.48 nm).

- (1) WOOD SEAT
- (2) SEAT ADAPTER PALTE (P/N 53-100293-000)
- (3) SCREW 1/4-20 FLAT HEAD (P/N 11-008148-000) TORQUE TO 75 INCH LBS
- (4) 8 MM NUT (P/N 11-051744-001)
- (5) SEAT PLATE
- (6) COLUMN

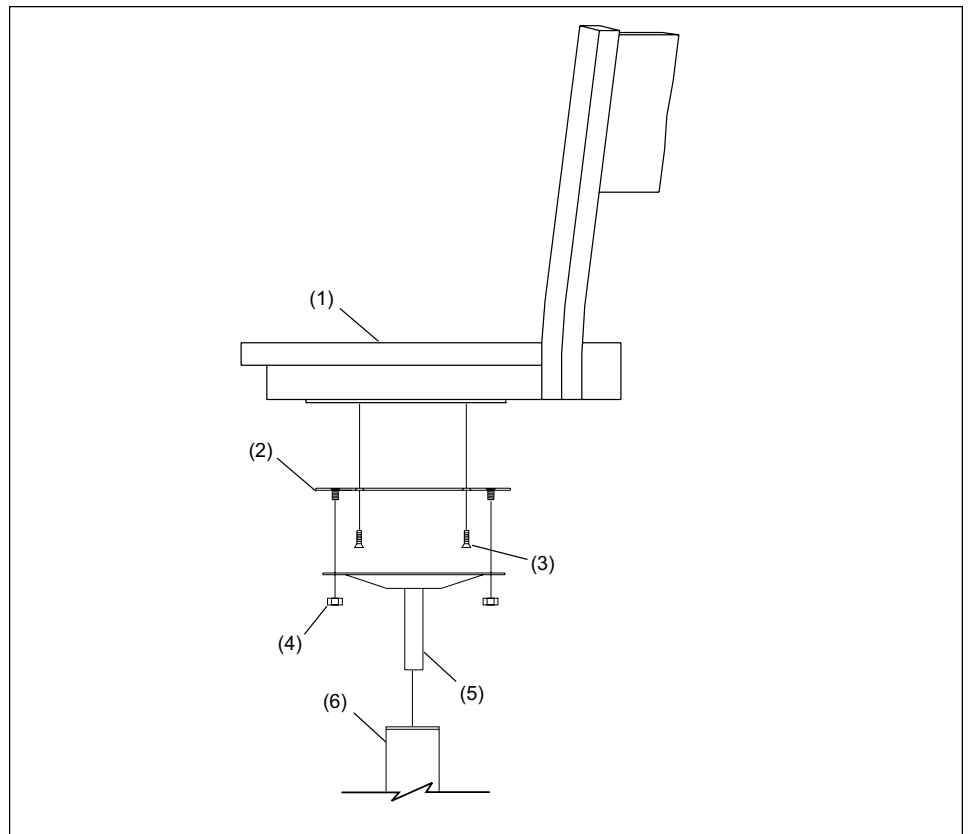


Figure 25. Secure Seat to Chair

2. Assemble seat adapter plate (P/N 53-100293-000) to seat plate with 8 mm nut (11-051744-001) and tighten to 100 inch lbs (11.30 nm).



CAUTION!

Do not use power tools to tighten screws. Do not overtighten screws. Using torque wrench make sure not to exceed the maximum torque of 100 inch lbs (11.30 nm).

3. Slide seat plate into inner cloumn and snap into place making sure there is no gap between seat and bearing.



NOTE:

The seat plate shaft must be greased. They should arrive from the supplier pre-greased, but if they do not or if the grease gets wiped off, apply a thin coat of white lithium grease to the shaft before installation.

General Information (Concourse Table and Seat)

All concourse table and seat units use the same oval table top. They are available with three seat options which are listed below:

Option 1 - Fixed

On this configuration, the position of the seat support and the position of the seat are fixed. Neither the seat support nor the seat can move.

Option 2 - Swivel

On this configuration, the position of the seat support is fixed but the seat can rotate.

Option 3 -Swing

On this configuration, the seat support can pivot and the seat can rotate.

Oval Fixed and Swivel Table Assembly and Installation

Fixed and Swivel Table Assembly

1. Secure seat outriggers to center table post using four 3/8-16 - 1" button head cap screws. Refer to *Figure 26*.
2. Align the threaded insert in the table top with the mounting holes in the table mounting plate. Secure the table top to the two table mounting plates with four 3/8-16 x 3/4" button head cap screws. Refer to *Figure 26*.

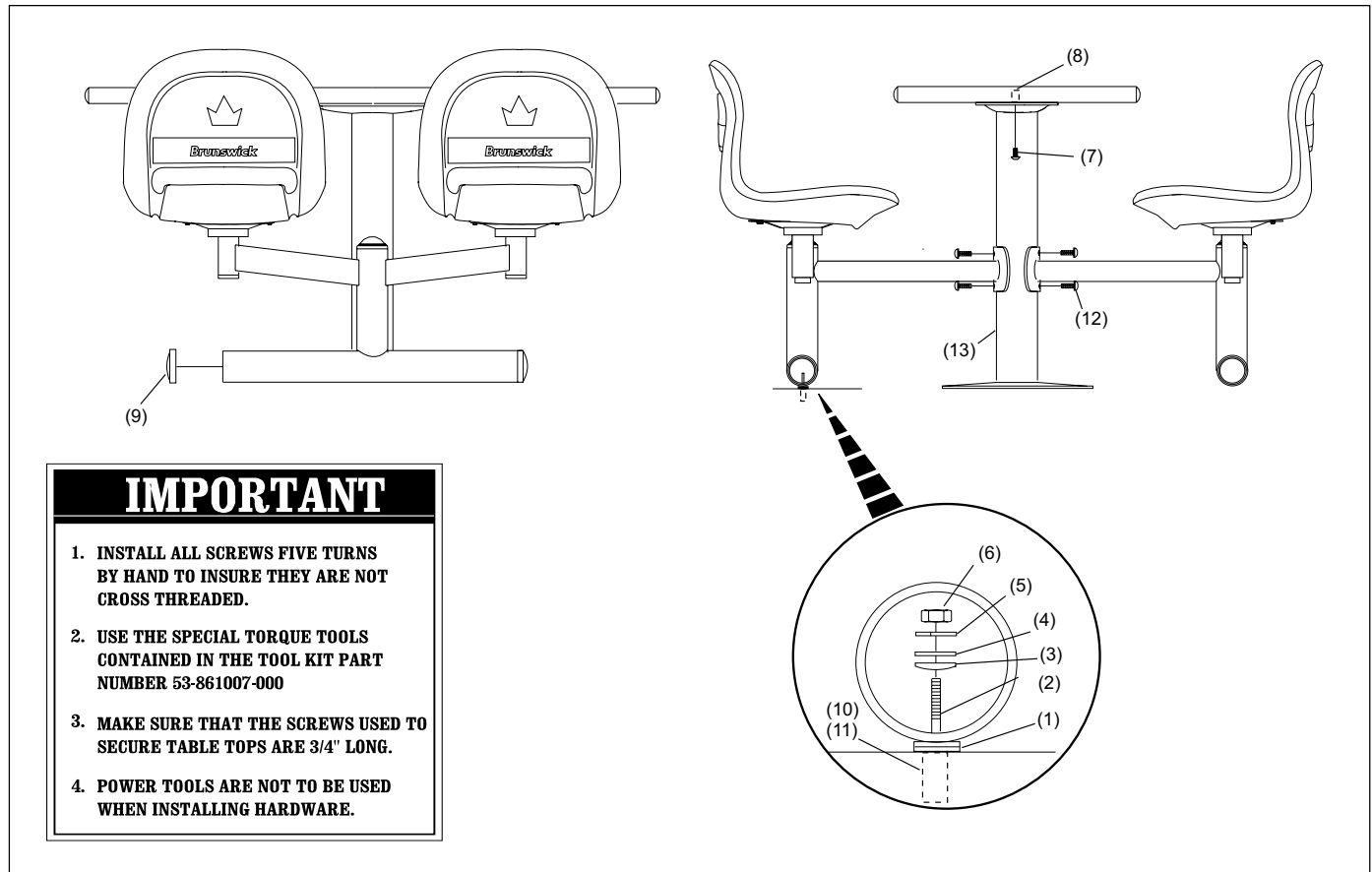


Figure 26. Assemble Table and Chair

- | | | |
|------------------------------------------------|---------------------|-----------------------------------|
| (1) 3/8" PLAIN BLACK WASHERS
(FOR SHIMMING) | (2) STUD | (3) BELLEVILLE WASHER |
| (4) FLAT WASHER | (5) LOCKWASHER | (6) 3/8-16 HEX NUT |
| (7) 3/8-16 X 3/4" BUTTON HD. CAP SCREW | (8) THREADED INSERT | (9) END CAP |
| (10) 3/8-16 X 1" HILTI QUIC LOC STUD | (11) FLOOR FASTENER | (12) 3/8-16 X 1" BUTTON HD. SCREW |
| (13) TABLE CENTER POST | | |

Fixed and Swivel Table Installation

1. Place the table and chair assembly at the chosen location. Mark the location of the four holes in the end of the support tubes on the floor. Move the assembly so the floor fasteners can be installed.
2. The tubes will be secured with 3/8-16 x 3-1/2" male concrete studs or 3/8-16 wood floor anchors and 3" x 16 threaded studs.
3. Install the proper floor fastener for your floor material (wood or concrete) following the instructions contained in the *Locating and Installing Seating and Concourse Furniture Fasteners* section.

- (1) HILTI FASTENER (TO BE SHIMMED)
- (2) SIDE TO SIDE LEVEL
- (3) FRONT TO BACK LEVEL
- (4) DIAGONAL LEVEL

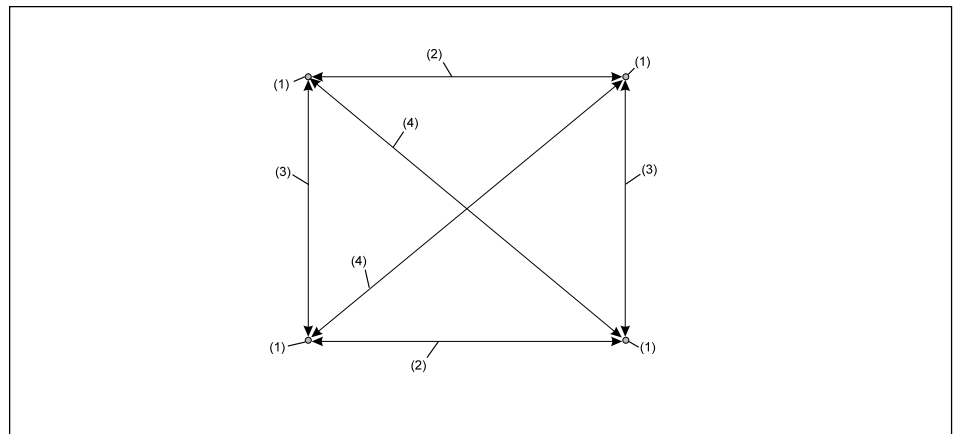


Figure 27. Place Washer on Points

4. Shim the four floor fasteners to provide a level surface for the seat weldment:
 - a. Place a 3/8" black flat washer on each of the threaded studs. Refer to *Figure 27*.
 - b. Check the level between the studs side to side, front to back and diagonally. Add washers as necessary to correct any non-level condition.



NOTE:

No more than four shim washers are to be installed on any of the Hilti fasteners.



NOTE:

When making the diagonal level checks, you must have a gap of approximately 1/8" (3.175 mm) between the bottom edge of the level and the concrete floor.

Figure 27.

5. Follow the instructions on page 32 to install the plastic seats.

6. Reposition the assembly over the floor fasteners.
7. Secure the tubes at each of the floor attaching studs with the following hardware:
 - 1 each 3/8" Lockwasher
 - 1 each 3/8" Flat Washer
 - 1 each 3/8" Belleville Washer
 - 1 each 3/8-16 Hex Nut
 - A/R 3/8" Plain Black Washer (For Shimming)
8. Tighten the 3/8-16 hex nuts to 25 foot lbs. (34 nm).
9. Install the tube caps in the four open ends of the tubes. *Figure 28.*

Swing Table Assembly and Installation

Swing Seat Table Assembly

1. Align the threaded inserts in the table top with the mounting holes in the table mounting plate. Secure the table top to the two table mounting plates with four 3/8-16 x 3/4" button head cap screws. Refer to Figure 28.

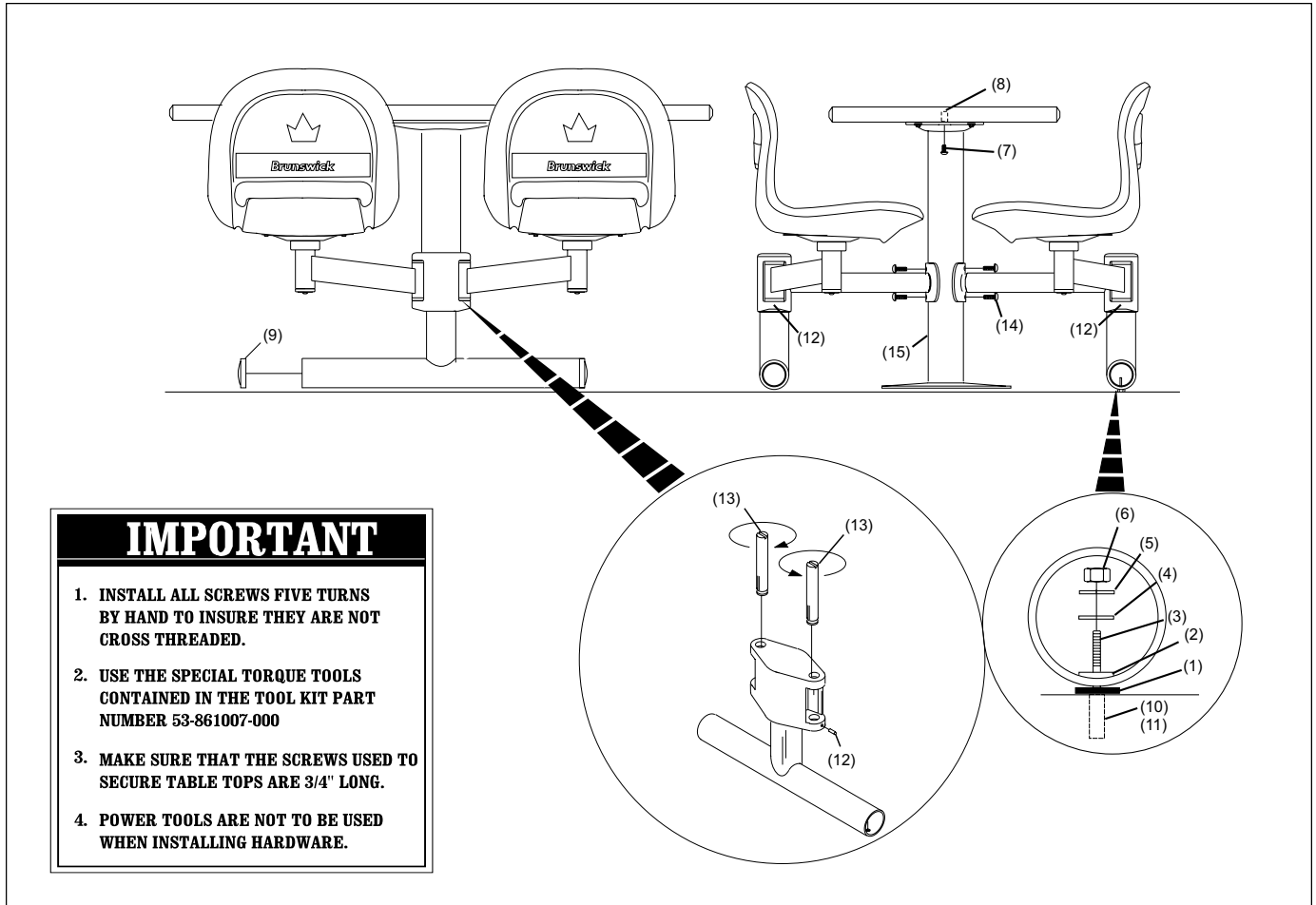


Figure 28. Secure Table Tops to Table Mounting Plates

- | | | |
|---------------------------------------------------------------|----------------------------------------------------|------------------------|
| (1) 3/8" PLAIN BLACK WASHERS
(FOR SHIMMING) | (2) BELLEVILLE WASHER | (3) STUD |
| (4) FLAT WASHER | (5) LOCKWASHER | (6) 3/8-16 HEX NUT |
| (7) 3/8-16 X 3/4" BUTTON HD. CAP SCREW | (8) THREADED INSERT | (9) END CAP |
| (10) 3/8-16 X 3-1/2" HILTI QUIC LOC STUD
(CONCRETE FLOORS) | (11) STANDARD WOOD FLOOR FASTENER
(WOOD FLOORS) | (12) SET SCREW |
| (13) TOP OF SHAFTS | (14) 3/8-16 X 1" BUTTON HD. SCREW | (15) TABLE CENTER POST |

Swing Seat Table Installation

1. Place the table and chair assembly at the chosen location. Mark the location of the two mounting holes in the pedestal base and the four holes in the end of the support tubes on the floor. Move the assembly so the floor fasteners can be installed.
2. The tubes will be secured with 3/8-16 x 3-1/2" male concrete studs or 3/8-16 wood floor anchors and 3" x 16 threaded studs.
3. Install the proper floor fastener for your floor material (wood or concrete) following the instructions contained in the *Locating and Installing Seating and Concourse Furniture Fasteners* section.

- (1) HILTI FASTENER (TO BE SHIMMED)
- (2) SIDE TO SIDE LEVEL
- (3) FRONT TO BACK LEVEL
- (4) DIAGONAL LEVEL

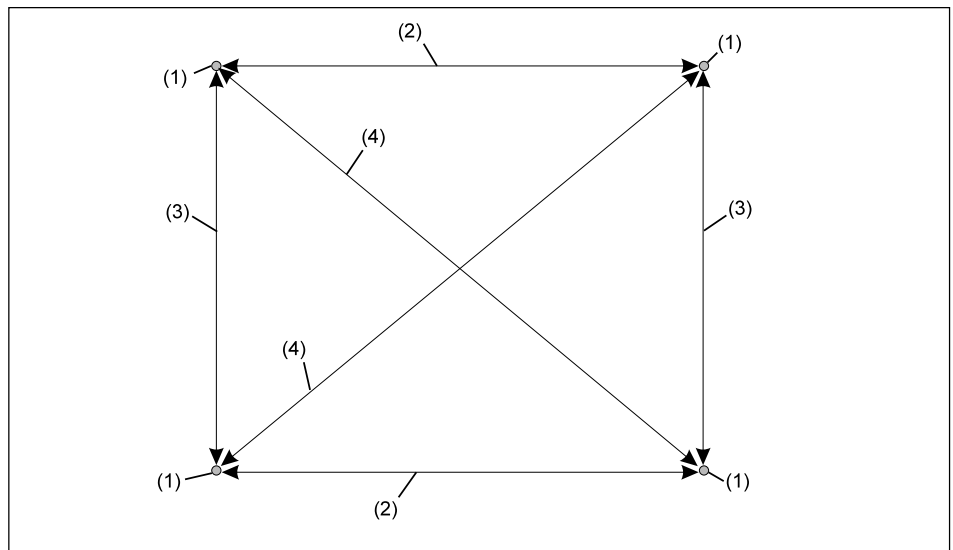


Figure 29. Place Washer on Points

4. Shim the four floor fasteners to provide a level surface for the seat weldment:
 - a. Place a 3/8" black flat washer on each of the threaded studs. Refer to *Figure 29*.
 - b. Check the level between the studs side to side, front to back and diagonally. Add washers as necessary to correct any non-level condition.



NOTE:

No more than four shim washers are to be installed on any of the Hilti fasteners.

5. Follow the instructions on page 29 to install the contour seats.
6. Reposition the assembly over the floor fasteners.
7. Secure the tubes at each of the floor attaching studs with the following hardware:
 - 1 each 3/8" Lockwasher
 - 1 each 3/8" Flat Washer
 - 1 each 3/8" Belleville Washer
 - 1 each 3/8-16 Hex Nut
 - A/R 3/8" Plain Black Washer (for shimming)
8. Install the tube caps in the four open ends of the tubes, *Figure 28*.
9. Swing arm spring tension adjustment: *Figure 28*.
 - a. Pull each seat assembly to the fully out position and release it. A swing arm with proper tension will slowly return towards the table until it contacts a stop in the pivot assembly.
 - b. If the seat assembly returns too fast or too slow, adjust its seat tension as detailed in step 10.
10. Swing arm spring tension adjustment: *Figure 28*.
 - a. Loosen set screw (12). This will release the existing tension on the torsion spring that rotates the swing arm to the home position.
 - b. Using a wide blade screw driver in the slot of a spring shaft (13), rotate it in the required direction as shown by the arrows in *Figure 28*.
 - 3c. Holding the shaft in this position, pull the chair to the fully out position and release it. If the return speed is satisfactory, tighten the set screw. The required torque for the screw is **100-110 inch lbs.** (11 nm).
 - d. If the speed is unsatisfactory, loosen the set screw and repeat the adjustment but increase or decrease the amount the shaft is rotated.

Stand Alone Triangle Table Assembly and Installation

Table Assembly

1. Secure the triangle table top to the table leg assembly with four 3/8-16 x 3/4" button head cap screws. Refer to *Figure 29*.

- (1) 3/8-16 X 3/4" BUTTON HEAD CAP SCREWS
- (2) THREADED INSERTS

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

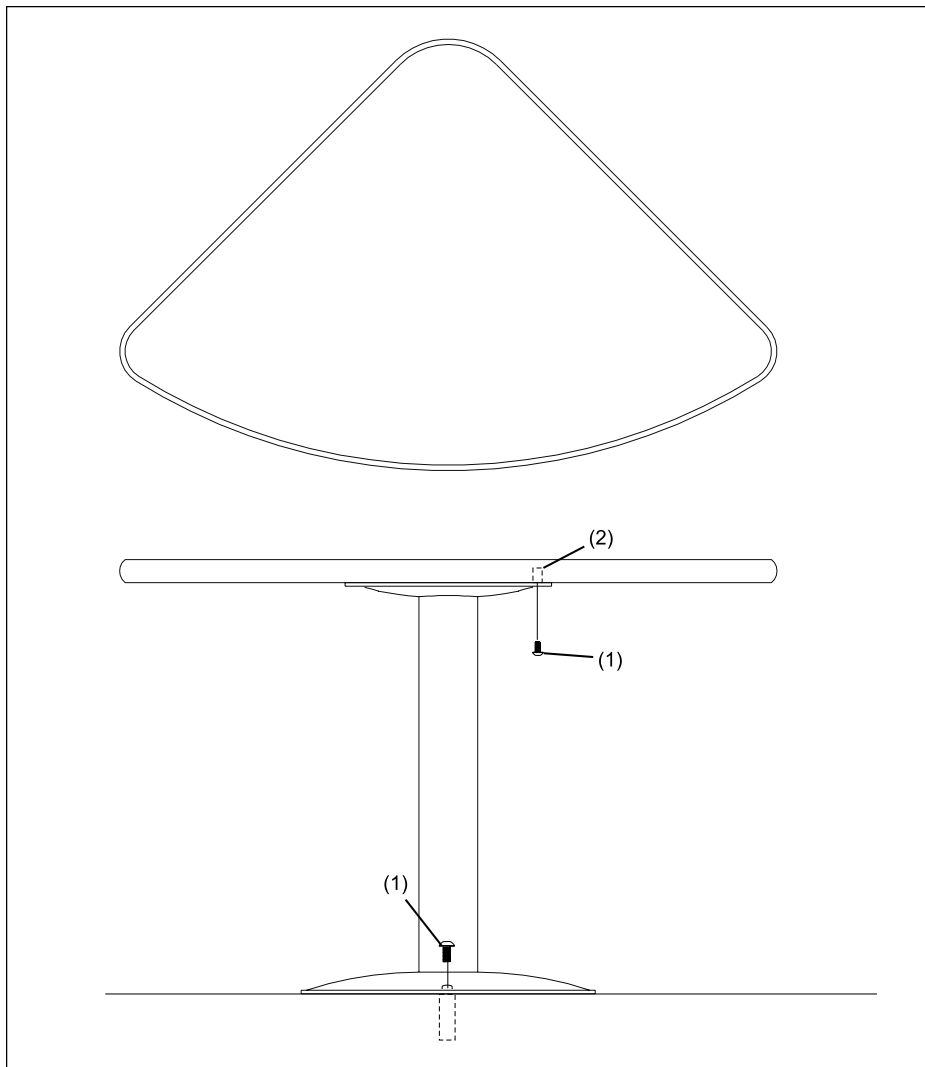


Figure 29. Secure Triangle Table Top to Leg Assembly

Table Installation

1. Place the table assembly at the chosen location. Mark the location of the floor fastener on the floor. Following the instructions in the floor attaching section, install the proper fastener for your floor material, wood or concrete.
2. Secure the table base to the floor with four 3/8-16 x 3/4" button head cap screws tightened to 25 foot lbs (34 nm). Reference *Figure 29*.

Stand Alone Triangle Table with Optional Leaning Rail - Assembly and Installation

The stand alone triangular table offers a leaning rail as an option. The rail is secured to the table top with two 3/8-16 x 2-1/2" cap screws. Two leaning rail cups are provided to cover the joint between the leaning rail legs and the table top.

Table Assembly

1. On the bottom of the table top are two partially drilled holes. These partially drilled holes are the points where attaching holes for the leaning rail are to be drilled. Through drill with a 1/4" diameter drill bit at these two locations. Refer to *Figure 30*.

- (1) 3/8-16 X 3/4" BUTTON HEAD CAP SCREWS
- (2) CUP
- (3) THREADED INSERTS
- (4) 3/8 LOCKWASHER
- (5) 3/8 FLAT WASHER
- (6) 3/8-16 X 2-1/2" HEX HEAD CAP SCREWS
- (7) LEANING RAIL

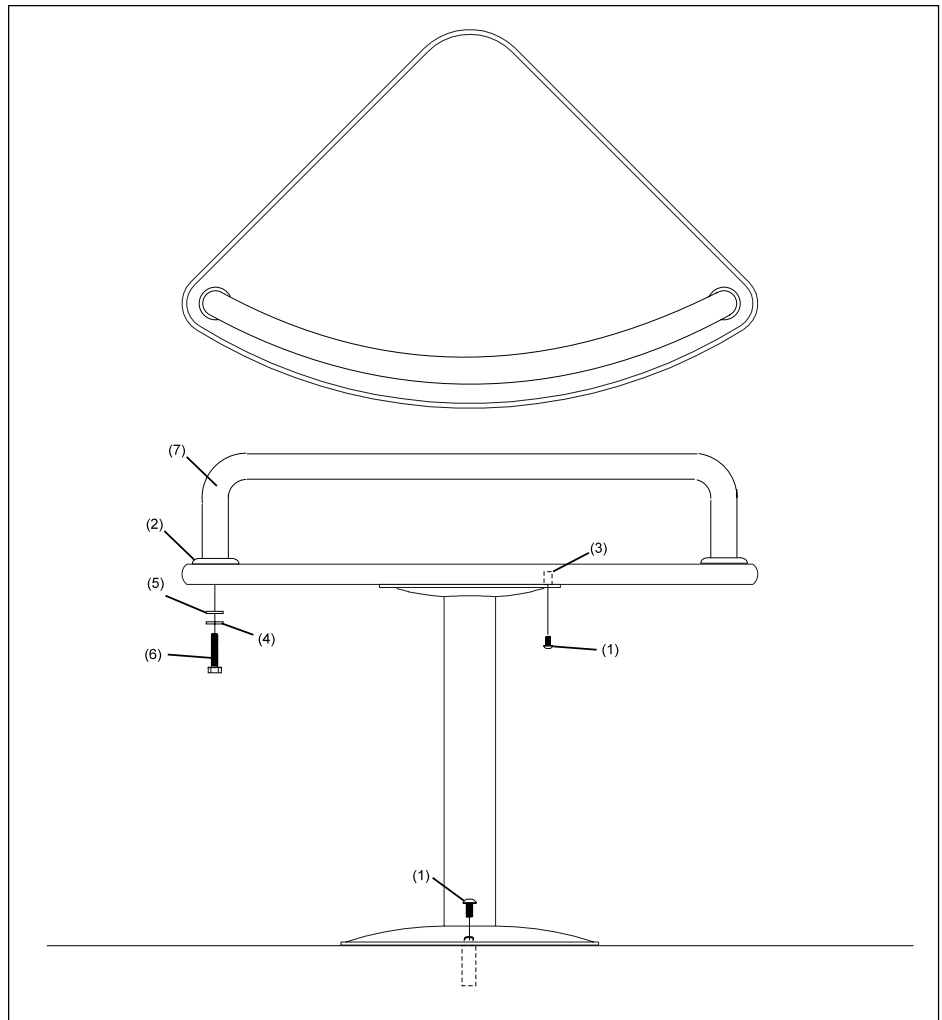


Figure 30. Secure the Triangle Top to the Leg Assembly

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. MAKE SURE THAT THE SCREWS USED TO SECURE TABLE TOPS ARE 3/4" LONG.
4. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

2. Turn the table top so its top surface is up and enlarge the 1/4" holes to 1/2".
3. Slide a leaning rail cup on each leg of the rail. Align the threaded inserts in the leaning rail with the two holes drilled into the table top and secure the leaning rail with two each 3/8-16 x 2-1/2" cap screws, 3/8" lockwashers and 3/8" flat washers. Refer to *Figure 30*.

Table Installation

1. Place the table assembly at the chosen location. Mark the location of the floor fastener on the floor. Following the instructions in the floor attaching section, install the proper fastener for your floor material; wood or concrete.
2. Secure the table base to the floor with four 3/8-16 x 3/4" button cap screws. Refer *Figure 30*.



NOTE:

Tighten the button head cap screws to 25 foot lbs. (34 nm).

Bowler's Area Seating, End Table, Center Table and Ashtray/Drink Holder Assembly

End Table Assembly



NOTE:

If end tables are to be installed, this must be done before the seats are installed.

1. Slide the end table support bracket into the end of the seat support tube. Secure it with a 3/8-16 x 1" button head cap screw/lockwasher. Refer to *Figure 31*.

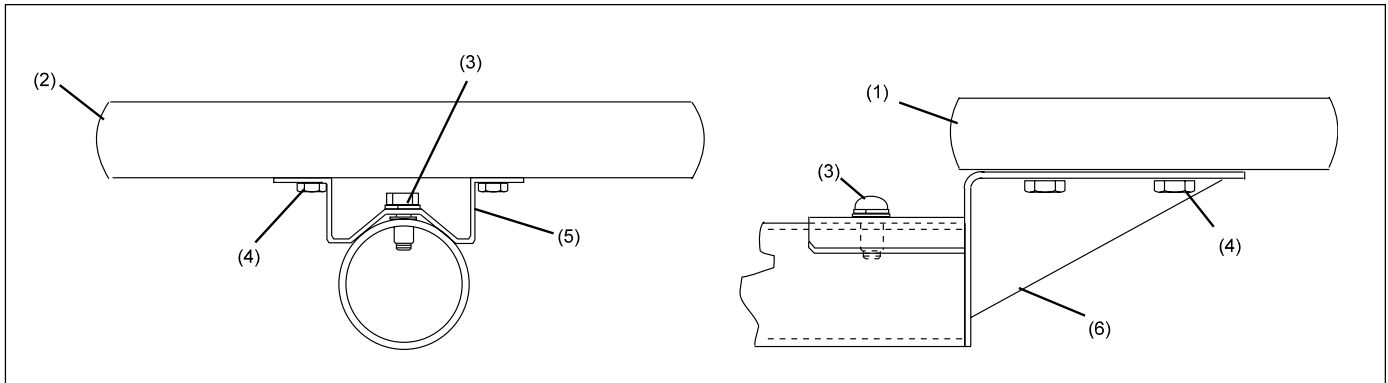


Figure 31. Install End Table Support Bracket

- | | | |
|---------------------------------------------|-----------------------------------|----------------------------------------------------|
| (1) END TABLE | (2) CENTER TABLE | (3) 3/8-16 X 1" HEX HEAD CAP SCREW WITH LOCKWASHER |
| (4) 1/4-20 X 3/4" CAP SCREW (FOUR REQUIRED) | (5) CENTER TABLE MOUNTING BRACKET | (6) END TABLE MOUNTING BRACKET |

2. Secure the end table to the mounting bracket with four 1/4-20 x 1/2" hex head screws (Figure 31).

Center Table or Ashtray/Drink Holder Assembly

1. Secure the center table mounting bracket to the threaded insert located at the center of the seat support tube. Secure it with a 3/8-16 x 1" hex head cap screw and lockwasher. Refer to *Figure 31*.
2. Secure the center table to its mounting bracket with four 1/4-20 x 1/2" hex head cap screws and lockwashers. Refer to *Figure 31*.

Plastic Seat Installation

1. Install the seat buckets following the instructions in the seat attachment section. Refer to page 29.

Bowler's Area Seating Installation

1. Place the seat rails at the chosen location in the bowler's area and mark the location of the four attaching holes on the floor.
2. Following the instructions in the floor attaching section, install the proper floor fasteners for your floor material, wood or concrete.
3. Reposition the assembly over the floor fasteners and secure the assembly to the floor with four 3/8-16 x 3/4" button head cap screws. Refer to *Figure 32*.



NOTE:

Tighten the button head cap screws to 25 foot lbs. (34 nm).

- (1) END CAPS (2 REQUIRED)
- (2) 3/8-16 X 3/4" BUTTON HEAD CAP SCREW
- (3) FLOOR FASTENER (FOUR REQUIRED)

IMPORTANT

1. INSTALL ALL SCREWS FIVE TURNS BY HAND TO INSURE THEY ARE NOT CROSS THREADED.
2. USE THE SPECIAL TORQUE TOOLS CONTAINED IN THE TOOL KIT PART NUMBER 53-861007-000
3. POWER TOOLS ARE NOT TO BE USED WHEN INSTALLING HARDWARE.

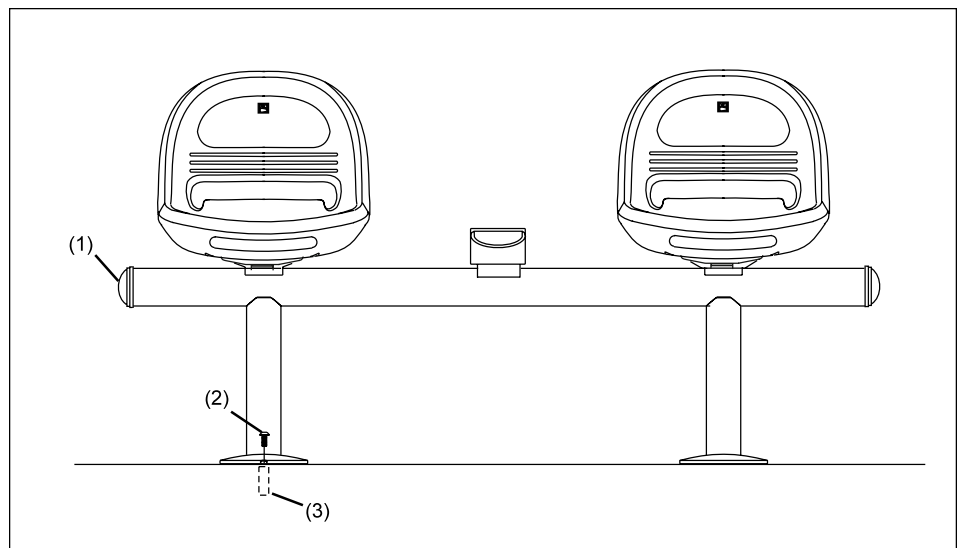


Figure 32. Secure Seating to the Floor

4. If the seating does not have end tables, install a plastic end caps at each end of the seat support tube. Refer to *Figure 31*.
5. Follow the instructions on page 32 to install the plastic seats.

Swivel Seat Arm Spring Replacement

1. Loosen set screw securing the pivot shaft on the table weldment. Refer to *Figure 33* for view of components.
2. Using hammer and punch, carefully tap out the pivot shaft from the table weldment.
3. Remove seat arm from table weldment.
4. Using screwdriver(s), remove the top and bottom plastic swivel bearings from seat arm (*Figure 33*).



NOTE:

Carefully note orientation of installed spring for reference when installing replacement spring. There are two different seat arm springs; a left-hand wound and a right-hand wound, referring to the swivel seat arm location on the table weldment!

- (1) LEFT-HAND SWING ARM TENSION ADJUSTMENT DIRECTION
- (2) RIGHT-HAND SWING ARM TENSION ADJUSTMENT DIRECTION
- (3) PIVOT SHAFT
- (4) SET SCREW
- (5) SWIVEL BEARING
- (6) SPRING SLEEVE
- (7) SPRING
- (8) SEAT ARM
- (9) OUTSIDE TAIL END OF SPRING

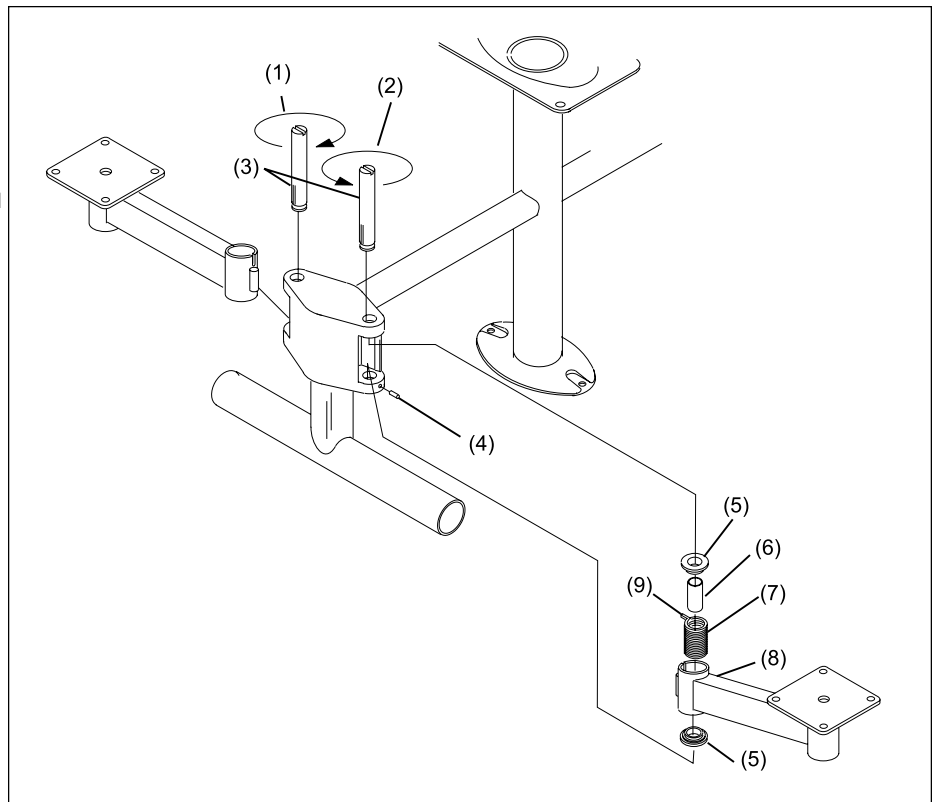


Figure 33. Swivel Seat Arm Spring Replacement

5. Remove spring and spring sleeve from seat arm housing.
6. Insert spring sleeve into replacement spring and reinstall spring into seat arm, placing the outside tail end of the spring into the slot of seat arm. See *Figure 34*.
7. With spring properly seated into seat arm housing, reinstall the top and bottom swivel bearings.

- (1) END TAIL OF SPRING
- (2) SLOT IN SEAT ARM

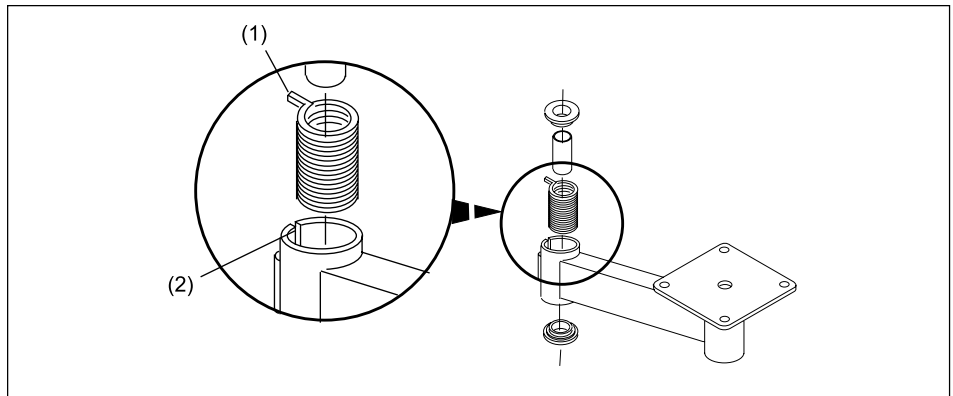


Figure 34. Align Outside End Tail of Spring with Seat Arm Slot

8. Insert assembled seat arm into table weldment and align slot of pivot shaft with inside end tail of spring. Push down on pivot shaft while rotating slightly to make sure that spring tail end inserts into slot of pivot shaft. Refer to *Figure 35*.

- (1) PIVOT SHAFT
- (2) SEAT ARM
- (3) SPRING SLEEVE
- (4) SPRING
- (5) SLOT IN SEAT ARM
- (6) INSIDE TAIL END OF SPRING
- (7) SLOT IN PIVOT SHAFT
- (8) TOP VIEW

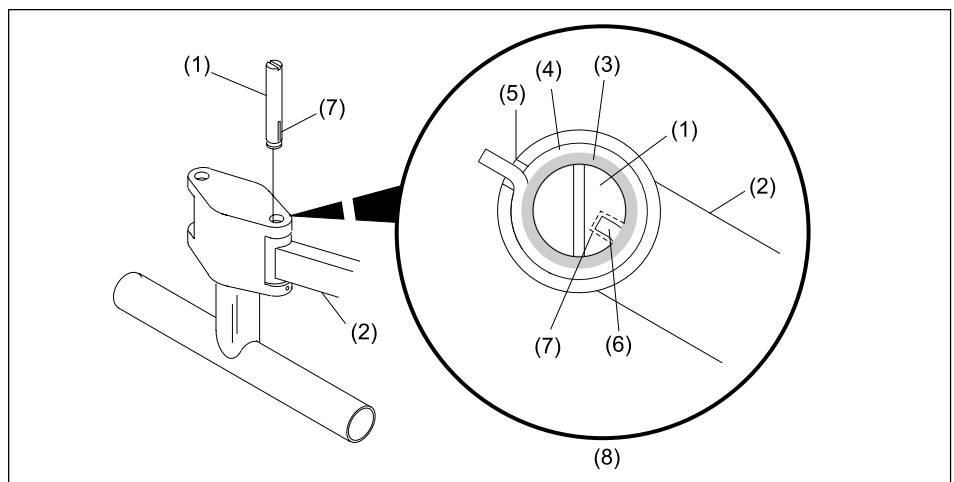


Figure 35. Align Inside End Tail of Spring with Pivot Shaft Slot

9. Fully seat the pivot shaft into table weldment.
10. Using large blade screwdriver, rotate the pivot shaft as shown in *Figure 27* until seat arm freely retracts toward table. Extend seat several times making sure that it retracts smoothly.
11. Tighten set screw to **100-110 in.lb.**
12. Verify that seat arm extends and retracts properly. If adjustment is required, go back to step 10.