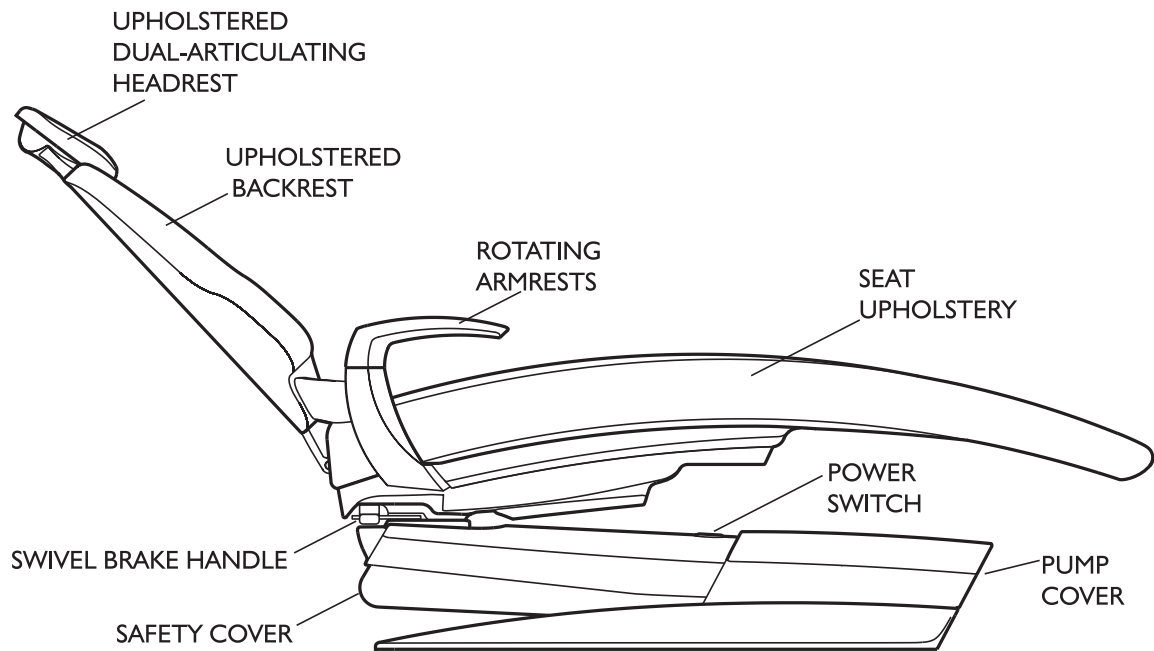


SERIES 5 DENTAL CHAIR

OVERVIEW



INTRODUCTION

BEFORE YOU BEGIN

Study the chair overview in this booklet and layout dimensions from the owner's manual. Make sure the planned location will have the necessary space available for installation, including room for travel of the chair's base and backrest.

Open all containers and review the contents. It may be helpful to locate all kits containing components and accessories for installation.

Locate all documentation supplied with the equipment. Manuals and installation information may be found in one or more boxes with their respective components. Set aside the documentation for the end user to review.

Check local and state codes which pertain to the installation of this product and make adequate preparations for proper conformance to all requirements.

SYMBOLS USED IN THIS MANUAL

The following symbols may be used throughout this product manual:



WARNING: Failure to carefully follow the described procedure may result in serious damage to the equipment, or serious injury or harm to the operator.



CAUTION: Failure to carefully follow the described procedure may result in damage to the equipment and/or operator.



NOTE: Take note of additional important information. Not a WARNING or CAUTION.



ELECTRICAL HAZARD: Risk of electrical shock present. Ensure that power is disconnected before attempting this procedure.

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REGULATORY INFORMATION

Regulatory information is delivered with DCI Edge dental equipment as mandated by agency requirements and can be found in the accompanying Instructions for Use for this device.

SETUP

TOOLS NEEDED FOR INSTALLATION

- Scissors or utility knife
- Allen wrench set
- Socket wrench set

INCLUDED HARDWARE

- Power Switch Cover



Figure 1. Power switch cover

- S5 Base Cover (optional)

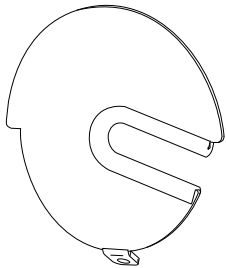


Figure 3. S5 base cover

- Backrest Wire Cover and Fasteners

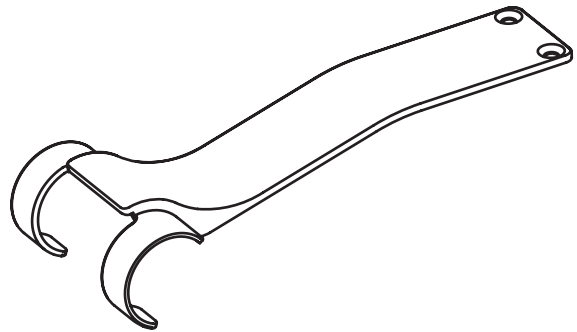


Figure 2. Backrest wire cover and fasteners

PLACING THE CHAIR IN LOCATION

- 1** Remove the shipping straps and open the crate.
- 2** Remove the 3/8" bolts holding the chair to the wood pallet.
- 3** Carefully remove the chair from the pallet and position it in the proper location for installation. Refer to dimensional information on the next page for guidance in positioning the chair.
- 4** Check that the chair rests flat and level on the floor and that it does not rock due to uneven areas on the floor. Use shims to eliminate gaps if the surface is uneven.



WARNING: To prevent injury, use an assistant to help safely position the chair in the operator.

DIMENSIONAL LAYOUT

CHAIR AND UNIT DIMENSIONS

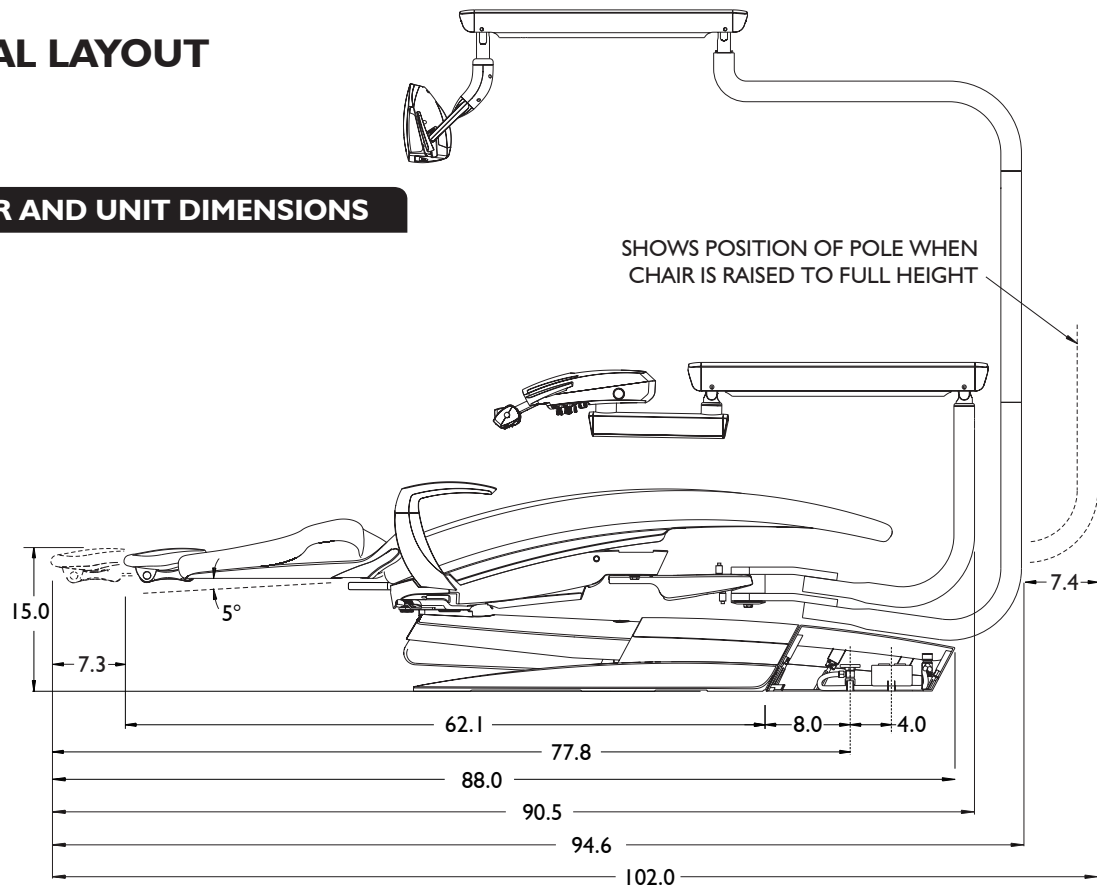


Figure 4. Chair and unit dimensions

JUNCTION BOX LAYOUT

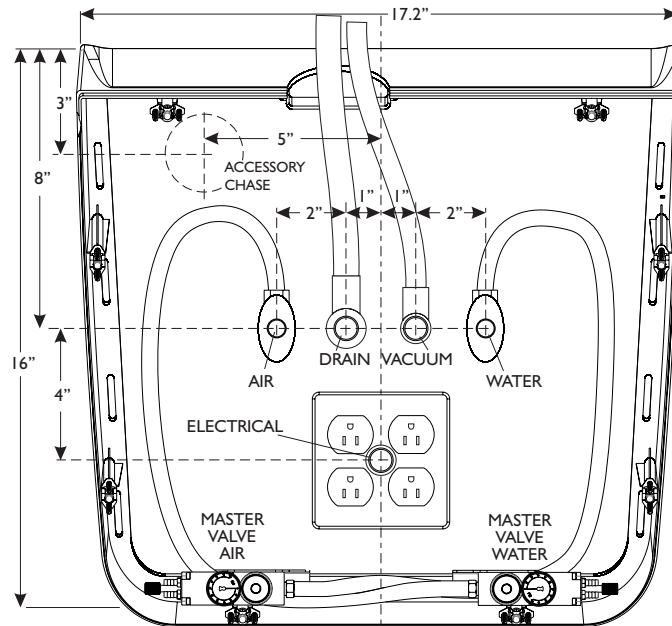


Figure 5. Junction box layout

CHAIR PREPARATION

SHIPPING BOLT

Remove the shipping bolt (Figure 6) by unscrewing from above the seat pan casting using a 3/8" wrench. Once unscrewed, removed the bolt and related hardware from the assembly.

POWER SWITCH COVER

Power Switch Cover (Figure 6): Install the power switch cover into the opening around the power switch by snapping it firmly into place.

FOOT SWITCH

Foot Switch (Figure 7): Unpack the foot switch and set in position for use.

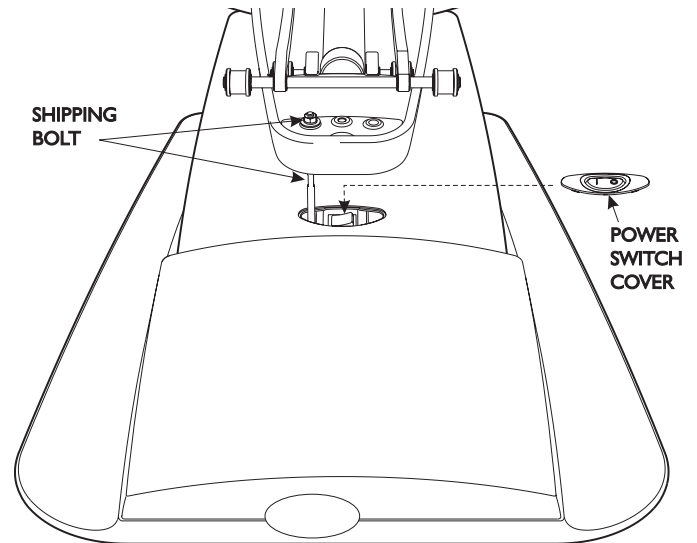


Figure 6. Removing the shipping bolt and installing the power switch cover

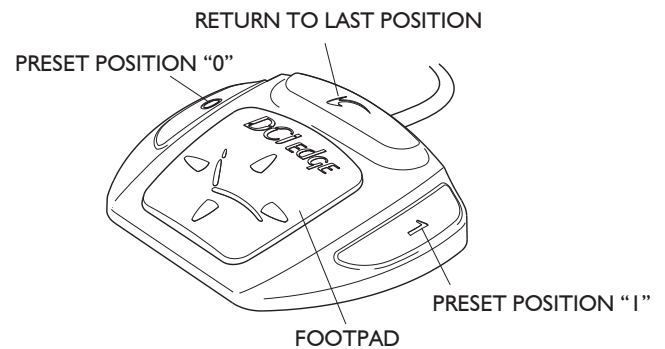


Figure 7. Foot switch

CHAIR PREPARATION

BACKREST

- 1** Loosen the Set Screw (Figure 8, item 1) which secures the steel Cross Pin (Figure 8, item 2).
 - 2** Remove the cross pin.
 - 3** Rotate the backrest into position (Figure 9) by aligning the backrest bottom holes to the holes in the link bar which extends from the upper hydraulic assembly.
 - 4** Re-insert the Cross Pin.
- NOTE:** If necessary, use a rubber mallet to drive the pin until it has fully engaged both parts.
- 5** Tighten the Set Screw on the backrest link against the Cross Pin to prohibit its movement.
 - 6** Install the Backrest Wire Cover (Figure 10).

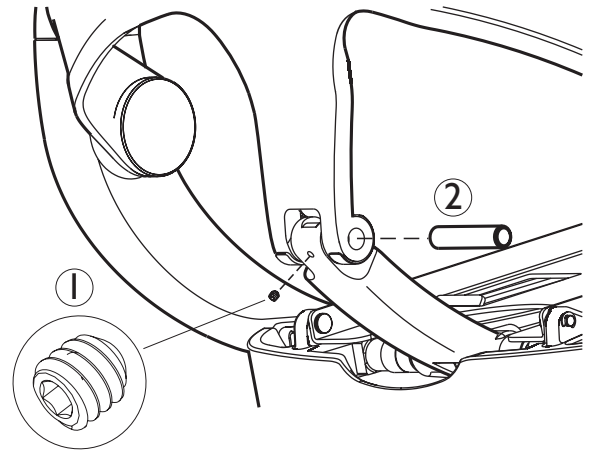


Figure 8. Removing the cross pin

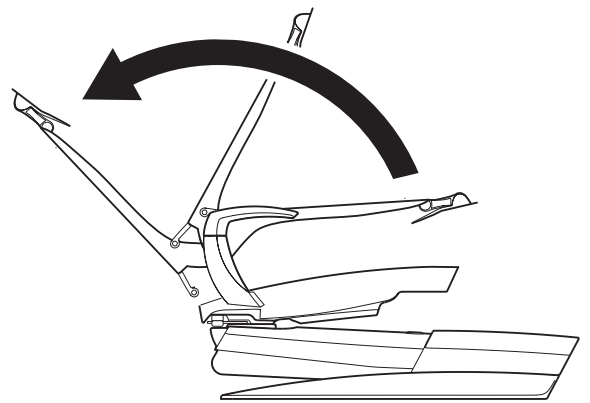


Figure 9. Rotating the backrest

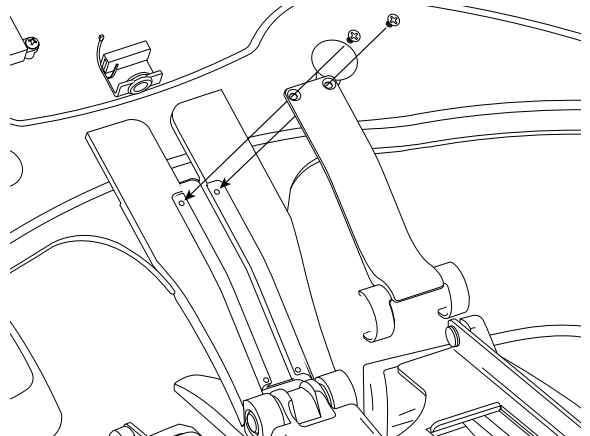


Figure 10. Installing the backrest wire cover

UPHOLSTERY INSTALLATION

SEAT UPHOLSTERY

- 1** Center and place the seat upholstery on the seat plate so that the clips on the bottom of the seat upholstery drop into the slots of the Seat Plate (Figure 11, item 1).
- 2** Engage the clips by pushing the seat upholstery toward the backrest (Figure 11, item 2).
- 3** Once the clips are engaged, turn the two rotating catches 90 degrees to lock the seat in position (Figure 11, item 3).



WARNING: Failure to properly assemble the seat upholstery to the chair could result in injury or damage to the equipment.

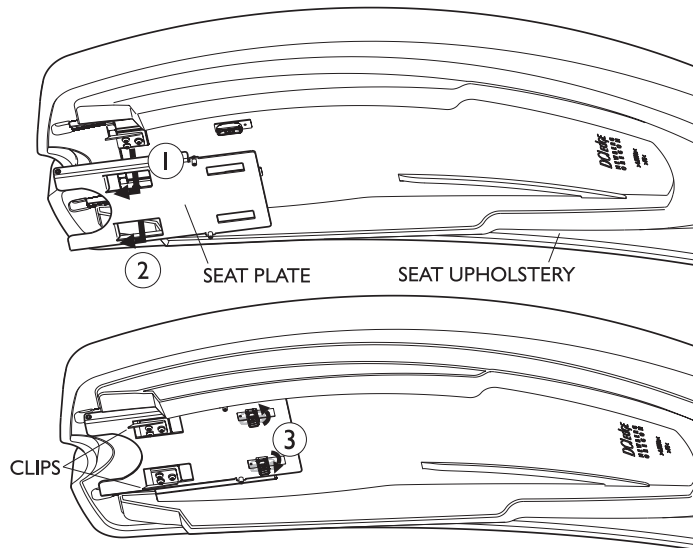


Figure 11. Assembling the seat upholstery to the chair

BACKREST UPHOLSTERY

- 1** Attach the backrest upholstery by aligning the lower keyhole features in the plastic substrate to the flat head elevator bolts on the metal back (Figure 12, item 1).
- 2** Push down and slide the backrest upholstery toward the seat (Figure 12, item 2) until the upper keyhole features catch on the upper elevator bolts.
- 3** Ensure that the upper elevator bolts engage in the upper keyhole slots of the backrest upholstery substrate and continue to push the backrest toward the seat until it is fully engaged on the metal back.

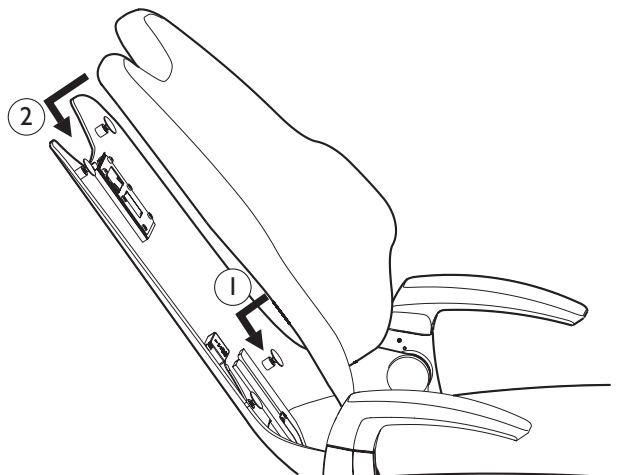


Figure 12. Assembling the backrest upholstery

UPHOLSTERY INSTALLATION

HEADREST UPHOLSTERY

- 1** Remove the 6-32 screw from the back of the headrest upholstery and set aside.
- 2** Align the Keyholes (Figure 13, item 1) of the headrest upholstery to the Flat Head Bolts (Figure 13, item 2) on the headrest assembly.
- 3** Push down and slide the headrest upholstery toward the bottom tip of the casting to engage the bolts in the keyhole slots.
- 4** Complete the assembly by adding the 6-32 screw to the back of the headrest as shown (Figure 13, item 3).

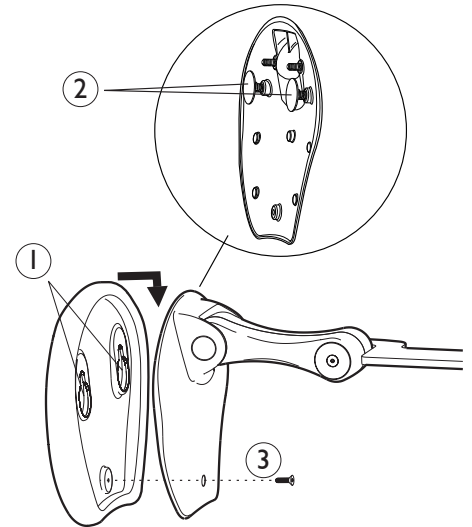


Figure 13. Assembling the headrest upholstery

ARMREST UPHOLSTERY

- 1** Press on the Cushion (Figure 14, item 1) directly above the inserts in order to start the screws.
- 2** Attach the armrest cushion to the armrest using two 69055 Screws and a 1/8" L-Key (Figure 14, item 2).

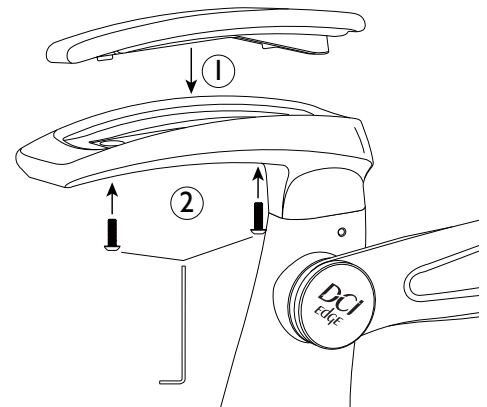


Figure 14. Attaching the 54957 armrest cushion

OPTIONAL QUICK CONNECT BOX

ATTACHING BOX TO CHAIR

- 1** Identify to which side of the chair the box will mount.
- 2** Use two 10-32 fasteners to attach the bracket to the Quick Connection Box. Determine orientation based on the side of the chair to which it will mount.
- 3** Use two 10-32 fasteners to attach to the seat pan casting.

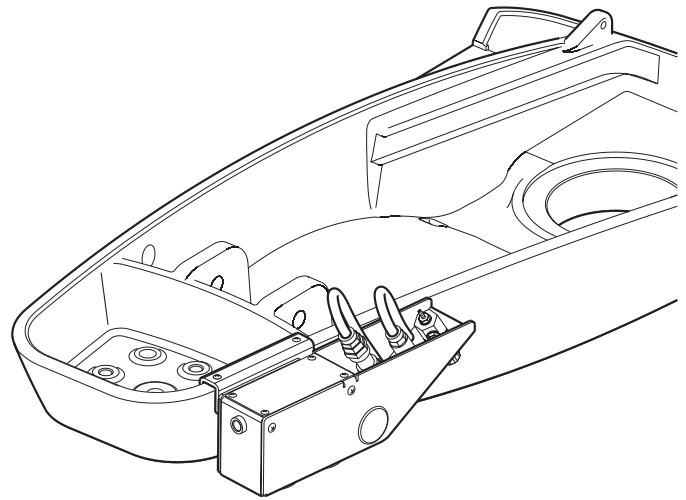


Figure 15. Attaching the Quick Connection Box to the chair

ROUTING LINES

- 1** Route wires and tubings out the hole on the side of the Quick Connection Box which is closest to the chair casting (Figure 16).
- 2** Remove the umbilical cover, the wire hanger, the truss cover, and the pump cover, and then route the wires under the seat casting and into the wire channel of the truss casting.

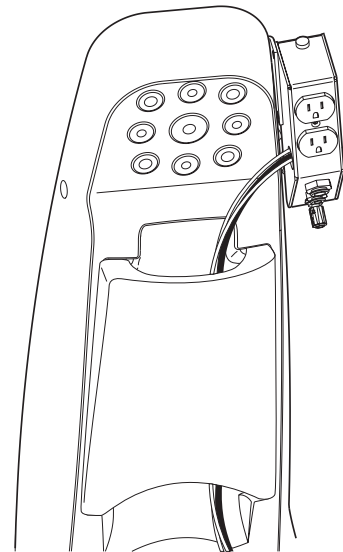


Figure 16. Routing wires from the box to the chair casting

CONNECTING TO UTILITIES

- 1** Connect the power cable to the connector labeled AUXILIARY OUTPUT at the front side of the transformer box in the chair.
- 2** Remove the top cover of the Junction Box in front of the chair and route air and water lines through the opening at the front of the chair into the Junction Box. Make air and water connections to the incoming air and water lines after the regulator.

OPTIONAL BASE COVER

If desired, the optional Base Cover (Figure 18, item 1) can be installed (no difference to the performance of the chair).

Using the provided fasteners (Figure 18, item 2), install the cover as shown.



NOTE: It may be necessary to route the base tubing through the cover prior to installing.

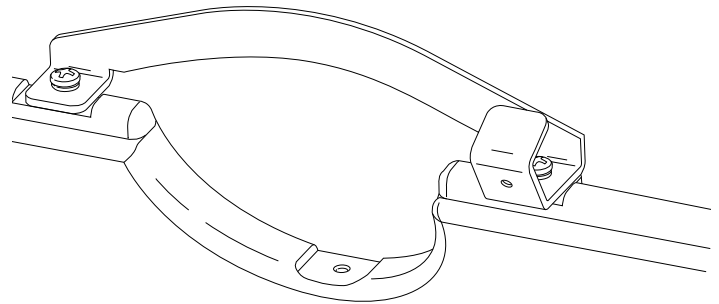


Figure 17. Series 5 without base cover

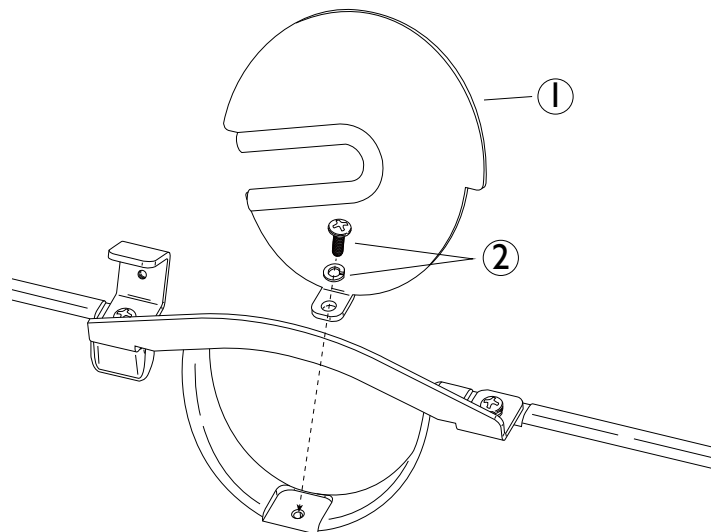


Figure 18. Installing the base cover to the bracket

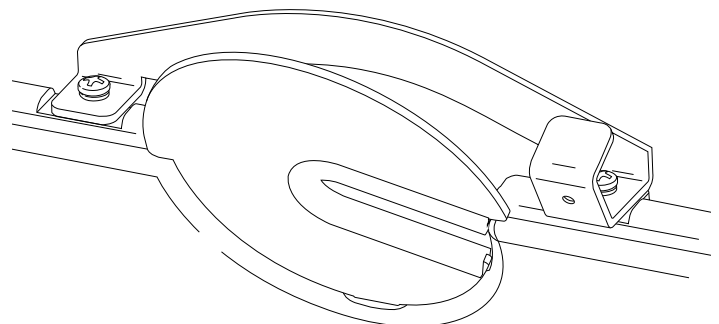


Figure 19. Series 5 with base cover

OPTIONAL AIRSOOTHE™ MASSAGE

The AirSoothe™ Massage feature requires air connections to be made to the upholstered back and to the utilities in the junction box in front of the base of the chair. It also requires an electrical connection between the upholstered seat and the seat plate.

MAKING CONNECTIONS AT THE FLOOR

1. Locate the coiled yellow 1/8" ID Tubing (Figure 20, item 1) in the base of the chair.
2. Remove the bag that is taped to the end of the tubing which includes a washer, 1/8" barb, and clamp sleeve.
3. Extend the tubing to the Air Manifold (Figure 21) in the floor junction box.
4. Cut excess tubing length.
5. Install the 1/8" barb to a plugged position on the air manifold.
6. Connect the air input yellow tubing to the Air Manifold in the junction box.

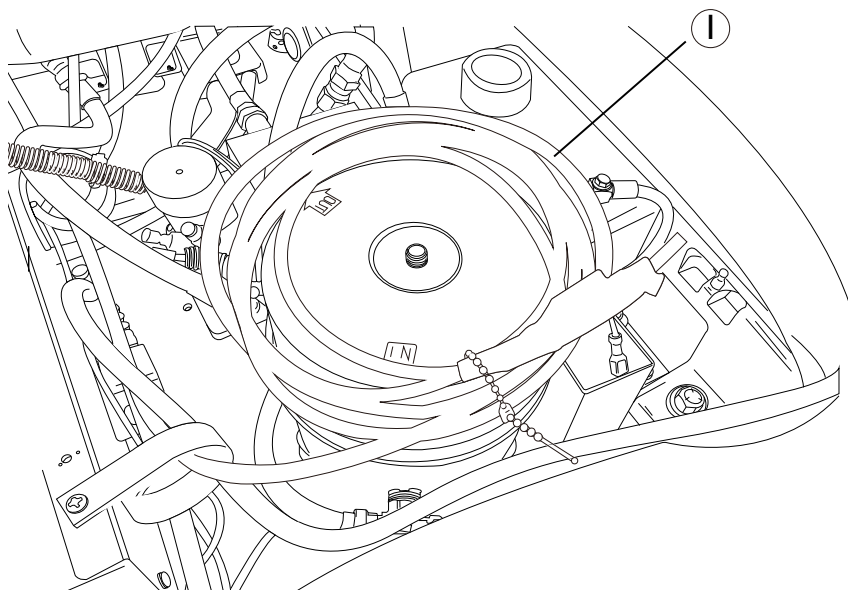


Figure 20. AirSoothe tubing coil

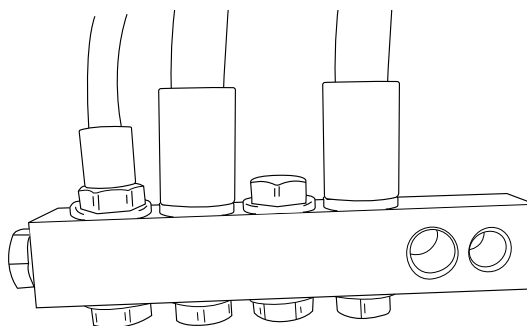


Figure 21. Air manifold

OPTIONAL AIRSOOTHE™ MASSAGE

MAKING CONNECTIONS TO UPHOLSTERY

Backrest Air Connection:

1. Connect the Inline QD Swivel connector (Figure 22, item 1) from the upholstered backrest to the mating connector (Figure 22, item 2) on the gray 1/8" ID tubing (Figure 22, item 3) as shown.
2. Install the backrest upholstery to the metal back (Figure 22, item 4), and ensure the tubing creates a service loop on the left side of the backrest (Figure 22, item 3).

Upholstered Seat Electrical Connection

1. After assembling the upholstered seat to the chair, lift the seat and use a standard hammer (Figure 23, item 1) to hold the seat up as shown below.
2. Reach into the slot (Figure 24, item 1) in the middle of the seat plate to retrieve the electrical wire and connector from the upholstered seat (Figure 24, item 2) item.
3. Install the connector to the mating connector (Figure 24, item 3) on the seat plate.

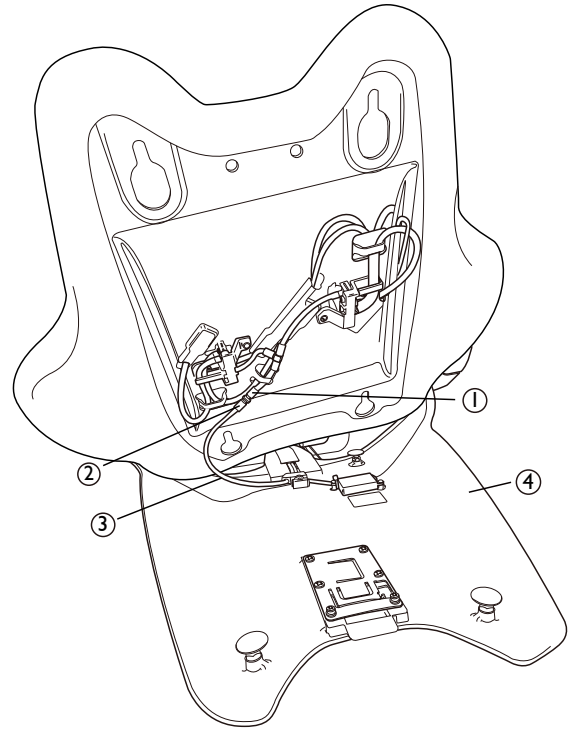


Figure 22. Backrest air connection

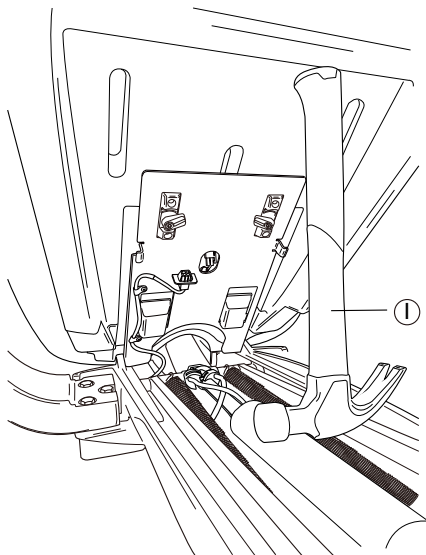


Figure 23. Lifting the seat

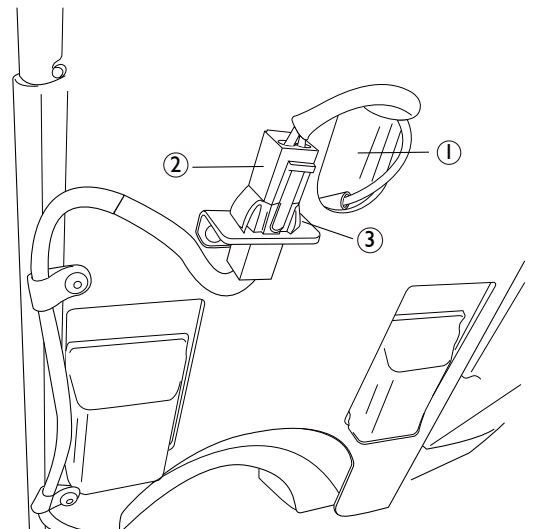


Figure 24. Seat electrical connection

CHAIR POSITION SOFT LIMIT ADJUSTMENTS

PROGRAMMING SOFT LIMITS

Soft Limits are the software controlled position limits for the hydraulic chair movements. These can be programmed using the foot switch or any touchpad that controls chair movement. Soft limits are factory set and should only be adjusted by a technician.

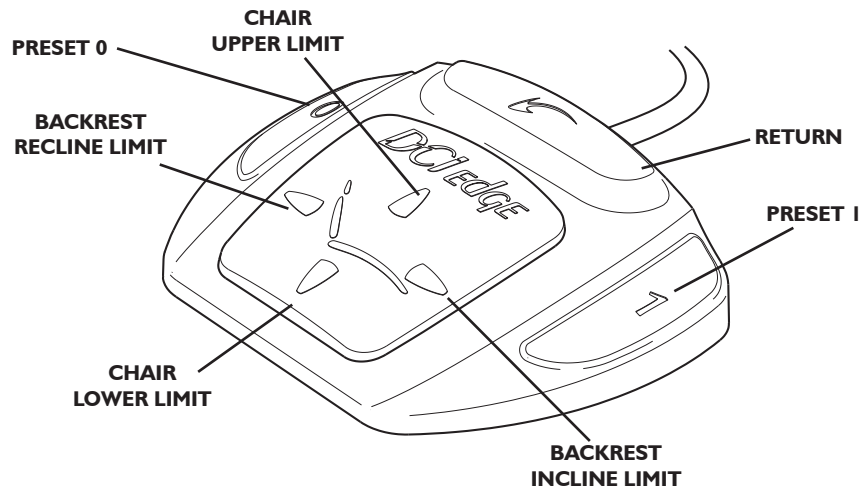


Figure 25. Setting soft limits

- 1 Enter Soft Limit Mode:** While holding the “Return” key, press and hold the “Preset 1” key for 6 seconds. Two short beeps followed by one long beep indicate that you have entered Soft Limit Mode. While in Soft Limit Mode, the chair will be able to move through its full mechanical range of travel.
- 2 Position the chair:** Press a directional key (up, down, recline, incline) to position the chair at its desired soft limit position.
- 3 Set soft limits:** While pressing and holding the “Return” key, press the directional key (up, down, recline, incline) for the direction that you want to limit. Two long audible beeps will indicate successful programming of that soft limit. **Example: To set the lower limit of chair height, press and hold the Return key and the Chair Down arrow key.**
- 4 Exit Soft Limit Mode:** while holding the “Return” key, press and hold the “Preset 1” key for 6 seconds. Three audible beeps indicate that you have left Soft Limit Mode. Once exited, the chair will operate within the movement constraints that have been programmed.

If, while in Soft Limit Mode, no keys are pressed for over 60 seconds, the chair will automatically exit Soft Limit Mode, at which time three audible beeps will sound. Once exited, the chair will operate within the movement constraints that have been programmed.

HYDRAULIC SYSTEM

HYDRAULIC SCHEMATIC

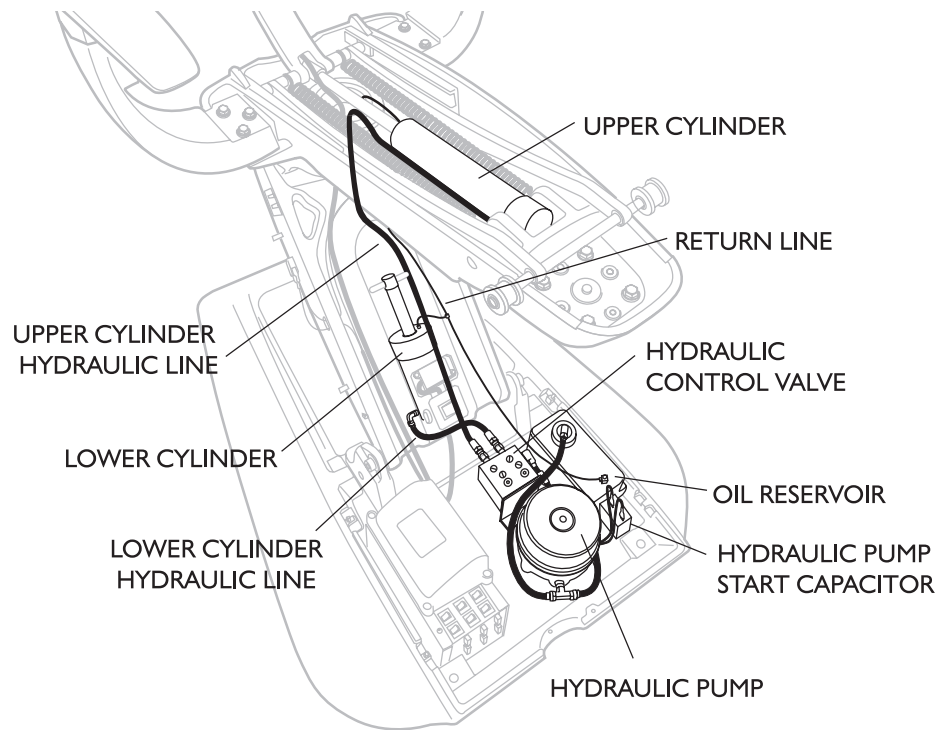


Figure 26. Hydraulic schematic

HYDRAULIC CONTROL VALVE

SPEED ADJUSTMENT

TV1 = BACK UP
TV2 = BACK DOWN
TV3 = BASE UP
TV4 = BASE DOWN

To increase speed turn counterclockwise.

To decrease speed turn clockwise.

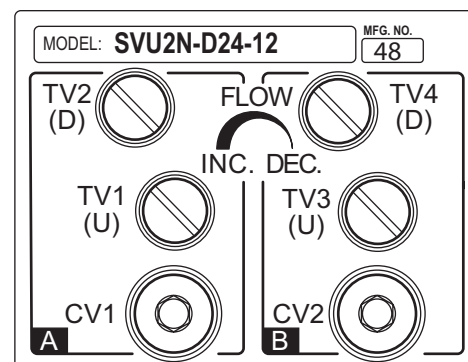


Figure 27. Hydraulic control valve

ELECTRICAL

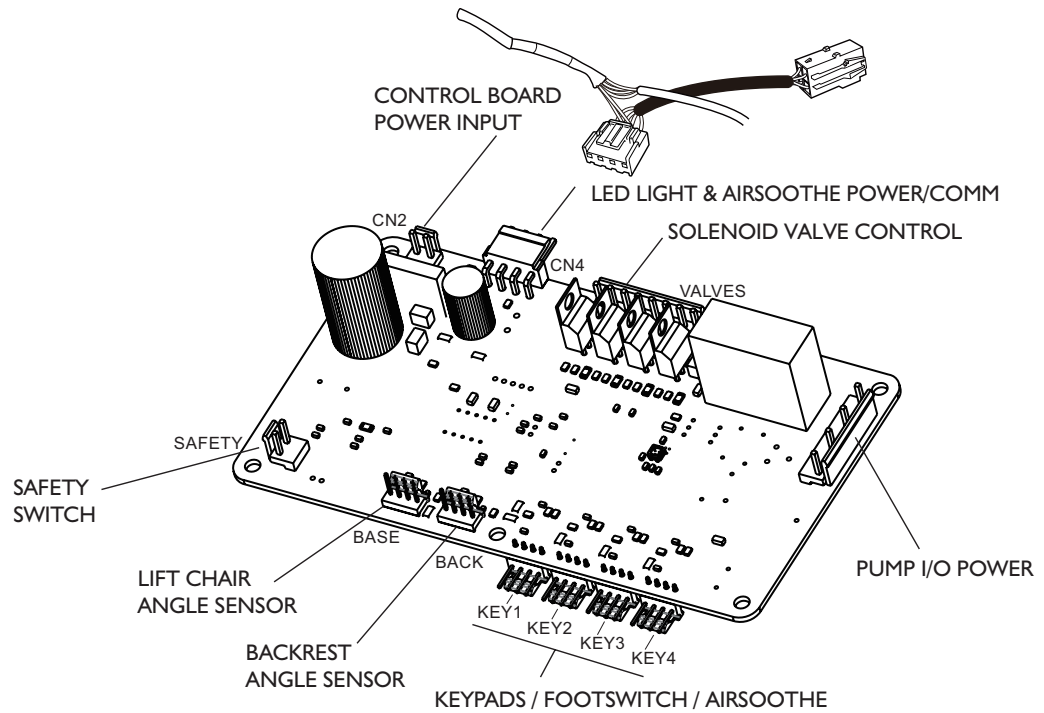


Figure 28. Control PCBA

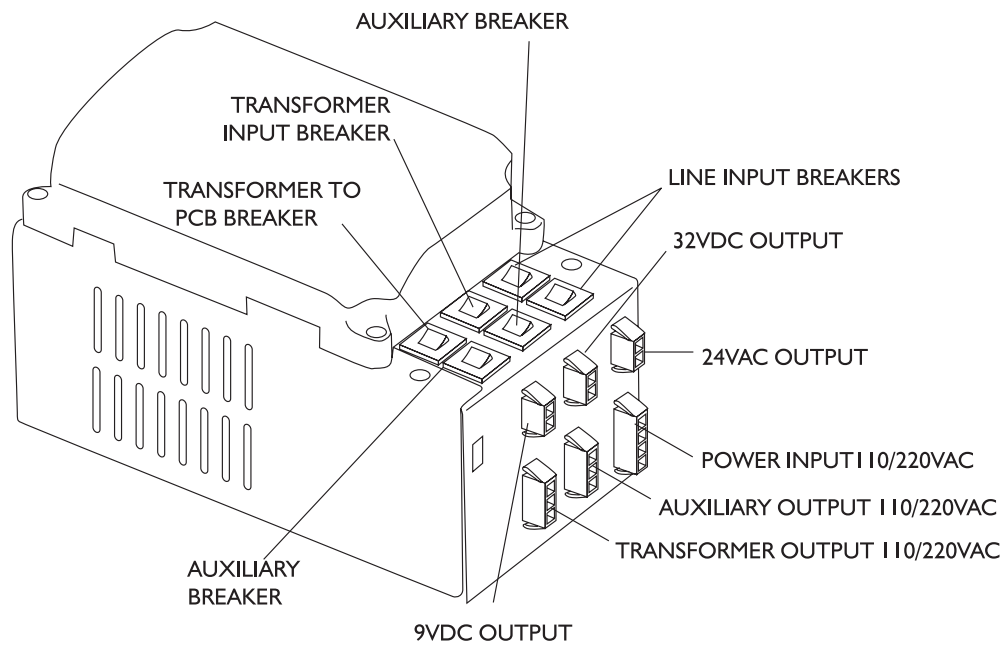


Figure 29. Transformer

DIAGNOSTIC STATUS CODES



Status Codes are displayed on a two 7-segment display on the chair control circuit board. These are visible through the clear window of the protective cover. Errors are designated with an 8 as the first digit. While there are error codes displayed, no other status code will be displayed. When more than one code's condition is present, each applicable code will be displayed, alternating every second.

POSITION CONTROLS

Dis-play	Status	If this status is incorrect
00	System Normal, No current action	Check Green LEDs are lit on the keypad input board
10	Keypad connected to KEY1 is being pressed	<ul style="list-style-type: none"> Check keypad for a stuck key Check keypad cables for damage creating a short circuit
11	Keypad connected to KEY2 is being pressed	
12	Keypad connected to KEY3 is being pressed	
13	Keypad connected to KEY4 is being pressed	
14	No motion in progress while keypad is pressed	
15	Backrest in motion	(normal function)
16	Base in motion	(normal function)
17	Auto-position in progress	(normal function)
18	Auto-position in progress	(normal function)

INDICATORS

Dis-play	Status	If this status is incorrect
20	Signal received to move backrest but it has reached its soft limit	Reprogram soft limits
21	Signal received to move base but it has reached its soft limit	Reprogram soft limits
22	Signal received to move both base and backrest but both have reached their soft limits	Reprogram soft limits
25	Lamp is being activated or deactivated	<ul style="list-style-type: none"> Check keypad for a stuck key Check keypad cables for damage creating a short circuit

SAFETY SWITCHES

Dis-play	Status	If this status is incorrect
30	Safety cover switch engaged	<ul style="list-style-type: none"> Check the safety cover and ensure that it is free to move up and down Check that the safety cover properly activates the switch Check cable connections to the safety switches attached to each side of the truss casting Check cables connecting the switches for continuity Check that safety switches open the electrical circuit when the lever is depressed
31	Auxiliary Switch engaged	<ul style="list-style-type: none"> Check the air switch in the delivery head for proper function Check keypad cable connecting the delivery head Input Board to the Control Board

ERRORS

Dis-play	Status	If this status is incorrect
80	Backrest Position value too low	<ul style="list-style-type: none"> Check soft limits, reprogram as necessary Check for damaged sensor cables Check to ensure the sensor is installed with the text on the box being right side up
81	Backrest Position value too high	
82	Base Position value too low	
83	Base Position value too high	
84	Software fault, watchdog engaged	Replace Control Board if persistent
85	Base Sensor not found	<ul style="list-style-type: none"> Ensure that the sensor is connected to the Control Board Check sensor or input wiring for damage
86	Back Sensor not found	
88	Hardware fault	Replace Control Board if persistent
89	No keypads found	<ul style="list-style-type: none"> Check keypad connections both at the Control Board and the Input Board to which the keypad is connected Check for damage to the keypad cables
F0	Fault on Base Port	Check sensor or input wiring for damage
F1	Fault on Base Port	
F2	Fault on KEY1 Port	
F3	Fault on KEY2 Port	
F4	Fault on KEY3 Port	
F5	Fault on KEY4 Port	
Pu	Pump has overrun, chair has been automatically stopped	<ul style="list-style-type: none"> If chair had reached its mechanical limit, adjust soft limits farther away from the mechanical limit Check hydraulic system for leaks

