# INSTRUCTIONS

## RPD INFORMATION

| | |
|---|---|
| **Address** | 5218 Barthel Industrial Drive<br>Albertville, MN 55301 USA |
| **Website** | www.rpdinc.com |
| **Email** | sales@rpdinc.com |
| **Phone** | 763-497-2071 or 800-497-2071 |
| **Fax** | 763-497-2295 |

## RPD PRODUCT INFORMATION

| Item Number | Description |
|---|---|
| 254-000 | Treatment Chair |

## DISCLAIMER

Caution:  Federal law (USA) restricts the sale of this device for use by (or at the order of) a physician.

THE TREATMENT CHAIR IS NOT STERILE AND IS TO BE USED BY HOSPITAL OR CLINICAL AUTHORIZED PERSONNEL ONLY.

RADIATION PRODUCTS DESIGN INC assumes no liability for consequential damages of any kind for this product when used or for any direct or indirect consequences of its use or misuse by the customer.

## INTRODUCTION

This versatile Treatment Chair provides upright positioning for specialty treatment cases of head, neck, thorax, breast, and lung or for patients who have difficulty lying supine for treatments. The seated patient has improved comfort, increased lung volume and reduced respiratory motion. The Treatment Chair has an open grid back that allows for posterior treatment of the breast, lung and thorax. Anterior treatment of the breast, lung and thorax can also be treated (Fig. 9).

Patient safety features for the treatment chair include a seat belt and a Velcro® chest belt with three vertical position locations. Always fasten the seat belt and chest belt to prevent patient movement during treatment. The patient seat belt, chest belt and the head Baseplate with a round head cup and Velcro® straps will immobilize the patient during radiation treatment through the patients back (posterior) or front (anterior) area (Fig. 9).  When using the chair the organs will sag downward giving more lung capacity as stated in journal papers.

The breasts can be supported with an optional accessory item, patient brazier or wrapping the breasts with Saran wrap. This is done in the same manner as when a patient is lying on a couch. The Radiation Physicist will determine the field size and entrance point and angle, and the amounts of radiation to the patient for all types of treatments.  A port film will be used for patient position verification before treatment.

Patient comfort is enhanced with a vinyl covered foam seat cushion which is tapered lower at the back to prevent the patient from sliding forward and giving more support under the thigh.

Velcro® tabs attached to bottom of the seat cushion make it non-slip and easily removable from the chair when installing on the treatment table.

The Treatment Chair Base attaches to the front or side of the couch.  Securing chair to carbon fiber couches will use four curved plastic blocks with t-bolts and wing nuts. Securing chair to couches with rails will use four plastic rail blocks with t-bolts and wing nuts (See Diagram A). The front of the chair base is designed to be referenced to the table edge or to the table rail for reproducibility.

The chair back is then secured to the chair base with a knob. Once the chair back is secured to the chair base the chair back can recline to five positive-locking positions between - 5° and 20° (85° to 110°) (Fig. 3). The chair back has a carbon fiber grid treatment window with 0.007" thick polyester covering to prevent skin protrusion through the grid (Fig. 1).  Under the carbon fiber and polyester the dose rate is less than 1mm of water equivalent build-up.

The Treatment Chair includes a Baseplate with a Round Head Cup and Velcro® Straps (Fig. 2). The Velcro® straps can be mounted in three different positions over the head (Forehead, Nose or Chin) (Fig. 4). The head cup will immobilize the patient head during radiation treatment.  The Baseplate is mounted on the Treatment Chair Back in positions A to M. Positions N to Z (Fig. 2) are used when the Baseplate is rotated 180 degrees for taller patients. A notch in the Baseplate shows the lettered Baseplate location on the Treatment Chair Back.  The Baseplate has two location pins and is secured to the Chair Back with a knob when the location is determined.

Optional:  A Baseplate for a U-Frame Head Mask, Item 254-050 (Fig. 7).

The head mask is used to secure the head to the back of chair when treating the head area in the seated position. (Fig. 8). The angles (60° to 300°) of treatment are depicted in Fig. 10 & 11. Markings can be applied to the head mask indicating radiation entrance.  Areas of the mask can be opened to allow direct treatment to the head.

The Baseplate accommodates a Silverman Head and Neck Support and a Standard U-Frame Thermoplastic Head Mask

(Fig. 5 & 6). A Spacer (Included) can be placed under the head and neck support, if needed, for head shrinkage.  The Baseplate with Thermoplastic Head Mask will immobilize the patient head during a radiation treatment.  Location markings can be applied to a mask in the same manner as when a patient is lying down on a couch for treatment.


The U-Frame Head Mask Baseplate is mounted to the chair back (Fig. 8).  Using positions A to M (Fig. 5) and using Positions N to Z (Fig. 6) are used when the Baseplate is rotated 180 degrees for taller patients. A notch in the Baseplate shows the lettered Baseplate location on the Treatment Chair Back.  The Baseplate has two location pins and is secured to the Chair Back with a knob when the location is determined.

The Baseplate also has two positions, A and B, for the U-Frame Clamps. 'A' is used when the Baseplate is in the A-M position (Fig. 5) and 'B' is used when the Baseplate is used in the N to Z positions (Fig. 6). Use standard procedure for forming head mask as stated by the manufacturer.  Markings can be applied to the head mask indicating radiation entry points.  The Radiation Physicist will determine the field size and entrance point and angle, and the amounts of radiation to the patient for all types of treatments.  A treatment computer program will show them the treatment area and isodose curves for that patient.  A port film will be used for patient position verification before treatment.

The Treatment Chair includes the Arms Down Assembly (Fig.1 & 3) that consists of two stainless steel L-Bars and Arm Cradles. The L-Bar has vertical markings of 1-15 cm and slides into a locking clamp with rotation indexing of 1-12 locations.   The horizontal leg of the L-Bar has 4 hole locations, A-D, for placement of the Arm Cradle. The Arm Cradle is lined with a foam pad.

Optional: Arms Up Assembly Item 254-070. (Fig. 4)
The Arms Up Assembly includes two vertical black posts, adjustable elbow support and handles. Each post is marked R or L indicating chair or patient right or left.  Each post has a keyhole slot at the bottom which fits over a pivot pins located at the bottom center on each side of the chair. The post is then secured with a knob into an adjustable sliding lock. The Arm posts can be

positioned in any of 6 anterior positions, indicated by the markings of 1-6 on the side of the chair and locked with a knob. The elbow support and handles can be moved vertically to fit the patient. The elbow support can be indexed from 0-33 cm and the handles can be indexed from 1-35 cm.



**Figure 1**
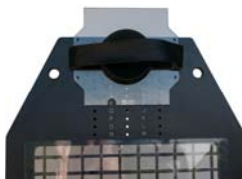


**Figure 2**



**Figure 3**



**Figure 4**
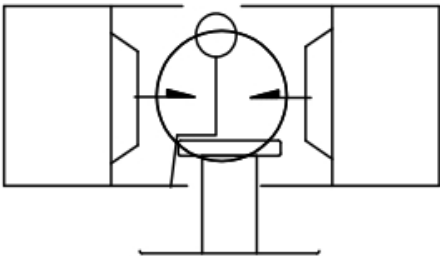


**Figure 5**



**Figure 6**



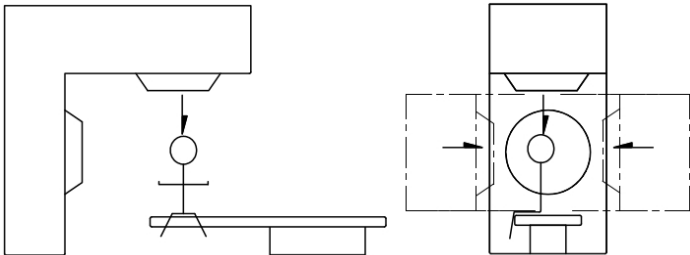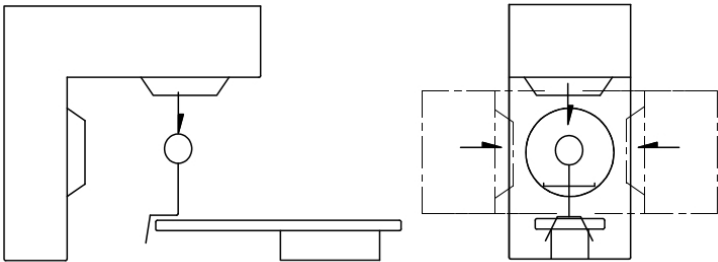**Figure 7**



**Figure 8**

**Figure 9**



**Figure 10**



**Figure 11**

## SPECIFICATIONS

**Back Opening:** 20″ Wide x 24.5″ High (508x622 mm)

**Polyester covering Thickness:** 0.007″ (0 .1778 mm)

**Surface Exposure at 6 MV:**

No reading was obtained under the polyester only.

Under the carbon fiber and polyester the dose rate is less than 1mm of water equivalent build-up.

**Seat Size:** 25″ Wide x 17.5″ Deep (635x444 mm)

**Chair Base Weight:** 28 lb  (12.7 kg)

**Weight with Chair Back and Arm-Down Supports:** 47 lb (21.3 kg)

**Total Weight with All Parts:** 57 lb (25.9 kg)

**Patient Load Rating Equals Couch Load Rating Minus 57 lbs. (25.9 Kg)**

**This is a non-sterile product**

**For indoor use only**

## WARNING LABELS

WARNING
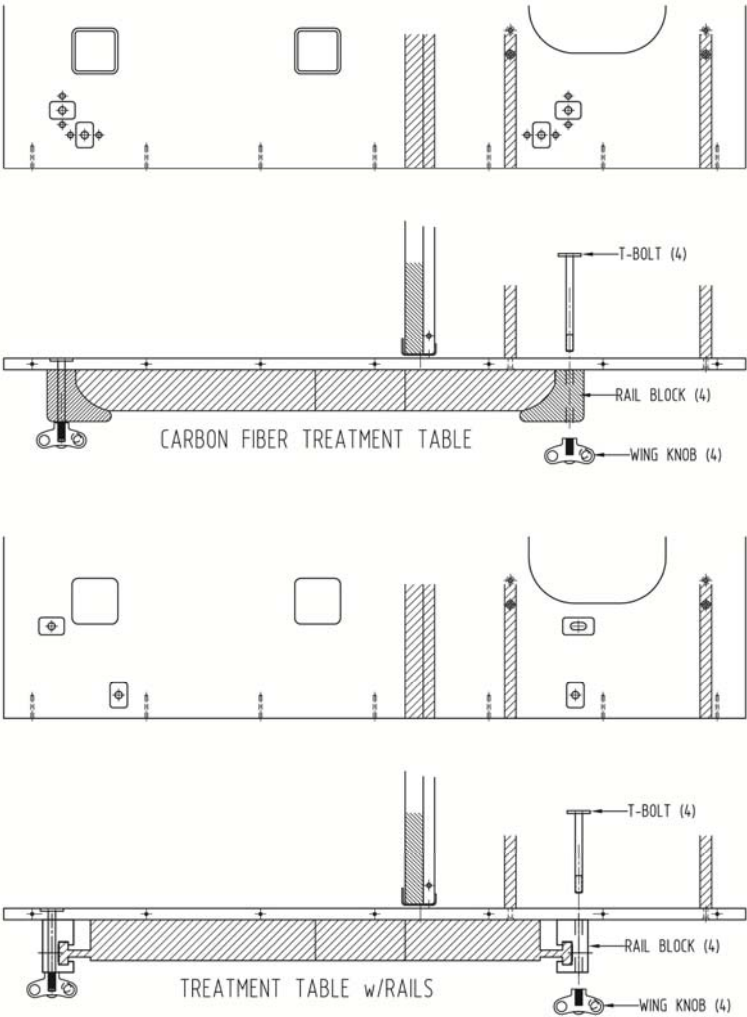SECURE
HEAD
SUPPORT

WARNING
SECURE
BACK SUPPORT
TO CHAIR

WARNING
SECURE CHAIR
TO TREATMENT
TABLE

## INSTALLATION

1. If table has rails, install four rail blocks onto the rails.

2. Place the Chair Base on treatment table and remove the seat cushion. Install two T-Bolts in front and rear edge of chair into the rail blocks or into the table blocks and secure with wing knobs.  Reference chair to front edge of table or rail and tighten wing knobs. **See Diagram A**

3. Install Chair Back and secure with knob. Adjust Chair Back reclining position.  Record position.

4. Place seat cushion back on base with thin end to the back of the chair.

5. Lower treatment table and have patient sit in chair.  Connect seat belt and adjust to tighten.

6. Connect chest Velcro® belt in one of three positions. Record position.

7. Adjust Chair Back reclining position.  Record position.

8. Install Baseplate in a position A to Z. Positions N to Z are used when either Baseplate is rotated 180 degrees for taller patients.  Secure Baseplate with knob. The Round Head Cup Baseplate has three mounting positions for the head straps. Use standard procedure for forming thermoplastic mask.  Record positions.

9. Install selected Arm Assembly. a or b.
   a. Arms Down Assembly
      - Adjust rotation, height and arm cradle position. Record positions.
   b. Arms Up Assembly
      - Adjust post angle, elbow support and handles. Record positions.

   Install the two vertical arm posts with the keyhole slot at the bottom over the pivot pin located on the side of the chair. Secure with the knob into the adjustable sliding lock located on the side of the chair.

**Diagram A**



CARBON FIBER TREATMENT TABLE

T-BOLT (4)

RAIL BLOCK (4)

WING KNOB (4)

TREATMENT TABLE w/RAILS

T-BOLT (4)

RAIL BLOCK (4)

WING KNOB (4)

## CHART

**Patient Name:** _____

**Patient Number:** _____

**Chair Back Reclining Angle: -5, 0-20 Deg.** _____

**Chest Belt:  Top** _____, **Middle** _____, **Bottom** _____

**Baseplate Position:  A to Z** _____

**Baseplate Cup Belt:  Forehead** _____, **Nose** _____, **Chin** _____

**Mask Baseplate:  (a)  Silverman Head/Neck Support A – F** ____
                   **(b)  Mask Spacer:  Yes** _____, **No** _____

**Arms Down Assembly:  (a)  Height  1 – 15** _____
                         **(b)  Angle   1 – 12** _____
                         **(c)  Arm Rest Position  A – D** _____

**Arms Up Assembly:  (a)  Hand Position  1 – 35cm** _____
                       **(b)  Arm Support   1 – 33cm** _____
                       **(c)  Angle: 1 - 6** _____

## CLEANING

### Chair Frame, Vinyl Cushion, Arms and Head Supports

1. Remove excess spill with a damp cloth.  Clean with a 1:1 mixture of Ivory liquid soap and water.  Next, rinse with clean water and dry.
2. To disinfect use a 1:4 mixture of bleach and water.  Rinse with clean water and dry.

This information is not a guarantee and does not relieve the user from the responsibility of the proper and safe use of cleaning agents.  The use of certain agents can be harmful on the surface appearance and lifespan of vinyl and plastics. Radiation Products Design Inc. assumes no responsibility resulting from the use of such cleaning agents to the vinyl and plastics.

Ivory® soap is a trademark of  "The Procter & Gamble Company".

## OPTIONAL ACCESSORIES

| Item | Description |
|------|-------------|
| 254-050 | Baseplate for a U-Frame Head Mask |
| 254-070 | Arms Up Assembly |

**End of Document**