<table>
<thead>
<tr>
<th>Catalog #</th>
<th>Size</th>
<th>Liter Fill</th>
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<tbody>
<tr>
<td>VF-100</td>
<td>150 x 100 cm</td>
<td>65</td>
</tr>
<tr>
<td>VF-101</td>
<td>150 x 100 cm</td>
<td>70*</td>
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<tr>
<td>VF-102</td>
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<td>VF-111</td>
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<td>VF-122</td>
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<td>VF-131</td>
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<td>VF-133</td>
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<tr>
<td>VF-151</td>
<td>S1</td>
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<td>VF-195</td>
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<td>27</td>
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<tr>
<td>VF-540</td>
<td>Air hose assembly for use with hospital central vacuum System</td>
<td></td>
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<tr>
<td>VF-Pump</td>
<td>Vacuum Pump</td>
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<tr>
<td>VF-REP</td>
<td>Cushion Repair Kit</td>
<td></td>
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<tr>
<td>VF-1-J</td>
<td>VacFix Patient Jig (with Straight Sides) Discontinued</td>
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<tr>
<td>VF-1-CS</td>
<td>Curved sides for patient Jig (CT scanning) Discontinued</td>
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</tbody>
</table>

* Suggested liter fill for first order
Custom sizes and shapes are available.
Please call for information.
Field Size: 10 x 10 cm  FSD 100 cm
Ionization Chamber: NACP 05-05

**AT RADIATION OF 10 MVR**

<table>
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<tr>
<th>Description</th>
<th>Dose</th>
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<tbody>
<tr>
<td>Skin Dose</td>
<td>28.5%</td>
</tr>
<tr>
<td>2 x .15mm (plastic covering of VacFix bag)</td>
<td>34.2%</td>
</tr>
<tr>
<td>Build up due to plastic covering</td>
<td>5.7%</td>
</tr>
<tr>
<td>Skin Dose</td>
<td>28.5%</td>
</tr>
<tr>
<td>25mm Polystyrene Spheres + 2 x .15mm (plastic)</td>
<td>42.6%</td>
</tr>
<tr>
<td>Build up due to plastic covering and spheres</td>
<td>14.1%</td>
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</table>

**WITH COBALT**

<table>
<thead>
<tr>
<th>Description</th>
<th>Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin Dose</td>
<td>69.6%</td>
</tr>
<tr>
<td>2 x .15mm (plastic covering of VacFix bag)</td>
<td>80.0%</td>
</tr>
<tr>
<td>Build up due to plastic covering</td>
<td>10.4%</td>
</tr>
<tr>
<td>Skin Dose</td>
<td>69.6%</td>
</tr>
<tr>
<td>25mm Polystyrene Spheres + 2 x .15mm (plastic)</td>
<td>99.5%</td>
</tr>
<tr>
<td>Build up due to plastic covering and spheres</td>
<td>29.9%</td>
</tr>
</tbody>
</table>

**NOTE**

At 10 MVR the build up effect of the 2 layers of 0.15mm plastic foil is only 5.7% and two layers of the foil plus 25mm thickness of spheres (polystyrene fill) is only 14.1%. The spheres alone have a build up effect of 8.4%.

Using Cobalt is very different. **A big build up effect is apparent.** We strongly advise that two VacFix shells be made for the patients. One for prone position having the back uncovered, and one for supine position having the front uncovered. In this way the build up effect is completely avoided.

Air Equivalence: -980
Air is defined at -1000 C.T. unit
**VACUUM SYSTEM**
Since the molding of the VacFix shells is made by vacuum, it is important to have reliable equipment. The source of vacuum can be either the [VacFix Pumping Station](#), or an existing supply of vacuum from a wall outlet.

The VacFix Pumping Station was designed to leave your hands free to mould the VacFix cushions quickly and efficiently.

**USING THE VACFIX PUMPING STATION**
The VacFix Pumping Station ensures ideal vacuum for firm and stable shells. A tone sounds when the correct vacuum has been reached. There is no need to guess when a complete vacuum has been achieved. The pump’s compact lightweight design (just 25 lbs) - with handles for easy carrying, makes it ideal for the most crowded department.

The pump is designed to be located on a shelf, cart or underneath the table where the patient is being fixated, and can easily be moved from room to room.

When the right side of the foot pedal (vacuum side) is depressed once, the pump will start and evacuate the air. When it is depressed again, the pump will stop. When the left side (inflate side) is pressed, the pump will force air into the bag as long as the pedal is pressed down. When the pump is on and the vacuum is operating, depressing the inflate side will reverse the flow and send air into the bag. The flow will return to vacuum when the pedal is released. This aids in removing wrinkles and making quick adjustments to the patients position.

**USING AN EXISTING FORM OF VACUUM**
Your wall vacuum connection or an existing pump must be able to pull down to approximately 23” of mercury. If an in-house vacuum system is to be used an adapter can be supplied upon request. This adapter will enable an existing 1/4” ID air hose to mate with the VacFix valve.

The vacuum hose has to be removed from the valve of the VacFix bag, and the valve plugged during each step of fixation. If too much vacuum has been achieved too soon, crimp the valve, remove the hose and slowly release the valve until the desired amount of air has been let in. Replace the plug and continue molding. It is advisable to leave the vacuum source on a few extra minutes beyond the time you feel the VacFix cushion is hard. If any air is left in the cushion, it will gradually soften the bag leading you to believe there is a small leak in it. Before you assume that you have a leak, vacuum out the additional air and check the firmess over a period of time.
**Small Standard** fixate arm, a leg, or use in conjunction with other bags (i.e. to fixate the front of the neck by connecting to a back cushion using velcro tape.)

**70 x 100 cm Breast**
Made for fixating the upper body. The narrowness of the bag allows for secure molding without excess bag material.

**100 x 100 cm Thorax**
Made for fixing the upper part of the body. Can be used for treatment of breast cancer, lung tumors, esophageal cancer, etc.

**150 x 100 cm Pelvis**
Made for fixing the whole body. Can be used for treatment in the pelvic region and in the abdominal region, as well as whole body treatment.

**Type S2: Brain Tumor**
Designed for fixation of the face, it is used together with the S3 cushion. The S2 cushion is placed on the face of the patient and connected to the back S3 cushion using velcro strips.

**Type S1: Head and Neck Region**
Designed to fixate the head and the upper part of the thorax. The patient, can be placed either in the supine or prone position.
**VacFix® Cushions: Standard Sizes and Shapes**

**Type S3: Laryngeal, Espohageal, and Upper Thoracic Cancers**
Designed for fixation of the head and neck, as well as the upper part of the thorax.

**Type S4: Breast Cancer**
Designed for fixating the upper part of the thorax with an arm placed in an angled position.

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**Sample Variation: Type S4: Breast Cancer**

**Sample Variation: Type S1 - Head and Neck Region** preferred for prone positioning.
The following directions and examples have been tested over several years and can serve as guidelines for specific fixations. See our price list for a full listing of the different styles and sizes of VacFix bags and the liter fills they are available in.

If no specific description is given for a treatment position it is recommended that the patient be fixated according to a mid line passing through the jugulum, xiphoid process, vertebral spines and symphysis pubis (See drawing).

**HEAD-NECK: General Guidelines**
For most cranial treatment the head is positioned in a vertical position which passes through the external acoustic meatus and inferior nasal spine.

When wedge fields are used the head is positioned so that the glabella and maxilla are placed in a horizontal position.

For most neck malignancies (larynx-pharynx) the head is positioned so that the angle defined by the junction of the upper and lower lips and the external acoustic meatus are vertical.

Shoulders should be as low as possible.

**HEAD-NECK: Supine Position - (Backshell & Forehead tape)**
*Suggested Cushion:* VF-171 (S3 w/22.5 liter fill)
*Patient Jig:* Vertical Sides or CT (curved sides)

A VF-530 supporting pad is placed at the head end of the jig. When the backshell has been shaped (See page 4) velcro (hook) tape is put on to the backshell at the ear region. (See drawing)

The velcro (loop) tape is cut exactly, to fit tightly from the lower edge of one hook tape to the lower edge of the other. This method insures that the tape can be applied equally tight for every treatment.

**HEAD-NECK: Supine Position - (Backshell & Mandibular fixation)**
*Suggested Cushion:* VF-171 (S3 w/22.5 liter fill) and VF-121 (100 x 25cm w/6.5 liter fill)
*Patient Jig:* Vertical sides or CT (curved sides)

The backshell is made (as above) using the VF-530 supporting pad and the VF-171 cushion. Fixation of the mandible is made using either a VF-121 or VF-132 cushion. Remove the VF-530 pad from the jig. Place chosen cushion in position and fixate.

Squares of velcro hook tape are placed on the backshell and on the cross shell on both sides (see drawing). In order to insure consistent fixation velcro (loop) tape is cut exactly to fit tightly between the backshell and the mandible fixation on both sides of the shells.
HEAD-NECK: Supine Position - (Backshell)

Suggested Cushion: VF-171 (S3 w/22.5 liter fill), VF-112 (100 x 100cm w/40 liter fill) or VF-113 (100 x 100cm w/45 liter fill)

Patient Jig: Vertical sides or CT (curved sides)

Before and during fixation as many spheres as possible are placed in the mandibular region on both sides (See drawing). At the same time the cushion is shaped around the top of the head. Use VF-530 to aid in shaping if necessary, but remove it during fixation.

HEAD-NECK: Supine Position
(Backshell & Frontshell in Planet Thermoplastic or S2 bag)

Suggested Cushion: VF-171 (S3 w/22.5 liter fill), VF-160 (S2 w/3 liter fill)

Patient Jig: Vertical sides or CT (curved sides)

Follow instructions for fixation of backshell. Frontshell is made with Planet Thermoplastic material or by fixating the S2 shell with the opening over the patient’s face and the sides molded to overlap the backshell. If a viewing area is needed to see patient markings, a window can be made in the area of the markings by using magnets when fixating. Pieces of velcro are fastened to both the frontshell and the backshell in at least 4 places (See drawing).

HEAD-NECK: Prone Position - (General Guidelines)

Fixation in the prone position follows the same general rules of fixation as in the supine position, with a vertical plane passing through the external acoustic meatus and inferior nasal spine.

In cancer of the middle ear and clomus jugluar tumors, the next is extended, tipping the head backwards so that the meatus region is in a vertical plane and is free of the orbits.

HEAD-NECK: Prone Position - (Frontshell & Velcro tape)

Suggested Cushion: VF-151 (S1 w/17.5 liter fill)

Patient Jig: Vertical sides or CT (curved sides)

Place the patient so that eyes, nose and mouth are at the level of the hole in the cushion (See figure A). The shell is shaped around the head without using the jig (See figure B).

The body of the bag is shaped following the same instructions as used in supine position. Velcro tape is put on to the VacFix shell just below ear level. The velcro tape is cut to fit tightly from the lower edge of one hook tape to the lower edge of the other.
**THORAX: Supine Position - (Backshell) (Breast cancer)**

Suggested Cushion: VF-112 (100 x 100 cm w/40 liter fill), VF-119-30 (70 x 100 cm w/30 liter fill) or VF-190 (S4 w/50 liter fill - this bag or one of it’s variations)

Patient Jig: Vertical sides (and one low side) or CT (curved sides and one 1/2 side)

Use the low side in the section nearest the head of the side being treated. The use of the low side allows for the formation of the shell with the proper amount of support for the arm on the treatment side (See drawing).

In any fixation where the arm is crossed over the body or elevated, have the patient grasp a portion of the bag nearest the hand and put finger indentaton in it during evacuation. This adds extra support to the arm during treatment as well as helping the patient to be respositioned properly during repeated treatments.

**THORAX: Supine Position - (Backshell) (Breast cancer)**

Suggested Cushion: VF-112 (100 x 100 cm w/40 liter fill), VF-119-30 (70 x 100 cm w/30 liter fill)

Patient Jig: Vertical sides (and one low side) or CT (curved sides and one 1/2 side)

Make as described, but with the low side in second section of the jig. Avoid wrinkles under the patient. As above, the patients arms may be relaxed or gripping the cushion to make hand holds.

**THORAX: Supine Position - (Backshell - Mantle field)**

Suggested Cushion: VF-112 (100 x 100 cm w/40 liter fill), VF-119-30 (70 x 100 cm w/30 liter fill) or VF-190 (S4 w/50 liter fill - this bag or one of it’s variations)

Patient Jig: Vertical sides (and one low side) or CT (curved sides and one 1/2 side)

If placing the patient with his hands at his sides, remove both sides of the 2nd section of the jig. One of the sides section removed can be replaced by a low side to make room for an arm or elbow.

If using a CT scanner, be sure to consider the size of the gantry opening. Partially evacuate the cushion and arrange the fill to allow for support of the arms during fixation.

The patient’s neck should be fully extended during the fixation process. The head end of the VacFix jig can be removed to allow for easy access to the head/neck region for shaping.
THORAX: Prone Position - (Frontshell)
Suggested Cushion: VF-112 (100 x 100 cm w/40 liter fill), VF-119-30 (70 x 100 cm w/30 liter fill) or VF-101 (150 x 100 cm w/70 liter fill)
Patient Jig: Vertical sides (and one low side) or CT (curved sides)
Remove the head end of the jig. Follow general instructions for fixation.

Position A: The head is turned laterally.

Position B: The head is placed at the top of the cushion forming an imprint of the mandibular region.

Position C: Remove the second section of the jig on each side to allow the patient to press his hands to his sides. The patient’s neck should be fully extended.

PELVIS-ABDOMEN: Supine Position - (Backshell)
Suggested Cushion: VF-112 (100 x 100 cm w/40 liter fill), VF-119-30 (70 x 100 cm w/30 liter fill) or VF-101 (150 x 100 cm w/70 liter fill)
Patient Jig: Vertical sides (and one low side) or CT (curved sides)
Either a long (VF-101) cushion or a short (VF-112 or VF119) cushion can be used depending on whether or not the fixation is needed below the pelvis/abdomen region. Follow general instructions for fixation.

PELVIS-ABDOMEN: Prone Position - (Frontshell)
Suggested Cushion: VF-112 (100 x 100 cm w/40 liter fill), VF-119-30 (70 x 100 cm w/30 liter fill) or VF-101 (150 x 100 cm w/70 liter fill)
Patient Jig: Vertical sides (and one low side) or CT (curved sides)
If fixating beyond the pelvic/abdominal region the VF-101 may be needed. Fixate according to usual directions.
UPPER LIMBS: (Backshell)
Suggested Cushion: VF-121 (100 x 25 cm w/6/5 liter fill) or
VF-142 (70 x 50 cm w/12.5 liter fill)
Patient Jig: NONE

Working on a flat surface, distribute spheres evenly throughout the
 cushion. Partially evacuate the bag until it can be molded around
 the required area. After the desired shape is achieved, fully
 evacuate the bag.

The size of the cushion depends on the size of the treatment area and the
 positioning needed.

UPPER LIMBS: (Backshell - Hand)
Suggested Cushion: VF-132 (50 x 25 cm w/2 liter fill) or
VF-142 (70 x 50 cm w/12.5 liter fill)
Patient Jig: NONE

See drawing.

LOWER LIMBS: (Backshell)
Suggested Cushion: VF-142 (70 x 50 cm w/12.5 liter fill)
Patient Jig: NONE

See drawing.

POSITIONING GUIDES: For Accelerator & Simulator Tables
In order to position the VacFix shell precisely on the therapy table,
 positioning guides are used between the shell and table.

Female guides, which attach to the VacFix shell, have a self
 adhesive backing. Male guides are available with a self
 adhesive backing or with a dowel base.

INSTRUCTIONS: For the White (Male) Guides
Four male guides, which attach to the treatment table, are placed
 as shown in the drawing. Distance A is determined by the distance
 between the rails on the VacFix jig. Distance B should be slightly
 smaller than the length of the smallest VacFix bag used in your depart-
 ment. (The distance between male guides should be the maximum
 allowable, while still being able to position four male guides on the
 smallest VacFix bag used.)

It is advisable to carefully mark the position of the male guides (if
 using self adhesive type) on the therapy table by drawing a circle with
 ink or paint around the guides (this is for relocation of the guides
 should it become dislodged). If using the dowel base, four holes should be drilled in the table for the
 male guide placement.
INSTRUCTIONS: For the Blue (Female) Guides
During the evacuation process, two rails at the base of the patient jig produce indentations in the shell. These indentations are made for the Blue (Female) guides (See figures 3 & 4)

To attach the Blue (Female) guides to the VacFix shell, the Blue guides are first placed on top of the male guides on the therapy table. This protective tape is then removed (Figure 4). The shell is located with it’s indentations lining up with the male guides, so that the female guides adhere to the shell within its indentations (Figure 5).

The exact distance between the guides on the therapy table can be transferred to all other therapy tables in the department simply by using the shell with it’s Blue Guides as a template.