

# Bulletin 2-04

## Isocentric Mounting Fixture (IMF)

### Purpose

This bulletin tells how to install and use the Isocentric Mounting Fixture (IMF) (Figure 1), an accessory for MapCHECK, Profiler2, and Daily QA 3.



Figure 1. Isocentric Mounting Fixture

### Description

With the IMF, you can attach the instrument to the gantry tray at isocenter (100 cm SDD, source-to-detector distance) and rotate the gantry while taking measurements.

The IMF is shipped assembled and consists of three plates separated by standoffs. The middle and bottom plates are black anodized aluminum separated by a standard distance.

The colored top plate, or “block tray,” and standoffs that separate it from the middle plate are specific to the accelerator manufacturer. The block tray and its standoffs are color-coded for each manufacturer (Table 1).

Table 1. Assemblies for different accelerators

Manufacturer	Assembly P/N	Top Plate Color
Varian	1175000-V	blue
Siemens	1175000-S	red
Elekta	1175000-E	green

**CAUTION:** The top plate is designed to fit tightly in the slots of the accelerator’s accessory holder to prevent movement of the IMF during rotation of the gantry.

### Installation

#### Varian

- 1 Slide the BLUE block tray of the IMF into the block accessory tray of the accelerator until it locks.
- 2 Remove the leveling feet from the bottom of the instrument.
- 3 Insert the instrument into the IMF (Figure 2) and align the four outer threaded holes in the bottom of the instrument with the matching holes in the bottom plate of the IMF.

**CAUTION:** Insert the instrument as shown in Figure 2 to keep the center detector aligned with the beam axis.

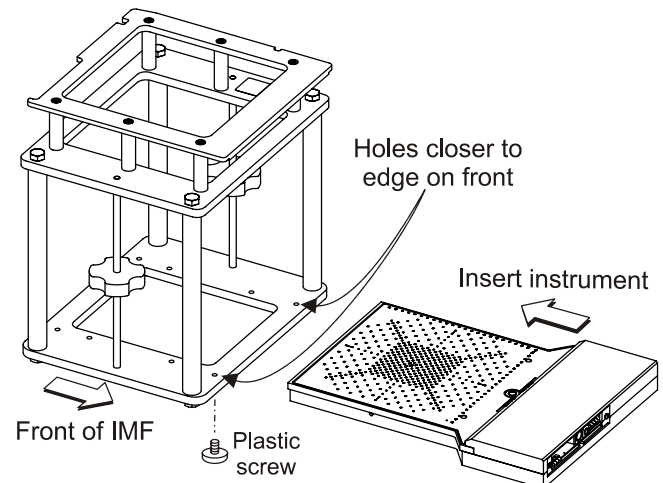


Figure 2. Installing MapCHECK in IMF

- 4 Secure the instrument to the bottom plate with the four, 1/4-20, plastic cap screws (Figure 2) furnished with the IMF. Do not use the three leveling screws.

**NOTE:** You can also install the instrument on the IMF first, then place the entire assembly in the block accessory tray.

#### Siemens

- 1 Slide the RED block tray of the IMF into the block accessory tray until it locks in the detent notch.

**IMPORTANT NOTE:** The IMF top plate is designed to fit the majority of Siemens accessory holders. Unfortunately, in a few Siemens installations, the top plate of the IMF does not fit the width or thickness of the slots in the accessory holder. If this occurs in your installation, refer to Bulletin 5-07 for a complete description of the problem and recommendations for correcting the fit.

- 2** If the detent fit is loose, unscrew the two stop screws (Figure 3) outward an equal dimension until a tight fit is achieved.

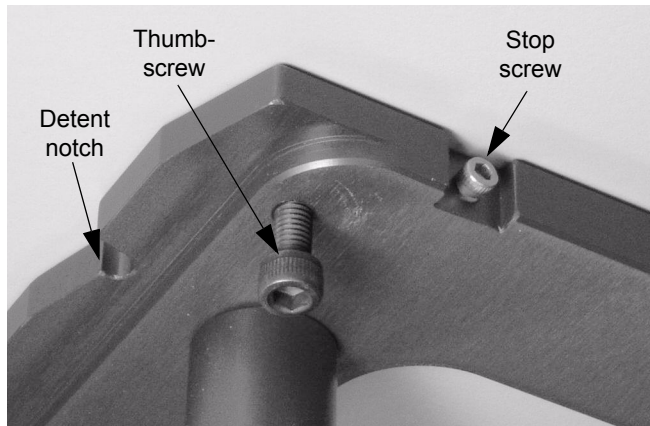


Figure 3. Adjusting screws at back of Siemens block tray

- 3** Screw in the two thumbscrews (Figure 3) at the rear of the assembly until they contact the accessory tray above the tray block. Tighten firmly by hand without tools. These screws help support the IMF and prevent sag due to shortness of some accessory holder slots.

*NOTE: Loosen thumbscrews before removing IMF.*

- 4** Remove the leveling feet from the instrument.
- 5** Insert the instrument into the IMF (Figure 2) and align the four outer threaded holes in the bottom of the instrument with the matching holes in the bottom plate of the IMF.

**CAUTION:** Insert the instrument as shown in Figure 2 to keep the center detector aligned with the beam axis.

- 6** Secure the instrument to the bottom plate with the four, 1/4-20, plastic cap screws (Figure 2) furnished with the IMF. Do not use the three leveling screws.

*NOTE: You can also install the instrument on the IMF first, then place the entire assembly in the block accessory tray.*

## Elekta

- 1** Remove the coded Perspex sliding tray (Figure 4).
- 2** Remove the four knurled releasing screws that hold the removable Perspex tray at the top of the shadow block assembly.
- 3** Place the GREEN block tray of the IMF into the shadow block assembly in place of the removable Perspex tray and secure in place with the knurled screws that you removed previously.

*NOTE: This step may be easier if the gantry is rotated with the head near the floor.*

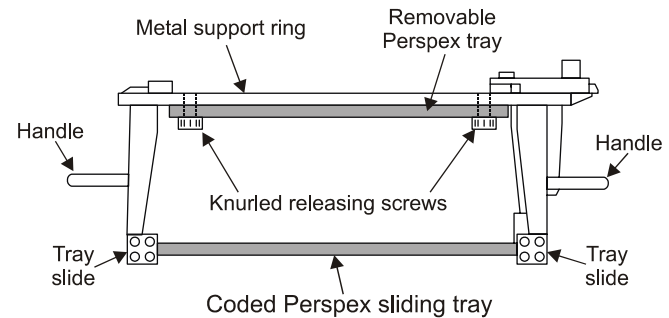


Figure 4. Elekta shadow tray mounting details

**CAUTION:** Insert the instrument as shown in Figure 2 to keep the center detector aligned with the beam axis.

- 4** Insert the instrument into the IMF (Figure 2) and align the four outer threaded holes in the bottom of the instrument with the matching holes in the bottom plate.
- 5** Secure the instrument to the bottom plate with the four, 1/4-20, plastic cap screws (Figure 2) furnished with the IMF. Do not use the three leveling screws.

## Operation

If properly installed, the instrument detector plane will now be at 100 cm from the radiation source, and the center detector will be aligned with the beam axis. The optical distance indicator (ODI) will measure the distance to the top surface of the instrument.

**CAUTION:** Pull the couch away to avoid interference with the IMF. Before using the IMF, rotate the gantry while observing it to be sure that the movement is unobstructed. Verify that the top plate fits snugly in the accessory holder and does not shift during gantry rotation.

**WARNING: Stay clear of IMF and instrument while rotating to prevent injury.**

Operate the instrument normally while rotating the gantry. Refer to the instrument *User's Guide* for details.

The fixture accommodates standard 30 x 30 cm buildup blocks, for up to 8 cm of additional buildup. If buildup is required, place it on top of the instrument top surface and secure it in place with the large plastic nuts on the threaded rods.

*NOTE: Use only 30 x 30 cm buildup blocks. Do not use the buildup furnished with the instrument since it is too narrow to be secured by the plastic nuts.*



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