

Bulletin 5-08

Isocentric Mounting Fixture (IMF)

Purpose

This bulletin tells how to install and use the improved Isocentric Mounting Fixture (IMF) (Figure 1), as an accessory for MapCHECK™, MapCHECK 2™, PROFILER 2™, and Daily QA 3™.

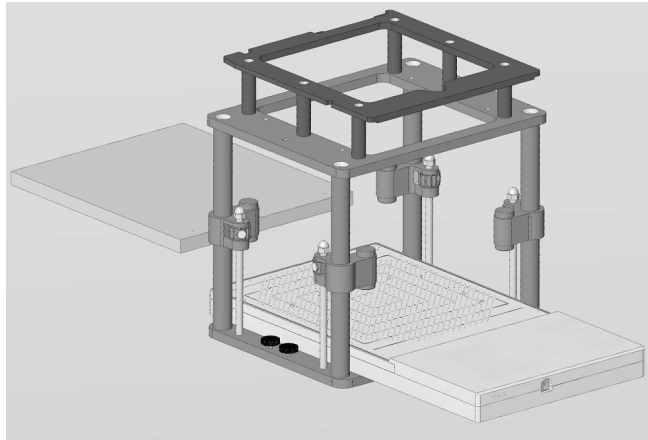


Figure 1. Isocentric Mounting Fixture

Description

The IMF can attach an instrument to the gantry tray at isocenter (100 cm SDD, source-to-detector distance) and allows gantry rotation while taking measurements.

The IMF is shipped assembled and consists of three plates separated by standoffs. The assembled middle and bottom plates are black anodized aluminum. They are separated by a distance of 28.575 cm.

The 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 made of color coded aluminum for each manufacturer (Table 1).

Table 1. Assemblies for different accelerators

Accelerator	P/N	Color	Weight	Dimensions
Varian	1177000-V	blue	16.25 lb (7.4 kg)	15.5x12.4x15.4” (39.4x31.5x39.1 cm)
Siemens	1177000-S	red	17.75 lb (8.1 kg)	15.5x12.4x18.9” (39.4x31.5x48.0 cm)
Elekta	1177000-E	green	17.5 lb (7.9 kg)	15.5x11.3x19.2” (39.4x28.7x48.8 cm)

CAUTION: The top plate is designed to fit tightly in the Varian and Siemens accessory tray to prevent movement of the IMF during rotation of the gantry. The Elekta mounting uses four bolts to ensure no movement.

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 (if attached).
- 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.

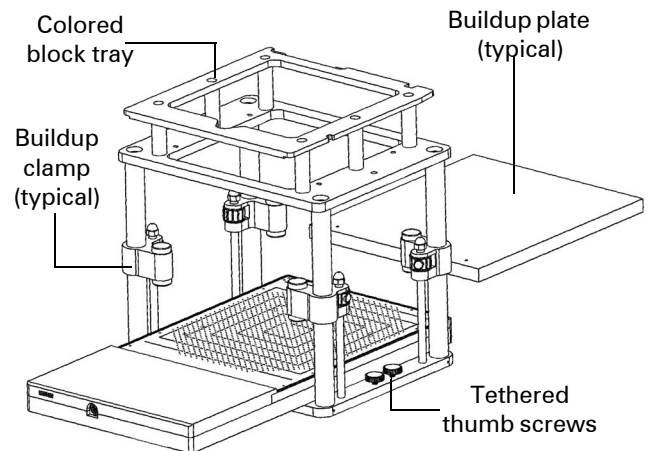


Figure 2. Installing instrument in IMF



CAUTION: Secure the instrument with tethered thumb screws to prevent motion and keep the center detector aligned with beam axis.

- 4 Secure the instrument to the bottom plate with the four, 1/4-20, tethered thumb screws (Figure 2) furnished with the IMF. Do not use the screws from the leveling feet.

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.

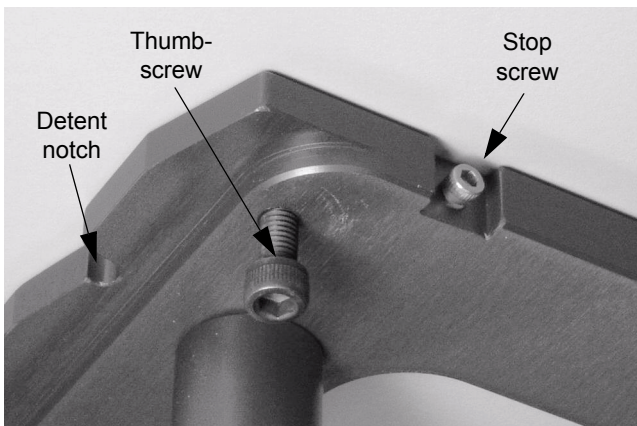


Figure 3. Adjusting screws at back of Siemens block tray

- 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 bottom of the instrument (if attached).
- 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: Secure the instrument with tethered thumb screws to prevent motion and keep the center detector aligned with beam axis.

- 6 Secure the instrument to the bottom plate with the four, 1/4-20, tethered thumb screws (Figure 2) furnished with the IMF. Do not use the screws from the leveling feet.

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.

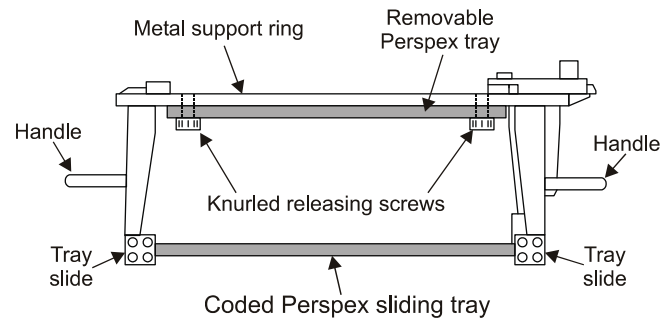


Figure 4. Elekta shadow tray mounting details

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

- 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.
- 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.



CAUTION: Secure the instrument with tethered thumb screws to prevent motion and keep the center detector aligned with beam axis.

- 5 Secure the instrument to the bottom plate with the four, 1/4-20, tethered thumb screws (Figure 2) furnished with the IMF. Do not use the screws from the leveling feet.

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

Installation of Buildup

The fixture accommodates standard 30 x 30 cm or accessory 30 x 35 buildup plates. If buildup is required, place it on top of the instrument top surface and secure it in place with the four sliding clamps as follows:

- 1 Place the buildup block(s) centered on top of the instrument.
- 2 On each of the four sliding clamps, press the button in and then slide the clamp down until the rubber foot contacts the top buildup plate (Figure 5).

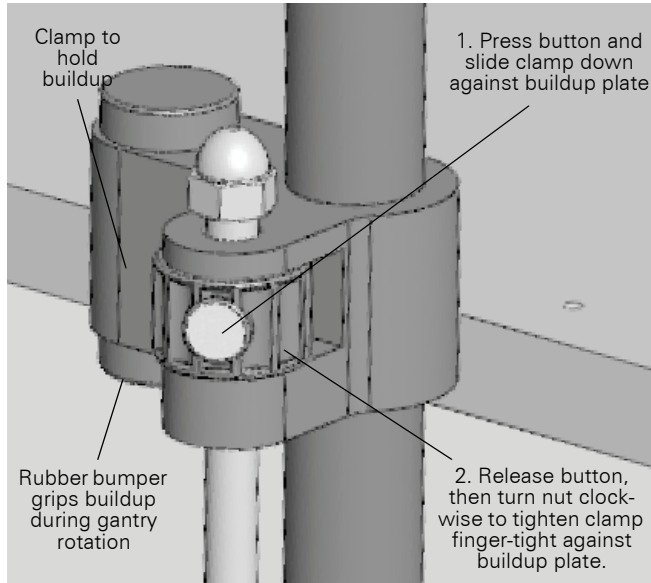


Figure 5. Clamping Buildup to the Instrument

- 3** Release button, then turn each of the four nuts clockwise to tighten each clamp finger-tight so

that the buildup plate will not move when the gantry rotates.

- 4** To remove the buildup, loosen the nuts, then press the buttons to retract the clamps.

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 (if no buildup is installed).



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.

Operate the instrument normally while rotating the gantry. Refer to the instrument documentation for details.



Corporate Headquarters
425A Pineda Court
Melbourne, FL 32940-7508 USA
telephone +1 321 259-6862, Fax +1 321 259-7979
www.sunnuclear.com