SynFrame Access and Retractor System

System Overview

The SynFrame Access and Retractor System allows direct visualization and stable retraction for less invasive spine surgery, eliminating the need for large hand-held retractors. The system is easily assembled from both sides of the operating table up to the retractor ring. Once the ring is positioned over the surgical site, retractors can be secured in any configuration.
SynFrame Components

SynFrame Angled Rod [387.344]

SynFrame Connecting Rod [387.345]

SynFrame Tube-to-Tube Clamp [387.353]
Star-grind allows relative positioning between rods

SynFrame Insulated Table Clamp [387.346]

SynFrame Angled Rod Holder [387.343]

Large Hexagonal Screwdriver [314.27]

Socket Wrench with Straight Handle [388.14]
**SynFrame Components** (continued)

**SynFrame Lengtheners [387.338]**
Allow increased retraction area by elongating ring

**SynFrame Holding Ring [387.336]**
- Retractors attach to Holding Ring for customized retraction
- Two-piece ring, 300 mm diameter
- Consists of two Half Rings [387.337] (also additionally available)

**SynFrame Ring Clamp [387.347]**
- Snaps onto Holding Ring without tightening
- Permits flexible retractor positioning

**SynFrame Guide Rod [387.358]**
- Finger loop aids in positioning retractor blades
- Swiveling tip allows blade angulation
Light Guide [387.362]

- Connects to light source via ACMI connector (Wolf and Storz adaptors included)

- Attaches to Ring Clamp, allowing visualization of tissues

SynFrame Retractors

Insert into Guide Rod and rotate 90° for secure fit

387.391 60 mm
387.392 80 mm
387.393 100 mm
387.394 120 mm
387.395 140 mm
387.396 160 mm

Longer blade for specialized needs (additionally available)

387.397 180 mm
SynFrame Assembly Guide

Sterile Assembly of SynFrame

The use of a sterile sleeve is recommended for separating the sterile from non-sterile areas. Since the Insulated Table Clamp can be sterilized, it can be used in the sterile field (for example, on top of the sterile cover).

Note: The assembly instructions are designed to facilitate the use of SynFrame but do not provide guidance on surgical technique. Failure to comply with instructions or precautionary measures can result in damage to the system, risks during the procedure or injury to the patient. Refer to package insert for specific safety directions and special cleaning and sterilization instructions.

Frame Assembly

1. Secure Table Clamp

First, loosen the knob on the table clamp. Then, attach the table clamp to the guide rail by the top and bottom jaws. “TOP” must be visible on the clamp surface. Tighten the knob at the desired location. Repeat installation steps on the opposite side.

Locate the table clamps laterally so that:

a. The 300 mm Holding Ring can be attached cranially and caudally between the table clamps (recommended minimum craniocaudal distance: 400 mm).

b. The surgeon’s movement within the operating field is not restricted.

Ensure the table clamps are securely fixed to the guide rails of the operating table.

2. Insert Angled Rod Holder into Table Clamp

Insert the Angled Rod Holder into the Insulated Table Clamp and tighten the knob to secure it. Repeat on the opposite side at the same height.

Note: The Insulated Table Clamp and the Angled Rod Holder are designed to insulate the system from the operating table. This configuration should be maintained throughout the procedure.

Note: An adaptor may be required for use with a Jackson table.
3 **Secure Angled Rod in Angled Rod Holder**

Insert an Angled Rod into the Angled Rod Holder on each side of the operating table. Secure the Angled Rods approximately 5–10 cm above the patient.

4 **Attach Tube-to-Tube Clamp to Angled Rod**

Loosely slide the Tube-to-Tube Clamp onto the Angled Rod. Repeat on the opposite side.

5 **Insert Connecting Rod**

Slide the Connecting Rod through the Tube-to-Tube Clamp. Tighten the clamp at desired position. Repeat on the opposite side.

6 **Assemble Holding Ring**

The Holding Ring consists of two Half Rings. Assemble the Holding Ring by pushing the two Half Rings together over the guide pins. Tighten the set screws using the Screwdriver. This step may be completed prior to assembly of the side supports.

*Note:* The round 300 mm Holding Ring may be extended to a 400 mm oblong ring, using two Lengtheners.
7 Fit Holding Ring to Connecting Rods

Open the clamps of the two Connecting Rods. Insert the Holding Ring into both clamps. Loosely tighten the clamps so the Holding Ring can be freely moved.

8 Secure Holding Ring over patient

Position the Holding Ring as closely as possible to the operating field, minimizing the gap between the operating field and the instruments to be used on the Holding Ring.

Adjust and tighten the Tube-to-Tube Clamps and the clamps of the Connecting Rods. If necessary, the Angled Rods can be lowered or raised in the Angled Rod Holders.

Check the stability of all connecting elements to prevent any unwanted movement during the operation.

Note: Do not rest against the SynFrame Basic System as this can put an excessive load on the construction, possibly causing individual parts of the SynFrame to move. In the event of patient movement, monitor the position of the instruments relative to the patient.

9 Attach Ring Clamps to Holding Ring

The Ring Clamps secure the various SynFrame instruments on the Holding Ring.

Snap the Ring Clamp onto the Holding Ring without tightening, using the larger of the two slots. Ensure that the Ring Clamp is placed on the outside of the Holding Ring. Repeat for the desired number of Ring Clamps.
Retraction

1 Mount SynFrame Retractor to Guide Rod

Laterally insert a Retractor into the end of the Guide Rod and rotate 90°. Tighten the swiveling clamp of the Guide Rod using the socket wrench. This allows the Retractor to be held in the Guide Rod mechanism while remaining adjustable.

2 Position Retractors

Snap the Retractor and Guide Rod assembly into the smaller slot of the Ring Clamp. Until the clamp is tightened, the Retractor remains freely movable in all directions on the Holding Ring. Once the Retractor is in position, secure by tightening the Ring Clamp. Repeat for the desired number of Retractors.

Note: Always align the Retractor directly with the direction of pull of the Guide Rod, ensuring the full width of the Retractor rests against the soft tissue, rather than on a single point.

3 Enlarge operating area

Loosen the swiveling clamp of the Guide Rod using the socket wrench. This allows the swiveling clamp of the secured Retractor to swivel in its axis and thus enlarge the visible operating area. The Retractor should be guided by hand to protect the soft tissue. Tighten the Guide Rod Clamp using the socket wrench to secure Retractor.

Note: Do not use the socket wrench as a lever arm to adjust the Retractor as this may exert a large force on the Retractor, possibly leading to injury.
SynFrame Assembly Guide (continued)

**Position Light Guide**

To use the Light Guide, a separate light source is required. The Light Guide has an ACMI connector. If necessary, attach an adapter (Wolf or Storz) to the ACMI connector.

Snap the Light Guide into the small slot of the Ring Clamp. Fasten the Light Guide securely to the frame by tightening the Ring Clamp.

*Note: Avoid direct tissue contact and keep the distal end of the rod at least 10 mm away from the tissues when securing the Light Guide. Refer to package insert for further safety instructions.*

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**Dismantling SynFrame**

The SynFrame is dismantled in the reverse sequence. The Holding Ring and Connecting Rods can be rapidly removed from the operating area by loosening and removing the Tube-to-Tube Clamps on the Angled Rods.
SynFrame Access and Retractor System

SynFrame Standard Access System
[187.310]

690.017   SynFrame Graphic Case
387.346   SynFrame Insulated Table Clamp, 2 ea.
387.343   SynFrame Angled Rod Holder, 2 ea.
387.344   SynFrame Angled Rod, 2 ea.
387.353   SynFrame Tube-to-Tube Clamp, 2 ea.
387.345   SynFrame Connecting Rod, 2 ea.
387.336   SynFrame Holding Ring, two-piece
387.338   SynFrame Lengthener, 2 ea.
387.347   SynFrame Ring Clamp, 8 ea.
387.358   SynFrame Guide Rod, 6 ea.
314.27    Large Hexagonal Screwdriver
388.14    Socket Wrench with straight handle

SynFrame Anterior Lumbar Spine System [187.316]

690.018   SynFrame Retractor Graphic Case
387.391   SynFrame Retractor, 60 mm, 4 ea.
387.392   SynFrame Retractor, 80 mm, 4 ea.
387.393   SynFrame Retractor, 100 mm, 4 ea.
387.394   SynFrame Retractor, 120 mm, 4 ea.
387.395   SynFrame Retractor, 140 mm, 4 ea.
387.396   SynFrame Retractor, 160 mm, 4 ea.
387.362   Light Guide

Additionally Available Parts

387.337   SynFrame Half Ring (150 mm radius)
387.361   SynFrame Retractor Holder, adjustable
387.397   SynFrame Retractor, 180 mm

Additionally Available Sets

105.888   SynFrame Auxiliary Instrument Set
105.889   SynFrame Bone Lever Instrument Set
01.609.000 ProAccess Radiolucent Lumbar Blade Set – Standard 25 mm
01.609.001 ProAccess Radiolucent Blade Set – Auxiliary 15 mm
01.609.002 ProAccess Radiolucent Blade Set – Auxiliary 25 mm
01.609.003 ProAccess Bone Lever Instrument Set – Auxiliary
01.609.010 ProAccess Radiolucent Lumbar Blade Set – Wide 50 mm

Note: For additional information, please refer to package insert.

For detailed cleaning and sterilization instructions, please refer to http://us.synthes.com/Medical+Community/Cleaning+and+Sterilization.htm or to the below listed inserts, which will be included in the shipping container:
—Processing Synthes Reusable Medical Devices—Instruments, Instrument Trays and Graphic Cases—DJ1305
—Processing Non-sterile Synthes Implants—DJ1304