Mediflex®

FAQ GUIDE

LIVER RETRACTION SOLUTIONS

What are the key clinical differences between Nathanson Hooks and Lapro-Flex™ Liver Retractors?	This is a question that is dependent on the procedure at hand. Procedures like Sleeve Gastrectomy, Bypass, and Esophagectomy require a simple lifting of the liver to expose the anatomy, which can be defined as static retraction. Procedures like Liver Resection or Bile Duct Repair require more dynamic manipulation of the liver. The Nathanson is a percutaneous (direct through the abdominal wall) inserted retractor, whereas the Lapro-Flex® is operated through a lateral 5 mm port. Both products solve the prevalent issue of over-retraction of the liver (often handheld or utilized in a holding system that does not allow for easy dropping and lifting of the liver) to ensure hepatic health.
Can Nathanson Hooks be sterilized and reused, and if so, what is their average life cycle?	Yes, they can. The hooks themselves could last for 10 years easily. The most important part is the device that holds the retractor, whether it be a StrongArm® or a FlexArm™ (far more complex with lots of mechanical stress). It is not uncommon for Mediflex® to see products still in use after 10 years, when taken care of properly. Everyone should revisit our lubrication video series to ensure extended life.
What is the maximum liver retraction angle achievable with Lapro-Flex™?	There is no angle that cannot be achieved. It is important to remember that you don't want to overextend the liver, particularly in a direction that is not in line with the liver ligaments.
How does the Lapro-Flex™ design improve on traditional fixed liver retractors in terms of access and visibility?	Historical retractors like Fan/Finger retractors are 10 mm ø (5 mm doesn't make enough contact for large livers), have sharp edges that can cause crushing of tissue and bleeding if not handled properly. Using Lapro-Flex® reduces the working diameter to 5 mm and uses innovative cable technology to create a large surface contact area of the articulated 'triangle'.

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Are there size or shape variations available for the Nathanson Hook set to accommodate different patient anatomies?	Yes, there are. We offer XS, S, M, L, and XL sizes, in various diameters and in 'Mediflex' or 'Cook'-style shapes. Factors such as abdominal wall thickness and size of liver (not always in line with BMI) can therefore easily be addressed.
What is the recommended insertion technique for Lapro-Flex™ to ensure optimal positioning and minimal trauma?	Turn the rotation knob counterclockwise to fully relax the internal cable, so the instrument is 'straight', and slide it right through a 5 mm port. Then, under vision of the tip, tighten the cable by turning the knob clockwise until fully formed.
What are the main contraindications or limitations in the use of either system?	Traditional Nathanson Hooks are not ideal for Robotic surgery as it requires experience in the docking of the robot and port placement. Our Robotic Nathanson Hooks and Lapro-flex are ideal for both laparoscopic and robotic set ups.
Is there a locking or fixation mechanism in Lapro-Flex™ to maintain the liver's position during long procedures?	No, the tensioning of the cable at the proximal end of the device maintains its shape and rigidity.
Is one Strongarm version better than the other for particular Upper GI surgical procedures. An outline or list of the surgical procedures that would be better suited to each of the two Nathanson designs -Front Mount versus Top Mount?	Traditionally we always promote the Top Mount (73001-TM) as it is the easiest to use and manipulate. The issue with this design, (designed for very high BMI patients) is that if your facility has smaller CSSD equipment it may not accommodate larger sterilization trays (69762 required for sterilization). For those who need the extended height but require a smaller tray, our 73000-LP suffices.

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Lapro-Flex: How do you convince the CSSD staff that the instrument is "clean" (no blood/ microorganisms) between all the moving parts?	It requires a special procedure; extended cleaning time compared to traditional devices. We strongly believe we are the only supplier of said device that can provide full cleaning and sterilization validation. Mediflex® can provide, upon request, supporting documentation to confirm the validated procedures listed in the IFU.
What is the answer to a doctor who thinks that a Nathanson hook can cause compression injuries to the liver?	The doctor is correct that this can happen when the liver is over-retracted. This is not specific to Mediflex®, but all companies who offer such devices. This is where our Holding Arms are so important, as they allow the surgeon to intraoperatively easily release pressure and drop the liver to not cut off blood flow.
Lapro-Flex® internal engineering — what makes the Mediflex® so much better than the others out there from a mechanism POV and cleaning?	The joints on the Mediflex® Lapro-Flex® are manufactured through a machining process that leaves them precisely toleranced and physically robust. Competitors use a stamping process that isn't as repeatable and the joints are prone to joint deformation. When these joints deform over time the surgeon will be forced to over-tension the cable to achieve rigidity; eventually breaking the cable. Stronger joints simply take pressure off the cable in the long run. In addition, Mediflex® uses aerospace-grade cables (leveraged from 60 years of FlexArm™ engineering) and loops the cable internally from the proximal end up to the distal end as an added layer of protection so in case the cable does break, the joints will not fall into the body.
What's the best way to fix and hold the Nathanson retractor securely during surgery — with a StrongArm® or a FlexArm™?	Both arms are sufficient to hold all types of livers. This tends to be a product setup and lubrication issue of the holding arms, which may lose strength over time. Proper cleaning and subsequent lubrication reset any loss in strength.

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Differences on Top Mount vs. Front Mount: Many UK surgeons go for Top Mount due to the need for lower quadrant triangular liver retraction, and the Front Mount reach can sometimes make this more difficult. Does everyone know this?	Usually on the Front Mounts, it's about learning how to find the slot, but yes, the Top Mount is easier to facilitate. For use with Lapro-Flex®, they do not set up the arm as they would for a Nathanson. The Lapro-Flex® will operate through a lateral port requiring the arm to be lower. In my experience, the FlexArm™ easily does this. A FlexArm™ will allow for subtle movements without the need for untensioning the cable and joints. If a StrongArm® is used, the 73000-SA requires less working space with its shorter distal arm.
Well worth covering lubrication again of StrongArm® and what users SHOULD NOT do, e.g., move arm physically without loosening the handle — how to avoid damage, increase longevity for customers?	Great question. We do not want to lubricate the entire devices, as this will exacerbate the holding strength issue. We just want to lubricate areas with threads that require force. By lubricating the threads, one can exert more force more easily, resulting in greater holding strength. If you don't put oil in your car, your engine will break down. Metal-on-metal moving parts require the same for our arms. It does not need to be done every procedure but every 10 procedures or when in question to ensure proper health. Note: Lubricating after/before every procedure cannot harm. Lubrication Of Holding Systems
How can a surgeon best insert a Nathanson hook? Is it possible to cause injury to the patient?	We generally recommend, after the initial incision, using a 5 mm trocar (larger outer diameter than 5 mm) to make a 90-degree tunnel through all layers, allowing for easy insertion of the hook. Use a pair of forceps to enlarge the trocar tunnel at the fascia to ensure it does not close. All of this is done under visualization, so like anything: If you are not careful, you can cause injury — but this is not specific to Mediflex®. Also, one will need to make sure you are using a Nathanson hook with a long enough tip to get through the abdominal wall.

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Are Nathanson Hooks compatible with all standard laparoscopic ports, or do they require specific trocars?	The hooks are inserted percutaneously through the abdominally cavity, left of the midline, sup-xiphoid. This of course is done under visualization.
Sometimes FlexArms™ show gaps between segments after sterilization. what causes that and how do we avoid it?	A certain amount of gap between the segments is needed for proper (ultrasonic) cleaning. If the FlexArm™ is functional, there is no need for intervention.
If a surgeon has no preference or background knowledge in different types of systems, what set would you recommend?	73025-XL-R9 — It is a top mount StrongArm® with 6.5 mm hooks with a standard small hook and extended tips on medium and large hooks facilitating easier entry into patients with thicker abdominal walls. Note: Check large sterilization container/basket availability. If not available: 73020-XL-R9, Front Mount system
Current MDR situation on competition nathanson hooks - who and what is available or more to the point , no longer available?	MDR auditing will begin in September and finish in 2026. We do not anticipate anything being discontinued for CE-based markets.
What are the key selling points of these systems compared to regular & conventional retractors like Fan retractor?	• Atraumatic Design • Smaller device diameters resulting in smaller ports/incisions • Low profile • Ensures Hepatic health • Superior Visualization
What's the main difference between Lapro-Flex® and GoldFinger?	Lapro-Flex® is used for livers, and GoldFinger is used primarily for the esophagus or kidney.

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