Holding Systems and Retraction Devices for Laparoscopic and Robotic-Assisted Surgery
For over 50 years, Mediflex® has been designing and manufacturing uniquely engineered surgical devices used in operating rooms throughout the world. Working in close collaboration with world-renowned surgeons, Mediflex® has developed a wide range of devices which offer clinical efficiency while reducing staff and procedure time resulting in improved surgical outcomes.

First used in 1969 to hold a valve retractor in open heart surgery, our FlexArm™ holding system was introduced for gynecologic laparoscopy beginning in 1974. At that time, with no video available, the FlexArm™ was used to hold the scope for the surgeon while he used his hands to operate. Today, the benefits of using one or even two holding and positioning arms for scope, instrument and/or retractor holding remains - surgeons have greater control over their surgical environments, a steady image, and perform laparoscopic and robotic-assisted procedures more efficiently. Hospitals are able to reduce the surgical assisting staff and increase work-flow efficiency resulting in less operative time by using Mediflex® devices.

Mediflex® holding systems and retraction devices are recognized around the world by surgeons who have gained direct control over their camera and retractor positions while having two hands free to operate. Surgical administration and management appreciate the reduction in personnel during laparoscopic procedures which allows for more efficient utilization of staff and resources in the operating room.

In this catalog, we feature the widest variety of table mounted surgical holding systems, Nathanson Liver and Laparoscopic Retractors and innovative attachments on the market.

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The Universal FlexArm™ Plus Systems offer hands-free scope and/or instrument holding so the surgeon can focus on the procedure. The FlexArm™ provides unlimited positioning with rigid holding capability for static stabilization of instruments and anatomy – without the need for an assistant. Only FlexArm™ Plus allows for intra-operative adjustment without loosening the tension knob making repositioning of the scope or instrument quick and easy.

FlexArm™ Plus is commonly utilized in robotic-assisted surgery where static organ retraction is required — eliminating an assistant, as well as additional costly robotic components.

**Features and Benefits**

- Flexible positioning with adjustable rigidity
- Holds virtually any instrument, retractor or scope
- Arms lock with a single knob
- Complimentary to robotic-assisted surgery

- Available in a variety of configurations
- Simple, rapid set-up
- Attaches to the surgical table rail

Shown: FlexArm™ Plus Long Reach System (99054-QCLR) with Quick-Grip 10mm Tip (72162). Scope not included.
UNIVERSAL FLEXARM™ PLUS SYSTEMS

LONG REACH FLEXARM™ PLUS SYSTEMS

Includes Long Reach Swivel Bar Mount Post (69098), Table Rail Clamp (69099) and FlexArm™ Plus Companion Arm

<table>
<thead>
<tr>
<th>FLEXARM™ CONFIGURATIONS</th>
<th>SINGLE ARM REF. NO.</th>
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*See page 10 for Holding Tip accessories

STANDARD REACH FLEXARM™ PLUS SYSTEMS

Includes Swivel Bar Mount Post (69053) and FlexArm™ Plus Companion Arm

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*See page 10 for Holding Tip accessories
**FLEXARM™ PLUS TWIN ARM LAPAROSCOPIC SYSTEM**

The Twin FlexArm™ Plus System eliminates the need for up to two assistants - providing static scope and liver retraction for optimized surgical efficiency.

### FlexArm™ Plus Twin Robotic / Laparoscopic System

Ref. No. 99000-R (System Includes:)

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<td>4 72162</td>
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<td>5 69099</td>
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### FLEXARM™ PLUS COMPAION ARMS & MOUNTING ACCESSORIES

Individual FlexArm™ system components are available for expansion, upgrade or replacement of existing holding and positioning systems.

**FlexArm™ Plus with Quick-Connect Hex Fitting***

Ref. No. 99056-QC

**FlexArm™ Plus with Distal Swivel Option, Quick-Connect Hex Fitting***

Ref. No. 99056-QC-BS01

*See page 10 for Holding Tip accessories*

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**FLEXARM™ PLUS MOUNTING POSTS**

Horizontal arm allows for Universal FlexArm™ mounting / positioning. Vertical post attaches a Rail Clamp or directly to surgical table rail.

**Long Reach Swivel Ball Mount Post** (requires Rail Clamp)

Ref. No. 69098

Upper Post is ½" (1.27cm) dia., 16.5" (41.9cm) long and rotates 360° horizontally and vertically. Vertical post is ⅝" (1.59cm) dia. x 17.3" (44.5cm) long and allows for height adjustability. Used with an Table Rail Clamp.

**Swivel Ball Mount Post** (with built-in rail clamp)

Ref. No. 69053

Upper Post is ¼" (1.27cm) dia. 11.75" (29.8cm) long and rotates 360° horizontally and 180° vertically. Lower post is .7" (1.7cm) dia. x 4.3" (10.9cm) long.

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**TABLE ATTACHMENT**

**Table Rail Clamp**

Ref. No. 69099

Features a spring loaded quick-mount. Accepts ⅝" (1.59cm) dia. posts. Fits all standard surgical table rails.
The Monolithic FlexArm™ Plus features a one-piece design with a built-in rail clamp which is easy to set-up and simple to use. The ergonomic drop-down slide handle automatically aligns parallel to the arm to prevent interference.

- Rapid set-up, easy to use
- Versatile for endoscope or instrument holding
- Available in standard and long reach lengths

### STANDARD MONOLITHIC FLEXARM™ PLUS

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* See page 10 for Holding Tip accessories

### LONG REACH MONOLITHIC FLEXARM™ PLUS AND SYSTEMS

For Bariatric and GERD procedures, the Long Reach Monolithic FlexArm™ Plus coupled with a Nathanson Liver Retractor permits static, atraumatic retraction of the liver without the retractor sagging.

### REF. NO. DESCRIPTION/SYSTEM CONTENTS

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**NOTE:** See page 9 for a full list of Nathanson Liver Retractors

* - see Mediflex® website for details
BOOKLER® ENDOSCOPIC FLEXARM™ PLUS

The Bookler® Endoscopic FlexArm™ holder and positioner combines a 1” Field Post with a FlexArm™ Plus to provide an extremely versatile laparoscope or instrument holding device.

Allows for quick conversion of an endoscopic procedure to an open procedure - with the same Field Post and Post Coupler used in Mediflex® Bookler® or Universal Round Bar™ Table Mounted Retractor Systems.

• Versatile endoscope and instrument holding device
• Expanded utility of Mediflex® retractor systems
• Multiple configurations to accommodate all surgical procedures
• Individual components offered to maximize flexibility and serviceability

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<th>FLEXARM™ TIP CONFIGURATIONS</th>
<th>COMPLETE SYSTEMS 12” (30cm) Post (72011) Includes FlexArm™ and Post Coupler (72013)</th>
<th>COMPLETE SYSTEMS 18” (45cm) Post (72009) Includes FlexArm™ and Post Coupler (72013)</th>
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*See page 10 for Holding Tip accessories

BOOKLER® ENDOSCOPIC SYSTEM COMPONENTS

Field Posts

| Ref. No. 72011 – 12” x 1” (30cm x 2.5cm) | Ref. No. 72009 – 18” x 1” (45cm x 2.5cm) |

Post Couplers

| Ref. No. 72013 – 1” x 1” (2.5cm x 2.5cm) | Ref. No. 72013-C – Quick Lock 1” x 1” (2.5cm x 2.5cm) |

Vertical Extension Bar

| Ref. No. 72014 – 12” x 1” (30cm x 2.5cm) |

*Bookler® is a registered trademark of Flexbar® Machine Corporation.
STRONGARM™ HOLDING & POSITIONING SYSTEMS

Providing hands-free instrument, retractor, scope or accessory holding during all laparoscopic and robotic-assisted procedures for maximum surgical and operating room efficiency.

Features Universal 3-D Positioning in all Planes

VERSATILITY
Provides versatile placement and rigid holding capacity of virtually any instrument, retractor, scope or accessory. An assortment of Holding Tips and Attachments (see pages 9 & 10) offer extensive options for expanded applications.

EFFICIENCY
Having a completely static image provides better visualization to reduce procedure time. Retraction is constant, resulting in superior exposure with less trauma to organs and other tissue. Staff and residents can focus on other tasks or learning.

SIMPLICITY
Simple and rapid set-up as the Table Rail Clamp attaches to the surgical table rail over sterile drapes and offers height adjustability of the arm. Multi-directional arms lock tight with a single, ergonomic knob.

VARIETY OF CONFIGURATIONS
Available in a variety of configurations to accommodate any surgical requirement including:
- Single Arm for retraction instrument or scope holding
- Twin Arm for maximum efficiency holding both a retraction instrument and scope
- Top-Mount for greater height and reach for bariatrics
- Front-Mount for most standard operations
- Short Distal Arm for specific procedures, pediatrics or small incision surgery
All StrongArm™ Systems include the quick-connect hex fitting and height adjustable vertical post. StrongArms are available with or without Table Rail Clamp (69099). See page 10 for holding tips and page 9 for Nathanson Liver Retractors.

Top-Mount Systems
Features 360° rotation in the horizontal plane

Front-Mount Systems
Ref. No. 73000
Includes Rail Clamp (69099)
Ref. No. 73001
Without Rail Clamp

Front-Mount Extended Post Systems
Ref. No. 73000-LP
Includes Rail Clamp (69099)
Ref. No. 73001-LP
Without Rail Clamp

Short Distal Arm Systems
Ref. No. 73000-SA
Includes Rail Clamp (69099)
Ref. No. 73001-SA
Without Rail Clamp

Short Distal Arm Curved Post Systems
Features 360° rotation in the horizontal plane
Ref. No. 73002
Includes Rail Clamp (69099)
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<td><strong>C - D</strong> End Segment</td>
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*see page 8
STRONGARM™ TWIN / COMBO SYSTEMS

All StrongArm™ Twin/Combo Arm Systems include the quick-connect hex fitting and height adjustable vertical post. StrongArms are available with or without Table Rail Clamp (69099) as noted. See page 10 for tips and page 9 for Nathanson Liver Retractors.

Twin StrongArm™ Systems

Ref. No. 73010
Includes Rail Clamp (69099)

Ref. No. 73012
Without Rail Clamp

StrongArm™ FlexArm™ Combo System

Ref. No. 99040
Includes Rail Clamp (69099)

StrongArm™ provides rigid holding of a Nathanson Liver Retractor - FlexArm™ provides static scope holding and allows for intraoperative adjustments.

STRONGARM™ NATHANSON SYSTEMS

StrongArm™ Nathanson Liver Retraction Systems provide a variety of components to offer versatility for different procedures performed requiring liver retraction and/or static scope holding. The systems include Top-Mounted StrongArm™ Systems with quick-connect hex fitting along with three Robotic Nathanson Retractors, Stainless Steel Tip for holding instruments, Delrin Tip for holding endoscopes, and a Table Rail Clamp.

- Useful in robotic-assisted, bariatric and GERD procedures
- Eliminates the need of assistant to hold the liver retractor
- Hexagonal lock prevents retractor slippage and rotation

NATHANSON STRONGARM™ COMPLETE SYSTEMS* INCLUDE:

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<th>Ref. No.</th>
<th>Arm: Top-Mount StrongArm™ with Quick-Connect Tip (73001-TM), Rail Clamp (69099)</th>
<th>Robotic Nathanson Retractors: 5mm Set (69709-R9) - see page 9</th>
<th>Tips: Stainless Steel Instrument Tip (69706), Delrin Scope Tip (69707)</th>
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*Also available: Nathanson StrongArm™ complete systems with standard hooks - see www.mediflex.com
NATHANSON LIVER RETRACTORS

Nathanson Liver Retractors from Mediflex® have proven to be ideal for laparoscopic liver retraction as they support the entire left liver lobe to provide atraumatic exposure. The retractors feature a hexagonal proximal end which fits securely into the quick-connect hex fitting of all Mediflex® FlexArms and StrongArms. Only Mediflex® offers a line of Robotic Nathanson retractors - specially designed to eliminate interference with robotic arm movement.

- Widest variety on the market
- Used in Upper GI, Bariatric and GERD procedures
- Eliminates the need for an assistant to hold the liver retractor
- Reduced trauma compared to hand-held
- Hexagonal lock eliminates retractor slippage and rotation
- Versions with extended distal tips for thicker abdominal walls
- 3 different diameter options - 3mm, 5mm and 6.5mm
- Full range of robotic retractors available

INDIVIDUAL NATHANSON RETRACTORS

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* additional sets available with standard length hooks on www.mediflex.com
HOLDING TIPS & ACCESSORIES

ADJUSTABLE HOLDING TIPS

Allows for manual clamping adjustment to hold instruments and/or scopes of varying sizes

Stainless Steel Tip
Ref. No. 69706
Holding capacity: 3.5-15mm
Provides secure holding of metal instrument shafts

Delrin Tip
Ref. No. 69707
Holding capacity: 1.5-15mm
Gentle contact to hold scopes

XL Stainless Steel Tip
Ref. No. 69706-L
Holding capacity: 5-31.75mm
Wide opening to facilitate large tubing or odd shaped devices

AUTOMATIC HOLDING TIPS

Safely and quickly secures endoscopes - atraumatic jaws will not cause damage

Quick-Grip Tip, 10mm
Ref. No. 72162
Holding capacity: 10mm

Quick-Grip Tip, 5mm
Ref. No. 72163
Holding capacity: 5mm

Quick-Grip Tip, 4mm
Ref. No. 72164
Holding capacity: 4mm

FLEXIBLE SCOPE TIP

Provides stabilization of flexible scopes of various configurations

Flexible Scope Tip
Ref. No. 99706
Holding capacity: 35.5mm

Flexible Scope Tip innovative design incorporates replaceable Silicone Liners for scope protection and increased grip strength. (Silicone Liners sold separately)

Silicone Liners
Ref. No. 99706-SL
Reusable, 4 per Pk

TABLE ATTACHMENT DEVICES

Attachments to standard surgical table rails

Table Rail Clamp
Ref. No. 69099
Features a spring loaded quick-mount. Accepts ⅝” (1.59cm) dia. posts

Clark Socket Clamp
Ref. No. 91187
Allows for adjustable angles of vertical post positioning. Accepts ⅝” (1.59cm) dia. posts

Rail Segment Clamp
Ref. No. 38111
For squared-off imaging tables without rails. Fits on tables up to 1.5” (3.8cm) thick

Rail Clamp Adapter
Ref. No. 72225
Allows all Mediflex® Rail Clamps to fit oversized table rails such as Jackson Table
LAPRO-FLEX® ARTICULATING RETRACTORS

Mediflex’s Lapro-Flex® self-forming articulating retractors allow for convenient and atraumatic retraction of organs and structures in the peritoneal space. These retractors can be introduced through a 5mm cannula and articulated to their shape by rotating a knob in the handle. They are available in several different configurations including right angle, triangular, and angled triangular.

- Reusable articulating technology used for atraumatic retraction in laparoscopic procedures
- Actuating knob quickly forms shape completely
- Finger style model ideal for esophageal and renal hilum retraction
- Innovative tip design ensures minimal space is required inside the abdomen to form the retractor shape
- Held by a FlexArm™ Plus or StrongArm™ to eliminate an assistant dedicated to retraction

Available in Straight or Angled Base* Styles:

**FINGER STYLE**

Ref. No. 91680
90 Degrees Articulation
5mm x 38cm

**60mm TRIANGLE STYLE**

Ref. No. 91682
60mm Base - 5mm x 32cm
Ref. No. 91682-A
60mm Angled Base - 5mm x 32cm

**80mm TRIANGLE STYLE**

Ref. No. 91683
80mm Base - 5mm x 32cm
Ref. No. 91683-A
80mm Angled Base - 5mm x 32cm

FlexArm™ Plus (99054-QCLR) with
Quick-Grip 5mm Tip (72163) holding Lapro-Flex® (91683-A)

StrongArm™ (73000-TM) with
Stainless Steel Tip (69706) holding Lapro-Flex® (91682)

See Laparoscopic Instrument Catalog or website for a complete line of instruments
A variety of laparoscopic retraction instruments are available to achieve optimum exposure.

**KITE STYLE FAN RETRACTORS**

- Ref. No. 91670
  - Straight Kite Retractor
  - 5mm x 33cm

- Ref. No. 91675
  - Curved Kite Retractor
  - 5mm x 33cm

**ARTICULATING FAN RETRACTORS WITH FLUSH PORT**

- Ref. No. 91671
  - 5mm x 33cm* Articulating Fan Retractor, 3 Blades with Flush Port

- Ref. No. 91672
  - 10mm x 34cm* Articulating Fan Retractor, 5 Blades with Flush Port

* Total length including fan

**STERILIZATION TRAYS & CONTAINERS**

Wrapable, multi-use Sterilization Trays are available for Mediflex® holding systems and accessories.

- Ref. No. 69760 - Standard Tray
  - 22.7" x 10.6" x 4.7" (57.6cm x 26.9cm x 11.9cm)

- Ref. No. 69760-M - Silicone Mat
  - Fits Sterilization Tray 69760
  - 20.3" x 9.5" (51.6cm x 24.1cm)

- Ref. No. 69761 - Medium Tray
  - 26.7" x 11" x 6" (67.8cm x 27.9cm x 15.2cm)

- Ref. No. 69762 - Extra Long Tray
  - 31" x 11" x 6" (78.7cm x 27.9cm x 15.2cm)

Sterilization Container Systems are available. [www.mediflex.com](http://www.mediflex.com)

See Sterilization Tray Chart for compatibility with Mediflex® Holding Systems
**ADDITIONAL INNOVATIVE PRODUCTS**

**Port-Free Internal Retractors**

simple, hands-free retraction solution - sterile, disposable

### Versa Lifter Band

- for liver retraction

### Versa Lifter Needle

- for dynamic or static retraction

### TPEA Lifter

- for static retraction

**DynaTrac™ Retraction System**

for superficial and deep retraction requirements — with table mounted stabilization

**Liquid Scope Warmer**

for rapid and safe prevention of scope condensation

**Patented SafePass™ Suture Grasper**

to protect patients against needle injury

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