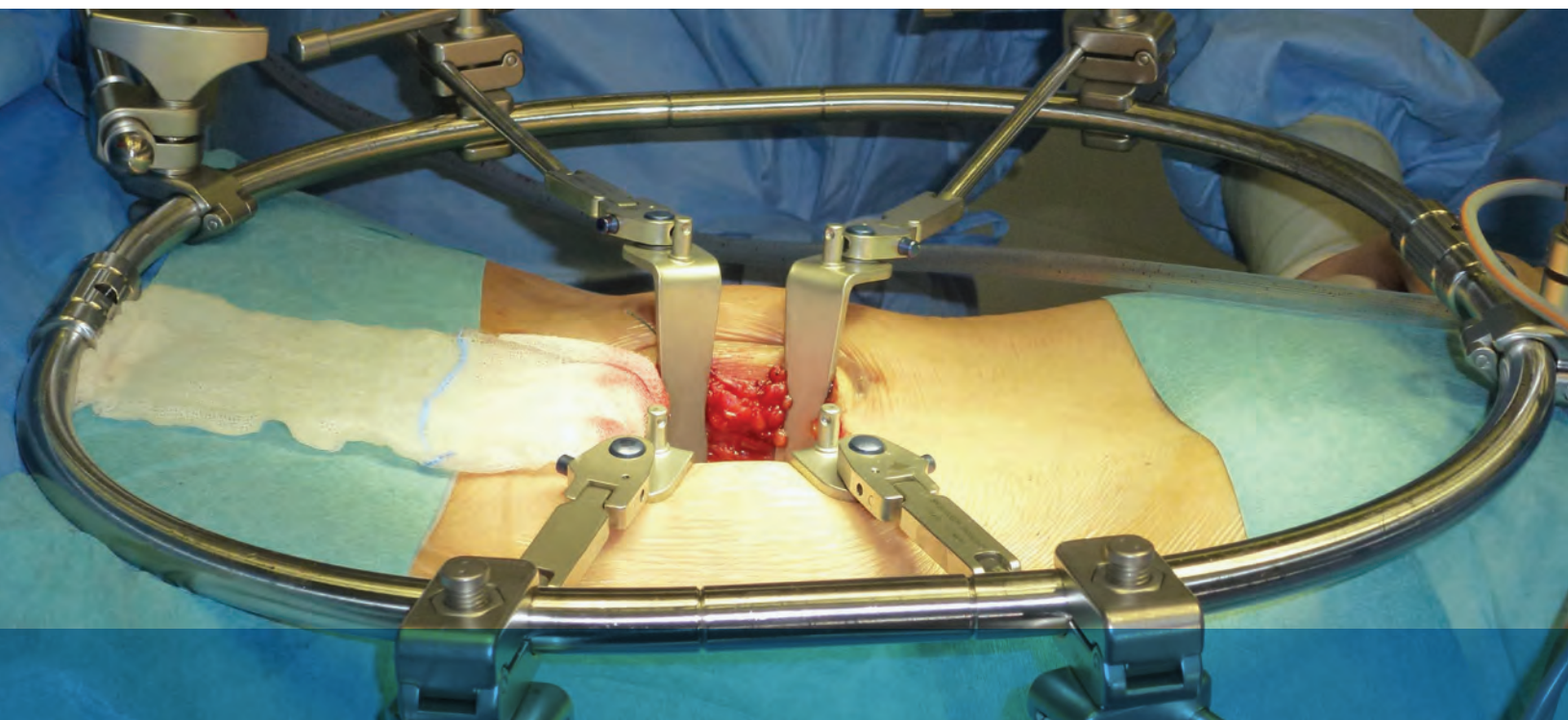


Anterior Lumbar
Bone Lever System
User Manual

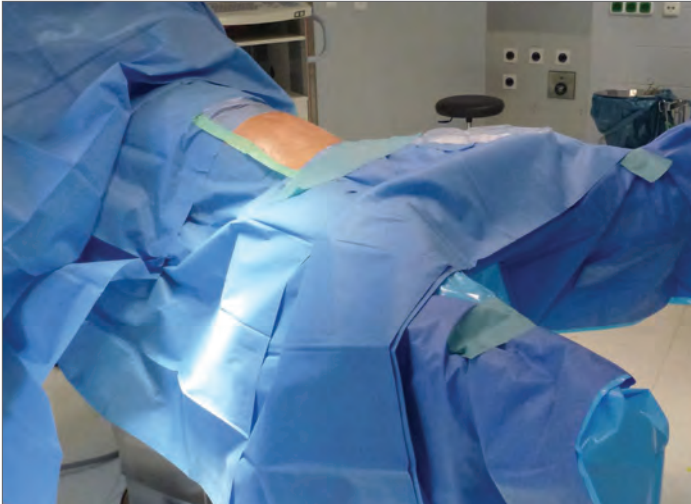
Thompson Retractor 



Uncompromised Exposure.

Prior to use, inspect all parts for damage: DO NOT use if any part has been deformed, altered, or damaged in any way.

PATIENT POSITIONING AND TABLE MOUNT SET UP:



STEP 1

Position the patient supine for an anterior retroperitoneal surgical exposure of the anterior lumbar disc space. A slight Trendelenburg position may be used for lower lumbar levels. Alternate to the supine positioning, the patient may be placed in the DaVinci position (shown to left) to allow the surgeon to view the spine from a straight vantage point.

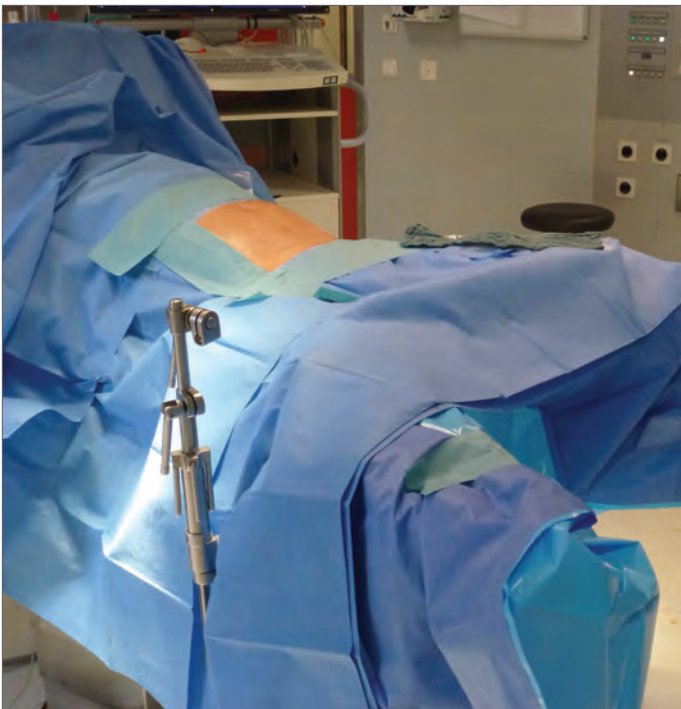
STEP 2

Utilize lateral fluoroscopy and a marker to locate the desired lumbar level to plan the incision. Applying the retroperitoneal approach, expose the desired level.



STEP 3

A Open the Elite II Rail Clamp (or Infinite Height Rail Clamp, IHRC) jaw by turning the knob located at the top of the rail clamp (or middle section of rail clamp if using the IHRC).

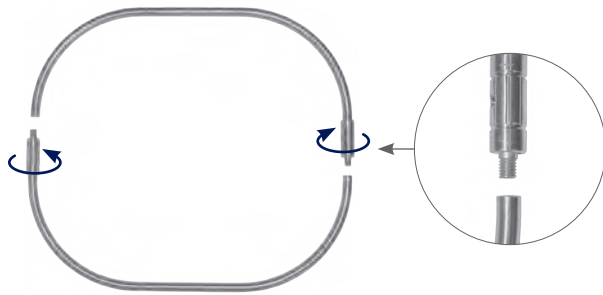


B Place the open jaw over the sterile drapes, 18-20" superior to the operative level and turn the knob in the opposite direction to secure. Utilize the swinging handles for additional leverage.

Repeat with a second rail clamp on opposite side of the table, inferior to the operative level. Ensure the C-Arm or other OR equipment can move freely around the rail clamps and adjust position as necessary.

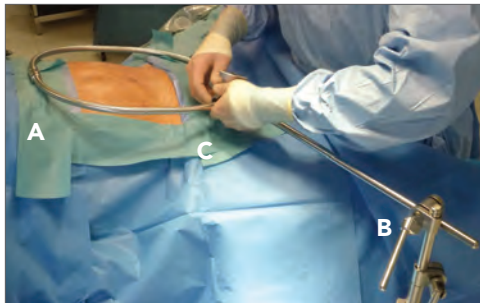


FRAME ASSEMBLY:



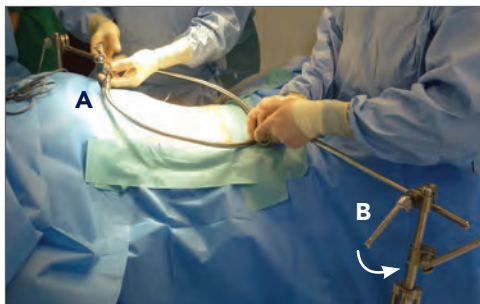
STEP 4

Assemble the Ring Frame by connecting the two Ring Halves. Hold the Ring Halves together and simultaneously rotate the threaded sleeve on each ring to thread the rings together. Both sleeves rotate inward to tighten. Ensure a complete connection threading is no longer visible.



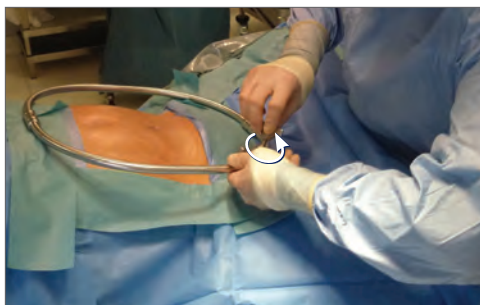
STEP 5

A Lay the assembled Ring Frame on the patient, centered over the operative site.
B Obtain an Extension Arm and insert into the open cam joint on the rail clamp, do not lock joint yet.
C Position Extension Arm to confirm a reach to the Ring Frame. Use an assistant to repeat this step on the opposite side of the table.



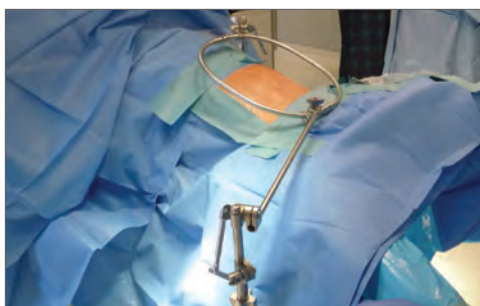
STEP 6

A With an assistant, clip each Extension Arm to the Ring Frame (do not lock clip joint on Extension Arm yet).
B Lock each Extension Arm to the rail clamp by closing the cam joint. Utilize the rail clamp post for leverage.



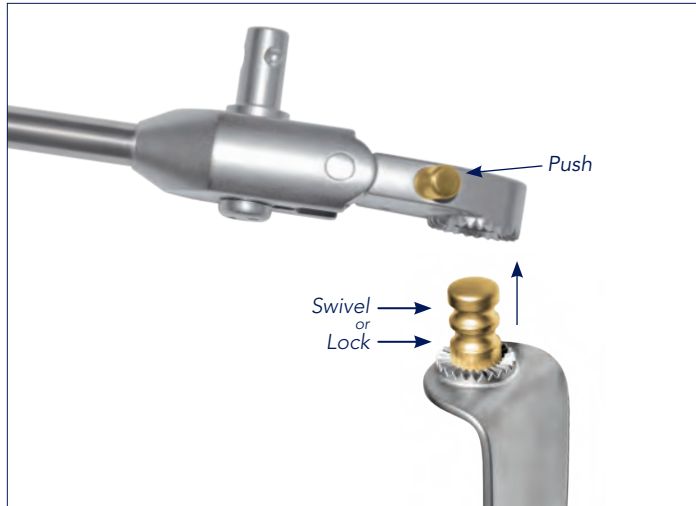
STEP 7

A Tighten the clip joints on the Extension Arms to the Ring Frame. The Ring Frame must be 1 1/2 - 2" above the patient's body when secured.



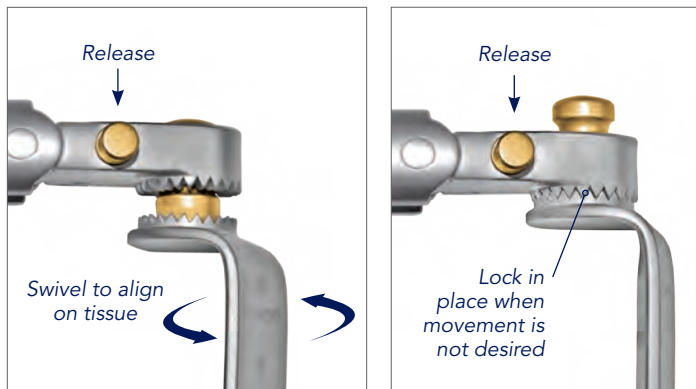
B Complete Ring Frame set up. Note that the Extension Arms should be attached as far superior and inferior as possible to maximize available space for retractors on the frame. *Note that the staggered Elites add stability to the set up.*

RENAL VEIN BLADE PLACEMENT:

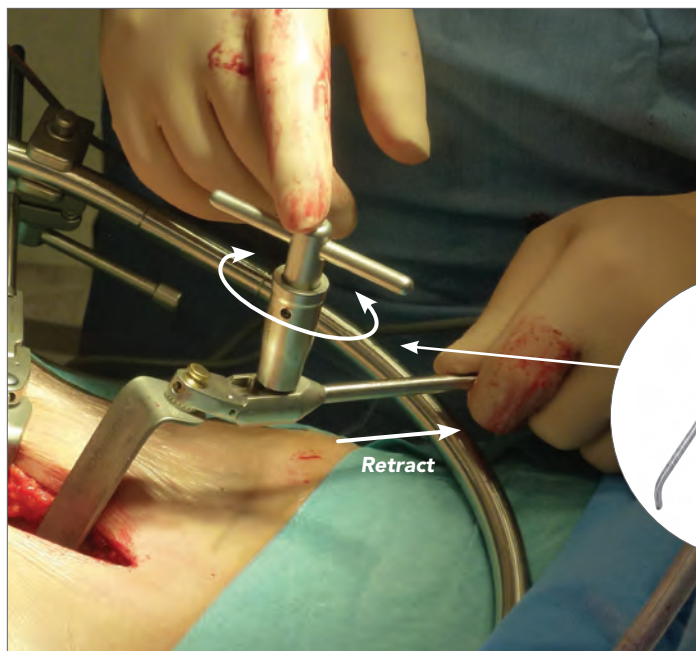


STEP 8

A Obtain initial exposure using renal vein blades. Select the appropriate depth renal vein blade. Attach to the S-Lock® Quick Angle Retractor Handle by inserting the blade nipple into the retractor handle while pressing the handle plunger.



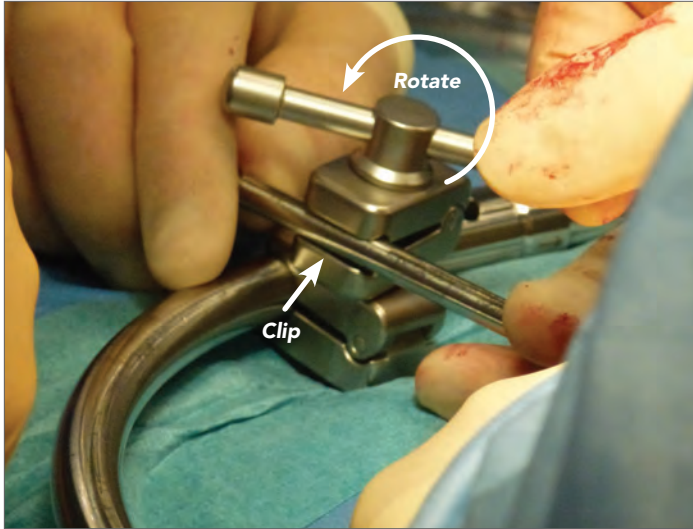
B Utilize a swivel or locked position as desired by releasing the handle plunger to secure the blade on either the lower locked groove or the upper swivel groove on the blade nipple.



STEP 9

Insert the renal vein blade into the incision and retract.

OPTIONAL: Prior to insertion, toe or angle the renal vein blade out by inserting the T-Handle Puller onto the Quick Angle Retractor Handle screw and rotating.

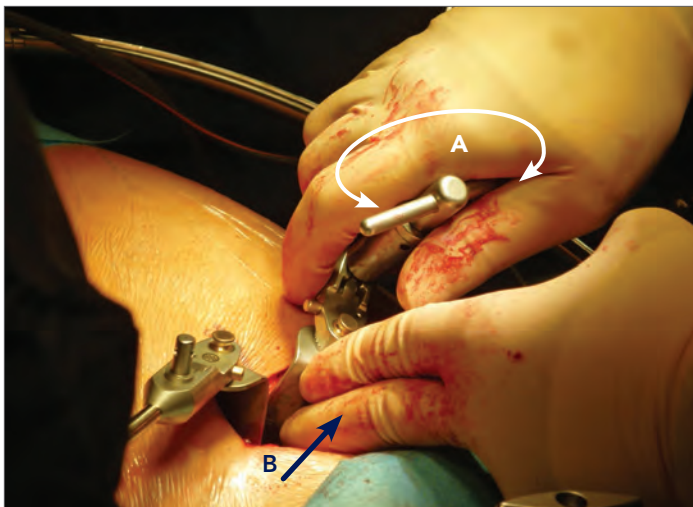


STEP 10

Clip a Clip-Clip joint to the Ring Frame in the location closest to the first renal vein blade placement. Ensure the joint is open by rotating the knob to loosen the Clip-Clip joint before clipping to the frame.

STEP 11

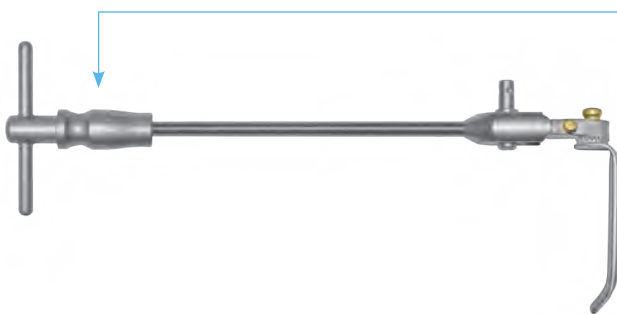
Swing the distal end of the S-Lock® Quick Angle Retractor Handle into the top portion of the Clip-Clip joint and tighten the knob fully to secure the handle.



STEP 12

A OPTIONAL: To further retract, apply the T-Handle Puller to the S-Lock® Quick Angle Retractor Handle screw and rotate to angle the blade in.

B Loosen the Clip-Clip joint as needed, place finger in front of renal vein blade and retract back further as needed.



TIP: For retraction assistance, apply a second T-Handle Puller to the distal end of the S-Lock® Quick Angle Retractor Handle.

BONE LEVER PLACEMENT:



STEP 13

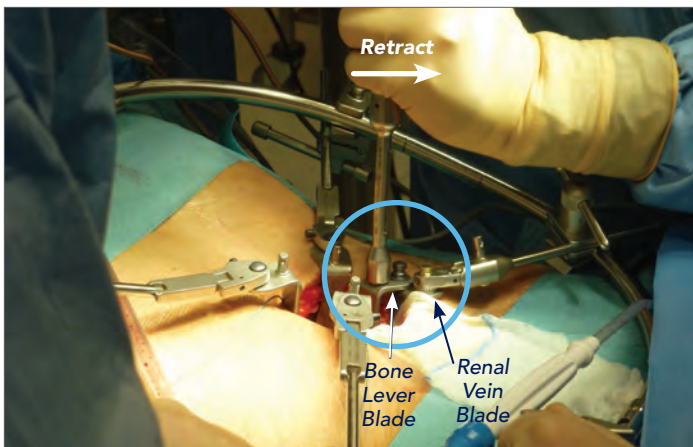
Replace renal vein blades with bone lever blades for secure and steady retraction of tissues. Select the appropriate Bone Lever Blade length and attach the Manipulator Handle to the proximal end of bone lever.



STEP 14

CAUTION: Using visual confirmation, ensure all vessels are protected behind the renal vein blades before placing bone levers.

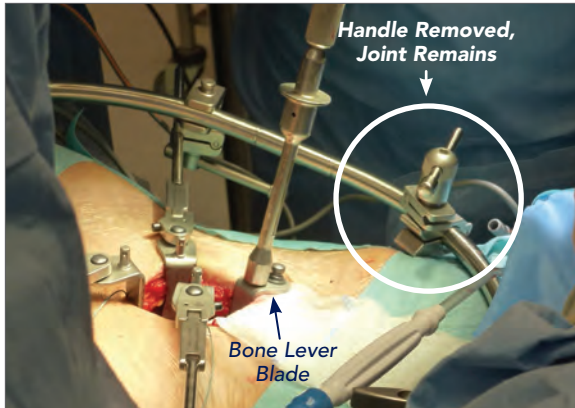
Insert bone levers onto the anterolateral sector of the spine, superior or inferior to disc. Apply a mallet to the Manipulator Handle to dock the bone levers to the spine. To safely secure bone levers to the spine, no more than 1/2" of the bone lever tip should be engaged in the bone.



STEP 15

Use the Manipulator Handle to retract the bone lever blade back toward the nearest renal vein blade. Ensure the bone lever tip is still engaged securely to the bone.

NOTE: Photo to left also shows three bone lever blades already positioned and locked in place.



STEP 16

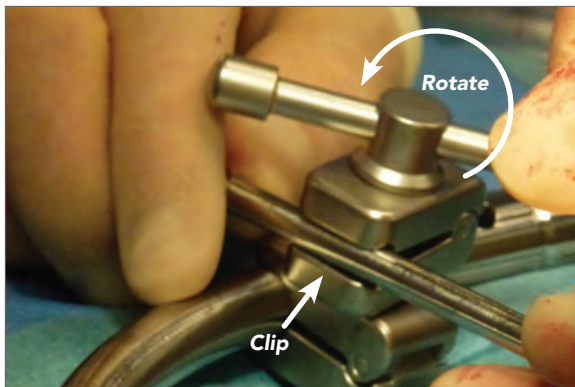
Use an assistant to loosen the S-Lock® Clip-Clip joint that is securing the renal vein blade and Quick Angle Handle. Remove the Quick Angle Handle and renal vein blade from the Clip-Clip joint but leave the joint on the frame.

OPTIONAL: If renal vein blade cannot be removed, leave in place and obtain a second Clip-Clip joint. Attach second Clip-Clip joint to frame next to the renal vein blade's Clip-Clip joint.



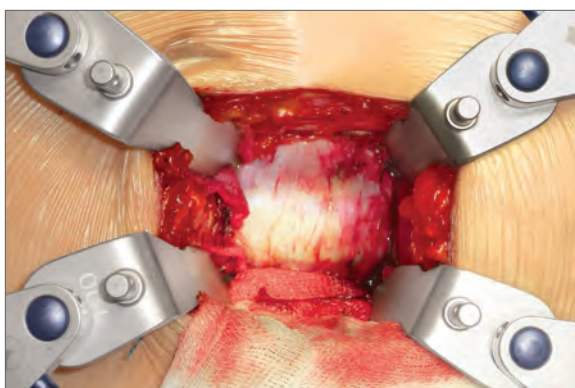
STEP 17

Holding the bone lever blade in place with the Manipulator Handle, use an assistant to secure a Hinged Handle to the bone lever blade. The assistant should press the plunger on the Hinged Handle and insert the distal end of the handle over the blade nipple.



STEP 18

Use an assistant to swing the distal end of the Hinged Handle into the Clip Clip joint, then fully tighten the Clip Clip joint knob to secure. Remove Manipulator Handle from bone lever blade.



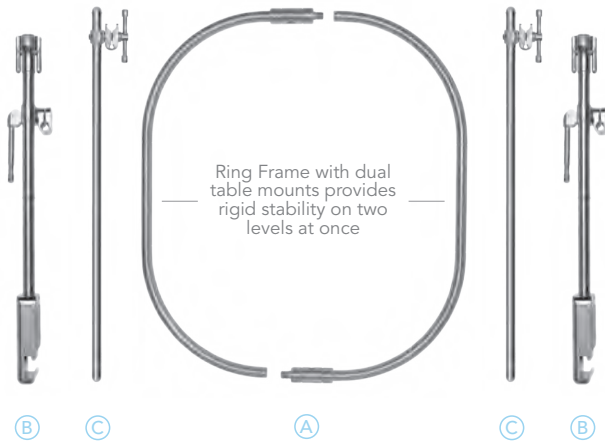
STEP 19

Repeat to add additional bone lever blades and complete the exposure.

Use care when removing bone levers, distal end is sharp.

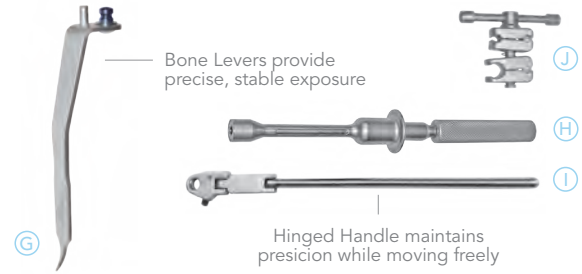
Anterior Lumbar Bone Lever System Part Identification:

Start with the Ring Frame Kit, then add blade kits and accessories below to complete the system.



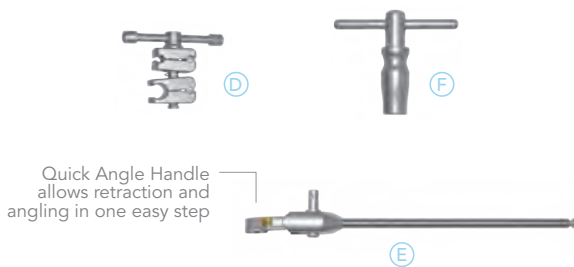
RING FRAME KIT

QTY.	ITEM DESCRIPTION	PART #
	Ring Frame Kit (handles NOT included)	90016
(A) 2	Ring Half (14 1/2" x 17 1/2")	44216
(B) 2	Elite II Rail Clamp with 1 Cam Joint 18"	41902AC
(C) 2	Extension Arm with Clip Joint 20"	44020C
1	Instrument Case	50000G



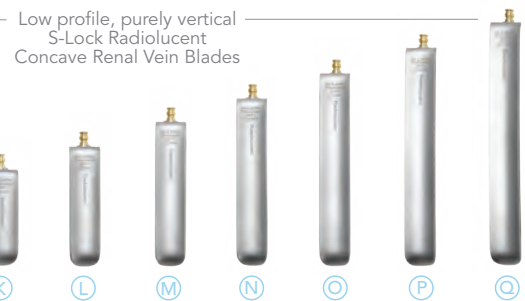
ANTERIOR LUMBAR BONE LEVER BLADE KIT

QTY.	ITEM DESCRIPTION	PART #
	Anterior Lumbar Bone Lever Blade Kit	80020
4	Bone Lever 22mm x 80mm	BL46968
4	Bone Lever 22mm x 100mm	BL46970
4	Bone Lever 22mm x 120mm	BL46972
(G) 4	Bone Lever 22mm x 140mm	BL46974
4	Bone Lever 22mm x 160mm	BL46976
4	Bone Lever 22mm x 180mm	BL46978
4	Bone Lever 22mm x 200mm	BL46980
(H) 2	Manipulator Handle	42128AC
(I) 4	Bone Lever Hinged Handle 8 1/2"	BL45002H
(J) 4	Clip-Clip Joint 1/2" x 1/4"	42122
1	Instrument Case - AL Bone Lever	50000ALB



QUICK ANGLE HANDLE KIT

QTY.	ITEM DESCRIPTION	PART #
	Quick Angle Handle Kit	90018
(D) 4	Clip-Clip Joint 1/2" x 1/4"	42122
(E) 4	S-Lock Quick Angle Handle 8"	SL45002G
(F) 2	Handle Puller - 3 Dimple	60022
1	Instrument Case	50000A3



S-LOCK RADIOLUCENT RENAL VEIN BLADE KIT

QTY.	ITEM DESCRIPTION	PART #
	S-Lock Radiolucent Renal Vein Blade Kit	SL91036
(K) 4	S-Lock Radiolucent Concave 25mm x 80mm	SL46558
(L) 4	S-Lock Radiolucent Concave 25mm x 100mm	SL46560
(M) 4	S-Lock Radiolucent Concave 25mm x 120mm	SL46562
(N) 4	S-Lock Radiolucent Concave 25mm x 140mm	SL46564
(O) 4	S-Lock Radiolucent Concave 25mm x 160mm	SL46566
(P) 4	S-Lock Radiolucent Concave 25mm x 180mm	SL46568
(Q) 4	S-Lock Radiolucent Concave 25mm x 200mm	SL46570
1	Instrument Case - AL Renal Vein	50000ALR

Try this blade kit with our S-Lock® Spine Frame or the Ring Frame



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Patents: US5984865, US8257255. Other patents pending.

For cleaning, sterilization,
and maintenance, please refer to the
Thompson Cleaning & Sterilization Manual.

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