



SECUROS ORTHOPEDIC Resource Guide



Where imagination becomes reality.



where **imagination**
becomes
reality





External Skeletal Fixation

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- Instructions
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- Components



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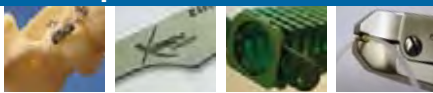
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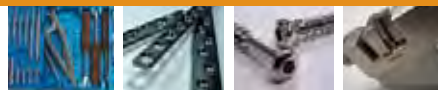
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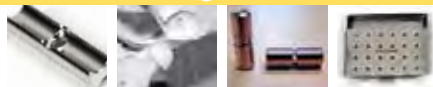
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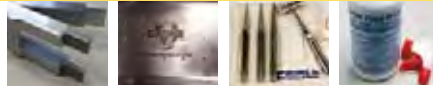
SECUROS ORTHOPEDIC

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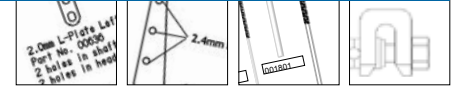
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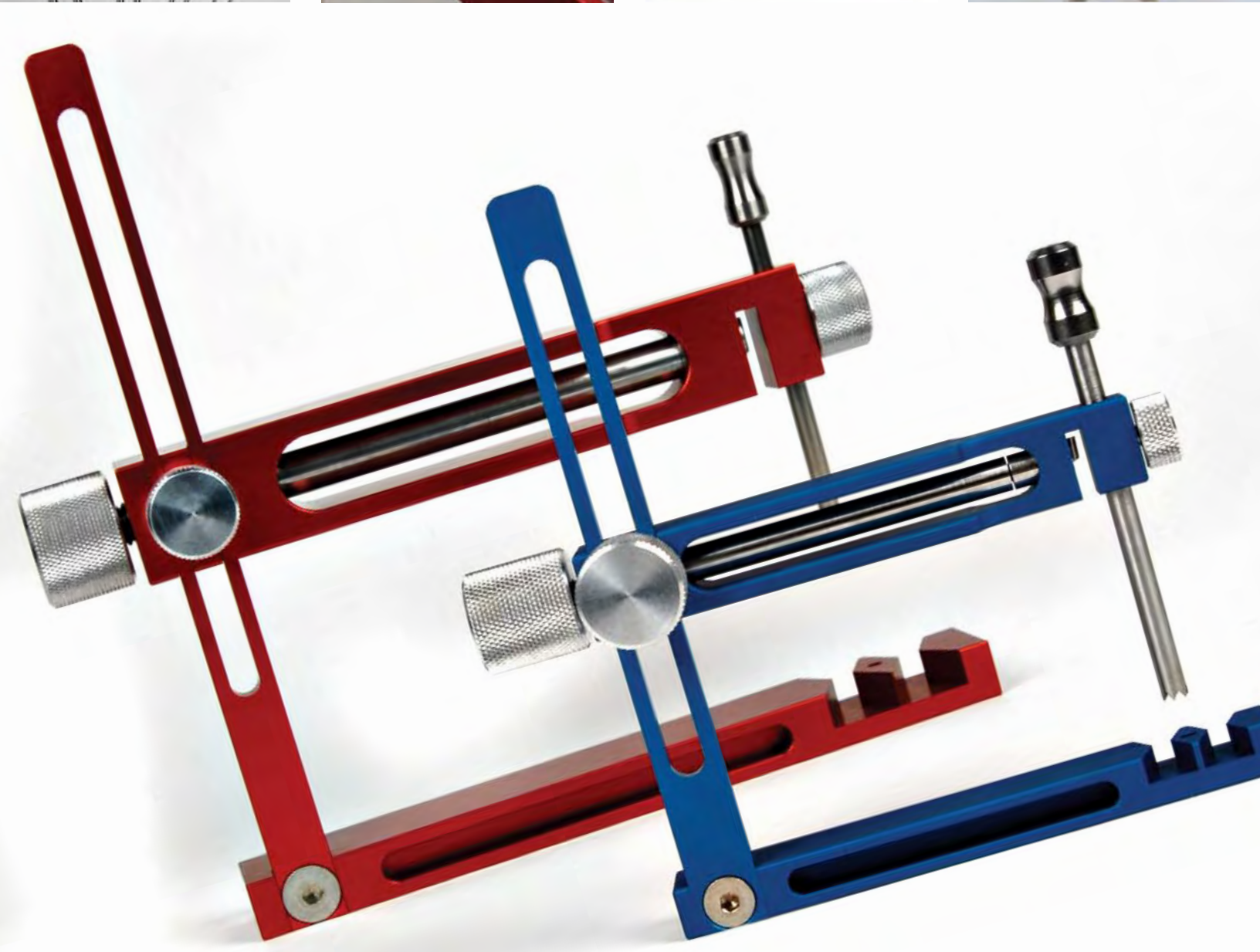


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Introduction to External Skeletal Fixation

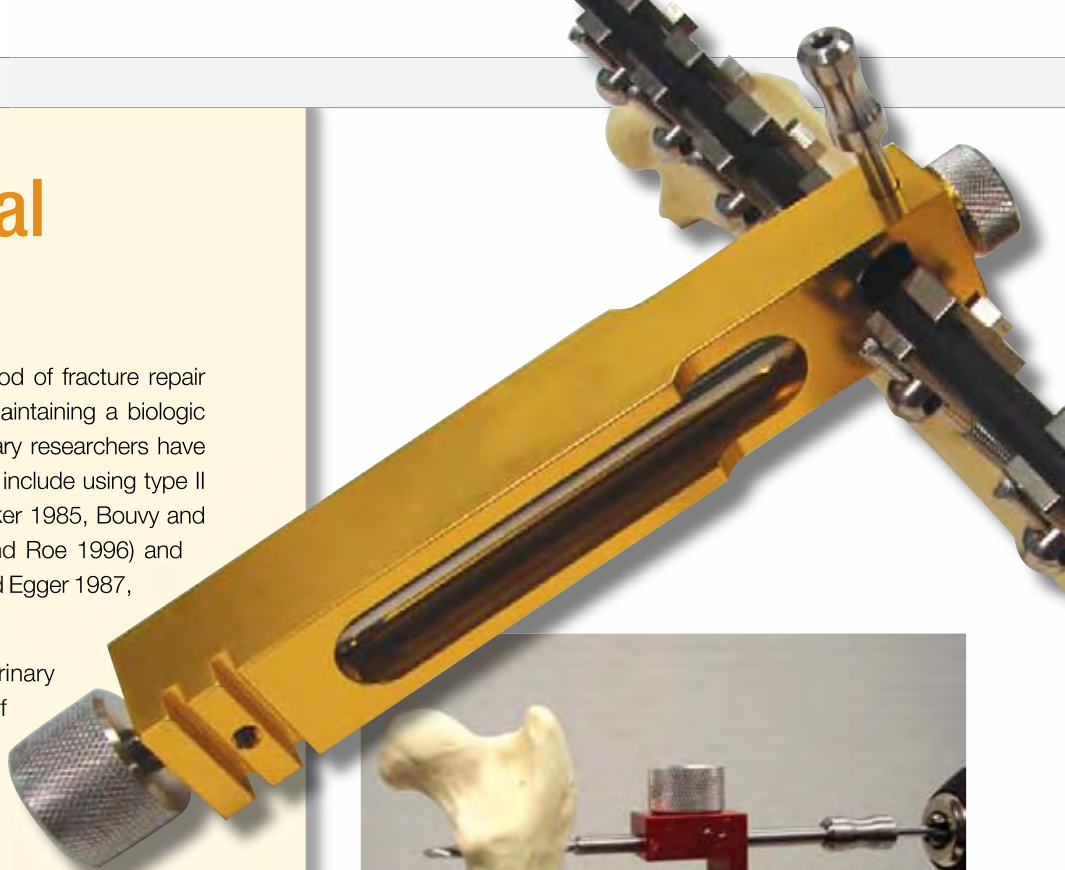
External Skeletal Fixation is an effective method of fracture repair in animals, rigidly stabilizing fractures while maintaining a biologic environment for rapid osteosynthesis. Veterinary researchers have defined optimal application techniques. These include using type II fixators with full pins whenever possible, (Brinker 1985, Bouvy and Markel 1993) pre-drilling pilot holes, (Clary and Roe 1996) and using positive profile threaded pins. (Bennet and Egger 1987, Anderson and Mann 1993 and 1996)

SECUROS, committed to enabling the veterinary surgeon to easily apply science to the art of external fixation, has designed the SECUROS External Fixation System. Fixator clamps are not pre-placed on connecting rods, but snapped on wherever you want, even between two installed clamps. Positive profile threaded pins are easily added to type I, II, and III fixator configurations, even at re-check examinations. Pilot holes are drilled using tissue-protecting sleeves. Full and/or half pins in type I and type II fixators are accurately placed to either side of the opposite connecting rods. The SECUROS system is interchangeable with medium and small external fixator components.

Biomechanical Testing has shown that the design of the SECUROS External Fixator clamp results in greater fixator pin to connecting bar rigidity, reducing premature pin loosening.

It's as easy as 1, 2, 3 !

1. Use the SECUROS pin placement device to accurately pre-drill the desired pilot hole. A fixator pin can be placed to either side of the opposite connecting rod in type II fixators. The depth of the hole can be measured with a standard depth gauge.
2. Insert the positive profile fixation pin that corresponds with the pilot hole from Step 1 through the pin placement tool. This aligns the pin with the pilot hole.
3. Snap on the SECUROS fixator clamp by sliding it over the fixation pin and onto the connecting rod. Insert and tighten the clamp bolt. It is ideal to tighten the bolt to 7.34 Nm of torque. SECUROS offers a precision torque wrench for this purpose.





Instructional Media

Item#	Description
001385	VHS Tape
001386	CD-ROM

SECUROS

ESF Stainless Steel Product Instructions

Applying the SECUROS fixation clamp

1. After the fixation pin is placed, slide the pin into the appropriate hole on the head component (bullet shaped).
2. Take the U component and put it together with the head component (keeping the head component on the pin).
3. Slide the two components down the fixation pin (approaching the fixation bar).
4. Once the clamp is going over the connecting bar, you will notice that the head component hits the connecting bar not allowing for the clamp to go completely over the bar.
5. At this point, gently use your thumb (not the one pushing down the clamp) to push the fixation pin away from the clamp. This will allow for the clamp to snap over the fixation bar.
6. Finger tighten the bolt and then apply two-thirds of a turn using the standard wrench.
7. Construct the rest of the frame in the same manner.
8. Apply final tightening using the torque wrench.

Using the SECUROS pin placement tool in type I configurations

1. Apply the most distal and most proximal fixation pins in the standard way.
2. Connect the connecting bar to the proximal and distal pins.
3. Tighten bolts
4. Remove the sliding component of the aiming tool by removing the stainless steel knob.
5. After fixation pin is placed, put bullet-shaped or head clamp inside U-shaped clamp, and slide it over fixation pin. Gently use your thumb to push fixation pin away from the clamp. This will allow for the clamp to snap over the fixation bar.
6. Adjust the aiming tool so that when you drill you will have good bone purchase (you may test this by probing through the aiming tool into the soft tissue using a K-wire).
7. Tighten the large knob on the far end of the aiming tool.
8. Place the drill sleeve through the aiming tool down to the bone surface (you can use a Steinmann pin to guide the drill guide to the bone).
9. Make sure that the aiming tool is tight; drill your fixation pinhole.
10. Remove the drill sleeve and place the fixation pin through the aiming tool into the drilled hole. Insert pin.
11. Repeat for all pin locations.

Using the SECUROS pin placement tool in type II configurations

1. Apply the most distal and most proximal fixation pins in the standard way.
2. Connect the connecting bars to the proximal and distal pins.
3. Tighten bolts
4. Open the aiming tool as much as possible by loosening the knob and sliding the rail.
5. Put the aiming tool over the connecting rod, making sure that it hits the stainless steel back of the cup-shaped component of the through rod (you may have to adjust the stainless steel back by using another connecting bar).

6. Slide the rail so that the aiming tool just sits on the opposite connecting bar (important: do not apply a lot of pressure). Adjust the aiming tool so that when you drill you will have good bone purchase (you may test this by probing through the aiming tool into the soft tissue using a K-wire). You may have to change which side the opposite connecting bar sits in. You can also flip the entire aiming tool so that you are drilling on the opposite side of the connecting bar.
7. Tighten the large knob on the far end of the aiming tool.
8. Place the drill sleeve through aiming tool down to the bone surface (you can use a Steinmann pin to guide the drill guide to the bone).
9. Make sure that the aiming tool is tight; drill your fixation pinhole.
10. Remove the drill sleeve and place the fixation pin through the aiming tool into the drilled hole. Insert pin.
11. Repeat for all pin locations

SECUROS double clamp instructions

- The SECUROS double clamps work differently than the K-E type double clamps.
- The SECUROS double clamp components are used with your existing SECUROS clamps.
- Using the SECUROS double clamps
 1. Take two SECUROS clamps and remove the hex head bolt from one and the hex head bolt and head unit from the other.
 2. Place the two clamps together so that the smaller holes are face to face.
 3. Place the normal head unit in one of the larger holes and the double clamp components in the other. You now have a double clamp complete.

Precision torque wrench

- The torque wrench comes pre-set for the appropriate torque (7.34 Nm). If you need to adjust the torque wrench, see accompanying directions.
- The torque wrench can not be sterilized! It is to be used for final tightening after surgery.
- Using the torque wrench
 1. Assemble the fixator. Tighten the bolts as you go by first finger tightening them and then apply two-thirds of a turn with the standard wrench. This is close to the recommended torque.
 2. Once the fixator is completely assembled, use the torque wrench to apply the final tightening (non-sterile).
 - Place the torque wrench over the bolt head.
 - Hold the torque wrench at the end of the handle.
 - Turn the torque wrench until you feel a click. This is how the torque wrench indicates that you are at the set torque.
 - Once you feel the click, move on to the next clamp and repeat.
 - After all bolts have been tightened you're done!
- Important: If for some reason the bolts were tightened beyond the recommended torque, prior to using the torque wrench, the torque wrench will not click. If you continue to tighten the bolt, it could break.

Stainless Steel SECUROS ESF Systems



Stainless Steel SECUROS ESF Small Starter Kit

For use with 5 - 30 lb dogs.

Includes	Qty.
Small Pin Placement Device (1.5mm & 2.4mm drill sleeves)	1
Small External Fixation Clamps	20
3/16" x 6" ESF Connecting Bar	2
3/16" x 8" ESF Connecting Bar	2
3/16" x 10" ESF Connecting Bar	2
1.5mm x 5.5" Orthopedic BITE Drill Bit	1
2.4mm x 5.5" Orthopedic BITE Drill Bit	1
Small Positive Profile End-Threaded ESF Pin	6
Small Positive Profile Center-Threaded ESF Pin	6
ESF 5/16" - 1/4" Stainless Steel Wrench	1
Small ESF Organizer Bag	1
Instructional CD-ROM	1
Instructional VHS Tape (available per request)	

Item#	Description
004019	SECUROS ESF Small Starter Kit

Item #001330 is the recommended sterilization case

Stainless Steel SECUROS ESF M/Lg Starter Kit

For use with 30 - 60+ lb dogs.

Includes	Qty.
M/Lg Pin Placement Device (2.4mm & 3.2mm drill sleeves)	1
M/Lg External Fixation Clamps	20
3/16" x 6" ESF Connecting Bar	2
3/16" x 8" ESF Connecting Bar	2
3/16" x 10" ESF Connecting Bar	2
2.4mm x 5.5" Orthopedic BITE Drill Bit	1
3.2mm x 6.5" Orthopedic BITE Drill Bit	1
Medium Positive Profile End-Threaded Pin	6
Medium Positive Profile Center-Threaded Pin	6
ESF Precision Torque Wrench	1
ESF 5/16" - 1/4" Stainless Steel Wrench	1
M/Lg ESF Organizer Bag	1
Instructional CD-ROM	1
Instructional VHS tape (available per request)	

Item#	Description
003172	SECUROS ESF M/Lg Starter Kit

Item #001332 is the recommended sterilization case

Stainless Steel SECUROS ESF Small Bilateral Kit

For use with 5 - 30 lb dogs.

Includes	Qty.
Small External Fixation Clamps	12
Small Positive Profile Center-Threaded Pin	6
1/8" x 6" ESF Connecting Bar	2

Item#	Description
004018	SECUROS ESF Small Bilateral Kit

Stainless Steel SECUROS ESF M/Lg Bilateral Kit

For use with 30 - 60+ lb dogs.

Includes	Qty.
M/Lg External Fixation Clamps	12
Medium Positive Profile Center-Threaded Pin	6
3/16" x 8" ESF Connecting Bar	2

Item#	Description
004016	SECUROS ESF M/Lg Bilateral Kit

Stainless Steel SECUROS ESF Small Unilateral Kit

For use with 5 - 30 lb dogs.

Includes	Qty.
Small External Fixation Clamps	12
Small Positive Profile End-Threaded Pin	6
1/8" x 6" ESF Connecting Bar	1

Item#	Description
003173	SECUROS ESF Small Unilateral Kit

Stainless Steel SECUROS ESF M/Lg Unilateral Kit

For use with 30 - 60+ lb dogs.

Includes	Qty.
M/Lg External Fixation Clamps	12
Medium Positive Profile End-Threaded Pin	6
3/16" x 8" ESF Connecting Bar	1

Item#	Description
004020	SECUROS ESF M/Lg Unilateral Kit

Accessories

Dynamization Equipment

For SECUROS ESF System. Works with Stainless Steel Kits

Item#	Description
001383	Medium Dynamization Bolt
001384	Small Dynamization Bolt



SECUROS TITAN ESF System “Step by Step”

STEP 1



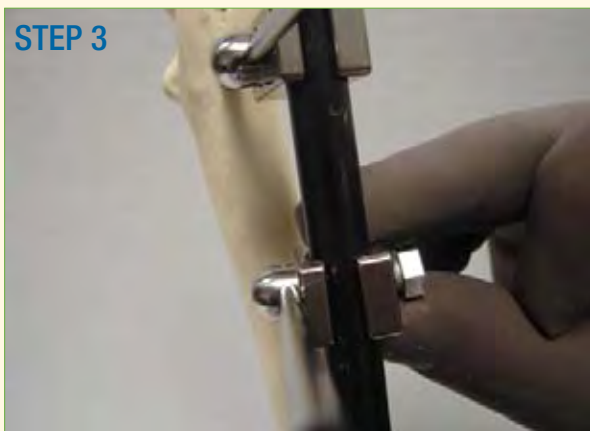
1. Start Application with Pre-drilling of Proximal and Distal pin holes with Placement Device and Drill Sleeve. Place Proximal and Distal ESF pins.

STEP 2



2. Slide Clamp Head onto Pin and place the Top Piece of Clamp on Head. Place Connecting Rod onto Clamp and attach Bottom of Clamp with Bolt.

STEP 3



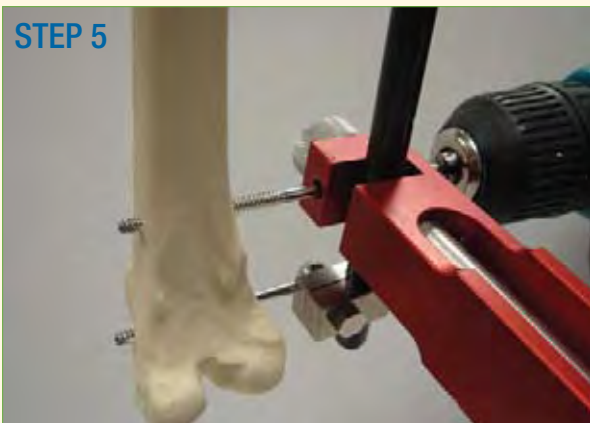
3. Tighten the Bolt with fingers until secure on Connecting Rod.

STEP 4



4. Use the 5/16” wrench to tighten. It is ideal to tighten bolts to 7.34Nm of torque. SECUROS offers a precision torque wrench for this purpose.

STEP 5



5. To place additional pins attach the Placement Device to the Connecting Rod. Tighten knob to hold rod. Make adjustments needed to Drill Sleeve knob to secure in place.

STEP 6



6. Repeat Pre-drilling, Pin placement and Clamps until complete.

TITAN ESF System



Small TITAN Starter Kit

For use with 20 - 40 lb dogs.

Includes	Qty.
Small TITAN Pin Placement Device (1.5, 2.4 & 3.2mm drill sleeves)	1
Small TITAN ESF Clamp	12
6.3mm x 50mm Carbon Fiber Rod	2
6.3mm x 100mm Carbon Fiber Rod	2
6.3mm x 150mm Carbon Fiber Rod	2
6.3mm x 200mm Carbon Fiber Rod	2
Medium Positive Profile End-Threaded ESF Pin	4
Medium Positive Profile Center-Threaded ESF Pin	4
Mini Positive Profile End-Threaded ESF Pin	2
Mini Positive Profile Center-Threaded ESF Pin	2
Small Positive Profile End-Threaded ESF Pin	4
Small Positive Profile Center-Threaded ESF Pin	4
ESF 5/16" - 1/4" Stainless Steel Wrench	1
1.5mm x 5.5" Orthopedic BITE Drill Bit	1
2.4mm x 5.5" Orthopedic BITE Drill Bit	1
3.2mm x 6.5" Orthopedic BITE Drill Bit	1
Instructional DVD	1

Item#	Description
000437	Small TITAN Starter Kit

Item #001332 is the recommended sterilization case

TITAN Starter Kit

For use with >50 lb dogs.

Includes	Qty.
TITAN Pin Placement Device (3.2mm & 4.0mm drill sleeves)	1
TITAN ESF Clamp	12
9.5mm x 50mm Carbon Fiber Rod	2
9.5mm x 100mm Carbon Fiber Rod	2
9.5mm x 150mm Carbon Fiber Rod	2
9.5mm x 200mm Carbon Fiber Rod	2
Large Positive Profile End-Threaded ESF Pin	6
Large Positive Profile Center-Threaded ESF Pin	6
Medium Positive Profile End-Threaded ESF Pin	4
Medium Positive Profile Center-Threaded ESF Pin	4
ESF 5/16" - 1/4" Stainless Steel Wrench	1
3.2mm x 6.5" Orthopedic BITE Drill Bit	1
4.0mm x 6.5" Orthopedic BITE Drill Bit	1
Instructional DVD	1

Item#	Description
004017	TITAN Starter Kit

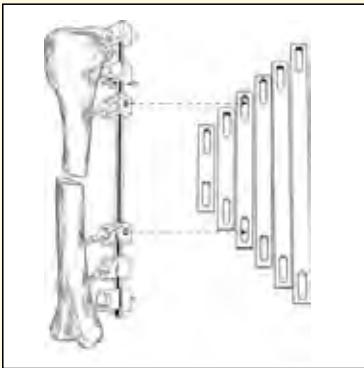
Item #001332 is the recommended sterilization case

Unilateral Augmentation System Instructions

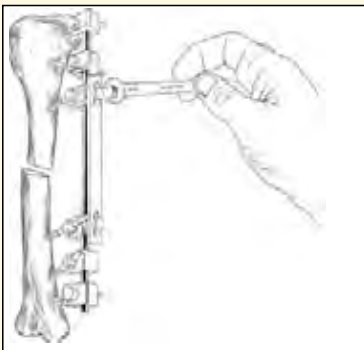
1. The modified clamps are used in place of the standard clamps to secure the fixation pins closest to the fracture. The modified clamps work exactly like the standard clamps.



2. The distance between the two clamps closest to the fracture is compared to the series of plates to determine which plate to use. The chosen plate is applied to the inner two clamps with bolts. Occasionally, the plate will need to be twisted with wrenches or plate bending irons to ensure it lies flat on the clamps.



3. The bolts for augmentation plates have the same head size as the clamp bolts, but are slightly shorter and marked. The augmentation plate works with the connecting rod to form a rod and beam construct that results in more than 400% increase in stiffness (resulting in an axial stiffness of more than 150N/mm). The plate can be removed during fracture healing once an initial callus has formed to dynamize the fracture. This system allows you to change the frame stiffness without removing pins, therefore maintaining bone/pin interface.



Unilateral Augmentation System



SECUROS ESF Augmentation System Med/Large Starter Kit

Includes		Qty.
002088	1"-2" Augmentation Plate	1
002089	2"-3" Augmentation Plate	1
002090	3"-4" Augmentation Plate	1
002091	4"-5" Augmentation Plate	1
001201	5"-6" Augmentation Plate	1
001202	6"-7" Augmentation Plate	1
001203	Unilateral Augmentation Clamp	2
Item#	Description	
003179	Med/Large Starter Kit	

SECUROS ESF Augmentation System Small Starter Kit

Includes		Qty.
011205	1"-2" Small Augmentation Plate	1
001206	2"-3" Small Augmentation Plate	1
001207	3"-4" Small Augmentation Plate	1
001208	4"-5" Small Augmentation Plate	1
001209	Small Unilateral Augmentation Clamp	2
Item#	Description	
001210	Small Starter Kit	




Fixation Clamps

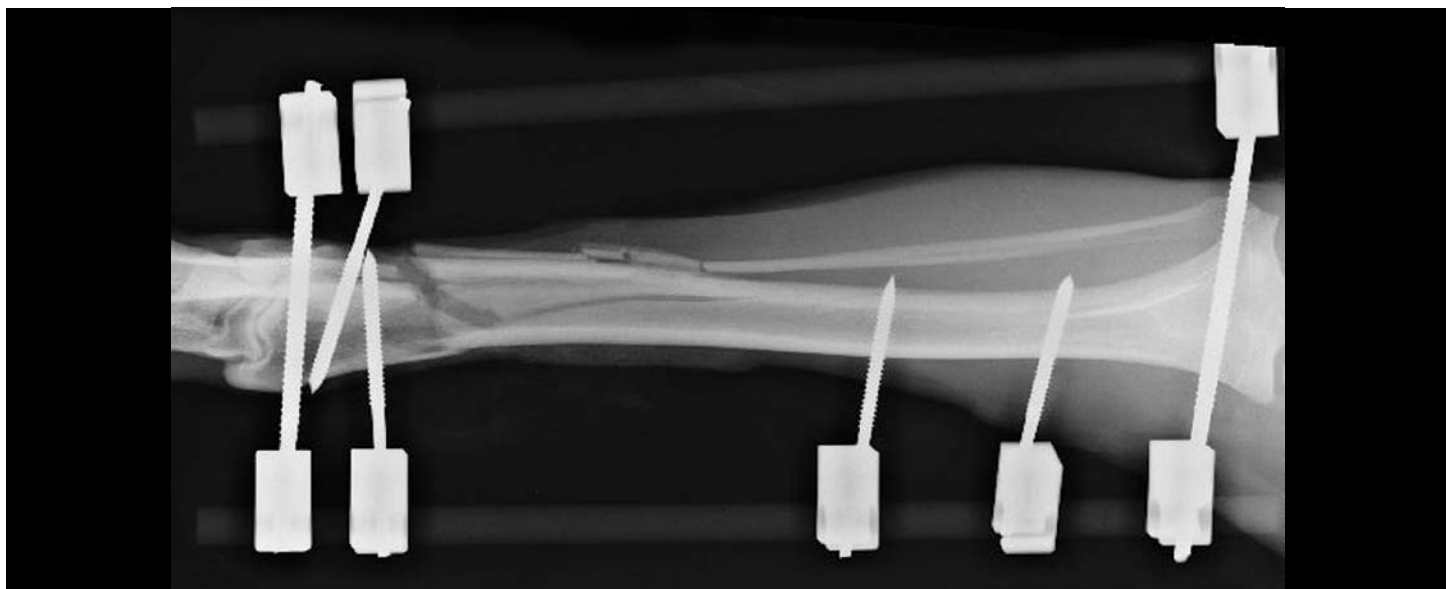
	ITEM #	PRODUCT	DESCRIPTION
<p>MD/LG DOUBLE</p> <p>MD/LG</p> <p>TITAN LARGE</p> <p>SMALL</p> <p>SMALL DOUBLE</p>	001367	SECUROS Medium/Lg ESF Double Clamp	Stainless Steel
	001366	SECUROS Medium/Lg ESF Clamp	Stainless Steel
	000621	SECUROS TITAN Large ESF Double Clamp	Titanium Clamp pieces, Stainless Head/Bolt
	001368	SECUROS TITAN Large ESF Clamp	Titanium Clamp pieces, Stainless Head/Bolt
	001370	SECUROS Small ESF Double Clamp	Stainless Steel
	001369	SECUROS Small ESF Clamp	Stainless Steel
	000622	SECUROS TITAN Small ESF Double Clamp	Titanium Clamp piece, Stainless Head/Bolt
	002356	SECUROS TITAN Small ESF Clamp	Titanium Clamp piece, Stainless Head/Bolt

Individual Replacement Pieces for External Fixation Clamps

	ITEM #	PRODUCT	DESCRIPTION
<p>TITAN LARGE</p> <p>BOTTOM TOP</p> <p>BOLT HEAD</p> <p>TITAN SMALL</p> <p>BOTTOM TOP</p> <p>BOLT HEAD</p> <p>MED/LG SS</p> <p>BOTTOM TOP</p> <p>BOLT HEAD</p> <p>U COMPONENT</p> <p>SMALL SS BOLT HEAD</p> <p>U COMPONENT</p>	001375	SECUROS TITAN Large Clamp TOP Piece	Titanium
	001376	SECUROS TITAN Large Clamp BOTTOM Piece	Titanium
	001377	SECUROS TITAN Large Clamp Head Component	Stainless Steel
	001378	SECUROS TITAN Large Clamp Bolt	Stainless Steel
	000623	SECUROS TITAN Small Clamp Bolt	Stainless Steel
	000265	SECUROS TITAN Small Clamp TOP Piece	Titanium
	000626	SECUROS TITAN Small Clamp BOTTOM Piece	Titanium
	000627	SECUROS TITAN Small Clamp Small/Medium Head Component	Stainless Steel
	000624	SECUROS TITAN Small Clamp Mini/Small Head Component	Stainless Steel
	001371	SECUROS Medium/Lg ESF Pin Head Component	Stainless Steel
	001372	SECUROS Medium/Lg ESF Connecting Rod U Component	Stainless Steel
	001373	SECUROS Medium/Lg ESF 3/16" 3/8 bolt	Stainless Steel
	001374	SECUROS Medium/Lg Double Clamp Component	Stainless Steel
	001379	SECUROS Small ESF Pin Head Component	Stainless Steel
	001380	SECUROS Small ESF Connecting Rod U Component	Stainless Steel
	001381	SECUROS Small ESF Bolt	Stainless Steel
001382	SECUROS Small ESF Double Clamp Component	Stainless Steel	

Positive Profile External Fixation Pins

	ITEM #	PRODUCT	SIZE
	001804	Large Center-Threaded	Length: 8", Thread: 3/16", Shank: 5/32"
	001803	Large End-Threaded	Length: 6", Thread: 3/16", Shank: 5/32"
	001399	Medium Center-Threaded	Length: 7", Thread: 5/32", Shank: 1/8"
	001398	Medium End-Threaded	Length: 5", Thread: 5/32", Shank: 1/8"
	001802	Small Center-Threaded	Length: 5", Thread: 9/64", Shank: 3/32"
	001801	Small End-Threaded	Length: 3.5", Thread: 9/64", Shank: 3/32"
	001397	Mini Center-Threaded	Length: 5", Thread: 5/64", Shank: 1/16"
	001396	Mini End-Threaded	Length: 3.5", Thread: 5/64", Shank: 1/16"
	001353	Medium Acrylic End-Threaded	Length: 5", Thread: 5/32", Shank: 1/8"
	001354	Medium Acrylic Center-Threaded	Length: 7", Thread: 5/32", Shank: 1/8"
	002368	Medium Blunt End-Threaded	Length: 5", Thread: 5/32", Shank: 1/8"




Pin Placement Devices

	ITEM #	PRODUCT	COLOR	SLEEVES
	001363	SECUROS Medium/Large Pin Placement Device	Red	2.4mm and 3.2mm
	001364	SECUROS Small Pin Placement Device	Blue	2.4mm and 1.5mm
	001365	SECUROS TITAN Pin Placement Device	Gold	3.2mm and 4.0mm
	002360	SECUROS TITAN Small Pin Placement Device	Green	1.5, 2.4 & 3.2mm

Advantages

1. Accurate centering of fixation pin through the medullary cavity.
2. Allows for sleeved pre-drilling of all pin sites.
3. Accurate and precise placement of "half" or "full" pins.
4. Free placement of fixation pins.
5. User friendly.
6. ERROR PROOF.
7. Color-coded Placement Device for easy size recognition.

Connecting Rods

	ITEM #	DIAMETER	LENGTH
STAINLESS STEEL CONNECTING RODS			
 <p>The SECUROS stainless steel connecting bars are 24% more rigid than the standard connecting bars</p>	001806	1/8"	50mm (2")
	001807	1/8"	76mm (3")
	002178	1/8"	100mm (4")
	002097	1/8"	122mm (5")
	002098	1/8"	150mm (6")
	002099	1/8"	200mm (8")
	002100	1/8"	250mm (10")
	002201	3/16"	100mm (4")
	002202	3/16"	150mm (6")
	002203	3/16"	200mm (8")
	002204	3/16"	250mm (10")
002205	3/16"	300mm (12")	
002206	3/16"	350mm (14")	
ALUMINUM CONNECTING RODS			
	002207	9.5mm	100mm (4")
	022208	9.5mm	150mm (6")
	002209	9.5mm	200mm (8")
	002210	9.5mm	300mm (12")
	002211	9.5mm	350mm (14")
CARBON FIBER CONNECTING RODS			
	002212	9.5mm	50mm (2")
	002213	9.5mm	100mm (4")
	002214	9.5mm	150mm (6")
	002215	9.5mm	200mm (8")
	002216	9.5mm	250mm (10")
	002217	9.5mm	300mm (12")
	002218	9.5mm	350mm (14")
	003905	9.5mm	700mm (24")
	002351	6.3mm	50mm (2")
	002352	6.3mm	100mm (4")
	002353	6.3mm	150mm (6")
	002354	6.3mm	200mm (8")
	002355	6.3mm	250mm (10")
	002347	3/16"	100mm (4")
	002348	3/16"	150mm (6")
	002349	3/16"	200mm (8")
	002350	3/16"	250mm (10")

Carbon Fiber Rings

	ITEM #	SIZE	INFORMATION
CARBON FIBER MODULAR 1/2 RINGS			
 <p>CALL FOR STAINLESS STEEL NUT & BOLT</p>	001344	Inner Diameter: 80mm Outer Diameter: 120mm	Bolt together to make full ring
	001345	Inner Diameter: 100mm Outer Diameter: 140mm	Bolt together to make full ring
	001346	Inner Diameter: 120mm Outer Diameter: 160mm	Bolt together to make full ring
	001347	Inner Diameter: 140mm Outer Diameter: 180mm	Bolt together to make full ring
	001348	Inner Diameter: 160mm Outer Diameter: 200mm	Bolt together to make full ring
	001349	Inner Diameter: 180mm Outer Diameter: 220mm	Bolt together to make full ring
	001351	Inner Diameter: 200mm Outer Diameter: 240mm	Bolt together to make full ring
CARBON FIBER MODULAR FULL RINGS			
	001333	Inner Diameter: 50mm Outer Diameter: 74mm	Same geometry as standard ring
	001334	Inner Diameter: 60mm Outer Diameter: 90mm	Same geometry as standard ring
	001335	Inner Diameter: 70mm Outer Diameter: 93mm	Same geometry as standard ring
	001336	Inner Diameter: 84mm Outer Diameter: 114mm	Same geometry as standard ring
	001337	Inner Diameter: 100mm Outer Diameter: 126mm	Same geometry as standard ring
	001338	Inner Diameter: 118mm Outer Diameter: 148mm	Same geometry as standard ring
CARBON FIBER MODULAR 5/8 RINGS			
	001340	Length: 50mm Width: 3.2mm	
	001341	Length: 66mm Width: 3.2mm	
	001342	Length: 84mm Width: 4.7mm	
	001343	Length: 118mm Width: 6.3mm	

BITE Self-Centering Drill Bits (Anti-Skid)



ITEM #	PRODUCT	LENGTH/FLUTE
001359	1.5mm BITE Jacob's Chuck	5.5", 140mm/1.25", 32mm
001358	2.4mm BITE Jacob's Chuck	5.5", 140mm/1.25", 32mm
002990	2.8mm BITE Jacob's Chuck	6.5", 165mm/1.25", 32mm
001357	3.2mm BITE Jacob's Chuck	6.5", 165mm/1.25", 32mm
001360	4.0mm BITE Jacob's Chuck	6.5", 165mm/1.25", 32mm
000643	1.5mm BITE Quick Coupling	5.5", 140mm/1.25", 32mm
001361	2.4mm BITE Quick Coupling	5.5", 140mm/1.25", 32mm
001362	3.2mm BITE Quick Coupling	6.5", 165mm/1.25", 32mm
000644	4.0mm BITE Quick Coupling	6.5", 165mm/1.25", 32mm



Drill Sleeves



ITEM #	PRODUCT	LENGTH
002359	1.5mm Drill Sleeve	2.5" Long
001230	2.4mm Drill Sleeve	2.5" Long
001231	2.4mm Extended Drill Sleeve	3.0" Long
001232	3.2mm Drill Sleeve	2.5" Long
001233	3.2mm Extended Drill Sleeve	3.0" Long
001234	4.0mm Drill Sleeve	3.5" Long



Tools

	ITEM #	PRODUCT	DESCRIPTION
	000836	ESF Precision Torque Wrench	Without Socket
	001222	ESF Precision Torque Wrench	With Socket
	001223	ESF 5/16" - 1/4" Socket	For Torque Wrench
	001221	ESF 5/16" - 1/4" Socket	Stainless Steel Wrench
	001224	1/4" Nut Driver	Stainless Steel with Handle
	001225	5/16" Nut Driver	Stainless Steel with Handle

FastFix Putty



CUT



KNEAD



APPLY



FastFix

FastFix is a fast-setting, high-strength polymer compound that enables fast, simple, inexpensive external fixation repairs. The polymer can replace the connecting bar and the external fixation clamp or it can be used to replace the external fixation clamp.

Each unit contains pre-measured portions of the activator and base throughout—no measuring or mixing tools are necessary. As the polymer is mixed, the two contrasting colors blend into one color and indicate complete mixing. The consistency (like modeling clay) eliminates drips and runs and allows the material to be shaped and formed as needed before curing begins.

FastFix polymer contains no solvents or VOCs. It's non-flammable and releases no noxious fumes. It won't shrink or pull away. The unused portion stays fresh for future use when saved in its original package.

- Easy to use and very inexpensive
- Bonds instantly with superior strength
- No mixing tools required
- No odor
- Allows ESF pins to be placed at various angles and locations
- Ideal for mandible fractures
- Gas sterilize only

Item#	Description	Size
002219	7" FastFix	0.25oz