



The **SX404** Sager Extreme Bilateral
Emergency Traction Splint



Exceptional • Exact • Extreme
The compact Sager alternative



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www.sagersplints.com

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NATO CAT #: 6515-99-898-5651

GSA #: GS-07F-0374W

Exceptional, Exact, Extreme

Anatomically and medically engineered to accommodate First Responder treatment with a single, fast, easy, fail-safe compact traction device for today's extreme rescue environments.

Exceptional value, safety, performance, traction and immobilization.

Exact documentation of traction force applied and required.

Extreme environment capabilities: Designed for use in extreme military environments, as well as rugged, harsh, mountain rescue and urban environments.

Features and Benefits

- Indicated for treatment in proximal third and mid-shaft femoral fractures. As such, has a much broader range of application and use than other traction devices.
- From field to hospital: The **SX404** when applied, is radio lucent to all areas of a femoral fracture. Radio lucent design enables Xrays and Catscans to be taken without removing the splint.
- Compact, robust and light weight – easily stored or carried in most backpacks. Folds into a 13.75" x 10.75" x 4.25" carry case.
- Universal: fits adult or child (5th to 99th percentile of patients). One splint has the capacity to treat four different patient types.
- Treats unilateral or bilateral fractures.
- Rapid assembly. The **SX404** unfolds and is ready to apply in under 15 seconds.
- Rapid one-person application (can be applied in under 2 minutes). Frees other attendants for other patients or procedures.
- Reduces further trauma and pain
- Promotes rapid recovery with fewer complications
- Applied in any position (patient can be nursed in any position)
- Straight in-line traction. Alignment, traction and counter-traction is the same as that provided to patients in operating

room theatres undergoing orthopedic surgical reductions and splinting. As with surgical procedures, Sagers' application of traction avoids point pressure on the sciatic nerve and related vascular structures – in the critical proximal third of femoral fractures. By design, Sager splints do not have a half-ring posteriorly: this eliminates any pressure on the sciatic nerve and most importantly eliminates the angulation of the fracture site, which occurs with most half ring splints (ischial pad splints).

- Can be applied under or over Shock Trousers
- Stays within the body silhouette. Does not extend beyond the feet of an adult. Eliminates transport complications in helicopters, fixed wing aircraft, and van type ambulances. If the patient fits in a stokes basket – the Sager fits!
- Super durable composite plastic construction – years of use – practically indestructible.

Quantifiable, Dynamic Traction

- *Sager Emergency Traction Splints* are the only traction splint available on the world market today that continuously shows the exact amount of traction being applied. The quantifiable feature (Sagers' traction handle/scale) enables First Responders to set and document the traction force applied. Traction is measurable in both pounds and kilograms. Besides being *Quantifiable*, the traction is *Dynamic*. The *dynamic* function permits the traction to decrease as the spasm releases.
- No fear of over-traction and the complications associated with excess traction.
- You always have the correct amount of safe traction.

Attention: Read First – Prior to Application

Models: **SP407** ((STORM PAC) Sager Tactical Orthopedic Response Matrix), **SX405** ((SEFRS) Sager Emergency Fracture Response System)) Et **SX404** Sager Extreme Compact Bilateral Emergency Traction Splint).



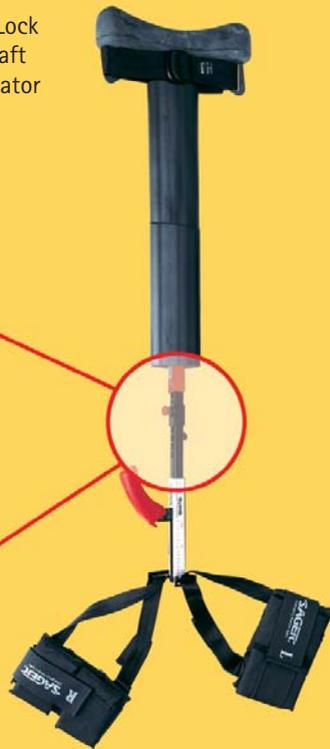
Important: Follow these additional steps to ensure correct assembly and usage of Sager Extreme Compact Bilateral Traction Splints. Note: the Security Sliding Lock should be applied after traction is applied to the patient and the yellow indicator is visible. On short, light-weight people, the yellow indicator might not be visible if the Traction Bar does not extend out of the Outer Tube. If the Lock is applied before inserting the Traction Bar into the Outer Tube, the range of travel will be limited.

Security Sliding Lock

1. Slide the Security Sliding Lock over hinge of the Inner Shaft and cover the yellow indicator with the red knob.



2. Lock down by tightening the red knob.



Important: Traction Assembly Packing and Folding Procedure! To refold the inner-traction splint shaft (traction tube) and place in Carrying Case, grasp the traction tube with thumb against Hinge Tab. Push Hinge Tab, as you would to turn on a flashlight, while gently pulling the solid bar. When solid bar stops then fold keeping the bar and tube in alignment.

Diagram 1

Traction Tube

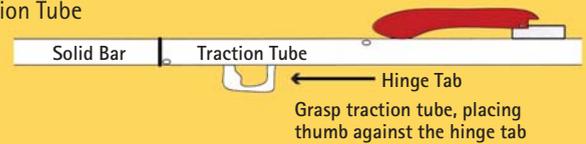
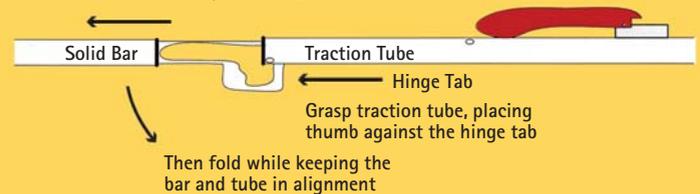


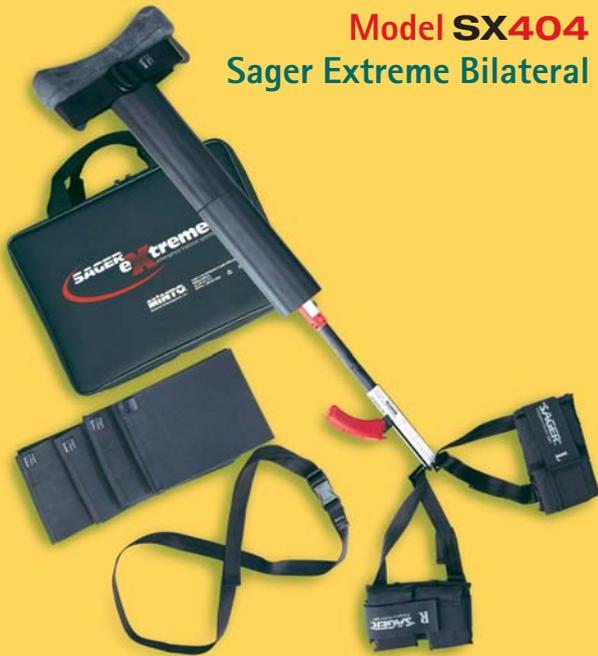
Diagram 2

Traction Tube "pull away from the traction Tube..."



Warning: Failure to follow Manufacturer's Assembly Instructions and Packing Procedures may result in damage to the splint and/or hinder the application of the splint. Minto Research & Development, Inc. is not responsible for incorrect assembly and/or usage of the splinting device. All Operators should receive full and proper initial/refresher instruction sessions from a qualified person on detailed use of this equipment and regarding the particular situations in which it should be used. Please defer to federal, state, and/or local protocol for definitive analysis and guidelines.

Model **SX404** Sager Extreme Bilateral



Step 1 ▶ Position



Position the Sager **SX404** between the patient's legs, resting the ischial perineal cushion (the saddle) against the ischial tuberosity, with the shortest end of the articulating base towards the ground. In the case of a unilateral fracture, the splint should be placed in the perineum on the side of the injury. In bilateral fractures, excluding

pelvic trauma, the side with the greatest degree of injury should be the side of placement. Apply the abductor bridle (thigh strap) around the upper thigh of the fractured limb. Push the ischial perineal cushion gently down while at the same time pulling the thigh strap laterally under the patient's thigh. This will seat the lower end of the cushion comfortably against the ischial tuberosity. Tighten the thigh strap lightly. Lift the spring clip to extend the inner shaft on the **SX404** until the crossbar rests adjacent to the patient's heels.

Step 2 ▶ Set



Note the absence or presence of distal pulses, check for sensation. Position the malleolar harness (ankle harness) beneath the heel(s) and just above the ankle(s). Fold down the number of comfort cushions needed to engage the ankle above the medial and lateral malleoli. Using the attached hook and loop straps wrap the ankle

harness around the ankle to secure snugly. Pull control tabs to engage the ankle harness tightly against the crossbar. Apply Quantifiable Dynamic Traction. Grasp the padded shaft of the **SX404** with one hand and the red traction handle with the other; gently extend the inner shaft until the desired amount of traction is recorded on the traction scale. It is suggested to use 10% of the patient's body weight per fractured femur up to 7kg (15 pounds) for each leg. If bilateral fractures are present – the maximum amount would be 14kg (30 pounds). At the hollow of the knees, gently slide the large elastic leg cravat through and upwards to the thigh repeating with the smaller cravats to minimize lower and mid-limb movement.

Step 3 ▶ Secure



Adjust the abductor bridle (thigh strap) at the upper thigh making sure it is not too tight, but snug and secure, then firmly secure the elastic leg cravats. Apply the pedal pinion (figure 8 strap) around the feet to prevent rotation. Note the absence or presence of distal pulses, check for sensation. Patient is now ready for transport.

Warning: All Operators should receive full and proper initial/refresher instruction sessions from a qualified person on detailed use of this equipment and regarding the particular situations in which it should be used.

Multiple Fractures

If a patient has multiple fractures, femur as well as tibia-fibula fractures, use of the Sager is recommended. In the case of ankle fractures along with a femur fracture, an air splint should be placed over the ankle with the Sager malleolar harness (ankle harness) applied over the air splint. This method was developed by innovative Paramedics to provide traction with alignment and immobilization of all fractures.

The **SX404** has been designed for rapid one-person assembly and rapid one-person application. The splint can be assembled and applied in under 2.5 minutes. To assemble the splint, simply unfold and secure into place. The **SX404's** unique tri-fold semi-attached design ensures that no major parts will be lost or incorrectly assembled.



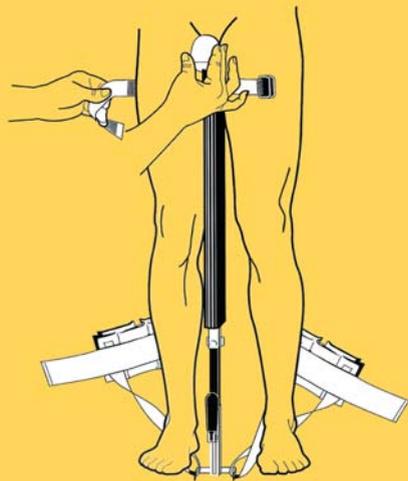
1 Remove and unfold the outer shaft assembly.



2 Remove, unfold and lock the inner shaft assembly.

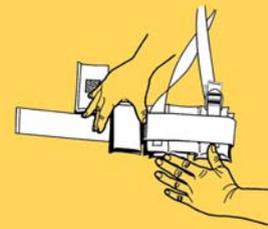


3 Insert inner shaft assembly into the outer shaft assembly. Splint is ready to apply.



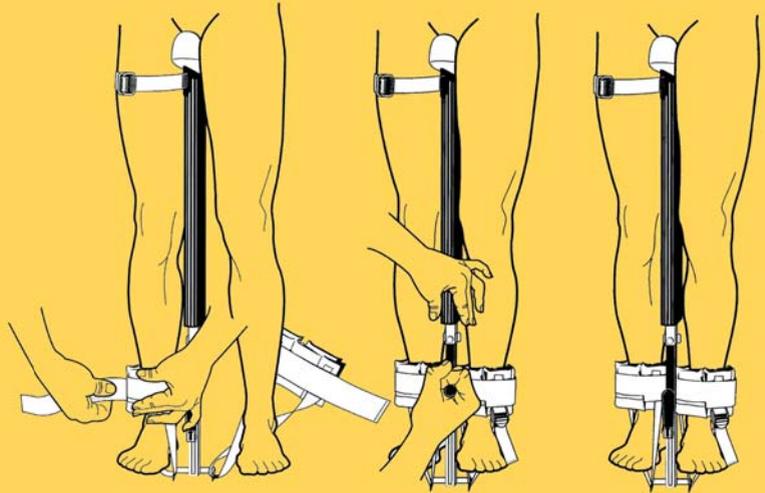
Position:

a. Position the Sager **SX404** between the patient's legs, resting the ischial perineal cushion (the saddle) against the ischial tuberosity, with the shortest end of the articulating base towards the ground.



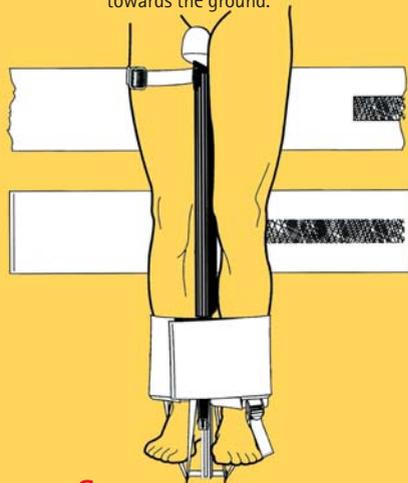
Set:

b. Fold down the number of comfort cushions needed to engage the ankle above the medial and lateral malleoli.



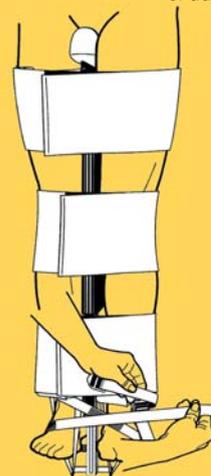
c. Using the attached hook and loop straps wrap the ankle harness around the ankle to secure snugly

d. Pull control tabs to engage the ankle harness tightly against the crossbar. Apply **Quantifiable, Dynamic Traction**. Grasp the padded shaft of the **SX404** with one hand and the red traction handle with the other; gently extend the inner shaft until the desired amount of traction is recorded on the traction scale.

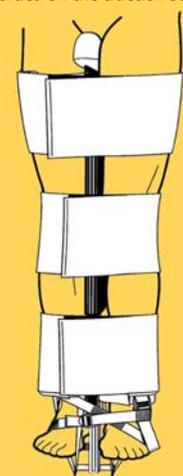


Secure:

e. Adjust the abductor bridle (thigh strap) at the upper thigh making sure it is not too tight, but snug and secure, then firmly secure the elastic leg cravats.



f. Apply the pedal pinion (figure 8 strap) around the feet to prevent rotation. Note the absence or presence of distal pulses, check for sensation. Patient is now ready for transport.



How much traction should I apply?

Apply the amount of traction recommended by your medical consultant, or that required by protocol. For adults, the American Academy of Orthopedic Surgeons recommends gentle traction to a maximum of 7kg (15 pounds) per fractured femur (14kg (30 pounds) for a bilateral fracture)). A general rule of thumb is 10% of the patient's body weight per fractured femur. For example; if a patient weighing 45kg (100 pounds) has a single fracture, the appropriate amount of traction would be 4½kg (10 pounds). If that same person has a bilateral fracture, 9kg (20 pounds) would be estimated. The **SX404** Sager Splint is designed to register a maximum of 14kg (30 pounds) of traction. There are rare circumstances, such as patients who have highly developed muscles, where the initial traction of more than the maximum of 14kg (30 pounds) is required. This is easily accomplished by extending the splint shaft beyond the 14kg (30 pound) stop, increasing the traction beyond the maximum registered.



Indications and contraindications for the use of traction splints on femoral fractures.

Sager splints are indicated for use on proximal third and mid-shaft femoral fractures.

All traction splints of any kind are contraindicated in the case of fractured pelvises unless the Medical Consultant indicates otherwise, or a MAST Trousers has been applied – in which case a Sager Splint can be applied over the MAST Trousers. Supracondylar fractures of the knee and ankles fractures are also contraindicated. The contraindications listed above are only intended as a basic reference tool. Please defer to federal, state, and/or local protocol for definitive analysis and guidelines.



Caution: Sager Emergency Traction Splints are just that - short-term emergency traction devices for use at the scene of an accident and while transporting the patient for more definitive care. Prolonged use of any traction device can cause pressure sores and/or other medical problems. If prolonged use is unavoidable, the splint contact areas should be monitored frequently and reduced traction and/or no traction and/or repositioning of the device should be considered. Please refer to local/state/federal splinting protocols for definitive guidance.

Articulating Base and Cushion



Articulating Base and Cushion (the saddle) bends laterally for seating and exacting conformance to the ischial tuberosity. With a **SX404**, most perineal examinations and procedures can be performed with the splint in place – without compromising the comfort and safety of the patient. The **SX404's** well-padded shaft cushion provides additional comfort and stability.

Shock Trousers



If shock trousers are used in cases of multiple trauma, Sager Splints may be used either over or under the shock garment to rapidly provide traction and alignment. The optimum in treatment is to apply the Sager Splint prior to the application of the trousers. In the case where trousers have already been applied, the splint may also be placed over the trousers with good results. If the splint is applied first, the patients' fractured femur is stabilized and it becomes simple to clothe the patient in shock trousers. The shaft of the splint is closely applied to the medial side of the thigh and the ischial perineal cushion is located so that it lies in the perineal opening of the garment. In addition, since the splint is applied closely to the leg, there is excellent contouring of the pressure bladder of the trouser around the shaft of the splint and over the leg. The possibility of tenting between the shock trouser and the splint shaft is so small that it becomes negligible.

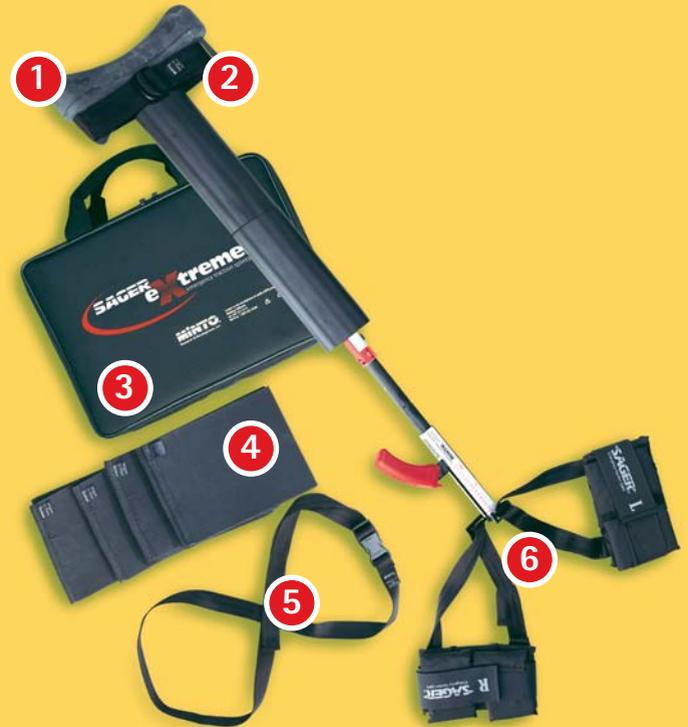
Comfort

How comfortable are Sager Splints against male and female genitalia? The ischial perineal cushion of the splint rests against the ischial tuberosity and with natural genital mobility the male genitalia can be checked and moved to ensure it is not under any pressure. During actual accident situations the clothing should be opened, cut and/or removed during the general assessment procedures. In practice trials, loose clothing should be worn to enable genital mobility. (Note: the structures used and pressed on are the same as sitting on a bicycle seat).



Comes complete with all accessories required for use, including the Sager Carrying Case.

- 1 One Ischial Perineal Cushion (saddle).
Cat.#S324
- 2 One Abductor Bridle (thigh strap).
Cat.# S357
- 3 One Carry Case.
Cat.# SX417
- 4 One Leg Cravat Kit (2 short, 1 long,
1 extra long. Cat.# S346
- 5 One Pedal Pinion (figure eight strap).
Cat.#S345
- 6 Two Malleolar Harnesses (ankle harnesses)
(1 ea. Right, 1 ea. Left). Cat.#S34



Cleaning Instructions

Software Goods and Stainless Steel: "Manu-Klenz"¹ (i.e.: Sodium Dodecylbenzine Sulfonate and Coconut Diethylthanolamide). Effective manual washing of heavily soiled washable surfaces, medical instruments, counters, glass and plastic surfaces.

Directions: 1 ounce Manu-Klenz to 1 gallon water.

Stainless Steel: 70% Alcohol solution or above instructions.

Foam Rubber: "Precise"² Hospital Foam Cleanser/Disinfectant. (1, 2 or other comparable product).

Guarantee:

Each SX404 Sager Extreme Bilateral Emergency Traction Splint has been tested and is guaranteed by Minto Research & Development, Inc. to be free of defects for a period of five years under normal usage.



Caution: This product contains Natural Rubber Latex, which may cause allergic reactions.

The Sager Instructor's Package

Now available on-line: The Sager Instructor's Package provides training and lecture guidelines: Manual with student exam and exercises, training literature and student handouts. Application video is available from Minto Research & Development, Inc.

Contact your Authorized Sager Distributor for Pricing and Demonstrations.

Model SX405

Customize the splint to the patient with the **SEFRS SX405**.
Model SX405, SEFRS – Sager Emergency Fracture Response System Minto's complete fracture response system.

Combines a compact Sager Bilateral Emergency Traction Splint (for treatment of proximal third and mid-shaft fractures) with an Adaptor for treatment of all other fractures.



Model MFK700

Model MFK700, Minto Fracture Kit. Minto's basic fracture response kit. Compact, lightweight and MOLLE Equipped.

Treat extremity fractures, dislocations and joint injuries with less movement, injury and pain. Splint in position found.

Cost effective and Compliments existing Sager Splints.

