HANDS ON DEMONSTRATION & SURGICAL SKILLS MODELS

SPINE
Products Catalog

Expert models and skills development systems for demonstration and training

A Division of Pacific Research Laboratories, Inc.
www.sawbones.com
SOLID FOAM
Solid foam models are made of rigid foam throughout. This is an economical material for general anatomy. Any pathology or fracture pattern can be replicated.
Most commonly used for plates and cages. Can also be used for pedicle screws.

FOAM CORTICAL SHELL WITH CANCELLOUS
Foam cortical shell models are made of a rigid foam shell with inner cancellous material. These models can be cut and drilled easily. Any pathology or fracture pattern can be replicated.
Most commonly used for all general spine procedures as a workshop bone.

SOLID WHITE PLASTIC
Solid plastic models are made of a rigid plastic and are very durable. Most commonly used for patient education or product display.

RADIOPAQUE
Radiopaque models are designed for use with Xray or Fluoroscopy and contain a visible high contrast cortical shell. Any solid foam or foam cortical shell model can be converted to radiopaque.
See page 13 for more details.

BIOMECHANICAL TEST MATERIAL
Biomechanical test materials and composite bones mimic the physical strength properties similar to real bone. They are most commonly used for testing, comparing or designing implants and other devices.
Please refer to our website www.sawbones.com or download our biomechanical catalog for more details and options.

SOLID CLEAR
Solid clear models are made of a solid clear plastic. We can install customer-provided implants. Most commonly used for product display.
Please refer to our website www.sawbones.com or download our solid clear catalog for more details and options.
Sawbones needed a model that could showcase their spinal implant and also provide a workshop opportunity for the user to deploy the device and watch it work. Solution: a clear model mounted to a base with built-in lighting to highlight the device during surgical deployment.

NEW – upgraded formula that allows for large pedicle screw insertion.

NEW- spinal reduction/alignment holder designed to be completely adjustable for increased stability when performing various spinal alignment procedures. See page 4 for more details.

Visualizing the actual function and movement of a device when it is deployed can have a huge educational impact. This clear model allows the mechanics of the spinal device to be repeatedly demonstrated in action.

Stryker needed a model that could showcase their spinal implant and also provide a workshop opportunity for the user to deploy the device and watch it work. Solution: a clear model mounted to a base with built-in lighting to highlight the device during surgical deployment.
WORKSHOP
Commonly used for cages, plates, and pedicle screws.

★ #1323 C1 to sacrum articulated with anterior and posterior ligaments and tan flexible discs. Includes malleable rod for limited manipulation and fixation. Solid foam.

#1323-1 C1 to sacrum articulated with anterior and posterior ligaments and tan flexible discs. With full male pelvis. Includes malleable rod for limited manipulation and fixation. Solid foam.

#1323-4 C1 to T12 made of solid foam. The lumbar vertebrae, sacrum, and pelvis include cancellous inner material.

#1323-8 Occipital to sacrum. Includes malleable rod for limited manipulation and fixation. Solid foam.

#1323-25 C1 to sacrum. C1 to L3 made of solid foam while the L4 to sacrum contain cancellous inner material.

HOLDERS
Semi-flexible and reusable. Spine models sold separately.

#1526 C1 to sacrum. Posterior approach.

#1526-4 C1 to sacrum. Anterior approach.

DISPLAY

#1701-100 C1 to sacrum articulated with white foam discs. Includes #5137 stand. Solid clear.

#1701-100-1 C1 to sacrum with nerve roots and articulated with white foam discs. Includes #5137 stand. Solid clear.

#1701-100-3 C1 to sacrum with full pelvis, nerve roots and articulated with white foam discs. Includes #5137 stand. Solid clear.

#1701-100-4 Occipital to sacrum articulated with white foam discs. Includes #5137 stand. Solid clear.

★ = Top Seller

#1526 shown in use
SCOLIOSIS TRAINING

All models include malleable rod for limited manipulation and fixation.

#1323-20 T1 to sacrum includes 55° left scoliosis curve and 15° rotation with periosteum. Solid foam.

#1323-22 T3 to sacrum includes 25° scoliotic curve with the apex at T9 and periosteum. Foam cortical shell with cancellous.

#1323-24 C1 to sacrum articulated with tan flexible discs. Foam cortical shell with cancellous.

★ #1323-40 C1 to sacrum includes flex and hold feature to allow repeatable reduction of scoliosis angulation and rotation. Solid foam.

#1323-40-1 C1 to sacrum with full pelvis includes flex and hold feature to allow repeatable reduction of scoliosis angulation and rotation. Solid foam.

SCOLIOSIS HOLDERS

#1526-3 T1 to sacrum soft tissue scoliosis holder. Accepts most Sawbones scoliosis models. Anterior approach.

#1703-100-13 Spinal reduction/alignment holder is designed to be completely adjustable for increased stability when performing various spinal alignment procedures. Full length spine models (with or without full pelvis) can be secured into position on the three malleable, nonslip center pads and adjusted vertically, as well as horizontally, to specific spinal deformities. Quick release riser pads allow for the user to easily raise and lower the pads. Practice alignment or reduction procedures of several spinal conditions including scoliosis, extreme lordosis, and kyphosis. Spine models sold separately.

SCOLIOSIS DISPLAY

#1702-19 C1 to sacrum includes flex and hold feature* to allow repeatable reduction of scoliosis angulation and rotation. Can be customized with pre-drilled pedicle holes. Solid smooth white plastic.

TRAVEL CASE


★ = Top Seller
#1528-5
C1 to C7 articulated with anterior and posterior ligaments and white flexible discs. Solid foam.
#1326-2
Occipital to C7 articulated with anterior and posterior ligaments and tan flexible discs. Solid foam.
#1326-5
Occipital to C7 articulated with posterior ligament only and tan ensolite discs. Solid foam.
#1326-6
C1 to C7 articulated with posterior ligament and tan flexible discs. Solid foam.
#1326-53
C1 to C7, articulated with white flexible discs, and fused to posterior block. Semi-flexible, non-slip block allows for table top demonstration and training of cervical plate and interbody placement. Solid foam.
#1351
C1 to C7 articulated with anterior and posterior ligaments and tan flexible discs. Foam cortical shell with cancellous.
#1351-1
C1 to C7 articulated with posterior ligament and tan flexible discs. Foam cortical shell with cancellous.

**WORKSHOP**
Commonly used for cages, plates, and pedicle screws.

**DISPLAY**
#1701-125
C1 to C7 articulated with white foam discs on a black walnut stand. Without stand #1701-129. Solid clear.
#1701-125-1
Occipital to C7 articulated with white foam discs. No stand. Solid clear.
#1701-125-2
C5 to C6 articulated with white foam discs. No stand. Solid clear.
#1701-126
C1 to C7 with nerve roots and articulated with white foam discs. Includes black walnut stand. Solid clear.

**HANDS-ON DISPLAY**
Semi-flexible and reusable.

#4050-2
C1 to C7 articulated with anterior and posterior ligaments and clear semi rigid discs. Solid white plastic.

**HOLDERS**
#1528-5
C1 to C7 with or without occipital. Spine model sold separately. Posterior approach.
#1528-6
C1 to C7 with or without occipital. Spine model sold separately. Anterior approach.
#1528-10
Occipital to C7 encased in partial head for posterior approach. Suitable for most implant applications. Additional anatomy can be added upon request.
#1703-201
Clear head and neck shell mounted on base in the supine position includes replaceable clear window #1710-5-1 and cervical vertebrae #1326-5. Anterior approach.
#1703-402
Clear head and neck shell mounted on base in the supine position with open cervical access point includes replaceable solid foam block. Anterior approach.

★ = Top Seller
## WORKSHOP
*Commonly used for cages, plates, and pedicle screws.*

- **#1323-3** T1 to sacrum articulated with anterior and posterior ligaments and clear semi-rigid discs. Includes malleable rod for limited manipulation and fixation. Solid foam.
- **#1325** T1 to T12 articulated with anterior and posterior ligaments and tan flexible discs. Includes malleable rod for limited manipulation and fixation. Solid foam.
- **#1325-2** T8 to sacrum articulated with anterior and posterior ligaments and tan flexible discs. Solid foam.
- **#1325-3** T9 to L2 articulated with anterior and posterior ligaments and tan flexible discs. Foam cortical shell with cancellous.
- **#1325-7** T5 to T8 with proximal ribs cut to 10 cm. Solid foam.
- **#1325-11** T1 to T12 articulated with anterior and posterior ligaments and tan flexible discs. Foam cortical shell with cancellous.
- **#1325-14** T7 to L2 articulated with tan flexible discs. Solid foam.

## DISPLAY
- **#1701-606** T1 to T12 articulated with white foam discs without stand. Solid clear.

## HANDS-ON DISPLAY
- **#1702-23** T7 to sacrum with iliac wings and pre-drilled pedicle holes. Solid smooth white plastic.
- **#1702-19-2** T7 to sacrum with notched iliac crests and pilot holes all levels. Solid smooth white plastic.

## HOLDERS
*Semi-flexible and reusable. Spine models sold separately.*
- **#1526-2** T1 to sacrum spine models. Posterior approach.
- **#1526-2-1** T1 to sacrum with iliac crests. Posterior approach.
- **#1526-5** T1 to sacrum spine models. Left lateral approach.
- **#1526-9** T7 to sacrum and iliac spine models without posterior muscle anatomy. Posterior approach.

★ = Top Seller
WORKSHOP
Commonly used for cages, plates, and pedicle screws.

* #1300-5 L1 to sacrum includes full male pelvis and left-side psoas major muscle for lateral approach procedures. Solid foam.
* #1324 L1 to sacrum articulated with anterior and posterior ligaments and flexible discs. Solid foam.
* #1324-1 L1 to L5 articulated with anterior and posterior ligaments and flexible discs. Solid foam.
* #1324-44 L4 to sacrum without ligaments. Solid foam.
* #1328 L1 to sacrum articulated with ligament subflavum and supraspinatus ligaments. Solid foam.
* #1340 L3 to sacrum articulated with anterior and posterior ligaments. Foam cortical shell with cancellous.
* #1340-3 L3 to sacrum with bilateral ligaments under tension, ideal for discectomy applications. Solid foam.
* #1340-10 L3 to sacrum articulated with anterior and posterior ligaments. Solid foam.
* #1352 L1 to sacrum. Foam cortical shell with cancellous.
* #1352-26 L1 to sacrum with bilateral iliac crests. Vertebrae and sacrum include cancellous inner material.
* #1352-84 L1 to sacrum with iliac crests, dura, nerve root, flexible aorta and vena cava allowing for easy retraction. Anterior approach. Foam cortical shell with cancellous.

HOLDERS
Semi-flexible and reusable. Spine models sold separately.

* #1524 L1 to sacrum lumbar models without posterior muscle anatomy. Posterior approach.
* #1524-1 Lumbar and MIS models with posterior muscle anatomy. Posterior approach.
* #1524-3 L1 to sacrum lumbar models without posterior muscle anatomy. Anterior approach.
* #1524-11 Lumbar and MIS models with posterior muscle anatomy. Includes replaceable clear Mylar cover #1801-1. Posterior approach.
* #1524-26 L1 to sacrum models with or without muscle structures. Posterior approach.
* #1524-41 L1 to sacrum models with iliac crests. Posterior approach.
* #1524-58 L1 to pelvis models. For both anterior and posterior approach positions. Secures to working surface without the use of clamps. Holds full pelvis models with or without lumbar vertebrae, up to L1. Ideal for practicing SI joint fixation and external fixation.

★ = Top Seller
MIS LUMBAR WITH MUSCLES

#1340-17 L3 to sacrum with multifidus and erector spine muscles. Foam cortical shell with cancellous. Use with #1524-1 or #1524-11 holder.

#1352-47 L1 to sacrum with multifidus and erector spine muscles. Foam cortical shell with cancellous. Use with #1524-1 or #1524-11 holder.

MINIMALLY INVASIVE SURGERY

#1524-24 MIS lumbar holder and cover. Soft tissue can be incised, will securely hold access dilators/instruments, and has self-healing material. Includes #1352 lumbar spine, #1524-22-1 clear cover and #1524-1 holder.

#1524-22-1 Clear cover without portals.

#1524-22-3 Tan cover without portals.

#1524-22-8 Clear cover with bilateral portals L1 to sacrum with connecting channels.

FRACTURED/PATHOLOGY

Fractured and pathology models can be made in any configuration. More models are available on the website.

#1324-8 L1 to sacrum includes severe spinal stenosis of L3, L4 and L5 with dura and nerve roots. Solid foam.

#1324-14 L1 to sacrum includes spondylolisthesis of L5 to S1 secured with latex band. Solid foam.

#1324-18 T10 to sacrum with nerve roots and kyphosis at L2. Solid foam.

#1352-1 L1 to sacrum includes dura, nerve roots and solid L5 with spinal stenosis Foam cortical shell with cancellous.

#1352-2 L1 to sacrum with spondylolisthesis of L5 to S1. Specify grade 1, 2, 3, or 4 when ordering. Grade 1 pictured. Foam cortical shell with cancellous.

#1352-13 T10 to sacrum with severe L1 burst fracture. Foam cortical shell with cancellous.

DISPLAY

#1701-110 L1 to sacrum articulated with white foam discs. Solid clear.

#1701-120 L3 to sacrum articulated with white foam discs. Solid clear.

HANDS-ON DISPLAY

#1702-24 L1 to sacrum with pre-drilled 4 x 40 mm pedicle holes at L3, L4 and L5. Smooth white plastic.
POSTERIOR APPROACH
For lumbar specific applications where external visualization is desired.

#1703-59-1 Holder includes portable stand with clear torso shaped removable shell, lumbar model #1352, and clear flexible window #1485-65-10 over access point.

#1703-203-1 Black aluminium holder includes replaceable clear flexible cover #1485-155 and lumbar model #1352. Possibility to custom color the holder.

#1703-203-14 Same as #1703-203-1 but with black base.

LATERAL APPROACH
For lumbar specific applications where external visualization is desired.

#1703-59-4 Holder includes portable stand with clear removable shell, lumbar model #1352, and clear flexible window #1485-65-10 over access point. Adjustable bone clamps control the degree of disc space access.

#1703-59-11 Holder includes portable stand with clear removable shell, lumbar model #1352, psoas muscle #1870-186-1 and clear flexible window #1485-65-10 over access point. Adjustable bone clamps control the degree of disc space access.

#1703-59-12 Portable stand and adjustable clamps that control the degree of lateral decubitus. Includes replaceable L1 to sacrum #1352.
#1513-19 T7 to sacrum spine holder includes replaceable T7 to L5 model #1352-31 and clear #1513-62 and opaque #1513-61 covers. Can be used with or without "C" arm. Custom options available.

#1513-38 L1 to sacrum spine holder includes clear cover #1513-59, and opaque cover #1513-58. Can be used with or without "C" arm. Spine model sold separately. Custom options are available. Compatible with spine models #1324, #1352, #1352-33, #1352-39, #1352-44.

#1513-51 Head to mid femur spine holder with replaceable opaque cover #1513-31-2. Suitable for all levels of vertebroplasty, as well as any minimally invasive or image related targeting procedures from C1-Sacrum. Model comes with high resolution iliac crests. Compatible with spine models #1323, #1323-24, #1323-25, and #1323-41.

Numerous combinations of spines can be used with the soft tissue trunks. Contact us for more product details and application ideas.

TRUNK HOLDER

#1703-512-1 Holder for #1513-19 series trunks, black. Posterior access.
#1377-3 Specify level C3-C7. Foam cortical shell with cancellous.
#1377-40 Solid foam.
#1384-10 Specify level C4-C7. Solid white plastic.

#1379-3 Specify level T1-T12 (unless otherwise noted).
#1379-1 Osteoporotic foam cortical shell with cancellous.
#1379-60 Foam cortical shell with cancellous.
#1386-10 Solid white plastic.

LUMBAR
Specify level L1-L5 (unless otherwise noted).
#1375-40 Solid foam.
#1378-60 Foam cortical shell with cancellous.
#1385-10 Solid white plastic.

NUCLEUS EXTRACTION LUMBAR
#1701-251 With replaceable disc #1575-10. Disc includes flexible gel-filled nucleus. Solid clear.
WORKSHOP

Pediatric models are the size of an average 6-8 year old child. All models include malleable rod for limited manipulation and fixation.

#1323-30 C1 to sacrum articulated with anterior and posterior ligaments and tan flexible discs. Solid foam.

#1323-31 C1 to sacrum includes complete rib cage and clavicles. Solid foam.

#1323-31-1 C1 to sacrum includes full rib cage and clavicles with spondylothoracic dysplasia. Solid foam.

#1323-32 C1 to sacrum includes clavicles, scapulas, full rib cage, and pelvis. Solid foam.

#1323-34 C1 to sacrum includes clavicles, scapulas, full rib cage and pelvis. Spine has a 62 degree right lumbar, left thoracic, scoliotic curve. Rib cage has fused ribs (four through eight) of the right side. Solid foam.

#1323-34-1 T1 to sacrum includes clavicles, scapulas, full rib cage and pelvis. Spine has a 62 degree right lumbar, left thoracic, scoliotic curve. Rib cage has fused ribs (four through eight) of the right side. Solid foam.

#1323-37-1 C1 to sacrum includes clavicles, scapulas, full rib cage, and pelvis. Right ribs with simulated semi-flexible cartilage. Solid white plastic.

#1375-15 Individual lumbar vertebrae. Solid foam. Specify level when ordering (1-5).

#1376-15 Individual thoracic vertebrae. Solid foam. Specify level when ordering (1-12).

#1377-15 Individual cervical vertebrae. Solid foam. Specify level when ordering (1-7).

HOLDER

Semi-flexible and reusable. Spine models sold separately.

#1526-6 Holder for C1 to sacrum pediatric spine models without posterior muscle anatomy. Posterior approach.
STANDARD RESOLUTION*

*Examples show foam cortical shell with cancellous material.

RADIOPAQUE

The radiopaque option provides a brighter and more refined image. Most Sawbones models can be made with a radiopaque option on the outer cortical wall.

WORKSHOP

All models include cancellous inner material and radiopaque properties unless otherwise listed.

CERVICAL

#1351-9 C1 to C7 articulated with anterior ligament.
#1351-10 Occipital to C7 articulated with anterior and posterior ligaments and tan flexible discs.

THORACIC

#1325-20 T1 to T12 articulated with posterior latex ligament and tan flexible discs.

LUMBAR

#1340-17-1 L3 to sacrum with bilateral multifidus and erector spine muscles articulated with anterior and posterior naugahide ligaments and tan flexible discs.
#1352-33 L1 to L5 with osteoporotic cortex and open-cell cancellous inner material that will accept cement.
#1352-35 T7 to L5 with osteoporotic cortex. T7 and T8 include standard cancellous inner material and T9 through L5 include open-cell cancellous inner material that will accept cement.
#1352-39 L1 to sacrum articulated with 12.5 mm anterior latex ligament and tan flexible discs with osteoporotic cortex, and open-cell cancellous inner material that will accept cement.
#1352-44 L1 to sacrum articulated with 19 mm anterior latex ligament and tan flexible discs with osteoporotic cortex, and open-cell cancellous inner material that will accept cement.
#1352-47-1 L1 to sacrum with bilateral multifidus and erector spine muscles articulated with anterior and posterior naugahide ligaments and tan flexible discs.
#1352-77 L1 to sacrum articulated with tan flexible discs, and anterior and posterior ligaments.
#1352-83 L1 to sacrum with bilateral iliac crests. Includes radiopaque properties. Articulated with anterior and posterior latex ligaments and tan flexible discs.

FULL SPINE

#1323-41 C1 to sacrum articulated with anterior and posterior ligaments and tan flexible discs.
BIOMECHANICAL TEST MATERIALS
For more information about blocks, sheets, cylinders see our biomechanical catalog or our website. Primarily used in testing of orthopaedic implants, and instrumentation.

BIOMECHANICAL SPINE
The biomechanical spine models are a consistent and durable testing alternative to cadaver specimens that may be used for feasibility testing of orthopaedic devices or spine testing protocol development.

SINGLE LEVEL


#3429-3-2 Individual composite L3 vertebrae with 10 PCF (0.16 g/cc) density solid foam cancellous core. Dimensions: a) 48 mm; b) 35 mm; c) 11 mm; Pedicle height 16 mm. Also available with 20 PCF solid foam cancellous, #3429-3-5.

#3429-4-2 Individual composite L4 vertebrae with 10 PCF (0.16 g/cc) density solid foam cancellous core. Dimensions: a) 52 mm; b) 36 mm; c) 14 mm; Pedicle height 16 mm. Also available with 20 PCF solid foam cancellous, #3429-4-5.

#3429-5-2 Individual composite L5 vertebrae with 10 PCF (0.16 g/cc) density solid foam cancellous core. Dimensions: a) 56 mm; b) 36 mm; c) 15 mm; Pedicle height 16 mm. Also available with 20 PCF solid foam cancellous, #3429-5-5.

MULTIPLE LEVELS

RANGE OF MOTION TEST MODEL

#3430 Potted T12 to sacrum without cancellous inner material.

#3430-1 T12 to sacrum solid cortical, no cancellous foam, not potted.

#3430-25 Potted L2 to L5 solid cortical, no cancellous foam.*

#3430-34 Potted L3 to L4 solid cortical, no cancellous foam.*

#3430-34-2 Potted L3 to L4 with 10 PCF solid foam cancellous core.*

#3430-34-6 L3 to L4 solid cortical with 10 PCF solid foam cancellous core. No potted end blocks.

*unpotted versions available as well
SAWBONES CUSTOMER COMMITMENT AND PRODUCT GUARANTEE

At Sawbones, we are committed to providing the highest level of service and product quality. If you are less than completely satisfied with the performance of our products for any reason, we will gladly honor a full refund or replacement.

Contact us anytime with suggestions on how we can improve our products or service.

ORDERING INFORMATION

Please provide the part number, description, and quantity for each item requested.

Indicate precise shipping instructions, if different than the billing address, and purchase order number when applicable.

Credit cards and bank transfers accepted. Please call customer service.

SAWBONES CORPORATE HEADQUARTERS
Servicing North America, South America, Asia and Australia

10221 SW 188th Street, PO Box 409
Vashon, Washington 98070, USA

E-mail: info@sawbones.com
Tel: (206) 463-5551
Fax: (206) 463-2526

SAWBONES EUROPE AB
Servicing Europe, Middle East and Africa

Krossverksgatan 3,
216 16 Malmö, Sweden

E-mail: info@sawbones.se
Tel: +46 (0)40 650 70 00