TRAUMA HAL®
S3040.100

Rugged, Resilient, and Tetherless

- Durable and splash proof
- Quadruple trauma limbs and bleeding wounds
- BleedSmart™ Real-time blood loss monitoring
- eCPR™ – CPR effectiveness monitor and trainer
- Wireless and tetherless up to 900 ft.
- 10 hour battery life
TRAUMA WITH BLEEDSMART™
HAL’s arteries bleed as a function of blood pressure and heart rate specified on wireless tablet PC. Sensors in his arms and legs respond to applied pressure and stop bleeding when tourniquet is applied correctly; his bleeding wounds at axilla and groin also respond to applied pressure and can be packed using combat gauze.

UNI® SOFTWARE + RUGGED TABLET

RUGGED
Instructor’s tablet PC includes a rugged “bump” case and also features wireless communications for up to 900 ft. Perfect for field conditions.

LONG RANGE WIRELESS CONTROL
Tetherless communications range up to 900 ft.

STREAMING AUDIO
Be the voice of Trauma HAL®; hear responses at distances up to 150 ft.

VERSATILE INTERFACE
Expand windows to include: palettes, scenarios, branching scenarios, actions, log, monitors, speech, medications, and quick meds.

SIMPLE INTERFACE
Physiologic parameter groups include airway, breathing, cardiac, cephalic, and circulation.

TETHERLESS
HAL’s communications, compressor, and power supply are inside the simulator, eliminating external tubes, wires and compressors. Control the simulation from up to 900 ft. away.

TESTED
Trauma HAL® is based upon the proven technology found in the HAL® 3000 which was independently tested and approved. MIL-STD tests included vibration, EMI testing for avionics, high and low temperatures, humidity, rapid decompression at 45000 feet, explosive atmospheres, and flight testing in fixed and rotary winged craft.

REALISTIC
• Streaming voice and pre-recorded verbal responses in any language
• Difficult airway with tongue edema, laryngospasm, and pharyngeal swelling
• Chest rise and fall responding to commands from wireless tablet PC
• Palpable ribs
• Height 178 cm/70 in
• Radial, brachial, carotid and femoral pulses operate continuously and are dependent upon blood pressure
• Articulating neck, arms, and legs feature rugged joints for field use
• Interchangeable arms and legs
DECONTAMINATION CAPABLE
Fully functional during soap and water decon spray procedure.

LIQUID SECRETION
Independent liquid secretion from ears, eyes, and mouth.

HEART AND LUNG SOUNDS
Multiple realistic heart sounds and anterior lung sounds.

OXYGEN SATURATION
Oxygen saturation can be measured using real equipment. Optional real CO₂ expiration.

CYANOSIS
Cyanosis and vital signs respond to physiologic conditions, and interventions.

PROGRAMMABLE AIRWAY
Programmable airway: tongue edema, laryngospasm, and pharyngeal swelling.

CPR SENSORS
Sensors detect and log ventilations and compressions. Includes eCPR™ with UNI® software.

INTRAOSSEOUS ACCESS
Intraosseous infusion system with interchangeable and replaceable tibial bones.

4 LEAD ECG
Optional 12-lead ECG. Use real equipment to obtain HAL’s ECG

BLOOD PRESSURE
Blood pressure can be taken using real equipment

GASTRIC DISTENTION
Gastric distention with esophageal intubation and excess BVM ventilation.

LIQUID SUCTION
Practice gastric liquid suctioning techniques.

CHEST TUBE PLACEMENT
Simulate pneumothorax exercise Defibrillation and Pacing Perform defibrillation and pacing with real AED pads

NASAL & ORAL INTUBATION
Endotracheal intubation using conventional ETTs. Unilateral chest rise with right mainstem intubation

BOWEL SOUNDS
Bowel sounds in four quadrants

BILATERAL LEG BLEED
Bleeding arteries in both right and left legs. Internal 1.5L reservoir and auxiliary input.
**AXILLA AND GROIN WOUNDS**

Sensors in wounds detect appropriate pressure reducing and then stopping blood flow from the wound. Wounds accept combat gauze.

**NEEDLE DECOMPRESSION**

Features palpable ribs to locate 2nd intercostal space for bilateral needle decompression. Sensors detect needle insertion and activate audible hiss during shallow needle insertion.

**TRAUMA ARM AND LEG**

Arteries bleed as a function of BP + HR specified on wireless tablet PC. Bleeding ceases when tourniquet is applied 2in above wound or 1 or 2in above the joint.
**SURGICAL CRICOID**

Perform lateral and medial incisions, then use “Trach-hook” used by Combat Medics to lift cricoid for airway assessment and insertion of “trach-tube”.

**FAST-1 STERNAL I/O**

Use FAST-1 Locator and position it below the sternal notch; sites are replaceable and either accept medications or can be used to collect fluids.

**STREAMING AUDIO**

Pre-recorded verbal responses in any language and bi-directional streaming audio up to 150 ft. away.
ANATOMY AND CONNECTIVITY
- Full body adult 70 inches (178 cm), 88 lbs. (40 kg)
- Rugged shoulder and hip joints allow dragging and carrying
- Splash proof for CBRN decontamination
- Self-contained design; all operating components and blood reservoirs stored inside the body
- Wireless and tetherless control; at distances of up to 900ft.
- Fully operational on battery power for up to 10hrs (AC power supported)
- Interchangeable trauma/healthy lower arms and legs
- Designed for fast scenario resets with automatic self-refilling reservoir system
- Ruggedized for outdoor climate

NEUROLOGIC
- Blinking eyes with reactive pupils
- Software controlled fluid secretion at ears, eyes, and mouth
- Mild and severe convulsions
- Wireless streaming audio; be the voice of Trauma HAL and hear responses at distances up to 150 ft.
- Library of prerecorded responses
- Programmable custom verbal responses in any language

AIRWAY
- Head tilt/chin lift
- Naso/orotracheal intubation: ETT, supraglottic airway, King® LT
- Retrograde intubation
- Fiber optic intubation
- Programmable difficult airway: tongue edema and pharyngeal swelling
- Laryngospasm with tight seal preventing intubation
- Surgical airway for cricothyrotomy, tracheotomy, and tracheal hook exercises
- Supports suctioning liquids from the airway and lungs
- Visible gastric distention with esophageal intubation

BREATHING
- Visible chest rise with BVM
- Ventilation detection
- Shallow and deep needle decompression with audible hiss and needle placement detection up to 3.25in.
- Unilateral chest rise and right mainstem intubation
- Spontaneous chest rise and fall with normal and abnormal respiratory patterns
- Selectable anterior lung sounds
- Bilateral chest tube insertion

CARDIAC
- Selectable normal and abnormal heart sounds
- Preprogrammed ECG rhythm library with customizable variations
- 4-Lead ECG monitoring using real equipment (12-lead option available item S3040.100.120)
- Defibrillation and pacing using real energy

CPR
- eCPR™ Real-time CPR performance monitoring
  » Time to CPR
  » Compression depth/rate
  » Chest recoil
  » Compression interruptions
  » Ventilation rate
  » Excessive ventilation
  » Time to defibrillation
  » Smart CPR voice coach
- Real end-tidal CO2 capability (option S3040.100.078)
- Durable chest recoil design

CIRCULATION
- Programmable cyanosis
- Measure blood pressure using a real blood pressure cuff
- Detectable oxygen saturation using real OSAT monitors
- Antecubital IV access
- Bilateral carotid, radial, brachial (antecubital fossa), femoral, popliteal, and pedal pulses
- Blood pressure dependent pulses
- Sternal I/O infusion supports F.A.S.T.1
- Tibia I/O access
- Bilateral deltoid and quadriceps IM injection sites

TRAUMA
- Quadruple trauma limbs: Interchangeable trauma lower arms and legs included
- Bleeding axilla and groin wounds detect applied pressure
- Trauma site arterial bleeding synched with heart rate and blood pressure
- Blood pressure Intravascular access bleeding rate
- Arm and legs tourniquet sensors
- Pressure on femoral artery reduces or stops distal bleeding in leg
- On-board 1.5 Lt. blood reservoir
- Automatic self-refilling reservoir system
- On-screen blood loss monitor and reservoir level

DIGESTIVE
- Internal fluid bladder with male genitalia for catheterization
- Bowel sounds in four quadrants

UNI® UNIFIED SIMULATOR CONTROL SOFTWARE
- Unified Interface Design
- Manual and Automatic Operating Modes
- 3D Patient Visualization
- Virtual patient monitor
- Scenario designer
- Preprogrammed scenario library
- eCPR™ – CPR effectiveness monitor and trainer
- Lab report designer
- Medication library with editor
- Questionnaire form designer
- Time stamped event logging
- Provider actions tracker
- UNI Control View Replay

TURNKEY PACKAGE INCLUDES
- Wireless tablet PC, protective “bump” case, and UNI software license
- RF Communications Module
- Battery charger/Power supply
- L/R Healthy lower arms and legs
- L/R Trauma lower arms and legs
- Axilla and groin wound inserts
- Replacement surgical tracheas
- Soft carrying case
- Hands-free blood reill bag
- User Manual
- One-Year Limited Warranty
- Extended warranty plans available
TRAUMA HAL® S3040.100

S3040.100
Patented; other patents pending
Available in the following ethnic skin tones at no extra charge:

Light / Medium (standard) / Dark

OPTION

CO2 EXHALATION
S3040.100.078
- Real and measurable EtCO₂
- 10 programmable levels of CO₂ output
- Internal CO₂ system allows tetherless operation

AUTOMATIC “PHYSIOLOGIC” CONTROL
S3040.100.600
- Intuitive interface and automation makes simulation easy
- Vital signs are generated in real time
- Drug library with medications
- Use of medications change conditions in real time mimicking real clinical situations
- Blood loss automatically affects related vital signs

ADVANCED 12 LEAD ECG
S3040.100.120
- Use real 12 lead ECG monitor
- Defibrillate, cardiovert or pace
- HAL’s dysrhythmia
- Design 12 lead ECGs using our editing feature:
  - Create and modify waveforms even on a “point-by-point” basis
- Monitor ECG using real monitoring equipment
- Use the integrated MI module to:
  » Specify occlusions, ischemia, injury, necrosis
  » Modify infarctions quickly and easily
  » Resultant dynamic 12 lead ECG quickly generated

TRAUMA HAL® S3040.100 | Rugged and Resilient Trauma Simulator

D/C VIRTUAL MONITOR
S3040.100.002
- Interactive virtual patient monitor displays vital signs in real time
- Display numeric values and waveforms
- Customizable layout, threshold alarms

WOUND KITS
ADULT EMERGENCY WOUND KIT
WK100
11 wound types • 18 total wounds

ADULT BURN WOUND KIT
WK105
5 wound types • 10 total wounds

ADULT TRAUMA WOUND KIT
WK110
11 wound types • 18 total wounds

CONSUMABLES
INTRAOSSEOUS STERNAL ACCESS SITE
S3040.100.121
SET OF 5 SURGICAL TRACHEA INSERTS
S3040.100.035
SET OF 10 TRACHEA SKIN COVERS
S3040.100.122
SET OF 10 CRICOTHYROID MEMBRANES
S3040.100.037.R2
BLOOD CONCENTRATE
S3040.100.080

REPLACEMENT PARTS
IV FILL KIT (STANDARD)
S3040.100.048
EXTERNAL BLOOD FILLING KIT
S3040.100.050
MINERAL OIL
S3040.100.181
TRAUMA ARM
S3040.100.005
TRAUMA LEG
S3040.100.004
AXILLA WOUND INSERT
S3040.100.109A
GROIN WOUND INSERT
S3040.100.109G
AXILLA HEALTHY INSERT
S3040.100.108A
GROIN HEALTHY INSERT
S3040.100.108G
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S3040.100.011
RF MODULE
S3040.100.206
CHEST SKIN REPLACEMENT
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INDEPENDENT AEROMEDICAL RESEARCH LABORATORY
TESTS CONDUCTED ON COMPARABLE HAL® S3000 SIMULATOR

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REQUEST A QUOTE
14700 SW 136th Street
Miami, Florida 33196-5691

P.O. Box 140098
Coral Gables, Florida 33114-0098

Toll Free USA
Call 8:00 a.m. - 7:30 p.m. ET
Monday - Friday
800.882.6655

Worldwide
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Fax
305.252.0755
24 hours

Web Site
www.gaumard.com

Sales / Customer Service
sales@gaumard.com

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