OPERATIONS MANUAL

2021 EDITION
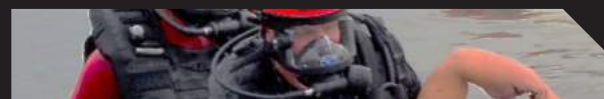
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NARS Tablet

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NARS Tablet Overview

This section will cover:

- Launching NARS Advanced Remote Software

- Finding and Connecting with NARS Devices.

- *TOMManikin®* operational features and functions (detailed demonstrations):
  ◊ Breathing (unilateral/bilateral lung control)
  ◊ Pneumothorax features
  ◊ Pulses (rate, pressure, and regularity)
  ◊ TOMManikin speech
  ◊ Bleeding (upper/lower locations, rate)

- Developing a Training Scenario
  ◊ Selecting Evaluation
  ◊ Entering Cadre and Student Information
  ◊ Scoring Performance
  ◊ Evaluations - How to save, store, and export

Before you begin...

TIP: Ensure that A) the tablet is fully charged, and B) the USB wireless dongle is snuggly fastened on the X-Bee port (the small black box on the back of the tablet) securely in the tablet's port.

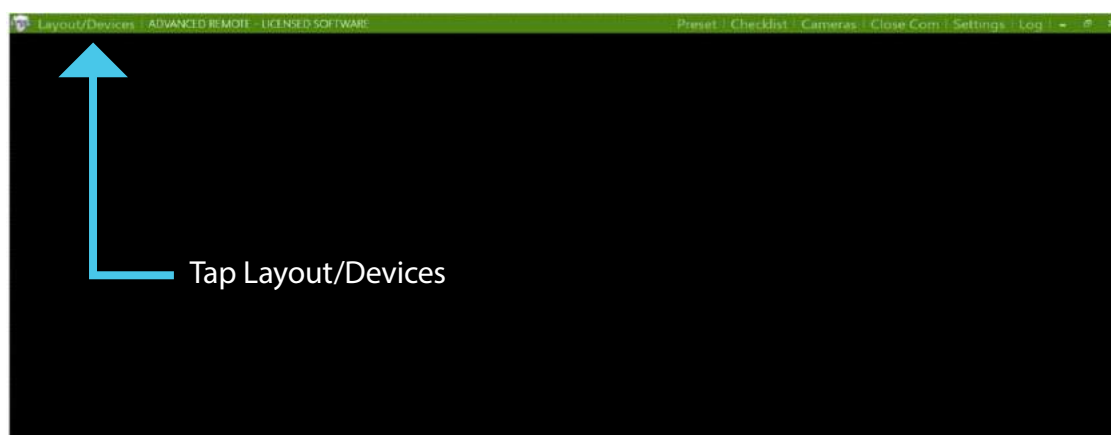# Launching NARS Advanced Remote Software

Double-tap the NARS Advanced Remote Icon

Finding and Connecting with NARS Devices

Tap Layout/Devices
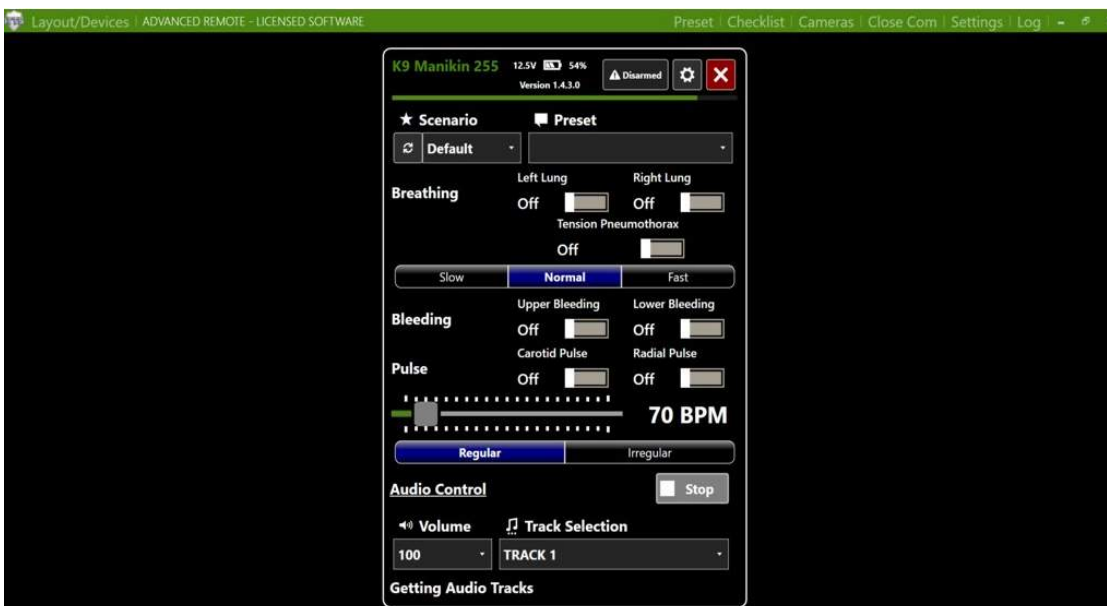
Finding and Connecting with NARS Devices - cont.

Select GET DEVICES
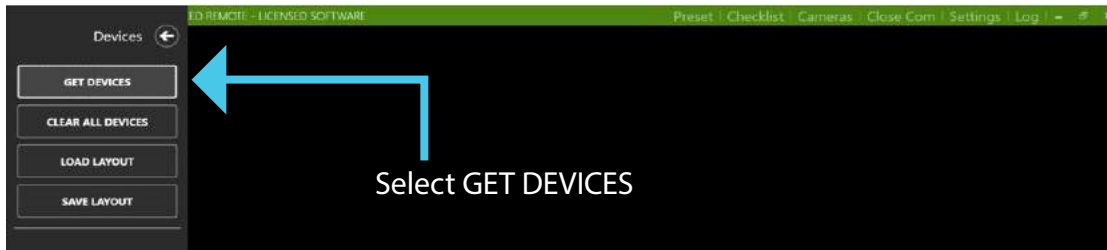
The Advanced Remote software will scan for any currently activated NARS devices.

The device's operations menu will appear once connection is successfully established.

TOMManikin® Operational Features and Functions

Operational controls for *TOMManikin®* and related devices:

Battery Charge Status   Arm/Disarm   Advanced Settings

Device Identifier

Device Disconnect

Scenario Selection

Presets

Breathing Rate

Lung & Pneumothorax Control

Bleeding ON/OFF & Location

Pulse Control

Pulse Rate & Regularity

Audio Quick-Stop

Volume Control

Audio Track Selection

K9 Manikin 255   12.5V   54%   ⚠ Disarmed   ⚙   ✕
Version 1.4.3.0

★ Scenario   💬 Preset
⟳ Default

Breathing   Left Lung   Right Lung
             On   On
             Tension Pneumothorax
             Off
Slow   Normal   Fast

Bleeding   Upper Bleeding   Lower Bleeding
            On   On
Pulse   Carotid Pulse   Radial Pulse
            On   On

70 BPM
Regular   Irregular

Audio Control   Stop

Volume   Track Selection
100   TRACK 1
Getting Audio Tracks

Developing a Training Scenario

Along with several preloaded training scenarios, you can create your own customize presets, using the following steps:

#1 Select PRESET

#2 Select NEW

#3 Name your scenario

#4 Name your preset

#5 Set the values for your presets

#6 SAVE the preset

Creating Additional Scenario Presets

As a scenario developer, you can create as many presets as needed within a scenario.

For example, this preset depicts a patient's condition worsening:

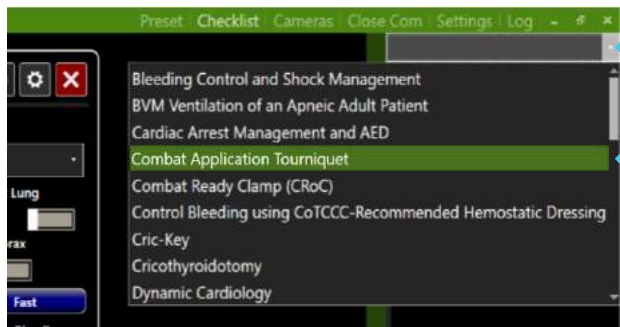...whereas this preset depicts a patient's condition improving:

Student Evaluation Checklists

The NARS Advanced Remote Software allows trainers to actively evaluate student performance during the scenario using checklists, which can be saved and exported for record-keeping purposes.
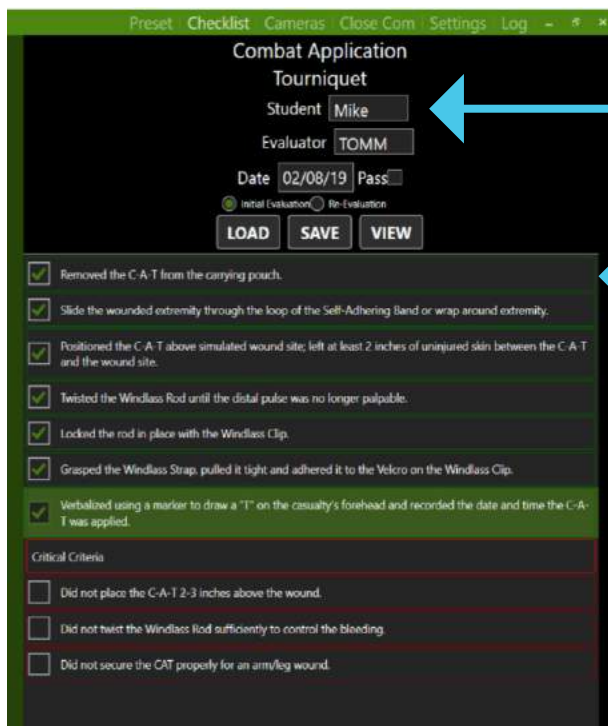
#1 Select CHECKLIST

#2 Click drop-down arrow to view available evaluations

#3 Select evaluation

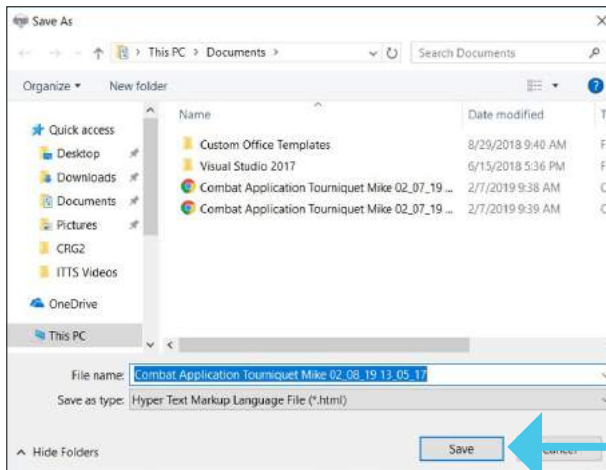#4 Enter Student Name, Evaluator Name, Date, and select either Initial or Re-Evaluation

While running your scenario, you can score student performance in real-time

Saving and Exporting Student Evaluations

Once evaluations are complete, you can save and export them into html files for use either in print or online record keeping.
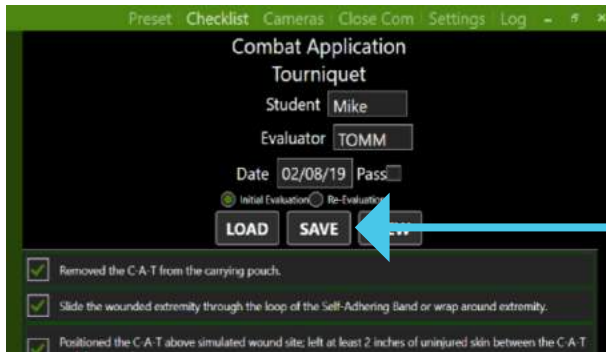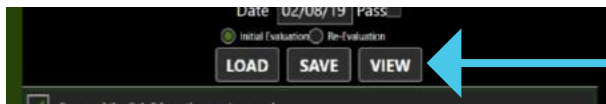

#1 Click SAVE

#2 Navigate to the desired save location and click SAVE in pop-up dialog box

You can also view the saved evaluation:

#1 Click VIEW

#2 Navigate to the desired evaluation file and click OK in pop-up dialog box

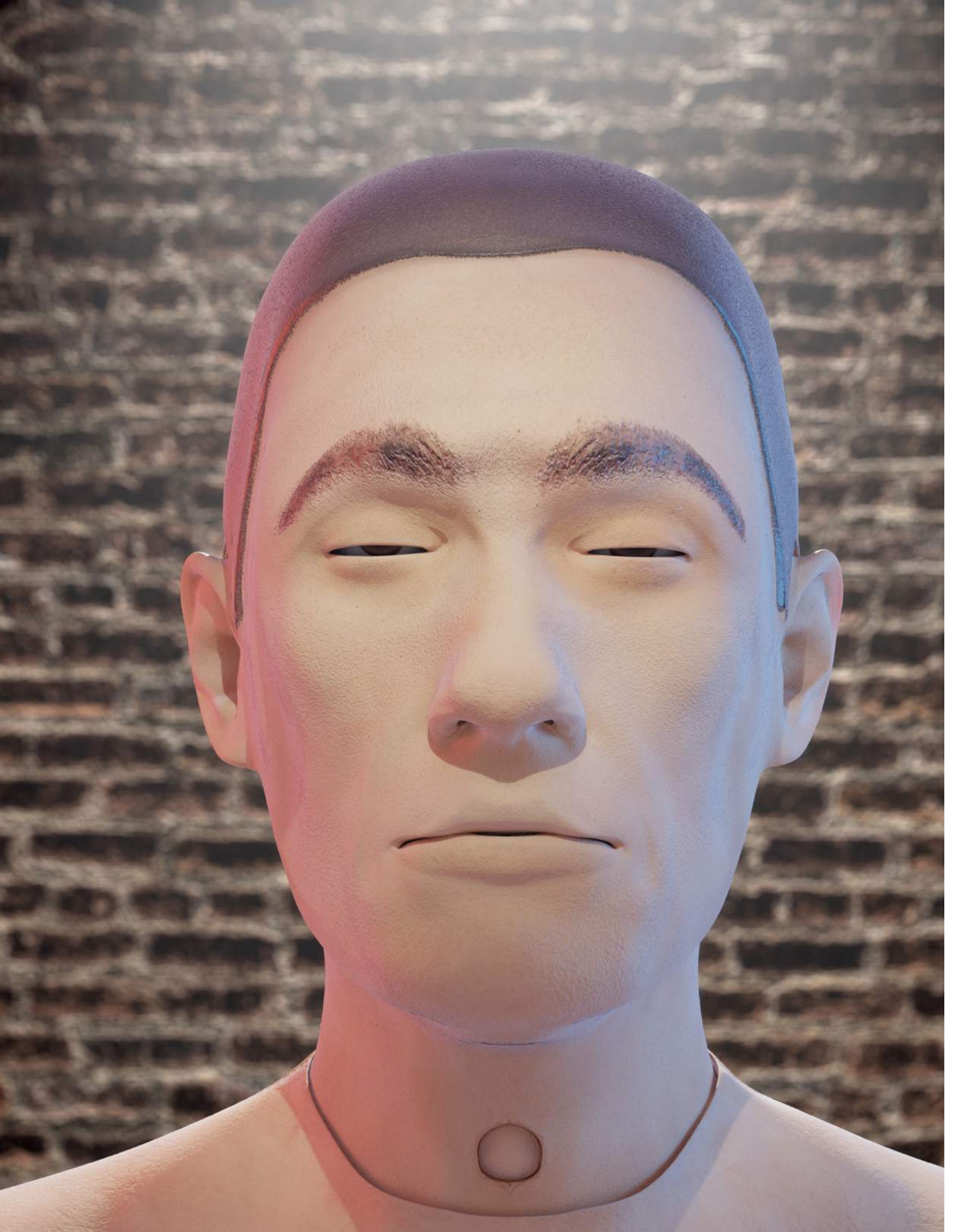#3 Saved evaluations can be viewed, updated, or printed from this screen

TOMManikin™

NORTH AMERICAN RESCUE®
Simulation

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INTRODUCTION

Combining cutting edge technology with decades of real-world combat care experience, the **_TOMManikin_**® (Tactical Operations Medical Manikin) provides the ability to enhance Tactical Combat Casualty Care (TCCC) from Point of Injury to transfer of higher care.

This all-in-one system allows you to build multiple PR Scenarios and create realistic Full Mission Profile (FMP) with reactive patients. Formerly operating as _ITTS_, our group specializes in the design and development of effective tactical training simulation equipment for military, law enforcement, and medical organizations.

Our primary objective is to create products with such attention to detail that they add unparalleled realism in creating the simulation training environment. Our focus on creating simulations that provide actual combat stress in a training environment, while leveraging technology to integrate our various simulation tools, create the ultimate comprehensive training experience.

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TOMManikin® Gen 5 Hose/Wiring Diagram

J6

To Cranial Antenae

C

J2

To Cranial Antenna

J7

J5

J3

To Electronic Eye Control

To 2-Way Communication

To Audio System

[FACING HEAD]

A

[FACING PELVIS]

[TOP]

Always upper

Always lower

P10

P12

P205

To Blood Refill Sprayer

P11

K

J

P202

To Trachea Airway

D

E

F

B

H

P20   P21

L Lung   R Lung

I

To Neck Pulse

To Arm Pulse

J4

G

***** ATTENTION *****
DISCONNECT AND CHARGE THE BATTERY
WHEN TOM IS NOT IN USE OR IN STORAGE!

P115

P114

P113

P112

P116   To GSW Chest Wound

A — Main Control Boxes
B — Air Control Ports
C — Power Outlet Ports
D — Power ON/OFF Button
E — Activate Button
F — Battery Port
G — 12V Battery

H — Tension Pneumo Bag
I — Lung Bladders
J — Bleeder Regulator Valves
        (Upper and Lower Extremities)
K — Bleeder Bag

16

J1	—	Power line to Bleeder devices. Splits into P10 and P11	**P20**	—	Split yellow power line to Bleed Regulator Valve (Upper Extremities)
J2	—	Power line to audio device in head	**P21**	—	Split yellow power line to Bleed Regulator Valve (Lower Extremities)
J3	—	Power line between Power and Compressor Main Control Boxes	**P112**	—	Black air line to Right Lung
J4	—	Power line from 12V Battery	**P113**	—	Black air line to Left Lung
J5	—	Power line to Pulse Motors	**P114**	—	Black air line to Tension Pneumo Bag
J6	—	Power line to Cranial Antenna	**P115**	—	Braided metal air line to Trachea
J7	—	Audio line to 2-Way Communication Receiver	**P116**	—	Red air line to GSW
P10	—	Power line to Bleeder Valves	**P202**	—	Black bleeder line from Bleeder Bag to Bleeder Valve Regulator
P11	—	Power line to Bleeder Pump	**P205**	—	Red bleeder fill line for refilling Bleeder Bag
P12	—	Power line to Bleeder Pump (Before split to P20 and P21)			

(Components shown and hose/wire lengths are not to scale and have been enlarged/reduced for illustration purposes and for clarity of assembly.)

Change pic to CPR chest

Main Control Boxes, Battery, Lung bladders, Sternal IO, Chest Tube, & Tension-Pneumo bag housed in rib cage.

Bleeder Regulator Valves & Bleeder Bag housed in seat.

Change pic to gray pelvis with crep hip

TOMManikin® Seat and Chest Description

PELVIS

The pelvis of *TOMManikin®* contains the **Bleeding Bag** which contains the fluid, and the **Bleeding Solenoid** that control which extremity receives the fluid. The seat now features a locking-pin system for swapping out lower extremities (Part A in Figure 1)

CHEST

The chest cavity of *TOMManikin®* contains the **Main Control Box** and the **12V Battery** component, which can be secured in the rib cage by fastening the end opposite of where the power cable extends.

Additionally, the two **Lung Bladders** are inserted through the rib cage and slid into place between the outside of the rib cage and the *Softech®* skin. **Tension Pneumo Bag,** which provides air pressure to the *TOMManikin®* **Trachea Airway**, is secured using the small Velcro™ strap, onto the second or third rib under the Sucking Chest Wound (SCW) (Figure 2).

change pic to CPR chest
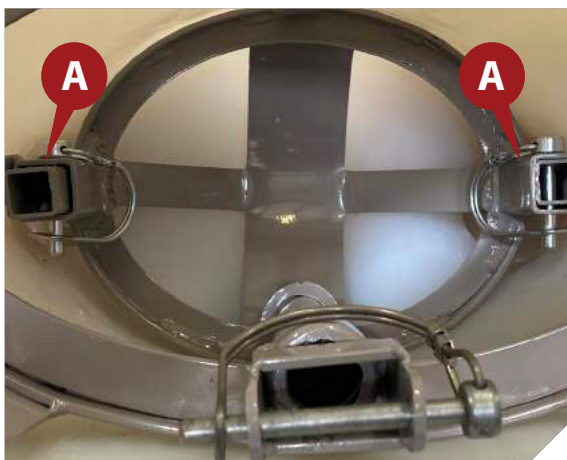
Figure 1 - *Locking pins for interchangeable lower extremities*

Figure 2 - *Tension Pnuemo fastening point (Gen 4 version shown)*

Part numbers
93-0141 — **12V 10-amp Battery**
93-0167 — **Tension Bladder with Velcro™ wrap**
93-0168 — **Velcro™ wrap for Tension Bladder**
93-0169 — **Tension Bladder**
93-0182 — **Bleeding Solenoids**
93-0185 — **Bleeding Bag**

Change pic to CPR chest
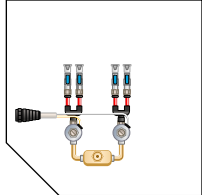
Bleeding Component Assembly

Attaching Bleeding Bag to Bleeding Solenoid

Connect the two components fastening the 5/16th black bleeder line (**P202**) from the **Bleeding Bag** (Part A in Figure 3) to valve stem on **Bleeding Solenoids** (Part B in Figure 4) . The solenoid possesses four ports paired off into two sets. When holding the solenoid ports up the left pair is set to control the upper extremities (Part C in Figure 5), while the right pair is set to control the lower extremities. (Part D in Figure 5) The user may adjust the flow of fluid by turning the desired blue valve switch from between 0° to 90° (Part E in Figure 5).

93-0185 — Bleeding Bag

Figure 3

93-0182 — Bleeding Solenoids

Figure 4
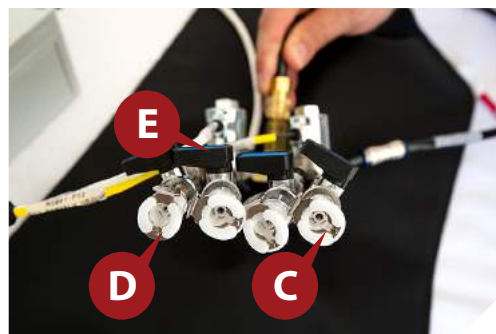
Figure 5
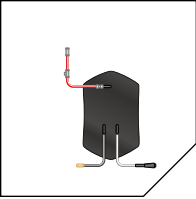
Powering the Bleeder System - Gen 5 TOMManikin®

Attach the grey power cable (**P11**, split off from **J1**) to the grey power cable extending from the **Bleeding Bag**. Attach the grey power cable (**P10**, also split off from **J1**) to the power cable attached to the **Bleeding Solenoids** (**P12**).

Connect grey power cable (**J1**) to the **Main Control Box**, in the 6-pin port labeled "**BLEED**" (bottom-left port when facing right-side up). Lastly, attach the black bleeder hose (**P202**) from the **Bleeding Bag** to the fluid intake port on the **Bleeding Solenoids**. (See Illustration 1)

Bleed 6-Pin Connector

↑
Back side view of Main Control Boxes
↓

J1

P10

P205

P11

P12

[FACING HEAD]

n

[FACING PELVIS]

P202
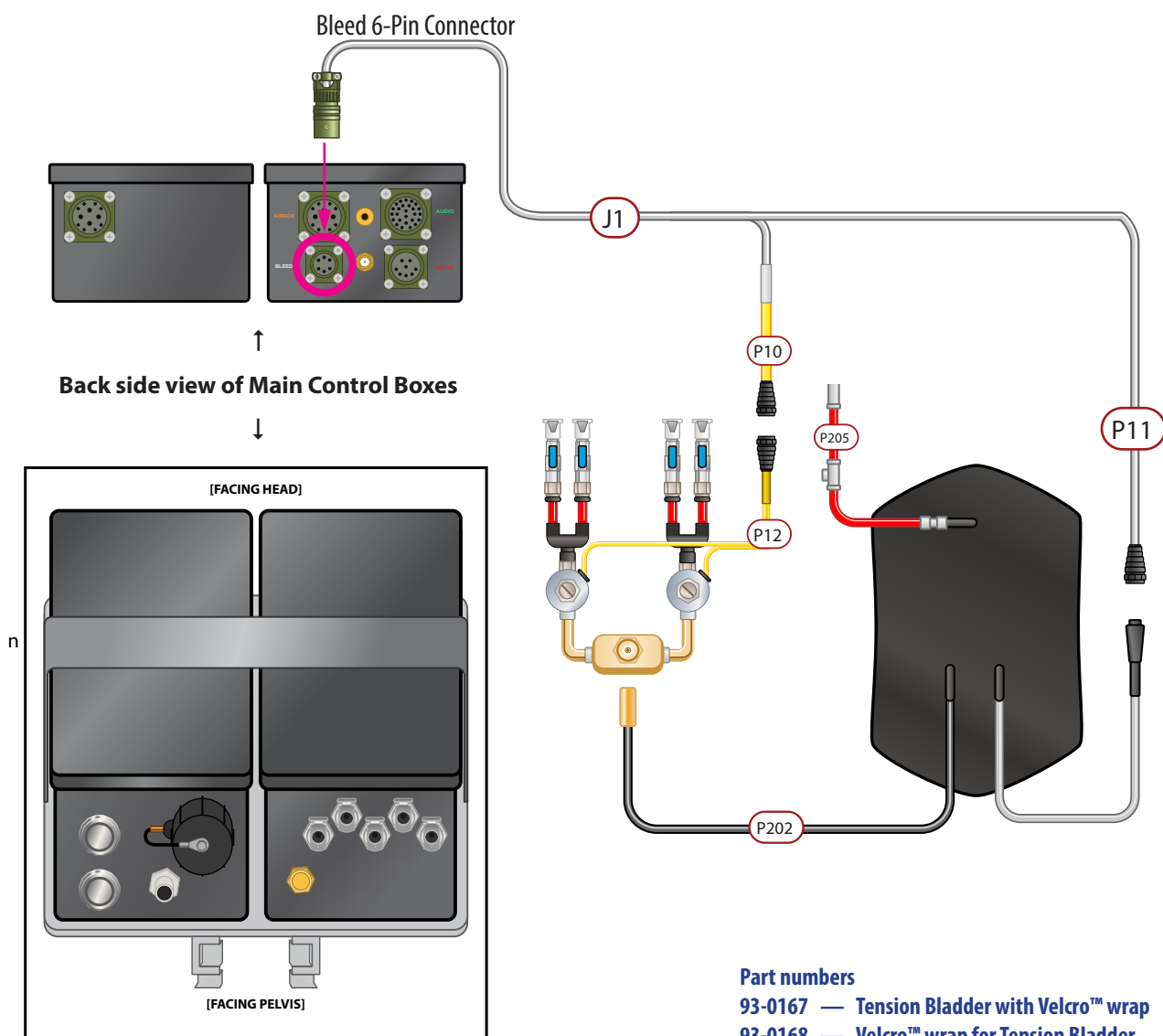
Illustration 1

Part numbers
93-0167 — **Tension Bladder with Velcro™ wrap**
93-0168 — **Velcro™ wrap for Tension Bladder**
93-0169 — **Tension Bladder**
93-0182 — **Bleeding Solenoids**
93-0185 — **Bleeding Bag**
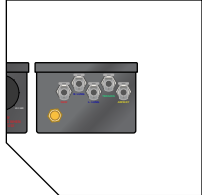
Breather Component Assembly

Port arrangement on Air Control Manifold

Nearly all the components necessary for the breather functionality of your *TOMManikin®* are located on the end of the **Main Control Box**, with the exception of the **Tension Pneumo Bag** which is situated outside the **Main Control Box,** fastened to the inside of the Rib Cage using the small Velcro™ strap. (See Figure 1)

Airflow between the various components is handled by the **Air Control Manifold,** which for added convenience is now built into the **Main Control Box**. It connects to the different components via numbered air lines inserted in the manifold's ports. There are five ports total along the length of the manifold, labelled with their hose number and function. (See Illustration 2)
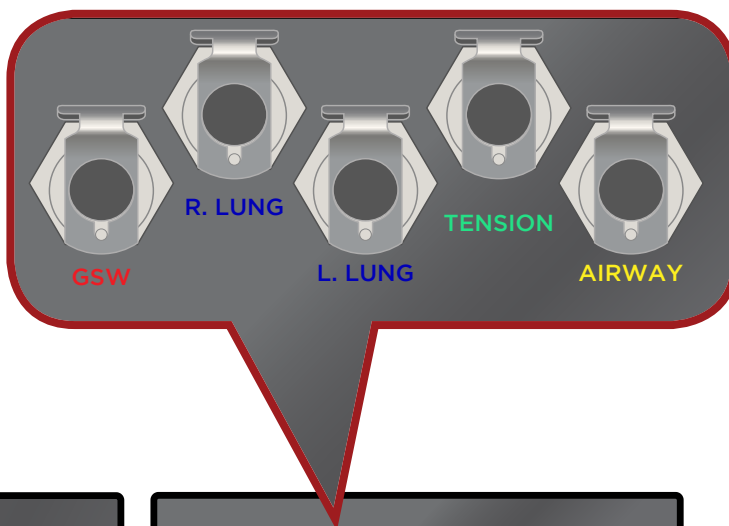
Figure 1 - *(Gen 4 version shown)*

change pic to CPR chest

R. LUNG
TENSION
GSW   L. LUNG   AIRWAY

POWER

ACTIVATE

SD CARD

BATTERY
UNPLUG WHEN
NOT IN USE

GSW   R. LUNG   L. LUNG   TENSION   AIRWAY
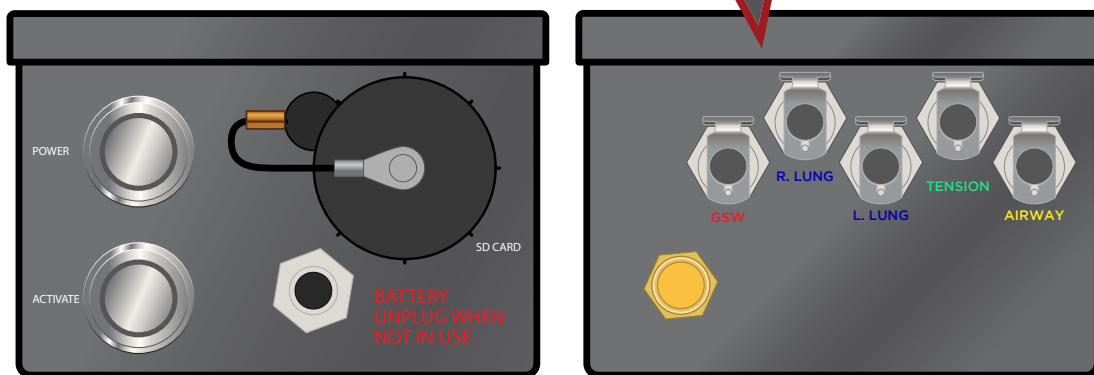
Front side of Main Control Box

Illustration 2

Connecting Tension Pneumo Bag to Main Control Box

Connect black air line (**P114**) to **Air Control Manifold** port on **Main Control Box**, labeled with the green-coded **TENSION** port, second from right (See illustration 1).

R. LUNG   **L. LUNG**   **Tension Pneumo Port**

R. LUNG
GSW   L. LUNG   TENSION   AIRWAY
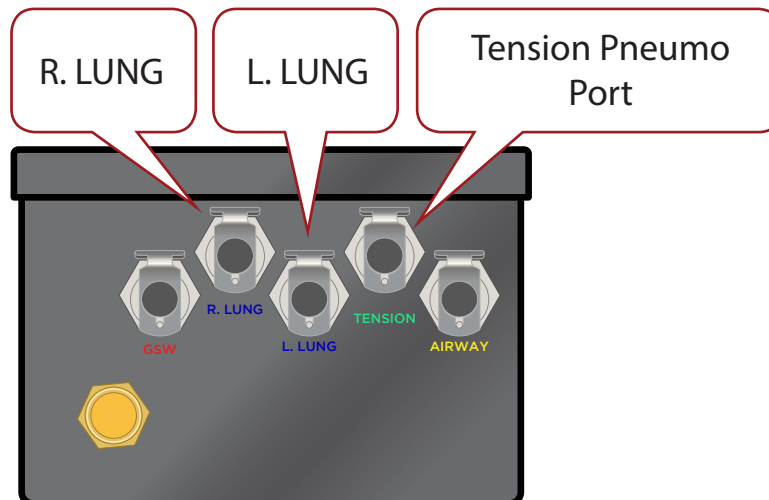
Illustration 1

Connecting Right Lung (RL) and Left Lung (LL) bladders to Main Control Box

Connect the *RL* black air line (P112) to the **Air Control Manifold** port on the **Main Control Box** labeled with the blue-coded **R. LUNG** port, second from left (See Illustration 1).

Connect the *LL* black air line (P113) to the **Air Control Manifold** port on the **Main Control Box** labeled with the blue-coded **L. LUNG** port, middle of the five ports (See Illustration 1).

It is recommended that you only connect the air lines to the **Main Control Box** after it has been placed and secured in the rib cage.

Figure 1

Part numbers
93-0175   —   Lung Bladder
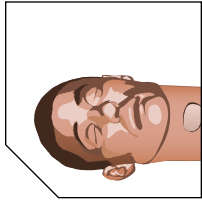
Connecting Trachea, Audio & Pulse to Main Control Box

Connect the braided metal air line (**P115**) extending from the yellow-coded **AIRWAY** port on the *Air Box* half of the ***Main Control Box*** to the bottom of *TOMManikin's®* rubberized esophagal pathway using its right-side tube (A).

To power the sound system, plug the black 26-Pin power cable (**J2**) into the *Power Box* half of the ***Main Control Box*** in the top-right port marked **AUDIO** (B). Connect one of the two ends into green/grey power line extending from the bottom of *TOMManikin®* neck (C). Plug the second into the black cable to power the electronic eye control (D).

To power the carotid pulse motor, plug the red/grey 8-Pin power cable (**J5**) into the *Power Box* half of the ***Main Control Box*** in the bottom-right port marked **PULSE** (E). Connect the opposite end into the red/grey power line extending from the bottom of *TOMManikin®* neck (F).

To enable radio communication, as well as remote audio, attach the Cranial Audio Cable (**J6**) to the barrel connector on the *Power Box* half of the ***Main Control Box***, in between the **BLEED** and **PULSE** ports (G). Plug the Remote Audio (**J7**) cable into the jack located between the **AUDIO** and **AIRBOX** ports (H).

**Back View
Enlarged and Rotated**
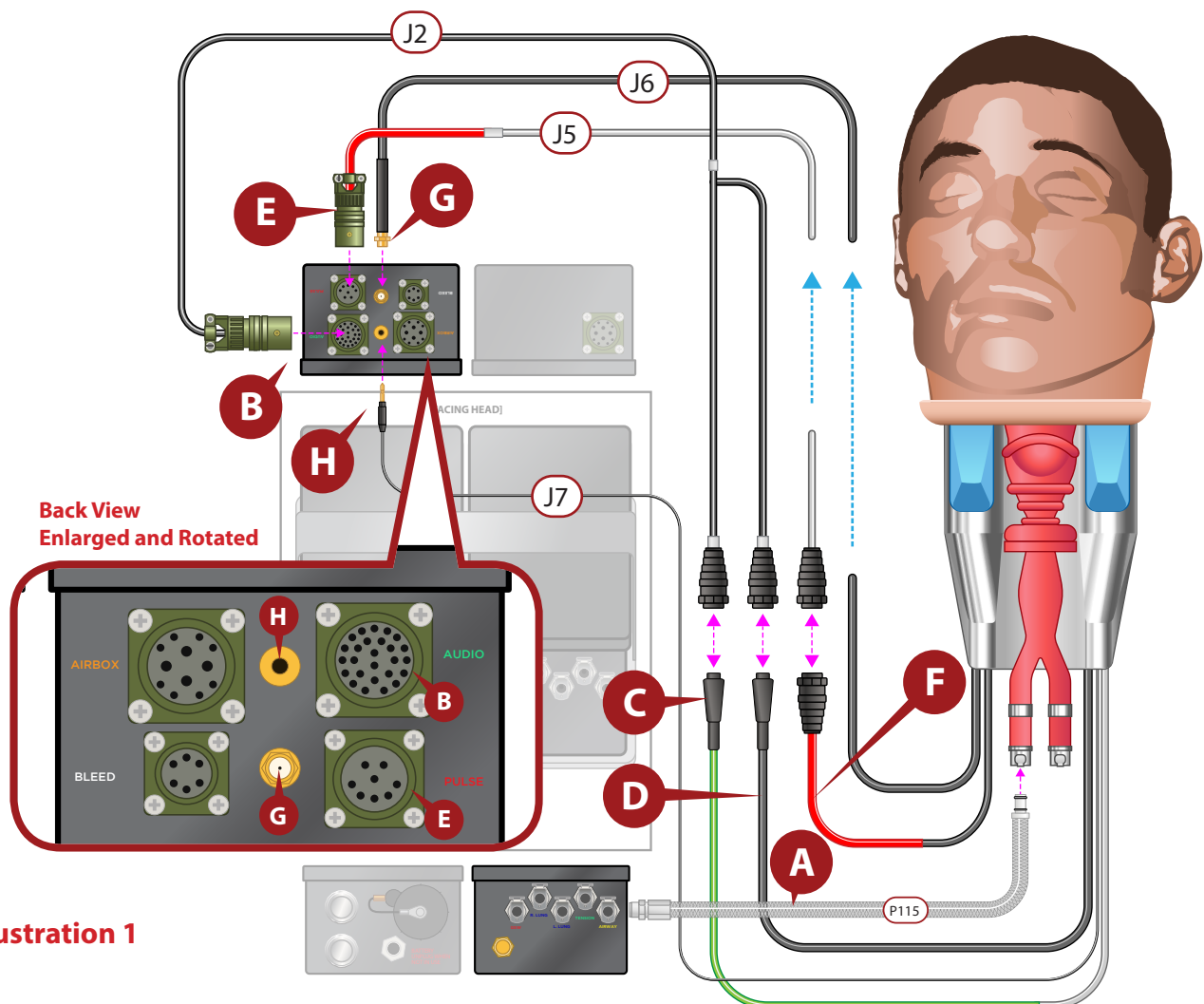
Illustration 1
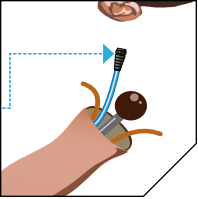
IO/IV procedures

TOMManikin® now supports training with Intraosteosis (*IO*) procedures in the shoulder and the sternum and Intravenous (*IV*) procedures with the brachial artery.

IO procedures are simulated through the use of a hard, reusable shoulder joint located in the detachable arms. (See Figure 1).

IV procedures are performed on a closed-circuit tubing system, separate from the bleeder system running to the extremities, allowing a convenient way to avoid introducing foreign fluids to the rest of the system. Once scenario training is complete, the IV tubes may be emptied and cleaned separately. (See Figure 2)

Figure 1

Shoulder Joint for
IO Procedures

Figure 2

IV Tube undone for
cleaning/emptying

Attaching Sternum and Chest Tube Components

Attaching Sternum Chestplate

Your *TOMManikin*® is compatible with both chest tube and sternum IO procedures, with reusable components that allow for an even more well-rounded and authentic medical training experience.

Placement of the sternum IO component is as shown in Figure 2 below, over the circular hole in the metal rib cage. The top plate can be moved by removing the 4 screws, allowing you to replace the hard rubber sternum piece when necessary without needing to remove the entire part from the rib cage.

Attaching Chest tube

Shown in Figure 3 is the rubber soft tissue material. Attach to the rib cage by inserting the two flat head screws through the upper and lower openings and match to 2 pre-drilled holes on ribs two and four. Secure on the inside of the rib cage with the two provided washers.

Lastly, place the aluminum rib cover onto the soft tissue material until it is flush with the rib cage as shown in Figure 4.

Figure 3

Figure 2

Figure 4

Packing Components into TOMManikin ®

Before inserting the main components, ensure that:

A) The **Right Lung** and **Left Lung Bladders** are situated in between *TOMManikin*®'s rib cage
and the Softech® skin.

B) The **Tension Pneumo Bag** is secured to the interior of the rib cage with the small Velcro™ strap.

C) **Sternum** and **Chest Tube IO** components are in place.

D) **Tension Pneumo** and **Lung** air hoses arranged so they will be accessible after
Main Control Box insertion. See Figure 1 for completed prep reference *(Gen 4 Tension Pneumo shown)*.

Chest Components

To pack your *TOMManikin*® for easiest use, you will need to guide the air line hoses by hand
so that when the **Main Control Box** is positioned in the rib cage, all power cables are situated at the
top of the rib cage, and air and battery lines are extending out of the bottom of the rib cage.

The braided metal **P115 Trachea Airway** tube extending from the head should
run down the length of the spine, where it can be attached once the
Main Control Box is in place.

Once both halves of the **Main Control Box** are secured to
the metallic tray, slide the tray up into the rib cage from
beneath so that the **Power Box's** *POWER button, ACTIVATE
button, BATTERY Port*, and *SD Card slot*, as well as the
Air Box's five *Airway Ports* and *Air Filter Port*, are accessible
via the abdominal opening and oriented towards the seat.

Fasten the five air line hoses to the lower-left rib.

Part numbers
93-0137 — **Silicone Chest Insert**
93-0167 — **Tension Bladder with Velcro™ wrap**
93-0168 — **Velcro™ wrap for Tension Bladder**
93-0169 — **Tension Bladder**
93-0175 — **Lung Bladder**
93-0181 — **Chest Tube Set**
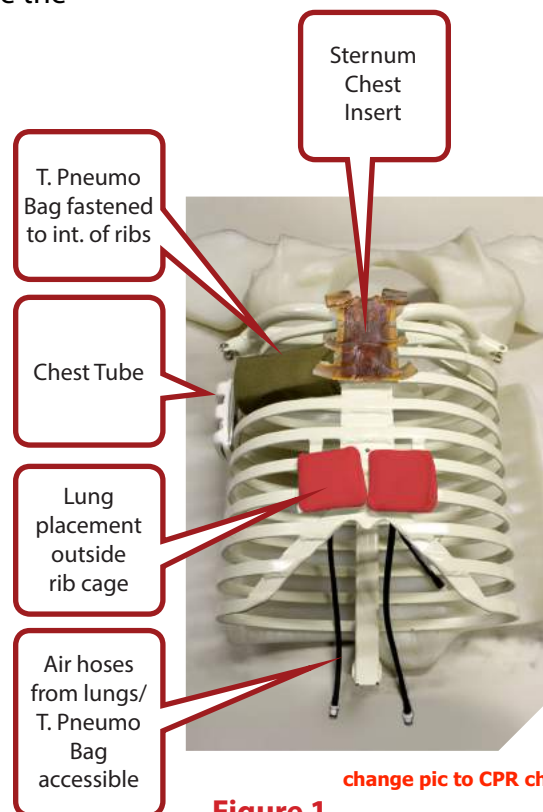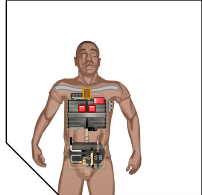
Sternum Chest Insert

T. Pneumo Bag fastened to int. of ribs

Chest Tube

Lung placement outside rib cage

Air hoses from lungs/ T. Pneumo Bag accessible

change pic to CPR chest

Figure 1

Seat Components

The two components that are placed into the seat of your *TOMManikin*®
are the **Bleeding Solenoid** and the **Bleeding Bag.**

Attach the appropriate bleeder lines to the Upper and Lower Extremity
ports, remembering the that when the valves are held in a "U"
orientation, that the *left set are always for upper extremities*, and *the right
set are always for lower extremities*. Failure to match the valves will likely
be detrimental in the proper execution your training scenario, as the
command from the software will not correspond with the correct limb.

Once the bleeder lines have been connected, rest the **Bleeding Bag** on
top of the **Bleeding Solenoid**.

See the image sequence to the right for an example of how the contents
are arranged in the seat *(Gen 4 seat shown)*.

Connecting the Battery

Attach the power cable extending from the end of the **12V 10-amp Battery** pack (**J4**) and
plug into the **BATTERY** port on the bottom of the *Power Box* half of the **Main Control Box**.
(See Illustration 1)

BATTERY
Port

J4

***** ATTENTION *****
DISCONNECT AND CHARGE THE BATTERY
WHEN TOM IS NOT IN USE OR IN STORAGE!
WARNING!!! Failure to disconnect and charge battery
when not in use or during storage will result in complete
battery discharge and permanent failure.
XX/XX   BAT XXXXX
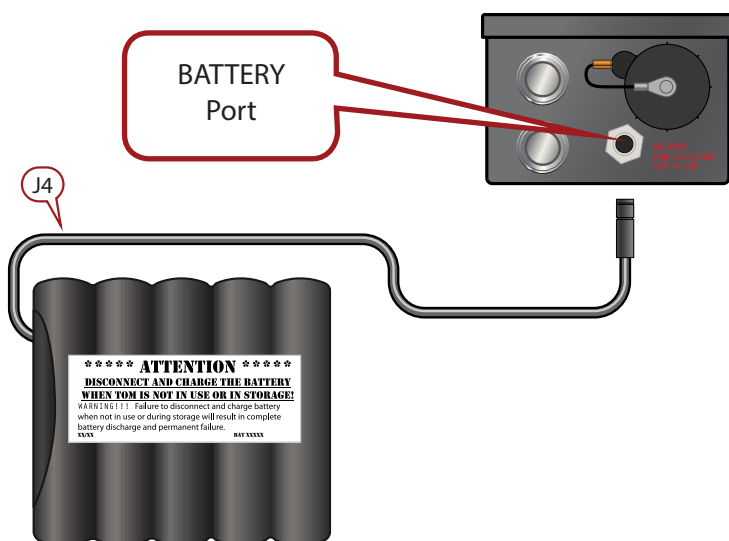
Part numbers
93-0141 — **12V 10-amp Battery**
93-0182 — **Bleeding Solenoids**
93-0185 — **Bleeding Bag**

Illustration 1

NOTE

Disconnect and charge the battery when *TOMManikin*® is not in use and before putting in storage.
Failure to disconnect and charge the battery when not in use and before putting in storage will result in
complete battery discharge and permanent failure.

Final Operations Check

1) **Main Control Box - Power Box** Connection Check:

   - **J1 BLEED** 6-Pin power cable. Splits into **P10** to the **Bleeding Solenoid** and **P11** to the **Bleeding Bag.**
   - **J2 AUDIO** 26-Pin power cable. Connects to audio cable from *TOMManikin®* head.
   - **J3 AIRBOX** 12-Pin power cable. Connects Power Box to Air Box.
   - **J4 12V BATTERY** cable. Connects on bottom of **Main Control Box**.
   - **J5 PULSE** 8-Pin power cable. Splits into one red cable for carotid pulse, & two blue cables for radial pulse motors.
   - **J6 Cranial Antenna** power cable. Runs from *TOMManikin®* head to barrel connector on **Main Control Box**.
   - **J7 2-Way Communication** cable. Runs from *TOMManikin®* head to audio jack on **Main Control Box**.

2) **Main Control Box - Air Box** Connection Check:

   - **P112 Air Line**. Connects blue-coded **R. LUNG** port to **Right Lung Bladder**.
   - **P113 Air Line**. Connects blue-coded **L. LUNG** port to **Left Lung Bladder**.
   - **P114 Air Line**. Connects green-coded **TENSION** port to **Tension Pneumo Bag**.
   - **P115 Air Line**. Connects yellow-coded **AIRWAY** port to rubberized trachea airway in *TOMManikin®* head.
   - **P116 Air Line.** Connects **GSW** port to red air line to GSW.

3) Check to ensure **P202** Black Fluid Line is connected from **Bleeding Bag** to **Bleeding Solenoid**.

4) Press the **POWER** Button on the **Main Control Box**.

5) Manually initiate **ACTIVATE** button on bottom side of the **Main Control Box.**

6) Check to ensure air is flowing into the **Right** and **Left Lungs.**

7) Check to ensure air is exiting the **AIRWAY** from *TOMManikin®* throat.

8) **WATERTOMM/CBRNE TOM ONLY:** Check to ensure Air Regulator Gauge is set between 5 to 20 PSI.
   WARNING: Do NOT operate above 20 PSI.

Troubleshooting

No air flow or no air pressure.

- Re-check all power cable connector fittings.
- Re-check battery connection to **Main Control Box** and ensure battery has a charge.
- Re-check head connection.
- Turn OFF all power at the main power switch, located on the front of the *Power Box* half of the **Main Control Box**.
- Turn ON power at the main power switch, located on the front of the **Main Control Box**.

No sound.

- Turn OFF all power at the main power switch, located on the front of the *Power Box* half of the **Main Control Box**.
- Ensure SD card is properly seated.
- Ensure SD card capacity is 2 - 4 GB.
- Ensure SD card is either SanDisk SDHC or PNY brand.
- Ensure audio files on SD card are properly formatted.
- Ensure power cable connection (**J2**) to head.
- Ensure battery is fully charged.
- Check volume level.

No blood flow.

- Ensure **Bleeding Bag** is full.
- Ensure no punctures in **Bleeding Bag.**
- Check to make sure desired **Bleeding Solenoid** valves are open.
- Re-check red bleeder lines from extremities are properly fastened in **Bleeding Solenoid** ports.
- Re-check that red bleeder lines from extremities correspond to correct **Bleeding Solenoid** ports for upper and lower extremities.
- Re-check power cable connections, at the **Main Control Box** (J1), **Bleeder Bag** (P11), and **Bleeding Solenoid** (**P10** and **P12**).
- Verify no kinks in bleeding lines.
- Ensure battery is fully charged.

No pulse.

- Ensure **J5 PULSE** 8-Pin power cable is plugged into the **PULSE** port on rear side of the *Power Box* half of the **Main Control Box**.
- Re-check connection fittings.
- Neck Pulse must be ON for arm pulse to work.

Adding/Changing Audio files - Gen 4 only

Included on every SD card shipped with *TOMManikin*® is the software necessary to add, remove, reorder or change the description of the MP3 files that are played during scenario training.

The application used to edit your MP3 files is called *SDBuilder*, and is a user friendly program. This application does require Microsoft Dot Net 4.5. If you don't already have this installed, a free copy can be downloaded directly from Microsoft at:
http://www.microsoft.com/en-us/download/details.aspx?id=30653

If for some reason your SD card does not come pre-loaded with SDBuilder, then it can be downloaded from the following website:
https://www.dropbox.com/sh/j5qzik48j4qhh7q/AABqHLT9xaApzpiyMqFFWCx4a?dl=0

SDBuilder screen

Upon startup, please verify that the SD card drive is selected in the white box. All audio files must be located in the root level folder of the SD card.

Audio Tracks are made up of two different files:
1. TRACK###.MP3 – The audio file
2. TRACK###.DES – The short description of the track

Add Tracks

To load tracks currently on the SD card, click "Load Files from SD Card". You can also drag and drop from another folder into the center box.

Modifying Tracks

Once tracks are in the SDBuilder list, you can:
Play - Click the ⏵ button to play any track
Remove - Click the ✖ button to remove any track
Rename - Click and type in the white box below the track
Reorder - Click and drag the track above or below other tracks
        as desired

Clear List - Click the [Clear List] button to remove all tracks from the list.

Generate SD - Once ready to format for use with *TOMManikin*®, click [Generate SD]. *SDBuilder* will then compile a play list (up to 200 tracks), place on to the SD card, and upon completion will notify you with a prompt reading "SD Card loaded Successfully".

Changing Volume - Volume can be boosted using an external application called *MP3 Volumer*. It can be downloaded for free at: http://www.mp3volumer.com/

NOTE: Be advised that excessively boosting the volume may lead to distortion. Trial and error can be utilized to achieve desired volume. For further information, refer to README.PDF included on the SD card.

TOMManikin® Heart & Lung Sounds

List of pre-loaded audio files*, courtesy of *3M Littmann*®

Aortic Valve Area Sounds
- FIRST HEAR SOUND PLUS AORTIC EJECTION CLICK
- AORTIC STENOSIS (DIAMOND SHAPED SYSTOLIC MURMUR)
- AORTIC STENOSIS MODERATE & REGURGITATION MILD RHEUMATIC
- PROSTHETIC HEAR SOUND
- AORTIC STENOSIS - SEVERE
- COARCTATION OF THE AORTA

Pulmonic Valve Area
- SECOND HEART SOUND - PHYSIOLOGIC SPLIT
- PATENT DUCTUS ARTERIOSUS
- PULMONARY STENOSIS
- ATRIAL SEPTAL DEFECT
- SECOND HEART SOUND W/ FIXED SPLITTING

ERB'S Point
- AORTIC REGURGITATION (DECRESCENDO DIASTOLIC MURMUR)
- ACUTE PERICARDITIS
- MEDIASTINAL CRUNCH

Tricuspid Valve Area
- INNOCENT SYSTOLIC EJECTION MURMUR - SUPINE
- INNOCENT SYSTOLIC EJECTION MURMUR - STANDING
- TRICUSPID REGURGITATION - SEVERE
- VENTRICULAR SEPTAL DEFECT
- EBSTEIN'S ANOMALY
- FIRST HEART SOUND (MINIMALLY SPLIT)

• Mitral Valve Area
- MID-SYSTOLIC CLICK
- SECOND HEART SOUND & LATE SYSTOLIC CLICK
- MITRAL VALVE LEAFLET PROLAPSE

- MITRAL STENOSIS - MODERATE
- MITRAL REGURGITATION - SEVERE
- PROSTHETIC HEART SOUND - MITRAL
- MITRAL VALVE PROLAPSE W/ MID SYSTOLIC CLICK - STANDING
- FIRST & SECOND HEART SOUNDS - NORMAL & UNSPLIT
- THIRD HEART SOUND - PHYSIOLOGIC
- THIRD HEART SOUND - ABNORMAL
- FOURTH HEART SOUND
- THIRD & FOURTH HEART SOUND GALLOP
- OPENING SNAP & SECOND HEART SOUND
- MID-SYSTOLIC CLICK
- CARDIOMYOPATHY - CONGESTIVE MODERATE
- SUMMATION GALLOP @ 120 BEATS PER MINUTE

Lung Sounds
- BRONCHIAL
- BRONCHOPHONY - ABNORMAL
- BRONCHOPHONY - HEALTHY
- BRONCHOVESICULAR
- CRACKLES - COARSE (RALES)
- CRACKLES - FINE (RALES)
- EGOPHONY - "A"
- EGOPHONY - "E"
- PLEURAL RUBS
- RONCHI - LOW-PITCHED WHEEZES
- STRIDOR (AUDIBLE)
- VESICULAR - NORMAL
- WHEEZES - EXPIRATORY
- WHEEZES - MONOPHONIC
- WHISPERED PECTORILOQUY - ABNORMAL
- WHISPERED PECTORILOQUY - HEALTHY
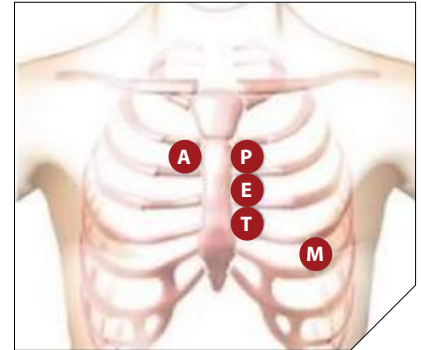
A	Aortic Valve Area	Second right intercostal space (ICS), right sternal border
P	Pulmonic Valve Area	Second left intercostal space (ICS), left sternal border
E	Erb's Point	Third left ICS, left sternal border
T	Tricuspid Valve Area	Fourth left ICS, left sternal border
M	Mitral Valve Area	Fifth ICS, left mid-clavicular line

if equipped with advanced audio system

TOMManikin® Cleaning Instructions

Customers are advised to clean exterior surfaces with a soft cloth using a mild **(non-bleach)** detergent and water mixture.

Stubborn stains can be removed using a citrus-based spray cleaner **(e.g., Citrus Magic, Zep Heavy Duty Citrus Degreaser)**, or by directly applying WD-40 to the stain and wiping clean. Internal structures and surfaces are to be cleaned using low-pressure **compressed air** in combination with **a damp cloth.**

Please direct any further inquiries to:
NAR Operations Division
c/o Mr. Rocco Deluca
rdeluca@narescue.com
jpike@narescue.com

Glossary of Terms

12V Battery: Powers all components of *TOMManikin*®. Connects on *Power Box* half of the **Main Control Box** with **J4** power cable. Situated near spine of rib cage when in use. **Remember to remove and recharge battery when *TOMManikin*® is not in use or in storage, otherwise discharge and complete battery failure may occur.**

ACTIVATE Button: Located below POWER button on *Power Box* half of the **Main Control Box**. Used to directly activate *TOMManikin*® in lieu of remote activation.

Air Compressor: Located inside the *Air Box* half of the **Main Control Box** in the chest cavity. Used to inflate left/right lung air bladders and *Tension Pneumo Bag*.

Air Line (Lung):   Two ¼-inch black hoses connecting **R. LUNG** and **L. LUNG** ports on *Air Box* half of the **Main Control Box** to right/left lung air bladders.

Air Line (Tension): One ¼-inch black hose. Runs from **TENSION** port on *Air Box* half of the **Main Control Box** to *Tension Pneumo Bladder*.

Air Line (Airway): One ¼-inch braided metal hose. Runs from **AIRWAY** port on *Air Box* half of the **Main Control Box** to *Trachea Airway*.

Air Line (Red):   One ¼-inch red hose. Runs from **GSW** port on *Air Box* half of the **Main Control Box** to *GSW*.

Air Regulator Gauge: Displays current pressure levels. Recommended psi operating setting is 5 to 20 PSI. ***WATERTOMM/CBRNE models only.***

Audio: WAV player board located in *Power Box* half of the **Main Control Box** (pre-recorded sound on SD card). Tracks must be saved in WAV format.

Audio Cable: **J1** Cable from head to **AUDIO** port on **Main Control Box** to green/grey cable and black cable extending from *TOMManikin*® **neck;** powers speakers and Electronic Eye Control.

Bleeding Bag: Standard hydro-bag, modified with connectors that join the bag to the proximal end of the fluid pump.

Bleeding Cric Neck Skin: Band of skin over trachea, representing the cutting area of the skin on the neck.

Bleeding Line: 1/8-inch red line hose from the chest; for extremities, ¼-inch red line hose that connects to distal end of **Bleeding Solenoid**. Blood volume controlled by a valve located at distal end of **Bleeding Solenoid**.

Glossary of Terms cont.

Bleeding Solenoid: A set of four valves, grouped in sets of two, that control the flow of fluid to the extremities.

Head Component: Consists of the skull, skin, moveable jaw, and airway.

IV tube: Closed-circuit tubing in arms to simulate IV procedures.

Left Lung and Right Lung (LL and RL): A pair of small 2-inch bladders that allow the lungs to inflate within the chest cavity to a maximum of 2 ½ inches. Connects to *Air Box* half of the *Main Control Box* via **P112** and **P113** blue air line hoses.

Lower Extremity: Describes right and left legs.

Main Control Box: The *Main Control Box* handles all command, fluid and breather input and output of the unit. Comprised of two separate boxes: *Power Box* and *Air Box*.

Main Power Button: Turns on all power to *TOMManikin*®, adjacent to the *ACTIVATE button* and *SD Card slot*.

Pulse: Simulated via subdermal vibration motors running at various strengths and intervals. Powered by **J5 PULSE** power cable.

SD card: *TOMManikin*® supports between 2 to 4GB, standard SD card (must use SanDisk SDHC or PNY brands).

Seat: Lower part of skeleton (seat), representing the pelvic area. Contains the *Bleeding Bag*, pump, and *Bleeding Solenoid*.

Tension Pneumo Bag: Standard bladder used for needle decompression with positive air flow of 2-3 psi (disposable after multiple sticks).

Trachea: Simulates human scale trachea. The trachea consists of four components; aluminum inner-pipe, membrane, plastic trachea mold, and bleeding cric neck skin. Yellow exhaust line from manifold connects to inner pipe. Trachea is used for surgical airway procedures.

Trachea Membrane: Small layer of material running underneath trachea. Represents crichoid membrane.

Upper Extremity: Describes left and right arms.

TOMManikin® Disclaimers

North American Rescue Simulation (NARS) are not responsible for damage to *TOMManikin®* due to:
- Submersion in water for non-WATERTOMM models.
- Excess falls.
- Crushing from excessively large objects causing a bent *TOMManikin®* frame.
- Lack of maintenance procedure follow-up (pre-check, post-training, and storage).
- Excessive heat.
- Burning.

To extend the life and of your *TOMManikin®*, the following maintenance and safety procedures are highly recommended;
- During each operational use, insure joints are properly tightened (lock seal).
- After each post-use, bleeder lines should be flushed with soapy water.
- Liquid-container bags should be rinsed clean with soapy water.
- Battery should be charged in between uses or when *TOMManikin®* is in storage.
- *TOMManikin®* is NOT a projectile, nor should it be dropped on another person which may result in serious injury.

Limited Warranty

NARS warrants to the purchasers of *TOMManikin®* products that they will be free from defects in material and workmanship for a period of ninety (90) days from the date of purchase. Components found to be defective may be returned directly to manufacturer.

TOMManikin® manufacturers will be liable under this limited warranty only if *TOMManikin®* products have been serviced and maintained properly as directed in the operating manual. NARS will not be responsible for damage caused by unauthorized repairs or modifications that have been made, or if the product has been damaged through misuse, accident, or abuse. This warranty does not cover wear and tear or expendables such as batteries and replacement lungs. There are no other expressed or implied warranties of merchantability, fitness of purpose or otherwise on *TOMManikin®* products, parts, and accessories.

CONTACT INFORMATION

For more information, to place orders, and see our entire line of products, visit us online at **tommanikin.com**

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TOMManikin® Gen 4 Supplemental Manual

The following pages are instructions pertaining to older-generation *TOMManikin®* models. Where important operational differences exist between the most up-to-date instructions described in the preceding pages, and previous generation *TOMManikins®,* they are described in the following pages. These differences largely pertain to engineering of the internal components (particularly of the Main Control Box), color-coding and numbering conventions of the various air lines, construction materials, and other disposable accessories, all of which have been greatly improved in the Gen 5 *TOMManikin®*.

If not otherwise specified in this section, the prior section will cover all other functions.

TOMManikin® Gen 4 Hose/Wiring Diagram

Non-Compressor Model

H
I
To Trachea Airway
P114
L Lung
P112
R Lung
P113
P115
Always upper
Always lower
J5
B
P10
P12
P20
P21
C
J
J1
[TOP]
A
J2
To Blood Refill Sprayer
P11
To Neck Pulse
To Arm Pulse
K
P205
TOM MANIKIN
GEN 4
E
F
P202
D
To Audio System
[TOP]
***** ATTENTION *****
DISCONNECT AND CHARGE THE BATTERY
WHEN TOM IS NOT IN USE OR IN STORAGE!
J4
G
To Air Refill Tank

A — Main Control Box
B — Air Control Ports
C — Power Outlet Ports
D — Power ON/OFF Button
E — Activate Button
F — Battery Port
G — 12V Battery

H — Tension Pneumo Bag
I — Lung Bladders
J — Bleeder Regulator Valves
    (Upper and Lower Extremities)
K — Bleeder Bag

J1 — Power line to Bleeder devices.
        Splits into P10 and P11
J2 — Power line to audio device in head
J4 — Power line from 12V Battery
J5 — Power line to Pulse Motors
P10 — Power line to Bleeder Valves
P11 — Power line to Bleeder Pump
P12 — Power line to Bleeder Pump
        (Before split to P20 and P21)
P20 — Split blue power line to Bleeder Regulator Valve
        (Upper Extremities)
P21 — Split blue power line to Bleeder Regulator Valve
        (Lower Extremities)

P112 — Blue air line to Right Lung
P113 — Blue air line to Left Lung
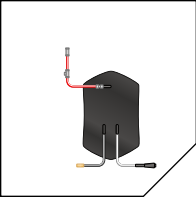**P114** — Green air line to Tension Pneumo Bag
P115 — Yellow air line to Trachea
P202 — Black bleeder line from Bleeder Bag to Bleeder
        Valve Regulator
P205 — Red bleeder fill line for refilling Bleeder Bag

(Components shown and hose/wire lengths are not to scale and have been enlarged/reduced for illustration purposes and for clarity of assembly.)

Compressor Model

Main Control Box, Battery and Lung bladders go into rib cage

Bleeder Reg. Valves and Bleeder Bag go into seat.
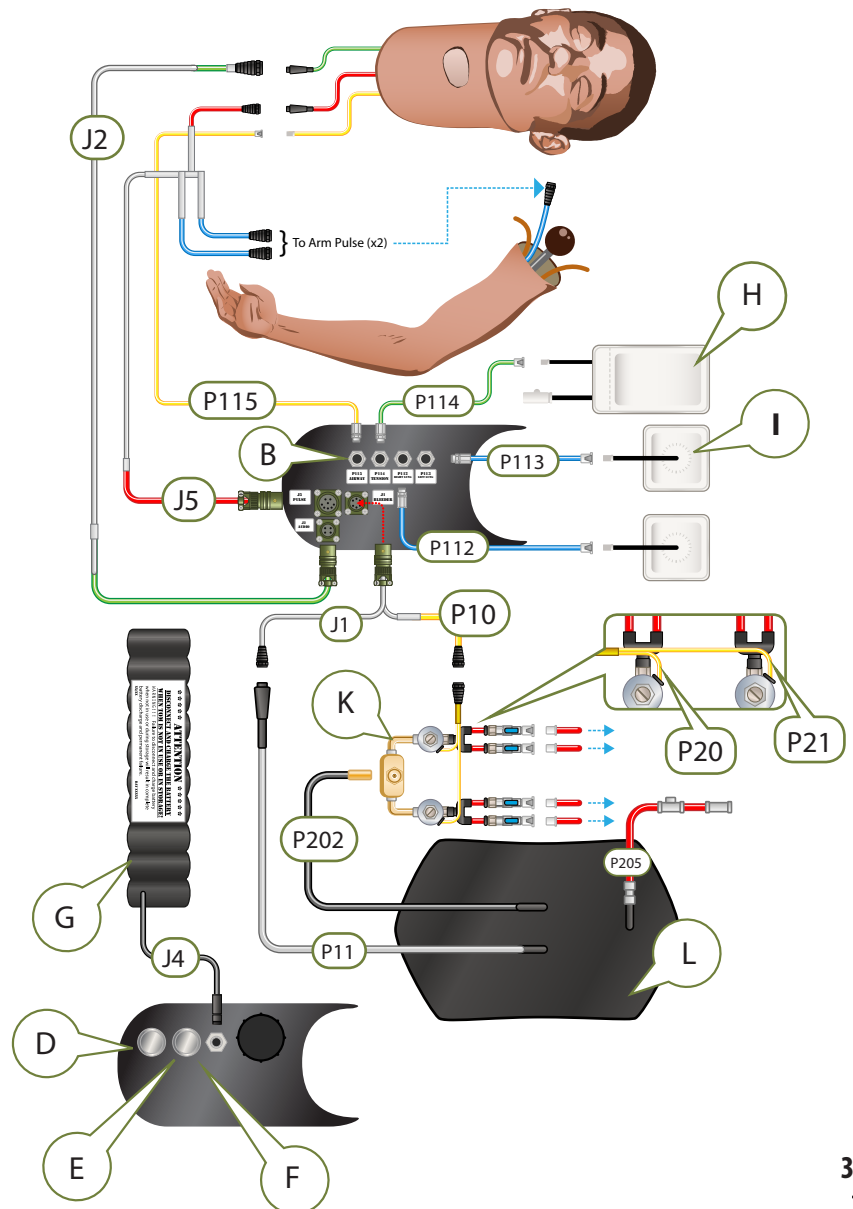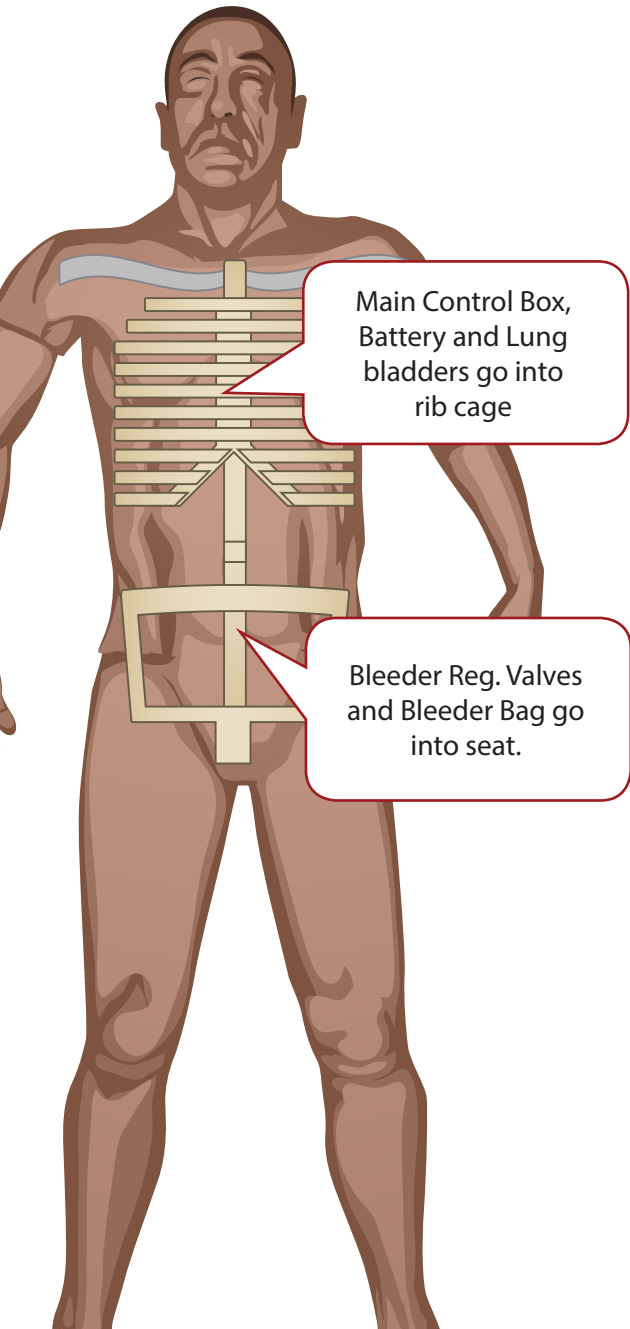
Powering the Bleeder System - Gen 4 TOMManikin®

Attach the grey power cable (P11, split off from J1) to the grey power cable attached to the **Bleeder Bag**. Attach the grey power cable (P10, also split off from J1) to the power cable attached to the **Bleeder Regulator Valves** (P12).

Connect grey power cable (J1) to the **Main Control Box**, in the port labeled "J1 BLEED" (Upper-right port when faced right-side up). Lastly, attach the black bleeder hose from the **Bleeder Bag** to the fluid intake port on the **Bleeder Regulator Valves**. (See Illustration 1)
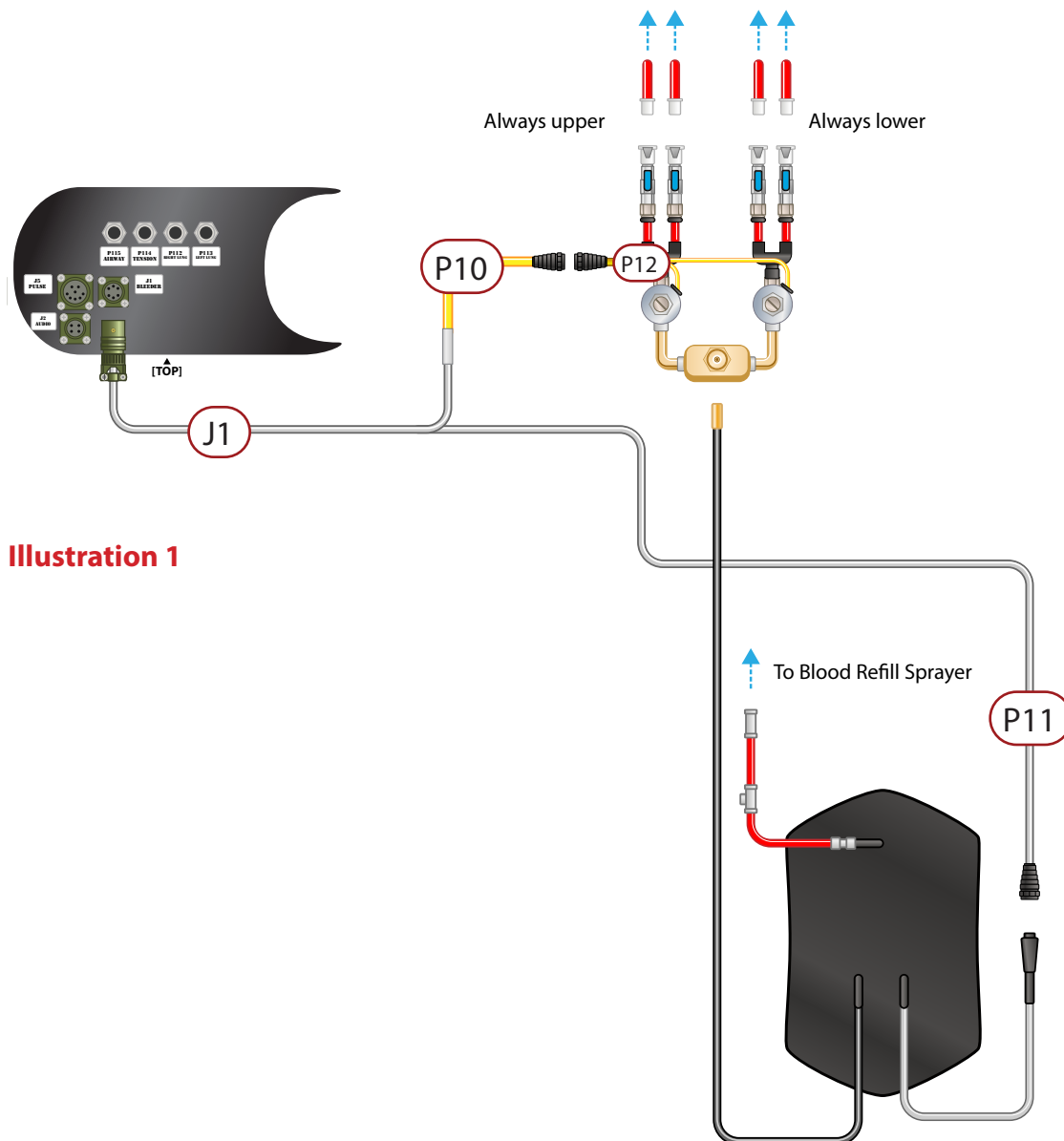
Always upper   Always lower

P10   P12

J1

Illustration 1

To Blood Refill Sprayer

P11

Breather Component Assembly

Port arrangement on Air Control Manifold
Non-Compressor Model

Nearly all the components necessary for the breather functionality of your *TOMManikin®* are located on the end of the **Main Control Box**, with the exception of the **Tension Pneumo Bag** which is situated outside the **Main Control Box,** fastened to the inside of the Rib Cage using the small Velcro™ strap. (See Figure 1)

Airflow between the various components is handled by the **Air Control Manifold,** which for added convenience is now built into the **Main Control Box**. It connects to the different components via numbered, colored air lines inserted in the manifold's ports. There are four ports total along the length of the manifold, labelled with their hose number and function. (See Illustration 2)
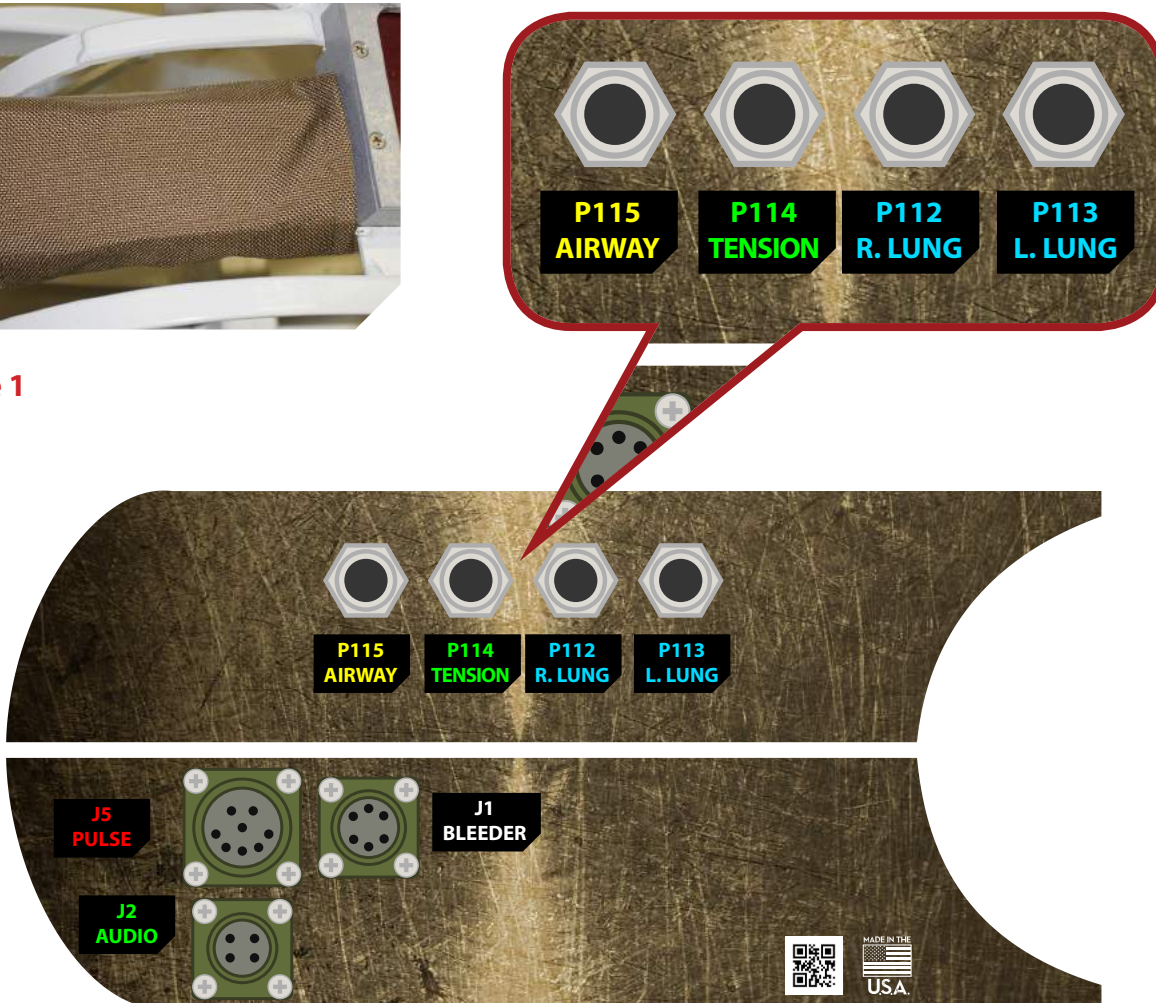

Figure 1

Illustration 2

Connecting Tension Pneumo Bag to Main Control Box

Connect green air line (P114) to **Air Control Manifold** port on Main Control Box ("P114 TENSION" port, second from left) (See illustration 1).
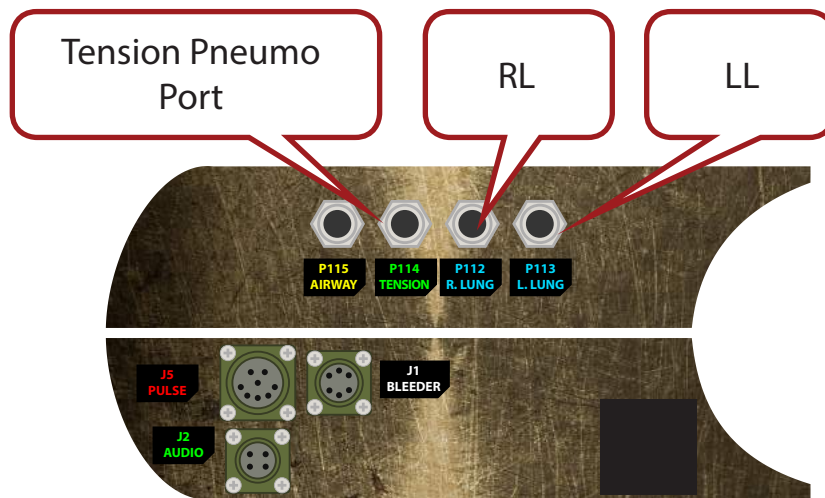
Tension Pneumo Port

RL

LL

P115 AIRWAY
P114 TENSION
P112 R. LUNG
P113 L. LUNG

J5 PULSE
J1 BLEEDER
J2 AUDIO

Illustration 1

Connecting Air Bottle to Main Control Box
Non-Compressor Model

Attach **Air Bottle** (Illustration 2) to black air hose (P101). Securely fasten hose to bottle tap. Connect opposite hose end to the **Air Control Manifold** port on the bottom of the **Main Control Box** (Illustration 3). The Air Pressure Gauge is located directly on the **Main Control Box**, allowing you to read current air pressure levels (between 5-20 psi) and vent excess pressure after the termination of your exercise. Lastly, secure the **Air Bottle** to the **Main Control Box** by positioning the bottle into the concave channel with the tap oriented downward, and using the large black Velcro™ strap. (Figure 1)
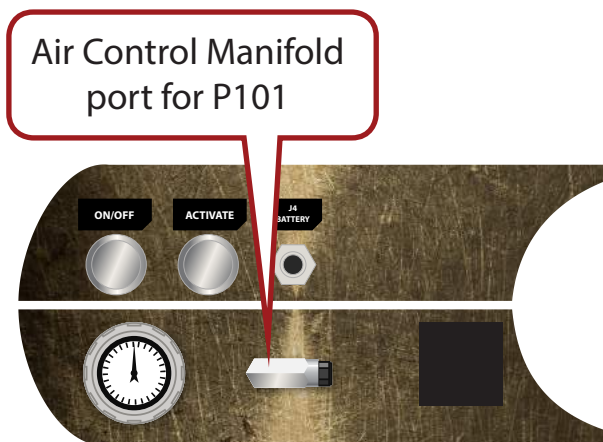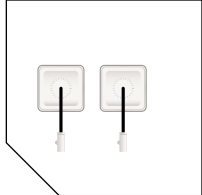
Air Control Manifold port for P101

Air Bottle secured in channel w/ Velcro™ strap

ON/OFF
ACTIVATE
J4 BATTERY

Oriented downward

Illustration 2   **Illustration 3**   **Figure 1**

Connecting Right Lung (RL) and Left Lung (LL) bladders to Main Control Box

Connect the **RL** blue air line (P112) to the **Air Control Manifold** port on the **Main Control Box** (See Illustration 1). Connect opposite end to RL fitting attached to black air line.

Connect the **LL** blue air line (P113) to the **Air Control Manifold** port on the **Main Control Box** (See Illustration 1). Connect opposite end to LL fitting attached to black air line.

It is recommended that you only connect the blue air lines to the black control lines after **Main Control Box** has been placed in rib cage.

Figure 2

Pulse Motors

Small subdermal motors are in place in both wrists and neck of your *TOMManikin*®, simulating pulses in the ulnar artery and carotid artery. Pulse rates, intervals and strengths are controlled via the Remote (see *TOMManikin® Remote Control* for further details)

See figures below for pulse motor locations.

Figure 3
Location of ulnar artery pulse motor

Figure 4
Location of carotid artery pulse motor
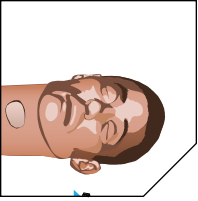
Connecting Trachea and Audio to Main Control Box

Connect the yellow air line extending from the bottom of *TOMManikin*® neck (See Figure 1) to the end of the yellow air line (P115) to **Air Control Manifold** port on the **Main Control Box** (See Illustration 1).

To power the sound system, plug the grey/green power cable (J2) into the **Main Control Box** in the lower-left port marked **J2 AUDIO** (See Illustration 1). Plug the opposite end into grey/green power line extending from the bottom of *TOMManikin*® neck (See Figure 1).

It is recommended that you only connect the yellow air lines and the J2 green power lines after **Main Control Box** has been placed in rib cage. For further details, see page 16

Yellow Air Line

Figure 1

Connects to
J2 Power Cable

To Trachea Airway

P115
AIRWAY

P114
TENSION

P112
R. LUNG

P113
L. LUNG

J5
PULSE

J1
BLEEDER

J2
AUDIO

To Audio System

Illustration 1

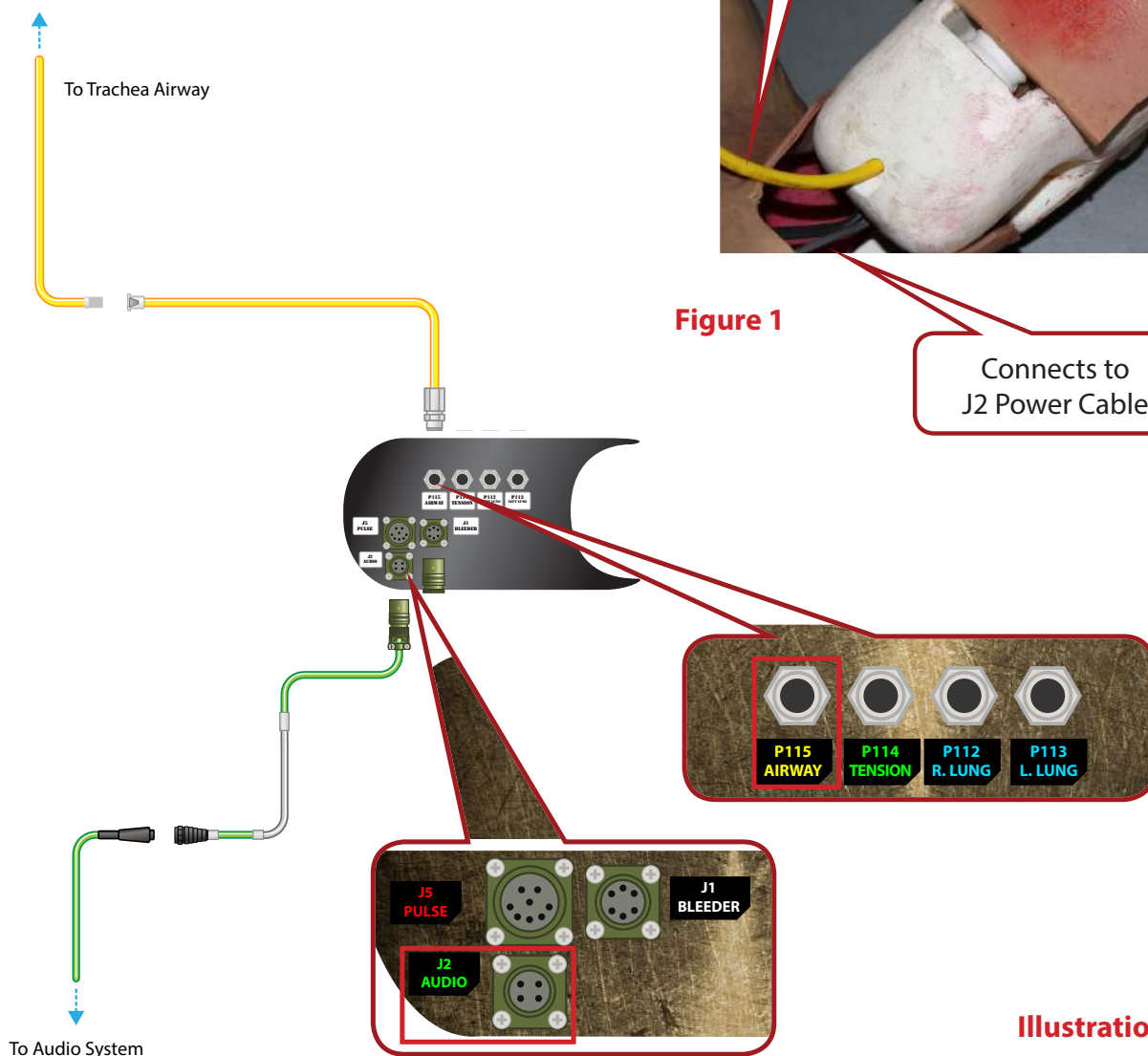# Attaching Sternum and Chest Tube Components

Attaching Sternum Chestplate

Your *TOMManikin®* is now compatible with both chest tube and sternum IO procedures, with reusable components that allow for an even more well-rounded and authentic medical training experience.

Placement of the sternum IO component is as shown in Figure 2 below, over the circular hole in the metal rib cage. The top plate can be moved by removing the 4 screws, allowing you to replace the hard rubber sternum piece when necessary without needing to remove the entire part from the rib cage.

Attaching Chest tube

Shown in Figure 3 is the rubber soft tissue material. Attach to the rib cage by inserting the two flat head screws through the upper and lower openings and match to 2 pre-drilled holes on ribs two and four. Secure on the inside of the rib cage with the two provided washers.

Lastly, place the white plastic rib cover onto the soft tissue material until it is flush with the rib cage as shown in Figure 4.

Figure 3
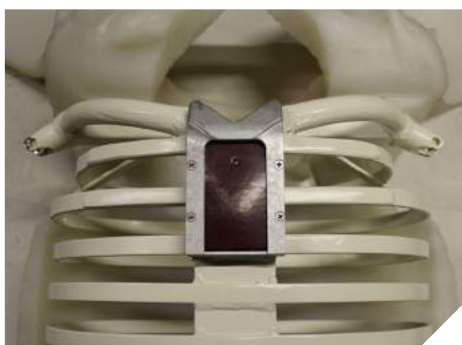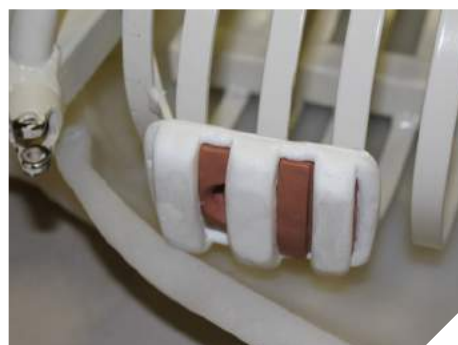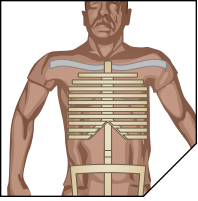

Figure 2

Figure 4

Packing Components into TOMManikin®

Before inserting the main components, ensure that:

A) The **Right Lung** and **Left Lung Bladders** are situated in between *TOMManikin®*'s rib cage and the Softech® skin.

B) The **Tension Pneumo Bag** is secured to the interior of the rib cage with the small Velcro™ strap.

C) **Sternum** and **Chest Tube IO** components are in place.

D) **Tension Pneumo** and **Lung** air hoses arranged so they will be accessible after **Main Control Box** insertion. See Figure 1 for completed prep reference.

Chest Components

To pack your *TOMManikin®* for easiest use, you will need to guide the wires and hoses by hand so that when the Main Control Box is positioned in the rib cage, that the J5 PULSE power cable *is the only cable situated at the top of the rib cage*, and the rest are extending out of the bottom of the rib cage.

Both the Audio System power cable and the yellow Trachea Airway tube extending from the head should run down the length of the spine, where they can be attached once the **Main Control Box** is in place.

With the **Air Bottle** secured to the **Main Control Box** with the large black Velcro™ strap, insert the **Main Control Box** up into the rib cage from beneath so that the side of the box with the Power Button, Activate Button, Air Gauge, Air Hose port and Battery port is facing out towards the bottom.

Strap the four colored air hoses to the lower-left rib as seen in the figure directly below.
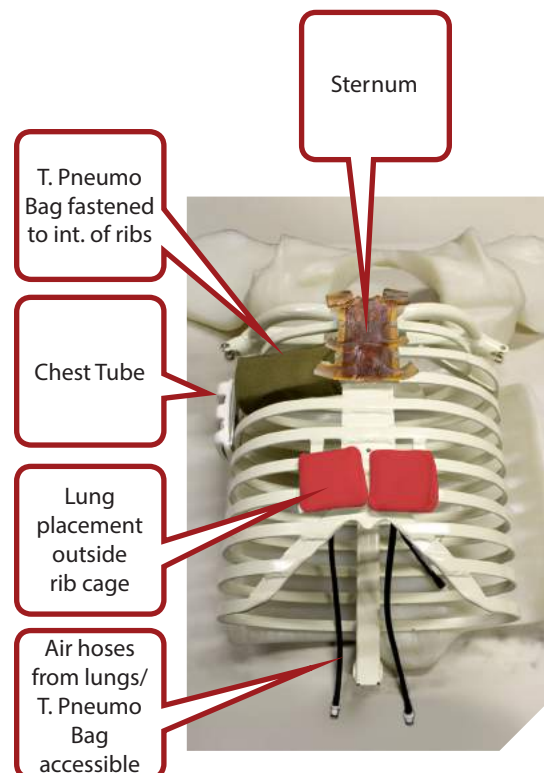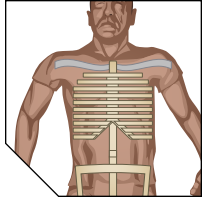
See Figure 2 for completed assembly.

Figure 2

Sternum

T. Pneumo Bag fastened to int. of ribs

Chest Tube

Lung placement outside rib cage

Air hoses from lungs/ T. Pneumo Bag accessible

Figure 1

Seat Components

The two components that are placed into the seat of your *TOMManikin*®
are the **Bleeder Regulator Valves** and the **Bleeder Bag.**

Attach the appropriate bleeder lines to the Upper and Lower Extremity
ports, remembering the that when the valves are held in a "U"
orientation, that the *left set are always for upper extremities*, and *the right
set are always for lower extremities*. Failure to match the valves will likely
be detrimental in the proper execution your training scenario, as the
command from the remote will not correspond with the appropriate
limb.

Once the bleeder lines have been connected, rest the **Bleeder Bag** on top
of the **Bleeder Regulator Valves**.

See the image sequence to the right for an example of how the contents
are arranged in the seat..

Connecting the Battery

Attach the power cable extending from the end of the **12V Battery** pack (J4) and plug into the
J4 BATTERY port on the bottom of the Main Control Box. (See Illustration 1)

J4
Battery Port

[TOP]
ON/OFF   ACTIVATE   J4 BATTERY

***** **ATTENTION** *****
DISCONNECT AND CHARGE THE BATTERY
WHEN TOM IS NOT IN USE OR IN STORAGE!
W A R N I N G ! ! ! Failure to disconnect and charge battery
when not in use or during storage will result in complete
battery discharge and permanent failure.
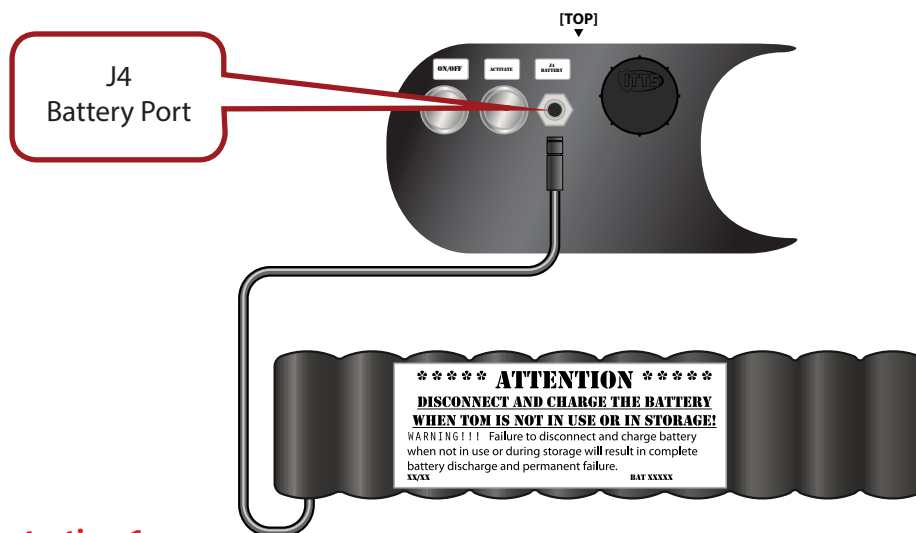XX/XX   BAT XXXXX

Illustration 1

NOTE

Disconnect and charge the battery when *TOMManikin*® is not in use and before putting in storage.
Failure to disconnect and charge the battery when not in use and before putting in storage will result in
complete battery discharge and permanent failure.

Part Replacement/Maintenance

Surgical Skin and Membrane Insertion and Exchange

Begin by pulling back the skin at the base of the neck, exposing the **Trachea**. Remove the used **Bleeding Cric Neck Skin** to expose upper airway components. Then, remove **Trachea** to expose the internal windpipe. Place the surgical membrane over the aluminum windpipe, then replace the plastic **Trachea** over the membrane. Wrap the opening from left to right with a new disposable **Bleeding Cric Neck Skin**. Secure everything in place by replacing the neck skin, remembering to feed the yellow airway hose back through the bottom. NOTE: Skin fully removed in images for purposes of illustration; removing skin to just below the jaw line is typically adequate to replace **Trachea** components.
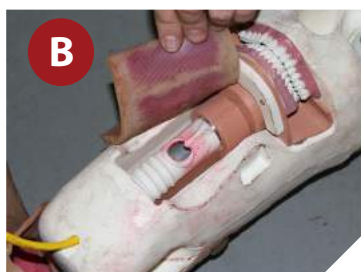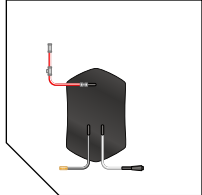
Filling/Refilling the Bleeder Bag

The *TOMManikin®* **Bleeding Bag** is designed for refilling utilizing a simple sprayer system, included with your *TOMManikin®*. Attach the sprayer hose--without sprayer handle--to the red bleeder fill line (**P205**) (See Figure 1). After filling, vent excess pressure using the release valve (See Figure 2).

Figure 2

Figure 1

Refilling the Air Bottle - WATERTOMM/CBRNE Only

Previous generation *TOMManikins®* are equipped with an internal pressurized **Air Bottle**, which must be periodically refilled. One of the more efficient and portable ways to refill the **Air Bottle** is by using a standard, commercially available SCUBA tank. An **Air Fill Station** (See Illustration 1) is included with these *TOMManikins®*. For instructions on refilling the **Air Bottle**, see following pages.

Tension Knob

Bleed Valve

Pressure Gauge

Female Port
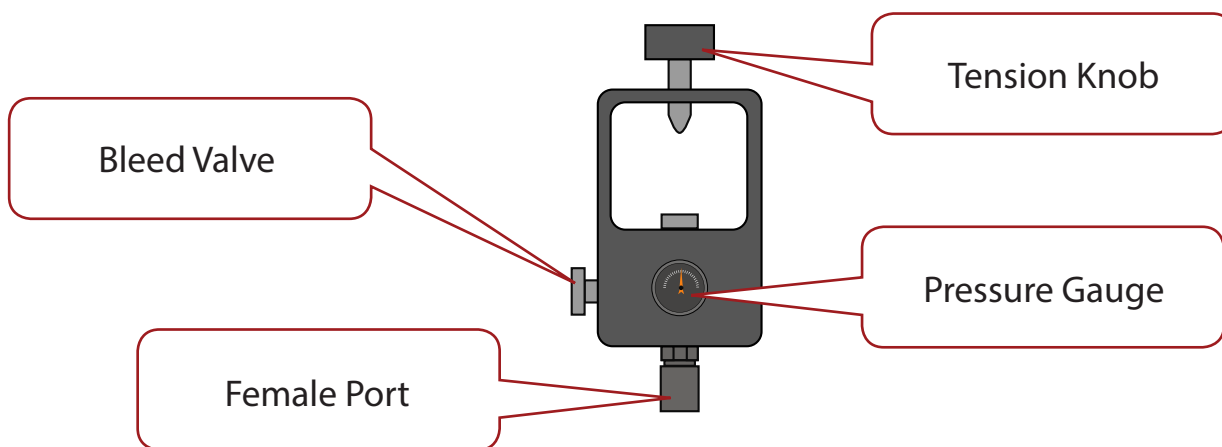
Illustration 1
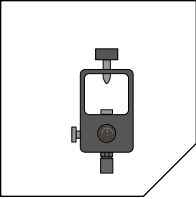
Refilling the Air Bottle - cont.

To refill the *Air Bottle*:

Affix your **Air Fill Station** to the air outlet on the SCUBA tank. Screw the large tension knob to tightly secure in place

WARNING: Do not overtighten

Take the male end of the black air refill hose and plug into the female port on the **Air Fill Station** by pulling back the sleeve, inserting the male end, then replacing the sleeve.

Take the female end of the black air refill hose and fasten to the male port on the *Air Bottle's* Adapter

Before next step: make sure the bleed valve on the **Air Fill Station** is "closed", or turned all the way clockwise.

Begin filling the **Air Bottle**. Open the valve on the SCUBA tank, listen for airflow, then fill to a pressure of 3,000 PSI or less.

When 3,000 PSI is reached, close the valve on the SCUBA tank.

Let off the excess air pressure by opening the bleed valve on the **Air Fill Station.**

Disconnect the black air refill hose from the **Air Fill Station**, and replace the **Air Bottle** into the *TOMManikin®* **Main Control Box.**

WARNING

DO NOT fill the Air Bottle to over 3,000 PSI!

TOMManikin® Disclaimers

North American Rescue Simulation (NARS) are not responsible for damage to *TOMManikin*® due to:
- Submersion in water for non-WATERTOMM models.
- Excess falls.
- Crushing from excessively large objects causing a bent *TOMManikin*® frame.
- Lack of maintenance procedure follow-up (pre-check, post-training, and storage).
- Excessive heat.
- Burning.

To extend the life and of your *TOMManikin*®, the following maintenance and safety procedures are highly recommended;
- During each operational use, insure joints are properly tightened (lock seal).
- After each post-use, bleeder lines should be flushed with soapy water.
- Liquid-container bags should be rinsed clean with soapy water.
- Battery should be charged in between uses or when *TOMManikin*® is in storage.
- *TOMManikin*® is NOT a projectile, nor should it be dropped on another person which may result in serious injury.

Limited Warranty

NARS warrants to the purchasers of *TOMManikin*® products that they will be free from defects in material and workmanship for a period of ninety (90) days from the date of purchase. Components found to be defective may be returned directly to manufacturer.

TOMManikin® manufacturers will be liable under this limited warranty only if *TOMManikin*® products have been serviced and maintained properly as directed in the operating manual. NARS will not be responsible for damage caused by unauthorized repairs or modifications that have been made, or if the product has been damaged through misuse, accident, or abuse. This warranty does not cover wear and tear or expendables such as batteries and replacement lungs. There are no other expressed or implied warranties of merchantability, fitness of purpose or otherwise on *TOMManikin*® products, parts, and accessories.

CONTACT INFORMATION

For more information, to place orders, and see our entire line of products, visit us online at **tommanikin.com**

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Feedback System

NORTH AMERICAN RESCUE®
Simulation

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Feedback System Contents

A — Storage Pouch

B — Tripods - 72 in. (x2)

C — Cameras (x2)

D — Retractable Ethernet Reels - 25 ft. (x2)

E — NARS Tablet

F — Recorder

Pelican case model #1650
31.59 in. L x 20.47 in. W x 12.45 in. D

Total Package weight 57.5 lbs.

Tripod Setup

1 — Unlatch and extend legs to desired height.
2 — Loosen center knob to extend center column.
3 — Tighten center knob to lock center column in place.

Prepare the Camera Mount

1 — Press lock lever down.
2 — Press safety lever towards lock lever.
3 — Release lock lover to hold safety lever in place.
4 — Angle quick release with the larger end towards the safety lever and set the smaller end down.
5 — Press the large end down to lock into place.
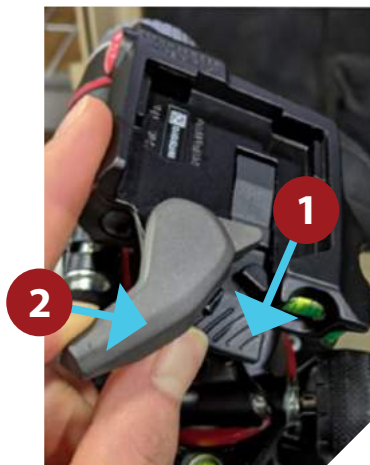
Connecting Retractable Cable and Camera

1 — Tug retractable cable to desired length by pulling continuously.
2 — Tug twice to lock the cable and stop it from retracting.
3 — Connect NARS tablet's RJ45 plug from camera to coupler.
4 — Connect retractable RJ45 to coupler.
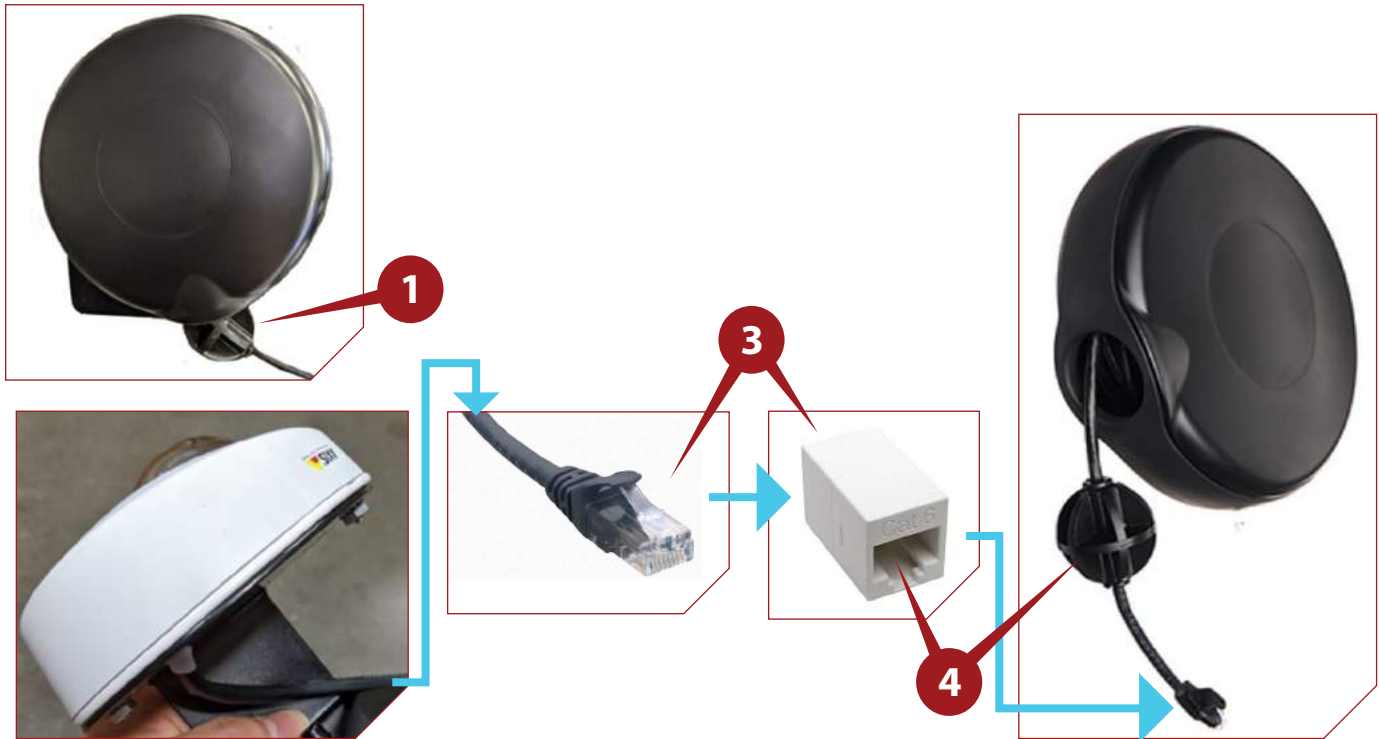
Connecting Camera from Reels to Recorder

Ensure cables from the reels are connected to the rear of the recorder.

Green LEDs will illuminate when recorder is powered on.
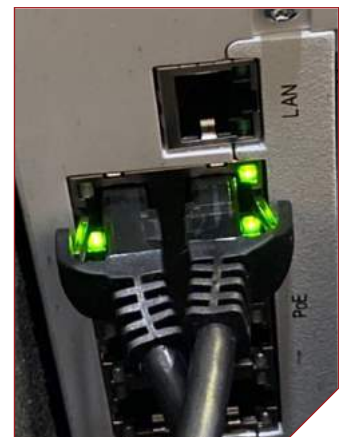
Powering On System

1 — Press and hold power-on button for several seconds.

2 — Indicator light will turn amber while system is starting.

3 — Indicator light will turn green when system is on and ready.
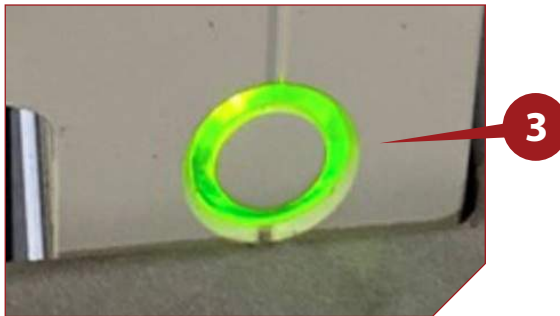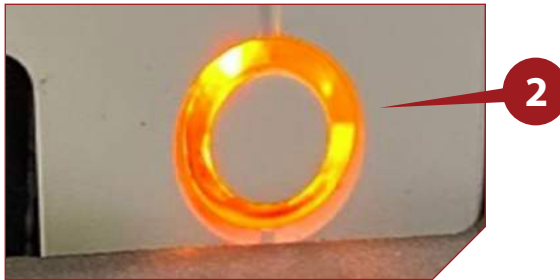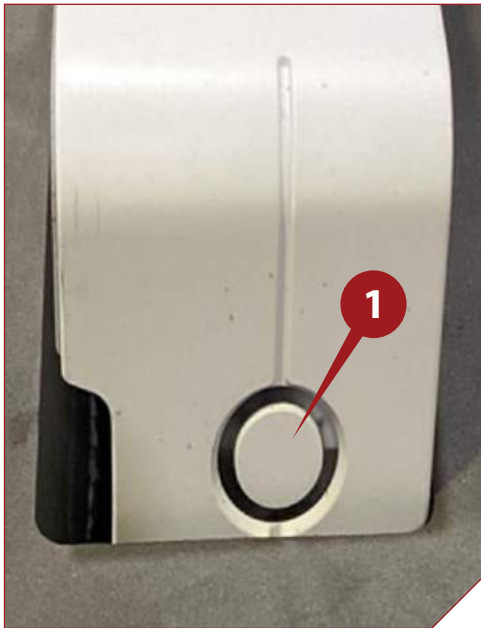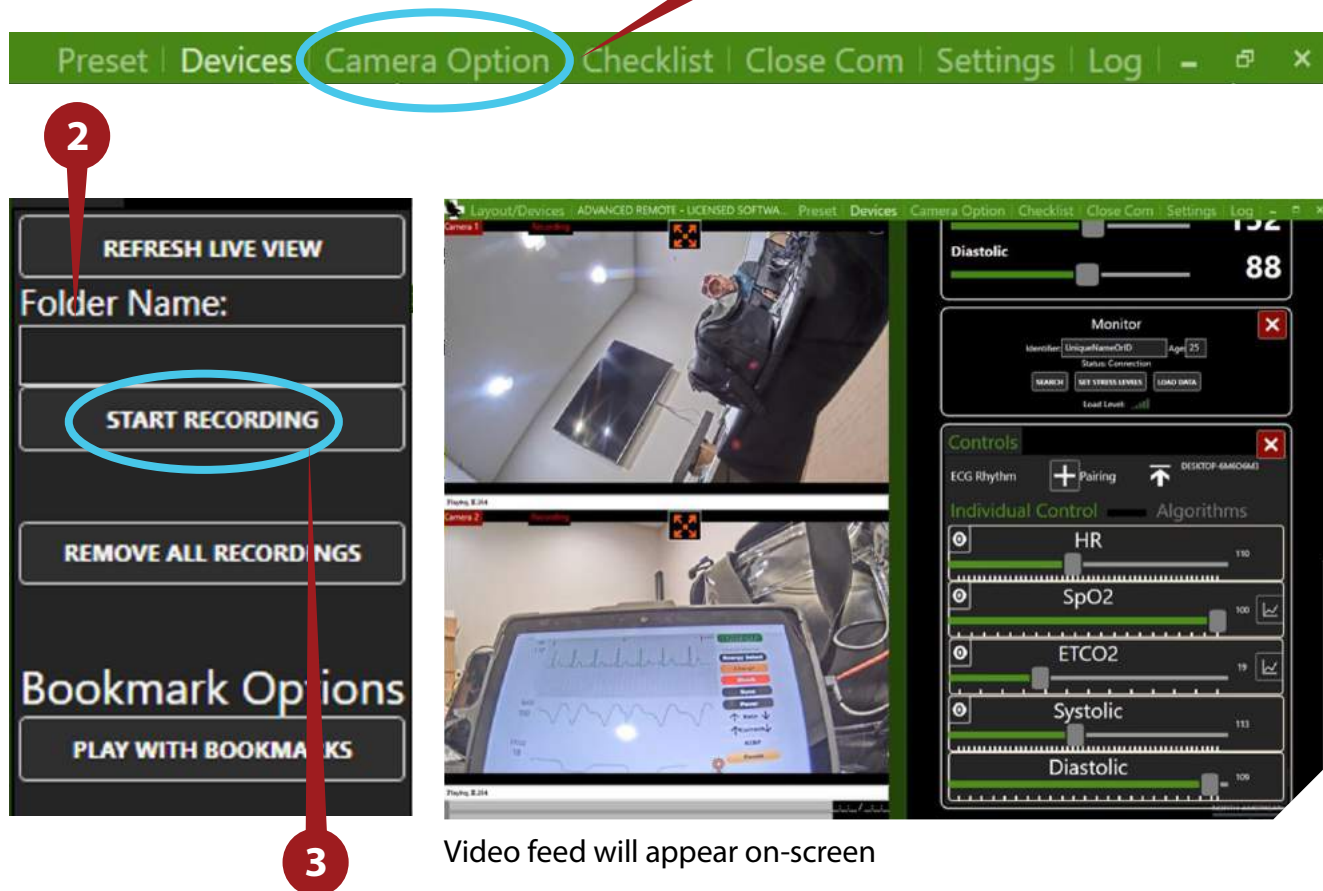
Using NARS Tablet with Cameras

1 — Start up tablet by pressing and holding the power button.

2 — Log in using password **TOMM**.

3 — Connect the USB module to the tablet.

4 — Select the "NAR Feedback" App on the desktop by double-tapping the icon.

5 — Select cameras to use, then tap "OK".
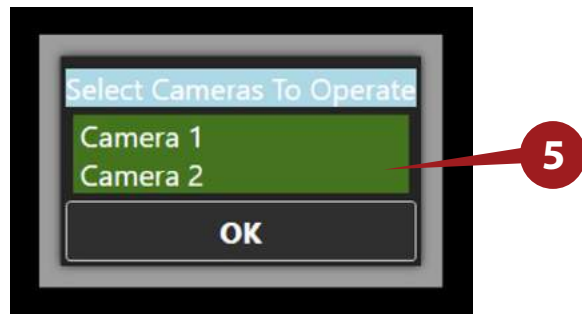
Camera Options

1 — Select "Camera Option" at the top of NARS Tablet screen.

2 — Name the event in the provided box.

3 — To begin filming select "Start Recording".

1

Preset | Devices | Camera Option | Checklist | Close Com | Settings | Log | — ⊡ ✕

2

REFRESH LIVE VIEW

Folder Name:

START RECORDING

REMOVE ALL RECORDINGS

Bookmark Options

PLAY WITH BOOKMARKS

3

Video feed will appear on-screen

Adjusting Camera Angles

Cameras can be manually configured to adjust camera angles.

1 - Remove two screws on camera casing. Carefully remove casing cover.

2 - Numbers on the lens indicate angle degree. The lens can be manually turned to the desired camera angle.

1

2

Recording Scenario

Once you start recording follow the prompts below to enable the **Feedback System**. To create a bookmarked folder, click "Create New", name the event, and tap "Save".

- You can now begin adding "Bookmarks" to the event and make comments.
- When finished select "Exit" to stop recording.

To replay an event:

- Select "Play with Bookmarks" (Rename Feedback)
- Select the named event, select bookmark.

Adding Event to Establish a Bookmark

1 — Select "ADD EVENT".

2 — Add the event comment. Multiple bookmarks can be captured during each recorded event.
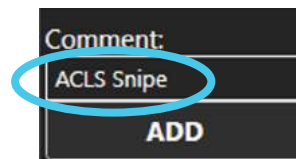
NOTE

Date and Time are recorded along with TOMManikin's vital signs and, if being used, students' stress level (HR & RR)
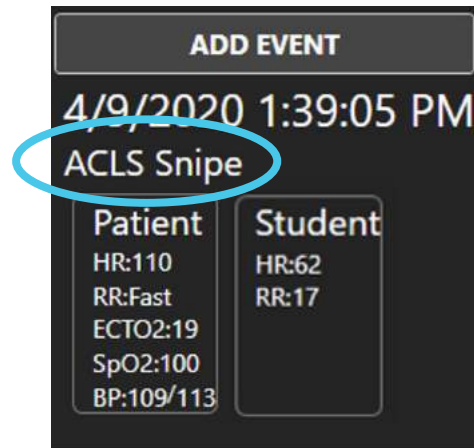
Replay Bookmarks

1 — From the Live view, select "Stop Recording". (The menu pictured will appear in upper right).

2 — Select "Play with Bookmarks".

3 — Select event to be played back. NOTE: Current event will display as last recorded bookmark file. Drop-down arrow allows user to select event to replay.

4 — Select "LOAD".

5 — Select the bookmark to be viewed from the captured event bookmarks.

STOP RECORDING

REFRESH LIVE VIEW
Folder Name:

START RECORDING

REMOVE ALL RECORDINGS

Bookmark Options
PLAY WITH BOOKMARKS

BookMark File
ACLS Example.txt
4/9/2020 1:35:18 PM
LOAD
CANCEL
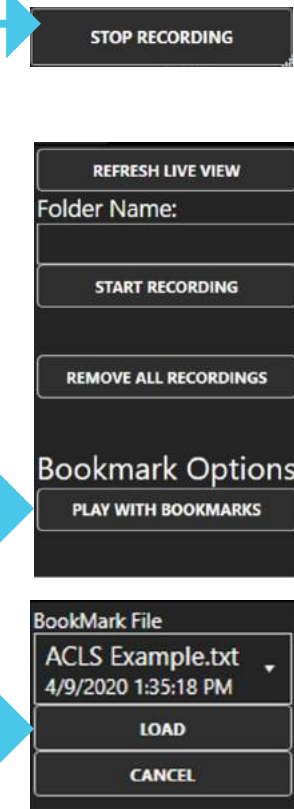
Getting Additional Devices

To get devices not already saved:

1 — Click "Layout/Devices".

2 — Click "GET DEVICES".
  • You can load previously saved layouts by clicking "LOAD LAYOUT".
  • If devices are not connected, turn on the device then click "Refresh".

Layout/Devices ADVANCED REMOTE - LICENSED SOFTWARE

Communication
with
TOM Manikin 7

Timeout

Refresh

50 BPM

Devices
GET DEVICES
CLEAR ALL DEVICES
LOAD LAYOUT
SAVE LAYOUT
ADD ACLS
ADD VIT MODULE

2

Device Examples

Wearable Stress Monitor

TOMManikin™

Patient Monitoring Suite
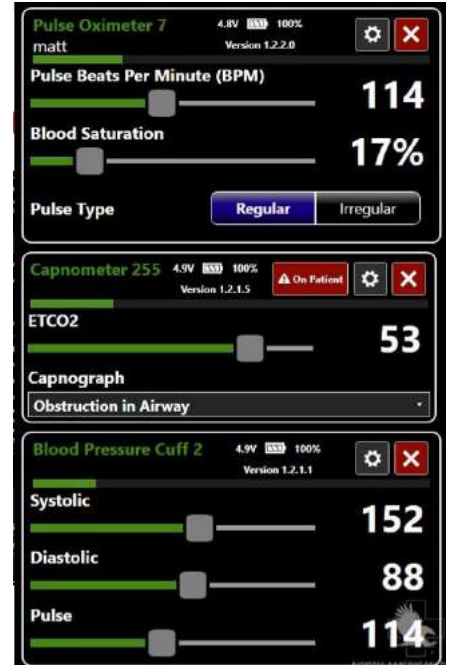
Pairing to get PMS under one control

- Press and Hold on the device name.
- After two seconds release to bring up devices to pair.
  NOTE: You must perform "Get Devices" first.
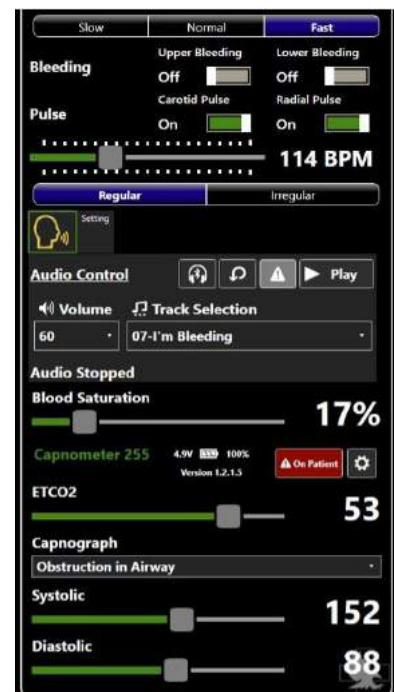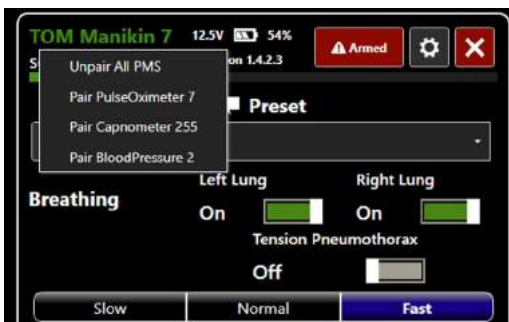
H-60/CV22 Airframe

NORTH AMERICAN RESCUE®
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Onboard Generator

The **CASEVAC** system is powered primarily by the onboard generator. The control box uses up to **50 AMPs** of power through two **110 VAC 30 AMP** circuits.

The trailer can also be powered from shore power using the **L5-30 connections** or the **15 AMP adaptor cables.**

The **NARS CASEVAC** platforms can be powered by multiple brands/platforms of generator. Example **Honda EU3000is** used in this manual. NARS **does not** manufacture generators. Please follow all manufacturer's instructions and suggestions.

NOTE: Upon cold start, the generator needs to run for approximately **5 minutes** prior to any AC power usage. The AC generator has to stabilize in order to provide the appropriate amount of power needed by trailer system's electronics.

Honda EU3000is manual:
https://www.northerntool.com/images/downloads/manuals/101609.pdf

⚠️ **SAFETY NOTICE** ⚠️

FAILURE TO COMPLY WITH ELECTRICAL SAFETY PRECAUTIONS MAY RESULT IN DAMAGE TO EQUIPMENT AND/OR SERIOUS INJURY OR DEATH TO PERSONNEL.

⚠️ **NOTE** ⚠️

ENSURE ALL EQUIPMENT IS POWERED OFF PRIOR TO SHUTTING DOWN THE GENERATOR OR SHORE POWER

Controls and Features

The below illustrations show the identity and location of the most frequently used controls:
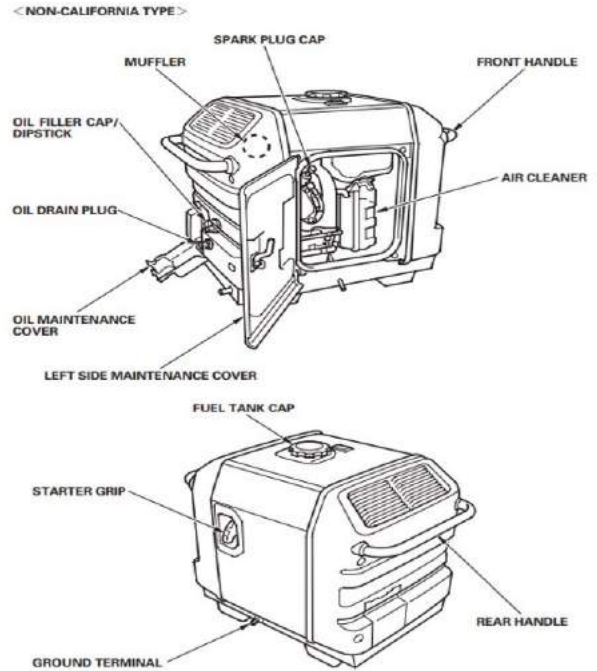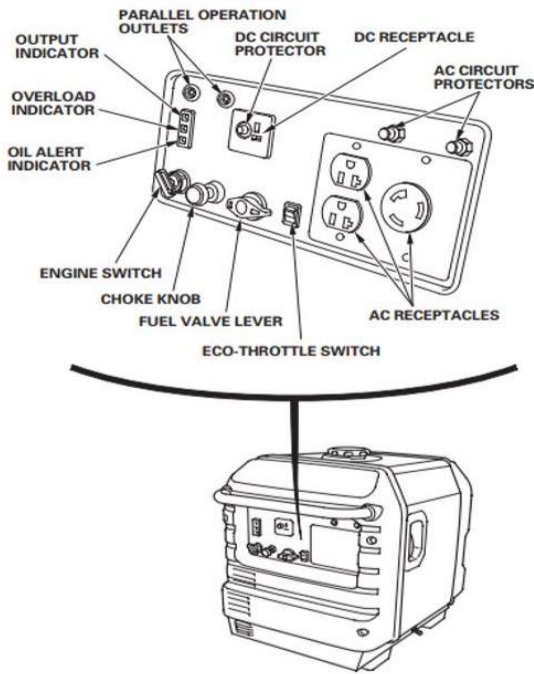
The Engine Switch controls the ignition system, and it operates the electric starter.

OFF — Stops the engine. The engine switch key can be removed/inserted.

ON — Running position, and for starting the recoil starter.

START — Operates the electric starter.

Starter Grip is used when the battery voltage is too low to turn the starter motor. Pulling the starter grip operates the recoil starter to crank the engine.

NOTE: Do not allow the starter grip to snap back against the generator. Return it gently to prevent damage.

The Fuel Valve Lever is located on the control panel.

The fuel valve must be in the ON position for the engine to run.

After stopping the engine, turn the fuel valve to the OFF position.

The Choke Knob is used to provide proper starting mixture when the engine is cold. It can be opened and closed by operating the choke knob manually. Move the choke knob to the closed position to enrich the mixture for cold starting.

Shore Power

The trailer also be powered from shore power using the **L5-30 connections** or the **15 AMP adaptor cables.**

Extreme care should be used when connecting and using shore power. Typical shore **110VAC outlets** are limited to **15 AMPs** each. This means proper planning must be utilized in order not to overload any circuits and damage personnel or equipment. Please use the guidance below to customize use with limited circuits.

Use **ONLY ONE** of the following configurations:

Use with only **ONE** 110VAC 15AMP circuit
- Control and Audio System
- Control and one fan
- Control and smoke

Use with **TWO** 110VAC 15AMP circuits
- Control, Audio System, and one fan
- Control, Audio System, and smoke
- Control, one fan, and smoke
- Control, and two fans

Control Panels
Power Panel

1 — Power with Main LED Power Button
2 — Power on fans with White toggle switch
3 — Power on Network with Black toggle switch
4 — Power on Network with Black toggle switch
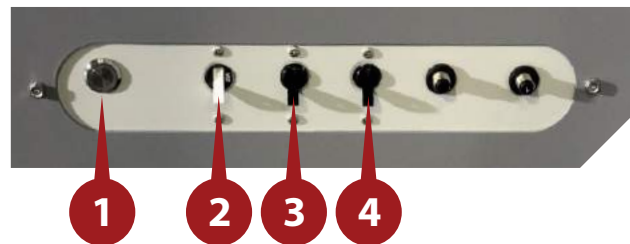
Remote Head Control

The remote head located in the helo cabin provides a local operator to control the operations of the helicopter control system. Verify the system has been activated within the software or select the ACTIVATE SWITCH after the POWER ON sequence.

Press the corresponding push-button switch button to turn on each required operation. Press again to cease the operation

Tablet Set-up

The **NARS CASEVAC** trailers operate using the proprietary **NARS Tablet** and software system.

1 — From the desktop, open **Advanced Remote Software.**

2 — Click "Layout/Devices" to connect to the unit.

3 — Click "GET DEVICES" to populate with any NARS equipment currently powered on. The **CASEVAC** trailer's controls will populate within the app.
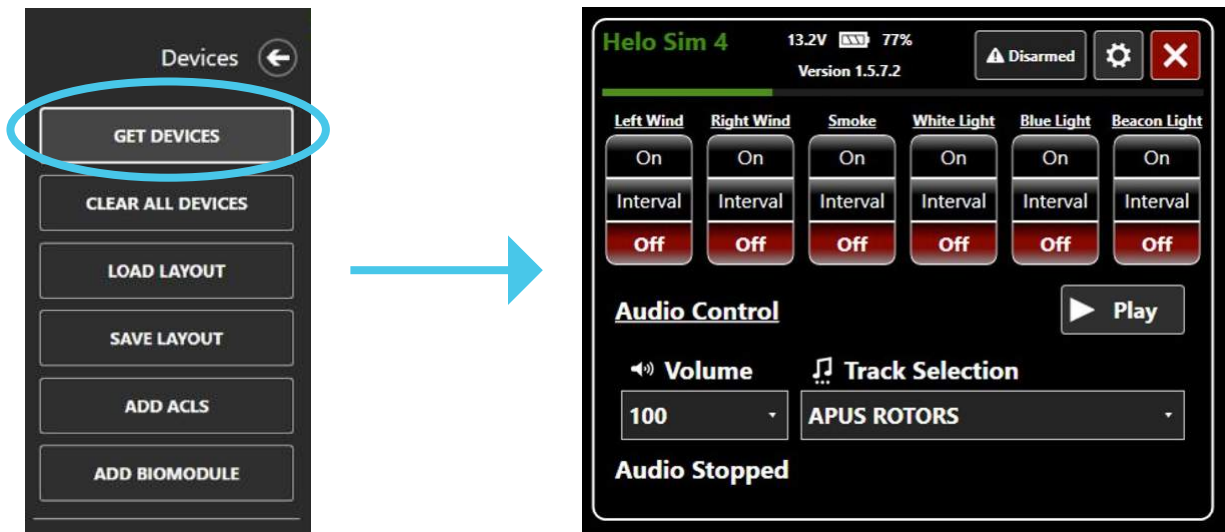
Onboard Camera WiFi

The **CV-22 NARS CASEVAC** trailer is equipped with onboard WiFi that allows for camera connectivity. NOTE: There is no internet access with this WiFi.

1 — Open the Network WiFi connects list from the task bar in the screen's bottom-right**.**

2 — Select "ITTS HELO 2". Password: HELO
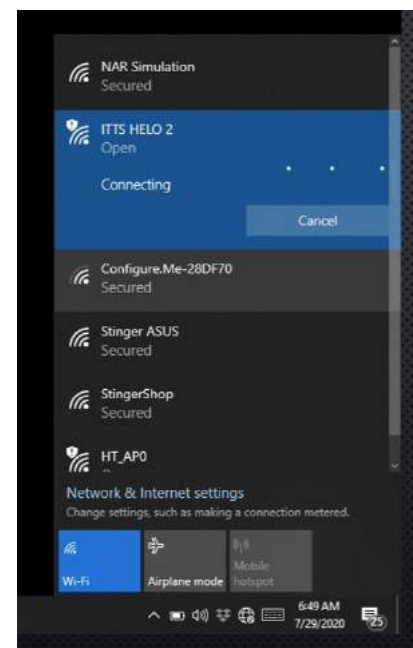
Operations

1 — Fan operation (Left and Right)
2 — Smoke machine
3 — White Light
4 — Blue Light
5 — Beacon Light - Roof beacon
6 — Audio Volume (100, 80, 60, 40, 20, 0)
7 — Audio Track Selection

Add Cameras

To add camera feeds within the app:

1 — In the upper-right corner of the **Advanced Remote Software,** click "Cameras", then click "ADD NEW CAMERA".
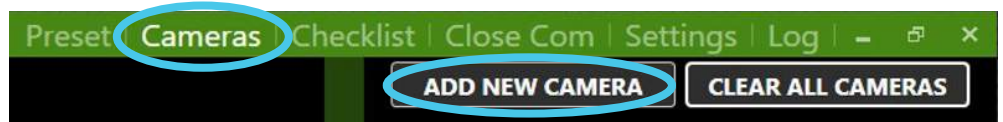
2 — Available cameras will populate on the right half of the desktop. Select the camera.
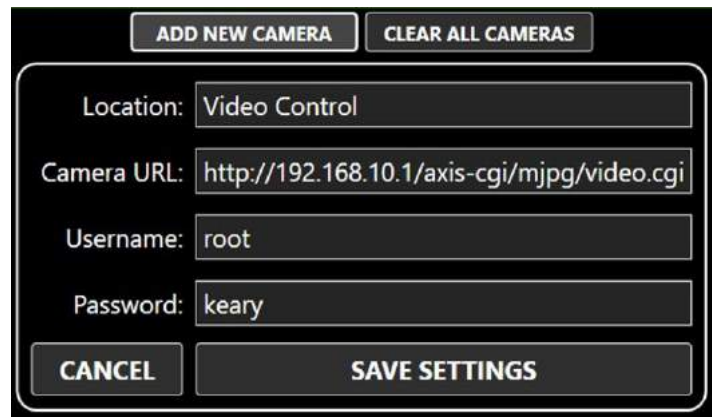
3 — The video feed will appear on the right.
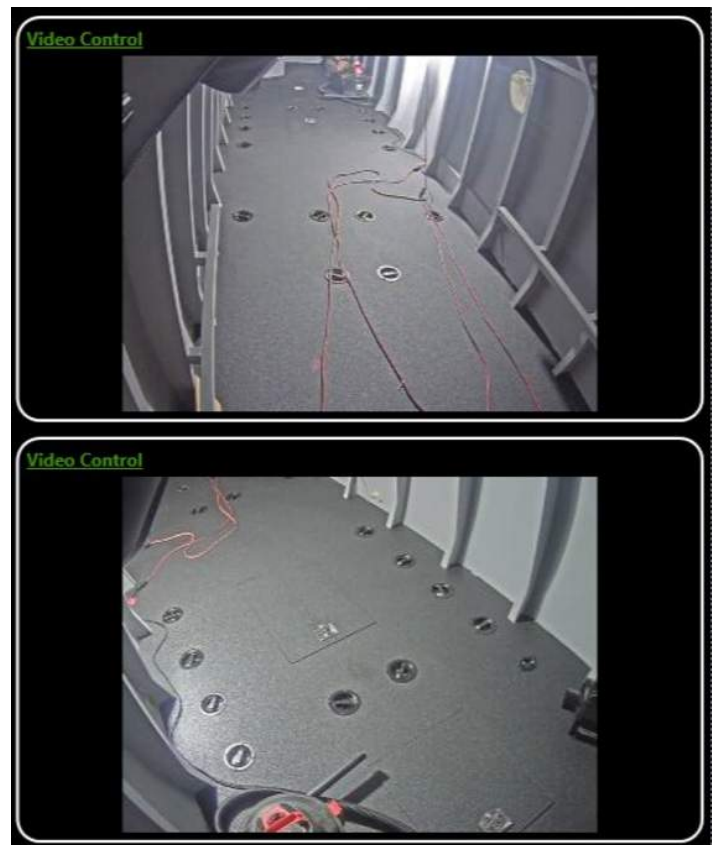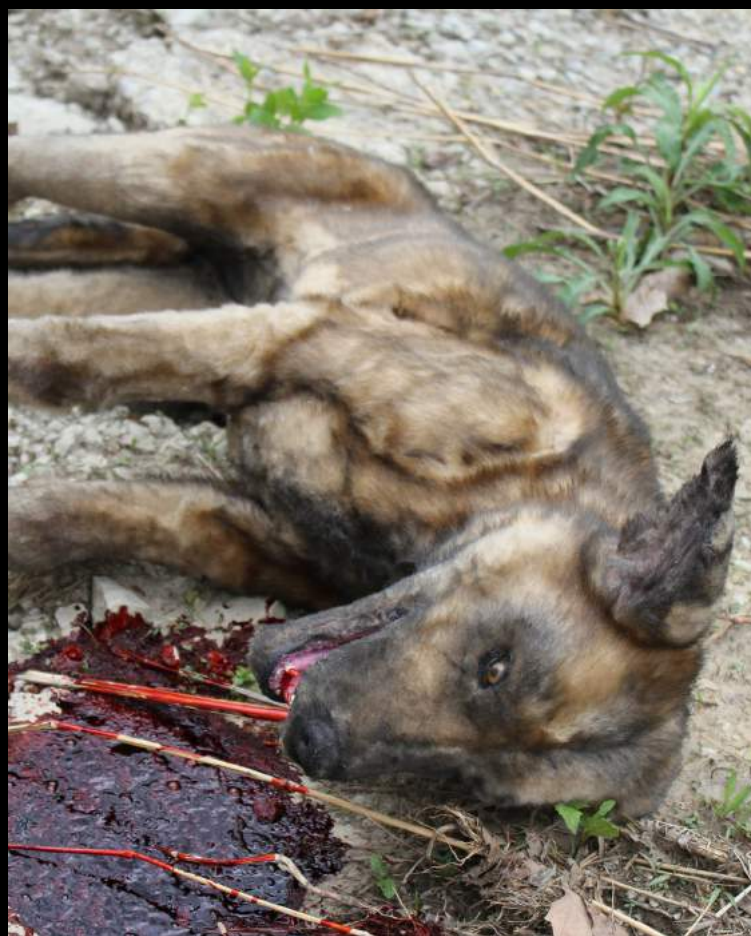
K9 Operations Manual

NORTH AMERICAN RESCUE®
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Product Components and Specifications

Your **NARS K9™ Manikin** will arrive with the following components:

- **K9 Manikin** (A)
- Bleeding Fill Spray Bottle (B)
- Surgical Airway neck wraps
- Shaveable IV site wraps
- Accessory Kit including
  1. NARS Tablet (C)
  2. 5 AMP battery
  3. 2 (two) battery chargers
  4. Bottle of Simulation Blood (D)
  5. Operations Manual
  6. IO site replacements

Features

- The **NARS K9™ Manikin** mimics a Belgian Malinois service dog
- Weight: 57 lbs. / 25.85 Kg
- Internal Air Compressor
- 2-Liter capacity blood bag

NARS K9™ Setup

Your **NARS K9™ Manikin** is run by the Control Unit, which is located inside your **NARS K9™ Manikin's** chest frame. Your Control Unit provides the Audio, Air, and Bleeding functionality.

Powering the Control Unit

- Ensure the NARS battery is in its proper place.
  *NOTE: the **NARS K9™ Manikin** comes with the battery shipped in place.*

- Attach the NARS battery to the Control Unit (**A**). (See bottom-right image)

- Fill the **NARS K9™ Manikin** Bleeding Reservoir via the Blood Fill Bottle. (See next page)

Bleeding Solenoid

Battery Cable

Bleeding Reservoir & IV Fill Ports, Power Cable
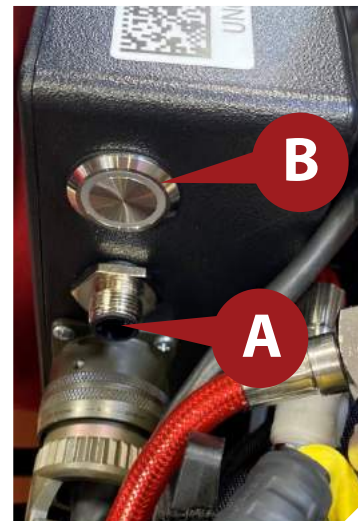
Power ON/OFF Button & Battery Port

- Press the POWER button (**B**) on the face of the Main Control Box.

NOTE: Disconnect battery from port when not in use.

Filling/Refilling the Bleeding Reservoir

To fill/refill the Bleeding Reservoir:

1. Pump the Spray Bottle to pressurize the system.
2. Attach the Spray Bottle to Bleeding Reservoir quick-connect line. (See image at right)
3. Turn the in-line valve to the 'ON' position.
4. While filling, monitor Bleeding Reservoir to avoid overfilling with fluid or air.
   WARNING: Overfilling may lead to rupture of reservoir.
5. When Bleeding Reservoir is full, turn in-line valve to 'OFF'.
6. Vent excess pressure from the Spray Bottle. (See image below right)

Bleeder Component Assembly

Connect the two components fastening the 5/16th black bleeder line from the *Bleeder Bag* (**A**) to valve stem on *Bleeder Regulator Valves* (**B**) .

The regulator possesses four ports paired off into two sets. When holding the regulator ports-up the left pair is set to control the *upper extremities* (**C**), while the right pair is set to control the *lower extremities*. (**D**)

The user may adjust the flow of fluid by turning the desired blue valve switch from between 0º to 90º (**E**)
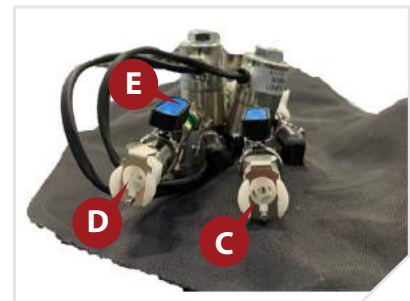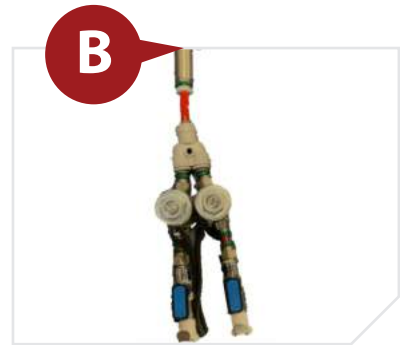
The Blood Reservoir Bag maximum capacity is **2 liters**. Avoid overfilling the bag, or you run the risk rupture. The IV Fill is a closed circuit that is pressurized with approximately 30cc of simulated blood.

Bleeding Reservoir & IV Fill Ports

Procedure Components

Surgical Airway Wrap

Your **NARS K9™ Manikin** comes equipped with a Surgical Airway wrap. Being used for surgical incisions, wraps are one-time use accessories. It is easily replaced on the **NARS K9™ Manikin** by undoing the Velcro™ attached at either end of the of the wrap.

Surgical Airway Insert

Simulating the trachea, the Surgical Airway Insert is located in the **NARS K9™ Manikin's** throat.

Intraosseous Site Locations

The **NARS K9™ Manikin's** features the ability to perform Proximal Humerus and Lateral Tibia IO procedures.

Interchangeable Lower Limbs

The **NARS K9™ Manikin's** lower extremities can be swapped out to simulate a variety of trauma.

Troubleshooting

NO BREATHING

- Re-check all power cable connector fittings.
- Re-check battery connection to Main Control Box and ensure battery has a charge.
- Re-check head connection.
- Turn OFF all power at the main power switch, located on the front of the Main Control Box.
- Turn ON power at the main power switch, located on the front of the Main Control Box.

NO SOUND

- Make sure your audio cable is securely attached to the audio cable that comes out of the Control Unit.
- Ensure that the audio cable is not kinked or damaged in any way.
- Make sure that the SD card is seated properly in the Control Unit.

NO BLOODFLOW

- Check blood lines to ensure that they are connected to the bleeding valves.
- Check that the gold connector is securely connected to the cable that connects to the blood bag.
- Ensure that the vales on the bleeding ports are in the on position (if they are in line they are on line).
- Check all bleeding lines for kinks or damage. Manually blow air in blood tubes to check for blockages in tubes.

CONTACT INFORMATION

For more information, to place orders, and see our entire line of products, visit us online at **tommanikin.com**

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Mobile Sensory Control Unit

NORTH AMERICAN RESCUE®
Simulation

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NARS-MSCU System Components & Features

LED Light Set

- Wireless Control
- Six brilliant amber, blue, red, and white LEDs
- Clear optic hard-coated polycarbonate lens
- Tripod stand included

Fogger

- Wireless Control
- Water-based fog/smoke
- 0.9-gallon capacity
- Low fluid indicator
- Output 20,000 CFM
- Features low fluid light indicator
- LED-illuminated tank
- Automatic shutdown

Fogger

- Wireless AC control
- Two sizes available
- 3-speed output (2600-4000 CFM)
- 1HP
- Power: 10-10.8 amp
- Voltage: 115-120
- Weight: 24.5 – 38.5 lbs
- Power cord length: 25'

Loud Speakers

- Wireless control of volume and soundtracks
- Built-in 1000W amplifier (2000W peak – 1000 continuous)
- Output: 127dB
- Input connectors: ¼" mic/line input – 2X RCA (phono)
- Net weight: 27 lbs. per speaker
- Enclosure: impact-resistant ABS with 16-gauge powder-coated steel grille, 8" woofer with 1.75" diaphragm compression driver and 105 conical DMT cover.
- Includes hard case for cables and wireless control devices.
- Power cord length: 25'

Unpacking the NARS-MSCU

The **NARS-MSCU** ships with the following items, packaged in two Pelican containers:

Box A

- Smoke Machine with integrated Smoke Control Unit
- Smoke Machine Power Cable
- 1 Gallon Fog Juice
- Sound Control Unit
- (x2) Speaker Cables
- (x2) 10" Speakers
- Fan with integrated Fan Control Unit
- Magnetic Light Control Unit
- (x2) 10 Amp Batteries
- (x2) Smart Battery Chargers
- (x2) Power Supplies
- NARS Tablet Controller

Box B

- (x2) 10" Speakers

NARS-MSCU Power Setup

The **NARS-MSCU** is run by power supplies/batteries and power cables. The fan, smoke machine, and speakers each have standard power cables, and must be plugged into a wall outlet in order to be operational. The speaker control unit and light control unit can be powered either via a wall outlet or with the 10-amp batteries.

Fan Setup

1. Plug the fan into wall outlet.

2. A flashing green and red LED will indicate the fan is ready to operate.

Smoke Setup

1. Attach power cable from rear of the smoke machine to the wall outlet. Power cable can only be inserted one way, and should be twisted clockwise to lock into position.

2. Flip on green ON/OFF switch on left-hand side of smoke machine. The switch will glow and display will power on.

3. The display will cycle through wireless pairing and a heating-up screen. Once both cycles are complete, the smoke machine is ready to operate.

Audio
Control
power

Output to
speaker

Speaker
power
switch

IN1
port

THRU
port
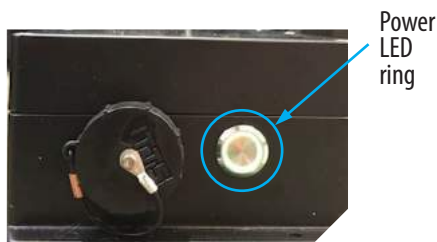
Power
LED
ring

Audio Setup

1. Attach power supply from the audio control unit to the wall outlet .

2. Attach speaker power cable to wall outlet for each speaker.

3. Power on the speakers with black ON/OFF switch located at the bottom left. A white-colored POWER LED and green-colored MAIN LED on the speaker will turn on, indicating the speakers are ready.

4. Run one speaker cable from the speaker output port on the audio control unit to the IN1 port on the backside of one speaker.

5. Run another speaker cable from the THRU port on the first speaker, to the IN1 port on the second speaker.

6. Thread the antenna onto the front of the audio control unit.

7. Push the audio control unit's power button. A green and red LED ring will flash, then go continuously green. This indicates the audio control unit is ready to operate.

Light Setup

1. Thread the power supply from the light to the wall outlet.

2. A green and red LED will flash, then go continuously green. This indicates the light control unit is ready to operate.

NARS Tablet Setup

All **NARS-MSCU** components are controlled via the **Advanced Remote** app on the **NARS Tablet**.
To wirelessly connect the components:

1. Ensure the components are properly connected/wired and powered on.

2. Power on the **NARS Tablet**.

3. Launch the **Advanced Remote** app by double-tapping the icon on the desktop.

4. Select **GET DEVICES** on the left-hand side of the screen. Each active component should populate in its own individual box within the central screen.

5. Select the light orange square to sync all components and consolidate the controls into one box.

Advanced Remote app
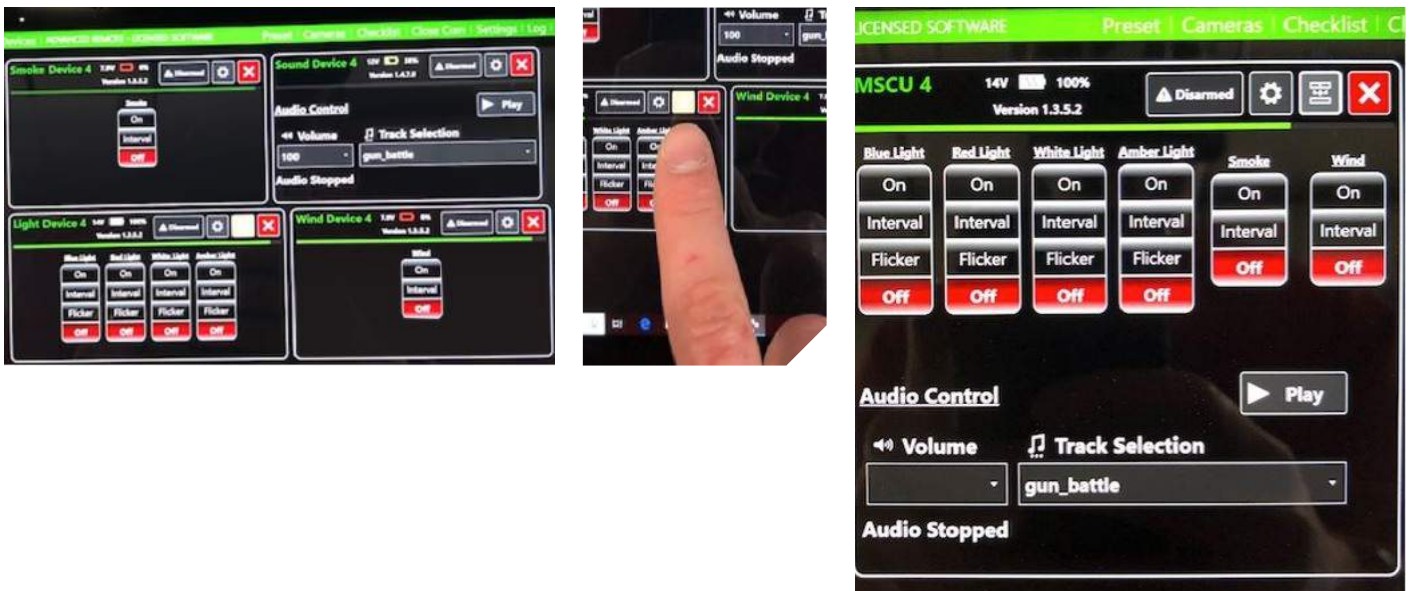
Arming the NARS-MSCU

While in the Advanced Remote app, with all NARS-MSCU components synced, you can select Disarmed in the top corner to toggle on/off all components with one button. You can also arm each component individually, to suit your scenario requirements.

General Troubleshooting / Maintenance

Smoke

- Ensure the Smoke Machine is plugged in.
- Ensure the Power is On.
- Make sure there is enough Fog Juice. Recommended to stay above ¼ full for best operation.

Speaker

- Make sure Speakers are plugged in.
- Make sure Speakers are turned on.
- Make sure Audio control unit is plugged in.
- Make sure Audio control unit is turned on.
- Make sure Speakers are connected to Audio control unit via provided cables.
- Make sure SD Card is seated properly.
- Make sure SD Card has available tracks.

Lights

- Make sure power supply is plugged into light and wall outlet.
- If using battery, ensure battery has been charged. *NOTE: Always disconnect battery at the end of training session*.

Fan

- Make sure Fan is plugged in.
- Make sure Fan is turned on.

General Maintenance

- Clean off products if they encounter dirt or debris, using a damp towel or similar non-abrasive cleaning product.
- *Keep smoke machine above ¼ full* to prevent malfunction or overheating.
- Always disconnect batteries at the end of training. Batteries should be charged monthly or on an as-needed basis, whichever comes first.
- Batteries should be run down to empty, then charged fully at 0.9 volts to ensure battery longevity.
- It is recommended that each unit be turned off and unplugged at the end of training to protect the product from surging.

Parts Catalog

ITTS PART #	NAR PART#	DESCRIPTION
TOMMANIKIN®		
ITTS BAS 00	93-0035	**Basic TOMManikin®**
ITTS GSW 01	93-0040	**GSW TOMManikin®**
ITTS BLA 02	93-0036	**Blast TOMManikin®**
ITTS BRN 04	93-0037	**Burn TOMManikin®**
ITTS TAM 01	93-0039	**Female TOMManikin®**
ITTS WTR 00	93-0041	**Water TOMManikin® Basic**
ITTS WTM 03	93-0108	**Water TOMManikin®**
ITTS CBRN 00	93-0038	**CBRN TOMManikin®**
ITTS CFS 00	93-0110	**Confined Space TOMManikin®**
TOMMANIKIN Custom & Upgrade		
T3M-UK	93-0049	**TOMManikin® Upgrade**
ITTS CUS 00	93-0070	**Custom TOMManikin®**
ITTS-INST	93-0050	**Upgrade kit installation**
TOMMANIKIN ACCESSORIES		
ITTS ATBE	93-0122	**Tablet for ITTS Simulation**
ITTS-TAK	93-0123	**TOMManikin® Accessory Kit**
ITTS-REM	93-0124	**ITTS Remote**
ITTS-TMCB	93-0126	**TOMManikin® Main Control Box**
ITTS-TMCB-T	93-0127	**TOMManikin® Main Control Box with ITTS Tablet**
ITTS-TCOMP	93-0128	**ITTS Compressor TOMManikin®**
ITTS-VUM	93-0129	**Velcro Uniforms - non-BERRY**
ITTS-1304	93-0130	**TOMManikin® Eye Ball Kit**
ITTS-SCC	93-0131	**Wheeled Soft Carrying Case**
ITTS-BLD-KIT	93-0106	**1 Gallon concentrated blood simulant; non-staining**
ITTS-SBP	93-0136	**Simulated blood powder 4.4oz**
TOM-6001	93-0137	**Silicone chest insert**
TOM-6002	93-0138	**silicone pelvic insert**
ITTS-6003	93-0154	**Nasal & oral airway w/teeth**
ITTS-5AB	93-0139	**5 AMP battery w/o charger**
ITTS-5ABC	93-0140	**5 AMP battery w/charger**
ITTS-10AB	93-0141	**10 AMP battery w/o charger**
ITTS-10ABC	N/A	**10 AMP battery w/charger**
ITTS-SBC	93-0144	**Smart Battery Charger**
ITTS-1000	93-0145	**Good Head Skin**
ITTS-1001	93-0078	**Blast Head Skin**
ITTS-1002	93-0079	**Burn Head Skin**
ITTS-1003	N/A	**Wounded head skin - open jaw fx**
ITTS-1300	93-0103	**Replace cric membranes (25 pack)**
ITTS-1301	93-0102	**Replace neck skins (10 pack)**
ITTS-1301.5	N/A	**Replace neck skins (5 pack)**
ITTS-1305	93-0147	**No bleed neck skins (10 pack)**
ITTS-2000	93-0148	**Good Chest Skin**
ITTS-2001	93-0149	**GSW Chest Skin**
ITTS-2002	93-0150	**Evisceration Chest Skin**
ITTS-3000	93-0151	**Pelvic Pants**
ITTS-3001	93-0081	**TOMM GSW Groin Skin**
ITTS-3002	93-0082	**TOMM uninjured pelvic shorts**

ITTS PART #	NAR PART#	DESCRIPTION
ITTS-4100	93-0152	**Uninjured arm (Rt)**
ITTS-4100W		**Uninjured arm (Rt) - WATERTOMM**
ITTS-4101	93-0083	**Complete Arm Amp (Rt)**
ITTS-4101W	N/A	**Arm amputation (Rt.) WATERTOMM**
ITTS-4102	93-0084	**Partial Arm Amp (Rt)**
ITTS-4102W	N/A	**Partial Arm Amp (Rt) WATERTOMM**
ITTS-4103	93-0085	**Shrapnel Arm (Rt)**
ITTS-4103W	N/A	**Shrapnel arm (Rt) - WATERTOMM**
ITTS-4104	93-0086	**Burn Arm (R)**
ITTS-4104W	N/A	**Burn arm (Rt) - WATERTOMM**
ITTS-4105	93-0087	**Closed Fx arm (R)**
ITTS-4200	93-0088	**Uninjured arm (Lt)**
ITTS-4200W	N/A	**Uninjured arm (Rt) - WATERTOMM**
ITTS-4201	93-0089	**Complete Arm Amp (Lt)**
ITTS-4201W	N/A	**Arm amputation (Rt.) WATERTOMM**
ITTS-4202	93-0090	**Partial Arm Amp (Lt)**
ITTS-4202W	N/A	**Partial Arm Amp (Rt) -WATERTOMM**
ITTS-4203	93-0091	**Shrapnel Arm (Lt)**
ITTS-4203W	N/A	**Shrapnel arm (Rt) - WATERTOMM**
ITTS-4204	93-0092	**Burn Arm (L)**
ITTS-4204W	N/A	**Burn arm (Rt) - WATERTOMM**
ITTS-4205	93-0093	**Closed Fx Arm (Lt)**
ITTS-4205W	N/A	**Closed Fx Arm (Lt) WATERTOMM**
ITTS-5100	93-0094	**Right Leg uninjured**
ITTS-5100W	N/A	**Right Leg uninjured - WATERTOMM**
ITTS-5101	93-0095	**Complete Leg Amp (Rt)**
ITTS-5101W	N/A	**Complete Leg Amp (Rt) WATERTOMM**
ITTS-5102	93-0096	**Partial Amp Leg (Rt)**
ITTS-5102W	N/A	**Partial Amp Leg (Rt) WATERTOMM**
ITTS-5103	93-0097	**GSW Leg (Rt)**
ITTS-5103W	N/A	**GSW Leg (Rt) WATERTOMM**
ITTS-5104	N/A	**Tibial IO leg (Rt)**
ITTS-5104A	N/A	**Tibial IO skin plug**
ITTS-5104B	N/A	**Tibial IO Bone Insert**
ITTS-5200	93-0098	**Left leg uninjured**
ITTS-5200W	N/A	**Left leg uninjured WATERTOMM**
ITTS-5201	93-0099	**Complete Leg Amp (Lt)**
ITTS-5201W	N/A	**Complete Leg Amp (Lt) WATERTOMM**
ITTS-5202	93-0100	**Partial Amp Leg (Lt)**
ITTS-5202W	N/A	**Partial Amp Leg (Lt) WATERTOMM**
ITTS-5203	93-0101	**GSW Leg (Lt)**
ITTS-5203W	N/A	**GSW Leg (Lt) WATERTOMM**
ITTS-6000	93-0153	**Skull TOMManikin® GEN5**
ITTS-6000W	N/A	**TOMManikin® Skull WATERTOMM**
ITTS-9001	93-0155	**TAMI head skin uninjured**
ITTS-9002	93-0156	**TAMI chest skin uninjured**
ITTS-9003	93-0157	**TAMI GSW pelvic shorts**
ITTS-9004 duplicate#	93-0158	**TAMI uninjured pelvic shorts**

ITTS PART #	NAR PART#	DESCRIPTION
ITTS-TASC	93-0159	TOMManikin® Spare Connectors (1 set/11 Assorted connectors)
ITTS-TASCT	93-0160	TOMManikin® Spare Connectors (1 set/11 Assorted connectors and 12' of tubing)
ITTS-9005 duplicate#	N/A	TAMI wounded head skin
ITTS-TPIN	93-0161	Spare pins HEAD & WAIST
ITTS-TALS	93-0162	Arm & leg screws
ITTS-TEETH	93-0163	Teeth (1 set upper & lower)
ITTS-UTA	93-0164	Updated TOMManikin® trachea assembly
ITTS-RTA	93-0165	TOMManikin® replacement trachea assembly - consumable
ITTS-AC	93-0166	Audio Cable
ITTS-TBR	93-0167	Tension Bladder with wrap
ITTS-TRAP	93-0168	Velcro™ wrap for tension bladder
ITTS-TB	93-0169	Tension Bladder
ITTS-R A H	93-0170	Air Remote High Pressure line
ITTS AT	93-0171	Air Tank
ITTS 15IN FW	93-0172	15 inch High Pressure Fill Whip
ITTS SCUBA FU	93-0173	Scuba Fill Unit
ITTS Air TB	93-0174	TOMManikin® air tubing bundle Y/B/G
ITTS LB SET	93-0175	Lung bladder
ITTS SIOC	93-0176	IO replacement plate frame
ITTS SIOC RP	93-0177	IO replacement cartridge
ITTS HIOB	93-0178	IO replacment - Humeral ball
ITTS CPC	93-0179	Carotid pulse motors (x2 included)
ITTS PC	93-0180	Pulse Cable
ITTS-TCTS	93-0181	Chest tube set
ITTS BS	93-0182	Bleeding Solinoids
ITTS BF	93-0183	Blood Fill Tank
ITTS-BC	93-0184	Bleeding Cable
ITTS-BB	93-0185	Bleeding Bag
ITTS-SRK	93-0186	Silicone Repair Kit

ACADEMIC SKILLS TRAINING DEVICES

ITTS PART #	NAR PART#	DESCRIPTION
ITTS-ASAC	N/A	TC AirSim Combo X
ITTS-ASB	N/A	TC AirSim Baby X
ITTS-ASCB	N/A	TC AirSim Child Bronchi
ITTS-ASPR	N/A	TC AirSim Pierre Robin
ITTS-TMS	N/A	TC TruMan Trauma X
ITTS-TMSNS	N/A	TruMan Trauma no-bleed neck skins
ITTS-PTT1	93-0104	Hemorrhage Control Trainer

STICKY WOUNDS

ITTS PART #	NAR PART#	DESCRIPTION
ITTS-SW-SWK	93-0187	Complete Sticky Wound Kit
ITTS-SW-GSWK	93-0188	GSW Sticky Wound Kit
ITTS-GSW-SW001	93-0189	GS Entry Wound; Small
ITTS-GSW- SW002	93-0190	GS Entry Wound; Large
ITTS-GSW-SW003	93-0191	GS Exit Wound; Medium
ITTS-GSW-SW004	93-0192	GS Exit Wound; Large
ITTS-SW-LACK	93-0193	Laceration Stick Wound Kit
ITTS-LAC-SW005	93-0194	Laceration; Medium
ITTS-LAC-SW006	93-0195	Laceration: Large
ITTS-SW-BRNK	93-0196	Burn Sticky Wound Kit

ITTS PART #	NAR PART#	DESCRIPTION
ITTS-BRN-SW007	93-0197	Burn; 2nd Degree
ITTS-BRN-SW008	93-0198	Electrical Burn; Medium
ITTS-BRN-SW009	93-0199	Chemical Burn; Medium
ITTS-BRN-SW010	93-0200	Thermal Burn; Medium
ITTS-BRN-SW011	93-0201	Electrical Burn; Large
ITTS-BRN-SW012	ITTS-BRN-SW012	Thermal Burn; Large

WEARABLE WOUNDS

ITTS PART #	NAR PART#	DESCRIPTION
WW3-001	93-0203	Thigh laceration
WW3-002	93-0204	GSW through hand (Rt)
WW3-003	93-0205	Impaled object
WW3-004	93-0206	Severe burn forearm (Rt)
WW3-005	93-0207	Evisceration (non-packable)
WW3-006	93-0208	Broken jaw with laceration
WW3-007	93-0209	Open scalp wound
WW3-008	93-0210	Compound fracture
WW3-009	93-0211	Avulsion to calf
WW3-010	93-0212	GSW leg
WW3-011	93-0213	Burned face (full mask)
WW3-012	93-0214	Wound extender
WW3-014	93-0215	Neck wound
WW3-051	93-0216	Partial arm amputation (Rt)
WW3-052	93-0217	Partial leg amputation (Rt)
WW3-053	93-0218	Close arm fracture (Rt)
WW3-054	93-0219	Shrapnel full arm (RT)
WW3-055	93-0220	GSW to groin (male)
WW3-071	93-0221	Arm Amputation
WW3-072	93-0222	Leg amputation
WW3-702	93-0223	GSW through hand (Lt)
WW3-704	93-0224	Severe burn forearm (Lt)
WW3-751	93-0225	Partial arm amputation (Lt)
WW3-752	93-0226	Partial leg amputation (Lt)
WW3-753	93-0227	Close arm fracture (Lt)
WW3-754	93-0228	Shrapnel full arm
WW3-901	93-0229	Multiple GSW abdomen
WW3-902	93-0080	Abdominal evisceration (packable)
WW3-903	93-0230	Blast face with hard bone (mask)
WW3-904	93-0231	Leg amputation hard bone
WW3-905	93-0232	Part arm amp w/bone (Rt arm only)
WW3-906	93-0233	Part leg amp w/bone (Rt)
WW3-907	93-0234	Shrapnel wound axillary (Rt)
WW3-908	93-0235	GSW bicep
WW3-909	93-0236	GSW clavicle (Rt)

WOUNDS IN A BOX

ITTS PART #	NAR PART#	DESCRIPTION
PTT-B01	93-0238	GSW wound in a box
PTT-B02	93-0239	Laceration in a box
PTT-B03	93-0240	Shrapnel wound in a box
PTT-B51	93-0241	IO in a box
PTT-B70	93-0242	Nose in box
ITTS-BLS Box Kit	93-0243	GSW, I/O, Nose in box (incl. blood and pump)
ITTS-BSP	93-0244	Manual pump blood bag

ITTS PART #	NAR PART#	DESCRIPTION
STOP THE BLEED TRAINING KITS		
ITTS-STB-GSW-WPK	93-0245	Grab & Go GSW wound packing kit
ITTS-STB-GLS-WPK	93-0246	Grab & Go multiple wound packing kit
ITTS-STB-GLS-WPK 10	93-0247	Grab & Go multiple wound packing kit 10 student class
ITTS-STB-GLS-WPK 20	93-0248	Grab & Go multiple wound packing kit 20 student class
TEMS TRAINING KITS		
ITTS-TEMS LE BASIC	93-0249	TEMS-LE-Basic KIT
ITTS-TEMS-LE-AD	93-0250	TEMS - LE Advanced Deluxe Kit
ITTS-TCCC-KIT	93-0251	TCCC TRAINING KIT 10 student class
K9		
ITTS-K9 (M)	N/A	K9 Medical
ITTS-K9J	93-0252	K9 Jump
ITTS-K9CPR	93-0253	K9 w/ CPR chest
ITTS-K9-IV	93-0254	IV tube 10 pack
ITTS-K9-SA	93-0255	Airway 10 pack
ITTS-K9-RIF	93-0256	Replacement fur IV site (10 pack)
ITTS-K9-RNF	93-0257	Replacement fur neck site (10 pack)
ITTS-K9-AMP	93-0258	Hind leg full amputation
ITTS-K9-SW	93-0259	Hind leg shrapnel wound
ITTS-K9-OFX	93-0260	Hind leg open fracture
ITTS-K9-BRN	93-0261	Hind leg burn
ITTS-K9-GSW	93-0262	Hind leg GSW
PATIENT MONITORING		
ITTS-PMS	93-0027	PMS w/o tablet
ITTS-PMST	93-0071	PMS w/tablet
ITTS-NIBP	93-0264	NIBP cuff
ITTS-CAP	93-0265	Capnograph
ITTS-POX	93-0266	Pulse Ox
ITTS-ALS-1	93-0267	ECG & waveform simulator w/ bag & tablet
ITTS-ALS-2	93-0268	ECG & waveform simulator w/ bag w/o tablet
ITTS-ALS Deluxe Kit	N/A	ECG Waveform simulator monitor, PMS w/tablet
VIRTUAL PATIENT SIMULATOR		
ITTS-VPIT-1	93-0269	Virtual Patient simulator - Hololens X1 unit
ITTS-VPIT-2	93-0270	Virtual Patient simulator - Hololens X2 units
ITTS-VPIT-3	93-0271	Virtual Patient simulator - Hololens X3 units
ITTS-VPIT-4	93-0272	Virtual Patient simulator - Hololens X4 units
WEARABLE STRESS MONITOR		
ITTS-HRM-4	93-0273	4 student puck w/harness & software
ITTS-HRMK-4	93-0274	4 student kit w/puck, harness, tablet & software

ITTS PART #	NAR PART#	DESCRIPTION
MOBILE ENVIROMENTAL CONTROL UNIT		
ITTS-MECU-T	93-0275	MECU w/tablet
ITTS-MECU	93-0276	MECU w/o remote
ITTS-MECU-R	93-0277	MECU w remote
SENSORY CONTROL UNIT		
ITTS-SCUC	93-0278	SCU w/cameras
ITTS-SCU	93-0279	SCU w/o cameras
ITTS-HCS	93-0280	Pelican-style hard travel case
ITTS-BLWR	93-0281	Variable speed blower w/o remote
ITTS SFM	93-0282	Smoke/Fog machine w/o remote
ITTS-LSPKR	93-0283	Loudspeaker
ITTS-LED4	93-0284	4-color LED lighting system
ITTS-LTSTAND	93-0285	Tripod for ITTS-LED4 system
STORAGE		
ITTS-MR	93-0286	3 shelf metal rack
ITTS-SST	93-0287	Sim Trailer
NOISE MAKERS		
ITTS-PMG	93-0288	Propane MG
ITTS-APMG	93-0289	Air MG Simulator
ITTS-PBS	93-0290	Propane Blast Simulator
ITTS-APBS	93-0291	Air Blast Simulator
ITTS H-60 TCCA	93-0292	H60 tower
ITTS-MH6W	93-0293	Little Bird Water
ITTS-H60 CS	93-0294	H60 Crash Site
ITTS-MH6	93-0295	Little Bird crash site
ITTS H6 SP	93-0296	Little Bird sniper plattform
ITTS-CV22T	93-0072	CV 22 Casevac Basic
ITTS-H60-T	93-0335	Basic Casevac Helo
ITTS-H60 AIET	93-0297	H 60 Tower with Fast rope
ITTS H47 AIET	93-0298	H 47 Tower with Fast rope
ITTS-ICS	93-0299	ICS box
ITTS-ICS K	93-0074	ICS kit
ITTS-CAM	93-0075	Camera
ITTS-FRIES	93-0300	FRIES Bar
ITTS-CV22 LS	93-0301	2 sets of litter stanchions
ITTS-H60-DTS	93-0302	Dynamic tilt system
ITTS-CV22-DTS	93-0303	Dynamic tilt system
URBAN SEARCH & RESCUE TRAINERS		
ITTS-USAR T	93-0304	Urban Search & Rescue Trainer
ITTS SILO A	93-0305	Silo SAR trainer
ITTS SILO B	93-0306	2-story, 30' catwalk w/ rappel points
ITTS SILO C	93-0307	Silo covered roof w/ obs platform
SALVAGE		
ITTS-CSWR TR	93-0308	Salvage truck
ITTS-CSWR H60	93-0309	Salvage H60
ITTS-CSWR F18	93-0310	Salvage F18
TOM-BDSL	93-0311	Blanket Dirt/Sand
ITTS-AHT	93-0312	Armor Hatch Trainer
ITTS-ATTUA	93-0313	ATTU Advanced

ITTS PART #	NAR PART#	DESCRIPTION
ITTS-ATTU	93-0314	Active Targeting Training Unit
ITTS-NET	93-0076	New Equip Tng
ITTS-NET OCONUS	93-0315	OCONUS NET
ITTS-EFT	93-0316	Refresh Tng
ITTS-VTRN	93-0317	Virtual Tng
ITTS-CUFS-S-3D-NC	93-0318	3-day Care Under Fire Tng Support
WARRANTY & PRODUCT SUSTAINMENT		
ITTS-BAS-00-EW1	93-0319	1yr Ext Warr
ITTS-BLS-02-EW1	93-0320	1yr Ext Warr
ITTS-GSW-01 EW1	93-0321	1yr Ext Warr
CV22-EW	93-0322	CV22 1yr Ext Warr
H-60EW	93-0323	H60 1yr Ext Warr
MH6-EW	93-0324	MH6 1yr Ext Warr
MSCU-EW	93-0325	MSCU Ext Warr
ITTS-PSP001	93-0326	Product Sustainment Package
ITTS-PSP002	93-0327	Product Sustainment Package
ITTS-PSP003	93-0328	Product Sustainment Package
ITTS PSP004	93-0329	Product Sustainment Package
ITTS-PSP005	93-0330	Product Sustainment Package
ITTS-PSP006	93-0331	Product Sustainment Package
ITTS-EWPS-01	93-0077	Extended Warranty and Product Sustainment Package (X1 TOMManikin x 1 year)
ITTS-EWPS-02		Extended Warranty and Product Sustainment Package (X2TOMManikins x 1 year)
ITTS-EWPS-03		Extended Warranty and Product Sustainment Package (X3 TOMManikins x 1 year)
ITTS-EWMP-SC-01		Extended warranty & maintenance package for sim center

NORTH AMERICAN RESCUE®

Simulation