

# SKYDRATE



## USER & MAINTENANCE GUIDE

**OMNI**  
DEFENSE TECH



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## IMPORTANT SAFETY INFORMATION

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Before using the Skydrate™ System in a mission setting, familiarize yourself with the components and operation of the system. **Practice** using the Skydrate™ in a chair or flight simulator before using it in an aircraft.

1. Always follow instructions when operating the device.
2. Once the **batteries** have been charged for the first time (taken out of sleep mode), they must be fully recharged at least once every 6 months.
3. The batteries must be left in fully charged state when they are not going to be used for more than 2 months.
4. Do not submerge Control Unit under water.
5. Do not use liquid cleaners (bleach, vinegar, alcohol, ammonia, etc.) or aerosol cleaners. Clean using a warm water (or a solution of 3% hydrogen peroxide) and a damp cloth.
6. Use only the type of power supply provided with the Skydrate™ System.
7. Do not attempt to service this product yourself, as opening or removing covers may damage the device and void your warranty.
8. Refer all servicing to **Omni Service Technicians** under the following conditions:
  - When the power-supply cord or plug is damaged.
  - If the product does not operate.
  - If the product has been dropped or damaged in any way.
  - When the product exhibits a distinct change in performance.
9. All servicing should be done by a certified Omni Service Technician. Unauthorized component substitutions may result in fire, electric shock, or other hazards.
10. This product should be kept away from heat sources such as radiators, heat registers, stoves, or other products that produce heat.

# SYSTEM COMPONENTS

Control Unit



Battery Charger & Battery



Female Hose  
(Control Unit Side)



Female Pad



Hose  
Switch



Female Hose  
(Pad Side)



Collection Bag

# QUICKSTART

## Skydrate Personal Aircrew Flight Equipment

The Skydrate is a fully automatic, hands free bladder relief system designed for use in fixed and rotary wing aircraft. The system was designed to allow pilots to be hydrated during mission (in accordance with mandatory regulation for aircrew of military aircraft) and to remain fully clothed and secure in their seat harness at all times.

### How Does The Skydrate Work?

The Skydrate system is simple to use. Worn discretely beneath the flight suit, the collection **pad** contains sensors that will detect urine once the user begins to urinate. The external control unit will automatically activate, evacuating the urine from the pad and into the attached collection bag. The Gen 3 Hose Switch controls the system power (ON/OFF) and pad inflation/deflation, and has a push button for manual activation of the control unit without waiting for sensors.

*Pad worn discretely beneath the flight suit.*



# QUICKSTART

## DON THE SYSTEM

1. Don the **Female Undergarment**.
2. Connect the removable hose to the front of the pad. Place the Pad into the undergarment with the hose exiting from the front. Use the adhesive strip on the underside of the pad to secure it to the undergarment.
3. Don the rest of the flight ensemble. If using the **Through Suit Connector (TSC)**, connect the pad hose to the inside TSC port. If not, make sure that the hose is accessible via the flight suit's zipper.

## BEFORE TAKE OFF

1. Ensure that the control unit is fully charged (all green lights)
2. Ensure that the system is **fully connected** (Status LEDs will Flash the Battery Status continuously when the system is powered and ready for use)
3. Ensure that the collection bag drain is closed.
4. Ensure the pad sensors are positioned in lowest part of the seat and that the pad hasn't shifted.

## SYSTEM OPERATION

1. Before urinating, slide the hose switch to the ON position and allow **60-90 seconds for the system to inflate the pad** in order to create a seal.
2. The system is now **ready for use** and will **automatically** drain urine into the collection bag as soon as the aircrew begins to urinate.
3. The **GREEN push button** can also be used to manually activate the pump to drain urine.
4. After each use, slide the hose switch to the OFF position to deflate the pad between uses.
5. Before disconnecting the system, slide the hose switch to the ON position and press and hold the GREEN push button to **drain any residual urine from the pad and hoses**.

# CONTROL UNIT KIT

## KIT CONTENTS

- 1 Control Unit
- 1 Charger
- 2 Battery Packs
- 1 Wall Power Adaptor
- 1 User Manual



Gen 3 Control Unit with QR Code for easy access to Omni's Training and Supply App.



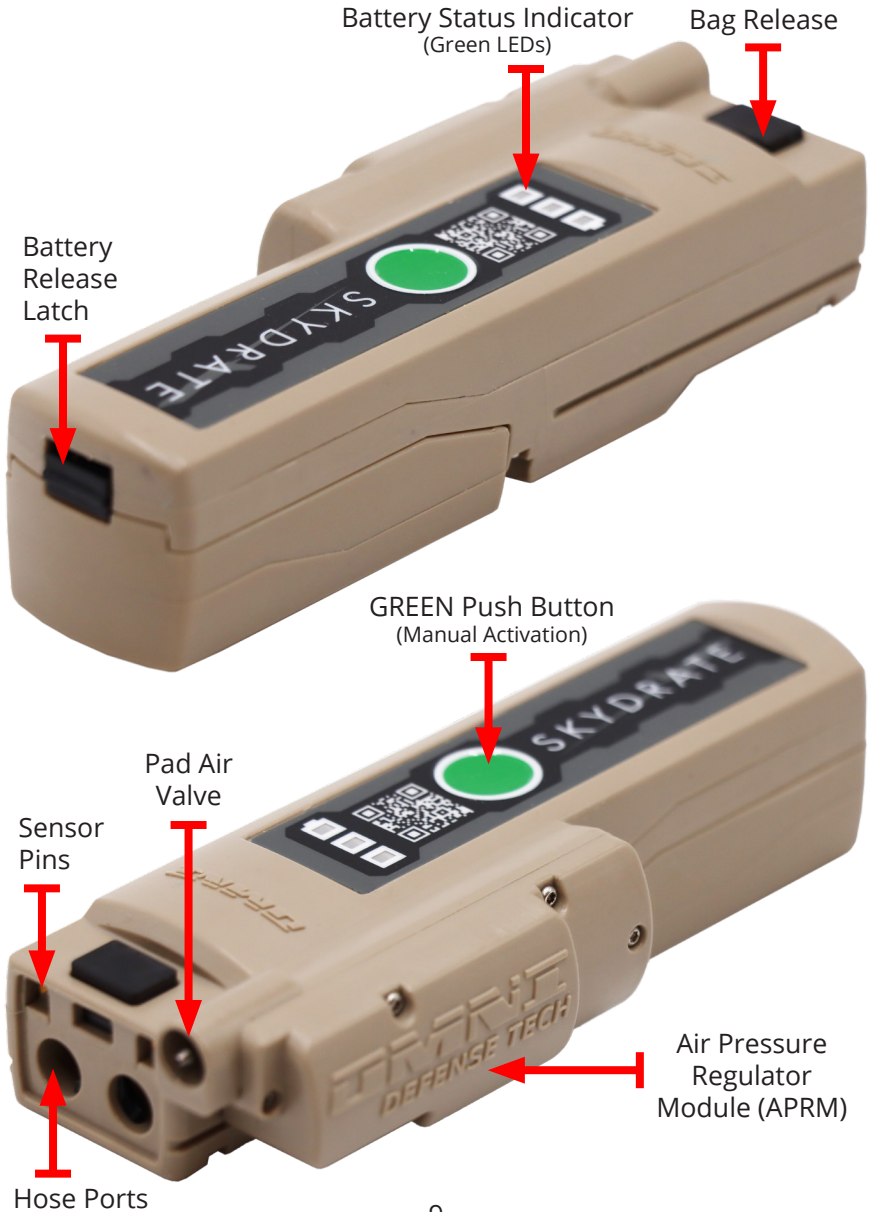
Charger with 2 Battery Packs.  
Batteries are shipped in sleep mode.



Wall Power Adaptor



# CONTROL UNIT



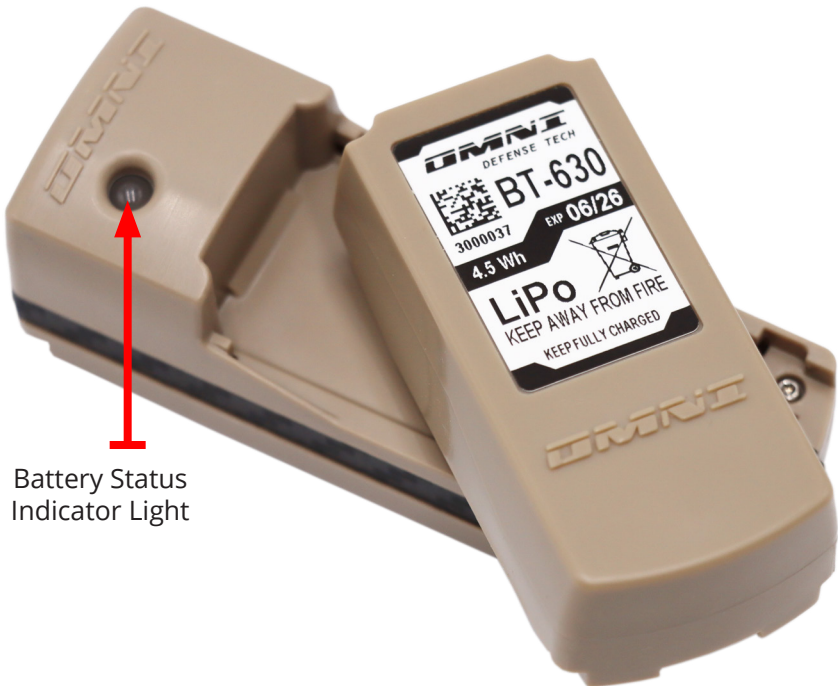
## CHARGER & BATTERIES

The battery charger is only for use with the Skydrate™ rechargeable battery packs. It must only be used with the supplied power supply.

Fully charged, the battery lasts for up to 12 uses within a 16 hour period.

**Long Term Storage:** Batteries are shipped in sleep mode. Once the battery is taken out of sleep mode (charged for the first time), the batteries **must be fully recharged every 6 months.**

**DO NOT submerge batteries in water.**  
**DO NOT leave batteries discharged.**



## HOSE SWITCH



### **Removable Hose Pad Side**

*Note: Tan Connector is Color Coded to the Hose Switch*

The **Hose Switch** allows for one handed operation of the system.

*Note: Tan color Code to Pad Side Hose Connector*



### **Manual Button**

Manually activates the liquid pump while held.



### **ON/OFF Switch**

Inflates (ON) and deflates (OFF) the pad.

It can be used to manually activate the system, as well as to completely deactivate the system and deflate the Female pad without disconnecting any hoses.

*Note: Black Color Code to Control Unit Side Hose Connector*

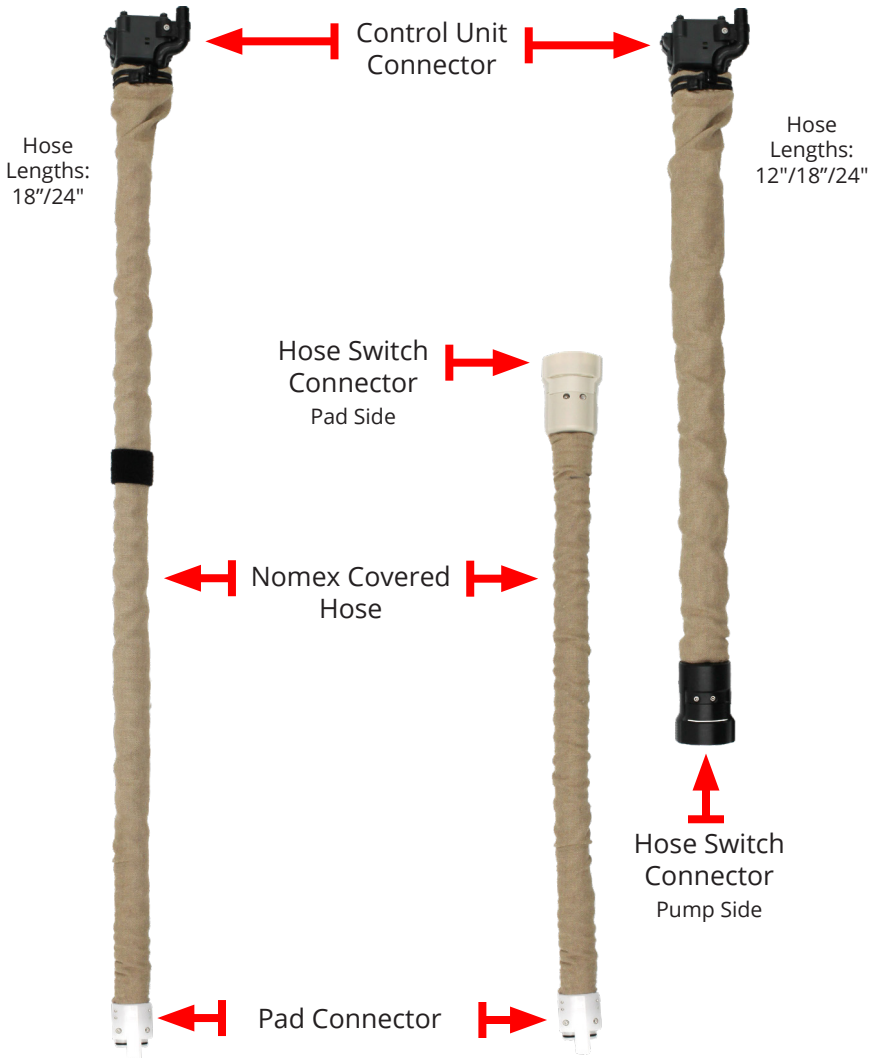


### **Removable Hose Control Unit Side**

*Note: Black Connector is Color Coded to the Hose Switch*

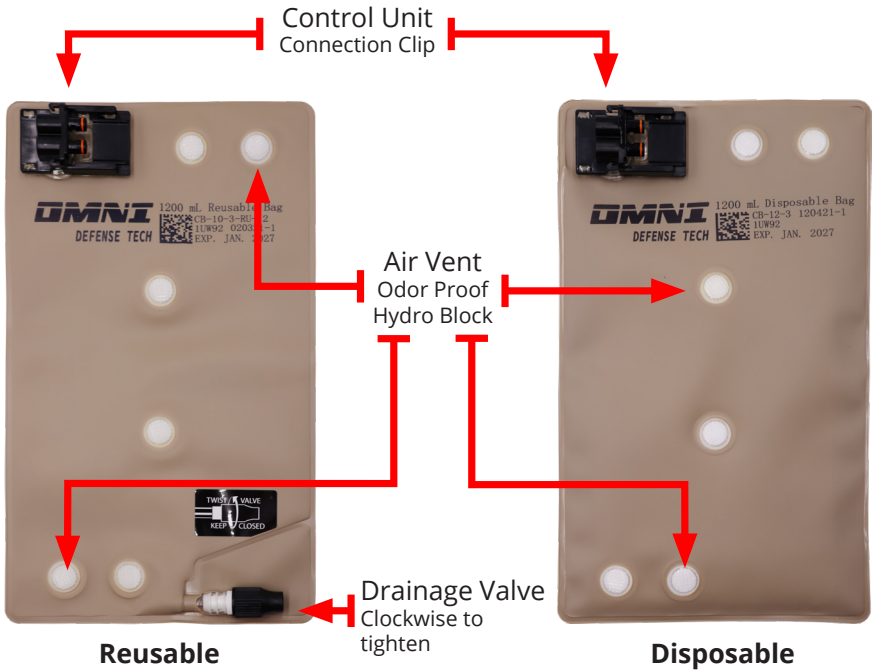
## REMOVABLE HOSES

The removable hoses connect the pad to the hose switch and/or control unit. These hoses are reusable and should be inspected and tested before each flight - replace after 25 flights.



# COLLECTION BAG

The Collection Bag is manufactured from durable, medical-grade urethane. The **standard bags have a capacity of 1200mL**. While **not recommended**, in an **emergency it can withstand up to 2200mL**.



Standard Reusable Bag Filled with 1200mL



Filled with 2200 mL

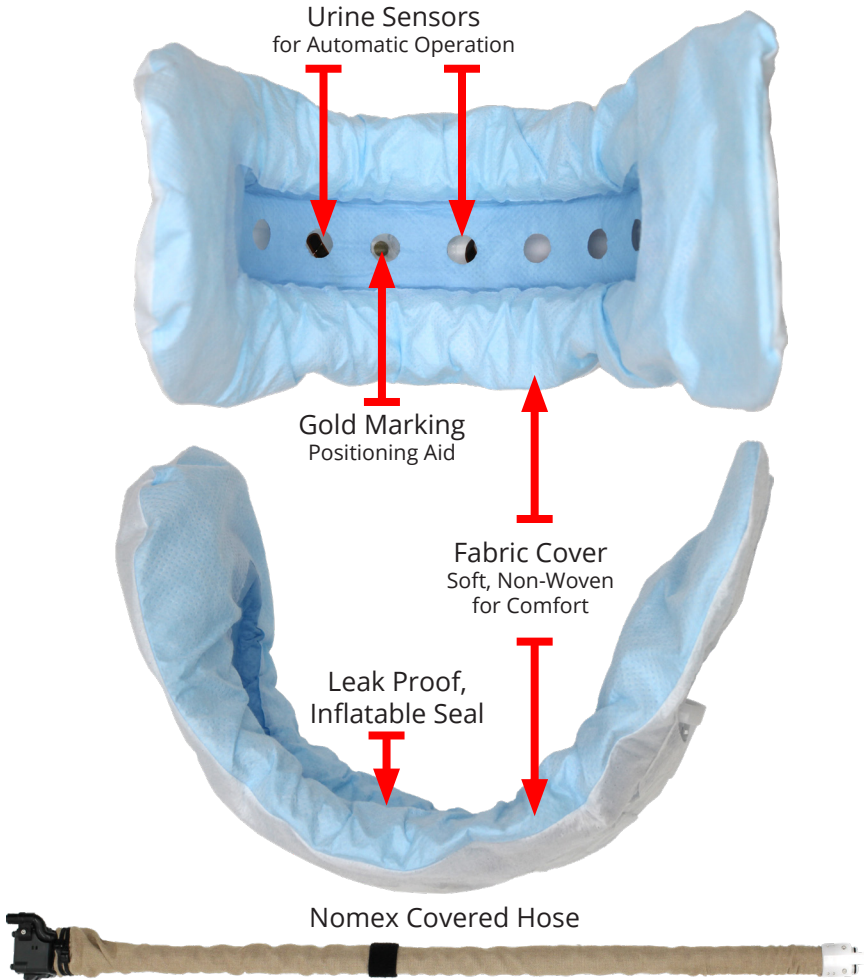


## **DO NOT** OVERFILL THE COLLECTION BAG

The Collection Bag has a one-time emergency 1000mL over-capacity safety factor and **must be replaced after overfilling**.

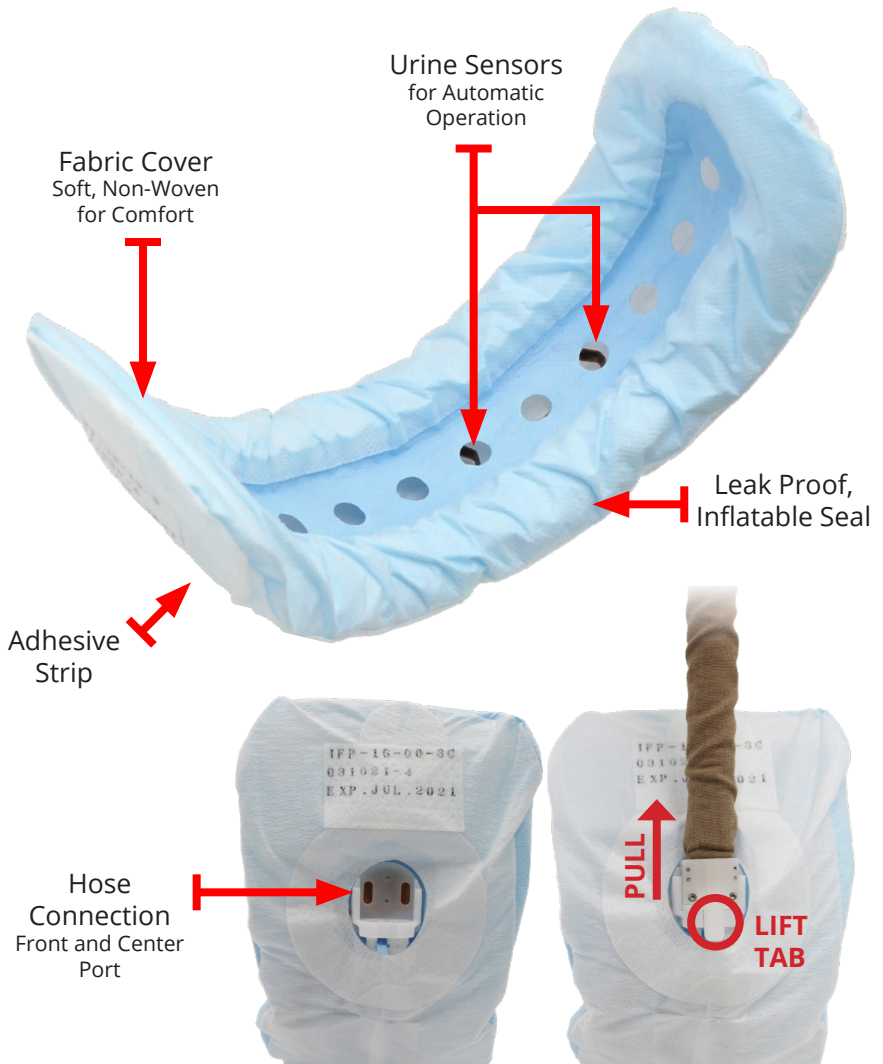
## FEMALE PAD

The Disposable Female Pad is safe, sanitary, and shaped to fit like a sanitary pad. The non-invasive pad has integrated **urine sensors** for automatic operation. The pad **inflates** to provide a **leak proof seal** between the pad and the body. It has a soft, non-woven **fabric cover** for comfort. The pad is **disposable**, but can be cleaned and reused at the user's discretion if the need arises.



# FEMALE PAD

The Female Pad has a removable hose. It is designed for optimal use in all aircraft, including aircraft with the 5-point harness. The pad is disposable, and can be detached from the hose and disposed of.



# PAD SIZING

## PAD TYPE – A or B

IFP-3-XX-A -Seat Recline Angle 0-14°

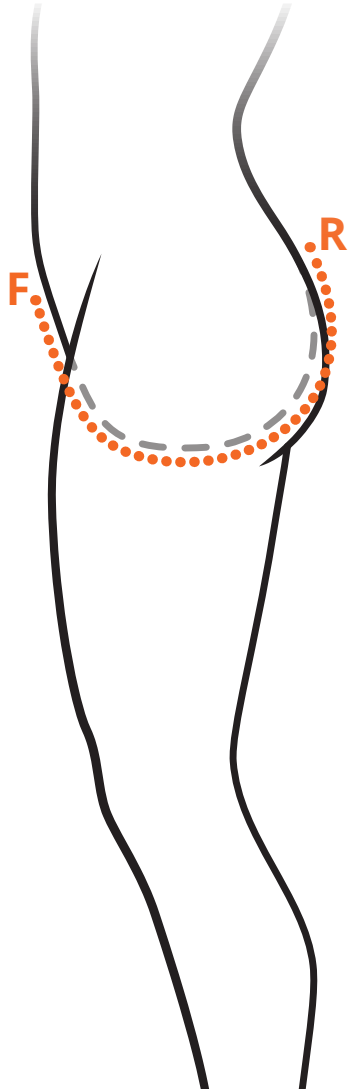
IFP-3-XX-B - Seat Recline Angle 15-30°

Ex. F-15, A-10 use IFP-3-XX-A  
F-16, F-35 use IFP-3-XX-B

## PAD SIZING

Measure from leg fold point (F), approximately 2" below bikini line, to the top of the gluteal cleft (R).

SIZE (XX)	F to R
<b>12</b>	<b>12"</b>
<b>13</b>	<b>13"</b>
<b>14</b>	<b>14"</b>
<b>15</b>	<b>15"</b>
<b>16</b>	<b>16"</b>
<b>17</b>	<b>17"</b>



\* If in-between 2 sizes, round up!  
\* Special sizes available.



## UNDERGARMENT



**BIKINI**  
FG-XX-B-MF



**CREW**  
FG-XX-C-MF



**MID-THIGH SHORTS**  
FG-XX-S-MF

### UNDERGARMENT

There are 3 different styles of garment available for use with the Skydrate system. Each garment comes in 5 different sizes.

The undergarments are used to hold the Pad in place. They should be sized for a snug fit.

Features:

- **No-melt, no-drip construction**
- **Lightweight and Breathable**
- **Machine washable**

SIZE (XX)	HIPS
<b>XS (36)</b>	<b>36"</b>
<b>S (38)</b>	<b>38"</b>
<b>M (40)</b>	<b>40"</b>
<b>L (42)</b>	<b>42"</b>
<b>XL (44)</b>	<b>44"</b>

## FEMALE SYSTEM OVERVIEW

The Female System consists of the **Female Pad**, **Female Hose**, **In-Line Hose Switch**, **Control Unit**, and **Collection Bag**. They are connected together as pictured below. These are the only components required on a mission. Additional batteries and bags may be taken as needed.



Green Status LEDs will Flash Battery Status continuously when system is ON, activated and ready for use.

## CHARGING THE SYSTEM

The battery pack **must be charged prior** to the first use. It make take up to 2.5 hours.



Connect a **Rechargeable Battery** to the **Charger**.



Connect the cord from the **Power Supply** to the **Charger**.



A solid **GREEN** light indicates that the battery is charged.



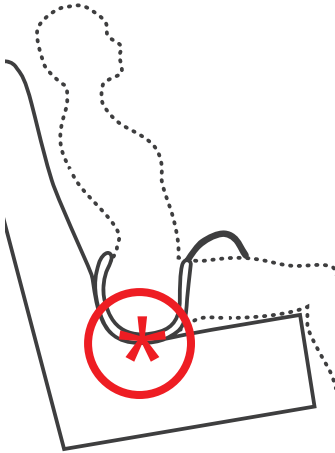
A flashing **YELLOW** light indicates that the battery is charging.



A flashing **RED** light indicates that the battery is completely discharged.

If it does not change to yellow after an hour, the battery must be replaced.

## DONNING THE FEMALE SYSTEM



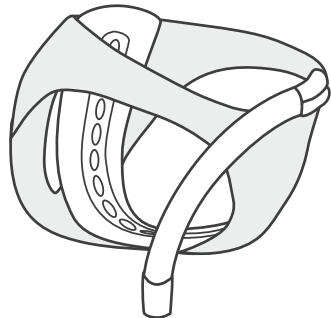
Prior to use, locate the **gold dot** (pickup point) in the **Female Pad**. When seated in the ejection seat, the **Gold Dot MUST BE located at the lowest point.**

The location of the pickup point is critical for the Skydrate™ System to function properly.

***It is very important that this be determined on the ground, prior to flight.***

Place the **Female Pad** into the undergarment with the hose in the front and to the right.

Use the **adhesive strip** located on the underside of the Female Pad to secure it to the undergarment.



Ensure that the hose can be retrieved through the bottom zipper after donning flight gear.

After entering the aircraft, but **before securing the harness**, retrieve the hose and zip the flight suit to capture the hose. **Ensure that the hose is not kinked, crimped or pinched.**

Once seated in aircraft, adjust the pad for comfort and **ensure that the pickup-point is at the lowest point of aircraft seat.**

## PREPPING THE SYSTEM

Press the GREEN push button for 1 second and release to display the battery charge status. Recommended to start mission with a fully charged battery.

100%-80%



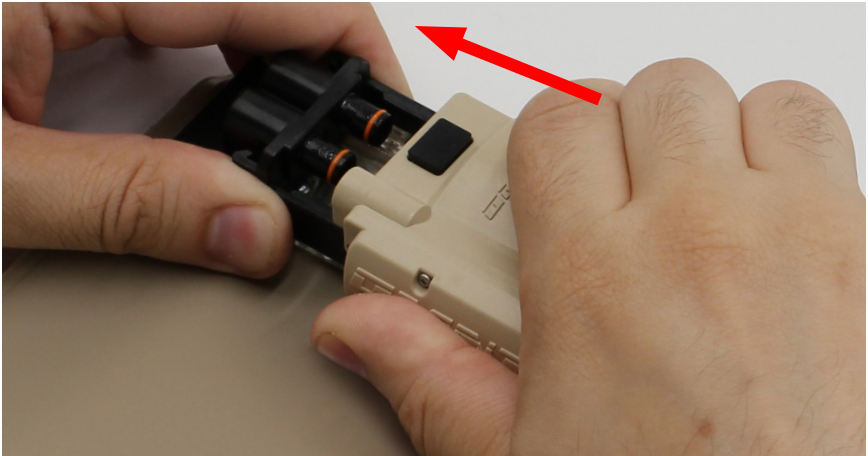
80%-20%



**CHARGE**  
Below 20%



**CHARGE**  
0%

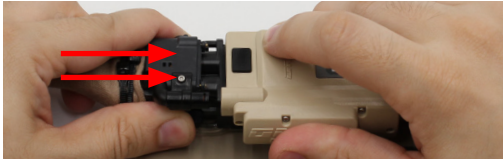


Slide the Control Unit onto the Collection Bag clip.  
There will be an audible click when the connection is made.

Roll the Control Unit up in the Collection Bag and store in an available pocket that is accessible during flight.

## FEMALE SYSTEM OPERATION

Connect the Pad Hose to the Control Unit prior to use and place the **In-Line Hose** switch in the "ON" position. Once connected, the user **must wait** at **60-90 seconds** for the pad to inflate and create a **leak proof seal** against the body. Once inflated, the system will automatically activate when the user begins to relieve her bladder.



Align Air Hose Connector with clip and slide into place.



When connected, there will be an audible click, and the control unit will beep twice.

The Female Pad will inflate, taking at 60-90 seconds to complete.

Once the pad has inflated, the user may begin to relieve her bladder. Remain firmly seated, pressed against the pad during use. **DO NOT** raise the body up from the pad while in use.

The sensors in the Female Pad **automatically detect** urine and activate the Control Unit pump, transferring the urine from the pad and into the Collection Bag, keeping the user dry.

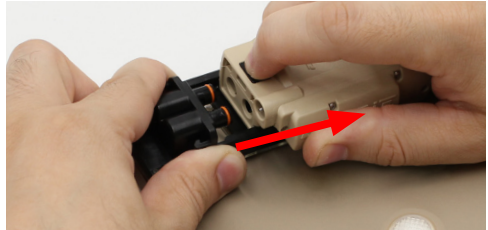


After using, press the Manual button for 5 seconds to remove any residual liquid. Place the in-line switch to the "OFF" position to deflate the pad.



## AFTER MISSION

To remove the Control Unit from the Bag, press the release button and slide the unit away from the clip.



Remove battery from control unit and recharge.



Drain the reusable collection bag.

Either dispose of Collection Bag and Female Pad, or clean for reuse. See Care and Maintenance for Cleaning instructions, or visit **omni-defense.com** to view the Skydrate™ Instructional Video

## CARE, MAINTENANCE AND STORAGE

### **WARNING:**

**NEVER SUBMERGE THE CONTROL UNIT WITH BATTERY ATTACHED**

### **Cleaning**

1. Attach all components (Control Unit, Pad, Hoses, Switch, and Bag) of the Skydrate™ system together.
2. Fill Female Pad with warm water OR a solution of 3% Hydrogen Peroxide. The Control Unit should turn on automatically. If the system does not automatically turn on, press and hold the GREEN button. Repeat this process twice.
3. Once all the water is pumped out of the Pad and into the Bag, move the Bag around to rinse it on the inside.
4. Open the drainage valve and empty the bag.
- 5. REMEMBER TO CLOSE THE VALVE AFTER DRAINING.**
6. Dip the connector end of the Control Unit into warm water. DO NOT submerge past the release button.
7. Press and hold the GREEN push button for 5 seconds, then remove the Control Unit from the water and hold the button for an additional 5 seconds to dry out the Control Unit pump.
8. DO NOT USE BLEACH, VINEGAR, OR HEAVY DETERGENTS.

### **Storage**

1. *Short Term Storage:* Always fully recharge batteries before storing.
2. *Long Term Storage:* The batteries must be recharged and left fully charged every 6 months.
3. Always store the Skydrate™ Control Unit in a dry place with temperatures between -4F and 158F (-20° - 70° C).
4. Keep the Skydrate™ system away from heat, humidity or harmful chemicals and avoid long term exposure to sunlight.

### **Maintenance Tips**

Omni recommends that the Female Pad, Control Unit, Hoses, and Bag are cleaned after each use to maintain their functionality.

### **Disposal**

The Female Pad and Collection Bag can be disposed of in any trash receptacle.



## TROUBLESHOOTING

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### **Having trouble?**

Try these simple tips, email us at [support@omni-defense.com](mailto:support@omni-defense.com) or call 1 (802) 497-2253.

### **The Control Unit does not start ...**

1. Check that the battery is charged by pressing the GREEN button.
2. The unit should beep twice and flash battery status LED lights.
3. If the Control Unit does not emit an audible beep or does not display a green light, remove the battery and replace with a charged battery.
4. If the battery fails to charge, please contact an Omni Service technician.

### **The Control Unit doesn't automatically start pumping ...**

1. Disconnect and re-connect the Female Pad connector to the Control Unit.
2. The Control Unit should beep twice.
3. If the Control Unit does not emit an audible beep, press and hold the GREEN button to activate the pump. If the Control Unit turns on when activated manually, replace the Pad and/or Hose and repeat.
4. If the system shows Flashing Status Lights and is not sensing, pour Salt Water (1 tsp salt per 16 oz water) into pad. If the sensors do not detect the fluid, replace the pad. If the issue persists, contact an Omni Service technician.
5. If the battery status indicator shows that the battery is charged and the Control Unit fails to start pumping when pressing the GREEN push button, please contact an Omni Service technician.

### **The charger indicator light is not working ...**

1. Check that power supply is plugged in and is securely connected to the charger.
2. Remove and connect the rechargeable battery to the charger.
3. If the charger indicator light is not lit or is RED, please contact an Omni Service technician.

## TECHNICAL SPECIFICATIONS

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### **Control Unit Specifications**

Flow rate	2.25 LPM
Operating Temp	-10C/14F to 50C/122F
Operation Cycles/Time	12 Relief Cycles on Full Charge
Power	7.6V DC, 1200mA
Weight	3 oz.
Dimensions	5" L X 1.75" W X 1" H

### **Rechargeable Battery Specifications**

Chemistry	Lithium Polymer
Voltage	7.6V
Capacity	680 mAh
Charge Cycles	500
Storage	See page 24
Weight	1 oz.
Dimensions	2.32" L X 1.2" W X 0.6" H

### **Battery Charger Specifications**

Battery Chemistry	Lithium Polymer
Charging Voltage	8.4 V
Charging Current	350 mA
Charging Time	2.5 hours
Dimensions	2.3" L X 1.2" w X 0.5" H
Wall Pack	Input ~ 100-240VAC (50/60Hz), 0.30A Output ~ 12V DC, 500mA

## **WARRANTY**

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### **WARRANTY**

Omni warrants its system to the original purchaser, against defects in material and workmanship for a period of one year from the date of original purchase. Omni will, at our option, replace or repair defective parts without charge. Omni will, replace or repair any part found to be defective upon inspection by Omni. The purchaser will be responsible for freight to Omni. Omni will be responsible for freight, via UPS Ground, to purchaser after repairs. This warranty does not apply in the event of misuse or abuse or failure by the user to maintain the system in accordance with Omni instructions or as a result of unauthorized alteration or repairs. Damage occurring during transit is not covered by this warranty. No other warranty expressed or implied shall apply and in no event shall Omni be liable for consequential economic damage or consequential damage to property.

### **OMNI DEFENSE TECHNOLOGIES DISCLAIMER**

Buyer assumes all risk and liability whatsoever from the installation and use of Omni products. Omni products are sold as bodily fluid collection and storage devices and should not be relied upon as protection from bodily fluids exposure to the body, clothing or other items such as flight deck. Omni assumes no liability for injury, loss, incidental or consequential damages in the event of an accident.

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**To re-order supplies please contact:**

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Phone: 1(802)497-2253

Fax: 1(802)497-3601

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