



# The HoverMatt® Air Patient Transfer & Repositioning System

## EQUIPMENT MANUAL



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## **User's Manual**

### **Using the HoverMatt® Lateral Patient Transfer Device**

The HoverMatt® system is used to assist with lateral transfers and repositioning anywhere in the hospital. It is radiolucent and artifact free so patients may remain on the HoverMatt® mattress for all ancillary procedures, including Diagnostic Radiology, Nuclear Medicine, MRI, or Radiation Therapy. There is no weight limit on the HoverMatt®; it is available in four different widths to accommodate the body mass of the patient. See the HoverTech International Product Line on page 17 for details.

#### **The Purpose of the HoverMatt® Technology:**

Consistent utilization of the HoverMatt® dramatically reduces back injuries to staff that are caused by lateral transfers and repositioning. In addition, fewer staff members are required and a very comfortable transfer for the patient is provided.

#### **The Principle of the HoverMatt® Technology:**

After the patient is placed on the HoverMatt® transfer mattress, low pressure air from the small air supply will inflate the mattress. At the same time the air is supporting the patient, the air is escaping from the perforations in the underside of the HoverMatt®. The escaping air acts as a lubricant to reduce friction, which facilitates effortless transfers. With less force needed to transfer a patient, there is less physical effort and strain expended by caregivers which results in a reduction of the workers' comp injuries. The HoverMatt® technology requires 90% less force than conventional products currently in use.

#### **Operational Sequence Recommended Using the HoverMatt® Technology:**

##### **IMPORTANT - READ THE FOLLOWING CAREFULLY**

The HoverMatt® should be placed on the patient bed or stretcher prior to patient use. However, if this is not the case, the patient is placed onto the transfer mattress using the common log rolling technique, the same as used to change a bed sheet. The buckled patient safety straps are attached. If the patient is lying on a pad or absorbent sheet to keep the bed clean, it can be placed on top of the HoverMatt® mattress to help keep it clean. *The transfer mattress can simply be wiped down between patients with the current anti-bacteria cleaner being used on stretchers, or if the mattress really becomes soiled, it can be laundered. (Laundering instructions can be found on page 6).* If the patient is debilitated, s/he can remain on the transfer mattress, while it is deflated, in the bed.

The Power Button on the HoverMatt® Air Supply (AIR200G, AIR400G, and 220V International) does not have an On/Off Indicator. To Avoid Incident, Follow the Instructions in the Manual Carefully.

Plug the electric cord into the outlet FIRST. If the Power was left ON following the prior use, the hose will be disconnected from the Matt and will not begin inflation before it is intended.

Once assured that the power supply is not turned on, attach the flexible hose end to the mattress, parallel to the foot end, and snap in place.

Be sure transfer surfaces are as close as possible and brake the wheels on the transferring equipment.

If possible, transfer from a higher surface to a lower surface.

Turn on air supply while keeping your attention on the patient.

When inflation of the mattress is complete, grasp the pull handles and pull the patient on an angle, either head first or feet first, until the patient is in the desired location. Be careful not to pull on the patient safety straps, but use the handles for pulling. Avoid over transferring.

If the width of the equipment receiving the patient is less than the width of the transfer pad, ensure that the patient is centered on the receiving equipment prior to turning off the air supply and deflating the HoverMatt®.

Turn off the air supply. Disconnect the hose from the mattress.

**Note: Never leave the patient unattended on an inflated transfer mattress. Always use bedrails for safety.**

When transporting the stretcher and patient to the next location, the air supply can hang on the stretcher/bed and be transported with the patient. It can also remain on the unit to be used with another HoverMatt® transfer mattress. When the patient arrives at the ancillary department, the staff will reconnect the air supply hose and transfer as above. Using the HoverMatt® technology minimizes the need for a large lift team.

### **To Use the Transfer Bridge:**

If large gaps or height differences occur between surfaces, the transfer bridge should be used. Open the folded transfer bridge and place along side of the transfer mattress. Inflate the transfer mattress, with the patient on it, and push the edge of the transfer bridge under the transfer mattress 2-3 inches. When transferring uphill, pull on the handle at the head end of the patient first and then

continue the transfer by pulling the handle at the legs. This will prevent the patient from feeling as if s/he might roll off of the mattress. To transfer down the height difference, pull the feet first and then the upper torso. To transfer across the gap, proceed in the same manner as described in “Operational Sequence to Use the HoverMatt® Technology”.

### **Additional Benefits:**

**Oncology/Radiation Therapy:** Some oncology patients have bone metastasis which can cause brittle bones to break while transferring. The use of the HoverMatt® technology greatly assists to minimize pain because the transfer is so smooth and the patient’s body is supported by the air. Radiation Therapy can be performed through the deflated transfer mattress.

**Trauma:** Trauma departments will place the HoverMatt® mattress on the trauma receiving stretcher. When an accident victim arrives, and if on a spinal board, the only physical move required is from the ambulance litter to the hospital stretcher. Normally, enough attendants are available to help with this one physical move. A benefit to the patient is that x-ray cassettes may be easily placed under an inflated HoverMatt® mattress to allow a portable x-ray to be taken. The HoverMatt should be deflated during the x-ray. All transfers can be performed with the spinal board remaining on the HoverMatt® mattress. This greatly helps with pain reduction because the patient is not being physically pulled. Quite often, CT Scan technicians are “on-call” during the night and have to transfer patients by themselves or with one ER nurse. The HoverMatt® solution reduces the number of staff required to make transfers.

**Cardiac Catheterization:** The HoverMatt® system helps to minimize the possibility of a post-op “bleeder” because of the smooth transfer from the treatment table.

**General Nursing and Radiology:** The HoverMatt® system can be used in all areas of nursing and radiology. Some hospitals will equip every radiology stretcher with a HoverMatt® and air supply and others will store the system on the nursing units. In either case, once the equipment is taken to the patient’s room, the transfer is performed as described in the section “Sequence of Use...”

### **Use with Magnetic Resonance Imaging**

The HoverMatt® transfer mattress is safe for use in the MRI. The snaps on the end of the mattress that hold the hose in place are made of non-ferrous metal. HOWEVER, the air supply is NOT to be used in the MRI environment.

HoverTech International is able to supply a special hose, 25 feet in length, to permit the use of the matt in the MRI while the air supply remains outside of the MRI environment.

***UNDER NO CIRCUMSTANCES IS THE HOVERMATT® AIR SUPPLY TO BE TAKEN INTO THE MRI ENVIRONMENT.***

### **To Launder the HoverMatt® Transfer Mattress:**

The HoverMatt® mattress is constructed of nylon twill.

In between patient use, the mattress should be wiped down with phenolic disinfectants, quaternaries, or other similar type solutions, as per hospital protocol for stretchers, OR pads and/or bed mattresses.

If the nylon mattress becomes badly soiled, it can be laundered in a washing machine with a **150 degree Fahrenheit maximum water temperature**. A 10:1 bleach solution may be used (10 parts water: one part bleach) during the wash cycle.

The mattress should be air dried if possible. Air drying can be expedited by using the air supply unit to circulate air through the inside of the mattress. If using the dryer, the temperature setting should be set on the coolest setting. **Drying temperature should never exceed 115 degrees Fahrenheit.** The backing of the nylon is polyurethane, and will begin to deteriorate after repeated high temperature drying. *The Double-Coated HoverMatt® should not be put in the dryer.*

To help keep it clean, HoverTech International recommends the use of their disposable or re-usable protector sheets. A bed sheet may also be used.

## **Infection Control**

HoverTech International offers superior infection control with our heat-sealed HoverMatt®. This unique construction eliminates the needle holes of a sewn mattress which can be potential bacterial entryways. Additionally, the heat-sealed, double-coated HoverMatt® offers a completely stain and fluid proof surface for easy cleaning.

Whatever the patient is laying on to keep the hospital bed clean may be placed on top of the HoverMatt® mattress to help keep it clean. If desired, the protector sheet or disposable sheet may be used to cover the transfer mattress (available for separate purchase). This sheet may also be placed under the transfer mattress, when log rolling the patient, to prevent the bottom of the transfer mattress from coming in contact with the hospital bed sheets.

If the mattress is used on an isolation patient, the hospital shall employ the same protocols/procedures it utilizes for the bed mattress and/or for the linen from that patient room.

The air supply (model #'s AIR200G, AIR400G and 220V International) has a 2 micron filter over the motor. This filter can be accessed by removing the three small screws holding the canister to the motor. If desired, this filter may be soaked with any germicidal solution.

## **THE HOVERMATT® PATIENT TRANSFER SYSTEM STEP-BY-STEP INSTRUCTIONS FOR USE**

- 1. Patient should be in a horizontal position for transfer/repositioning.**
- 2. Place the HoverMatt® mattress underneath patient using log-rolling technique and attach patient safety straps. Whatever the patient is laying on to keep the bed mattress clean can be placed on top of the transfer pad to help keep it clean.**
- 3. Plug electric cord into outlet.**
- 4. Attach flexible hose end to mattress, parallel to foot end, and snap in place.**
- 5. Be sure transfer surfaces are as close as possible and brake the wheels.**
- 6. If possible, transfer from a higher surface to a lower surface.**
- 7. Turn on air supply.**
- 8. Grasp handles and pull patient on an angle, either head first or feet first, until patient is in desired position.**
- 9. If the width of the equipment receiving the patient is less than the width of the transfer pad, ensure that the patient is centered on the receiving equipment prior to deflation.**
- 10. Turn off air supply and employ the bed/stretchers rails.**

## HoverMatt® Lateral Transfer & Repositioning System Warranty Statement

All HoverMatt® transfer components, mattresses and air supplies are warranted to be free from defects in materials and workmanship for (1) one year. Warranty begins on date of in-service by a HoverMatt® representative or shipment date.

In the unlikely event that a problem arises as a result of a defect in materials or workmanship, we will promptly repair your item or replace it if we feel that it cannot be repaired – at our expense and discretion using current models or parts performing the equivalent function – upon receipt of the original item to our repair department. You must pre-notify HoverTech International by phone (see below). Item is to be insured by you against loss during transportation and must be shipped with transportation and/or broker charges prepaid. Should a mattress or motor be returned, which is not covered under warranty, there will be a minimum \$100 service charge plus shipping costs. See page 10 for return/ repair instructions.

This warranty is not an unconditional guarantee for the life of the product. Our warranty does not cover product damage that may result from use contrary to Manufacturer's instructions or specifications, misuse, abuse, tampering, or damage due to mishandling. Equipment that has been neglected, improperly installed or maintained, repaired or altered by someone other than an authorized representative of Manufacturer, or operated in anyway contrary to the operating instructions, shall void this warranty.

This warranty does not cover normal "wear and tear". Component parts- particularly Matts and cords will show wear with use over time and eventually may need to be refurbished or replaced. This normal type of wear is not covered by our warranty, but we will provide prompt, high quality repair service and parts at a nominal cost.

**HoverTech International's liability under this warranty and on any claim of any kind for any loss or damage arising out of, connected with, or resulting from the design, manufacture, sale, delivery, installation, repair or operation of its products, whether in contract or tort, including negligence, shall not exceed the purchase price paid for the product and upon expiration of the applicable warranty period, all such liability terminates. The remedies which this warranty provides are exclusive and HoverTech™ International shall not be liable for any incidental or consequential damages.**

**There are no warranties, express or implied, which extend beyond this warranty statement. The provisions of these warranty clauses are in lieu of all other warranties, expressed or implied, and of all other obligations or liabilities on HoverTech International's part and neither assumes nor**

**authorizes any other person to assume for HoverTech™ International any other liability in connection with Manufacturer's sale or lease of said products. HoverTech™ International makes no warranty of merchantability or fitness for a particular purpose. There is no warranty that the goods will be fit for a particular purpose. By accepting the goods, the buyer acknowledges that buyer has determined the goods are suitable for the buyer's purposes.**

**Manufacturer's specifications are subject to change.**

## **RETURNS AND REPAIRS**

All products being returned to HoverTech International should have a Return Authorization Number issued from the company. Please call 800-471-2776 for an RA #. Any products returned without the necessary RA # may cause a delay in the repair time.

If the product is not covered under warranty, a minimum charge of \$100 will be assessed for each repair. Should a repair charge be assessed, HoverTech International will notify the facility and a purchase order for the repair will need to be issued before the repair can be completed. Lead-time for repairs is approx. 2 weeks.

A laundering fee of \$50 will be assessed if HoverMatts® are not properly cleaned or laundered for repair.

### **All products returned should be sent to:**

HoverTech International  
513 South Clewell St.  
Bethlehem, PA 18015  
Attn: Repair Dept.  
Phone: 800-471-2776  
Fax: 610-694-9601

# CERTIFICATION RECORD

The company named below has been authorized by CSA International to represent the products listed in this record as "CSA Certified" and to affix the CSA Mark to these products according to the terms and conditions of the CSA Service Agreement and applicable CSA program requirements (including additional Markings).

File No: 1 142930000

Class No: 8711 81 ELECTROMEDICAL EQUIPMENT Certified to US Standards  
UL 544

## SUBMITTOR

HoverTech International, (d/b/a),

4576472 D.T. Davis Enterprises, Ltd.  
513 S. Clewell St.  
Bethlehem, Pennsylvania 18015  
USA

## FACTORIES

4576472 HoverTech International, (d/b/a),  
D.T. Davis Enterprises, Ltd.  
513 S. Clewell St.  
Bethlehem, Pennsylvania 18015  
USA

December 8, 2003 (Replaces: December 13, 2001)

- Patient transfer matt, Model "HoverMatt", Risk Class 1, rated 1 10/120V ac, 50/60Hz, 850W version.
- Patient transfer matt, Model "HoverMatt", Risk Class 1, Rated 1 10/120V ac, 50/60Hz, 1100W version.
- Patient transfer matt, Model "HoverMatt", Risk Class 1, rated 1 10V 50/60Hz, 800W version.

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# CERTIFICATION RECORD

The company named below has been authorized by CSA International to represent the products listed in this record as "USA Certified" and to affix the CSA Mark to these products according to the terms and conditions of the USA Service Agreement and applicable USA program requirements (including additional Markings).

File No: 114293\_0\_000

Class No: 8750 01 MEDICAL ELECTRICAL EQUIPMENT  
Certified to CSA 601-1

## SUBMITTOR

4576472 HoverTech International, (d/b/a),  
D.T. Davis Enterprises, Ltd.  
513 S. Clewell St.  
Bethlehem, Pennsylvania 18015  
USA

## FACTORIES

4576472 HoverTech International, (d/b/a),  
D.T. Davis Enterprises, Ltd.  
513 S. Clewell St.  
Bethlehem, Pennsylvania 18015  
USA

April 15, 2005

Air Supply for "HoverMatt" Lateral Patient Transfer System, Model "800W", rated I 10/120V, 50/60Hz, 800W and Model "1100", rated I 10/120V, 50/60Hz, 1100W. Both models are Class I with Type B Applied Part.

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# CERTIFICATION RECORD

The company named below has been authorized by CSA International to represent the products listed in this record as "CSA Certified" and to affix the CSA Mark to these products according to the terms and conditions of the CSA Service Agreement and applicable CSA program requirements (including additional Markings).

File No: 1142930000

Class No: 8750 81 MEDICAL ELECTRICAL EQUIPMENT Certified to US Standards  
UL 2601-1 or UL 60601-1

## SUBMITTOR

4576472 HoverTech International, (d/b/a),  
D.T. Davis Enterprises, Ltd.  
513 S. Clewell St.  
Bethlehem, Pennsylvania 18015  
USA

## FACTORIES

4576472 HoverTech International, (d/b/a),  
D.T. Davis Enterprises, Ltd.  
513 S. Clewell St.  
Bethlehem, Pennsylvania 18015  
USA

April 15, 2005

Air Supply for "HoverMatt" Lateral Patient Transfer System, Model "800W", rated 1 10/120V, 50/60Hz, 800W and Model "1100", rated 1 10/120V, 50/60Hz, 1100W. Both models are Class I with Type B Applied Part.

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## **HoverMatt® Electrical Safety Test**

Every HoverTech International air supply undergoes a strict electrical safety test prior to shipping.

We use a Slaughter Industries Hipot Model 2510 for the testing. This is a device recommended to us by the Canadian Standards Association, CSA (an approved OSHA testing lab).

After the air supply is completely assembled, it is plugged in to the Hipot tester.

The air supply runs at 110V. However, the Slaughter device tests to 1,500V to assure there is no breakdown in the integrity of the wiring insulation and to assure no shorts are present. This device also performs a continuity test to assure that the device is grounded through the grounding pin on the cord.

HoverTech International blower motors test within the following parameters:

Current of .25 - .30 mA. Standards dictate it cannot go above 1 mA

Voltage of 1.49 – 1.53

Tests are conducted at the following settings:

Dwell (amount of time the voltage is held) 1.0 seconds

Ramp (amount of time taken to build voltage) 0.0 seconds

At the completion of the test, our technician records the testing numbers. When the device passes the requirements, our CSA label is then affixed. This label states that the approved device has been tested and deemed to comply with UL 544 and/or CSA 601-1.

The Slaughter device is sent to the factory for mandated recalibration once a year. CSA comes to our offices, unannounced, once every three months to ensure we are complying with the testing protocols which allow us to affix their label of safety.

## FREQUENTLY ASKED QUESTIONS ABOUT THE HOVERMATT® PATIENT TRANSFER SYSTEM

**Q: What is the weight limit on the HoverMatt® System?**

*A: There is no weight limit on the HoverMatt®; the HoverMatts® are available in different widths to accommodate patient girth.*

**Q: What is the recommended maintenance with regard to the air supply and filter?**

*A: The recommended replacement/change of the air supply filter is once a year. Obviously, if a visual inspection reveals a dirty filter, then it should be replaced at that time.*

**Q: How do you replace the filter on the (Air200G/Air400G/220V-International) air supply?**

*A: To access the filter, remove the three screws holding the canister to the motor housing. Remove the motor from the canister. The filter easily slides off the bottom of the motor housing. The filter can be washed with soap and water or a germicidal solution and replaced; or, the filter can be replaced with a new filter. The replacement P/N is HMF-100.*

**Q: I was told that the HoverMatt® can be used anywhere. Are the snaps safe in an MRI environment?**

*A: The snaps on the entry end of the mattress and on the end of the hose are not magnetic. They are nickel-plated brass and not chrome-plated steel. **If you wish to use the HoverMatt® in the MRI environment, a 25 foot hose MUST be used so that the air supply can be kept outside of the room.***

**Q: Is the HoverMatt® transfer system latex free?**

*A: Yes.*

**Q: BioMed has asked us for specifications for the Air Supply. What are they?**

*A: The Specifications for the HoverMatt® Air Supply are:*

The hose end temperature should not exceed 110 degrees Fahrenheit after ten (10) minutes of running with no back pressure on the motor.

The hose end air pressure should be approximately 2.8 psi or higher and the volume should be approximately 78 cfm or higher.

**Q: Is the HoverMatt® FDA Approved?**

*A: HoverTech International is registered with the FDA. The HoverMatt® is listed as a Class II device and therefore exempt from pre-market notification and approval.*

**Q: Why is a CSA Certification important?**

*A: The CSA Certificate attests to the safety of the electrical equipment. OSHA requires testing and approval by an OSHA approved laboratory, such as CSA. You can confirm this by visiting the OSHA regulations for electrical equipment.*

## HoverTech International Product Line

### HoverMatt® Transfer Mattresses:

HM2802N	HoverMatt® - 28 in. wide; 78" long sewn
HM3402N	HoverMatt® - 34 in. wide; 78" long sewn
HM3902N	HoverMatt® - 39 in. wide; 78" long sewn
HM50N	HoverMatt® - 50 in. wide; 78" long sewn
HM28HS	HoverMatt® - 28 in. wide; 78" long heat-sealed
HM34HS	HoverMatt® - 34 in. wide; 78" long heat-sealed
HM39HS	HoverMatt® - 39 in. wide; 78" long heat-sealed
HM50HS	HoverMatt® - 50 in. wide; 78" long heat-sealed
HM28DC	HoverMatt® - 28 in. wide; 78" long heat-sealed; double-coated
HM34DC	HoverMatt® - 34 in. wide; 78" long heat-sealed; double-coated
HM39DC	HoverMatt® - 39 in. wide; 78" long heat-sealed; double-coated
HM50DC	HoverMatt® - 50 in. wide; 78" long heat-sealed; double-coated
HX3401N	HoverMaxx™ - 34 in. wide; 72" long sewn; zippered fusion cover
HX3901N	HoverMaxx™ - 39 in. wide; 72" long sewn; zippered fusion cover
HM-Mini28HS	HoverMatt® 28" wide; 42" long; heat-sealed
HM-Mini28DC	HoverMatt® 28" wide; 42" long; double-coated; heat-sealed
HM-Mini34HS	HoverMatt® 34" wide; 42" long; heat-sealed
HM-Mini34DC	HoverMatt® 28" wide; 42" long; double-coated; heat-sealed

### Air Supply Units

AIR200G	Air Supply – 800 watts, CSA, Grounded
AIR400G	Air Supply – 1100 watts, CSA, Grounded

### HoverJack™ Patient Lift

HJ3201	HoverJack™ Air Patient Lift 32" wide
HJ3901	HoverJack™ Air Patient Lift 39" wide

### HoverJack™ Transport Sheet

HJTS32	Transport Sheet 32" wide
HJTS39	Transport Sheet 39" wide

### HoverMatt® Protector Sheets

HMPS28	Reusable, nylon protector sheet 28"x78"
HMPS34	Reusable, nylon protector sheet 34"x78"
HMPS39	Reusable, nylon protector sheet 39"x78"
HMPS50	Reusable, nylon protector sheet 50"x78"
HMDS	Disposable sheets; absorbent & impervious

**Storage Carts**

HMC-100

HoverMatt® Storage Cart; 2 baskets for transport & storage of HoverMatt® System

HJC-200

HoverJack™ Storage Cart; 2 baskets for transport & storage of HoverJack™ Patient Lift System

**Transfer Bridge**

BR5000

Folding Transfer Bridge, 60" long

**Transport Bag**

HMTB

HoverMatt® Transport Bag

**25-foot hose**

For use in MRI

**Safety Slide™**

HSS-101

Safety Slide™ Evacuation Sheet











