

# PC450/HD450 Operator's Manual



SMT Health Systems  
1380 Legion Road  
Detroit Lakes, MN 56501  
800-725-7761  
[www.patientlift.com](http://www.patientlift.com)



# Safety Notes

- The Volaro lift is designed for patient transfer only. Using the lift for transport can create an unsafe patient handling situation.
- Lift legs must be fully extended into the wide position when lifting a patient or resident.
- For Emergency Stop, pull power pac from power box.
- Make sure all four loops from the sling are properly “nested” in the bottom of the hooks before lifting or transferring a patient or resident. Also make sure that all four retainer springs are functioning correctly.
- Use **only** Volaro slings and accessories designed for use with the Volaro lift models.
- **Do not** push or pull on the beam or resident. This will jeopardize the lift’s stability.
- **Do not** use any other power pac charger. Use only the power pac charger supplied with the lift.
- **Do not** exceed the weight limit listed on the lift.
- **Do not** place fingers between the safety guards of the beam track.
- **Do not** attempt a transfer from the floor before examining for any injuries that may need special attention.
- **Do not** use a sling that shows wear, is torn, bleached out or has loose threads. Inspect sling before each use.

## Safe Working Loads

Volaro slings have been developed, tested and manufactured to have a safe working load of 1000 lbs. Due to the variety of resident shapes and dimensions, the appropriate size should be selected to accommodate specific patients. Care should be taken to ensure that the mechanical lift selected has the capacity to safely lift the resident.

The Volaro Sling Sizing Chart (page 7) is designed only to suggest which resident will safely fit into the sling based on their size and weight.

**NOTE:** Lifts are designed to “transfer” a resident, not “transport” them.

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## PARTS & SERVICE

### **SMT Health Systems**

**Phone: (218) 847-3386 Toll Free: (800) 725-7761**

**Toll Free Fax: (888) 385-2345**

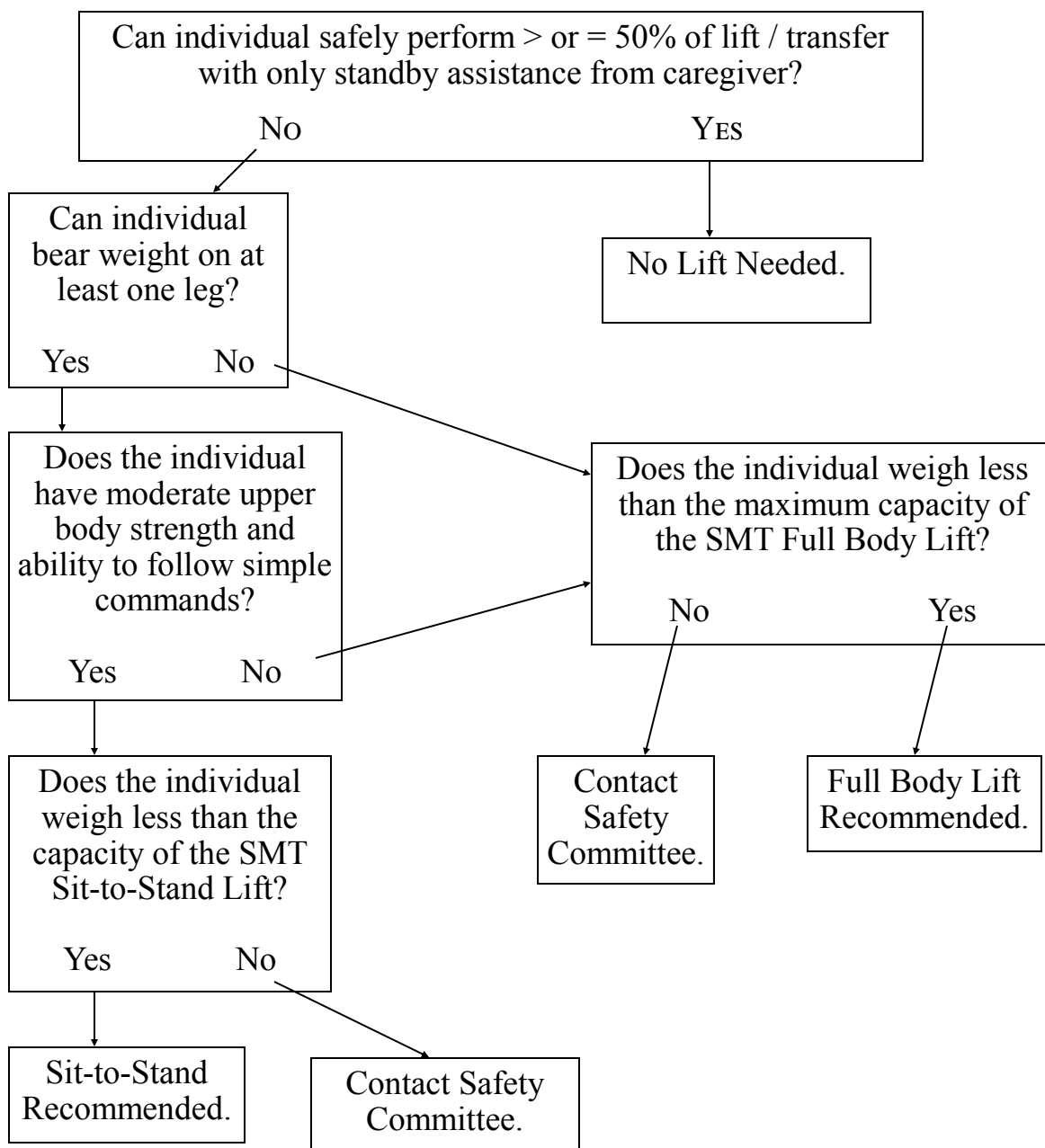
**Email: [sales@smthealthsystems.com](mailto:sales@smthealthsystems.com)**

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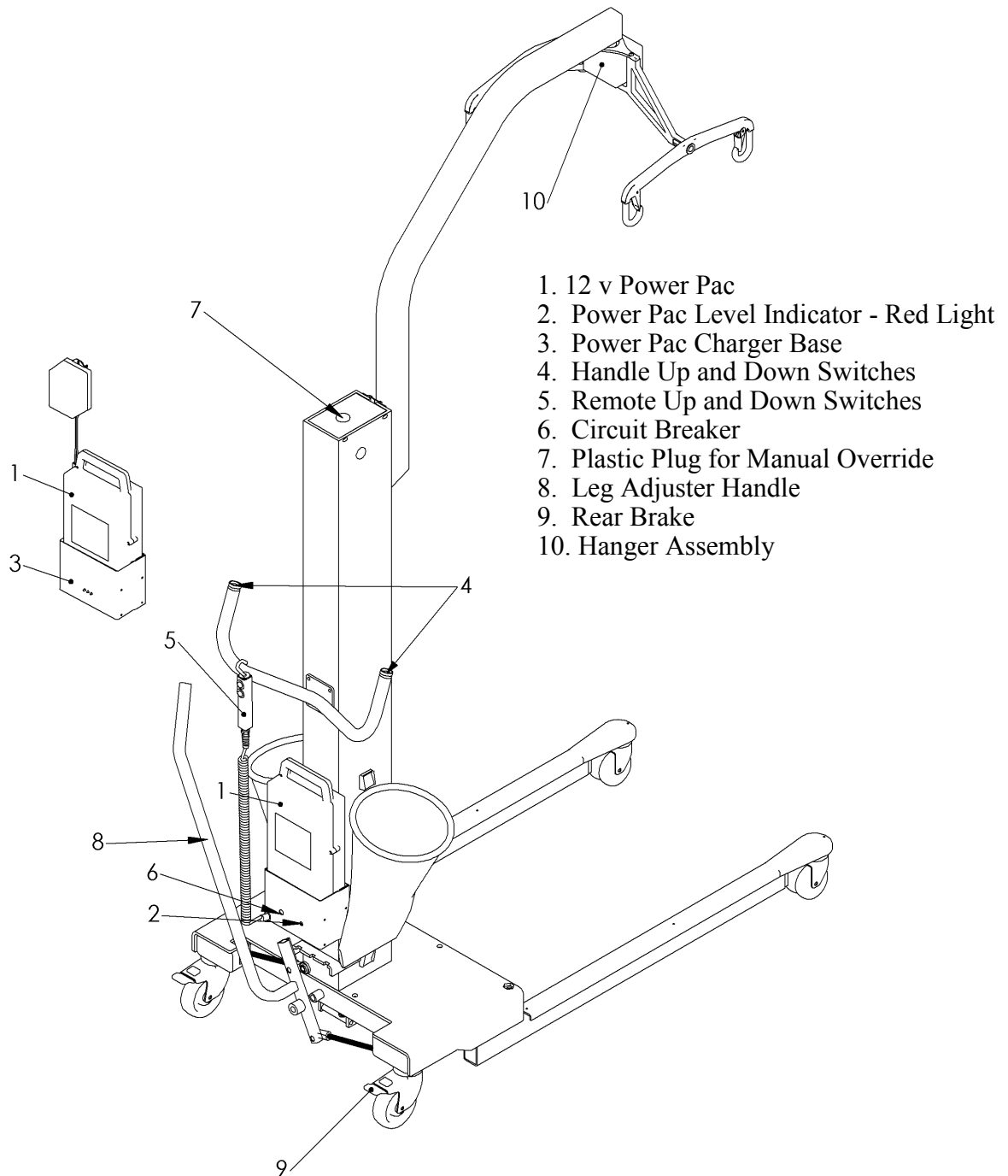
# Volaro Lift/Transfer Assessment Form

## Are you using the correct lift for your needs?

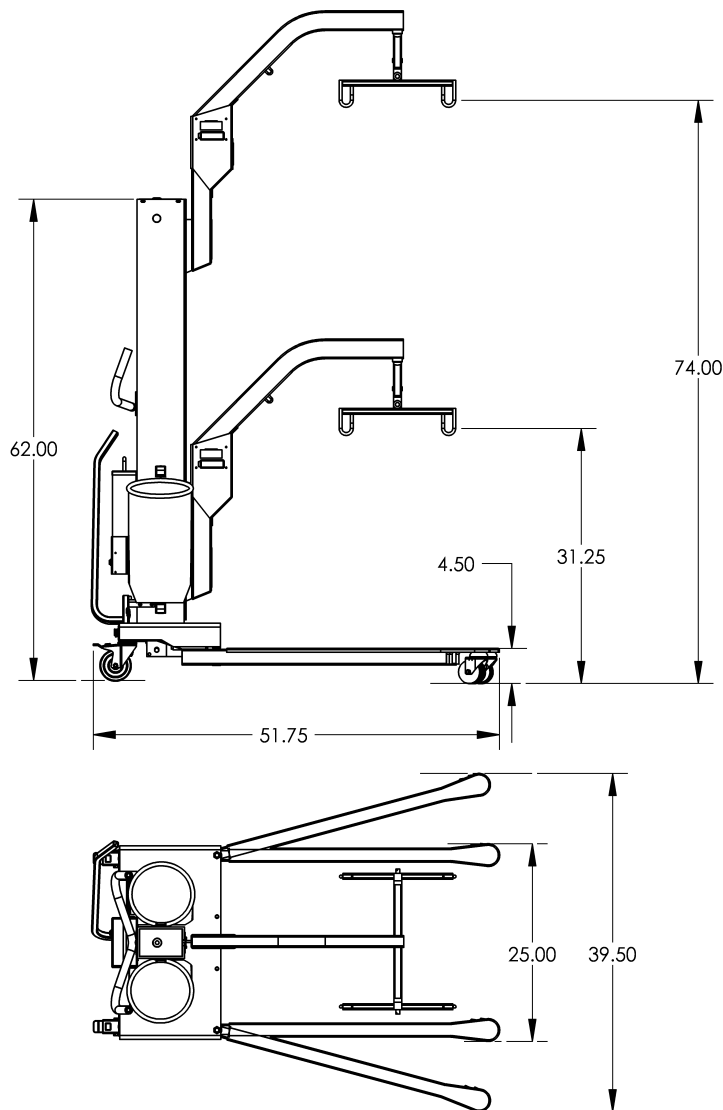


Patient Name \_\_\_\_\_ ID# \_\_\_\_\_ Room# \_\_\_\_\_  
 Assessment Completed by \_\_\_\_\_ Date \_\_\_\_\_  
 Lift(s) Required \_\_\_\_\_ Sling Size \_\_\_\_\_  
 Comments for PRN Use \_\_\_\_\_  
 Assessment Updated by \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_\_\_ Date \_\_\_\_\_  
 \_\_\_\_\_ Date \_\_\_\_\_  
 Assessment Care Planned by \_\_\_\_\_ Date \_\_\_\_\_

# Mechanical Operation



# PC450/HD450 Specification Sheet



- 450 LBS Lifting Capacity—PC450
- 700 LBS Lifting Capacity—HD450  
(NOTE: Base on HD450 is 5" wider in both open and closed positions)
- Non-Arcing Lift Beam
- Thrust Bearing Mounted Hanger
- Spring Retainer Clips
- Vinyl Safety Padding
- Vinyl Storage Bags
- Plastic Case Power pacs, 12VDC 12 AH Lead-Acid Battery
- 12VDC Ball-Screw Actuator with 1" diameter screw.
- Steel Hand Control
- Powder Coat Paint
- 3 Position Lock Leg Adjuster
- Digital Hanger Scale
- High Impact ABS Leg Covers
- Front Casters 3" Dual Swivel
- Rear Casters 4" Single Swivel w/Brake
- Safety Pressure Switch
- Manual Override
- Emergency Down

# Volaro Lift Slings



## **DL201S: DIVIDED LEG SLING**

The divided leg sling offers comfortable support for patients/residents in transfers. The divided leg sling is also available with head support.



## **H301S: HAMMOCK SLING**

The hammock sling offers comfortable support for persons who may be amputees or who may be more comfortable in this style. The hammock style comes with or without head support or commode opening.



## **MESH SLINGS:**

The Divided Leg and Hammock both come in a mesh fabric for use in bathing or showering.



## **TDL202S: TOILETING SLING**

The toileting sling can be used on persons with some upper body strength to provide increased ease of toileting.

## Volaro Sling Laundering Instructions

The sling material and webbing are made of nylon. If possible, put the sling in a Volaro mesh bag (P# LB2436) to prevent the straps from getting tangled. Recommended washing instructions are as follows:

- Machine wash warm - gentle cycle
- Tumble dry - **Low Heat Only** - (160° max) or drip dry
- Non-chlorine chemical disinfectants OK
- **No Bleach**

**Warning:** Excessive heat and/or bleach will shorten the serviceable life of the sling. If the sling is damaged due to improper laundering, **Warranty is VOID.**



# **Volaro** *Sling Sizing Chart*

Lifts for life

<b>XX-Small</b>	<b>50-75 lbs.</b>	Shoulder width approximately 12-16 in. Hip width approximately 12-14 in.
<b>X-Small</b>	<b>75-100 lbs.</b>	Shoulder width approximately 17-22 in. Hip width approximately 14-23 in.
<b>Small</b>	<b>100-125 lbs.</b>	Shoulder width approximately 22-24 in. Hip width approximately 23-25 in.
<b>Medium</b>	<b>125-200 lbs.</b>	Shoulder width approximately 24-28 in. Hip width approximately 25-31 in.
<b>Large</b>	<b>200-325 lbs.</b>	Shoulder width approximately 28-32 in. Hip width approximately 31-34 in.
<b>X-Large</b>	<b>325-400 lbs.</b>	Shoulder width approximately 32-37 in. Hip width approximately 34-41 in.
<b>XX-Large</b>	<b>400-600 lbs.</b>	Shoulder width approximately 37-44 in. Hip width approximately 41-47 in.
<b>3X-Large</b>	<b>400-700 lbs.</b>	Shoulder width approximately 44-49 in. Hip width approximately 47-53 in.
<b>4X-Large</b>	<b>400-800 lbs.</b>	Shoulder width approximately 49-56 in. Hip width approximately 53-60 in.
<b>5X-Large</b>	<b>400-1000 lbs.</b>	Shoulder width approximately 56-62 in. Hip width approximately 60-68 in.



Color code system indicates the color of the handles on the backs of Volaro slings.  
The size of each sling is also shown on the tag attached to that sling.

## **Selecting the Style and Size of Sling to be Used:**

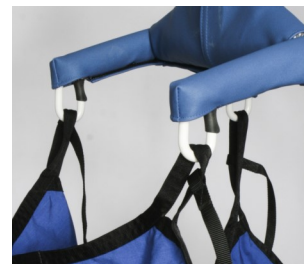
The first step is to select the **Style** of sling to be used. The most common sling is the divided leg sling (shown). This sling is designed to be removed from the person after they have been transferred into their wheelchair. This way they do not have to sit on the sling throughout the time they are sitting in their chair. If you find it difficult to remove a divided leg sling from behind a person while they are seated in a wheelchair, you may choose to leave it behind/under them. Be sure to observe the correct position of the sling before you lift the person. The sling may have repositioned. If a person has leg discomfort while you use the divided leg sling on them, another option would be the hammock sling. If you are lifting a single or bilateral amputee, you **must** always use a hammock sling. The hammock sling comes with or without the commode hole.



The second step is to determine the proper **Size**. Lay a sling across the persons chest. If it's the proper size sling, you will note 2-8 inches of extra material extended past the side of each arm. **NOTE: This is only a guide. Body shapes vary so much that fitting the patient to the sling ultimately needs to be determined by the health care professional.** If you observe little or no fabric extended past the arms, you must upgrade to a larger sling. All styles have color coded positioning handles to easily indicate the size of the sling. (Page 7) The loops on the straps are color coded to match each side in positioning the sling to the desired location. Make sure you use the same color loop on the "J" hook directly across from each other to keep the sling even. Changing the orientation of these loops will change the angle of the person being transferred. This comes in handy for charting the colors that would work best for each individual. All sling styles come with built in positioning handles on the back of the sling. These always face out and are used to position a person back in a chair.

## **Lifting from Chair to Bed:**

To apply the divided leg sling on someone sitting in a wheelchair, first lean the person slightly forward to get clearance between the back of the person and the back of the wheelchair. Keeping the sling from twisting, using the pockets in the back of the sling, make sure the sling is all the way down and that there is no gap behind the person. If the sling is not all the way down, it will not come under the leg very easily. Work the sling alongside the legs, getting as much material toward the front of the chair as possible. Raise the leg and pull the material through, preventing any wrinkles. Crisscross the inside flaps with the main loops, then thread the strap with the color-coded loops through the main loop. Crisscrossing the inside flaps will keep the legs together for a more comfortable and dignified transfer. Now that the sling is positioned, bring the lift toward the person, open the legs of the lift to the wide position, lower the hanger until the desired colored loops can be hooked on the hanger. **Note: Raise until there is tension on the straps, then double check to make sure sling loops are nested into the bottom of the hooks properly.**



Now push the up button on the handle or use the hand control to raise the person just high enough to clear the chair. Position the lift so that the person will be lowered to the proper position onto the bed. Lower the lift. Once there is plenty of slack in the straps, remove the loops from the hanger and pull the lift out of the way. Unthread the straps from the main loops. Roll the person on their side and fold the sling, then roll to the other side and remove the sling.

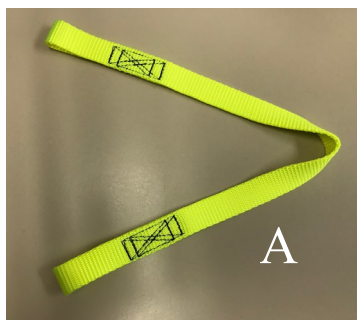
## **Lifting from Bed to Chair using the Divided Leg Sling:**

When transferring from bed to chair just reverse the steps in the previous instructions. Roll the person to their side and lay the folded sling behind them. Align the bottom of the back of the sling by the tailbone. Roll the person to their side and pull the rest of the sling through, straightening any wrinkles. Bring material under the legs the same way as if they were in the chair. Crisscross the inside flaps and thread the straps through the main loops. Bring the lift in, adjust the base to the widest position, and lower hanger near the center of the person being transferred. Keep the lift in the widest position possible at all times, especially when transferring a person who is uncooperative or combative. Bend the knees and hook up the color coded loops that were previously used to bring them to a sitting position. Press the button to raise the lift just high enough to clear the bed and make sure the material under the leg stays straight toward the knee, keeping out as many wrinkles as possible. **Note: Raise until there is tension on the straps and then double-check to make sure the loops are nested in the bottom of the hooks. If the base is in the narrow position, adjust it to the widest position once you are clear from the bed and always before turning the lift.** Once the patient is over the chair, lower and guide them by the built-in handles on the sling to bring them back far into the chair. **Note: Use only the lift handle bars to move the lift. Pulling or pushing on the person or the beam will cause the lift to be unstable.** To remove the sling, reverse the step. Unthread the straps from the main loops, raise the legs and pull the material aside. Now lean the person forward and pull sling clear.

## **Lifting from the Floor:**

To transfer from the floor, apply the sling with the same procedure as if they were in bed. **If the person is on the floor as a result of a fall, no transfer should be attempted until it is determined that there are no injuries.** Once the sling is positioned under the person as if they were lying in a bed, bring the lift up to the person being transferred from either the head or legs. If the lift is brought in by the head, apply a pillow between the head and the base of the lift. (The reverse may be done as well with the patient's legs resting on pillows on the base of the lift.) Lower the lift to the lowest position and hook up the front two straps to the hanger. You will need to use the two extension straps supplied with the sling ( **A** ). This strap loops through itself ( **B** ) in order to extend the head end of the sling strap low enough for a floor lift. A second set of straps can be used to extend it further if necessary. ( **C** ).

Push the lift as close to the patient as possible, then lock the brakes. (When bringing the lift in by the legs, lift the legs onto the base, cushioning with pillows.) Now hook up the back two straps by bending the knees and applying the loops to the hanger. All the models of slings come with straps on the foot end that are long enough to transfer from the floor. Note: If you are using a sling without head support, you will need to support the patient's head with your hands.



# Mechanical Operation

(Operation Corresponds with the View on Page 4)

## **Power Pacs:**

This lift is powered by a 12VDC removable power pac located at the back of the lift. The power pac fits either way in the lift and charger box. This is to make it easy to remove and replace the power pac.

**NOTE: Power pac removal is your emergency stop feature.** (Figure A)

The lift has a built-in power pac indicator which illuminates when the power pac is about 60% discharged. This would be the best time to replace the power pac with one that is fully charged. If the power pac indicator is solid red during rotation of the actuator, this means there is approximately 20% capacity left in the power pac. The power pac must be charged as soon as possible.

Once the power pac is inserted into the charging unit, the charge light on the charging unit comes on. Make sure this yellow light comes on to assure your power pac is charging. Once the power pac is fully charged, the light will shut off. The charger is fully automatic and will quit charging when the power pac reaches a full charge. You will not damage the power pac or charger if the power pac is left on the charger. The power pac life can vary depending on how many charging cycles the power pac has undergone or if the power pac was improperly stored discharged for a long period of time. A typical life cycle is between 1000- 1200 cycles from full to empty. (see charging procedure page 12) (Figure B)

## **Switches:**

The lift is operated by switches located at the tips of the handles. This allows proper ergonomics by keeping the hands on the handles while operating the lift and maneuvering it at the same time. The optional hand control provides a second source to operate the lift. This allows the operator to be next to the person being transferred and to operate the lift at the same time. It also aids as a back-up source to operate the lift. (Figure C)

## **Emergency Down Feature:**

If your lift is equipped with the emergency down feature, engage the rocker switch (under power box) to lower the lift. This is to be used in an emergency only, service may be needed. (Figure D)

## **Power Failure:**

If for any reason the lift would stop in mid travel, the first thing to check is the circuit breaker located on the power pac box. If the breaker has popped out, simply press it back in and try lifting. (Figure E) If the problem is not the breaker, and you cannot lower the patient/resident by the switch on the handle or the remote control, you must use the emergency down located under the power box. (Figure D) Another option is the manual safety override 5/16" x 3/8" bit provided with the lift.

## **Manual Down Operation:**

As a last option to operate the lift manually, remove the plastic plug at the top of the mast and use the 5/16" hex driver supplied with the lift, and a 3/8" socket and ratchet with extension. Insert the hex driver into the hex head at the top of the ball screw and simply turn in the desired rotation.

## **Width Adjustment:**

The leg adjuster opens and closes the legs of the lift. By pulling back, this allows you to rotate the handle back and forth. Keep the handle pulled back while rotating to keep the leg adjuster handle from rubbing on the notch plate. This process enables the lift to be narrowed to go through doorways and widened to go around a wheel chair or lounge chair. (Figure G)

## **Wheel Locks:**

The brakes are located on the rear wheels. Press the tab with your foot to lock the wheel and the swivel. Press the upper portion of the tab to release the brakes.



Figure A

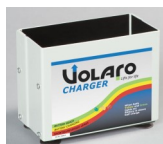


Figure B



Figure C



Figure D



Figure E



Figure G

## **Hanging and Dual Display Scale Calibration Instructions PC450/HD450**

1. Should calibration be necessary, all that is required is a 25 Lb precision weight. Do not use packaged goods, fitness weights or other items that say they weigh 25 Lbs. Failure to use a precision weight may cause the scale to display an inaccurate weight. Using a certified weight is the method preferred. 25 Lb certified weights are available from SMT Health Systems.
2. When calibrating scale, have the beam positioned in the middle of its stroke.
3. To enter calibration mode, push **“ON/ZERO”** button.
4. While holding the **“ON/ZERO”** button, press and hold the **“LB/KG”** button. After approximately 3 seconds the message on the display will change from **“ZERO”** to **“CAL”**. Release both and the display will show **“C O”**.
5. Hang strap or sling that will hold calibration weight on the hanger hooks. If using a sling, make sure it is empty. Push the **“ON/ZERO”** button and release. The display will count down from **“16”** to **“0”**. When finished the display will show the message **“C 25”**.
6. Now hang 25 Lb calibration weight on strap which you previously attached to the hanger (step 4, above) or place it in the sling and permit the scale to stabilize. (Failure to stabilize the unit may cause the scale to display an inaccurate weight – see below.)
7. Push **“ON/ZERO”** button again. Scale will count down from **“16”** to **“0”** as before and then the display should read **“25”**, which is the weight of the calibration weight.  
Calibration is now complete. **Do not touch lift while it is counting down.**
8. Remove the 25 Lb precision weight, stabilize the sling or strap, and press the **“ON/ZERO”** button to zero the scale. The scale is ready to use.

**Note:** To stabilize the unit, weight must be centered directly below the beam.  
Do not side load the scale.  
Permit the weight to stop bouncing or swinging.  
Switching between LBS. and KG. may trigger a need to recalibrate.

**Call SMT Customer Service if you have any questions. 800-725-7761**

# ***SMT Volaro 12V Power Pac Charging***

## **Charging Procedure**

(Note: if there is no power pac in the charger, the GREEN light will be on.)

- 1) The lift has a RED power pac indicator light located on the box that will come on when the power pac is low. At this point the power pac should be exchanged as soon as possible with one that is fully charged from the charger. However, it is best to exchange your power pac at a regular time(s) for optimum power pac life.
- 2) Store the charger unit near an outlet and on a counter or flat surface where the suction cups will have good contact.
- 3) When setting up a new Volaro lift: Insert power pac into charger and plug charger into outlet. (Power pac will fit in either direction.)
- 4) The RED light may come on briefly if the power pac is excessively discharged, but it should go off within the first few minutes followed by the YELLOW light. If the RED light stays on it may mean the power pac is extremely discharged. Leave the power pac on the charger overnight to see if it can be restored. If it stays on RED, you have a bad cell.
- 5) When the YELLOW light has gone out, the power pac is fully charged and will shut off automatically. However, you should leave the power pac on for its full charging cycle of 12 hours. The GREEN light will stay on. It will not harm the power pac to leave it on the charger longer than the normal charging cycle.

### **Note:**

- ☐ Charging sequence: Periodically unplug the charger, insert power pac and then plug charger back into outlet for proper electronic function.
- ☐ Leaving the power pac on the charger will NOT cause it to overcharge.
- ☐ If the power pac goes to GREEN in a short period it may mean you have a weak cell that will not take a full charge.
- ☐ Plug power pac into charger every night.
- ☐ Do not remove until charging cycle is complete.
- ☐ Power pac will not be damaged if left plugged in.
- ☐ The charger will get warm during its charge cycle.

## **Additional charging information:**

The VOLARO charger uses a three part process which could take up to 12 hours. The first part is called the **bulk charge**. During this stage the charger supplies 1.5 Amps until the power pac terminal voltage reaches 13.8 volts. The current then begins to ramp down from 1.5 Amps to about .5 Amps at the conclusion of the charging process. This **ramping charge (absorption mode)** will take several hours. Finally, the GREEN light will come on indicating that the charger has switched to the third part of the cycle, the **temperature compensated float charge**. The charger is now in its maintenance mode, keeping the power pac in its ideal charged state. The VOLARO charger is not a trickle charger nor will the power pac be damaged if left permanently attached and powered. If the GREEN light comes on soon after putting the power pac on the charger it means that either the power pac is already charged OR you have a weak power pac that will only hold a minimal charge. **Maintaining the proper power pac voltage when the power pac is not in use will extend the serviceable life of the power pac.**



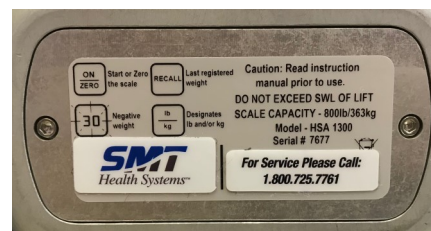
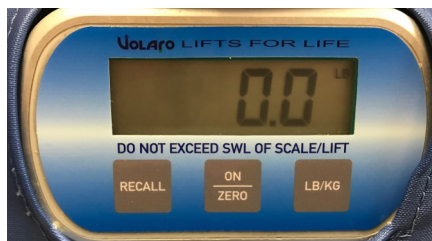
**SMT Health Systems, Inc.**  
1380 Legion Road  
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Email: [sales@smthealthsystems.com](mailto:sales@smthealthsystems.com)

SMT recommends the power pac tester #10048BT to help ensure that you will always have adequate power pac power.

<b>VOLARO CHARGER SPECIFICATIONS</b>	
Bulk Charge Current	1.5 Amps
Bulk Charge Voltage Range	10-14 Volts
Absorption Mode Current	1.5 - .5 Amps
Absorption Mode Voltage Range	14.0 - 15.0 Volts
Float Voltage	13.6 - 13.8 Volts
AC Voltage In	115 - 130 VAC
Power In	30 Watts

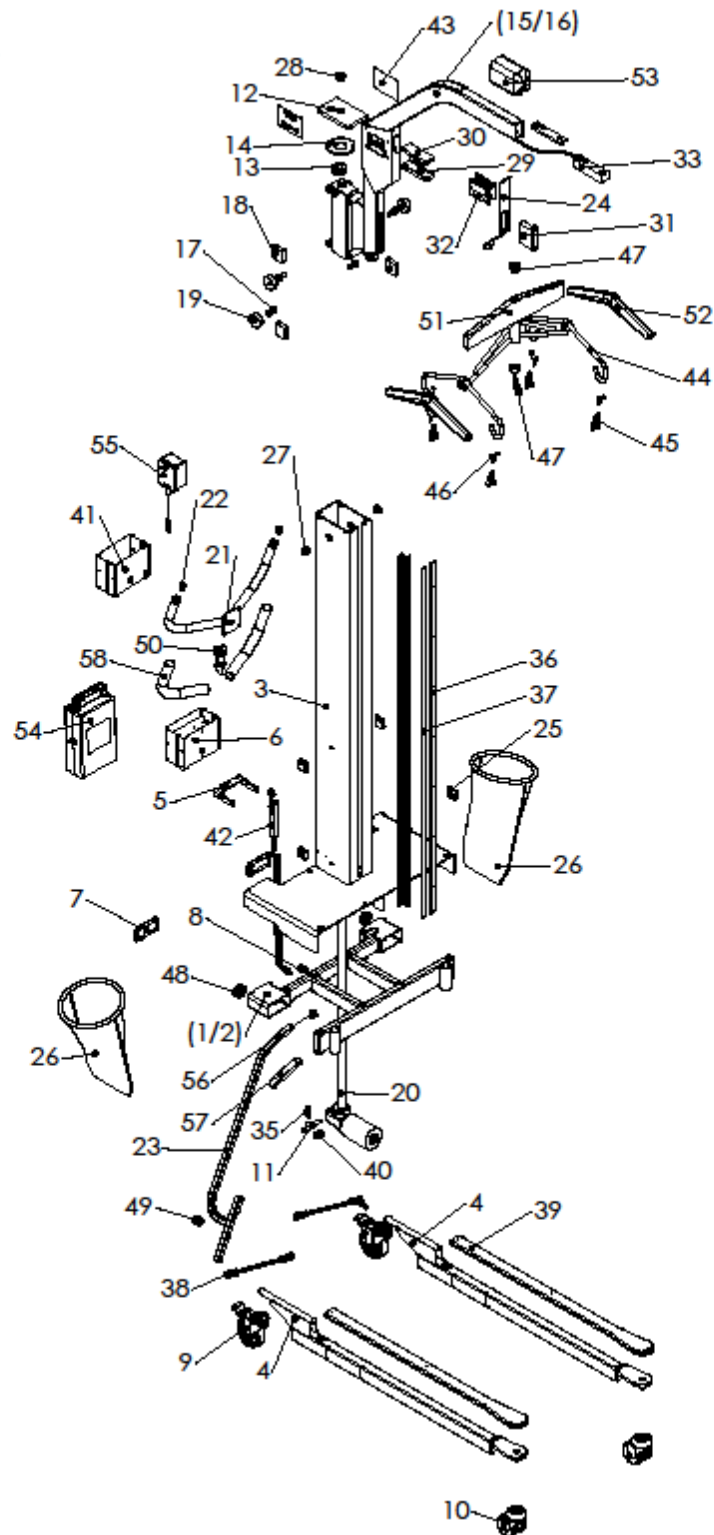
### **WEIGHING WITH ELECTRONIC SCALE (optional)**

- ❑ Press the “**ON/ZERO**” button to turn on the scale. If “**LOW BAT**” appears, replace 9V battery located on the back of the scale. The scale will take about 5 seconds to zero itself.
- ❑ Attach the desired VOLARO sling, Fleece Cover, Recumbent Bars or anything else you plan to use on the person being weighed. Make sure it is not touching anything.
- ❑ Press the “**ON/ZERO**” button – The scale counts down for 3 seconds (DO NOT touch lift during countdown or countdown will reset for additional 3 seconds.) This will place the weight of the sling into memory and the scale will automatically deduct the weight of the sling from the reading.  
**NOTE:** To switch from **Lbs.** to **Kilos** - Press and hold the **LB/KG** button until “**CONV**” disappears. Press and hold again to convert back to **Lbs.** (Note: this may trigger a need to recalibrate after weighing.)
- ❑ Now with the scale still on, remove the sling and place it beneath the person to be weighed.  
**NOTE** the appearance of the screen. You will see a flashing #. This is the weight of the items previously weighed. They will automatically be subtracted from the person’s weight. This reading will stay in memory even if the scale is turned off or the battery is removed.
- ❑ Attach and lift the person clear of chair or bed. Once the reading is steady, the scale will lock onto the reading to make it easier to reading.  
**NOTE:** Before you record weight, **Be sure that you are not pulling on the hanger.** This will show a false weight. Let weight steady and record reading.
- ❑ Scale shuts off automatically after **one minute**. Press the recall button to review the last recorded weight. (See Calibration Procedures on the next page.)



# PC/HD 450 EXPLODED VIEW

Volaro Lift Series 4



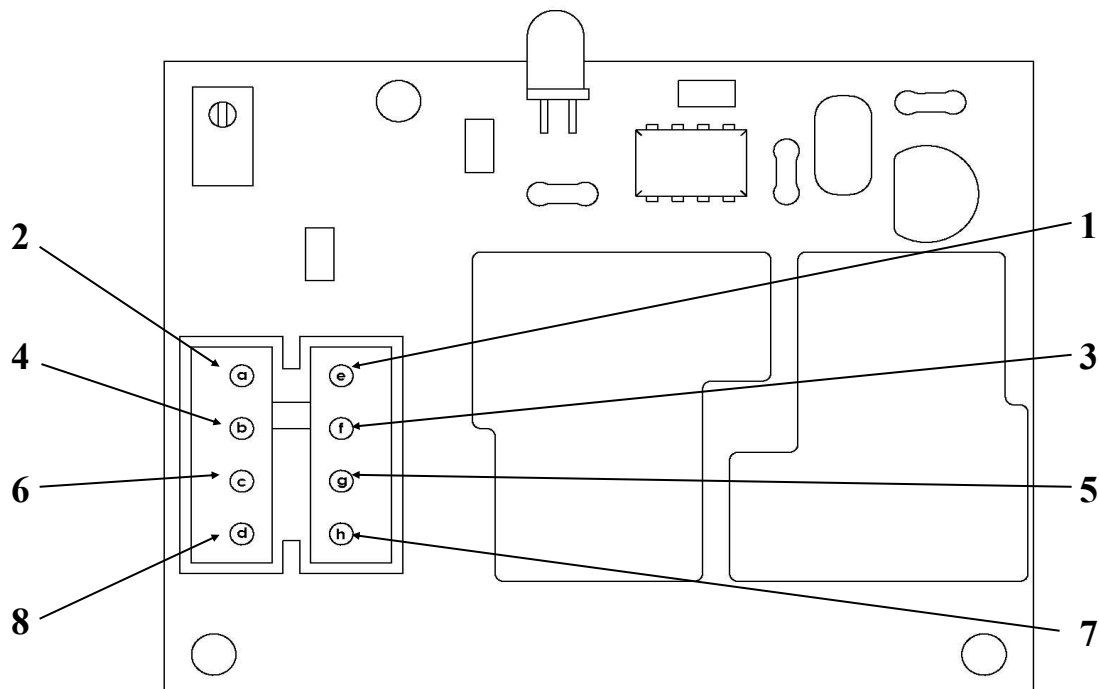
# PC/HD 450 PARTS LIST

ITEM #	QTY	PART #	DESCRIPTION
1	1	NA	HD Frame Assembly
2	1	NA	PC Frame Assembly
3	1	NA	Mast & Base Plate Assembly
4	2	PC4003A	Leg Assembly
5	1	70635	Notch Plate (SN prior to A4000 uses # PC45020)
6	1	10015-1	Power Box Assembly (Does not include circuit board 10011-2.)
7	2	2293	Rear Caster Mount Cap
8	1	PC45022	Safety Limit Switch
9	2	2196 / LT2046	4" rear caster (standard) or 5" high profile caster
10	2	2003 / 2034	3" dual front caster (standard) or 4" single high profile caster
11	1	PC45005A	Actuator Spring Mount
12	1	PC45026	Mast Cap
13	1	PC45027	Actuator Support Bushing
14	1	PC45023-1	Actuator Support Bushing Mount
15	1	70953	Non-Scale Beam (SN A6894 or older uses PC45031NS)
16	1	70953	Scaled Beam Assembly (SN A6894 or older uses PC45006A)
17	4	2013	Cam Follower
18	4	PC45037	Carriage Glide Block
19	4	35237-1	Nylatron Roller
20	1	2039	Actuator Assembly
21	1	PC45008A	Handle Bar Actuator Assembly
22	2	2008	Red Push Button Switch
23	1	PC4509A-1	Leg Adjuster Handle Assembly
24	1	35506-2	Scale Cover (for Dual Display Scale in Beam)
25	4	2159	Saddle Bag Strap Retainer
26	2	35005-2	Saddle Bag
27	2	2125	Mast Plug
28	1	2279	Mast Cap Plug
29	1	PC45056	Lower Circuit Board Mount (Dual Display Scale Only)

ITEM #	QTY	PART #	DESCRIPTION
30	1	PC45057	Upper Circuit Board Mount (Dual Display Only)
31	1	2743	Scale Power pac Box (Dual Display Only)
32	1	2791	Scale Circuit Board (Dual Display Only)
33	1	PC45060	Load Cell (Dual Display Only)
34	1	PC45031-1	Non-scale adaptor (Dual Display Only)
35	1	2087	Counter Balance Spring
36	2	35022-1	Mast Brush Holder (Older gray models only)
37	2	35021-1	Mast Brush
38	2	PC4511A	Leg Adjuster Linkage Assembly
39	2	PC45065-1	Leg Bumper – Color _____
40	1	50178-1	Actuator Mount Bushing
41	1	10006-A3	Charger Assembly (includes 2026 transformer)
42	1	10047-2	Hand Control (Remote)
43	2	35506-2	Scale Face Plate (Dual Display)
44	1	PL10004A	Hanger Assembly (not including padding and covers)
45/46	1	70756	Strap Retainer and Spring Kit (set of 4)
47	2	2033	Hanger Thrust Bearing
48	2	2035	Leg Bearing
49	1	PP40053-1	Leg Adjuster Spring (Urethane)
50	1	PA62201-1	Hand Control (Remote) Holder
51	1	PL44000-2	Hanger Cover Center – Color _____
52	2	PL44001	Hanger End Cover - Color _____
53	1	PL44002	Beam End Cover - Color _____
54	1	10048-2	12V Power pac Assembly
55	1	2026	Wall Transformer (White)
56	1	2272	Square End Cap
57	1	2006 -	Adjuster Handle Grip -1 Black, -2 Blue
58	2	2002 -	Handle Bar Grip -1 Black, -2 Blue

# Circuit Board Wiring Diagram

1	Positive up to Switch	Small Green
2	Positive Power	Large Red
3	Negative Power	Large White
4	Positive to Switch	2 Small Red
5	Safety Switch	Small Purple
6	Up Thumb Switch & Remote	2 Small Black
7	Motor	Large Black
8	Motor	Large Red



**NOTE: Do not pull plug out by wires, this could loosen/damage them.**

# Volaro Series 4 Lift

## PC450/HD450

### With and Without Scale

### Troubleshooting and Maintenance Guide

Problem	Cause	Solution
<b>Lift</b>		
1. Lift won't go up	1. Bad lift control switch 2. Dead power pac 3. Hand control is broken 4. Actuator not working 5. Power pac is not making connection 6. Circuit Breaker popped	1. Remove and replace 2. Switch power pacs 3. Order new hand control 4. Replace motor 5. Make sure power pac pack is making contact with terminals in the receiver box; replace terminal contacts 6. Push in circuit breaker
<b>Actuator</b>		
1. Actuator makes noise	1. Not enough grease on actuator 2. Loud ticking noise when lift goes up and down 3. Faulty or worn out actuator	1. Put #2 grease on the full length of the actuator screw 2. Replace actuator nut 3. Replace actuator
<b>Power Pac</b>		
1. Charge power pac light stays on constantly 2. Power pac wearing out too quickly	1. Power pacs are worn out or circuit board is bad 2. Power pacs are not being charged when the RED charge power pac light comes on the lift.	1. Order new power pacs or order new circuit board 2. Leave power pac on overnight; order new power pacs; also make sure that you charge the power pacs when the RED light comes on at the lift
<b>Power Pac Charger</b>		
1. Power pac charger lights do not come on when plugged in	1. Failed Transformer 2. Electrical outlet may not be operational	1. Order a new transformer 2. Use different outlet
2. Yellow light does not come on when power pac is inserted	1. Charger bad – verify by using new power pac 2. Power pac dead	1. Order new charger 2. Order new power pac
3. Red light stays on	1. Power pac shorted or reversed leads 2. Charger needs to be reset 3. Power pac is totally discharged	1. Replace power pac 2. Take out power pac, unplug transformer, but power pac back in, plug in 3. Leave power pac on charger for 24 hours to see if it will revive
<b>Scale</b>		
1. Inaccurate weights	1. Not zeroing out scale properly 2. "Lb" to "Kg" switch is in the wrong setting 3. Batteries in scale are low 4. Person in lift is moving excessively while taking weight 5. Scale is out of calibration	1. Zero scale according to instructions 2. See scale instructions 3. Replace the 9v battery in scale 4. Make sure the patient is hanging evenly under the hanger and there is minimal movement 5. Calibrate the scale following the calibration instructions
2. Display is erratic	1. 9v battery in scale is low. 2. Scale is out of calibration	1. Replace 9v battery 2. Calibrate scale
3. Display is blank	1. Power to scale is not turned on 2. 9v battery is bad 3. Scale is damaged	1. Turn scale on 2. Replace battery 3. Call SMT Support

# Volaro PC450/HD450

## General Procedure Guide for Training

This form is intended as a guide to help you develop a procedure sheet that will fit your specific application in your facility. It is recommended that everyone be in-serviced by the manufacturer's in-service video before operating any mechanical lift.

**(This for should be copied for each operator and kept with their personnel records.)**

Staff Name: \_\_\_\_\_ Date: \_\_\_\_\_

Checked Off By: \_\_\_\_\_

Yes	No	
		1. Identify the resident.
		2. Explain what you are going to do.
		3. Wash hands.
		4. Get supplies ready, sling, wheelchair, blanket or lap robe.
		5. Get help from experienced team member for this procedure.
		6. Have assistant stand on opposite side of bed to assist with transfer.
		7. Provide privacy. Pull curtain all around the bed.
		8. Position wheelchair at foot of bed.
		9. Adjust bed to working level.
		10. Make sure power pac indicator does not indicate a low power pac. (If so, replace)
		11. Examine lift sling for any damage: tears, frays or weak areas.
		12. Make sure the correct size sling is to be applied.
		13. If weighing resident, see instructions on page 11.
		14. Lower side rails.
		15. Roll resident to one side and place sling folded halfway under resident. Top of sling should be approximately at shoulder blade area. Bottom of sling should be approximately near the tail bone.

Yes	No	
		16. Roll resident onto center of sling. Pull legs on sling along each side and wrap inside thigh close to groin area. Crisscross straps through the holes before hooking to the lift.
		17. Raise head of bed slightly.
		18. Position lift over bed and instruct assistant to help guide lift into proper position.
		19. Check that the legs are in the wide position, where applicable. If base position must remain in a narrow position, make sure the lift area between bed and chair are clear of any obstacles. Widen once clear from bed.
		20. Attach straps on sling to lift with the strap “nesting” in the bottom of the hook. Remember, with the divided leg sling, the straps at the thigh area must be crisscrossed before lifting.
		21. As you begin to lift resident from the bed, use the “up” button on hand control or “up” button on handle. Once there is slight tension on the straps check to make sure all four loops are still nested in the bottom of the hooks before lifting
		22. Lift resident until buttocks have cleared the bed. Give reassurance to resident.
		23. Steady the resident in lift and guide to position over wheelchair, trolley, tub lift, etc. <b>CAUTION: Push and turn the lift from the handles only. Pushing on the top of the beam or on the resident could jeopardize the lift’s stability.</b>
		24. Lock wheelchair brakes.
		25. Place hands in positioning handles on both sides of sling. While the resident is coming down, pull the handles back to position the resident in an upright position.
		26. Disconnect all straps from the hanger and remove sling by raising legs and pulling along sides. Ask resident to lean forward as you assist and support them to remove from back and hip area.
		27. Move lift away and adjust for comfort.
		28. Cover lap with blanket and leave call light within reach.
		29. Wash hands. Report reaction and overall tolerance to team leader.

# Maintenance Schedule

## Volaro Series 4 Lift

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### **Every Day**

- After each person you lift, you should check the sling, and launder if needed. Refer to the VOLARO laundering instructions.
- Check the condition of all slings. If you are in doubt of its operational ability to safely lift a person, then discard the sling and order a new sling. SMT recommends replacing slings after 2 years of use.
- Check to see that strap retainer flapper and spring are working.
- Check the lift; if the “RED” light is on, charge the power pac ASAP.
- Keep your VOLARO lift clean by wiping it down with a damp cloth. Use a mild detergent if needed.

**NOTE:** Do not use a petroleum based solvent on paint, decals or plastic.

### **Every 3 Months**

- Lube pivot points on lift.
- Grease actuator with a good heavy duty #2 grease. (**Note: Do not use a silicone or WD 40 type lubricant on the actuator**)
- Check leg adjuster notch plate for signs of wear.
- Check the movement of the lift; remove hair from the casters if needed.
- Check leg covers; if cracked replace with new ones.
- Check all vinyl covers; if worn, replace with new ones.
- Check all external fittings; tighten where needed.
- Remove padding and check shoulder bolt and fittings.

### **Periodic Testing**

- General Lift Condition: A general visual inspection of the external parts and all functions can be carried out at any time to ensure no adverse damage has occurred. If any doubt, withdraw the equipment from use and call SMT Customer Service.

### **Other Maintenance**

- Actuator bearing (ball screw nut) must be replaced when grinding wear is heard but not longer than **5 years**.

**NOTE: On the next two pages, you will find a sample monthly lift inspection sheet and check off sheet. We encourage you to make copies for each lift and keep for your records.**

This is a suggested maintenance schedule, depending on use.  
The equipment may need to be inspected more frequently.

Service Questions? Call Toll Free: (800) 725-7761

# Volaro Lift Items To Inspect

## 1. Hanger: Full Body Lift

- ☐ Strap Retainer Springs
- ☐ Attaching Hardware
- ☐ Bearings
- ☐ Vinyl

## 2. Nuts and Bolts

- ☐ Check All Nuts and Bolts

## 3. Leg Adjuster Handle

- ☐ Condition (Check wear at pivot points.)
- ☐ Check All Attaching Hardware Tight

## 4. Leg Adjuster Notch Plate

- ☐ Wear (Legs kept securely in locked position?)
- ☐ Attaching Hardware

## 5. Leg Linkage

- ☐ Hardware Condition

## 6. Slings (Reasons to discard)

- ☐ Worn
- ☐ Frayed/Loose Threads
- ☐ Bleached Out

## 7. Actuator:

- ☐ Noise-Up/Down  
(Replace bearing after 5 years.)
- ☐ With And Without Weight
- ☐ Grease (#2 General Purpose grease regularly)

## 9. Scale:

- ☐ Accuracy (Calibration needed?)
- ☐ 9v Battery

## 9. Power Box:

- ☐ Plastic Guides in Place
- ☐ Terminals
- ☐ Remote Jack
- ☐ Holder or Lens

## 10. Thumb Switches

- ☐ Left and Right

## 11. Remote

- ☐ Switches
- ☐ Strain Relief
- ☐ Curly Cord

## 13. Casters

- ☐ Brakes
- ☐ Swivel
- ☐ Roll
- ☐ Bearings

## 15. Leg Bumpers

- ☐ Cracked or Missing

## 16. Charger

- ☐ Operation
- ☐ Lights
- ☐ Terminals (Bent or worn)

## 17. Power Pacs

- ☐ Load Test
- ☐ Age

## 18. Grips

## 19. Legs

- ☐ Pivot
- ☐ Attaching Hardware
- ☐ Alignment

## 20. Welds

- ☐ Visually Inspect for Cracks

## 21. Paint

## 22. Beam Safety Switch

- ☐ Lift Up On Beam While Holding Down Button

## 23. Decals

- ☐ Correct
- ☐ Missing

## 24. Other:



Copy and use this form for Each Lift.

Lift Inspection must be done Monthly. (sling included)
<b>Model</b>
<b>Serial #</b>

Date	Checked By:	Repairs Needed	Completed

SMT Health Systems  
[www.patientlift.com](http://www.patientlift.com)  
[sales@smthealthsystems.com](mailto:sales@smthealthsystems.com)  
 800-725-7761

# Product Warranty

## PC450/HD450

**1** YEAR  
Limited

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**2** YEAR  
Limited

---

**10** YEAR  
Limited

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### Parts

- Casters
- Hand Control
- Power Pac
- Spring Retainer Clip
- Motor
- Actuator
- Any Other Moving Parts

### Slings

- Manufacturer's Defects

### Main Structure

- Main Integrity and Welds of:
  - Frame
  - Base
  - Legs

Limited Warranty on all parts only under conditions of normal and intended use.

Misuse, damage or alterations to body of lift or any of its parts,  
**Voids the Warranty.** No other warranties written, verbal,  
implied or other than listed here, will be honored.  
Shipping charges not included.

Customer Service:  
Phone: 800) 725-7761  
Email: [sales@smthealthsystems.com](mailto:sales@smthealthsystems.com)  
Fax: (888) 385-2345  
[www.patientlift.com](http://www.patientlift.com)

