

Service Manual for:
NUVL855R
Under-Vehicle Lift®



Public Use Wheelchair Lifts

Series 01

DOT — Public Use Lift

“DOT — Public Use Lift” verifies that this platform lift meets the “public use lift” requirements of FMVSS No. 403. This lift may be installed on all vehicles appropriate for the size and weight of the lift, but must be installed on buses, school buses, and multi-purpose passenger vehicles other than motor homes with a gross vehicle weight rating (GVWR) that exceeds 4,536 kg (10,000 lb).



“Providing Access to the World”®

International Corporate Hdqrs: P.O. Box 310 Winamac, IN 46996 USA
1-800-THE LIFT® (574) 946-6153 FAX: (574) 946-4670



⚠ WARNING



Read manual before installing or servicing lift. Failure to do so may result in serious bodily injury and/or property damage.

Braun UVL Series™

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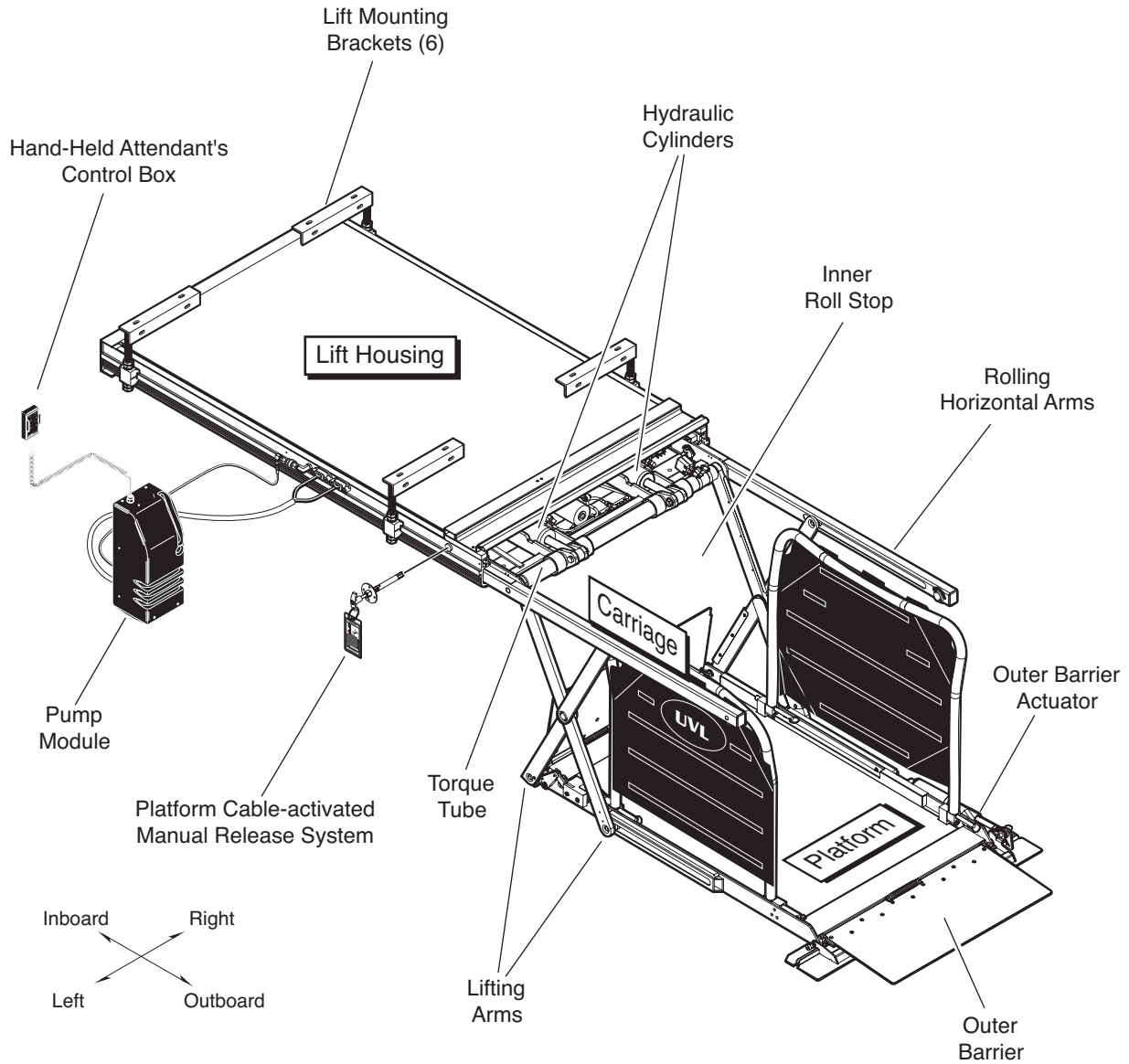
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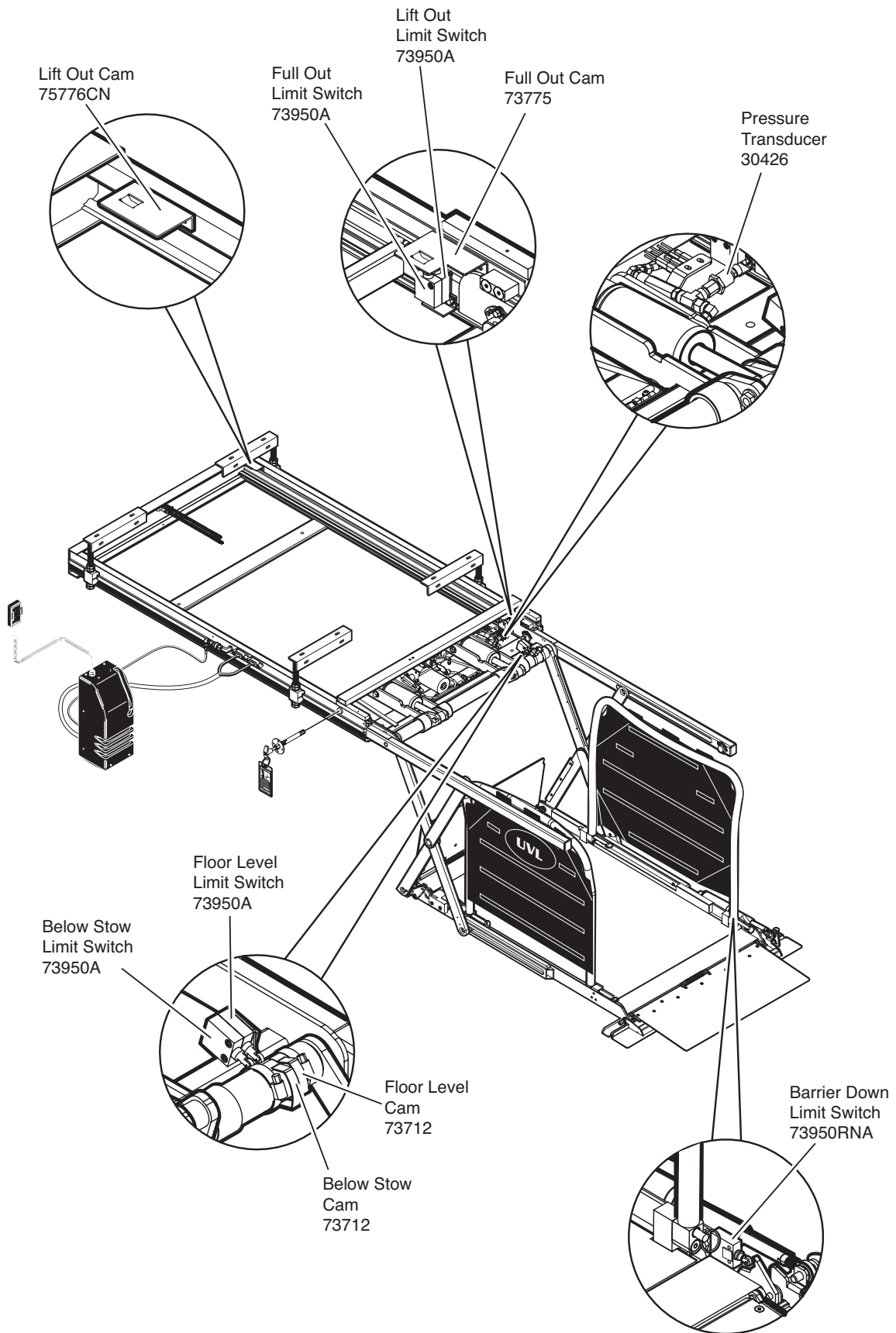
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Lift Terminology



Switch and Sensor Locations



Certification Checklist Diagnostic Procedures

The following operations and conditions must be functionally verified in order for the lift to be FMVSS 403/404 compliant. If an operation does not function as described or a condition is not met, follow the referenced procedures to correct the problem or contact a Braun Corporation Product Support representative at 1-800-THE LIFT®.

- Vehicle movement is prevented unless the lift door is closed, ensuring the lift is stowed.
 1. Verify lift stowed signal (pin 7) in the 9 conductor plug on the side of the pump module has a +12 volt signal.
 2. Refer to the interlock installation instructions.

- Lift operation shall be prevented unless the vehicle is stopped and vehicle movement is prevented.
 1. Verify vehicle secure signal (pin 6) in the 9 conductor plug on the side of the pump module has a +12 volt signal.
 2. Refer to the interlock installation instructions.

- The platform will not fold/stow when occupied.
 - Refer to Platform Sense Calibration.

- The inner roll stop will not raise if occupied.
 - Refer to Inner Roll Stop Occupied Sensor Adjustment

- The outer barrier will not raise if occupied.
 - Refer to Outer Barrier Occupied Calibration procedure

- Verify platform lighting when lift is deployed and pendant illumination when lift is powered.
 1. Replace bulb(s) in the light housing.
 2. Check inline fuse on wires going out to lights.

- A visual and audible warning will activate if the threshold area is occupied when the platform is at least 1" below floor level.
 1. Make sure connectors to threshold mat are properly connected.
 2. Call Product Support.

- Platform movement is prohibited beyond the position where the inner roll stop is fully deployed (up).
 - Call Product Support.

- Lift platform movement shall be interrupted unless the outer barrier is deployed (up).
 - Check Barrier Down limit switch, wires and connector.
 - LED D29 should not be illuminated when outer barrier is deployed (up).

Adjustments and Calibration

Adjustment Procedures

Lift Out Switch: The Lift Out Switch stops inward travel of the carriage/platform during Stow function (activated by the housing-mounted Lift Out Cam). Move cam in to increase inward travel. Move cam out to decrease inward travel. LED D25 will be illuminated when the switch is not contacting the cam.

Full Out Switch: The Full Out Switch stops outward travel of the carriage/platform during Deploy (Up/Down) functions (activated by the housing-mounted Full Out Cam). Move cam in to decrease outward travel. Move cam out to increase outward travel. Carriage rollers must be inside housing a minimum 1/2". The platform will not raise or lower until this switch is activated. LED D26 will be illuminated when the switch is contacting the cam.

Floor Level Switch: LED D28 will be illuminated when the switch is contacting the cam. Detailed on page 6.

Below Stow Switch: The Below Stow Switch controls the height of the carriage/platform before it moves inward during the Stow function (activated by the torque tube-mounted Below Stow Cam). Rotate the cam in to decrease platform height. Rotate the cam out to increase platform height. Adjust cam so lifting arms are aligned. View the platform position in the housing. LED D24 will be illuminated at stow level and below.

Barrier Down Switch: This platform-mounted switch prohibits the platform from raising unless the outer barrier is in the full up position. The Up function is prohibited if the outer barrier detent pin is not fully engaged also. LED D29 will be illuminated when the switch is not contacting the outer barrier detent pin.

Drive Chain Adjustment

In event the drive chain sags 1/2" or more, adjust tension as detailed. Tighten to eliminate visible sag but do not overtighten.

1. Remove bottom pan.
2. Pull the manual release cable and lock.
3. Remove adjustment bolt (tensioner) access cover.
4. Loosen inside jam nut. Secure tensioner and tighten outside jam nut. Tighten to eliminate visible chain sag but do not overtighten.
5. Lock jam nuts together making sure the tensioner roller is horizontal. Release and push the manual cable in fully. Ensure platform is locked by moving the platform in and out until chain release assembly engages chain.

Calibration Procedures

Platform Sense Calibration

1. There must be **no weight on platform**.
2. Press hand held pendant UP switch to raise platform a minimum 3" above stow level.
3. Remove pump cover and press and hold control board mounted CAL. 50 lb. button. While pressing the CAL. 50 lb. button, press and hold the hand-held pendant STOW switch (button). The platform will lower to stow level (begin stow function), and then start to raise. Release CAL. 50 lb. button immediately when platform starts to raise from stow level.
4. LED D18 will be illuminated when weight on platform prevents stowing.

Ground Sense Calibration

1. Press hand-held pendant DOWN switch to lower platform fully to ground level.
2. While continuing to press the pendant DOWN switch, press and then release control board mounted CALIB. GND SEN/OB button.
3. Release the pendant DOWN switch.
4. LED D23 will be illuminated when platform is at ground level.

Outer Barrier Occupied Calibration

1. Press hand-held pendant DOWN switch to lower platform fully to ground level.
2. Once outer barrier is fully unfolded (ramp position), release the pendant DOWN switch.
3. Press and hold the control board mounted CALIB. GND SEN/OB button. While holding CALIB. GND SEN/OB button, press hand-held pendant UP switch to raise the outer barrier. Be sure to release CALIB. GND SEN/OB button when outer barrier reaches approximately half full up (vertical) position.

Carriage Ride Height Adjustment

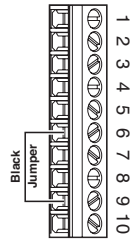
The carriage horizontal arms move (roll) in and out of the housing tracks on roller bearings. Following installation or extensive lift operation, clearance between horizontal arms and tracks may diminish. The eccentric shaft mounting plate allows height adjustment.

Remove eccentric plate mounting screw. Using screwdriver or small rod, rotate the shaft clockwise to increase carriage height. Rotate the shaft counterclockwise to decrease carriage height. Reinstall mounting screw in nearest retainer hole. Adjust left and right side eccentric shafts (screw positions may vary from side to side). Adjust height such that horizontal arms do not contact top or bottom of tracks (align center).

Terminal Strip and Door Operators

Terminal Strip

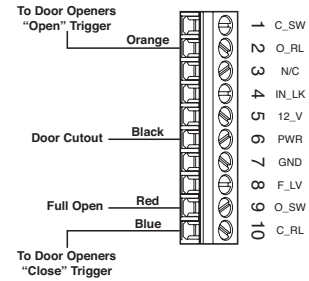
The pump-mounted terminal strip provides additional inputs and outputs that can be used for optional door operators, beepers, interlocks, etc. - as well as the door safety switch. The black jumper wire must be installed in terminals 6 and 9 to supply power to the circuit board.



Power Door Operators

Install optional power door operators as detailed in the instructions supplied with door operator kit.

Route the wires to the pump module and connect to the terminal strip as shown.



Floor Level and Inner Roll Stop Adjustments

Achieving proper floor level positioning of the platform and inner roll stop requires a combination of Floor Level switch adjustment and inner roll stop adjustment. Both are factory set but must be inspected during installation procedures (will vary per vehicle application).

Ensure the lift is positioned and secured as specified on Quick Reference Installation Sheet (supplied with lift) panels 1 and 2. **Adjust the Floor Level switch first** (detailed below). Then, adjust the inner roll stop as detailed in Inner Roll Stop Adjustment Instructions (adjust only if necessary). The inner roll stop must rest properly on the vehicle floor for wheelchair entry and exit.

Floor Level Switch Adjustment

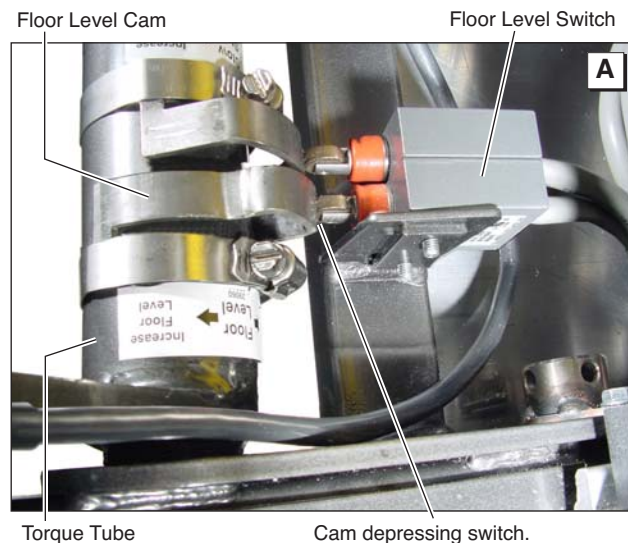
Adjust the Floor Level switch first!
(before adjusting the inner roll stop)!

The Floor Level switch stops upward travel of the platform during the Up function (activated by the torque tube-mounted Floor Level cam).

Position the bottom of the lift platform 1 1/2" above floor level (threshold mat) **using the manual operation system**. **Do not** operate the lift with the electric pump during adjustment procedures.

Loosen the clamp securing the torque tube-mounted Floor Level cam. Rotate the cam until the Floor Level switch is activated (cam depresses switch).

Note: Check the floor level position of the platform and the inner roll stop after powering the pump. Hydraulic pressure may affect platform height slightly. Fine tuning adjustment (tweaking) of the Floor Level switch may be required.



Floor Level and Inner Roll Stop Adjustments

Inner Roll Stop Adjustment

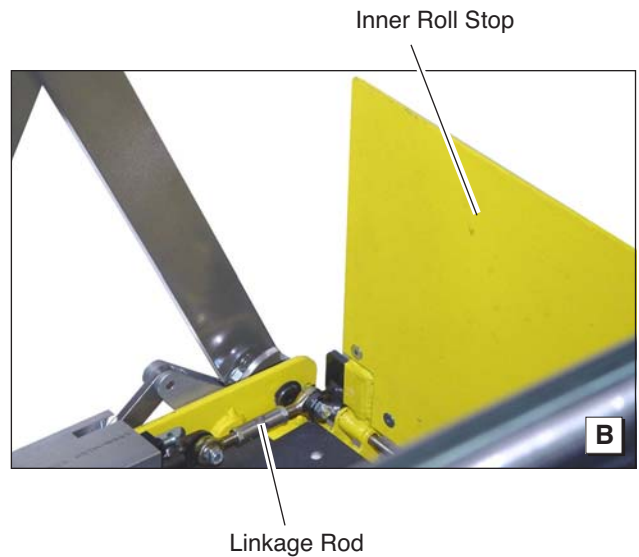
⚠ CAUTION

Do not adjust inner roll stop linkage rod. Linkage rod adjustment may result in lift damage.

Do not adjust inner roll stop linkage rod at this time! Linkage rod adjustment is not required unless extra usable platform length is needed. If the

angle of the inner roll stop (when in the vertical position) restricts the usable platform length for the wheelchair passenger, adjustment of the linkage rod will change the angle.

With the platform at ground level and the inner roll stop in the vertical position, there should be a minimum of 1" clearance between the inner roll stop and torque tube. See photo I.



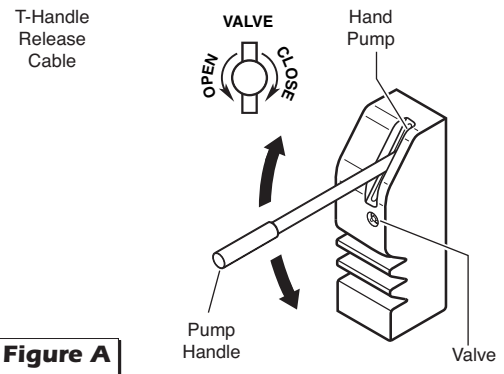
Adjust the inner roll stop as detailed in the following procedures. Then, adjust the linkage rod as detailed on page 9 (**only if necessary**).

1. Raise the lift platform fully (floor level) **using the manual operation system** (Manual Operating Instructions detailed on Quick Reference Installation Sheet). If the inner roll stop rests properly on the floor, **do not** adjust the inner roll stop. Lower the platform to ground level. If the angle of the inner roll stop (when in the vertical position), does not restrict the usable platform length for the wheelchair passenger, **disregard** inner roll stop adjustment procedures. See Photo G on page 9. Refer to the following procedures if adjustment is required.

2. Position the lift platform approximately 12" above stow level **using the manual operation system**. See Photo C.

Raising the platform will allow access to the cam securement screw and nut. See Photo E.

Manual Operation Systems



Floor Level and Inner Roll Stop Adjustments

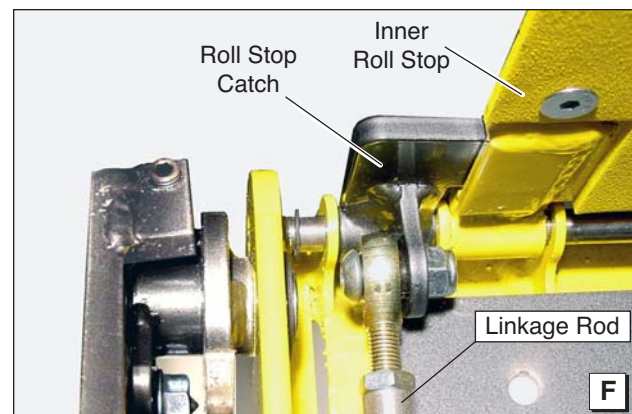
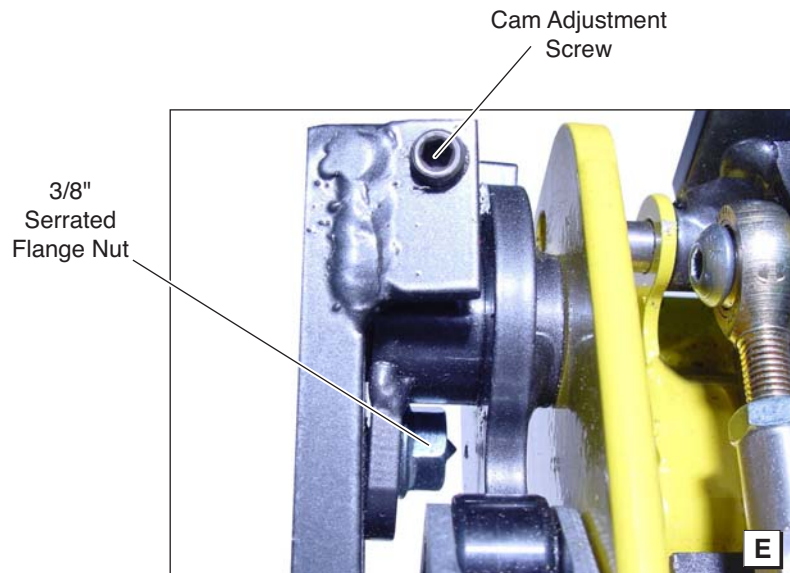
Inner Roll Stop Adjustment

3. Use an Allen wrench to prevent the cam locking screw from turning and loosen the 3/8" serrated flange nut securing the lifting arm cam. See Photos D and E. Do not remove the screw or nut.
4. Raise the platform 1" above floor level **using the manual operation system**.
5. Turn the cam adjustment screw counterclockwise until the inner roll stop rests on the floor.



Do not continue to turn the adjustment screw once the inner roll stop is contacting the vehicle floor.

6. Verify there is no gap between the inner roll stop and the roll stop catch. See Photo F. Turn the adjustment screw clockwise to bring the roll stop catch in contact with the inner roll stop. **Do not remove the gap by adjusting the linkage rod.**
7. While holding the cam locking screw, tighten the 3/8" serrated flange nut **securely**.



Floor Level and Inner Roll Stop Adjustments

Inner Roll Stop Adjustment

⚠ CAUTION

Improper inner roll stop linkage rod adjustment may result in lift damage.

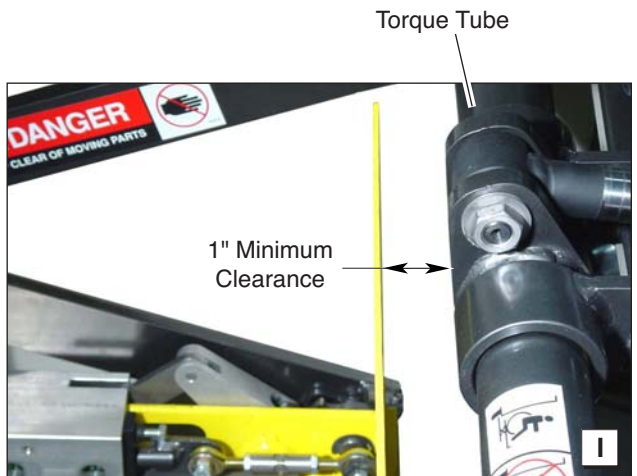
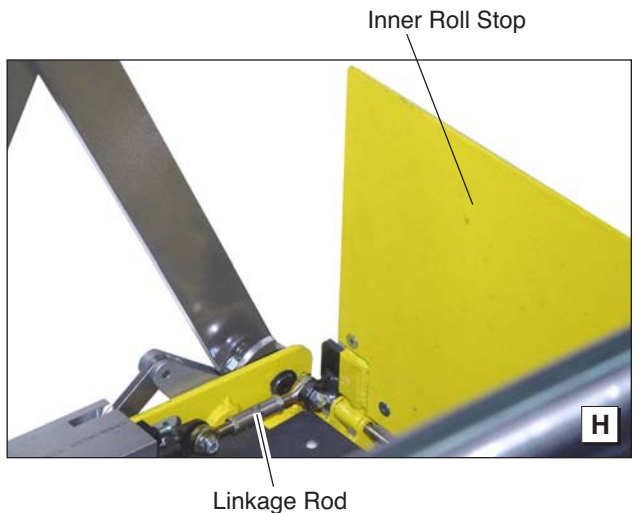
Do not adjust the inner roll stop linkage rod unless extra usable platform length is needed. See Photo

G. If the angle of the inner roll stop (when in the vertical position) restricts the usable platform length for the wheelchair passenger, adjustment of the linkage rod will change the angle.

Adjust the inner roll stop as detailed in the previous procedures. Then, adjust the linkage rod as detailed (**only if necessary**). If the linkage rod is adjusted too long or too short, it will exceed the travel of the slider block **resulting in damage** to the cam follower bearing, the cam and/or other components.

1. Position the lift platform below stow level **using the manual operation system**. **Do not** operate the lift with the electric pump during adjustment procedures.
2. Loosen the jam nuts at each end of the linkage rod. Adjust rod length as needed. Minimize adjustment. To prevent inner roll stop contact with the torque tube area, leave a minimum of 1" clearance. See Photo I. **Carefully** check the inner roll stop angle and operation **using the manual operation system**. Ensure the rod has not been over adjusted resulting in pressure on components (**damage will result**).
3. Tighten the linkage rod jam nuts.

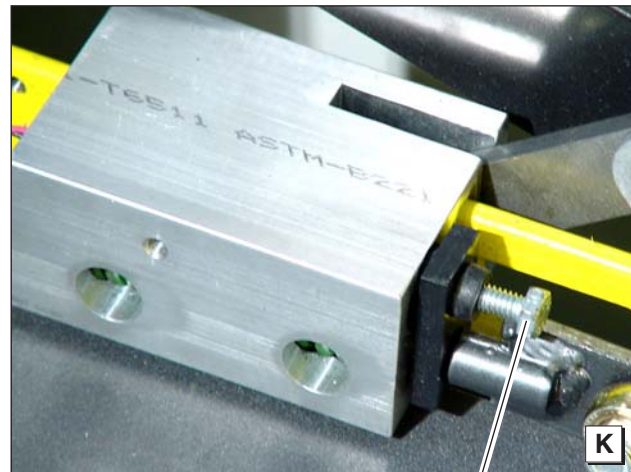
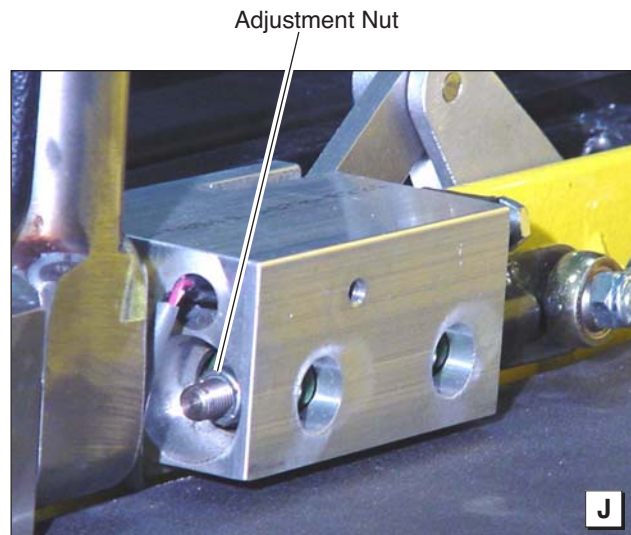
Linkage rod adjustment affects angle of inner roll stop (vertical position).



Floor Level and Inner Roll Stop Adjustments

Inner Roll Stop Occupied Sensor Adjustment

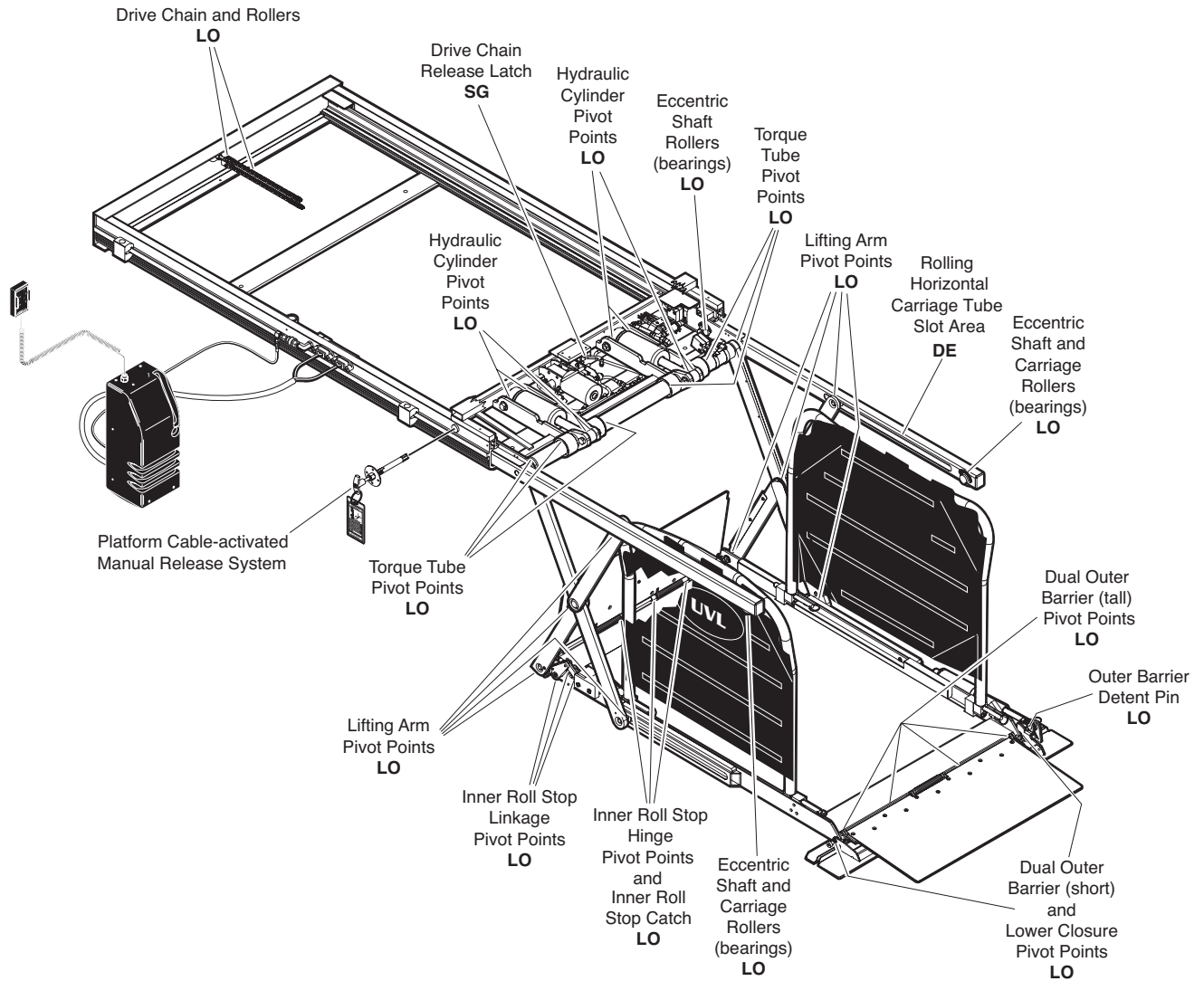
1. The optimum setting for the inner roll stop occupied sensor adjustment nut is to have just enough pressure to fold and unfold the inner roll stop without triggering the inner roll stop occupied sensor. This provides the most weight sensitive setting while allowing the unoccupied inner roll stop to function correctly.
2. If the weight of the empty inner roll stop is triggering the sensor while it is folding, tighten the sensor nut 1/8 turn and cycle the lift several times to verify correct operation. See Photo J.
3. If the lift is not reacting to weight on the inner roll stop soon enough, loosen the pressure adjusting nut 1/8 turn and cycle the lift several times to verify correct operation.
4. If the inner roll stop occupied alarm continues to go off even when the inner roll stop is in the vertical position, turn the sensor activation bolt clockwise until alarm is not activated. See Photo K.



Sensor Activation Bolt

Maintenance and Lubrication

Lubrication Diagram



See the Maintenance/Lubrication Schedule for recommended applications per number of cycles.

Lubricant	Type	Specified (recommended) Lubricant	Available Amount	Braun Part No.
LO - Light Oil	Light Penetrating Oil (30 weight or equivalent)	LPS2, General Purpose Penetrating Oil	11 oz. Aerosol Can	15807
DE - Door-Ease	Stainless Stick Style (tube)	Door-Ease Stick (tube)	1.68 oz.	15806
SG - Synthetic Grease	Synthetic Grease (Multipurpose)	Mobiltemp SHC32	12.5 oz. Tube	28598

Maintenance and Lubrication Schedule

Proper maintenance is necessary to ensure safe, trouble free operation. Inspecting the lift for any wear, damage or other abnormal conditions should be a part of all transit agencies's daily service program. Simple inspections can detect potential problems.

The maintenance and lubrication procedures specified in the following schedule **must** be performed by a Braun authorized service representative at the scheduled intervals according to the number of cycles. NHTSA NUVL Series lifts are equipped with a cycle counter (digital display built into the electronic control board).

NUVL Series lifts are equipped with hardened pins and self-lubricating bushings to decrease wear, provide smooth operation and extend the service life of the lift.

When servicing the lift at the recommended intervals, inspection and lubrication procedures specified in the previous sections should be repeated. **Clean** the components and the surrounding area **before applying lubricants**. LPS2 General Purpose Penetrating Oil is recommended where Light Oil is called out. Use of improper lubricants can attract dirt or other contaminants which could result in wear or damage to the components. Platform components exposed to contaminants when lowered to the ground may require extra attention. Lift components requiring grease are lubricated during assembly procedures. When replacing these components, be sure to apply grease during installation procedures. Specified lubricants are available from The Braun Corporation (part numbers provided on previous page).

All listed inspection, lubrication and maintenance procedures should be repeated at "750 cycle" intervals

following the scheduled "4500 Cycles" maintenance. These intervals are a general guideline for scheduling maintenance procedures and will vary according to lift use and conditions. Lifts exposed to severe conditions (weather, environment, contamination, heavy usage, etc.) may require inspection and maintenance procedures to be performed more often than specified.

WARNING

Maintenance and lubrication procedures must be performed as specified by an authorized service technician. Failure to do so may result in serious bodily injury and/or property damage.

Maintenance Indicator: The Lift Ready green LED mounted on top of the pump cover will change color to yellow after every 750 cycles. The yellow LED will not affect the functions of the lift, but is a reminder to complete necessary maintenance and lubrication.

Once the lift has been serviced, press the CYCLE button (located below LCD display on the control board) until the Lift Ready LED changes back to green. The CYCLE button also clears the lift cycle count (since last service) but not the lifetime cycle count.

Discontinue lift use immediately if maintenance and lubrication procedures are not properly performed, or if there is any sign of wear, damage or improper operation. Contact your sales representative or call The Braun Corporation at 1-800-THE LIFT®. One of our national Product Support representatives will direct you to an authorized service technician who will inspect your lift.

750 Cycles	Outer barrier and lower closure pivot points (2)	Apply Light Oil - See Lubrication Diagram
	Outer barrier detent pin pivot points (2)	Apply Light Oil - See Lubrication Diagram
	Inner roll stop hinge pivot points	Apply Light Oil - See Lubrication Diagram
	Inner roll stop linkage pivot points	Apply Light Oil - See Lubrication Diagram
	Lifting arm center and platform pivot points (bearings at all points)	Apply Light Oil - See Lubrication Diagram
	Inspect outer barrier and lower closure for proper operation	Correct or replace damaged parts.
	Inspect outer barrier seal and lower closure gasket	Resecure, replace or correct as needed
	Inspect outer barrier detent pin hairpin cotter	Ensure hairpin cotter is present and can be removed and inserted easily. Resecure, replace or correct as needed.
	Inspect lift for wear, damage or any abnormal condition	Correct as needed.

Maintenance and Lubrication Schedule

750 Cycles	Inspect lift for rattles	Correct as needed.
	Check drive chain tension.	Pull out and lock manual release cable. Adjust chain tension as needed. See Drive Chain Adjustment.
	Inspect inner roll stop and linkage for: <ul style="list-style-type: none"> • Proper operation. Roll stop should rest solidly on floor providing smooth transition. • Positive securement • Wear or damage 	Resecure, replace or correct as needed. See Inner Roll Stop Adjustment Instructions.
	Check carriage ride height in housing	Adjust as needed. See Carriage Ride Height Adjustment.
	Check stow height/lifting arm alignment	Lifting arms should be horizontal, aligned with each other and aligned with carriage. Adjust as needed. See Switch Adjustment (Below Stow Switch).
	Inspect wiring harnesses for securement, wear or other damage	Resecure, replace or correct as needed
	Check lower pan securement	Resecure, replace damaged parts or correct as needed.
	Torque tube pivot bearings (4 places)	Apply Light Oil - See Lubrication Diagram

1500 Cycles	Carriage and eccentric shaft rollers (bearings)	Apply Light Oil - See Lubrication Diagram
	Lifting arm slots in rolling horizontal carriage arm tubes	Apply Door-Ease - See Lubrication Diagram. Apply to the surface area around both slots and wipe off excess.
	Hydraulic cylinder pivot points (4 per cylinder)	Apply Light Oil - See Lubrication Diagram
	Drive chain and chain rollers	Apply Light Oil - See Lubrication Diagram
	Drive chain release latch mechanism	Apply Synthetic Grease - See Lubrication Diagram
	Deploy lift, remove inboard and outboard lower pans and blow out housing. Blow off platform also.	Use compressor and nozzle to remove all debris from housing. Clean outboard lower pan slot and apply Antisieze to slot before reinstalling pan.
	Deploy lift, remove inboard and outboard lower pans and clean housing tracks	Use clean cloth and solvent to clean tracks. Clean outboard lower pan slot and apply Antisieze to slot before reinstalling pan.
	Check drive chain tensioner, jam nuts and connecting link for securement and/or misalignment.	Correct or replace damaged parts and/or relubricate. See Drive Chain Adjustment.
	Inspect drive chain release latch mechanism for proper operation, positive securement, wear or other damage	Correct or replace damaged parts and/or relubricate.
	Inspect platform cable-activated manual release system (T-handle/cable assembly and carriage movement)	Ensure T-handle release and cable assembly operate properly. Ensure carriage can be manually extended and retracted freely.

Maintenance and Lubrication Schedule

1500 Cycles	Inspect limit switches for securement and proper adjustment	Resecure, replace or adjust as needed. See Switch Adjustment.
	Inspect carriage, lifting arm and eccentric shaft rollers (bearings) for wear or damage, positive securement and proper operation	Correct, replace damaged parts and/or relubricate.
	Inspect external snap rings (e-clips): • Carriage roller bearings (4) • Lower lifting arm pins (4) • Eccentric shaft track roller bearing (1)	Resecure, replace or correct as needed.
	Inspect lower lifting arm pins for wear or damage, positive securement and proper adjustment	Resecure, replace damaged parts, lubricate or correct as needed.
	Inspect eccentric shaft pins, bearing mounting screw, washers and securement hardware for wear or damage, positive securement and proper operation	Resecure, replace damaged parts, lubricate or correct as needed. See Carriage Ride Height Adjustment.
	Inspect torque tube cams for securement, wear or damage	Resecure, replace or correct as needed.
	Inspect housing cam brackets for securement, wear or damage	Resecure, replace or correct as needed.
Inspect cylinder(s), hoses, fittings and hydraulic connections for wear, damage or leaks	Tighten, repair or replace if needed.	
Inspect power cable	Resecure, repair or replace if needed.	
4500 Cycles	Hydraulic Fluid (Pump) - Check level. Note: Fluid should be changed if there is visible contamination. Inspect the hydraulic system (cylinder, hoses, fittings, seals, etc.) for leaks if fluid level is low.	Use 5606 aviation fluid only (part 87010R). Check fluid level with platform lowered fully . Fill to within 1-1/2" of the bottom of the fill tube (neck).
	Inspect lifting arm bushings and pivot pins for visible wear or damage	Replace if needed.
	Inspect outer barrier pivot pin mounting bolts (2)	Tighten or replace if needed
	Mounting	Check to see that the lift is securely anchored to the vehicle and there are no loose bolts, broken welds, or stress fractures.
Decals and Antiskid	Replace decals if worn, missing or illegible. Replace antiskid if worn or missing.	
Consecutive 750 Cycle Intervals	Repeat all previously listed inspection, lubrication and maintenance procedures at 750 cycle intervals.	

Troubleshooting Diagnosis Chart

⚠ WARNING

Troubleshooting and repair procedures must be performed as specified by authorized service personnel only. Failure to do so may result in serious bodily injury and/or property damage.

If a problem occurs with your lift, **discontinue operation immediately! Do not** attempt repairs yourself. Contact your dealer or call The Braun Corporation at 1-800-THE LIFT®. One of our national Product Support representatives will direct you to an authorized service repairman who will inspect your lift.

The cause of the problem can be determined by locating the lift function and related symptom in the Troubleshooting Diagnosis Charts. The specific cause and

remedy can then be determined by process of elimination. A Wiring Diagram, Electrical Schematic, Hydraulic Diagram and Hydraulic Schematic are provided to aid in troubleshooting.

A Repair Parts section with exploded views and corresponding parts lists is also provided. Correct the problem if possible. If the problem continues, contact The Braun Corporation.

FUNCTION	POSSIBLE CAUSE	REMEDY
1.00 NO OPERATION	1.11 Low battery 1.12 Bad ground 1.13 Poor plug connections 1.14 Blown fuse 1.15 Bad circuit breaker 1.16 Defective Interlock	Check vehicle battery Check for good ground between vehicle chassis and 3/8" bolt on back of power pack. Check all plugs for proper contact. Check fuses. Check for power on terminal 9 of terminal block on P.C. board. Check 20 amp self reset circuit breaker. Check 25 amp fuse from circuit breaker to P.C. board. Check for voltage on red wire with gray stripes in interlock plug connected to P.C. board.
2.00 Pump Runs But Will Not Lift Platform	2.11 Hydraulic valve open 2.12 Pump mounted horizontal 2.13 No oil (low)	Flush valve by operating manual override switches up and down at same time for 4 to 5 seconds several times. Power pack must be mounted vertically. Check fluid level.
3.00 PUMP DOES NOT RUN WITH MANUAL OVERRIDE OR REMOTE	3.11 Up Solenoid 3.12 Bad power and ground	Check for power on pump "T" wire going to solenoid. See 1.00

Troubleshooting Diagnosis Chart

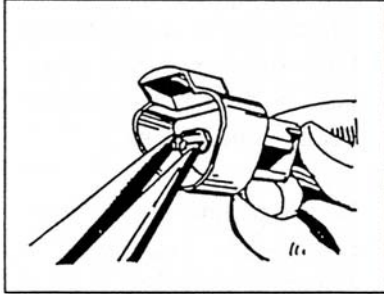
FUNCTION	POSSIBLE CAUSE	REMEDY
4.00 LIFT WILL GO UP WITH OVERRIDE SWITCH BUT NOT WITH REMOTE	<p>4.11 Barrier Down LED (D29) illuminated</p> <p>4.12 Full Out LED (D26) not illuminated</p> <p>4.13 Remote not working properly</p>	<p>Barrier is down, barrier release pin partially out or Barrier Down switch out of adjustment. Make adjustments as necessary.</p> <p>Check Full Out switch for proper operation/adjustment. Replace or adjust as necessary.</p> <p>Check for Up LED D20 when hitting Up button on remote. Check battery in remote. Replace battery/remote as necessary.</p>
5.00 LIFT WILL NOT GO DOWN WITH MANUAL OVERRIDE OR WITH REMOTE OR GOES DOWN SLOWLY OR DRIFTS DOWN BY ITSELF	<p>5.11 Hydraulic Down valve bad</p> <p>5.12 Dirty Down valve (clogged)</p>	<p>Check for power on valve "T" wire going to solenoid when pushing manual override or remote button. Replace if necessary.</p> <p>Flush valve by pushing manual override up and down buttons at same time for 4 to 5 seconds several times.</p>
6.00 LIFT WILL GO DOWN WITH OVERRIDE BUT NOT WITH REMOTE	<p>6.11 Full Out LED (D26) not illuminated.</p>	<p>Check for proper operation of Full Out switch with LED on P.C. board. Replace or adjust switch as necessary.</p>
7.00 LIFT WILL NOT GO OUT WITH OVERRIDE OR REMOTE	<p>7.11 Defective self-reset breaker</p> <p>7.12 No power on terminal 9</p> <p>7.13 Interlock circuit incomplete</p> <p>7.14 Poor plug connections</p> <p>7.15 Bad in/out motor</p> <p>7.16 Bad power and ground</p>	<p>Check for power through 20 amp self-reset breaker. Replace if necessary.</p> <p>Check vehicle Door Full Open switch and wiring.</p> <p>Verify interlock installation</p> <p>Check harness connections A1, A2, B1 and B2</p> <p>Check power at motor. Replace motor if necessary.</p> <p>See 1.00</p>
8.00 LIFT WILL NOT STOW WITH REMOTE	<p>8.11 Faulty Below Stow switch. Below Stow LED (D24) not illuminated</p> <p>8.12 Pressure LED (D18) illuminated</p>	<p>Check for proper operation of Below Stow switch.</p> <p>Remove weight from platform. See Platform Sense Calibration on page 5.</p>

Troubleshooting Diagnosis Chart

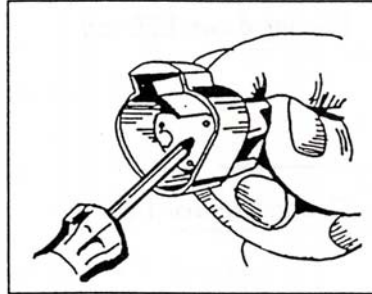
FUNCTION	POSSIBLE CAUSE	REMEDY
9.00 BARRIER WILL NOT OPERATE UP OR DOWN WITH REMOTE OR OVERRIDES	<p>9.11 Bad circuit breaker</p> <p>9.12 Poor plug connections</p> <p>9.13 Faulty barrier actuator motor or actuator out of adjustment</p> <p>9.14 Bad power and ground</p>	<p>Check for proper operation of Below Stow switch.</p> <p>Remove weight from platform.</p> <p>Check harness connectors A1 and A2, E1, N1, N2, E1, F1 and F2. Check power at motor. Adjust or replace actuator if necessary.</p> <p>See 1.00</p>
10.00 BARRIER OPERATES WITH OVERRIDES BUT WILL NOT GO UP WITH REMOTE	<p>10.11 Barrier Down LED (D29) not illuminated</p>	<p>Check Barrier Down switch for proper operation with LED on P.C. board. Replace or adjust as necessary.</p>
11.00 BARRIER OPERATES WITH OVERRIDES BUT WILL NOT GO DOWN WITH REMOTE	<p>11.11 Ground sensor LED (D23) not illuminated</p> <p>11.12 Below Stow LED (D24) not illuminated</p> <p>11.13 Full Out LED (D26) not illuminated</p>	<p>Check Pressure Transducer. Replace or adjust as necessary. See Ground Sense Calibration on page 5.</p> <p>Check Below Stow switch for proper operation. Replace or adjust as necessary.</p> <p>Check Full Out switch for proper operation. Replace or adjust as needed.</p>
12.00 SWITCHES DO NOT ACTIVATE LED(S)	<p>12.11 Improper terminal block wiring</p> <p>12.12 No power going to switches</p> <p>12.13 Faulty wiring</p> <p>12.14 Faulty connections</p>	<p>Check terminal block for correct wiring configuration.</p> <p>Check power on connector A1, pins 1 and 2.</p> <p>Check continuity of wires from switches to connector A2.</p> <p>Check for proper connections on each switch and on each connector on the harnesses. Replace contact if necessary. See diagram on following page.</p>
13.00 DOORS DO NOT OPEN	<p>13.11 Faulty wiring</p>	<p>Check for proper wiring to door openers.</p>
14.00 DOORS DO NOT CLOSE	<p>14.11 Full Out LED (D26) illuminated and Below Stow LED (D24) not illuminated</p> <p>14.12 Lift Out LED (D25) illuminated</p>	<p>Lift is out but not below stow level.</p> <p>Lift not stowed fully. Adjust Lift Out switch.</p>

Troubleshooting Diagnosis Chart

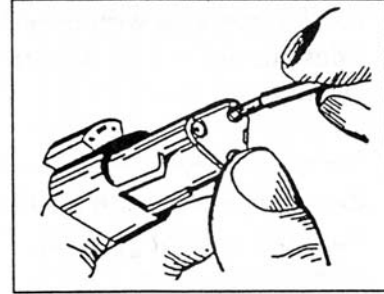
CONTACT REMOVAL



1. Remove orange wedge using needle nose pliers or a hook shaped wire to pull wedge straight out.

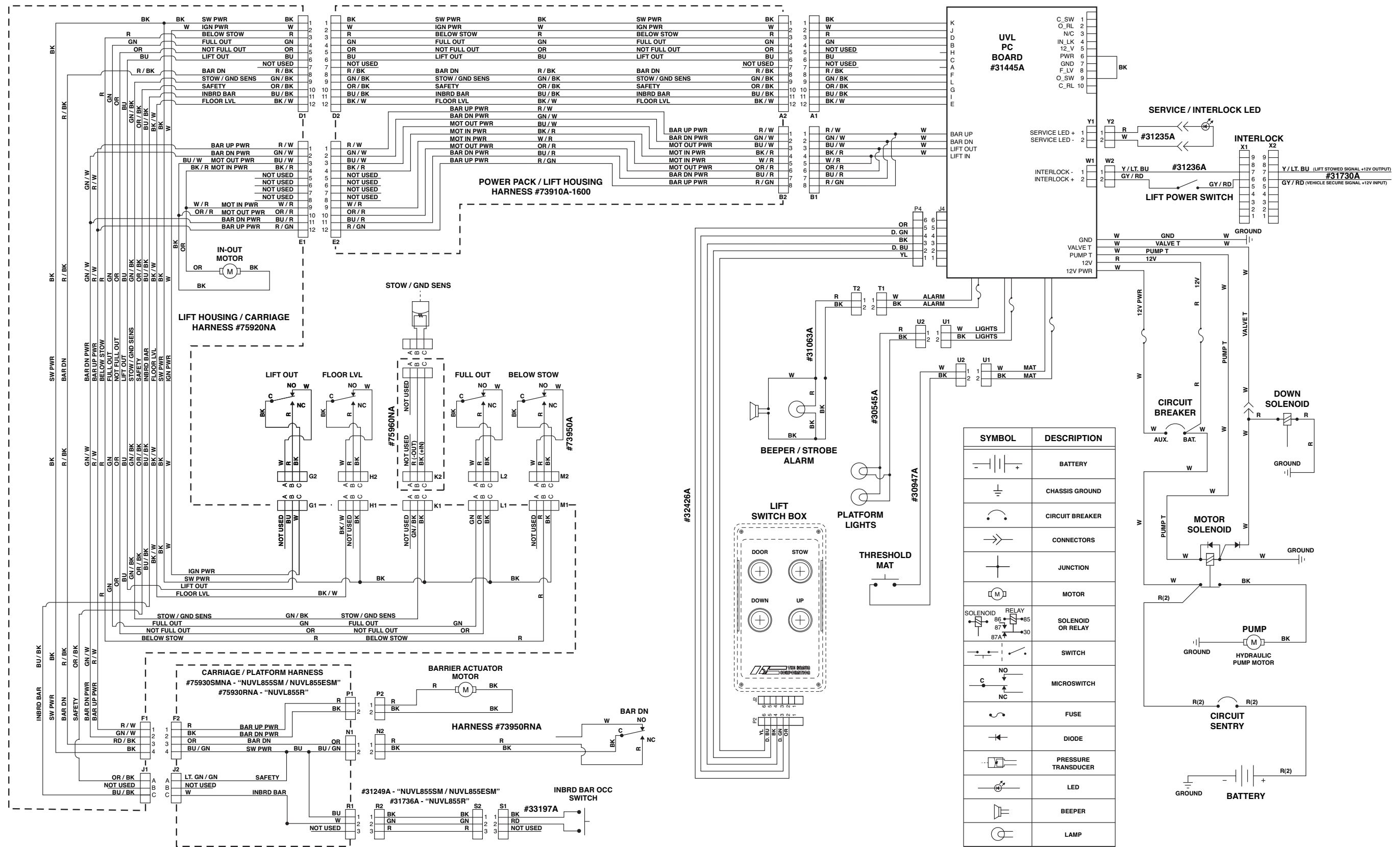


2. To remove the contacts, gently pull wire backwards, while at the same time releasing the locking finger by moving it away from the contact with a screwdriver.



3. Hold the rear seal in place, as removing the contact will displace the seal

Wiring Schematic

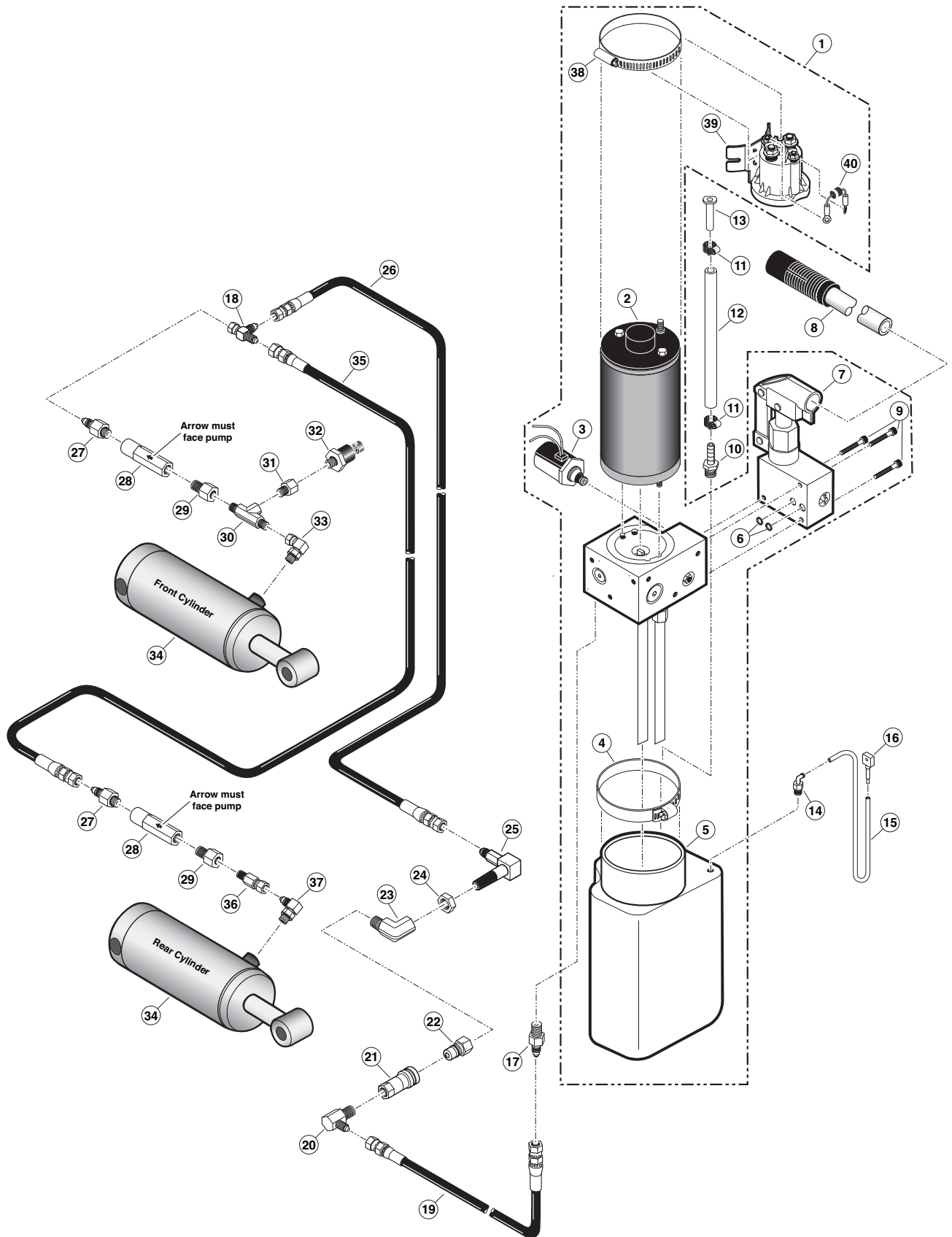


SYMBOL	DESCRIPTION
	BATTERY
	CHASSIS GROUND
	CIRCUIT BREAKER
	CONNECTORS
	JUNCTION
	MOTOR
	SOLENOID OR RELAY
	SWITCH
	MICROSWITCH
	FUSE
	DIODE
	PRESSURE TRANSDUCER
	LED
	BEEPER
	LAMP

Hydraulic Parts List

Item	Qty.	Description	Part No.
1	1	Pump Assembly (M259 with Reservoir/with Back-up pump)	87060
2	1	Motor, Pump	14785-IS
3	1	Valve, "Down" (with Solenoid)	14901
4	1	Clamp, Reservoir - H-48	17069
5	1	Reservoir Replacement Kit (Includes Item #10)	88188K
6	1	O-Ring (only), Hand Pump Mounting	17351
7	1	Hand Pump (Backup) with O-Rings (Includes Item #6)	87065
8	1	Handle with Grip	17206A
9	3	Screw, 1/4-20 x 1 3/4", Allen Head	17351
10	1	Fitting, 3/8" Male NPT x 3/8" Barbed	87618
11	2	Clamp, Hose - 5/8" O.D. - Worm Drive	84325
12	1	Tubing, 3/8" x 5/8", Tygothane - Clear	82066R012
13	1	Plug, 3/8" Plastic Hose	81580
14	1	Fitting, 90°-1/8" Male Pipe x 1/8" Barbed	87563
15	1	Tube, 1/4" O.D. x 1/8" I.D. - Plastic	81557R014
16	1	Plug, 1/8" Plastic Tube	81583
17	1	Adapter, 1/4" Male NPT x 7/16-20 Male JIC 37°	10130
18	1	Fitting, Tee, 7/16-20 Male JIC 37° (2) x F. Swivel 7/16-20 JIC 37° (1)	87587
19	1	Hose Assembly, 1/4" - Female Swivel 7/16-20 JIC 37°	32785A-202
20	1	Fitting, 90° - 7/16-20 Male JIC 37° x 1/4" Male NPT	87569
21	1	Coupling, Hydraulic Quick Connect x 1/4" Female NPT	87614
22	1	Nipple, Hydraulic Quick Connect x 1/4" Female NPT	87615
23	1	Elbow, 90° - 1/4" NPT Street	10114
24	1	Nut, 9/16-18, Hex Jam	83077
25	1	Fitting Assembly, Bulk Head	73777A
26	1	Hose Assembly, 3/16" - Female Swivel 7/16-20 JIC 37°	915-5603-080.5
27	2	Fitting, 9/16" Male O-Ring x 7/16-20 Male JIC 37°	26787
28	2	Valve, Flow Control	87053
29	2	Adaptor, Hydraulic Internal	87560
30	1	Fitting, Tee - 1/4" Male NPT (2) x 1/4" Female NPT (1)	26786
31	1	Adapter, 7/16-20 Female O-Ring to 1/4-18 Male NPT	29305
32	1	Switch, Pressure Transducer	30426
33	1	Fitting, 90° - 1/4" Female Swivel NPT x 7/16-20 Male JIC 37°	26789
34	2	Cylinder, UVL Retracting	87055N
35	1	Hose Assembly, 1/8" - Female Swivel 7/16-20 JIC 37°	16004A-020
36	1	Fitting, Straight - F. Swivel 7/16-20 JIC 37° x 1/4" Male NPT	87596
37	1	Fitting, 90°- 7/16-20 Male JIC 37° x 7/16" Male O-Ring	25085

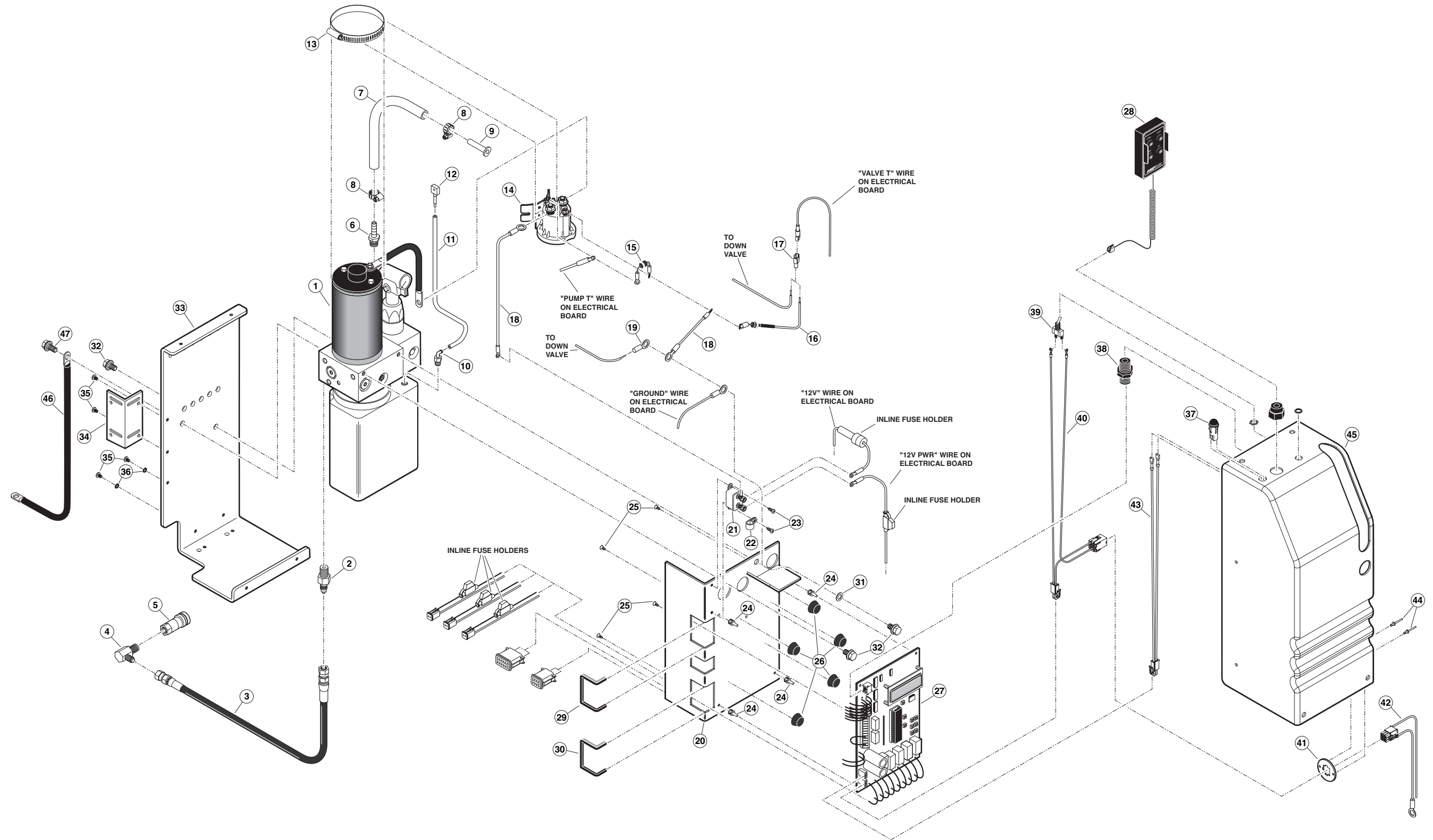
Hydraulic Diagram



Pump Module Parts List

Item	Qty.	Description	Part #
1	1	Pump Assembly, M259	87060
2	1	Adapter, 1/4" Male NPT x 7/16-20 Male JIC 37°	10130
3	1	Hose Assembly, 1/4" - F. Swivel 7/16-20 JIC 37°	32785A-202
4	1	Fitting, 90° - 7/16-20 Male JIC 37° x 1/4" Male NPT	87569
5	1	Coupling, Hydraulic Quick Connect x 1/4" Female NPT	87614
6	1	Fitting, 3/8" Male NPT x 3/8" Barbed	87618
7	1	Tubing, 3/8" x 5/8", Tygothane - Clear	82066R012
8	2	Clamp, Hose - 5/8" O.D. - Worm Drive	84325
9	1	Plug, 3/8" Plastic Tubing	81580
10	1	Fitting, 90°-1/8" Male Pipe x 1/8" Barbed	87563
11	1	Tube, 1/4" O.D. x 1/8" I.D. - Plastic	81557R014
12	1	Plug, 1/8" Plastic Tube	81583
13	1	Clamp, Hose	17069
14	1	Solenoid, Up - Trombetta	31129
15	1	Diode Assembly, Up Solenoid	73906A
16	1	Diode Assembly, Down Valve Solenoid	73907A
17	1	Terminal, 14/16 Gage Male Spade - 1/4" Fully Insulated	78036
18	2	Jumper Assembly, 12 Gage x 4"	73943A
19	1	Eyelet, 5/16" Insulated - Red	86267
20	1	Weldment, Bracket - PC Board Mounting	73824W
21	1	Circuit Breaker, 20 Amp - Self Reset	16453
22	1	Clip, Cable - 7/16" Plastic	15777
23	2	Screw, 10-32 x 3/8", Pan Head Philips, Thread Cutting	82755
24	4	Standoff, .25" PCB - Nylon	86739
25	4	Screw, #6 x 3/8". Self Tap, Flat Head	82764
26	5	Bumper, 1/2" Dia. x 1/4" Tall - Rubber	82064
27	1	Electrical Board Assembly w/Program Chip	31445A
28	1	Hand Pendant Assembly, NHTSA NUVL	32426A
29	1	Edge Liner, 1/8" x 6", Q-Trim	13910R006
30	1	Edge Liner, 1/8" x 4", Q-Trim	13910R004
31	1	Washer, .328" x .562" x .042"	83583
32	3	Screw, 5/16-18 x 1/2", Serrated Washer Head, Hex	82881
33	1	Plate, Power Pack Mounting	73822
34	1	Bracket, Power Pack Mounting	73825
35	4	Screw, 1/4-20 x 3/8", Pan Head Phillips	82769
36	2	Washer, Lock - 1/4" External Tooth	83588
37	1	Lamp, Bicolored LED Panel	30728
38	1	Fitting, Strain Relief - Liquid Tight	30753
39	1	Switch, Toggle	12185
40	1	Harness, Interlock	31236A
41	1	Plate, Interlock Plug / Cover Reinforcement	31345
42	1	Harness, Lift Interlock Connection	31730A
43	1	Harness, Service / Power Indicator	31235A
44	2	Rivet, Pop, 1/8" Dia. x .188/.250"	84249
45	1	Cover, UVL Power Pack	73820N
46	1	Ground Cable, Black - 26"	68874
47	1	Screw, 5/16-18 x 3/4", Serrated Washer Head, Hex	32464

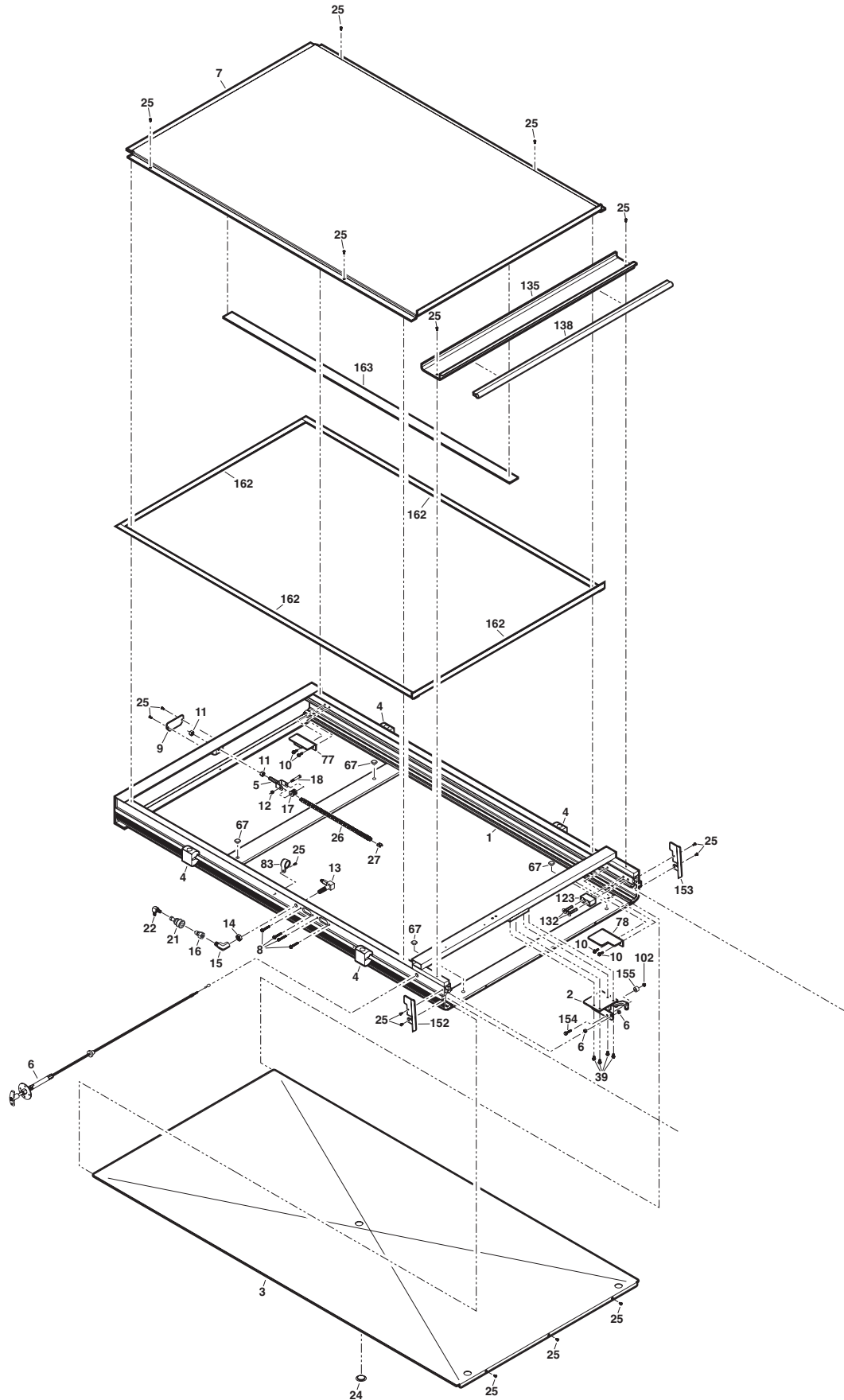
Pump Module Diagram



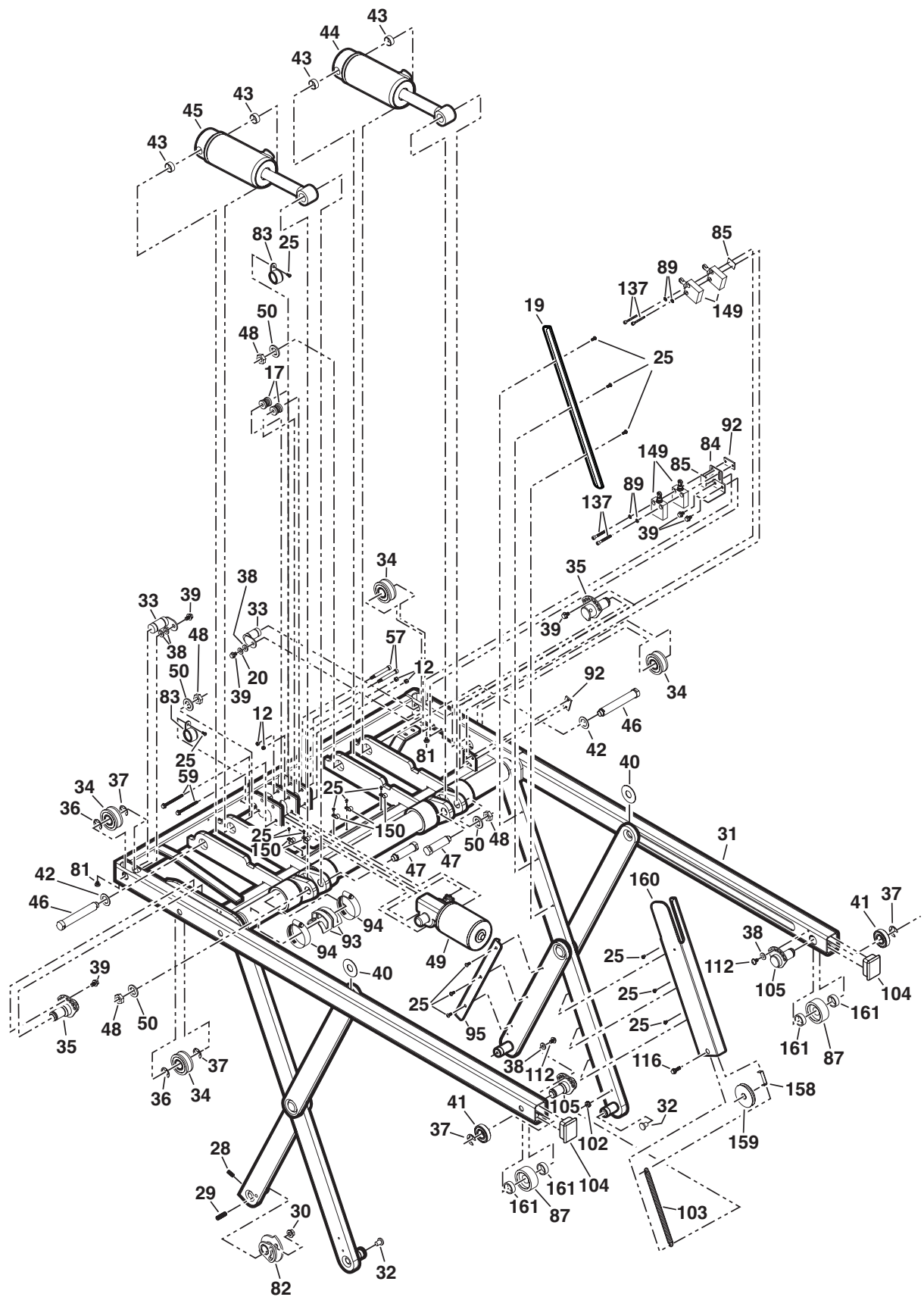
Repair Parts List

Item	Qty.	Description	Part No.	Item	Qty.	Description	Part No.
1	1	Housing Weldment	75101RNW	86	1	Rod End, 5/16-24 LH Male x 1 1/2" LG	31773
2	1	Chain Release Weldment	73760A	87	2	Bearing, Outer Race Assembly	75230A
3	1	Cover, Lower	75732-2	88	1	Rod End, 5/16-24 Male x 1 1/2" LG	31772
4	4	Clamp, Lift Mounting	73733	89	6	Washer, #10 Internal Tooth	11540
5	1	Chain Tensioner Weldment	76750W	90	4	Screw, 3/8-16 x 1" FHSCS, Black	26648
6	1	Manual Release Cable Assembly Kit	73770-600	91	2	Screw, 10-32 x 7/8", Socket Cap	82778
7	1	Cover, Upper	75730-2	92	3	Plate, Switch Bracket, Tap	68280-1
8	4	Screw, 1/4-20 x 1 1/2", Washer Head, Self Drill	24751	93	2	Cam, Torque Shaft Actuator	73712
9	1	Cover, Chain Tensioner	71754	94	2	Clamp, Worm Drive	26400
10	5	Screw, 1/4-20 x 3/4", Washer Head, Self Drill	24750	95	1	Cover, Idler Arm Wiring	75742
11	2	Nut, 1/2-20 Hex Jam, Auto, Black	83022	96	1	Weldment, Handrail Rear, NUVL855R	75383CNW
12	5	Nut, 1/4-20 Nylock, Full SS	83070	97	1	Weldment, Handrail Front, NUVL855R	75384CNW
13	1	Fitting Assembly, Bulk Head	73777A	98	3	Block, Handrail Mounting	31928
14	1	Nut, 9/16-18, Hex, Jam	83077	99	1	Block, Handrail Mounting	31926
15	1	Elbow, 1/4" NPT 90° Street	10114	100	16	Bearing, Sleeve, 1/2" I.D. x 5/8" O.D. x 3/4" Long	32026
16	1	Nipple, Hydraulic Quick Disconnect	87615	101	4	Washer, Thrust, 1/2" I.D., GTI-0814-01	40-8668-0
17	3	Roller, Idler, Nylon, Chain	73706	102	2	Nut, 1/4-20, Serrated Flange	83064
18	1	Screw, 5/16 x 1 1/4" Shoulder Soc Hd 1/4-20	82751	103	1	Spring, .5" O.D. x 5" x .063" x 9.6" Max. Extension	26367
19	1	Cover, Lift Arm Wiring	75741	104	2	Plug, 1 1/2" x 2" x 11 Gauge Tube	81582
20	1	Washer, .328" x .562" x .042"	83583	105	2	Shaft, Eccentric Bearing Weldment	75234W
21	1	Coupling, Hydraulic Quick Disconnect	87614	106	1	Platform Weldment	75301RNWY
22	1	Fitting, 90° JIC Male x 1/4" Male Pipe	87569	107	2	Bearing, Split, .75" I.D. x .25" Long	84282
23	1	Spring, 3/4 x 3/8 x 3 x .135 x .165 RATE 405 MAX	30169	108	4	Screw, Shoulder, 1/2" x 1.750" x 3/8" x 16/18-8	31929
24	1	Plug, Poly Finish, Black, 1" Hole	81576	109	1	Bolt, 1/4-20 x 1/2" Socket Low HD	82335
25	35	Screw, 10-32 x 3/8", Pan Hd., Self-Tap	82755	110	2	Grommet, 1.25" Diameter X .25" Wide	84386
26	1	Chain, Nickel Plated, #35 Roller	84314R124.75	111	1	Closure, Weldment, UVL850	75330W
27	1	Connector Link, #35 Roller Chain	84317	112	2	Bolt, 1/4-20 x 3/8" FLBHSCS-GD8	28252
28	1	Screw, 5/16-18 x 1/2", Set	11568	113	4	Nut, 3/8-16 Hex, Stainless Steel	10059-SS
29	1	Screw, 3/8-16 x 1" Set	28008	114	1	Washer, .281 x .75 x .06 Brass	83592
30	1	Nut, 3/8-16, Serrated Flange	83065	115	1	Screw, 10-32 x 1/2" PH PN ZP	82744
31	1	Carriage Weldment	75201RNW	116	1	Bolt, 1/4-20 x 3/4" Serrated Hex	82768
32	2	Bearing, Scissor Arm Pin	75248	117	1	Skid, Rear Barrier	75402
33	2	Shaft Bearing Weldment	73230W	118	4	Bearing, Flange 1/2" I.D. x 5/8" O.D. x 3/4" Long	32027
34	4	Bearing Track Roller, 20mm x 52mm	84305	119	1	Spring, Torsion, Lower Closure	73335
35	2	Shaft, Eccentric Bearing Wmt.	73233W	120	1	Screw, 1/2" x 1 1/4" Shoulder, Socket Head x 3/8-16	82771
36	2	E-Clip, 3/4" Bowed x .580" Groove	84377	121	1	Screw, 1/2" X 1/2" Shoulder, Socket Head x 3/8-16	25929
37	6	E-Clip, 3/4" x .580" Groove	84376	122	2	Washer, .390" x .625" x .073"	83585
38	5	Washer, .281" ID x .625" OD x .055"	83511	123	1	Block, Carriage Stop	75781N
39	10	Screw, 1/4-20 x 3/8", Serrated, Hex	82761	124	1	O-Ring, 7/16" I.D. x 5/8" O.D.	87861
40	2	Washer, Front Scissor Arm	73748	125	4	Pin, Detent, 1/2" X 3" Grip, 18.8 S.S.	31930
41	4	Bearing, 1 5/8" O.D. x 3/4" I.D.	84004	126	1	Ring, Retaining 5/8"	84189
42	2	Washer, .758 I.D. x 1.245 O.D. x .06	25141	127	1	Ring, Clevis Pin 5/16"	11390
43	4	Bearing, .75" I.D. x .625" Long	29515	128	1	Pin, Barrier Clevis Release	73741-2
44	1	Cylinder Assembly - Front	75801CFNA	129	1	Bolt, 5/16-24 x 1" SKT BTN PLTD	82348
45	1	Cylinder Assembly - Rear	75801CRNA	130	1	Clip, Hairpin, 5/16 DIA Shaft	84382
46	2	Pin, Cylinder Mounting, Long, Black	75700N	131	1	E-Clip, 3/8" Shaft	84383
47	2	Pin, Cylinder Rod Mounting, Black	75701N	132	2	Screw, 3/8-16 x 1 3/4 SS 18-8, FHSC	30385
48	4	Nut, 9/16-18 x 5/16" Stainless Jam	31176	133	1	Nut, 5/16-24 LH Hex Jam ZP	83076
49	1	Motor, Electric, In/Out	73780A	134	1	Nut, 5/16-24 Hex Jam ZP	83075
50	4	Washer, UVL Cylinder Rod Pin	31137	135	1	Lip, Upper Edge Seal	75746-8
51	1	Spring, Torsion	85101EVO	136	2	Nut, Rear Barrier Slide Block	31526
52	1	Rod, Barrier Hinge	32121	137	4	Screw, 10-32 x 1 1/2" NF SKT CAP ZP	82717
53	20	Screw, 1/4-20 x 3/8" FL SOC CAP HD	23471	138	1	Weatherstrip, 8" R.S. Seal, UVL	82071R
54	1	Barrier, Outboard	75401RN-13YL	139	1	Sponge Strip, 1/2" Wide x 1/4" - No Adhesive	82063R036
55	1	Weldment, Hinge Plate	75420RNW	140	1	Barrier, Actuator Assembly	74340-3
56	1	Switch, Push Button, SPST NC Mountain 10PA12	33196	141	2	E-Clip, 3/8" Shaft	84383
57	2	Screw, 5/16" x 2" Shoulder, Soc. Hd., 1/4-20	82758	142	3	Nut, #10-32 Serrated Flange ZP	83080
58	2	Pin, Outboard Barrier	32198	143	4	Screw, #10-32 x 1/2", Flat Head with Patch	17192P
59	2	Screw, 1/4-20 x 2 3/4", Serrated, Hex	82759	144	1	Skid, Rear Barrier	75414C
60	1	Plate, Platform Floor	75306IBNGMG	145	2	Spring, Torsion	85101
61	1	Cover, Platform Wiring Harness	75738RNY	146	1	Shaft, Barrier Hinge/RR	75413
62	1	Cover, Platform Wiring Harness	75738IBNY	147	1	Catch Weldment	75415CW
63	2	Screw, #8-32 x 1/4" PAN HD PHL	23512	148	1	Hinge Weldment, Rear Barrier	75420CNW
64	1	Weldment Cover Platform Wiring Harness	75317RNWY	149	4	Limit Switch Assembly, UVL	73950A
65	3	Nut, 5/16-24, Nylon, Plated	83079	150	5	Clamp, 1/4" I.D. Nylon Loop BLK	84396
66	11	Bolt, 3/8-16 x 3/4" GR5 Hex, Auto Black	12463	151	1	Limit Switch Assembly, 14.25" NUVL	73950RNA
67	4	Bearing, UHMW Flat	PS1006	152	1	Lip, LH Side Shield	75743
68	1	Block, Rear Barrier Slider	74408CN	153	1	Lip, RH Side Shield	75744
69	4	Bearing, Plastic Flange, 3/8 I.D. x 1/4"	24028	154	1	Screw, 1/4-20 x 1" SER HX ZP	82760
70	1	Block, Nylon Slider - Inside	74410	155	1	Cam, 7/8" UVL Follower	84052
71	1	Block, Nylon Slider - Outside	74409	156	1	Plate, Rear Barrier	75411NYL
72	1	Link, Rocker Assembly, I.B., UVL	75431CNA	157	2	Skid, Outboard Barrier	32194
73	2	Bolt, 5/16-24 x 1 1/2" FHSKT CAP	27803	158	1	Bracket, Pulley Spring Tension	75748
74	1	Weldment, Slide Block Rod	75407CNW	159	1	Pulley, Spring Tensioner	75749N
75	1	Screw, #10-32 x 1/2" Set	26613	160	1	Cover, Pulley Spring Tensioner	75740
76	1	Tie Rod, Rear Barrier	75407CN-2	161	4	Spacer, Bearing	75231
77	1	Bracket, Cam, Outside	75776CN	162	1	Tape, 1/16" x 3/4" x 108" DBL Face	82033R312
78	1	Bracket, In/Out Cam, Outboard	73775	163	1	Tape, 1/8 x 2" Foam Adhesive	82054R048
79	1	Weldment Barrier	75321RNW	164	1	Spring, 1/2 x 5 x .075 EXT L 7.6"	25717
80	1	Assembly Switch Actuator NUVL	33201A				
81	2	Screw, 1/4-20 x 1/4", Pan Head, Nylon	82773				
82	1	Cam, Rear Barrier Weldment	75408NW				
83	3	Clamp, Insulate, 1 1/8"	20535				
84	1	Bracket, Switch In/Out Mounting	73719				
85	3	Tape, Limit Switch Mounting Pad	73747				

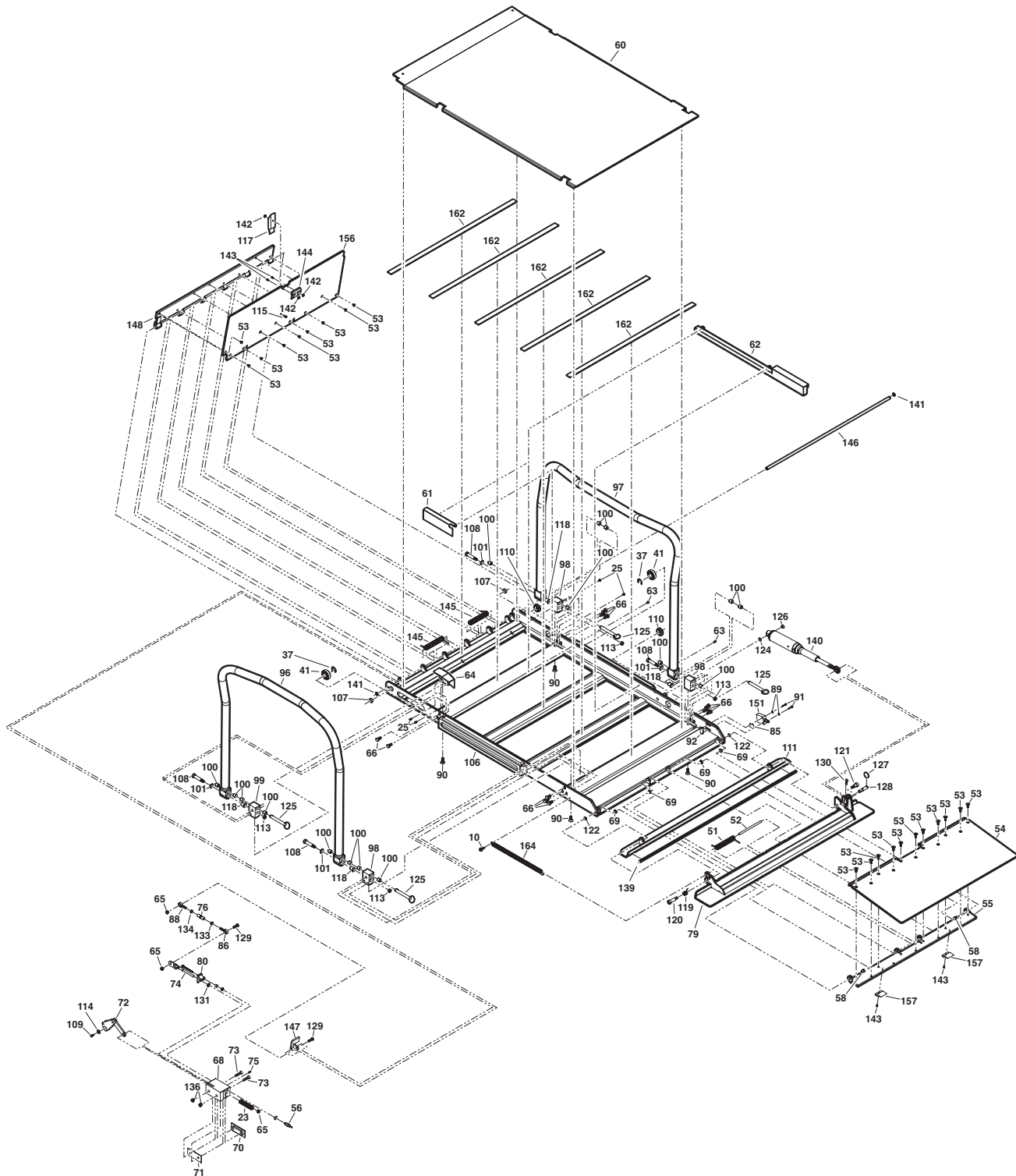
Lift Housing Detail Exploded View



Lift Carriage Detail Exploded View



Lift Platform Detail Exploded View



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NUVL855R

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Public Use Wheelchair Lifts

Braun "Worry-Free" Three-Year Limited Warranty

The Braun Corporation of Winamac, Indiana, warrants its wheelchair lift against defects in material and workmanship for three years, providing the lift is operated and maintained properly and in conformity with this manual. This warranty is limited to the original purchaser and does not cover defects in the motor vehicle on which it is installed, or defects in the lift caused by a defect in any part of the motor vehicle.

This warranty commences on the date the lift is put in service, providing the warranty registration card is completed and received by The Braun Corporation within 20 days of purchase.

This warranty also covers the cost of labor for the repair or replacement of most parts for one year when performed by an authorized Braun Representative. (A Braun labor schedule determines cost allowance for repairs.)

This warranty does not cover normal maintenance, service, or periodic adjustments necessitated by use or wear. The Braun Corporation will not, under any circumstances, pay for loss of use of lift or vehicle in which it is installed or loss of time.

This warranty will become null and void if the lift has been damaged through accident, misuse, or neglect, or if the lift has been altered in any respect.

Return Authorization Procedure

When processing any warranty claims (parts, repairs, etc.), all requests must be processed through The Braun Corporation Product Support Department. Call 1-800-THE LIFT® (extension 3009) during normal working hours. Product Support will issue a Return Material Authorization (RMA) number and detail the procedures required for processing returns and/or authorizing credit.

The lift identification information is provided on the Braun Serial No./Series No. identification tag and the two warranty cards (shown on inside front cover). The lift identification information must be provided when filing a warranty claim or ordering parts.

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33407 Rev. A
May 2007



Braun UVL Series™

All illustrations, descriptions and specifications in this manual are based on the latest product information available at the time of publication. The Braun Corporation reserves the right to make changes at any time without notice.

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