



Service Manual for:

NL Millennium Series

Public Use Wheelchair Lifts

Series 05

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).

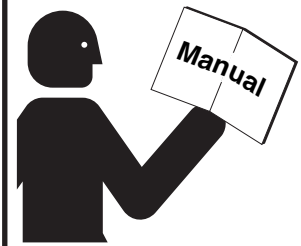


“Providing Access to the World”[®]

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 NL Series

33126
August
2006

Patent #5,261,779 Patent #6,599,079
Patent #6,065,924 Patent #6,692,217
Patent #6,238,169 Patent #6,739,824
Patent #6,464,447 Patents Pending

Congratulations

We at The Braun Corporation wish to express our fullest appreciation on your new purchase. With you in mind, our skilled craftsmen have designed and assembled the finest lift available.

This manual provides service-related material. Refer to the FMVSS No. 403 Quick Reference Installation Sheet for installation instructions, operating instructions and maintenance procedures.

Braun Millennium Series™ lifts are built for dependability and will provide years of pleasure and independence as long as the lift is installed and serviced as specified by a Braun certified technician, and the lift is operated by an instructed person.

Sincerely,
THE BRAUN CORPORATION



Ralph W. Braun
Chief Executive Officer

Warranty and Registration Instructions

Immediately upon receiving the lift, examine the unit for any damage. Notify the carrier at once with any claims.

Two warranty/registration cards (shown right) are located in the lift-mounted manual storage pouch. The sales representative must process one of the cards. The consumer must fill out the other card and mail it to The Braun Corporation. The warranty is provided on the back cover of this manual. **The warranty cards must be processed to activate the warranty.**

Series No. Pump Code
Model No. Serial No. Cylinder Code

OWNER'S WARRANTY REGISTRATION

NL9171B-05-00025-56-14CG

PURCHASED FROM _____

OWNER

NAME _____	DATE INSTALLED _____
ADDRESS _____	
CITY _____	
TELEPHONE _____	STATE _____ ZIP _____

TO VALIDATE WARRANTY
REGISTRATION CARDS MUST BE RETURNED TO THE BRAUN CORPORATION.

Sample Warranty/Registration Card

Two Braun Serial No./Series No. identification tags (shown below) are posted on the lift. One I.D. tag is posted on the opposite pump side vertical arm. A second I.D. tag is located on the opposite pump side tower. Both I.D. tags provide the product identification information provided on the warranty/registration card. Record the information in the space provided (or document on a copy). **This information must be provided when filing a warranty claim or ordering parts.**

The Braun Corporation
1-800-THE LIFT™
BRAUNLIFT.COM™

DOT Public Use Lift MODEL#

NL9171B

Max. Lifting Capacity - 800 lbs.

SERIAL NUMBER

05-00025

PUMP CODE	CYLINDER
56	14CG

MFG DATE

06/19/06

c5*72/245*95/54*0110*00
 PATENT
 PENDING: 5,261,779-6,065,924-6,238,169-6,46
 4,447-6,599,079-6,692,217-6,739,824

Sample Serial No./Series No. Identification Tag

Model No. _____

Series No. _____

Serial No. _____

Pump Code _____

Cylinder Code _____

Date of Manufacture _____

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Lift Exploded Views

42" Floor-to-Ground Lift Models

(NL915IB, NL915FIB, NL918IB, and NL918FIB)

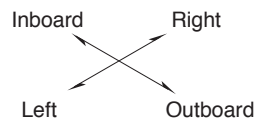
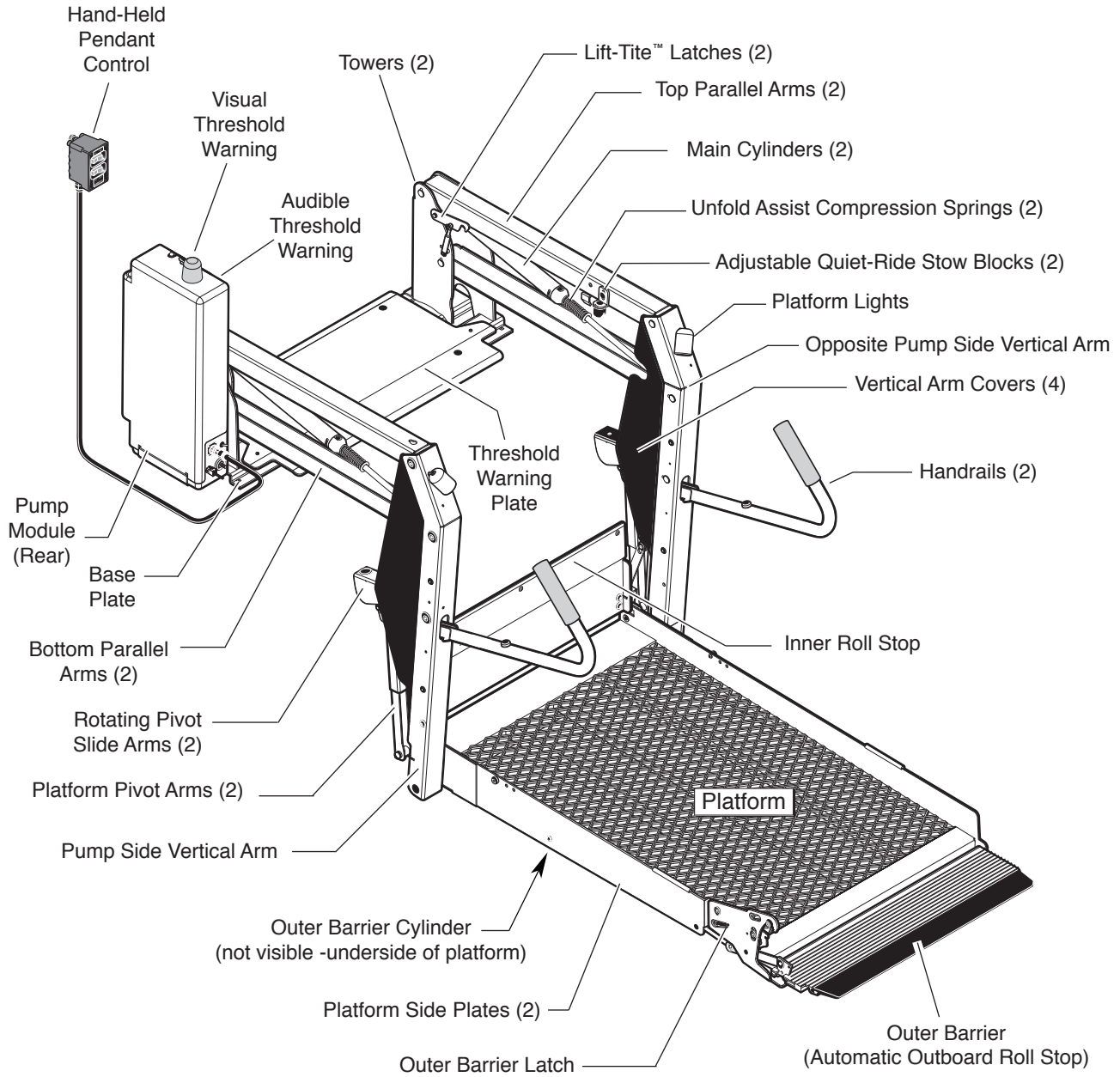
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48" Floor-to-Ground Lift Models

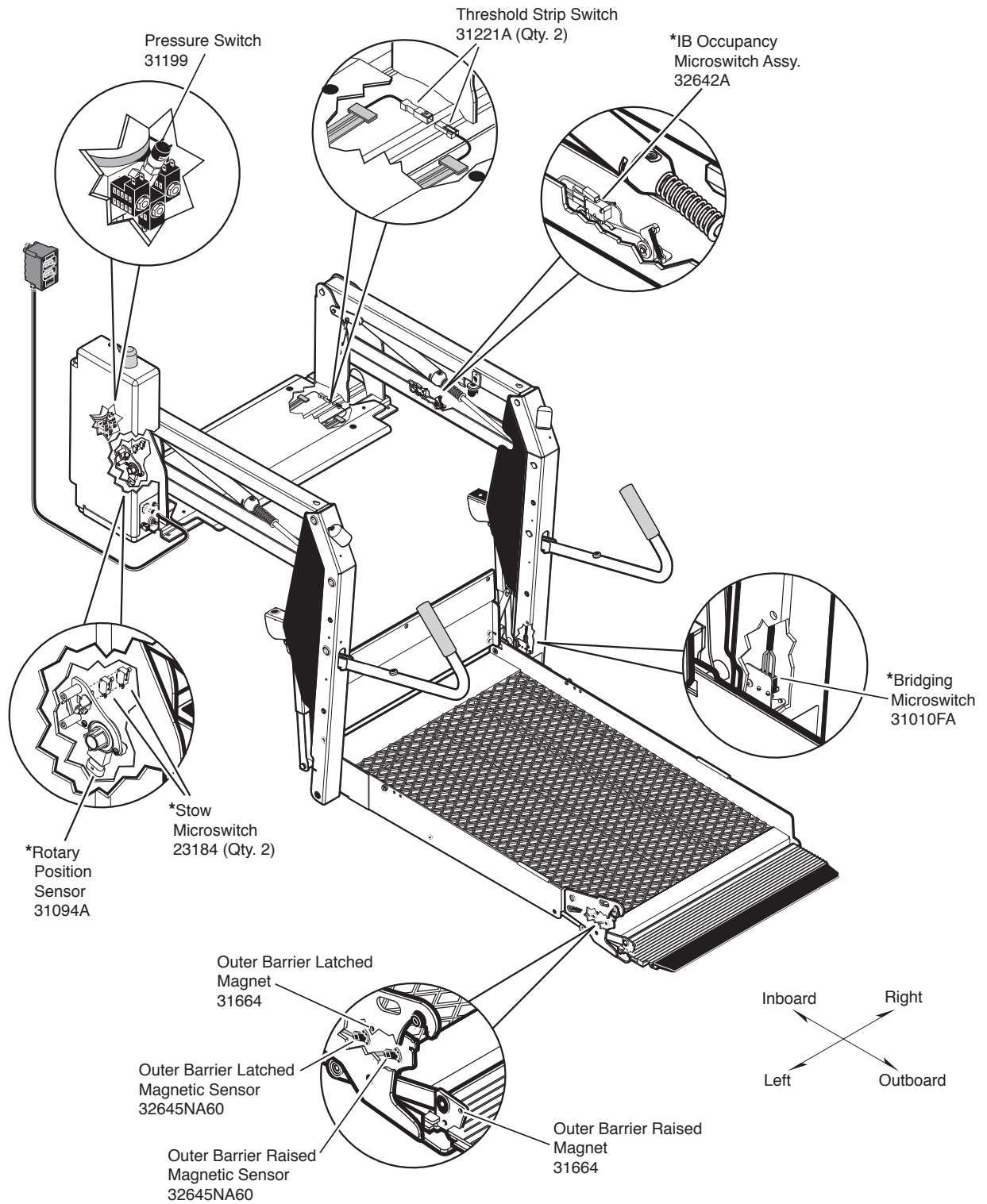
(NL916IB, NL916FIB, NL917IB, NL917FIB,
NL919IB and NL919FIB)

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Lift Terminology



Switch and Sensor Locations



*Note: Mirror image for right (front) pump lifts.

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 platform is fully stowed.
 1. Verify lift stowed signal - pin 7 on the pump module has a +12 volt signal OR pin 9 has a ground signal (depends on interlock used).
 2. Refer to the interlock installation instructions.

- Lift operation shall be inhibited unless the vehicle is stopped and vehicle movement is prevented.
 1. Verify vehicle secure signal (pin 6) has a +12 volt signal.
 2. Refer to the interlock installation instructions.

- The platform will not fold/stow when occupied.
 - Refer to Platform Fold Pressure Adjustment procedures.

- The inner rollstop will not raise if occupied.
 - Call Product Support

- The outer barrier will not raise if occupied.
 - Refer to Outer Barrier Fold Pressure Adjustment

- Verify platform lighting when lift is deployed.
 1. Replace bulb(s) in the light housing.
 2. Check fuse (5 amp fuse on circuit board; F13)

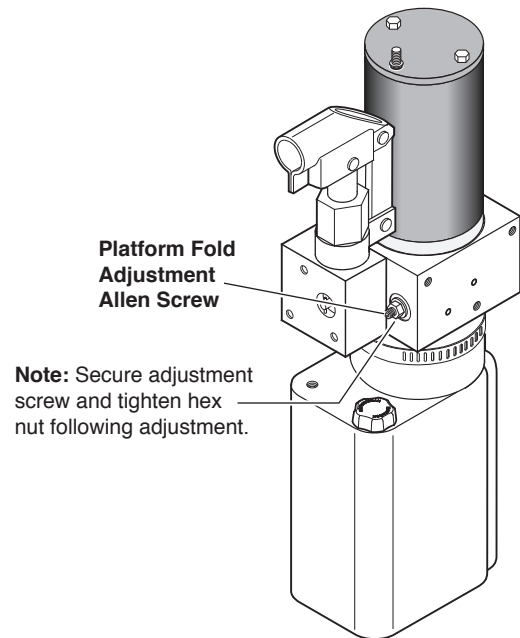
- An audio warning (and visual warning for public lifts) will activate if the threshold area is occupied when the platform is a least 1" below floor level.
 1. Remove the threshold warning plate
 2. Verify the threshold strip switch connectors are connected (see illustration on Page 3)
 3. Replace the threshold strip switch
 4. Reinstall the threshold warning plate

- Platform movement is prohibited beyond the position where the inner rollstop is fully deployed.
 - Call Product Support.

- Lift platform movement shall be interrupted unless the outer barrier is deployed.
 - Call Product Support.

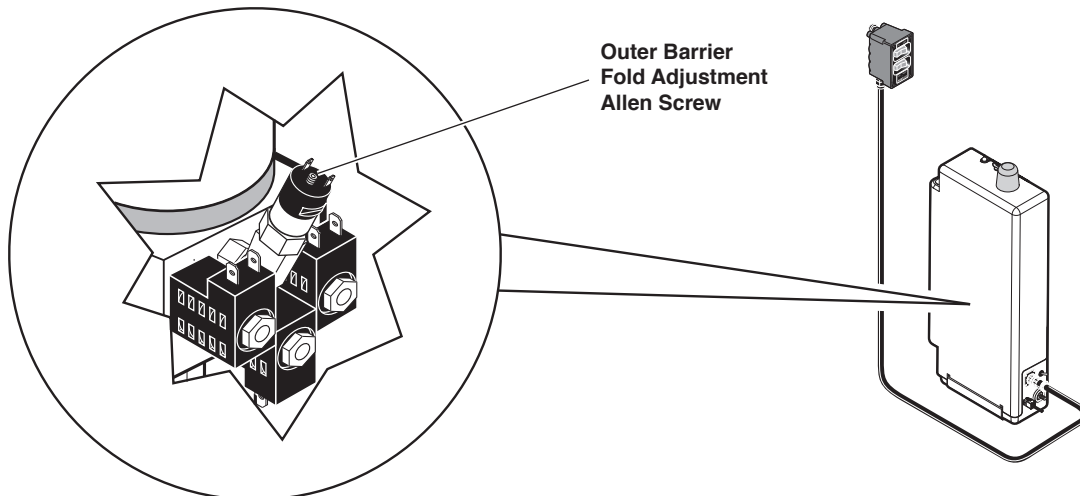
Platform Fold Pressure Adjustment

1. Position the platform at the floor level loading position.
2. Loosen the hex nut on the adjustment screw (do not remove hex nut).
3. Turn the adjustment screw counter clockwise until the platform does not fold when the Fold button is pressed.
4. Turn the adjustment screw clockwise in 1/4 turn increments and press the Fold button until the platform folds completely (Note: return the platform to floor level position after each attempt to fold the platform).
5. Turn the adjustment screw an additional 1/8 turn after the platform folds successfully.
6. Tighten the hex nut without moving the adjustment screw.
7. Verify the platform will not stow while occupied.



Outer Barrier Fold Pressure Adjustment

1. Lower the platform to the ground level loading position.
2. Remove the pump cover.
3. Turn the adjustment screw (shown below) counter clockwise until the outer barrier does not raise when the Up button is pressed.
4. Turn the adjustment screw clockwise in 1/4 turn increments until the outer barrier raises and fully locks in position when the Up button is pressed. DO NOT turn the adjustment screw beyond this position.
5. Verify the outer barrier will not raise when occupied.
6. Reattach the pump cover.



Platform Angle Adjustment

Adjusting the platform angle based on the relationship of the platform at ground level directly affects the angle of the platform when positioned at floor level.

Unfold the lift and visually examine the angle of the platform when positioned at floor level. Lower the platform fully and note the angle of the platform when it reaches ground level also. The **outboard end of the platform (toe) must contact the ground first** when the platform is lowered (all lift models).

Millennium “NL” Series:

The platform angle **should** be adjusted so there is a balance between the angle at both positions (**equal amount of angle**). **Angle A** should **equal angle B** as shown in Figure C.

Century “NCL” Series: Vista “NVL” Series:

The platform angle **must** be adjusted so the outboard end of the platform (toe) is angled down slightly when positioned at floor level. See Figure D. The outboard end of the platform **must** contact the ground first to **ensure** the spring-loaded outer **barrier unfolds fully**.

Adjustment Procedures: Adjustment Allen screws are provided on each side of the lift platform for adjusting the platform angle. Details and photos are provided on the opposite page.

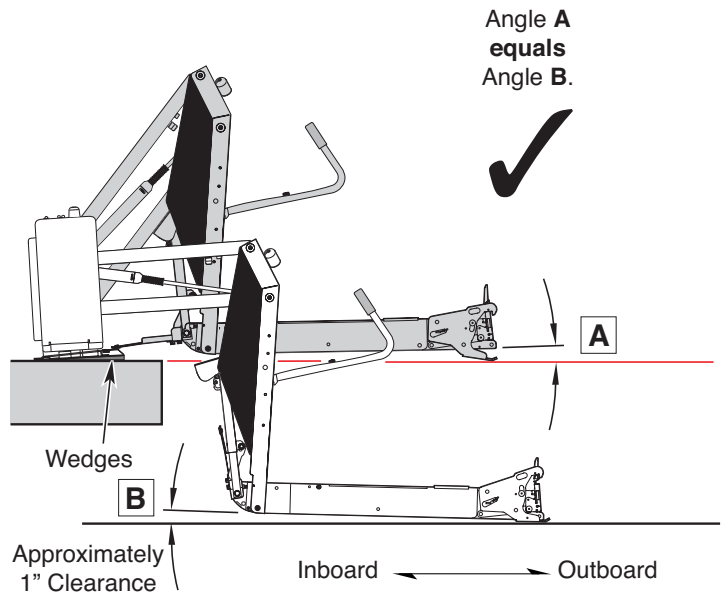
Base Plate Wedges: Installations where base plate wedges are used require more platform angle adjustment than normal.

Platform Stop Blocks: When adjusting platform angle, ensure both **stop blocks are making full contact with the vertical arms** (details on opposite page).

Floor Level Adjustment: Following platform angle adjustment, set floor level positioning as detailed in **Platform Floor Level Adjustment** (details on page 8).

Millennium “NL” Series

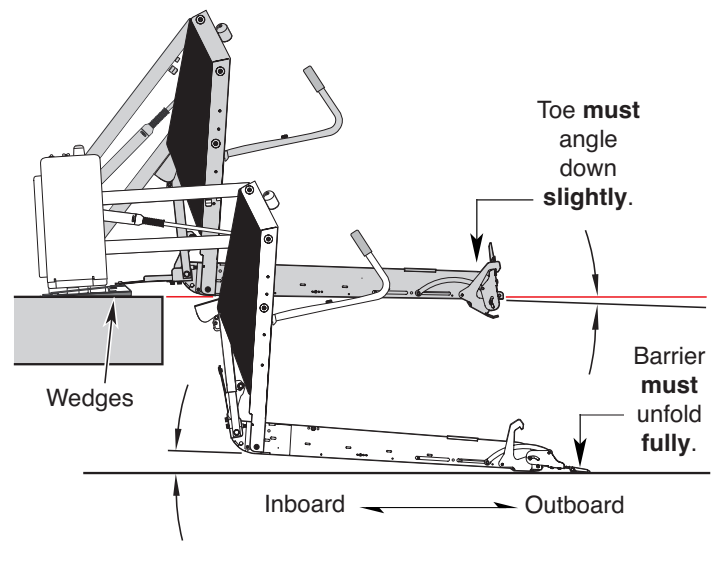
Figure C



Century “NCL” Series

Vista “NVL” Series

Figure D



Platform Angle Adjustment

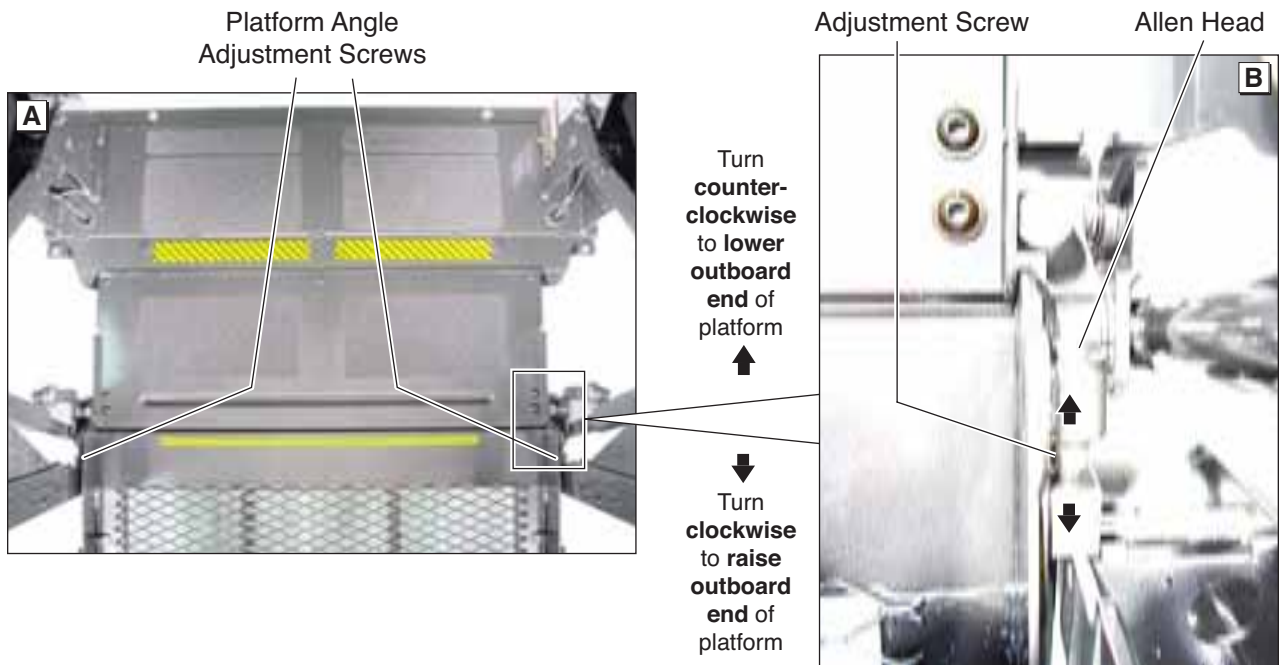
Adjustment Allen screws are provided on each side of the lift platform for adjusting the platform angle. Adjust platform angle as specified on previous page.

To **raise** the **outboard end** of platform - turn adjustment screw **clockwise**.

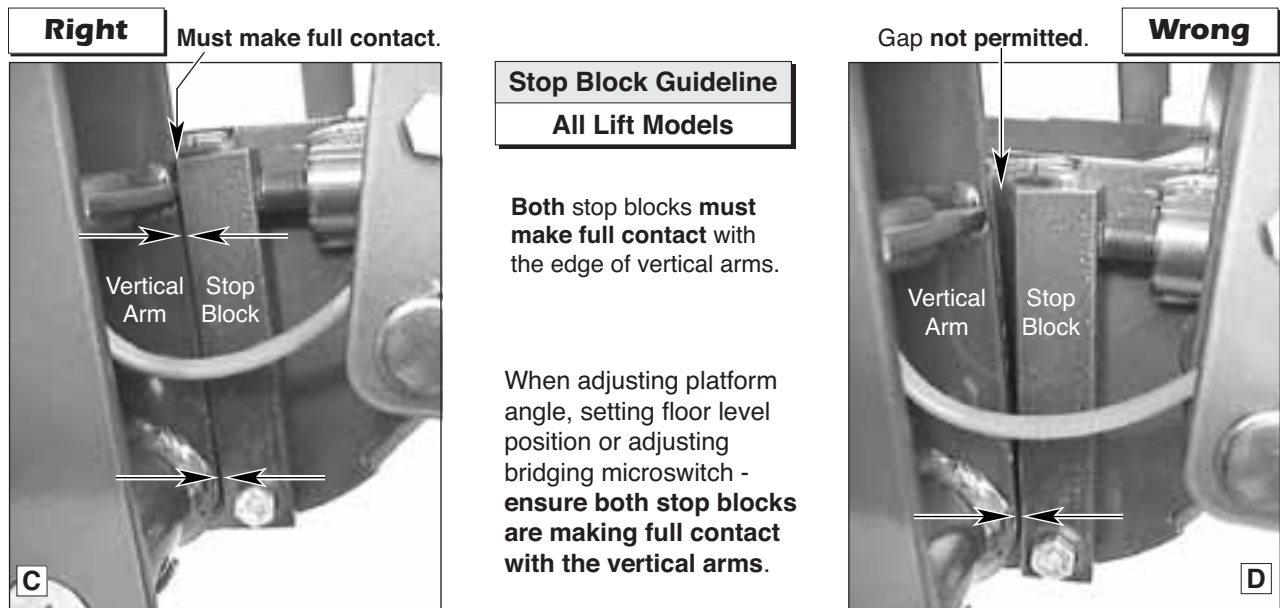
To **lower** the **outboard end** of platform - turn adjustment screw **counterclockwise**.

Note: Both adjustment screws **must be adjusted equally**.

Apply Loctite® to adjustment screws following adjustment.



Platform Stop Blocks



Platform Floor Level Adjustment

Before setting floor level position:

- Adjust platform angle as detailed on page 6.
- Ensure both **stop blocks are making full contact with vertical arms** (details on page 7).

Floor Level Adjustment:

1. Position platform at desired floor level position (passenger loading/unloading height).

Position platform such that:

- a. the inner roll stop is laying flat on the threshold plate
- b. platform has **not** begun to fold

Note: Use hand pump to position platform at proper posi-

tion if unable to stop platform when powering lift.

2. Turn Lift Power switch Off.
3. Press Floor Position Set button (located between pump housing and lift tower).
4. While pressing the Floor Position Set button, turn the Lift Power switch On.
5. Continue pressing the Floor Position Set button until the lift sounds three “beeps.”
6. Release the Floor Position Set button.
7. Cycle lift to verify that platform stops at the set floor level position. **Note:** If platform does not stop at



Floor Level Set Button

the intended position - repeat adjustment procedures. If repeating procedures fails - refer to Diagnostics section below.

Diagnostics: Diagnostic codes have been established in event the lift platform floor position does not set (the lift does not sound three “beeps” - see Step 5 above). The control board located inside the pump hous-

ing is equipped with an LCD screen. Remove the pump cover to access the LCD screen. The following diagnostic codes will help resolve floor position setting problems:

Century/Vista Jumper



- 91 – The platform position is out of a predetermined acceptable range
- 92 – The Bridging Microswitch is not activated (adjust switch or lower the platform)
- 93 – The Inner Roll Stop Occupied switch is not activated (adjust switch)
- 94 – The Outer Barrier Up switch is not activated (adjust switch)
- 95 – The Outer Barrier Latched sensor is not activated (Century and Vista: Verify jumper is installed on the outboard barrier latch switch – see photo at right; Millennium: Check latch)

LCD Screen



Bridging Microswitch Adjustment

Bridging Microswitch:

The bridging microswitch is located at the bottom of the right (front) vertical arm. See Photos A and B. An adjustment screw is built into the platform stop block.

The bridging microswitch will be deactivated if the outboard end of the platform contacts the unloading surface before the inboard end while the DOWN switch is pressed.

The deactivated bridging microswitch interrupts power to the DOWN switch circuit and stops the down travel of the platform (while allowing the outer barrier to deploy).



Adjustment Guidelines:

Caution: This adjustment is factory set and typically should not require adjustment.

Before adjusting the bridging microswitch:

- Adjust platform angle as detailed on page 6.

- Adjust floor level position as detailed on page 8.
- **Ensure** platform is in the fully unfolded position.
- **Ensure** both stop blocks are making full contact with vertical arms (details on page 7).

Failure to follow these guidelines will result in an overtight adjustment that will bend the adjustment screw, break the bridging switch and/or result in lift operation failure.

Bridging Microswitch Adjustment

1. Position the platform at floor level (or slightly below). Ensure the platform is not partially folded. From the stowed position, press the UNFOLD switch until the pump stops running and the platform comes to a full stop. From below floor level, press the UP switch until the pump stops running and the platform comes to a full stop.
2. Check **both** platform stop blocks to **ensure there is no gap** between the stop blocks and the vertical arms. See Photos B, C and D on page 7. A gap may indicate that the platform is not fully unfolded or the platform angle adjustment bolts are not adjusted equally on both sides.
3. Loosen the two jam nuts on the bridging switch activation screw (see Photo G). Tighten the screw until the activation lever is fully depressed. Verify that there is no play in the activation lever and tighten the jam nuts.
4. Test lift for proper operation.

LCD Lift Codes

To better understand the Braun LCD Trouble shooting display you must first understand the numbers that appear on the screen. There are Flashing Codes, Solid Error Codes, and Solid Normal Operational Codes.

Flashing Codes #65-89: About 10 seconds after an operation has stopped there are a set of scrolling flashing numbers that indicate whenever a particular sensor or switch has been activated. These numbers will start at number 65 and scroll up to number 89, then start the sequence over. Remember they are not error codes. Keep in mind that the lift will display codes for different positions and certain flashing codes must be present for that position, you will not always get an error code.

Solid Error Codes #50-64: These are the numbers that will come on the screen when the audible and visual alarm goes off, and will direct you to where the problem exists. These numbers will only stay on the screen for about 10 seconds and then the flashing codes will scroll indicating what sensors are active. This sequence of codes will keep repeating. It is important to be looking at the screen when trying to get the lift to fail.

Solid Normal Operational Codes: There are also solid numbers that will appear while and after the lift is moving that indicate the lift operation and platform position.

Troubleshooting Procedures

1. While **looking** at the LCD screen, operate the lift until the failure occurs. Read the number that comes on the display the moment the alarm goes off and the light starts to flash. This code will only stay on the screen for 10 seconds.
2. Look up the number on the correct error code sheet and determine what part on the lift is causing the failure. Go to the part on the lift that is suspected of causing the failure and look for anything obvious like magnets missing, broken wires etc. If nothing is found, the next step is to determine if that sensor is sending a signal to the board.
3. Bring the platform to the level that the sensor should be activated using the backup pump if needed. At this point, look up the flashing code that corresponds to that sensor in the error code sheet, look at the LCD screen and wait for the flashing scrolling numbers to appear. If the number is not included in the scrolling numbers, you know that sensor is the problem. You should then check the harness or try another magnet with the south side of the magnet facing the sensor and see if the number will come up on the display.
4. If the problem is still not found or the harness is suspected, the voltages should to be checked to and from the sensor to find the exact location of the problem. First determine the 3 wire colors for this sensor at the board and understand the 3 voltage readings needed to operate the sensor, the 12V power, 8V power, and the 8V input signal to the PC board when activated by a magnet. First check for a 8V input signal coming from the sensor to the wire going into the PC board, if there is 11V on this wire, the sensor is not being activated by the magnet. Next check the 12V and 8V wires at the PC board plug leading to the sensor. Once verified at the plug on the PC board, the voltages should then be checked at the next plug down on the harness going to the sensor until the location of the problem is found.

Anytime you see the code for that specific switch you will have 8 volts on that colored wire on the 8 or 18 pin connector from that switch. IE: Outboard Barrier is closed "72" will appear on the screen and also 8V will be present on the signal wire from that switch, if no code is present the voltage will be 11V.

LCD Lift Codes

Listed below are codes that the lift controller outputs during lift operation. The codes will be displayed on an LCD screen located on the lift control board inside the pump module. See the Manual Operating Instructions in the operator's manual for pump cover removal instructions.

Non-Flashing Numbers

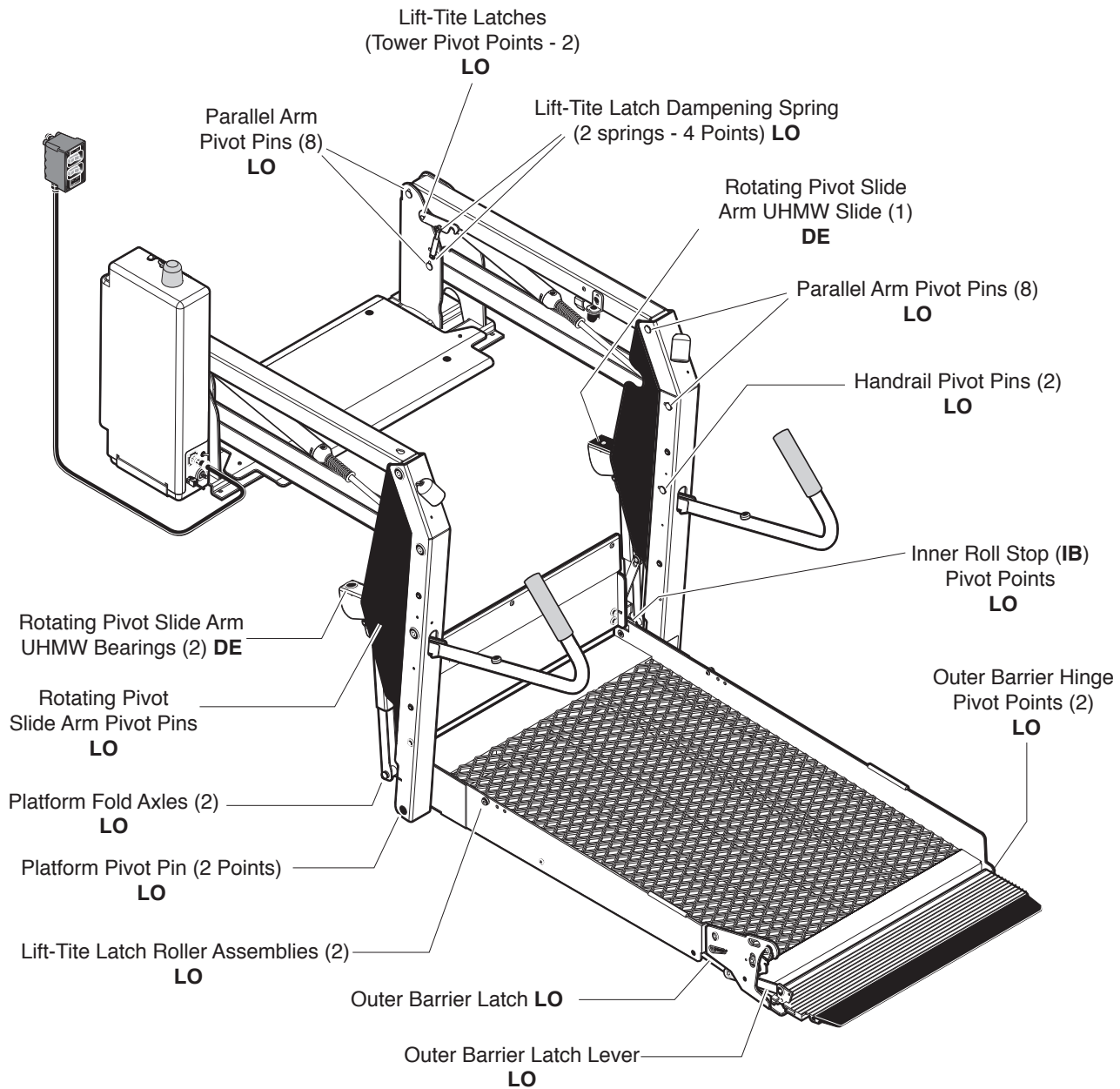
- 01 – Platform stowed
- 02 – Platform unfolding
- 03 – Platform unfolding paused
- 04 – Platform at floor level
- 05 – Platform beginning to lower
- 06 – Platform lowering (threshold cannot be occupied from this point down)
- 07 – Outer barrier moving to horizontal position
- 08 – Platform at ground level
- 09 – Outer barrier moving to vertical position
- 10 – Platform raising
- 11 – Platform raising paused at floor
- 12 – Platform folding (limited pressure)
- 13 – Platform folding (full pressure)
- 14 – Timed fold (cinching lift tite) or (anti-rattle state)
- 15 – Platform folding stopped
- 16 – Paused fold
- 17 – Platform between ground and 3" above ground
- 18 – Platform above 3"
- 19 – Outer barrier moving to horizontal position
- 23 – Outer barrier going back down after occupant detected
- 28 – Illegal function/not defined
- 29 – Interlock fault not recognized (or has been cleared but a motion button is still pressed)
- 30 – Platform location unknown
- 31 – Platform location transition state; attempting to locate position
- 35 – Two or more motion buttons are being pressed
- 36 – The retention belt cannot be buckled while trying to fold or unfold
- 37 – Motion button being pressed is not a valid motion
- 50 – Outer barrier is not up above inboard barrier locked position
- 51 – Threshold is occupied when platform is 1" or more below floor level
- 52 – Inner rollstop is not up and locked below inner rollstop locked position
- 53 – Inner rollstop occupied sensor is not activated between floor and inner rollstop up position
- 54 – Outer barrier is occupied before it is up
- 55 – Outer barrier is not latched when above the inner rollstop locked position (Millennium only)
- 56 – Outer barrier is not up and latched and bridge switch did not deactivate
- 57 – Outer barrier is not up and latched and ground detect switch did not deactivate (Century and Vista only)
- 58 – Outer barrier is not up and latched and the platform is 3" above the ground
- 59 – Outer barrier is not up after pausing platform travel
- 60 – The kickout gas springs are worn, replace before using
- 75 – Low voltage detected; must turn off power switch to reset LCD
- 77 – Vehicle secure interlock has not been activated
- 90 – Position will be set if you keep holding the button until it beeps
- 91 – Position is out of a predetermined acceptable range of floor position
- 92 – Bridge switch is not made, needs adjusting
- 93 – Inner rollstop occupied switch is not made, position needs to be moved or switch should be adjusted
- 94 – Outer barrier is not made, fix and try again
- 95 – Outer barrier latch is not made (check for jumper on Century and Vista lifts, check latch on Millennium lifts)
- 99 – Controller program is not valid; replace controller

Flashing Numbers

- Flashing 65 – Unfold button is pressed
- Flashing 66 – Fold button is pressed
- Flashing 67 – Down button is pressed
- Flashing 68 – Up button is pressed
- Flashing 69 – Bridge switch is activated
- Flashing 70 – Outer barrier latch switch is activated
- Flashing 71 – Ground detect switch is activated
- Flashing 72 – Outer barrier up switch is activated
- Flashing 73 – Inner rollstop up switch is activated
- Flashing 74 – Inner rollstop occupied switch is activated
- Flashing 76 – Outboard barrier occupied switch is activated
- Flashing 78 – Threshold tape switch "A" is activated
- Flashing 79 – Threshold tape switch "B" is activated
- Flashing 80 – Position set button is pressed

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
LG - Light Grease	Light Grease (Multipurpose)	Lubriplate	14 oz. Can	15805

Maintenance and Lubrication Schedule

Proper maintenance is necessary to ensure safe, troublefree 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 this schedule **must** be performed by a Braun authorized service representative at the scheduled intervals according to the number of cycles.

Braun dual parallel arm 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 these components are replaced, grease must be applied during installation procedures. Specified lubricants are available from The Braun Corporation (part numbers provided above).

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 begin to blink after every 750 cycles. The blinking 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, fully stow the lift. Once stowed, press the UP button on the hand pendant and the Floor Level Set button on the back side of the pump cover until the Lift Ready green LED stops blinking.

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 hinge pivot points (2)	Apply Light Oil - See Lubrication Diagram
	Outer barrier latch (pivot/slide points)	Apply Light Oil - See Lubrication Diagram
	Outer barrier latch lever pivot points	Apply Light Oil - See Lubrication Diagram
	Lift-Tite™ latches (tower pivot points - 2)	Apply Light Oil - See Lubrication Diagram
	Lift-Tite™ latch gas (dampening) spring pivot points (2 springs - 4 points)	Apply Light Oil - See Lubrication Diagram
	Inspect Lift-Tite™ latches and gas springs for wear or damage (bent, deformed or misaligned), positive securement (external snap rings) and proper operation	Resecure, replace defective parts or otherwise correct as needed. Note: Apply Light Grease to Lift-Tite™ latch tower pivot point if replacing latch.
	Inspect outer barrier for proper operation	Correct or replace defective parts.
Inspect outer barrier latch for proper operation, positive securement, and detached or missing spring	Correct or replace defective parts and/or relubricate. See Lubrication Diagram	

Maintenance and Lubrication Schedule

750 Cycles	<p>Inspect lift for wear, damage or any abnormal condition</p> <p>Inspect lift for rattles</p>	<p>Correct as needed.</p> <p>Correct as needed.</p>
1500 Cycles	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Perform all procedures listed in previous section also</div>	
	Platform pivot pin bearings (2)	Apply Light Oil - See Lubrication Diagram
	Platform fold axles (2)	Apply Light Oil - See Lubrication Diagram
	Inner roll stop (IB) lever bearings (2)	Apply Light Oil - See Lubrication Diagram
	Inner roll stop (IB) lever slot (2)	Apply Light Oil - See Lubrication Diagram
	Rotating pivot slide arm pivot pins (2)	Apply Light Oil - See Lubrication Diagram
	Parallel arm pivot bearings (16)	Apply Light Oil - See Lubrication Diagram
	Handrail pivot pin bearings (4)	Apply Light Oil - See Lubrication Diagram
	Hydraulic cylinder bushings (8)	Apply Light Oil - See Lubrication Diagram
	Inspect Lift-Tite™ latch rollers for wear or damage, positive securement and proper operation (2)	Correct, replace defective parts and/or relubricate.
	Inspect inner roll stop (IB) for: <ul style="list-style-type: none"> • Wear or damage • Proper operation. Rollstop should just rest on top surface of the base plate. • Positive securement (both ends) 	Resecure, replace or correct as needed. See Platform Angle Instructions and Microswitch Adjustment Instructions.
	Inspect handrail components for wear or damage, and for proper operation	Replace defective parts.
	Inspect microswitches for securement and proper adjustment.	Resecure, replace or adjust as needed. See Microswitch Adjustment Instructions.
	Make sure lift operates smoothly	Realign towers and vertical arms. Lubricate or correct as needed.
	Inspect external snap rings: <ul style="list-style-type: none"> • Handrail pivot pins (2 per pin) • Platform slide/rotate pivot pins (2 per pin) • Platform fold axles (1 per axle) • Inner roll stop (IB) lever bracket pins (1 per pin) • Lift-Tite™ latch gas (dampening) spring (2 per spring) 	Resecure or replace if needed.
	Inspect platform fold axles and bearings for wear or damage and positive securement	Replace defective parts and resecure as needed. Apply Light Oil.

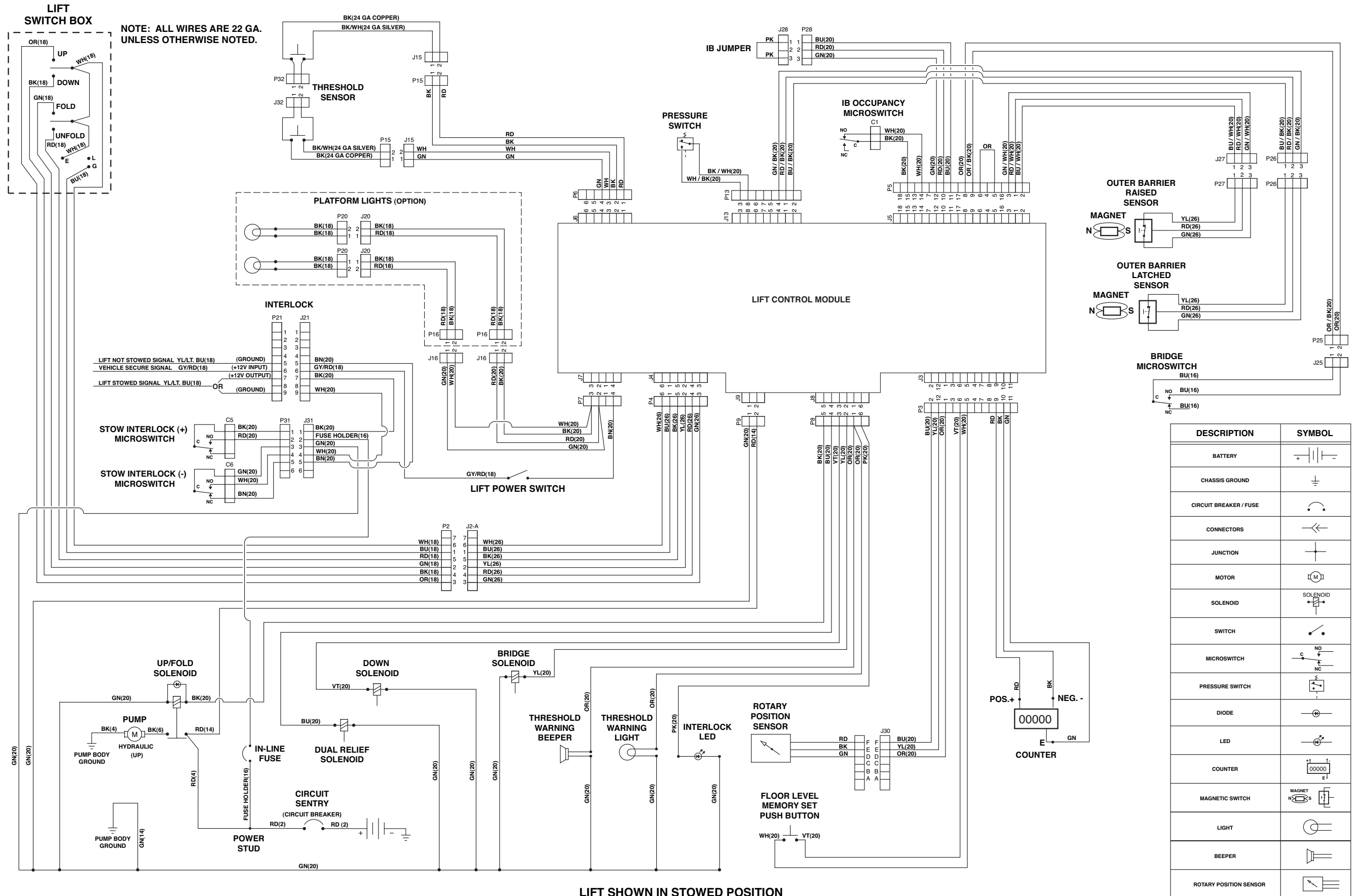
Maintenance and Lubrication Schedule

1500 Cycles	<p>Remove pump module cover and inspect:</p> <ul style="list-style-type: none"> • Hydraulic hoses, fittings and connections for wear or leaks • Harness cables, wires, terminals and connections for securement or damage • Control board, circuit breaker, power switch and lights for securement or damage 	Resecure, replace or correct as needed.
4500 Cycles	<div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;"> <p>Perform all procedures listed in previous section also</p> </div> <p>Inspect cotter pins on platform pivot pin (2)</p> <p>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.</p> <p>Inspect cylinders, fittings and hydraulic connections for wear, damage or leaks</p> <p>Inspect outer barrier cylinder hose assembly (hose, fasteners, connections, etc.) for wear, damage or leakage</p> <p>Inspect parallel arms, bushings and pivot pins for visible wear or damage</p> <p>Inspect parallel arm pivot pin mounting bolts (8)</p> <p>Inspect platform pivot pin, bushings and vertical arms for wear, damage and positive securement</p> <p>Inspect upper/lower fold arms, rotating pivot slide arms, slide support arms and associated pivot pins, bushings, and bearings for visible wear or damage</p> <p>Inspect gas springs (cylinders) for wear or damage, proper operation and positive securement (IB)</p> <p>Inspect rotating pivot slide arm UHMW slide bearings (buttons - 2) and UHMW slide (1)</p> <p>Inspect vertical arm plastic covers</p> <p>Inspect power cable</p> <p>Mounting</p> <p>Decals and Antiskid</p>	<p>Resecure, replace or correct as needed</p> <p>Use Braun 32840-QT (Exxon® Univis HVI 26) hydraulic fluid (do not mix with Dextron III or other hydraulic fluids). Check fluid level with platform lowered fully and roll stop unfolded fully. Fill to within 1/2" of the bottom of the 1-1/2" fill tube (neck).</p> <p>Tighten, repair or replace if needed.</p> <p>Tighten, repair or replace if needed.</p> <p>Replace if needed.</p> <p>Tighten or replace if needed.</p> <p>Replace defective parts and resecure as needed. Apply Light Grease during reassembly procedures.</p> <p>Replace if needed.</p> <p>Tighten, replace or correct as needed</p> <p>Apply Door-Ease or replace if needed. See Lubrication Diagram.</p> <p>Resecure or replace if needed.</p> <p>Resecure, repair or replace if needed.</p> <p>Check to see that the lift is securely anchored to the vehicle and there are no loose bolts, broken welds, or stress fractures.</p> <p>Replace decals if worn, missing or illegible. Replace antiskid if worn or missing.</p>
Consecutive 750 Cycle Intervals	<p>Repeat all previously listed inspection, lubrication and maintenance procedures at 750 cycle intervals.</p>	

NOTES

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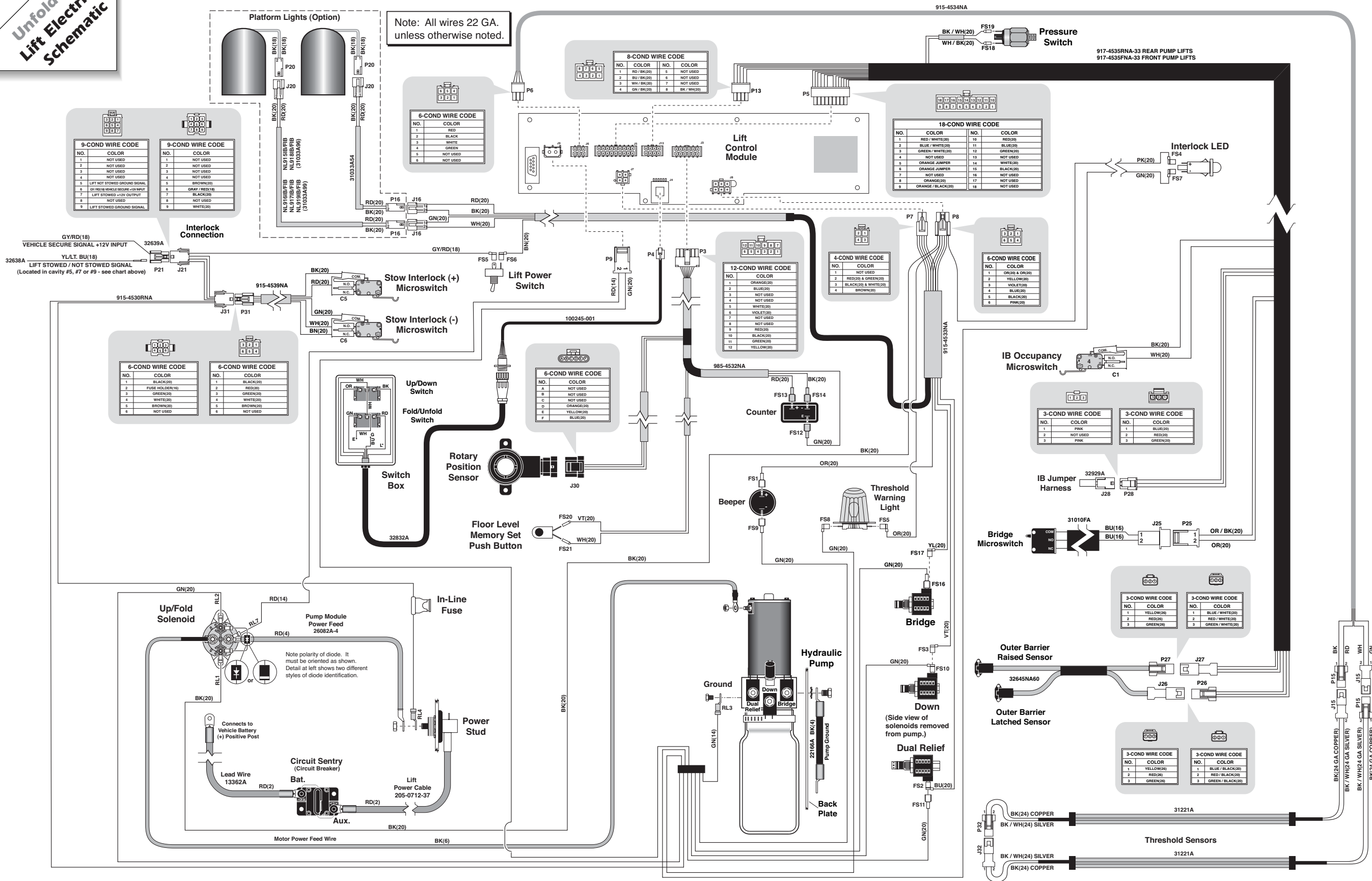
Lift Electrical Schematic



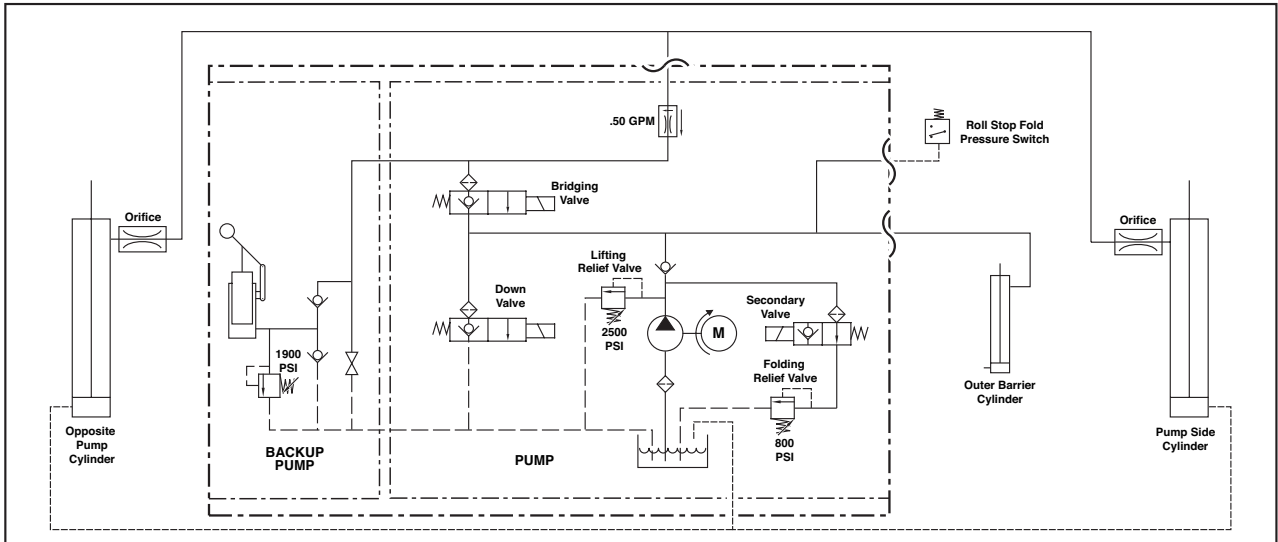
LIFT SHOWN IN STOWED POSITION

Lift Wiring Diagram

Unfold for:
Lift Electrical
Schematic



Hydraulic Schematic



Description	Symbol	Description	Symbol
Fixed Displacement Pump		Hydraulic Port	
Pump Motor		2 Way 2 Position Solenoid Valve	
Backup Pump		Pressure Compensated Flow Control	
Single Acting Cylinder		Relief Valve	
Check Valve		Filter Screen	
Unfold Orifice		Vented Reservoir	
Manual Shutoff Valve		Orifice	
Pressure Switch			

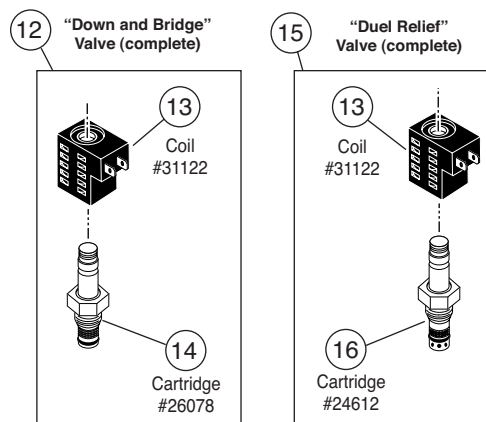
Hydraulics Parts List

Part Numbers of Items Dedicated per Lift Model (Front and Rear Pump Models)							
Item	Qty.	Description	NL915	NL916	NL917	NL918	NL919
1	1	Hose Assembly, 1/8" (Opposite Pump Side)	16004A-081	16004A-079	16004A-086	16004A-084	16004A-087
2	1	Hose Assembly, 1/8" (Pump Side)	16004A-042	16004A-046	16004A-046	16004A-042	16004A-046
3	2	Cylinder ✓	C1514.3-9407	C1514.3-9408	C1514.3-9408	C1514.3-9407	C1514.3-9408
4	1	(Rear Pump) Hose Assembly, 3/16" w/Two Guards	915-2601-123	915-2601-139	915-2601-139	915-2601-123	915-2601-139
5	1	(Front Pump) Hose Assembly, 3/16" w/Two Guards	915-5602-82	915-5602-92.5	915-5602-92.5	915-5602-82	915-5602-92.5
6	1	(Front Pump) Hose Assembly, 3/16"	915-5603-80.5	915-5603-83.5	915-5603-86.5	915-5603-83.5	915-5603-86.5
Part Numbers of Items Identical on all Lift Models (Front and Rear Pump Models)							
Item	Qty.	Description	Part No.				
7	1	Pump Assembly (M268-0113)12V - with Reservoir/with Backup Pump)	31038-12V				
8	1	Solenoid, Up - 4-Post - Trombetta (Flat Mount)	31374				
9	1	Power Cable, Up Solenoid to Motor	29049				
10	1	Motor, Pump - 12 Volt - Low RPM	31350				
11	1	Elbow, 65° - Male 7/16-20 SAE O-Ring to 7/16-20 SAE O-Ring Boss	26578				
12	2	Valve Assembly, "Down / Bridge" (complete)	31348K				
13	3	Coil (only), "Down / Bridge" Valve - (shown below)	31122				
14	2	Cartridge (only), "Down / Bridge" Valve - (shown below)	26078				
15	1	Valve Assembly, "Duel Relief" (complete)	31120K				
16	1	Cartridge (only), "Duel Relief" Valve - (shown below)	31121				
17	1	Cap, Reservoir Filler	16935				
18	4	O-Ring (only), Hand Pump Mounting	17351				
19	1	Hand Pump (Backup) with O-Rings (Item 18)	26074				
20	3	Screw, 1/4-20 x 2-1/4", Allen Head	26080				
21	1	Clamp, Reservoir - H-48 (M259)	17069				
22	1	Reservoir, Hydraulic Fluid	16934				
23	1	Fitting, 90° - 1/8" NPT x 1/8" Barb - Plastic	87563				
24	1	Switch, Pressure, 7/16-20 SAE O-Ring Male	31199				
25	2	Fitting, Male 7-16-20 SAE O-Ring to Male 7/16-20 JIC 37°	24504				
26	1	Elbow, (1) Female 7/16-20 JIC 37 Swivel - (2) Male 7/16-20 JIC 37°	26579				
27	2	Elbow, 90°, 7/16-20 SAE O-Ring Male - 7/16-20 JIC 37° Male, Orifice	26667				
28	2	Elbow, 90°, 1/4" NPT Male to 1/4" Barbed	15150				
29	1	Hose, Thermal Plastic - Black, 1/8" I.D.	23742R*				
30	1	Connector, Plastic "Y", 1/8" O.D.	18877				
31	1	Fitting, 90° - Male 9/16-18 SAE O-Ring to Male 7/16-20 JIC 37°	87622				
32	1	Cylinder, Roll Stop	25309-05A				
33	1	Handle with Grip	17206A				
34	1	Diode Assembly, Up Solenoid	73906A				
35	1	Breather Vent, 1/4" NPT	26200-2				
36	1	Kit, Hydraulic Port Service Cap	27049K				

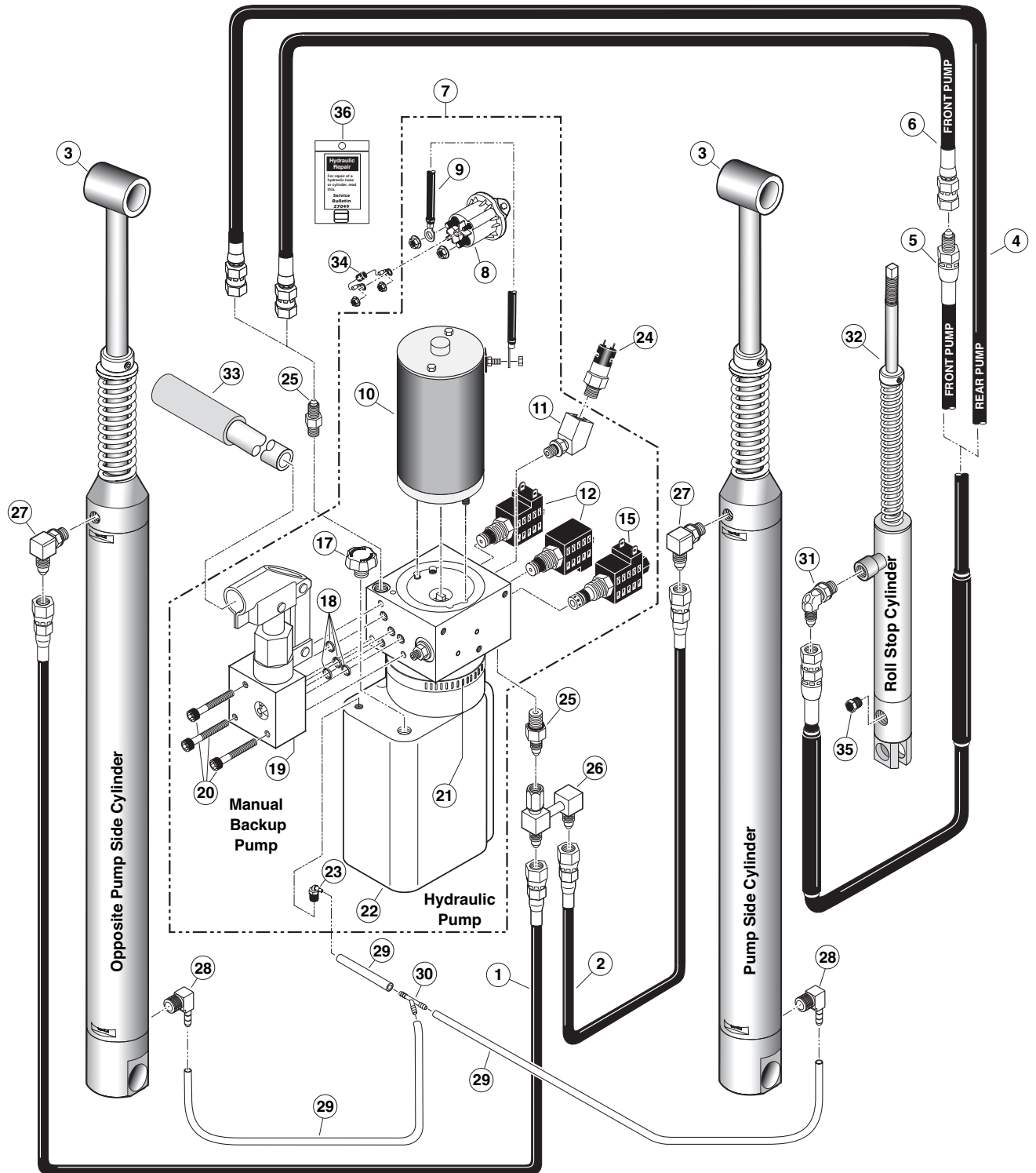
✓ **Seal Kits:** If repairing a cylinder, order Seal Kit #1500-0500P.

* Raw material items ordered and priced per inch (order specified length).

Hydraulic Fluid
When adding or changing hydraulic fluid, use Braun 32840-QT (Exxon® Unisvis HVI 26) hydraulic fluid (do not mix with Dextron III or other hydraulic fluids).



Hydraulics Diagram



Pump Module Parts List

Part Numbers of Items Dedicated per Lift Model			NL9151B, NL9161B, NL9171B, NL9181B and NL9191B	NL9151FIB, NL9161FIB, NL9171FIB, NL9181FIB and NL9191FIB
Item	Qty.	Description		
	1	Pump Module (complete), 12 Volt, Rear	917-5516RNA	917-5516FNA
1	1	Plate, Backing / Mounting - Rear	985-2501RN	985-2501FN
2	1	Cover, Pump, 2-Piece - Back / Bottom (915-0513RNAPT or 915-0513FNAPT Includes Items 2 and 16 - 22)	915-0513RNPT	915-0513FNPT
3	1	Cover, Pump - 2-Piece - Top / Front (915-0519RNAPT or 915-0519FNAPT Includes Items 3 and 39 - 52)	915-0519RNPT	915-0519FNPT
Part Numbers of Items Identical on all Lift Models				
Item	Qty.	Description	Part No.	
4	1	Pump Assembly (M268-0113) 12V-120G - Dual Relief / ARS (Includes Items 5 & 6)	31038-12V	
5	1	Power Cable, Up Solenoid to Motor	29049	
6	1	Solenoid, Up - 4-Post - Trombetta (Flat Mount)	31374	
7	1	Diode Assembly, Up Solenoid	73906A	
8	2	Nut, #10-32, Serrated Flange	83080	
9	2	Fitting, Male 7/16-20 O-Ring to Male 7/16-20 JIC 37°	24504	
10	1	Elbow, Female Swivel 7/16-20 JIC 37° to (2) Male 7/16-20 JIC 37°	26579	
11	1	Switch, Pressure	31199	
12	1	Control, Hand Pendant Assembly (See below for available options)		
12a	-	Control, Hand Pendant Assembly - Non-Shielded Cable - Straight ♦See note below	32832A	
12b	-	Control, Hand Pendant Assembly - Shielded Cable - Straight ♦See note below	32833A	
12c	-	Control, Hand Pendant Assembly - Shielded Cable - Coiled ♦See note below	32421A	
13	1	Control Board Assembly	100159-001	
14	8	Standoff, Snap-In	31011	
15	1	Switch, Push Button	31753	
16	1	Recepticle, Clip On	28803	
17	1	Lens, Threshold Warning - Red	30704	
18	1	Decal, Warning / Pressure Relief Valve (Not shown)	22249	
19	1	Spacer, Lens - NHTSA	31386	
20	1	Metal Ring Base - Lamp	30971	
21	1	Socket, Lamp	30703	
22	3	Screw, #8-32 x 1/2" Pan Head Phillips - Thread Cut	30974	
23	1	Bulb, Light	19841	
24	1	Diode, Green LED, Panel Mount	29545	
25	4	Rivet, Snap - .124" Hole x .197"/.236" Thick	29874	
26	2	Washer, 5/16" Flat	10063	
27	2	Bolt, 5/16-18 x 3/4", Nylock, Hex * See note below	29608	
28	2	Bolt, 5/16-18 x 1/2", Nylock, Hex * See note below	10012	
29	1	Cable, Ground	22166A	
30	1	Washer, 5/16" External Tooth	16368	
31	1	Beeper, Continuous	30487	
32	1	Switch, Toggle	31787	
33	1	Decal, Lift Power - On/Off (Not shown)	21494	
34	1	Stud, Power Feed	26084	
35	1	Rubber Boot, Red ♦See note below	82046	
36	1	Harness, Lift Interlock Connection	32639A	
37	1	Wire Assembly, Lift Stowed Connection ♦See note below	32638A	
38	1	Pump Handle with Grip	17206A	
39	3	Rivet, Pop, SD43BS - 1/8" - .13"/.19"	12954	
40	1	Plug, Window - Clear	30443	
41	1	Stud, Wing Head - 1/4 Turn	28804	
42	1	Retainer, Push On	28805	
43	1	Washer, Nylon, 1/4" I.D. x 11/16" O.D. x .030"	12690	
44	1	Clip, Pump Handle - Top	915-5517	
45	1	Clip, Pump Handle - Bottom	915-5518	
46	1	Decal, Manual Instructions - Public (Not shown)	31412	
47	1	Decal, Removal / Installaton - Pump Cover (Not shown)	29051	
48	1	Decal, Warning - Control Board Damage - ESD (Not shown)	30787	
49	1	Decal, Removal / Installation Pump Handle (Not shown)	29052	
50	1	Decal, Installation & Warning - Hydraulic Pressure Switch (Not shown)	27154	
51	1	Decal, Dual Relief Adjustment (Not shown)	32201	
52	1	Decal, LCD Lift Codes (Not shown)	32410	
53	1	Cable, Pump Module Power Hookup (Not shown)	26082A-4	
54	1	Harness, Power - Stow Interlock (Not shown - see Wiring Diagram)	915-4530RNA	
55	1	Harness, Interlock / Lighting (Not shown - see Wiring Diagram)	915-4533NA	
56	1	Harness, Up / Down Solenoid (Not shown - see Wiring Diagram)	915-2533NA	
57	1	Harness, Threshold Switch Extension (Not shown - see Wiring Diagram)	915-4534NA	
58	1	Harness, Hand Control - Pump Housing to Circuit Board (Not shown - see Wiring Diagram)	100245-001	

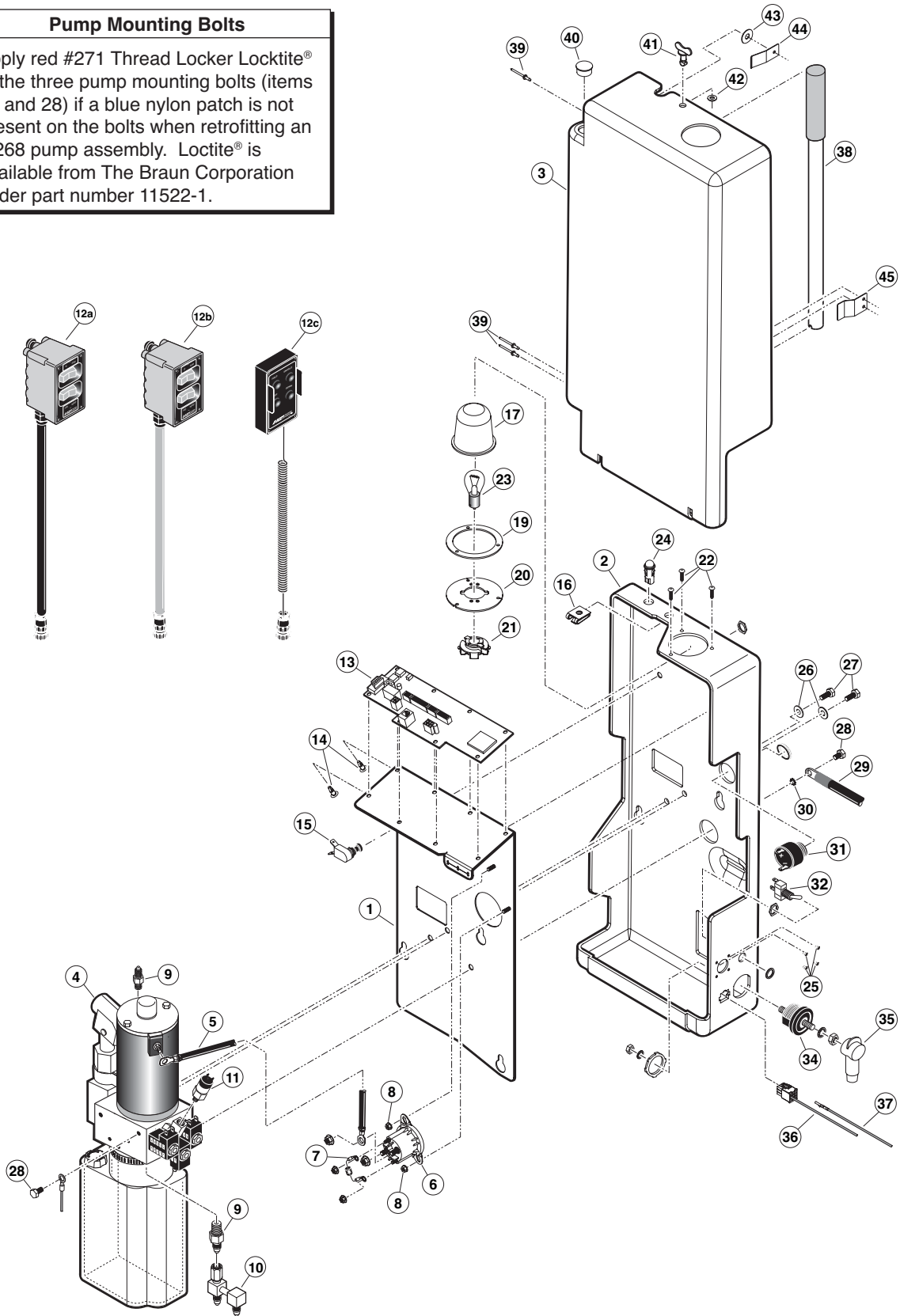
* Apply red #271 Thread Locker Loctite® to the four hex bolts (items 27 and 28) if a blue nylon patch is not present on the bolts when retrofitting an M268-0113 pump assembly. Loctite® is available from The Braun Corporation under part number 11522-1.

♦ Indicates items available for replacement part purposes **only**. These items **are not** included with replacement pump modules.

Pump Module Diagram

Pump Mounting Bolts

Apply red #271 Thread Locker Loctite® to the three pump mounting bolts (items 27 and 28) if a blue nylon patch is not present on the bolts when retrofitting an M268 pump assembly. Loctite® is available from The Braun Corporation under part number 11522-1.



Note: Rear pump shown, front pump mirror image.

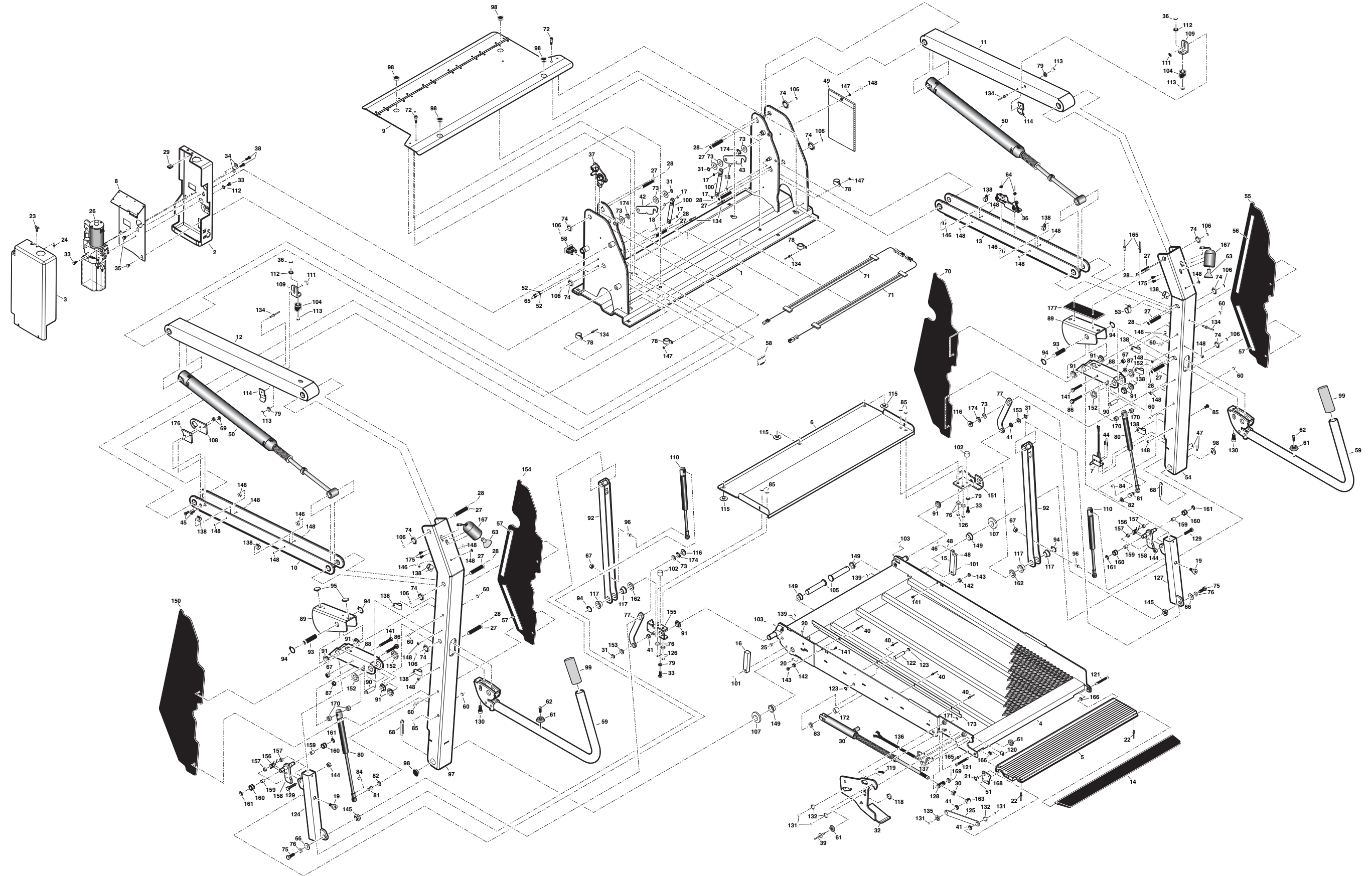
42" Floor-to-Ground Lift Repair Parts List

Part Numbers of Items Dedicated per Lift Model						
Item	Qty.	Description	NL915IB	NL915FIB	NL918IB	NL918FIB
1	1	Base Weldment	915R5142NW30	915F5142NW30	918R5142NW33	918F5142NW33
2	1	Cover, Pump, 2-Piece, Back-Bottom	915-0513RNPT	915-0513FNPT	915-0513RNPT	915-0513FNPT
3	1	Cover, Pump, 2-Piece, Top-Front Assy.	915-0519RNPT	915-0519FNPT	915-0519RNPT	915-0519FNPT
4	1	Platform Weldment	917-03050NW	917-03050NW	917-03050NW	917-03050NW
5	1	Outer Barrier	915R4312-30Y	915F4312-30Y	915R4312-33Y	915R4312-33Y
6	1	Inner Rollstop	918-0147NWY-30	918-0147NWY-30	918-0147NWY	918-0147NWY
7	1	Bridge Switch Assembly	31010FA	31010FA	31010FA	31010FA
8	1	Plate, Backing/Mounting Rear	985-2501RN	985-2501FN	985-2501RN	985-2501FN
9	1	Base, Cover	915-3142CNA30Y	915-3142CNA30Y	915-3142CNA33Y	915-3142CNA33Y
10	1	Parallel Arm Assy., Bottom, w/Bearings - Rear	915-4457NA	915-4456NA	915-4457NA	915-4456NA
11	1	Parallel Arm Assy., Top, w/Bearings - Front	915-0422FA	915-5422FNA	915-0422FA	915-5422FNA
12	1	Parallel Arm Assy., Top, w/Bearings - Rear	915-5422RNA	915-5422RA	915-5422RNA	915-0422RA
13	1	Parallel Arm Assy., Bottom, w/Bearings - Front	915-4458NA	915-4455NA	915-4458NA	915-4455NA
14	1	Rubber Nose	24603-30	24603-30	24603-33	24603-33

Part Numbers of Items Identical on All Lift Models

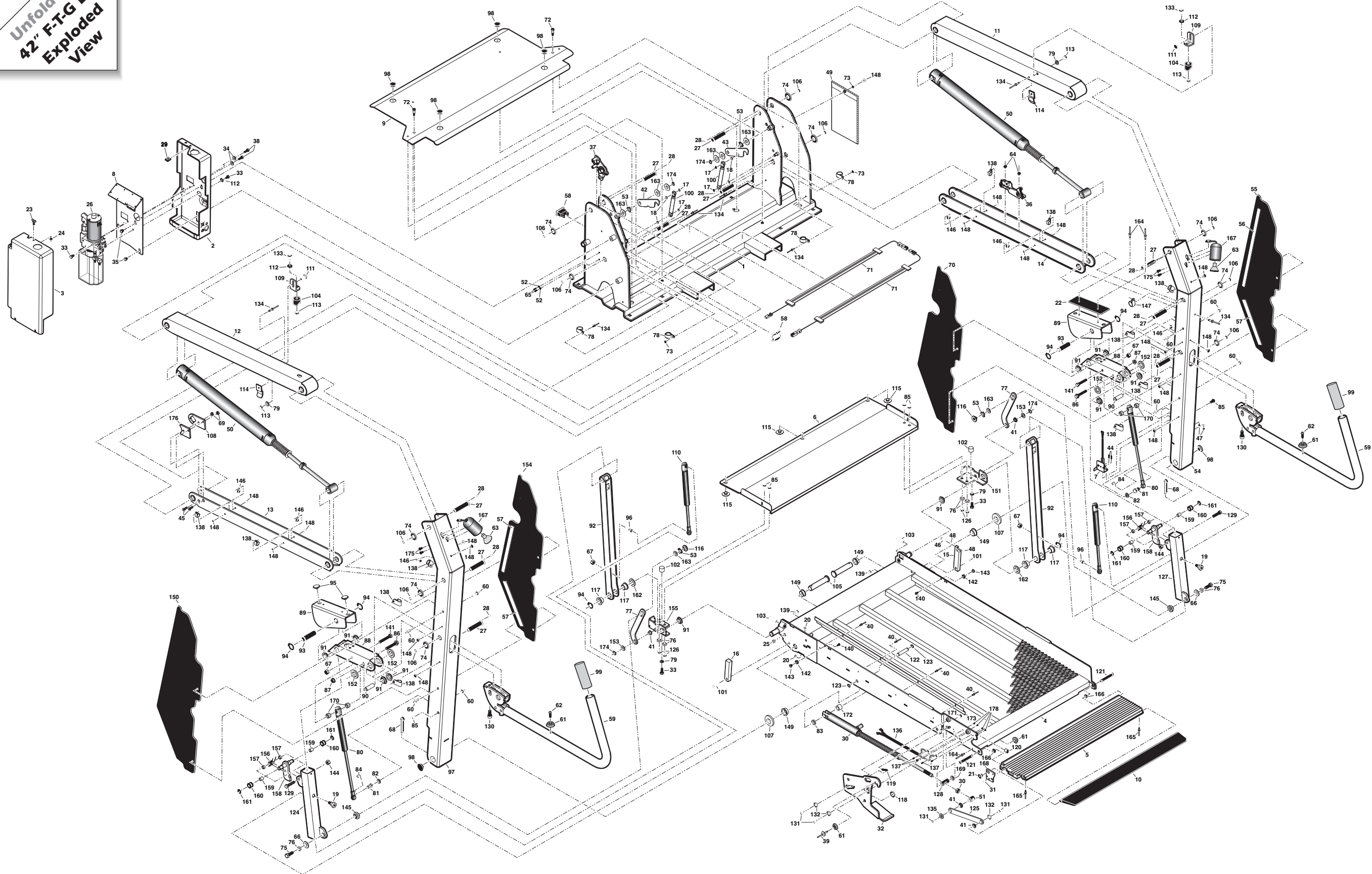
Item	Qty.	Description	Part No.	Item	Qty.	Description	Part No.
15	1	Block, Platform Stop	25778	100	2	Spring, Dampener, Retract	26963
16	1	Block, Platform Stop	900-0311	101	2	Bolt, 5/16-18 x 1 1/4" Low Socket Hd., Cap, Bk.	26327
17	4	Snap-Ring 5/16"	24570	102	2	Bumper, .75"x .625" Long	915-0391
18	4	O-Ring, 5/16" I.D. x 1/16" O.D.	26614	103	2	Screw, 1/2-20 x 1 1/2" Set Lock, Black	18663
19	2	Screw, Socket Head, 3/8-16 x 1/2" with 1/2" Shoulder	25929	104	2	Block, Guide-Platform Stow	28593
20	2	Grommet, I.D. .281" FR. 125" x GD. 625"/T.375"	27725	105	2	Pin, Platform	975-2325
21	1	Pivot, Outer Barrier Lever	24550	106	10	Screw, 5/16-18 x 3/4", SHFS	25527
22	2	Rivet, Pop. 3/16" x .06"/.13"	11512	107	2	Spacer, UHMW, Vertical Channel	995-0320
23	1	Stud, Wing Head	28804	108	1	Position Sensor Collet	31093
24	1	Retainer, Push-On	28805	109	2	Bracket, Mounting, Quiet Ride	915-0392
25	1	Grommet, ID .312", FR. .250", GD .813" T500"	27726	110	2	Gas Spring, 12.2" Extended/8.3" Compressed	26698
26	1	Pump Assembly	31038-12V	111	2	Bolt, 5/16-18 x 3/4", Carriage, Black	15858BK
27	10	Pin, Pivot, Parallel Arm	917-0403	112	3	Washer, 5/16", External Tooth	16368
28	10	Screw Drive #8 x 3/16" Long Black	31086BK	113	4	Nut, 5/16-18 Hex	10058
29	1	Receptacle, Clip-On	28803	114	2	Bracket, Inner Side Panel Guide	915-0703
30	1	Cylinder, Flap	25309-05A	115	3	Bearing, UHMW, Flat, Thin, Black	916-5406
31	4	Snap-Ring 1/2"	13273	116	2	Pivot, Inner Rollstop Lever, Upper, Inside	916-5433
32	1	Latch, Outer Barrier	915-4343NA	117	4	Bearing, Flange - 3/4" x 1/2"	24027
33	4	Bolt, 5/16-18 x 1/2" Nylock, Hex	10012	118	1	Spacer, UHMW, Latch	950-7760
34	2	Washer, 5/16" Flat	10063	119	1	Spring, 1/4" x 1" Extension w/Hooks	10774
35	2	Bolt, 3/8-16 x 1/2" Nylock, Hex	29729	120	1	Tubing, Polyurethane - 1/4" I.D. x 1/2" O.D. x .81"	28630R000.81
36	1	Assembly, IB Occupied	32642A	121	2	Pin, Clevis, 3/8" x 3", Black	24932BK
37	1	Assembly, Rotary Position Sensor	31094A	122	1	Pin, Platform Cylinder	915-0414
38	2	Bolt, 5/16-18 x 3/4" Nylock, Hex	29608	123	2	Ring, Snap, 1/2", External, .035" Thick	20946
39	1	Rivet, Pop. SD68 BSLF-3/16" - .38"/.50"	15244	124	1	Weldment, Tube-IB Fold Arm-Front	918-0625RNW
40	4	Rivet, Pop. 1/8"-.25"/.31"	13906	125	1	Lever, Outer Barrier Latch (Assembly #915-0345A)	915-0435
41	4	Bearing, Flange, 1/2" x 1/4"	24442	126	4	Nut, 3/8-16, Hex	10059BK
42	1	Weldment, Latch, Lift/Tite, Rear	27013RW	127	1	Weldment, Tube-IB Fold Arm-Rear	918-0625FNA
43	1	Weldment, Latch, Lift/Tite, Front	27013FW	128	1	Pivot, Outer Barrier Cylinder, Front	990-0352
44	2	Screw, #4-40 x 5/8", Round Head	14810	129	2	Bolt, 5/16-18 x 1 1/2" Hex Head, Cap	10014
45	2	Screw, 1/4-20 x 3/4", Flat Head, Countersink	28986	130	2	Bolt, 7/16-20 x 1", SHCS, w/Nylock Patch	28474
46	1	Screw, #8-32 x 1", Mach. Truss Head	19912BK	131	4	Screw, #10-32 x 3/8", Flat Head, Hex	24537
47	2	Nut, #4-40 w/Lockwasher	19537	132	3	Adapter, Cylinder/Outer Barrier Lever-Out	990-0341
48	2	Nut, #8-32, Hex	10777	133	2	Bolt, 5/16-18 x 3/4", Button Head, Soc Cap Hd	24440
49	1	Bag, Vinyl - 7" x 10"	31174	134	7	Rivet, Pop. 3/16"-.25"/.38", Black	14993
50	2	Cylinder, 14.625"/29.146" Retracted	C1514.3-9408	135	1	Adapter, Cylinder/Outer Barrier Lever	915-0341N
51	1	Screw, 10-32 x 5/8" Pan Head Phillips, Thd. Cut	26714	136	1	Harness, Sensor - Cherry w/Plug	32645NA60
52	2	Washer, External Tooth	83588	137	6	Rivet, Snap, Black, .158"/.197" Thick	25759
53	1	Clamp, 5/8" Closed Insulated	84070	138	11	Clip, Cable, 1/2", Plastic	10092
54	1	Vertical Channel Weldment, Front, 42"	918-0442FNW	139	2	Nut, 5/16-18, Top Lock, Black	28324BK
55	1	Cover, Plastic, Parallel Arm, O/S Front-w/Tape	915-0704NA	140	2	Bolt, 1/4-20 x 1/2", Button Head Socket	15733
56	2	Tape, 1" Wide S-Face Foam, x 14" (1 Shown)	82015R014	141	2	Bolt, 3/8-16 x 2", Hex Head, Cap	10027
57	6	Tape, 1" Wide S-Face Foam, x 10" (3 Shown)	82015R010	142	2	Roller Assembly	1000-2395A
58	1	Cycle Counter-LCD Without Reset	30547	143	2	Roller Retainer	915-5353
59	2	Handrail Weldment	985-4618NW	144	2	Nut, 5/16-18 Hex, Lock	11387BK
60	8	Rivet, Push In - 8MM	30063	145	2	Pivot, Inner Rollstop Lever, Upper-Outer	916-5434
61	4	Bumper, Rubber, 31/32" O.D.	10950	146	6	Clamp, 1/4" I.D. - Nylon Loop	84396
62	2	Screw, #8-18 x 1/2", Self-Tap, Phillips	13583	147	3	Washer, #10, Flat, Auto BK	11541
63	2	Bulb, Light 20-W, Halogen Reflector	31060	148	18	Rivet, Snap, .201" x .256"/.295"	26362
64	2	Nut, #10-32 w/Lockwasher	18349	149	4	Bearing, Flange, 1" x 1/2-16 FDU08	28031
65	2	Screw, 1/4-20 x 3/4", Button Head, Socket Cap	81068-000	150	1	Cover, Plastic, Parallel Arm, O/S Rear-w/Tape	915-0702NA
66	2	Washer, 3/8" Flat, Black	10064	151	1	Weldment, Inner Rollstop Bracket, Front	985-0431FNW
67	4	Nut, 3/8-16, Hex Lock	13617	152	4	Spacer, Handrail, .375" Thk. UHMW	995-0301
68	2	Cotter Pin, 1/4" x 2", Black	15886BK	153	2	Washer, .516" I.D. x .75" O.D. x .250", Black	25336
69	2	Nut, 1/4-20 Hex Lock	10775	154	1	Cover, Plastic, Parallel Arm, I/S Rear-w/Tape	915-0703NA
70	1	Cover, Plastic, Parallel Arm, I/S Front-w/Tape	915-0701NA	155	1	Weldment, Inner Rollstop Bracket, Rear	985-0431RNW
71	2	Threshold Strip Switch	31221A	156	2	Spring, Torsion - .366 I.D. x .05"	30386
72	2	Bolt, Shoulder, 5/16" x 5/8"-1/4-20	31816	157	4	Spacer, IB Lock	30394
73	8	Washer, .516" I.D. x 1" O.D. x .0269", Auto BK	15328	158	2	Weldment, IB Lock	985-0630NW
74	10	Washer, 1/2" Flat Black Zinc	25346	159	4	Bearing, 3/8" I.D. x 1/2" Long	84383
75	2	Bolt, 3/8-16 x 1", Hex	10025	160	4	Roller, .65" O.D. x 1/2" Long	985-0631N
76	6	Washer, 3/8", Lock, Black	10069BK	161	4	E-Clip, 3/8" Shaft	84383
77	2	Lever, Inner Rollstop	985-0404N	162	2	Spacer, Handrail, .230" Thk. UHMW	911-5301
78	4	Clamp, Insulate, 1 3/8" I.D.	29765	163	1	Adapter, Cylinder/Outer Barrier Lever	915-0344
79	4	Washer, 5/16" Lock, Black	10068	164	1	Harness, Sensor - Magnetic w/Plug - 15"	30433A15
80	2	Gas Spring, Fold Arm	29186	165	3	Rivet, Pop. 3/16" - .13"/.25" - SD64BS	11513
81	2	Ball Stud, Gas Spring, 13MM x 3/8-16 F. Thread	29185	166	2	Bearing, Flange, 3/8" x 1/4" - Plastic	24028
82	2	Washer, 3/8", Lock	10069	167	2	Light Assy, Vertical Channel	31062A
83	1	Spacer, Flap Cylinder, .184" Thick	915-0416	168	1	Tab, Outer Barrier, Flap Cylinder	915-4367NA
84	2	Clip, Safety, 3/8-16 x 3/4", Flange	12608	169	1	Washer, .4" I.D. x .810" O.D. x .12"	24536
85	6	Bolt, 3/8-16 X 3/4", Flange Button Head, Socket Cap	25171	170	4	Spacer, UHMW-.75" O.D. x .39" I.D. x .25"	30227
86	2	Bolt, 5/16-18 x 2", Flange, Hex	25130	171	1	Bolt, 3/8-16 x 3/4" Soc. Hd. Cap Screw Bk.	26259
87	2	Nut, 5/16-18, Serrated Flange	25131	172	1	Spacer, Flap Cylinder, .700" Thick	915-0415
88	2	Arm, Slide Support	985-0612N	173	1	Guard, Outer Barrier Sensor Wires	985-0368N50Y
89	2	Slide, Platform, Rotate, Weldment	915-0606N	174	4	Washer, Finger, Disc Spring	27276
90	2	Spacer, .5" O.D. x .334" I.D. x 1.515" LG	25132	175	4	Screw, #10-32 x 1/2" Button Head, Socket Cap	30375WP
91	10	Bearing, Flange, 3/4" x 1/4"	24012	176	1	Position Sensor Spacer	31092
92	2	Weldment, Platform Pivot Arm - 42"	918-0640NW-BKN	177	1	Slide, UHMW, Platform Rotate	31677
93	2	Pin, Pivot, Lower Arm	900-0413N				
94	6	Ring, Snap, 3/4", External	18657				
95	2	Bearing, UHMW, Flat, 1.226"	205-1760				
96	2	Ball Stud, 10MM	21301				
97	1	Vertical Channel Weldment, Rear, 42"	918-0442RNW				
98	6	Plastic End Cap, 1" I.D. x 1 1/4" O.D.	20474				
99	2	Grip, Handle, Yellow	19074				

42" Floor-to-Ground Lift Exploded View



48" Floor-to-Ground Lift Exploded View

Unfold for:
42" F-T-G Lift
Exploded View



48" Floor-to-Ground Lift Repair Parts List

Part Numbers of Items Dedicated per Lift Model								
Item	Qty.	Description	NL9161B	NL9161B	NL9171B	NL9171B	NL9191B	NL9191B
1	1	Base Weldment	985R5148NW30	985F5148NW30	985R5148NW33	985F5148NW33	985R5148NW34	985F5148NW34
2	1	Cover, Pump, 2-Piece, Back-Bottom	915-0513RNPT	915-0513FNPT	915-0513RNPT	915-0513FNPT	915-0513RNPT	915-0513FNPT
3	1	Cover, Pump, 2-Piece, Top-Front	915-0519RNPT	915-0519FNPT	915-0519RNPT	915-0519FNPT	915-0519RNPT	915-0519FNPT
4	1	Platform Weldment	917-03050NW	917-03050NW	917-03050NW	917-03050NW	917-03050NW	917-03050NW
5	1	Outer Barrier	915R4312-30Y	915R4312-30Y	915R4312-33Y	915R4312-33Y	915R4312-34Y	915R4312-34Y
6	1	Inner Rollstop	915-0147NW30Y	915-0147NW30Y	915-0147NWY	915-0147NWY	915-0147NW34Y	915-0147NW34Y
7	1	Bridge Switch Assembly	31010FA	31010FA	31010FA	31010FA	31010FA	31010FA
8	1	Plate, Backing/Mounting	985-2501RN	985-2501FN	985-2501RN	985-2501FN	985-2501RN	985-2501FN
9	1	Base, Cover	975-3148CNA30Y	975-3148CNA30Y	975-3148CNA33Y	975-3148CNA33Y	975-3148CNA34Y	975-3148CNA34Y
10	1	Rubber Nose	24603-30	24603-30	24603-33	24603-33	24603-34	24603-34
11	1	Parallel Arm Assy., Top-Front w/Bearings	915-0437FA	985-5437FNA	915-0437FA	985-5437FNA	915-0437FA	985-5437FNA
12	1	Parallel Arm Assy., Top Rear w/Bearings	917-5437RNA	917-0436RNA	917-5437RNA	917-0436RNA	917-5437RNA	917-0436RNA
13	1	Parallel Arm Assy., Bottom Rear w/Bearings	917-4458RNA	917-4457RNA	917-4458RNA	917-4457RNA	917-4458RNA	917-4457RNA
14	1	Parallel Arm Assy., Bottom Front w/Bearings	917-4458FNA	975-4458NA	917-4458FNA	975-4458NA	917-4458FNA	975-4458NA

Part Numbers of Items Identical on All Lift Models								
Item	Qty.	Description	Part No.	Item	Qty.	Description	Part No.	
15	1	Block, Platform Stop - Bridging - Rear	25778	100	2	Spring, Dampener, Retract	26963	
16	1	Block, Platform Stop - Bridging - Front	900-0311	101	2	Bolt, 5/16-18 x 1 1/4" Low Socket Hd., Cap. Bk.	26327	
17	4	Snap-Ring 5/16"	24570	102	2	Bumper, .75" x .625" Long	915-0391	
18	4	O-Ring, 5/16" I.D. x 1/16" O.D.	26614	103	2	Screw, 1/2-20 x 1 1/2" Set Lock, Black	18663	
19	2	Screw, Socket Head, 3/8-16 x 1/2" with 1/2" Shoulder	25929	104	2	Block, Guide-Platform Stow	28593	
20	2	Grommet, I.D. .281" FR.125" x GD.625"/T.375"	27725	105	2	Pin, Platform	975-2325	
21	1	Pivot, Outer Barrier Lever	24550	106	10	Screw, 5/16-18 x 3/4", SHFS	25527	
22	1	Slide, UHMW, Platform Rotate	31677	107	2	Spacer, UHMW, Vertical Channel	995-0320	
23	1	Stud, Wing Head	28804	108	1	Position Sensor Collet	31093	
24	1	Retainer, Push-On	28805	109	2	Bracket, Mounting, Quiet Ride	915-0392	
25	1	Grommet, ID. 31/2", FR. 250", GD. 813" T500"	27726	110	2	Gas Spring, 12.2" Extended/8.3" Compressed	30550A	
26	1	Pump Assembly	31038-12V	111	2	Bolt, 5/16-18 x 3/4", Carriage, Black	15858BK	
27	10	Pin, Pivot, Parallel Arm	917-0403	112	3	Washer, 5/16", External Tooth	16368	
28	10	Screw Drive #8 x 3/16" Long Black	31086BK	113	4	Nut, 5/16-18 Hex	10058	
29	1	Receptacle, Clip-On	28803	114	2	Bracket, Inner Side Panel Guide	915-0703	
30	1	Cylinder, Outer Barrier	25309NA	115	3	Bearing, UHMW, Flat, Thin, Black	916-5406	
31	1	Screw, 10-32 x 5/8" Pan Head Phillips, Thd. Cut	26714	116	2	Pivot, Inner Rollstop Lever, Upper, Inside	916-5433	
32	1	Latch, Outer Barrier w/Magnet	915-4343NA	117	4	Bearing, Flange - 3/4" x 1/2"	24027	
33	4	Bolt, 5/16-18 x 1/2" Nylon, Hex	10012	118	1	Spacer, UHMW, Latch	950-7760	
34	2	Washer, 5/16" Flat	10063	119	1	Spring, 1/4" x 1" Extension w/Hooks	10774	
35	2	Bolt, 3/8-16 x 1/2" Nylon, Hex	29729	120	1	Tubing, Polyurethane - 1/4" I.D. x 1/2" O.D. x .81"	28630R000.81	
36	1	Assembly, IB Occupied	32642A	121	2	Pin, Clevis, 3/8" x 3", Black	24932BK	
37	1	Assembly, Rotary Position Sensor	31094A	122	1	Pin, Platform Cylinder	915-0414	
38	2	Bolt, 5/16-18 x 3/4" Nylon, Hex	29608	123	2	Ring, Snap, 1/2", External, .035" Thick	20946	
39	1	Rivet, Pop, SD68 BSLF-3/16" - .38"/.50"	15244	124	1	Weldment, Tube-IB Fold Arm-Rear	985-0625RNW	
40	4	Rivet, Pop, 1/8" - 25"/.31"	13906	125	1	Lever, Outer Barrier Latch (Assembly #915-0345A)	915-0435	
41	4	Bearing, Flange, 1/2" x 1/4"	24442	126	4	Nut, 3/8-16, Hex	10059BK	
42	1	Weldment, Latch, Lift/Tite, Rear	27013RW	127	1	Weldment, Tube-IB Fold Arm-Front	985-0625FNW	
43	1	Weldment, Latch, Lift/Tite, Front	27013FW	128	1	Pivot, Outer Barrier Cylinder, Front	990-0352	
44	2	Screw, #4-40 x 3/4", Round Head	14810	129	2	Bolt, 5/16-18 x 1 1/2" Hex Head, Cap	10014	
45	2	Screw, 1/4-20 x 3/4", Flat Head, Countersink	28986	130	2	Bolt, 7/16-20 x 1", SHCS, w/Nylock Patch	28474	
46	1	Screw, #8-32 x 1", Mach. Truss Head	19912BK	131	4	Screw, #10-32 x 3/8", Flat Head, Hex	24537	
47	2	Nut, #4-40 w/Lockwasher	19537	132	3	Adapter, Cylinder/Outer Barrier Lever-Out	990-0341	
48	2	Nut, #8-32, Hex	10777	133	2	Bolt, 5/16-18 x 3/4", Button Head, Soc Cap Hd	24440	
49	1	Bag, Vinyl - 7" x 10"	31174	134	6	Rivet, Pop, 3/16" - 25"/.38", Black	14993	
50	2	Cylinder, 14.625"/29.146" Retracted	C1514.3-9408	135	1	Adapter, Cylinder/Outer Barrier Lever	915-0341N	
51	1	Adapter, Cylinder/Outer Barrier Lever	915-0344	136	1	Harness, Sensor - Cherry w/Plug	32645NA60	
52	2	Washer, External Tooth	83588	137	4	Screw, #4-40 x 1/4" Phillips Head	11480	
53	4	Washer, Finger, Disc Spring	27276	138	11	Clamp, Cable, 1/2", Plastic	10092	
54	1	Vertical Channel Weldment, Front, 48"	955-0448FNW	139	2	Nut, 5/16-18, Top Lock, Black	28324BK	
55	1	Cover, Plastic, Parallel Arm, O/S Front-w/Tape	915-0704NA	140	2	Bolt, 1/4-20 x 1/2", Button Head Socket	15733	
56	2	Tape, 1" Wide S-Face Foam, x 14" (1 Shown)	82015R014	141	2	Bolt, 3/8-16 x 2", Hex Head, Cap	10027	
57	6	Tape, 1" Wide S-Face Foam, x 10" (3 Shown)	82015R010	142	2	Roller Assembly	1000-2395A	
58	1	Cycle Counter-LCD Without Reset	30547	143	2	Roller Retainer	915-5353	
59	2	Handrail Weldment	985-4618NW	144	2	Nut, 5/16-18 Hex, Lock	11387BK	
60	8	Rivet, Push In - 8MM	30063	145	2	Pivot, Inner Rollstop Lever, Upper-Outer	916-5434	
61	4	Bumper, Rubber, 31/32" O.D.	10950	146	6	Clamp, 1/4" I.D. - Nylon Loop	84396	
62	2	Screw, #8-18 x 1/2", Self-Tap, Phillips	13583	147	1	Clamp, 5/8" Closed Insulated	84070	
63	2	Bulb, Light 20-W, Halogen Reflector	31060	148	18	Rivet, Snap, .201" x .256"/.295"	26362	
64	2	Nut, #10-32 w/Lockwasher	18349	149	4	Bearing, Flange, 1" x 1/2-16FDU08	28031	
65	2	Screw, 1/4-20 x 3/4", Button Head, Socket Cap	81068-000	150	1	Cover, Plastic, Parallel Arm, O/S Rear-w/Tape	915-0702NA	
66	2	Washer, 3/8" Flat, Black	10064	151	1	Weldment, Inner Rollstop Bracket, Front	985-0431FNW	
67	4	Nut, 3/8-16, Hex Lock	13617	152	4	Spacer, Handrail, .375" Thk, UHMW	995-0301	
68	2	Cotter Pin, 1/4" x 2", Black	15886BK	153	2	Washer, 5/16" I.D. x .75" O.D. x .250", Black	25336	
69	2	Nut, 1/4-20 Hex Lock	10775	154	1	Cover, Plastic, Parallel Arm, I/S Rear-w/Tape	915-0703NA	
70	1	Cover, Plastic, Parallel Arm, I/S Front-w/Tape	915-0701NA	155	1	Weldment, Inner Rollstop Bracket, Rear	985-0431RNW	
71	2	Threshold Strip Switch	31221A	156	2	Spring, Torsion - .366" I.D. x .05"	30386	
72	2	Bolt, Shoulder, 5/16 x 5/8-14"-20	31816	157	4	Spacer, IB Lock	30394	
73	3	Washer, #10, Flat, Auto BK	11541	158	2	Weldment, IB Lock	985-0630NW	
74	10	Washer, 1/2" Flat Black Zinc	25346	159	4	Bearing, 3/8" I.D. x 1/2" Long	30405	
75	2	Bolt, 3/8-16 x 1", Hex	10025	160	4	Roller, .65" O.D. x 1/2" Long	985-0631N	
76	6	Washer, 3/8", Lock, Black	10069BK	161	4	E-Clip, 3/8" Shaft	84383	
77	2	Lever, Inner Rollstop	985-0404N	162	2	Spacer, Handrail, .230" Thk, UHMW	911-5301	
78	4	Clamp, Insulate, 1 3/8" I.D.	29765	163	8	Washer, .516" I.D. x 1" O.D. x .269", Auto BK	15328	
79	4	Washer, 5/16" Lock, Black	10068	164	3	Rivet, Pop, 3/16" - .13/25" - SD64BS	11513	
80	2	Gas Spring, Fold Arm	29186	165	2	Rivet, Pop, 3/16" x .06"/.13	11512	
81	2	Ball Stud, Gas Spring, 13MM x 3/8-16 F. Thread	29185	166	2	Bearing, Flange, 3/8" x 1/4" - Plastic	24028	
82	2	Washer, 3/8", Lock	10069	167	2	Light Assy, Vertical Channel	31062A	
83	1	Spacer, Flap Cylinder .184" Thick	915-0416	168	1	Tab, Outer Barrier, Flap Cylinder w/Magnet	915-4367NA	
84	2	Clip, Safety, 3/8-16 x 3/4", Flange	12608	169	1	Washer, 4" I.D. x .810" O.D. x .12"	24536	
85	6	Bolt, 3/8-16 X 3/4", Flange Button Head, Socket Cap	25171	170	4	Spacer, UHMW-.75" O.D. x .39" I.D. x .25"	30227	
86	2	Bolt, 5/16-18 x 2", Flange, Hex	25130	171	1	Bolt, 3/8-16 x 3/4" Soc. Hd. Cap Screw Bk.	26259	
87	2	Nut, 5/16-18, Serrated Flange	25131	172	1	Spacer, Flap Cylinder .700" Thick	915-0415	
88	2	Arm, Slide Support	985-0612N	173	1	Guard, Outer Barrier Sensor Wires	985-0368N50Y	
89	2	Slide, Platform, Rotate	985-0606N	174	4	Snap-Ring 1/2"	13273	
90	2	Spacer, .5" O.D. x .334" I.D. x 1.515" LG	25132	175	4	Screw, #10-32 x 1/2" Button Head, Socket, Cap	30375WP	
91	10	Bearing, Flange, 3/4" x 1/4"	24012	176	1	Position Sensor Spacer	31092	
92	2	Weldment, Platform Pivot Arm - 48"	985-0640NW-BKN	177	4	Weld Nut, #4-40 x 1/8" Barrel	32949	
93	2	Pin, Pivot, Lower Arm	900-0413N					
94	6	Ring, Snap, 3/4", External	18657					
95	2	Bearing, UHMW, Flat, 1.226"	205-1760					
96	2	Ball Stud, 10MM	21301					
97	1	Vertical Channel Weldment, Rear, 48"	955-0448RNW					
98	6	Plastic End Cap, 1" I.D. x 1 1/4" O.D.	20474					
99	2	Grip, Handle, Yellow	19074					

NOTES

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"Providing Access to the World"®



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Dealers Worldwide**

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

**Millennium
Series**

**Public Use
Wheelchair Lifts**

**Millennium Series Lift
Braun "Worry-Free"
Five-Year Limited Warranty**

The Braun Corporation of Winamac, Indiana, warrants its wheelchair lift against defects in material and workmanship for up to five years*, providing the lift is installed, 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 into service, providing the warranty registration card is completed and received by The Braun Corporation within twenty days of purchase. If no warranty card is received, the warranty will expire three years from the date of manufacture as identified on the lift serial number tag.

This warranty also covers the cost of labor for the repair or replacement of parts for three years when performed by an approved Braun Dealer. (A labor schedule determines cost allowance for repairs, which can be provided upon request by an approved Braun Dealer).

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, incidental or consequential damages related to the lift, or vehicle in which it is installed.

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.

* The five-year portion of this warranty covers the following lift's power train parts:

- Cable ▪ Cylinder ▪ Flow Control ▪ Gear Box ▪ Motor ▪ Pump ▪ Hydraulic Hose & Fittings
- Solid State Controller

All remaining lift components are covered by a three-year warranty.

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.



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

