

**MOBILIFT CX**

# Operating and Maintenance Manual



**Adaptive Engineering Inc.**





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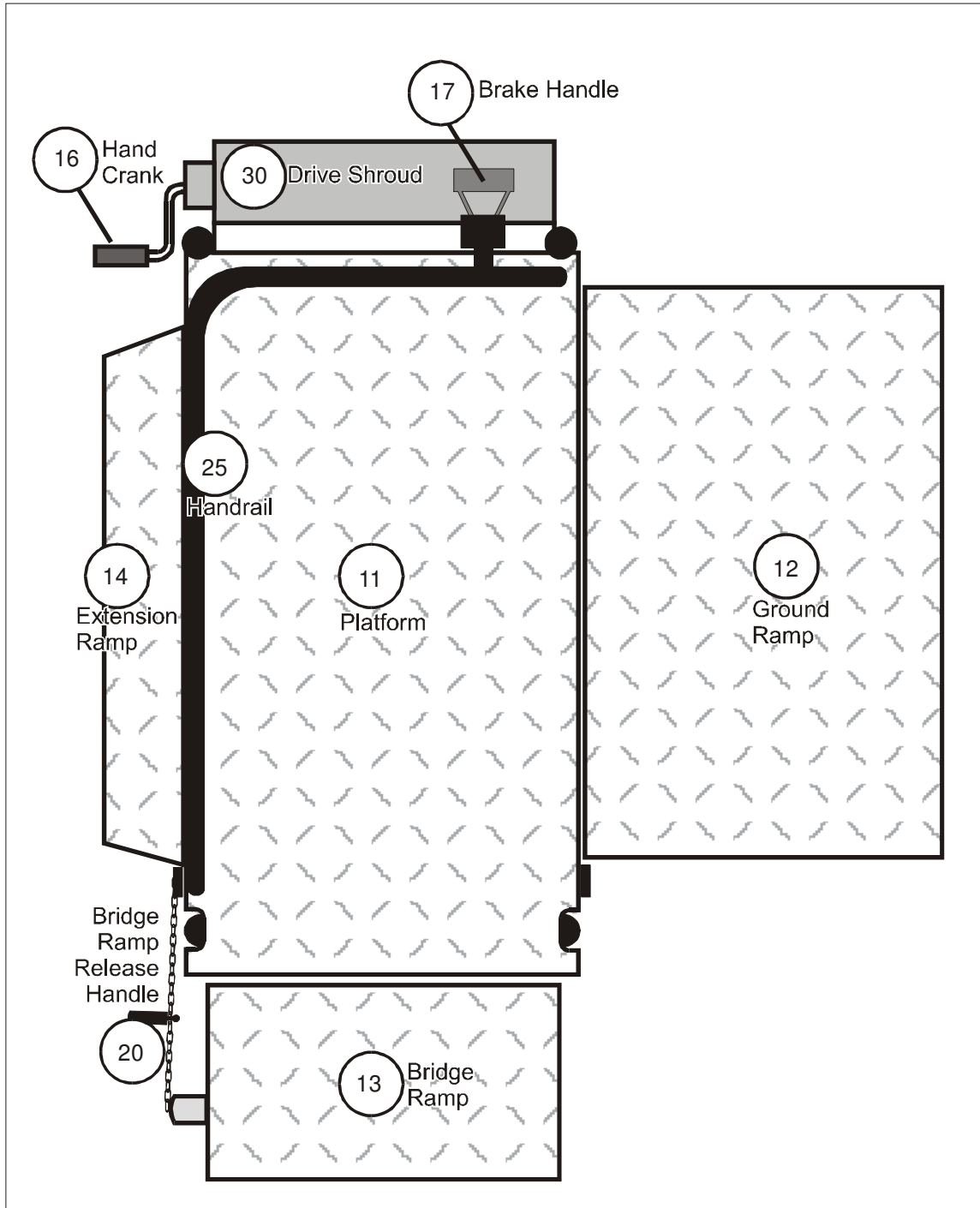
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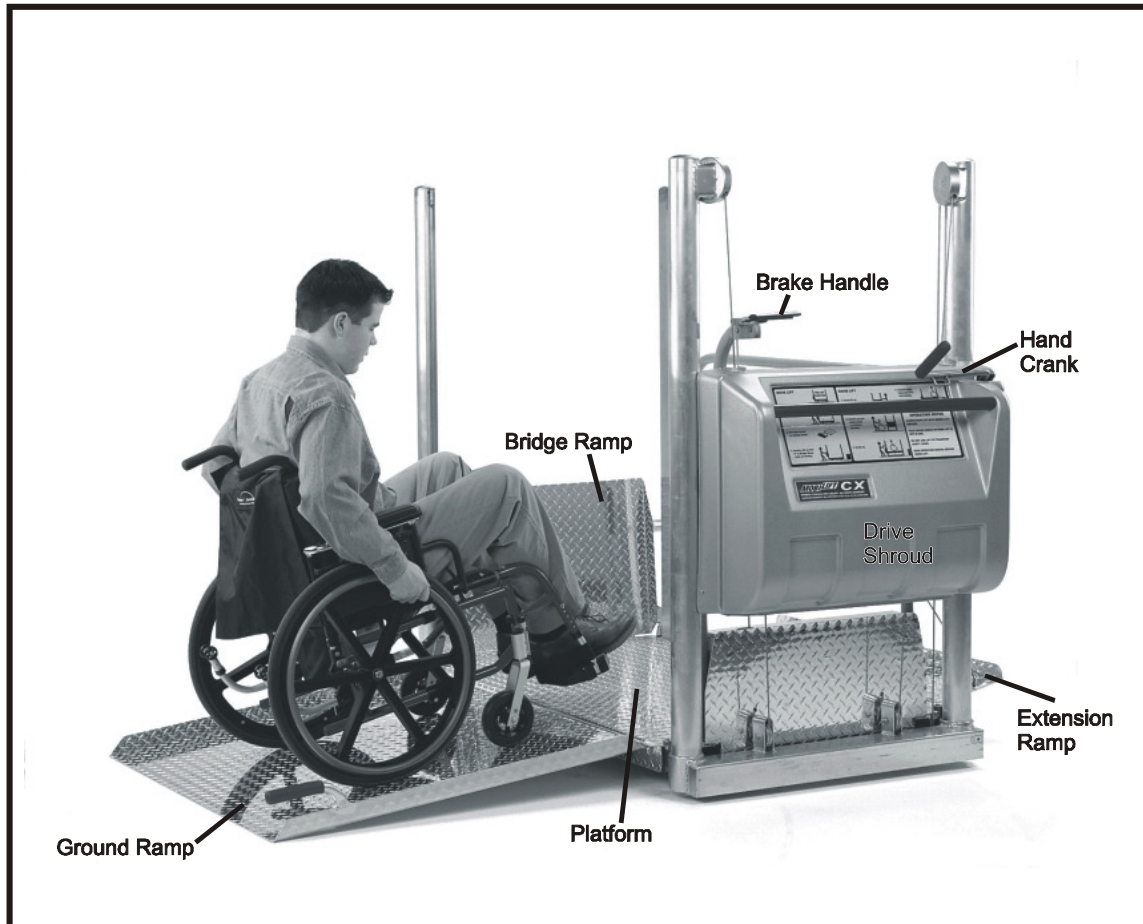
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**MAJOR COMPONENTS – TOP VIEW**



## MAJOR COMPONENTS



## SPECIFICATIONS

<b>Standard Unit (North American Users)</b>			
Weight	268 lb (122 kg)	Max Lifting Height	60" (1.52 m)
Overall Length	72" (1.83 m)	Minimum	
Overall Width	37.5" (0.95 m)	Safety Factors	Cables 7.0
Capacity (Can & US)	600 lb (273 kg)		Structure 5.0
Platform Size	34" x 56" (0.86 x 1.42 m)	Patents	5,040,638
<b>CE Option: (European Users)</b>			
Capacity (Europe)	250 kg (550 lb)		
Safety Factors	Cables 10.0		
	Structure 5.4		



## FEATURES

- Single operator set-up and use
- Silent, manual operation
- Pictogram instruction decals
- Locking cable
- Auto fail-safe crank with load activated drum brakes
- 20" (0.51 m) bridge ramp
- Automatic "fail-safe" parking brakes prevent rolling
- Movable with passenger on platform
- Powder coated handrails
- Rough terrain – lift can be operated indoors or outdoors
- Minimal service requirements

## OPTIONS

Various options are available to increase the utility of your Mobilift CX

- Weather protection:
  - Enclosed shed
  - Open mesh shed
  - Tarp cover
- Mobile bridge ramp – gain accessibility over stairs or other obstacles restricting the Mobilift's use.
- Choice of ramp lengths:
  - 30" (.76 m)
  - 40" (1 m)
  - 50" (1.27 m)
  - 60" (1.52 m)
- CE Compliance Package (includes the following)
  - 0.84 m (33") Bridge Ramp
  - 4.76 mm (3/16") lifting, return and paralleling
  - Metric decals

Contact **Adaptive Engineering Inc.** for more information.

Phone: 1 (800) 448-4652 or (403) 243-9400

Web: [www.adaptivelifts.com](http://www.adaptivelifts.com)

Email: [info@adaptivelifts.com](mailto:info@adaptivelifts.com)

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## **MATERIALS**

- 6061 T-6 Aluminum
- 316 Stainless Steel Fittings and Fasteners
- Industrial duty rubber wheels
- ABS – Hair cell plastic

## **COMPREHENSIVE TWO YEAR WARRANTY**

- Adaptive Engineering Inc., warrants the Mobilift CX to be free from manufacturing or material defects for two years from the date of invoice.
- Damage caused by vandalism or abuse is not covered by this warranty.

## **FEEDBACK**

At Adaptive Engineering Inc., we wish to provide safe, high quality, and easy to use products. Customer satisfaction is of great importance to us. To continue our tradition of quality and response to customer needs, we welcome any comments or suggestions. Call toll free **1 (800) 448-4652** or email at **info@adaptivelifts.com**.

## **WARNINGS**

- Always park lift with wheels off the ground unless being parked in a locked enclosure.
- Use cable and lock to secure lift when not being used. The lift is light enough to be moved by vandals even with the wheels raised.
- Fold the hand crank in when not in use. This provides a mechanical lock for the drive system and prevents damage to the handle.
- Use the ground ramp at ground level only to prevent overturning.
- Wheelchair users should approach the lift at 2mph (3km/h) or slower to reduce the risk of overturning
- Lift is not to be used to transport heavy loads. Use as designed, for wheelchair access only.
- Do not operate lift or perform maintenance on lift unless familiar with operating manual. Consult with Adaptive Engineering Inc., before performing any mechanical repairs.
- Make sure the bridge ramp overlaps the stage by at least 6" (0.15 m) European models should overlap the stage by the amount indicated on the "Warnings" decal (0.5m).

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If you have any questions about the operation or maintenance of this product, please contact Adaptive Engineering Inc.

## GENERAL OPERATING NOTES

- When turning the hand crank, maintain a slight outward pull to prevent the hand crank from folding and catching.
- The load on the platform affects the force required to raise or lower with the hand crank. This is due to the patented “load activated” braking system, which is an essential safety feature of the drive system.
- The drive’s braking system is very reliable. Additional safety is gained by folding the hand crank in the vertical position. This acts as a secondary mechanical lock for the drive system and is the reason why the hand crank must always be folded in the vertical position when not in use.
- Persons in wheelchairs must feel safe when being lifted. The Mobilift GX lift has established a reputation for reliability and safety. If the person being lifted expresses any uncertainty about the lift, assure the person:
  - Each lift is load tested to over 3,000 lbs (1360 kg) before being placed in service. (About the weight of a mid-sized car)
  - There is no single component in the lift that can allow the platform to drop in the event of failure.
  - Critical components have been tested successfully for extreme weather performance from –50 degrees to +130 degrees Fahrenheit. (-45 C to +54 C)
  - Over 900 Mobilifts are in use around the world with no safety related incidents.
- **LOCKING.** The loop on the arm of the hand crank is designed for the locking cable (provided at no charge with your lift). The short section of the cable is placed around the lift post and through the loop on the hand crank, while the long section is placed around any available column or post. This arrangement prevents the lift from being moved or raised.
- European users must follow the operating procedures for CE lifts in order to comply with regulations for the European Common market.

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**ALWAYS:**

- Park the lift in an enclosure or with the wheels off the ground.
- Return the hand crank to the vertical, folded position when not being used.

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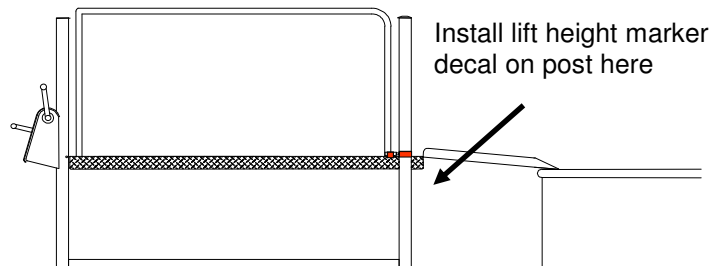
**OPERATION**

**Initial Setup: Installing the Lift Height Marker Decal**

Note: Only apply the lift height marker decal on lifts that will be used in to access one location only.

To install the lift height marker decal:

1. Position the lift at the location to access
2. Crank the deck up to an appropriate height
3. Place red marker decal provided on corner post as shown.



**Moving the Mobilift CX**

1. Lower the lift platform until the wheels contact the ground and the lift frame rises off the ground. Fold the hand crank in the vertical position.
2. Pull the blue brake handle down to the push handle with the left hand to release the automatic parking brake.
3. Move the lift to the desired location. Remember to hold the brake handle on the push handle.





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4. Position the lift so the front (bridge ramp end) is about 6 to 12" (0.15 to 0.30 m) from the stage or platform requiring wheelchair access.

**WARNING:**

On basic CE lifts (equipped with 0.84 m bridge ramps with no handrails) the bridge ramp should overlap the landing by at least 0.50 m to avoid creating a gap that walking passengers could fall through.

**Positioning the Mobilift CX in Restricted Spaces**

For problem areas with limited space, the passenger can be placed on the lift before being moved into position. Even with a load, maneuvering is almost effortless and the wheels automatically retract when the platform is raised, maximizing the lift's stability.

### **Loading and Lifting a Wheelchair**

1. Before loading a wheelchair, the lift's wheels must be raised clear of the ground so the lift frame can sit firmly on the ground. To do this, swing the hand crank out and turn it clockwise until the wheels lift off the ground. Return the hand crank to the vertical, folded position.

**NOTE:**

European users must board the wheelchair while the lift is on its wheels: do not raise the wheels clear of the ground. Parking brakes hold the lift in place.

2. Release the ground ramp (large ramp on the left side) by pushing on the ground ramp while releasing the blue handgrip from the keyhole.
3. Lower the ground ramp to the ground. Notice that the extension ramp on the right side of the platform has lowered to create extra room to maneuver the wheelchair.

**WARNING:**

The ground ramp should never be used for loading passengers other than at ground height due to the risk of overturning the lift

4. Push the wheelchair up the ground ramp so the passenger is facing forward (toward the bridge ramp).
  - Many people in wheelchairs, particularly electric chairs, may prefer to maneuver themselves without assistance. They may wish to back onto the lift, particularly if they are using a large scooter.
  - People with crutches or canes can also use the lift. They should position themselves in the right, rear corner of the lift so there is a handrail on both sides.

**WARNING:**

Wheelchair users should approach the lift no faster than 2 mph (3km/h) to prevent overturning.

5. Once the wheelchair is in place, and the wheelchair brakes applied, the ground ramp can be raised and re-latched.
6. The wheelchair is ready to be lifted to stage height.
7. Swing the hand crank out and turn it clockwise until the platform is level or slightly higher than the stage.



8. Once the lift is raised to stage height, the bridge ramp is lowered onto the stage. The bridge ramp handle is on the front, right side of the lift and must be operated by the operator, from ground level. Make sure there is at least a 6" overlap of bridge ramp on the stage!
9. The wheelchair can move forward onto the stage.

### **Lowering and Unloading a Wheelchair**

When moving a wheelchair from a stage or platform down to ground level, reverse the "Loading and Lifting a wheelchair" instructions. However, the wheelchair must be facing forward when it comes off the stage and should move forward down the ground ramp once it reaches ground level.

### **Moving through Narrow Doorways\***

\*If not equipped with Narrow Door Option.

To maneuver the Mobilift CX through a narrow door it is necessary to remove the handrail and ground ramp, and to tip the lift sideways. The steps are:

1. Remove the five bolts securing the handrail using a 7/16" socket wrench and a Phillips screwdriver. Labeled 1 on Figure 1.
2. Remove the two bolts securing the two brake handle pulleys (Part 17 on Rear Assembly diagram) Use two 7/16" wrenches. Strap the cable to the lift so the cable doesn't drag on the ground. Labeled 2 on Figure 1.
3. Remove the bolt securing the bridge ramp latch using two 7/16" wrenches. Labeled 3 on Figure 1.
4. Remove the ground ramp hinge bolt then remove the hinge pin to remove the ground ramp. Use a 7/16" wrench and a Phillips screwdriver. Labeled 4 on Figure 1.
5. Remove the nut and bolt securing the ground ramp release handle to the handrail. Use two 7/16" wrenches, (See part 19 on Rear Assembly Diagram). Labeled 5 on Figure 1.
6. Tip the lift on its side as shown in Figure 2 and carefully slide and rotate it through the door.
7. Reinstall the handrail, ground ramp and accessory pieces, ensuring that they are secure and tightened in place.

Note: After re-assembly, all pulleys should spin freely (Items 2 & 5)

### Maneuvering Through Narrow Doorway

Figure 1

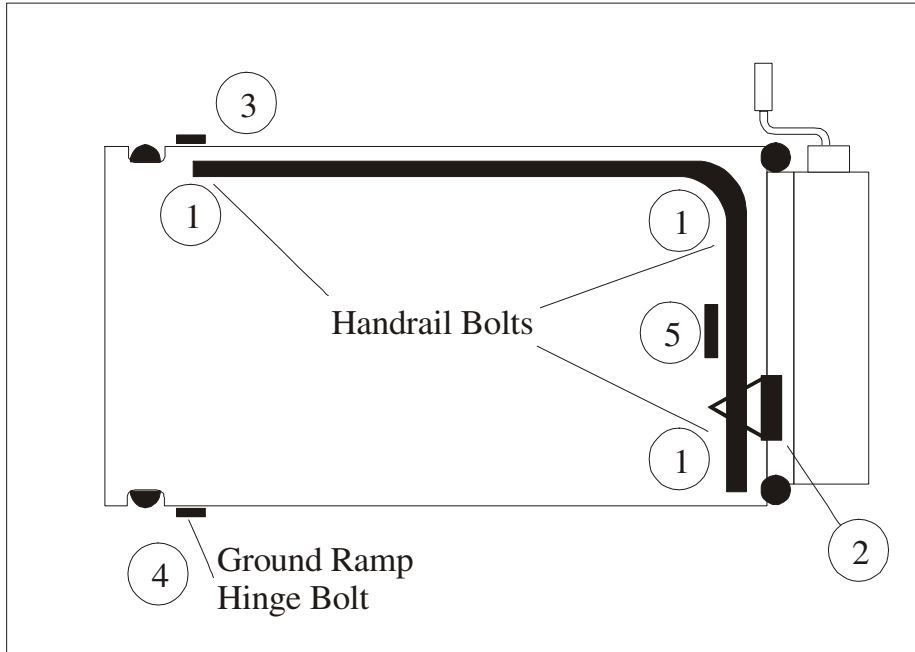
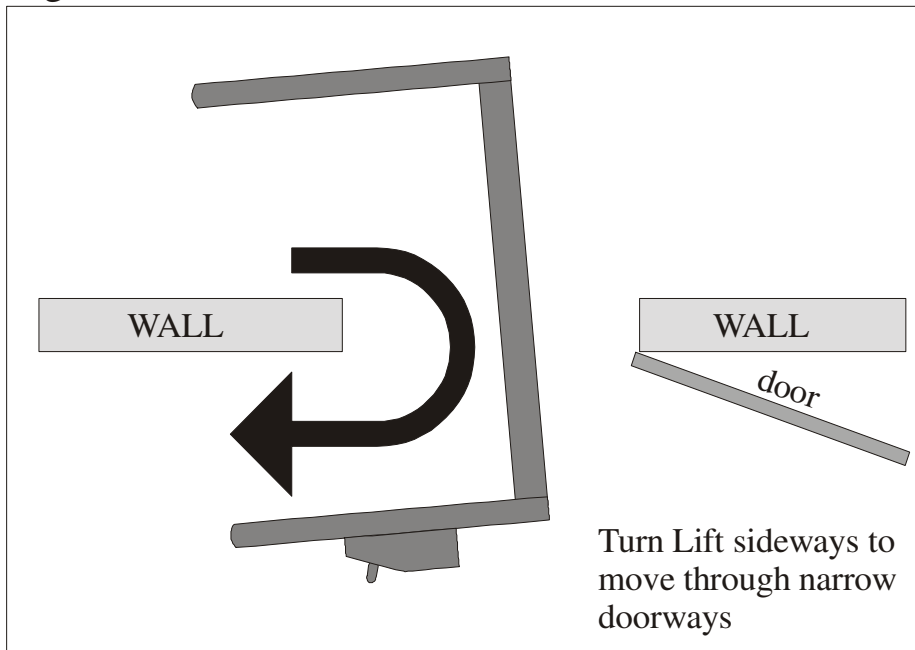


Figure 2





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## MAINTENANCE

The Mobilift CX must be inspected officially at least once a year, or in high use areas, after every 500 uses.

European users must inspect the unit every 6 months

Operators of the Mobilift CX should perform a quick inspection of the lift before operating. All visible cables and components should be checked for any signs of wear or vandalism. **Contact Adaptive Engineering Inc., if any problems arise.**  
**Phone: 1 (800) 448-4652 or (403) 243-9400**  
**Email: [info@adaptivelifts.com](mailto:info@adaptivelifts.com)**

Parts used for the purpose of repair and maintenance must be authorized by Adaptive Engineering Inc. Adaptive Engineering Inc. accepts no liability for any failures, damages or injuries to or from the equipment as a result of substituting parts other than those authorized.

As with any piece of safety equipment, the CX mobile wheelchair lift must be on a documented preventive maintenance program. A suggested inspection report form is included at the end of this manual. Users with an established preventive maintenance system can incorporate these requirements as necessary.

The lift is designed and manufactured to minimize maintenance work. All exposed materials are aluminum, stainless steel, polymers, or electroplated steel. **THERE ARE NO PARTS ON THE LIFT THAT REQUIRE LUBRICATION.** The brakes may squeal as the lift is being cranked, in the same way that automobile brakes squeal. This is normal, and under no circumstances should these brakes be cleaned with solvents nor should they be sprayed with aerosol lubricants such as WD40, LPS or silicon.

The serial numbers for the lifts are on the top of the frame at the rear of the lift. This serial number should be used in recording all maintenance inspection and work. It must also be given when ordering parts.



## ADJUSTMENTS

The adjustments covered in this section refer only to those items where parts are not required. All parts supplied by the manufacturer include detailed instructions on installation and adjustment.

If the lift has been vandalized or damaged such that welding or machining is required, it must be carried out by qualified trades people. The people performing the repairs should refer to the manufacturer's literature and discuss the repairs with the manufacturer if necessary.

### Lifting, Return, and Paralleling Cables

It is important to understand that adjustments involving the lifting, return or paralleling cables will affect both the tension of the cable and the angle of the platform. The cables should be adjusted for correct tension and to set the wheelchair platform angle (horizontal). This is for both the users' safety and for proper lift operation.

As illustrated, the lifting cables (part 23) go from the main winding drum up through the top of the drive shroud over the upper idler pulley, then down under the platform. These two cables are critical because each supports half the load on the lift.

### Notes for Cable Adjustment

- a. Tightening the lifting cable also tightens the return cable (part 22) because they act as one continuous loop.
- b. It is important, when performing cable adjustments, to prevent the adjusters from turning when the nuts are being turned. A pair of needle-nose vice grips clamped on the end of the adjusters works quite well.

## Lifting Cable Adjustment

1. Raise the platform up about two feet and measure the distance from the right rear corner of the platform to the top of frame and from the left rear corner of the platform to the top of frame. The right and left measurement should be the same to within  $\frac{1}{4}$ " (6mm).
2. If the platform is not level from side to side, adjust the lifting cable anchors underneath the rear of the platform to make the platform level. Increasing the tension in one of the lifting cables will cause the platform to rise on that side.
3. If a lifting cable is already tight, and more adjustment is needed, first loosen the return cable anchor on that side to prevent over-tensioning. The return cable anchors are inside the shroud at the rear of the platform.
4. Once the platform leveling adjustment is completed, adjust the lifting cable anchors to set the cable tension. The cable deflection specifications are listed under the inspection section at the end of this manual.
5. Following adjustments: CHECK THAT ALL LOCKING NUTS ON THE CABLE ANCHORS HAVE BEEN TIGHTENED AND LOCKED.
6. Following adjustment: Crank the lift to full height and back down to ensure full range operation.

## Paralleling Cable Adjustment

The paralleling cables can only be adjusted once the lifting cables are adjusted to set the angle of back end of the platform to level.

If the inspection indicates that the platform is not level from front to back, or that the paralleling cables (part 60) require adjustment, proceed as follows:

1. Crank the platform up off the ground approximately two feet and measure the height from the top of the frame to the platform at the right rear corner and at the right front corner – these dimensions should be the same to within  $\frac{1}{2}$ " (13 mm).
2. If the platform is not level, from front to back, the paralleling cables will need adjustment. Note: the height of the rear end of the platform (drive end) is



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controlled by the lifting cables and that paralleling cable adjustment affects only the front of the platform.

To raise the front of the platform, tighten the paralleling cable adjuster (63) underneath the rear end of the frame. To lower the front of the platform, the paralleling cable adjuster under the front of the frame is tightened. If the cable tension is getting too high when tightening the adjusters, use a combination of tightening the adjuster at one end and loosening the adjuster at the other end.

3. Be sure to relock all cable anchor nuts and run the lift through one full cycle after any adjustments to check function.

### **Parking Brakes**

The parking brake is a safety feature of the lift. It is held in the “off” position when moving the lift and automatically activates when the brake handle is released.

If adjustment is indicated by the inspection, proceed as follows:

1. Check that both brake springs (part 65) are attached and not broken (the easiest way to do this is to turn the lift on its side because the springs are under the platform just ahead of the two main wheels).
2. If the springs appear to be in good condition, with the lift on its side, attempt to rotate the main wheels (part 56). It should be difficult to move either of these wheels by hand.
3. If either of the wheels can be rotated easily, it indicates a weak brake spring or a fault in the activating system.
4. Check that the cables attached to the brake levers opposite the springs are slack.
5. If the cables are not slack, remove the shroud at the rear of the platform, and check the cable and lever mechanisms that activate the brakes. Loosen the wheel brake cable adjusters (part 66) until slack is felt in the cable.

**NOTE:** Be sure to relock all adjusters and recheck the brakes before putting the lift back into service.



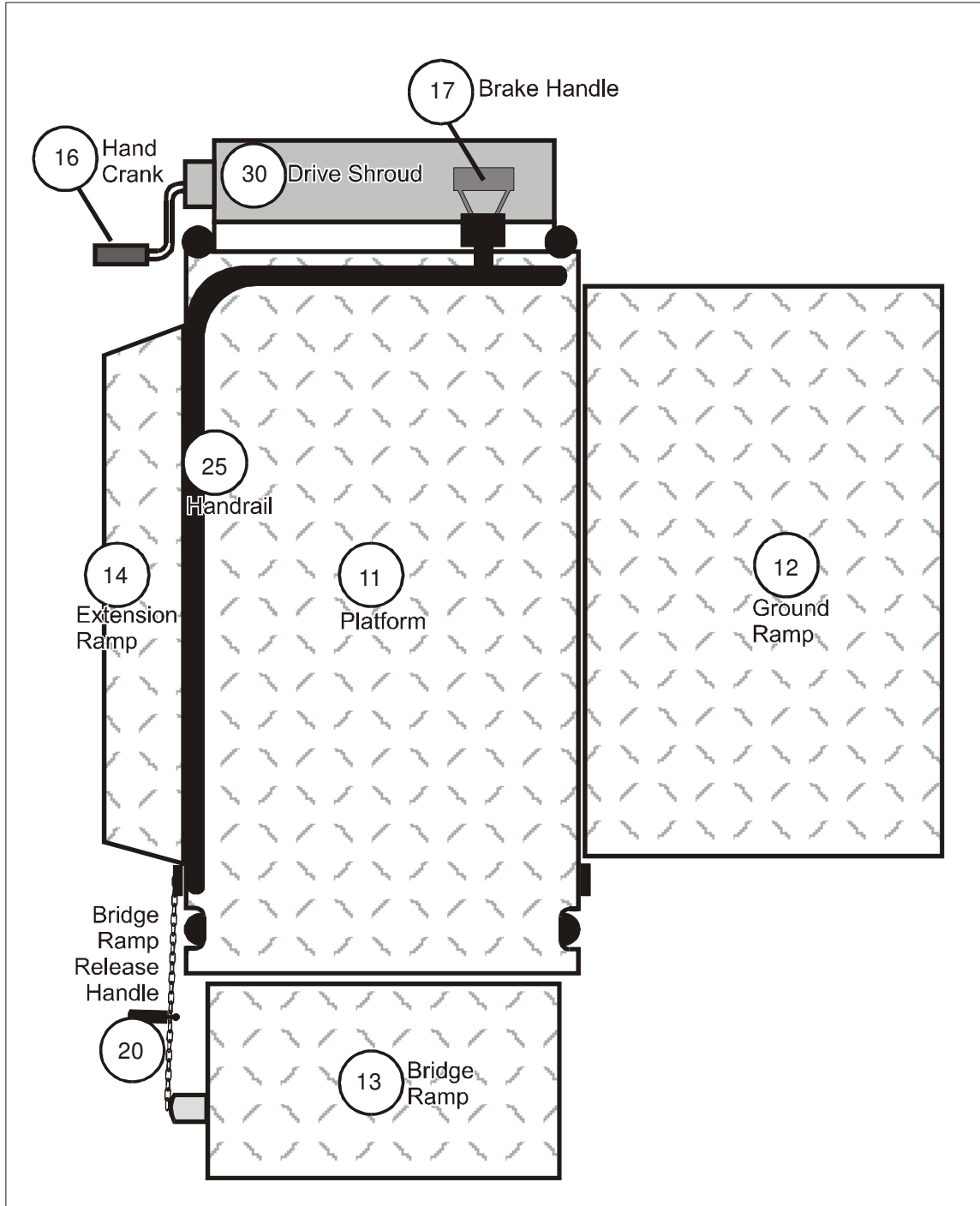
## **Springs**

A large spring is used to counterbalance loads on the platform. It is designed to provide trouble-free operation and long life. Should the spring or the attaching cable break, the cranking loads will increase, but the lift does not have to be taken out of service. Since the spring can store large amounts of energy, improper servicing can result in serious bodily injury. In all cases, contact Adaptive Engineering for replacement parts and procedures.

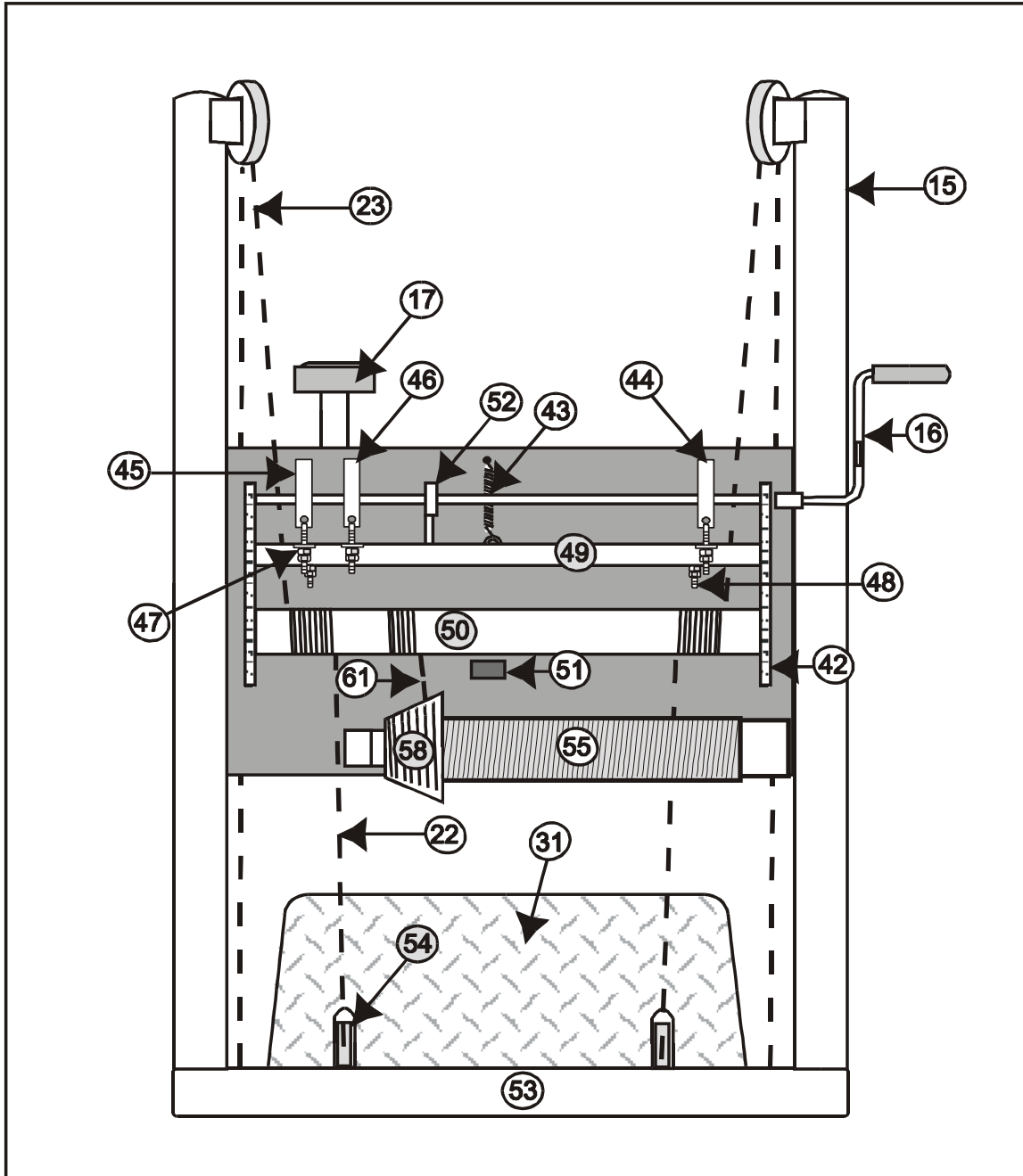
### **WARNING!**

- **Improper service of steel springs can result in serious bodily injury!**

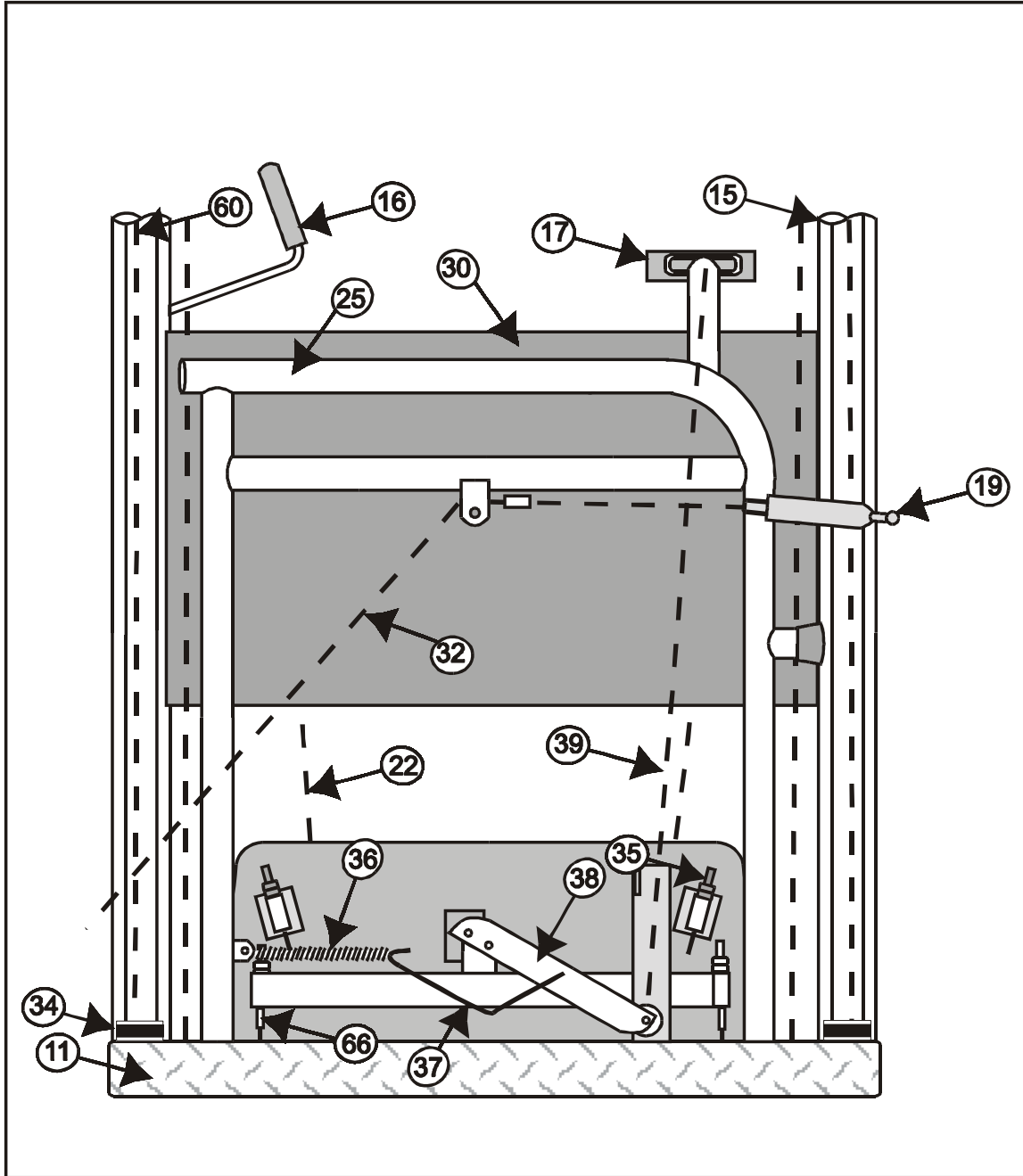
**MAJOR COMPONENTS – TOP VIEW**



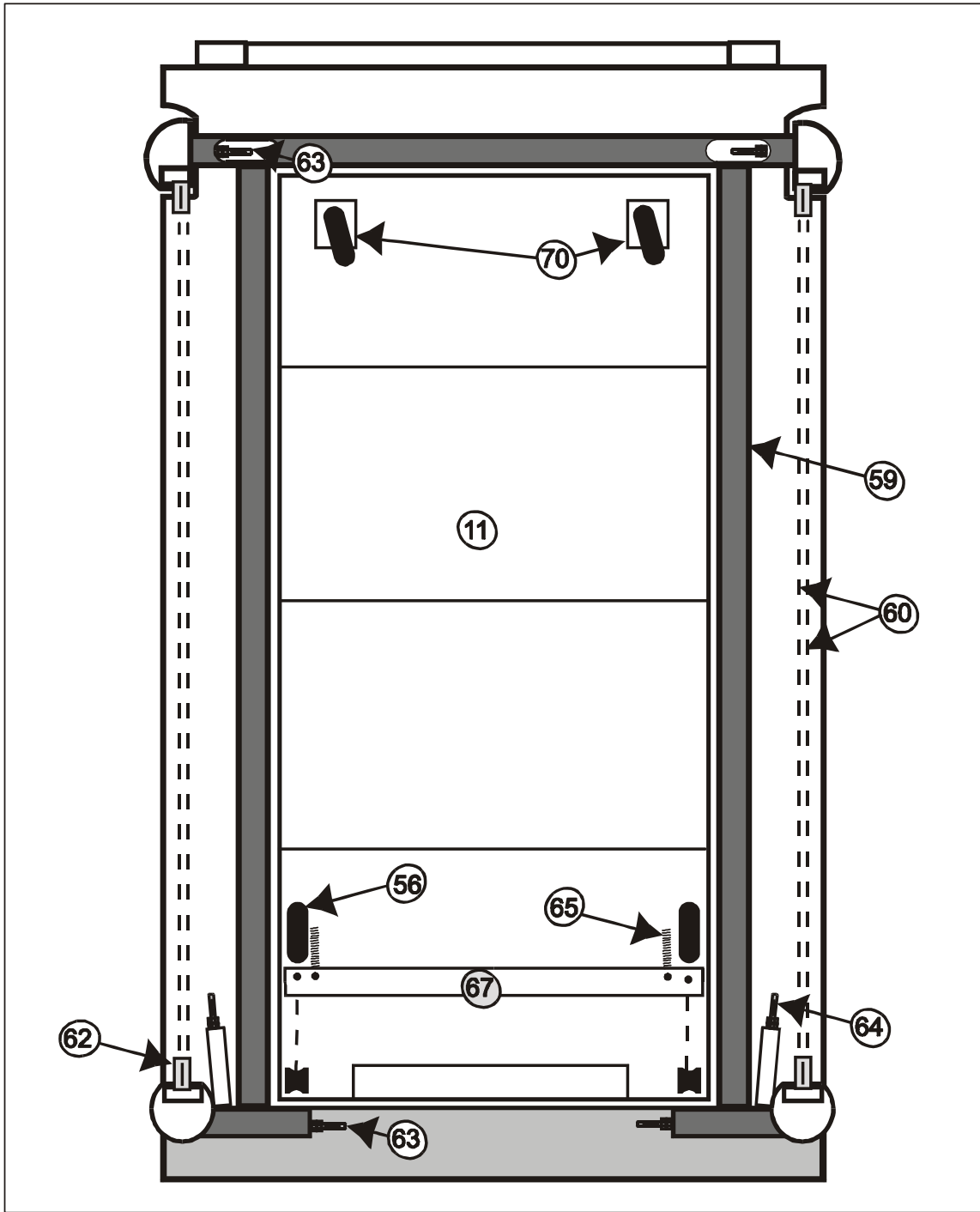
**DRIVE ASSEMBLY**



**REAR PLATFORM ASSEMBLY**



**UNDERSIDE ASSEMBLY**



**Adaptive Engineering Inc.**





## PARTS LIST

**NOTE: EUROPEAN USERS MUST SPECIFY THEIR MODEL AS CX-CE TO ENSURE COMPONENTS MEET CE STANDARDS**

11	Main Platform	50	Main Cable Drum
12	Ground Ramp	51	Discontinued
13	Bridge Ramp	52	Steady Bearing
14	Extension Ramp	53	Automatic Leveler Shroud
15	Corner Post	54	Return Pulley
16	Hand Crank	55	Platform Counter Balance Spring
17	Brake Handle	56	Main Travel Wheels
19	Ground Ramp Release Handle	57	Counter Balance Cable Cone
20	Bridge Ramp Release Handle	58	Counter Balance Cable Drum
22	Return Cable	59	Frame
23	Lifting Cable	60	Paralleling Cables
25	Handrail	61	Counter Balance Cable
30	Drive Shroud	62	Paralleling Cable Pulley
31	Platform Rear Shroud	63	Paralleling Cable Adjuster
32	Ground Ramp Cable	64	Lift Cable Adjuster
34	Post Guide Assembly	65	Brake Activation Spring
35	Return Cable Adjuster	66	Wheel Brake Cable
36	Brake Return Spring	67	Brake Bar
37	Brake Return Spring Arm	70	Front Travel Wheel
38	Brake Lever		
39	Brake Pull Cable		
42	Drive Chain		
43	Drive Frame Counterbalance Spring		
44	Right Lift Brake		
45	Left Lift Brake		
46	Return Brake		
47	Brake Adjuster		
48	Frame Adjuster		
49	Drive Frame		



### INSPECTION REPORT

- 1. Crank the lift to full height and back down with 300 to 350 lbs (135 to 160 kg) on the platform (a full cycle up-down cycle should take no more than one minute)
- 2. With the above weight on the platform and the lift approximately 12" (0.30 m) off the ground, using a spring scale or weight, check the force on the hand crank. The force should be 10 – 20 lbs (4.5 to 9 kg) for cranking up, and 3 – 15 lbs (1.3 to 6.8 kg) for cranking down.
- 3. Did the lift crank up and down smoothly? (On the down movement it is normal to have a slight squeal or chatter from the brakes as with automobile brakes).
- 4. Remove Shroud and check that the cables are in their grooves on the winding drum.  
Crank the lift to full height with no platform load and recheck the cables on the winding drum.  
Ensure that all drive chains are lubricated and in good condition.  
Replace drive if chain is worn: the center-to-center distance for 6 links is greater than 3.045" (77.3 mm) (1.5% stretch).
- 5. With the lift in the "travel" mode, check that the lift rolls easily with the parking brake in the "off" position and that it stops immediately when the brake handle is released.
- 6. Crank lift about half way up with no load and measure the distance from the platform to the top of the main frame at each corner. These measurements should be within 3/4" (20 mm) of each other.
- 7. Tilt the lift back, visually inspect all of the cable anchors (six) to see that they are secure and the double nuts are locked against each other (some rust and corrosion on the anchors and nuts in severe conditions is normal and not a safety concern).
- 8. With the lift tilted back, check that the paralleling cables are on their pulleys at both ends and are not frayed. Check that a pull of fifteen lbs. at the middle of each paralleling cable deflects it between 3/4" and 2" (20 mm to 50 mm)
- 9. Return the lift to upright position. Check that the crank handle swings in automatically when it is released.
- 10. Check ramp securing cables for operation and fraying.
- 11. With the wheels just clear of the ground release both the ground ramp and the bridge ramp so that they are resting on the ground. Apply a load to the upper corners of both ramps by standing on the corner and bouncing up and down.
- 12. Check all fasteners to make sure that the bolts engage the nylon of the locking nuts. Check with wrenches that the nuts on all visible cable adjusters are locked.
- 13. Check all visible welds for signs of cracking.
- 14. Check the full visible length of each lifting cable with the lift at ground level and at two feet from ground level for corrosion or fraying, with particular attention to the point at which the lifting cable turns in under the platform.
- 15. With the platform just off the wheels, pull on each lifting cable just above the main shroud. A 20 lb (9n kg) pull should deflect this cable between 1/2" to 1-1/2" (12 to 38 mm)
- 16. With the lift at ground level, release the ground ramp and the extension ramp, and stand on the middle of the outside of the extension ramp. It will deflect but should return to approximately level position.
- 17. With the lift at ground level, inspect the paralleling cables inside each corner post for fraying, particularly at the top of each post.

### LOAD TEST

The lift must be re-load tested to 1800 lbs (820 kg) (3 times the design load) following this inspection or any repairs or adjustments. If formal testing equipment is not available, proceed as follows:

- 1 Position the lift under a beam or overhead doorway that will take a 2000lb (850 kg) upward load.
- 2 Place a wooden 4" x 4" (or two 2" x 4" nailed together), from the middle of the platform up to the overhead beam.
- 3 Stand well to the side of the lift in case a cable slips. Crank the lift up against the 4" x 4" with a 50lb (23 kg) pull on the hand crank (use a spring scale or weight). This puts a load of 1800lbs (820 kg) on the platform.
- 4 After testing, remove the 4" x 4" and check that the lift cranks up and down normally for the full height of the lift.

Lift Serial Number: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Inspected By: \_\_\_\_\_

Inspector's Signature: \_\_\_\_\_

Inspector Employed by (company name): \_\_\_\_\_

