

LIFT-O-FLEX® 20000 Series Manual



LIFT-O-FLEX® 20000 SERIES

Lifter Serial Number: _____

Lift Mast Serial Number: _____

Intermediate Member Serial No.: _____

Power Pack Serial No.: _____

Lift-O-Flex® 20000 Series Manual

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Lift-O-Flex® 20000 Series Manual

1. LIFT-O-FLEX® 20000 Series Ergonomic Lifter

LIFT-O-FLEX® is a registered trademark of RonI Inc, Charlotte NC.

NOTE: It is important that you read and fully understand this manual before using your Lift-O-Flex® Lifter. If you have any questions contact your distributor or the manufacturer.

GENERAL DATA

- | | |
|--|--|
| • Type | LIFT-O-FLEX® 20000 Series |
| • Total Lift Capacity | |
| -20200 Series | • Maximum 140-lbs (includes weight of load and end-effector) |
| -20300 Series | • Maximum 200-lbs (includes weight of load and end-effector) |
| -20500 Series | • Maximum 275-lbs (includes weight of load and end-effector) |
| • Certification | • CE Marked |
| • Material | • Intermediate Section: Aluminum – Anodized |
| | • Legs: Steel – Powder Coated or Stainless Steel |
| | • Lift Mast: Aluminum – Anodized |
| | • End-Effector: Stainless Steel (304), Aluminum, Other |
| • Lifter Weight (excluding End-Effector) | • ~80-lbs. |
| • Weighted average for vibrations during operation | • Not to exceed 2.5 m/s ² |
| • Operational Sound Level | • Not to exceed 70 dB (A) |
| • Declaration of Conformity | • Delivered with each lifter |
| • Labeling | • Manufacturer |
| | • Year of Manufacture |
| | • Serial Number |

GOOD WORKING ENVIRONMENT

LIFT-O-FLEX® lifters are designed to ergonomically assist in material handling operations. By using the lifter, the prevention or elimination of injuries as well as the creation of safer working conditions for personnel will occur. People that already suffer from injuries or have suffered injuries will find that the lifter will enhance productivity.

FLEXIBLE

LIFT-O-FLEX® can lift and transport boxes, totes, rolls, etc. The end-effector is electrically lifted and lowered. A lift height of 47” (standard lift height, other lift heights are available) from the floor is provided for your material handling needs.

Optional devices for greater flexibility are:

- Platforms
- Custom End-Effectors
- Different leg lengths
- Different widths and lift mast heights

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OPERATIONAL SAFETY

The ergonomic design of LIFT-O-FLEX® Lifter is by itself an active factor of operational safety. Other factors of security and technical features are as follows:

- The movement of the load platform will stop should an object be placed in-between the lift frame and the load platform or if other jamming occurs.
- The lifter cannot be overloaded since it will automatically stop the lifting function if loaded with more than the maximum load limit that is factory set.
- A simple and easily operated foot activated system is installed for central wheel locking of the rear casters along with providing a directional wheel lock.
- The LIFT-O-FLEX® Lifter is easy to use in confined spaces and aisleways due to its compact outside dimensions and large caster wheels. Both rear caster wheels have a directional lock, which makes maneuvering of the LIFT-O-FLEX® simple.
- The handlebar is designed to protect the operator's hands while maneuvering the lifter.

SERVICE

The service is easy. Modular parts, electronics and batteries are easily accessible for replacement. This manual includes a spare parts list with drawings.

RECYCLABLE

The LIFT-O-FLEX® is made of recyclable aluminum materials. The LIFT-O-FLEX® uses gel-cell batteries, which do not leak gas and require no maintenance and are acceptable for recycling.

1.1 Warranty

Each lifter has a warranty that is valid for one (1) year from the date of shipment. The warranty provides that lifter is free from defects in material and workmanship. The batteries have a standard manufacturer's warranty of thirty-(30) day.

The warranty is valid providing the customer follows the instruction manual and completes the maintenance procedures as described. Normal maintenance, calibration or regular adjustments as specified in the operating instructions are the responsibility of the customer.

Abuse and/or careless operation will void the warranty.

This warranty is exclusive and is in lieu of all other warranties, expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, each of which is hereby expressly disclaimed.

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2. Assembly Instructions

Each lifter is delivered either fully assembled or in modules. If delivered in modules, they are shipped in a cardboard box(s).

2.1 Assembly

Assembly instructions for a partly assembled lifter (Intermediate section with legs and brake rod assembled)

1. Place the lifter base on the floor. Items include:
 - 1) Leg - Right Hand
 - 1) Leg – Left Hand
 - 1) Intermediate Section-Lower (with lift motor)
 - 1) Intermediate Section-Upper (with mast slide)
 - 1) Brake Rod

Note: Rear casters should be delivered with the wheels in the locked position.
2. Ease off the two nuts on the Mast Slide mounting bracket located at the rear of the Upper Intermediate Section above the Brake Rod but do not remove them.
3. Pick up the lift mast and carefully insert the mast onto the mast slide on the Upper Intermediate Section and slide it down over the mounting slide. (A mounting slot is provided full length on the rear of the mast). Slide the mast into the lift motor coupling located at the bottom of the intermediate section. (If the coupling does not seat properly, lift the mast up approximately 2” from the Lower Intermediate Section, lift up on the end-effector mounting yoke (this will turn the coupling on the lift mast) and push the mast into position). When properly seated, the lift mast base should be flush with the top of the Lower Intermediate Section.
4. Tighten up the two bolts at the rear of the Upper Intermediate Section with an open-end wrench (13 mm), **but not too hard.**
5. Take the Electronic Power Package and insert the mounting tabs into the top of the slot at the rear of the Lift Mast. Next, lower it until it stops and tighten the two bolts with an open end wrench (13 mm). Plug the motor cable into its outlet on the Electronic Power Pack.
6. Take the handle and insert the mounting tabs into the top of the slot on the backside of the lift mast and slide it down to a comfortable position and lock it in place. Make sure that the remote control holder is placed on the handlebar in a good position. Then place the remote control on the remote control holder in the keyhole slot and plug in the controller to the electronic power pack.

The lifter is now ready to operate.

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Assembly instructions for a completely disassembled lifter

1. Place the lifter base components on the floor. Items include:
 - 2) Leg - Right Hand
 - 2) Leg – Left Hand
 - 2) Intermediate Section-Lower (with lift motor)
 - 2) Intermediate Section-Upper (with mast slide) 200200 and 20500 Series only
 - 1) Brake Rod

Note: Rear casters should be delivered with the wheels in the braked position. Insure they are in this position prior to assembly.

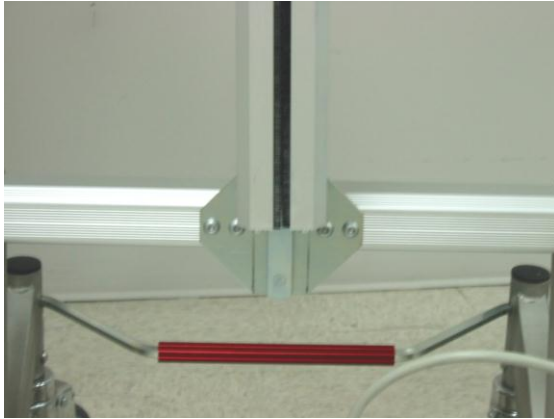
2. Assemble the Lower Intermediate Section and Upper Intermediate Section to one leg. The Lower Intermediate Section should have the motor cable on the left side if you are standing at the rear of assembled lifter. The Upper Intermediate Member should be assembled with the Mast Mounting bracket facing the front of the lifter if you are standing at the rear of the assembled lifter. Insert and loosely tighten (8) M8 x 50mm button head bolts as shown below. Do Not Tighten



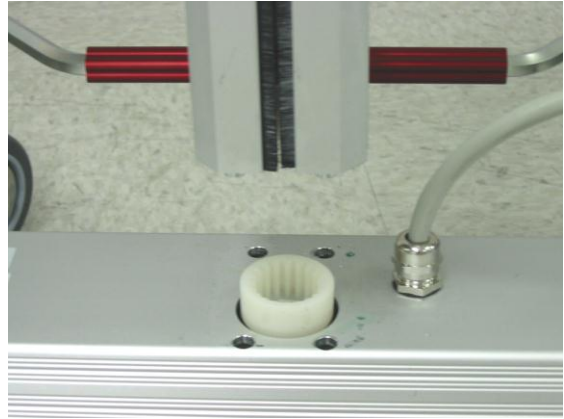
3. Next turn the intermediate section(s) with one leg attached on its side and insert the brake rod at a forward angle horizontal to the floor (the wheels are now in the braked position) into the hexagon hole situated above the wheel. Take the next leg and insert the brake rod into its hexagon hole located above the wheel and secure the leg with the screws as described above. Check to make sure both rear casters are in the braked position prior to bolting final leg to intermediate section.
4. After assembly, prior to installing the mast, place lifter base on a flat surface and tighten the button head bolts ensuring that all wheels are in contact with the floor. **Do Not Over tighten.**

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5. Ease off the two nuts on the Mast Slide mounting bracket located at the rear of the Upper Intermediate Section above the Brake Rod but do not remove them.
4. Pick up the lift mast and carefully insert the mast onto the mast slide on the Upper Intermediate Section and slide it down over the mounting slide. (A mounting slot is provided full length on the rear of the mast). Slide the mast into the lift motor coupling located at the bottom of the intermediate section. (If the coupling does not seat properly, lift the mast up approximately 2" from the Lower Intermediate Section, lift up on the end-effector mounting yoke (this will turn the coupling on the lift mast) and push the mast into position). When properly seated, the lift mast base should be flush with the top of the Lower Intermediate Section.



Sliding Mast into Mounting Bracket



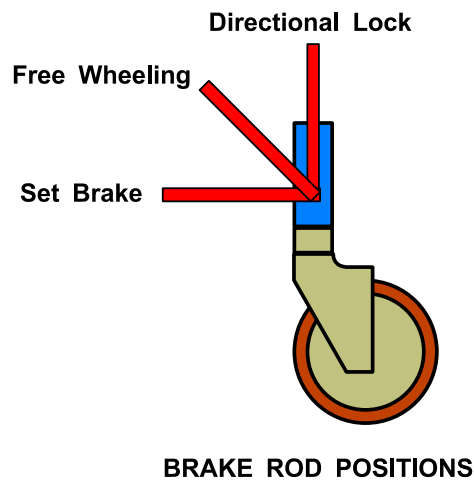
Lift Motor Coupling

5. Tighten up the two bolts at the rear of the Upper Intermediate Section with an open-end wrench (13 mm), **but not too hard.**
6. Take the Electronic Power Package and insert the mounting tabs into the top of the slot at the rear of the Lift Mast. Next, lower it until it stops and tighten the two bolts with an open end wrench (13 mm). Plug the motor cable into its outlet on the Electronic Power Pack.
7. Take the handle and insert the mounting tabs into the top of the slot on the backside of the lift mast and slide it down to a comfortable position and lock it in place. Make sure that the remote control holder is placed on the handlebar in a good position. Then place the remote control on the remote control holder in the keyhole slot and plug in the controller to the electronic power pack.

The lifter is now ready to operate.

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Follow the instructions from 2.1 Assembly for a partly assembled lifter.



2.2 Disassembly

To disassemble the lifter, refer to item 2.1 above and reverse the order.

Disposal after useful life

When the lifter has provided many years of use and is ready to be disposed of, it should be recycled. The LIFT-O-FLEX® lifter is manufactured with materials that are recyclable. We have also selected recyclable gel-cell batteries over nickel-cadmium batteries for this purpose.

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3. Operating instructions

3.1 Operating

In order to prevent and avoid work injuries it is important that the LIFT-O-FLEX® be operated in a proper manner.

3.1.1 Charging

NOTE: DO NOT OPERATE LIFTER WHEN CHARGING BATTERIES

Gel-Cell batteries cannot withstand total discharging and need to be recharged after use. The battery charger supplied with the lifter connects to an ordinary electrical wall outlet and allows for recharging the batteries.

When the battery charger is connected to the lifter and plugged into the wall outlet, both the green and the red lights come on simultaneously. After a few seconds the red light stays on, showing that the charging procedure is taking place. When the batteries are about fully charged the yellow light goes on which gives the battery a “Balancing Charge” to top off the charge cycle. Generally, the Charge State reached at the “Balancing Charge” is 80%-95% of total charge capacity of the battery. The green light indicates that the battery is fully charged.

Note: The battery chargers will not over charge the batteries. The electronic card used on the lifter will not allow for total discharge of the batteries. Continuous lifter use will not hurt the batteries.

Red lamp = Charger is connected to power supply and charging battery.

Yellow lamp = Balancing Charge-Charging battery at 2.7 Amp.

Green lamp = Battery fully charged

The batteries will not leak and are maintenance free (18 volt, 6.5 AHr-Standard-Electronic Power Packs 17270B & 17470B)/(24 volt, 7.2 AHr-Standard-Electronic Power Packs 20001 & 20002).

The 20001 and 20002 Electronic Power Packs are equipped with a voltmeter. When the display on the voltmeter flashes the batteries need to be recharged. **The power pack must be switched on for two full minutes after finishing charge cycle for the display on the voltmeter to indicate charge level.**

The lifter should be recharged every night, over weekends, holidays and after prolonged periods without use, or the batteries will lose the capability of being recharged. This will ensure that the batteries can achieve a maximum charge and that they will handle the lifts required during the working day.

3.1.2 Handlebar

The height of the handlebar can easily be adjusted by loosening the quick disconnect handles and sliding the handlebar to the desired position. After adjustment, tighten the quick disconnect handles. To obtain the best working conditions it is important to adjust the handle to a comfortable level. During movement of the lifter, always keep hands inside the handle. This will protect the hands if the handlebar should encounter an obstacle.

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3.1.3 Lifting

Important!

The maximum lift capacity is limited to weights as noted on page 3

The lifter is not to be used for personnel transportation.

Place your LIFT-O-FLEX® in the working area. Make sure to always apply the brake before loading or unloading the end-effector. To apply the brakes, push the red brake bar forward to its bottom position.

Be certain that the end-effector is placed on the same level as the object being loaded. To adjust the elevation of the end-effector, use the buttons on the remote control pendant. The remote control pendant has arrows to show the direction of operation.

Place the load on the end-effector. The load should always be positioned centrally in order to obtain the best stability possible. The load should be placed at the center and back of the end-effector.

When loading different items raise/lower the end-effector to the correct elevation, making it easy to push or pull the items on or off the end-effector.

The remote control pendant can rest on the handle or be held in the hand in the best position to observe the movement of the end-effector. The remote control holder with keyhole slot is mounted on the handlebar and can be easily adjusted. Turn the quick release handle loosening the holder, adjust to the desired angle or position and retighten the quick release handle to lock it in place.

3.1.4 Transport

The end-effector should always to be lowered to the lowest possible position before moving the lifter. Unlock the central brake by positioning the red bar in the middle position. All four wheels can now swivel in any direction.

Directional wheel locks

When moving a heavy load, it is both easier and safer if you use the directional wheel locks by moving the red bar into the upper position. Both back wheels are now locked in a straightforward position. This gives greater directional stability when moving heavy loads. Observe that it is especially important that a heavy load be kept as low and as centered on the end-effector as possible.

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3.2 Troubleshooting

The LIFT-O-FLEX® has been designed to operate safely and effectively provided that maintenance procedures are followed according to the instruction manual. A guide for trouble-shooting is provided as listed below should any problems arise. If the problem remains after referring to the troubleshooting guide below - contact **RONI, LLC** in Charlotte, NC.

Symptom		Action	
1	Motor not running when remote is depressed	A	Check that lights on battery charger are on See 3.11 Charging
		B	Check if the voltmeter display on the 20001 and 20002 Power Packs indicate that the battery is charging
		C	Check that the connections to/from the battery charger are correct during charging
		D	Check battery voltage-See 3.1.1
		E	Check fuses inside Power Packs 15A for 17270B & 17470B 30A for 20001 & 20002
2	End-Effector doesn't move when depressing remote controller or control module	A	See above under Symptom 1
		B	Check that the maximum load is not exceeded
		C	Check that the lift mast is secure and in its lowest position-see Assembly 2.1
3	End-Effector moves slowly up and down	A	See Symptom 1-Actions 1A and 1D
4	During lifting, mast sounds noisy or behaves oddly	A	Go through actions under 2.1 Assembly-4
5	Rear wheel brake doesn't hold	A	With 3mm Allen wrench tighten set screw found on caster. Perform adjustment while brake is in opened position. Only slight adjustments are required

Contact RonI, Inc for further assistance if required.

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3.3 Maintenance

Regular maintenance is important to protect the continued use of the LIFT-O-FLEX® lifter.

Daily maintenance

1. If the lifter is fitted with a scale - make sure that power to the scale is off when not in use.
2. Wipe down the lifter with a detergent suitable for powder coat surfaces, aluminium and stainless steel. Follow the instructions on the detergent. Wipe the lifter dry. **Do not use a high-pressure hose. It could damage both the electronics as well as the chassis.**
3. The batteries are to be charged every night or when the lifter is not being used for a long period of time. **The batteries can not be "over charged".**

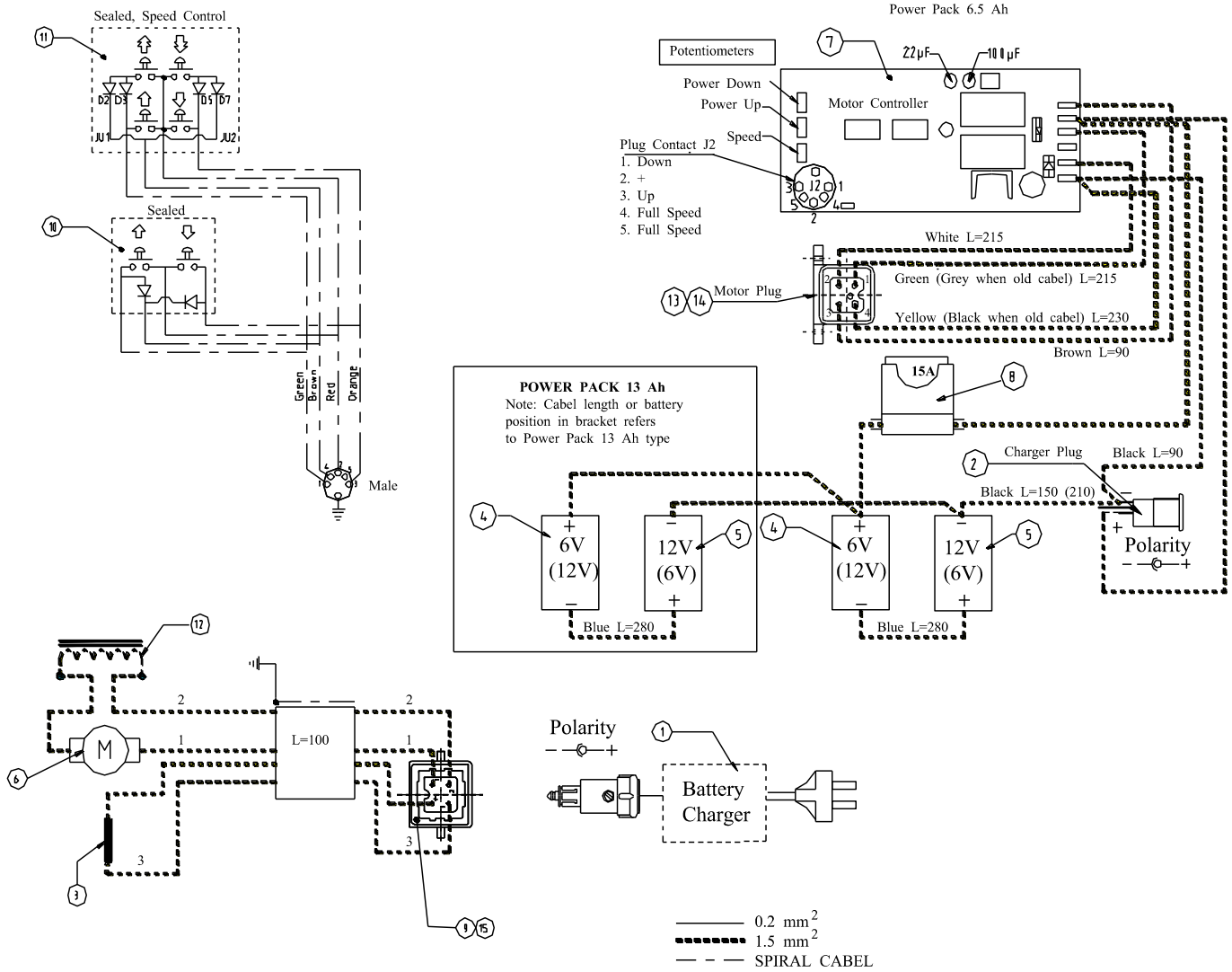
Every 6 month maintenance

1. Electrical connections: Check all connections and have any items that show wear or damage repaired. Replace if needed.
2. Bolts and screws: Check that all bolts and screws are tight.
3. Lift mast: Take the mast out of the base frame. Wipe it clean and lubricate it with ball bearing grease. When the mast is out of the intermediate section the bristles in the mast are to be taken out from the bottom of the mast and cleaned. At the same time the screw can be lubricated with ball bearing grease. Assemble the mast, see 2.1 Assembly, and check that the end-effector is operating properly.
4. Wheels: Check that all wheels run smoothly and lubricate the ball bearings regularly. Check that the wheel rubber is not worn or damaged.
5. Central brake system: Check that all brake positions are operating properly:
 - Rear wheels locked (brake rod is in lower (horizontal) position)
 - Neutral, casters are unlocked (brake rod is in middle position)
 - Directional lock engaged (brake rod is in the upper (vertical) position)
6. Quick disconnect handle for handlebar and the mounting bracket for remote control: Check that the quick disconnect handles can be loosened and tightened properly.
7. Identification and warning signs: Check that the signs are well attached and can be read. They are mounted for your safety.
8. If the LIFT-O-FLEX® is fitted with the optional scale, check that the scale is calibrated. If the scale does not show the correct figures, 0.00, after zeroing "TARA" (Tare), please contact your agent.

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4. Enclosures

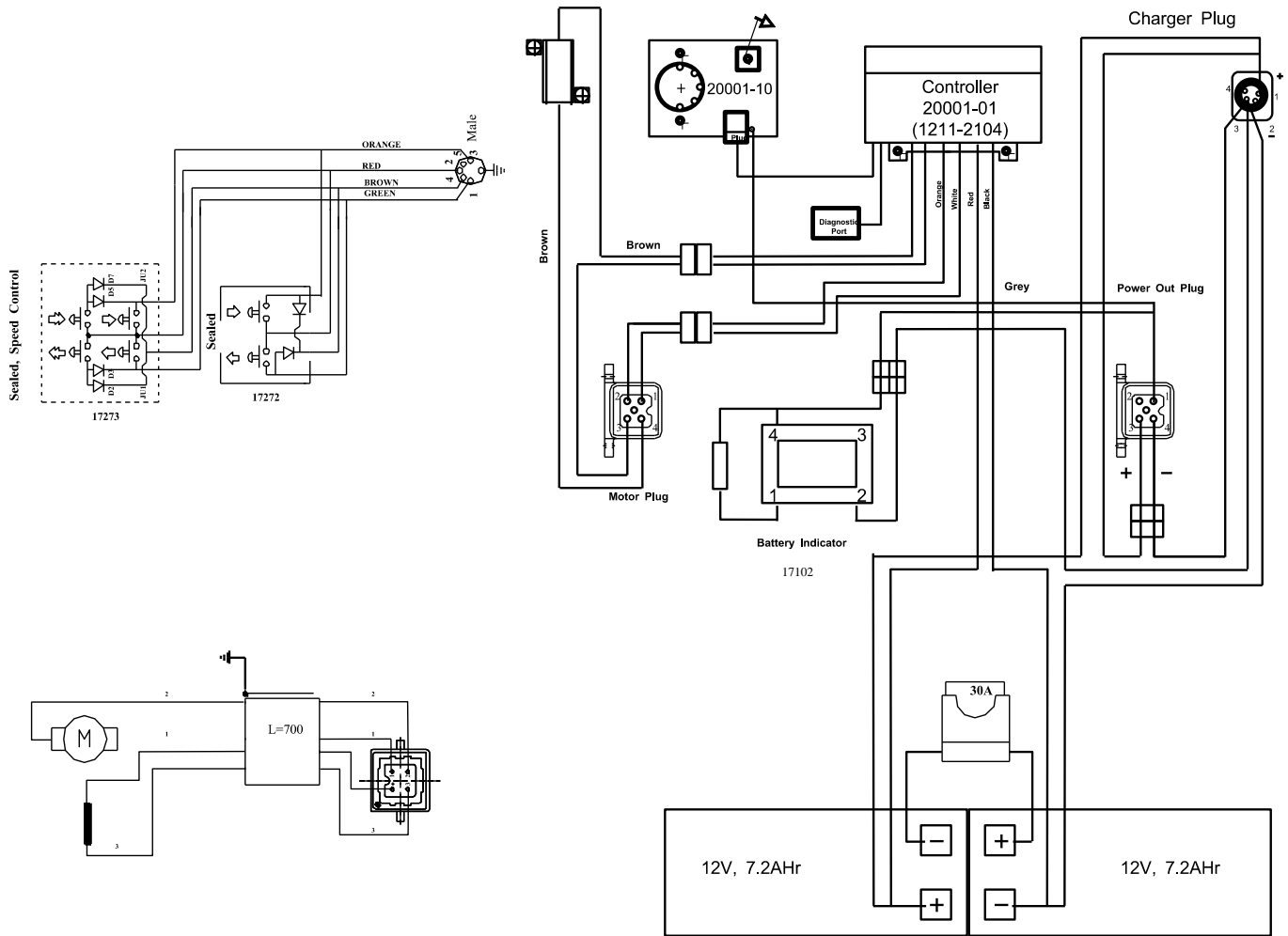
4.1 Electrical Schematics (17270B and 17470B Series Electronic Power Packs)



No.	Qty	Description	Part No.	No.	Qty	Description	Part No.
1	1	Charger (18VDC/110VAC)	17136	9	1	Upper part-Straight	17270-12
2	1	Plug	17327	10	1	2 Button Controller	17272
3	1	Brake	18114	11	1	4 Button Controller	17273
4	1	Battery 6V	17548	12	1	Choke Coil	17123
5	1	Battery 12V	17549	13	1	Angular Housing	17270-11
6	1	Motor 12V 404 311		14	1	Female Contact	17270-09
7	1	Motor Controller	17274	15	1	Male Contact	17270-10
8	1	Fuse 15A					

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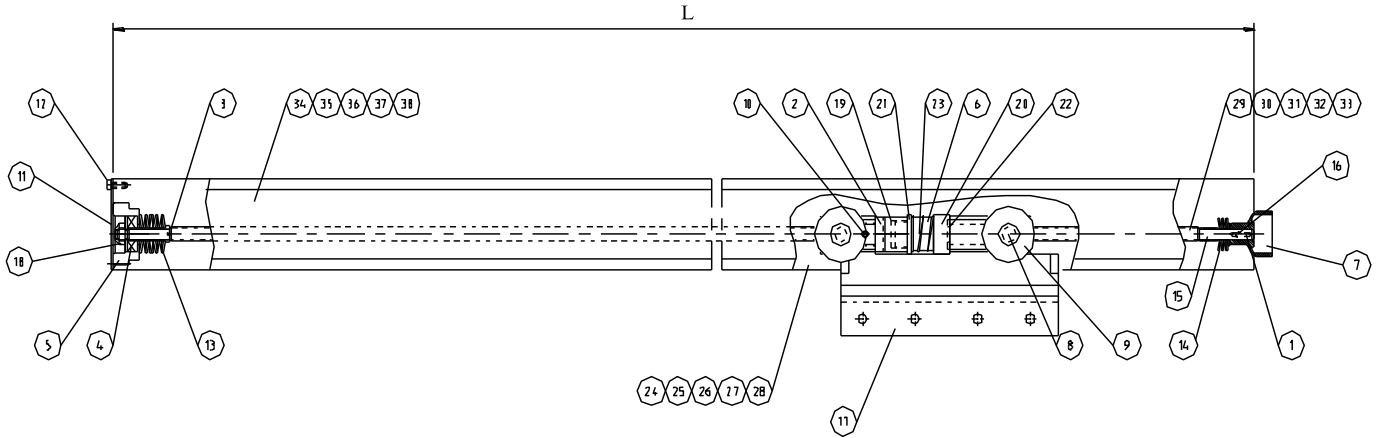
4.2 Electrical Schematics (20001 and 20002 Series Electronic Power Packs)



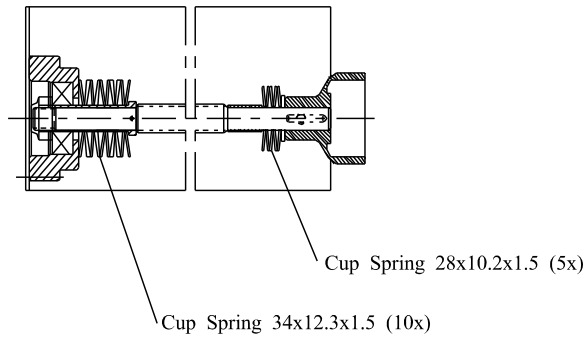
No.	Qty	Description	Part No.	No.	Qty	Description	Part No.
1	1	Charger (24VDC/110VAC)	2403SRL	6	1	Aux. Card	20001-10
2	1	Plug	17327	7	1	Motor Controller	20001-01
3	1	Battery Indicator	17102	8	1	Fuse 30A	
4	2	Battery 12V	R7104	9	1	2 Button Controller	17272
5	1	Motor 12V w/Brake	20053	10	1	4 Button Controller	17273

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4.3 Lift Mast



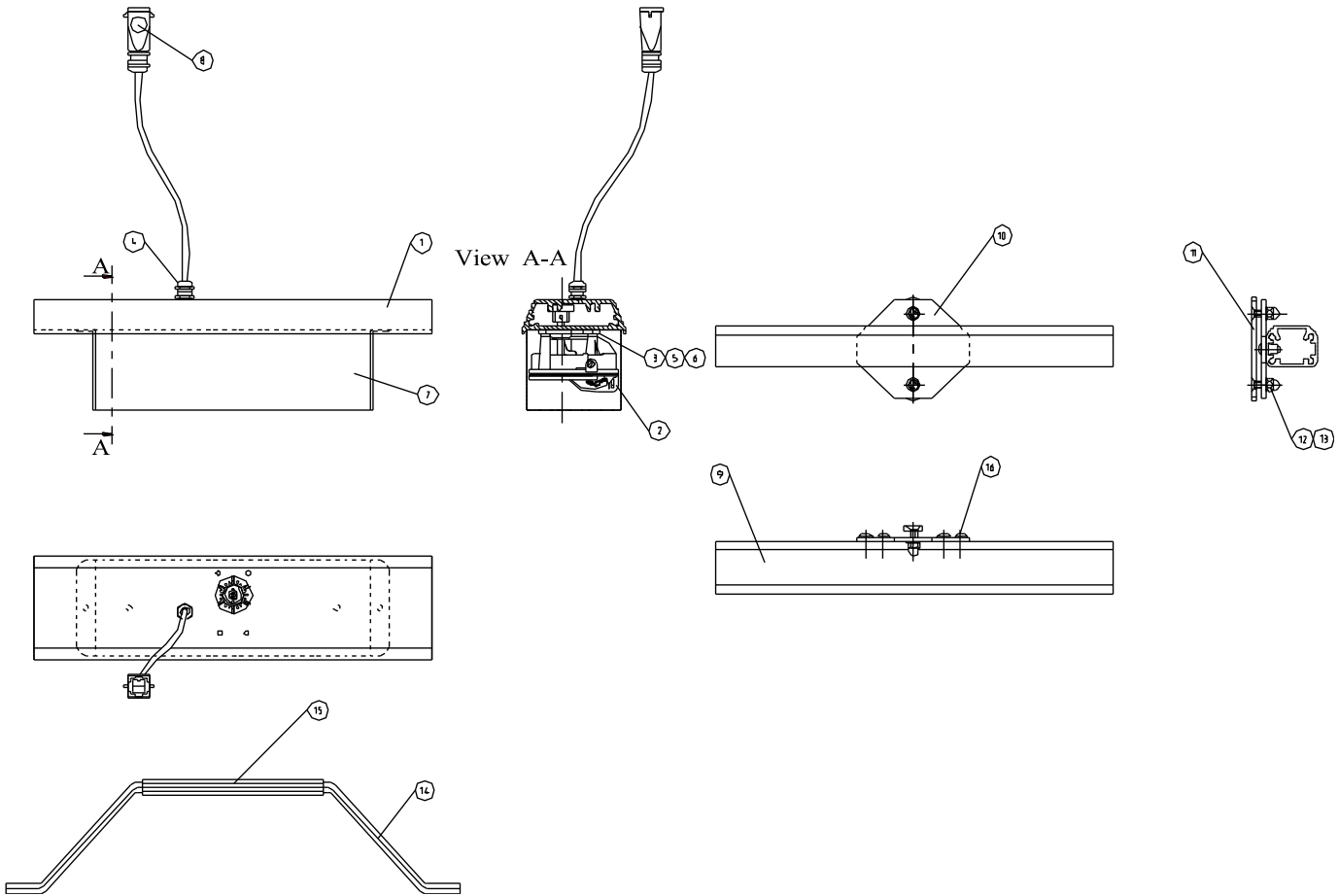
Cup Spring Mounting



No.	Qty	Description	Part No.	No.	Qty	Description	Part No.
1	1	Wedge 3x3 L=18	17531	20	1	Spacer L=15	17568
2	1	Connector-Slide	17567	21	1	Spacer L=5	17569
3	1	Sleeve	17529	22	1	Washer	17580
4	1	Bearing 7201 BE	17520	23	1	Spring	17581
5	1	Bearing Holder	17521	24		Brush Strip L=1497	
6	1	Lift Screw Nut	17523	25		Brush Strip L=1747	
7	1	Coupling	15101	26		Brush Strip L=1997	
8	4	Stub Axle	17515	26		Brush Strip L=2197	
9	4	Wheel	17516	28		Brush Strip L=2497	
10	1	Screw	sk6SS m6X8	29		Ball Screw L= 1485	17522
11	1	End Cover	17000-82	30		Ball Screw L= 1735	20045
12	4	Screw	mc6S m5x1.6 8.8	31		Ball Screw L= 1985	17539
13	10	Cup Spring	34x12x1.5	32		Ball Screw L= 2185	17506
14	5	Cup Spring	28x10.2x1.5	33		Ball Screw L= 2485	17565
15	1	Spacer	20052	34		Mast Profile L= 1487	20040-01
16	1	Screw	t6ss m5x6	35		Mast Profile L= 1737	20041-01
17	1	Slide	20049-02	36		Mast Profile L= 1987	20042-01
18	1	Nut	895 m10	37		Mast Profile L= 2187	20043-01
19	1	Connector	17566	38		Mast Profile L= 2487	20044-01

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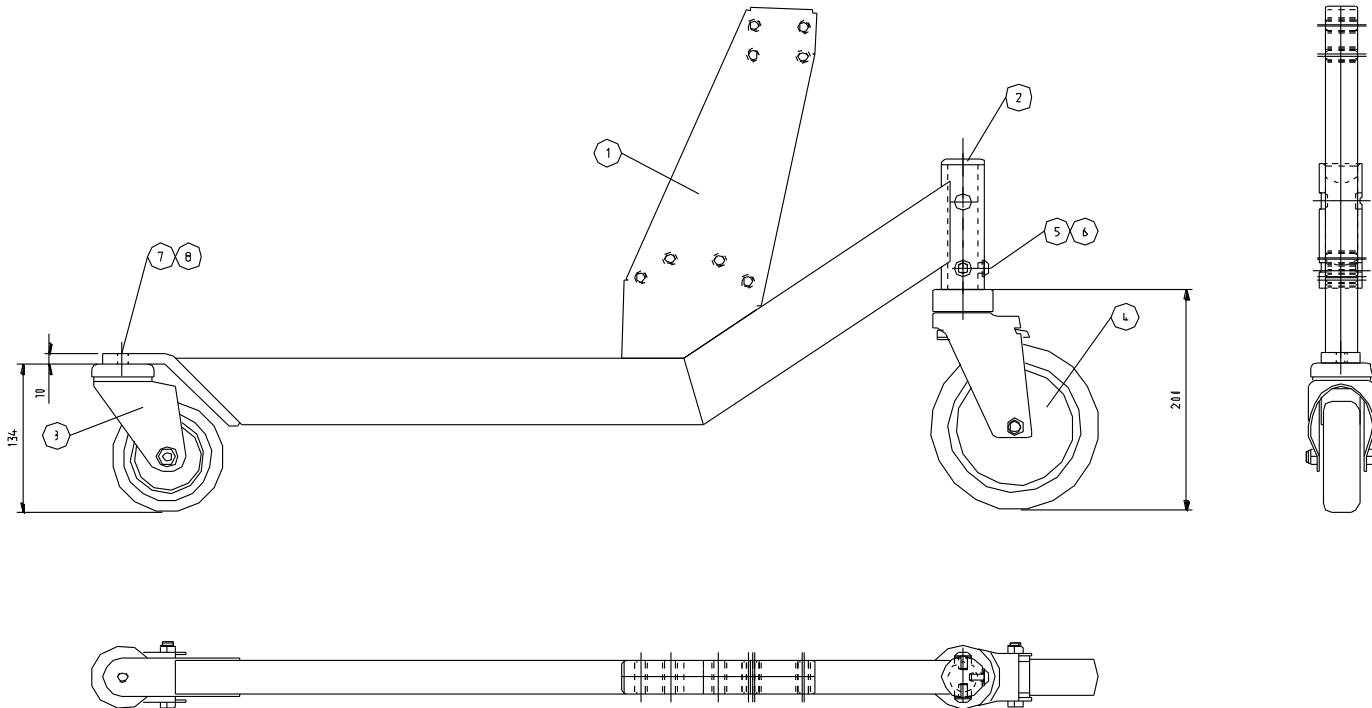
4.4 Lower and Upper Intermediate Sections



No.	Qty	Description	Part No.	No.	Qty	Description	Part No.
1	1	Lower Intermediate	20030-01	9	1	Upper Intermediate	20030-03
2	1	Motor 404.311	17344	10	1	Mast Bracket	20030-04
3	1	Motor Bracket	16014	11	1	Locking Plate	19134
4	1	Cable Fitting	20016	12	2	Lock Washer	8.4 hb 200
5	3	Screw	Mc6s m6x20	13	2	Nut	M8 mk
6	5	Screw	Mk6s m6x20	14	2	Bar	17205
7	1	Motor Cover	20030-02	15	1	Brake Rod	17111
8	1	Electrical Schematic		16	4	Screw	K6s m8x20

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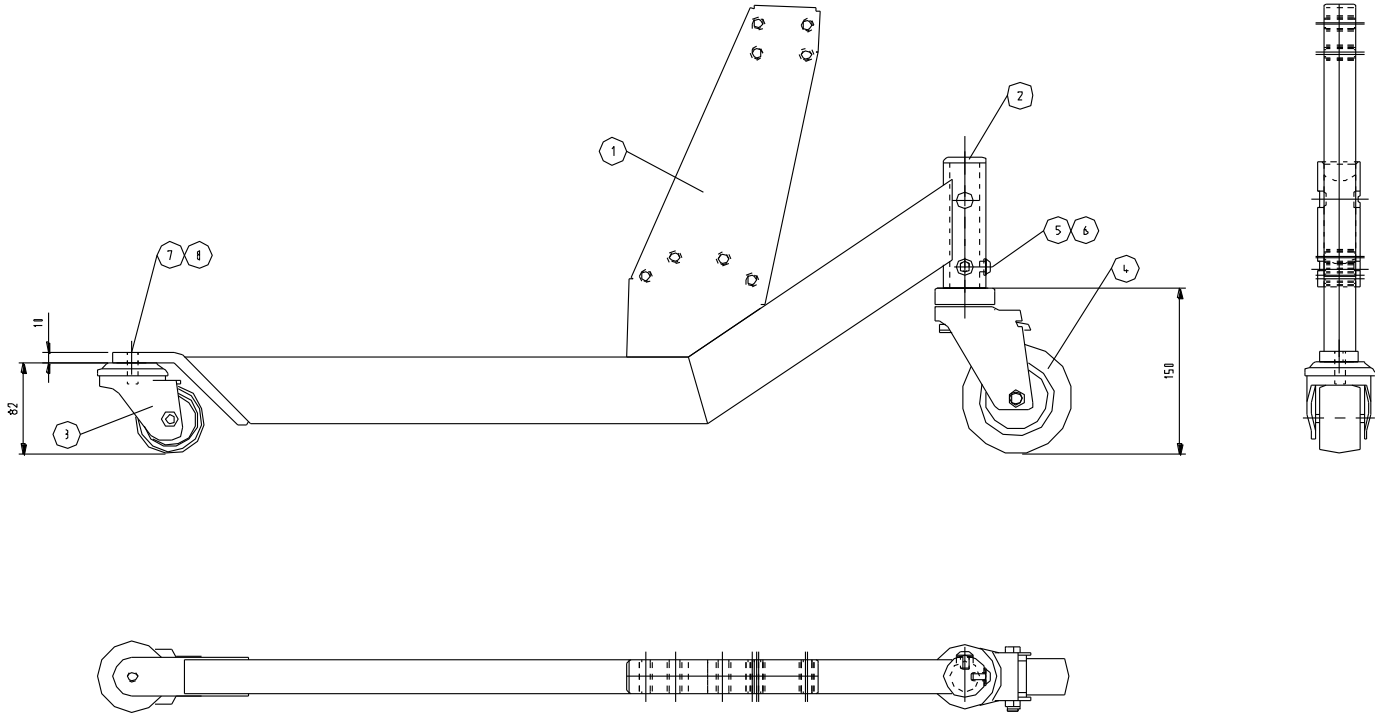
4.5 Legs-Standard (20300 and 20500)



No.	Qty	Description	Part No.
1	2	Legs	20020
2	2	End cover	13004
3	2	Front Wheel 100mm \varnothing	20010-01
4	2	Rear Wheel 150mm \varnothing	19118
5	4	Washer	8.4
6	4	Screw	K6s m8x12 10.9
7	2	Screw	Mc6s m10x20 8.8
8	2	Washer	10.5

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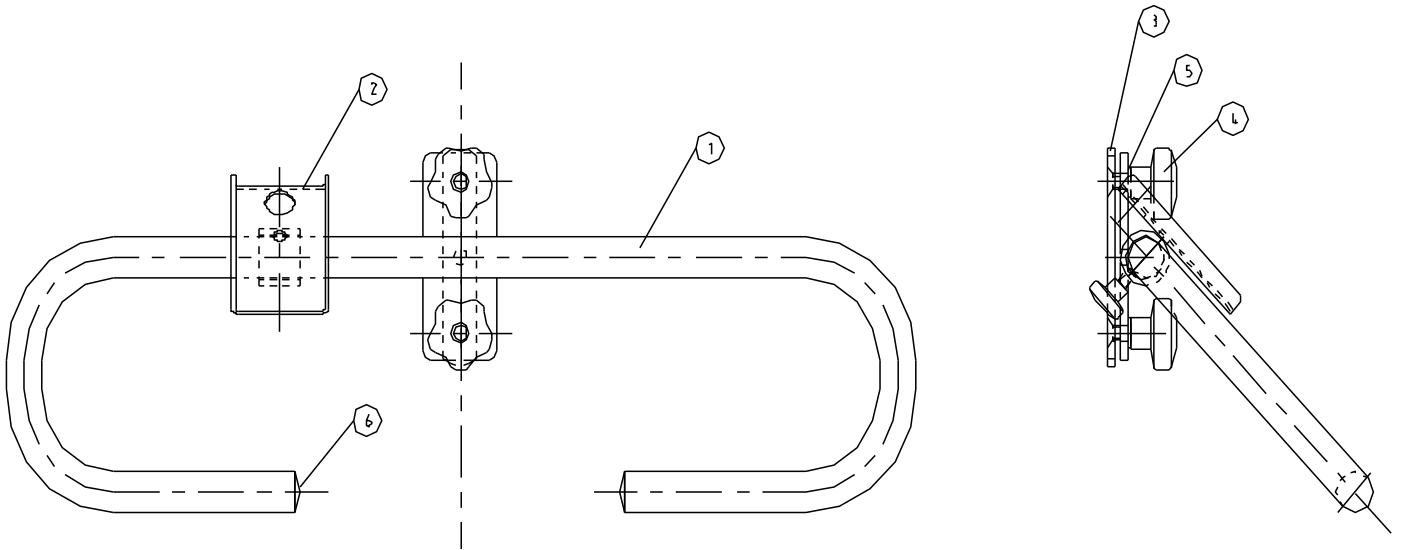
4.6 Legs-Low Profile (20300 and 20500)



No.	Qty	Description	Part No.
1	2	Legs	20020
2	2	End cover	13004
3	2	Front Wheel 56mmØ	20011-01
4	2	Rear Wheel 100mmØ	17557
5	4	Washer	8.4
6	4	Screw	K6s m8x12 10.9
7	2	Screw	Mc6s m10x20 8.8
8	2	Washer	10.5

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4.7 Handlebar



No.	Qty	Description	Part No.
1	1	Handle	17280-03
2	1	Remote Bracket	17201A
3	1	Bar	19228
4	2	Locking Knob	19166
5	2	Washer	8.4 hb 200
6	2	End Cover	19169-03

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5. Declaration of Conformity

Referring to Directive for machines 89/392/EEC with addendum - appendix 2A

Supplier: RONI Inc., 9319 Forsyth Park Drive, Charlotte, NC 28273
Address

Description: LIFT-O-FLEX® 20000 Series Lifter

Regulations: AFS 1993:10 (89/392/EEG) AND (91/368/EEG)
Regulations that the lifter complies to.

Standards: EN 292-1, EN 292-2, EN 294, EN 60204-1, EN 349
(when applicable) Applicable harmonized standards
IKH 4.30.01 utg 3, SMS 2986
Applicable national standards and specifications

The item above hereby is assured to be in compliance of the fundamental requirements as stated in the Directive for machines 89/392/EEC with addendum, respectively be in compliance with the machine that has gone through Common market control by an institution as above.

Signature: _____

6. TEST PROTOCOL

- Proof loaded. The overload protection operates.
- The slide stops correctly when it goes to the top end position with and without load.
- The break function in the slide works at the lower end position, and if the load platform is hold and is moving downward.
- The wheels, rolls - brakes - the directional lock - works with as well as without load.
- The maneuvering handle is adjustable and is in fixed position when locked.
- Surface condition.
- Machine plate - signs - language.
- The wheels can rotate free from the load platform.
- The sound level from motor and stand is normal.
- Accessories - check order / requisition.
- Manuals, including; Declaration of Conformity - Instructions for recharging - Assembly instructions.
- The battery charger operates together with the lift trolley. Over night charged.

Serial number:..... Date of delivery:

Approved by: Date:.....