

molift[®]

MOVER 205 MOVER 300



CE

- a patient lift from
TM05101 Molift Mover 205-300 English

molift[®]
designed for life

TECHNICAL MANUAL

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General Advice

This technical manual contains important information about the lift, including safety precautions. Therefore, study the manual carefully before handling and repairing the patient lift.

Explanation of Symbols

References to positions are made like this: **A**① refers to Appendix A, position 1.



This symbol appears in the manual beside all the information, which deals with workplace safety, and when a potential risk for personal damage may arise. Always follow all these instructions and be extra observant and careful.



This symbol refers to important information about the correct use of the equipment described in this manual. Failure to observe the information may lead to functional faults or damages to the equipment.



This symbol highlights information, which is particularly useful. If it is observed, you may be able to use the equipment more efficiently. The information simplifies work tasks or explains complicated facts.

Safety Precautions

Repair of the lift involves lifting and handling objects, which are heavy, long and/or sharp. Assembly or disassembly of parts may affect the stability of the lift, and this creates a risk that it may topple over or collapse.

Therefore, always be careful.



Read this manual, as well as the user manual and general safety precautions.

Disclaimer

Etac Supply Gjøvik does not accept responsibility for damages and functional faults if the instructions in the manual have not been followed. Claims covered by the warranty should be made immediately after a deficiency has been discovered, and marked with the serial number of the lift and any identification number to the service personnel. Normal wear is not covered by the warranty. All technical information, all data and all the instructions in this manual was completely up-to-date at the time this manual was sent for printing. The manual was compiled on the basis of our experience and to the best of our ability and intentions. We reserve the right to make technical modifications in connection with further development and improvement of the product described in this manual. Therefore, claims may not be based on information, illustrations and descriptions contained in this manual. We do not take responsibility for any kind of damages and faults arising from unintended use related to failure to follow the manual or insufficient maintenance. We want to emphasize that only Molift spare parts and equipment approved by us may be used.

For safety reasons, the installation and use of unapproved spare parts or equipment, and unauthorised modification and alteration of the product is not allowed. Etac Supply Gjøvik does not accept responsibility for damages caused because this was done anyway.

With the exception of indirect damages, Etac Supply Gjøvik takes responsibility for faults and deficiencies of the product within the scope of what is described in the purchase agreement. Claims for damages are excepted, regardless of whatever legal foundation such claims may be based on. Only the documentation related to the product is valid.

If safety directions or other regulations described in this manual have not been followed, the conformity declaration (CE declaration), delivered with this product in accordance with the Directions for Medical Equipment (93/42/EØF), is considered invalid.

Technical Description

Main Components

The lift is delivered in three main parts:

1. Chassis with legs;
2. Lifting arm and column with battery holder and electronics;
3. Suspension.

Chassis and Legs

The chassis **C**① is made of cast aluminium. The adjustable legs are made from aluminium profiles and are attached to the chassis with a leg parting mechanism and a motor **C**④.

Column and Battery Holder

The column **D**① is made of aluminium profile and placed in the column holder on the chassis. There is an operation handle and a battery holder on the column. The battery holder is on the back of the column, and contains all the electronics and the control card.

The lifting arm **D**⑱ is suspended at the top of the column and can be raised and lowered with the motor.

Electronics

The electronics consists of a control card **E**⑥ with remote control, emergency stop and lowering switches, and battery and service lights. All functions rely on the control card. The control card has a counter, which registers the number of seconds with activity. After a certain time, it signals to activate the service light to inform the user that the lift needs service. An electric emergency lowering switch **E**⑭ is located above the stop switch. The motor has a manual emergency lowering function in case of a power failure.

Battery

The battery **A**④ is placed in the battery holder and consists of 22-cell battery pack.

Arm and Suspension

The lifting arm **D**⑱ is made of aluminium profile and is suspended on the column. A motor **D**⑲ operates the lifting arm. The suspension **A**③ is made of strong and light composite plastic, with 4 safety hooks for the sling. The suspension has an automatic coupling to make suspension change easy.

Hand Control Unit

The hand control unit **A**⑤ has four switches for lift operation, one "up" and one "down" switch, and a switch for "legs out" and one for "legs in". A light indicates when the battery needs charging. The remote control socket is located at the bottom of the battery holder.

Charger and Battery

Molift Mover 205/300 runs on a battery consisting of a 26 V battery pack **A**④. The battery is charged in a separate charger **A**⑥ by placing the battery in the holder. One battery can be charged while another operates the lift.

Technical Specifications

Material: Aluminium, steel and composite plastic.

Lifting motor: 24 V DC

Leg parting motor: 24 V DC

Battery: 2.1 Ah NiMH, 22-cell

Battery charger: Mascot type 2215MV

No. of lifts with fully charged battery:
75 lifts
(75 kg, 500 mm up/down)

Lifting capacity: 205 / 300 kg (SWL)

Lifting range: 1,460 mm

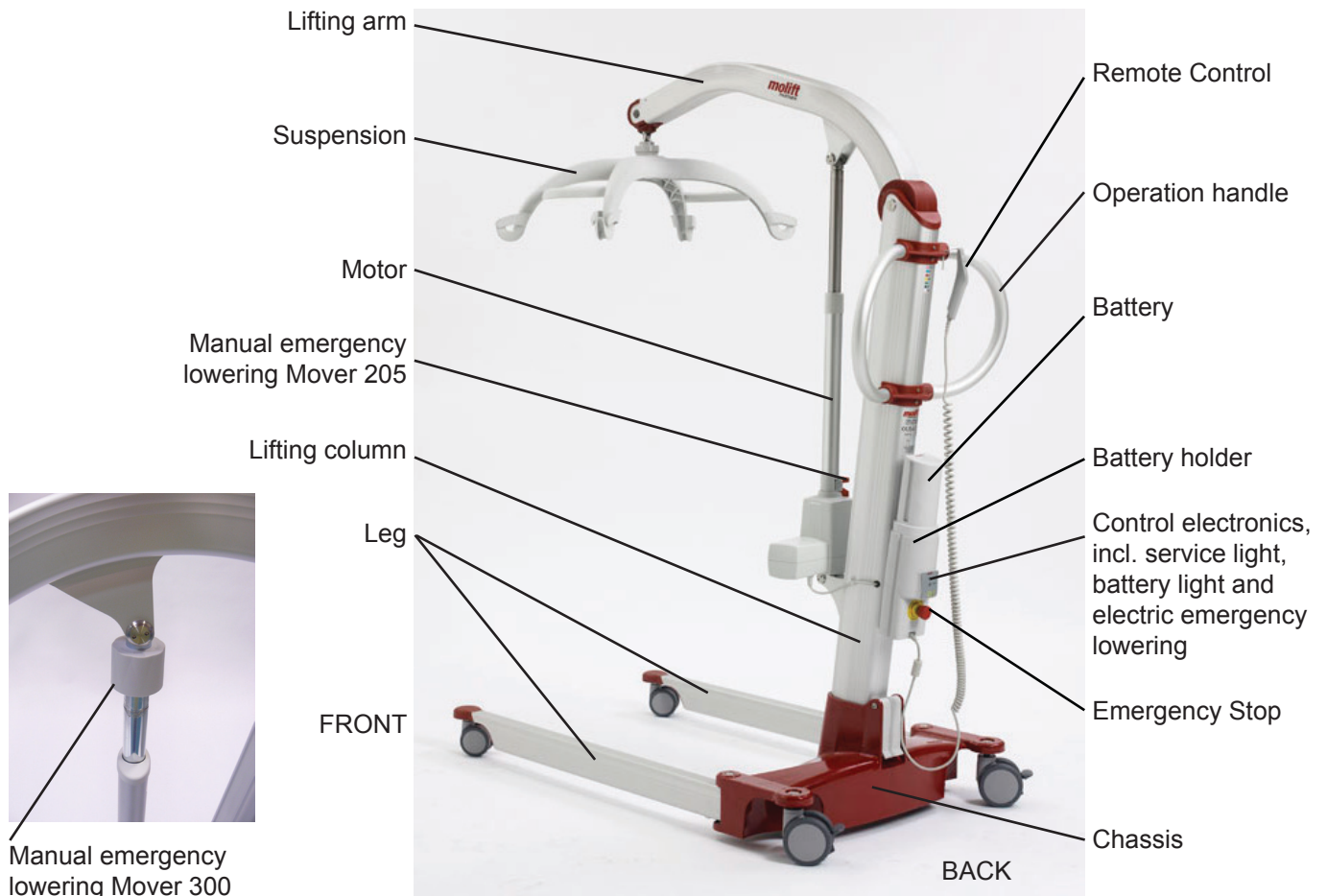
Lifting speed: 40 mm/sec for normal lift and fully charged battery.

Measurements: 1,320x700x1,380 mm

Height to hook for sling on suspension:
min 340 mm
max 1,800 mm

Weight:
Total (without battery) 38.5 kg
Chassis 17.0 kg
Column with
Arm/suspension 21.5 kg
Battery 1.4 kg

Technical specifications may be changed without notice.



Service

Molift Mover 205/300 is a mobile lift, which needs relatively little maintenance and has few parts. Take good care of your Molift Mover 205/300 and follow the regular service regulations, and you will enjoy using it for many years. Service must only be done by authorised personnel.

In addition to the required service, Molift recommends regular inspections to detect unforeseen damages and faults. A checklist for periodic inspections is found in the User Manual.

Notice of Service

The lift has a built-in service light, which gives a warning when service is needed. The light is green when the lift can be used in a normal way. The electronics registers the loads and how much the lift is used, and after a certain operation time a signal warns that service is needed. The light will be yellow at first, then red. The lift may still be used, but you should order a service from your local service partner. An additional buzzer indicates when the lift needs service urgently.



Service light

Use the Molift Servicetool and read the lift data and number of lifts. The Molift Servicetool is also used for resetting the service light after service.

Service

Service should be done when the service light signals or at least after five years.


- Replacing the motor/actuator must be done when service lamp gives signal
- Replacing worn and damaged parts.
- Replacing the composite plastic suspension (if this is mounted)

If you have any questions on service and maintenance, please contact your local service partner/dealer or Etac Supply Gjøvik.

All repair and service must be logged for each lift. After service and/or repair, the lift should be checked using the Inspection diagram on page 13.

The lift owner is responsible for storing the information on inspections, service and repair.

Cleaning

 *Detergents used should be pH-neutral. Do not use solvents or other strong fluids, which may damage or ruin outside surfaces or change the characteristics of lift materials. If disinfection is necessary, use isopropyl alcohol. Avoid using abrasives and corrosives.*

Wash the outside with a damp cloth and a suitable detergent.

Troubleshooting

If the lift is not functioning, the first action is to check that the power supply is in order. Then check that the battery light is on and that the service light is not indicating a need for service. See the troubleshooting table in the user manual.

Should the troubleshooting table not yield a fault diagnosis, use your judgment and a process of elimination.



Use only original spare parts from Etac Supply Gjøvik.

Repair



Remove the battery before maintenance on the lift to make sure that the lift does not move unintentionally.

Replacing Motor

You will need:

- Loctite 2701 or similar
- Special tool; universal key x 2
- Hot air gun

Procedure

- Remove the suspension.
- Remove column with lifting arm from chassis and put it on a worktop.
- Loosen lower special screw (26) at the column using the special tool.

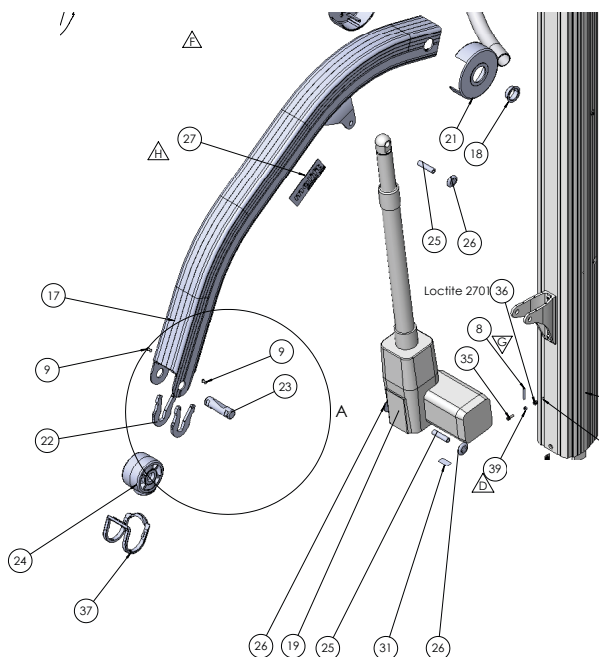


You need to heat the screw/bolt to loosen the Loctite used for assembly. Limit the heat to as small an area, and as low a temperature, as possible.



The motor will come loose and may fall down during the next steps. Get someone to hold the motor or secure it in some way.

- Loosen upper special screw (26) at the arm using the special tool.



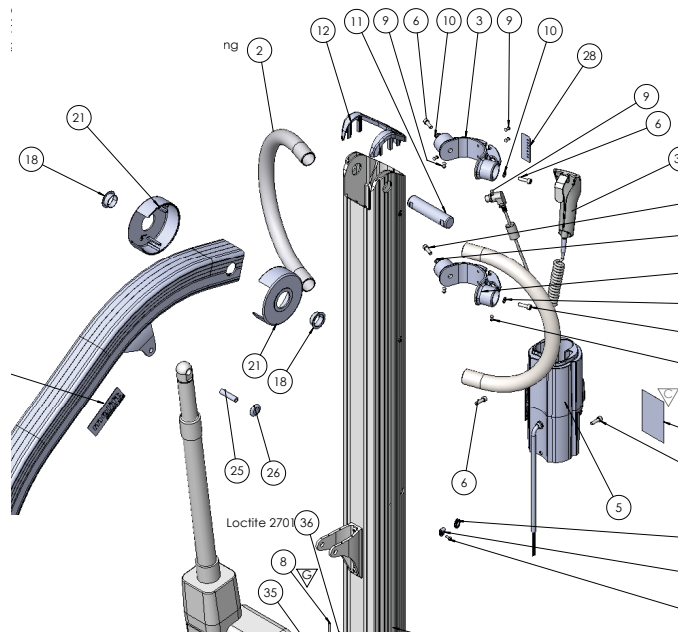
- Push out both bolts (25), or use a bolt or similar to carefully press/knock them out.
- Lift the motor out and put it down gently.
- Install a new motor (19) - be careful to put it in its correct position, i.e. with motor housing turned the right way.
- Mount the bolts.
- Put Loctite 243 or similar on the special screws and tighten them.
- Connect the wire from the motor to the electronics.
- Tighten the strain relief.

Disassembly of arm

- Remove the suspension.
- Remove column with lifting arm from chassis and put it on a worktop.
- Loosen the motor by unscrewing the special screw (26) and remove the bolt (25), which holds it to the bracket.
- Take off the top cover (12) by drilling out the rivet (9) and then gently knocking the cover off the column.

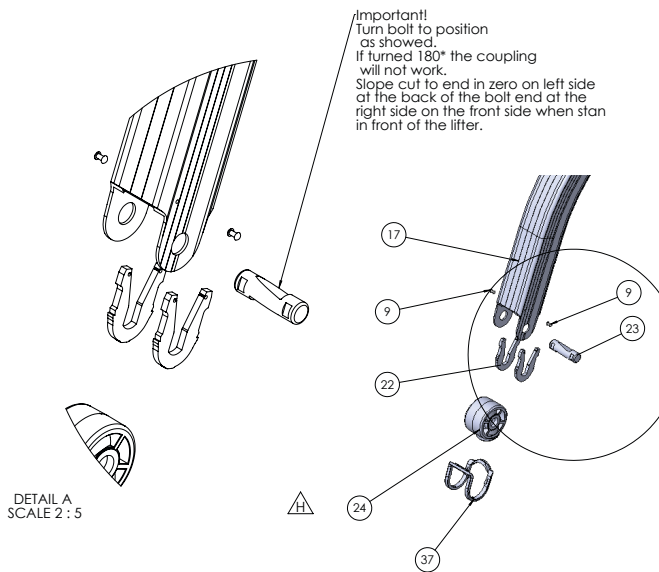


The parts are now loose and may fall apart.



- Remove the bolt (11) holding the arm to the column and remove the two red covers (21).

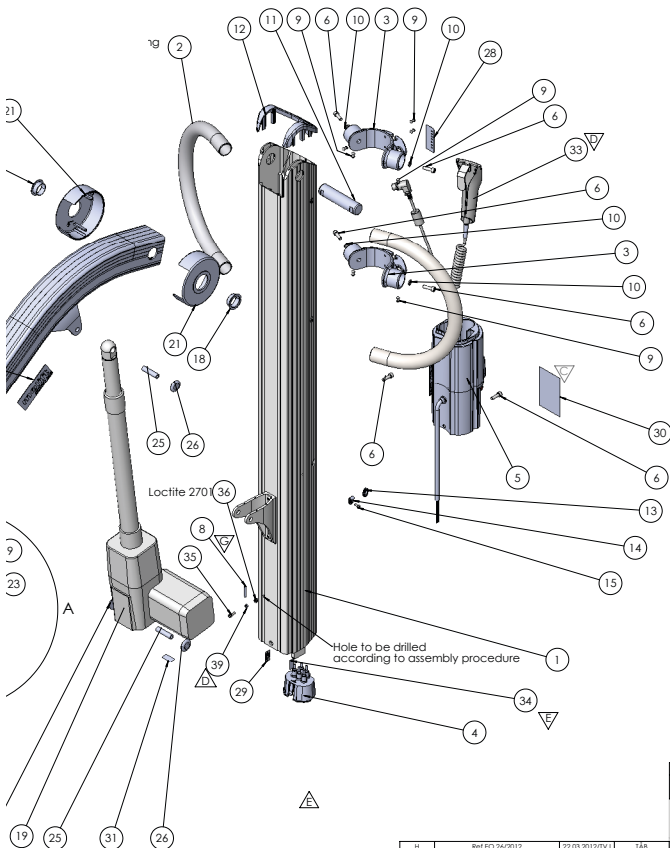
- Move the front cover (37), front bulb (24), steelplate (22) and bolt (23) with screws to the new arm.



- The arm with bracket can now be replaced.
 - Assembly is done in the opposite order.
- NOTE! Posistion bolt correctly acc. to drawing.

Disassembly of Column

- When disassembling the column, remove the lifting arm and motor (19) as described above.
- Remove battery holder (5).



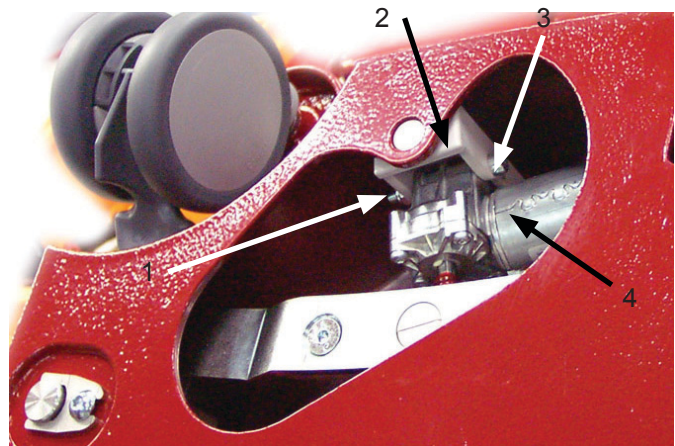
- Remove drive handle (2) by drilling out the rivets(9).
- Remove the screws (6) and the rivets (9) holding the bracket (3) , and remove the bracket.
- Remove upper contact (4)
- The column can now be replaced; assembly is done in the opposite order.

Replacing chassis parts

i For best access to the chassis parts during disassembly, the legs should be positioned in the centre.

- Remove column with lifting arm from chassis and put it sideways in a safe place.
- Place the chassis on a work stand.

Disassembly of Leg Parting Motor



- Loosen the leg parting motor (4) from the bracket (2) by removing screws (3) and nut (1).

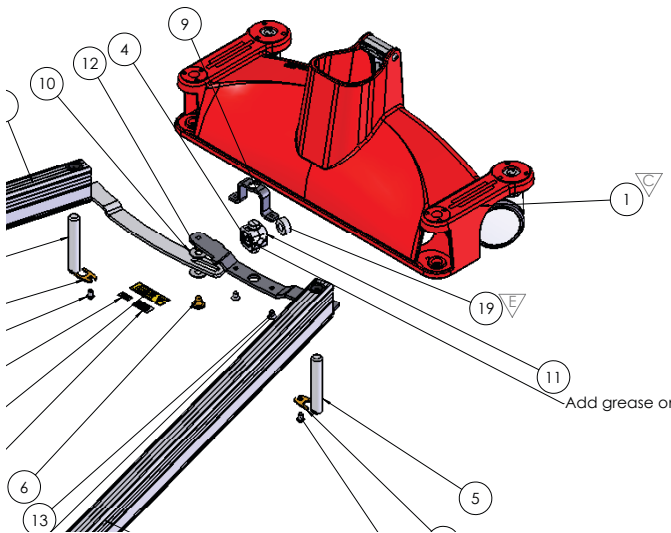
i External power is needed for running the motor out of the spindle nut.

! Make sure that fingers do not get caught when running the leg parting mechanism.

- Remove the leg parting motor wire (push and pull), and connect external power, 24 V.
- Run the leg parting motor inwards until the spindle is free from its nut.

WARNING! Do not run the legs to their end positions as the end stop does not work.

- Remove the motor and disconnect external power.
- As needed, the bracket (9), nut holder (11) with spindle nut (4) may be removed by loosening the screws (13). Heat the screws before loosening.

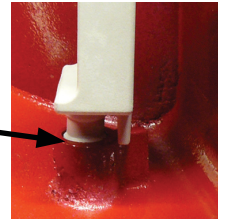


- The bracket is removed by turning it anti-clockwise until it falls down and out of position and then gently pulling it out. When the bracket is in place, it is supported by a flange at the back.



Assembly of Leg Parting Motor

- Mount spindle nut (4) and nut holder (11) to bracket (9). Put Loctite 241 on the screws (13).
- Mount the bracket by lifting and turning it into place in the hole up and down.
- Place the motor (4) in the correct position. Connect external power and run the spindle out until it fastens to the spindle nut (centred on the spindle).
- Fasten the leg parting motor to the bracket with screw (21) and nut (28).
- Connect the power wire to the motor - push and pull.
- Mount column with lifting arm on chassis.
- Perform a safety test on the lift.

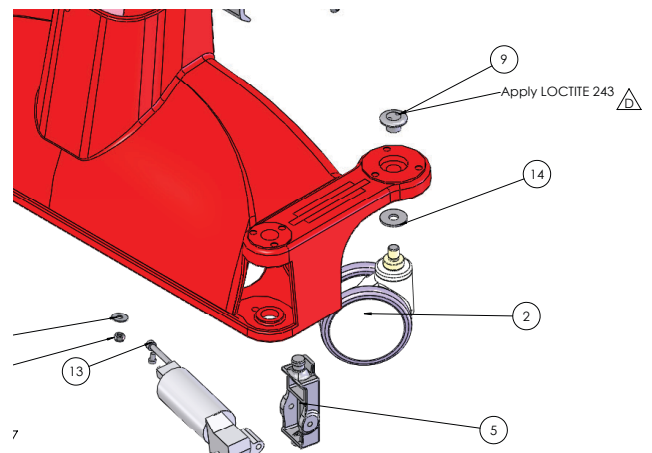


Wheels

- i** Place the lift in a stable horizontal position at a suitable work height. Remove column and suspension for easy handling.

Back Wheel

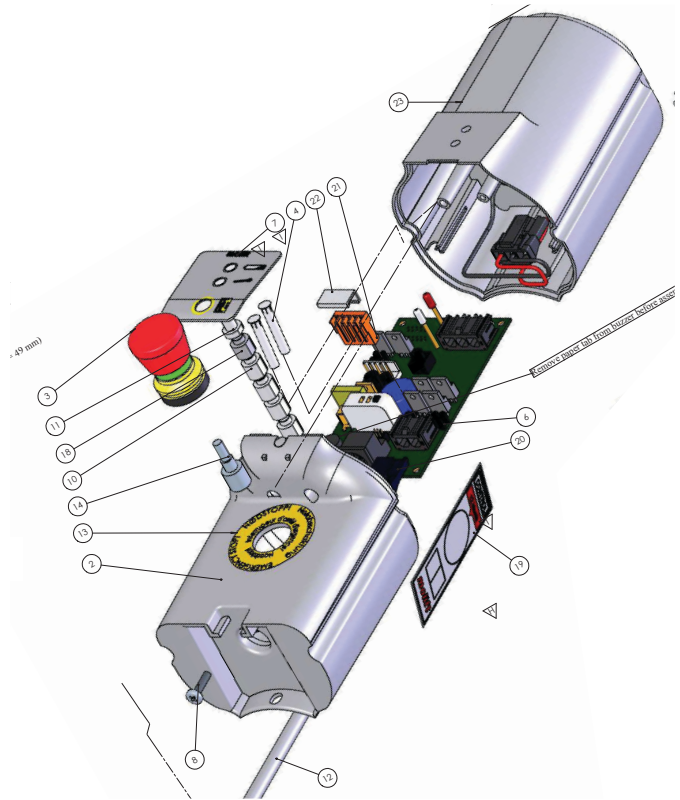
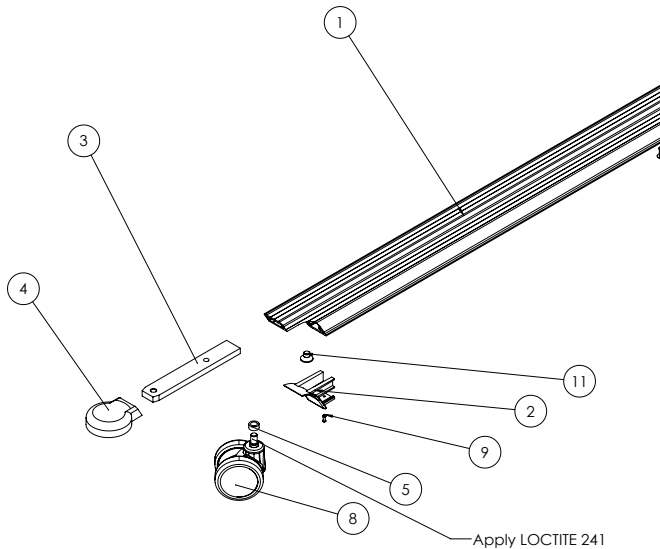
- Loosen the special nut (9).



- Unscrew the wheel (2), watching the disc (14).
- Assembly is done in the opposite order. Put Loctite 241 on the nut.

Front Wheel

- Use heat to loosen the wheel (8).
- Put Loctite 241 on the screw of the new wheel and mount it.



- Gently pull out the control card and loosen wires (5).

Control Card



The control card may only be replaced if all the data can be copied over from the old card to the new one. If copying is impossible, the lift should be sent to Etac Supply Gjøvik.



Watch the extensions (11) for the emergency lowering switch.

- Copy the data over from the card using the Molift Servicetool. Connect lift and copy to PC. Then connect the new control card and copy from PC to card according to the instruction.
- Remove battery and lifting arm with suspension and place the column on a worktop.
- Loosen membranes (7) and open battery holder by loosening screw (8) and removing the upper part (1).

Replacing Emergency Stop Switch

- Loosen the emergency stop switch (3) from the inside. Watch the extension (13), end piece (14) and washer (10).
- Pull out the emergency stop switch.
- Mount a new emergency stop switch and secure it with the screw.
- Make sure the extension, end piece and washer are correctly placed on the card in relation to the switch.

Mounting of Control Card

- Remove the piece of paper on the card's buzzer before mounting the card.
- Connect all wires and place the card in the battery holder.



Check that all LED:s are correctly positioned in the LED guides.

- Mount the extensions (11) for the emergency lowering switch.
- Put the upper part of the battery holder into place.
- Put a battery in the holder and check light/buzz.
- Put a new membrane on the battery holder.
- Mount column with lifting arm on chassis.
- Perform a safety test on the lift.

Marking

Check all markings/stickers - replace any damaged markings/stickers.

Inspection Diagram after Service and Repair

Molift Mover 205/300

- The lift has been visually checked for damages, faulty function and deformation, and it is in order. Checked that the suspension has no cracks or other damages.
- Checked that the lift has no loose parts, and correct mounting. The column is locked.
- Checked that remote control works and that wire and socket for remote control are undamaged.
- Suspension has been checked and can be easily disassembled/assembled. Fork greased as needed.
- Lift run all the way up and down several times without load. Checked that lift functions correctly and without abnormal noise. Checked that end stop works. Test repeated with a load of around 100 kg.
- Leg parting mechanism run all the way in and out several times without load. Checked that end stop works and easy leg travel both ways. Test repeated with a load of around 100 kg.
- Emergency stop and lowering (electric and manual) checked and working.
- Service and battery lights are green.
- Marked lift with safety sticker with month/year and certificate number for completed safety inspection. Inspecting person must sign safety sticker and this diagram.

During service:

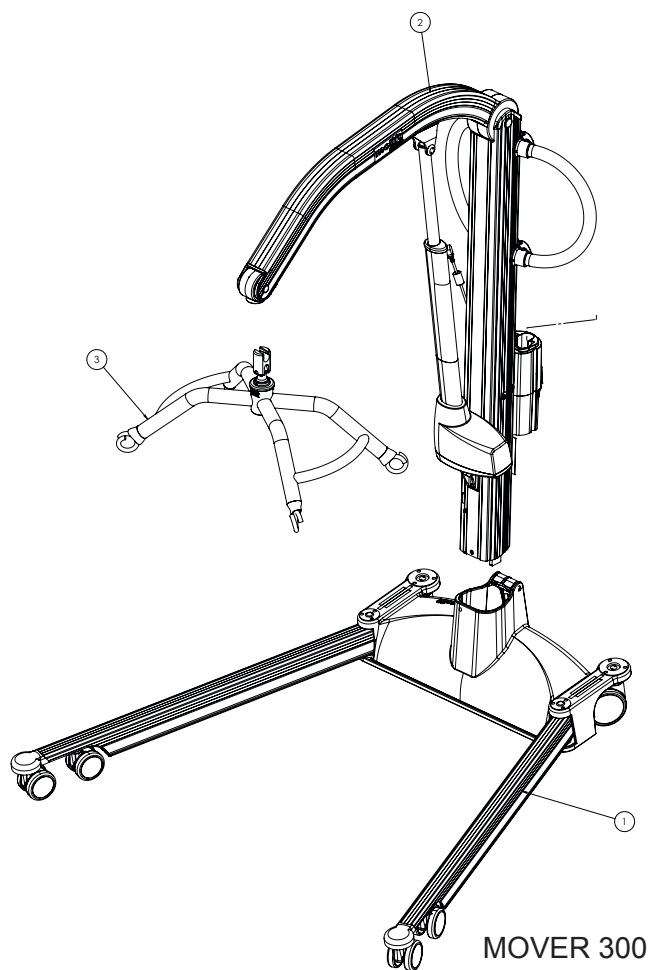
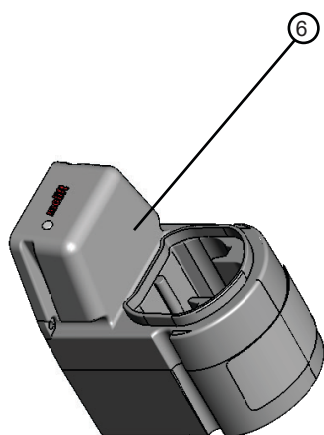
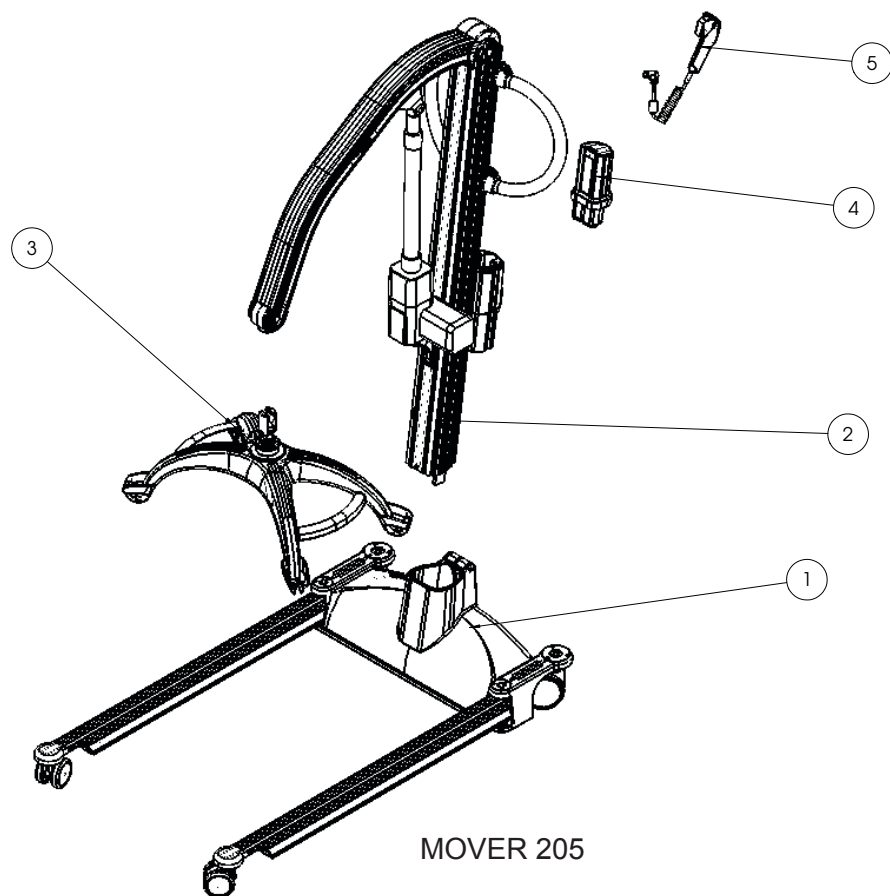
- Used the Molift Servicetool and read the lift data and noted number of lifts. N.B.: Write down "Sum" from right-hand column. This shows total number of lifts (equiv. to class 2 lift/15 sec) and remaining lifts until next service. N.B.: The service light must ONLY be reset after completed service!

No. of lifts (Sum): _____ Service completed: _____
- Service is completed (always when service light is on): - Replaced the composite plastic suspension. Replaced lifting motor. Checked visually for damages. Worn or damaged parts, or malfunctioning parts, were replaced. See description for parts replacement. Use the Molift Servicetool and read the lift status and service data.
- Completed safety inspection after service.
- Service light was reset using Molift Servicetool. N.B.: The service light must ONLY be reset after completed service!

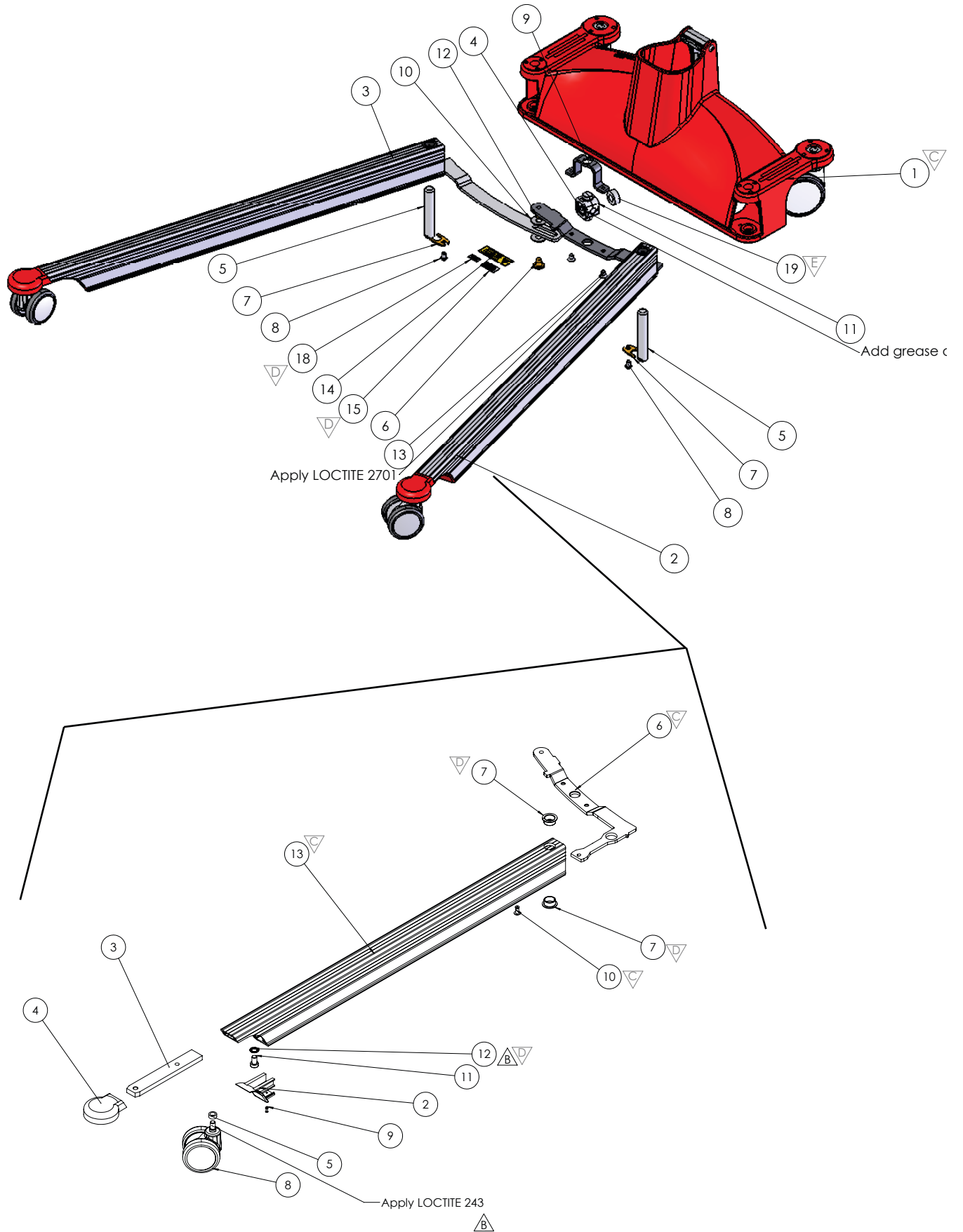
Inspection, repair and service should be done by a person certified by, or on behalf of Etac Supply Gjøvik. Always complete under:

Client: _____ Serial number of lift: _____
Date: _____ Signature: _____

Main Components

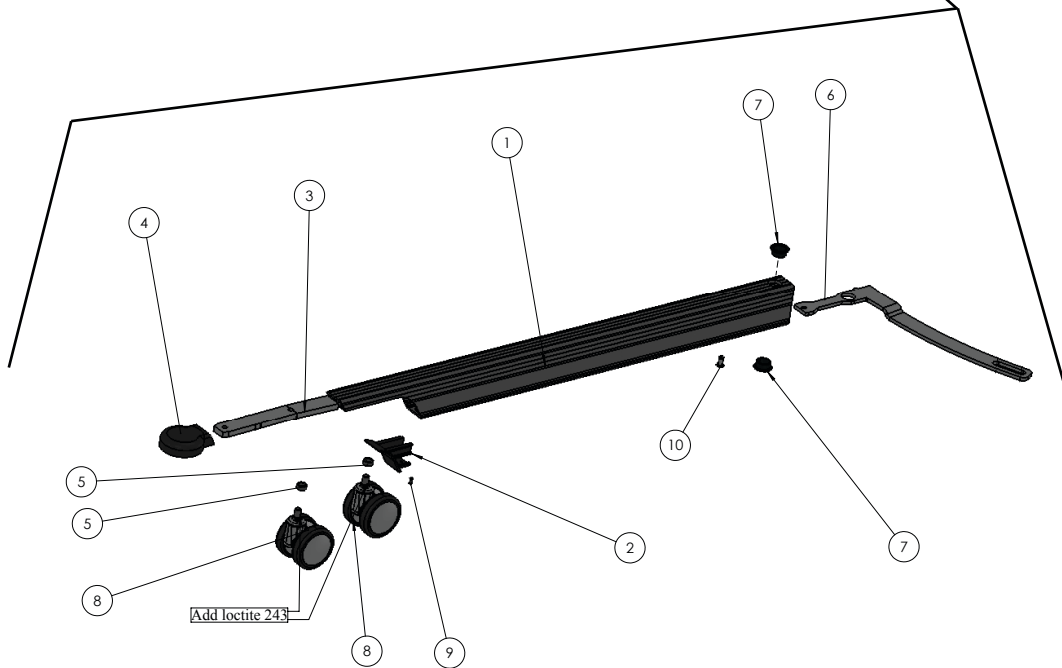
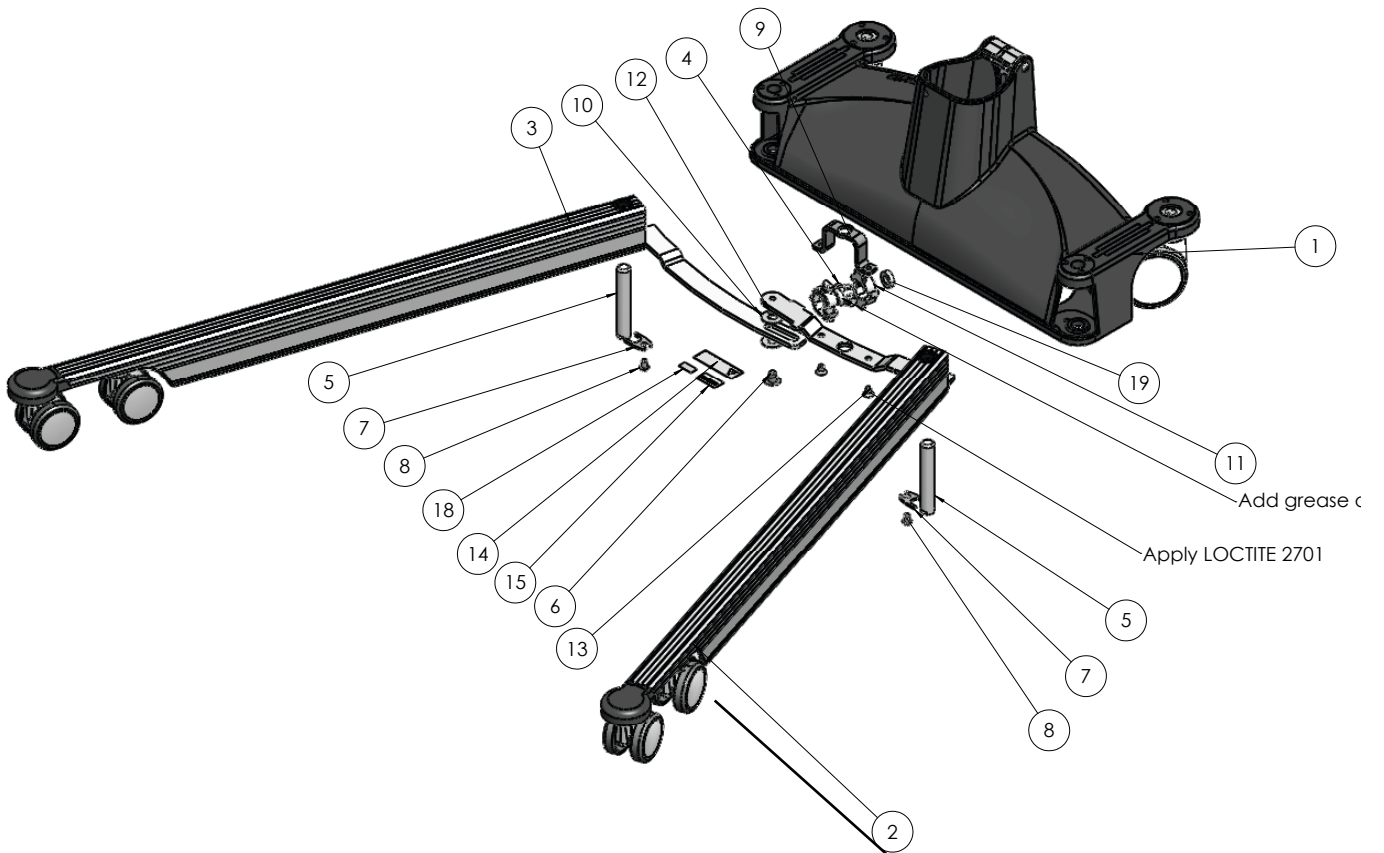


Chassis and Legs, Mover 205

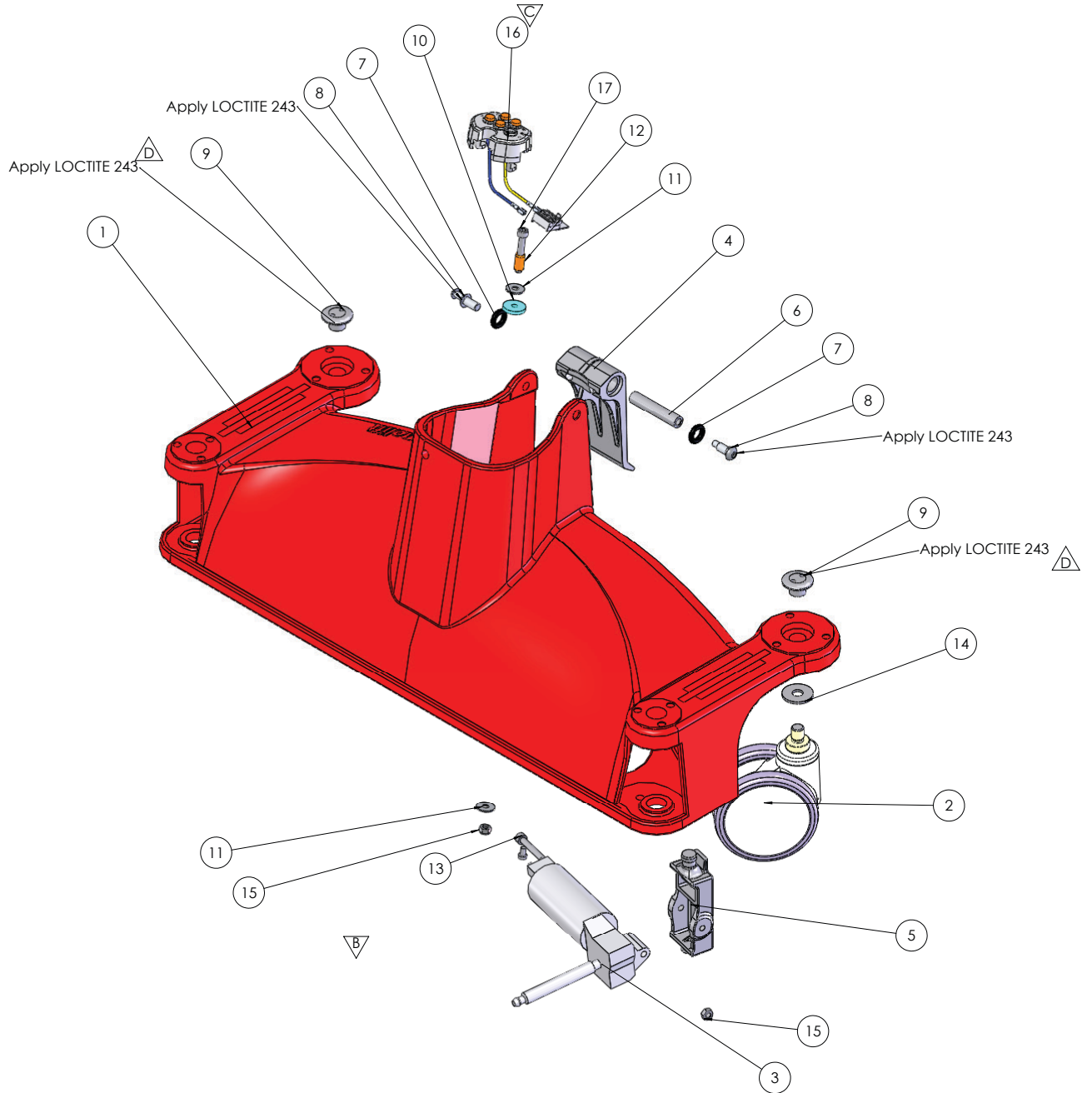


Chassis and Legs, Mover 300

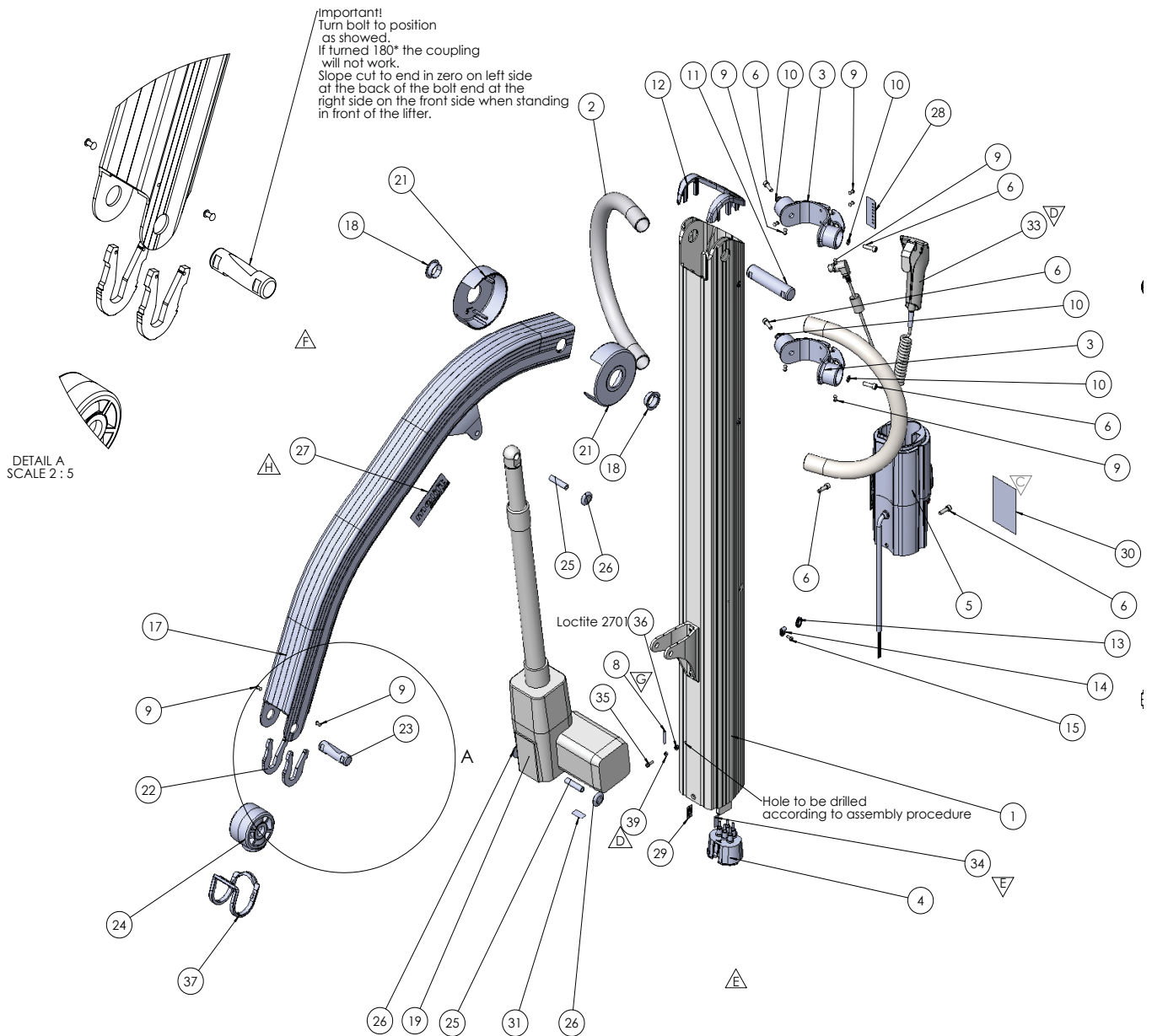
Chassis and Legs, Mover 300



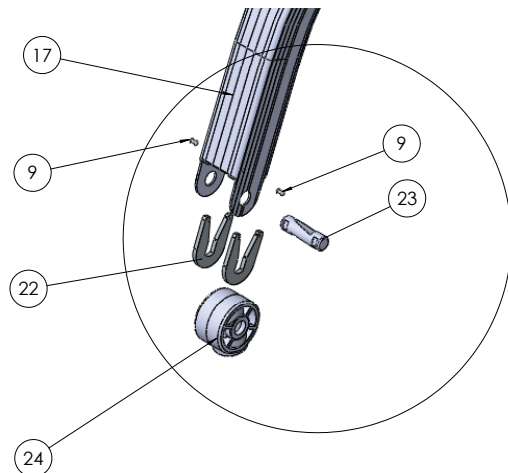
Motors

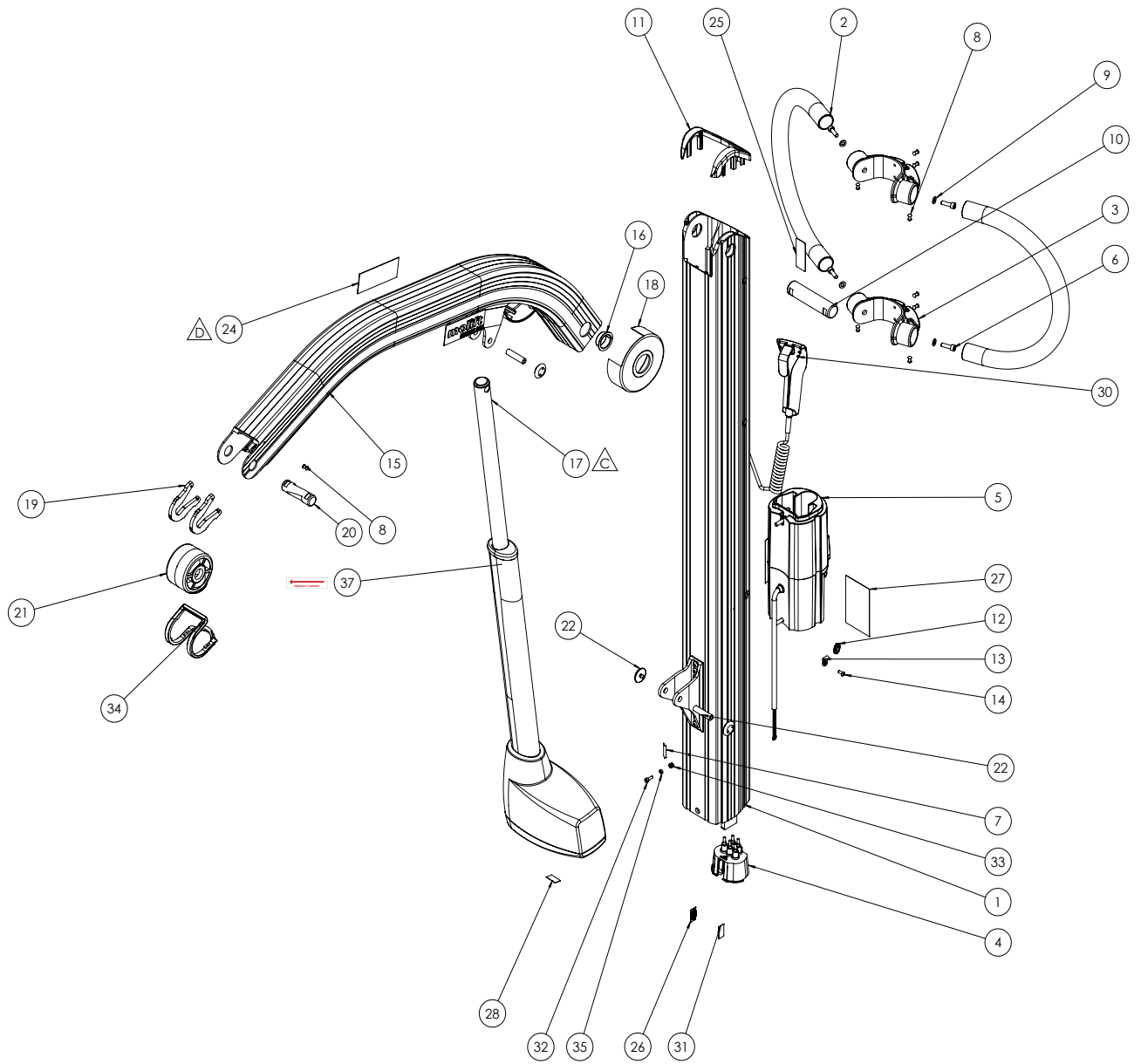


Column, complete, Molift Mover 205



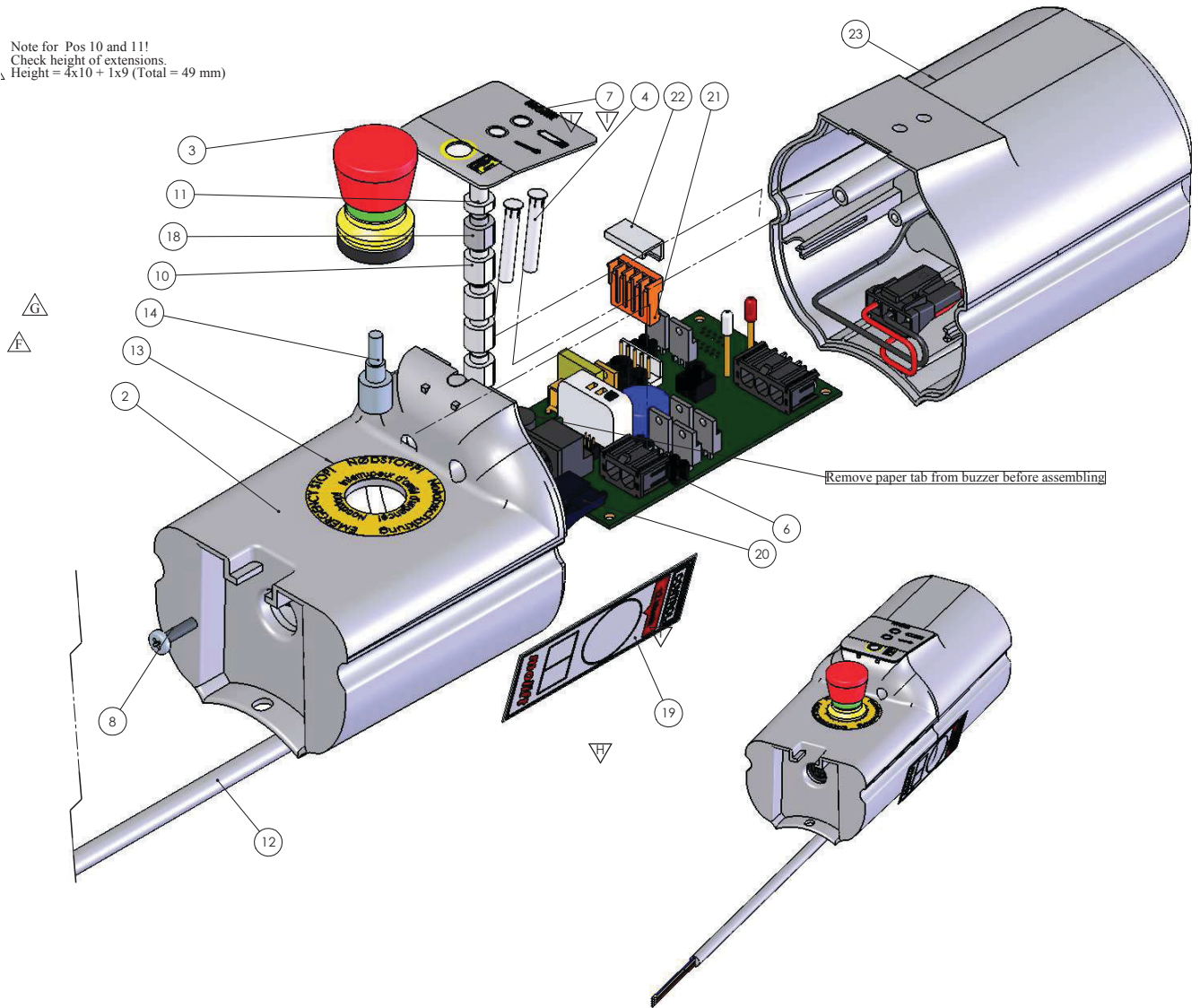
Arm front, lifters produced before week 37/2010



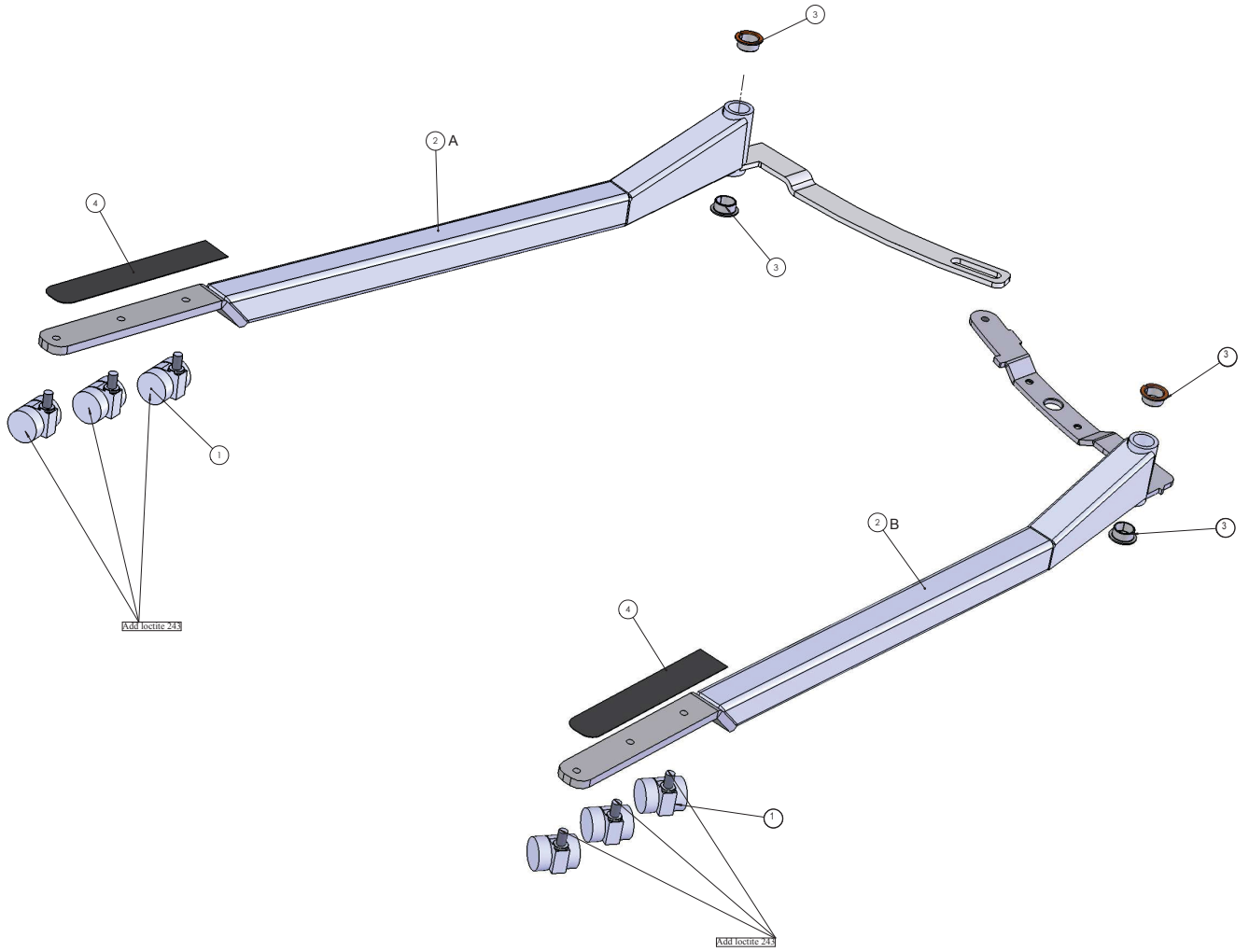


Battery holder, complete

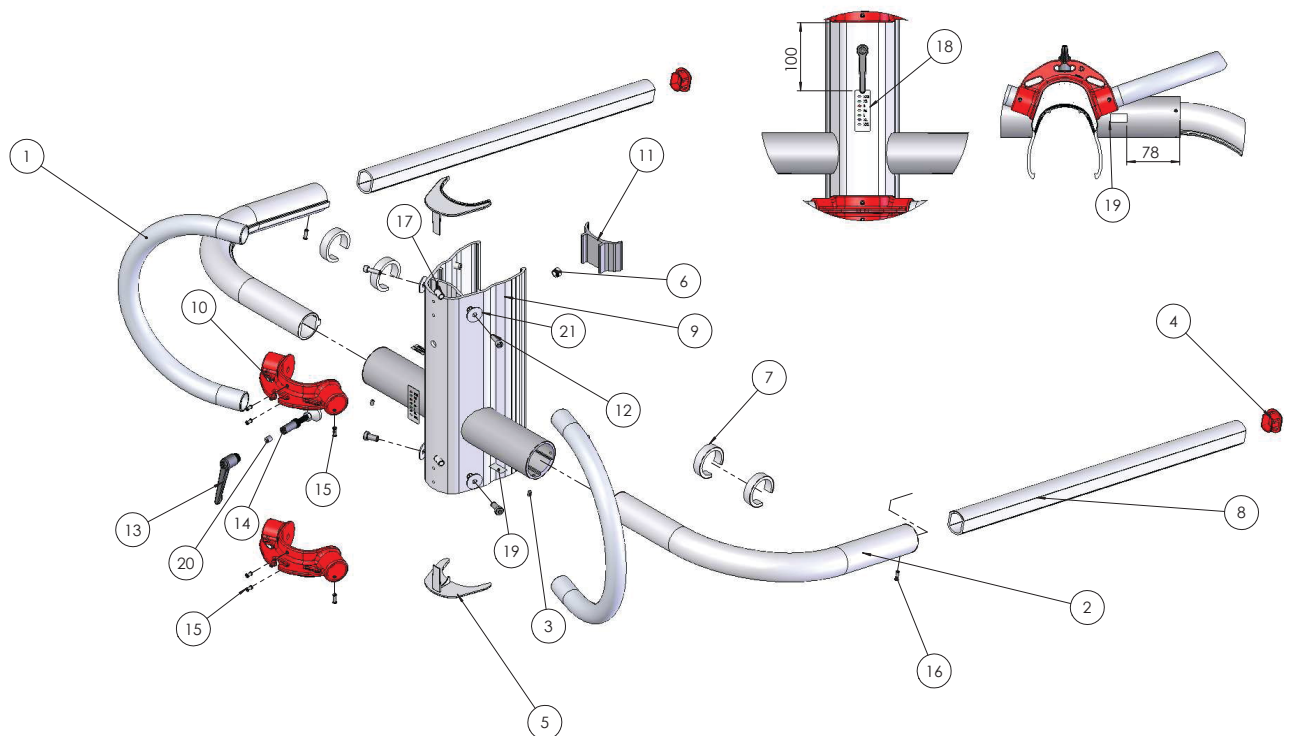
Note for Pos 10 and 11!
 Check height of extensions.
 Height = 4x10 + 1x9 (Total = 49 mm)



Chassis Low base



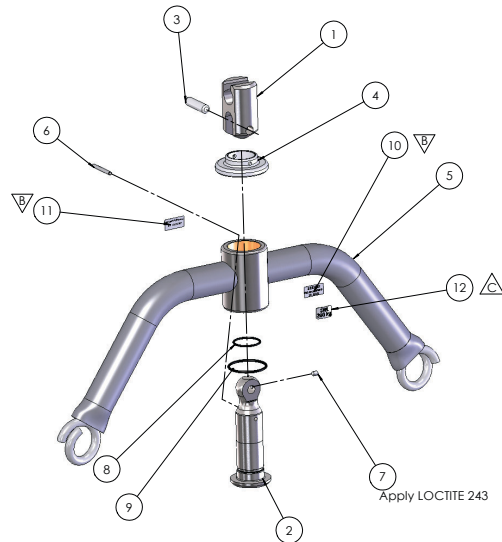
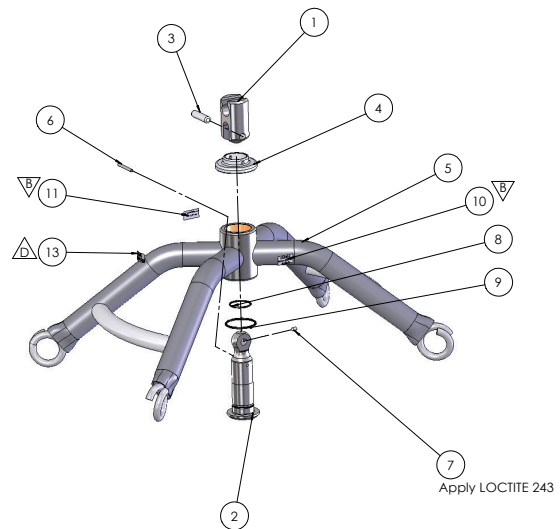
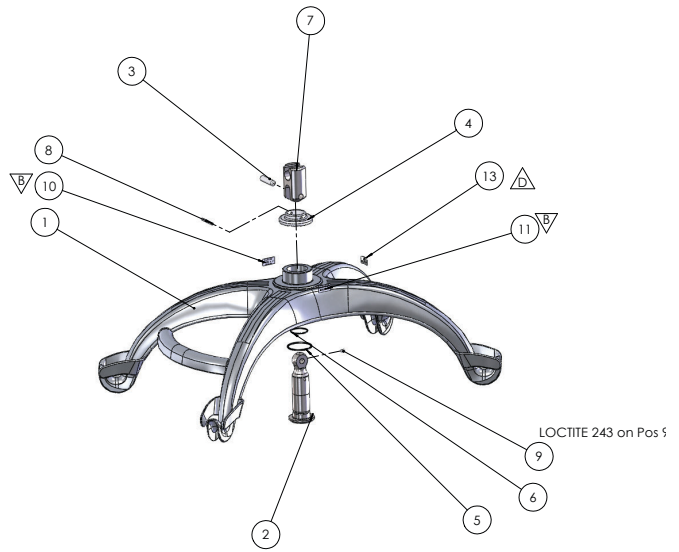
Supporting arms



Appendix I

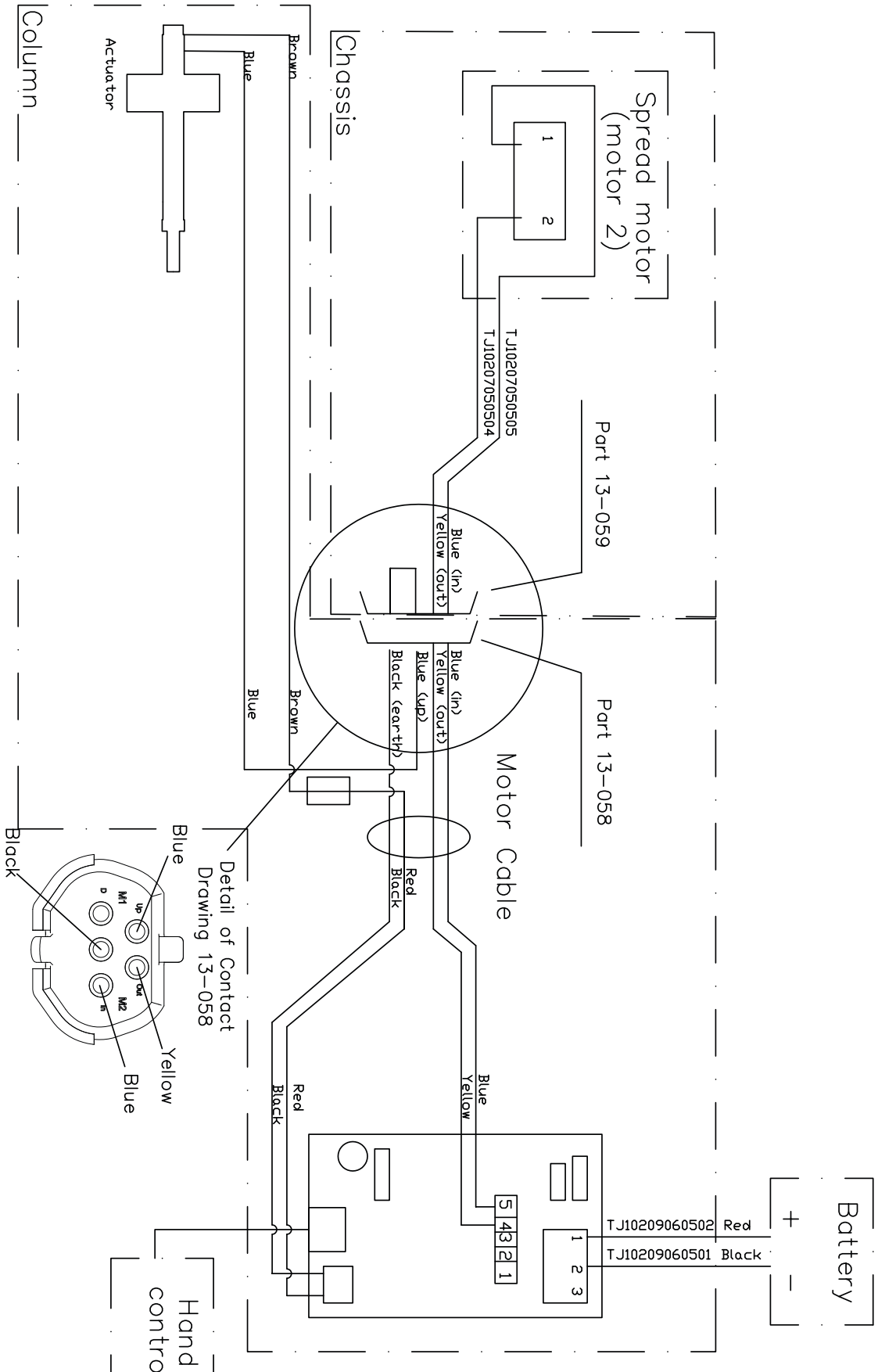
Suspensions

| Pos. | Item no. | Qty. | Description |
|------|----------|------|------------------------------|
| 1 | 1330101 | 1 | Suspension 4-point Composite |
| 2 | 1410113 | 1 | Eye bolt, P 205 |
| 3 | 1410120 | 1 | Pin bolt, P205 |
| 4 | 1410112 | 1 | Plastic cover susp. P 205 |
| 5 | 1330111 | 1 | O-ring ø39,2x3,0 N70B |
| 6 | 1330112 | 1 | O-ring ø39,2x3,0 N70B |
| 7 | 1410116 | 1 | Fork bolt, P205 |
| 8 | 1220336 | 1 | Spring Pin DIN 1481 UB 4X36 |
| 9 | 1320124 | 1 | Screw DIN 914 M5X8 A2 |
| 10 | 1310306 | 1 | Label, Art. Id. No. (Brady) |
| 11 | 1310307 | 1 | Label, Controlled date/sign. |
| 13 | 1550012 | 1 | Label SWL 300 kg |
| 1 | 1410116 | 1 | Fork bolt, P205 |
| 2 | 1410113 | 1 | Eye bolt, P 205 |
| 3 | 1410120 | 1 | Pin bolt, P205 |
| 4 | 1410112 | 1 | Plastic cover susp. P 205 |
| 5 | | | Alternative suspensions |
| | 1330205 | 1 | Suspension, 4X Steel Large |
| | 1330204 | 1 | Suspension, 4X Steel Medium |
| | 1330209 | 1 | Suspension, 4X Steel Small |
| | 1330202 | 1 | Suspension, 2X Steel Large |
| | 1330203 | 1 | Suspension, 2X Steel Medium |
| | 1330206 | 1 | Suspension, 2X Steel Small |
| 6 | 1220336 | 1 | Spring Pin DIN 1481 UB 4X36 |
| 7 | 1320124 | 1 | Screw DIN 914 M5X8 A2 |
| 8 | 1330112 | 1 | O-ring ø18x3,0 N70B |
| 9 | 1330111 | 1 | O-ring ø39,2x3,0 N70B |
| 10 | 1310306 | 1 | Label, Art. Id. No. (Brady) |
| 11 | 1310307 | 1 | Label, Controlled date/sign. |
| 13 | 1550012 | 1 | Label SWL 300 |



Appedix J

Electrical diagram



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