

**Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.**

# Dayton® Stackers

## Description

The Dayton Stacker is specially designed for conveyance on level roads. Its design makes it applicable for turns within racking, loading and unloading, and for the horizontal transport of goods up to 2200lbs . This series is very flexible when used for order picking. The load capacity for stacker is marked on the stacker data plate.

## Unpacking and Inspection

Handle carefully. Check the packing list to account for all items. Visually inspect for shipping damage. If damaged, immediately file a claim with the carrier.

## General Safety Information

### READ AND FOLLOW SAFETY INSTRUCTIONS

**▲ WARNING** *Read and understand these operating instructions before operating product.*

NOTE: Keep this manual for future reference.

Thank you for purchasing this electric stacker. For your safety and to ensure proper operation, carefully read this instruction book and the warnings on the stacker before using it.

These operating instructions are designed for you to thoroughly understand and master the safe operation of the stacker.

Specifications for multiple types of

stackers may be described in these operating instructions. During operation and maintenance, please apply the relevant aspects for the type of stacker that you have purchased.

Safety specifications and special notices are marked with the following signs:

**▲ WARNING** *Safety warnings must be observed to avoid serious personal injury or equipment damage.*

**▲ CAUTION** *Caution must be observed to avoid personal injury or equipment damage.*

NOTE: – General notices and specifications should be observed before use.

**IMPORTANT:** The information reported within this manual is based on data available at the time of printing. Products are constantly being developed and improved, therefore, we reserve the right to modify our products at any time without prior notice. As a result, it is always recommended to verify possible updates and changes to manufacturer.



Figure 1

# Dayton® Stackers

## General Safety Information (Continued)

NOTE: The majority of this stacker consists of steel, which can be completely recycled. Waste material from repairs, maintenance, cleaning or scrapping, must be collected and disposed of in environmentally friendly ways and in accordance with local laws and ordinances. Recyclable material should be taken care of by qualified authorities. Environmentally hazardous waste, such as oil, oil filters, batteries, and electronics, will have a negative effect on the environment, or health, if disposed of improperly.

### OPERATOR REQUIREMENTS

- Stacker must be operated by an authorized and trained person who can demonstrate its proper operation.

### OBLIGATIONS AND RESPONSIBILITIES OF THE OPERATOR

- Operator must fully understand his obligations and have received training on the stacker's proper operation prior to use.
- Operator must master the information contained in these operating instructions.
- Operator should wear appropriate safety equipment during use, eg. safety boots, labour suit, etc.

### FORBIDDEN USE BY UNAUTHORIZED PERSONS

- Operator must be responsible for the stacker and must prevent unauthorized persons from driving or operating the stacker.
- Lifting or carrying persons is strictly prohibited.

## FAILURE AND FAULT

In the event of equipment failure or fault, notify maintenance personnel immediately. In cases where the stacker's safety is compromised (e.g. worn-out wheel or brake fault), immediately discontinue using the stacker until it is properly repaired.

### REPAIR

Only professionally trained and specifically authorized individuals are permitted to repair or modify any part of the stacker. Any changes to installed switches and safety devices by the operator are strictly prohibited.

**IMPORTANT:** All spare parts from the manufacturer are inspected by Quality Assurance Authorities. To ensure the safety and reliability of the stacker's operation, only manufacturer approved spare parts may be used. Replaced parts, including oils and fuels, must be disposed of in accordance with environmental protection regulations.

### DANGER AREA

The "danger area" refers to the area where the stacker is working or lifting, causing a potentially dangerous situation for persons or property in that the area.

**▲ WARNING** *Unauthorized persons must keep away from the danger area. In situations with potential danger to others, the operator must give a warning notice. If the danger area isn't vacated as requested, the operator must stop using the stacker immediately.*

### WORKING IN HAZARDOUS ENVIRONMENTS

A stacker operating in an area where there is a hazard risk, or in any other

high-risk area, should be specially equipped for use in that environment.

**▲ CAUTION** *This stacker is not equipped for hazardous situations.*

### SAFETY DEVICES AND WARNING SIGNS

Special attention should be given to safety devices, warning signs, and warning notices within these Operating Instructions and on the stacker itself.

### DRIVING IN PUBLIC AREAS

The stacker should not be driven on public roads.

### DISTANCE BETWEEN VEHICLES

Bear in mind that the material handling vehicle in front of you may brake suddenly; therefore, keep a reasonable distance when operating this stacker.

### PASSENGERS

Passengers should not ride on the stacker unless it is indicated as permissible on the stacker.

### CLEARANCE HEIGHT

The stacker cannot be used where the overhead clearance height is less than the height of the load or the mast.

### USE IN ELEVATORS AND ON LOADING PLATFORMS

This stacker may only be driven into an elevator or loading platform if it has been authorized. The operator must confirm that the elevator or loading platform has adequate load capacity to support the weight of the operator, stacker, load and other contents of the elevator or loading platform before entering the elevator or loading platform. Cargo should be placed properly inside the elevator to avoid touching the elevator walls.

## Models 21XU83 and 21XU84

### General Safety Information (Continued)

Passengers must enter the elevator only after proper parking of the stacker, and should depart from the elevator before moving the stacker.

#### DRIVING LANES AND WORK AREAS

Only lanes and routes that are specially allocated for stacker traffic may be used. Unauthorized persons should stay away from work areas. Loads must only be stored in places specially provided for this purpose.

#### OPERATOR CONDUCT

Driving speeds must be applicable for conditions. Low speed is mandatory when turning, navigating narrow aisles, passing through doors, or driving with a blocked field of vision. The operator must be able to measure the braking distance to the front of the stacker by sight and control his stacker at all times. Sudden braking (except in emergency), quick U-turns, and passing other trucks in dangerous or blind spots is prohibited. Operator should stay within the operator's area during operation.

#### VISIBILITY

The operator must have clear visibility in the driving direction the stacker is traveling. If cargo obstructs your line of sight, operating in reverse is recommended. If operating in reverse isn't suitable, another person must walk ahead of the stacker to give guidance and warning.

#### NEGOTIATING SLOPES AND INCLINES

Operating on slopes is permitted only when they are recognized lanes, when

they are clean and non-slip surfaces, and when the technical data of the stacker permits safe driving on such slopes or inclines. Cargo must face in an upward direction of slope. U-turns, cutting obliquely over slopes or inclines, and parking on slopes or inclines is prohibited. When operating on a slope, the stacker should be driven at a slow speed and the operator must be prepared to brake and stop.

#### FLOOR LOAD

Carefully check maximum floor load capacities and ensure they are not exceeded.

#### TRANSPORTS

The stacker should always be driven with the forks to the lowest position except when placing or removing a load. The stacker should be driven in the opposite direction of the forks when possible. This will allow better visibility and maneuverability. Driving with the forks pointing forward may cause the stacker to turn unexpectedly.

#### LOAD CHARACTERISTICS

Only loads that have been safely and correctly secured may be carried. Never transport loads stacked higher than the top of the stacker.

#### STACKER ON ANOTHER VEHICLE'S LOADING PLATFORM OR ON A GANGWAY

Before the stacker is driven from a loading dock onto a platform or vehicle, always check the maximum load capacity of the gangway. Ensure that there are devices to prevent the gangway from sliding. The driver must check the maximum load capacity of the

vehicle that you intend to drive onto. There should be devices (e.g. wheel chocks) that prevent the vehicle from moving.

#### PARKING

The stacker should not be left unattended other than in specified parking areas. The stacker should always be parked on a level surface. If the stacker is equipped with a parking brake, it should be engaged. The forks should be lowered to their lowest position. Always turn the key switch to the "OFF" position. Unauthorized personnel should not use the stacker. Always remove the key when leaving the stacker.

**NOTE:** If the stacker will be left unused for a prolonged period without being recharged (e.g. between two shifts), the battery plug should be disconnected.

#### PROTECTIVE SHOES

Protective shoes should be worn when working with stacker according to EU standard EN-345:1-S1.

#### ADDITIONAL FEATURES / TRAILERS

An authorized representative should be contacted if, after delivery, the stacker needs to be equipped with additional features, tow hitch equipment for trailers, or other accessories which could influence the stability or braking capacity of the stacker.

# Dayton® Stackers

## Specifications

Model	Drive	Lift	Maximum Capacity/ Rated Load (Q)*	Load Center Distance (C)*	Operation Type
21XU83	Electric	Electric	2200lbs	24"	Pedestrian
21XU84	Electric	Electric	2200lbs	24"	Pedestrian

(\*) See Figure 5

Model	Service weight (incl. Battery)	Travel Speed (laden/unladen)	Lifting Speed (laden/unladen)	Lowering Speed (laden/unladen)	Gradability (laden/unladen)
21XU83	1487lbs.	2.67/2.80mph	21.6/31.5FPM	25.6/21.6FPM	5/10%
21XU84	1663	2.67/2.80	21.6/31.5	25.6/21.6	5/10

Model	Service Brakes	Drive Motor Rating *s2 60min.	Lifting Motor Rating *s3 15%	Battery Voltage Norm. cap.	Battery Weight ±5%	Drive Control	Sound Level (at driver's ears) per EN 12053
21XU83	Electric mag.	0.6 hp	2.9 hp	2x12/80 V/Ah	2x55 lbs.	MOSFET	<70 dB(A)
21XU84	Electric mag.	0.6	2.9	2x12/120 V/Ah	2x60	MOSFET	<70 dB(A)

\* **NOTE:** S1 = continuous running duty, S2 = short time duty and S3 = intermittent periodic duty

# Models 21XU83 and 21XU84

## Specifications (Continued)

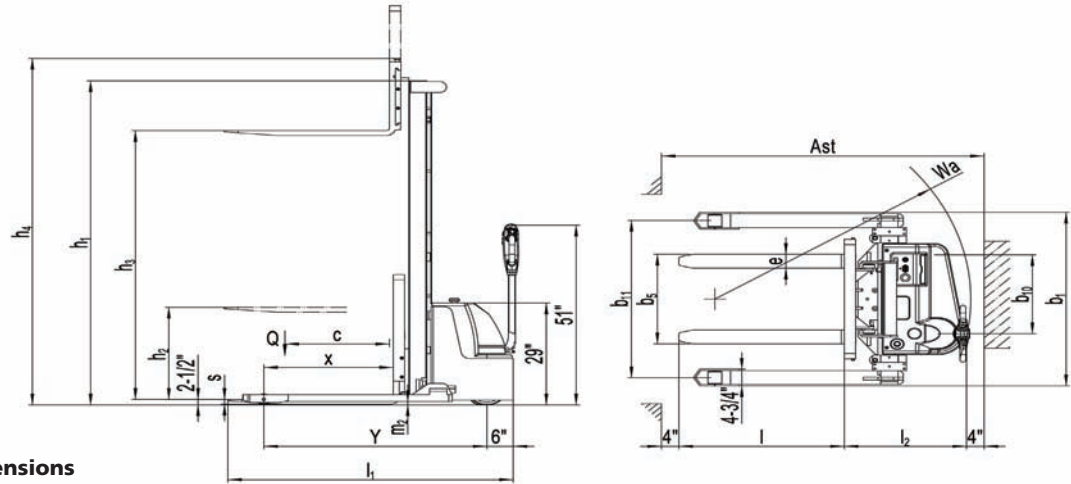


Figure 2 – Stacker Dimensions

Description	Fig. 2 Reference	21XU83	21XU84
Mast height (lowered)	h1	76 1/8	76 1/8
Free lift	h2	60 1/4	2 3/4
Lifting height, Max.	h3	60 1/4	112
Extended mast height	h4	83 1/2	135
Lifting height, Min.	h13	2 1/2	
Tiler height (in drive position min. & max.)	h14	30 7/8 & 51 1/8	
Overall length	l1	66	
Length to face of forks	l2	27	27 1/2
Overall Width	b1	46 - 58	
Fork Size-Length	l	45 1/4	
Fork Size-Width	e	4	
Width overall forks	b5	1 3/8	
Ground clearance, center of wheelbase	m2	1.0	
Turning radius	Wa	59	
Base Legs Inside Dim.		38 - 50	
Base Legs Outside Dim.		46 - 58	

Table 1 – Stacker Specific Dimensions (unit: inch)

Description	Fig. 2 Reference	21XU83 21XU84
Tire material		Polyurethane (PU)
Tire size(DxW) (drive end)		8.66x2.75"
Tire size (DxW) (load end)		3.15 x 3.66"
Caster wheels		4.88 x 2.36"
Number of wheels		1 drive wheel, 1 caster, 2 load wheels

Table 2 – Wheel Dimensions

Lifting Height (H)*	Capacity at 24" Center	Capacity at 28" Center
79"	2200lbs	1600lbs
98"	2200	1200
114"	1760	1000

Table 3 – Lifting Heights

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# Dayton® Stackers

## Specifications (Continued)

### TECHNICAL DATA-STANDARD VERSION

Descriptions of technical data are only provided for standard stackers. Non-standard types, additional equipment, etc. could produce other values. The manufacturer reserves the right to make technical modifications and additions.

### STANDARDS

Sustained noise levels: < 70dB (A); Refer to EN 12053 Standard.

NOTE: Continuous sound levels are averaged values according to standard regulations, taking into account the noise level when driving, lifting and idling. The noise level is measured at the ear.

### ELECTROMAGNETIC COMPATIBILITY (EMC)

The manufacturer tests electromagnetic emissions, immunological interference, and electrostatic elimination in compliance with EN12895 and other standards.

**CAUTION** *No modifications to the electrical system may be made without written approval from the manufacturer.*

### APPLICATION CONDITIONS

Ambient temperature operation range: 40°F (5°C) to 105°F (40°C).

**CAUTION** *During continuous operation of the stacker in conditions below 40°F (5°C), or in low temperature and high humidity, special protections should be taken to protect electronic gauges and circuitry.*

IMPORTANT: Read and understand all product data plates before use. In case of problems or to purchase spare parts, refer to the series number and part codes on data plates.

## Transportation and Commissioning

### STACKER CONVEYANCE

**WARNING** *The load capacity of any hoisting equipment used to lift the stacker should be adequate. (Carried weight = net weight of stacker + weight of battery; refer to data plate.)*

NOTE: Hoisting position is indicated on the chassis by the manufacturer.

Prior to conveyance:

- Place the stacker at a safe position.
- Attach to a point of strength on the crane using the hoisting position on the stacker.

**WARNING** *The point of strength of the crane must be attached to hoisting position to avoid slippage of the stacker. During hoisting, the hoisting equipment must be attached to the*

*hoisting position without touching the stacker.*

### COMMISSIONING

**WARNING** *Only battery power may be used to operate the stacker. AC power will damage the electric circuitry. Battery connecting cables should be less than 20 feet (6 meters) in length.*

For normal operation after delivery or transportation, the following procedures should be followed:

- Verify that the assembly of all stacker parts is complete and will satisfy the job requirements.
- If necessary, install the battery, taking care to avoid damage to the battery cable.
- Charge the battery immediately.
- If the consumer expects to apply a maintenance-free battery as a substitute, verify that the type of battery is compatible with the electronics of the stacker and charger. Get approval from the manufacturer if there is any doubt regarding compatibility.

## Models 21XU83 and 21XU84

### Assembly (Continued)

#### STRADDLE LEG ASSEMBLY INSTRUCTIONS

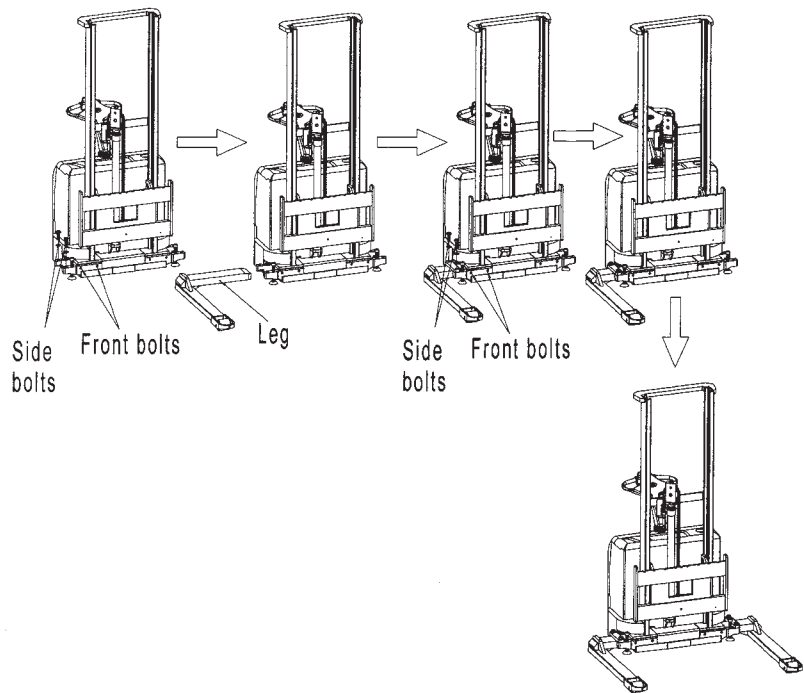
Because of shipping, the straddle leg and the forks may be dismantled. You can assemble them according to following:

If so, carefully follow the assembly instructions taking care to heed all safety precautions. Some tools are required, including wrenches, hex keys, a dead blow or other non-marring hammer, and a hoisting device such as a crane.

**▲ WARNING** *Do not remove the stacker from the pallet. The stacker should remain secured to the pallet until after assembly is completed. Failure to follow this instruction could cause serious injury. Stabilizing the stacker during assembly using a suitable crane or hoist is recommended.*

#### STRADDLE LEG ASSEMBLY

1. Unscrew both sets of bolts on the side and front of the stacker.
2. Slide the legs into the slots of the body to the desired position.
3. Tighten both sets of bolts on the side and front securely.
4. Assemble the other leg following the above steps.
5. Remove the stacker from the pallet using a crane or other suitable lifting device.



**Figure 3 - Straddle Leg Assembly**



# Dayton® Stackers

## Assembly (Continued)

### FORK ASSEMBLY

1. Unscrew the fork carriage bolt on the front of the stacker.
2. Install the first fork from the middle of the fork carriage, then move the fork to one side.
3. Install the second fork from the middle of the fork carriage, then move the fork to the other side.
4. Insert and tighten the fork carriage bolt.

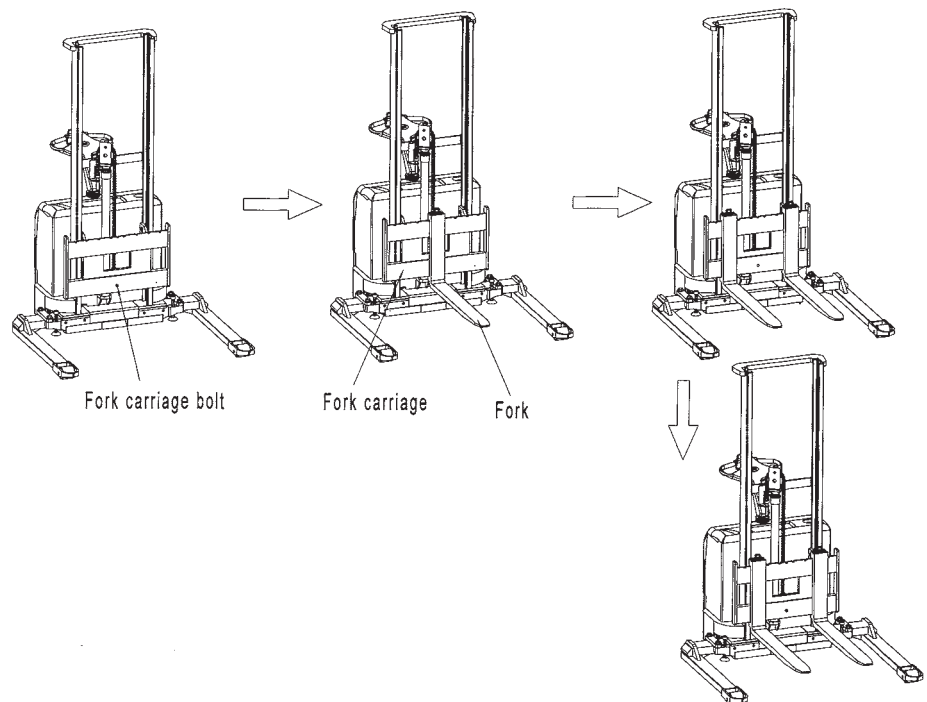
### MOVING A STACKER WITH A DAMAGED DRIVE FUNCTION

In case of emergency, the electromagnetic brake must be released in order to move the stacker.

- Press the emergency button, turn the key switch to the "OFF" position, and remove the key to cut power.
- Open the cover.
- Loosen the three bolts on the driving motor counterclockwise until the bolts no longer inhibit movement of stacker.

The stacker can now be moved.

**NOTE:** When parking at your destination, bolts should be retightened clockwise until the brake functions again.



**Figure 4 - Forks Assembly**



# Models 21XU83 and 21XU84

## Operation

### CONTROL HANDLE FEATURES

1. Reversing button – Emergency directional reverse button.
2. FWD/REV travel button – Variable speed control switch.
3. Horn button
4. Raise button - Moving the fork upward.
5. Lower button - Moving the fork downward.

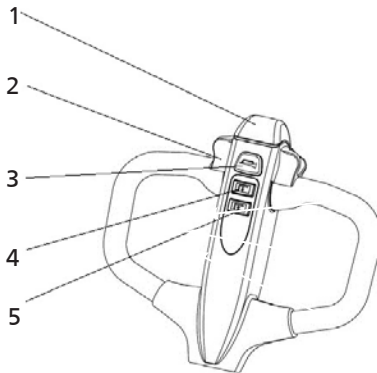


Figure 5 – Control Handle Features

### STARTING THE STACKER

**▲ WARNING** *Confirm that no person is too close before starting and operating the stacker or lifting any cargo.*

#### ROUTINE CHECKS BEFORE STARTING UP

- Check for any external stacker defects (especially wheels and pallets).
- Check that the battery is firmly fixed and cables are connected properly.

#### STACKER START UP

- Engage the emergency brake.

- Insert key into electric lock switch and turn right to the “ON” position.
- Check the battery meter for adequate capacity.
- Check the function of horn.
- Check the braking functions of the control handle.

### STACKER OPERATION

**▲ CAUTION** *Caution must be used when starting up and driving the stacker. Riding of any kind is prohibited unless expressly permitted by notations on the stacker.*

#### EMERGENCY STOPPING

To stop suddenly, press the emergency brake switch. All electric control functions will be cut off.

#### SUDDEN BRAKING

If you need to brake suddenly, release the control handle. The control handle will rise into braking range (B1) and the stacker will automatically brake (emergency stop).

**▲ WARNING** *If the control handle rises slowly when released, locate the problem and repair it. If necessary, please replace the gas piston within the handle.*

#### STARTUP

IMPORTANT: The battery case must be checked and covered before starting up the stacker.

#### STARTING THE STACKER

Driving speed is controlled by the controller.

- Move the control handle into driving range “F”.
- Adjust the controller to the direction you want to move and the stacker will move in the selected direction.

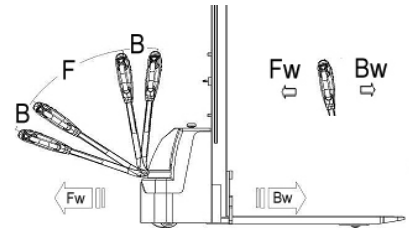


Figure 6 – Control Handle Driving and Braking Range of Motion

#### STEERING

Swing the control handle to the left or right to steer.

#### DRIVING ON A SLOPE

**▲ WARNING** *Operator should stand uphill of the load when traveling on a slope. Non-uniformly loaded cargo must be loaded in an upward direction of the slope. Make sure the area downhill from the stacker is clear should any slippage occur. When traveling downhill, pull the handle downward from the full upright position and then release it as needed to utilize the electromagnetic brake and control the speed and the direction of the stacker.*

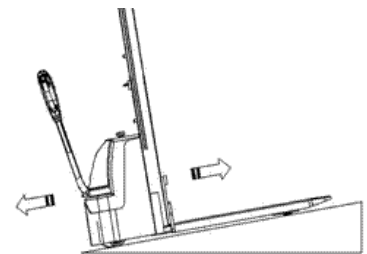


Figure 7 – Movement on a Slope

# Dayton® Stackers

## Operation (Continued)

### BRAKING

**▲ WARNING** *The operator must understand that braking performance is subject to surface conditions.*

There are three methods of braking on this stacker:

- Electromagnetic braking (control handle)
- Reverse current braking (controller)
- Sensor braking (release braking)

### ELECTROMAGNETIC BRAKING

**IMPORTANT:** In emergency situations, the stacker should be stopped by electromagnetic braking (control handle) only.

- Move the control handle upwards or downwards into braking range (B) and the driving motor will stop mechanically. See Figure 7.

**NOTE:** When the control handle is released, it will move to braking range (B1) automatically.

After parking the stacker, the electromagnetic brake serves as the parking brake.

### REVERSING CURRENT BRAKING

**NOTE:** In case of control system or driving power malfunction, it is possible to use reverse braking.

- Rotate the controller in the direction opposite of driving until the stacker has stopped.
- Release the controller.

### INERTIA BRAKING

After releasing the controller, it will return to the neutral position and the stacker will stop by motor inertia. Note

that the rate of braking is subject to the position of controller.

**▲ WARNING** *If inertia braking is removed by maintenance staff and the controller is set at neutral position, the stacker can be stopped only by electromagnetic braking and reverse current braking.*

### CARGO LOADING/UNLOADING

**▲ WARNING** *Before loading cargo, the operator must confirm that cargo is properly placed on the pallet and the weight of the cargo is within the rated load capacity of the stacker. Carrying full capacity loads for extended periods is prohibited.*

- The forks should extend the full length of the bottom of the cargo.
- The "Up" and "Down" buttons will lift and lower the load at a fixed speed.

### LIFTING OF FORKS

- Press the "Raise" control button until desired height is achieved. Pay attention to the overhead clearance.

### LOWERING OF FORKS

- Press the "Lower" control button to lower the forks to the required height.

**▲ WARNING** *Forks should be as low as possible when driving with a load.*

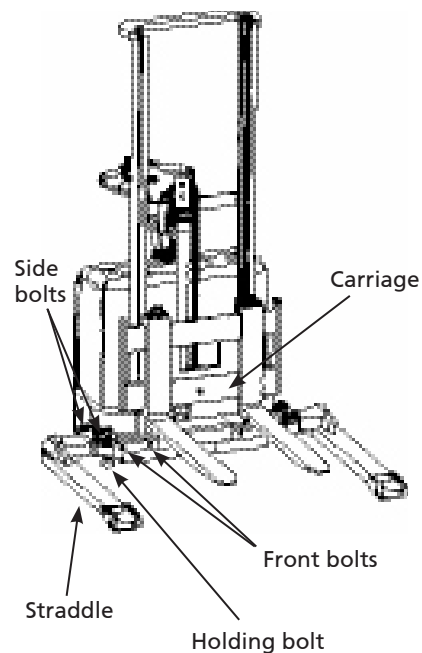
### PARKING

**IMPORTANT:** Parking the stacker on a slope is strictly prohibited. Forks must be lowered to their lowest height when parking.

- Lower the forks.
- Turn electric lock switch to the "OFF" position and take out the key.

### STRADDLE WIDTH ADJUSTMENT

1. Raise the carriage slightly.
2. Screw the holding bolt downward until it contacts the ground.
3. Unscrew both sets of bolts on the side and front of the stacker.
4. Move the straddle to the desired position.
5. Retighten both sets of bolts on the side and front securely.
6. Raise the holding bolt.



**Figure 8**

# Models 21XU83 and 21XU84

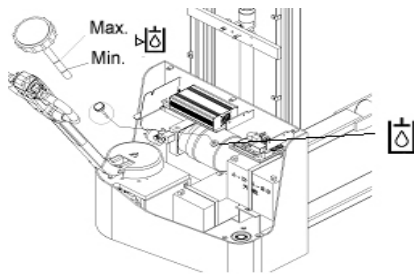
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## Maintaining, Charging and Replacing the Battery

### CHECK AND REFILL HYDRAULIC OIL

The required hydraulic fluid- type is

- H-LP 46, DIN 51524
- Viscosity is 41.4 - 47
- Depending on the type the amount is 2,5L to 3,0L



**Figure 9 Oil level**

Waste material like oil, used batteries or others must be probably disposed and recycled according to the national regulations and if necessary brought to a recycling company

### SAFE OPERATION RULES FOR LEAD-ACID BATTERY

Before doing any maintenance on the battery, securely park the stacker in a safe location.

### MAINTENANCE STAFF

Charging, repairing, and replacing batteries should only be performed by qualified professionals. Before operating, carefully read the instructions included in this manual regarding battery preparation and charge requirements.

**⚠ WARNING** *The electrolyte in the battery is poisonous and corrosive. Battery maintenance should always be performed while wearing protective goggles and clothing to avoid bodily contact with the battery acid solution.*

**⚠ WARNING** *If clothing, skin or eyes accidentally come into contact with the electrolyte in battery, liberally flush the affected parts with clean water and consult a doctor immediately. Any spilled electrolyte must be neutralized as soon as possible.*

### FIRE PROTECTION

Smoking and any other sources of ignition are strictly prohibited near the battery. The battery should be stored and charged at least 6 feet (2 meters) away from any flammable substance. Batteries should be stored in a well ventilated location with fire protection equipment.

### MAINTENANCE OF BATTERY

1. Keep all screw caps on the battery cells dry and clean. Battery posts and cable terminals should be tightened and covered with clean dielectric grease. Terminal connections and battery posts should be covered with anti-slip insulated covers.
2. Cables connecting the cells should have good contact. Check nuts for loosening or slippage and tighten if necessary.
3. Keep the surface of the battery clean and dry. After each charge, wipe any acid stains with a cotton cloth, and rinse the surface clean.
4. Over-charging or rapid discharging of the battery should be avoided. Forcibly charging or discharging the battery will shorten its life.
5. To prevent a short circuit or explosion, conductive objects (including metal tools) should not be placed on the battery.
6. Harmful impurities (solid or liquid) cannot be allowed to enter

the battery cells. When using a hydrometer to check electrolyte, its surface should be clean.

7. After battery is discharged, it should be recharged in a timely fashion. Maximum charging intervals should not exceed 24 hours. On cold days, if the battery doesn't take a charge, move it indoors and allow it to warm to room temperature.
8. If the battery will not be used for a long period of time, it should be fully charged prior to storage, and a full charge should be reapplied monthly.
9. If fluid levels decrease, distilled water (not electrolyte) should be added. Levels should be even across cells.
10. If a cell malfunctions, the cause should be determined and the malfunctioning cell should immediately be repaired or replaced.
11. When charging batteries, ventilation equipment should be used to exhaust any potentially harmful or flammable gases.

**⚠ WARNING** *There is a risk of hydrogen explosion in poorly ventilated conditions.*

12. The weight and dimension of the battery have a significant effect on the stability of the stacker. Any change of battery type should be approved by manufacturer.

### BATTERY DISPOSAL

Scrap batteries must be disposed of in an environmentally-friendly way and in accordance with the regulatory authorities.

# Dayton® Stackers

## Maintaining, Charging and Replacing the Battery (Continued)

### BATTERY REMOVAL AND INSTALLATION

**▲ WARNING** Park the stacker on level ground. Cover electrodes with a rubber gasket to avoid a short circuit. When removing the battery, adjust the battery cables to keep them from impeding the battery's removal.

**▲ WARNING** When lifting the battery with a hoist, confirm that the hoist has adequate capacity (battery weight is shown on the stacker data plate). The hoist must pull the battery vertically to avoid damaging the battery case. The hoist hook must be safe and reliable. The hoist hook must not contact the battery posts.

- Engage the emergency stop and turn electric lock switch to "OFF" position.
- Disconnect the battery.
- Remove the battery using a hoist or crane.

NOTE: Installation procedure is the reverse of the above sequence.

**▲ WARNING** After installing, check for damage on all cables and plugs. Battery posts must be covered by an insulating cap for protection. When connecting the battery, the stacker must be turned completely off to avoid arcing.

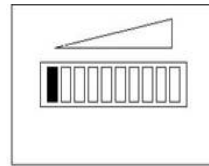
**▲ CAUTION** Use caution when covering the battery case. Avoid putting fingers between the cover and case. Before using the stacker, ensure the battery and cover are properly secured.

### BATTERY METER

The level of battery charge is indicated on the battery meter with ten indicator bars, each indicating 10%.

As the charge is consumed, bars will descend downwards from the top. An "Insufficient Capacity" reading will appear when the battery is at 30% capacity, at which time the battery should be recharged. If the battery reaches 20%, the meter will flash and the lifting function of the stacker will be automatically cut off and locked until the battery is recharged.

Battery discharged



Battery fully charged

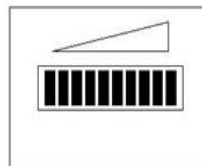


Figure 10 – Battery Meter Indicator Bars

NOTE: If the battery meter indicates insufficient capacity immediately upon lifting, the battery should be charged to at least 70% of capacity before resuming lifting.

### BATTERY CHARGING

**▲ WARNING** Battery charging must comply with any instruction manuals provided by the battery and charger suppliers. These stackers are equipped with a charger that is specific to the battery supplied.

**▲ WARNING** Before connecting the charger to battery, make sure the charger, emergency switch, and electric lock switch are in the off position. Charge the battery in a dry and air-circulated environment and keep away from fire sources. The battery should be charged regularly (once per month at a minimum).

When the charge is low, an alarm will flash on the battery meter. When this happens, discontinue use and charge

the battery immediately.

### AUTOMATIC CHARGER

A fully automatic smart charger is included with the stacker. The charger indicator light is red when the battery is charging. The charger will automatically adjust the current flow according to residual capacity of the battery, which ensures an optimum charge. When complete, the charger indicator lights green and the charger automatically stops. A full charging course generally lasts 5-7 hours.

IMPORTANT: Before charging, make sure no metal objects are on the battery. Check for any obvious faults on all cables and plugs. Safety instructions, including common rules and battery charging preparation procedures, should be strictly observed. During charging, cock caps for each cell should be opened to maintain air circulation conditions.

## Maintenance

### SAFETY OPERATION AND ENVIRONMENTAL PROTECTION

The instructions in this section should be performed based on the time intervals specified in the Maintenance List.

**▲ WARNING** No part of the stacker, especially safety devices, may be changed without the manufacturer's written permission. Altering the travel speed of the stacker is strictly prohibited. All spare parts from the manufacturer are qualified by Quality Assurance Authorities. To ensure safe and reliable stacker operation, only spare parts from the manufacturer should be used. Replaced parts, including oils and fuels, must be disposed according to environmental protection regulations.

## Models 21XU83 and 21XU84

### Maintenance(Continued)

#### MAINTENANCE SAFETY RULES

##### MAINTENANCE STAFF

Repair and maintenance should only be performed by qualified professionals who have been trained by the manufacturer.

##### LIFTING THE STACKER

Hoisting equipment used to lift the stacker should be safe and reliable. When the stacker is lifted, necessary precautions should be taken to avoid slipping or overturning of the stacker (a wedge block or wood block can be applied). The stacker should be lifted only when the forks are fixed and adequately strong connecting cables are applied.

##### CLEANING

Using flammable fluids to clean the stacker is strictly prohibited. Before cleaning, safety measures must be taken to avoid sparking (e.g. caused by short circuit). Battery work should only be performed after cutting off the power. Electric elements and electronic assemblies should only be cleaned using compressed air or a nonconductive, anti-static brush.

**▲ WARNING** *If the stacker is cleaned with a high pressure washer, all electric elements and electronic assemblies should be covered to avoid a functional fault. Cleaning with a steam nozzle is prohibited.*

##### ELECTRICAL SYSTEM

Work on the stacker's electrical system should only be performed by trained professionals. Protective measures should be taken to avoid electric shock. Before beginning work, separate the battery socket to turn off power to the stacker.

##### WELDING

To avoid damage of electric and electronic assemblies, assemblies should be removed from the stacker before welding.

##### INSTALLATION

After repairing or replacing hydraulic components, electric elements, and electronic assemblies, confirm that all components are at original positions before resuming use.

##### WHEELS

Wheel quality greatly affects the stability and driving performance of the stacker. Any change of wheels should be approved by the manufacturer. During replacement of wheels, the stacker must be kept in a horizontal position. Wheels must be replaced in pairs, (e.g. both left and right).

##### LIFTING CHAINS AND ROLLERS

Without proper lubrication, lifting chains and rollers will wear out prematurely. Maintenance intervals outlined in this section are for normal operating conditions. In substandard operating conditions (high dust, extreme temperatures), more frequent lubrication will be necessary.

##### HYDRAULIC OIL LINE

The oil line should be replaced every six years. Hydraulic oil should be replaced at the same time.

#### DAILY MAINTENANCE (BEFORE EACH SHIFT)

1. Check the battery's acid levels daily. Note that the acid level will rise during recharging.
2. Check battery terminals and cables for proper fit.
3. Make sure the battery box is securely fastened in its holder.
4. Check for any oil leakage.
5. Check the horn.

6. Check the functionality of the transport and parking brakes.
7. Check the frame and wheels for any signs of damage.

#### MAINTENANCE AND INSPECTION

Complete and professional maintenance is an important part of safe stacker operation. Neglecting maintenance will cause premature failure of the stacker and potential danger to people and equipment.

**NOTE:** Maintenance cycles stated in the instruction manual refer to single shift operation under normal conditions. Under dusty conditions, extreme temperature variations, or when operating multiple shifts, maintenance cycles should be shortened.

Maintenance should be performed according to the following intervals under normal conditions:

W1 = every 50 working hours or at least once per week.

M3 = every 500 working hours or at least once every three months.

M6 = every 1000 working hours or at least once every six months.

M12 = every 2000 working hours or at least once per year.

For newly commissioned stackers, the following additional maintenance should be done:

After 50 hours to 100 hours of operation or after 2 months of use:

- Check for any loose nuts on the wheels and tighten as necessary.
- Check for any leakage of hydraulic parts and tighten fittings as required.
- Replace the hydraulic filter.

#### MAINTENANCE SCHEDULE

Refer to Table 5 on pages 14 and 15 for weekly, monthly and yearly schedules.



# Dayton® Stackers

## Maintenance (Continued)

Maintenance Area	Action	1 Week	3 Months	6 Months	1 Year
Chassis and Stacker Frame	Inspect for any damage of load bearing parts		•		
	Inspect all joints and bolts		•		
Drive Wheel	Inspect for noise and leakage in drive system		•		
	Check drive system oil levels		•		
	Replace lubricants			#	•
Load Wheels	Inspect for wear and damage		•		
	Inspect bearings inside wheels and ensure a proper fit †		•		
Steering System	Inspect steering operation motion		•		
Braking System	Inspect brake performance and adjust as needed	#	•		
	Inspect reset function of gas piston; check for leakage or damage		•		
	Check for brake wheel wear		•		
	Inspect brake connection and adjust if necessary		•		
Lifting Equipment	Check performance, look for wear		•		
	Visually inspect for any blockages in the loading wheels		•		
	Check for any wear or damage to the edges of forks and pallet	#	•		
Hydraulic System	Check performance	#	•		
	Check for any leakage or damage on all joints ‡	#	•		
	Check for leakage or damage to hydraulic cylinder, verify safety and reliability of connections	#	•		
	Check oil capacity	#	•		
	Replace hydraulic oil and filter ‡‡			#	•
	Inspect adjustment function of pressure regulator			#	•

**Table 5 – Maintenance Schedule**

- (•) Standard
- (#) Refrigerated warehouse
- (†) After initial 100 hours of operation, check for any loose nuts on wheels and tighten as necessary
- (‡) After initial 100 hours of operation, check for any leakage of hydraulic parts and tighten as required
- (‡‡) 500 hours after initial operation

# Models 21XU83 and 21XU84

## Maintenance (Continued)

Maintenance Area	Action	1 Week	3 Months	6 Months	1 Year
Electrical System	Check performance		•		
	Check for safety and reliability of cable connections, check for damage		•		
	Inspect fuses for proper amperage ratings		•		
	Check safety, reliability, and function of switches		•		
	Inspect connections, replace worn parts if necessary		•		
	Inspect function of alarm equipment	#	•		
Motor	Check for carbon brush wear		•		
	Check that motor is securely attached		•		
	Clean motor housing with vacuum, inspect for commutator wear (DC motor only)		#	•	
Battery	Check the density and capacity of acid, check the battery voltage	#	•		
	Inspect for safety hoods and dielectric grease on connection terminals	#	•		
	Clean battery connections, inspect for tightness of fit	#	•		
	Check for damage to battery cables, replace if necessary		•		
Lubrication	Check grease fittings for proper lubrication, add grease as needed	#	•		
Integrated Measurement	Check for faults in grounding of the electrical system				•
	Check driving speed and braking distance				•
	Check lifting and lowering speed				•
	Inspect safety devices		•		
Demonstration	Commissioning under load rating		•		
	After the above maintenance, the stacker is certified to be reliable for the operator	#	•		

Table 5 – Maintenance Schedule (Continued)

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# Dayton® Stackers

## Maintenance (Continued) MAINTENANCE AND REPAIR PREPARATIONS

Take necessary safety precautions to avoid accidents during repair and maintenance by:

- Parking the stacker safely
- Pressing the emergency parking switch to turn off power.

**▲ WARNING** *If it becomes necessary to lift the stacker for maintenance or repair, refer to the related instructions in the "Transportation and Commissioning" section for precautions to be taken when lifting the forks or lifting the stacker.*

### INSPECTION OF HYDRAULIC OIL LEVEL

- Prepare the stacker to be repaired or maintained.
- Lower the forks and carriage to their lowest height.
- Open the access panel covers.
- Check the capacity of the hydraulic oil in the oil tank.

### INSPECTION OF ELECTRICAL FUSES

- Prepare the stacker to be repaired or maintained.
- Open the access panel covers.
- Consult the chart below to verify the correct rating for all fuses. Replace if necessary.

Code	Fuse Type	Rating
FU1	Control circuit	10A
FU2	Hourmeter	0.5A
FU01	Main circuit	60A
FU02	Lift control	100A
FU3	Fan	1.0A

**Table 6 – Fuse Types and Ratings**

## USING THE STACKER AFTER MAINTENANCE

Complete the following operations before using the stacker:

- Clean the stacker.
- Check the braking function.
- Check the function of the emergency parking switch.
- Check the function of the horn.

## STORAGE OF THE STACKER

If the stacker will be unused for 2 or more months, it should be parked in a cool (non-freezing) and dry location. The following measures should be taken before, during, and after storage.

**NOTE:** During storage, the stacker should be elevated to keep the wheels completely off the ground. This will protect the wheels and the bearings inside wheels from damage. In the case of storage period of over 6 months, contact the manufacturer for additional measures.

### PREPARATIONS BEFORE STORAGE

- Clean the stacker thoroughly.
- Check the braking function.
- Check the hydraulic oil capacity, add fluid if necessary.
- Apply oil or grease to fittings as needed.
- Consult detailed lubrication list to lubricate the stacker.
- Recharge the battery.
- Disconnect and clean the battery. Apply dielectric grease to the battery electrodes.

**NOTE:** In addition to the above, instructions provided by the battery supplier should also be observed.

## MEASURES TO BE TAKEN DURING STORAGE

Every two months: charge the battery.

**IMPORTANT:** It is important to recharge the battery regularly. Batteries allowed to completely discharge may become damaged and require replacement.

### RE-COMMISSIONING

- Clean the stacker thoroughly.
- Consult detailed lubrication list to lubricate the stacker.
- Clean the battery, apply dielectric grease to electrode bolts and connect the battery.
- Recharge the battery.
- Check for any moisture in the gear oil, replace if required.
- Check for any moisture in the hydraulic oil, replace if required.
- Start the stacker. Check all safety functions before using.

### BATTERY OPERATION

In the case of a problem in the electrical system, brush all exposed electrical connections with contact cleaner. Repeat this step to remove oxidation on controller connections.

**▲ WARNING** *Electromagnetic braking should be tested immediately after re-commissioning.*

## Models 21XU83 and 21XU84

### Troubleshooting Chart

Fault	Possible Cause(s)	Corrective Action
Load can't be lifted	<ol style="list-style-type: none"> <li>1. Load weight too high</li> <li>2. Battery discharged</li> <li>3. Lifting fuse faulty</li> <li>4. Hydraulic oil level too low</li> <li>5. Oil leakage</li> </ol>	<ol style="list-style-type: none"> <li>1. Lift only the max. capacity metioned on the ID - plate</li> <li>2. Charge the battery</li> <li>3. Check and eventually replace the lifting fuse</li> <li>4. Check and eventually refill hydraulic oil</li> <li>5. Repaire the hoses and/or the sealing of the cylinder</li> </ol>
Oil leakage from air breathing	<ol style="list-style-type: none"> <li>1. Dirty oil blocks control valve</li> <li>2. The solenoid valve for lowering is not opened or is damaged</li> <li>3. Excessive quantity of oil</li> </ol>	<ol style="list-style-type: none"> <li>1. Check hydraulic oil and clean control valve.Replace the oil if necessary.</li> <li>2. Check or replace the valve for lowering.</li> <li>3. Reduce oil quantity</li> </ol>
Stacker not work	<ol style="list-style-type: none"> <li>1. Battery is discharging</li> <li>2. Battery not connected</li> <li>3. The fuse is faulty</li> <li>4. Battery discharged</li> <li>5. Combined emergency switch is activated</li> <li>6. Tiller in the operating zone</li> </ol>	<ol style="list-style-type: none"> <li>1. Charge the battery completely and then remove the main power plug from the electrical socket.</li> <li>2. Connect the battery correctly.</li> <li>3. Check and eventually replace fuses.</li> <li>4. Charge the battery</li> <li>5. De-activate the combined emergency switch by inserting and pulling the knob.</li> <li>6. Move the tiller firstly to the braking zone.</li> </ol>
Only travel in one direction	The accelerator and the connections are damaged.	Check the accelerator and the connections.
The stacker only travels very	<ol style="list-style-type: none"> <li>1. The battery is discharged</li> <li>2. The electromagnetic brake is engaged.</li> <li>3. The relating tiller cables are disconnected or damaged</li> </ol>	<ol style="list-style-type: none"> <li>1. Check the battery status at the discharge indicator</li> <li>2. Check the electromagnetic brake</li> <li>3. Check the tiller cables and connections</li> </ol>
The stacker starts up suddenly	<ol style="list-style-type: none"> <li>1. The controller is damaged</li> <li>2. The accelerator not moves back to its neutral position</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace the controller</li> <li>2. Repair or replace the accelerator</li> </ol>

# Dayton® Stackers

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## Hydraulic Flow Diagram

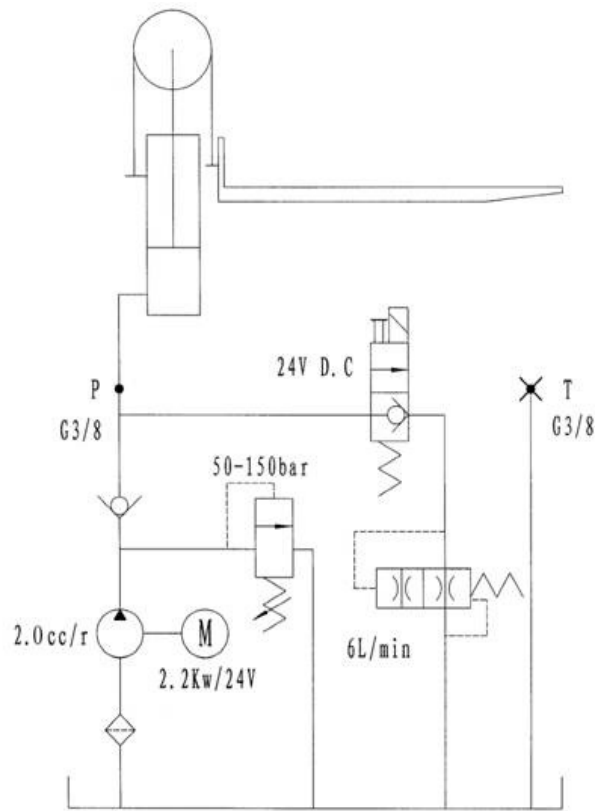


Figure 11 – Hydraulic Flow Diagram

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

## CONTENTS

1.	Base System .....	20
2.	Fork Carriage.....	22
3.	Mast System (21XU84).....	24
4.	HYdraulic and Lifting System.....	26
5.	Drive Wheel System.....	34
6.	Control Handle and Arm.....	38
7.	Electrical Diagram & Parts.....	42

E  
N  
G  
L  
I  
S  
H

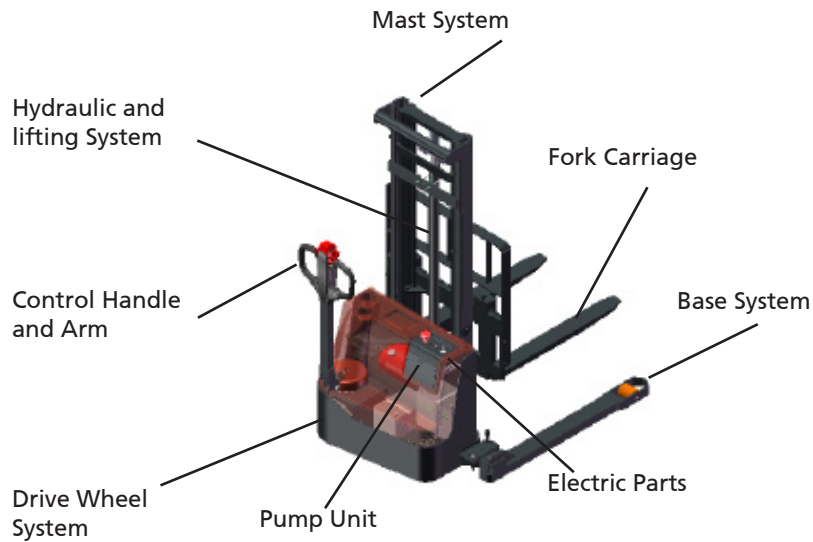


Figure 12

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

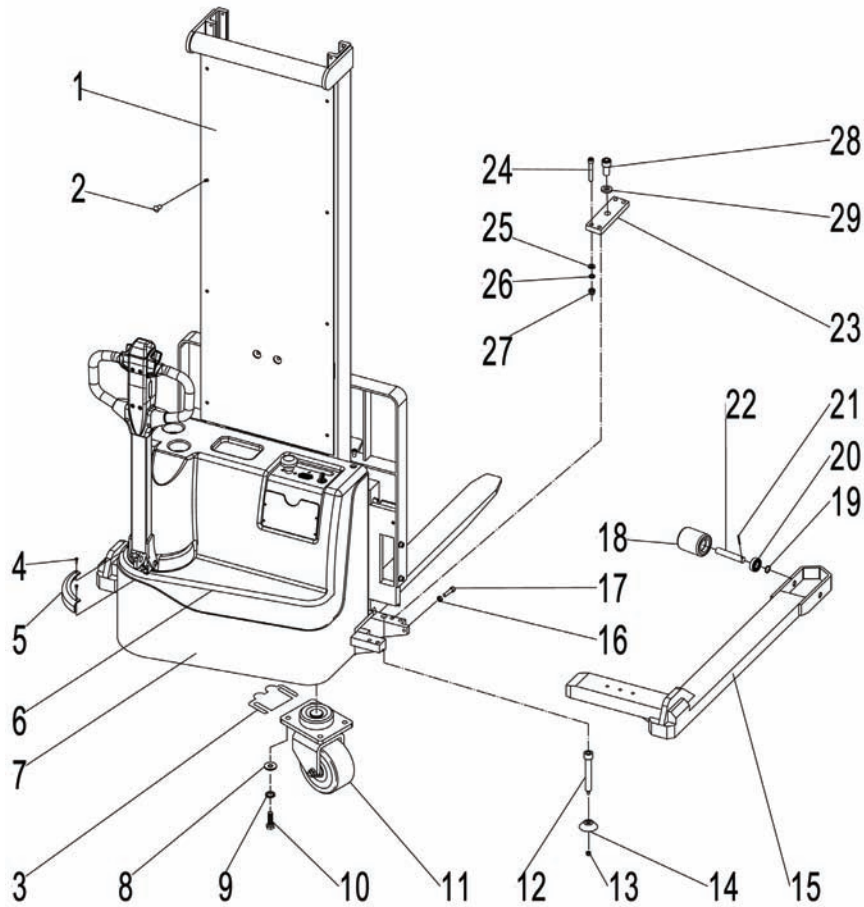


Figure 13 – Repair Parts Illustration for Stacker Base System

# Repair Parts List for Stacker Base System

Reference Number	Description	Part Number	Quantity	
1	Protect cover (for 21XU83)	MH21XU8301G	1	
1	Protect cover (for 21XU84)	MH21XU8401G	1	
2	Screw, M6x16	++	8	
3	Adjusting plate for castor	MH21XU8302G	1 to 4	
4	Screw, M5x12	++	2	
5	Cover	MH21XU8303G	1	
6	Box cover	MH21XU8304G	1	
7	Base frame	+	1	
Caster kit			MH5RTC207G	1
8	Flat washer, 10	▲	4	
9	Elastic washer, 10	▲	4	
10	Bolt, M10x35	▲	4	
11	Caster wheel	▲	1	
Leveling screw kits			MH2LEC135	2
12	Bolt	▲	1	
13	Lock nut, M8	▲	1	
14	Holding plate	▲	1	
15	Support leg, right	+	1	
15	Support leg, left	+	1	
16	Nut, M10	++	4	
17	Screw, M10x40	++	4	
Roller kit			MH21XU8305G	2
18	Roller	▲	1	
19	Washer	▲	2	
20	Bearing, 6204	▲	2	
21	Roller pin, 5x40	▲	1	
22	Roller shaft	▲	1	
23	Pressure plate	+	2	
24	Screw, M12x80	++	8	
25	Flat washer, 12	++	8	
26	Elastic washer, 12	++	8	
27	Lock nut, M12	++	8	
28	Holding pin	+	2	
29	Flat washer, 20	++	2	

(▲) Available as part of a kit only.

(†) Not available.

(++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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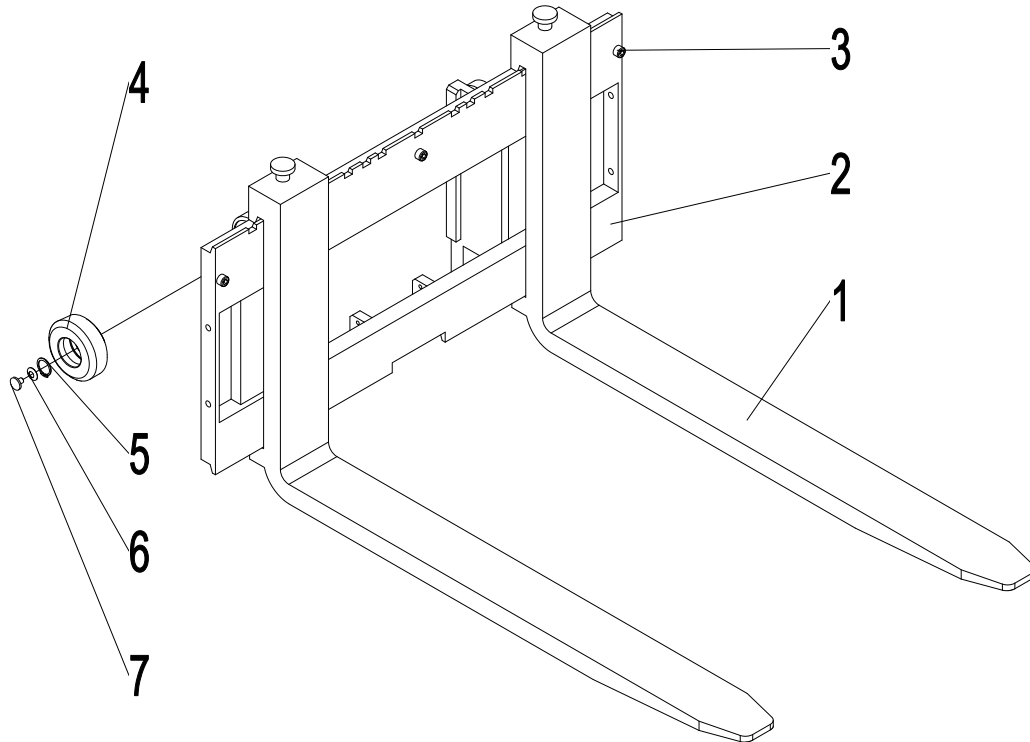


Figure 14 – Repair Parts Illustration for Stacker Fork Carriage



## Repair Parts List for Fork Carriage

Reference Number	Description	Part Number	Quantity
1	Fork, 4"x45"	MH2LEC202	2
2	Carriage	+	1
3	Screw, M10x25	++	3
4	Roller	MH21XU8306G	4
5	Retaining ring, 25	++	4
6	Washer	+	2
7	Holding washer	+	4

((†) Not available.

((++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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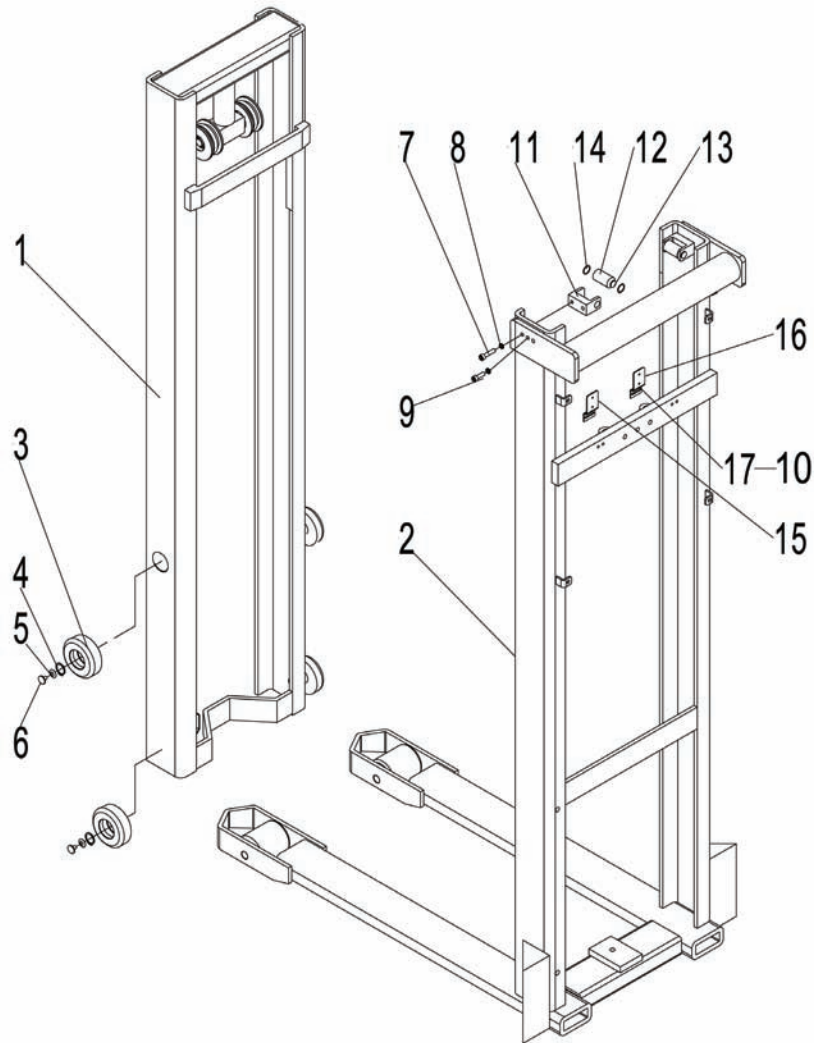


Figure 15 – Repair Parts Illustration for Stacker Mast System(Model 21XU84)

## Repair Parts List for Stacker Mast System( Model 21XU84)

Reference Number	Description	Part Number	Quantity
1	Inner mast	+	1
2	Screw, M6x16	++	8
3	Roller	MH21XU8306G	4
4	Retaining ring, 25	++	4
5	Washer	+	2
6	Holding washer	++	4
7	Screw, M8x30	++	4
8	Elastic washer, 8	++	4
9	Screw, M8x25	++	2
10	Flat washer, 6	++	4
	Guide pulley kits	MH21XU8402G	2
11	Seat	▲	1
12	Roller	▲	1
13	Pin	▲	1
14	Retaining ring, 12	▲	2
15	Fixing plate	+	1
16	Fixing plate	+	1
17	Screw, M6x16	++	4

(▲) Available as part of a kit only.

(†) Not available.

(++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

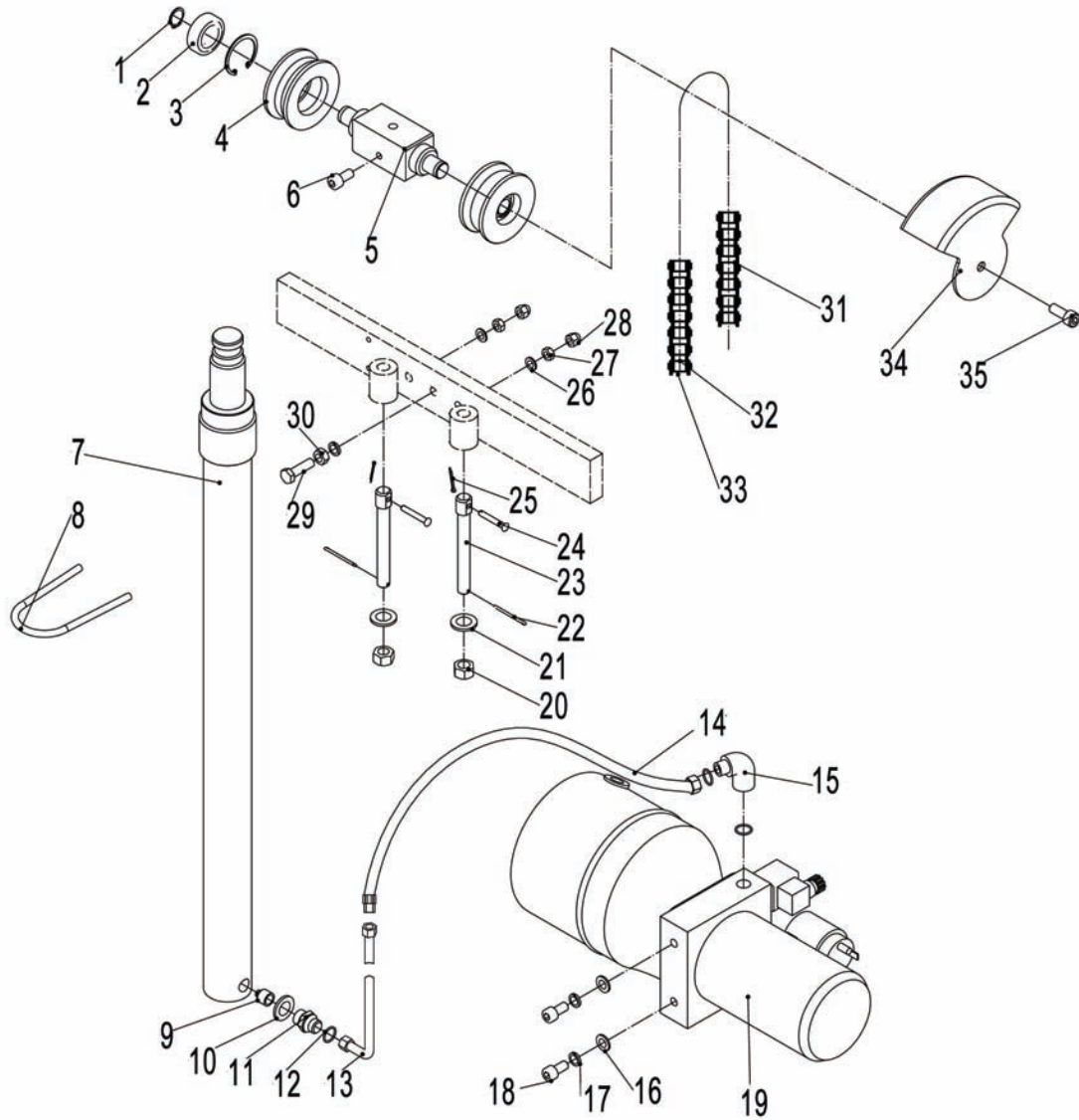


Figure 16a – Repair Parts Illustration for Hydraulic and Lifting System (Model 21XU83)

ENGLISH

# Repair Parts List for Hydraulic and Lifting System (Model 21XU83)

Reference Number	Description	Part Number	Quantity
	Chain roller kit	MH21XU8307G	2
1	Retaining ring, 20	▲	1
2	Bearing, 6204	▲	1
3	Retaining ring, 47	▲	1
4	Chain roller	▲	1
5	Holding plate	+	1
6	Screw, M8x16	++	1
7	Cylinder (see page 30)	MH21XU8308G	1
8	Hoop for cylinder	+	1
9	Safety valve	MH5RTC232G	1
	Hydraulic line kits	MH21XU8309G	1
10	Seal washer, 16	▲	1
11	Joint	▲	1
12	O - ring, 8x1.8	▲	3
13	Hydraulic line(steel)	▲	1
14	Hydraulic line(rubber)	▲	1
15	Joint	▲	1
16	Flat washer, 10	++	2
17	Elastic washer, 10	++	2
18	Screw, M10x45	++	2
19	Pump station (see Page 32)	MH21XU8310G	1
20	Nut, M14	++	4
21	Flat washer, 14	++	2
22	Split pin, 3x40	++	2
23	Linking bolt for chain	MH21XU8311G	2
24	Pin, 6x40	++	2
25	Split pin, 1x8	++	2
26	Flat washer, 8	++	2
27	Nut, M8	++	2
28	Dome cap nuts, M8	++	2
29	Bolt, M10x30	++	1
30	Nut, M10	++	2
	Chain kit	MH21XU8312G	2
31	Chain, 12A-1x61	▲	1
32	Pin, 6x45	▲	2
33	Split, 2x20	▲	2
34	Cover for chain	MH21XU8313G	2
35	Screw, M8x20	++	2

(▲) Available as part of a kit only.

(†) Not available.

(++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

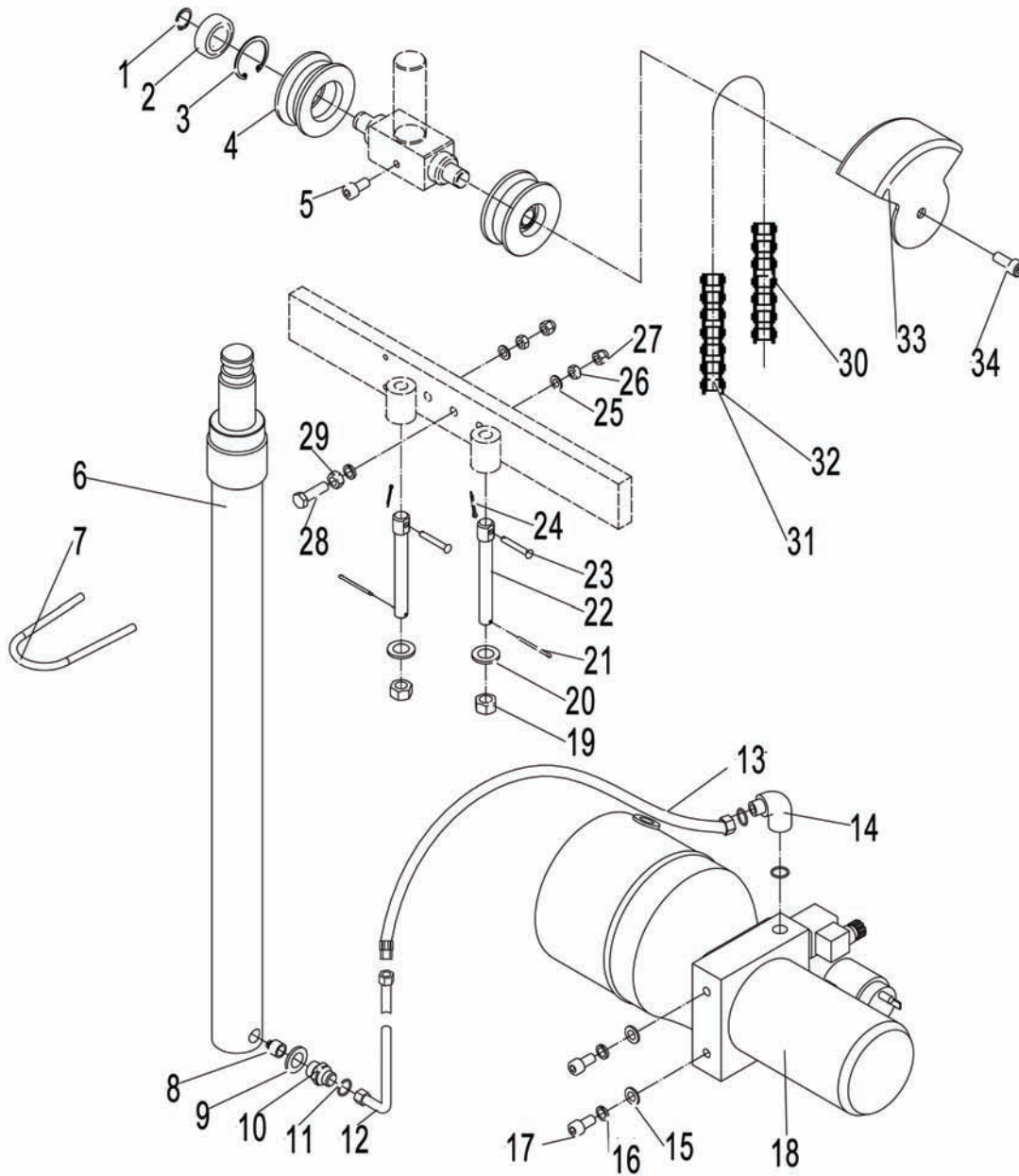


Figure 16b – Repair Parts Illustration for Hydraulic and Lifting System (Model 21XU84)

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# Repair Parts List for Hydraulic and Lifting System (Model 21XU84)

Reference Number	Description	Part Number	Quantity
	Chain roller kit	MH21XU8307G	2
1	Retaining ring, 20	▲	1
2	Bearing, 6204	▲	1
3	Retaining ring, 47	▲	1
4	Chain roller	▲	1
5	Screw, M8x16	++	1
6	Cylinder (see page 30)	MH21XU8403G	1
7	Hoop for cylinder	+	1
8	Safety valve	MH5RTC232G	1
	Hydraulic line kits	MH21XU8309G	1
9	Seal washer, 16	▲	1
10	Joint	▲	1
11	O - ring, 8x1.8	▲	3
12	Hydraulic line(steel)	▲	1
13	Hydraulic line(rubber)	▲	1
14	Joint	▲	1
15	Flat washer, 10	++	2
16	Elastic washer, 10	++	2
17	Screw, M10x45	++	2
18	Pump station (see Page 32)	MH21XU8310G	1
19	Nut, M14	++	4
20	Flat washer, 14	++	2
21	Split pin, 3x40	++	2
22	Linking bolt for chain	MH21XU8311G	2
23	Pin, 6x40	++	2
24	Split pin, 1x8	++	2
25	Flat washer, 8	++	2
26	Nut, M8	++	2
27	Dome cap nuts, M8	++	2
28	Bolt, M10x30	++	1
29	Nut, M10	++	2
	Chain kit	MH21XU8404G	2
30	Chain, 12A-1x95	▲	1
31	Pin, 6x45	▲	2
32	Split, 2x20	▲	2
33	Cover for chain	MH21XU8313G	2
34	Screw, M8x20	++	2

(▲) Available as part of a kit only.

(†) Not available.

(++) Common hardware, not offered as a replacement part.



# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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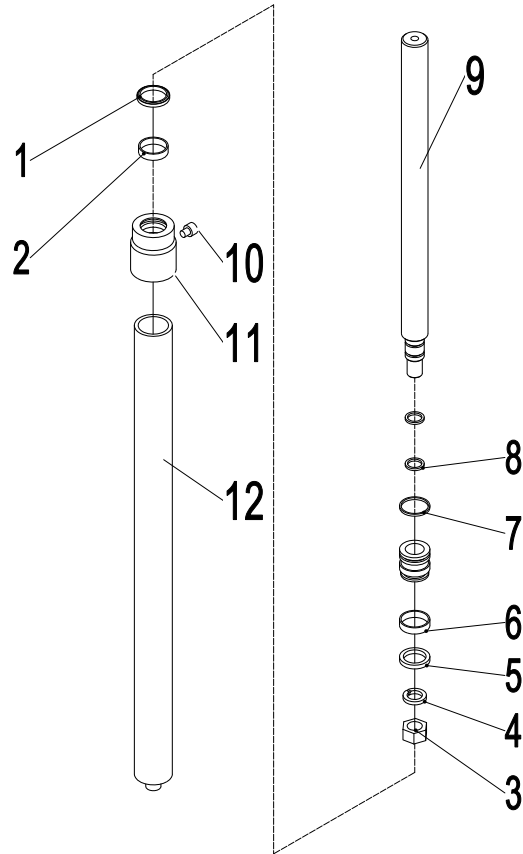


Figure 17 – Repair Parts Illustration for Cylinder

## Repair Parts List for Cylinder

Reference Number	Description	Part Number	Quantity
1	Dusting ring, 40x48x5	+	1
2	Holding ring, 40x10-2	+	1
3	Nut, M20x1.5	++	1
4	Elastic washer, 20	++	1
	<b>Piston kits</b>	<b>MH21XU8314G</b>	<b>1</b>
5	Y - ring, 45x35x6	▲	1
6	Holding ring, 45x10-2	▲	1
7	O - ring, 45x3.2	▲	1
8	O - ring, 25x3.1	▲	2
9	Piston rod	+	1
10	Screw	+	1
11	Screw cover	+	1
12	Cylinder body	+	1

(▲) Available as part of a kit only.

(+) Not available.

(++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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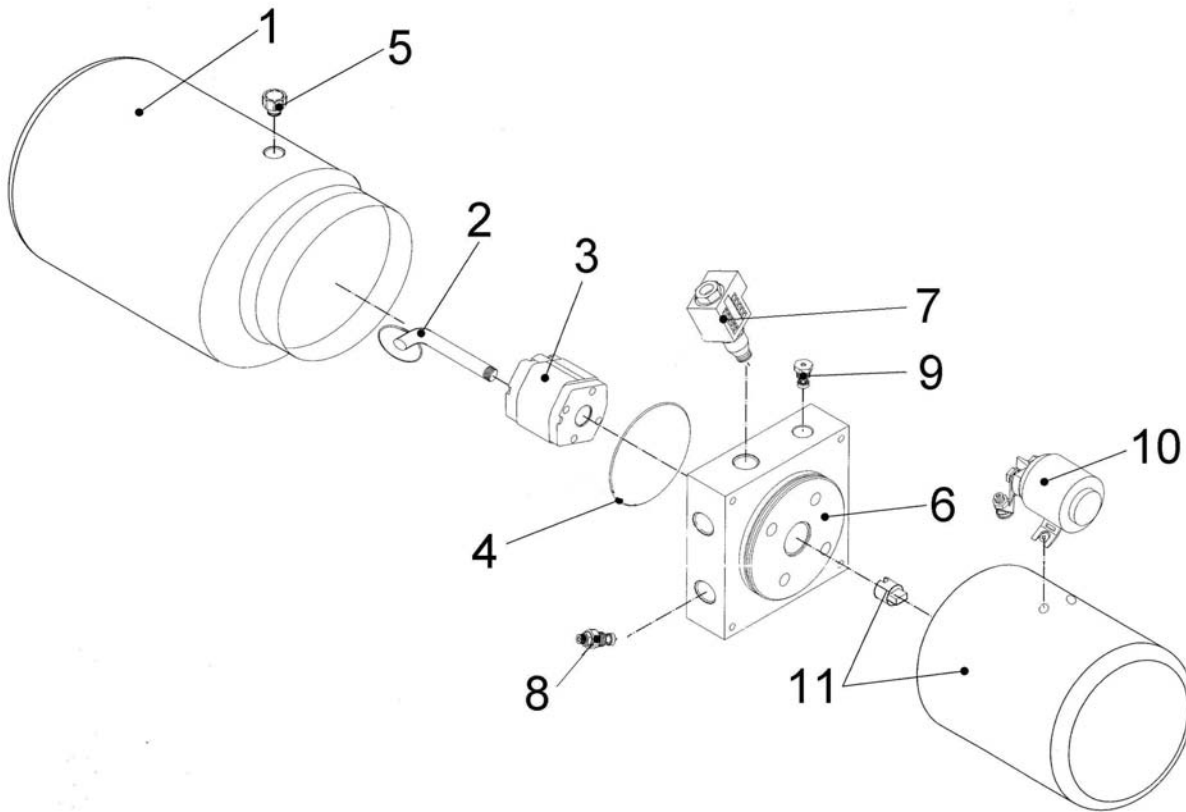


Figure 18 – Repair Parts Illustration for Pump Station

## Repair Parts List for Pump Station

Reference Number	Description	Part Number	Quantity
1	Oil Tank	+	1
2	Oil suction pipe	+	1
3	Gear pump	+	1
4	O - ring	+	1
5	Tank cap	+	1
6	Valve plate	+	1
7	Electromagnetic valve	MH21XU8315G	1
8	Overflow valve	+	1
9	One-way valve	+	1
10	Contactora for lifting	MH21XU8316G	1
11	Motor for lifting, DC24V	MH21XU8317G	1

(t) Not available.

# For Repair Parts, call 1-800-323-0620

**24 hours a day – 365 days a year**

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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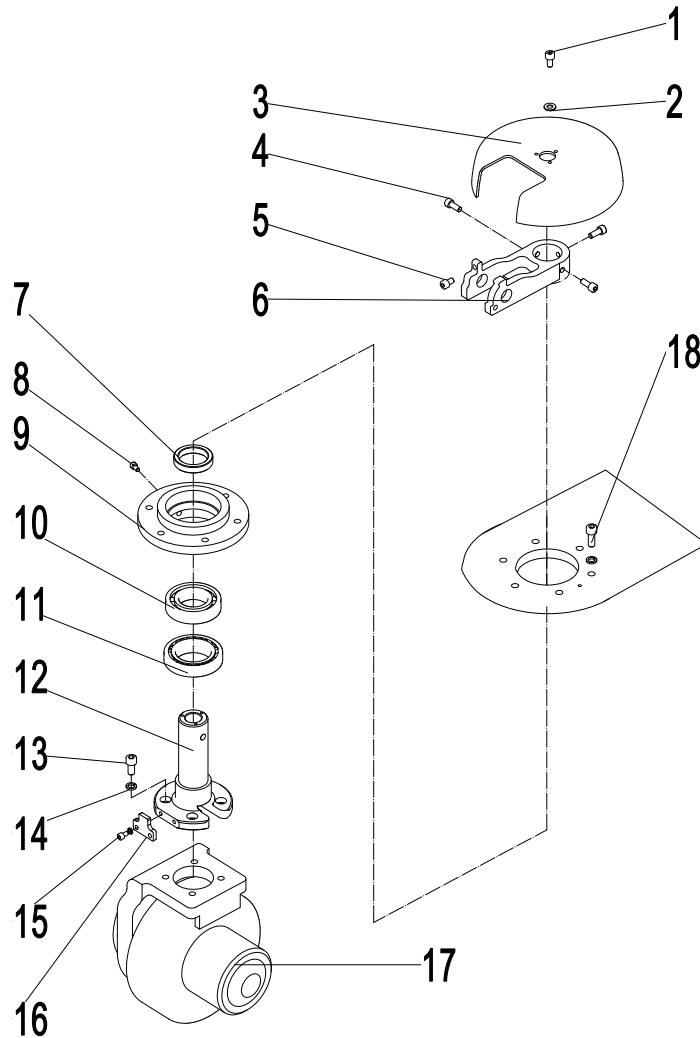


Figure 19 – Repair Parts Illustration for Driving Wheel System

## Repair Parts List for Driving Wheel System

Reference Number	Description	Part Number	Quantity
1	Screw, M4x8	++	3
2	Flat washer, 4	++	3
3	Cover	MH21XU8318G	1
4	Screw, M8x20	++	3
5	Screw, M8x12	++	1
6	Seat for handle	MH21XU8319G	1
7	Sleeve	+	1
8	Screw, M6x10	++	4
9	Seat for bearing	+	1
10	Bearing, 6209	++	1
11	Bearing, 32011	++	1
12	Linking flange	+	1
13	Screw, M10x20	++	4
14	Elastic washer, 10	++	10
15	Elastic washer, 6	++	4
16	Located block	+	1
17	Driving wheel unit	MH21XU8252G	1
18	Screw, M10x25	++	1

(▲) Available as part of a kit only.

(†) Not available.

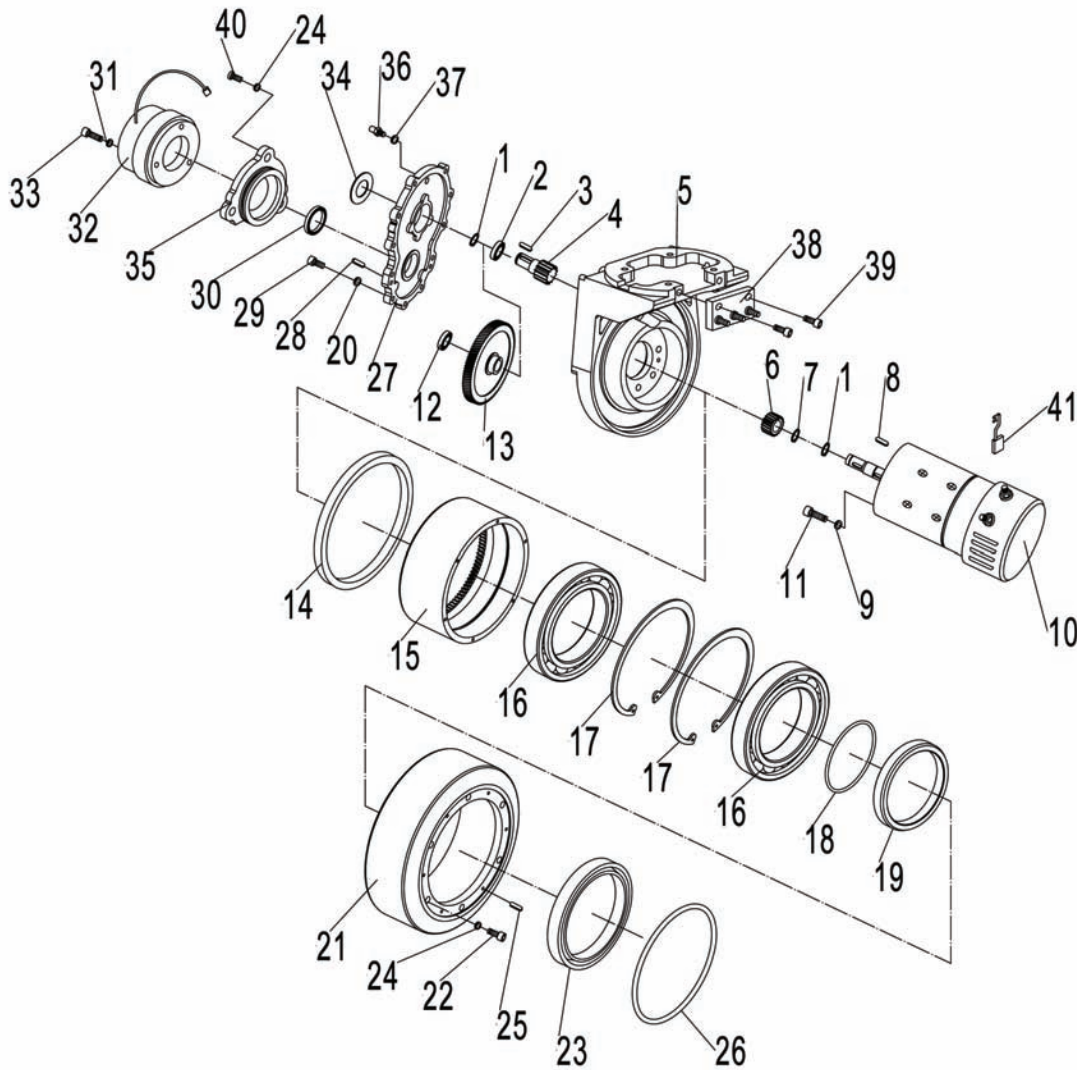
(++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list



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Figure 20 – Repair Parts Illustration for Drive wheel unit



## Repair Parts List for Drive wheel Unit

Reference Number	Description	Part Number	Quantity
1	Retaining ring, 17	+	2
2	Bearing, 6203	+	1
3	Key, A5x18	+	1
4	Axle with gear	+	1
5	Motor frame	+	1
6	Gear	+	1
7	Retaining ring, 15	+	1
8	Key, A5x15	+	1
9	Washer, 8	+	5
10	Motor for traction,DC24V	MH21XU8204G	1
11	Screw, M8x25	+	5
12	Bearing, 61905	+	1
13	Gear	+	1
14	Seal ring,160x174x10	+	1
15	Inner gear	+	1
16	Bearing, 61824	+	1
17	Retaining ring, 150	+	1
18	O - ring, 115x2.65	+	1
19	Seat of seal ring	+	1
20	Elastic washer, 6	+	11
	Replacement wheel kit	MH21XU8254G	1
21	Wheel	▲	1
22	Screw, M5x14	▲	10
23	Seal ring	▲	1
24	Elastic washer, 5	▲	10
25	Pin, 5x20	▲	2
26	O - ring, 140x2.65	▲	1
27	Cover	+	1
28	Pin, B6x20	+	2
29	Screw, M6x16	+	11
30	Seal ring, 17x28x7	+	1
	Brake kit	MH21XU8206G	1
31	Elastic washer, 4	▲	3
32	Electromagnetic brake	▲	1
33	Screw, M4x45	▲	3
34	Cover	+	1
35	Protect cover	+	1
36	Screw, M10x1	+	1
37	Seal washer,10	+	1
38	Fixing plate for cable	+	1
39	Screw, M5x16	+	2
40	Screw, M5x25	+	2
41	Carbon brush for motor	+	1

(▲) Available as part of a kit only.

(+) Not available.

## For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

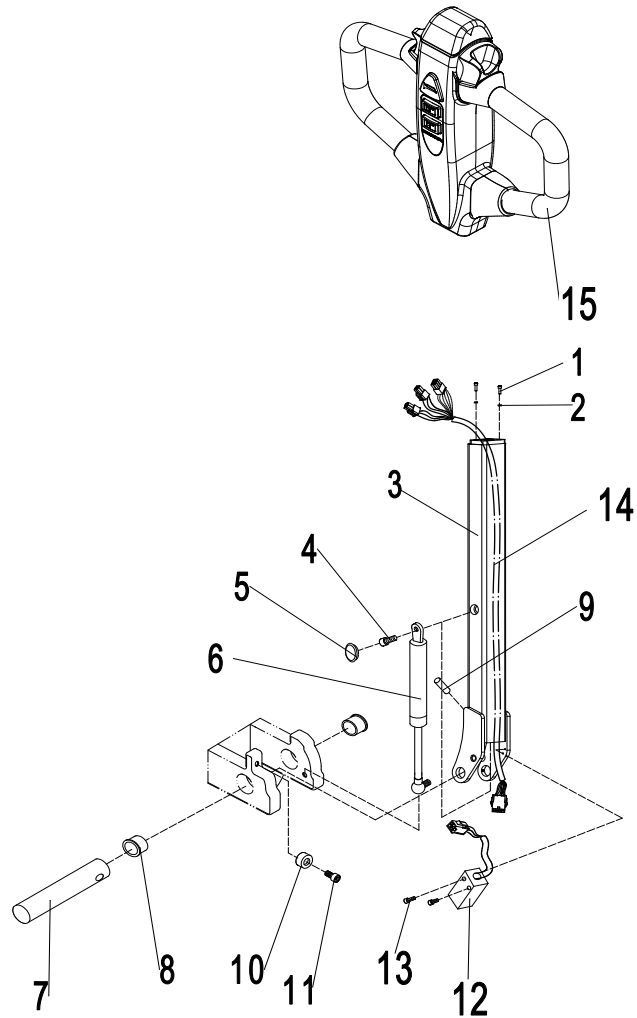


Figure 21 – Repair Parts Illustration for Control Handle and Arm

## Repair Parts List for Control Handle and Arm

Reference Number	Description	Part Number	Quantity
1	Screw, M8x25	++	4
2	Elastic washer, 8	++	4
3	hand bar	+	1
4	Screw, M8x20	++	1
5	Cover	+	1
6	Air spring	MH21XU8258G	1
	Handle axle kit	MH21XU8320G	1
7	Shaft, 20x78	▲	1
8	Bushing, 20x22x12	▲	2
9	Roll pin, 4x35	++	1
10	Elastic washer, 8	++	1
11	Screw, M8x12	++	1
12	Inductive sensor, NBN5-FT-E2	MH21XU8214G	1
13	Screw, M3x20	++	2
14	Cabel for handle	MH21XU8321G	1
15	Control handle Assy.	MH21XU8257G	1

(▲) Available as part of a kit only.

(t) Not available.

(++) Not available.

## For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

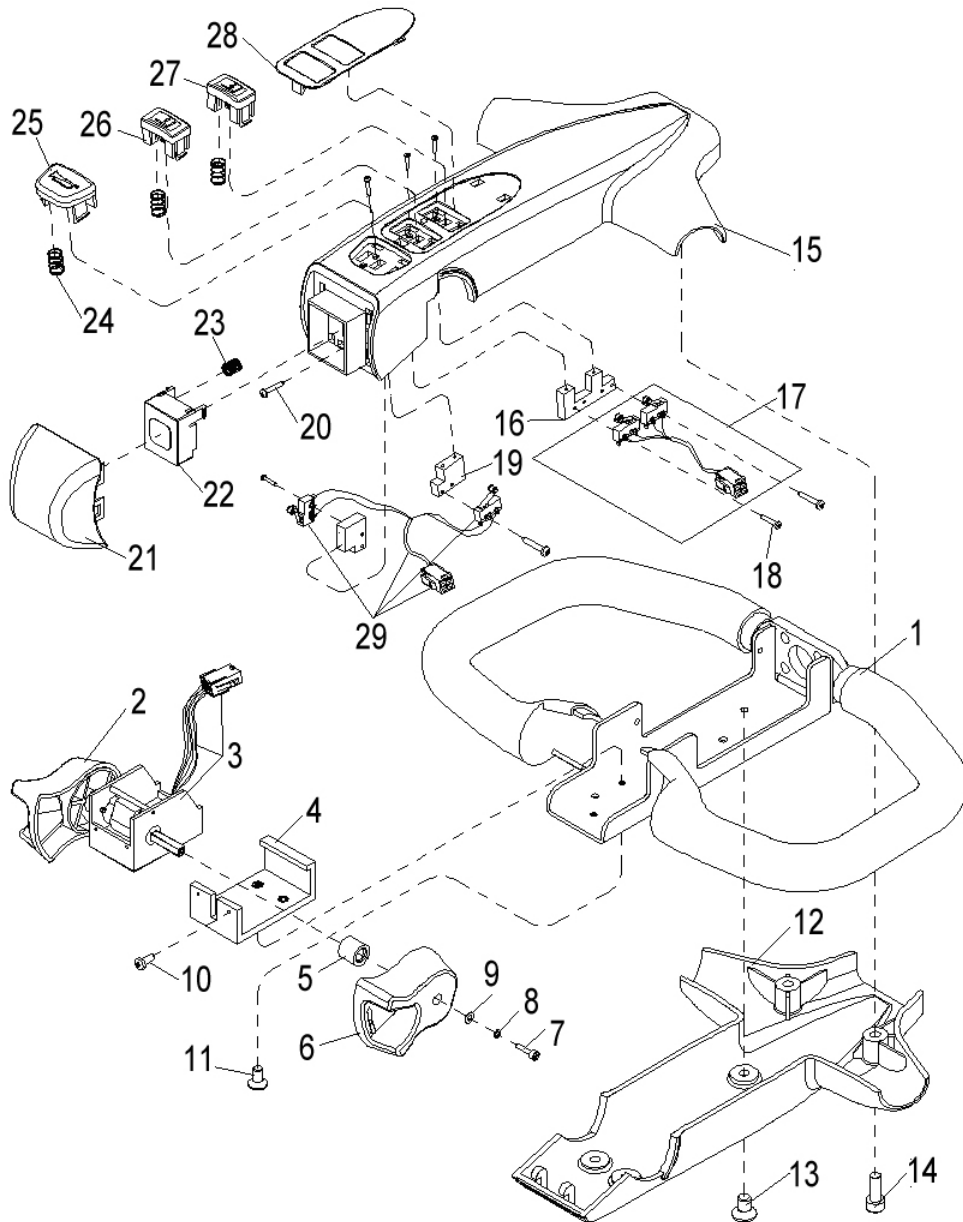


Figure 22 – Repair Parts Illustration for Control handle

## Repair Parts List for Control Handle Arm

Reference Number	Description	Part Number	Quantity
1	Handle	+	1
2	Butterfly knob left	+	1
3	Accelerator, BD-190	MH21XU8221G	1
4	Fixing plate	+	1
5	Bushing	+	2
6	Butterfly knob right	+	1
7	Screw, M3x12	++	2
8	Elastic washer, 3	++	2
9	Flat washer, 3	++	2
10	Tapping screw, M3x8	++	2
11	Screw, M4x8	++	3
12	Lower cover	+	1
13	Screw, M6x10	++	4
14	Screw, M6x16	++	2
15	Upper cover	+	1
16	Fixing seat	+	1
17	Switch kit, SS-5GL2, for lift and lower	MH21XU8220G	1
18	Tapping screw, M2.2x13	++	14
19	Fixing seat	+	2
20	Tapping screw, ST2.2x9.5	++	7
	Emergency stop button kit	MH21XU8261G	1
21	Switch cover	▲	1
22	Contact base	▲	1
23	Spring, 0.8	+	4
24	Spring, 0.5	+	6
25	Horn button	MH21XU8262G	1
26	Lifting button	MH21XU8263G	1
27	Lowering button	MH21XU8264G	1
28	Cover	+	1
29	Switch kit, SS-5GL2, for horn and EMR	MH21XU8219G	1

(▲) Available as part of a kit only.

(+) Not available.

(++) Common hardware, not offered as a replacement part.

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

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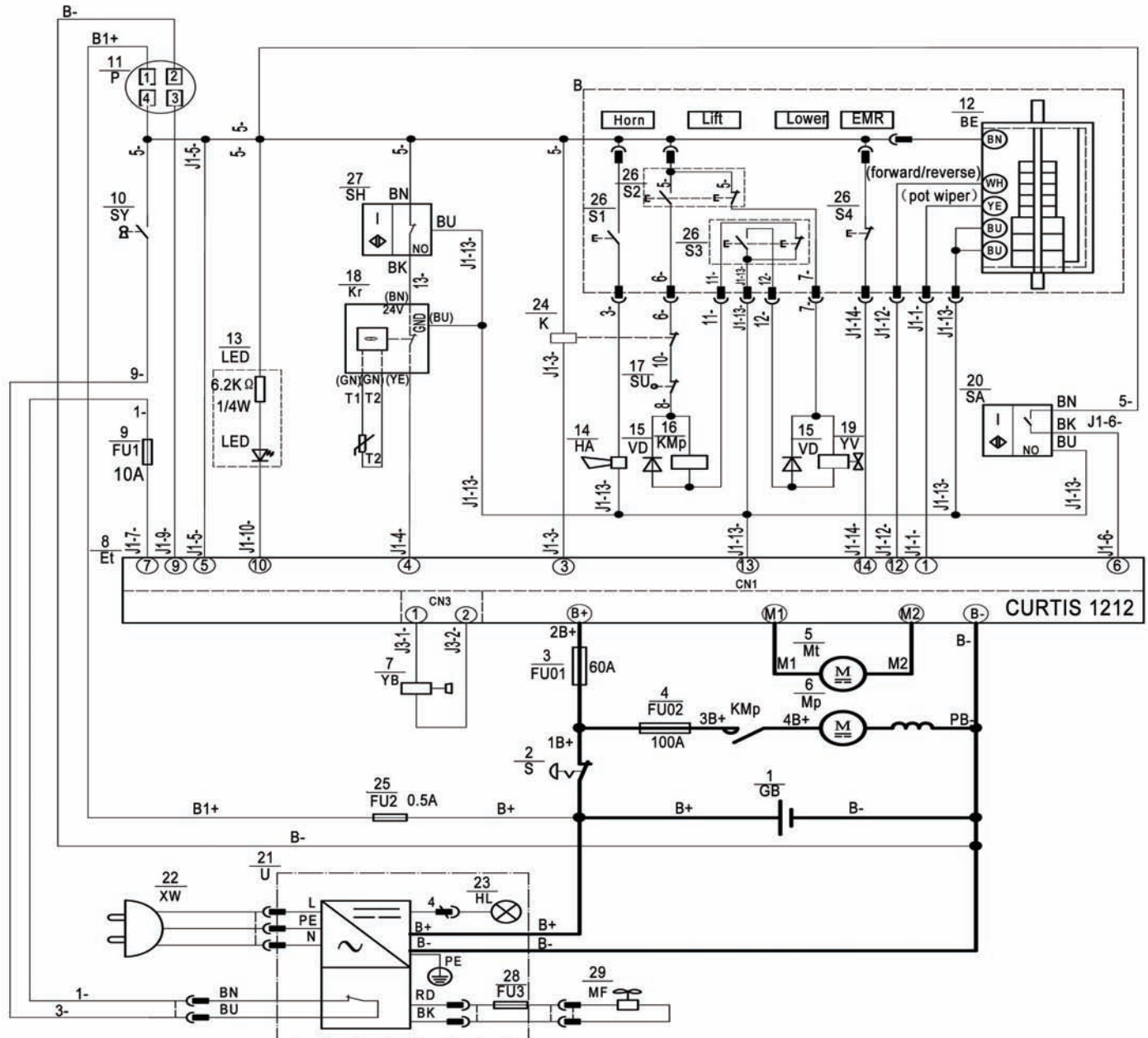


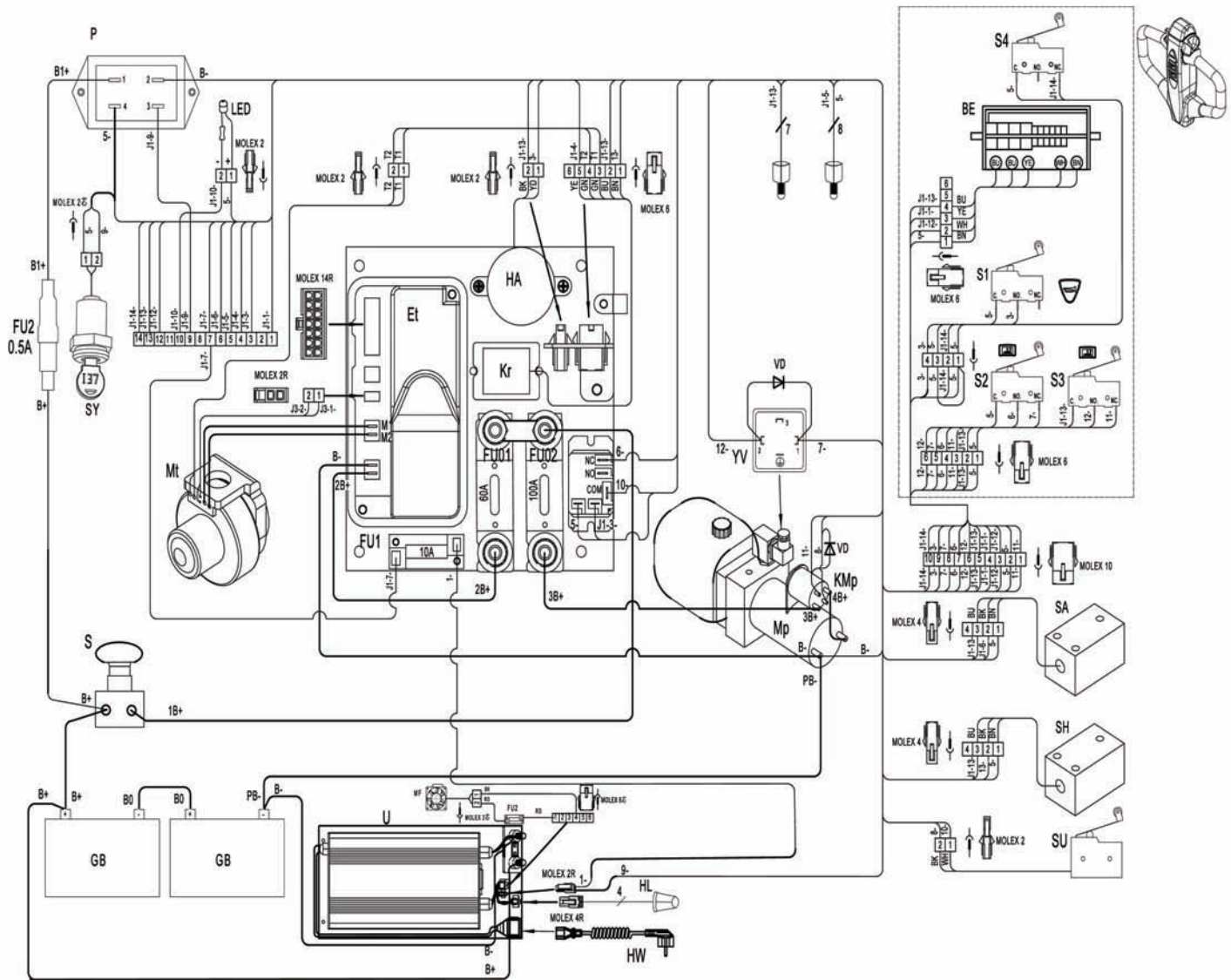
Figure 23 – Repair Parts Illustration for Electric Diagram & Parts

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list



ENGLISH

Figure 24 – Repair Parts Illustration for Electric Diagram & Parts

## Repair Parts List for Electric Diagram & Parts

Symbol	Description	Part No.	Qty.
GB	Battery, 12V/80Ah	MH21XU8322G	1
	Battery, 12V/120Ah	MH21XU8405G	
S	Emergency switch, ZDK31-250	MH2LEC143	1
FU01	Fuses, 60A	MH21XU8203G	2
FU02	Fuses, 100A	MH21XU8323G	2
Mt	Motor for traction,DC24V	MH21XU8204G	1
Mp	Motor for lifting, DC24V	MH21XU8317G	1
YB	Brake, DC24V	MH21XU8206G	1
Et	Controller,CURTIS 1212P-2501	MH21XU8207G	1
FU1	Fuse, 10A	MH5RTA716G	1
SY	Power key, LKS-101A	MH2LEC144	1
P	Battery indictor, CURTIS 906	MH21XU8208G	1
BE	Accelerator, BD-190	MH21XU8221G	1
LED	LED light for fault	MH21XU8209G	1
HA	Buzzer, HYD-4216W 24VDC	MH21XU8210G	1
VD	Diode, 1N5408	+	2
KMp	Contact for lifting	MH21XU8316G	1
SU	Micro switch, XZ-15GW22-B	MH21XU8324G	1
YV	Electromagnetic valve	MH21XU8315G	1
SA	Inductive sensor, NBN5-FT-E2	MH21XU8214G	1
U	Charger kit, AC115V/10A	MH21XU8325G	1
XW	Spring line, USA type	MH21XU8216G	1
HL	Charging indicator	MH21XU8217G	1
Kr	Protect module, BD-W-115-N	MH21XU8326G	1
S1, S4	Micro switch kit, SS-5GL2,for horn and EMR	MH21XU8219G	1
S2, S3	Micro switch kit, SS-5GL2, for lift and lower	MH21XU8220G	1
K	Relay, ARP12F-1C 24VDC	MH21XU8222G	1
FU2	Fuse, 0.5A	MH21XU8223G	1
SH	Inductive sensor, NBN5-FT-E2, for 21XU83	MH21XU8327G	1
	Inductive sensor, NBN5-FT-E2, for 21XU84	MH21XU8406G	
MF	Fan, ADDA, DC12V	MH21XU8266G	1
FU3	Fuse, 1A	MH21XU8267G	1

**Table 7 – Electrical Interface Legend**

(+) Not available



# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

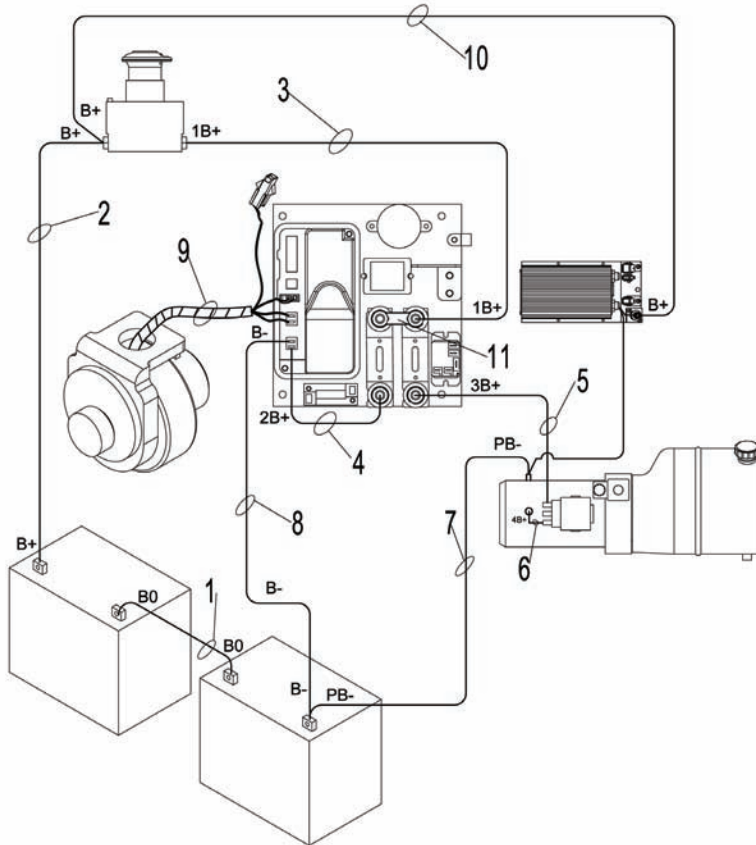


Figure 25 – Repair Parts Illustration for Main Cable

## Repair Parts List for Pallet Truck Cable

Reference Number	Description	Part Number	Quantity
1	Cable B0	+	1
2	Cable B+	+	1
3	Cable 1B+	+	1
4	Cable 2B+	+	1
5	Cable 3B+	+	1
6	Cable 4B+	+	1
7	Cable PB-	+	1
8	Cable B-	+	1
9	Cable for driving wheel	+	1
10	Cable for charger B+	+	1
11	Copper bar	+	1

(†) Not available.

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# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
- Part description and number as shown in parts list

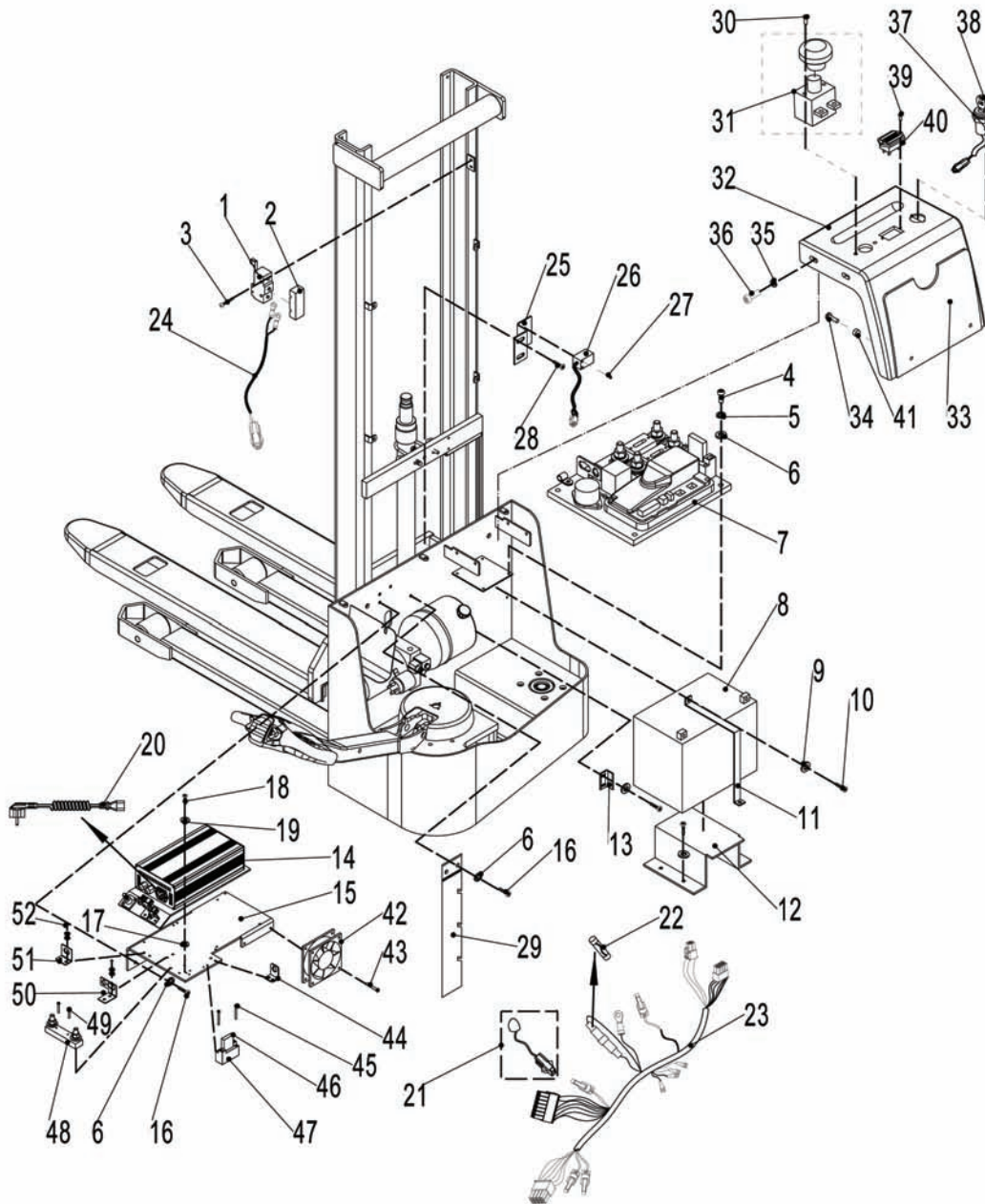


Figure 26 – Repair Parts Illustration for Electric parts location

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## Repair Parts List for Electric Parts Location

Reference Number	Description	Part Number	Quantity
1	Micro switch, XZ-15GW22-B	MH21XU8324G	1
2	Protect cover	MH21XU8328G	1
3	Screw, M4x25	++	2
4	Screw, M5x16	++	6
5	Elastic washer, 5	++	18
6	Flat washer, 5	++	12
7	Controller Unit (see next page)	+	1
8	Battery, 12V/80Ah (for 21XU83)	MH21XU8322G	1
8	Battery, 12V/120Ah (for 21XU84)	MH21XU8405G	1
9	Flat washer, 8	++	8
10	Screw, M8x12	++	8
11	Fixing plate for battery	+	1
12	Fixing plate for battery	+	1
13	Angle iron	+	1
14	Charger kit, AC115V/10A	MH21XU8325G	1
15	Fixing plate for charger	+	1
16	Screw, M5x12	++	6
17	Washer	+	1
18	Screw, M4x12	++	4
19	Flat washer, 4	++	4
20	Spring line, USA type	MH21XU8216G	1
21	LED light for fault	MH21XU8209G	1
22	Fuse, 0.5A	MH21XU8223G	1
23	Control cable	MH21XU8329G	1
24	Cable for micro-switch	+	1
25	Fixing plate	+	1
26	Inductive sensor, NBN5-FT-E2, for 21XU83	MH21XU8327G	1
26	Inductive sensor, NBN5-FT-E2, for 21XU84	MH21XU8406G	1
27	Screw, M3x20	++	2
28	Screw, M6x10	++	2
29	Fixing frame	+	1
30	Screw, M5x10	++	2
31	Emergency button ZDK31-250	MH2LEC143	1
32	Cover	MH21XU8330G	1
33	Board for paper	MH21XU8331G	1
34	Screw, M3x20	++	4
35	Flat washer, 8	++	4
36	Screw M8x12	++	4
37	Power key, LKS-101A (with key)	MH2LEC144	1
38	Key for power key	MH21XU8332G	1
39	Screw, M4x8	+	2
40	Battery indictor, CURTIS 906	MH21XU8208G	1
41	Nut, M3	++	4
42	Fan, ADDA, DC12V	MH21XU8266G	1
43	Screw, M4x30	++	2
44	Fixing plate	+	1
45	Screw, M3x30	++	1
46	Fuse, 1.0A	MH21XU8267G	1
47	Fuse seat	++	2
48	Cable seat	+	1
49	Screw, M4x16	++	2
50	Fixing plate	+	1
51	Fixing plate	+	1
52	Screw, M5x10	++	6

(†) Not available.

(++) Common hardware, not offered as a replacement part..

# For Repair Parts, call 1-800-323-0620

24 hours a day – 365 days a year

Please provide following information:

- Model number
- Serial number (if any)
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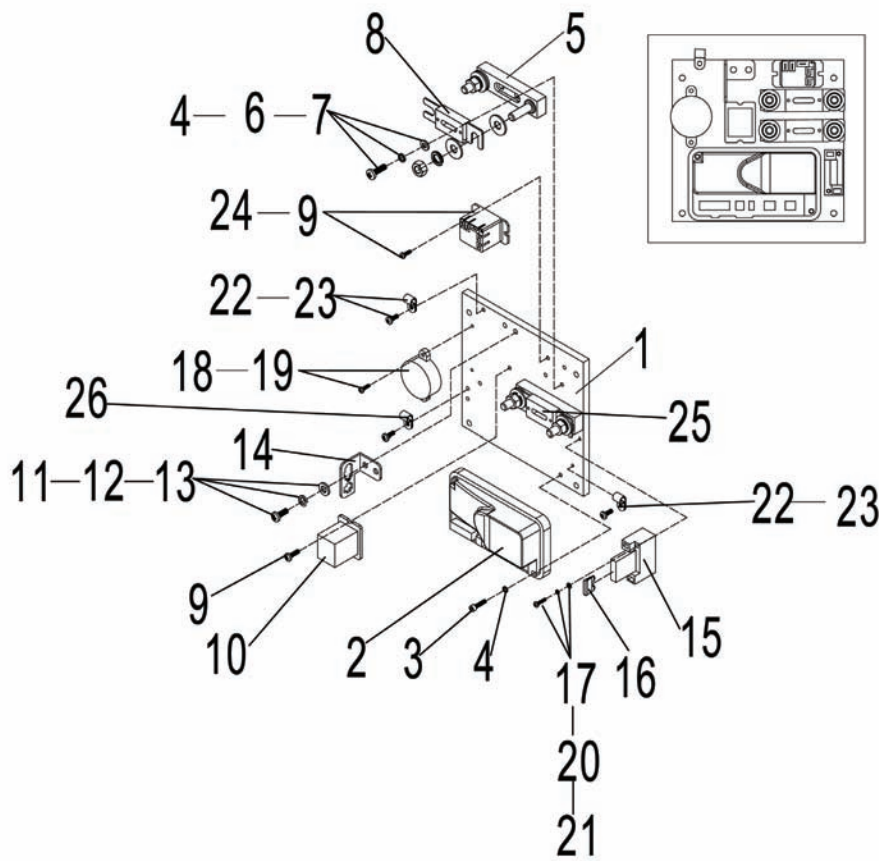


Figure 27 – Repair Parts Illustration for Controller kit

## Repair Parts List for Control Kit

Reference Number	Description	Part Number	Quantity
1	Al plate	+	1
2	Controller,CURTIS 1212P-2501	MH21XU8207G	1
3	Screw, M4x25	++	2
4	Elastic washer, 4	++	8
5	Fuse seat, SYY	+	2
6	Flat washer, 4	++	6
7	Screw, M4x16	++	2
8	Fuse, 100A	MH21XU8323G	1
9	Screw, M4x8	++	2
10	Protect module, BD-W-115-N	MH21XU8326G	1
11	Screw, M5x10	++	2
12	Flat washer, 5	++	2
13	Elastic washer, 5	++	2
14	Fixing frame	+	1
15	Fuse seat, BD-1x10A	+	1
16	Fuse, 10A	MH5RTA716G	1
17	Screw, M3x30	++	2
18	Buzzer, HYD-4216W 24VDC	MH21XU8210G	1
19	Screw, M3x8	+	2
20	Elastic washer, 3	++	2
21	Flat washer, 3	++	2
22	Fixing ring for cable	+	1
23	Screw, M4x10	++	1
24	Relay, ARP12F-1C 24VDC	MH21XU8222G	1
25	Fuse, 60A	MH21XU8203G	1
26	Fixing ring for cable	+	2

(†) Not available.

(++) Common hardware, not offered as a replacement part.





## Model 21XU83 and 21XU84

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