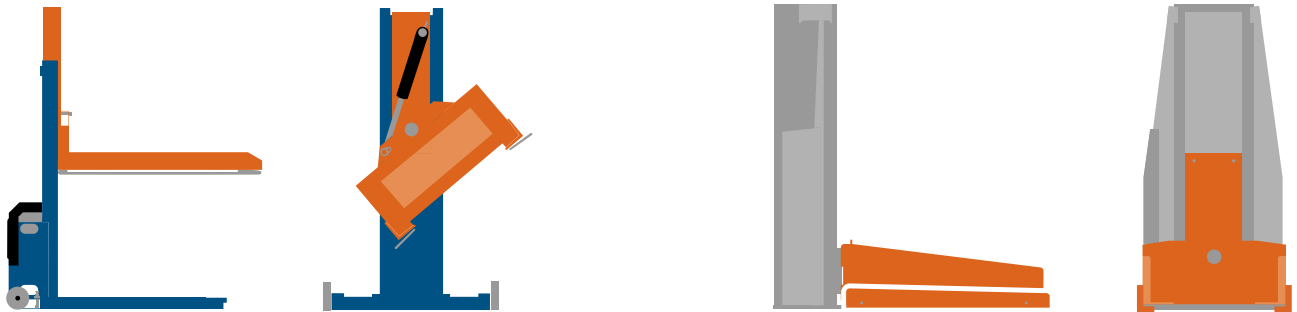


PALLET LIFT

- User manual



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EDMOLIFT PALLET LIFT

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1 Important information

Before you start using your EdmoLift product, it is important that you read and understand the content of this user manual in its entirety.

The user manual contains important safety and maintenance information and describes any problems that may occur during use. The user manual is also intended to teach you about the product's functions and properties and how to best use them.

Print the user manual and keep it near to the product, as important information regarding use, safety and maintenance may be required. Information can also be obtained from www.edmolift.com

All information, as well as images, illustrations and specifications are based on the product information that was available at the time of publication of this user manual. Images and illustrations found in the user manual are type examples, they are not intended to be exact depictions of different parts of the product. We retain the right to make changes to the product without prior information.

1.1 Technical support

For support or service, please contact your EdmoLift sales representative. Always state the serial number and machine type as per the machine plate, see section 9.6 *Machine plate*, page 44.

1.2 Spare parts and accessories

Visit www.edmolift.com/installation for more information and then contact your EdmoLift sales representative.

1.2.1 General

Only EdmoLift original spare parts may be used. Use of other parts invalidates the product warranty.

EdmoLift stocks all spare parts for standard products. It may sometimes be appropriate to hold some recommended spare parts in your own stock. We can suggest the appropriate stock for your specific conditions.

1.2.2 Ordering

When ordering spare parts, always state the serial number and machine type as per the machine plate. The machine plate is usually located on the lower section on one side of the stand, see section 9.6 *Machine plate*, page 44.

State the part numbers of the spare parts according to the available spare parts information on www.edmolift.com/installation and state the required quantity. Also state the operating voltage regarding electrical components.

1.3 Recycling

This product is manufactured from recyclable materials or materials that can be reused. Specialised companies handle worn out products, dismantle them, and recycle materials that can be reused.



Caution

Spilled or used hydraulic oil must be handled as hazardous waste.



Caution

Electrical material and packaging is handled according to local regulations.

1.4 Warranty

This product is supplied with a warranty in accordance with the applicable agreement, which is stated in the order specification. The warranty covers material and manufacturing faults that may occur during the warranty period during normal use.

The warranty does not cover:

- Normal wear.
- Faults caused by insufficient maintenance.
- Faults caused by incorrect or careless use.

NB!

The seals on electrical equipment may not be broken, if they are, the warranty is deemed invalid.

Warranty repairs must first be approved by EdmoLift AB. Repairs must then be carried out by EdmoLift AB or a contracted partner or in accordance with the agreement made with your EdmoLift sales representative.

1.4.1 Returns

Always contact EdmoLift AB or your EdmoLift sales representative regarding any returns to obtain a return number. The return must be marked with your name, address and telephone number.

NB!

Returns without a return number will be destroyed upon receipt.

Worn, damaged or unusable parts must be returned within 30 days of receipt of the replacement part, if the fault is deemed to fall within the warranty conditions.

1.5 Product approval

This product can be used in a large number of different applications. This means the product is covered by many laws and regulations, issued for the whole EEA area (EU countries as well as Norway, Iceland, Switzerland and Lichtenstein) and those that are national.

This product is constructed according to standard EN 1570–1, lift tables that serve up to 2 fixed stop levels, which is a standard that gives approval to the Machinery Directive, when applied in full.

For this product we usually supply an EC declaration of conformity to the Machinery Directive, a 2A-declaration, based on EN 1570–1.

In some cases, supplements with accessories or composition for an installation are made by a party other than EdmoLift, e.g. a machine installation or lift builder, or by the customer themselves. In such cases, EdmoLift issues a 2B-declaration, Declaration of incorporation of partially completed machine, and then the person or company responsible for completion must issue a 2A Declaration of Conformity.

NB!

This product can be used in applications not covered by the Lift table standard EN 1570–1 without any other standard. Other use, not covered by a standard may also be considered. In such cases, an individual risk assessment and CE marking must be made according to the Machinery Directory.

2 Safety regulations

2.1 General

It is important to read and follow the instructions and safety precautions in this user manual before using the product.

EdmoLift AB is not responsible for any damage to product or property or personal injury, caused by the user or another person not following the recommendations, warnings and instructions contained in this user manual. EdmoLift AB accepts no responsibility for accidents or injuries caused by ill judgement.

2.2 Pay attention!

The user manual contains "warnings", which are intended to draw your attention to conditions that can lead to unwanted problems, incidents, personal injury or damage to the product etc.



Warning

Pay particular attention. Risk of personal injury as well as damage to the product and its surroundings.



Caution

Pay attention.

2.3 Applications



Warning

Use of this product for other applications or loading cases not described in this user manual is not permitted and invalidates the product warranty.

2.4 External safety measures



Warning

In addition to the product's built-in safety details, additional safety measures may be required on or next to the product. Discuss appropriate measures with EdmoLift AB or your EdmoLift sales representative, safety officer, inspector or equivalent. A risk assessment must be undertaken for the work area. Also see section 2.8.6 *Risks during use*, page 13.

2.5 Product selection

Warning

Choosing the right product starts with EdmoLift AB's loading conditions that apply to each application. Inclined loading, point loads or horizontal loads are only permitted within the specified values according to EN 1570-1, unless stated as permitted for the relevant case.

2.6 Installation

Warning

Do not install the product in such a way that amplifies the noise it generates.

Never let the moving parts come into contact with surrounding objects. Ensure that applicable regulations and norms regarding safety distances are met.

Do not install the product in a potentially explosive environment if it is not specially adapted for it.

Ensure that the product is anchored by bolts or equivalent on a secure, flat and horizontal base before use.

The base must have sufficient bearing capacity for the product including a load, as well as a strength class corresponding to concrete C12/15 or greater.

When installing fixed control devices, position the control device so that the operator has a clear view of the product's dangerous areas and load.

Minimise crushing risks when installing next to other equipment and ensure that required safety distances are met according to applicable norms and local regulations.

Check that the product's specified voltage corresponds to the mains voltage, and that a sufficient conducting area and fuse are used.

More than one emergency stop may be required for the product to achieve overall safety at the worksite. In cases where the only operator location is on the platform, at least one additional emergency stop must be installed easily accessible in connection to the product. Attention must always be drawn to the additional emergency stops by clear labelling.

Warning

The electrical installation must be performed by an authorised electrician and other installation work performed by skilled personnel with the required knowledge in order that the work is carried out in a professional manner. Risk of personal injury.

2.7 Prior to use

Warning

Before each shift, check that the product is in good working order and that all safety devices are intact. Any faults must be rectified before the product is used.

The operator must have a clear view of the pallet lift and work area during operation. Risk of personal injury.

2.8 Operation

2.8.1 General

Warning

This product should only be used by authorised trained personnel for its intended use. Remember that you, as the user, have responsibility for anyone being injured!

This product must be operated gently, carefully and attentively. This increases safety and reduces maintenance costs and the risk of operational stoppages.

The product must not be overloaded, this can cause a risk of accidents resulting in personal injury and/or property damage.

Do not raise the load carrier if the space above it is not clear of obstructions.

The load carrier must not be moving during loading and unloading.

Never insert parts of your body or objects under the load carrier unless it is in the service position according to section 4.5 *Blocking the load carrier in service position*, page 30.

Do not lower the load carrier if the area beneath it is not clear of people or other obstacles

Do not use the product in connection with welding, unless it is especially adapted for it. The surface finish of the product can produce hazardous gases during welding or grinding. Use suitable protection and work methods.

This product must not come into direct contact with food unless specially adapted.

When used in public environments, especially where people can enter the machine's work area, the operator must take appropriate actions to prevent people entering the risk area. A risk assessment according to the Machinery Directive must be established for the relevant work situation.

There must not be any load on the load carrier during inspections, servicing and repair work. Inhibit the load carrier using the maintenance chock, according to section 4.5 *Blocking the load carrier in service position*, page 30.

Do not let any part of your body come into contact with hydraulic oil as it can cause allergic reactions.

2.8.2 Carriage of persons

Warning

This product is not intended for the carriage of persons.

Warning

In cases where it is permitted to ride on or stay on a raised platform:

Do not climb down from a raised platform!

Never operate the product from the platform before the installation is complete and the necessary safety devices are in place.

Always stand with both feet on the platform and always keep within the platform. Do not sit or climb on handrails or gates!

2.8.3 Protective equipment

Warning

Use protective footwear and other necessary protective equipment required for the work tasks.

2.8.4 Centre of gravity

Warning

Always try to distribute the load evenly on the load carrier, in order to avoid instability. Avoid loads that extend beyond the platform and always make sure that the load is firmly positioned and, if necessary, is also securely fastened.

This product should not be used for handling free-swinging loads.

Under no circumstances must the rated load and centre of gravity distance be exceeded, as this entails a personal injury risk and a damage risk to the product and its surroundings. See section 10.2 *Permitted load distribution*, page 45.

2.8.5 Surroundings



Warning

The standard version of the product is designed for indoor use in environments with normal humidity and temperatures of +5 to +40°C.

When working close to machines there are usually crushing risks. Observe caution, there is a risk of personal injury and property damage!

Never let the moving parts come into contact with surrounding objects. Ensure that applicable regulations and norms regarding safety distances are met.

Do not use the product in a potentially explosive environment if it is not specially adapted for it.

EdmoLift products are not insulated against electrical currents and do not give any protection against contact with live objects and cables.

Always keep a safe distance from live objects and cables.

2.8.6 Risks during use

This section states some risks and examples of measures to prevent them. Certain accessories that increase safety or contribute to increased efficiency can be found in “Examples of measures”.

NB!

The list does not consist of all possible risks and is only intended for use as a guide when establishing an individual risk assessment.

| | Risk | Example of measure |
|----------------------|--|--|
| General risks | Unauthorised use. | <ul style="list-style-type: none"> • Training. • Instructions. • Clear labelling. • Lockable main switch. • Lockable control device. • Separate the work area. |
| | Unauthorised entry under raised load carrier. | <ul style="list-style-type: none"> • Clear labelling. • Protective mesh or protective bellows. • Cordon off the work area. |
| | Overloading. | <ul style="list-style-type: none"> • Training. • Instructions. • Clear labelling. • Adjust the load. |
| | Operation error. | <ul style="list-style-type: none"> • Training. • Instructions. • Clear labelling. |
| | Applicable laws and regulations not met. | <ul style="list-style-type: none"> • Perform a risk assessment. • Check applicable laws and regulations for the installation. |
| | Diminished performance. Shortened service-life. | <ul style="list-style-type: none"> • Adjust the usage intensity. • More frequent service intervals and inspections. |

| | Risk | Example of measure |
|---------------------|--|--|
| | Risks at the interface around the pallet lift. | <ul style="list-style-type: none"> • Perform a risk analysis for the installation. Ensure clear view. |
| | The installation is not CE labelled. | <ul style="list-style-type: none"> • Establish action plan to CE label the installation. |
| | Crushing risk. | <ul style="list-style-type: none"> • Training. • Instructions. • Clear labelling. • Check that the necessary safety distances are met according to the applicable standards. |
| | Material can fall off. | <ul style="list-style-type: none"> • Securing devices. • Location of work place. • Prevent access to risk area. |
| | Instability. | <ul style="list-style-type: none"> • Training. • Instructions. • Clear labelling. • Observe load distribution. • Check attachment. • Note lateral forces and stabilize as necessary. |
| Surroundings | Extreme ambient temperatures. | <ul style="list-style-type: none"> • Use correct type of oil. • Equip with free-standing hydraulic power pack in adapted space. • Heat/cool the area. |
| | Fire risk. | <ul style="list-style-type: none"> • Use correct type of oil. • Equip the hydraulic power pack with oil cooler. • Equip with free-standing hydraulic power pack in adapted space. |

| | | |
|--|-----------------------|--|
| | Explosion risk. | <ul style="list-style-type: none"> • Equip with EEx equipment according to the ATEX directive. • Equip with free-standing hydraulic power pack in adapted space. |
| | Environmental impact. | <ul style="list-style-type: none"> • Biodegradable oil. • Oil collection receptacle. |
| | Foodstuff impact. | <ul style="list-style-type: none"> • Foodstuff approved oil. • Adapt the cleaning agent according to surface treatment. |
| | Moisture impact. | <ul style="list-style-type: none"> • Control moisture content. • Adapt corrosion protection. • Equip with free-standing hydraulic power pack in adapted space. |
| | Dust impact. | <ul style="list-style-type: none"> • Control dust content. • Equip with bellows around mechanism. • Equip with free-standing hydraulic power pack in adapted space. |

| | | |
|--------------------------------------|--|---|
| | Weather impact. | <ul style="list-style-type: none"> • Protect from rain. • Adapt corrosion protection. • Equip with free-standing hydraulic power pack in adapted space. • Equip with bellows around mechanism. • Note lateral forces and stabilize as necessary. |
| Moving mobile pallet lifters. | <p>Collision with persons or other objects.</p> <p>Uneven surfaces cause overturning.</p> <p>Material falls off.</p> | <ul style="list-style-type: none"> • Movement must occur carefully and with a clear view of the surroundings. • Movement must only occur without load. • The load carrier must be in the bottom position when moved. |

2.9 Maintenance



Warning

Regular inspection, maintenance and cleaning is important to maintain low maintenance costs, a high level of safety as well as a long service life for the product.



Warning

No load should be on the load carrier during inspection and service work. Risk of personal injury.

During inspection and service work under the load carrier, the maintenance chock must always be positioned in the locked position, see section 4.5 *Blocking the load carrier in service position*, page 30. Risk of personal injury.



Caution

Spilled or used hydraulic oil must be handled as hazardous waste.

3 Design and function

3.1 General

EdmoLift Pallet Lifts can be used in a wide range of applications. They are basically designed for lifting and lowering loads that are distributed across the load carrier, for example, on Euro pallets. Typical applications include the loading/stacking of components for machine tools, the installation of cabinets and the servicing of machines.

EdmoLift Pallet Lifts are intended for use on flat and solid surfaces and can be placed on floors or recessed in a pit.

The base must have sufficient bearing capacity for the pallet lift including cargo. We recommend that all pallet lifts intended for stationary use are anchored in the base, to avoid accidental movement during collisions. Anchorage can also be an unconditional requirement, to prevent tipping, for example in the case of eccentric loads and in cases where the pallet lift is equipped with tilt.

The intended use and load distribution of the relevant pallet lift is shown in the document "EC Declaration of conformity".

3.2 Scope of delivery

EdmoLift pallet lifts are supplied test operated with standard hydraulic oil, according to ISO 32 (see order specification regarding alternatives).

The standard electrical equipment is intended for connection to 3~ 400VAC, 50Hz. Neutral cable not used. Actual supply voltage is stated on the connection cable and on the electrical equipment.

The control system is 24V DC powered.

In standard form the product is painted in the following colours:

- Blue = RAL 5002 or Grey = RAL 7035
- Orange = RAL 2010
- Black = RAL 9005

3.3 Mechanical construction

3.3.1 General

EdmoLift Pallet Lift consists of a mast, where the lifting force is provided by one or two single-acting cylinders. The trolley slides with the load carrier in the mast's beams.

The lift cylinder has a built-in hose burst valve, which automatically closes when the oil flow becomes too high, e.g. hose rupture. In addition, there is a flow control valve in the hydraulic power pack valve unit, which on delivery is set for an appropriate lowering speed, approximately 35 mm/s at full load.

EdmoLift Pallet Lift is available in two versions. With centre support leg and 2 transport wheels and model without centre support leg. The load carrier, intended for Euro pallets, 1200 x 800 mm, can be lowered to the floor, where the pallet can be loaded on or off using a pallet truck. On the TSLN model, the load carrier can also be tilted sideways up to 40°, to both left and right. When tilting, it is important to ascertain that the stability of both the machine and the load is sufficient, and to perform tilting only when the space next to the machine is free of persons and other obstacles. Movement can be facilitated by transport trolley (accessory only for TSLN 750). Under the long sides of the lift forks there is a safety frame, which stops lowering when activated.

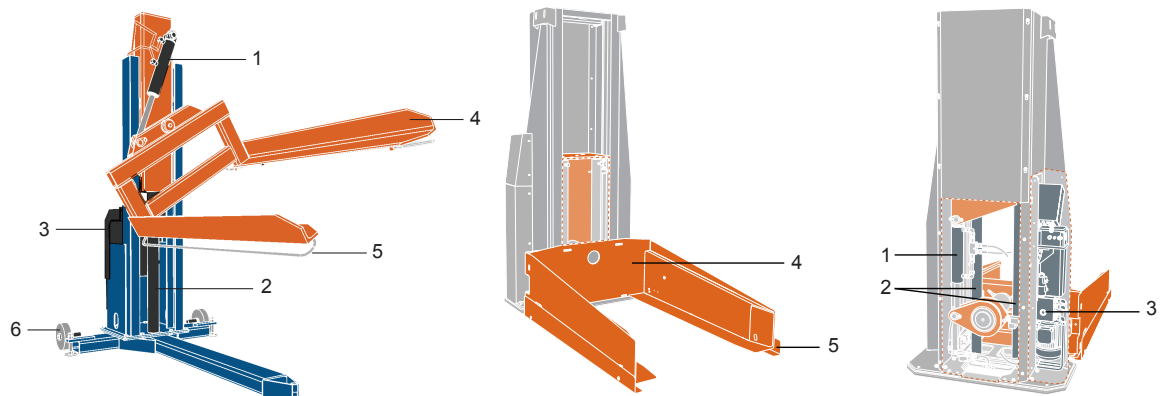


Image 1 Overview

1. Tilt cylinder(TSLN)
2. Lift cylinder
3. Hydraulic power pack
4. Load Carrier
5. Safety frame
6. Wheel

3.4 Control devices

3.4.1 General

Control device consists of Control buttons for control and an emergency stop button. The number of buttons for control varies depending on how many functions the product has.

1. Emergency stop
2. Up
3. Down
4. Tilt right
5. Tilt left

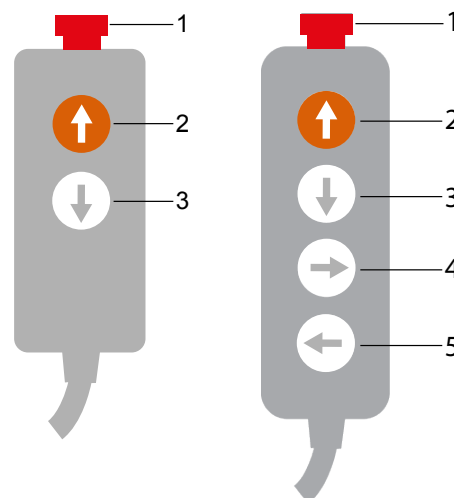


Image 2 Control devices

3.4.2 Emergency stop

There is an emergency stop on the control device. This is red, clearly marked and used in emergencies to stop all electrically powered functions.

3.4.3 Control buttons

The control device has up to four control buttons, lift up, lift down, tilt left, and tilt right. The buttons have a dead man's grip function, i.e. when the control button is released, the load carrier's movement stops at the current position.

3.5 Hydraulic system

EdmoLift pallet lifters come with an integrated single acting or double acting hydraulic system as standard depending on model. Due to the product's wide range of use, the hydraulic system is usually adapted individually. The relevant hydraulic and wiring diagrams are enclosed on delivery.

In order for the hydraulic system to work optimally, it is important to use the correct type of hydraulic oil and ensure a high level of cleanliness.

3.5.1 Hydraulic pump

The hydraulic pump supplies the product's hydraulic cylinders with oil, via hoses and/or pipes as well as valves, and powers the hydraulic functions.

3.5.2 Valve package

The hydraulic power pack's valve package controls the flow of the hydraulic oil to the hydraulic cylinders. They are operated by one or more solenoids that receive signals from the product's control system. The valve package contains a pressure-compensated, constant flow valve that can regulate the lowering speed. It must always be set so that the peripheral speed when lowering at full load does not exceed 35 mm/s. Type of valve varies depending on model and configuration. Certain models have several constant flow valves for controlling the speed of several functions.

1. Solenoid
2. Overflow valve
3. Flow control valve, adjustable
4. Tema 100 output for manometer (Pressure gauge)

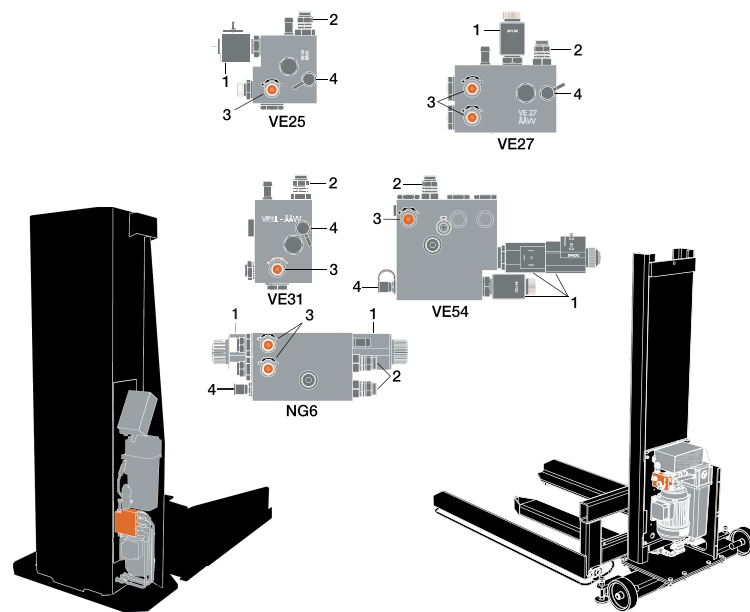


Image 3 The valve package is mounted on the hydraulic power pack

3.5.3 Lowering valve - Hydraulic lock

EdmoLift pallet lifters are equipped with an electrically operated non-return valve that prevents the load carrier being lowered, except when the down button is depressed (3). On models with tilt function, the tilt cylinder is equipped with a hydraulically controlled non-return valve that prevents the load carrier being tilted, except when one of the tilt buttons is depressed (4/5).

1. Solenoid
2. Hydraulic hose connection
3. Hydraulic cylinder connection

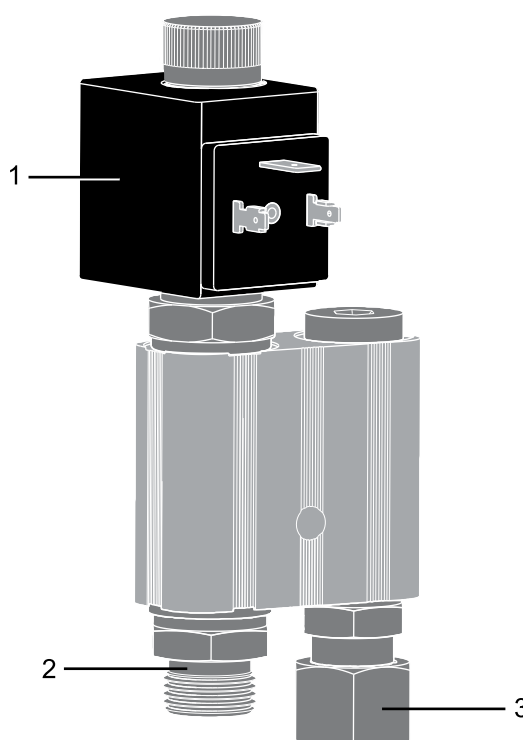


Image 4 Lowering valve - Hydraulic lock

3.5.4 Hydraulic cylinder

EdmoLift pallet lifters are equipped with one or more hydraulic cylinders that power the different functions. The standard hydraulic cylinders for raising and lowering functions are single acting. The standard hydraulic cylinders for tilt function are double acting.

3.6 Electrical and control system

The UC-60 control system makes it possible to easily program desired functions such as, for example, retrofitting of upper and lower limit position switches for limiting the movement of the load carrier. Limit position switches and extra control devices are simply connected to the control system.

The main switch and motor protection relay are not included in EdmoLift's delivery, but must be installed by the installer. The feed cable is connected to the main power switch's terminal blocks.

Wiring diagrams for standard products can be found in section 11 *Wiring diagrams*, page 46.

The electrical system is individually adapted, the relevant wiring diagram is then included in the delivery.

To see which electrical diagram applies to your product, see section 11.1 *Identifying applicable wiring diagram*, page 46.

4 Operation

4.1 General

After use, the load carrier must be tilted to the horizontal position, lowered to the bottom position and the current switched off at the main power switch.

In the event of risk of unauthorised use, the main power switch can be locked in the off position. The control device can also be locked.



Warning

This product should only be used by authorised trained personnel for its intended use. Remember that you, as the user, have responsibility for anyone being injured!

This product must be operated gently, carefully and attentively. This increases safety and reduces maintenance costs and the risk of operational stoppages.

The product must not be overloaded, this can cause a risk of accidents resulting in personal injury and/or property damage.

Do not raise the load carrier if the space above it is not clear of obstructions.

The load carrier must not be moving during loading and unloading.

Never insert parts of your body or objects under the load carrier unless it is in the service position according to section 4.5 *Blocking the load carrier in service position*, page 30.

Do not lower the load carrier if the area beneath it is not clear of people or other obstacles

Do not use the product in connection with welding, unless it is especially adapted for it. The surface finish of the product can produce hazardous gases during welding or grinding. Use suitable protection and work methods.

This product must not come into direct contact with food unless specially adapted.

When used in public environments, especially where people can enter the machine's work area, the operator must take appropriate actions to prevent people entering the risk area. A risk assessment according to the Machinery Directive must be established for the relevant work situation.

There must not be any load on the load carrier during inspections, servicing and repair work. Inhibit the load carrier using the maintenance chock, according to section 4.5 *Blocking the load carrier in service position*, page 30.

Do not let any part of your body come into contact with hydraulic oil as it can cause allergic reactions.

4.2 Prior to use

The function of the safety frame must always be checked before use, see section 4.4 *Checking the function of the safety frame*, page 29. If the safety frame is activated, the cause of the stoppage must be investigated and rectified. Thereafter, the up or down button (depending on which safety protection stopped the function) must first be pressed briefly, so-called resetting, before the pallet lift can be used normally again.



Warning

Before each shift, check that the product is in good working order and that all safety devices are intact. Any faults must be rectified before the product is used.

The operator must have a clear view of the pallet lift and work area during operation. Risk of personal injury.



Warning

Always try to distribute the load evenly on the load carrier, in order to avoid instability. Avoid loads that extend beyond the platform and always make sure that the load is firmly positioned and, if necessary, is also securely fastened.

This product should not be used for handling free-swinging loads.

Under no circumstances must the rated load and centre of gravity distance be exceeded, as this entails a personal injury risk and a damage risk to the product and its surroundings. See section 10.2 *Permitted load distribution*, page 45.

4.3 Control

EdmoLift Pallet Lifts should be operated gently, carefully and attentively! The control functions are carried out with dead man's grip function, i.e. when you release a control button, the load carrier stops in the current position. After use, the load carrier must be lowered to the bottom position and the power switch turned off. In the event of risk of unauthorised use, the main power switch can be locked in the off position. The control device can also be locked.

Before operating the load carrier, make sure that you do not risk personal injury or damage to property. Be especially aware that the load carrier does not extend over any object on which it can become suspended.

1. Emergency stop
2. Up
3. Down
4. Tilt right
5. Tilt left

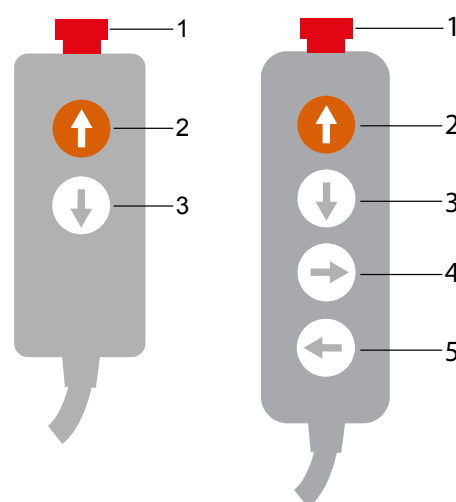


Image 5 Control devices

4.3.1 Emergency stop

4.3.1.1 Activation

Depress the emergency stop to stop all electrical functions.

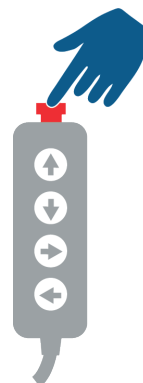


Image 6 Activation of emergency stops.

4.3.1.2 Resetting

Turn the emergency stop clockwise to reset.



Warning

Emergency stops may only be reset after the cause of the emergency stop has been established and operation can be restarted safely.

NB!

Resetting emergency stop only allows movement to restart, no function is activated automatically at reset of the emergency stop.

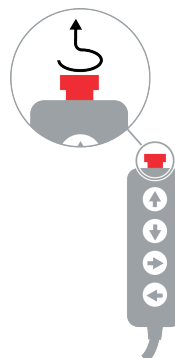


Image 7 Resetting emergency stops.

4.3.2 Up

Press and hold the up key to raise the load carrier. The movement stops as soon as the control button is released.



Image 8 Up

4.3.3 Down

Press and hold the down key to lower the load carrier. The movement stops as soon as the control button is released.

NB!

If the safety frame has been activated, the cause of the stoppage must be investigated and rectified. To be able to lower again, the carrier must be raised to reset the safety frame.

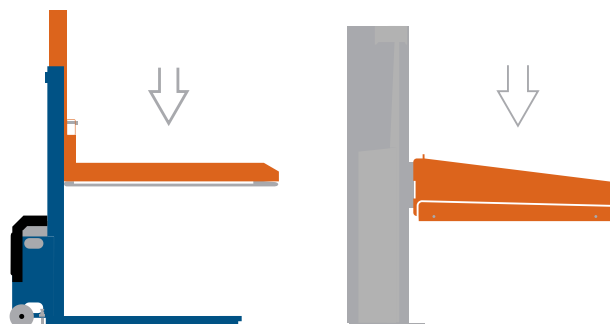


Image 9 Down

4.3.4 Tilt right

Press and hold the tilt right button to tilt the load carrier to the right. The movement stops as soon as the control button is released.

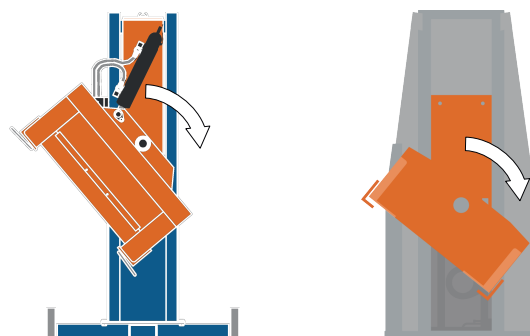


Image 10 Tilt right

4.3.5 Tilt left

Press and hold the tilt left button to tilt the load carrier to the left. The movement stops as soon as the control button is released.

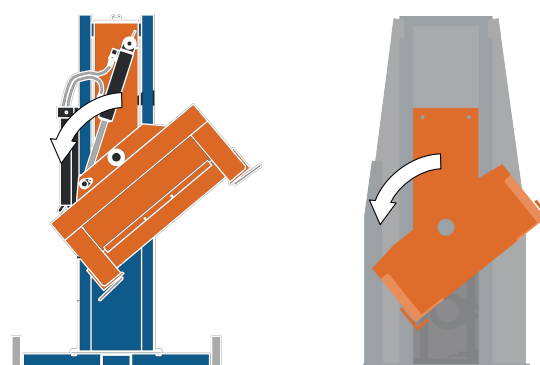


Image 11 Tilt left

4.4 Checking the function of the safety frame

Before you start using EdmoLift Pallet Lift check that the safety frame works.

1. Operate the load carrier to an appropriate height and ensure that there is no risk of crushing.
2. Lower the load carrier and activate the safety frame by pushing it upwards with your hand. Repeat the function test on all sides of the load carrier to ensure the safety of the safety frame.



Image 12 Checking the function of the safety frame.

4.5 Blocking the load carrier in service position

On certain models of pallet lift it may be necessary to raise the load carrier during service work. These pallet lifts are fitted with a mechanical chock. When work is to be carried out under the load carrier, it must be mechanically blocked by the use of the supplied maintenance chock.



Warning

Blocking of the load carrier may only occur when the load carrier is unloaded. Load on the load carrier may result in damage to the maintenance chock, which means that the carrier falls down during service work. Risk of personal injury and damage to property.

Ensure that the maintenance chock is pushed in through the recesses on both sides of the mast and so far that the maintenance chock protrudes on the opposite side and that its handle is facing the mast. Incorrectly mounted maintenance chock can cause the load carrier to fall down during service work. Risk of personal injury and damage to property.

Activation of maintenance chock

1. Raise the load carrier to its highest position.
2. Remove the plastic plugs that cover the hole on the sides of the mast, see image.13.
3. Slide the maintenance chock into the recess.
4. Lower the load carrier.

Deactivation of maintenance chock

1. Raise the load carrier slightly to release the maintenance chock.
2. Pull the maintenance chock out of the recess.
3. Lower the load carrier to its lowest position.
4. Install the plastic plugs that cover the hole on the sides of the mast, see image 13.

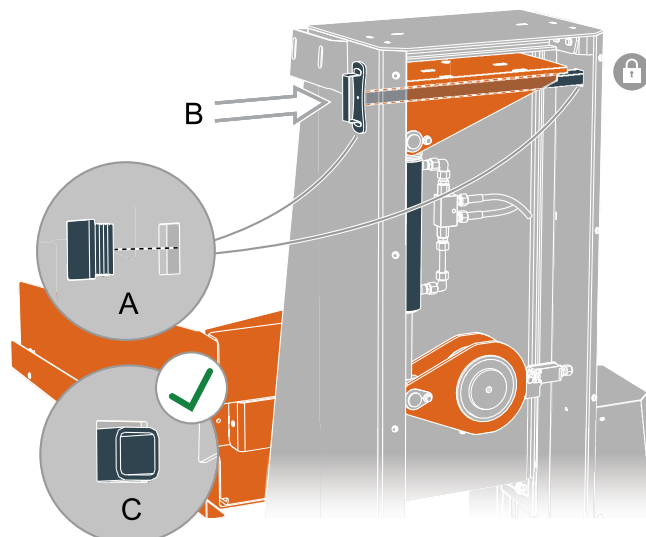


Image 13 Blocking the load carrier in service position

5 Maintenance

The following maintenance must be performed regularly, approx. 4 times/year or at intervals of 1000 lift cycles if this occurs first. Certain types of operating conditions and work environments can require shorter service intervals. Discuss the appropriate service interval with your EdmoLift sales representative.

All inspection, servicing and repair work must be performed by skilled personnel with the required knowledge, in order that the work is carried out in a professional manner. Always replace defective and damaged parts.

Only EdmoLift original spare parts may be used. Use of other parts invalidates the product warranty.

For detailed information about repairs, contact an EdmoLift sales representative.



Warning

Regular inspection, maintenance and cleaning is important to maintain low maintenance costs, a high level of safety as well as a long service life for the product.



Warning

No load should be on the load carrier during inspection and service work. Risk of personal injury.

During inspection and service work under the load carrier, the maintenance chock must always be positioned in the locked position, see section 4.5 *Blocking the load carrier in service position*, page 30. Risk of personal injury.



Warning

When inspecting and working under the load carrier, the maintenance chocks should always be placed in blocked position, see section 4.5 *Blocking the load carrier in service position*, page 30. Risk of personal injury.



Caution

Spilled or used hydraulic oil must be handled as hazardous waste.

5.1 Hydraulic system

- Check that oil reservoirs, pipes, hoses, couplings and hydraulic cylinders are not damaged or leaking. Rectify any leaks and replace damaged parts.
- Check the fluid level. Top up if necessary.

If the oil is dirty, it must be changed.

EdmoLift Pallet Lifts are supplied with standard hydraulic oil according to ISO 32 (see order specification regarding alternatives).

NB!

The maximum volume of the tank is achieved when the load carrier is in the bottom position.

5.2 Electrical equipment

- Ensure that all electrical equipment works as intended.
- Function test all emergency stops, see section 4.3.1 *Emergency stop*, page 26.
- Function test the safety frame, see section 4.4 *Checking the function of the safety frame*, page 29.
- Inspect all cables. Check that they are not loose or pinched. Rectify as required. Replace any damaged cables.

5.3 Mechanical equipment

- Check that wheels and pins are properly secured.
- Check that there is no excessive bearing play.
- Check for fractures or bursts.
- Check that the safety frame's profiles and mountings are intact.
- Make sure that the pallet lift is firmly anchored in the surface.
- Check that all warning signs are present and legible, see section 9 *Labels and signs*, page 42.

5.4 Lubrication points

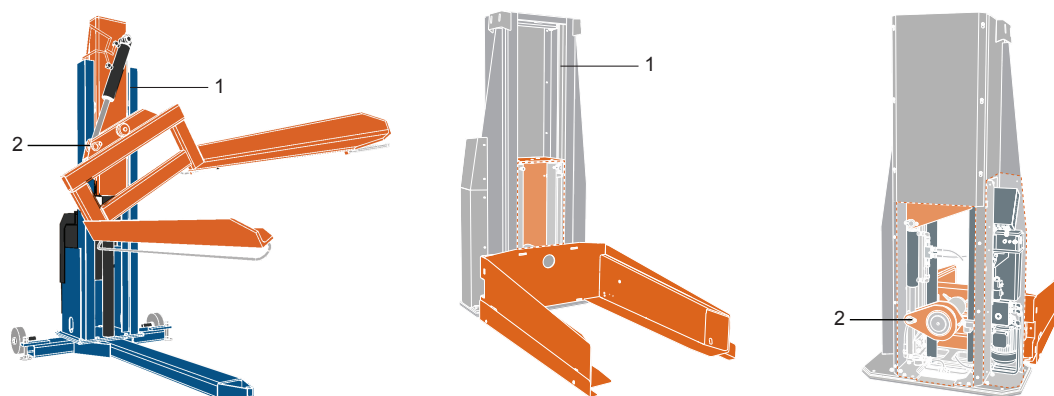


Image 14 Lubrication points

1. Mast rails.
2. Piston rod bearing

6 Installation

Simplified installation instructions with illustrations accompany the delivery. If missing, they can be downloaded from www.edmolift.com/installation.

NB!

Check that no transport damage has occurred. The electrical cable for the temporary connection is located on one short side

Do not lift by the safety frame, it can become damaged resulting in malfunctions. (The lift can be raised but not lowered.)

Only lift at the lifting points.

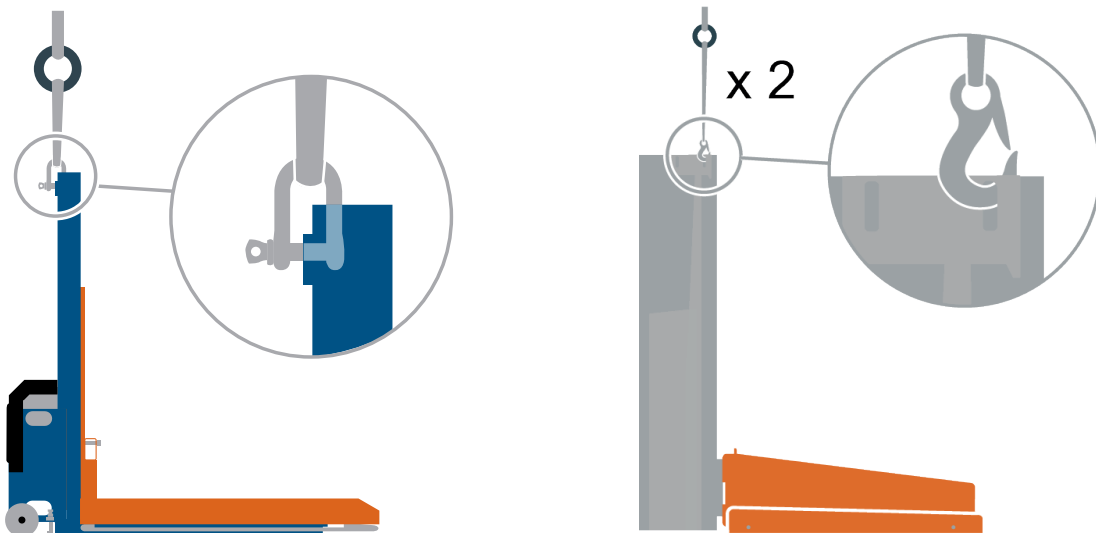


Image 15 Only lift at the lifting points.

Warning

Do not install the product in such a way that amplifies the noise it generates.

Never let the moving parts come into contact with surrounding objects. Ensure that applicable regulations and norms regarding safety distances are met.

Do not install the product in a potentially explosive environment if it is not specially adapted for it.

Ensure that the product is anchored by bolts or equivalent on a secure, flat and horizontal base before use.

The base must have sufficient bearing capacity for the product including a load, as well as a strength class corresponding to concrete C12/15 or greater.

When installing fixed control devices, position the control device so that the operator has a clear view of the product's dangerous areas and load.

Minimise crushing risks when installing next to other equipment and ensure that required safety distances are met according to applicable norms and local regulations.

Check that the product's specified voltage corresponds to the mains voltage, and that a sufficient conducting area and fuse are used.

More than one emergency stop may be required for the product to achieve overall safety at the worksite. In cases where the only operator location is on the platform, at least one additional emergency stop must be installed easily accessible in connection to the product. Attention must always be drawn to the additional emergency stops by clear labelling.

Warning

The electrical installation must be performed by an authorised electrician and other installation work performed by skilled personnel with the required knowledge in order that the work is carried out in a professional manner. Risk of personal injury.

NB!

The seals on electrical equipment may not be broken, if they are, the warranty is deemed invalid.

1. Ensure that the base is flat and has sufficient load-bearing capacity.

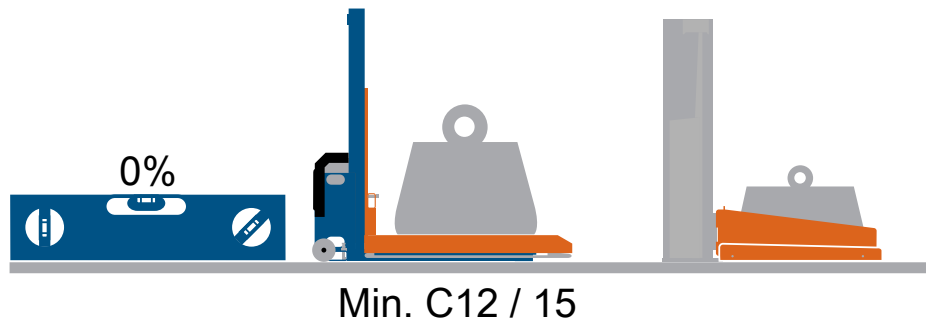


Image 16 Place the pallet Lift on a level surface with sufficient load-bearing capacity.

2. Place the pallet Lift in the desired position. Ensure that there is free space around the pallet lift (min. 500 mm.), see image 17.

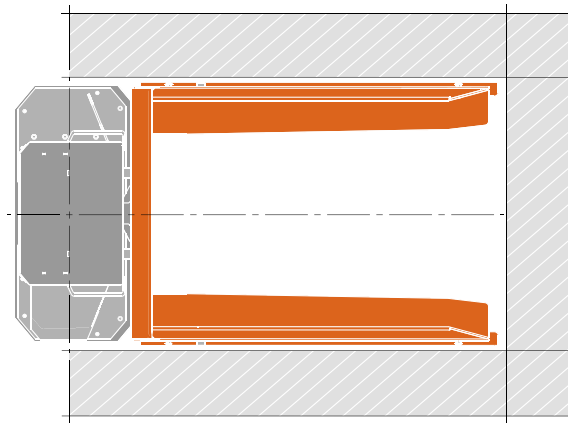


Image 17 Safety Zone

3. Anchor the pallet lift in the base using 3 or 6 expander bolts depending on the model, see image 18. These should withstand at least 13 kN each. Visit www.edmolift.com/installation for more information.

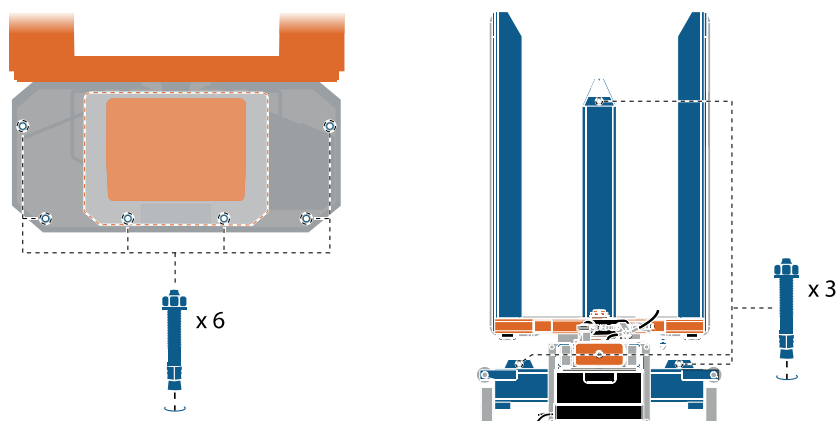


Image 18 Anchor the pallet lift in the base using 3 or 6 expander bolts depending on the model

4. Plug in the electrical connection to run the pallet lift. The feed cable is a 4-core, 3-phase (black, blue, brown) and earth (green-yellow). Neutral cable is not used. CEE connector, motor protection and main power switch are not usually included with the delivery. Unless otherwise requested, the product is supplied for connection to 3 phase/400 V/50 Hz. (For 380-420V). Actual voltage stated in the order specification.



Image 19 Electrical connection.

5. Connect to power.
6. Press the control device button to raise the load carrier. Release the button when the load carrier is at the top or after approx. 10 seconds if the load carrier is not raised. If the carrier is not raised, the hydraulic pump is probably rotating in the wrong direction, shift the electrical connection phases (see image 20) and then make a new attempt to raise the carrier.

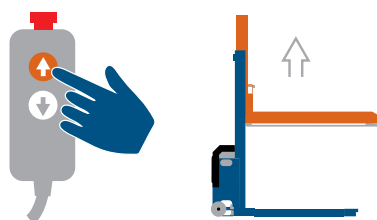


Image 20 Press the control device button to raise the load carrier.

7. For pallet lifts with centre support leg, go directly to point 10. For pallet lifts without centre support leg, block the pallet lift, see section 4.5 *Blocking the load carrier in service position*, page 30.
8. For pallet lifts without centre support leg anchor the pallet lift in the base using a further 2 expander bolts, see image 21. Visit www.edmolift.com/installation for more information.

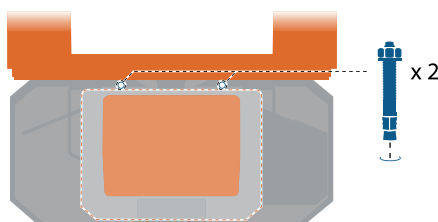


Image 21 Anchor the pallet lifts without centre support leg, with a further 2 expander bolts.

9. For pallet lifts without centre support leg, deactivate the load carrier chock, see section 4.5 *Blocking the load carrier in service position*, page 30.
10. Check that all functions including emergency stop work. The movement of the load carrier shall at no time exceed 0.15 m/s.
11. Check that the safety frame works, see section 4.4 *Checking the function of the safety frame*, page 29.

7 Settings and checks

7.1 Setting the flow control valve - Lowering speed

Use the flow control valve's knob to set the lowering speed.



Warning

High speed increases the risk of instability. The lowering speed must not exceed 35 mm/s.

1. The valve package is mounted on the hydraulic power pack, see image 22.
2. Release the knob by loosening the lock nut.
3. There are different types of valve package depending on the product and its configuration. Identify which type of valve package your product has and which knob belongs to the function to be adjusted. Adjust the speed using the knob. Turn clockwise to reduce the speed. Turn anticlockwise to increase the speed.
4. Lock the knob by tightening the lock nut.

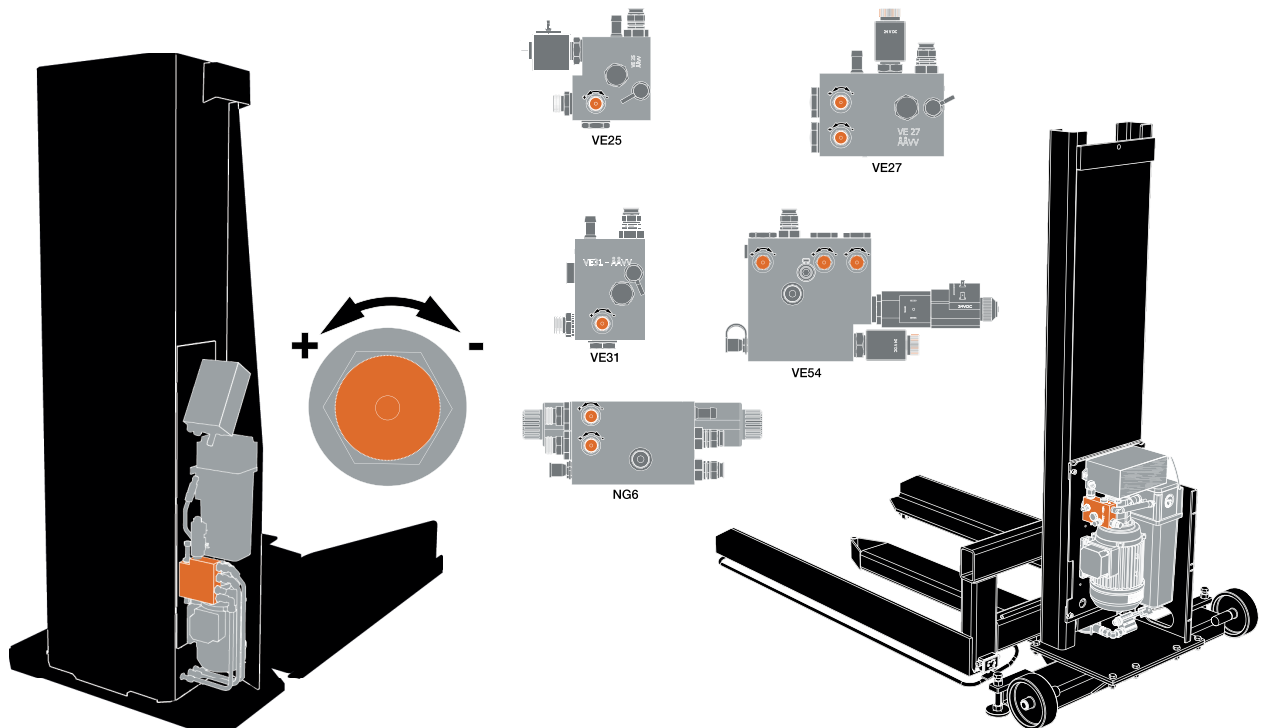


Image 22 The valve package is mounted on the hydraulic power pack. Identify the type of valve package your product has. Adjust the lowering speed using the flow control valve knob.

7.2 Checking the hydraulic system pressure

The valve package is mounted on the hydraulic power pack and is equipped with an output of the Tema 100 type for the connection of a pressure gauge.

NB!

If the product has a limit position, this may have to be removed so that the platform can be operated up to the mechanical stop.

Correct pressure is stated on the machine plate, see section 9 *Labels and signs*, page 42.

1. There are different types of valve package depending on the product and its configuration. Identify which type of hydraulic package your product has, see image 23.
2. Connect suitable pressure gauge to the output, see pos. 4 image 23. The output is equipped with a protective cover that must be removed before connection.
3. Raise the load carrier to the top position. Read the hydraulic system's pressure on the previously connected pressure gauge as the lift motion moves towards mechanical stop.
4. Remove the pressure gauge after completing the check.
5. Replace the protective cover on the output.

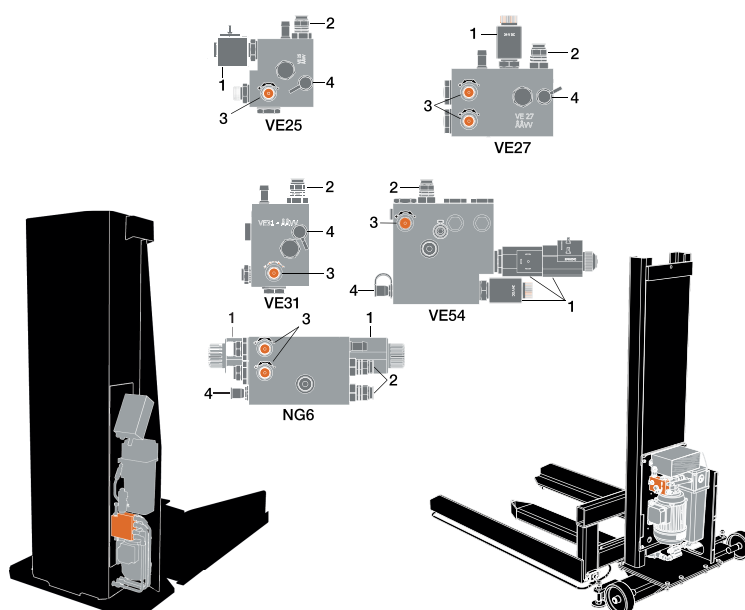


Image 23 The valve package is mounted on the hydraulic power pack. There are different types of valve package depending on the product and its configuration

- | | |
|--|--|
| 1. Solenoid | 3. Flow control valve for lowering speed |
| 2. Adjustment of max. working pressure | 4. Output for pressure gauge |

8 Troubleshooting

This section contains a troubleshooting guide that describes a number of errors and events that may arise when using your product as well as suggestions for corrective action. Note that this guide does not describe all the problems and events that may arise. If in doubt, you should always contact an EdmoLift representative.

| Symptom | Possible cause | Solution |
|---|---|---|
| Motor will not start. | Main power switched off. | Switch on the switch. |
| | No voltage. | Check supply voltage. |
| | Emergency stop depressed. | Turn emergency stop clockwise. See section 4.3.1.2 <i>Resetting</i> , page 26. |
| | Blown fuse. | Check cause and reset. |
| No lifting motion. | Incorrect direction of rotation of motor. | Swap two phases. Warning! Check that the main power switch is off before starting work! See section 6 <i>Installation</i> , page 34. |
| | Incorrect electrical connection. | Check the connection. |
| | The pressure relief valve opens. | The load carrier is overloaded. Remove the excess load. |
| | Other causes. | Contact EdmoLift. |
| Maximum lift movement not reached. | Insufficient fluid. | Top up with fluid, not more than the top position. Too much fluid can cause fluid to flow out of the tank during lowering. |
| | The pressure relief valve opens. | The load carrier is overloaded. Remove the excess load. |
| Jerky raising, lowering or tilt movement. | Air in the hydraulic system. | Check the fluid level. Run the product 2-3 times at 5 minute intervals. When the load carrier reaches the bottom position - hold the DOWN button for 30 seconds. |

| Symptom | Possible cause | Solution |
|---|--|--|
| Load carrier does not lower. | Incorrect electrical connection. | Check the connection. |
| | Emergency stop depressed. | Turn emergency stop clockwise. |
| | Safety frame activated. | Remove the object that activated the safety frame. Briefly press up, then down again. See 4.3 <i>Control</i> , page 25. |
| | Blown fuse. | Check cause and reset. |
| | Lowering valve does not open. | Check the power supply. Necessary replacement of valve cartridge and solenoid. |
| | Limit position tilt activated | Tilt to horizontal position. |
| The load carrier lowers without down being pressed. | Dirt in the hydraulic system. | <ol style="list-style-type: none"> 1. Run the product a few times to remove any particles from the valve seats. 2. Remove the lowering valve cartridge and clean. 3. Replace lowering valve cartridge and change fluid. |
| Lowering speed is faster or lower than desired. | Incorrectly adjusted flow control valve. | Adjust the constant flow valve to a maximum of 35 mm/s. See section 7.1 <i>Setting the flow control valve - Lowering speed</i> , page 38. |

9 Labels and signs

Regularly check that the labels and signs on the product on delivery are intact, legible and in the correct language. Damaged or illegible labels must be replaced with new ones.

In special cases, other locations than those shown here may apply. In addition, further labels may be applied in connection with certain accessories or usage situations.

The following signs must be installed:

1. EdmoLift labels, 2 x. See section 9.1.
2. Max. load labels, 1–2 x depending on model. See section 9.2.
3. Warning labels, 2 x. See section 9.4.
4. Warning label, 1 x. See section 9.5.
5. Machine sign, 1 x. See section 9.6.
6. Maintenance labels, 2 x. See section 9.3.

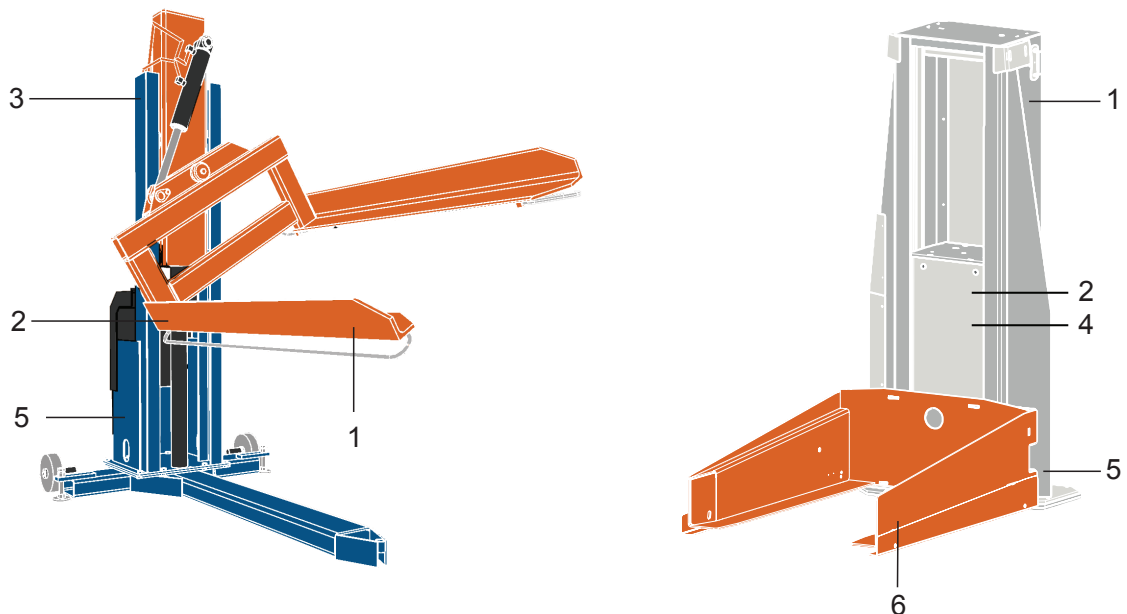


Image 24 Labels and signs

9.1 EdmoLift label

Label with logo and web address.



Image 25 EdmoLift label

9.2 Max. load label

The label indicates the maximum permitted load for the product. The label must be positioned so that it is clearly visible from all operating locations.



Image 26 Max. load label

9.3 Maintenance label

The label indicates that work inspection under the platform is not permitted unless the maintenance checks are in the maintenance position.



Image 27 Maintenance label

9.4 Warning label

The label provides information about load distribution, permitted or non-permitted carriage of persons, the position of the maintenance checks and encourages reading of instructions before use and service work.



Label for non-permitted carriage of persons



Label for permitted carriage of persons

Image 28 Warning label

9.5 Warning label

The label provides information about load distribution, non-permitted carriage of persons and encourages reading of instructions before use and service work.

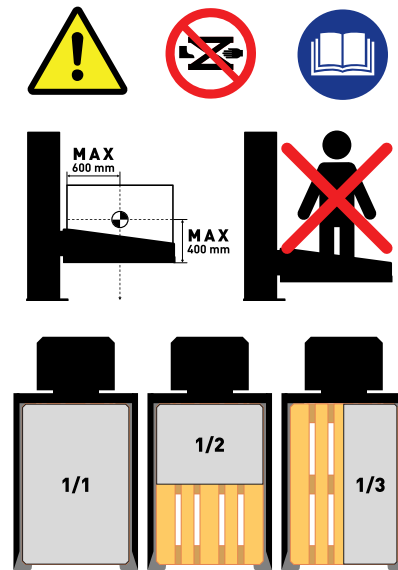


Image 29 Warning label

9.6 Machine plate

The machine plate contains the following information:

1. Product type
2. Year of manufacture
3. Hydraulic pressure
4. IP class
5. Serial number
6. Max. load
7. Dead weight




| | | | |
|---|----------------------|---|----------------------|
|  www.edmolift.se | |   | |
| TYPE | MAN YEAR | PRESSURE | IP-CLASS |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
| SERIAL NO. | MAX. ED LOAD | DEAD WEIGHT | |
| <input type="text"/> | <input type="text"/> | <input type="text"/> | |
| EdmoLift AB Härnösand, Sweden | | Tel. no +46 (0)611 837 80 b2b@edmolift.se | |

Image 30 Machine plate

9.7 User plate

The user plate contains product specifications as well as information about operation and safety. This plate must be sited alongside the operator's operating position, if local regulations so require. User plates are supplied when stated in the order specification.

10 Technical data

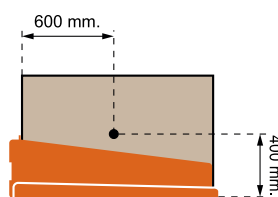
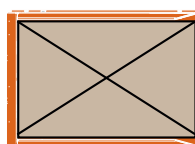
10.1 Specifications

For technical specifications, see order specification.

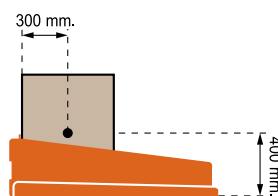
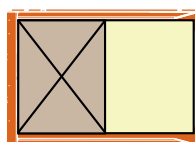
10.2 Permitted load distribution

Max. load stated in the technical specifications regards loads evenly distributed across the entire lorry loader. EdmoLift pallet lifters meet the requirements according to the lift table standard SS-EN 1570-1, where the basic requirement for max. load is defined as follows:

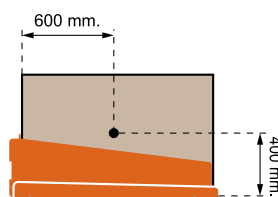
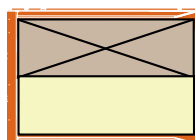
100 % of the max. load distributed across the entire load carrier.



or 50 % of the max. load distributed across half the load carrier longitudinally.



or 33 % of the max. load distributed across half the load carrier laterally.



10.3 Max. lateral loading

Max. permitted lateral force on the load carrier is 5% of the max. load stated in the technical specifications.

Lateral forces occur, for example, when pressure is applied to the load carrier or the load by hand tools, or by pulling a tool or machinery part onto the load carrier. If the lateral force is applied to the load, the tipping torque increases, which can cause the load to become unstable or move.

NB!

It is very difficult to estimate the size of the actual lateral force, so utmost care must always be taken.

11 Wiring diagrams

11.1 Identifying applicable wiring diagram

This section shows the wiring diagrams for standard products. The electrical system is individually adapted, the relevant wiring diagram is then included in the delivery but can also be obtained from www.edmolift.com/installation.

To see which electrical diagram applies to your product, see the electrical equipment's label. The correct wiring diagram can be identified using part no. and DIP.

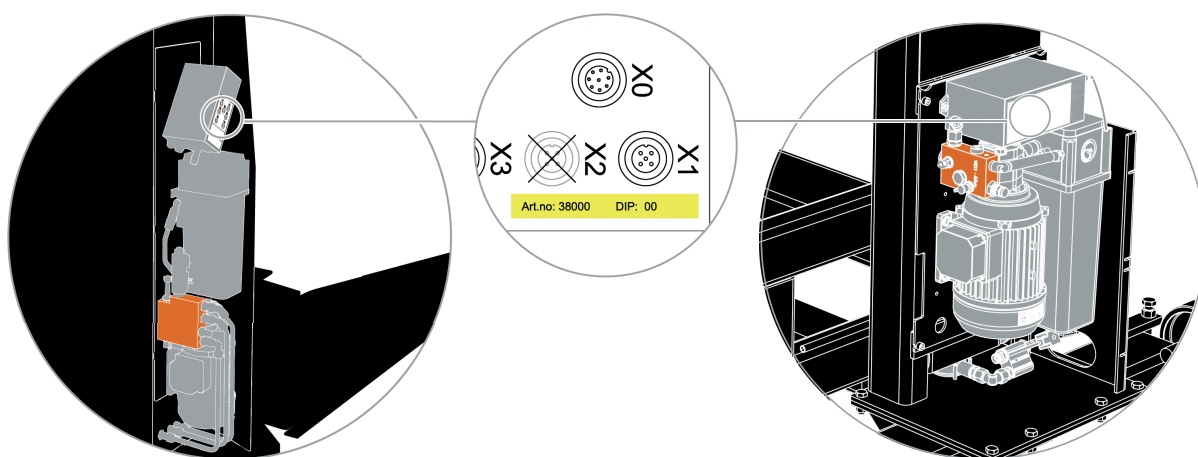
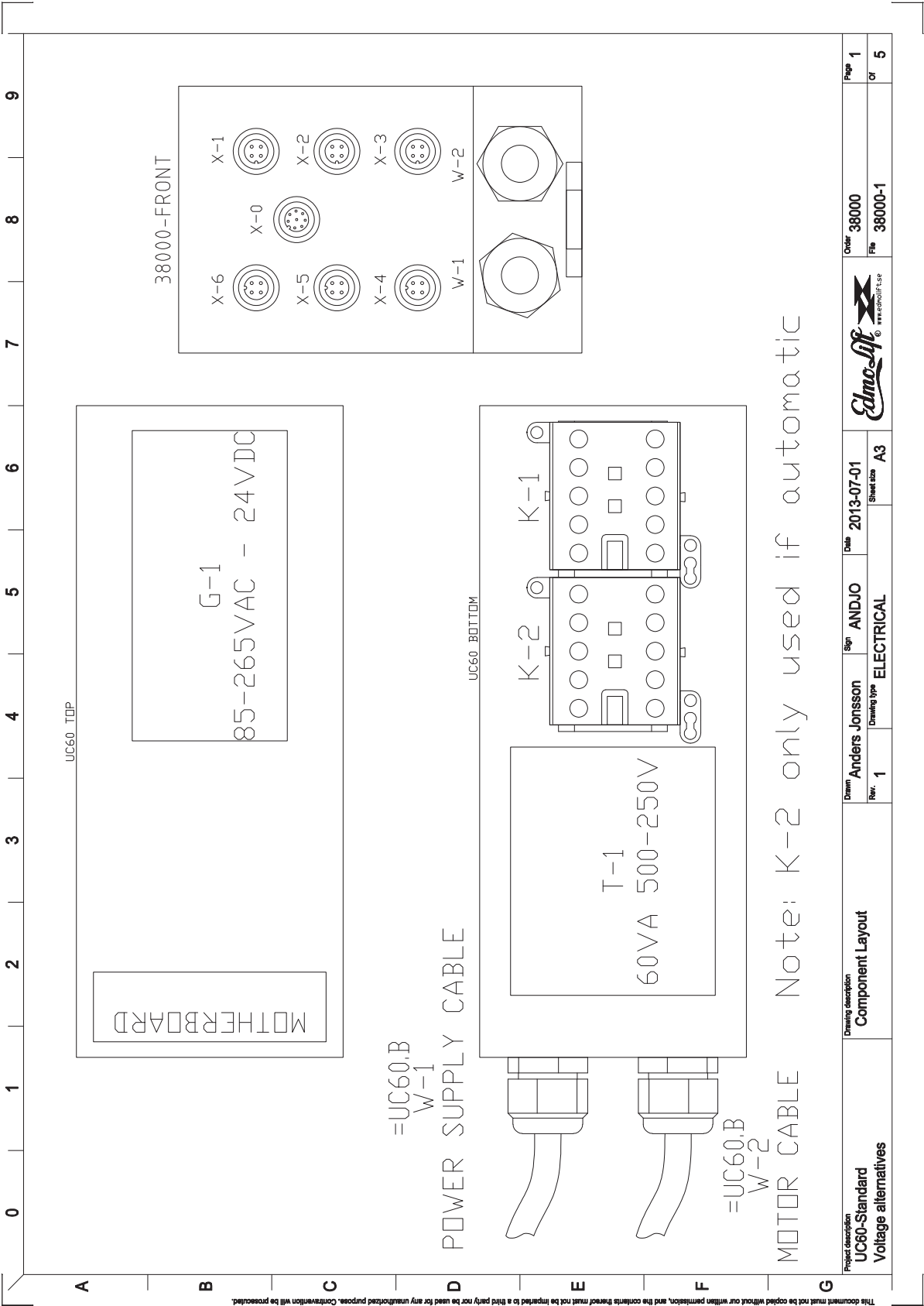


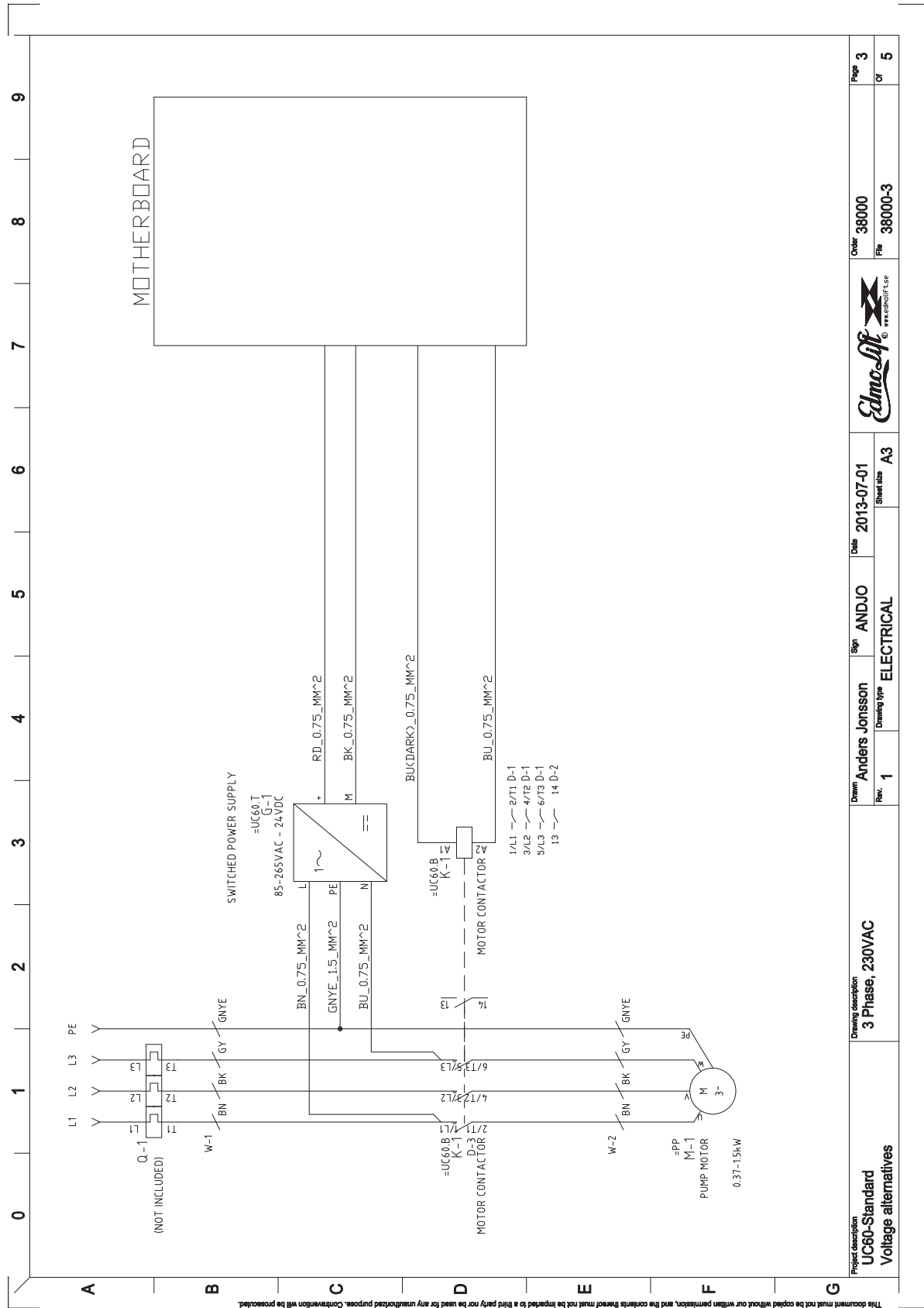
Image 31 Identifying applicable wiring diagram, in the chapter 38000–A0

11.2 Wiring diagram for UC60 Standard

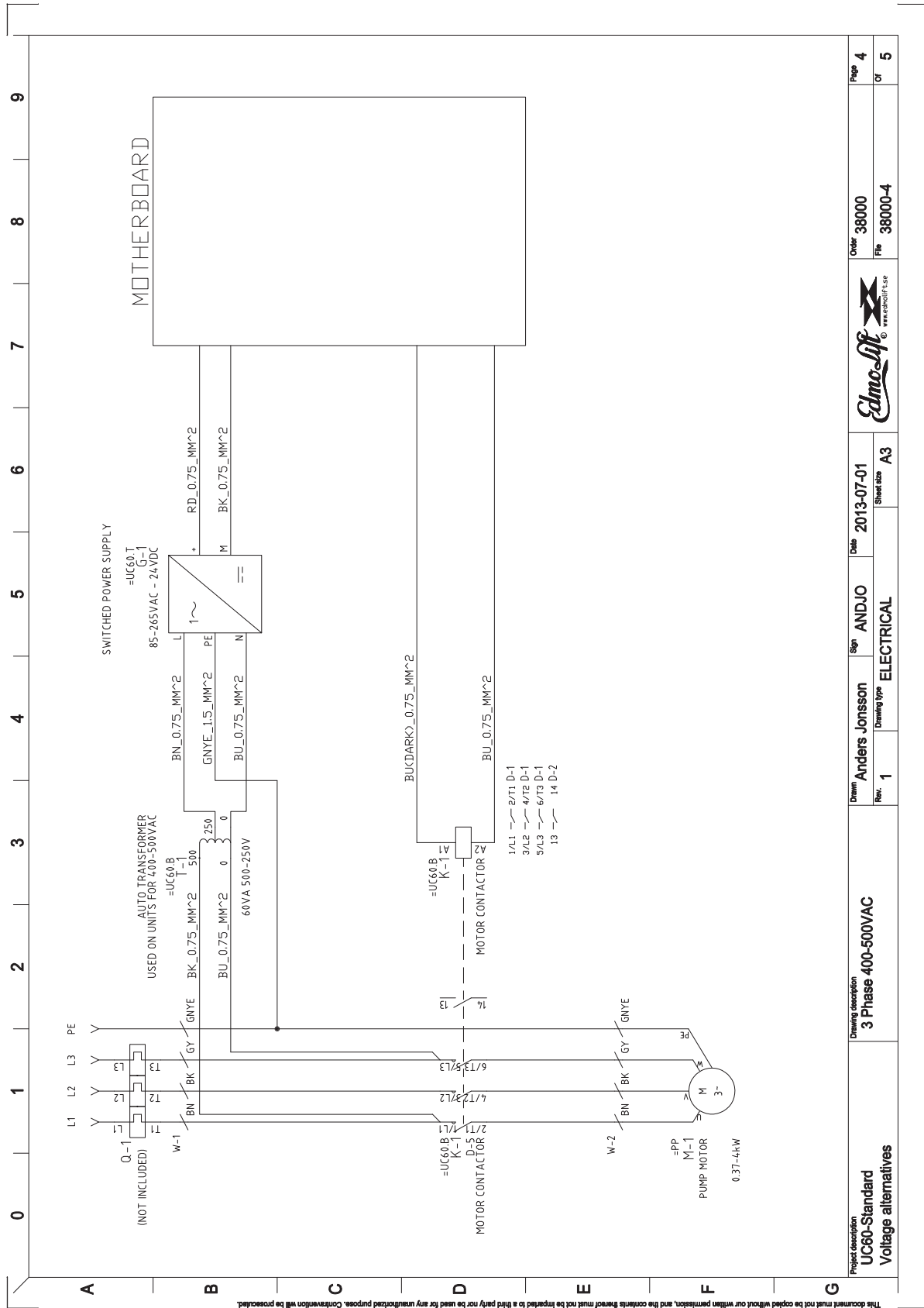
11.2.1 Component layout



11.2.3 Wiring diagram 3~230VAC



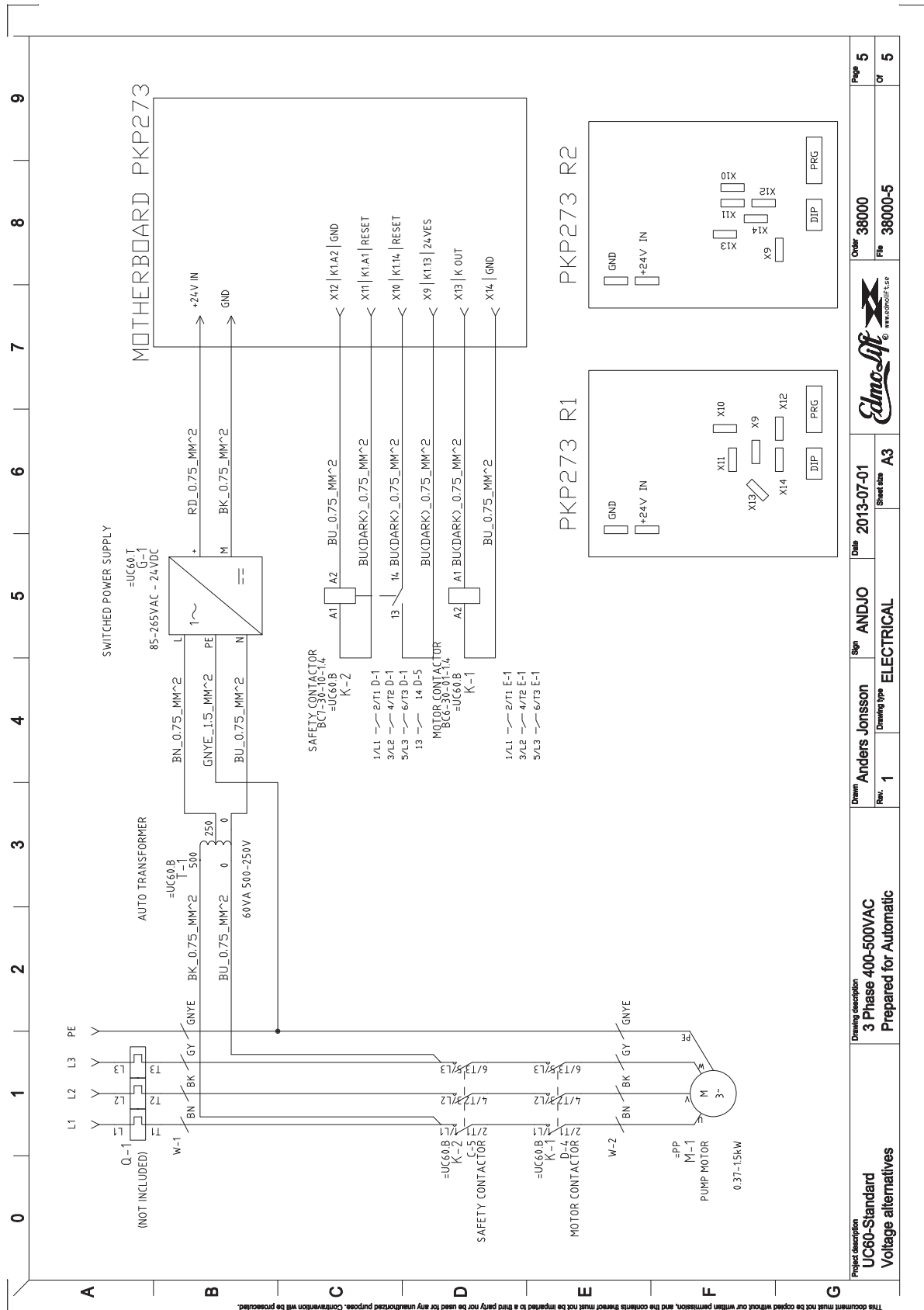
11.2.4 Wiring diagram 3~400-500VAC



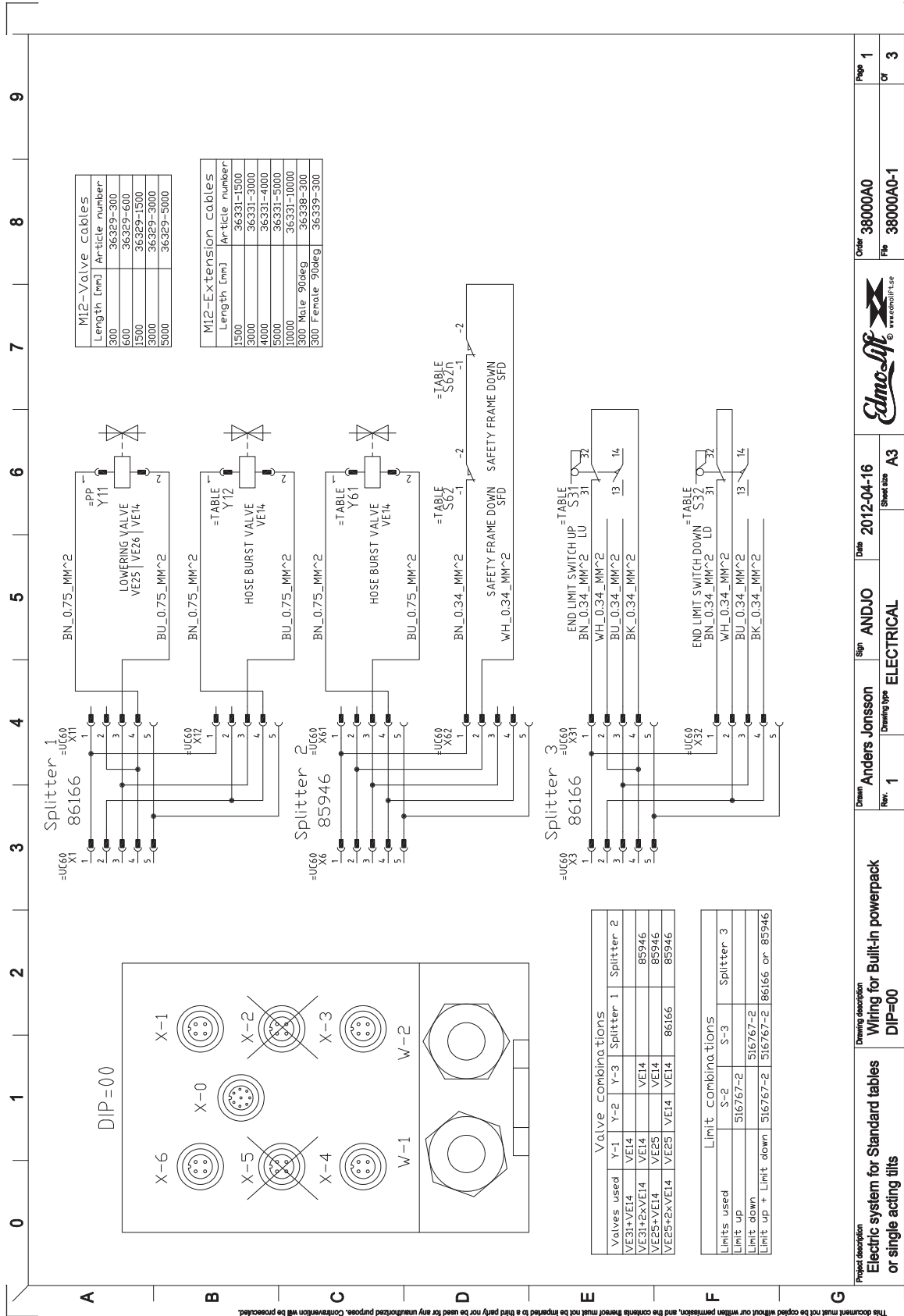
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| | | | | | | | |
|---|--|--------------------------------|----------------------|---------------------------|-------------------------|------------------------|------------------|
| Project description UC60-Standard Voltage alternatives | Drawing description 3 Phase 400-500VAC | Drawn Anders Jonsson | Sign ANDJO | Date 2013-07-01 | Sheet size A3 | Order 38000 | Page 4 |
| | | | | | | File 38000-4 | Of 5 |

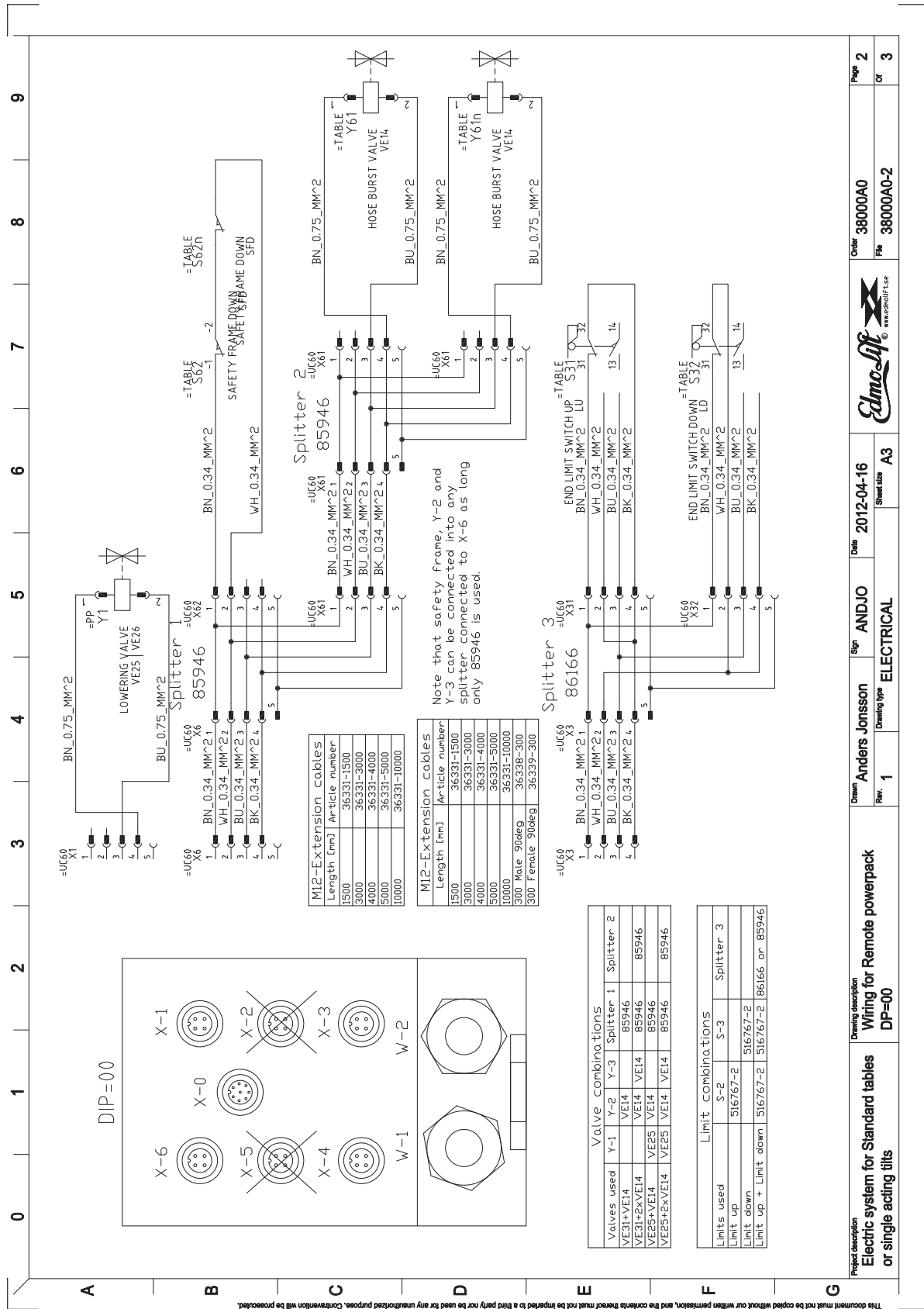
11.2.5 Wiring diagram 3~400–500VAC - prepared for automatic device



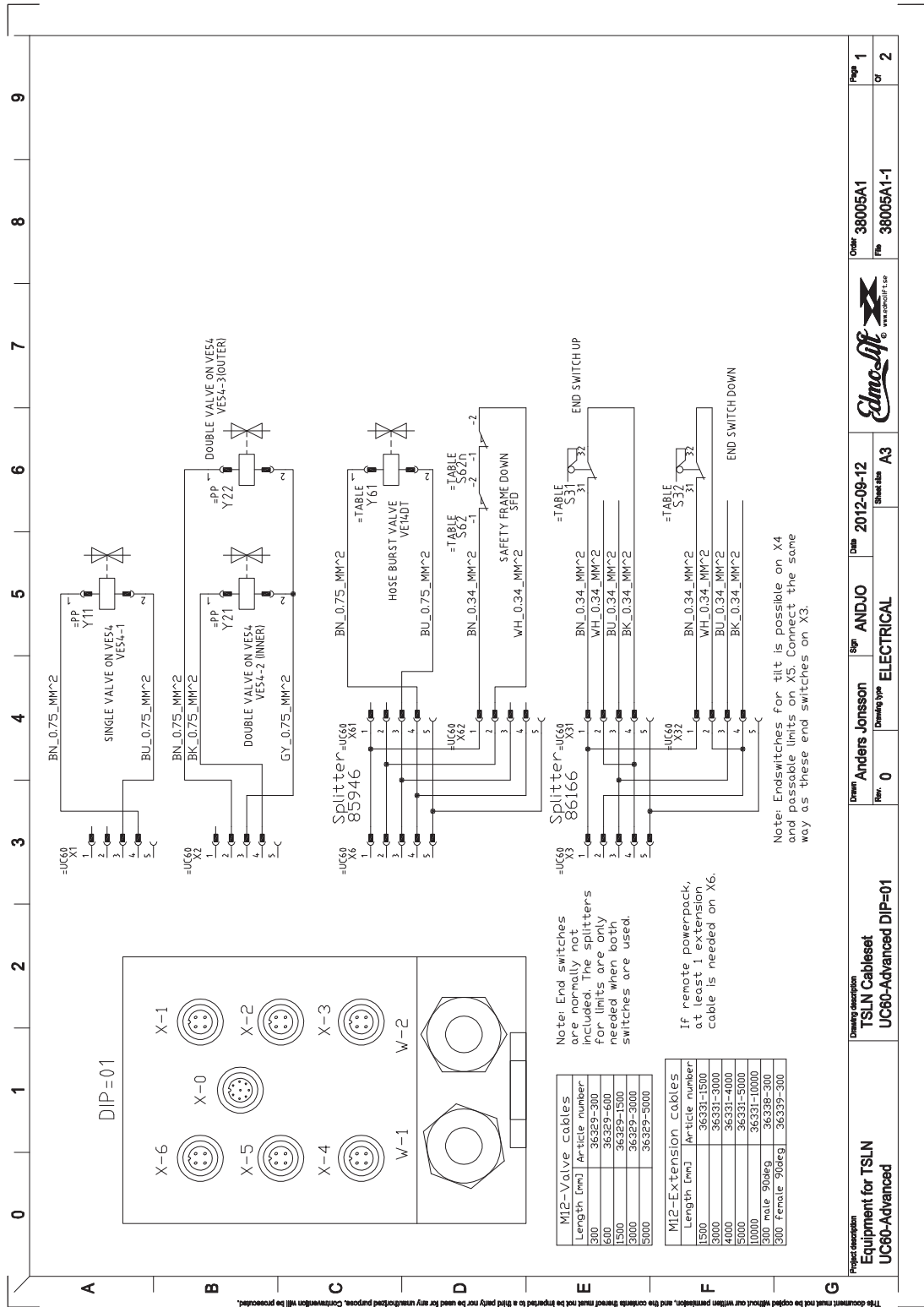
11.2.6 Integrated hydraulic power pack

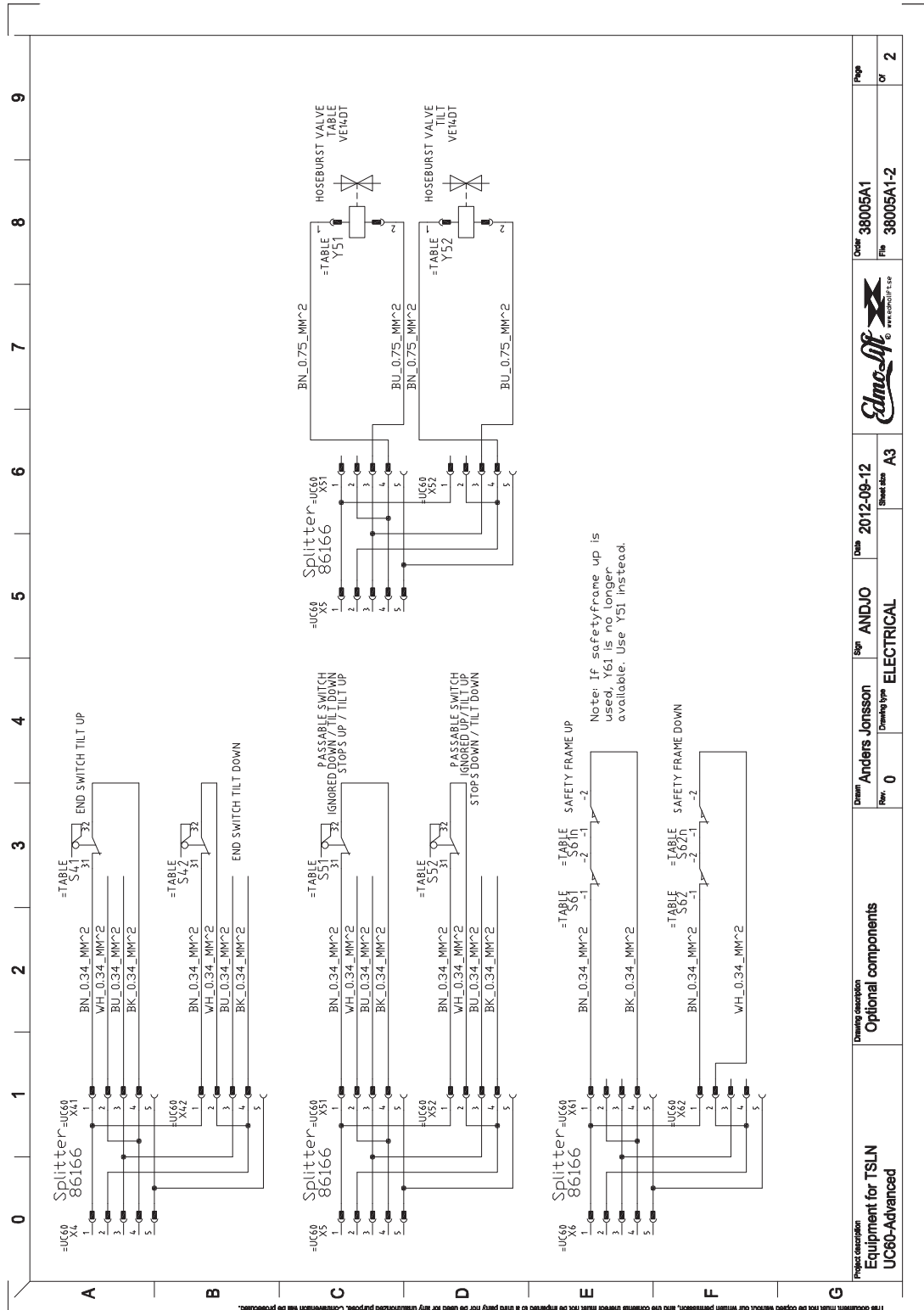


11.2.7 Freestanding hydraulic power pack



11.2.8 TSLN 750



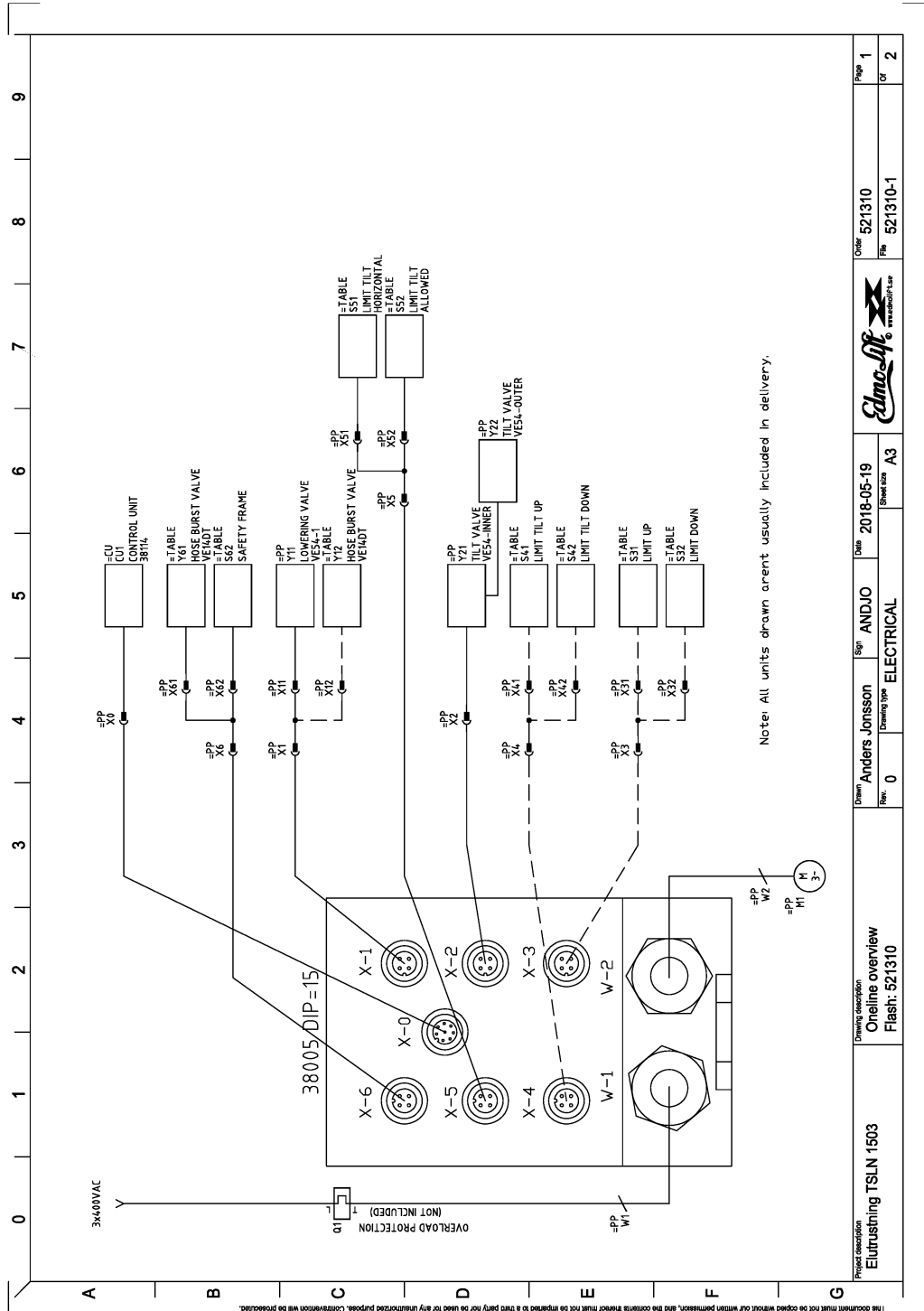


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| | | | | | | | | | |
|--|--|-------------------------|----------|--------------|----------------------------|--------------------|----------------|------------------|-----------|
| Project description Equipment for TSLN UC60-Advanced | Drawing description Optional components | Drawn Anders Jonsson | Rev 0 | Sig ANDJO | Drawing type ELECTRICAL | Date 2012-09-12 | Sheet no A3 | Order 38005A1 | Page 2 |
| | | | | | | | | | |



11.2.9 TSLN 1503



Note: All units drawn aren't usually included in delivery.

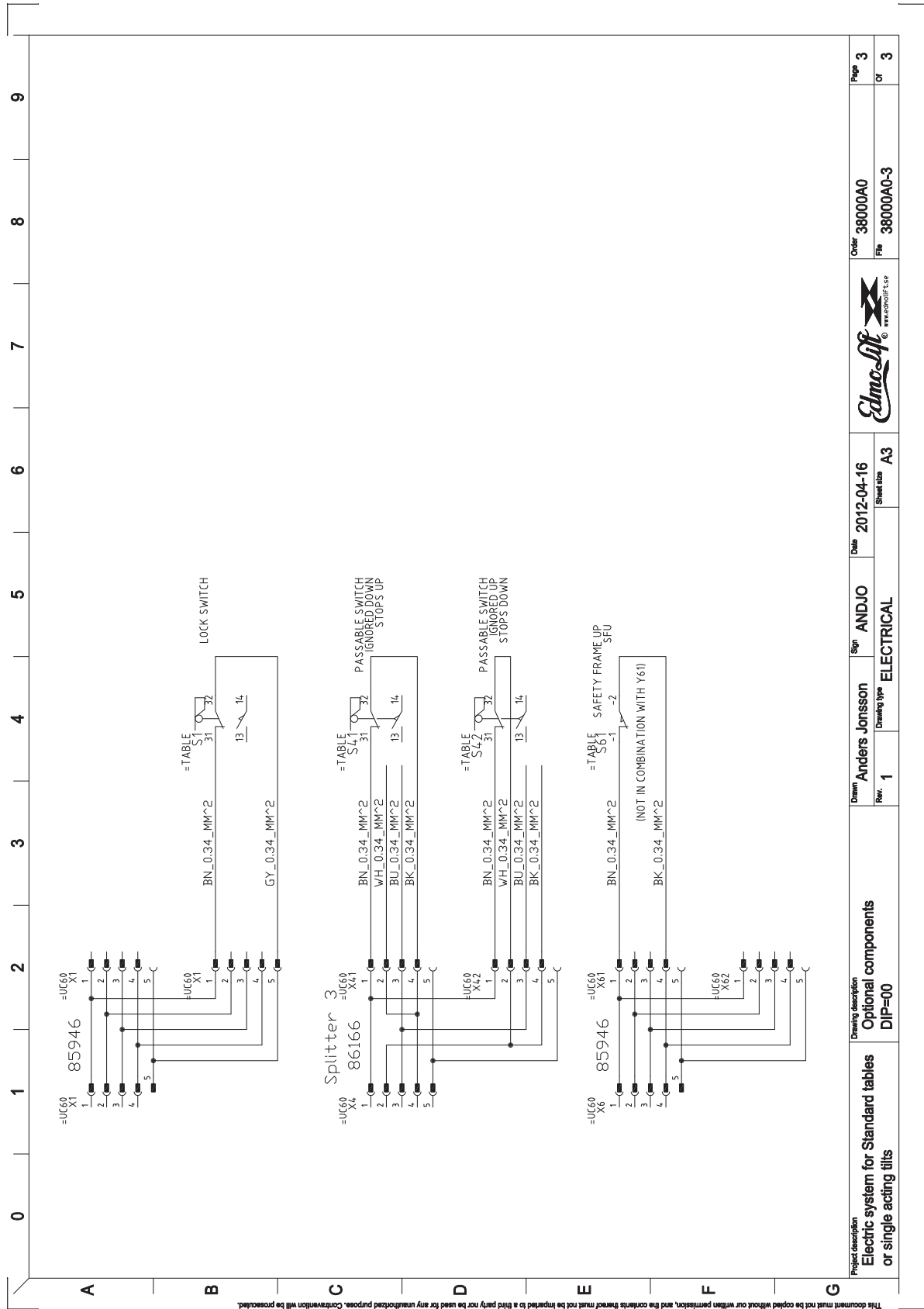
| | | | | | | | |
|--|---|-------------------------|--------------|--------------------|------------------|-----------------|-----------|
| Project description Elutrusting TSLN 1503 | Drawing description Online overview Flash: 521310 | Drawn Anders Jonsson | Sop ANDJO | Date 2018-05-19 | Sheet size A3 | Order 521310 | Page 1 |
| | | | | | | | |



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2

11.2.10 Optional components



12 Hydraulic diagrams

12.1 Single acting hydraulic system, VE31 + VE14

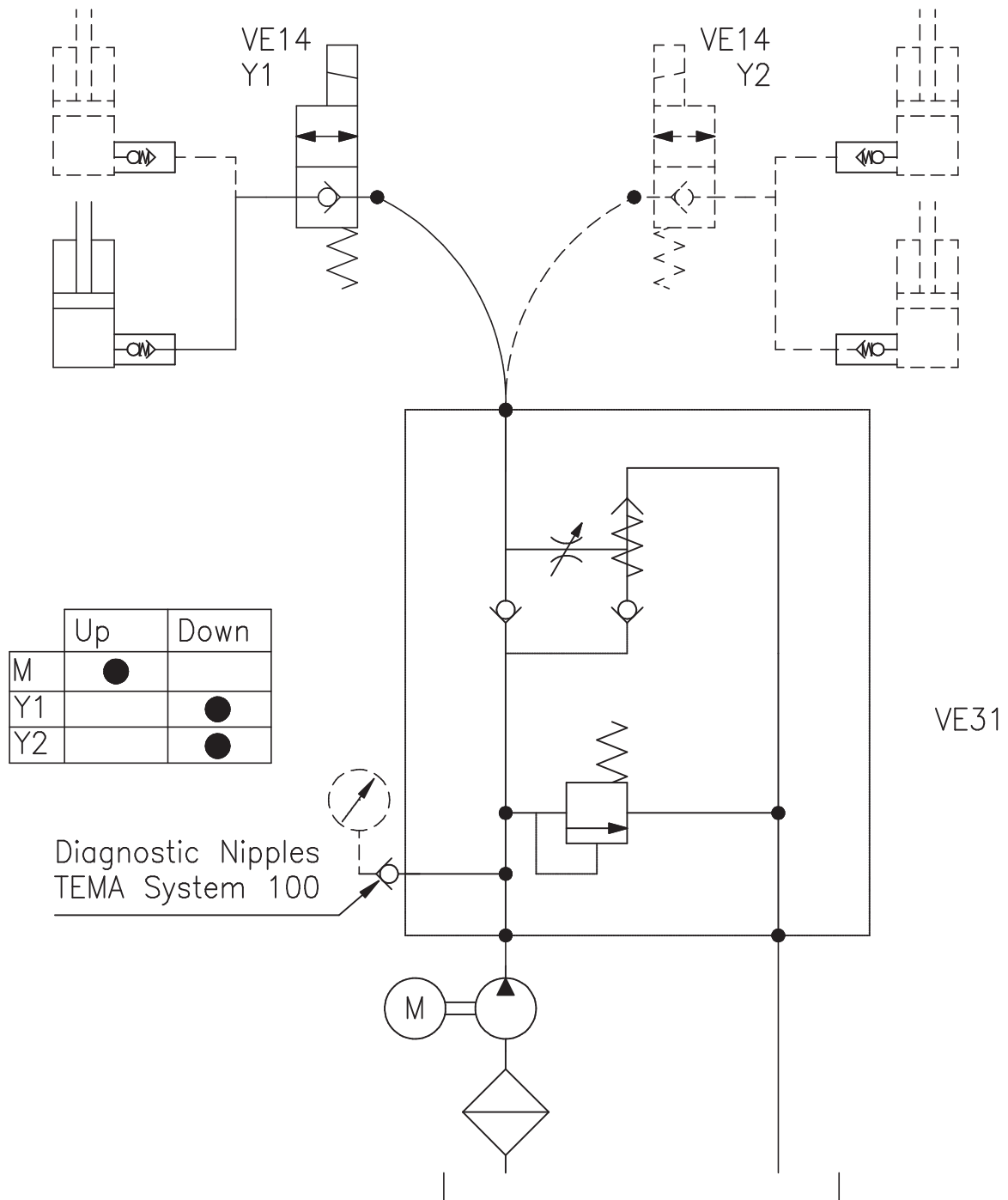


Image 32 Single acting hydraulic system, VE31 + VE14 (Part no. 45235)

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About EdmoLift

EdmoLift is one of the worlds largest manufacturers of scissor lift tables, pallet handling products and tools for materials handling. We have successfully supplied lift tables and solutions for materials handling for over 50 years. The largest customer category is industrial companies, but our lift solutions are also available within distribution, healthcare, service and trade.

Our mission is to be the most competitive supplier on the market. EdmoLift must also mean added value and high quality so that our products meet requirements, give the best functionality and stand the test of time. Our products are mostly sold via dealers and subsidiaries in more than 60 countries around the world.

EdmoLift was founded in 1964 by Torbjörn Edmo. The company is located in beautiful Härnösand on the High Coast of Sweden, where we have modern premises for production, development, sales and servicing. Our experienced and skilled staff can provide a rapid response and excellent service.

Our aim is to offer you the best and most ergonomic, cost-effective solution for your lifting and handling needs.

World class from Sweden!