



# ***User manual***

## ***Powerpack PP550***



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[orkel.no/qr/powerpack](https://orkel.no/qr/powerpack)

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# 1 General

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## 1.1 FOREWORD

The products from Orkel AS are well known for their high quality, reliability and strength. We will therefore congratulate you, choosing one of our products.

To fulfill our own goals, regarding quality and strength, Orkel AS has implemented a continuing product-developing process. All products undergo a thorough quality control before leaving the factory.

Read thoroughly, and familiarize yourself with our recommendations, regarding machine - safety, use and maintenance. Make daily maintenance a routine. By doing this, the machine will be safe to operate, and you will contribute to a longer machine lifespan and an effective utilization of the machine.

With regards

Orkel AS

## 1.2 DISCLAIMER

The original parts used in an Orkel® machine are designed and built to provide optimal fit, function, safety, and structural integrity. For this reason, Orkel® **DOES NOT** in any circumstance approve of the use of after-market, gray market, or imitation parts.

The information provided by Orkel® hereunder is provided “as is” and could contain technical-, inaccurate-, or typographical errors, where the entire risk associated with such information is entirely with the Buyer.

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Orkel® does not assume responsibility for any damages associated with the machine or failure caused by incorrect use of the machine. Neither do we assume responsibility for any changes to the product made after initial delivery.

## 1.3 GENERAL DESCRIPTION

The Orkel powerpack PP550 is an adjoining equipment for the Orkel compactors Dens-X, Hi-X, MP2000, MC1000 and MC850, intended for implementation as the main power source for these. The powerpack is portable in the sense that it disconnects conveniently from the compactor and electrical power source and then may be moved or transported by appropriate means.

The powerpack consists of a steel frame, an electrical motor with a PTO-shaft adapter and adjoining safety covers as well as an electrical motor control and power system enclosed in a steel cabinet. It connects to the compactor through a PTO shaft [cardan shaft], powering the compactors hydraulic pumps. It also hosts a 12Vdc 50A electrical power supply, suitable for powering the compactor's electrics and control system [MP and MC models only].

For powering the electrical motor, the powerpack utilizes a high-end heavy duty VFD [variable frequency drive]. The VFD provides the following features:

- Soft motor start
- Accurate speed control
- Optimized motor operating parameters

- Temperature controlled warm-up speed limiting
- Electrical power monitoring
- Safety level emergency stop switch function
- Motor state monitoring
- Motor overload protection

## 1.4 CONTROL BEFORE DELIVERY

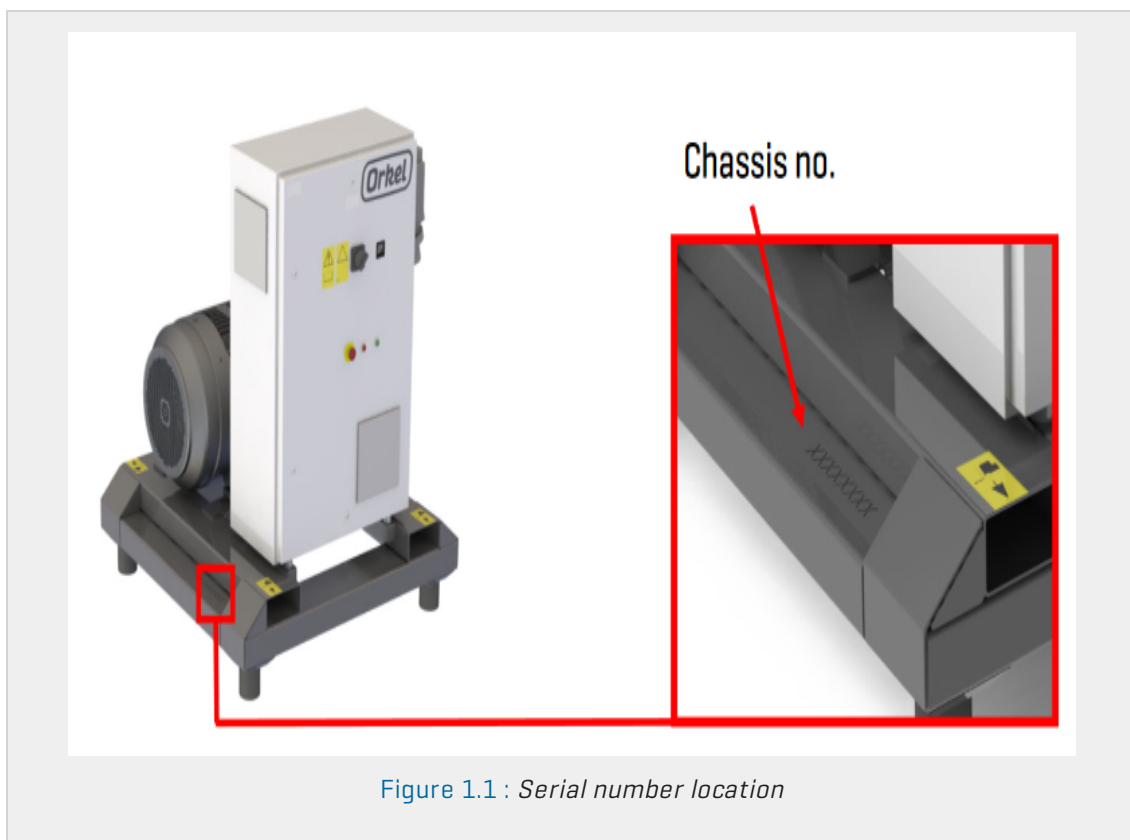
This machine is tested, controlled and has passed final inspection, before leaving the factory.

## 1.5 IDENTIFICATION OF THE MACHINE

A sticker describing the serial number is located on the right side of the machine. In addition, the number is also imprinted on top of the frame. See [Figure 1.1](#).

The serial number must always be provided when contacting your dealer, either it's for ordering parts or technical assistance.

The serial number is the safest way to identify your machine. Do not remove or change the serial number.



## 2 Safety

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### 2.1 EXERCISE OF SECURITY

- As operator, it is your responsibility that you read and understand the safety instructions given in this operator's safety manual.
- These instructions must be followed without exception. The operator is the key to safety on this machine, not only for you, but also for others in the compactors working area.
- Follow the safety instructions, and you will experience the compactor as a safe and secure place to work.

### 2.2 IMPORTANT ISSUES

Be aware of children and other unauthorized persons in close proximity to the machine. Never allow unqualified persons to operate this machine.

### 2.3 PERSONAL PROTECTION



The Compactor might generate a lot of dust and noise, depending on which material being compressed. For your own health, we recommend that operators use personal protective equipment, such as safety goggles, dust/filter mask, and ear-protection during operation.

### 2.4 PERSONAL SAFETY

Use all available protective and safety equipment. Provide good lighting in the area where the machine is positioned. All covers must remain intact and attached during operation. If pressing of flammable materials, a fire extinguisher must be in close proximity.

### 2.5 SAFE OPERATION



Persons under 16 years of age should under no circumstances operate this machine.



Personnel under influence of alcohol or other drugs must not operate this machine.

## 2.6 SYMBOLS

This symbol means:



- ATTENTION!
- BE CAUTIOUS!
- CONSERN FOR YOUR PERSONAL SAFETY!

When you see this symbol in the operator's manual, be aware that violation of instructions given, can cause you or others in the working area of the machine, being injured or killed.

## 2.7 WARNING, DANGER AND CAUTION

Each time you see the words and symbols as shown below, please note the different directions they symbolize. The pictograms are used in this manual or/and on the machine.



The symbol and the word **DANGER**, state a direct or immediate dangerous situation that will cause **DEATH OR SERIOUS INJURY** if not avoided.



The symbol and the word **WARNING**, indicates a potentially hazardous situation. If you fail to comply with instructions given it could result in personal injury or loss of life.



Do not start operating the machine until you have read and understood the safety precautions.



Always stop the tractor engine or external power unit before; lubricating, adjusting, maintaining or repairing the machine. Also, remove the ignition key to prevent accidental start.



Noise zone. Use ear protection.



Make sure the transmission is running with the correct speed and direction. Wrong speed and/or direction can damage machinery and may cause great danger to persons nearby. The machine is designed for a PTO-speed of 850 rpm.



Between the Powerpack and the machine, there is a rotating PTO-shaft. No one is allowed to stand between the tractor and the machine while the engine is running. Do not wear loose clothes, scarfs etc.



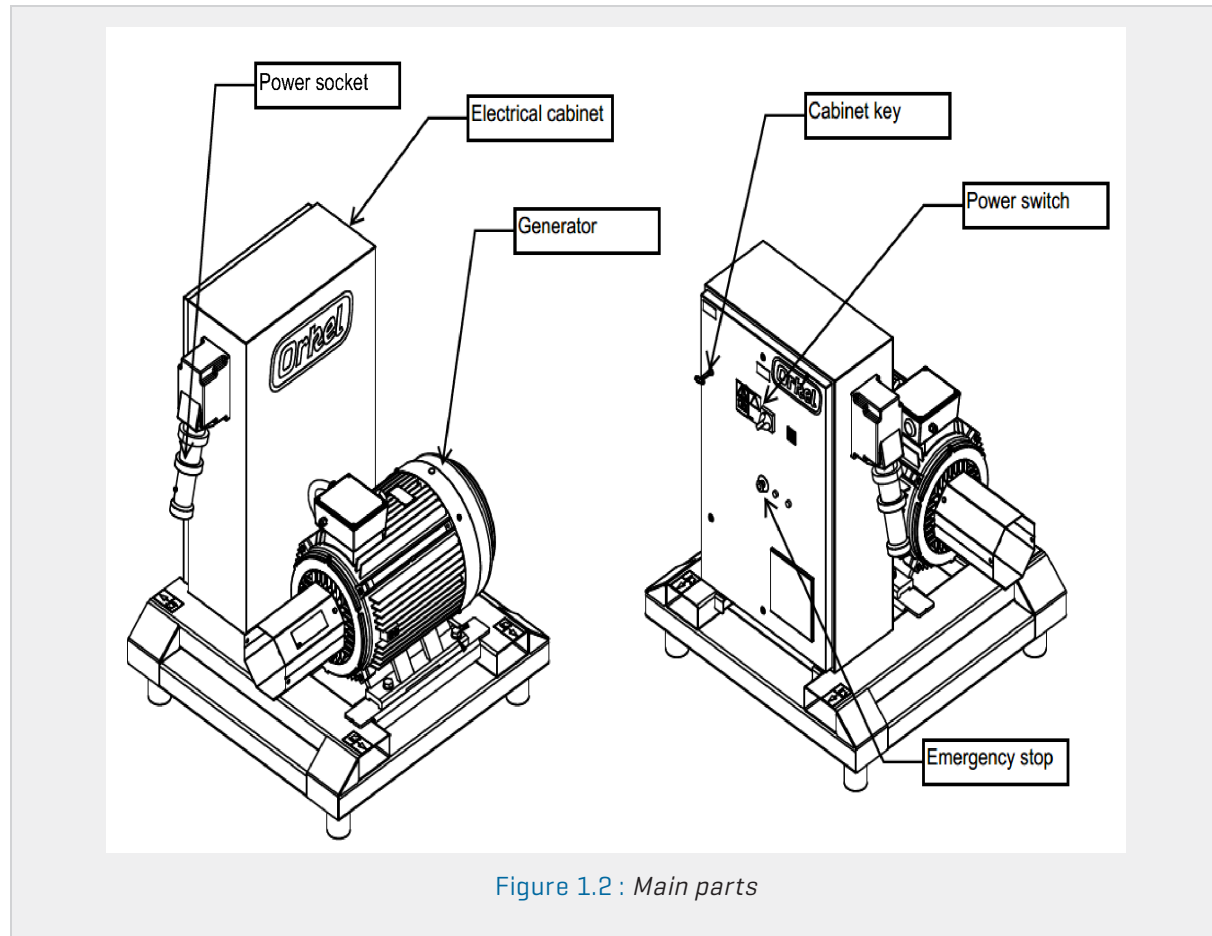
Warning signs, indicating danger or warning attached to the machine, must not be removed or painted over. Unreadable signs shall be replaced by new ones. These can be ordered from Orkel AS.

## 3 Settings

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### 3.1 MAIN PARTS

See the below picture for the main parts of the Powerpack. For an overview of the controls, see [section 5.1 "Controllers"](#).



### 3.2 INSTALLATION REQUIREMENTS

The powerpack is to be used indoor or beneath an appropriate roof covering. Place directly on a firm surface next to the compactor.

Further details regarding the positioning of the unit may be found in the compactor's user manual, in the directions for connecting the PTO shaft.

For the electrical connection, the powerpack carries a power intake socket on its electrical cabinet. A corresponding connector plug comes with the delivery, intended for installation on an appropriate cable [not included]. The electrical power take-out on the site must be a three-phase 400Vac with 125A fuse [motor fuse characteristics].

## 4 Operations

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### 4.1 SAFE WORK ROUTINE

This machine must under no circumstances be used for any other purpose than the intended one. Operate in daylight conditions only. Install additional worksite lighting if necessary. If the operator have to leave the site, the tractor or any other power supply must be turned off and key removed to avoid unattended start. Do not use loose or baggy clothing, due to many rotating parts in the machine. Long hair must be tied up to avoid possible entanglement in rotating parts.

### 4.2 SAFETY

**IMPORTANT:** If any dangerous situations occur, shut down the Powerpack right away.

### 4.3 OPERATOR SAFETY

If you fail to comply with instructions given it could result in personal injury or loss of life.

- be cautious and stay focused on all danger zones during operation.
- check all danger zones before startup and during operation to avoid dangerous situations.
- pay attention to every potential danger caused by the machines automatic systems.
- carry out a test on emergency stop switches, and sensors on a regular basis, to ensure they are in good working order.
- pay attention to fire hazard from overheated bearings, especially when pressing very dry materials.
- know the localization of the fire extinguisher. Keep it close!

### 4.4 OTHER PEOPLE'S SAFETY

The Powerpack spins the PTO shaft at high RPMs. No unauthorized personnel must be located near or between the Powerpack and the compactor.

### 4.5 POWER TAKE OFF

The PTO drive shaft is delivered with its own user manual from the manufacturer. Assemble the shaft accordingly. Maintain and lubricate the PTO-shaft according to instructions given in the PTO-manual. Power requirement:

90hp / 75 kW [electric motor]

**IMPORTANT:** If any dangerous situations occur, shut down the Powerpack right away.

### 4.6 PTO SPEED

The machine is designed for a PTO speed of 850 rpm. Ensure that the PTO speed and rotational direction is correct [counter clockwise rotation when viewed from the Powerpack is correct].

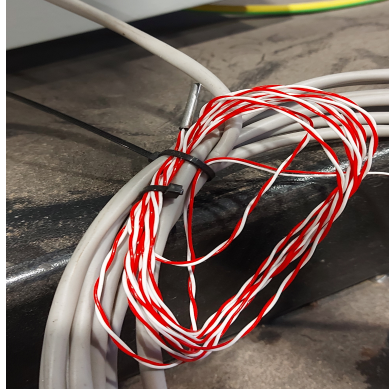
**NOTE:** It is important for the machine performance [the hydraulic system] that the PTO speed is steady.

## 4.7 SETTING UP

1. Ensure that the tank valves are all open (T1-T5) (see Compactor user manual).
2. Attach temperature sensor to the compactors oil tank. See instructions below.
  - a. Ensure that the sensor is firmly connected to the Powerpack socket. This is placed on the right side of the cabinet.
  - b. Insert the sensor into the aluminium block mounted on the oil tank.



Powerpack socket



Sensor with cable



Sensor holder block

3. Make sure that the main power switch on the Compactor is turned on, as to avoid damage to its electrical system.
4. Attach the PTO shaft to the Powerpack and the Compactor.
5. Start the Powerpack. IMPORTANT: Check the rotational direction of the PTO (see [section 4.5 "Power take off"](#)). The Powerpack has a automatic smart system that runs the PTO at 300 RPM as long as the oil temperature is below a certain threshold. After the oil temperature is sufficient, the PTO is spun at 850 RPM.

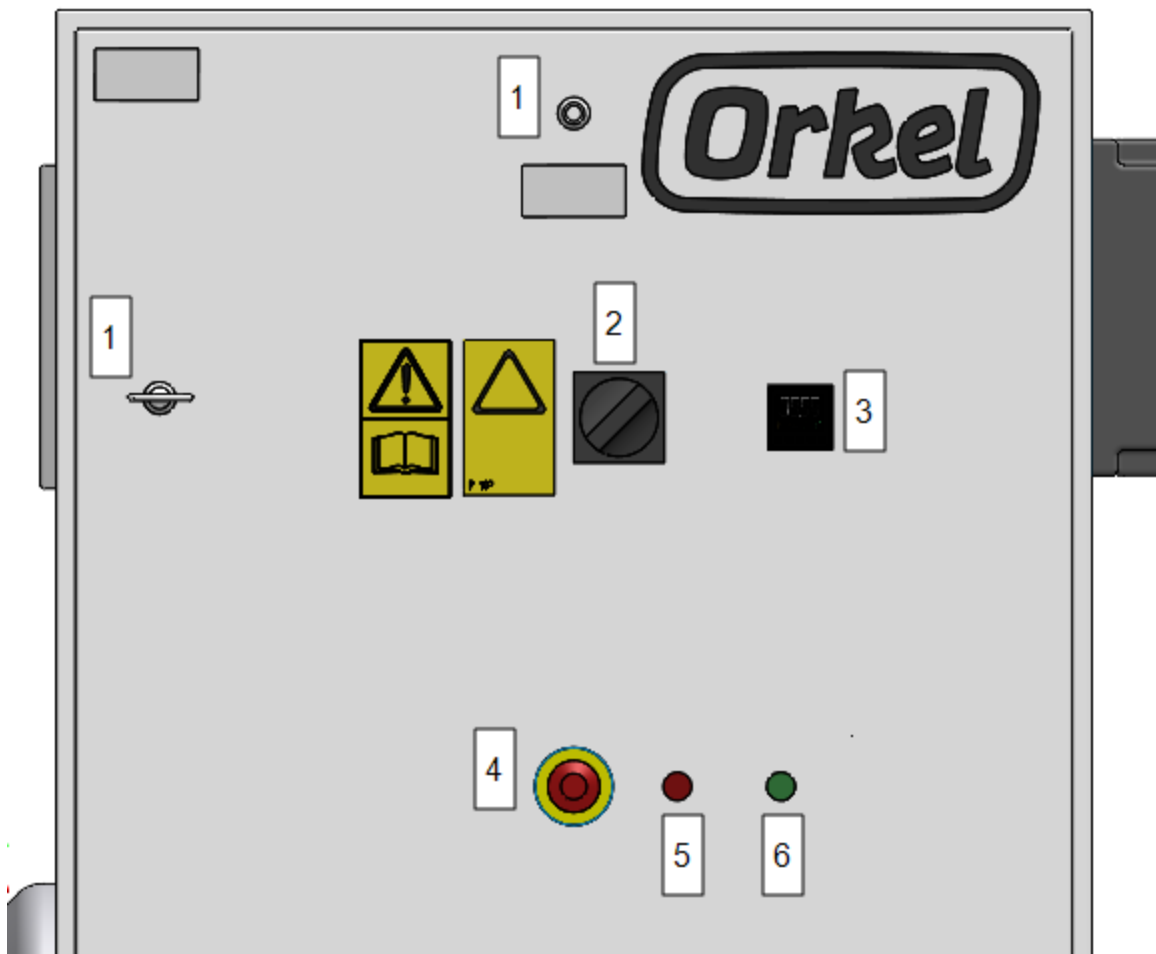


Perform a function test of all the emergency stop switches before starting baling.

## 5 Controls

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### 5.1 CONTROLLERS

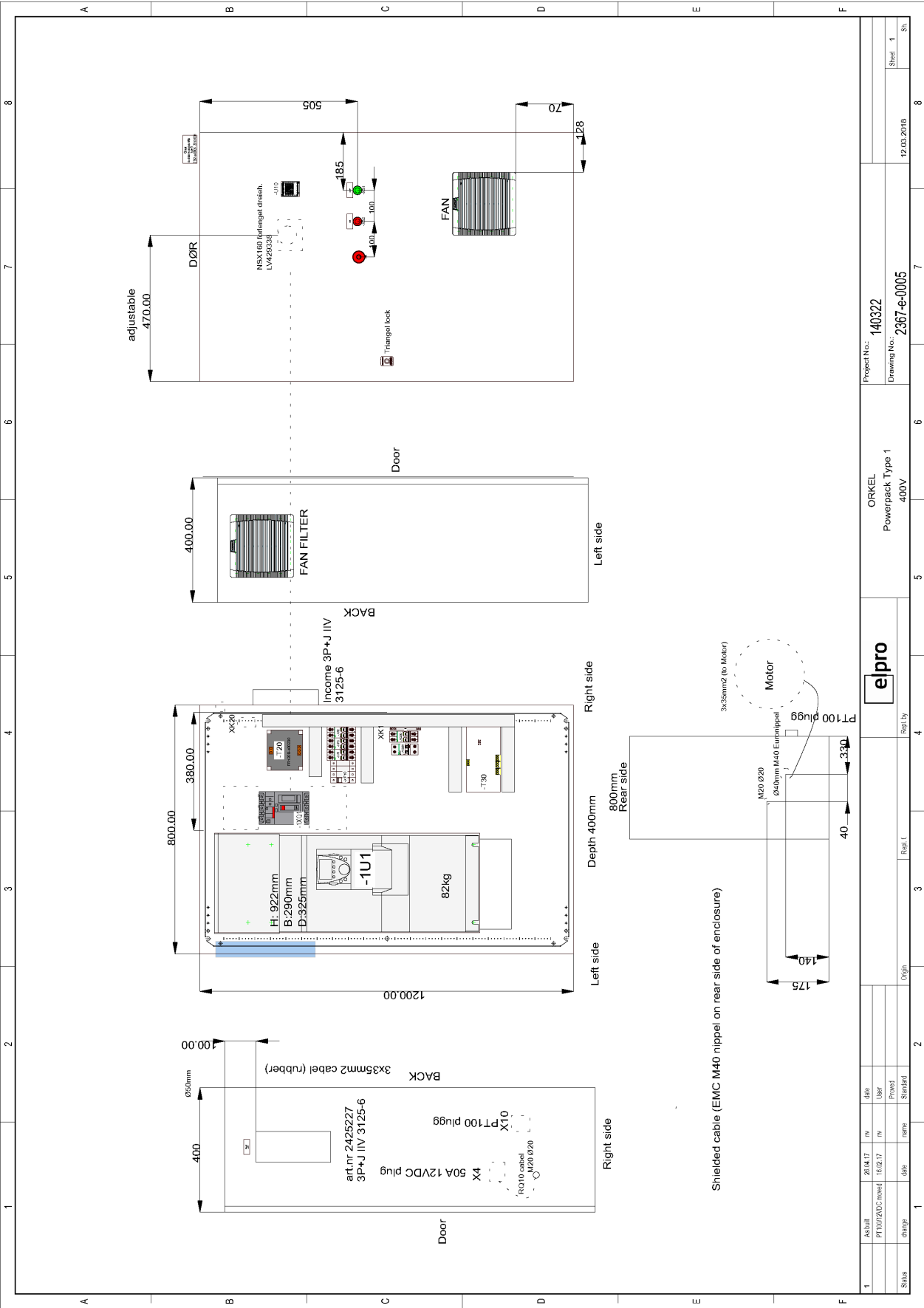


1. Cabinet key
2. Main power switch
3. Display
4. Emergency stop button
5. Stop button
6. Start button

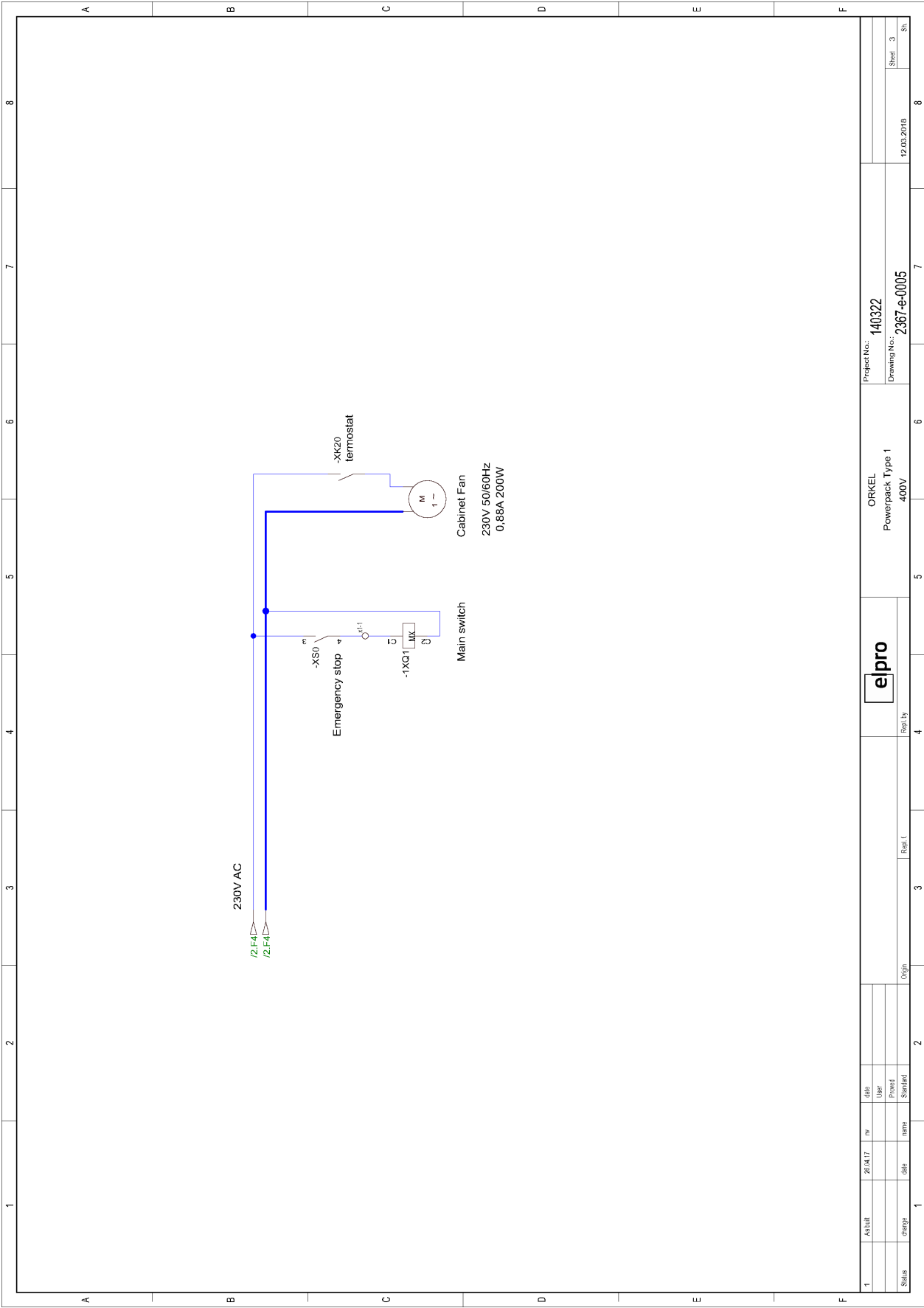


Perform a function test of the emergency stop switch before starting the Powerpack.

6 Electrical overview







## 7 Maintenance

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### 7.1 BEFORE MAINTENANCE



Shut down the machine and disconnect the PTO-shaft prior to every machine inspection.

Before any maintenance or adjustments are performed, shut down and disconnect the machine. We recommend you to make a conference call to your local dealer or Orkel AS regarding maintenance of adjustments. All repair work shall be carried out by a skilled mechanic/electrician.

### 7.2 POWERPACK MAINTENANCE

Normal maintenance consists of a visual check, removing dust and debris and periodically checking, cleaning and/or changing the filters in the electric cabinet. Periodically, the motor's bearings must be lubricated following instructions for this. The extent and frequency of the maintenance described depends on the conditions in which the powerpack operates.

### 7.3 CONTROL AFTER REPAIR OR MAINTENANCE

Check that all tools are stowed away and that all covers are mounted correctly and in place.



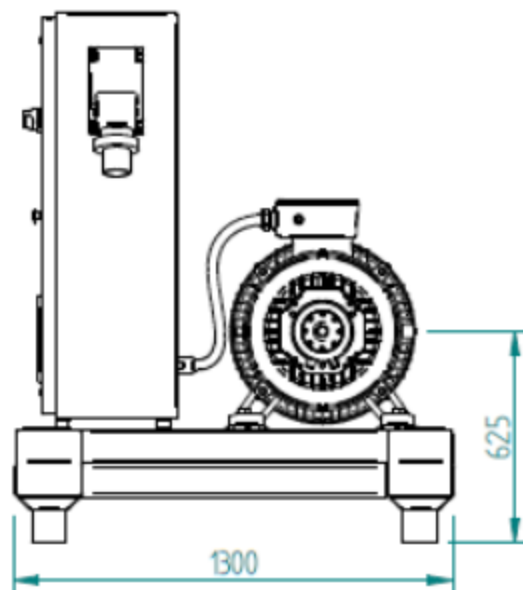
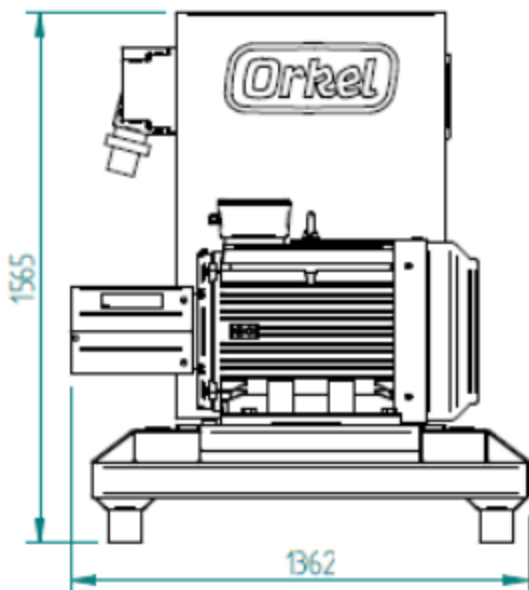
Be extra careful when performing function control on running machinery.

**IMPORTANT:** Inspections, simple repairs and adjustments mentioned in this manual may be performed by operators who have undergone training in the use and maintenance of this machine. More advanced repairs must be performed by skilled technicians.

**NOTE:** Maintenance should begin with a thorough cleaning in order to avoid dirt penetrating unwanted areas/-components.

## 8 Specifications

|                        |                             |
|------------------------|-----------------------------|
| Weight                 | 975 kg                      |
| Dimensions [L x W x H] | 136 x 130 x 157 cm          |
| Motor nominal power    | 55 kW                       |
| VFD nominal power      | 75 kW                       |
| Actual power, peak     | 80 kW                       |
| 12Vdc supply capacity  | 50 A                        |
| PTO speed, operation   | 850 rpm                     |
| PTO speed, warm-up     | 300 rpm                     |
| PTO spline             | 1 3/8 z6                    |
| PTO height             | 63 cm                       |
| Controls               | Manual, start, stop, e-stop |



### 8.1 POWER TAKE OFF

Maximum torque: 2900 Nm

Speed: 850 RPM