Electric winch

PL SERIE

Instruction manual _____ EN

Model	.....
Serial number	.....
Weight of the winch	.....
Customer order no.	.....

CE

97-269.09/6

To ensure the constant improvement of its products, HUCHEZ reserves the right to change the equipment as described below and, in this case, to supply products which differ from the illustrations in this instruction manual.

Summary

1 - Contents

All users are asked to read the start-up instructions carefully before using the winch for the first time. These instructions will help the user to become familiar with the winch and to use it to the best of its capabilities. The start-up instructions contain important information on how to use the winch in a safe and correct manner. Observing these instructions can help prevent risks, minimize repair costs, reduce down time and increase the reliability and useful life of the winch. The instruction manual must always be available at the winch operation location. In addition to the start-up instructions and the regulations relating to accident prevention, it is important to consider current rules in terms of industrial safety and professional standards in force in each country.

This machine is covered by European regulations and, more specifically, machinery directive 2006/42/CE, EMC directive 2004/108/EC and low-voltage directive 2006/95/EC, as well as standard EN 14492/1.

The PL Series winches can be used to perform lifting and pulling operations.

- When used for lifting, European regulations require the use of certain equipment, including a limit stop and a load limiter (above 1000 kg).
- The user must make sure that this equipment is in place (optionally available from the manufacturer) before undertaking any lifting operation.
- Please ensure that the operator is qualified to operate the winch under the conditions laid down in this manual. This is to respect the safety of workers and the environment.
- The capacity indicated on the winch corresponds to the maximum operational capacity (M.O.C.), which may not be exceeded in any case.
- This winch may not be used to lift personnel under any circumstances.
- Do not lift or carry loads while personnel remains in the danger zone.
- Do not authorize personnel to walk under a hanging load.
- Never leave a load hanging or under tension without supervision.
- Never begin to handle a load without fixing it correctly and making sure that all personnel has left the danger zone.
- Before each use, the operator must check that the machine, its ropes, its hook, its markings and its restraints are in good condition.
- The operator must make sure the load is hooked so that the winch, the rope and the load do not pose any risk for him or other personnel.
- The winches can be handled within a range of ambient temperatures between -10° C and +50° C. Please consult the manufacturer in the case of extreme operating conditions.
  Warning: When the ambient temperature is less than 0°C, the brake must be tested in order to make sure it has no operating faults caused by frost.
  All uses of the winches must strictly conform to accident prevention and safety measures for the country where they are being used.

- The manufacturer accepts no responsibility for the consequences of the machines being used or installed in ways other than described in the manual, or for the consequences of altering or replacing original parts or components with parts or components from other sources without its written agreement.

YOU ARE ALSO REQUIRED TO OBSERVE THE APPLICABLE RECOMMENDATIONS IN YOUR COUNTRY.

2 – What not to do

Before using the winch, make sure there is no risk of overloading due to adherence to the floor, suction, jamming, etc. of the load. In addition to the above, avoid all the incorrect uses and operations indicated below. It is dangerous and prohibited to:

- unwind the drum completely (always leave 2 to 3 coils).
- pull at an angle.
- swing the load.
- use ropes with a diameter and texture that do not comply with the specifications of this manual (FEM 3 m – ISO M6)
- use damaged or spliced ropes.
- use hooks without catches, not suitable for the loads specified on the winch, or in bad condition.
- insert objects into the moving parts.
- service winches while they are loaded or receiving power.
- use the rope of the machine as a sling.
- tap on the control box (heating the motor and the electrical controls).

3 – Compulsory regulatory inspections by the user

This equipment has been designed to be subjected to the following tests:

- Dynamic proof test at coefficient 1.1
- Static proof test at coefficient 1.25

Users are required to conform to the regulations in force in their own countries.

In the case of France:

Order of 1 March 2004 on the testing of lifting machines and accessories:

The amendments to the regulations regarding the use and testing of lifting machines and accessories, in force since 1 April 2005, impose new obligations on all users:

- Adaptation exam, which consists of checking that the lifting machine is suitable for the work the user intends to carry out as well as for the risks to which the workers are exposed and that the planned operations are compatible with the conditions for using the machine as defined by the manufacturer.
- Assembly and installation exam, which consists of making sure that the lifting machine is assembled and installed in a safe manner, in accordance with the manufacturer's instruction manual.
- Periodic general inspections, including an exam of the state of conservation and operating tests.
- Tests for starting or restarting service in the event of changing the operation site, changing the configuration or the conditions for use on the same site, following dismantlement and reassembly of the lifting machine, after any considerable replacement, repair or transformation affecting the core components of the lifting machine, following any accident caused by a failure in a core component of the lifting machine.

- Maintenance log (order of 2 March 2004, applicable since 1 April 2005) which must contain all the maintenance operations performed in accordance with the recommendations of the machine manufacturer as well as any other inspection, service, repair, replacement or modification operation conducted on the machine. Every operation must state the date of the work, the names of the persons and, where applicable, the companies that performed it, the nature of the operation and, in the case of a periodic operation, its periodicity. If the operations include replacing elements of the machine, the references of these elements must be specified. HUCHEZ lifting winches are supplied with their maintenance log.

The tests must be performed in strict observance of protocol. They aim to provide preventive maintenance, detecting any damage or faults that can create a risk.

4 – Introduction to the machines

4.1 - General

These winches are designed for pulling or lifting loads from 800 to 11000 kg.
They have a three-phase power supply of 230/400 V 50 Hz with 4 kW and 400/690 V 50 Hz with 7.5 to 22 kW.
Their FEM classification is 3 m (ISO: M6)
The motor has a protection rating of IP 55
The motors have a power range from 4 to 22 kW

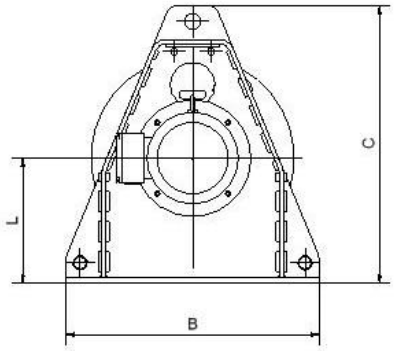
The following are available optionally:

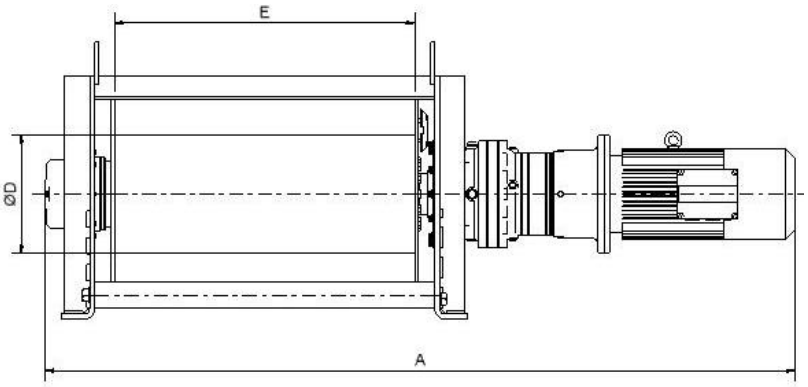
- Up to 4 tonnes:
  - ✓ 24 V low-voltage box,
  - ✓ Low-voltage box with variable speed drive.
- Above 5 tonnes, the low-voltage box with variable speed drive is compulsory.
- End limit switch (compulsory for lifting)
- Load limiter (compulsory above 1000 kg).

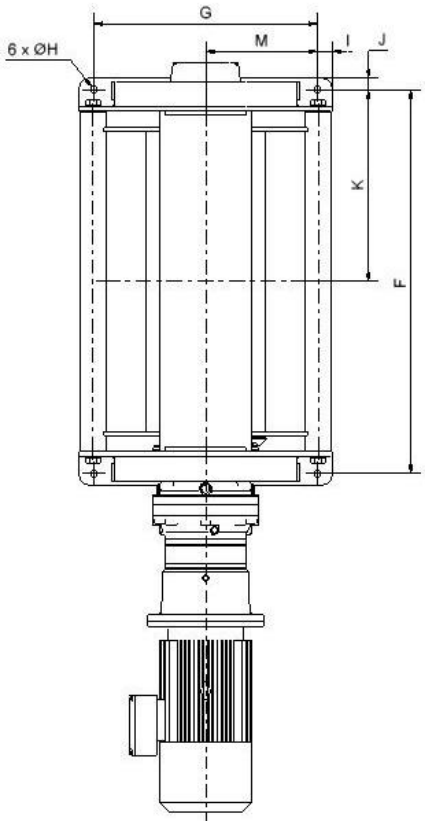
4.2 - Dimensions (800 to 4000 kg)

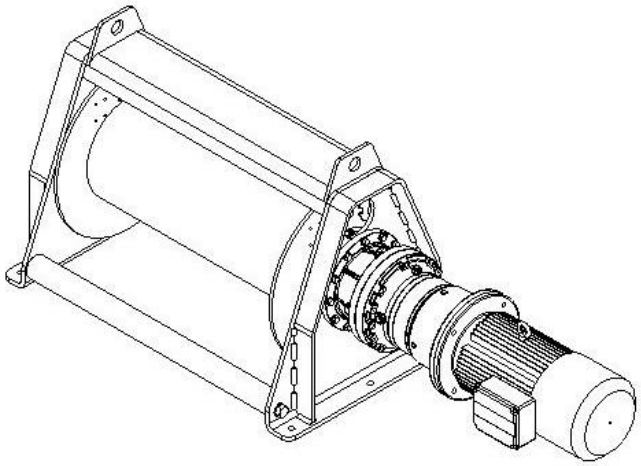
4.2.1. Coaxial model

	A	B	C	ØD	E	F	G	H	I	J	K	L	M
800PL26	1556	500	560	229	600	785	410	18	45	20	395	245	205
800PL45	1665												
1000PL19	1602												
1000PL37	1665												
1500PL28	1725												
2000PL21	2127	760	830	324	900	1150	670	22		35	575	375	335
2000PL42	2248												
3000PL36	2344												
4000PL15	2250			356									
4000PL23	2407												





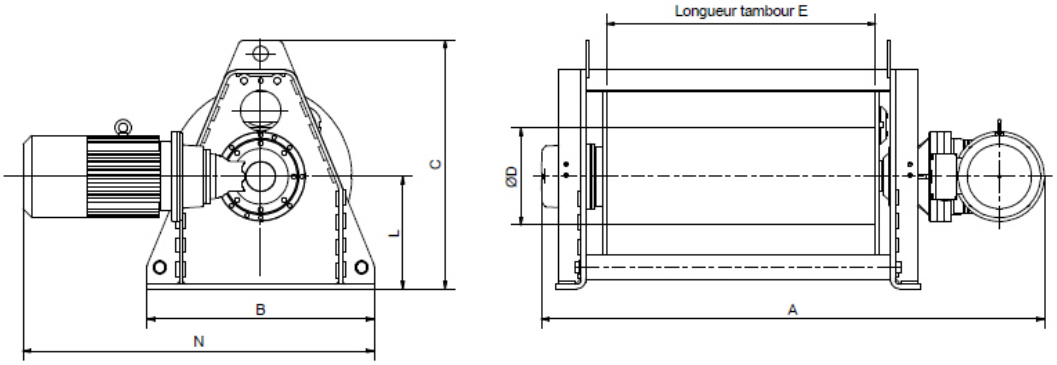


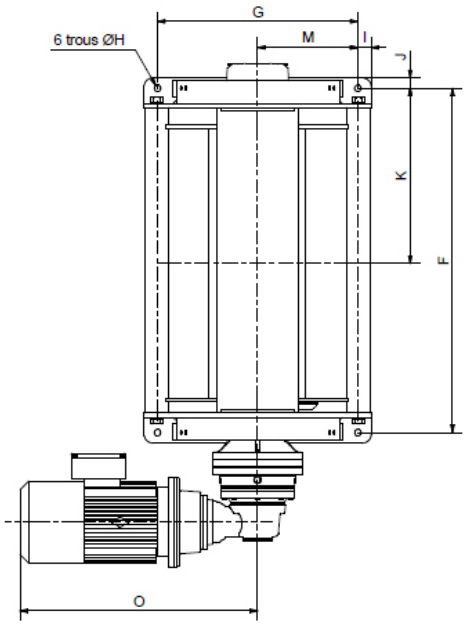


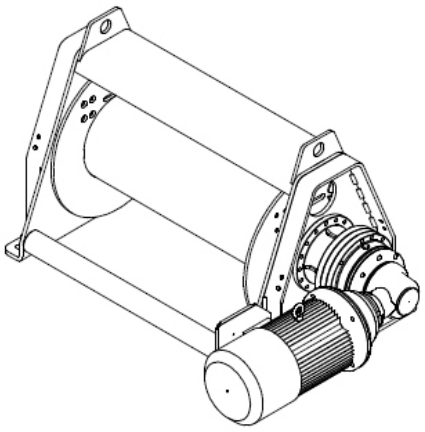
4.2.2. Orthogonal model (vertical or horizontal)

	A	B	C		ØD	E	F	G	H	I	J	K	L	M	N	O
			vertical	horizontal												
800PL26	1556	500	888	560	229	600	785	410	18	45	20	395	245	205	893	643
800PL45	1665		1103												1108	858
1000PL19	1602		888												893	643
1000PL37	1665		1103												1108	858
1500PL28	1725		1101												1106	856
2000PL21	2127	760	1171	830	324	900	1150	670	22		35	575	375	335	1176	796
2000PL42	2248		1347												1352	972
3000PL36	2344		1419												1424	1044
4000PL15	2250		1324		356										1329	949
4000PL23	2407		1481												1486	1106

Horizontal type



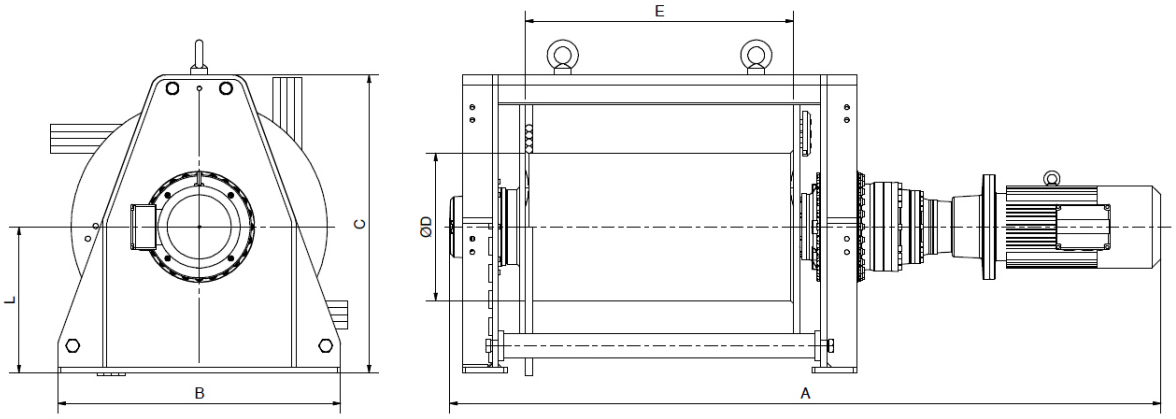


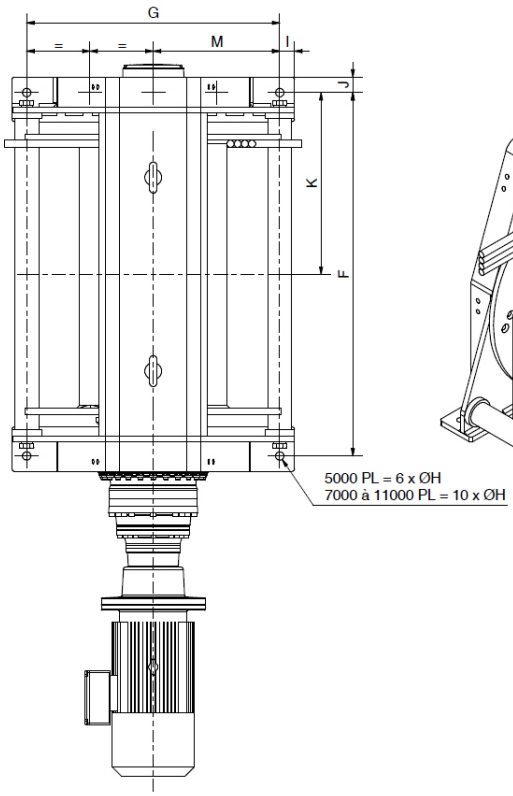


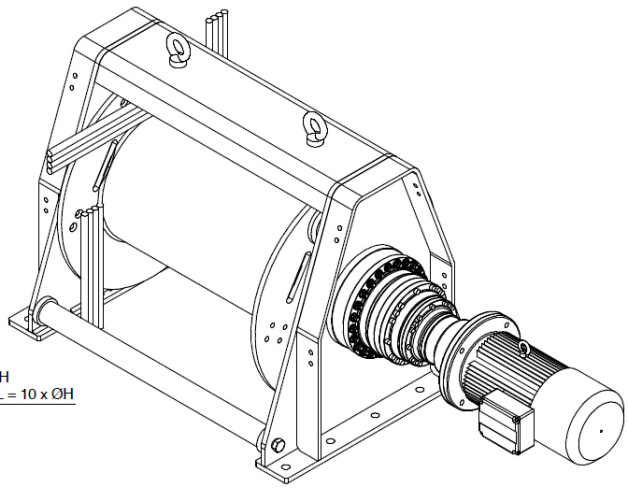
4.3 - Dimensions (5000 to 11000 kg)

4.3.1. Coaxial model

	A	B	C	ØD	E	F	G	H	I	J	K	L	M
5000PL19	2434	900	950	394	900	1150	810	22	45	35	575	420	405
5000PL24	2434												
7000PL8	2389	950	1110	495	900	1220	850	26	50	52	610	490	425
7000PL17	2478												
8000PL6	2358												
8000PL12	2546												
9000PL7	2419	1150	1315	570	900	1255	1050	26	50	64	622	555	525
9000PL14	2576												
10000PL12	2509												
11000PL5	2576												
11000PL7	2504												
11000PL11	2419												



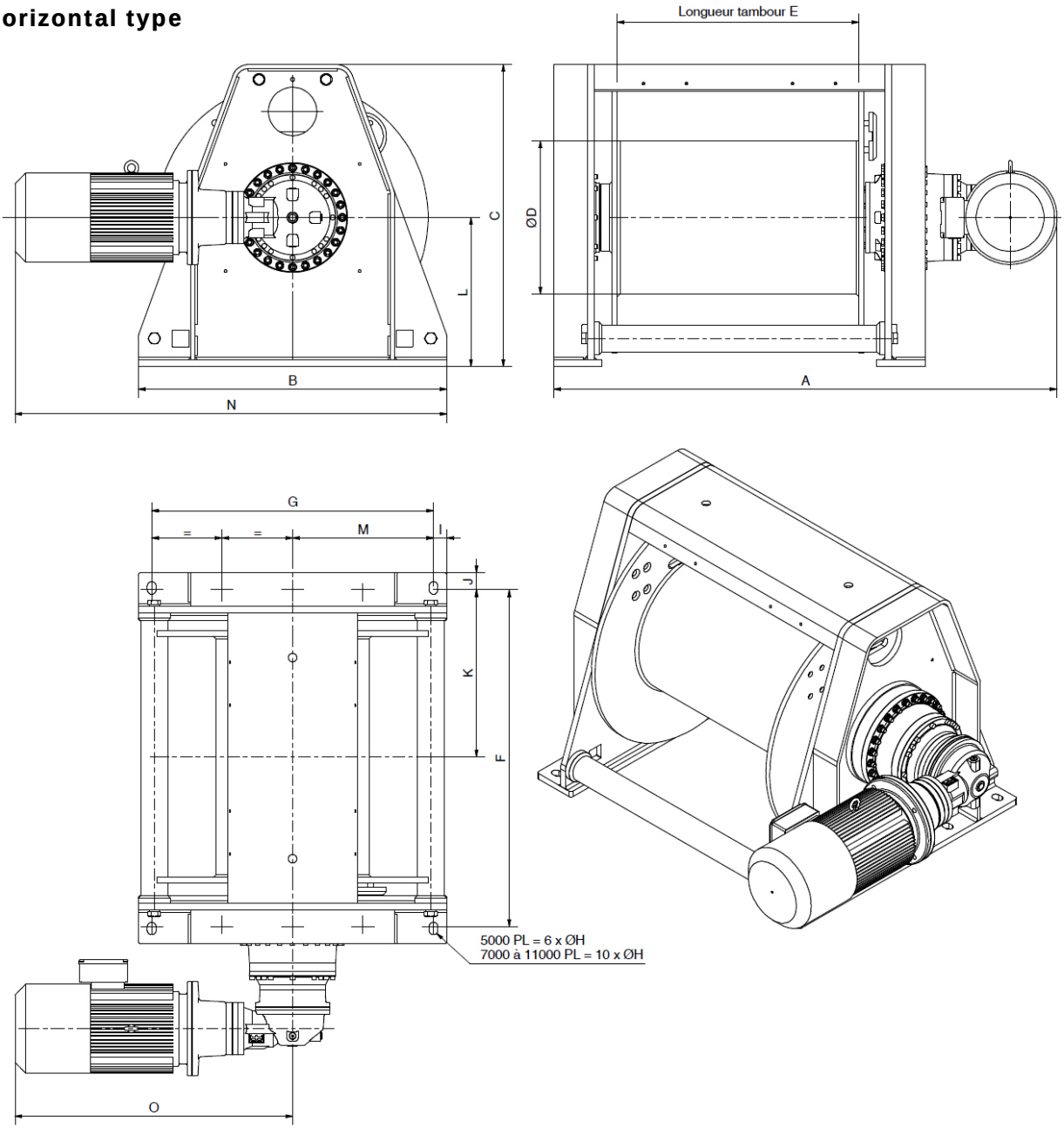




4.3.2. Orthogonal model

	A	B	C		Ø D	E	F	G	H	I	J	K	L	M	N	O
			Horiz.	Vert.												
5000PL19	1775	900	950	1526	394	900	1150	810	22	45	35	575	420	405	1556	1106
5000PL24	1775															
7000PL8	1842	950	1110	1377	495	900	1220	850	26	50	52	610	490	425	1362	887
7000PL17	1842			1534											1519	1044
8000PL6	1817			1346											1331	856
8000PL12	1842			1534											1519	1044
9000PL7	1876	1150	1315	1504	570	900	1255	1050	26	50	64	622	555	525	1524	949
9000PL14	1876			1661											1681	1106
10000PL12	1876			1661											1681	1106
11000PL5	1876			1504											1524	949
11000PL7	1876			1589											1609	1034
11000PL11	1876			1661											1681	1106

Horizontal type



4.4 - Models available

Warning: . the rope diameter shown above corresponds to the recommended rope according to FEM 3m / ISO M6 classification. It also corresponds to the capacity on the last layer.
. it is compulsory to ensure that the resistance coefficient of the rope complies with the lifted load (FEM 3m / ISO M6).

4.4.1. Orthogonal model

Reference	Motor (kW)	Capacity on the last layer (kg)	Speed on the last layer (m/min)	Max. rope capacity (m)	Rope diameter (mm)	Minimum breaking load of the rope (kg)
800 PL 26	4	800	25	220	9	4480
800 PL 45	7.5	800	46	220	9	4480
1000 PL 19	4	1 000	20	220	9	5600
1000 PL 37	7.5	1 000	30	220	9	5600
1500 PL 28	9.2	1 500	27	178	11.5	8400
2000 PL 21	7.5	2 000	21	324	13	11200
2000 PL 42	15	2 000	40	324	13	11200
3000 PL 36	18.5	3 000	28	274	15.8	16800
4000 PL 15	11	4 000	15	265	18	22400
4000 PL 23	18.5	4 000	23	265	18	22400
5000 PL 19	18.5	5 000	19	264	20	28000
5000 PL 24	22	5 000	24	264	20	28000
7000 PL 8	11	7 000	8	274	24	39200
7000 PL 17	22	7 000	16	274	24	39200
8000 PL 6	9.2	8 000	6	256	26	44800
8000 PL 12	18.5	8 000	12	256	26	44800
9000 PL 7	11	9 000	6	254	30	50400
9000 PL 14	22	9 000	14	254	30	50400
10000 PL 12	22	10 000	12	254	30	56000
11000 PL 5	11	11 000	5	254	30	61600
11000 PL 7	15	11 000	7	254	30	61600
11000 PL 11	22	11 000	11	254	30	61600

4.4.2. Coaxial model

Reference	Motor (kW)	Capacity on the last layer (kg)	Speed on the last layer (m/min)	Max. rope capacity (m)	Rope diameter (mm)	Minimum breaking load of the rope (kg)
800 PL 26	4	800	26	220	9	4480
800 PL 45	7.5	800	45	220	9	4480
1000 PL 19	4	1 000	19	220	9	5600
1000 PL 37	7.5	1 000	37	220	9	5600
1500 PL 28	9.2	1 500	28	178	11.5	8400
2000 PL 21	7.5	2 000	21	324	13	11200
2000 PL 42	15	2 000	42	324	13	11200
3000 PL 36	18.5	3 000	36	274	15.8	16800
4000 PL 15	11	4 000	15	265	18	22400
4000 PL 23	18.5	4 000	23	265	18	22400
5000 PL 19	18.5	5 000	18	264	20	28000
5000 PL 24	22	5 000	22	264	20	28000
7000 PL 8	11	7 000	8	274	24	39200
7000 PL 17	22	7 000	16	274	24	39200
8000 PL 6	9.2	8 000	6	256	26	44800
8000 PL 12	18.5	8 000	12	256	26	44800
9000 PL 7	11	9 000	7	254	30	50400
9000 PL 14	22	9 000	14	254	30	50400
10000 PL 12	22	10 000	12	254	30	56000
11000 PL 5	11	11 000	5	254	30	61600
11000 PL 7	15	11 000	8	254	30	61600
11000 PL 11	22	11 000	11	254	30	61600

4.5 - Options

The PL Series winches can be supplied with the following options:

- Clock-type limit switch
  Easily adjustable, this system guarantees safety by setting top and bottom limits.
- IP 65 limit switch
- Electronic load limiter
  Device with display which stops the winch in the event of an overload without breaking the kinematic chain.
- Slotted drum
  Enables correct winding of the rope on the first layer.
- Rope presser roller
  Essential complement for the slotted drum if the rope is not permanently tight.
- Manual unblocking of the brake with automatic return
- Manual control
  Handwheel or crank associated with a brake unblocking system.
- Rope-slack switch
  Detects rope that is not under tension.
- 2nd rope attachment
  Option for creating a back-and-forth system or for lifting a load at two points.
- Timer
  Allows the user to add up the total time of winch operation and makes it easier to use the maintenance log.
- Manual control
  Handwheel or crank associated with a brake unblocking system.
- Angle transmission
- Site chassis
  Chassis adapted to protect the winch against impacts.
- Drum with central flange
  Provides the option of winding several layers with 2 ropes.
- Radio control class 3
  Long-range lifting and towing: 230 m. Emergency stop active in separate circuit.
- Radio control class B for towing only
  Range of 50 m. Active emergency stop.
- Phase order detector
  Allows the winch not to be connected with raising / lowering inversion.

4.6 - Classification FEM

There are eight groups of mechanisms:

FEM	1 Dm	1 Cm	1 Bm	1 Am	2m	3m	4m	5m
ISO	M 1	M 2	M 3	M 4	M 5	M 6	M 7	M 8

To determine the group of a given lifting device, winch or hoist, three essential parameters must be considered:

Maximum load to be lifted
Including the weight of the rope and any lifting accessories used (hook, etc.) unless these have a total weight equal to or less than 5% of the load to be lifted.

Strain condition
Specifies the proportions in which the lifting machine is used with maximum load or reduced load. Four characterized strain conditions are identified in this way:

Light	Lifting machines exceptionally subjected to the maximum strain and commonly to very light strains.	$k \leq 0.5$
Medium	Lifting machines often subjected to the maximum strain and commonly to light strains.	$0.5 < k \leq 0.63$
Heavy	Lifting machines frequently subjected to the maximum strain and commonly to medium strains.	$0.63 < k \leq 0.8$
Very heavy	Lifting machines regularly subjected to the strains near to the maximum strain.	$0.8 < k \leq 1$

FEM classification

Strain condition	Average operating time per day, in hours						
	30'	1 h	2 h	4 h	8 h	16 h	More than 16 h
Light	1 Dm	1 Cm	1 Bm	1 Am	2m	3m	4m
Medium	1 Cm	1 Bm	1 Am	2m	3m	4m	5m
Heavy	1 Bm	1 Am	2m	3m	4m	5m	
Very heavy	1 Am	2m	3m	4m	5m		

4.7. – Technical description

The PL Series winches are equipped with the following:

- Reduction gear with planetary gears, completely watertight with optional angle transmission.
- Motor 1 speed, three-phase 230/400 V 50 Hz with 4 kW and 400/960 V 50 Hz with 7.5 to 22 kW, protection rating IP 55. Operating limits from -10ºC to +50ºC (without declassification).
- Electrification. To grant greater freedom for users and in order to adapt to any usage conditions, the control box is supplied separately:

24 V very-low voltage control including:
- Contactors
- Power line isolator
- Thermal circuit breaker
- Detachable button box (2 buttons + emergency stop), 3 m of cable.

Very-low voltage control with variable speed drive (compulsory above 5 tonnes), comprising:
- Power line isolator
- Variable-frequency drive
- Braking resistance
- Button box (2 buttons + emergency stop + potentiometer), 3 m of cable.

Optionally available:

- Additional cable length for the button box (in meters)
- Additional electric cable length (in meters)
- Other input and control voltages and frequencies on request

5 – Handling - Storage

When handling the winch, use slings that are compatible with the slinging points provided for this purpose on the winch.
Warning: the angle formed between the hook and the two slinging points must be at most 45º.
Lift and set down the winch with care, without letting it fall, bearing in mind the offset centre of gravity.
For further information on the weight of the winch, consult the Technical Specifications chapter.

These winches must be protected from the elements, in a dry and clean location, at temperatures comprised between -10ºC and +50ºC.

6 – Installation and start-up

6.1 - Fixings

The PL Series winches must necessarily be installed on a flat, solid and safe surface that can withstand the loads to which it will be subjected. An unsuitable installation location can result in serious accidents.
To assess the suitability of an installation location and its load resistance, it is advisable to take into account any possible overloads, the weight of the actual winch as well as the weight of the optional components and/or accessories installed on it, including any dynamic forces. The winch operator is responsible for selecting the installation location. In the event of any doubts regarding the suitability of an installation location, consult a civil engineer or a stress and strain specialist.

Correctly tighten the fixing bolts (see tables 4.2 and 4.3)

Screw / nut	Screw / nut tightening torque, quality 8.8 Nm
M16	210
M20	410
M24	710

6.2 – Mains power supply

Very important: the winch will only operate with full power when the motor is correctly supplied with a suitable cable cross-section.

Provide voltage protection before the electric box.

An isolator must be installed at least 10 meters from the usage location.

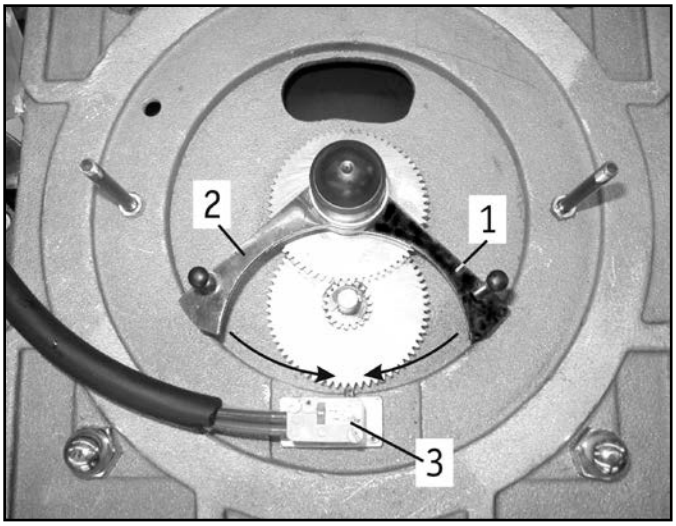
6.3 – Adjusting the limit switch (optional)

The PL Series winches are available with two types of limit switches:

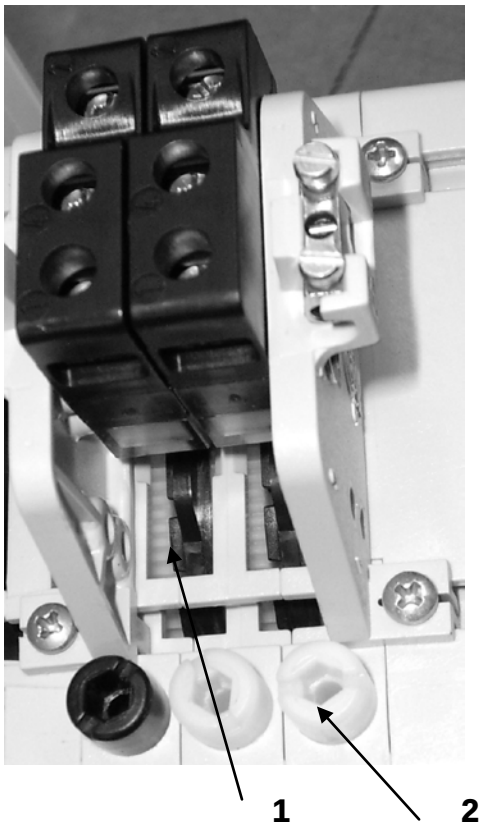
Clock type: Remove the protective cover of the device (inside this cover you will find the diagram below). The levers, which are now accessible, can be turned manually.

- Adjustment of the winding stop point:
- Wind the rope to the maximum desired winding point. Stop the winch.
- Still in this position, manually move the red lever (2) to the lowest position of the rotation circle, where it activates the switch (3)

- Adjustment of the unwinding stop point:
- Unwind the rope to the maximum desired unwinding point. Stop the winch.
- Still in this position, manually move the black lever (1) to the lowest position of the rotation circle, where it activates the switch (3)



Type with IP65 cam: Remove the protective cover of the device, the cams (1) which are now accessible can be positioned with the help of a worm (2) using a screwdriver.



Each adjustment screw (2) corresponds to a TOP or BOTTOM limit position.

Adjustment of the top winding stop point:

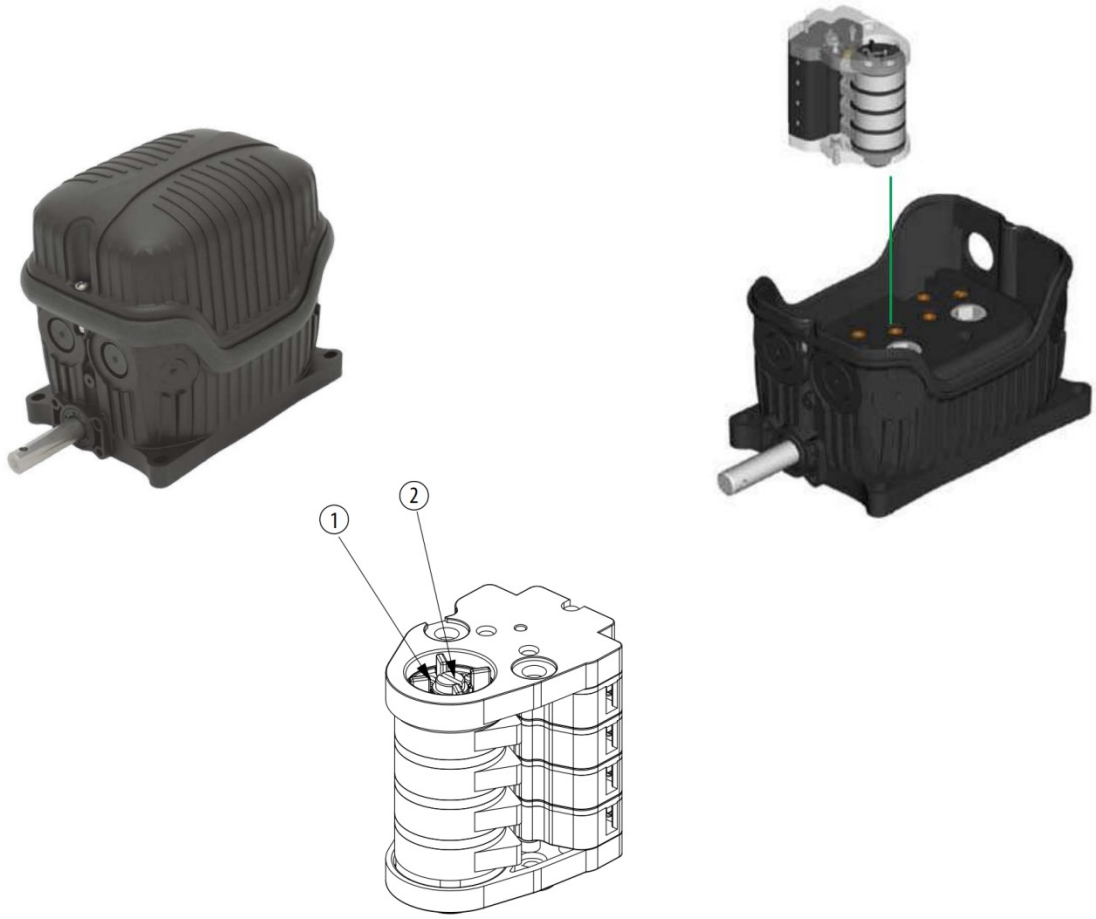
Wind the rope to the maximum desired winding point. Stop the winch.
Still in this position, with the help of a suitable screwdriver, turn the adjustment screw (2) until a click is heard in the contactor.

Adjustment of the bottom unwinding stop point:

Unwind the rope until the bottom point, always leaving 3 safety turns on the drum. Stop the winch.
Still in this position, with the help of a suitable screwdriver, turn the adjustment screw (2) until a click is heard in the contactor.

This range of limit switches also includes a model with 4 positions.
If you need more positions, do not hesitate to consult us.

Rotating cam limit switch IP66-67



Before doing anything, turn off the main power supply to the winch.

To set the cams properly, loosen the central screw ② of the group of cams. Then set the trigger point for each cam using their adjustment screws①. The screws are numbered to indicate the cams in increasing order from the bottom of the group to the top. Retighten the central screw.

6.4 – Working rope

Warning: the direction of rotation of the drum depends on the connection of the machine.
Reminder: check the maximum capacity of the winch (see Models available § 4.4).

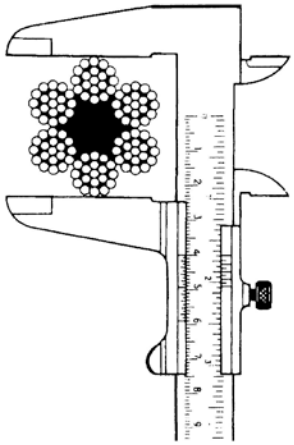
Very important:

Safety regulations require 2 to 3 coils of rope to be left on the drum at all times.
To comply with the legislation, the rope should not exceed the recommended diameter.
Make sure the rope and hook used guarantee a safety level corresponding to the table in §4.4 if they were not supplied by the manufacturer with the machine.

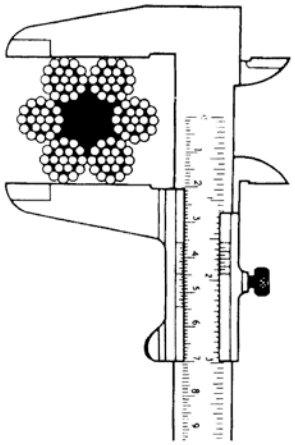
The useful life of the steel ropes used on the winch depends on many factors, including the conditions of the work cycles (lifting height, lifting speed, number and type of deviations, etc.) as well as the operating mode (number of winding layers, working cycle distribution along the length of the steel rope, etc.). The potential useful life of the steel ropes is therefore subject to considerable variations according to these points.

It is important to remember that any replacement ropes must use materials with the same characteristics as the original rope.
This replacement must be included in the maintenance log.

Measuring the rope diameter:



Correct measurement
with slide caliper



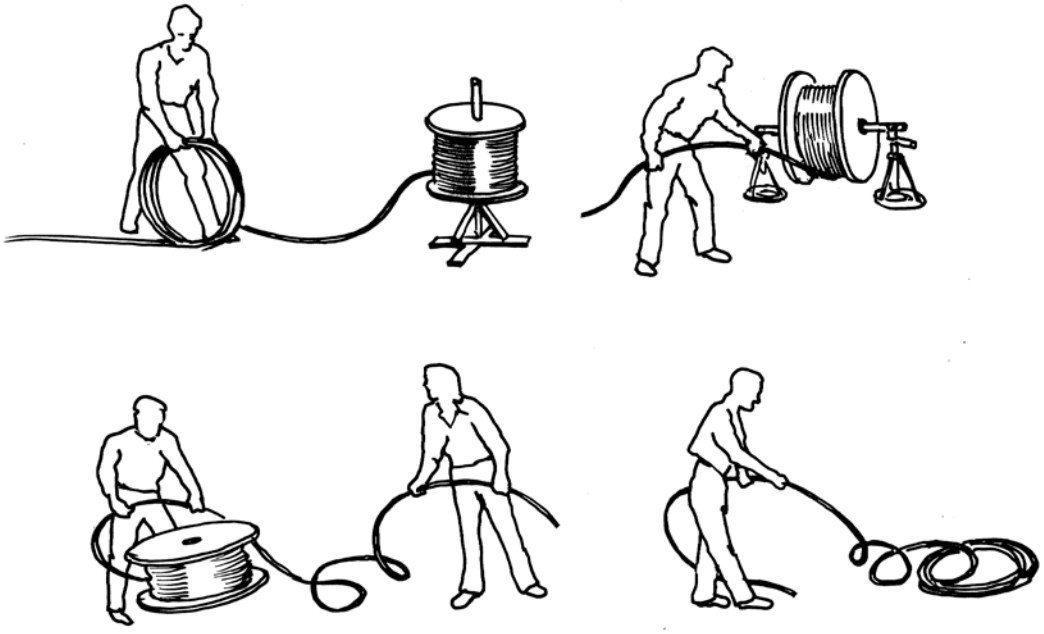
Incorrect measurement

Handling of steel ropes:

- Always use suitable protective gloves when handling steel ropes
- Never use any ropes that have defects such as:
  - ✓ An unacceptable number of broken strands
  - ✓ Birdcaging
  - ✓ Birdcaging
  - ✓ Flattening
  - ✓ Shrinkage
  - ✓ Strand extrusion
  - ✓ Broken cable cores
  - ✓ Slack strands
  - ✓ Bends or kinks
- Always check the rope for wear before using it.
- Never use steel ropes as loops
- Never expose the steel ropes to jagged lips or sharp edges

Unwinding the rope on its reel:

CORRECT**:**



INCORRECT

Fixing the rope :

The ropes are supplied as standard with a rope attachment suitable for the recommended rope and installed according to a standard rope outlet.
Align the rope clamp with the hole made in the winch for this purpose.
Pass the rope through the slot of the flange and place it between the flange and the rope clamp, taking care to position it correctly in the rope clamp slot. Make the rope exceed the limit of the outer diameter of the flange.
Once the 4 screws are correctly tightened, the rope is properly installed.
The rope should not form loops in any case.

Winding the rope on the drum :

Tension the rope and wind it around the drum in close joining coils.
Check the winding direction of the rope according to the motor connection.

Start to wind the rope forming a spiral to the right. In order to facilitate this operation, some drums are provided with a heel attached to one of the flanges, which "fills" the space between the first turn and the flange.

The first layer must be wound in a compact manner and under tension. Take a mallet or a block of wood and knock the turns against one another; not too hard to prevent the strands from overlapping one another, but tightly enough to prevent the rope from moving on the drum. If the first layer is wound too loose, the next layer will form a space in the first layer that will result in an open area. If the first layer is too tight, the subsequent layers will not have enough space between turns.

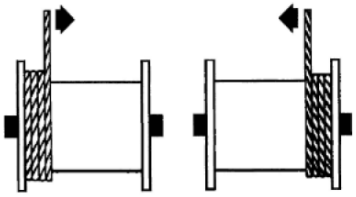
In any case, the first layer and all the other layers must be wound onto the drum with enough pre-tension (5-10 % of the MWL of the rope). If the rope is wound without any tension, it will suffer from crushing and premature flattening caused by the loaded upper layers.

Even if the first layer is wound correctly during installation, it will expand a little while in service. When the first layer expands (loss of pre-tension) the initial procedure MUST be performed at regular intervals.

Otherwise, the "hard" turns will severely crush the base layers.

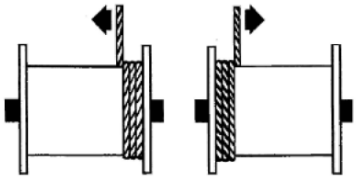
Whatever you do, DO NOT pass the rope through a clamping mechanism. For example, two blocks of wood screwed together. **THIS WILL CAUSE IRREPARABLE DAMAGE TO THE ROPE!**

Rope crossed to the right
Winding from left
to right



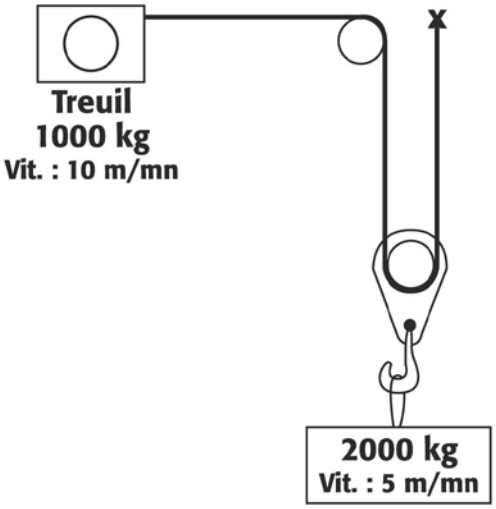
Rope crossed to the left
Winding from right
to left

Rope crossed to the right
Winding from right
to left

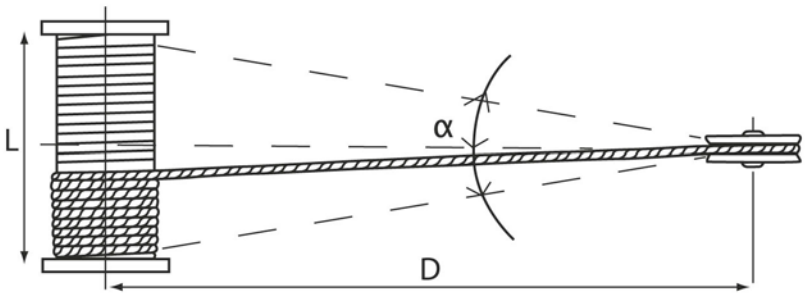


Rope crossed to the left
Winding from left
to right

Reeving diagrams :



Bending angle :



Smooth drum: α = max. 1.5°
Slotted drum: α = max. 2°
D = 20 times L

6.5 – Rope presser roller

This option can be used to hold the rope in the slot of the drum.
It has different positions according to the required rope outlet. It is therefore necessary to define the rope outlet for the control.

6.6 – Rope slack switch

This option can detect a loss of tension in the rope due to, for example, the load being set on the ground.
It has different positions according to the required rope outlet. It is therefore necessary to define the rope outlet for the control.

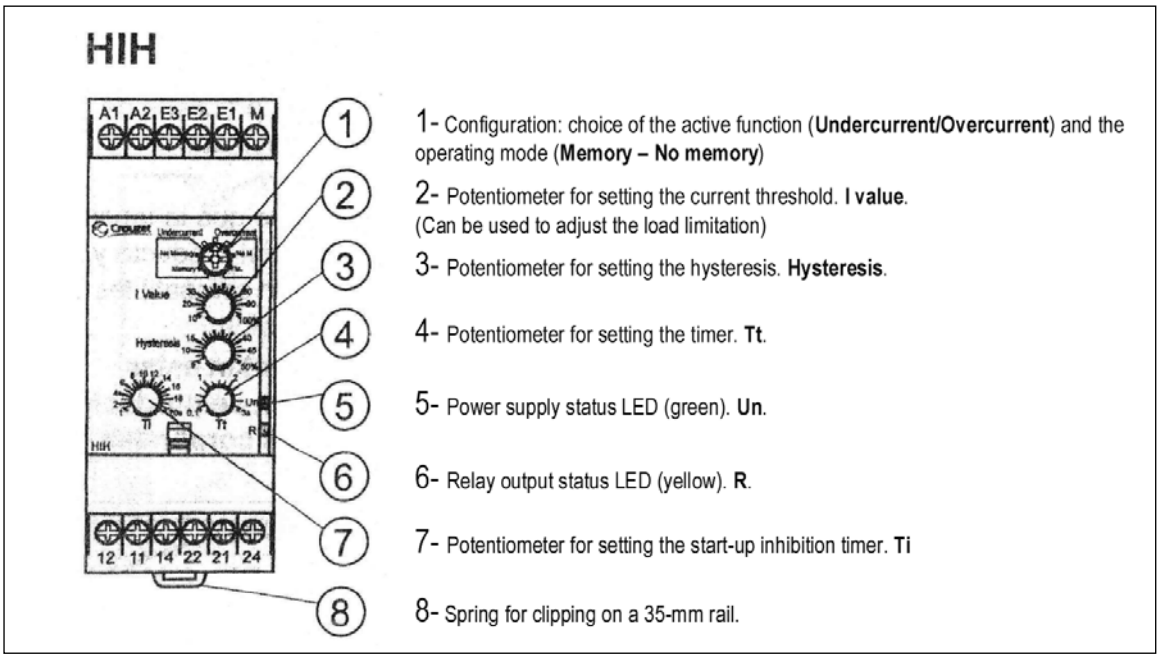
6.7- Load limiter (optional)

a) With CROUZET load limiter

The winch is adjusted in the factory with the electrical voltage indicated on the test report enclosed with this instruction manual. If this voltage is different in the place of use, the setting must be readjusted.

In the event of overloading of the winch, a load limitation by motor current measurement cuts the lift control.
Once you have identified and eliminated the cause of the load limiter activation, use the key-activated turning button on the right of the unit to reset the load limiter and use the winch again.

Adjust the sensitivity of the load limiter by adjusting the "I value" on the limiter using a small slotted screwdriver:



The load limiter is adjusted in the factory to the value of about 110% of its MCU.

IMPORTANT!
Setting the threshold too high may lead to major risks both for the equipment and the operators.

DANGER: RISK OF ELECTROCUTION, EXPLOSION OR ELECTRIC ARC.

Switch the power off before installing, wiring or performing a maintenance operation.
Check that the power supply voltage of the product, with its tolerances, is compatible with that of the network.

Non compliance with this instruction will cause death or serious injury.

WARNING: UNEXPECTED OPERATION OF THE EQUIPMENT

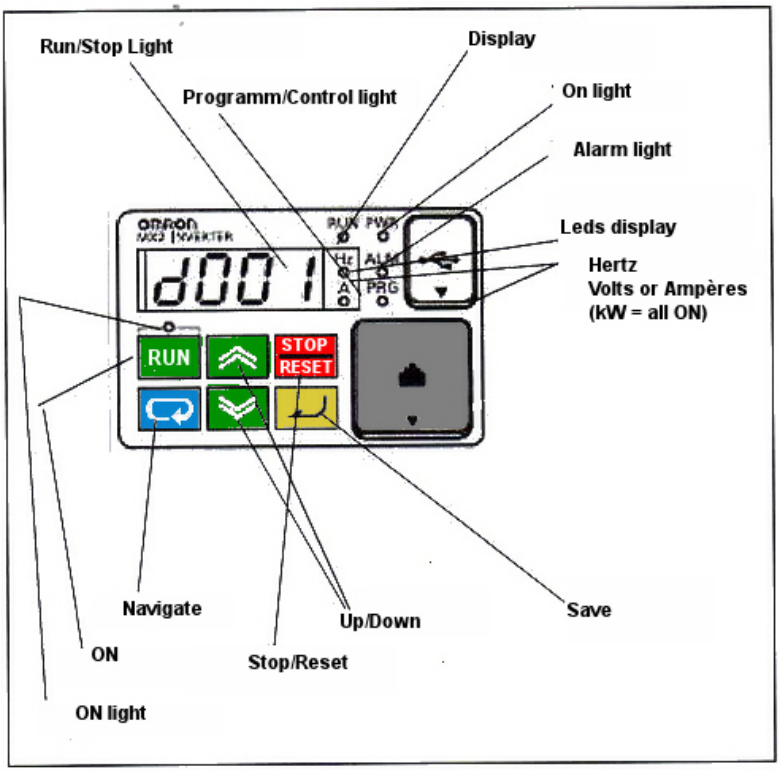
Please do not disassemble, repair or modify the product.
Respect the installation and operating conditions of the product described in this document.

Non compliance with this directive may cause death, serious bodily injury or material damage.

Electrical equipment must be installed, operated and serviced by qualified personnel.

b) With speed inverter

Use of the integrated keyboard



Setting of the limit (current) by the inverter:

1/ Winch turned on display 0000, key **save**  .

2/ Key **navigate**  multiple pulses to display **C001**.

3/ Key **Up**  until **C041**.

4/ Key **Save**  .

5/ A value in Amps is displayed: increase a maximum with the key **up**  , Then the key **save**  .

6/ Key **navigate** to display **D001**.

7/ Key **up** until **D002** (reading of the current in Amps).

8/ Key **save**. **0000** is displayed. (Load the winch to the desired cutoff value).

9/ Operate the rise (online reading of the Amps). Example 5A at XX kg cutoff desired.

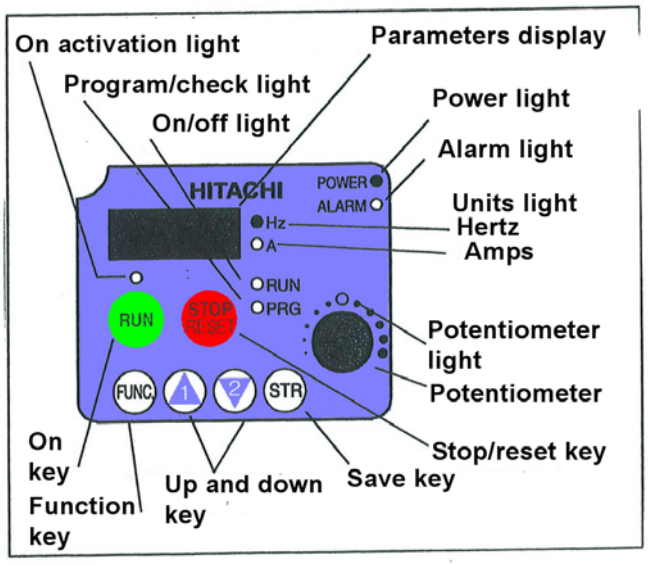
10/ back in **C041** with the key **save** then **navigate**, **save** and then **up**. Setting at 5A (example) with the key **up** or **down** and **save**.

11/ Key **navigate** **D001** then **save** and use.

The default reset E12 is made by the stop reset key STOP RESET or the key switch on the electrical cabinet.

c) With SJ200 variator

Use of the integrated keyboard



Setting of the curent limitation via the speed inverter SJ200 :

1/ Winch turned on display **0000**, key FUNC. display **D001**.

2/ Arrow **2** = **H - - -** .

3/ Arrow **2** = **C - - -** .

4/ Key FUNC. **= C001** the arrow **1** until **C041**.

5/ Key FUNC. display the value in Amps, key 1 until maximum value. Then key STR to validate.

6/ Key STR back in **C041**, 3 successive press on key FUNC. for **C - - - .**

7/  for **D002** then key  display **0000** live reading of the Amps.

8/ Load the winch to the required value, then test and read the Amps (ex 5.00A).

9/ Back in **C041** to set the defined value in **D002** : key  +3 times on key  , key  + tkey  until **C041** setting of the value (ex 5.00A or inferior for cut off below the reading) in Amps then key  to validate.

10/ Key  for **C - - -** then arrow **1** until **D001** then key  and key  to read the frequency.

7 – Servicing and maintenance

Winches
Observe the following instructions, in particular if your winch is used in a large number of different locations or in a particularly dirty or humid environment:

- Remove as much dirt as possible from the winch.
- Always store the winch in a dry and clean location.

7.1 – Before starting up, check the following

- The oil level of the reduction gear
- The fixing of the rope on the drum.
- The external appearance of the winch.

7.2 – First start-up

At the start of the installation, you are advised to observe a running-in period at ¾ of the load for approximately thirty hours. The rated force is obtained after this running-in period.

7.3 – Periodic service

Every 100 hours, check the oil level of the reduction gear.

Every 500 hours, drain the reduction gear.

The reduction gear must be lubricated using Esso Glycolub Range 220 mineral oil (or equivalent).

Model	Amount (liters)
800 to 1500 PL	1.8 to 2.1
2000 and 3000 PL	2.6 to 2.9
4000 PL	3.8
5000 PL	5.5
7000 and 8000 PL	5.2 to 6
9000 to 11000 PL	9.8 to 11 l

Very important:

If you change the type of oil, please contact our after-sales department.

Bearing lubrication: every 100 hours.

Ropes

The ropes must be cleaned and lubricated regularly using a special lubricant that penetrates to the cable core.
Only use cleaning products that are suitable and harmless for all the components of the rope, including the core.
If greasing cannot be carried out due to operational reasons, its useful life will be noticeably shorter and it will therefore necessary to increase monitoring of the rope.
The ropes must be checked visually every day.

Hooks

Check the hook and its safety catch.
If the rope and the hook are not supplied by the manufacturer, check that they guarantee a safety level corresponding to the table in §4.4.
Check the snatch block fastening points on a regular basis.

8. Decommissioning

Once the equipment has reached an age at which it may pose hazards, the user is obliged to dispose of the equipment, i.e. taking it out of operation and dismantling it if required.

9 – Spare parts

If during the maintenance operations you detect that certain parts of your winch need to be replaced, only use original HUCHEZ parts.

When ordering spare parts, please provide the following information with your order:

- Type and capacity of the winch (on the data plate).
- Serial number and year of manufacture (on the data plate)
- Number or name of the required parts (exploded views).

10 - Troubleshooting

Fault	Possible cause	Solution
Motor does not start.	Power supply interrupted.	Check and correct the problem. Check the emergency stop.
	The brake does not unblock	See "brake fault"
	The contactor does not respond, Fault in the control.	Check the contactor control and Get rid of the error.
	Limit switch triggered.	Check the limit switch.
Motor does not start or has difficulty starting.	The voltage or the frequency are very different from the set values when starting the motor.	Improve the mains conditions. Check the cable cross-sections.
The motor purrs and consumes a lot of current.	The brake does not unblock	See "brake fault"
	Faulty winding.	Take the motor to an authorized service center for repairs.
	A power supply phase is missing.	Check the power supply.
Circuit breaker trips instantly.	Short-circuit in the power cables.	Get rid of the short-circuit.
	Short-circuit in the motor.	Have the fault corrected at an authorized service center,
	Power cables not connected correctly.	Correct the connection.
	Motor ground fault.	Have the fault corrected at an authorized service center,
Speed considerably reduced under load.	Voltage drop.	Increase the cross-section of the power cable.
Motor overheating (temperature measurement)	Insufficient ventilation.	Free up the ventilation shafts.
	Excessively high ambient temperature.	Observe the authorized temperature range.
	Poor contact of the power cable (temporary operation with 2 phases)	Get rid of the poor contact.
	Circuit breaker tripped.	Poor contact on the relays.
	Service factor exceeded (S1 to S10, DIN 57530), e.g. due to an excessively high start-up rate.	Adapt the service factor to the recommended conditions and, if necessary, call a specialist to determine the motor.
Excessively noisy drive	Vibration of the rotating elements.	Check the balance and get rid of the cause of the vibrations.
	Foreign bodies in the ventilation shafts.	Clean the ventilation shafts.
The brake does not unblock	Incorrect voltage in the brake rectifier.	Apply the voltage specified on the data plate.
	Faulty brake control.	Replace the brake control, check the brake coil (internal resistance and insulation) and the relays.
	Max. air gap exceeded due to wear of the linings.	Measure and, if necessary, correct the air gap.
	Voltage drop > 10% of input power.	Guarantee correct power supply, check the cable cross-section.
	Short to frame or between the turns.	Have the complete brake including rectifier replaced at an authorized service center, check the relays.
	Faulty rectifier.	Replace the brake coil and rectifier.
The motor does not brake.	Incorrect air gap.	Measure and, if necessary, correct the air gap.
	Brake linings completely worn.	Replace the entire backplate.

11 - Appendixes

11-1 – Declaration of EC conformity

HUCHEZ

CE

DECLARATION OF CONFORMITY

F03.31.1 - UK Electric winch – MOTORBOX - Tirlev
PRIMO – TRBoxter - TRB - TRB VV - TRC
INDUSTRIA – TT -TE - TEL – PL - Engineering

We hereby declare that the design and manufacture of the machinery referred to below comply with the relevant requirements of Directive 2006/42/CE on Machinery.
Moreover, we hereby declare that the machinery complies with the following Directives:

- Directive CEM 2000/108/CE
- Directive BT 2006/95/CE

The machinery's technical file has been put together by the signatory of this declaration.
This declaration shall become null and void in the event it is changed or if any item is added without our prior consent.
Moreover, this declaration shall become null and void if the machinery is not used in accordance with its instructions for use and if it is not inspected regularly.

Type of device: **Electric winch**

Model:

Force:

Serial n°:

Funcion: ☐ Hoisting or hauling equipment

☐ Hauling only

Harmonised standard(s) used, notably: EN 14492-1
Quality assurance: ISO 9001 (certificate registration n°: FQA 9911492)

Equipment delivered: ☐ with cable ☐ with hook

☐ without cable ☐ without hook
Important: these items must comply strictly with the specifications indicated on the manufacturer's plate affixed to the winch and the instructions for use, and they must be supplied by professionals specialized in their use.

☐ with limit switch ☐ with load-limiting device
1000+ kg

☐ without limit switch ☐ without load-limiting device
For hauling only *For hauling only*

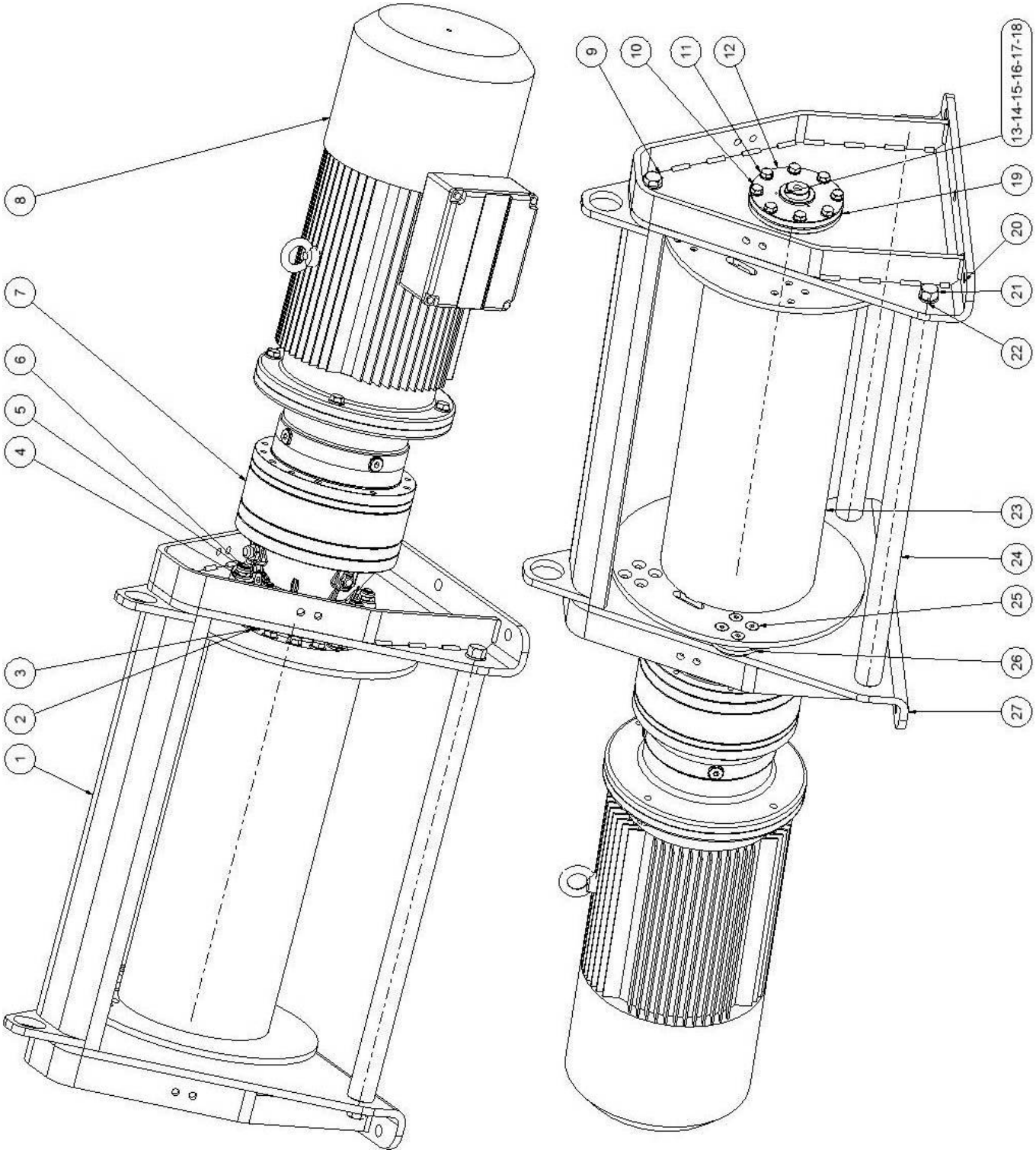
and with instructions for use.

Issued in Ferrières on:

Antoine Huchez,
President

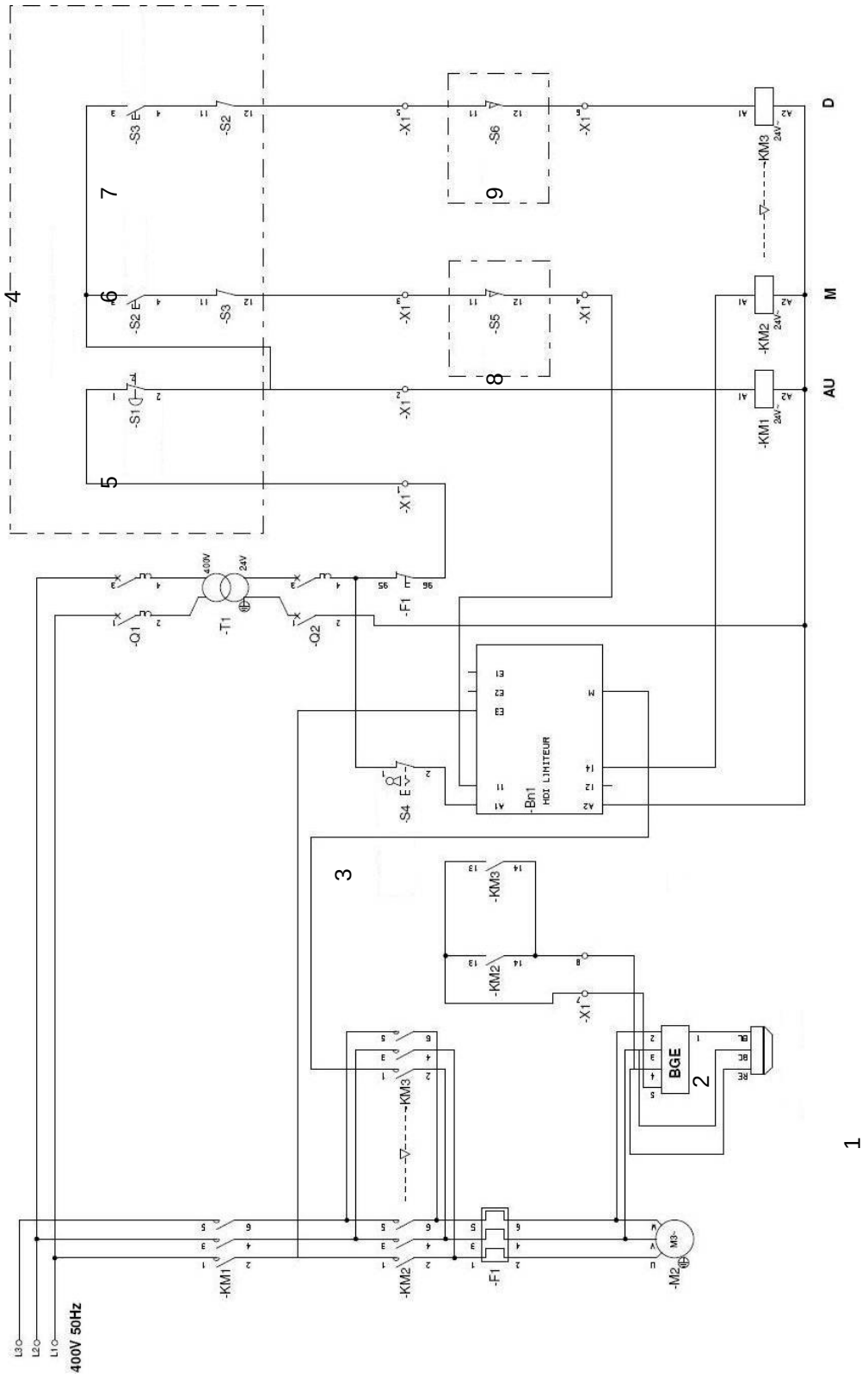
www.huchez.fr
HUCHEZ S.A.S.
Place de l'Eglise
60420 Ferrières (France)
Tel.: +33 (0)3 44 51 11 33
Fax: +33 (0)3 44 51 13 13
contact@huchez.fr
S.A.S. with a capital of €500,000
RC Beauvais 526 020 482
APE 2822 Z
VAT FR 80 526 020 482
membre du cisma

11.2 - Winch



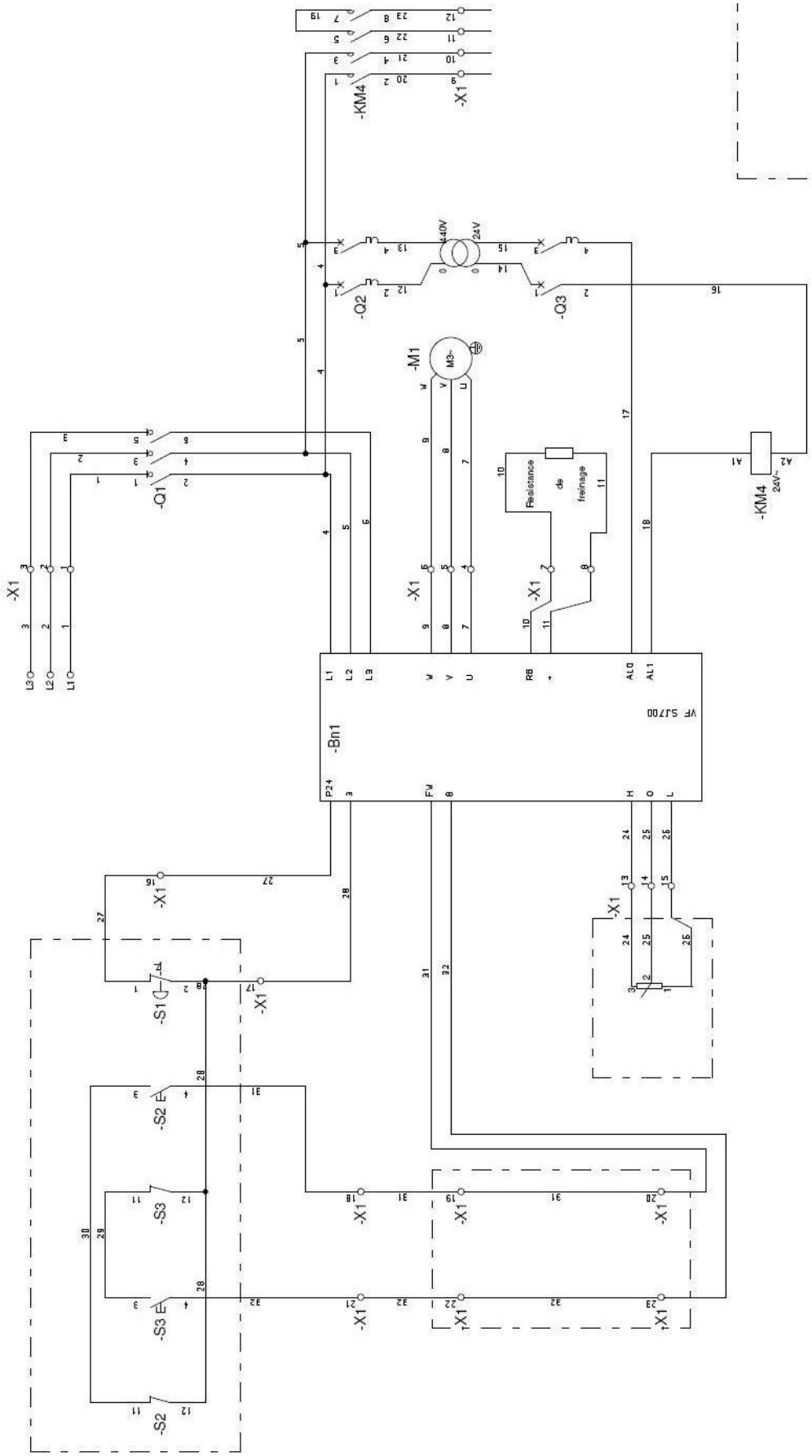
		Winch reference											
		800 PL	1000 PL	1500 PL	2000 PL	3000 PL	4000 PL	5000 PL	7000 PL	8000 PL	9000 PL	10000 PL	11000 PL
Item	Name	Part no.											
1	Top tie rod	23313	23313	23313	23331	23331	23331	23356	23372	23372	23391	23391	23391
2	Washer	13212	13212	13212	13213	13213	13307	13307	13216	13216	13217	13217	13217
3	Screw	13083	13083	13083	13094	13094	13098	13412	13543	13543	13632	13632	13632
4	Washer	13213	13213	13213	13212	13212	13213	13214	13214	13214	13214	13214	13214
5	Nut	13022	13022	13022	13433	13433	13022	13485	13485	13485	13485	13485	13485
6	Screw	13409	13409	13409	13396	13396	13409	13099	13637	13637	13638	13638	13638
7	Reduction gear (orthogonal model)	23846	23847	23850	23851	23853	23854	23856	23857	23860	23861	23863	23866
													23865
		23848	23849		23852		23855	23413	23858	23859	23862		23864
	Reduction gear (coaxial model)	23406	23407	23405	23410	23409	23411	23433	23416	23417	23422	23418	23423
													23421
		23431	23432		23408		23412	23413	23414	23415	23419		23420
8	Motor	23398		23400	23399	23404	23402	23404	23402	23400	23402	23403	23402
													23401
		23399			23401		23404	23403	23403	23404	23403		23403
9	Screw	13581	13581	13581	13477	13477	13477	13632	13632	13632	13639	13639	13639
10	Screw	13334	13334	13334	13098	13098	13098	13098	13382	13382	13671	13671	13671
11	Washer	13306	13306	13306	13214	13214	13214	13214	13214	13214	13214	13214	13214
12	FDC clamp	23317	23317	23317	23335	23335	23335	23335	23377	23377	23377	23377	23377
13	Seal	2955	2955	2955	2958	2958	2958	2958	2958	2958	2958	2958	2958
14	Circlips	13048	13048	13048	2957	2957	2957	2957	2957	2957	2957	2957	2957
15	Bearing	2953	2953	2953	2959	2959	2959	2959	2959	2959	2959	2959	2959
16	Seal	2954	2954	2954	2954	2954	2954	2954	2954	2954	2954	2954	2954
17	Plate	23316	23316	23316	23334	23334	23334	23334	23376	23376	23376	23376	23376
18	Greaser				2960	2960	2960	2960	2960	2960	2960	2960	2960
19	Box	23315	23315	23315	23333	23333	23333	23333	23375	23375	23375	23375	23375
20	External support	23303	23303	23303	23320	23320	23321	23349	23363	23363	23384	23384	23384
21	Tie-rod screw	23120	23120	23120	22115	22115	22115	22115	22117	22117	22117	22117	22117
22	Washer	13214	13214	13214	13214	13214	13214	13217	13310	13310	13310	13310	13310
23	Drum sub-assembly	23305	23305	23305	23323	23323	23338	23351	23365	23365	23386	23386	23386
24	Tie rod	23310	23310	23310	23328	23328	23328	23328	23378	23378	23395	23395	23395
25	Stud screw	13580	13580	13580	13638	13638	13638	13509	13671	13671	13671	13671	13671
26	Rope clamp	23430	23430	23430	22676	22676	22676	23442	23442	23442	23434	23434	23434
27	Reduction gear support	23300	23300	23300	23318	23318	23336	23346	23359	23359	23380	23380	23380

11.3 – Standard wiring diagram

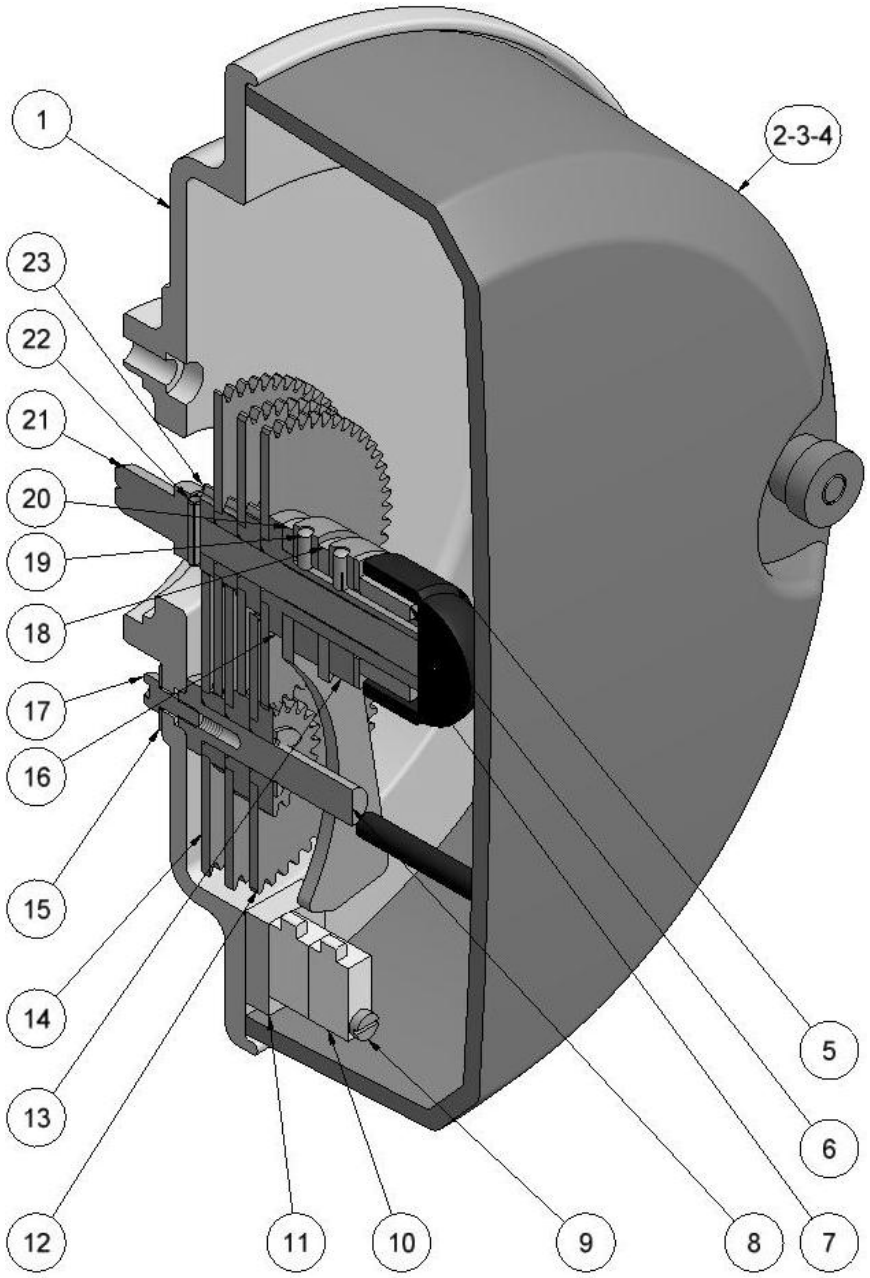


1. Motor brake
2. Brake rectifier
3. Motor reset
4. Control box
5. Emergency stop
6. Lift
7. Lower
8. Top limit switch
9. Bottom limit switch

11.4 – Wiring diagram with variable speed drive



11.5 – Limit switch (optional)



Item	Reference	Name
1	20886	Base
2	4907	Cover
3	4909	Captive nut
4	4908	Tie rod
5	3036	Cap
6	13023	Nut
7	13244	Circlips
8	20883	Intermediate pin
9	13244	Screw
10	3683	Contact
11	20781	Wedge
12	4914	Cannon pinion sub-assembly

Item	Reference	Name
13	20787	Spacer
14	4912	Intermediate pinion sub-assembly
15	13370	Washer
16	4925	Cannon pinion pin
17	13121	Screw
18	4939	Top index sub-assembly
19	3025	Pin
20	4940	Bottom index sub-assembly
21	20884	Cannon pinion pin
22	13384	Pin
23	4915	Entry pinion

11.6 Maintenance booklet

The English version of the maintenance booklet for our lifting winches can be downloaded from our website www.huchez.fr/uk **under the heading "After sales services".**

Date	Person In charge Company	Person In charge Name	Nature of the operation	References of replaced parts	Frequency if appropriate	Signature

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