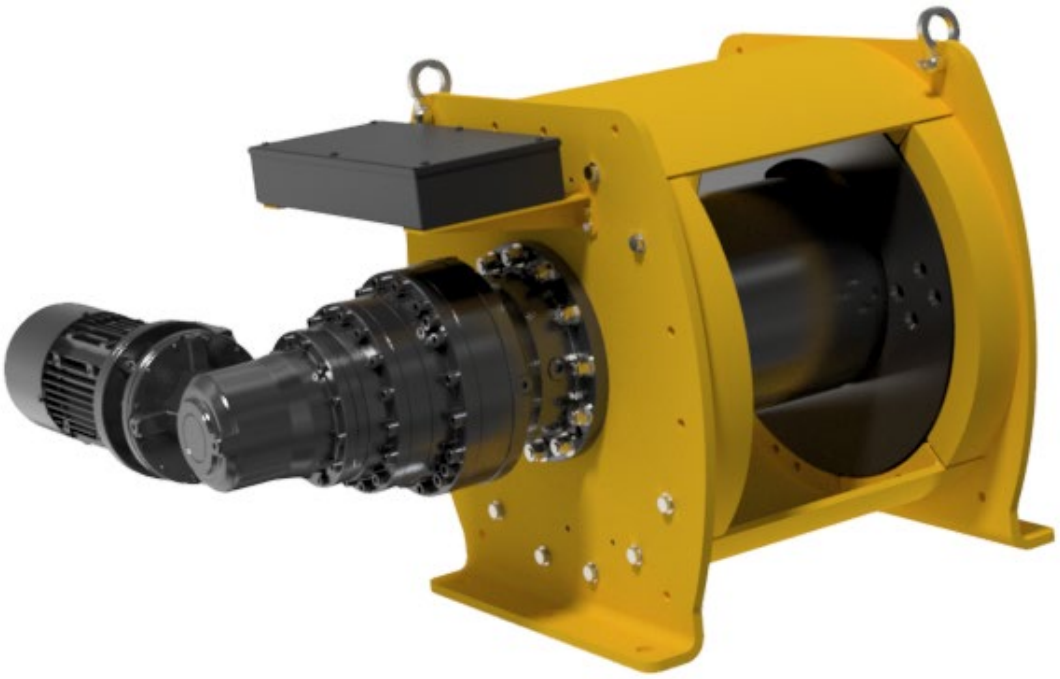
HUCHEZ

Electric winch

INDUSTRIA SERIE

Instruction manual EN

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



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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 INDUSTRIA 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 1 Am – ISO M4)
- 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. 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". A copy is however proposed in the annexes of this manual.

- 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 1000 to 20000 kg.
Their FEM classification is 1 Am (ISO: M4) or 3m (ISO : M6) depending on models up to 10 t, 1 Am (ISO: M4) for 12 and 15 t models, 1 Bm (ISO: M3) for 20 t model.

The INDUSTRIA Series winches are equipped with the following:

- Reduction gear with planetary gears, completely watertight (coaxial or orthogonal version).

- Motor 1 speed, single phase 230 V 50 Hz or three-phase 400 V 50 Hz depending on models, protection rating IP 55. Operating limits from -10ºC to +50ºC (without declassification). Motor range from 1,1 to 22 kW.

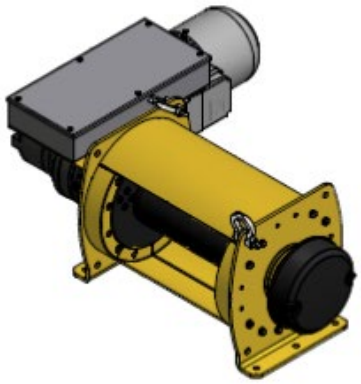
- Long drum or short drum depending on models.

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.

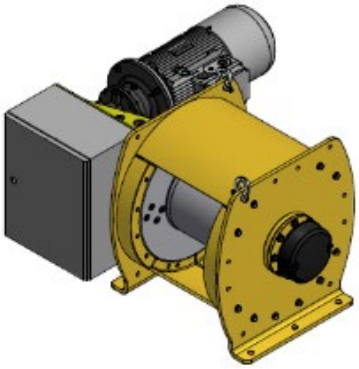
Very-low voltage control with variable speed drive (compulsory above 5 tons), comprising:
- Power line isolator
- Variable-frequency drive
- Braking resistance
- Button box (2 buttons + emergency stop + potentiometer), not disconnectable, 3 m of cable.

4.2 - Dimensions

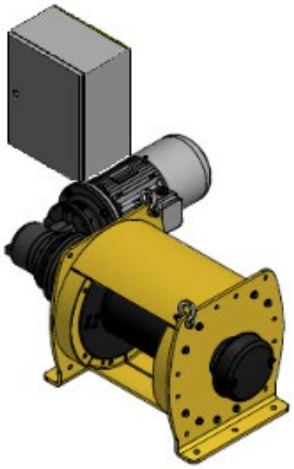
Depending on models :



Above the motor (1)

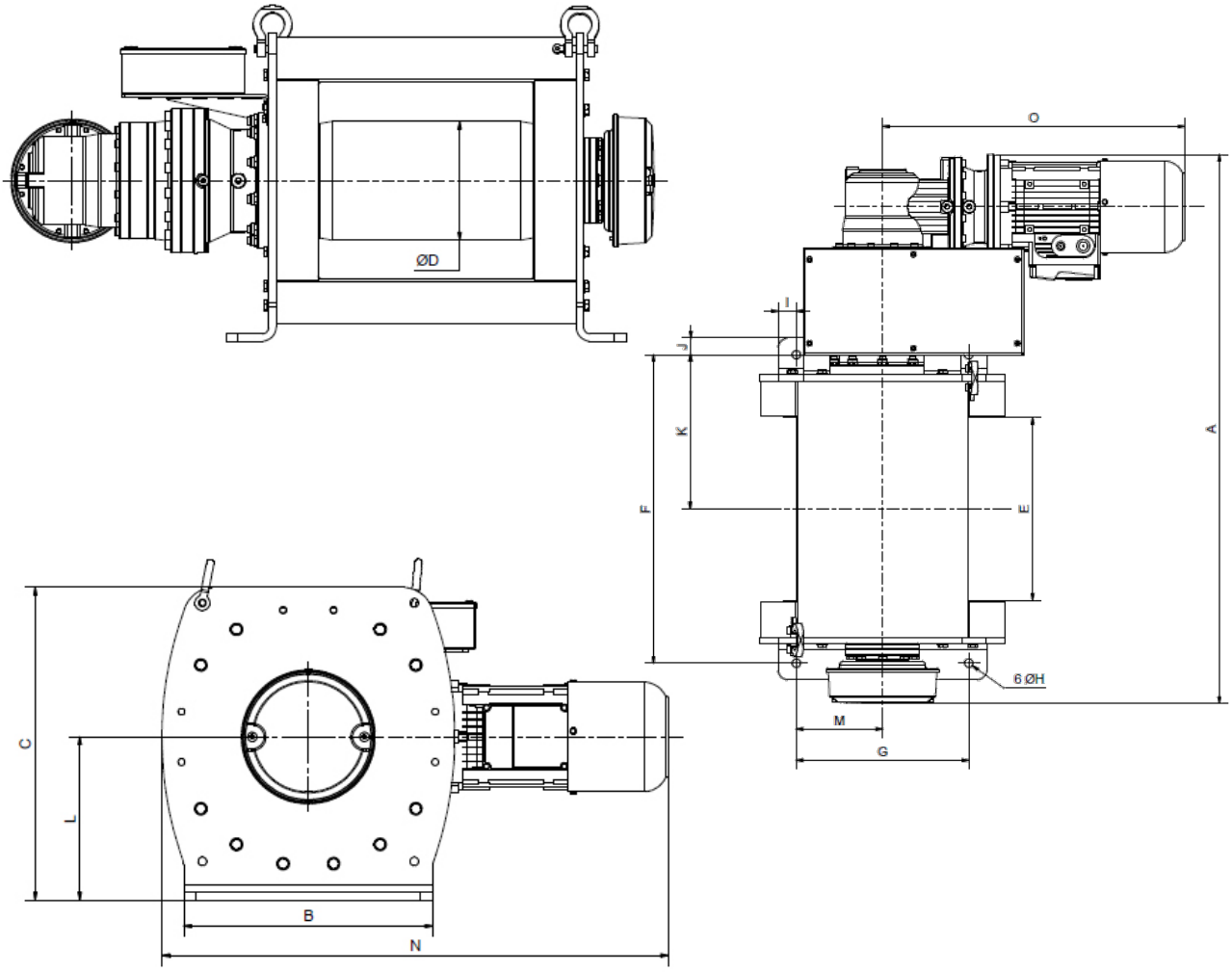


on its side (2)

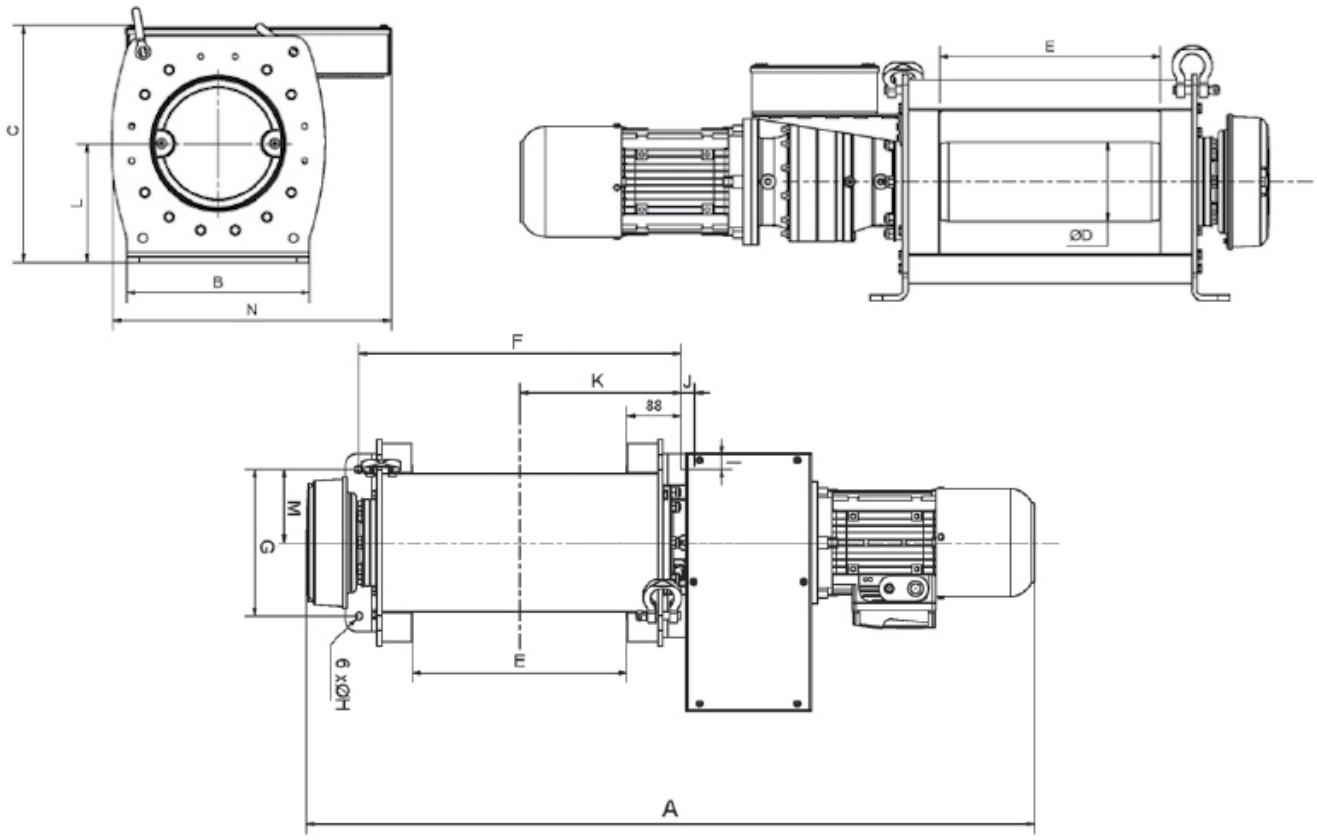


or away (3)

Depending on models, orthogonal version:



coaxial version:



a. Low voltage control – Models with 1 speed

References INDUSTRIA	1 T 05BT/10BT	2 T 05BT/09BT	3 T 03BT/06BT	4 T 02BT/05BT	5 T 03BT/07BT	6 T 02BT/06BT	7 T 02BT/06BT
Position of the electrical unit	(1) / (1)	(1) / (1)	(1) / (1)	(1) / (1)	(1) / (2)	(1) / (2)	(1) / (2)
A in mm	911	1050/1045	1065/1090	1169/1194	1194/1220	1224/1250	1241/1267
B in mm	290	420	420	520	520	650	700
C in mm	375	500	500	665	665	765	870
Ø D in mm	125	219.1 (267)	219.1 (267)	292 (355.6)	292 (355.6)	323.9 (406.4)	355.6 (457.2)
E in mm	350	350	350	350	350	350	350
F in mm	525	590	590	600	600	600	720
G in mm	240	330	330	420	420	420	620
Ø H en mm	12	16	16	22	22	22	30
I in mm	25	45	45	50	50	115	40
J in mm	23	32	32	30	30	30	50
K in mm	263	295	295	300	300	300	360
L in mm	188	262	262	350	350	395	455
M in mm	120	165	165	210	210	210	310
N in mm	716/748	823/902	823/902	905/984	954/1190	1013/1181	1103/1271
0 in mm	548/578	578/657	578/657	578/657	627/795	627/795	662/830

*Data of INDUSTRIA FEM 3m/ISO M6 Classification between brackets.
**Models with long drum : A, E and F + 250 mm.
Dimensions of coaxial models : consult us.

References INDUSTRIA	8 T 02BT/05BT	9 T 02BT/05BT	10 T 03BT/05BT	12T 04BT	15T 03BT	20T 02BT
Position of the electrical unit	(1) / (2)	(1) / (2)	(1) / (2)	(1)	(1)	(1)
A mm**	1241/1267	1288/1314	1288/1314	1520	1560	1700
B mm	700	840	840	940	940	940
C mm	870	975	975	1135	1135	1140
∅ D mm*	355.6 (457.2)	406.4 (495)	406.4 (495)	457.2	457.2	457.2
E mm**	350	350	350	450	450	450
F mm**	720	720	720	850	860	860
G mm	620	750	750	820	820	820
∅ H mm	30	32	32	33	33	33
I mm	40	45	45	60	60	60
J mm	50	47	47	70	70	70
K mm	360	360	360	420	430	430
L mm	455	515	515	605	605	610
M mm	310	375	375	410	410	410
N mm	1133/1271	1176/1314	1176/1314	1430	1430	1490
O mm	692/830	692/830	692/830	878	878	936

*Data of INDUSTRIA FEM 3m/ISO M6 Classification between brackets.
**Models with long drum : A, E and F + 250 mm.
Dimensions of coaxial models : consult us.

b. Low voltage control – Models with frequency inverter

References INDUSTRIA	1 T 05VV/10VV/28VV	2 T 05VV/09VV/23VV	3 T 03VV/06VV/15VV	4 T 02VV/05VV/12VV	5 T 03VV/07VV/17VV	6 T 02VV/06VV/14VV	7 T 02VV/06VV/15VV
Position of the electrical unit	(1) / (1) / (3)	(1) / (1) / (3)	(1) / (1) / (3)	(1) / (1) / (3)	(1) / (2) / (3)	(1) / (2) / (3)	(1) / (2) / (3)
A in mm	911/911/931	1050/1045/1070	1065/1090/1085	1169/1194/1161	1194/1220/1195	1224/1250/1225	1241/1267/1248
B in mm	290	420	420	520	520	650	700
C in mm	375	500	579/500	737/665	665	765	870
∅ D in mm	125	219.1 (267)	219.1 (267)	292 (355.6)	292 (355.6)	323.9 (406.4)	355.6 (457.2)
E in mm	350	350	350	350	350	350	350
F in mm	525	590	590	600	600	600	720
G in mm	240	330	330	420	420	420	620
∅ H in mm	12	16	16	22	22	22	30
I in mm	25	45	45	50	50	115	40
J in mm	23	32	32	30	30	30	50
K in mm	263	295	295	300	300	300	360
L in mm	188	262	262	350	350	395	455
M in mm	120	165	165	210	210	210	310
N in mm	716/748/909	823/902/1040	823/902/1040	905/1052/1157	1022/1122/1296	1067/1220/1355	1103/1271/1540
O in mm	548/578	578/657	578/657	578/657	627/795	627/795	662/830

References INDUSTRIA	8 T 02VV/05VV/13VV	9 T 02VV/05VV/13VV	10 T 03VV/05VV/10VV	12 T 04VV/09VV	15 T 03VV/07VV	20 T 02VV/05VV
Position of the electrical unit	(1) / (2) / (3)	(1) / (2) / (3)	(1) / (2) / (3)	(1) / (3)	(1) / (3)	(1) / (3)
A mm**	1241/1340/1248	1288/1367/1468	1288/1367/1459	1610/1520	1620/1560	1700
B mm	700	840	840	940	940	940
C mm	870	975	975	1135	1135	1140
∅ D mm*	355.6 (457.2)	406.4 (495)	406.4 (495)	457.2	457.2	457.2
E mm**	350	350	350	450	450	450
F mm**	720	720	720	850	860	860
G mm	620	750	750	820	820	820
∅ H mm	30	32	32	33	33	33
I mm	40	45	45	60	60	60
J mm	50	47	47	70	70	70
K mm	360	360	360	420	430	430
L mm	455	515	515	605	605	610
M mm	310	375	375	410	410	410
N mm	1133/1271/1540	1176/1314/1590	1176/1314/1590	1430	1430	1490
O mm	692/830	692/830	692/830	878	878	936

*Data of INDUSTRIA FEM 3m/ISO M6 Classification between brackets.
**Models with long drum : A, E and F + 250 mm.
Dimensions of coaxial models : consult us.

4.3 - Models available

Warning: . the rope diameter shown above corresponds to the recommended rope according to FEM 1 Am / ISO M4 or 3m / ISO M6 classification depending on models up to 10 t, FEM 1Am / ISO M4 for 12 and 15 t models, FEM 1Bm / ISO M3 for 20 t model. 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 1 Am / ISO M4 or 3m / ISO M6 classification depending on models up to 10 t, FEM 1Am / ISO M4 for 12 and 15 t models, FEM 1Bm / ISO M3 for 20 t model).

Low voltage control – Models with 1 speed
FEM 1Am/ISO M4 classification up to 15 t,
FEM 1Bm/ISO M3 classification for 20 t model

References INDUSTRIA	1 T		2 T		3 T		4 T		5 T	
	05BT	10BT	05BT	09BT	03BT	06BT	02BT	05BT	03BT	07BT
Capacity on the 1rst layer kg	1255		2420		3765		4985		6230	
Capacity on the last layer (kg)	1000		2000		3000		4000		5000	
Nb of layers	3		3		3		3		3	
Wire rope capacity at 1rst layer m *	17 (-)		20 (35)		16 (28)		16 (29)		16 (29)	
Max. rope capacity (m)	60 (-)		71 (120)		59 (102)		60 (105)		60 (105)	
Rope diameter (mm)	8		11,5		14		18		18	
Speed on the 1rst layer m/min	4	8,5	4,5	8	2,5	4,5	2	3,5	2,5	6
Speed on the last layer (m/min)	5	10,5	5,5	9,5	3,5	5,5	2,5	4,5	3	7,5
FEM	1Am		1Am		1Am		1Am		1Am	
Motor (kW)	1,1	2,2	2,2	4	2,2	4	2,2	4	3	9,2
Supply	3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V	
Weight (winch without wire rope) kg	140	150	260	280	260	280	440	470	450	530

References INDUSTRIA	6 T		7 T		8 T		9 T		10 T	
	02BT	06BT	02BT	06BT	02BT	05BT	02BT	05BT	03BT	05BT
Capacity on the 1rst layer kg	7480		8725		9975		11120		12355	
Capacity on the last layer (kg)	6000		7000		8000		9000		10000	
Nb of layers	3		3		3		3		3	
Wire rope capacity at 1rst layer m *	16 (29)		15 (28)		15 (28)		16 (29)		16 (29)	
Max. rope capacity (m)	60 (104)		60 (104)		60 (104)		62 (107)		62 (107)	
Rope diameter (mm)	20		22		22		24		24	
Speed on the 1rst layer m/min	1,5	5	1,5	4,5	2	4	1,5	4	2	3,5
Speed on the last layer (m/min)	2	6	2	5,5	2,5	5	2	4,5	2,5	4,5
FEM	1Am		1Am		1Am		1Am		1Am	
Motor (kW)	3	9,2	3	9,2	4	9,2	4	9,2	5,5	9,2
Supply	3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V	
Weight (winch without wire rope) kg	580	660	840	910	850	910	1160	1230	1180	1230

References INDUSTRIA	12 T	15 T	20 T
	04 BT	03 BT	02 BT
Capacity on the 1rst layer kg	14750	18450	25200
Capacity on the last layer (kg)	12000	15000	20000
Nb of layers	3	3	3
Wire rope capacity at 1rst layer m *	19	19	16
Max. rope capacity (m)	75	75	65
Rope diameter (mm)	28	28	32
Speed on the 1rst layer m/min	3,2	2,6	1,9
Speed on the last layer (m/min)	4	3,2	2,4
FEM	1Am	1Am	1Bm
Motor (kW)	9,2	9,2	9,2
Supply	3 Ph – 400 V	3 Ph - 400 V	3 Ph - 400 V
Weight (winch without wire rope) kg	1700	1800	2000

The wire rope diameter corresponds to the capacity on the last layer. *** Data about long drum models in brackets.**

Low voltage control – Models with frequency inverter
FEM 1Am/ISO M4 classification up to 15 t, 1Bm/M3 for 20 t model.

INDUSTRIA	1 T			2 T			3 T		
	05VV	10VV	28VV(1)	05VV	09VV	23VV (1)	03VV	06VV	15VV (1)
Capacity on the 1rst layer kg		1255			2420			3765	
Capacity on the last layer (kg)		1000			2000			3000	
Nb of layers		3			3			3	
Wire rope capacity at 1rst layer m *		17 (-)			20 (35)			16 (28)	
Max. rope capacity (m)		60 (-)			71 (120)			59 (102)	
Rope diameter (mm)		8			11,5			14	
Speed on the 1rst layer m/min	0,4-4	0,8-8,5	2,3-23	0.4-4,5	0,8-8	1,9-19	0,2-2,5	0,4-4,5	1,2-12
Speed on the last layer (m/min)	0,5-5	1-10,5	2,8-28	0,5-5,5	0,9-9,5	2,3-23	0,3-3,5	0,5-5,5	1,5-15
FEM		1Am			1Am			1Am	
Motor (kW)	1,1	2,2	5,5	2,2	4	9,2	2,2	4	9,2
Supply	1 Ph-230V-3 Ph - 400 V		3 Ph - 400 V	1 Ph-230V-3 Ph - 400 V		3 Ph - 400 V	1 Ph-230V-3 Ph - 400 V		3 Ph - 400 V
Weight (winch without wire rope) kg	150	155	210	270	300	360	270	300	360

INDUSTRIA	4 T			5 T			6 T		
	02VV	05VV	12VV(1)	03VV	07VV	17VV(1)	02VV	06VV	14VV(1)
Capacity on the 1rst layer kg		4985			6230			7480	
Capacity on the last layer (kg)		4000			5000			6000	
Nb of layers		3			3			3	
Wire rope capacity at 1rst layer m *		16 (29)			16 (29)			16 (29)	
Max. rope capacity (m)		60 (105)			60 (105)			60 (104)	
Rope diameter (mm)		18			18			20	
Speed on the 1rst layer m/min	0,2-2	0,3-3,5	1-10	0,2-2,5	0,6-6	1,4-14	0,1-1,5	0,5-5	1,1-11
Speed on the last layer (m/min)	0,2-2,5	0,4-4,5	1,2-12	0,3-3	0,7-7,5	1,7-17	0,2-2	0,6-6	1,4-14
FEM		1Am			1Am			1Am	
Motor (kW)	2,2	4	9,2	3	9,2	15	3	9,2	15
Supply	1 Ph-230V-3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V			3 Ph - 400 V	
Weight (winch without wire rope) kg	450	500	550	480	540	615	610	670	745

INDUSTRIA	7 T			8 T			9 T			10 T		
	02VV	06VV	15VV(1)	02VV	05VV	13VV(1)	02VV	05VV	13VV(1)	03VV	05VV	10VV(1)
Capacity on the 1rst layer kg		8725			9975			11120			12355	
Capacity on the last layer (kg)		7000			8000			9000			10000	
Nb of layers		3			3			3			3	
Wire rope capacity at 1rst layer m *		15 (28)			15 (28)			16 (29)			16 (29)	
Max. rope capacity (m)		60 (104)			60 (104)			62 (107)			62 (107)	
Rope diameter (mm)		22			22			24			24	
Speed on the 1rst layer m/min	0,1-1,5	0,4-4,5	1,2-12	0,2-2	0,4-4	1-10	0,1-1,5	0,4-4	1,1-11	0,2-2	0,3-3,5	0,8-8
Speed on the last layer (m/min)	0,2-2	0,5-5,5	1,5-15	0,2-2,5	0,5-5	1,3-13	0,2-2	0,4-4,5	1,3-13	0,2-2,5	0,4-4,5	1-10
FEM		1Am			1Am			1Am			1Am	
Motor (kW)	3	9,2	22	4	9,2	22	4	9,2	22	5,5	9,2	22
Supply		3 Ph - 400 V			3 Ph - 400 V			3 Ph - 400 V			3 Ph - 400 V	
Weight (winch without wire rope) kg	870	920	1085	880	920	1085	1190	1250	1415	1210	1250	1415

INDUSTRIA	12 T		15 T		20 T	
	04VV	09VV(1)	03VV	07VV(1)	02VV	05VV(1)
Capacity on the 1rst layer kg	14750		18450		25200	
Capacity on the last layer (kg)	12000		15000		20000	
Nb of layers	3		3		3	
Wire rope capacity at 1rst layer m *	19		19		16	
Max. rope capacity (m)	75		75		65	
Rope diameter (mm)	28		28		32	
Speed on the 1rst layer m/min	0,3-3,2	0,7-7,2	0,2-2,6	0,6-6,1	0,1-1,9	0,4-4,1
Speed on the last layer (m/min)	0,4-4	0,8-8,8	0,3-3,2	0,7-7,6	0,2-2,4	0,5-5,2
FEM	1Am		1Am		1Bm	
Motor (kW)	9,2	22	9,2	22	9,2	22
Supply	3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V	
Weight (winch without wire rope) kg	1800	2100	1900	2200	2200	2500

The wire rope diameter corresponds to the capacity on the last layer.

*** Data about long drum models in brackets.**

(1) Models with 3 m away control box.

Low voltage control – Models with 1 speed – FEM 3m/ ISO M6 classification

Ref. INDUSTRIA	2 T		3 T		4 T		5 T	
	05BT	09BT	03BT	06BT	02BT	05BT	03BT	07BT
Capacity on the 1rst layer kg	2400		3600		4800		6000	
Capacity on the last layer (kg)	2000		3000		4000		5000	
Nb of layers	3		3		3		3	
Wire rope capacity at 1rst layer m *	20 (37)		19 (34)		19 (35)		19 (35)	
Max. rope capacity (m)	74 (128)		69 (120)		70 (124)		70 (124)	
Rope diameter (mm)	13		14		18		18	
Speed on the 1rst layer m/min	4	8	2,5	4	2	3,5	2,5	6
Speed on the last layer (m/min)	5	9,5	3,5	5	2,5	4,5	3	7,5
FEM	3m		3m		3m		3m	
Motor (kW)	2,2	4	2,2	4	2,2	4	3	9,2
Supply	3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V	
Weight (winch without wire rope) kg	275	285	275	295	465	495	475	560

Ref. INDUSTRIA	6 T		7 T		8 T		9 T		10 T	
	02BT	06BT	02BT	06BT	02BT	05BT	02BT	05BT	03BT	05BT
Capacity on the 1rst layer kg	7150		8300		9600		10700		12000	
Capacity on the last layer (kg)	6000		7000		8000		9000		10000	
Nb of layers	3		3		3		3		3	
Wire rope capacity at 1rst layer m *	19 (35)		19 (36)		17 (32)		18 (35)		17 (32)	
Max. rope capacity (m)	72 (126)		73 (128)		72 (132)		72 (127)		67 (118)	
Rope diameter (mm)	20		22		24		24		26	
Speed on the 1rst layer m/min	1,5	5	1,5	4,5	2	4	1,5	3,5	2	3
Speed on the last layer (m/min)	2	6	2	5,5	2,5	5	2	4	2,5	4
FEM	3m		3m		3m		3m		3m	
Motor (kW)	3	9,2	3	9,2	4	9,2	4	9,2	5,5	9,2
Supply	3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V		3 Ph - 400 V	
Weight (winch without wire rope) kg	610	695	885	960	895	960	1220	1295	1240	1295

The wire rope diameter corresponds to the capacity on the last layer. *** Data about long drum models in brackets.**

Low voltage control – Models with frequency inverter – FEM 3m/ ISO M6 classification

Ref INDUSTRIA	2 T			3 T			4 T		
	05VV	09VV	23VV (1)	03VV	06VV	15VV(1)	02VV	05VV	12VV (1)
Capacity on the 1rst layer kg	2400			3600			4800		
Capacity on the last layer (kg)	2000			3000			4000		
Nb of layers	3			3			3		
Wire rope capacity at 1rst layer m *	20 (37)			19 (34)			19 (35)		
Max. rope capacity (m)	74 (128)			69 (120)			70 (124)		
Rope diameter (mm)	13			14			18		
Speed on the 1rst layer m/min	4	8	18	2,5	4	12	2	3,5	10
Speed on the last layer (m/min)	5	9,5	22	3,5	5	14	2,5	4,5	12
FEM	3m			3m			3m		
Motor (kW)	2,2	4	9,2	2,2	4	9,2	2,2	4	9,2
Supply	1 Ph-230V-3 Ph - 400 V	3 Ph - 230/400 V		1 Ph-230V-3 Ph - 400 V	3 Ph - 400 V		1 Ph-230V-3 Ph - 400 V	3 Ph - 400 V	
Weight (winch without wire rope) kg	285	315	380	285	315	380	475	525	580

The wire rope diameter corresponds to the capacity on the last layer. *** Data about long drum models in brackets.**

(1) Models with 3 m away control box.

Ref INDUSTRIA	5 T			6 T			7 T		
	03VV	07VV	17VV(1)	02VV	06VV	14VV(1)	02VV	06VV	15VV(1)
Capacity on the 1rst layer kg	6000			7150			8300		
Capacity on the last layer (kg)	5000			6000			7000		
Nb of layers	3			3			3		
Wire rope capacity at 1rst layer m *	19 (35)			19 (35)			19 (36)		
Max. rope capacity (m)	70 (124)			72 (126)			73 (128)		
Rope diameter (mm)	18			20			22		
Speed on the 1rst layer m/min	2,5	6	13	1,5	5	12	1,5	4,5	13
Speed on the last layer (m/min)	3	7,5	15,5	2	6	14	2	5,5	15
FEM	3m			3m			3m		
Motor (kW)	3	9,2	15	3	9,2	15	3	9,2	22
Supply	3 Ph - 400 V			3 Ph - 400 V			3 Ph - 400 V		
Weight (winch without wire rope) kg	480	540	615	610	670	745	870	920	1085

Ref INDUSTRIA	8 T			9 T			10 T		
	02VV	05VV	13VV(1)	02VV	05VV	13VV(1)	03VV	05VV	10VV(1)
Capacity on the 1rst layer kg	9600			10700			12000		
Capacity on the last layer (kg)	8000			9000			10000		
Nb of layers	3			3			3		
Wire rope capacity at 1rst layer m *	17 (32)			18 (35)			17 (32)		
Max. rope capacity (m)	72 (119)			72 (127)			67 (118)		
Rope diameter (mm)	24			24			26		
Speed on the 1rst layer m/min	2	4	10	1,5	3,5	10	2	3	8,5
Speed on the last layer (m/min)	2,5	5	12	2	4	12	2,5	4	10,5
FEM	3m			3m			3m		
Motor (kW)	4	9,2	22	4	9,2	22	5,5	9,2	22
Supply	3 Ph - 400 V			3 Ph - 400 V			3 Ph - 400 V		
Weight (winch without wire rope) kg	925	970	1140	1250	1315	1490	1275	1315	1490

The wire rope diameter corresponds to the capacity on the last layer.
(1) Models with 3 m away control box.
*** Data about long drum models in brackets.**

4.4 - Options

The INDUSTRIA 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 66 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.
- Secondary brake
- Emergency trouble shooting hand wheel
- Multi rope grooved drum
- Lower chassis
- Tarpauline cover
- Special paint (C4, C5M)
- 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.
- Radio control : Hauling, Adjustable speed drive hauling, Lifting, Proportional adjustable speed drive lifting
- Phase order detector
  Allows the winch not to be connected with raising / lowering inversion.
- Any other requirements : consult us.

4.5 - 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:

4.5.1. - 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.

4.5.2. - 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.	$0.8 < k \leq 1$

4.5.3. – FEM classification

Strain condition	Average operating time per day, in hours							
	15’	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	1Dm	1 Cm	1 Bm	1 Am	2m	3m	4m	5m
Heavy	1Cm	1 Bm	1 Am	2m	3m	4m	5m	
Very heavy	1Bm	1 Am	2m	3m	4m	5m		

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 INDUSTRIA 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)

Models up to 15 t

Bolt / nut	Grade 8.8 bolt / nut tightening torque Nm
M10	51
M12	85
M14	140
M16	210
M20	410
M24	710
M30	1600

20 t model

Bolt / nut	Grade 10.9 bolt / nut tightening torque Nm
M30	2700

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.

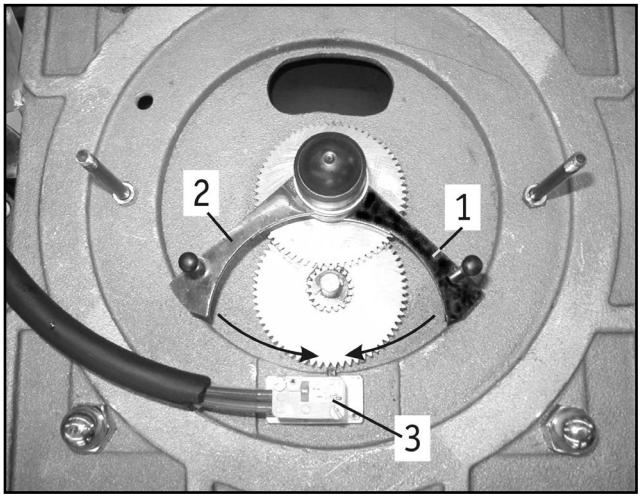
6.3- Adjusting the limit switch (optional)

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

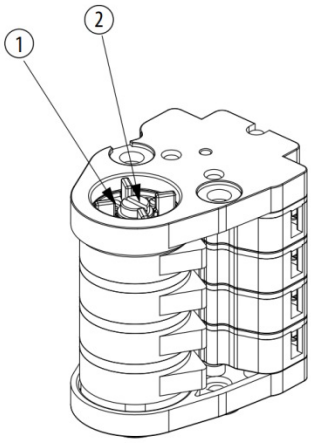
Clock type: Remove the protective cover of the device (inside this cover you will find the diagram below). The levers, which are now accessible, can be turned manually.

- 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)



Rotary limit switch, cam type IP66:



Always switch off the main power supply before working on the winch.

For correct cam adjustment, loosen the central screw ② of the cam group. Then, set the intervention point of each cam using the adjusting screws①. The screws are numbered to indicate the cams in ascending order from the bottom to the top of the group. Tighten the centre 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).

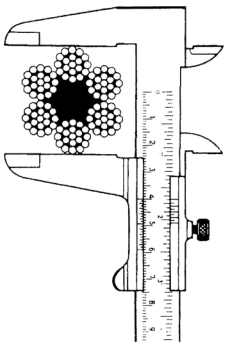
Very important:

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.

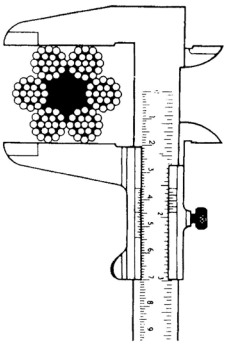
The useful life of the steel ropes used on the winch depends on many factors, including the conditions of the work cycles (lifting height, lifting speed, number and type of deviations, etc.) as well as the operating mode (number of winding layers, working cycle distribution along the length of the steel 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



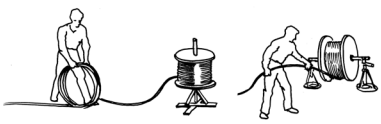
Incorrect measurement

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.

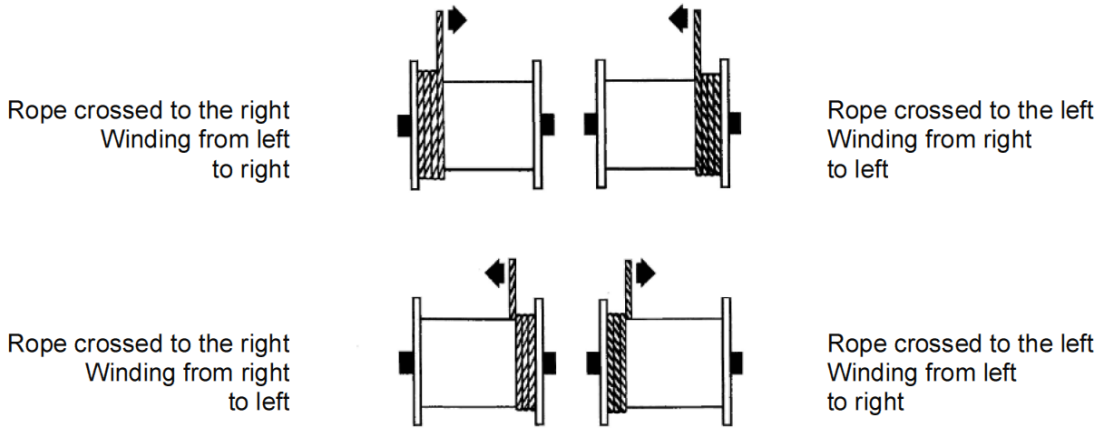
The first layer must be wound in a compact manner and under tension. Take a mallet or a block of wood and knock the turns against one another; not too hard to prevent the strands from overlapping one another, but tightly enough to prevent the rope from moving on the drum. If the first layer is wound 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.

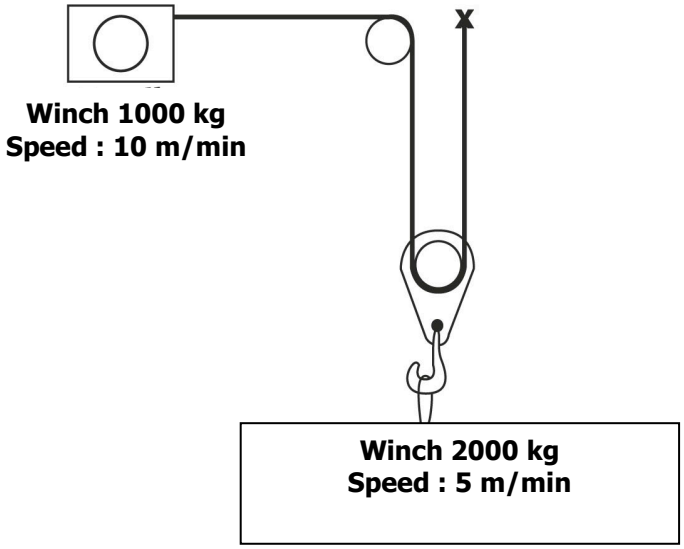
Even if the first layer is wound correctly during installation, it will expand a little while in service. When the first layer expands (loss of pre-tension) the initial procedure MUST be performed at regular intervals.

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

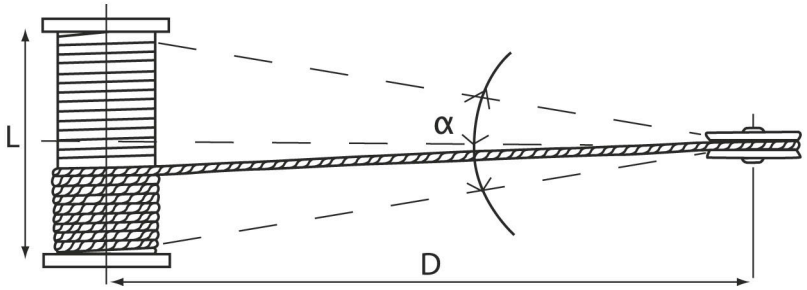
Whatever you do, DO NOT pass the rope through a clamping mechanism. For example, two blocks of wood screwed together. **THIS WILL CAUSE IRREPARABLE DAMAGE TO THE ROPE!**



Reeving diagrams :



Bending angle :



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

6.5 - Rope press roller (optional)

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 (optional)

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)

This device stops the winch in the event of an overload without the breakage of the kinematic chain.
Compulsory when lifting loads over 1000 kg (Directive 2006/42/EC) in order to avoid rope breakage, structure deformation and accidents due to problems caused by overloading.

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)
INDUSTRIA 1T	1,7
INDUSTRIA 2T – 3T	2,3
INDUSTRIA 4T – 5T	3,3
INDUSTRIA 6T	4
INDUSTRIA 7T – 8T	7
INDUSTRIA 9T – 10T	9
INDUSTRIA 12T	6
INDUSTRIA 15T	7
INDUSTRIA 20T	12

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.

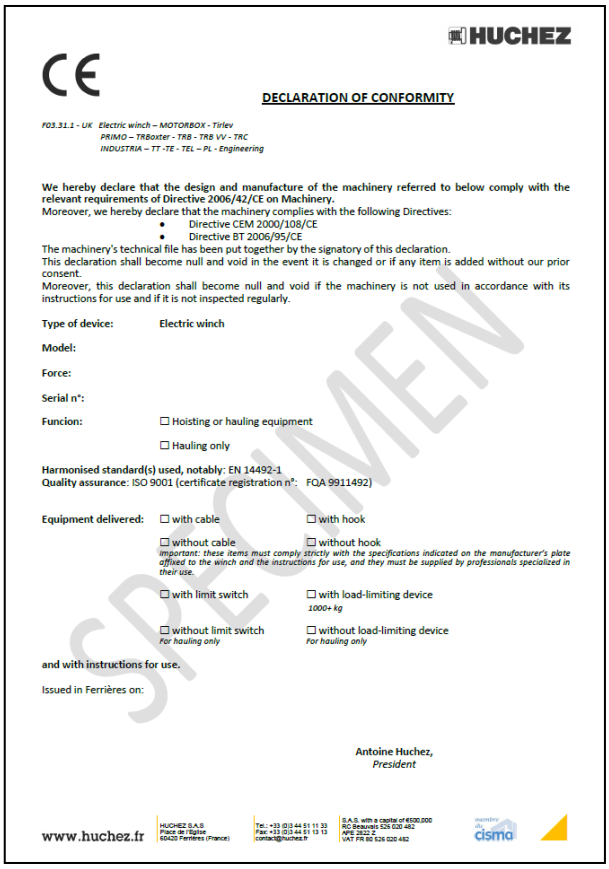
When ordering spare parts, please provide the following information with your order:

- 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 – 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

SPECIMEN

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12 - Appendixes

A – References of parts

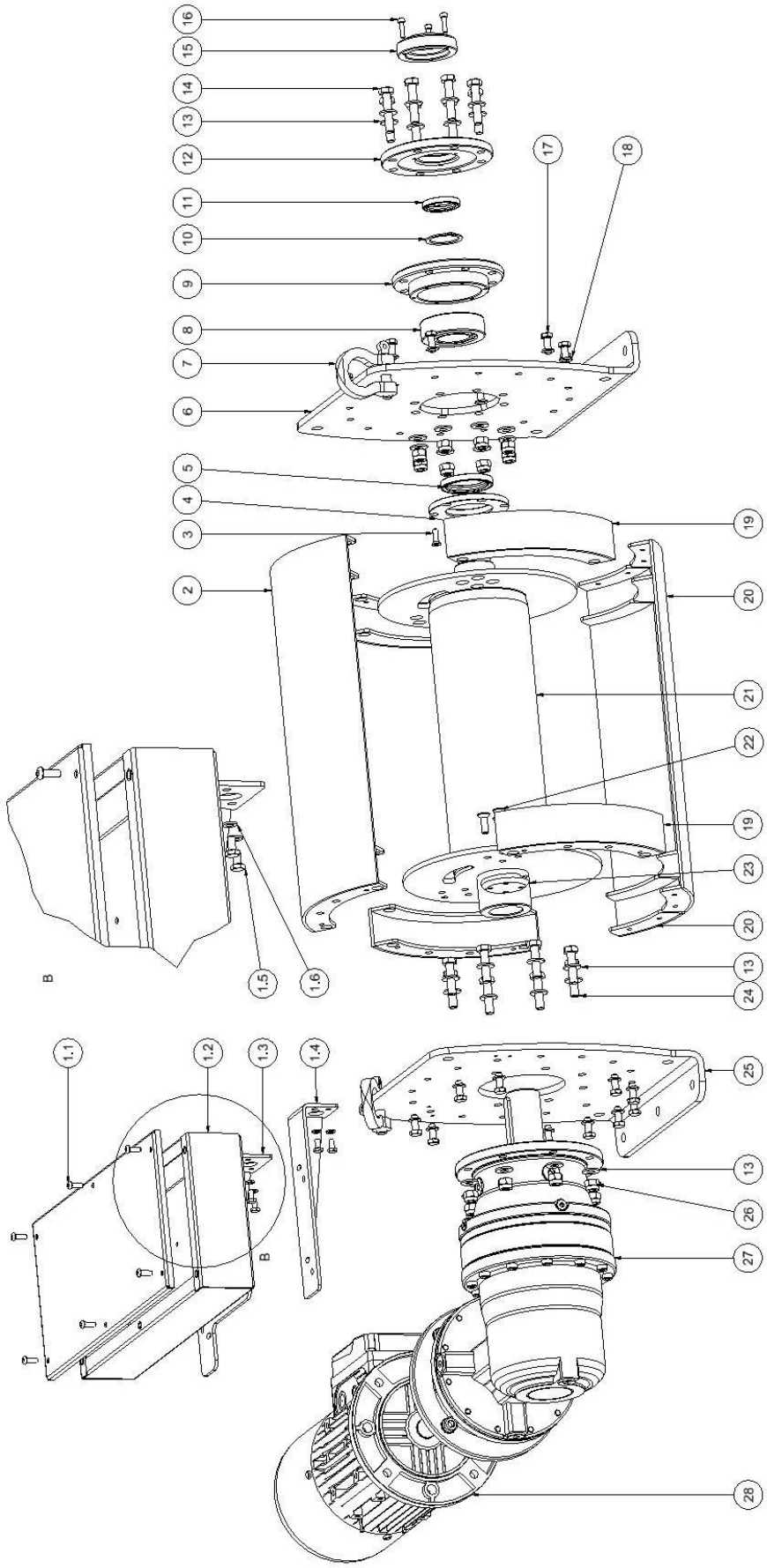
B - Limit switch

C – Load limiter

D - Maintenance booklet

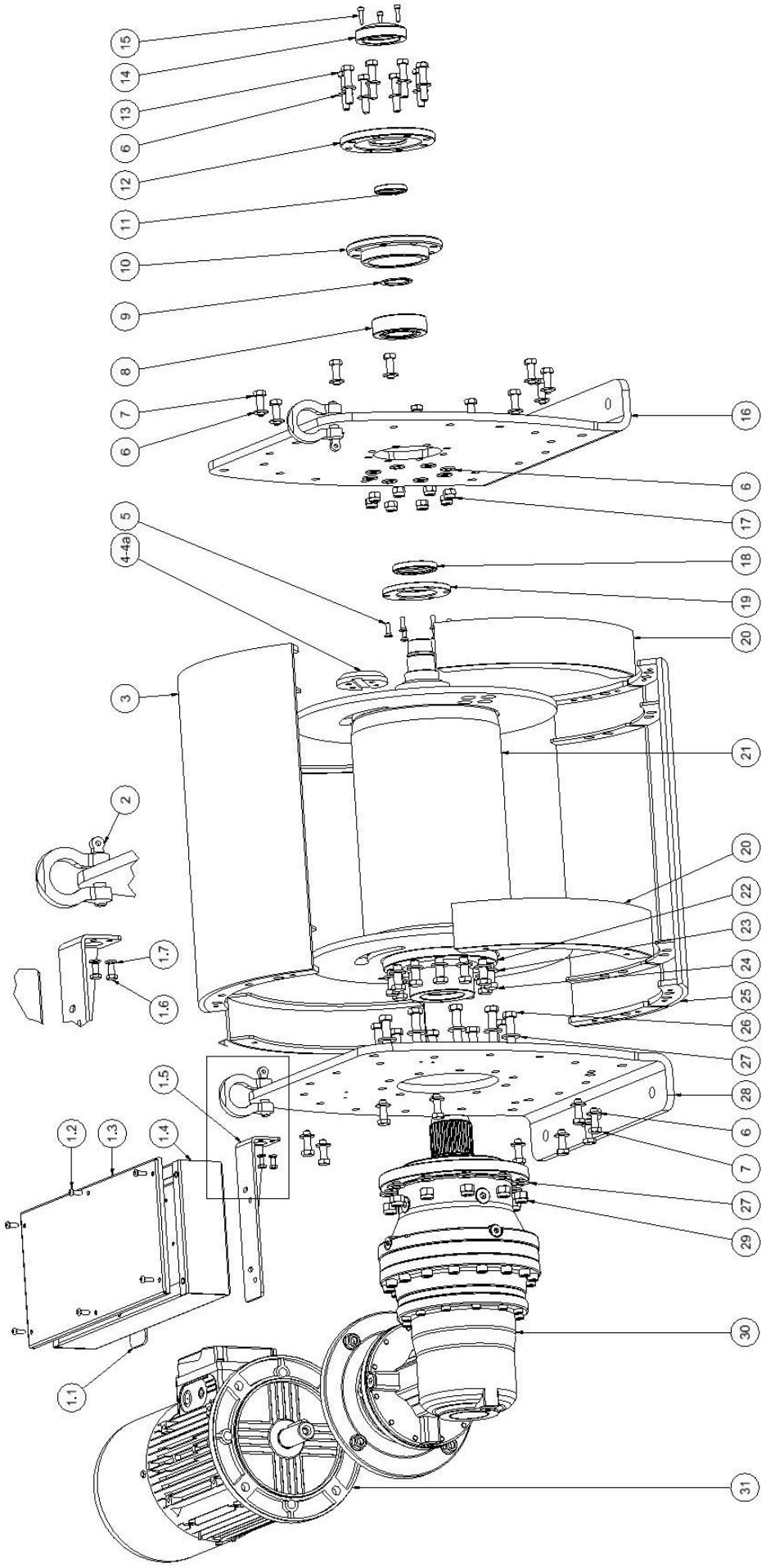
A-References of parts

INDUSTRIA 1T



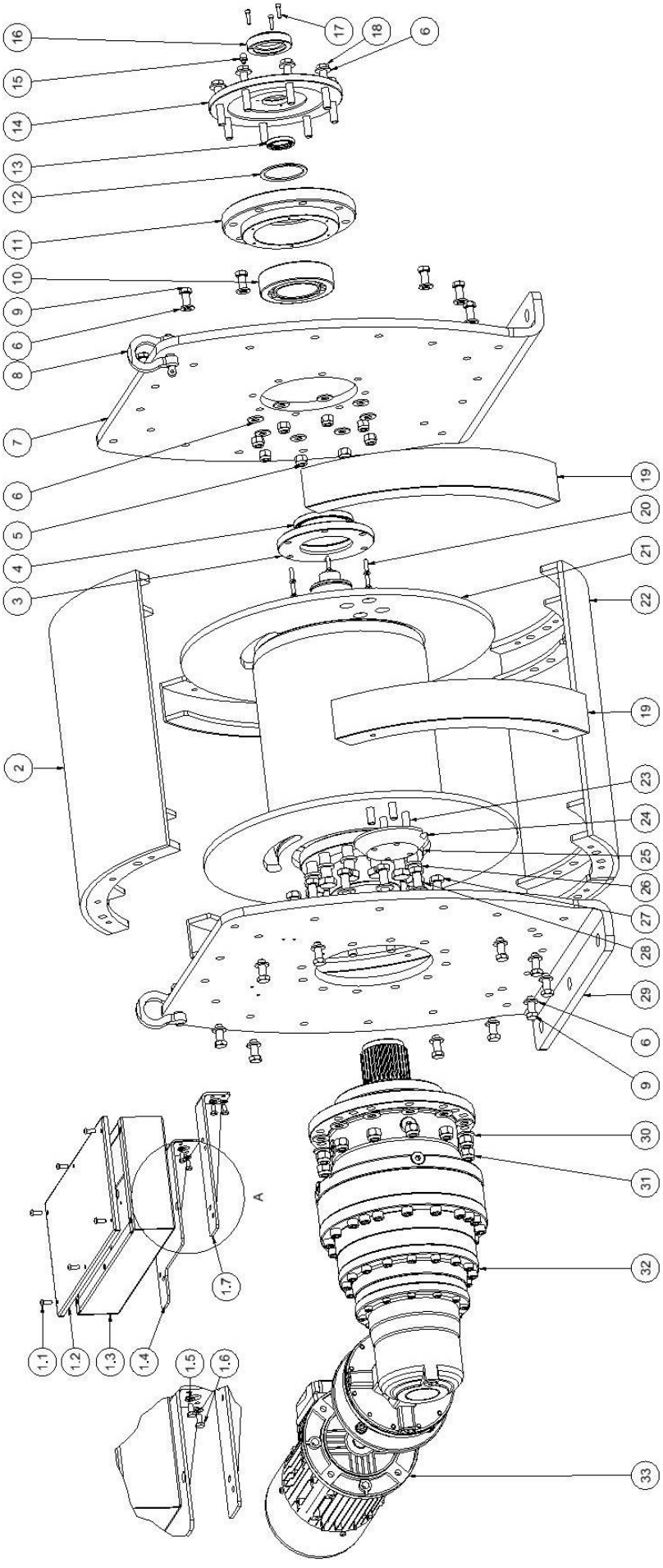
		Winch reference		
Key	**Designation**	INDUSTRIA 1T 05	INDUSTRIA 1T 10	INDUSTRIA 1T 28
1	Electrical cabinet BT	151050		-
	Electrical cabinet VV	151049	151051	151049
2	Tie rode	24096		
3	Screw	13541		
4	Plate	23316		
5	Seal	2955		
	Support	24091		
7	Crank	MANILLELYRE600KG		
8	Bearing	2953		
9	Housing	23315		
10	Spring retaining ring	13048		
11	Seal	2954		
12	Crank	23317		
13	Washer	13306		
14	Screw	13078		
15	Hub cap	24095		
16	Screw	13124		
17	Screw	13065		
18	Washer	13210		
19	Protection	24097		
20	Tie rode	24092		
21	SE drum	24093		
22	Screw	13168		
23	Cable clamp	24126		
24	Screw	13334		
25	Support	24090		
26	Nut	13020		
27	Reduction gear	24070	24071	24070
28	Motor	24190	24191	24190

INDUSTRIA 2T & 3T



Key	Designation	Winch reference					
		INDUSTRIA 2T05	INDUSTRIA 2T09	INDUSTRIA 2T23	INDUSTRIA 3T03	INDUSTRIA 3T06	INDUSTRIA 3T15
1	Electrical cabinet BT	151050	151009	-	151050	151009	-
	Electrical cabinet VV	151051	151056	151068	151051	151056	151068
2	Crank	MANILLELYRE600KG					
3	Tie rode	24103					
	Tie rode (model with long drum)	24780					
4	Cable clamp	23430					
4a	Screw	13112					
5	Screw	13541					
6	Washer	13306					
7	Screw	13076					
8	Bearing	2953					
9	Spring retaining ring	13048					
10	Housing	23315					
11	Seal	2954					
12	Flange	23317					
13	Screw	13078					
14	Hub cap	24095					
15	Screw	13124					
16	Support	24101					
17	Nut	13020					
18	Seal	2955					
19	Plate	23316					
20	Protection	24104					
21	SE drum (1Am models)	24121					
	SE drum (1Am models with lg drum)	24782					
	SE drum (3m models)	24951					
	SE drum (3m models with lg drum)	24950					
22	Tie rode	WF062					
23	Screw	13212					
24	Washer	13083					
25	Tie rode	24105					
	Tie rode (models with lg drum)	24781					
26	Protection	13087					
27	Drum	13212					
28	Support	24100					
29	Nut	13433					
30	Reduction gear (1Am models)	24072	24073	24832	24074	24075	24833
	Reduction gear (3m models)	24960	24961	24962	24963	24964	24965
31	Motor	24191	24192	24194	24191	24192	24194

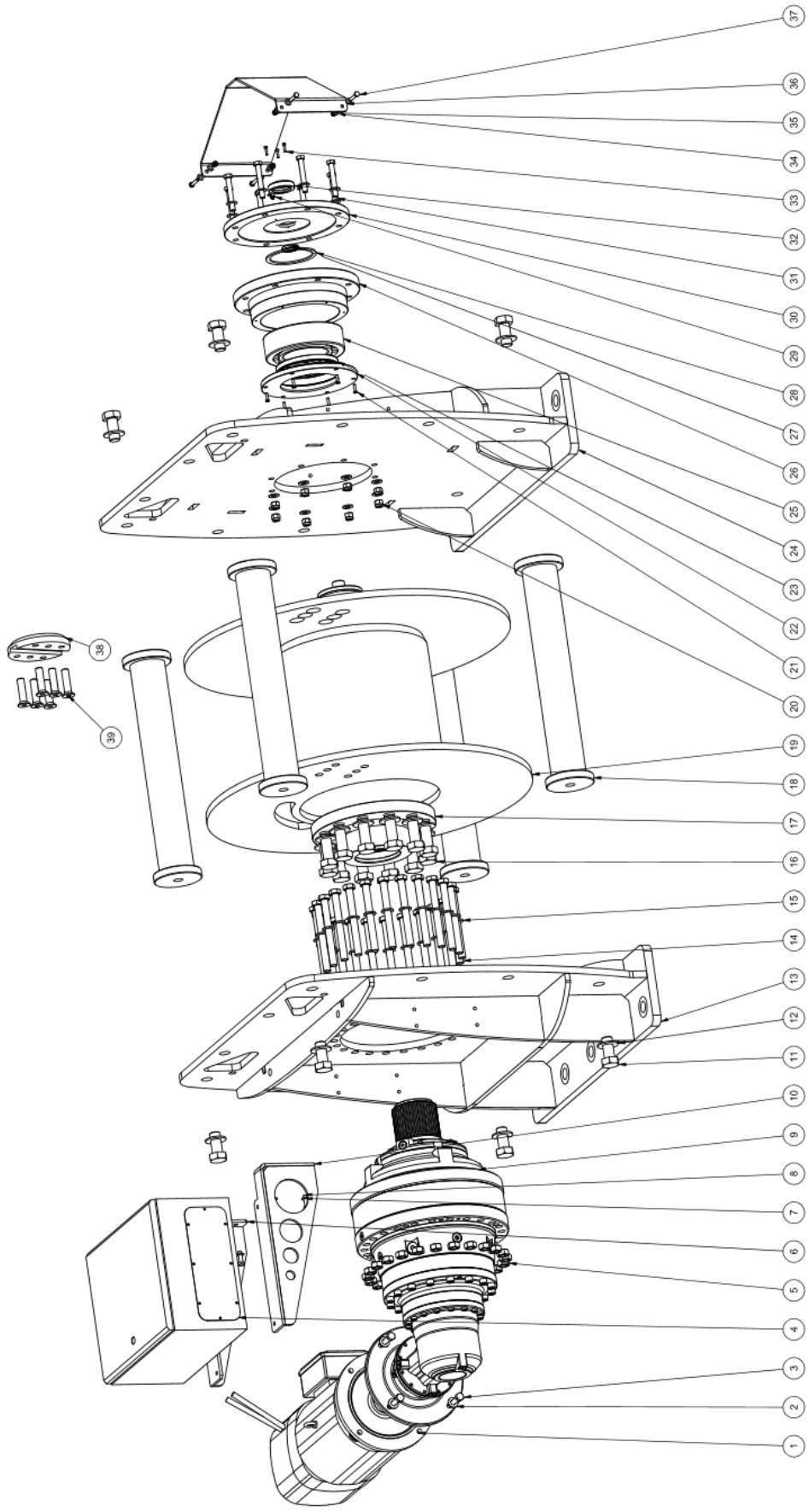
INDUSTRIA 4T à 10T



Rep.	Designation	Winch reference																			
		4T 02	4T 05	4T 12	5T 03	5T 07	5T 17	6T 02	6T 06	6T 14	7T 02	7T 06	7T 15	8T 02	8T 05	8T 13	9T 02	9T 05	9T 13	10T 03	10T 05	10T 10
1	Electrical cabinet BT	151050	151009	-	151009	151067	-	151009	151067	-	151009	151067	-	151009	151067	-	151009	151067	-	151061	151067	-
	Electrical cabinet VV	151051	151056	151068	151056	151068	CoffretVV15 Kw	151056	151068	CoffretVV15 Kw	151056	151068	CoffretVV22 Kw	151056	151068	Coffret VV 22 Kw	151056	151068	CoffretVV22 Kw	151062	151068	CoffretVV22 Kw
2	Tie rode	24133						24153			24163						24173					
	Tie rode (models with lg drum)	24789						24796			24803						24810					
3	Plate	24131						24131			24131						23376					
4	Seal	2989						2989			2989						2958					
5	Nut	13433						13433			13433						13485					
6	Washer	13212						13212			13212						13214					
7	Support	24129						24159			24169						24179					
8	Crank	MANILLELYRE600KG						-----			-----						-----					
9	Screw	13083						13083			13096						13097					
10	Bearing	3160						3160			3160						2961					
11	Housing	24130						24130			24130						23375					
12	Spring retaining ring	13729						13729			13729						2957					
13	Seal	3047						3047			3047						2954					
14	Flange	24136						24136			24136						23377					
15	Greaser	2960						2960			2960						2960					
16	Hub cap	24095						24095			24095						24095					
17	Screw	13124						13124			13124						13124					
18	Screw	13089						13089			13089						13415					
19	Protection	24134						24154			24164						24174					
20	Screw	13526						13526			13526						13541					
21	SE drum (1Am models)	24132						24152			24162						24172					
	SE drum (1Am models with lg drum)	24791						24798			24805						24812					

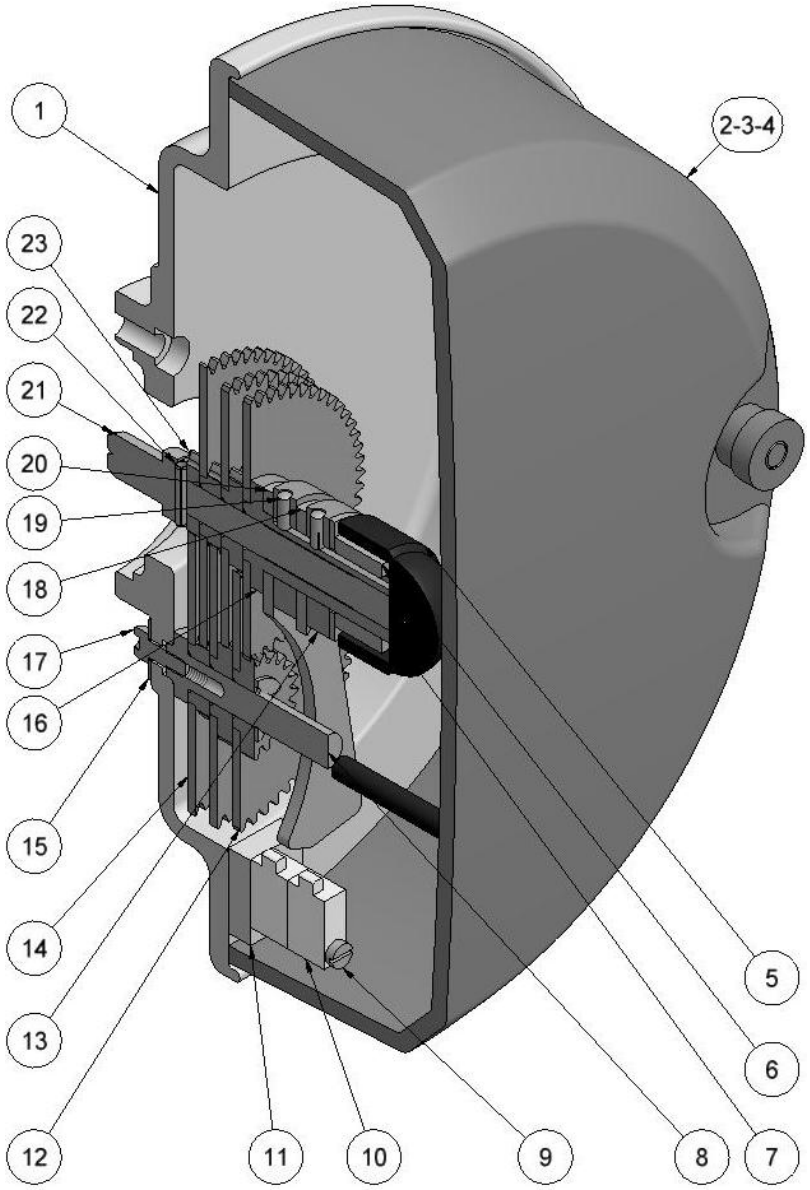
	SE drum (3m models)	24953						24955			24957						24959						
	SE drum (3m models with lg drum)	24952						24954			24956						24958						
22	Tie rode	24135						24155			24165						24175						
	Tie rode (models with lg drum)	24790						24797			24804						24811						
23	Screw	13638						13671			13671						13657						
24	Cable clamp	22676						23442			23442						23434						
25	Bride	WF080						WF090			WF100						WF120						
26	Washer	13307						13214			13217						13217						
27	Screw	13700						13099			13419						13497						
28	Screw	13412						13097			13632						13632						
29	Support	24128						24158			24168						24178						
30	Washer	13213						13214			13214						13214						
31	Nut	13022						13485			13485						13485						
32	Reduction gear (1Am models)	24076	24077	24834	24078	24079	24835	24080	24071	24836	24082	24083	24827	24084	24085	24828	24086	24087	24829	24088	24089	24830	
	Reduction gear (3m models)	24966	24967	24968	24969	24970	24971	24972	24973	24974	24975	34976	24977	24978	24979	24980	24981	24982	24983	24984	24985	24986	
33	Motor	24191	24192	24194	24193	24194	23401	24193	24194	23401	24193	24194	23403	24192	24194	23403	24192	24194	23403	24195	24194	23403	

INDUSTRIA 12T / 15T / 20T



Rep.	Designation	Winch reference					
		12T 04	**12T 09**	**15T 03**	**15T 07**	**20T 02**	**20T 05**
1	Motor	24194	23403	24194	23403	24194	23403
2	Washer	13213-k	13214-k	13213-k	13214-k	13213-k	13214-k
3	Screw	13717	13099	13717	13099	13717	13099
4	Electrical cabinet BT	151067		151067		151067	
	Electrical cabinet VV	151068	COFFRETVV22KW	151068	COFFRETVV22KW	151068	COFFRETVV22KW
5	Nut	13024-k	13024-k	13026-k	13026-k	13026-k	13026-k
6	SE Support BT down	25518	-	25518	-	25518	-
	SE Support VV down	25520	-	25520	-	25520	-
7	Washer	13306-k	-	13306-k	-	13306-k	-
8	Screw	13242	-	13242	-	13242	-
9	Reduction gear	24985	25512	25511	25510	25509	25508
10	SE Support BT up	25517	-	25517	-	25517	-
	SE Support VV up	25519	-	25519	-	25519	-
11	Screw	V2029	V2029	V2029	V2029	V2029	V2029
12	Washer	13311	13311	13311	13311	13311	13311
13	SE Support Reduction gear	25521	25521	25523	25523	25525	25525
14	Screw	13497-k	13497-k	62458	62458	64393	64393
15	Washer	V2032	V2032	V2037	V2037	V2037	V2037
16	Screw	13697	13697	13401	13401	-	-
17	Bride	-	-	65214-01	65214-01	-	-
18	Tie rode	25503	25503	25503	25503	25503	25503
19	SE drum	25527	25527	25514	25514	25502	25502
20	Nut	13022-k	13022-k	13022-k	13022-k	13022-k	13022-k
21	Screw	13526-k	13526-k	13526-k	13526-k	13526-k	13526-k
22	Plate	64399	64399	64399	64399	64399	64399
23	Seal	64614	64614	64614	64614	64614	64614
24	SE Support Limit switch	25522	25522	25524	25524	25524	25524
25	Bearing	64613	64613	64613	64613	64613	64613
26	Housing	64398	64398	64398	64398	64398	64398
27	Seal	3047	3047	3047	3047	3047	3047
28	Spring retaining ring	1717	1717	1717	1717	1717	1717
29	Greaser	2960	2960	2960	2960	2960	2960
30	Bride Limit switch	25504	25504	25504	25504	25504	25504
31	Screw	13583	13583	13583	13583	13583	13583
32	Hub cap	24095	24095	24095	24095	24095	24095
33	Screw	13124	13124	13124	13124	13124	13124
34	Washer	13210-k	13210-k	13210-k	13210-k	13210-k	13210-k
35	Nut	13014-k	13014-k	13014-k	13014-k	13014-k	13014-k
36	Protection Limit switch	25507	25507	25507	25507	25507	25507
37	Screw	13069-k	13069-k	13069-k	13069-k	13069-k	13069-k
38	Serre câble	25514-02	25514-02	25514-02	25514-02	25502-01	25502-01
39	Screw	V2077	V2077	V2077	V2077	V2077	V2077

B –Limit switch



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

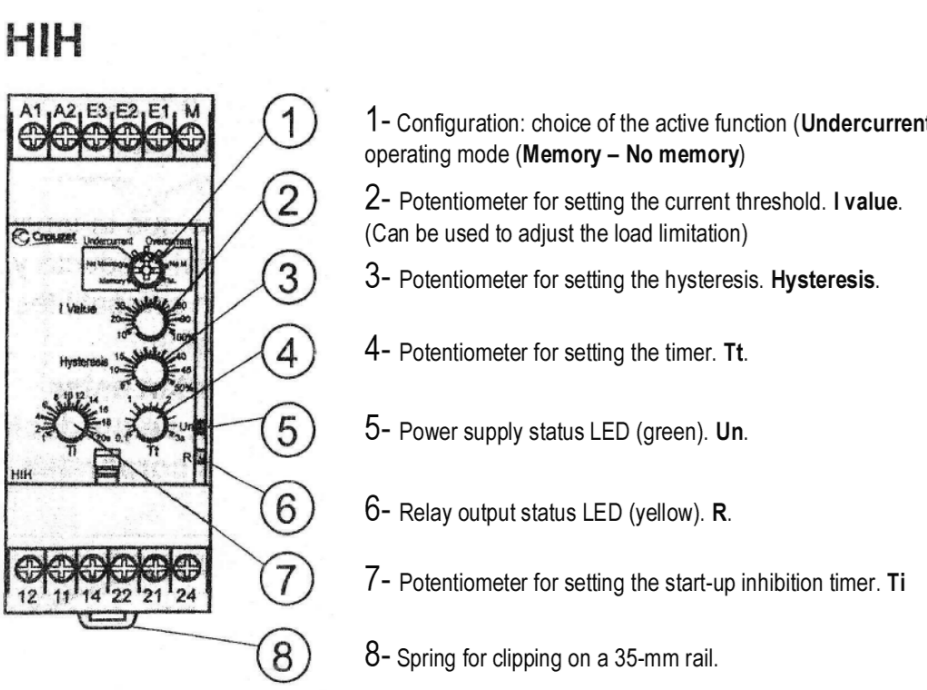
C – Load limiter

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:



1- Configuration: choice of the active function (**Undercurrent/Overcurrent**) and the operating mode (**Memory – No memory**)

2- Potentiometer for setting the current threshold. **I value**.
(Can be used to adjust the load limitation)

3- Potentiometer for setting the hysteresis. **Hysteresis**.

4- Potentiometer for setting the timer. **Tt**.

5- Power supply status LED (green). **Un**.

6- Relay output status LED (yellow). **R**.

7- Potentiometer for setting the start-up inhibition timer. **Ti**

8- Spring for clipping on a 35-mm rail.

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.

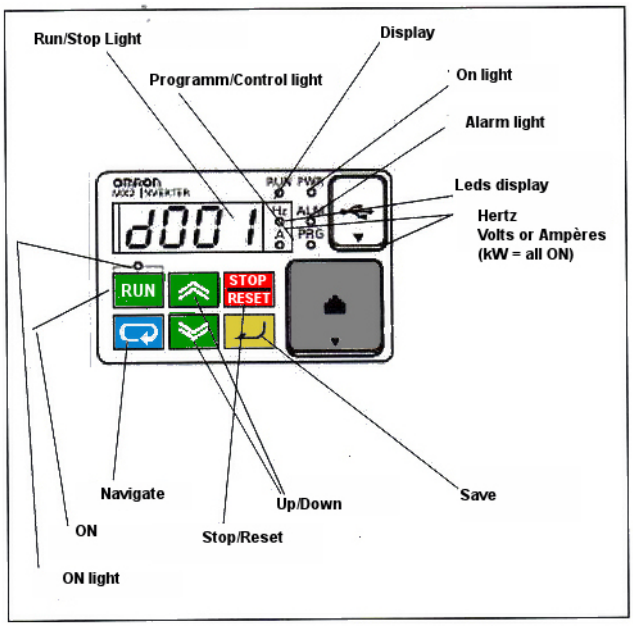
Respect the installation and operating conditions of the product described in this document.

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 (model INDUSTRIA VV)

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.

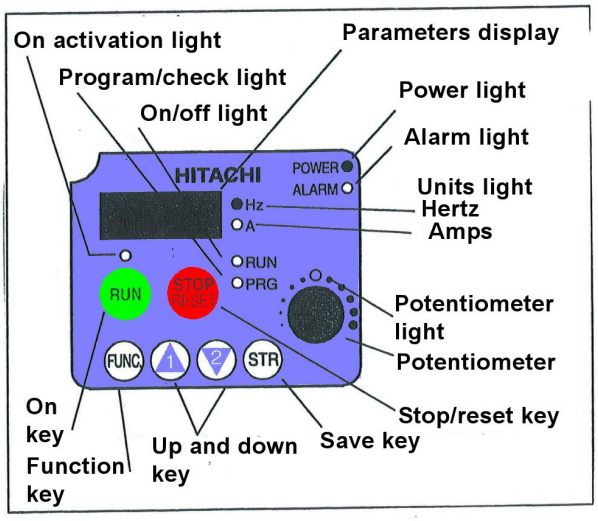
10/ back in **C041** with the key **save**  then **navigate**  , **save**  and then **up**  . Setting at 5A (example) with the key **up**  or **down**  and **save**  .

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

The default reset E12 is made by the stop reset key  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  display **D001**.

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

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

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

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

6/ Key  back in **C041**, 3 successive press on key  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.

C – 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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