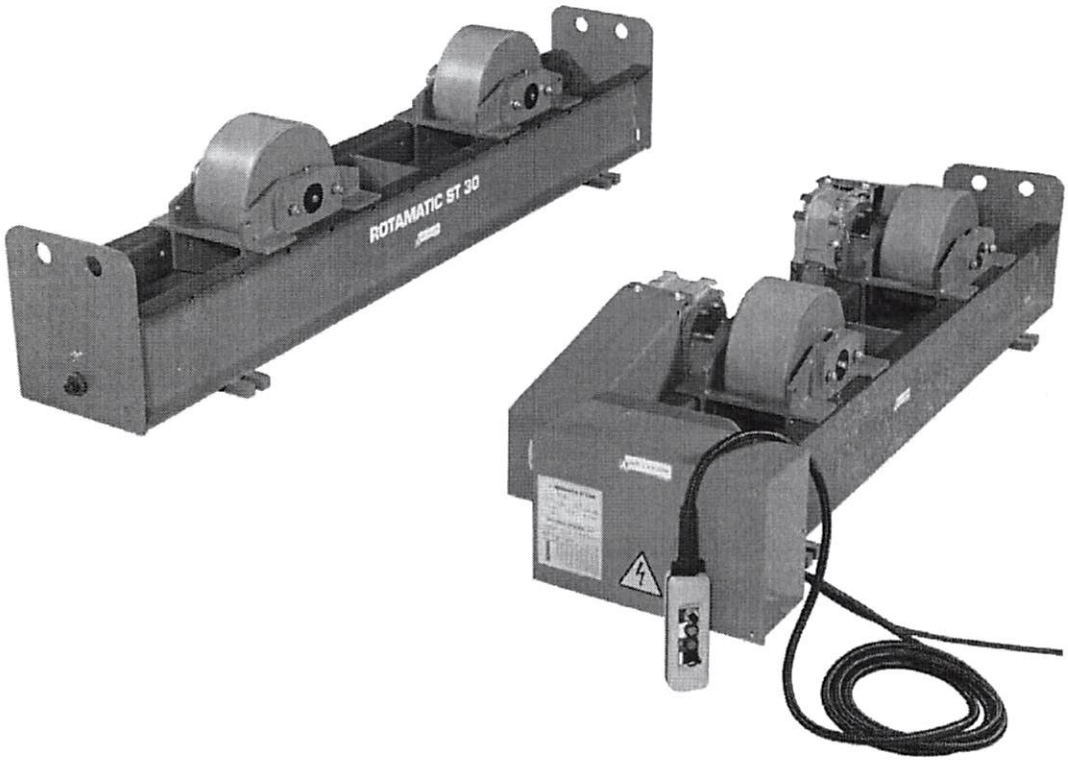
ROTATOR

ROTAMATIC ST 30

SAFETY INSTRUCTION FOR USE AND MAINTENANCE

MACHINE N° W000315309
W000315310



EDITION : GB
REVISION : K
DATE : 08-2009

instructions for use

REF : **8695-6435**
DS : 262-632

AIR LIQUIDE
WELDING

Thank for the trust you have expressed by purchasing this equipment, which will give you full satisfaction if you follow its instructions for use and maintenance.

Its design, component specifications and workmanship comply with applicable European directives.

Please refer to the enclosed CE declaration to identify the directives applicable to it.

The manufacturer will not be held responsible where items not recommended by themselves are associated with this product.

For your safety,there follows a non-restrictive list of recommendations or requirements, many of which appear in the employment code.

Finally we would ask you kindly to inform your supplier of any error which you may find in this instruction manual.

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INFORMATIONS

DISPLAYS AND PRESSURE GAUGE

The measuring tools or displays for voltage, intensity and speed .... either analog or digital, must be considered as indicators

REVISIONS

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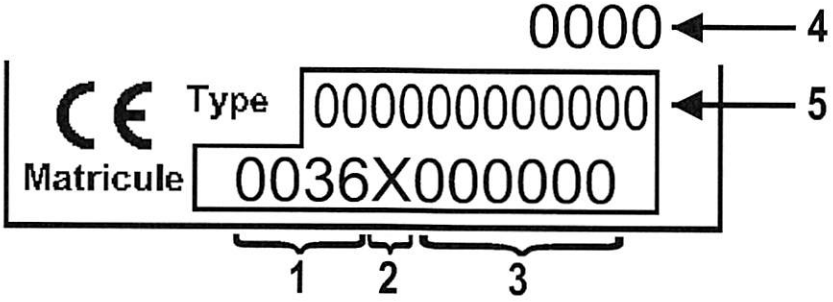
Add n° W	F27

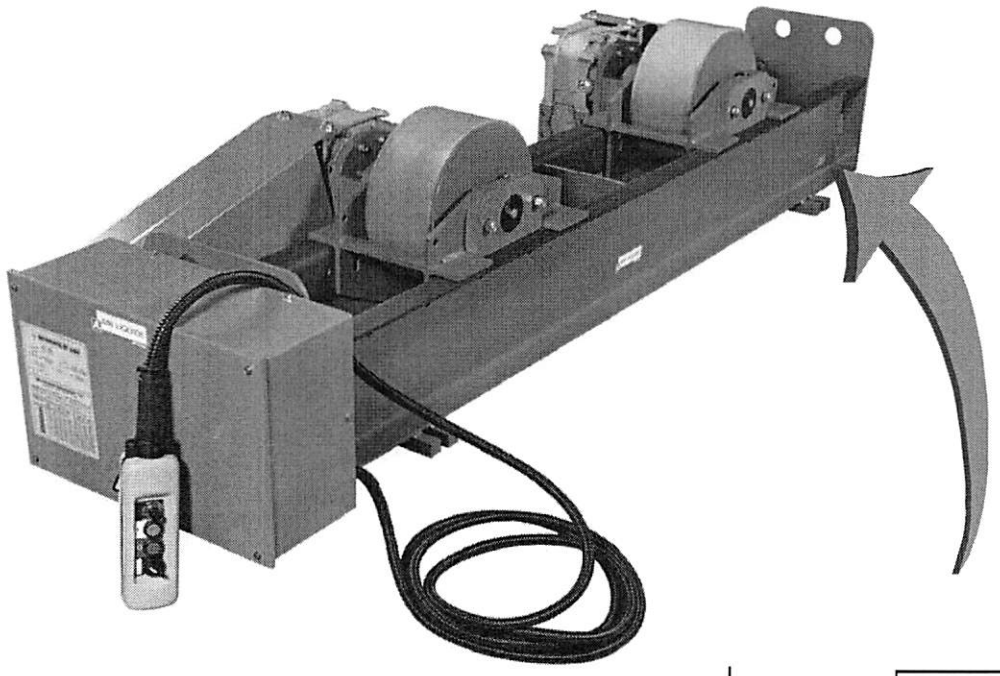
A - IDENTIFICATION

Please enter the number of your equipment in the following box.

Quote this information in all correspondence.



1 manufacturing	factory code 4		year manufactured
2	manufacturing year code	5	product type
3	product serial no.		



CE Type

Matricule

B - SAFETY INSTRUCTIONS

For general safety instructions, please refer to the specific manual supplied with the equipment.

AIRBORNE NOISE

Please refer to the specific manual supplied with the equipment.

SPECIFIC SAFETY INTRUCTIONS

- Do not overload the equipment, do not exceed the torques, tangent stress and min or maxi diameter of cylinders.
- Check the equipment to be sure that the electrical and mechanical protective covers are fixed before to set in working order.
- Try the rotations of equipment without load.
- Do not let load fall down on the equipment.
- Be sure that the functions of the equipment are not dangerous when a cylinder is on the rotators (rotation stopped by tools,plates or pieces around the equipment or by parts fixed on the cylinder which will able to hit the ground, walls or frameworck)
- Check the electrical cables (supply, remote control, motors)
- Never exceed the value allowed for the half angles - see chapter "Ring positioning"

C - DESCRIPTION

ROTAMATIC STs are for rotating cylindrical parts of varied diameter and weight, depending on the model chosen.

Each rotator comprises a dropped frame and rotating rollers, motorized or otherwise, with adjustable spacing.

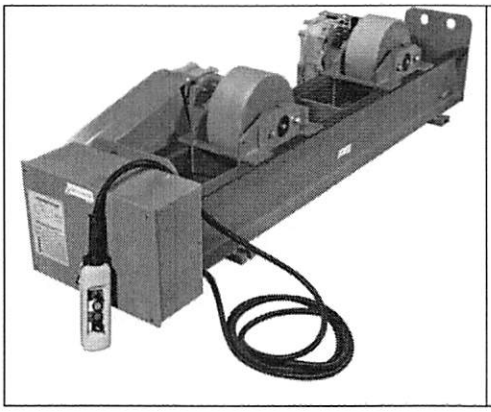
The motorized version of the rotator is equipped with a electrical unit.

It also has a remote control for the two rotational directions
with speed regulation by potentiometer.

The **ROTAMATIC ST 30** range can support rings with a weight less than or equal to 30 tonnes.

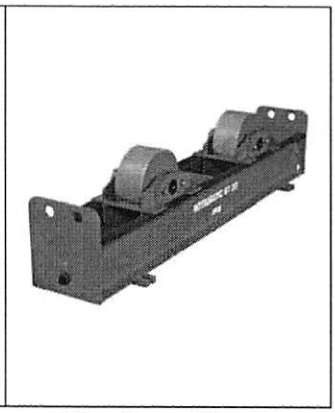
distance between rollers adjustable with a reverse thread screw :
Variable Pitch (PV)

ROTAMATIC WITHOUT OPTION



DOUBLE MOTORIZATION VERSION

ROTAMATIC ST 30W
ref W000315309



Version without motorization (idler)
ROTAMATIC ST 30F
ref W000315310

ROTAMATIC WITH OPTION

A	B	C	D	Designation	Ref.
X				ROTAMATIC ST 30W A	W000272479
X	X			ROTAMATIC ST 30W AD	W000272480
X	X	X		ROTAMATIC ST 30W ADR	W000272481
X	X	X	X	ROTAMATIC ST 30W ADRC	W000272482

a) AUTOMATIC CONTROL OPTION (OPTION ALONE W000315292)

With this option, the motorised rotator starts turning automatically when welding is started (single exterior contact)

b) DISPLAY OPTION

With this option, linear speed in cm/min is displayed on a digital indicator on the rotator's electrical unit.

c) TIG-PLASMA REGULATION OPTION

With this option, the rotation speed of the rotator is regulated with accuracy with a variable speed unit SJ200. This option is necessary when the rotator is used with a TIG or PLASMA welding installation

d) ENCODER 5000 pt/tr OPTION

With this option, the distance covered by the ring is measured with accuracy by means of an encoder placed on the roller shaft.

e) OPTION LORRY W000272574

This option includes 2 lorries which allow the transversal movement of ROTAMATIC on railway

f) ± 10V SETPOINT OPTION (ON REQUEST) 0300 1130

With this option, the working direction and speed are controlled by a ± 10V outer setpoint. It requires imperatively the auto control option W000315292

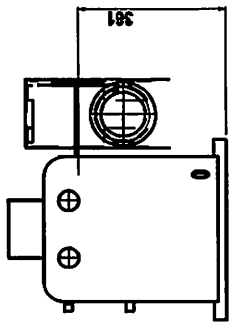
g) PEDAL KIT OPTION (OPTION ALONE W000273453)

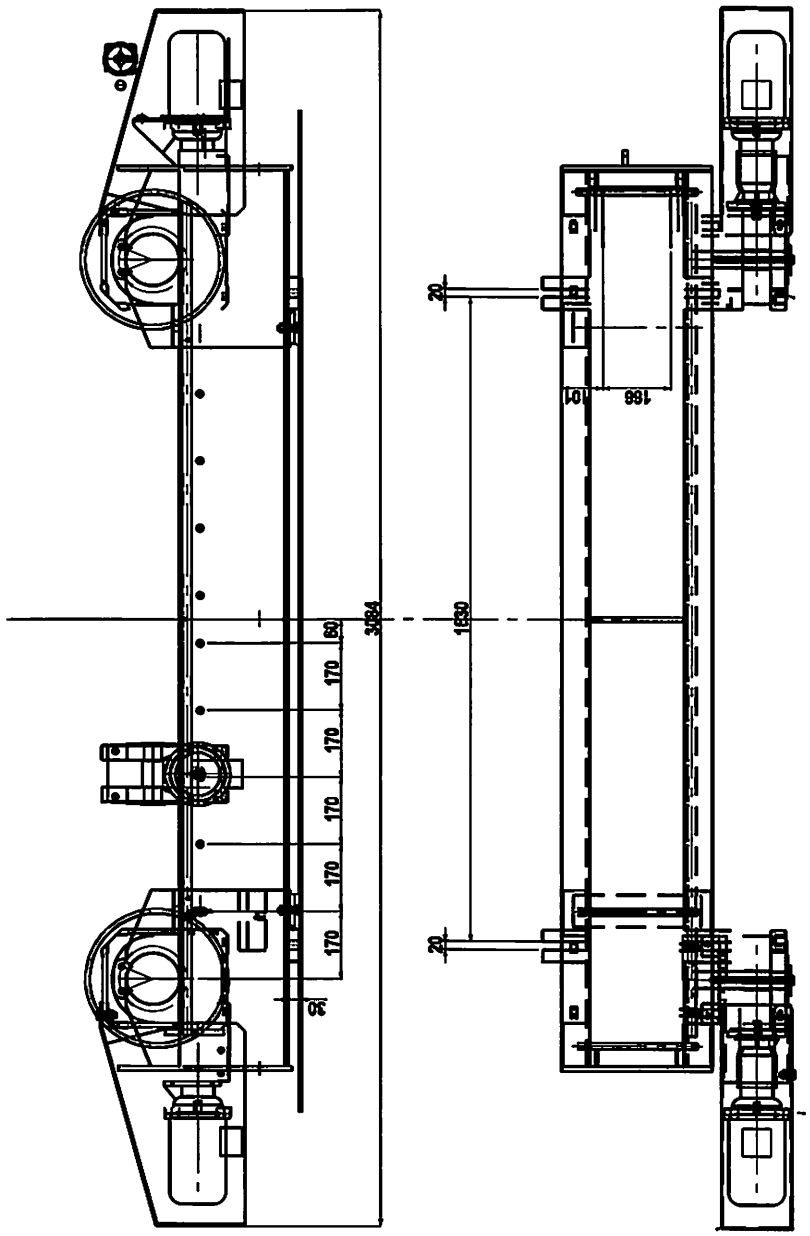
The pedal kit is used to control the rotation of the motorised rotator by keeping the pedal pressed down. The pedal kit may only be fitted if the optional auto kit (W000315292) is present on the Rotamatic unit.

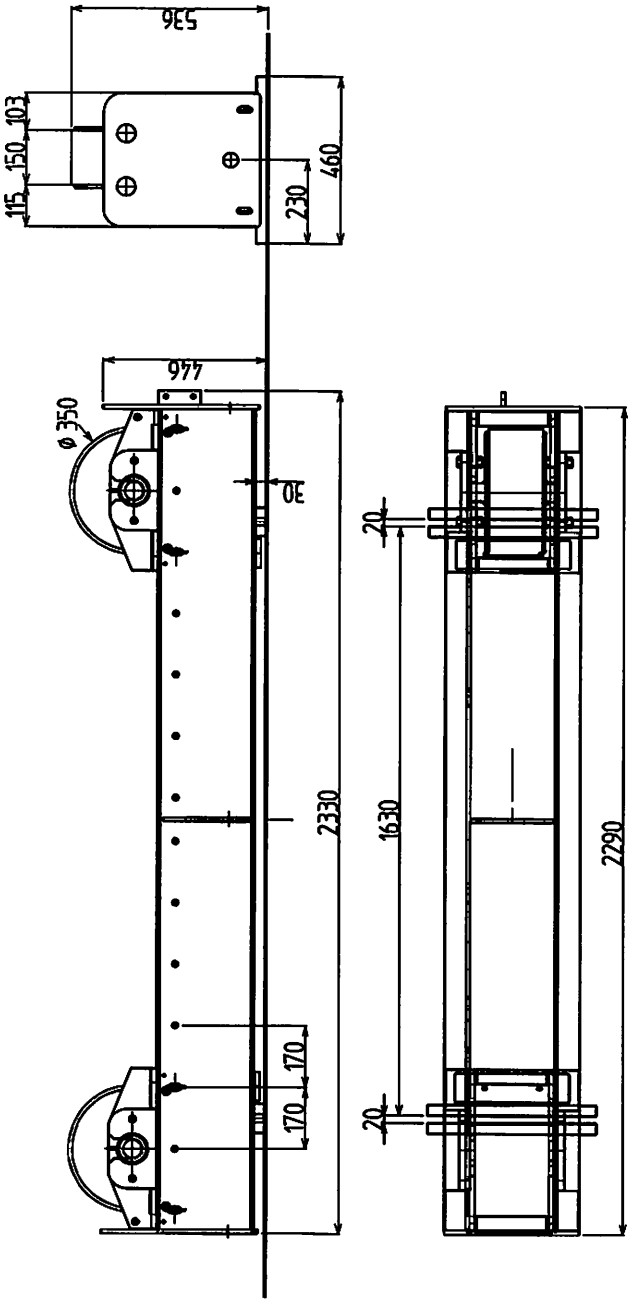
CHARACTERISTICS

	ROTAMATIC ST 30W	ROTAMATIC ST 30F
Rotation speed in cm/min	min : 12 max : 120	-
Admissible ring diameter (in mm)	min : 350 max : 4500	min : 350 max : 4500
Three-phase motor variable speed (in rpm)	min : 300 max : 3000	-
Idler and driving roller diameter (in mm)	350	350
Roller width (in mm) and material	150 polyuréthane	150 polyuréthane
Distance between rollers (in mm)	min : 460 max : 1820	min : 460 max : 1820
Power (in kVA)	W :3,8 M : 2,5	-
Mains voltage (in V)	3 x 400 (50/60Hz)	-
Maximum current drain (in Amps)	W :5,5 M : 3,6	-
Net weight(in kg)	WPV : 442 MPV : 382	FPV : 282
Gross weight (in kg)	WPV : 482 MPV : 422	FPV : 322
Maximum driven load (in kg)	30000	30000
Maximum supported load (in kg)	15000	15000

DIMENSIONS AND SPACE REQUIREMENTS:







ROTAMATIC ST 30F

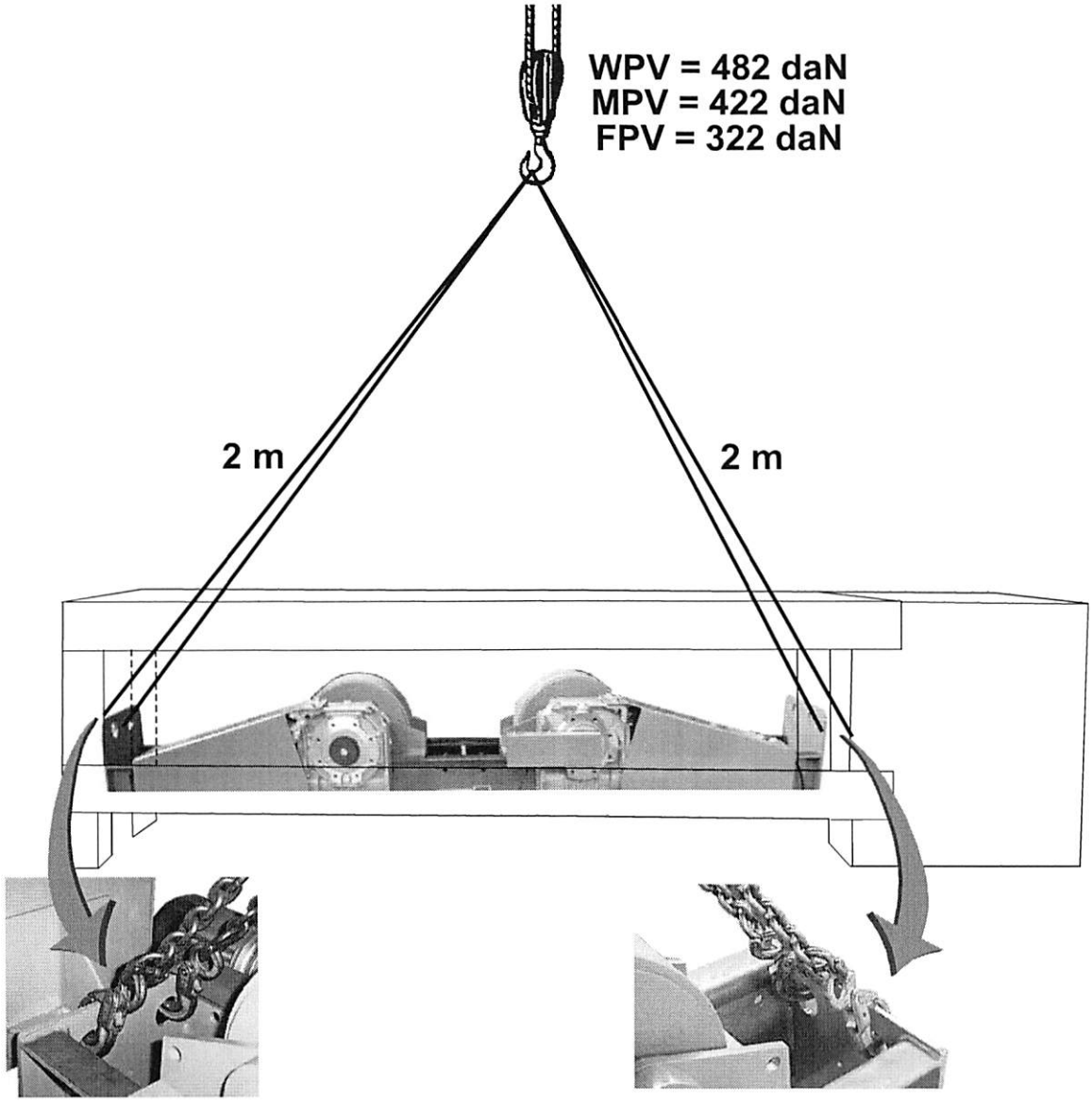
D - ASSEMBLY - INSTALLATION

1 - HANDLING THE ROTAMATIC ST

➢Sling the ROTAMATIC ST in its wooden packing as indicated on the diagram.

➢Remove the ROTAMATIC ST from its delivery packing.

➢Always use the opposite holes on both ends to sling the ROTAMATIC ST.



Operator protection :
Helmet - Gloves - Safety shoes

2 - INSTALLATION

⚠ **The rotator cross members should be positioned in parallel to limit the effects of screwing.**

The ring axis must be parallel to the axis of the rollers which support it.

In order to align the cross members, it is possible to refer to the blocks fixed symmetrically under the rotator frame.

3 - FIXING THE ROTAMATIC ST

It is essential that this machine is fixed to the ground by 4 anchorage points in a single piece 20 Mpa (350 kg/m^3) concrete slab with metal reinforcement, at least 21 days old (BAEL 91 standard).

EQUIPMENT RECOMMENDED FOR FIXING THE ROTAMATIC ST:

Make	Anchor bolt type	Reference	Drilling hole Ø(mm)	Admissible load (daN)
HILTI	Metallic	FBR M 16 x 130	Ø 16	800
	Chemical	HAS M 16 x 190 + HBP 16	Ø 18	2120
FISCHER	Metallic	FA 16 x 20 FB 16 x 25	Ø 16 Ø 16	1200 1200
	Chemical RM	16 + RGM 16 x 190	Ø 18	3750
SPIT	Metallic	050680 FIX 16/45	Ø 16	810 to 1270
	Chemical	M 16 - 5209 + SM 16 - 5224	Ø 18	2175

4 - ELECTRICAL CONNECTIONS

Electrical connection of the ROTAMATIC ST to the mains is by the 5 metre cable situated to the rear of the supply box.

This cable, comprising 4 conductors, should be connected to a 3 x 400 V / 50 -60Hz standard network with equipotential coupling.

⚠ **VERY IMPORTANT**

In order to comply with European safety regulations, connection to the mains must be made using a wall box fitted with an individual disconnecting switch of suitable size according to the mains voltage and to the consumption of the apparatuses

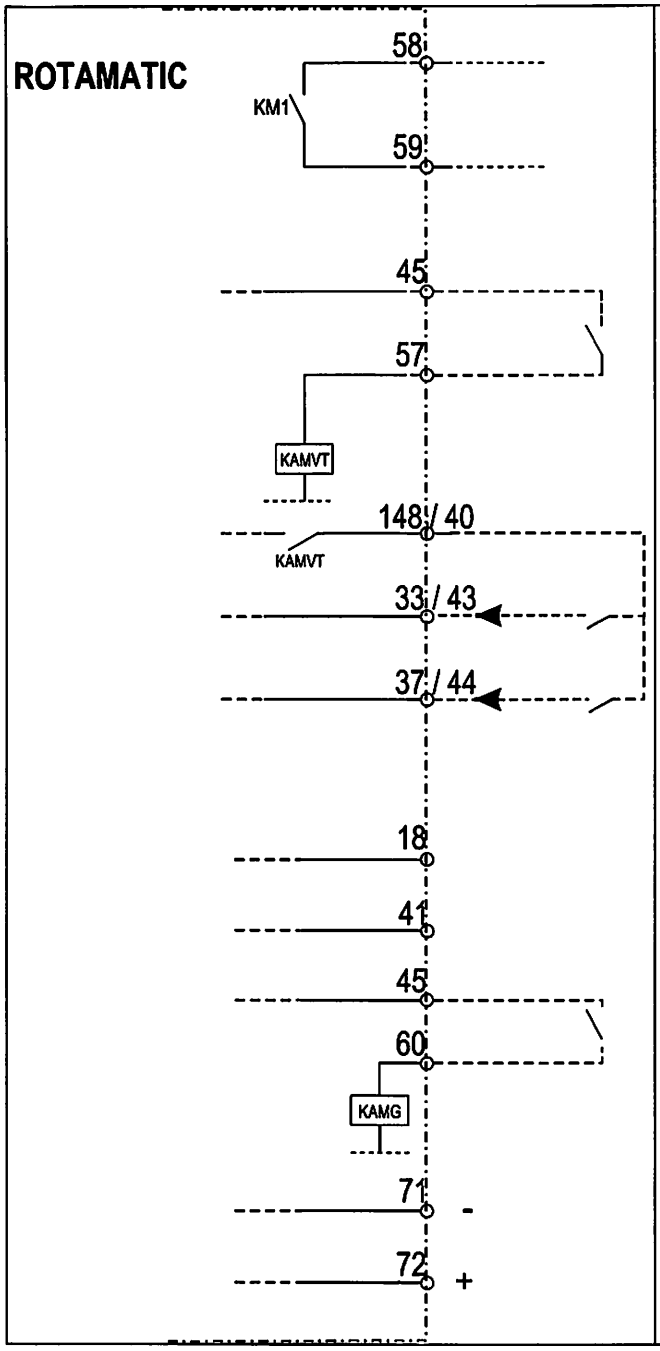
This protective disconnecting switch will need a 100 KA cutting capacity

We market units meeting such requirements. Do not hesitate to contact us.

LAYOUT OF CABLES AND FLEXIBLE PIPES

➪ The customer should provide the means of support for cables and flexible pipes throughout their length well away from mechanical, chemical, or thermal damage.

EXTERIOR CONNECTION FOR OPTIONS



AUTOMATIC CONTROL OPTION

Contact KM1 between terminals 58 and 59 indIcates whether the rotator is in service

To select th e automati c rotator control, an exte rior contact must be cabled between terminals 45 and 57.

To select a direction during automatic control, depending on options installed, the following terminals should be connected
- 40 and 43 for rightwards rotation
- 40 and 44 for leftwards rotation

or
- 148 and 33 for rightwards rotation
- 148 and 37 for leftwards rotation,

± 10V SETPOINT OPTION

A 0-10v analog signal proportional to the speed of the rotator is available at the output of terminals 18 and 41

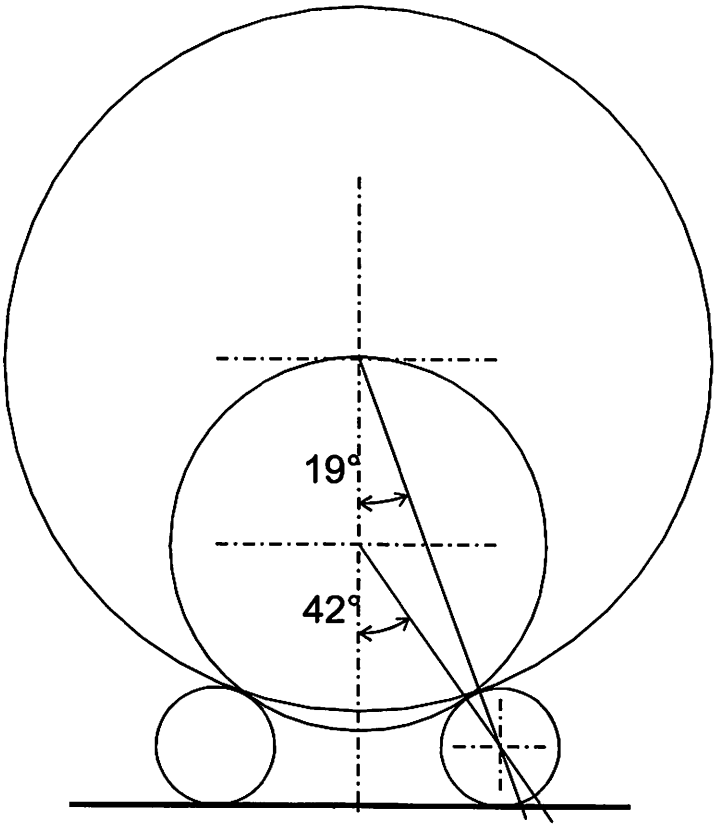
In order to select the auto control of the rotator with a ± 10v setpoint, an outer contact should be wired between terminals 45 and 60.

Connection of the ± 10v outer setpoint to terminals 71 and 72
- ⊕ to terminal 72
- Ě to terminal 71

5 - RING POSITIONING AND START-UP

Before starting up, it is important to observe the following installation instructions and precautions:

- **Adjust the centre distance between rollers depending on the diameter of the ring to be positioned. see page 15.**
- **The rotator cross members must be positioned under the parts, away from possible openings on the rings and from protruding parts which may interfere with the rotation of the ring.**
- **Balance the load on the 2 cross members using the table on page 14.**
- **For polygonal parts, the maximum admissible loads should be divided by 2.**



The half point angle formed by the axes of the rollers and ring should be between 19° minimun and 42° maximun for the device to operate properly

LIMITE D'UTILISATION (TRAVERSES MOTRICE + FOLLE)

MAXIMUM VALUES (DRIVE AND IDLER SECTIONS)

ROTAMATIC ST 30M — SANS BALOURD *WITHOUT UNBALANCING MASS* — CHARGE MAXIMALE *MAXIMUM LOAD* 30000 KG

1/2 ANGLE AU SOMMET (°) *1/2 TOP ANGLE (°)*	32.76°	19.92	25.62°	29.02°	23.58°	26.22°	22.61°	24.73°	22.04°
CHARGE SUR LES 2 TRAVERSES EN KG	DIAMETRE DE LA VIROLE EN M *DIAMETER OF THE WORKPIECE (M)*								
	0,5	1	1,5	2	2,5	3	3,5	4	4,5
LOAD CAPACITY ON THE 2 SECTIONS (KG)	BALOURD MAXI. ADMISSIBLE EN kg.m *MAXIMUM UNBALANCING MASS (m.kg)*								
1000		8	26	44	57	76	89	107	120
2000		16	51	88	114	151	178	214	241
3000		23	77	132	172	227	266	321	361
4000		31	103	177	229	302	355	428	481
5000		39	128	221	286	378	444	535	602
6000		47	154	265	343	453	533	642	722
10000		78	256	441	572	755	888	1070	1204
15000		10	193	377	560	743	926	1109	1293
20000			75	258	441	624	808	991	1174
30000									

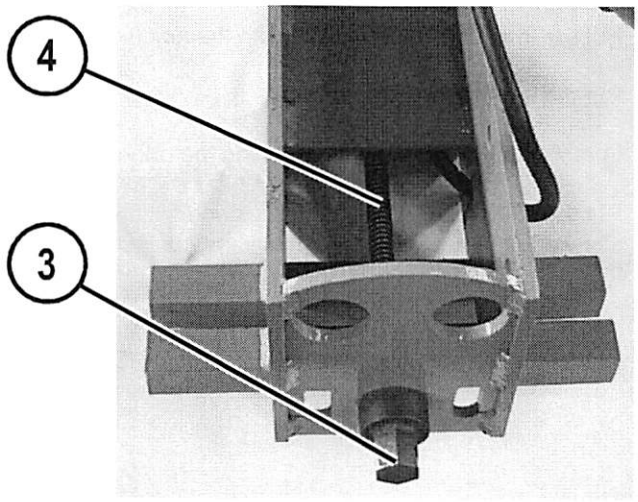
LIMITE D'UTILISATION (TRAVERSES MOTRICE + FOLLE)

MAXIMUM VALUES (DRIVE AND IDLER SECTIONS)

ROTAMATIC ST 30W — SANS BALOURD *WITHOUT UNBALANCING MASS* — CHARGE MAXIMALE *MAXIMUM LOAD* 30000 KG

1/2 ANGLE AU SOMMET (°) *1/2 TOP ANGLE (°)*	32.76°	19.92	25.62°	29.02°	23.58°	26.22°	22.61°	24.73°	22.04°
CHARGE SUR LES 2 TRAVERSES EN KG	DIAMETRE DE LA VIROLE EN M *DIAMETER OF THE WORKPIECE (M)*								
	0,5	1	1,5	2	2,5	3	3,5	4	4,5
LOAD CAPACITY ON THE 2 SECTIONS (KG)	BALOURD MAXI. ADMISSIBLE EN kg.m *MAXIMUM UNBALANCING MASS (m.kg)*								
1000	12	40	77	114	141	178	205	242	269
2000	24	81	153	228	282	356	410	484	538
3000	36	121	230	343	422	534	615	726	807
4000	48	162	306	457	563	712	820	967	1076
5000	61	202	383	571	704	890	1025	1209	1345
6000	73	242	459	685	845	1068	1230	1451	1614
10000	80	327	665	1001	1237	1578	1805	2150	2371
15000		208	547	882	1118	1459	1686	2031	2253
20000		89	428	764	1000	1341	1568	1912	2134
30000			190	526	762	1103	1330	1675	1896

6 - INSTALLING THE IDLER AND MOTORIZED ROLLERS



VARIABLE PITCH

Rollers with variable pit ch are fixed onto a scre w with reverse thread pi tch **(item.4)** allowing for symmetrical and accurate positioning along the whole length of the frame.

To position, turn a perforated screw **(item.3)** using an appropriate hexagonal wrench or a rod in the orifice of the screw.

It is recommended that the position of the variable pitch rollers should never be changed when there is a ring in place.

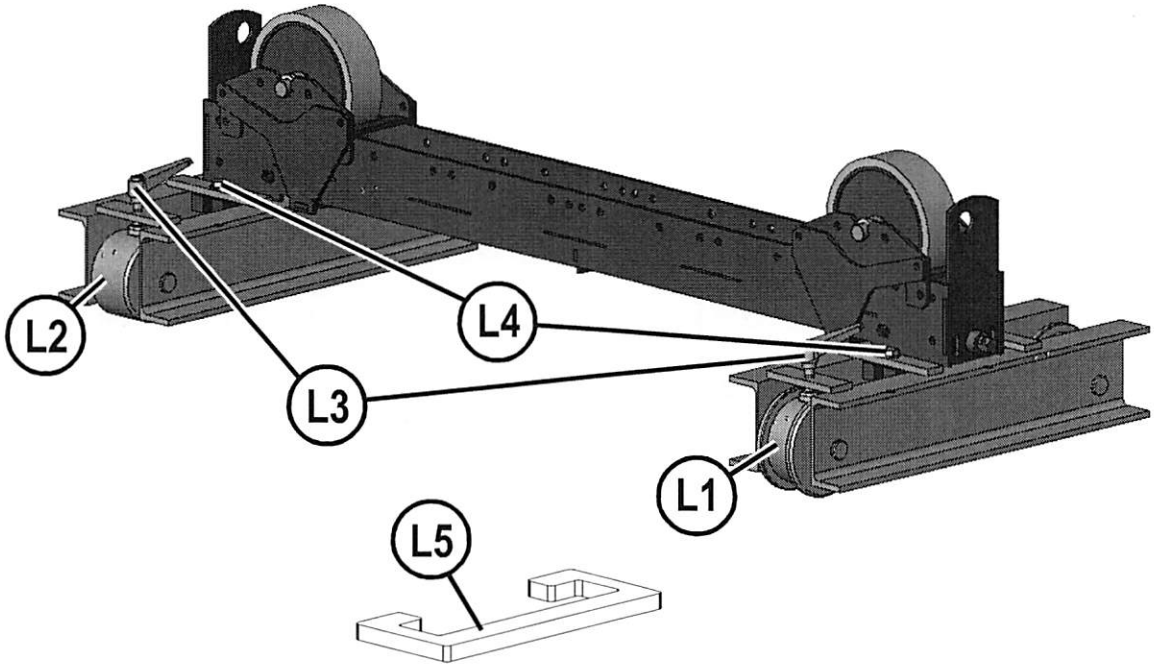
When a pneumatic or electrical device is used to manoeuvre an opposite thread pitch screw, the operator must take care that undue force is not used should the stops be hit.

7 – COMMISIONNING LORRY

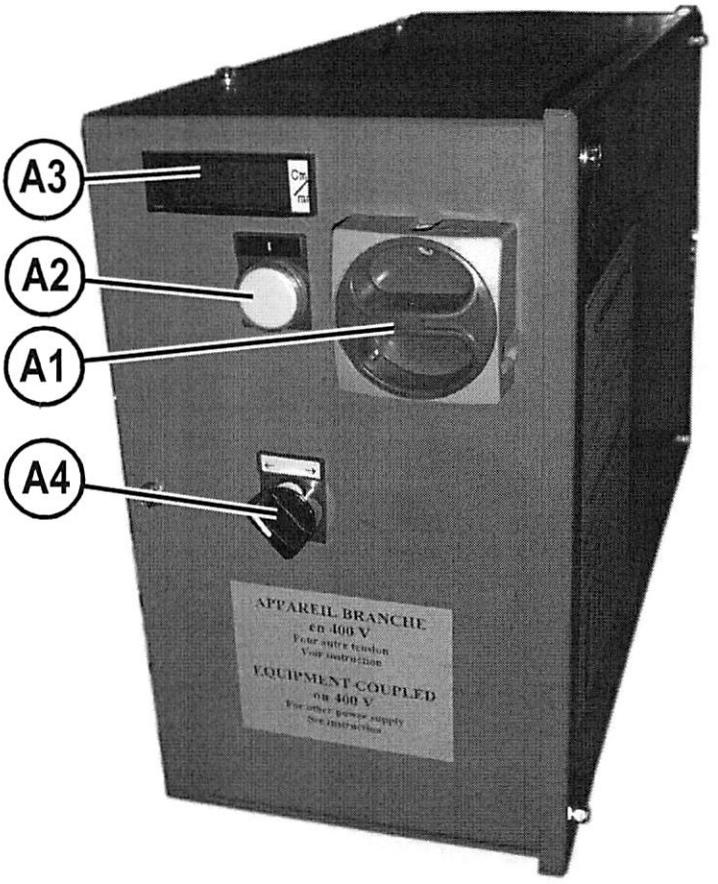
- Put the lorry L1 on the railway with the notch.
- Put the lorry L2 on other railway.
- Immobilize the lorries by tightenning the handle.
- Put the ROTAMATIC on the lorries and fix it with the 4 screws L4. (Check the perpendicularity of ROTAMATIC with the railway before tighten the screw).

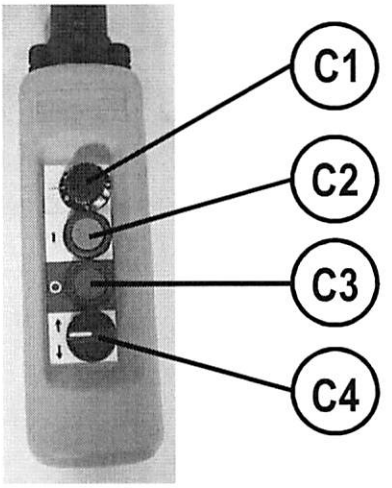
NOTA :

The plates L5 are not used for the ROTAMATIC ST6 and ST15.



E - OPERATOR MANUEL





Rep	Description
A1	Main ON/OFF switch
A2 "ON/OFF" indicator	
C1	Rotation speed adjusting potentiometer (speed variable from 12 to 120 cm/min).
C2 Powe	r **start-up** push-button (variable speed unit)
C3 Powe	r **switch off** push-button (variable speed unit)
C4	3 fixed position switch for rotation direction. The central position is that of rest.

OPTION	
A3	Speed display. (Option display).
A4	Rotation with automatic start. (Option auto start).

F - MAINTENANCE

1 - SERVICING

LUBRICATION

The reducing gears mounted on the ROTAMATIC STs are provided with permanent lubrication. They have no filler, level, or oil drain plug.

Therefore they require no maintenance.

These reducing gears can operate in an ambient temperature between 0°C and +50°C.

CHECKING AND SAFETY

It is important to follow the indications given in these instructions, especially those relating to limits of use.

In addition, the main elements of the device must be checked every 3 months, paying particular attention to the screws and nuts of the roller closeness system, the wear of the wheel and screw reducing gears, the motor and remote control feeder cables, motor ventilation, etc.

TYRE SERVICING AND PROTECTION

For maximum length of use, it is important to comply with the following instructions:

⇒ Do not overload them (avoid impacts when positioning the ring)

⇒ Do not leave the rollers for long under a heavy load which may distort the tyre irreversibly

⇒ Do not put hydrocarbons on the rollers. If so, clean them very quickly.

During preheating, the temperature of the ring area in contact with the tyres should not exceed 60 to 70°C and the part must be kept moving.

2 - TROUBLESHOOTING

<table>
<tr><th>Possible symptoms</th><th>Probable causes</th><th>Possible remedies</th></tr>
<tr><td rowspan="2">The rotator indicator goes out after switching on with QS1.</td><td>The indicator bulb has gone</td><td>Replace the bulb</td></tr>
<tr><td>Fuses FU1 or FU3 have gone</td><td>Replace the spent fuses with reference to the table of fuse sizes</td></tr>
<tr><td rowspan="5">The rotator does not turn after it has been switched on</td><td rowspan="2">No rotation direction has been selected</td><td>Choose a rotation direction using the switch ↑↓</td></tr>
<tr><td>During automatic control, no connection has been made between terminals 40 and 43 or 148 and 33 (rightwards rotation) or between 148 and 37 or 40 and 44 (leftwards rotation) to control the direction.
Make this connection using a shunt or an outer contact see electrical connections.
During operation with a ± 10V outer setpoint, check that a voltage is present between terminals 71 and 72 (0V → no rotation).</td></tr>
<tr><td rowspan="3">There is no power supply to the motor</td><td>Check and if necessary replace the FU2 (or FU4) fuses.</td></tr>
<tr><td>Check that the thermal relay FR1 or FR2 is not on.
Then check that the FR1 thermal relay is correctly regulated using the following table:
Double motorisation rotator
<table>
<tr><td>type:</td><td>2T</td><td>6T</td><td>15T</td><td>30T</td></tr>
<tr><td>value (A)</td><td>0,7</td><td>1</td><td>1,2</td><td>1,2</td></tr>
</table></td></tr>
<tr><td></td></tr>
<tr><td rowspan="6">The rotator turns for a short while then stops</td><td rowspan="4">Excess current leading to
- a thermal relay fault

or excess current leading to
- a fault in variable speed unit E01 or E02 or E03 or E04

or motor overload leading to
- a fault in variable speed unit E05</td><td>Check the state and regulation of the thermal relays (double motorisation situation) using the above table.</td></tr>
<tr><td>Check that you are correctly applying the table of permissible load and unbalanced mass values for your rotator.</td></tr>
<tr><td>Check that there has been no sudden addition to the load.</td></tr>
<tr><td>Check that there is no short circuit in variable speed unit terminals U,V,W.</td></tr>
<tr><td>Check that there is no short circuit in the motor cable and that the motor connections have been made correctly.</td></tr>
<tr><td>Mains undervoltage leading to
- a fault in variable speed unit E09</td><td>Check that the mains voltage is not too low or unstable</td></tr>
</table>

DEFINITION OF VARIABLE SPEED UNIT ERRORS DISPLAYED

NUMBER	DESCRIPTION
E01	Excess current at constant speed
E02	Excess current during acceleration
E03	Excess current during deceleration
E04	Excess current at standstill
E05	Motor overloaded
E06	Brake resistor overloaded
E07	Excess voltage
E08	EEPROM reading error
E09	Mains under-voltage
E11/E22	CPU processor fault
E12	Exterior fault
E13	"USP" restart locking fault
E14	Current escaping via earth
E15	Excess voltage in power supply
E21	Machine thermal protection
E35	Motor thermal protection by PTC probe

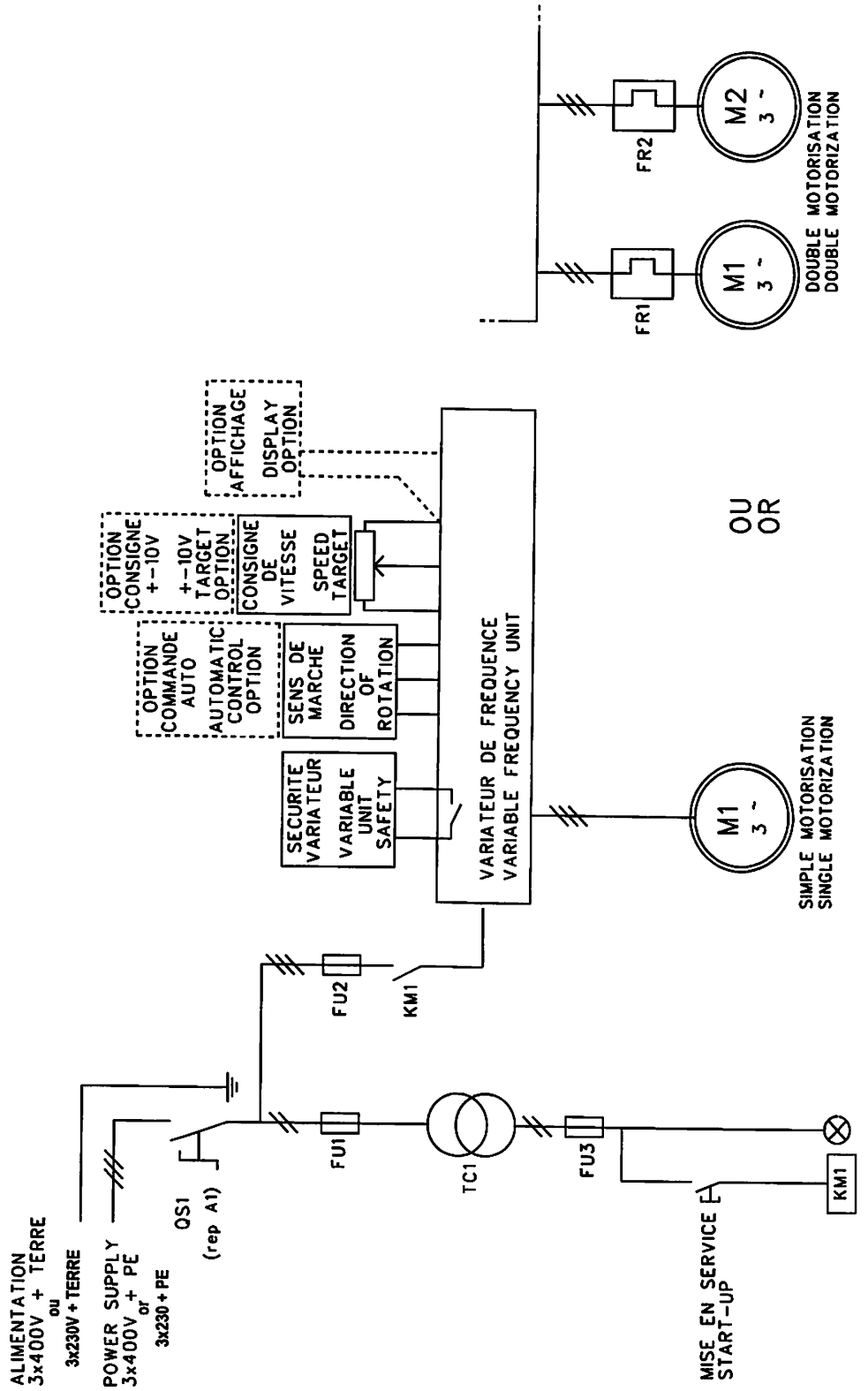
If any error other than E01 to E05 is displayed, do not hesitate to contact us.

ROTATOR FUSE SIZES:

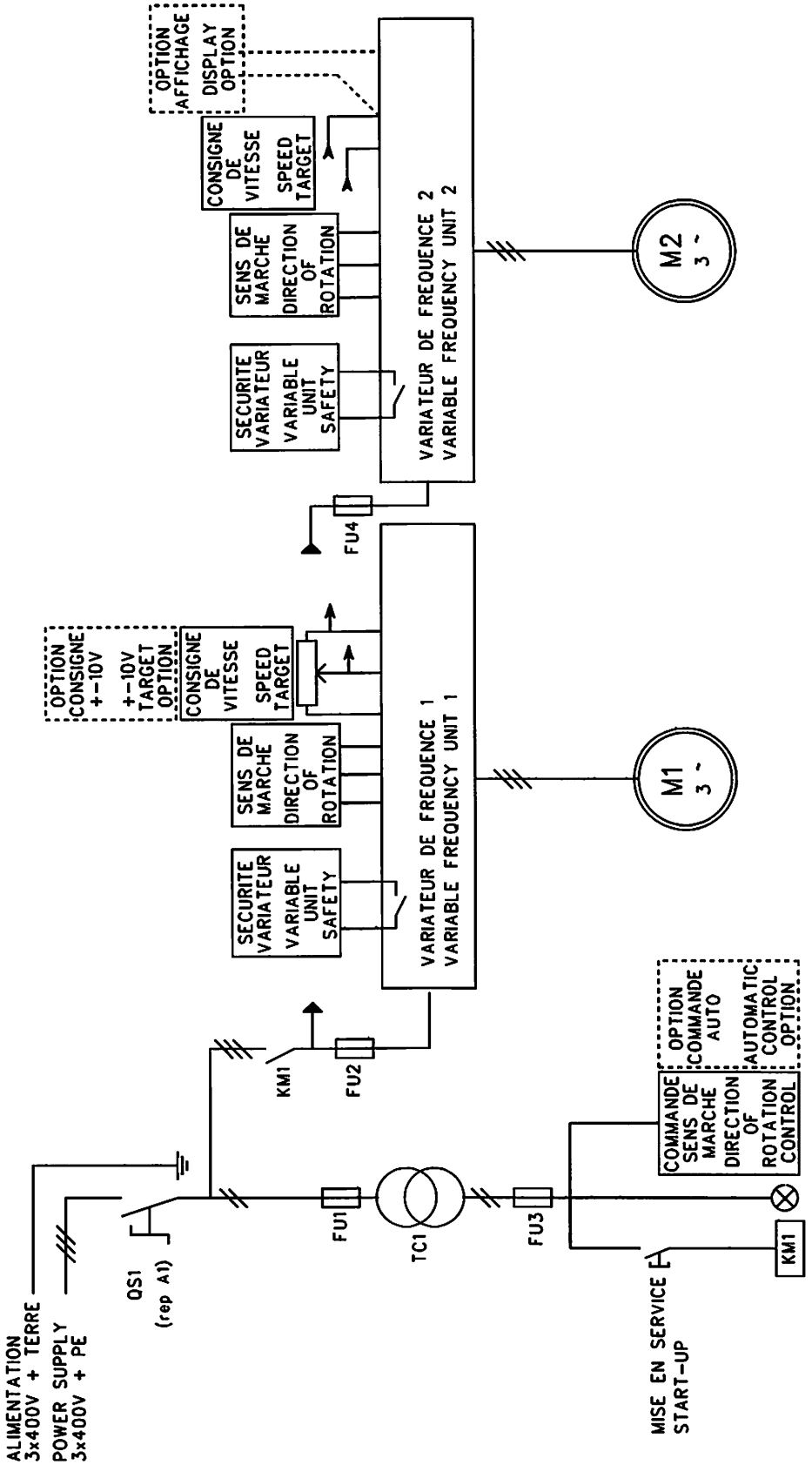
	STANDARD ROTATORS			REGULATION OPTION	
	FU1 (10x38)	FU2 (10x38)	FU3 (10x38)	FU2 (10x38)	FU4 (10x38)
ROTAMATIC ST 2	1 AaM	2 AaM	6 AgF	2 AaM	2 AaM
ROTAMATIC ST 6	1 AaM	4 AaM	6 AgF	2 AaM	2 AaM
ROTAMATIC ST 15	1 AaM	4 AaM	6 AgF	4 AaM	4 AaM
ROTAMATIC ST 30	1 AaM	6 AaM	6 AgF	4 AaM	4 AaM

BLOCK DIAGRAM (ROTAMATIC ST)

VERSION: 1 VARIABLE SPEED UNIT



VERSION: 2 VARIABLE SPEED UNITS



3 - SPARE PARTS

How to order

The photos or sketches identify nearly every part in a machine or an installation

The descriptive tables include 3 kinds of items:

- ***those normally held in stock*** : ✔
- ***articles not held in stock*** : ✘
- **those available on request : no marks**

(For these, we recommend that you send us a copy of the page with the list of parts duly completed. Please specify in the Order column the number of parts desired and indicate the type and the serial number of your equipment.)

For items noted on the photos or sketches but not in the tables, send a copy of the page concerned, highlighting the particular mark.

For example:

✔	normally in stock
✘	not in stock
	on request

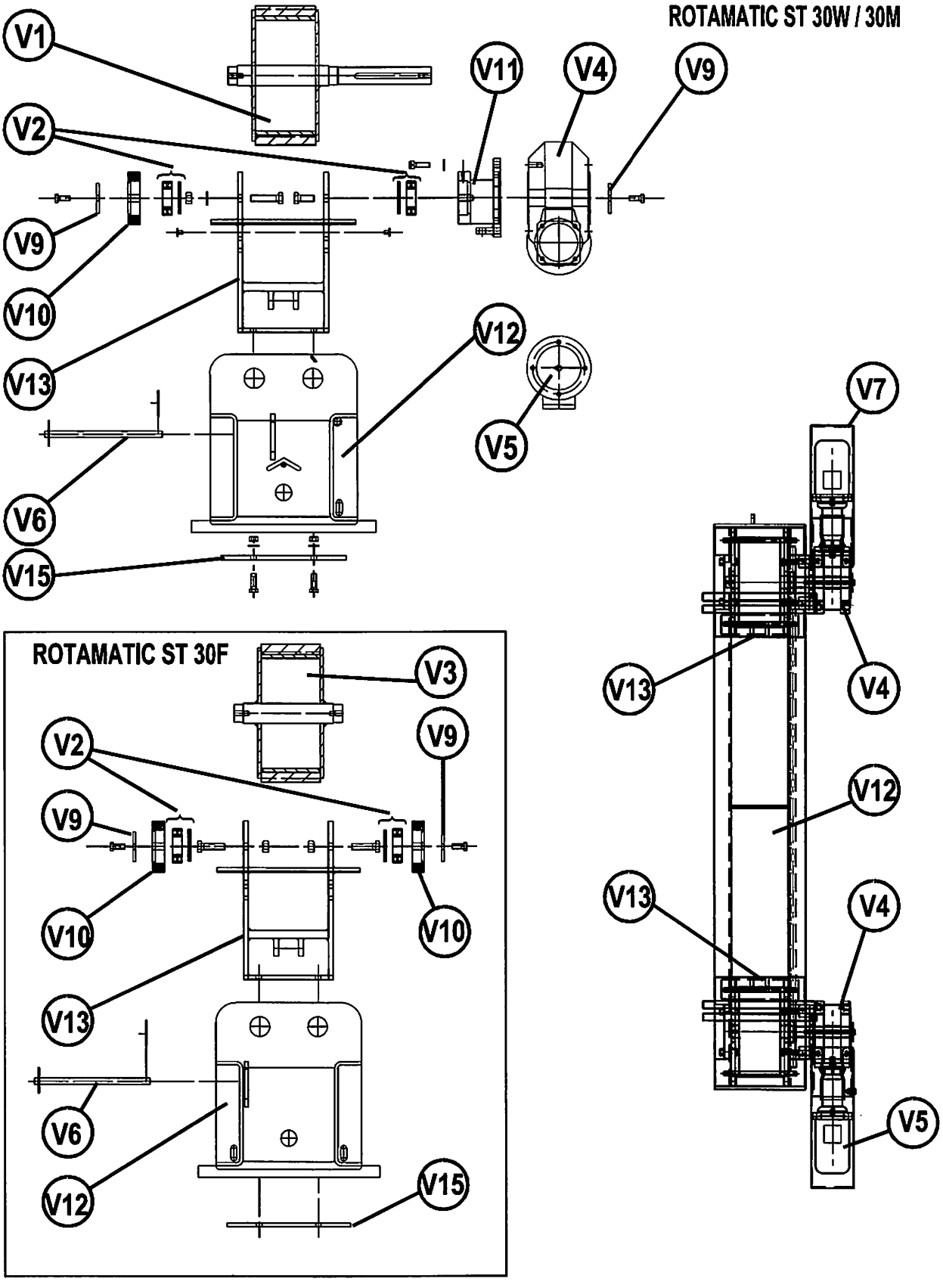
Item	Ref.	Stock	Order	Designation
1	W000 XXXX	✔		Machine interface board
2	W000 XXXX	✘		Flowmeter
3	9357 XXXX			Silk-screen printed front panel

➢ For parts order, give the quantity required and put the number of your machine in the box below.

TYPE : .....

Number : .....

MECHANICAL PART



MECHANICAL PART

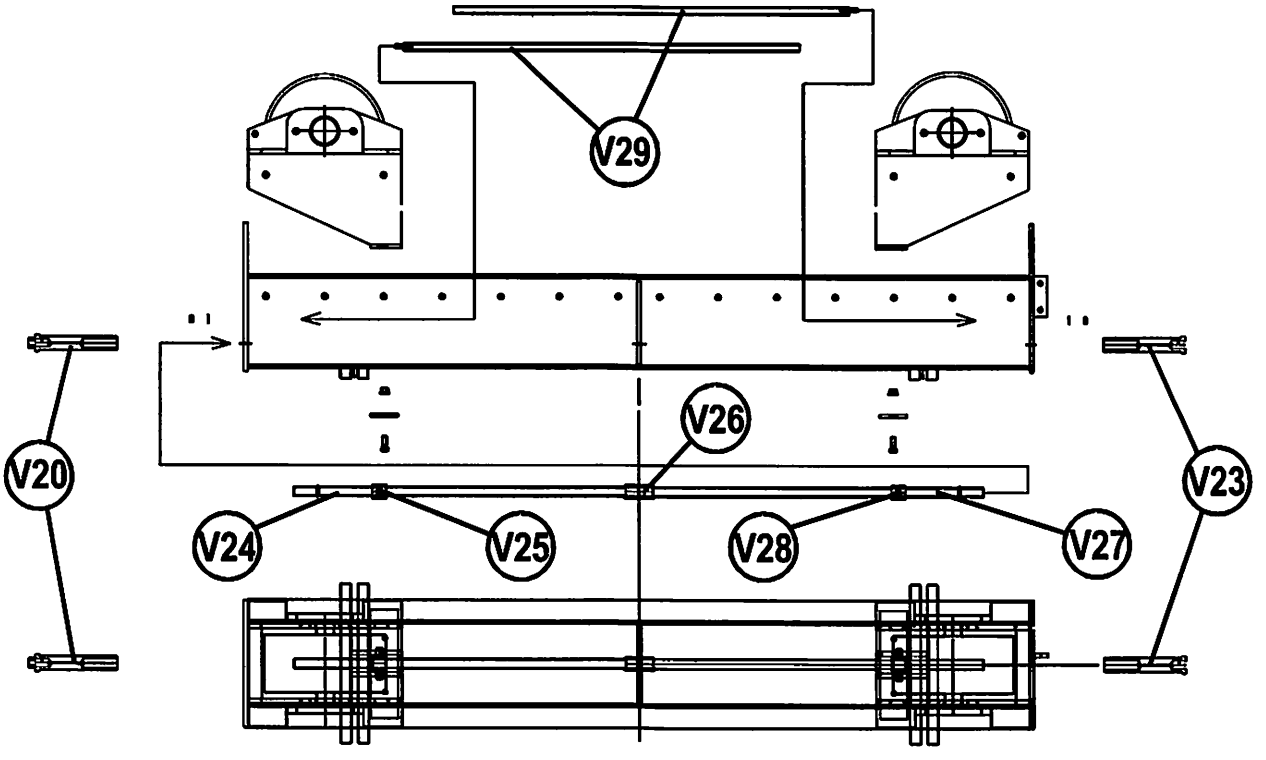
✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
V1	W000138035	✘		Driving roller
V2	W000138038	✔		Bearing + rivet washer
V3	W000138036	✘		Idler roller (wheel)
V4	W000138037	✔		Reducing gear motor
V5	W000138021	✔		Motor
V7	0300 1743			Motor protection cover
V9	0300 1719			Tightening washer
V10	0300 1715			Bearing
V11	0300 1724			Reducer rolling bearing
V12	0300 1705			Chassis
V13	0300 1714			Sliding block
V15	0300 1731			Flat piece
V20	0300 1727			Driving trunnion

➢ For parts order, give the quantity required and put the number of your machine in the box below.

TYPE : TYPE:.....

Matricule : Number: .....



OPTION LORRY

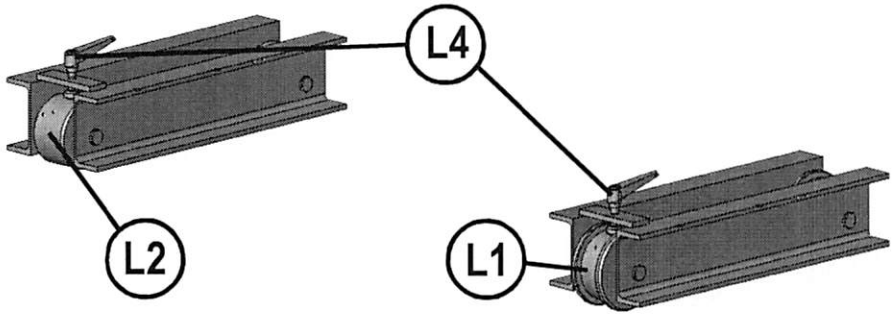
✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
L1	0300 5012			Flange wheel
L2	0300 5013			Flat wheel
L3	.530 0255			Screw
L4	.620 7303			Indexable handle
	.620 7304			Shoe screw
	.620 7305			Shoe
	0300 5016			Lorry roller axis

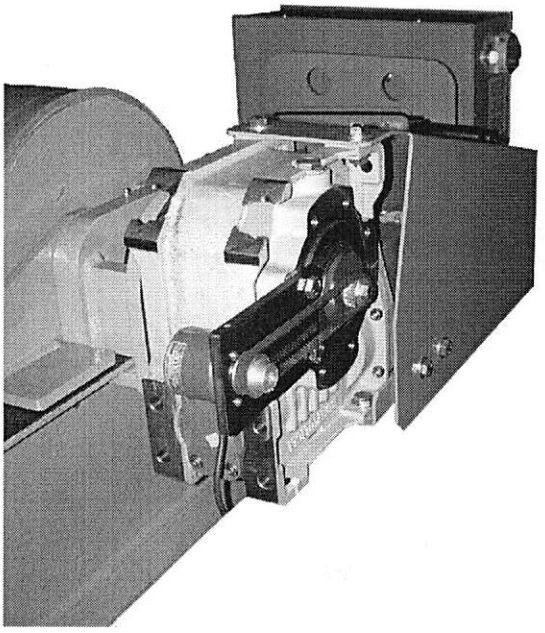
➢ For parts order, give the quantity required and put the number of your machine in the box below.

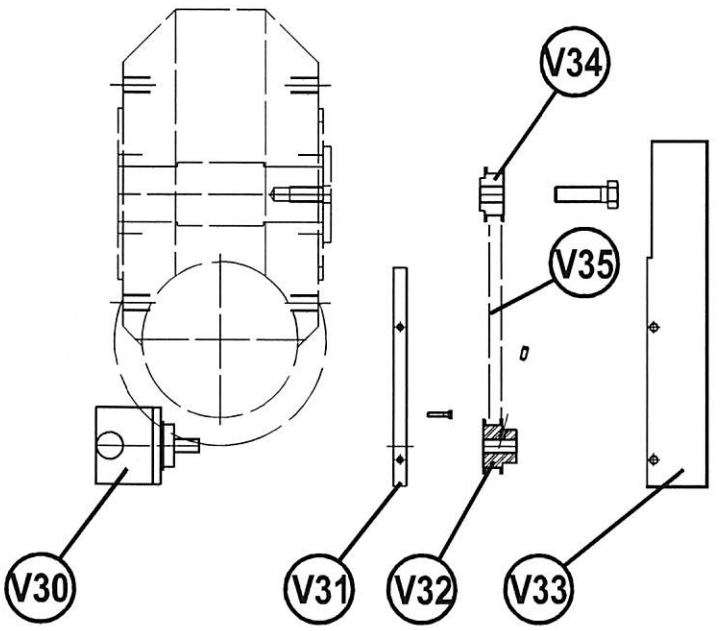
CE Type
Matricule

TYPE : .....
Number : .....



ENCODER OPTION

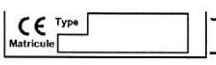




✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
V30	W000137985	✔		Encoder 1100 pt/tr
	W000275296	✔		Encoder 5000 pt/tr
V35	W000141120	✔		Belt

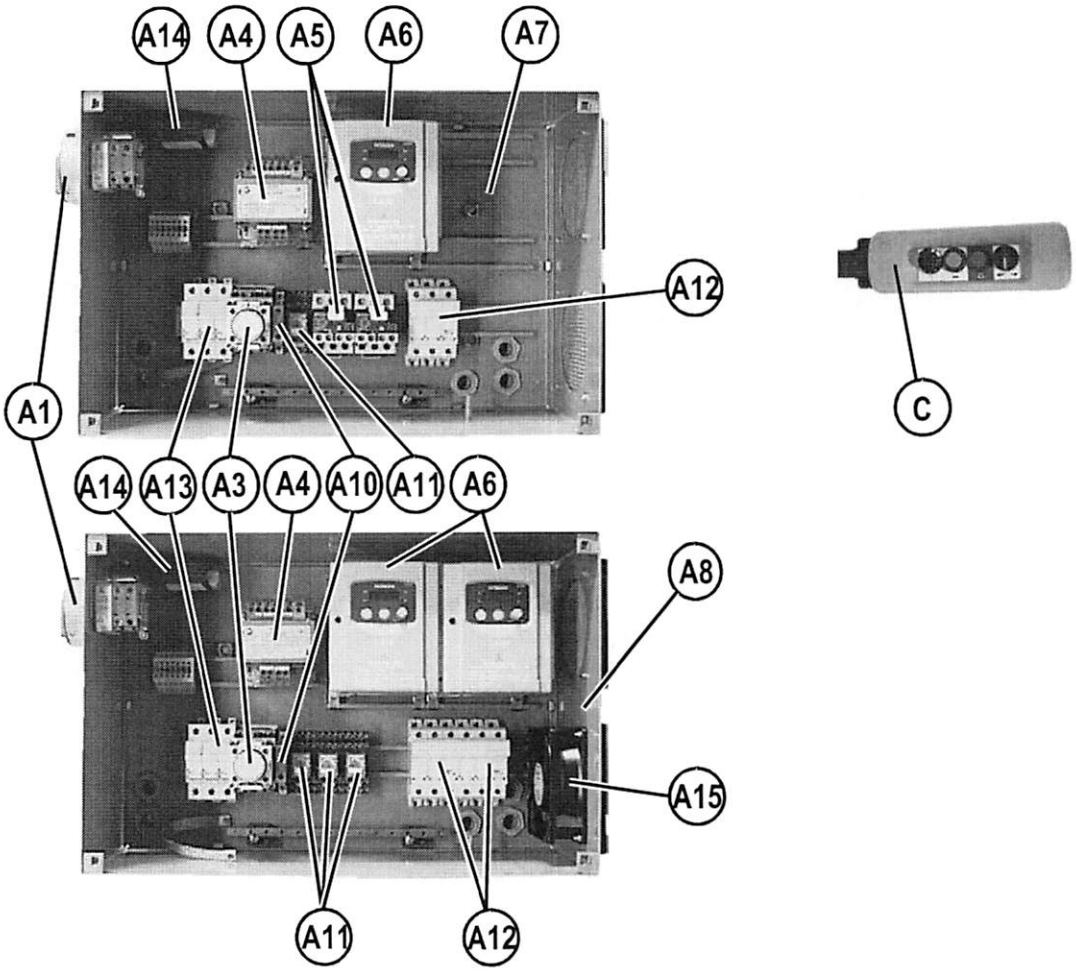
➢ For parts order, give the quantity required and put the number of your machine in the box below.



TYPE : TYPE:.....

Matricule : Number: .....

ELECTRICAL PART

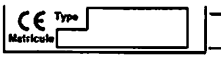


ELECTRICAL PART

✔	normalement en stock.
✘	not in stock
	sur commande spéciale.

Rep	Ref.	Stock	Cde	Désignation
A1	W000140748	✔		Main switch
A2	W000137799	✘		24 V bulb
A2	.570 4057			Indicator body
A2	.570 4054			Power ON indicator head
A3	W000137792	✔		KM1 contactor
A3	W000147095	✔		Time delay addition
A3	0011 5010			Anti-interference module
A4	.570 6078			63VA 220-380 / 2x24V transformer
A5	0020 5006			thermal relays
A6	W000138032	✘		Variable speed unit L200 for double motorization rotator W000315309
A6	W000138033	✘		Variable speed unit SJ200 for ROTAMATIC ST - No W000315309 equipped with the regulation option
A10	0011 4004			Additional contact
A11	9109 3173			4-contact relay
A11				Base for 4-contact relay
A12				Three-pole circuit breaker 10x38 (FU2-FU4)
A13				Fuse-holder 10x38 (FU1-FU3)
A14	W000141116	✘		Display unit
A15	W000140321	✘		Fan
C	W000137972	✔		Control box
	W000137798	✘		Converter ± 10V/ 0-10V
	0011 9013			Converter ± 10V/ 2 RT
	W000137794	✘		Relay 2 RT

➢ For parts order, give the quantity required and put the number of your machine in the box below.



TYPE : TYPE:.....

Matricule : Number:.....

PERSONAL NOTES