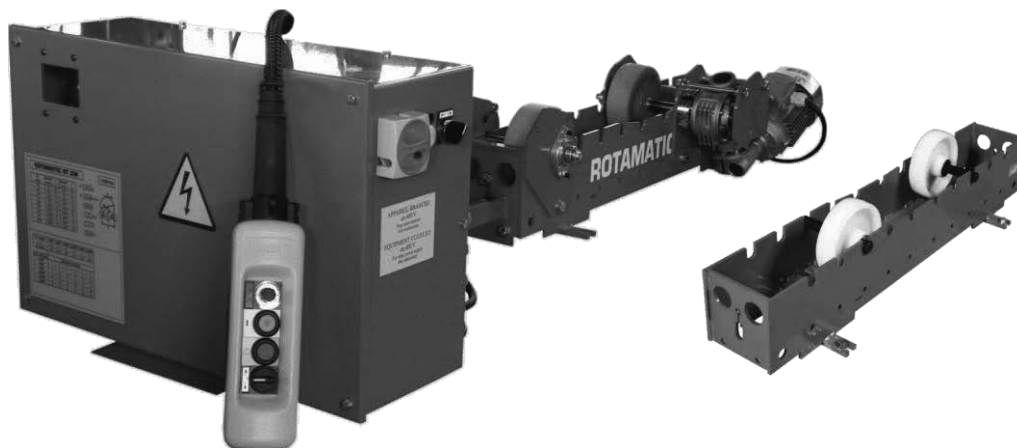


ROTATOR

ROTAMATIC ST 2

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

MACHINE N° W000315289 - W000315290
W000315288 - W000315291



EDITION: EN
REVISION: B
DATE: 04-2018

Instructions for use

REF: **8695 6421**

Original instructions

LINCOLN[®]
ELECTRIC

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 GAUGES

The measuring devices or displays for voltage, current, speed, pressure, etc., whether analog or digital, should be considered as indicators

For operating instructions, adjustments, troubleshooting and spare parts see safety instructions for use and maintenance.

REVISIONS

REVISION B

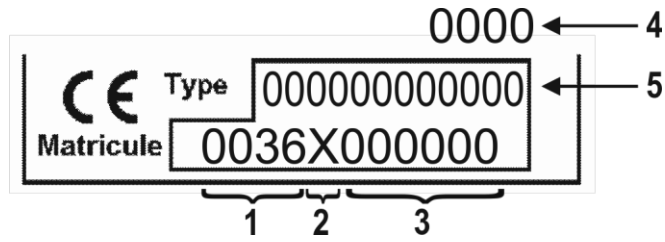
04/18

DESIGNATION	PAGE
To change logos	

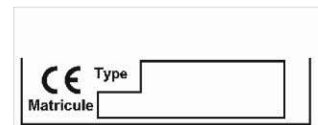
A - IDENTIFICATION

The information below should be provided in all correspondence.

Please note the serial number of your equipment in the box below.



1	Manufacturing plant code	4	Year of manufacture
2	Year of manufacture code	5	Type of product
3	Product serial number		



B - SAFETY INSTRUCTIONS

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



1 - AIRBORNE NOISE

Refer to the special instructions "8695 7051" supplied with the equipment.

2 - PARTICULAR SAFETY INSTRUCTIONS



Do not exceed the permissible loads, torques and tangential forces or the minimum and maximum diameters of shells.



Make sure that the guard covers of the electrical and mechanical parts are in place before starting up the equipment.



Carry out a dry test run of the rotation movement.



Do not drop loads on the equipment.



Make sure that the working of the equipment is not hindered by tools and/or objects left close to the rotating part or by its appendages, which could strike fixed elements (ground, frame, posts).



Make sure that the power and control conductors of the equipment are in good condition.



Maintain the centre to centre distance of the rollers depending on the diameter of the shell (see section D).



No object is to be placed on the rolling tracks.



Before using the machine, make sure that all the guards are in place. All guard covers must be screwed in. Only authorised personnel may access electrical cabinets, which must have locking systems.



Clean the working area from time to time.



If the equipment is used for welding, make sure that the ground of the power source is connected to the piece before you start welding.



Never modify the machine.
The rotator **is not** designed for anchoring lifting equipment.



The use of Personal Protective Equipment (PPE) is **mandatory**.



Machine maintenance must be carried out **with all the energy supplies switched off**.
The disconnection and padlocking of all energy sources is **mandatory**.

C - DESCRIPTION

1 - DESCRIPTION

- **ROTAMATIC ST** rotators are designed for rotating cylindrical pieces with variable diameters and weights, depending on their range.
- Each rotator is made of a low-floor frame and rollers that may or may not be powered, with adjustable spacing.
- The powered version of the rotator has an electrical cabinet.
- It also has a remote control for both rotation directions, and a potentiometer for speed variation.
- As standard, powered rotators make it possible to automatically start rotator operation with the start of welding (simple external contact).
- As standard, powered rotators display the linear speed in cm/min on the variable drive display in the cabinet.
- The spacing of the rollers is adjustable by means of compound screws

The **ROTAMATIC ST 2** range can support shells weighing 2 tonnes or less.

4 versions are available.

Nota : *The ROTAMATIC ST 2MT is a ROTAMATIC ST 2M equipped with a pressure roller for clamping small diameter (30 mm upwards) rings to increase stability during rotation.*

2 - ROTAMATIC WITHOUT OPTIONAL EQUIPMENT



DOUBLE POWER VERSION

ROTAMATIC ST 2W

REF W000315288



VERSION WITHOUT MOTORIZATION (IDLER)

ROTAMATIC ST 2F

REF W000315291



SINGLE POWER VERSION

ROTAMATIC ST 2M

REF W000315289



SINGLE MOTORIZATION VERSION

for TUBES

ROTAMATIC ST 2MT

REF W000315290

3 - ROTAMATIC WITH/WITHOUT OPTIONAL EQUIPMENT

	A	B	C	D	Description	Product no.
2T M	X	X			ROTAMATIC ST 2M	W000315289
	X	X	X		ROTAMATIC ST 2M ADR	W000272453
	X	X	X	X	ROTAMATIC ST 2M ADRC	W000272454
2T MT	X	X			ROTAMATIC ST 2MT	W000315290
	X	X	X		ROTAMATIC ST 2MT ADR	W000272457
	X	X	X	X	ROTAMATIC ST 2MT ADRC	W000272458
2T W	X	X			ROTAMATIC ST 2W	W000315288
	X	X	X		ROTAMATIC ST 2W ADR	W000272461
	X	X	X	X	ROTAMATIC ST 2W ADRC	W000272462

A) AUTO CONTROL (A)

This option makes it possible to automatically make the powered rotator start rotating with the start of welding (simple external contact).

B) DISPLAY (B)

This option makes it possible to display the linear speed in cm/min on the variable drive display in the cabinet.

C) OPTIONAL TIG-PLASMA REGULATION (C)

This option makes it possible to precisely regulate the rotator rotation speed to +/-1%. This option is required when the rotator is used along with a TIG or plasma welding installation.

D) OPTIONAL ENCODER, 5000 CPR (D)

This option makes it possible to accurately measure the distance covered by the shell using an encoder placed on the roller shafts.

E) OPTIONAL SETPOINT ± 10V (ON REQUEST)

This option makes it possible to control the direction and speed of operation of the rotator by an external ± 10V setpoint.

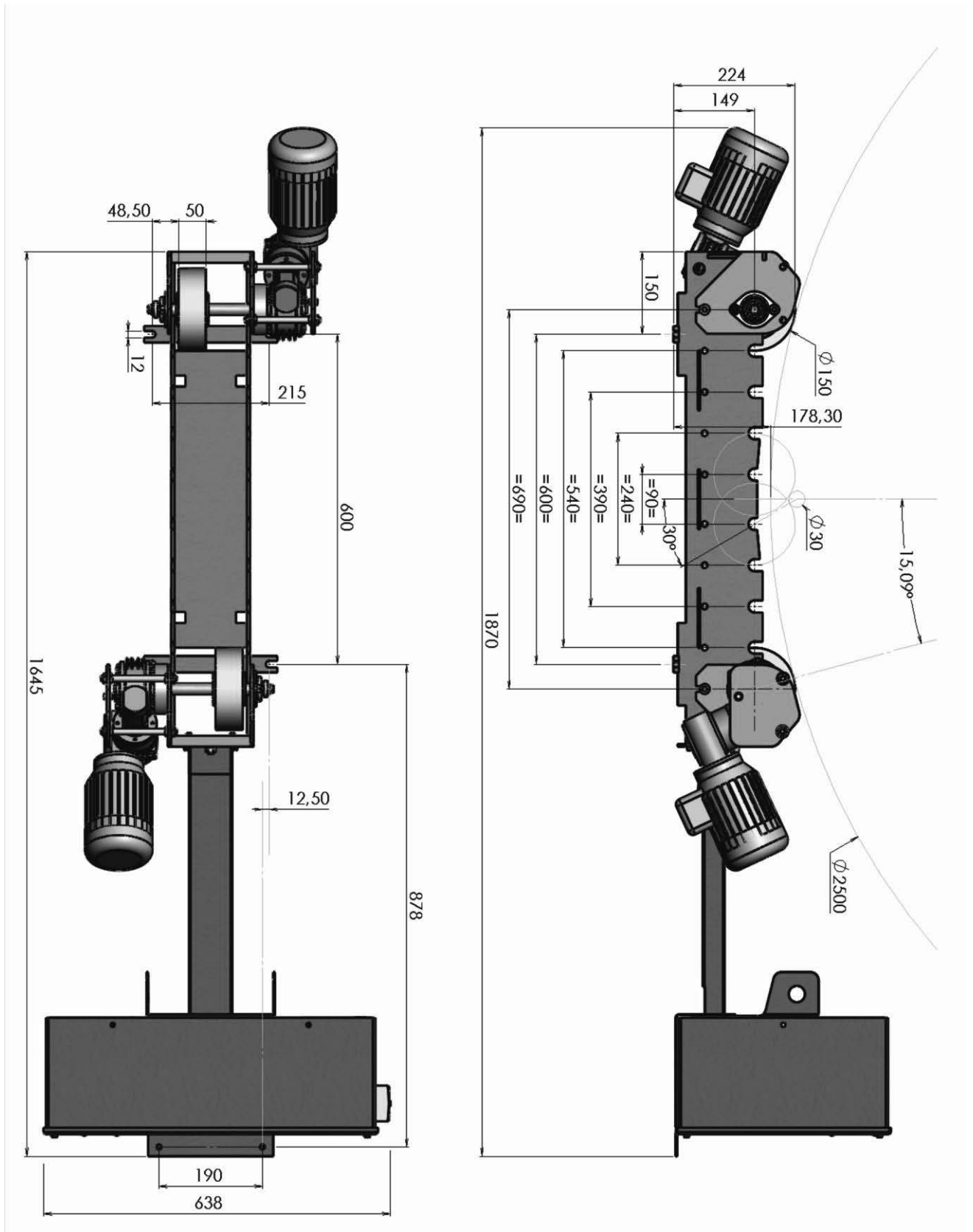
f) OPTIONAL PEDAL KIT (OPTION ALONE W000273453)

The pedal kit makes it possible to put the powered rotator into rotation when the operator keeps the pedal pressed down.

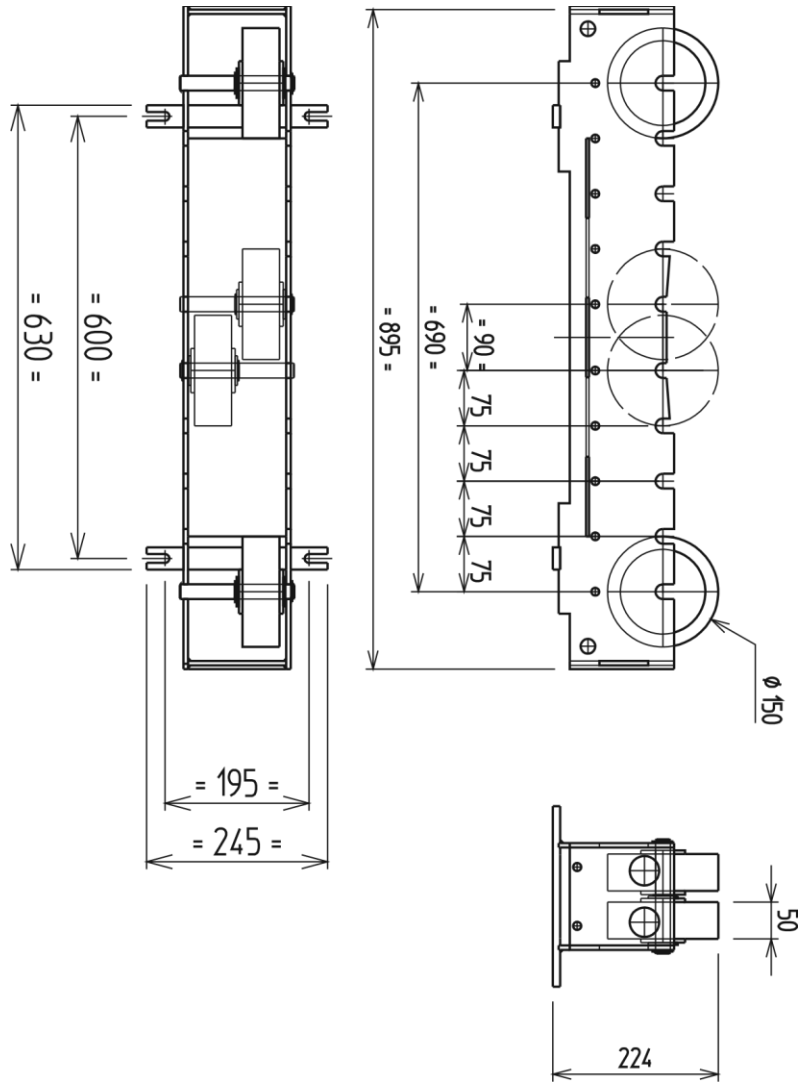
4 - SPECIFICATIONS

	ROTAMATIC ST 2M ROTAMATIC ST 2MT ROTAMATIC ST 2W	ROTAMATIC ST 2F
Rotation speed in cm/min	min : 12 max : 120	-
Permissible shell diameter (in mm)	min : 30 max : 2500	min : 30 max : 2500
Diameter of idler and drive rollers (mm)	150	150
Width (in mm) and material of rollers	50 polyurethan	50 polyamid
Roller distance (in mm)	min : 90 max : 690	min : 90 max : 690
Power (kVA)	1,7	-
Supply voltage (V)	3 x 400 (50/60Hz)	-
Maximum consumed current (A)	2,5	-
Net weight (kg)	W :70 M : 55	15
Gross weight (kg)	W :95 M : 80	25
Maximum driven load (kg)	2000	-
Maximum supported load (kg)	1000	1000
Tangential force (daN)	W : 288 M : 144	-

5 - DIMENSIONS



ROTAMATIC ST 2W et 2M



ROTAMATIC ST 2F

D - ASSEMBLY AND INSTALLATION

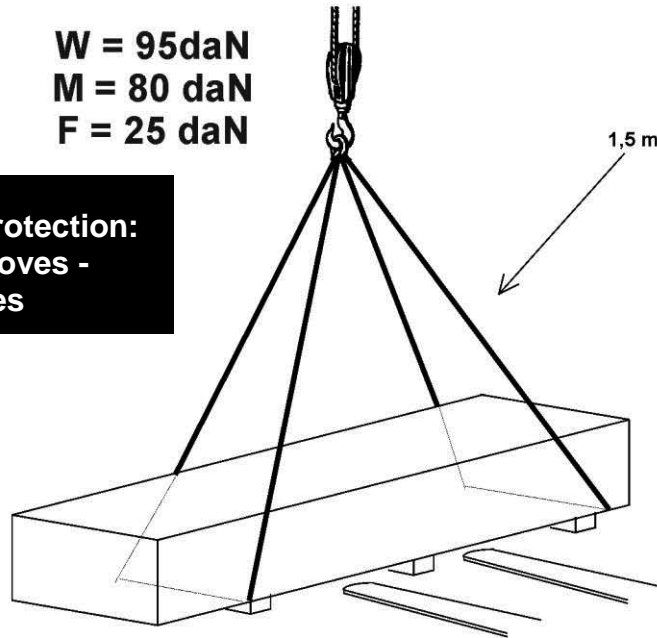
1 - MANUTENTION DU ROTAMATIC

- Sling the **ROTAMATIC ST** rotator in its wooden packaging as indicated in the drawing.
- Unpack the **ROTAMATIC ST** rotator from its delivery packaging.
- Sling the **ROTAMATIC ST** rotator, always using the opposite holes at each end.

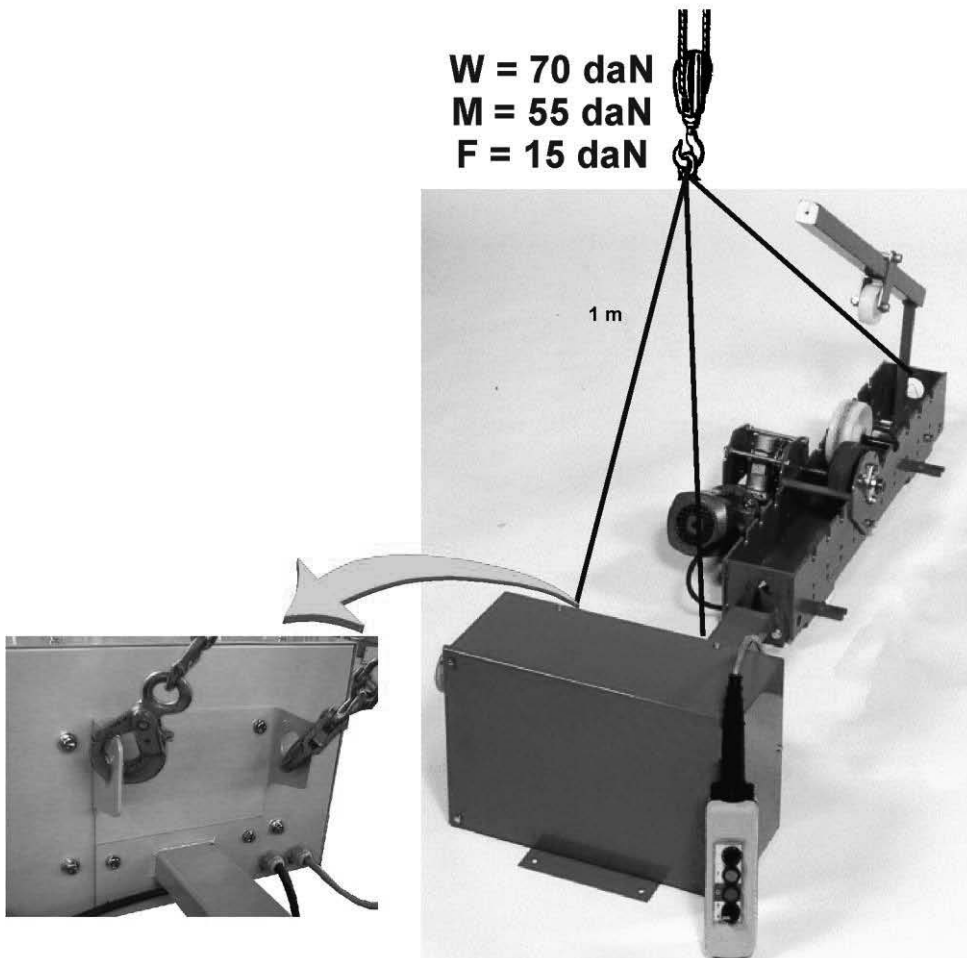


**Operator protection:
Helmet - Gloves -
Safety shoes**

**W = 95daN
M = 80 daN
F = 25 daN**



**W = 70 daN
M = 55 daN
F = 15 daN**



2 - PUTTING IN PLACE



The cross members of the rotators must be placed parallel in order to avoid screwing effects.

The centre line of the shell must be parallel to the line of the supporting rollers.

In order to line up the cross members, you may use the pads fixed symmetrically under the rotator frame as your reference.

3 - FASTENING OF ROTAMATIC ST

This machine must imperatively be anchored to the floor with four anchoring points in a 20 Mpa (350 kg/m³) single continuous concrete screed with metal reinforcement, completed since at least 21 days (standard BAEL 91).

When working with a large diameter ring, the base of the electrical unit may be positioned vertically, in which case it must be fixed to the ground..

FIXING THE ELECTRICAL UNIT VERTICALLY

- unscrew the tube connecting the electrical unit to the frame at both ends.
- remove the whole of the cable inside the tube.
- put the tube in vertical position and fix it to the ground by the part situated on the frame side.
- raise the unit up to the end of the tube and assemble using the 4 screws previously removed



EQUIPMENT RECOMMENDED FOR FASTENING ROTAMATIC ST

Brand	Type of anchors	Reference	Drilling diameter (mm)	Permissible load (daN)
HILTI	Metal	FBR M 16 x 130	Ø 16	800
	Chemical	HAS M 16 x 190 + HBP 16	Ø 18	2120
FISCHER	Metal	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	Metal	050680 FIX 16/45	Ø 16	810 à/to/bis 1270
	Chemical	M 16 - 5209 + SM 16 - 5224	Ø 18	2175

4 - ELECTRICAL CONNECTIONS

The **ROTAMATIC ST** is connected electrically to the network by means of the five-metre cable located at the rear of the supply cabinet.

The cable, which has four conductors, is to be connected to a standardised 3 x 400 V/50-60Hz system with equipotential bonding.



VERY IMPORTANT

For compliance with European safety standards, the connection to the electricity supply is to be made via a wall-mounted cabinet with an individual protective sectioning switch with rating appropriate for the mains voltage and the consumption by the equipment

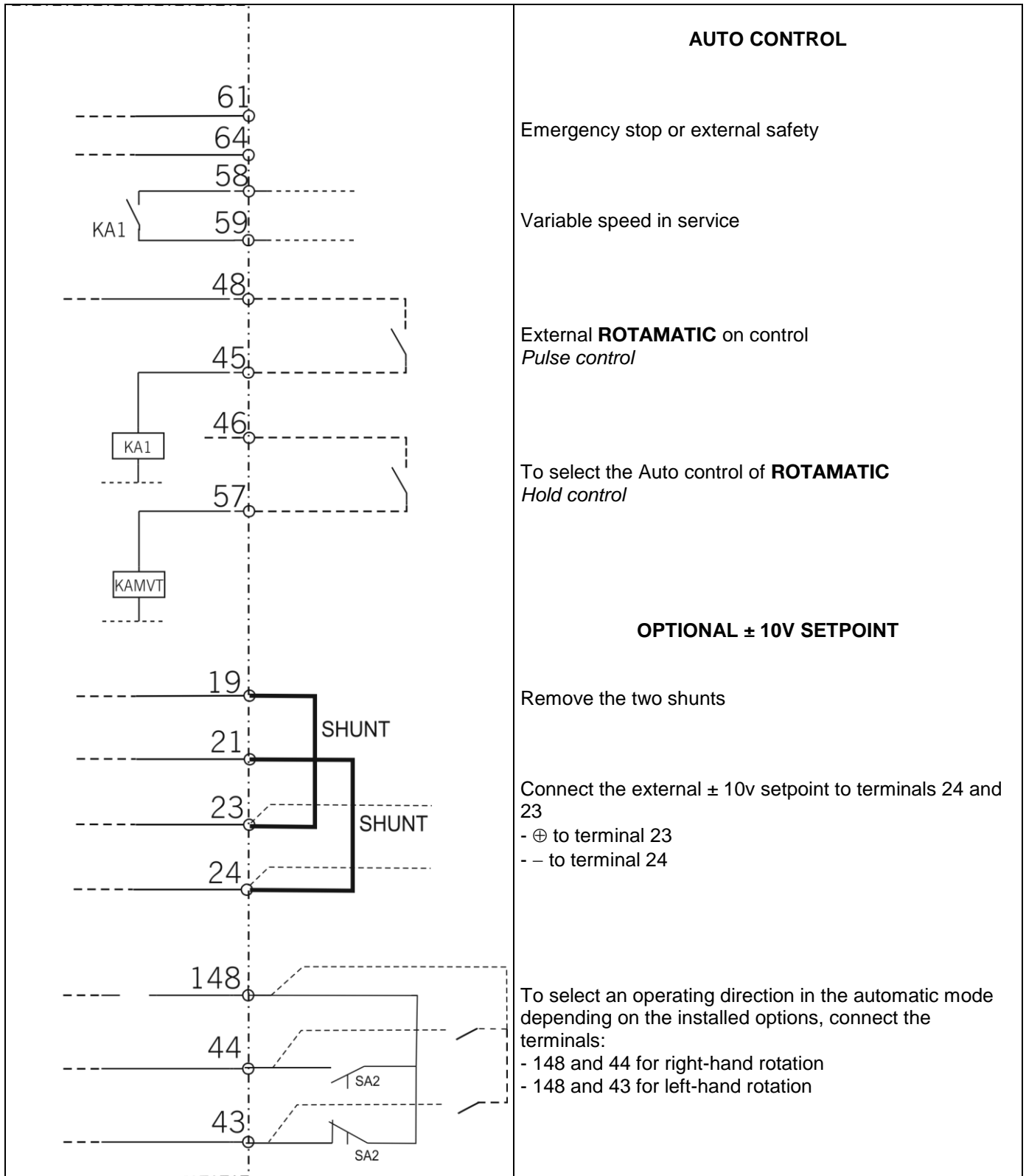
The protective sectioning switch must offer breaking capacity of 100KA.

We market cabinets that meet the criteria set out.

ARRANGEMENT OF CABLES AND FLEXIBLE HOSES

The customer must provide a means to support and protect cables and flexible hoses from mechanical, chemical or thermal damage, right from their point of origin.

EXTERNAL CONNECTION OF OPTIONAL EQUIPMENT



5 - POSITIONING OF SHELLS AND STARTING UP



Before starting up, always make sure that the following setting up conditions and precautions have been followed:

- Set the centre distance of the rollers depending on the diameter of the shell to work on.
- The cross members of rotators must be positioned under the pieces, away from any openings in the shells and away from protruding parts that could hinder the rotation of the shell.
- Balance the load on the two cross members on the basis of the tables below.
- With polygonal pieces, the maximum permissible loads must be divided in half.

ROTAMATIC ST 2M

2 000 Kg

E (mm)	∅ min (mm)	α (°)	∅ (mm)	α (°)
90	30	60	100	42
165	90	87	270	46
240	200	87	500	43
315	350	78	650	46
390	600	63	1000	40
465	900	53	1250	39
540	1250	45	1600	36
615	1600	41	2000	33
690	2000	37	2500	30

P 1000 kg

V 12-120 cm/mn

3x400 V

2,5 kVA

1,7 A

50/60 Hz

∅ (mm)	300	500	1000	1500	2000	2500
α (°)	64	43	40	38	37	30
E (mm)	240	240	390	540	690	690

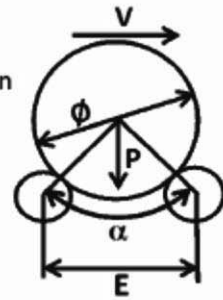
M= 2P (kg)	Balourd (m.kg)					
100	1	1	2	3	3	4
200	1	2	3	5	7	8
500	3	5	9	13	17	19
1000	7	9	17	25	34	38
1500	7	9	18	26	35	39
2000	6	12	24	35	46	52

ROTAMATIC ST 2W

2 000 Kg

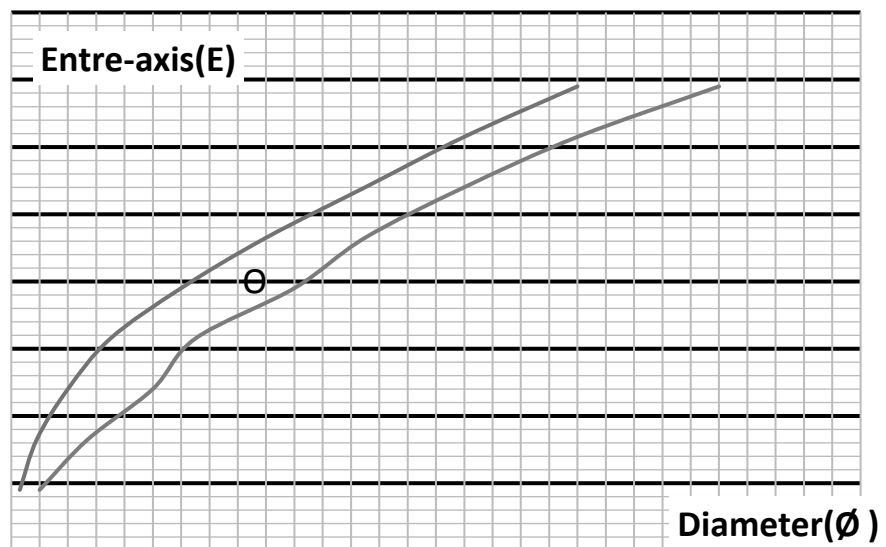
E (mm)	∅ min (mm)	α (°)	∅ (mm)	α (°)
90	30	60	100	42
165	90	87	270	46
240	200	87	500	43
315	350	78	650	46
390	600	63	1000	40
465	900	53	1250	39
540	1250	45	1600	36
615	1600	41	2000	33
690	2000	37	2500	30

- P** 1000 kg
- V** 12-120 cm/mn
- 3x400 V
- 2,5 kVA
- 1,7 A
- 50/60 Hz



∅ (mm)	300	500	1000	1500	2000	2500
α (°)	64	43	40	38	37	30
E (mm)	240	240	390	540	690	690

M= 2P (kg)	Balourd (m.kg)					
100	2	2	4	5	7	8
200	3	4	7	11	14	15
500	8	10	18	27	35	38
1000	16	19	37	53	70	76
1500	21	26	48	70	93	100
2000	26	34	64	94	123	134



6 - PUTTING IN PLACE THE IDLER AND POWERED ROLLERS

Motorized rollers:

The motorized rollers of **ROTAMATIC ST 2M, 2MT, and 2W** may be positioned at different places using 2 screws on each side of the roller

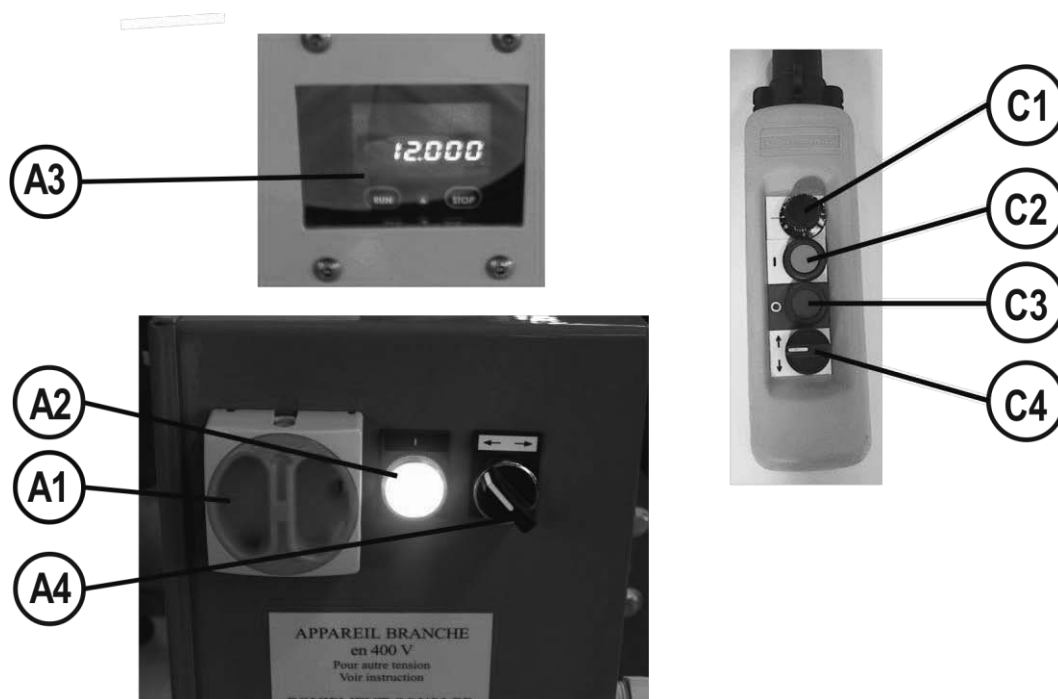
In order to change the location of the roller, remove these 2 screws, position the roller on the desired place, and replace the 2 screws.

Idler rollers:

The idler rollers of **ROTAMATIC ST 2F, 2M, 2MT, and 2W** may be positioned at different places in recesses, without fixing them.

E - OPERATING MANUAL

1 - CONTROL BUTTONS ON CABINET



Ref.	Description
A1	Main power button.
A2	Power on indicator
A3	Variable drive speed display
A4	Rotation direction with automatic starting up
C1	Rotation speed adjustment potentiometer, variable from 12 to 120 cm/min.
C2	Power on pushbutton (variable drive)
C3	Power off pushbutton (variable drive)
C4	Switch with three fixed positions for rotation direction. The central position is the idle position.

2 - OPTIONAL SYNCHRONISATION (FACTORY ASSEMBLED ONLY)

This option allows the synchronised or non-synchronised operating of two powered **ROTAMATIC** rotators. It makes it possible to rotate a piece supported by several powered and idler rollers from a single remote control or a single external control.

- Synchronised mode (*master/slave*):

This mode controls two **ROTAMATIC** rotators via the remote control or from the external inputs of the main (master) **ROTAMATIC**. An indicator on each **ROTAMATIC** rotator confirms that the synchronised mode has been selected. The remote control of the slave **ROTAMATIC** rotator is inactive, with the exception of the stop button.

- Desynchronised mode (*independent*):

This mode makes it possible to control the **ROTAMATIC** via their remote controls or from the external inputs of the **ROTAMATIC**, independently from each other. All the remote controls of the **ROTAMATIC** are active.

- Selecting the synchronised/desynchronised mode:

Switching from the synchronised mode to desynchronised mode is via the connecting cable between the powered **ROTAMATIC** rotators.

Synchronised mode: connecting cable connected and synchronisation indicator on cabinets on.

Desynchronised mode: connecting cable disconnected and synchronisation indicator on cabinets off.

In synchronised mode, the maximum driven load is $3/2$ times the load of the powered rotator:

For **ROTAMATIC ST2**: $3/2 \times 2T = 3T$

F - MAINTENANCE

1 - CARE

- For a long and trouble-free life, the machine requires a minimum level of care and maintenance.



Before working on the machine, it is **MANDATORY** to lock out all the supplies of utilities to the machine (electricity, air, gas etc.).
Locking an emergency stop button is not sufficient.

LUBRICATION

The reduction drives of **ROTAMATIC ST** have permanent lubrication and have no oil filling, topping up or draining plugs.

As a result, they need no maintenance.

These reduction drives can operate at an ambient temperature from 0 °C to +50 °C.

INSPECTION AND SAFETY

All the instructions in this manual must be followed closely, particularly those relating to the limits of use. Further, the main parts of the equipment, particularly the screws and nuts of the roller spacing system, the wearing of wheel and screw reduction gear, power cables of motors and remote control, motor ventilation etc., must be inspected after every three months.

TYRE MAINTENANCE AND PROTECTION

For a long life, the instructions below must be followed:

- ⇒ Do not overload (no impact when the shell is squeezed)
- ⇒ Do not place the rollers under a heavy load, as that could permanently deform their solid tyres
- ⇒ Do not put hydrocarbons on the rollers. If that were to happen, clean them very promptly.

In the event of pre-heating, the temperature of the shell area in contact with the tyres may not exceed 60 to 70 °C and the piece must be in continuous motion.

2 - TROUBLESHOOTING

Possible symptoms	Probable causes	Possible remedies
The rotator indicator goes off after the power is switched on with the switch QS1.	The indicator lamp has blown	Replace the bulb
	Fuses FU1 or FU3 have blown	Replace the blown fuses on the basis of the fuse rating table.
The rotator will not rotate after it is started up.	No rotation direction has been selected.	Select a rotation direction using the switch $\uparrow\downarrow$.
		With automatic control, the connection is not made between terminals 148 and 44 (right-hand rotation) or 148 and 43 (left-hand rotation) to control the operating direction. Make the connection with a shunt or external contact; see electrical connections.
		When using an external $\pm 10V$ setpoint, check the presence of voltage between terminals 23 and 24 (0V \rightarrow no rotation).
	The motor is not powered	Check and replace the fuses FU2 if needed.
		Check that the thermal relays FR1 or FR2 have not tripped. Then check that the thermal relay is correctly adjusted according to the table below:
Double power rotator:		
type: 2T		
valeur (A) 0,7		
The rotator runs for a short time and then stops.	Over-intensity leading to: - a thermal relay fault or over-intensity leading to: - a variable drive fault F0102 or F0103	Check the condition and adjustment of the thermal relays (double power version) according to the table above.
		Check that you have followed the table with the admissible load and unbalance values for your rotator.
		Check that the load has not increased suddenly.
		Check that the terminals U, V and W of the variable drive are not shorted.
		Check that the motor cable is not shorted and that the motor is correctly coupled.

DEFINITIONS OF ERRORS DISPLAYED ON THE VARIABLE DRIVE

NUMERO NUMBER/NUMMER	DESCRIPTION
F0102,F0103	Variable drive overload. Check the load behaviour. Check the motor parameter adjustments.
F0200...F0300	Temperature too high. Check cooling, flap, sensor and ambient temperature. Temperature low. Check the ambient temperature and the heating of the electrical cabinet.
F0400, F0403	Motor temperature too high or sensor faulty. Check the connection to X12.4. Phase fault. Check the motor and the wiring
F0500...F0507	Overload, short circuit or dispersion in the ground, motor current or phase fault. Check the load behaviour and the gradients (P420...P423). Check the motor and the wiring.
F0700...F0706	DC bus voltage too high or too low. Check the deceleration gradients (P421, P423) and the connected braking resistor. Check the network voltage. Check the network voltage, the fuses and the network circuit.
F0801,F0804	Electrical voltage (24V) too high or too low. Check the wiring of the control terminals
F1100...F1110	Maximum frequency reached. Check the control signals and adjustments. Inspect the deceleration gradients (P421, P423) and the connected braking resistor
F1310	Minimum output current. Check the motor and the wiring.
F1401	Signal of the reference value on the input X12.3 faulty, check the signal.
F1407	Over-intensity at input X12.3, check the signal.
F1408	Over-intensity at input X12.4, check the signal.
A0001...A0004	Variable drive overload. Check the load behaviour. Check the motor and application parameters.
A0008,A0010	Temperature too high. Check cooling, flap and ambient temperature.
A0080	Once the maximum motor temperature is reached, check the motor and sensor.
A0100	Network phase failure, check the main fuses and the power cable
A0400	Once the frequency limit is reached; output frequency limited.
A0800	Input signal at X12.3 too low. Increase the value
A1000	Input signal at X12.4 too low. Increase the value
A4000	The voltage of the DC bus has reached the minimum value

ROTATOR FUSE RATINGS:

	STANDARD ROTATORS			OPTIONAL REGULATION
	FU1 (5x20)	FU2 (10x38)	FU3 (5x20)	FU2 (10x38)
ROTAMATIC ST 2	1 AaM	6 AaM	6 AgF	10 AaM

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:

Item	Ref.	Stock	Order	Designation
1	W000XXXXXX	✓		Machine interface board
2	W000XXXXXX	✗		Flowmeter
3	9357 XXXX			Silk-screen printed front panel

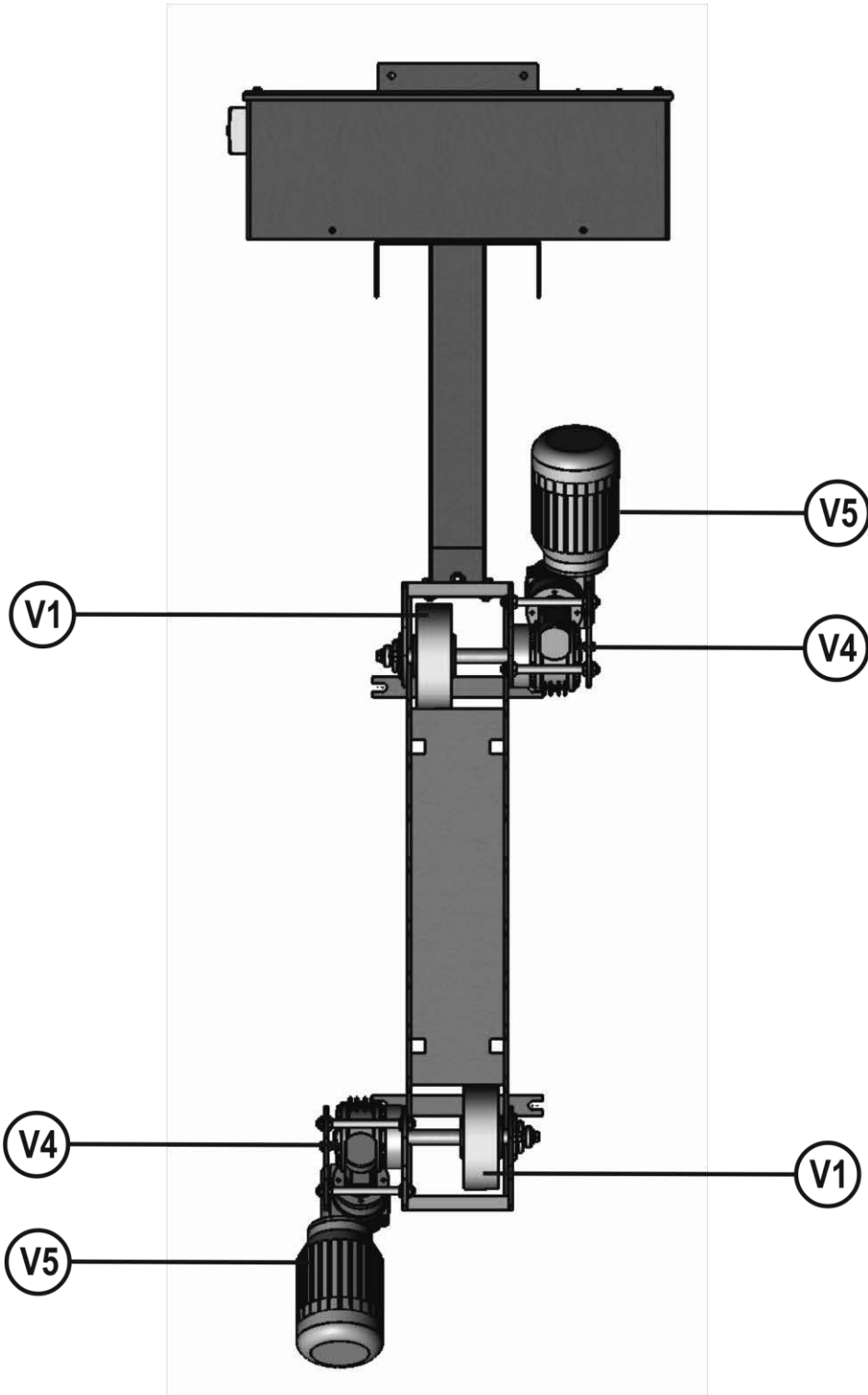
✓	normally in stock
✗	not in stock
	on request

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

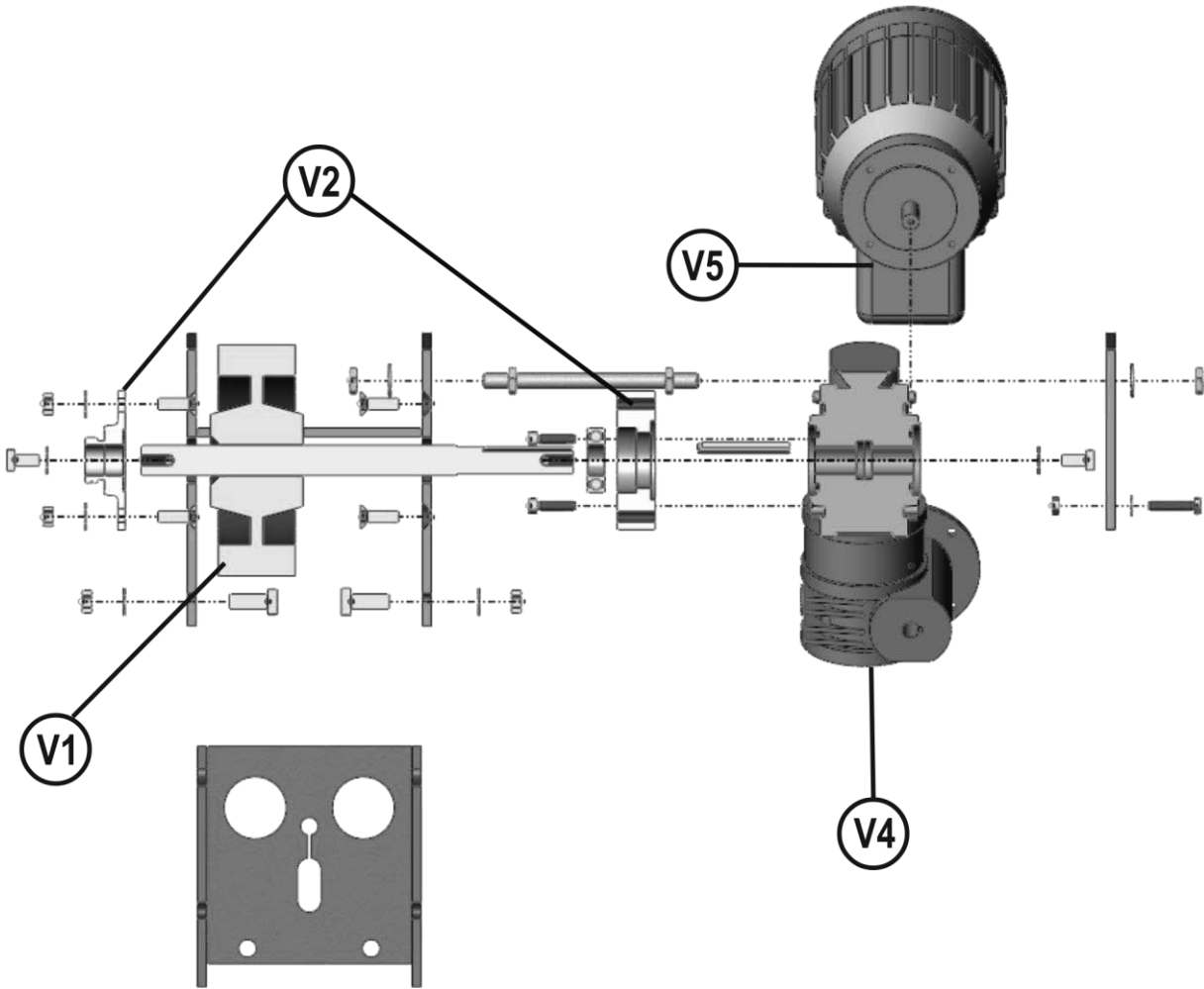
	TYPE:
	Number:

MECHANICAL PART

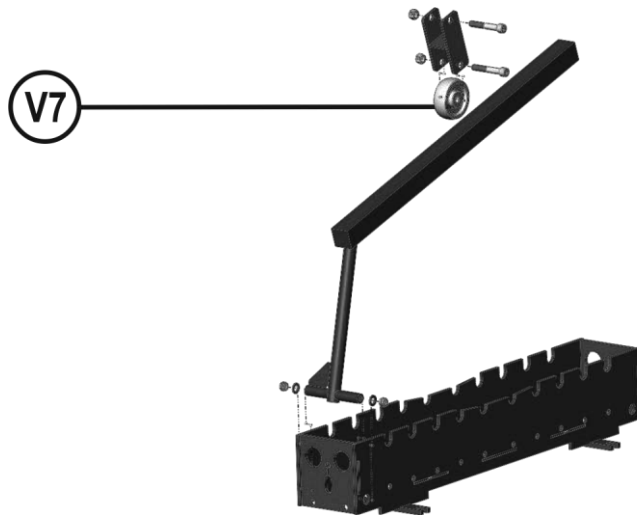
ROTAMATIC ST 2W



ROTAMATIC ST 2M/W

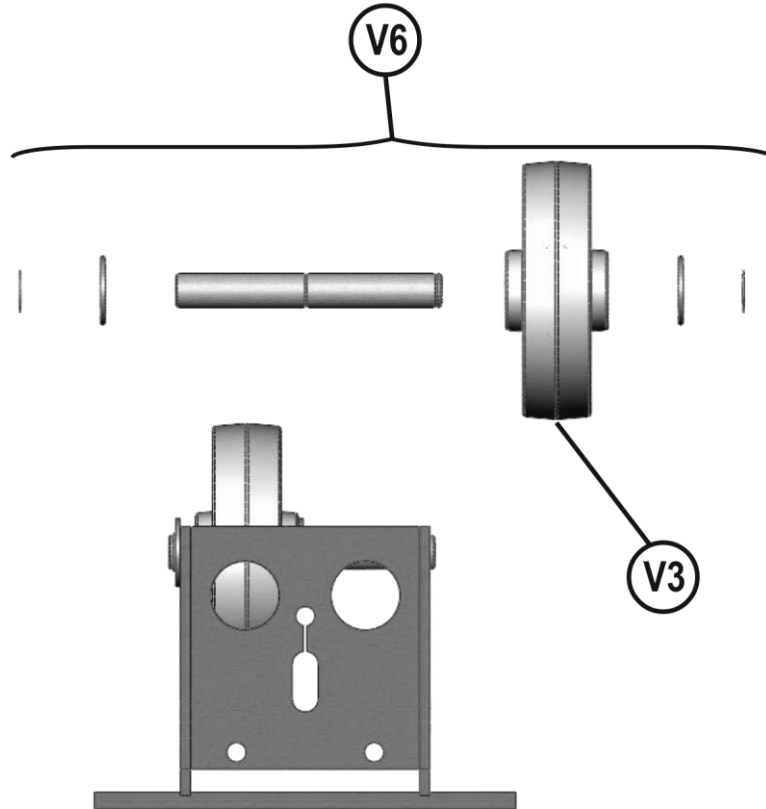


ROTAMATIC ST 2MT



MECHANICAL PART

ROTAMATIC ST 2F



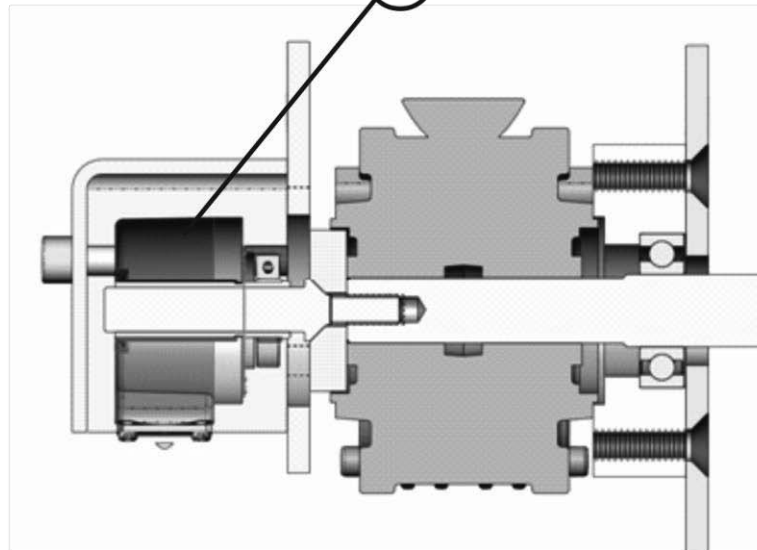
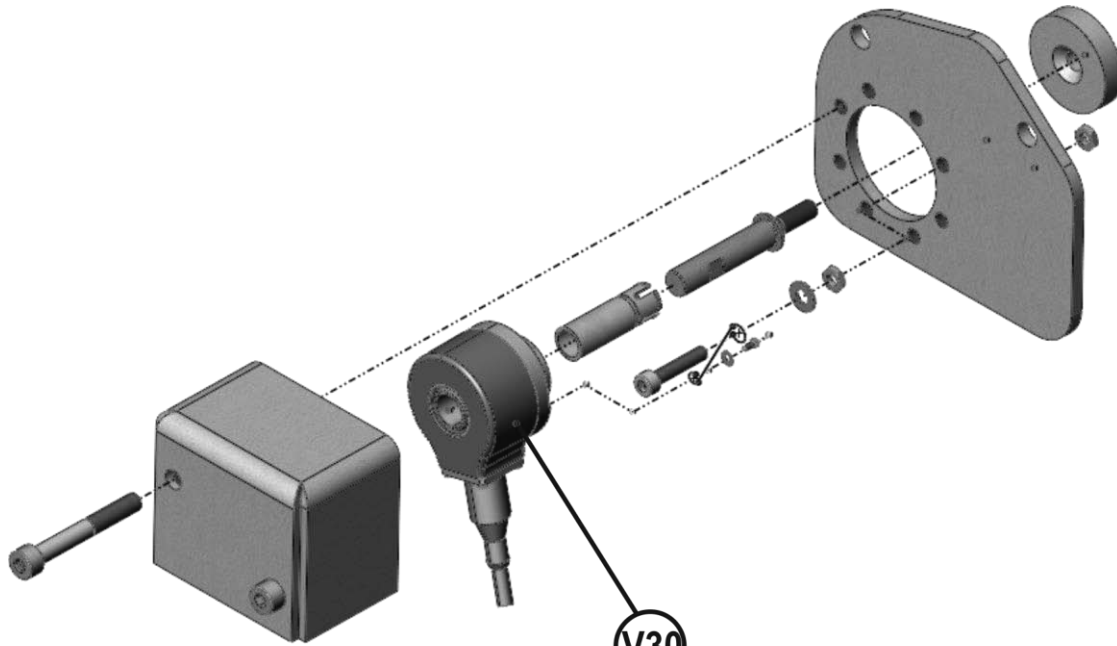
✓	normally in stock
✗	not in stock
	on request

Item	Ref.	Stock	Order	Designation
V1	W000137976	✓		Drive roller
V2	W000137980	✓		Drive roller bearing
V3	0300 1160			Idler roller (wheel)
V4	W000137977	✓		Reducing gear
V5	W000137981	✓		Motor
V6	W000137978	✓		Equipped idler roller
V7	0300 1170			Support roller (ROTAMATIC ST 2MT)

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

CE Type <input type="text"/> Matricule <input type="text"/>	TYPE:
	Number:

OPTIONAL ENCODER



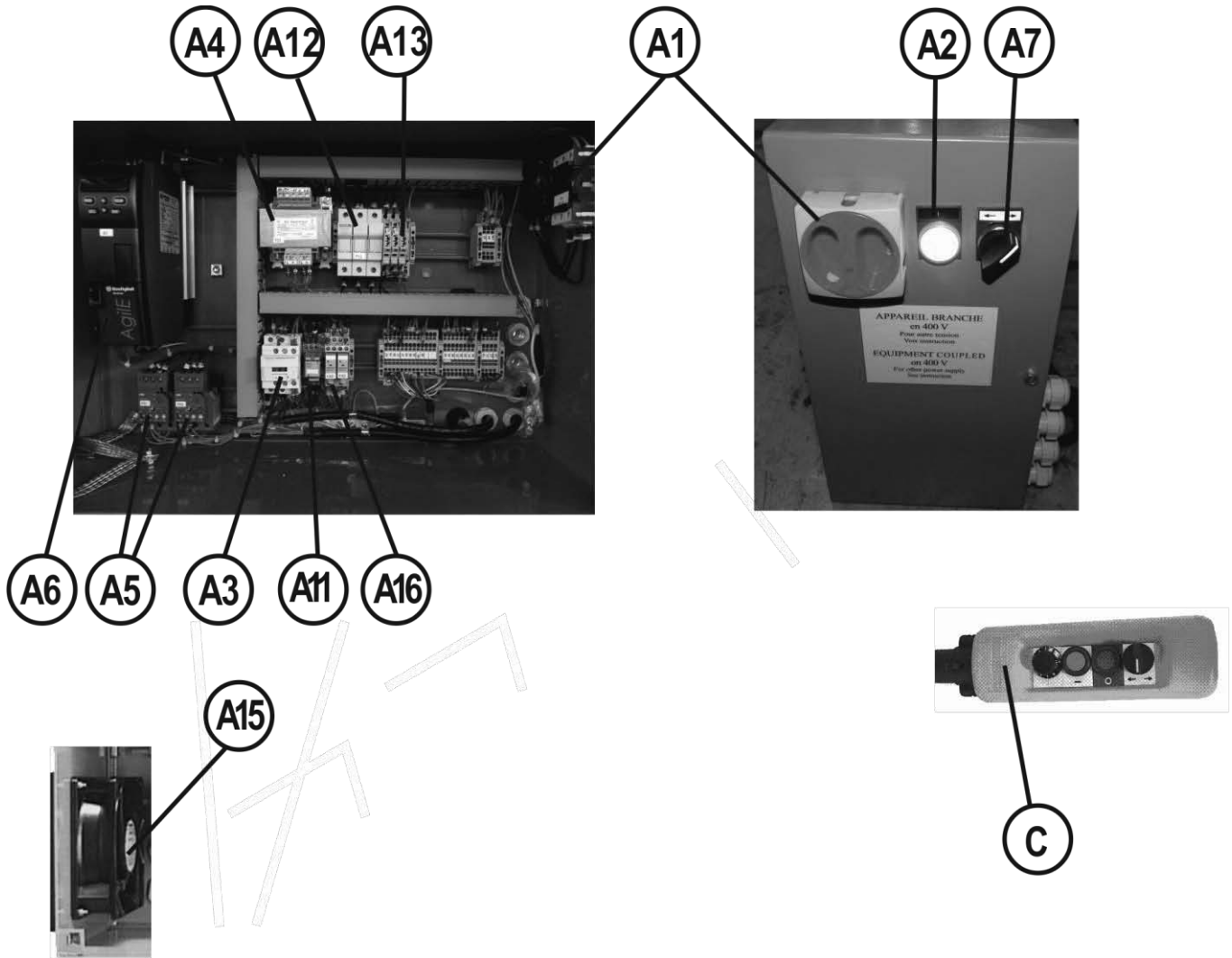
✓	normally in stock
✗	not in stock
	on request

Item	Ref.	Stock	Order	Designation
V30	W000383727			Encoder

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

	TYPE:
	Number:

ELECTRICAL PART



ELECTRICAL PART

Valid for serial number greater than 00361502155

✓	normally in stock
✗	not in stock
	on request

Item	Ref.	Stock	Order	Designation
A1	W000140748	✓		Main switch
A2	W000137799	✓		24V BA9S bulb
A2	.570 4057			Indicator body
A2	.570 4054			Power on indicator head
A3	.570 1064			Auxiliary contactor KA1
A4	.570 6078			63VA 220-380/2x24V transformer
A5	.570 5026			Thermal relay
A6	W000383719	✓		0.5KW Agile variable drive for 2TM-2TM R-2TW R
A6	W000383720	✓		0.5KW Agile variable drive for 2TW
A7	W000366020	✗		Two fixed pitch selector head
A7	W000366042	✗		Body
A7	W000366044	✗		Contact
A11	9109 3173			Four-contact relay
A12	.570 5167			10x38 three-pole cut-off (FU2)
A13	.551 3716			5x20 fuse holder (FU1-FU3)
A13	.551 3727			Accessory - 5x20 fuse holder (FU1-FU3)
A13	.551 3728			Accessory - 5x20 fuse holder (FU1-FU3)
A15	W000140321	✓		Fan
A16	.560 6743			Relay 2 RT
C	W000137972	✓		Control housing with cable

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

CE Type <input style="width: 80%;" type="text"/> Matricule <input style="width: 80%;" type="text"/>	→ →	TYPE: Number:
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