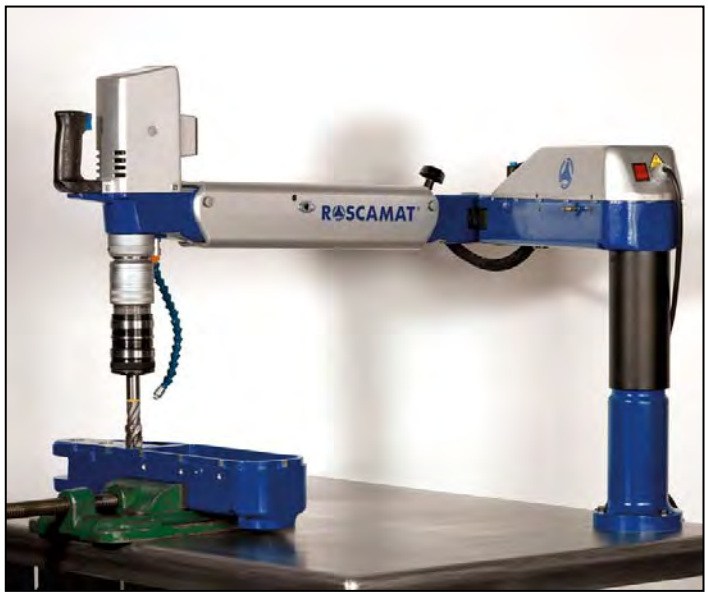
OPERATOR'S MANUAL

ROSCAMAT-9001 NC



Model	Serial nr.	Machine nr.	Year of manufacture

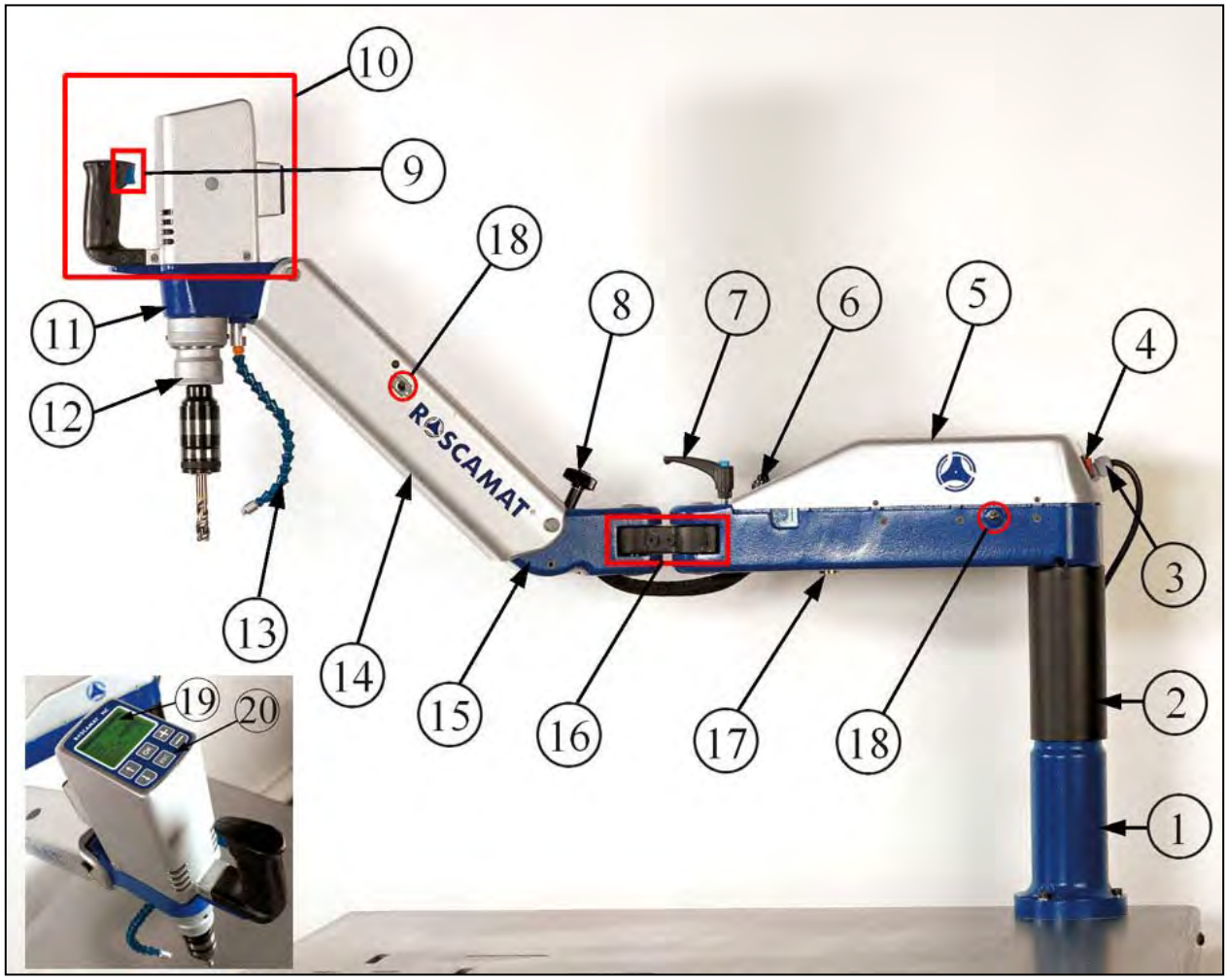
TECNOSPIRO, S.A.

Polígon Industrial Pla dels Vinyats, nau 2 – 08250 Sant Joan de Vilatorrada(Barcelona) Spain
☎ +34 93 8764242 / +34 93 8764359 🖷 +34 93 8767738/4044
E-mail :comercial@tecnospiro.com – http://www.tecnospiro.com

Dear customer:

We wish to take this opportunity to thank you for choosing a “ROSCAMAT” tapping machine to produce quality threads and associated operations.

This operation’s manual is given to you so that by careful reading of its content, it will enable you to maintain its reliability and performance for long-life.



1. Machine base
2. Lifter case
3. Electric cable
4. Electric current main switch
5. Electronic box casing
6. Oil reservoir filling cap
7. Handle turning brake
8. Damper regulation handwheel
9. “Trigger” - motor starting button
10. Motor
11. Motor head
12. Module
13. Articulated pipe (tool lubrication system)
14. Tilting arm
15. Cross unit
16. Union
17. Radial arm / Oil deposit drain cap
18. Arm enclave
19. Display screen
20. Key board

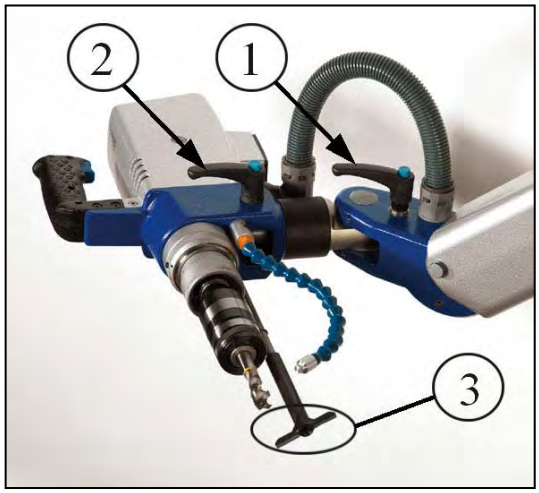
The machine consists of a pendular parallelogram that is balanced by a pneumatic spring, plus a radial arm. The gas spring and the radial arm assembly fix the motor head and keep it perpendicular to the working area.

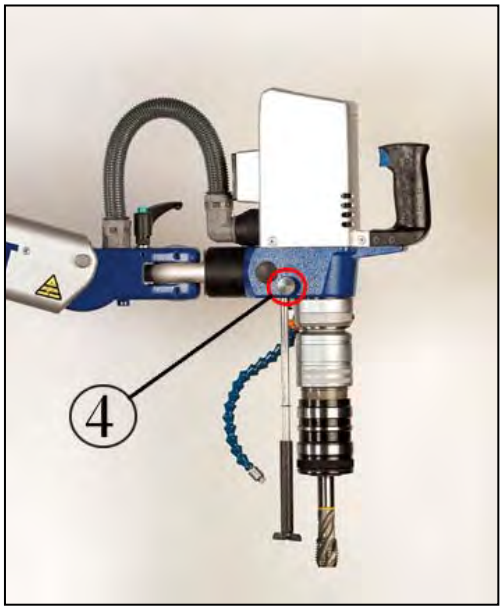
The electronic motor is equipped with a NC control. The machine can work in either manual or automatic mode, allowing us to configurate and control aspects such as the thread depth, the desired quantity of lubrication for each tap, the material type or else the recommended thread speed. By means of a quick-change system, a set of 6 modules or reducers can be assembled to the motor end. These allow us to adjust the thread speed depending on the size to be done.

Aforesaid modules have also incorporated a quick-change system to fit the tapholders with or without safety clutch.

The **ROSCAMAT-9000 NC C33** is supplied with an articulated head of easy handling which allows us to positionate the motor in vertical or horizontal position.

♦ **Orientable headmember**





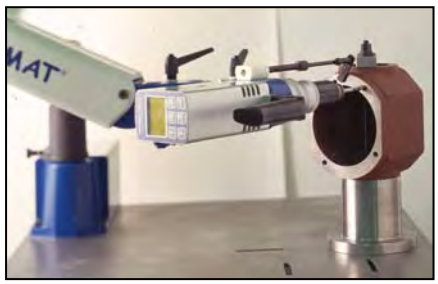
1.-Horizontal turn clamp handle
2.-Head orientation clamp handle
3.-Feeler of perpendicularity (to be used in horizontal threads)
4.- Regulation handwheel of feeler length
Note: loosen it and remove the feeler-rod assembly if needed

Vertical operations

♦ Place the motor in vertical position, and lock handles 1 and 2.

Horizontal operations (Max. M27):

♦ Loosen handle 2 to unlock the joint of the motor
♦ Turn the head 90º till you reach its interlock, and tighten the handle again (2).
♦ Unlock handle no.1 located in the upper side of the headmember.
♦ Align the feeler with the piece to be threaded and proceed with the thread **always keeping** the feeler correctly aligned to the piece.



- **Do not lock the handle 1 in horizontal operations !**
- **Maximum thread in horizontal : M27**
- **Maximum module in horizontal: mod. 75 (module 40 cannot be used in horizontal operations)**

AUTOMATIC TAP LUBRICATION

*__*Caution*__: *USE CUTTING OIL*. Certain lubricant types containing trichlorines and alcohols can damage some of the valve components..

Inside the radial arm (no.6 page 4) the cutting oil reservoir is located. This is used for lubricating the tool during the tapping operation.

The lubrication time is predetermined in the NC programme according to the size of tap. However by means of the screen keys, we can vary the lubrication time percentage depending on the material, the tap condition, etc. For its programming, please check pages *11, 13 and 14* if you work in manual as well as in automatic type.

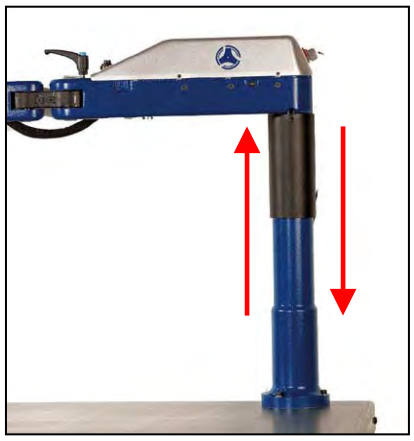
After filling up the oil reservoir because of being empty, it is possible that there is air inside its system so that you must switch on several times the motor until the circuit is completely bleed.

LIFTER

We can increase the working area in 170 mm in order to work on different height levels. For doing this, we should:

To adjust the desired height level position of the machine, you must close up the arms by placing the tilting arm in its interlock (18, page 4) and apply some pressure up or down until reach the needed height

The lifter system remains blocked when opening out the arm.



MODULAR SYSTEM - CHARACTERISTICS

Driven from a single motor, six different speed modules are available with their relevant power torques.

The six quick-change modules provide the speed and torque for each threading type, from M3 to M36 threads (M42 in aluminium), getting this way a high saving in time and energy

					MAXIMUM THREADS				
Module	Reducc.	Max. speed. (rpm)	Torque max. (Nm)	Coupl ∅ .	Aluminium 100 HB	Grey foundry GG22	Steel <90Kg	Steel 90-115 Kg.	Steel >115Kg.
40	35	40	340	∅48	M42	M39	M36	M33	M27
75	18,85	75	185	∅31	(M33)	M30	M27	M27	M22
140	9,7	140	95	∅31	M27	M24	M22	M22	M16
320	4,5	310	44	∅19	(M20)	M16	M16	M16	M12
500	2,91	480	28	∅19	M16	M12	M12	M12	M8
900	1,54	900	15	∅19	M10	M8	M8	M6	M6
Motor		4500	3						
Headmember	3,25	1385	9,75						

(-) For the sizes in brackets, we should dress the tap shank dimens. (ø) and the driving cube (☐)(to fit the tapholder's size) or order a special module with the upper type coupling diameter.

In manual operation, it is advisable to lower the cutting speed to 75% if the operator is working with modules 40, 75 and 140 in threads which are close to their maximum capacities in hard steels.

INSTALLATION

A: Fix the base of the machine to the working table by means of four M8 screws or the clamp.

B: Fit the machine into the base plate shaft, and firmly tighten the M12 threaded rod with a 6 mm. ALLEN wrench (nr.4, pag.35)

C: Raise the lifter cover (2, pag.4) and fix it to the machine by means of 2 ALLEN screws (nr. 39, pag.35)

D Connect the machine to a single-phase socket (220 V supply), and switch it on.

E: Arm balance

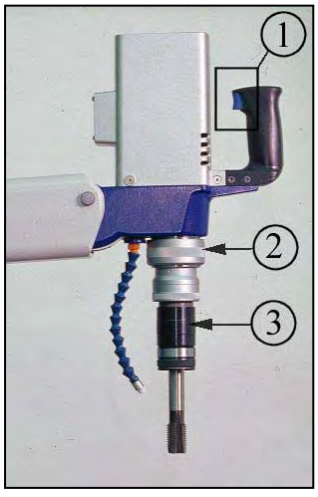
By turning the damper regulating handwheel (8, page 4) to the right (-) or to the left (+) different weights at the arm end are balanced.
Move this handwheel with the arm in horizontal position or lightly raised.

IMPORTANT:

- *Make the connection to a single phase socket (220 V.)*
- *The socket must have a ground wire and differential of 300 mA..*
- *Machine power: 1400 W*

OPERATION

Manual mode: Select the most suitable module according to the size to be threaded.(see page 7)



- Turn the *slide collar (2)* to the left, insert the module, and turn the slide collar to the right. Regulate the arm balance according to the weight of the module to be hold, specially when fitting modules 40, 75, & 140.
- Insert the tapholder into the module (3).

The motor starting button –trigger- (1) has two positions:

- To thread, push the starting button-trigger (1) up to its middle position.
- To unthread, push the starting button up to its final position
- To change the tap, pull up the *module slide collar (3)* and the tapholder will come out automatically.

Automatic mode: Insert the module and the tapholder advised by the NC control, and proceed following the above mentioned instructions.

BOARD DESCRIPTION

Cursor key: to select among different options

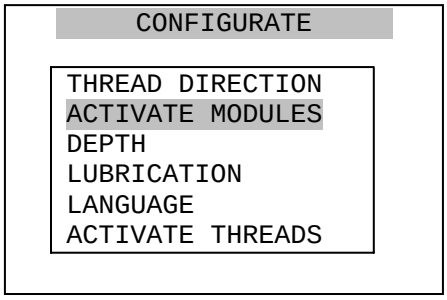
Validation key

To increase or decrease the value within the several options.

Go back to the main menu

3.1 MENU CONFIGURATION

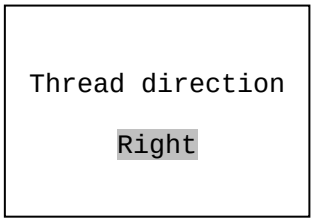
By choosing the aforesaid option, the following screen appears:



Select the desired option by using the cursor and the validation keys.

3.1.1 Thread direction

This option allows us to configurate the machine to make right or left hand threads. Entering the menu, the following screen appears:



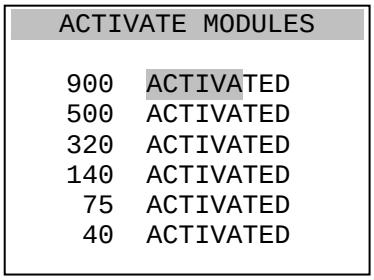
To change between one or the other direction, key: [+] or [-]

Once the thread direction has been selected, key [OK] to go back to the configuration menu.

3.1.2 How to activate modules

This configuration is valid to work in the automatic mode, **into the "configuration" menu, you must activate the modules you have** .

Once this option is selected, the screen will show the following:



The modules that can be used are: 40 – 75 – 140 – 320 – 500 - 900. The modules you have, must be activated. The ones that you do not have must be deactivated.

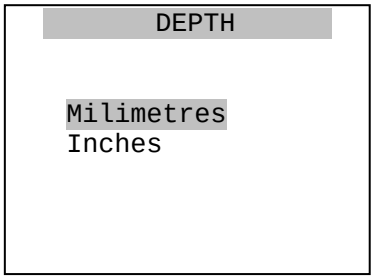
When the most suitable module is not activated, the automatic mode, by means of the control, will suggest the immediately inferior (slower) module with the appropriate thread capacity.

To activate the modules, use cursor keys ⇧ or ⇩ to chose the desired one and use the keys + - to change between activated and deactivated.

Once the suitable option has been selected, key OK to go back to the configuration menu.

3.1.3 Depth

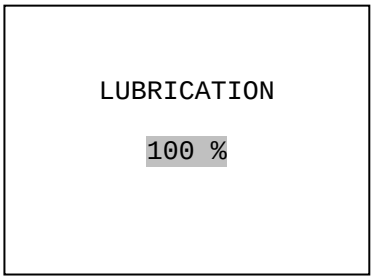
You can control the depth of the thread in milimetres or inches. The machine **control depth** only works when choosing automatic type.



To select the units by which you want to control the depth, use keys: ⇧ or ⇩ and once the suitable option is selected, press OK to go back to the configuration menu.

3.1.4 Tool Lubrication

By selecting this option, the following screen appears:



The tool lubrication time is predetermined by the programme depending on the thread dimension to work. Nevertheless, if needed by the working conditions, you can change the lubrication percentage in between 0% and 200% over the calculated time and in intervals of 5%.

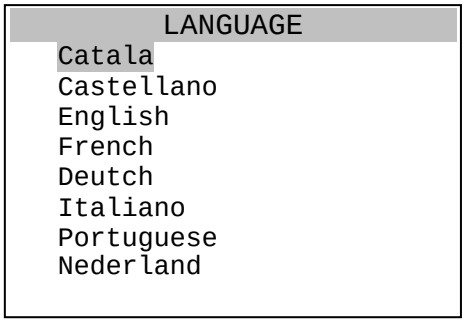
To change the aforesaid value in intervals of 5 % press the keys [+] [-] and once the suitable value has been selected, key [OK] to go back to the configuration menu.

The standard lubrication time (in seconds) is determined by the formula:

$$time = \frac{diameter}{25}$$

3.1.5 Language

Configurate the desired language by which you wish to read all the menus' of the machine by pushing on the written LANGUAGE letters:

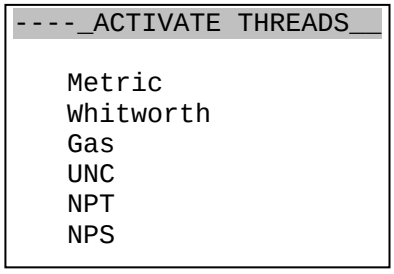


Move through the screen by using the keys ⇧ or ⇩ and confirm the language by pressing **OK**

3.1.6. Activate Threads (thread type, Metric, Whitworth, Gas, NPT, etc)

The control contains introduced several thread types with their correspondent normalised pitch which after being activated into the configuration menu, can be choosen to work only in ***automatic way***.

Once this option is selected, the screen will show the following:

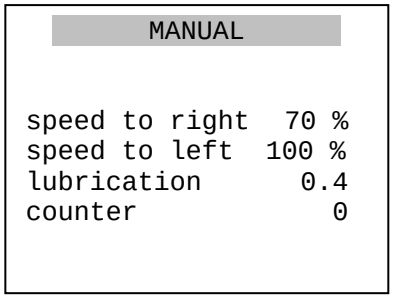


To select the kind of thread you want the menus to appear, use keys: ⇧ or ⇩ and activate or deactivate the type of thread that you most use by the keys + -

Once the suitable option is selected, press **OK** to go back to the configuration menu.

3.2. MANUAL RUNNING

Place the cursor on the option MANUAL, key **OK** and the following screen will be shown:



In the manual mode it is only possible to configurate the speed percentage to each direction according to the chosen module and the lubrication time.

If you want to work without the tool lubrication, its value must be 0. If it should not be so, the time (seconds) of lubrication needed has to be informed by using the keys **+** **-**

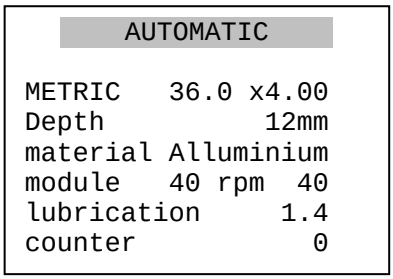
The *counter* indicates the number of threads done during the manual running. This value is accumulative, even after a machine disconnection. To put its value to 0, key **OK** having the cursor on the counter's value.

Once the manual running option is configurated, the machine is ready to work. To work on the aforementioned option, it is only necessary to push the trigger. Its whole run is separated in two sections; the first one to thread and the second, by pushing the trigger up to the end, to unthread (see page 7)

To go back to the main menu key **ESC**

3.3 AUTOMATIC RUNNING

When choosing this option, the following screen appears:



To move along the assorted screen options, key ⇧ or ⇩

In the mode of **automatic running** the kind of thread : *METRIC, WHITWORTH, GAS, UNC, NPT or NPS* can be chosen.

To choose among them, place the cursor on the thread size and key **OK** until the desired system appears.

Once the type of thread is selected, enter the thread size and the material to be threaded, by means of + and - keys. The control will then configurate the rest of parameters (pitch, time of lubrication) and advises the most suitable module to be used.

The programme allows to configurate separately each element by placing the cursor on them. This is very helpful in cases such as thin threads or threaded holes overhaul.

Thread depth control:

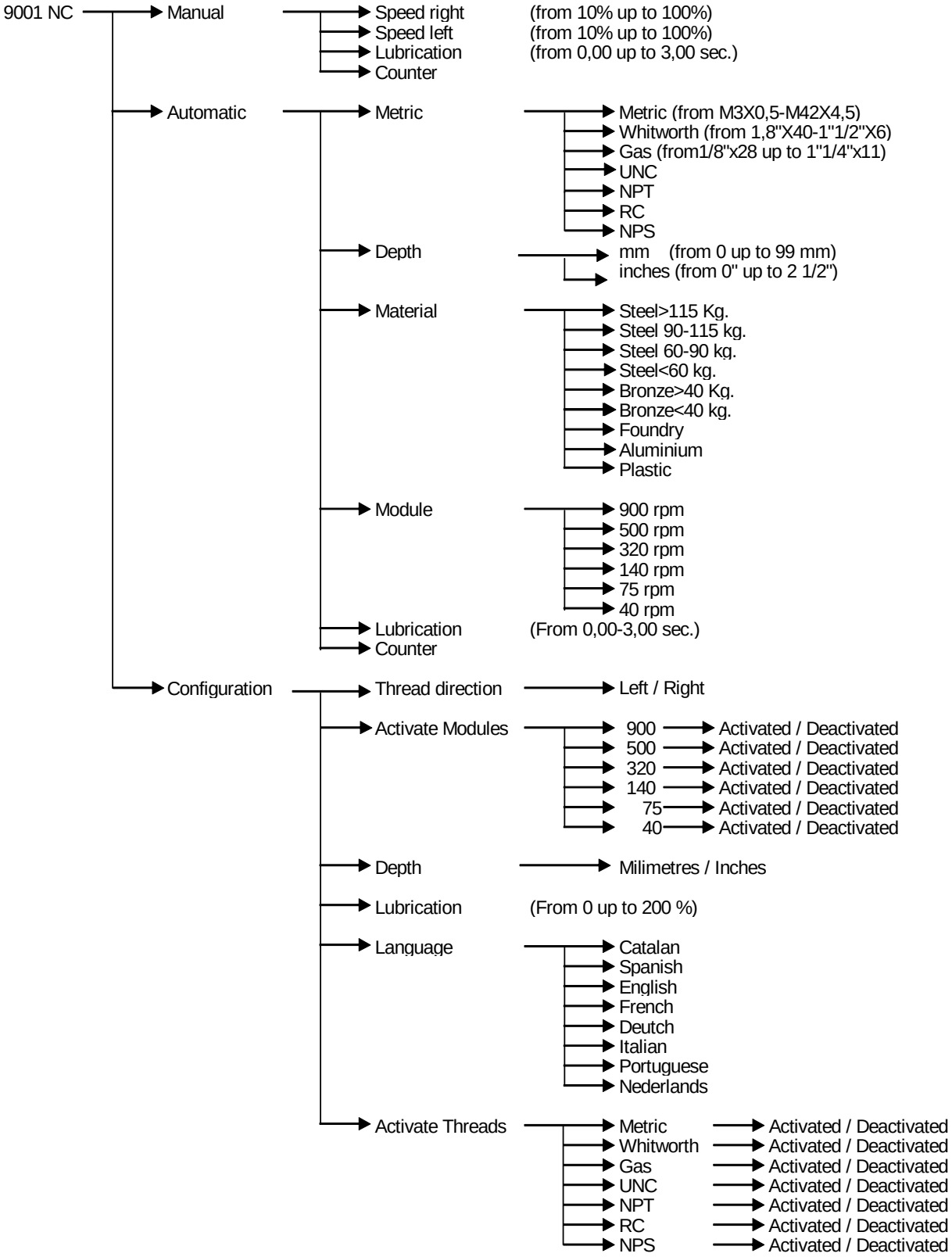
Place the cursor key on the depth dimension, and choose the desired one by using keys + or - . The measurement can be expressed in **inches or millimetres** by configurating it into the menu configuration, Depth.

If the thread depth is different to 0, it is only necessary to push the trigger up to the first position and the machine will automatically reverse the movement once the desired depth is reached, *whereas if no thread depth is selected*, the operator will have to push the trigger up to the end to unthread.

ATTENTION: When working with a depth different to 0, the module fitted in the machine must coincide with the one shown on the screen. The thread pitch must also be the same as the one in the screen.

The lubrication and the counter are operated as in the manual configuration.

To go back to the main menu, press **ESC**


9001 NC
Manual
Speed right
(from 10% up to 100%)
Speed left
(from 10% up to 100%)
Lubrication
(from 0,00 up to 3,00 sec.)
Counter
Automatic
Metric
Metric (from M3X0,5-M42X4,5)
Whitworth (from 1,8"X40-1"1/2"X6)
Gas (from1/8"x28 up to 1"1/4"x11)
UNC
NPT
RC
NPS
Depth
mm (from 0 up to 99 mm)
inches (from 0" up to 2 1/2")
Material
Steel>115 Kg.
Steel 90-115 kg.
Steel 60-90 kg.
Steel<60 kg.
Bronze>40 Kg.
Bronze<40 kg.
Foundry
Aluminium
Plastic
Module
900 rpm
500 rpm
320 rpm
140 rpm
75 rpm
40 rpm
Lubrication
(From 0,00-3,00 sec.)
Counter
Configuration
Thread direction
Left / Right
Activate Modules
900 Activated / Deactivated
500 Activated / Deactivated
320 Activated / Deactivated
140 Activated / Deactivated
75 Activated / Deactivated
40 Activated / Deactivated
Depth
Milimetres / Inches
Lubrication
(From 0 up to 200 %)
Language
Catalan
Spanish
English
French
Deutch
Italian
Portuguese
Nederlands
Activate Threads
Metric Activated / Deactivated
Whitworth Activated / Deactivated
Gas Activated / Deactivated
UNC Activated / Deactivated
NPT Activated / Deactivated
RC Activated / Deactivated
NPS Activated / Deactivated

The usage and running of the machine has several risks and some preventive measures should be taken into account by the operator to avoid any physical damages.

1.- Use always security glasses when working with the machine

2.- Do not put the fingers near the headmember end when the arm reaches its higher position.

3.- When changing the modules 40, 75 or 140, place the arm in its higher position in order to avoid a sudden movement upwards when taking out the module from its placement. This hit would come due to the energy accumulated by the damper.

Before making any manipulation to the machine, for verification, manipulation, repair or maintenance, the following aspect should be bore into account:

4.- Disconnect the machine from the power supply, before taking out the board cover or the motor case.

PROBLEM: THE MACHINE FAILS TO OPERATE, THE MOTOR DOES NOT START OR STOPS

Remove the electronics box housing (5, page 4) thereby exposing the electronics, and check the trouble condition as per the LED's being provided on the board's back side.

With the machine and the main switch on:

- **The green LED –POWER- must be always on**. This is an indication that the speed electronics board is operative.

- **Green LED off**. Check the voltage input and the fuse**s.**

- If the **LED's L1, L2, L3 are not on** with the motor running, this is indicative of the correct operation of the unit.
- If **any of these LED's is on**, troubleshoot as per the following table:

LED's				TROUBLE	NOTE
Green	L3	L2	L1		
●	●			INHIBIDO	Proper operation of the machine. This LED L3 goes off when starting the motor
●		●		Temp. Motor (ºC.)	Very high temperature. Wait till the motor temperature lowers and **reset** the unit.
●	●	●		Def. Power	Short-circuit between the motor phases or in the power stage. Reset the unit and contact the manufacturer if the problem persists.
●			●	Over Voltaje	Overvoltage. Check the voltage input
●	●		●	Under Voltaje	Low input or power level. Check the voltage input.
●		●	●	I2t ciclo alto	High current consumption (effective current) due to an overload while in operation. **Reset** the unit.
●	●	●	●	Error resolver	Sensor trouble because of a cut or wrongly connected cable or because of a wrong configuration of the variator. 1.- Check the cables between the variator and the motor. 2.- Reset the unit and contact the manufacturer if the problem persists.

PROBLEM: THE TILTING ARM DROPS

Probable reasons		Solution
1.-Not-equilibrated arm	=	Balance the arm according to the weight to be held. Verify point E (page 8)
2.-Defective damper	=	Replace it for a new one (page 19)

PROBLEM: THE CLUTCH SLIPS AND THE TAP CANNOT BE TURNED, BEING THE MOTOR IN OPERATION

Probable reasons		Solution
1.- Clutch slackness	=	Adjust clutch (page 18)
2.- No tool lubrication	=	Use cutting oil or with additives according to the material
3.- Inappropriate tap for the material	=	See page 39
4.- Tap spoiled "worn"		
5.- Misaligned hole		
6.- Drilled hole diameter too small		

PROBLEM: THE LUBRICATION SYSTEM DOES NOT WORK

Probable reasons		Solution
1.- Oil reservoir empty	=	Fill in the reservoir (filling cup 6, page 4)
2.- Lubrication nipple obstructed	=	Unscrew the end of the lubrication nipple and clean it. (ATTENTION: Do not mislay the spring and the ball located inside)

IMPORTANT:

If the oil reservoir has been fully emptied the circuit will have possibly been filled with air, so that after having filled the reservoir it is necessary to start the motor several times in succession with the lubrication time set to the maximum.

CLUTCH ADJUSTEMENT

Remove the small spring clip around perimeter and turn the notched nut clockwise or counterclockwise to increase or decrease the clutch tension and put the small ring back onto the new notch.

WARRANTY

The warranty period for the machine is 12 months. The warranty does not cover any damage caused by overloads, wear and improper handling of the machine. The warranty covers the costs of labouring and damaged spare parts. The transport, packaging and assurances are at customers' costs.

DAMPER SUBSTITUTION

R-9001 NC *Ref. 91100704*
R-9001 NC C33 *Ref.917A0204*

1. Disconnect the main switch
2. Take out the plastic cap located in the arm's upper part.
3. Move the arm up to its higher position
4. Turn to left the regulating handwheel to the maximum

ATTENTION: **always** keep the arm in its higher position***!***

5. Remove the plastic cover located between the cross unit and the tilting arm
6. Take out the M5 Allen screw that is at the end of the regulating screw rod.
7. Turn the regulating handwheel leftwards until the arm has no tension in the damper.
8. With the help of a M5 screw, take out the pin from the fork.
9. Remove the damper pin in the arm
10. Turn to left the regulating handwheel until the fork is free from the screw rod
11. Take the damper-fork assembly out and replace the damper.

*For the assembling, proceed the other way round, paying attention to the damper position inside the pin notch in the arm.

KEY-BOARD SUBSTITUTION

Ref.EL010126

1. Disconnect the main switch
2. Take the keyboard out by putting a small screwdriver between the keyboard and the frame of the motor case (small gap on its upper part).
3. Disconnect the connector
4. Connect the connector to the new display

5.- Put 4 points of silicone in the motor case border and place the display properly.

STARTING BUTTON SUBSTITUTION; TRIGGER

Ref.90103703

1. Disconnect the main switch
2. Unscrew the 4 sheet screws and the 2 Allen screws in the motor grip right side, and remove it.
3. Take the grip clamp out

PAY ATTENTION to balls and springs

*For the assembling, please proceed the other way round paying special attention to the balls and springs position.

MICRO'S SUBSTITUTION

Ref. EL010066

1. Disconnect the main switch
2. Unscrew the 4 sheet screws and the 2 Allen screws in the motor grip right side, and remove it.
3. Take the trigger out

PAY ATTENTION to balls and springs

4. Cut the wires by the nearest zone of the micros, and weld with tin the new ones.

Pay attention to the wires position

5. Proceed the other way round for its assembling, paying attention to the springs and balls position.

MOTOR GRIP REPLACEMENT

Ref. 90105404

1. Disconnect the main switch and the machine from the net plug
2. Remove the keyboard by introducing one small "screw driver" into the small gap situated on upper part of the motor cover and disconnect it from the display board.
3. Remove the motor cooling fan (see page 21)
4. Remove the 4 ALLEN screws of the motor housing and dislodge this latter
5. Disconnect the connection cable between the handle and the display.
6. Unscrew the 4 ALLEN screws fixing the handle to the motor head
7. Connect the new handle to the display again and proceed in reverse order for the assembly while making sure that the cable is not crushed when again fixing the motor housing in position

MOTOR SUBSTITUTION

Ref. 90200904

1. Disconnect the main switch
2. Disconnect the net plug
3. Take out the machine keyboard by introducing an small "screw driver" in between the keyboard and the gap situated on the upper part of the motor cover.
4. Take out the motor cooling fan (see page 21)
5. Take out the 4 Allen screws in the motor case and pull it up.
6. Unscrew the two motor connectors, the display connector and remove the support of the display being fixed to the motor.
7. Take out the 4 Allen screws which fix the motor to the head, and remove the motor.

*For the assembling, please, proceed the other way round. Do not force the wires when placing the case.

FUSE SUBSTITUTION

Ref. EL010114

1. Disconnect the main switch and the net plug
2. Take out the 4 ALLEN screws fixing the cover of the electronic box (5, page 4) and remove it.
3. Verify the fusses (see drawings of pages 31,32 to see their position) and substitute the one burn out.
4. Mount again the electronic box cover.

FAN SUBSTITUTION

Ref.EL010076

1. Disconnect the main switch and the net plug.
2. Take out the machine keyboard by introducing an small “screw driver” in between the keyboard and the gap situated on the upper part of the motor cover.
3. Unscrew the 3 screws which fix the fan and disconnect it from the display (connector with probe).
4. Take out the 4 ALLEN screws fixing the motor case and raise it.
5. Remove the cooling fan and proceed to assemble it again the other way round.

LUBRICATION PUMP SUBSTITUTION

Ref. NH120976

1. Disconnect the main switch
2. Disconnect the machine from the net plug
3. Take out the 4 ALLEN screws fixing the cover of the electronic box (5, page 4) and remove it.
4. Remove the 2 FASTON terminal and the oil inlet-outlet pipes of pump.
5. Take out the 2 ALLEN screws which fix the lubrication pump and replace for the new one.

*For the assembling, please repeat the process in the reverse order.

DISPLAY SUBSTITUTION

Ref. EL010136

1. Disconnect the main switch
2. Disconnect the net plug
3. Take out the machine keyboard by introducing a small “screw driver” in between the keyboard and the gap situated on the upper part of the motor cover. Switch the keyboard connector off (see page 19).
4. Remove the motor cooling fan (see page 21).
5. Take the 4 Allen screws fixing the motor case and raise it.
6. Disconnect the display board connector, the cooling fan and the motor grip.
7. Replace the display fixed to the motor.

*For the assembling, repeat the process in the reverse mode.

Do not force the wires when placing the case
Fix the display with 4 points of silicone, near the corners of the motor case frame.

VARIATOR BOARD SUBSTITUTION

Ref. EL010156

1. Disconnect the main switch
2. Disconnect the net plug
3. Take out the 4 ALLEN screws in the electronic equipment cover and remove the cover
4. Take out the cables (11+8+5; display+resolver+power) of the terminal strip, the “faston” connectors of the power supply and the oil pump.
5. Take out the 3 Allen screws which fix the board to the cupboard, and place the new board.
6. To connect the new board, pay carefully attention to the list of colours and pin nrs. like shown in drawings of pages 31-34.

*For assembling, repeat the process in the reverse mode.

 Machine Base *Ref. 91100104*	 Lifter spring damper *R-9001 NC Ref. 91101903* *R-9001 NC C33 Ref. 901A0303*	 Regulating handwheel *Ref. 91101504*
 Radial arm box *Ref. 60100304*	 Damper regulating handwheel *Ref.AC020056*	 Damper R-9001 NC *Ref. 90100205* R-9001 NC C33 *Ref.917A0204*
 Arm fixation handle *Ref AC060386*	 Stay *Ref 90100405*	 Union *Ref. 40100503*
 Spindle of the fork damper *Ref. 90102403*	 Spindle of the arm damper *Ref. CL020856*	 Spindle arm with screws *Ref.90100304*

 Main switch *Ref. EL010096*	 Variator board *Ref. EL010156*	 Fusses *Ref.EL010114*
 Motor TS-V *Ref. 90200904*	 Motor Case *Ref. 90103503*	 Motor grip *Ref.90105404*
 Trigger *Ref. 90103703*	 Trigger's micros *Ref. EL010066*	 Motor pinion *Ref. 90200103*
 Refrigeration fan *Ref. EL010076*	 Key *Ref. EL010126*	 Display board *Ref.EL010136*

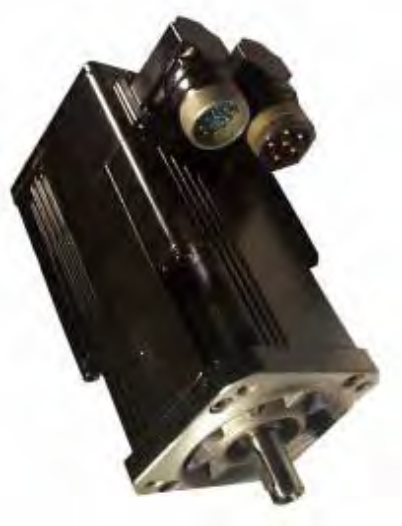
		
Lubrication pump *Ref. NH120976*	Articulated pipe *Ref.90400605*	Tank oil filler and drain plug *Rref.AC040456*

		
Quick-change - Module 40 *Ref.90500704*	Quick-change Modules 75/140 *Ref. 90500804*	Quick-change Modules 320/500/900 *Ref. AC090036*

	
Table wheel 1100 x850x850 *with brake: Ref.AC080366* *without brake: Ref. AC080356*	Trolley & table wheel 1.500x850 y 850x850 *With brake: Ref. AC080316* *Without brake: Ref. AC080306*

TS–V ELECTRONIC MOTOR

Electronic motor type BRUSHLESS of 1,5 KW. of power, equipped with a quick-change mechanism for modules.



LIFTER:

Pneumatic: 550 mm. Stroke in vertical direction.

In consists of a collapsible column and a torsion – vertical cylinder.

Attention: the lifter can be mounted on to a column, on to a trolley, on to a table and can support any ROSCAMAT model.

COLUMN

In order to mount the machine on the floor by means of 4 metallic dowels.

Base: 350 $_x$ 350 $_x$ 750 mm height
Weight: 20 Kg.

CLAMP SUPPORT

Camping device:
For mounting the machine on to any table of workbench.

TROLLEY AND COLUMN

For moving the working unit. The machine is fixed to the column by means of three thread holes.
With 4 pivoted wheels.
Measures 700 x 700 x 940 mm.
Weight 124 Kg

DETACHABLE TABLES

Measures: 1100x850x850 mm.
Weight : 135 Kg.

Maximum load on the table: 500 Kg.

Provided with:
- 4 wheels with brackets
- Notches for fixing the workpieces or tools.
- Lateral side with notches
- Lockable drawer

Measures: 850 $_x$ 850 $_x$ 850 mm
Weight: 74 Kg

Measures:1500 x 850x850 mm
Weight: 129 Kg

Maximum load for both tables: 200 Kg

Provided with:
- 4 wheels with brake
- Notches for fixing the workpieces or tools
- Support for tapholders

QUICK-CHANGE TOOLHOLDER

A wide range of tapholders, all of them with or without clutch, apart from other quick holding fixture for different tools, such as drills, sinking tools, threading dies,, socket wrenches etc are available.

- **Tapholder with safety clutch**
  (so that it slips when it reaches the hole bottom)

  Type 1 – Ø 19 mm: capacity range M2-M16
  (for modules 900, 500, 320)

  Type 2 – Ø 31 mm: capacity range M6 – M30
  (for modules 140 & 75)

  Type 3 – ø48 mm: capacity range M14-M42
  (for module 40)

- **Tapholders without safety clutch**
  (for holding different tools with cylindrical shank and driving cube)

  Type 1 – Ø 19 mm: capacity range M2 - M16
  (for modules 900, 500, 320)

  Type 2 – Ø 31 mm: capacity range M6 – M30
  (for modules 140 & 75)

  Type 3 – ø 48 mm: capacity M14-M42
  (for module 40)

THREADING DIE HOLDER

For die treading.
Capacity range: M5-M20

LONG THREADING DIE HOLDER

For guided die threading
Capacity range:M6-M12

QUICK-CHANGE EXTENSION

To separate 80 mm. Tool from the head member, and gain access to difficult areas.

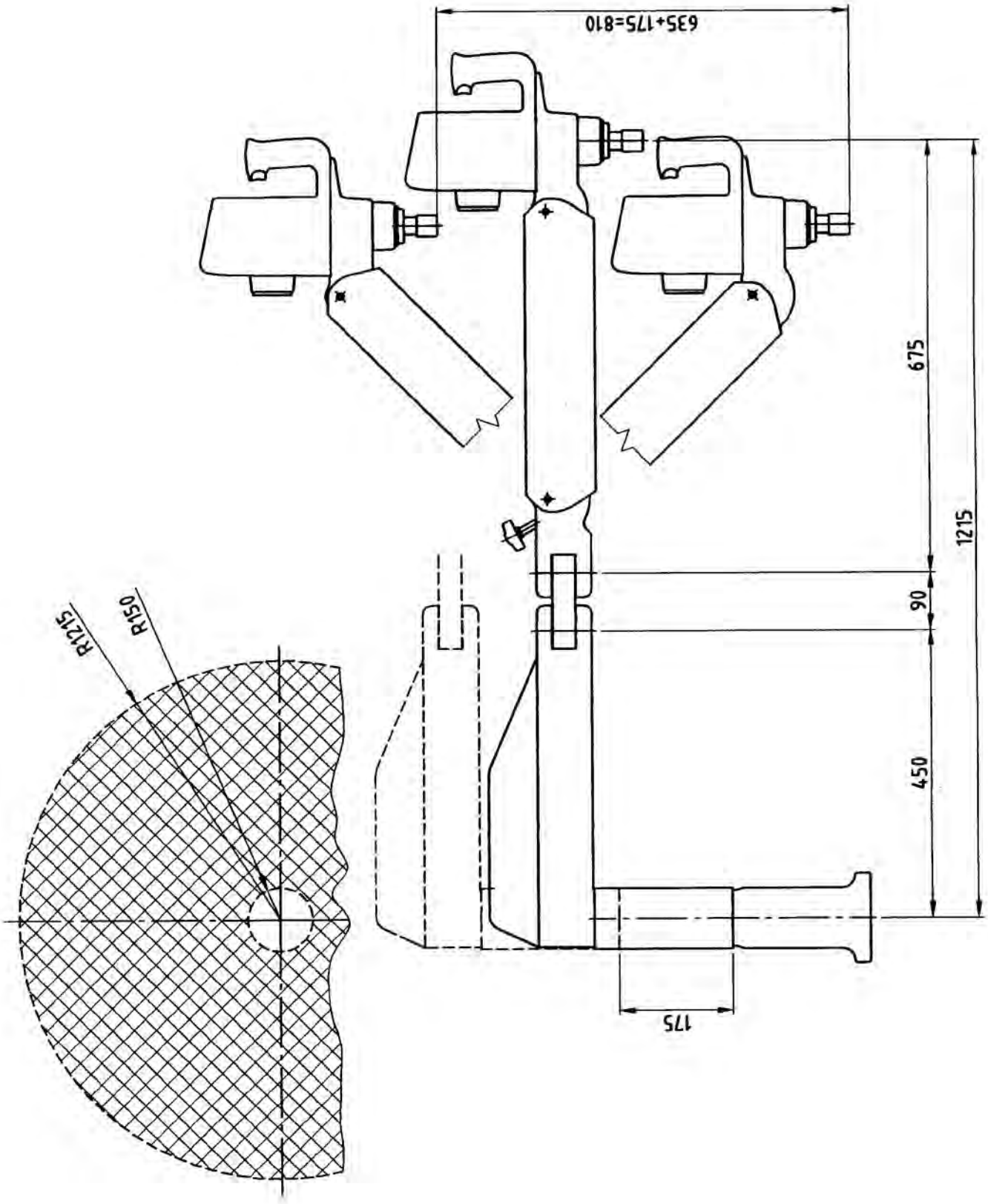
REDUCING CUP

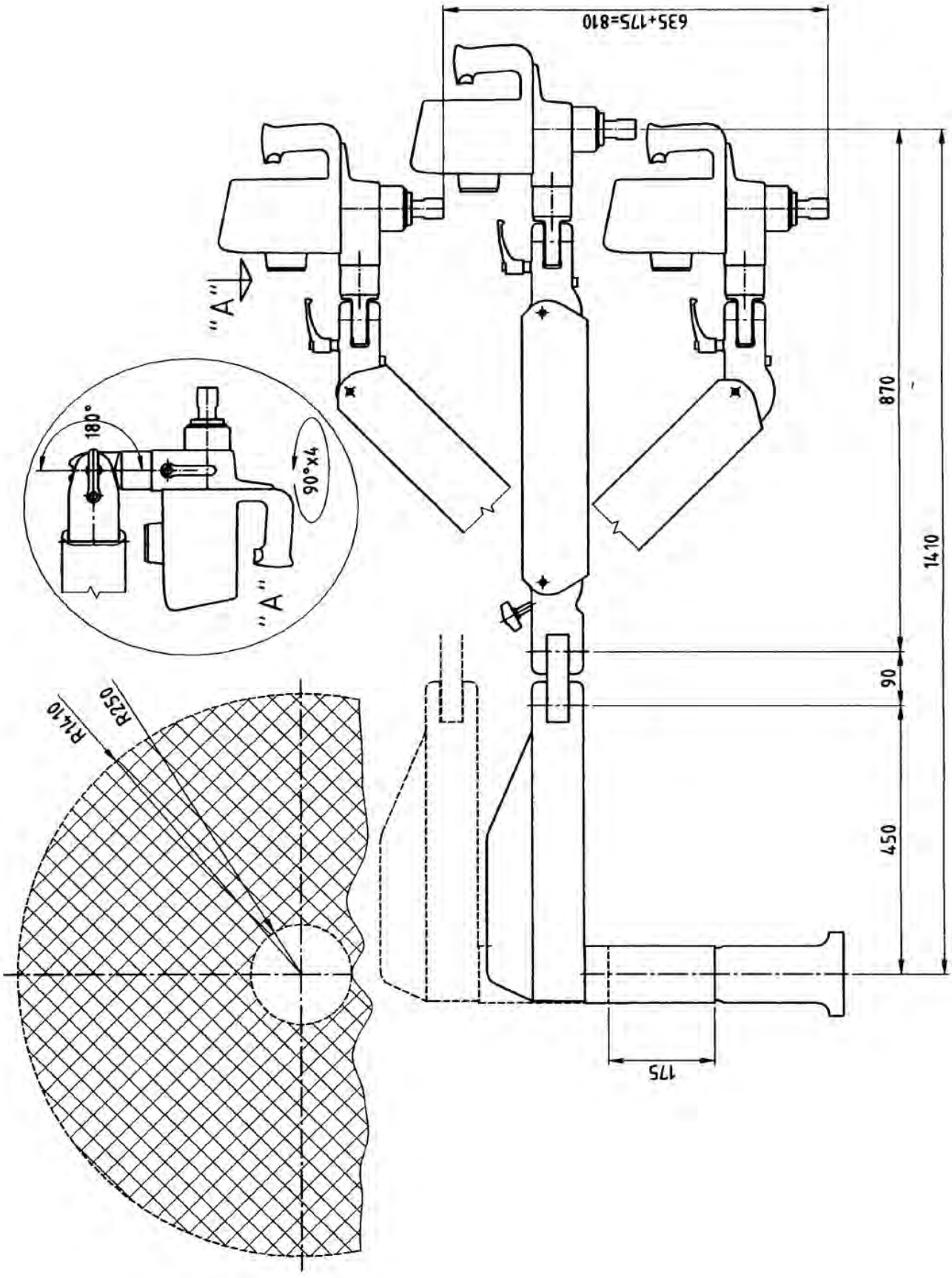
To convert different tapholder coupling diameters to modules with different output diameters.

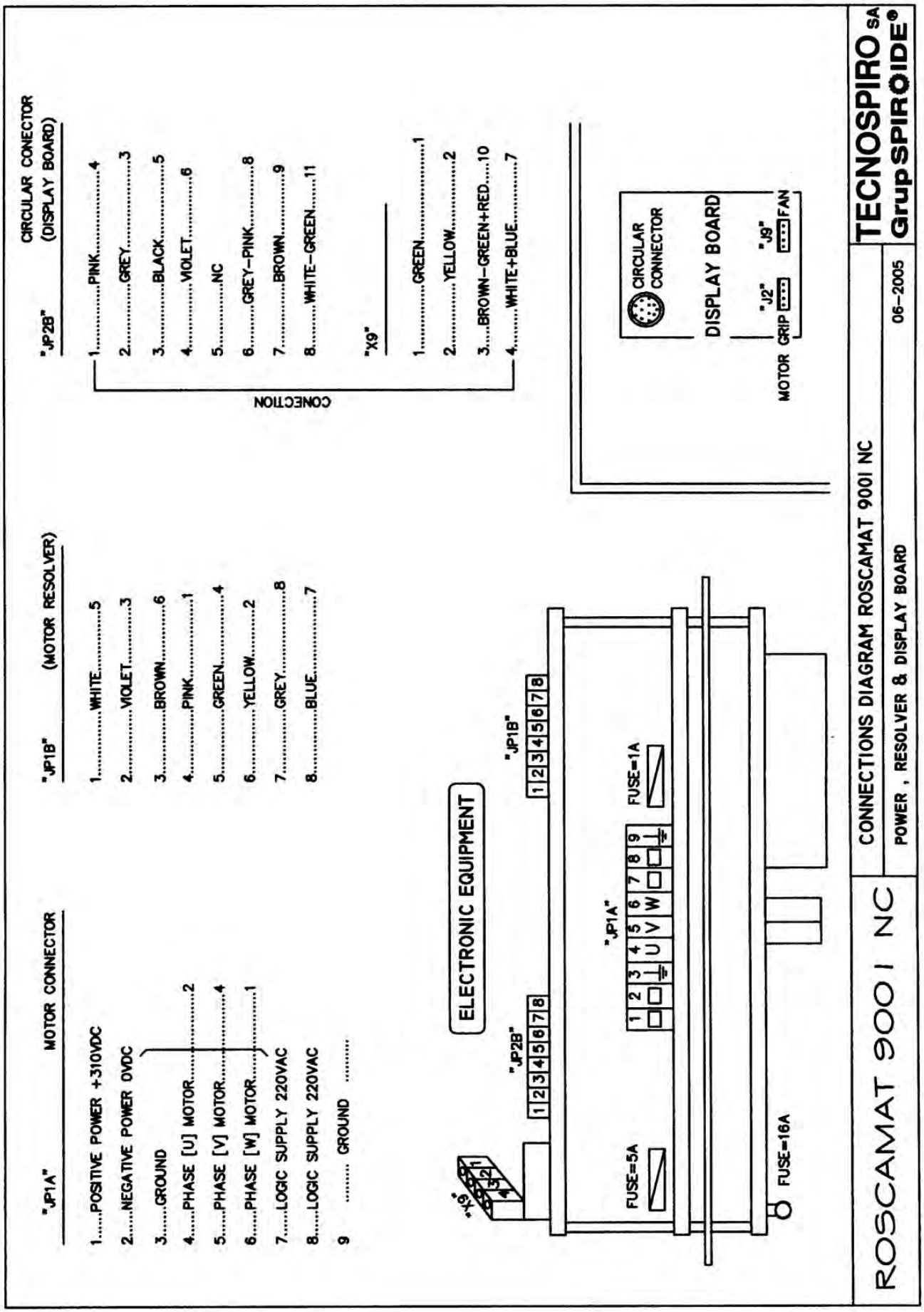
Models:

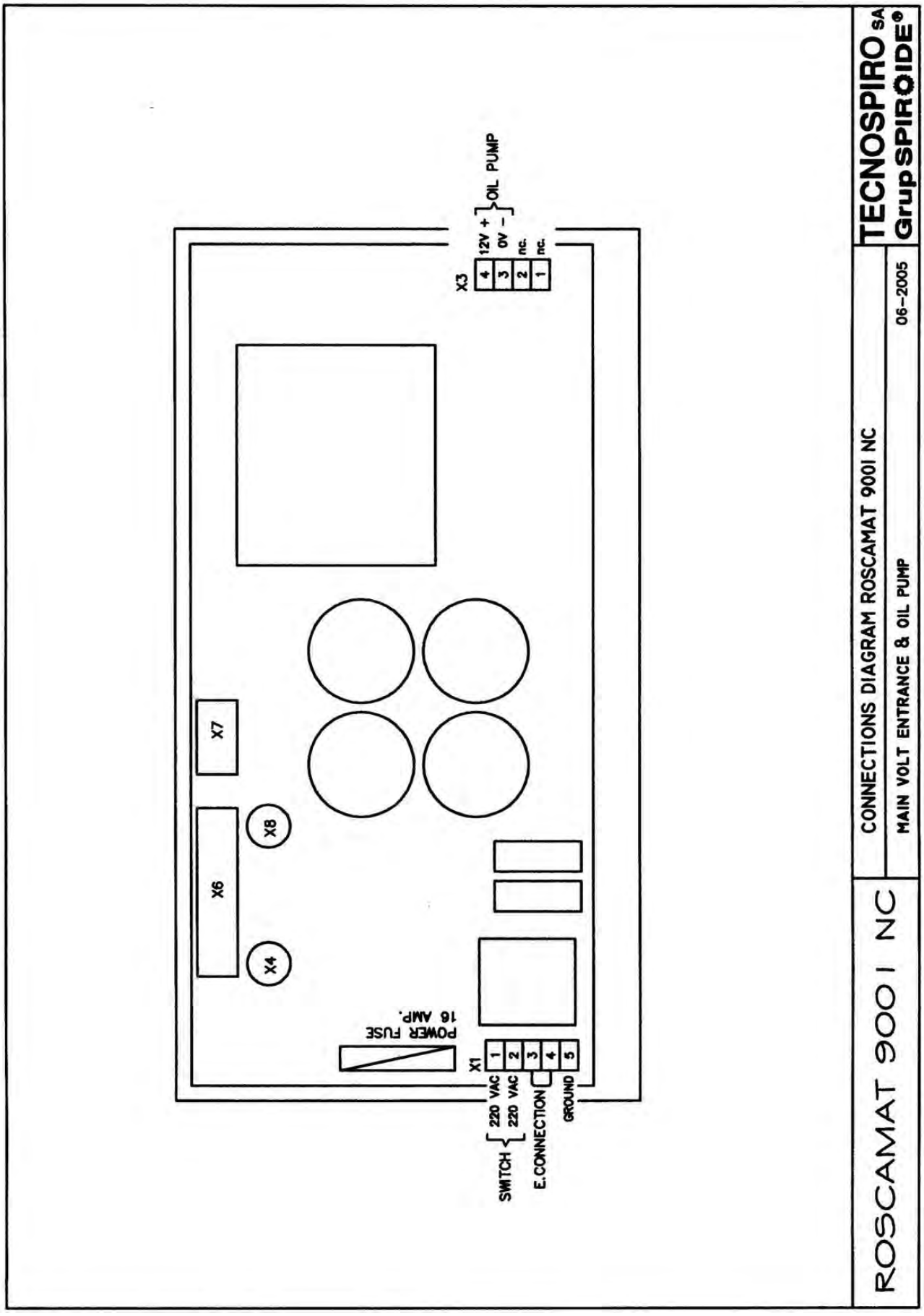
- ***reducer 48/31***
- ***reducer 31/19***
- ***reducer 48/19***

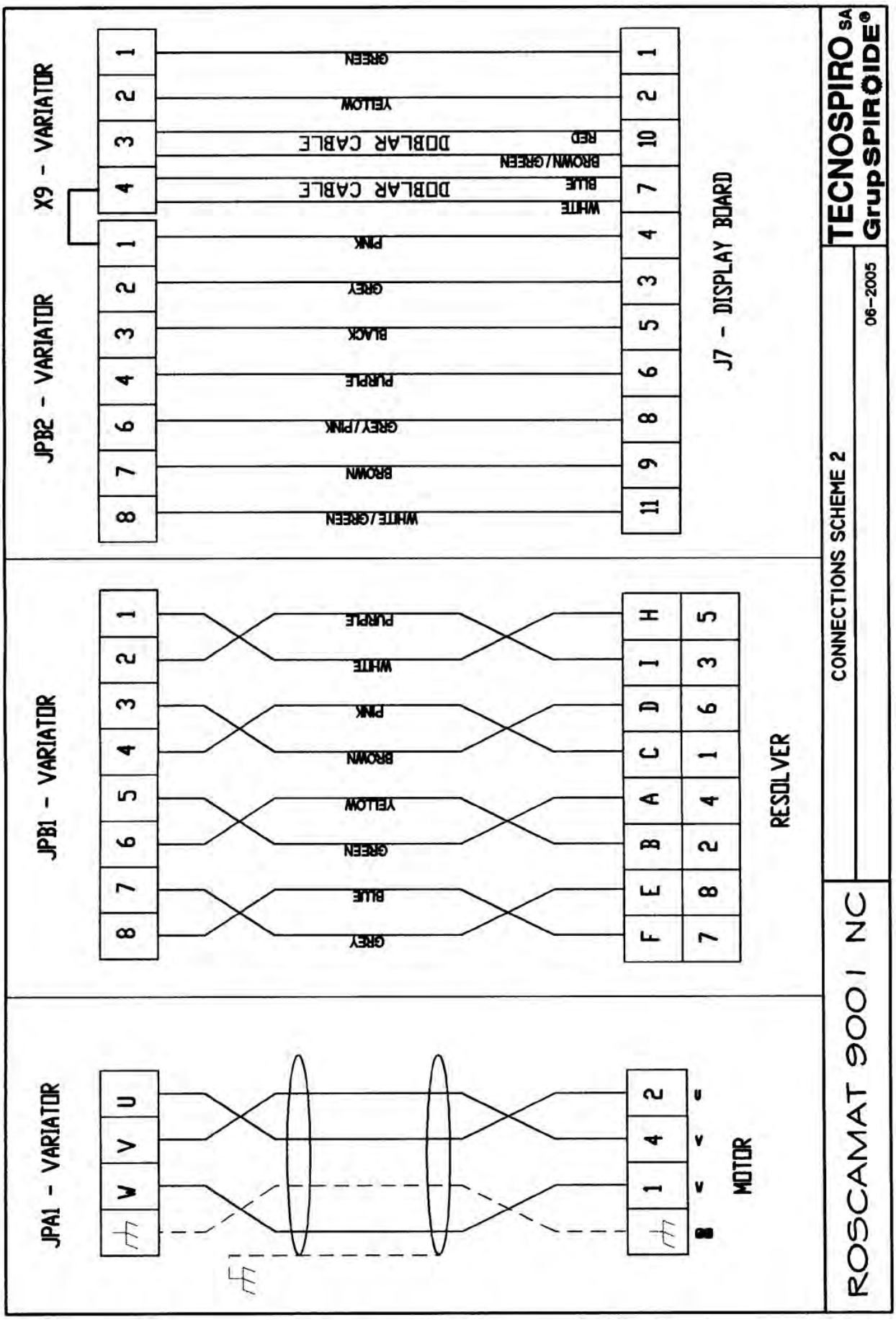
ANNEXE

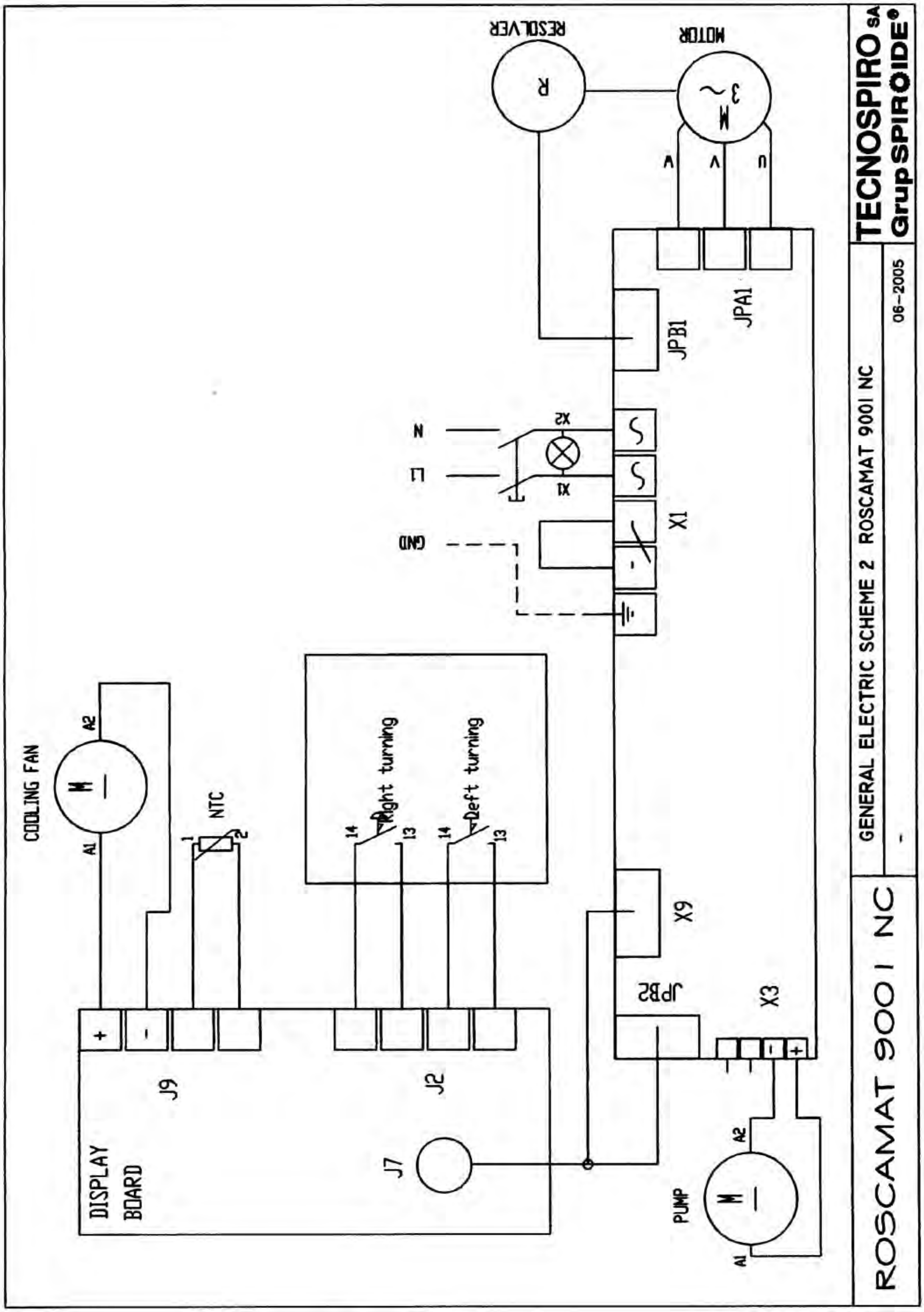

635+175=810
675
1215
90
450
175
R125
R150

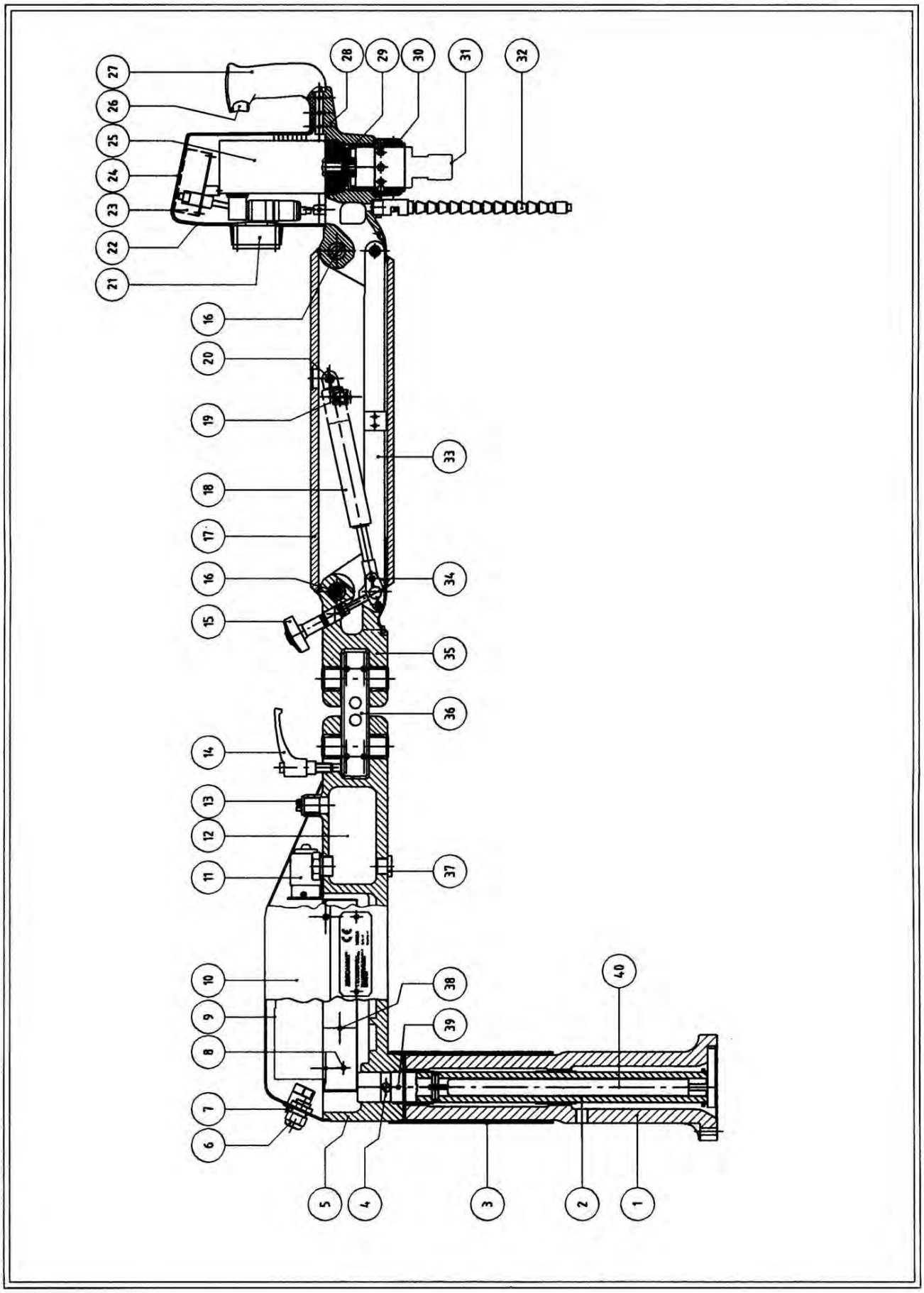

635+175=810
"A"
180°
90°x4
"A"
870
1410
90
450
175
R1410
R250


"JP1A" MOTOR CONNECTOR
1.....POSITIVE POWER +310VDC
2.....NEGATIVE POWER 0VDC
3.....GROUND
4.....PHASE [U] MOTOR.....2
5.....PHASE [V] MOTOR.....4
6.....PHASE [W] MOTOR.....1
7.....LOGIC SUPPLY 220VAC
8.....LOGIC SUPPLY 220VAC
9 ..... GROUND .....
"JP1B" (MOTOR RESOLVER)
1.....WHITE.....5
2.....VIOLET.....3
3.....BROWN.....6
4.....PINK.....1
5.....GREEN.....4
6.....YELLOW.....2
7.....GREY.....8
8.....BLUE.....7
CONECTION
CIRCULAR CONECTOR (DISPLAY BOARD)
"JP2B"
1.....PINK.....4
2.....GREY.....3
3.....BLACK.....5
4.....VIOLET.....6
5.....NC
6.....GREY-PINK.....8
7.....BROWN.....9
8.....WHITE-GREEN.....11
"X9"
1.....GREEN.....1
2.....YELLOW.....2
3....BROWN-GREEN+RED....10
4.....WHITE+BLUE.....7
CIRCULAR CONNECTOR
DISPLAY BOARD
"J2" "J9"
MOTOR GRIP FAN
ELECTRONIC EQUIPMENT
"JP2B"
"JP1B"
"JP1A"
FUSE=5A
FUSE=1A
FUSE=16A
ROSCAMAT 900 I NC
CONNECTIONS DIAGRAM ROSCAMAT 900I NC
POWER , RESOLVER & DISPLAY BOARD
06-2005
TECNOSPIRO sA
Grup SPIRO IDE®


TECNOSPIRO SA
Grup SPIROIDE®
CONNECTIONS DIAGRAM ROSCAMAT 900I NC
MAIN VOLT ENTRANCE & OIL PUMP
06-2005
ROSCAMAT 900 I NC
OIL PUMP
12V +
0V –
nc.
nc.
X3
4
3
2
1
X7
X8
X6
X4
POWER FUSE
16 AMP.
X1
1
2
3
4
5
220 VAC
220 VAC
GROUND
SWITCH
E.CONNECTION


JPA1 - VARIATOR
U
V
W
MOTOR
JPB1 - VARIATOR
PURPLE
WHITE
PINK
BROWN
YELLOW
GREEN
BLUE
GREY
RESOLVER
A
B
C
D
E
F
H
I
JPB2 - VARIATOR
X9 - VARIATOR
GREEN
YELLOW
DOBLAR CABLE
RED
BROWN/GREEN
BLUE
WHITE
PINK
GREY
BLACK
PURPLE
GREY/PINK
BROWN
WHITE/GREEN
J7 - DISPLAY BOARD
CONNECTIONS SCHEME 2
06-2005
TECNOSPIRO SA
GrupSPIRØIDE®
ROSCAMAT 9001 NC


RESOLVER
R
MOTOR
M
3~
W
V
U
JPA1
JPB1
N
L1
X2
X1
GND
X1
COOLING FAN
A1
A2
M
NTC
1
2
14
13
Right turning
Left turning
X9
JPB2
X3
+
-
J9
J2
J7
DISPLAY BOARD
PUMP
TECNOSPIRO SA
GrupSPIROIDE®
GENERAL ELECTRIC SCHEME 2 ROSCAMAT 900I NC
06-2005
ROSCAMAT 900 I NC


28
29
30
31
32
27
26
25
24
23
22
21
16
20
19
33
18
17
16
34
15
35
36
14
13
12
11
37
10
38
9
39
8
40
7
6
5
4
3
2
1

Num	Code	Description
1		Base
2		Base axis
3		Base casing
4		Mounting fixation screw to fix the base with the radial arm
5		Radial arm
6	-	Connection cable
7	EL010096	Main switch
8		ALLEN screw M5x18 to fix the electronic equipment to radial arm
9	EL010156	Variator board- Electronic equipment
10	60100304	Radial arm electronic box
11	NH120976	Oil pump for tool lubrication
12		Tank oil for tool lubrication
13		Filler plug
14	AC060386	Fixation handle
15	91101504	Regulation handwheel assembly
16	90100304	Spindle arm with screws
17		Tilting arm
18	91100704	Damper
19	-	Fixation clip
20	90102403	Spindle of the arm damper
21	EL010076	Refrigeration fan
22	90103503	Motor cover
23	EL010136	Display board
24	EL010126	Key board
25	90200904	Motor TS-V
26	90103703	Motor grip trigger
27	90105404	Motor grip
28		Head
29	90200103	Central transmission pinion gear
30		Motor slide collar (fix modules)
31	-	Module
32	90400605	Articulated pipe witn lubrication nipple
33	90100405	Stay
34	CL020856	Spindle of the fork damper
35		Cross unit
36	40100503	Arms Union
37		Drain plug
38		Fixation clip
39	-	Mounting fixation screw to fix the base with the radial arm
40	91101903	Lifter spring damper

MOTOR – TECHNICAL DATA

Electronic motor of BRUSHLESS type

Power	1400 W
Voltage	210-240 V
Frequency	50/60 Hz

Machine weight	34 Kg
Noise level	74 dab

TORQUE RELATION-METRIC SIZE- MODULES

TORQUE Steel<100 Kg/mm^2	METRIC	WHITWORTH	GAS - BSP	UNC nr.	NPT	STEEL>115	STEEL 90-115 BRONZE>40	STEEL<90 FOUNDRY BRONZE<40	ALUMINIUM PLASTIC
0.5 0.6 0.8	M3 M3,5	 1/8”		 nr. 4		500	900	900	900
1 1.2 1.6 2 2.5	M4 M5	5/32”		nr. 5 nr. 6 nr. 8					
3 4 5	M6	3/16” 7/32” 1/4”		nr. 10 nr. 12					
6	M7		G 1/8”	1/4”	1/16”		500		
8	M8								
10	M9	5/16”		5/16”				500	
12 16	M10	3/8”		3/8”		320			
18 20	M11				1/8”				500
22	M12	7/16”		7/16”					
25 28 32 36	M14	1/2”		1/2””		180	320	320	
40	M16	9/16”		9/16”					
45 50		5/8”	G 1/2”	5/8”			180	180	180
56 63	M18		G 5/8”		1/4”	75			
70 80	M20 M22	3/4”	G 3/4” G 7/8”	3/4”	3/8”				
90 100 110		7/8”		7/8”		40	75	75	
125 140	M24 M27	1”		1”					
160 180 200					1/2” 3/4”		40	40	75
220	M30	1.1/8”		1.1/8”					
240	M33	1.1/4”	G 1”	1.1/4”					40
260 340	M36								
			G 1.1/8”						
370 390 410 500	M39 M42	 1.3/8” 1.1/2”	G 1.1/4”	 1.3/8” 1.1/2”	 1” 1,1/4”				

TURNING TORQUE Nm FOR THREADING

Metric Thread	Steel 130 Kg.	Steel100 Kg.	Steel 80Kg.	Foundry GG22	Aluminium 100 HB
4	2	1.3	1.2	0.8	0.5
5	3	2	2	1.3	1.8
6	5	4	4	2.4	1,6
8	11	8	8	5	3,4
10	20	15	14	9	6
12	33	24	23	14	10
14	50	36	35	22	15
16	57	42	40	26	18
18	101	73	70	45	31
20	112	81	78	50	34
22	123	90	86	55	38
24	194	140	135	86	59
27	218	158	152	97	66
30	330	240	230	150	100
33	364	260	252	160	110
36	518	374	360	230	158
39	561	405	390	250	163
42	765	550	530	340	234

MACHINE TAPS

Blind hole	Helical-flute tap.	Lubrication.
Through hole	Straight-flute tap with helical feed-in.	
Steel > 80 Kg.	Rake angle 8-10.	Cutting oil with additives.
Steel < 80 Kg.	Rake angle 12-14.	Cutting oil.
Steel < 50 Kg. Stainless	Rake angle 14-16. Surface treatment.	
Cast iron	Straight-flute tap. Surface treatment. Nitrated. Rake angle 5.	Petroleum, coolant, dry machining.
Duraluminium	Rake angle 12-15.	Coolant, dry machining.
Aluminium	Rake angle 17-25.	Cutting oil with additives.
Plastics		Coolant, dry machining.

DATE	DESCRIPTION

Date of creation: July 2005

CERTIFICATE "CE" OF CONFORMANCE

We, Company: TECNOSPIRO S.A.
Address: POL.IND. PLA DELS VINYATS, NAVE 2
City: SANT JOAN DE VILATORRADA
Country: ESPAÑA

hereby certify, on our own responsibility that the machine

Brand: ROSCAMAT
Type: 9001 NC

Series nº	***Machine nr.***	***Year of built***

as per description in the enclosed documents, is in conformance with the **Machine Directions** 98/37/CEE and *with the* ***electromagnetic compatibility*** *direction 89/336/CEE (modified according to Directions 92/31/CEE, 91/263/CEE, 93/68/CEE and 93/97/CEE) .*

It conforms with the standards: UNE-EN12100-1: 2004
UNE-EN 12100-2 : 2004
EN 60204-1

Name: JOSEP
Surname: JOU PARROT
Post: MANAGER

Place and date: ST. JOAN DE VILATORRADA,

Signature: