PROPORTIONAL PROBE

TRACKMATIC ST

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

EDITION: EN
REVISION: M
DATE: 03-2020

Instructions for use

REF: **8695 6860**

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.

CONTENTS

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

ISEE	N°
MOTORISATION ELECTRIQUE CTP	8695 6885
UNITE DE TRANSLATION	8695 6844
REFRIJET	8695 5807

REVISIONS

REVISION H **05/05**

DESIGNATION	PAGE
Creation in several languages	

REVISION I **06/06**

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To change logos	-

REVISION J **02/08**

DESIGNATION	PAGE
Complete update	

REVISION K **09/08**

DESIGNATION	PAGE
Complete update + sparesparts newoffer	-

REVISION L **10/09**

DESIGNATION	PAGE
Update (BEAM-MATIC)	C7-F54-55

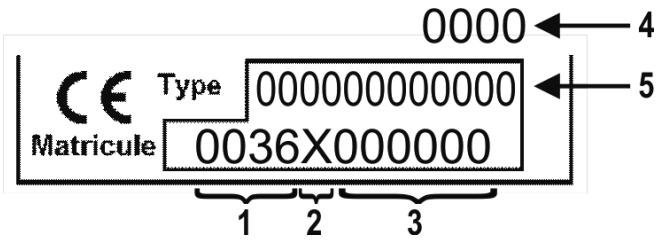
REVISION M **03/20**

DESIGNATION	PAGE
To change logos	

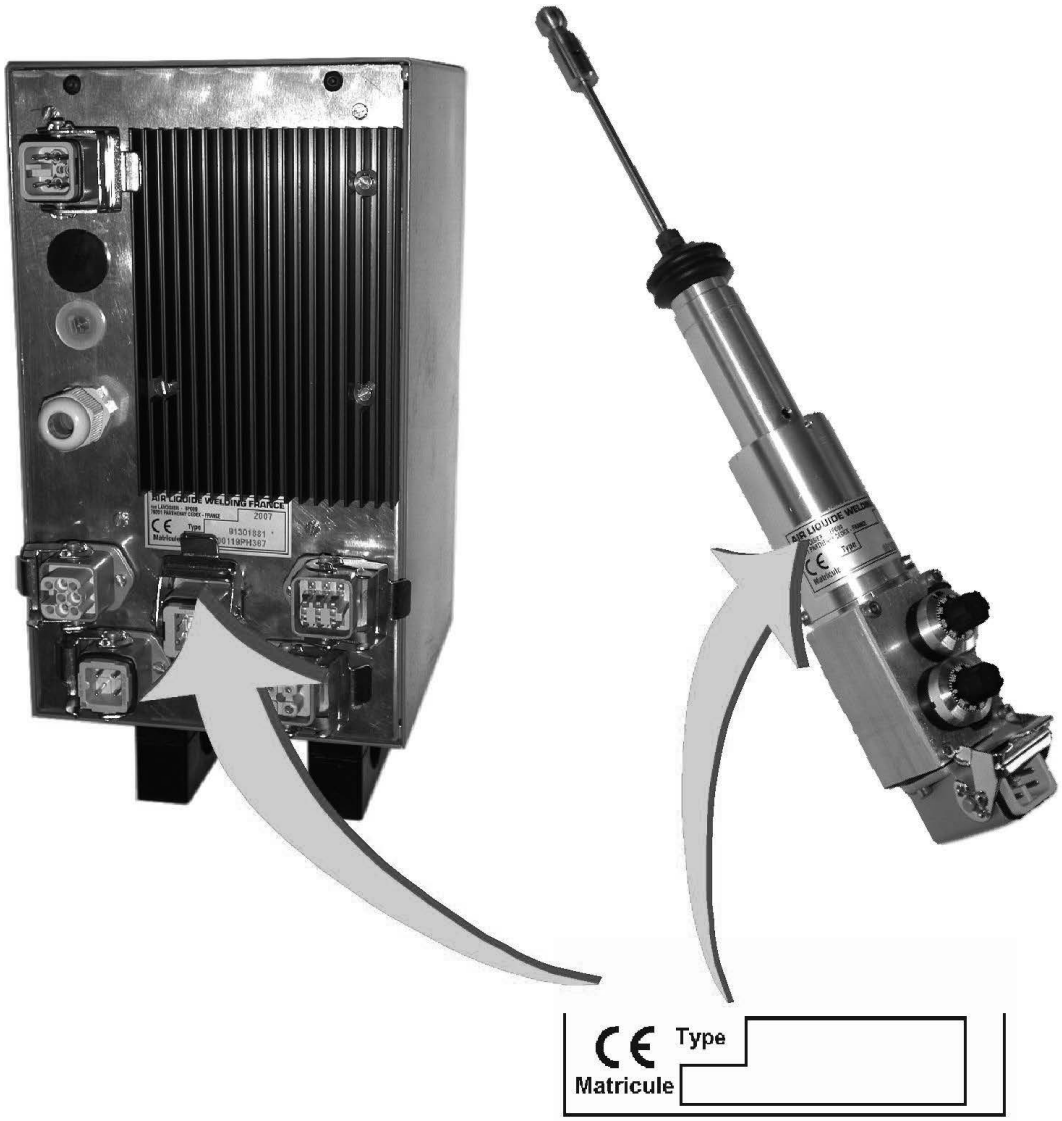
A - IDENTIFICATION

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.		



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.

C - DESCRIPTION

1 - CHARACTERISTICS

The proportional probe is a positioning tool used to follow up joints.

It is mounted on a SA (submerged arc) or MIG welding head.

Probing is mono-directional when the finger is connected to one unit and becomes bi-directional with two units.

JOINT FOLLOW-UP CONFIGURATION

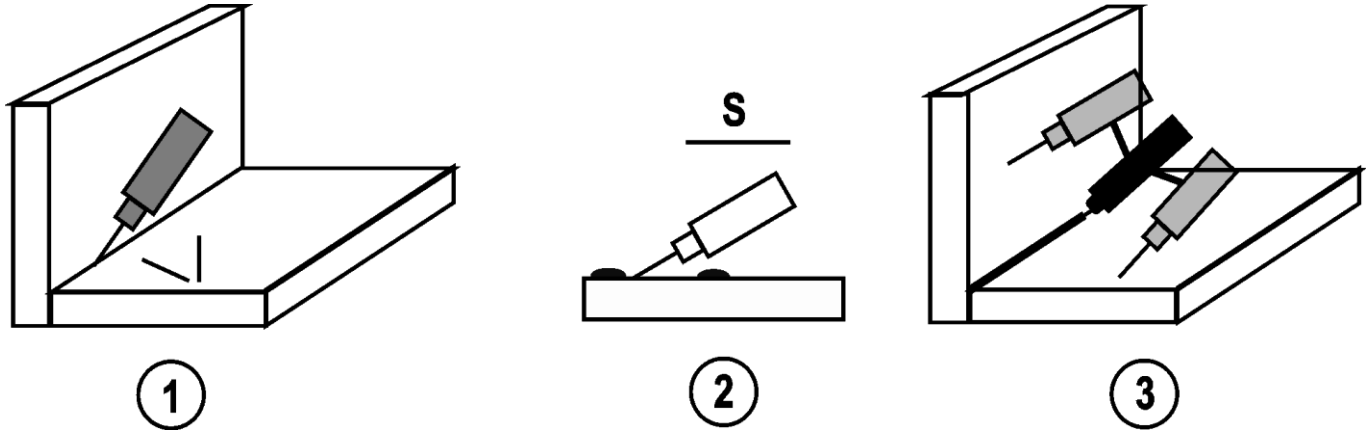
Probing consists of two stages:

- Probing approach to find the points of reference.

- Joint follow-up properly speaking.

Probing behaviour in various welding configurations.

A) INSIDE WELDING



Probing approach is possible as well as joint follow-up (see drawing 1).

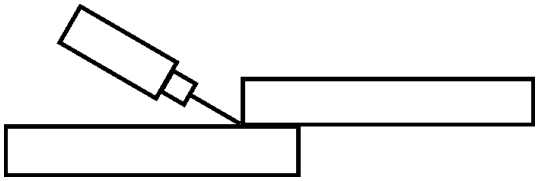
But ensure that surfaces are clean; it is possible to increase the displacement strength by modifying the offset temporarily (page D29). **Because once the vertical approach is completed, if the horizontal approach is too long and takes place on an uneven surface, the "probing" information, often used for welding start, may be triggered**.

Two solutions are available to avoid this problem:

It is essential to pull, not push the probing finger towards the point of reference (see drawing 2).

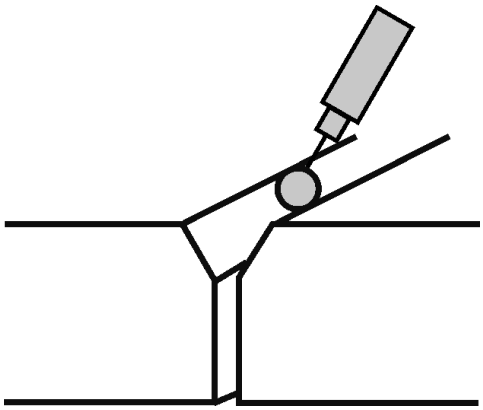
Otherwise, two probing fingers can be used to separate the two approaches clearly. Note that this solution is only possible if there is enough space available around the torch (see drawing 3).

B) FILLET WELD IN A LAP JOINT



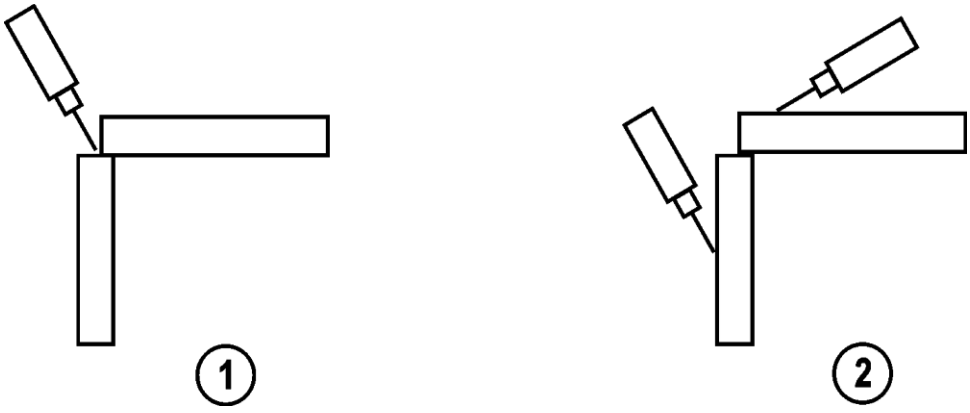
Probing approach is possible, but joint follow-up is critical. As a general rule, probing will be done only if the thickness of the metal sheet, after deduction of the thickness of possible point skips, is greater than or equal to 1.5 times the radius of the tip plus 2 mm.

C) BEVEL WELDING



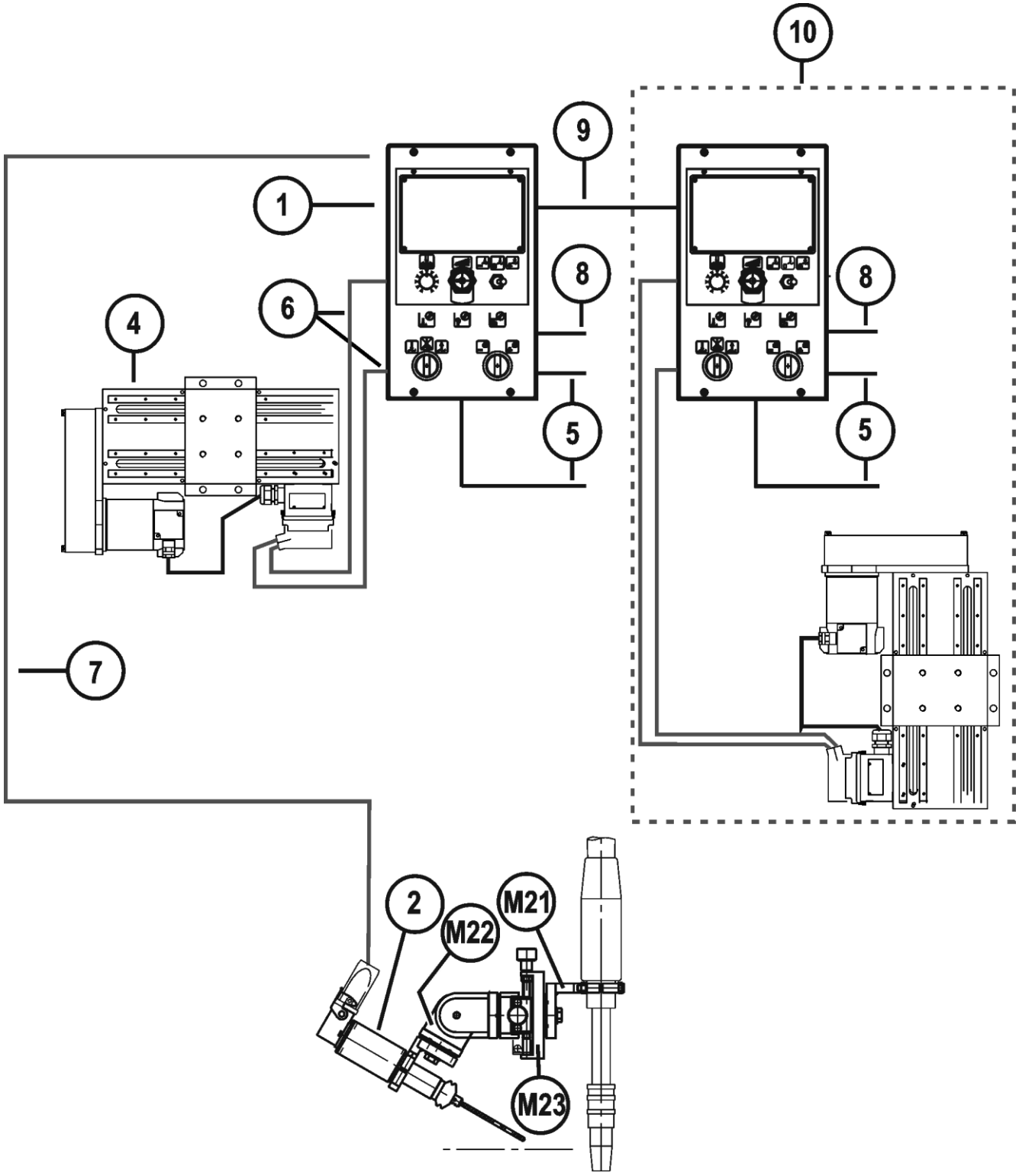
Probing approach and joint follow-up are possible. Be careful of those points where the probe may be driven out of the joint and cause a new horizontal reference to be looked for.

D) OUTSIDE WELDING



In the event of one probing finger, probing approach is impossible, but joint follow-up is possible (see drawing 1).

There is no restraint in the event of two probing fingers (see drawing 2).



Torch should be rigidly mounted.

In order to constitute a probing assembly, the following should be ordered :				
		Type of motor drive	**Other than BEAM-MATIC**	**BEAM-MATIC**
1	**Control unit including** - User's controls on the front pane - Terminals on the back panel to connect the motor, probe, limit switch, external control, 42 V supply connection cables	**A77**	**N°W000315489**	**9130 1900**
		SANYO	**N°9130 1881**	**9130 1902**
M21	**Torch collar** Used to attach the probing finger hinged support onto an AS torch		**N°W000315497**	
M22	**Hinged support** **B**etween the probing finger and the mini-slides		**N°W000315498**	
M23	**Mini-slides** Crossed mini-slides, 40 mm travel		**N°W000315496**	
2	**A probing finger** allowing the joint to be followed up through the mechanical contact of a tip.			
	- With no potentiometer		**N°W000315597**	
	- With two potentiometers to set the probe zero.		**N°9130 4155**	
5	**A 42 V feeder cable**			
	Length: 10 m		**N°W000315490**	
	Length: 17 m		**N°W000315491**	
	Length: 22 m		**N°W000315492**	
6	**A 42 V feeder cable**			
	Length: 3 m		**N°W000315596**	
	Length: 22 m		**N°W000315494**	
7	**A probe cable**			
	Length: 2 m		**N°W000315485**	

Associated motorisation:		
Probing may be associated with either:		
- displacement units with 200 travel		**N°W000315480**
- displacement units with 200 travel and Sanyo motor.		**N°9130 3101**
- CTP 3 metres/min motorisation		**N°9130 6009**
With two translation units		
9	A probe interconnection cable for a 2-axis operation	**N°W000315484**

The output signal, proportional to the distortion of the finger, directly affects the correction speed.

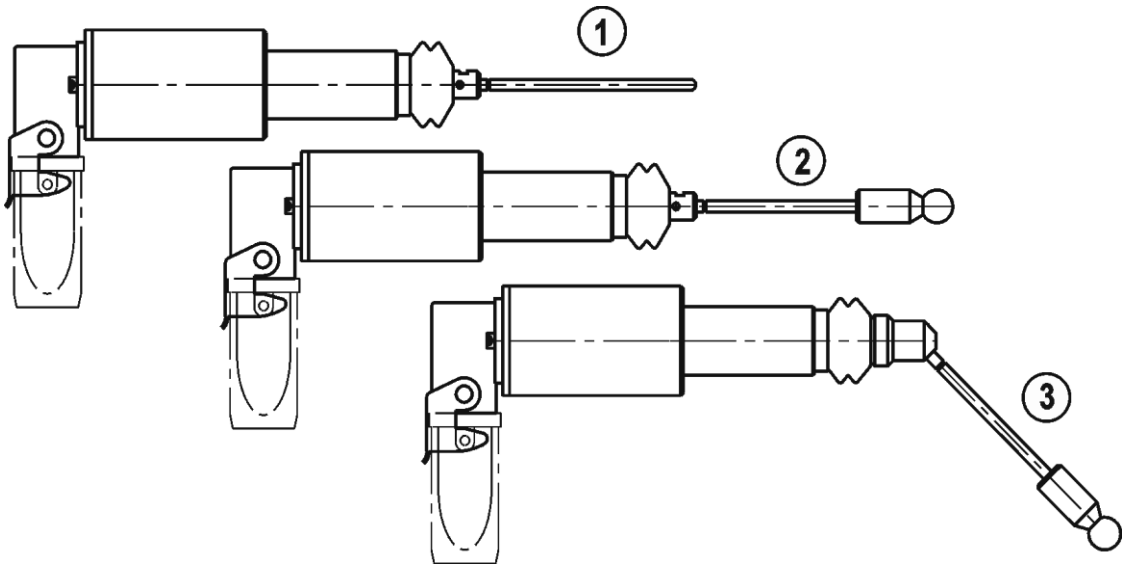
The tip of the probing finger can be mounted in three different ways:

- (1) A simple tip for smooth surfaces.

- (2) A tip with ninepin-shaped end supporting uneven surfaces to a certain extent.

- (3)) A joining piece fixed to the probing finger allows the tip, which can be mounted with or without the ninepin-shaped end, to be positioned at 45.

- (4) A two-direction end piece that is fixed to the probing finger.



NOTE : the TRACKMATIC ST system is not compatible with 10 m/min motorizations type W000315361 and W000315377.

NOTE :

An optional tacho generator can be connected to the slide in order to control the displacement speed.

2 - OPTIONS

➢External control cable (Item 8)

Ref : W000315493 length 10 m

Ref : W000315483 length 17 m

Ref : 9130 1810 length 22 m

For connection to a programmable controller or a control console of any sort.

➢Cooling system Ref.: W000315482 to be mounted on the probing finger.

Recommended in cases of intensive operation.

➢Remote control Ref. W000315488 enables probing to be remote controlled (manually or automatically). Harness length: 22 m

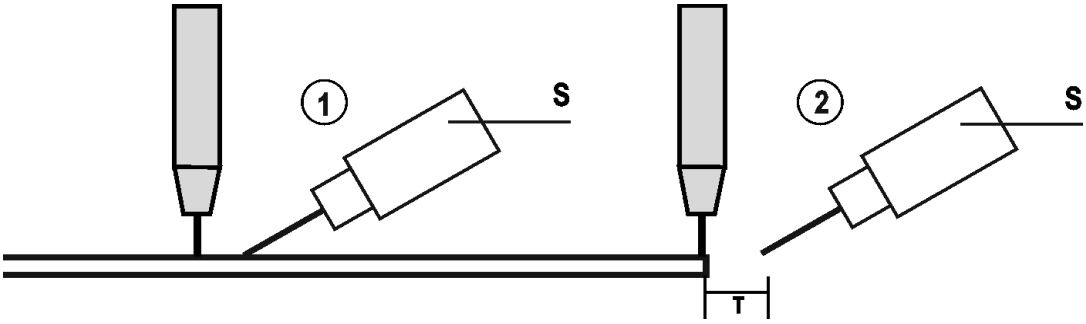
➢Optional sheet edge detection, part no.: W000315486

Important: the galvanometer and the sheet edge option cannot be installed in the same unit.

- **Sheet edge detection**

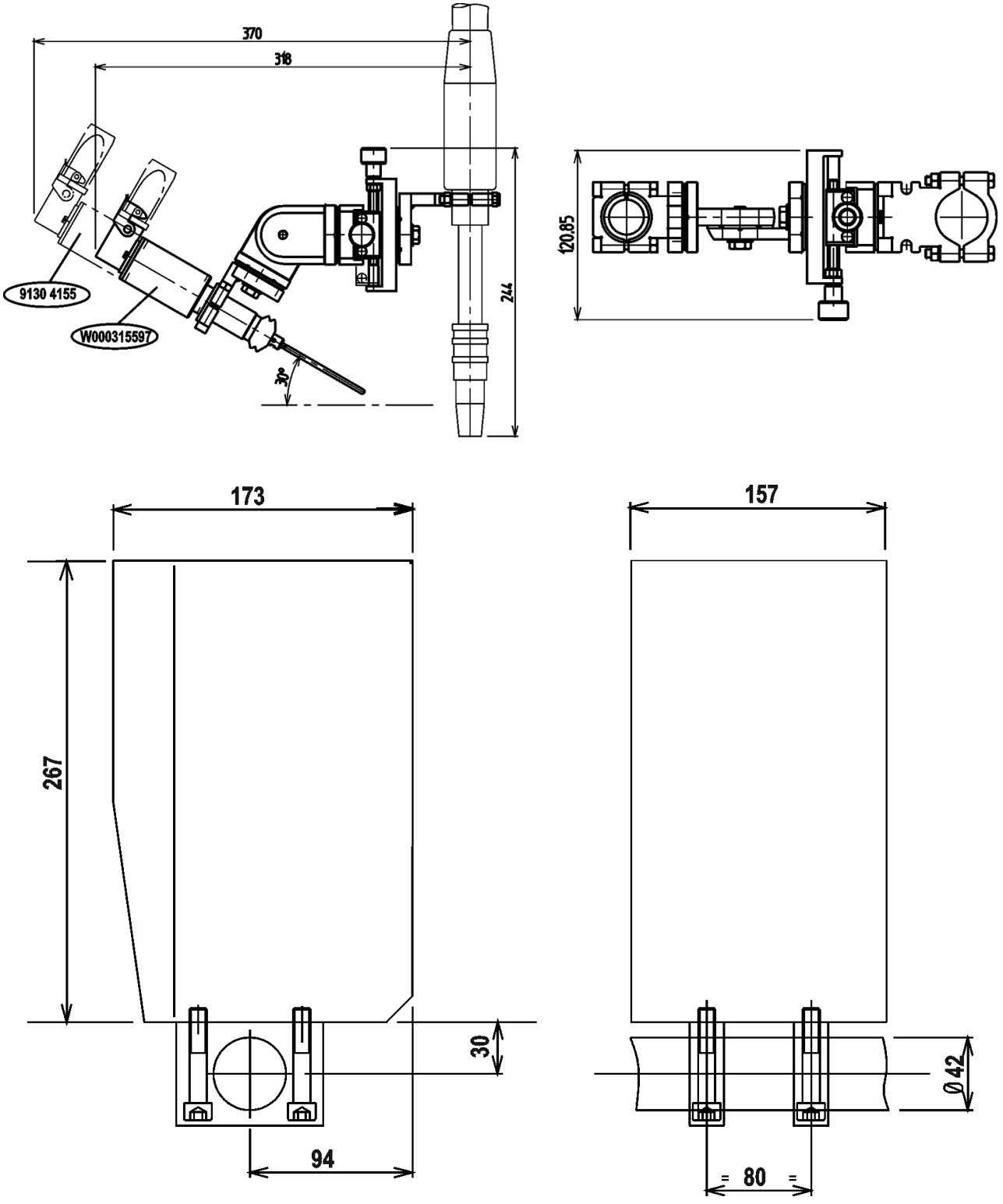
  - Case 1: the probe detects the metal sheet

  - Case 2: the probe no longer detects the metal sheet, probing is blocked but the torch can finish its movement to the edge of the sheet for time T, adjustable on the front panel.



Sheet edge detection is slightly delayed to avoid starting up for the slightest unevenness.
A sheet edge detection is taken into account only when the finger remains completely free for more than one second.

3 - SPECIFICATIONS



Unit power supply:		42V 50Hz 60Hz 10A
Operating temperature :		0 à +40° C
Probe + support weight: :		2 kg
Unit weight::		5,8 kg
A77 type motor : **TRACKMATIC**	N°W000315489 N° **9130 1900**	Vmax 5000 tr/min
ou		
SANYO motor : **TRACKMATIC**	N°9130 1881 N°**9130 1902**	Vmax 1250 tr/min
Maximum displacement speed of the motorization when no probing :		2,5 m/min
Maximum speed during probing :		0,8 m/min
Probing accuracy:		+/- 0,2mm

D - ASSEMBLY - INSTALLATION

1 - ASSEMBLY

THE INSTALLATION WHICH SUPPORTS THE PROBING SYSTEM TOLERATES NO VIBRATION.

- Place the probing unit near the operator. The unit is fixed to a tube of diameter 42 mm using plastic clamps located below the unit.

NOTE: the maximum length of the cable between the probing finger and the box should not exceed 4 m.

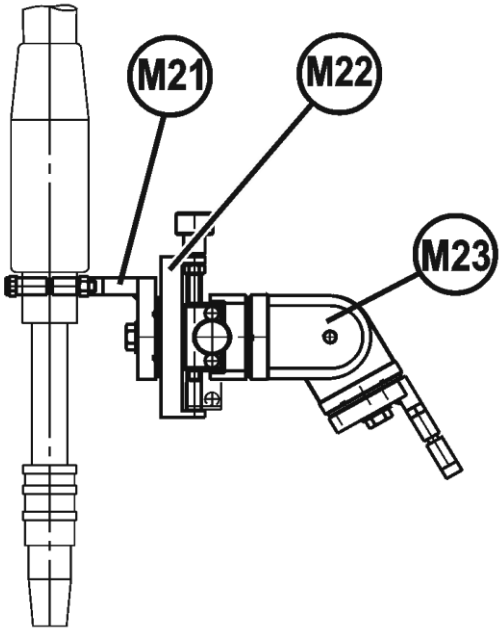
- If a motorization has to be mounted, please refer to the specific instructions.

To fix a slide, consult instructions ISEE **8695 6844.**

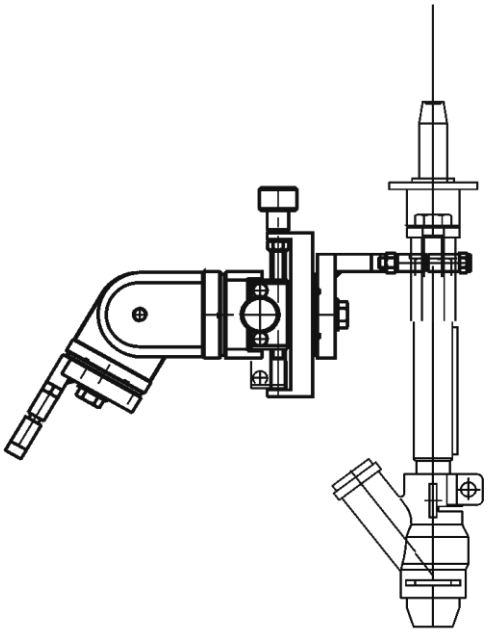
To fix a motorization, consult instructions ISEE **8695 6813.**

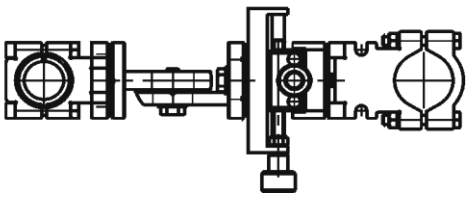
- Install the M21 collar on the torch, the M22 mini-slides, then the hinged support M23.

MONTAGE TORCHE MIG



MONTAGE TORCHE AS

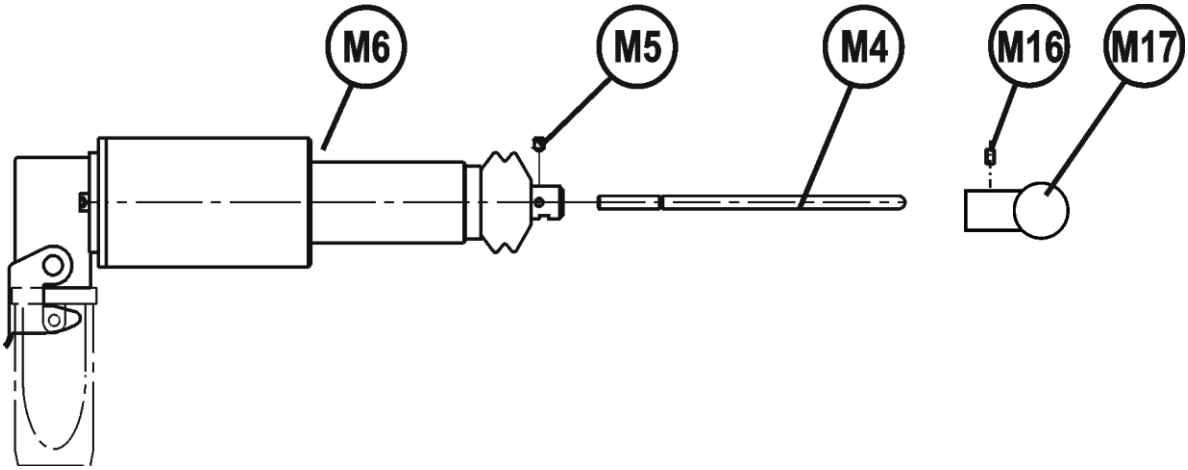




- **Fixing the tips to the probe.**

The probe (Item M6) is delivered with a straight tip (Item M4).

The screw (Item M5) holds the tip.



Fitting a 9130 1709 or 9224 0541 end piece

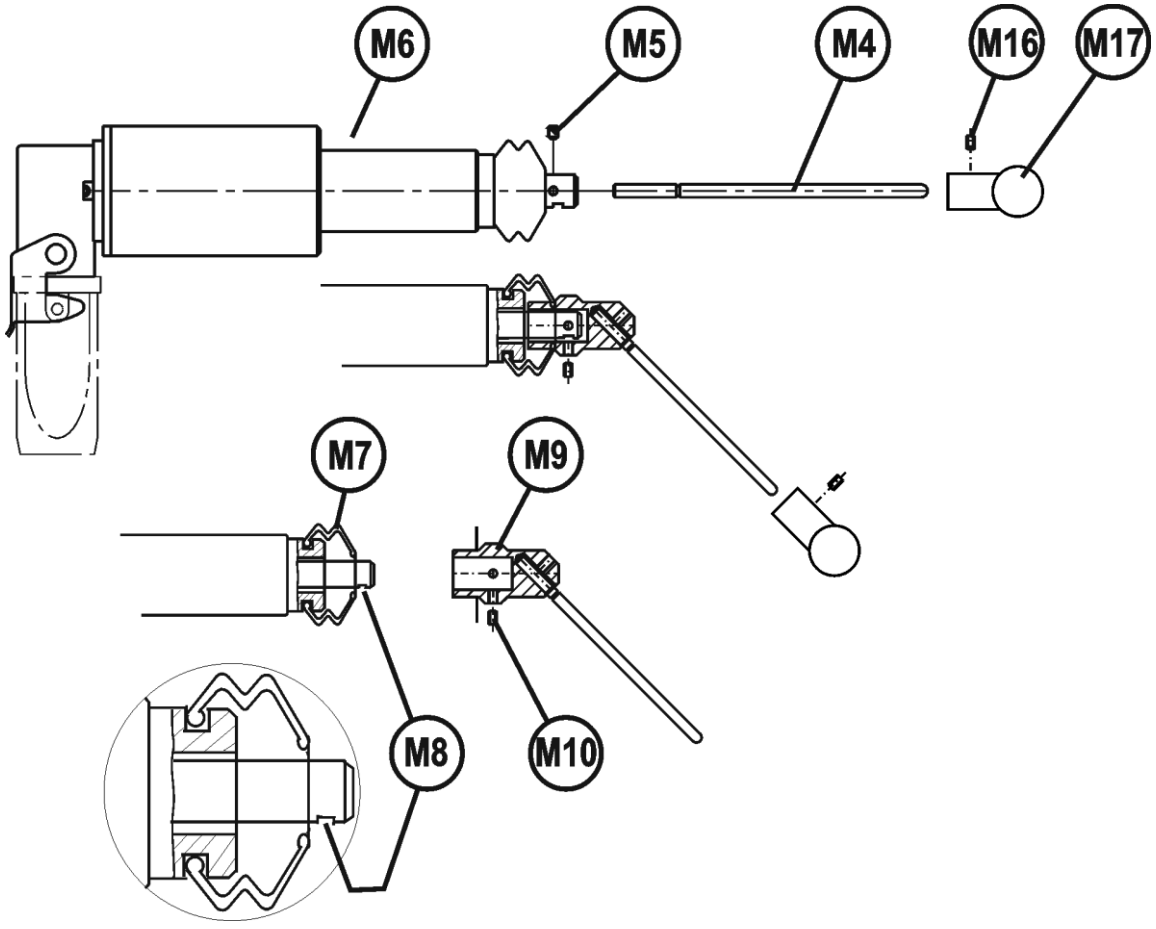
Unscrew and remove the screw (Item M5).

Remove the straight tip from the probing finger.

Place the joining piece (Item M9) on the probe by inserting it in the bellows (Item M7).

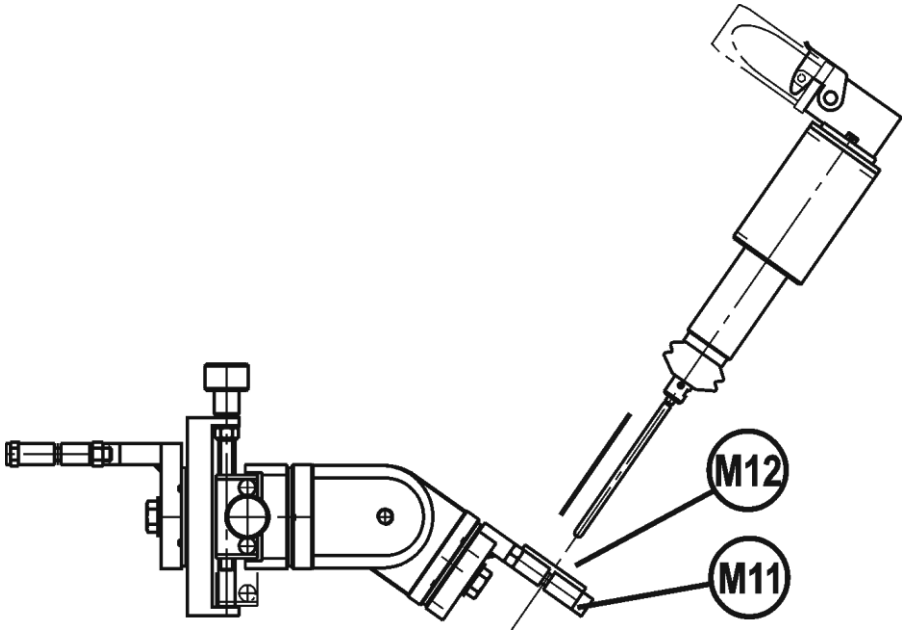
Tighten the screw (Item M10).

Caution: when the screw is tightened (Item M10), it should be positioned in the flat part (Item M8).



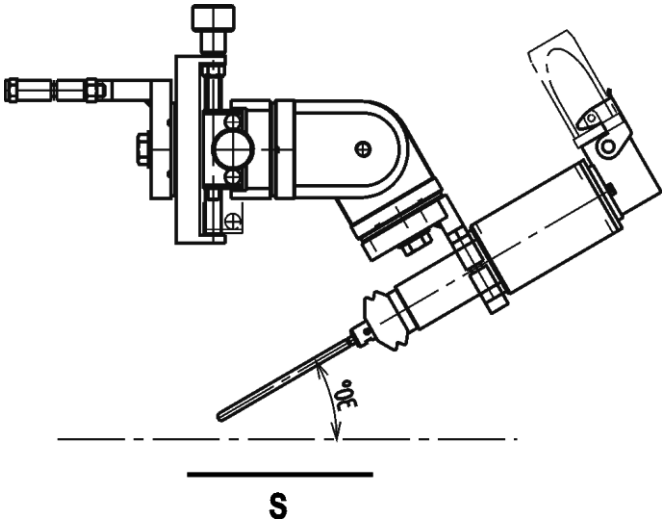
- The probing finger is fixed to the torch by means of the link.

- Unscrew the screws (Item M11) and position the probing finger in M12 and screw again.



CAUTION : Irrespective of the tip used, it should be tilted by 30° maximum in the welding direction, in order to prevent premature wear of the tip.

S = welding direction

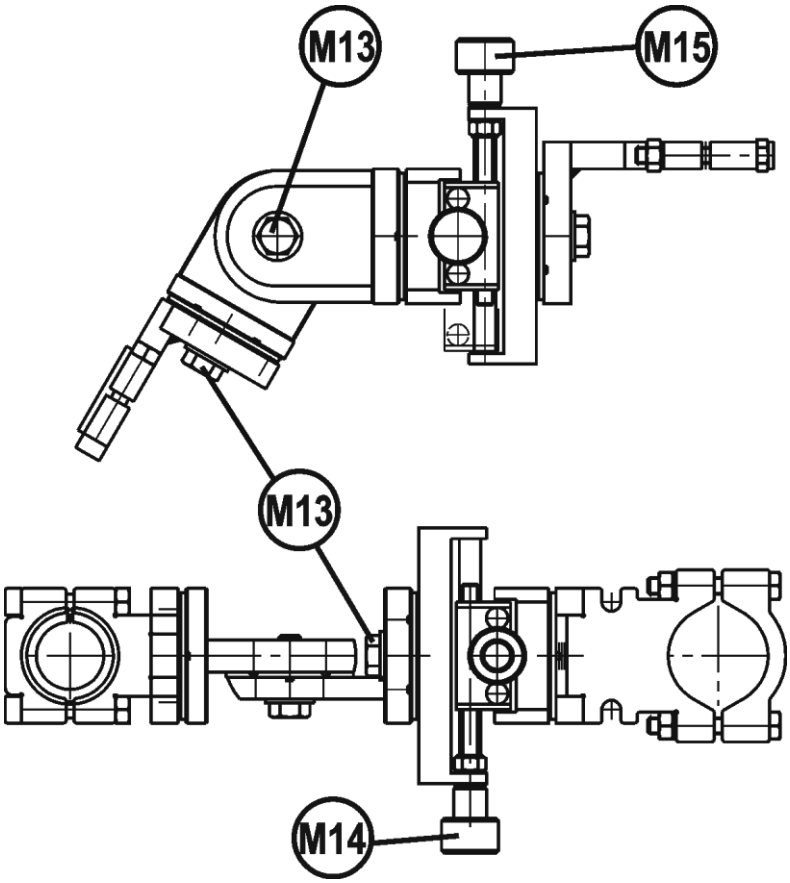


- Assembly to be used preferably for bidirectional probing.

The adjustment of the probing finger in relation to the part is performed in two steps on the link :

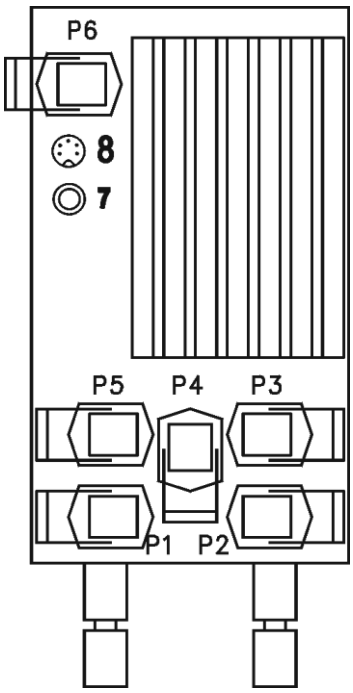
- A first adjustment for finger approach.
Slightly unscrew the screws (Item M13) and move the link until the end of the tip is in contact with the part. Then tighten the screws again.

- A second, fine adjustment. Screw or unscrew the knurl adjusting wheels (Item M15) for the vertical axis and (Item M14) for the horizontal axis.



2 - CONNECTION

PROBING UNIT WIRING DIAGRAM



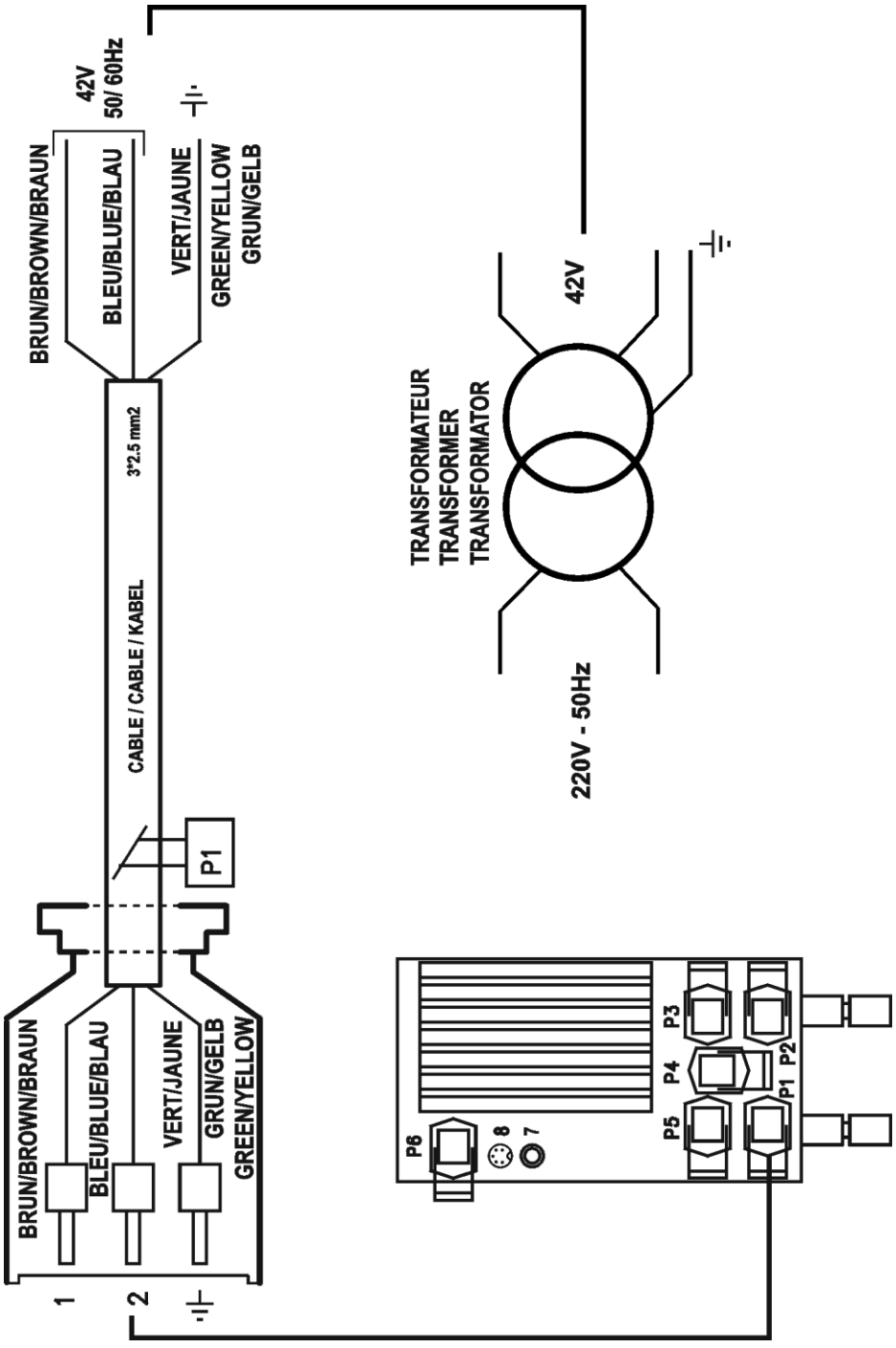
ITEM	Cables
P1	42 V feeder cable
P2	Motor cable
P3	Slide cable
P4	Output cable
P5	External control cable
P6	Probe cable
7	Probe interconnection cable
8	Probe/Synchro connection cable

42 V FEEDER CABLE

In case of one unit. Use a 42V/10A transformer.

Connect the cable terminal to socket P1 on the probing unit. The other end is connected to the 42 V transformer.

Cable length : 10m, 17m, 22m.



42 V FEEDER CABLE

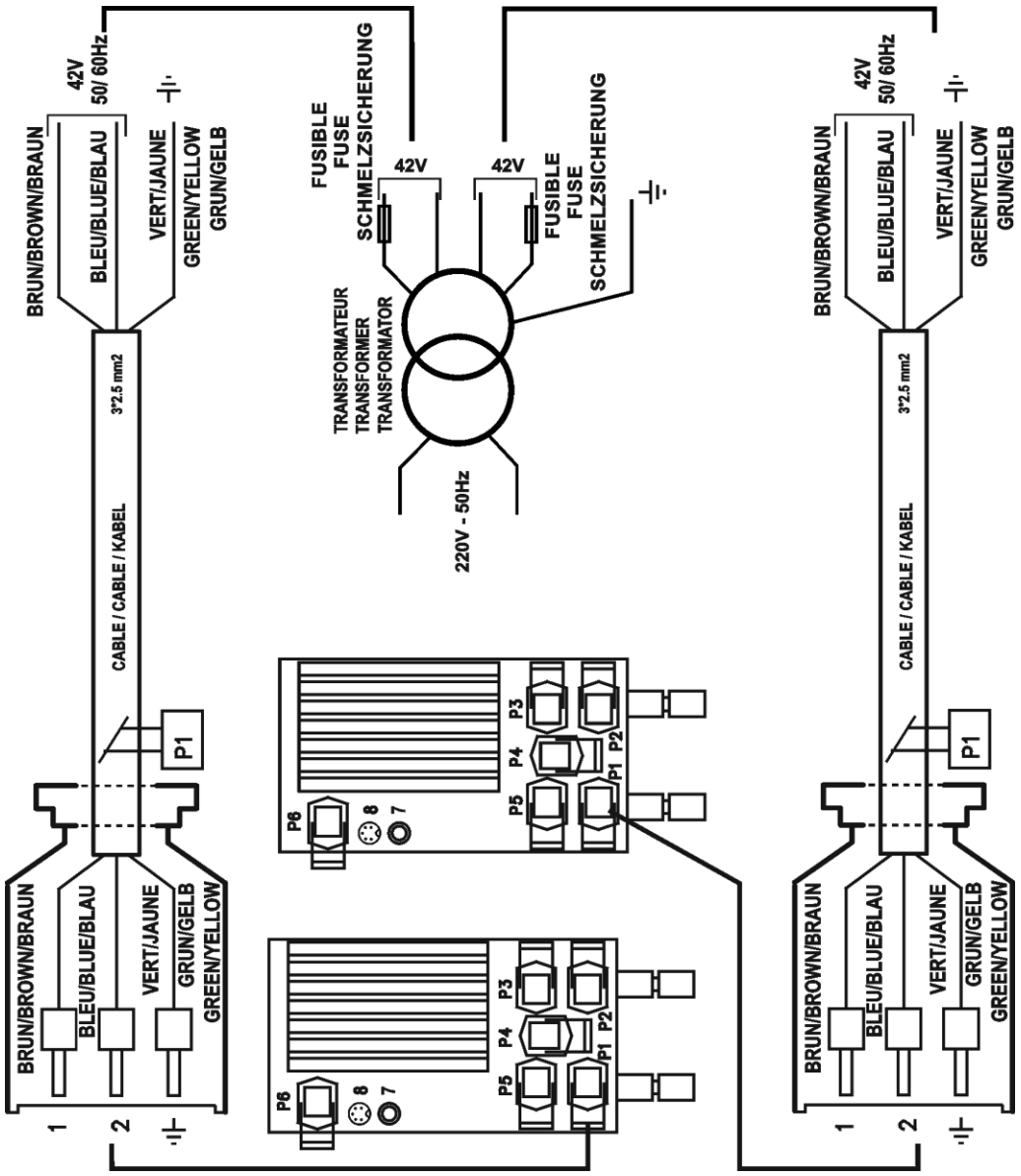
In case of two units :

IMPERATIVELY use a 2x42V/10A transformer (separate windings)

Remove the terminal strip connecting the neutral to the ground on the transformateur secondary and place a fuse in the same place

Connect the cable terminal to socket P1 on the probing unit. The other end is connected to the 42 V transformer.

Cable length: 10 m, 17 m, 22 m.

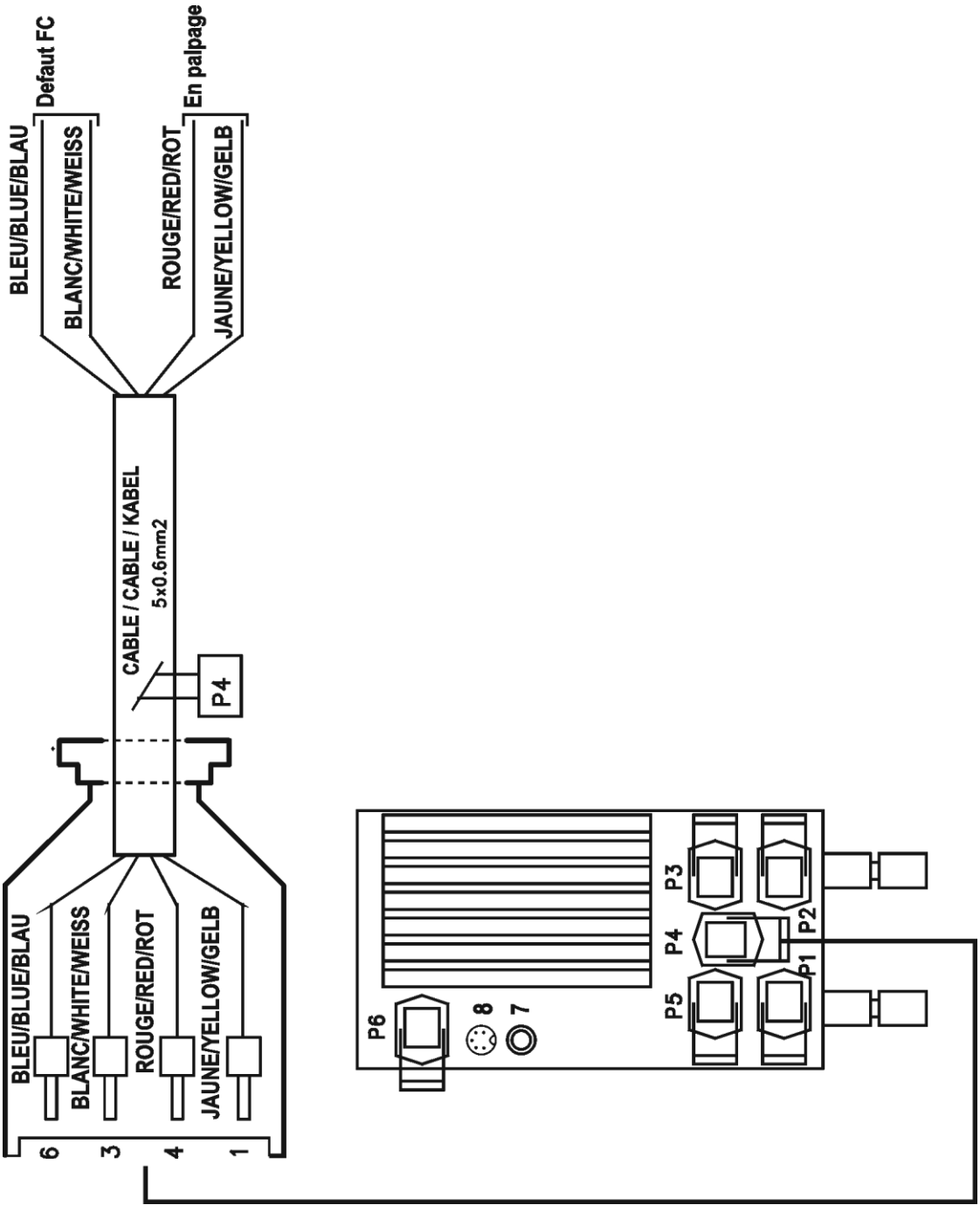


OUTPUT CABLE

This cable is used to transmit the probing or limit switch fault information to a control console.

Connect terminal P4 to the probing unit. Connect the other end of the cable to the controller.
Imax=0,3A - U=30V

Cable length: 10 m, 17 m, 22 m.

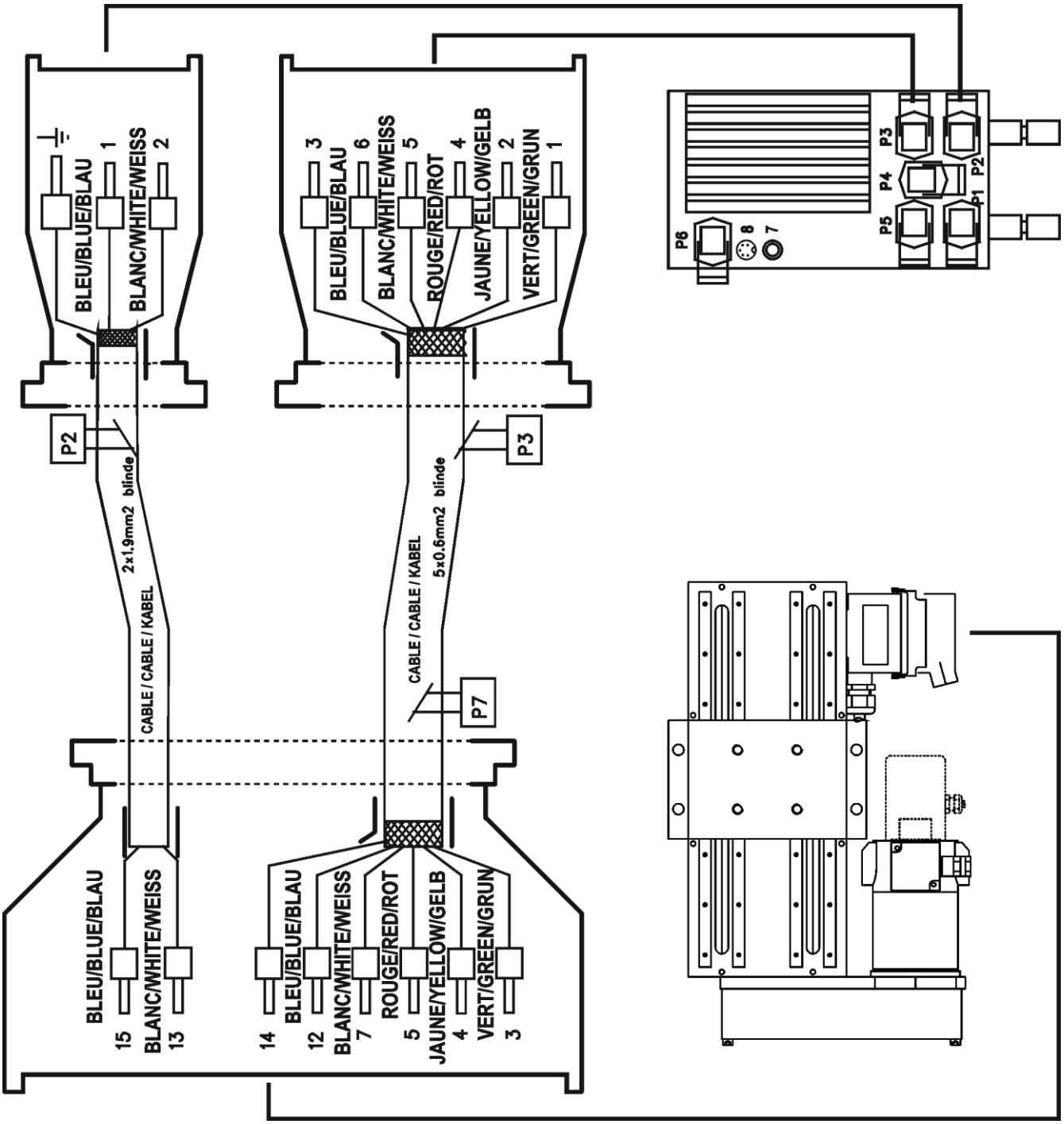


SLIDE CABLE

a) Connection of a slide with a Harting terminal.

Connect the Harting terminal P7 to the slide. Terminals P2 and P3 are connected to the probing unit.

Cable length: 3 m.

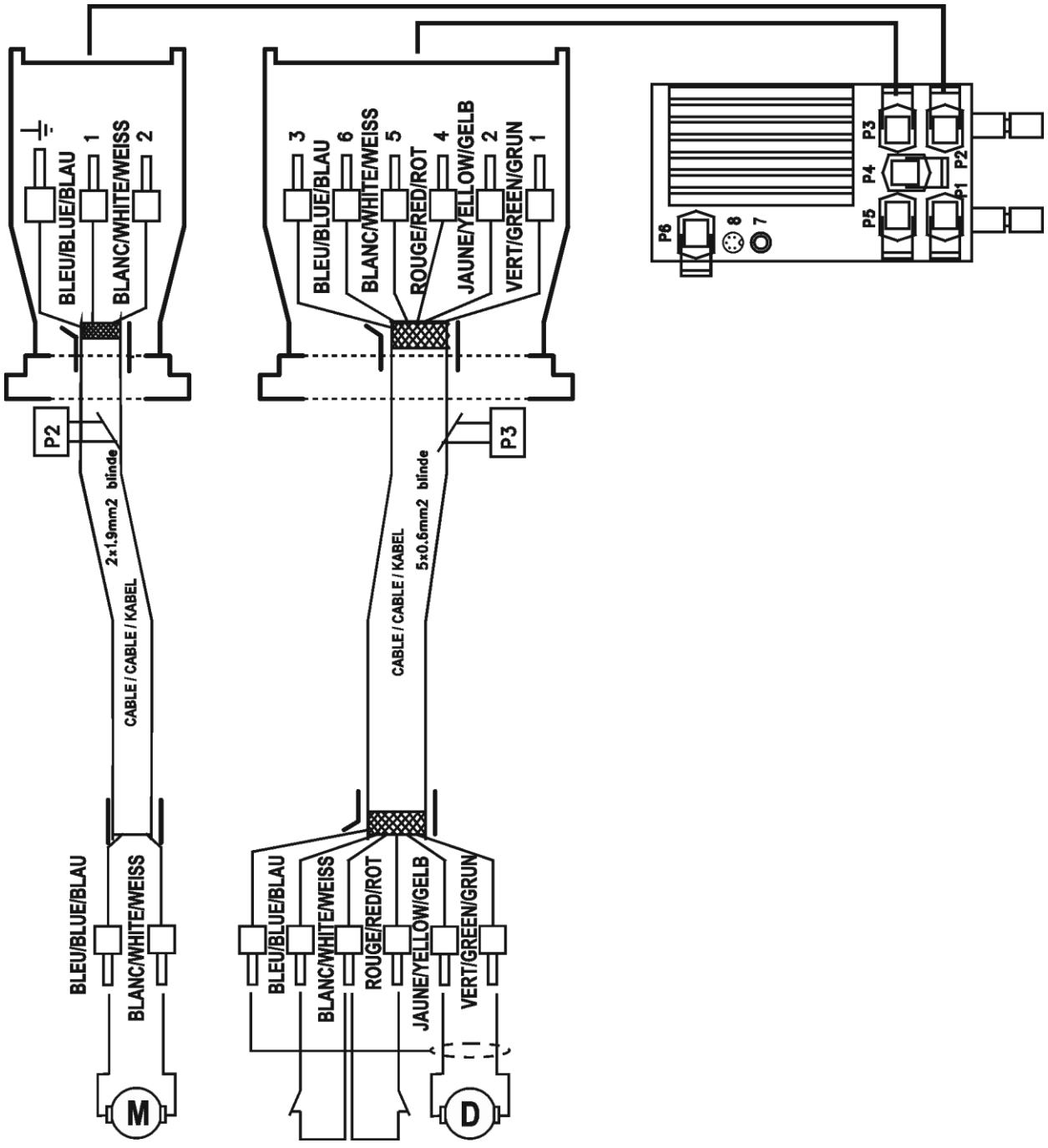


SLIDE CABLE

b) Connection of a slide without terminal or a CTP motorization

Connect the cables to the terminal block of a branch box. Terminals P2 and P3 are connected to the probing unit.

Cable length: 3 m.



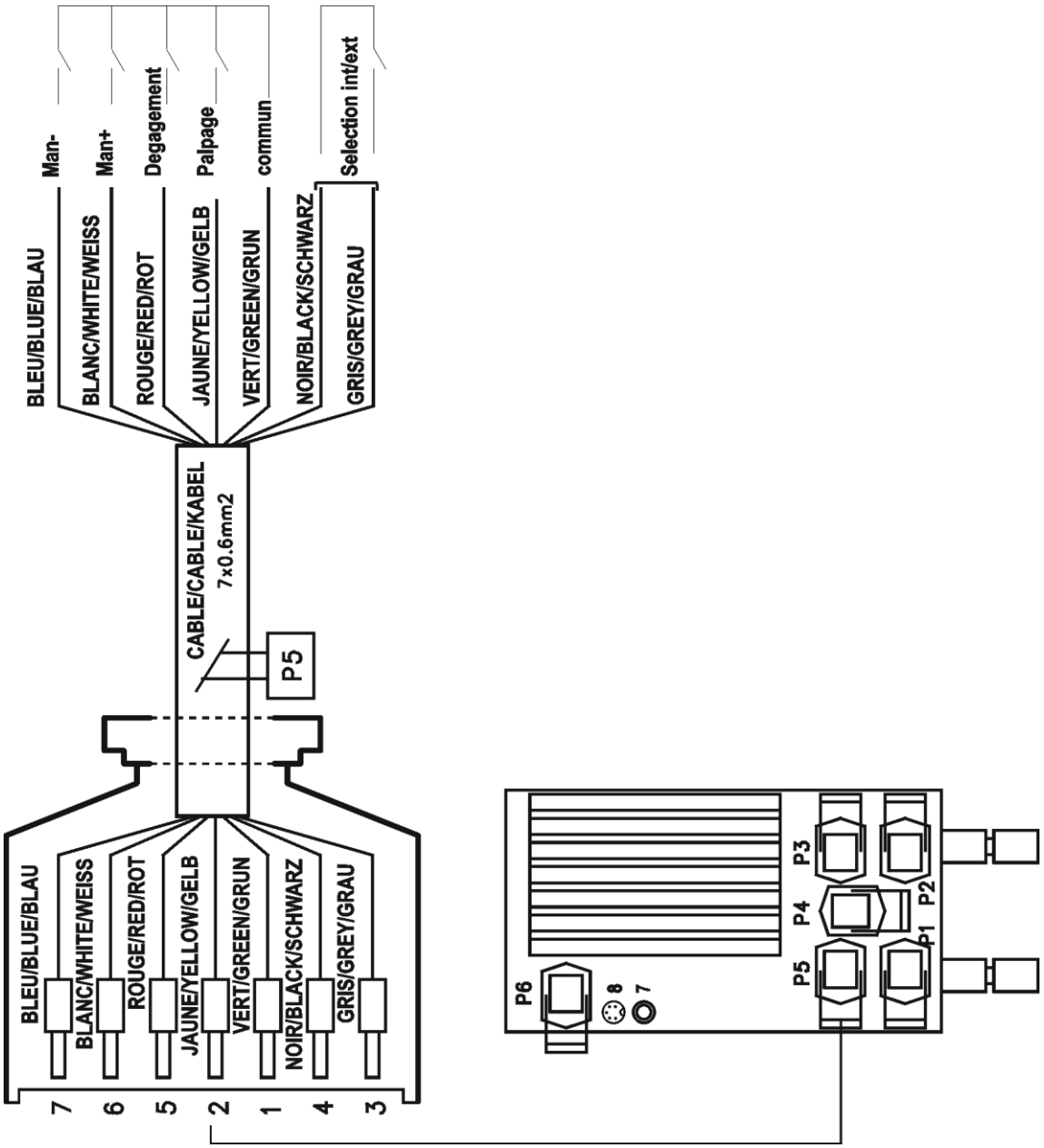
EXTERNAL CONTROL CABLE (OPTION) N° W000315483

This cable is used to connect the system to a programmable controller or to another control console.

The controls are made by dry contacts I<0, 1A.

Connect terminal P5 to the probing unit. Connect the other end of the cable to the controller.

Cable length : 10 m, 17 m, 22 m.

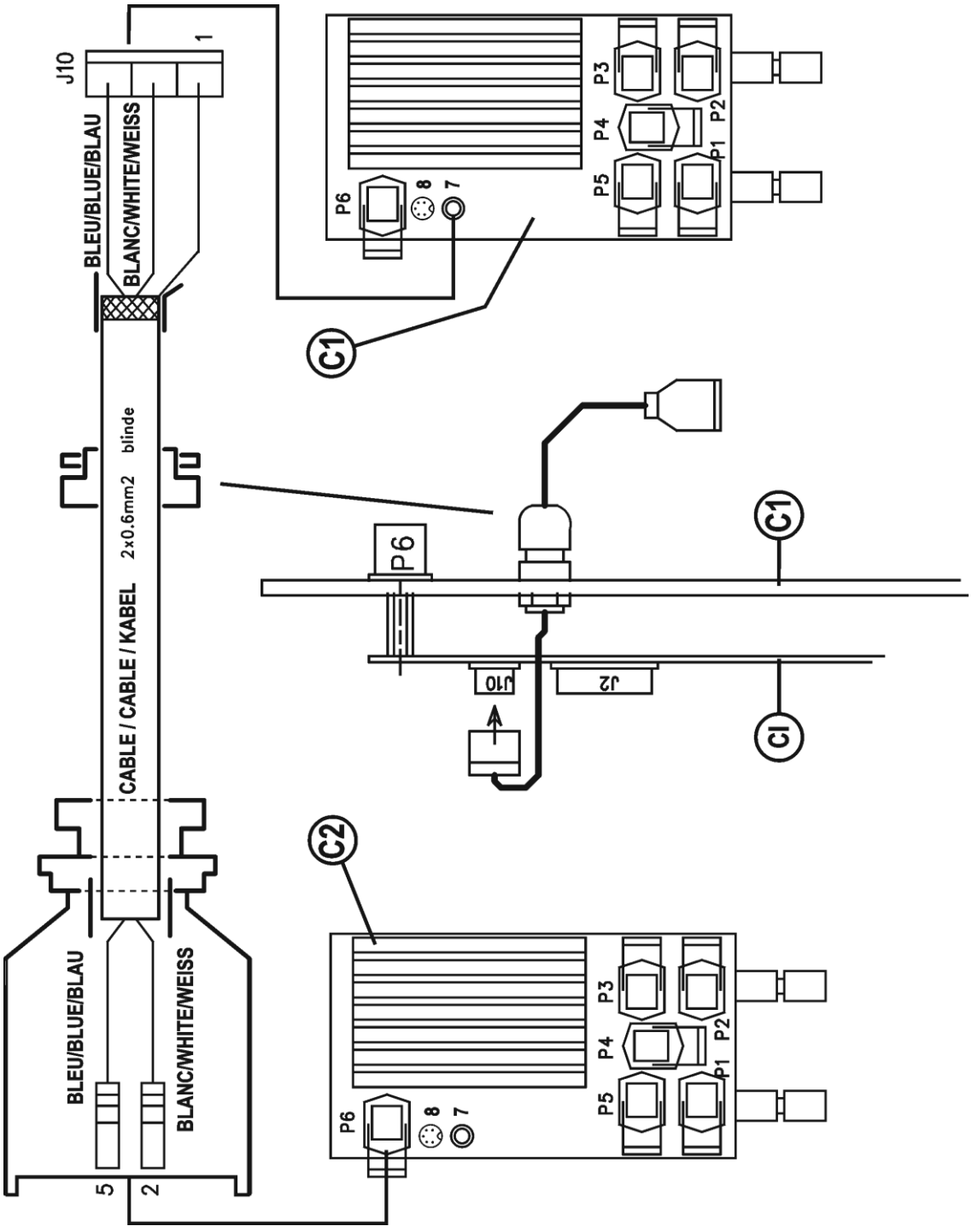


PROBE INTERCONNECTION CABLE

Cable to be used in a two-axis assembly.

Connect terminal P6 to unit C2 (Axis 2) and pass connector J10 through hole 7 of the probing unit C1. Fix the gland. Connect J10 to the CI board.

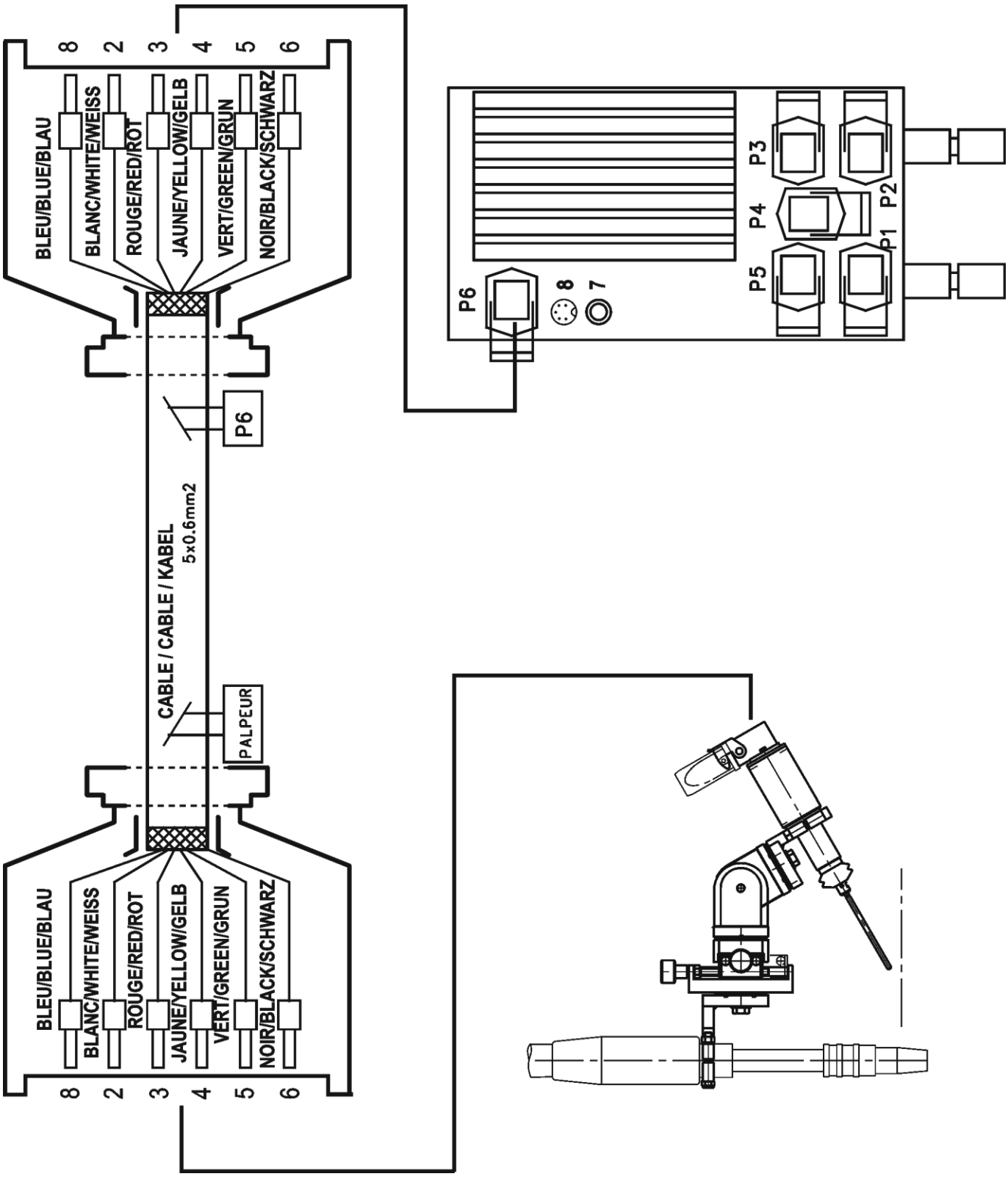
Cable length : 500 mm



PROBE CABLE

Connect terminal P6 to the probing unit. The other terminal is connected to the probing finger.

Cable length: 2 m.



PROBE/SYNCHRO CONNECTION OPTION N°W000315495

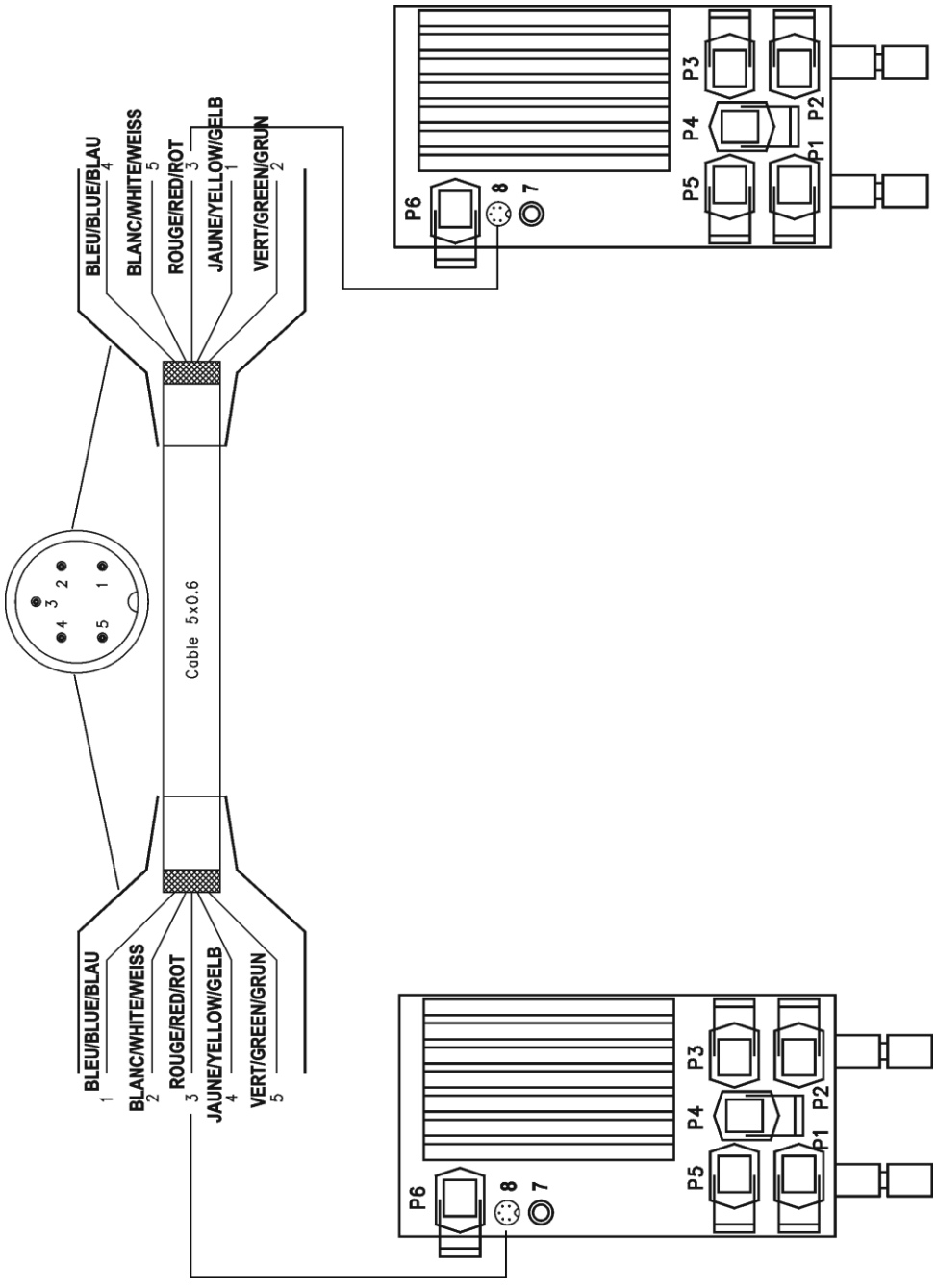
Cable to be used in a two-axis assembly, each being equipped with "point skip" or "sheet edge" options.

The detection of a point or sheet edge on one axis triggers the same function in the other axis.

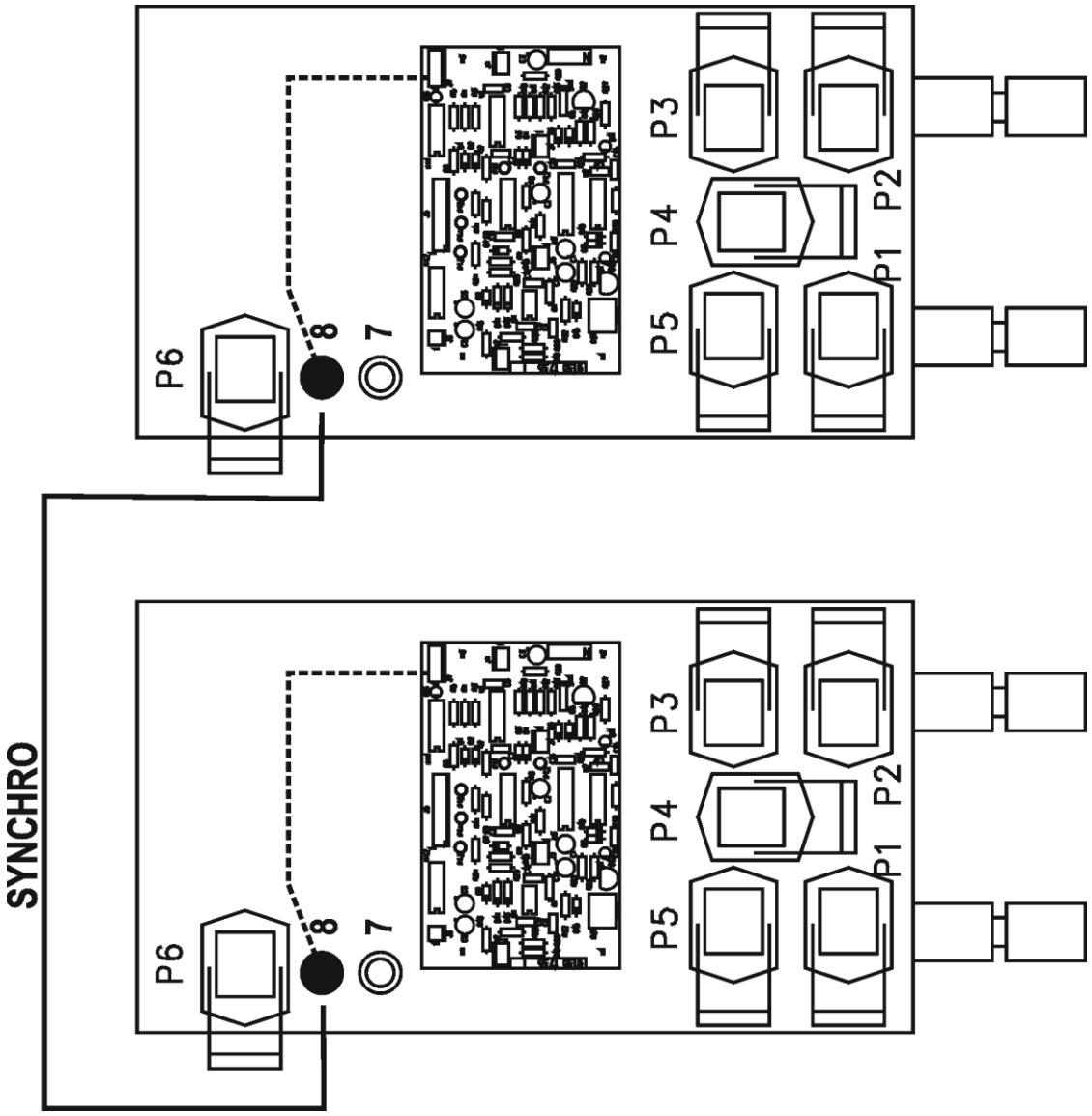
The option includes :

- two inside cables.
- a 600 mm cable connecting the two units.

Assembly of the option next page.



ASSEMBLY OF THE PROBE SYNC CONNECTION



On the two units:

⇒ Remove the plug item 8.

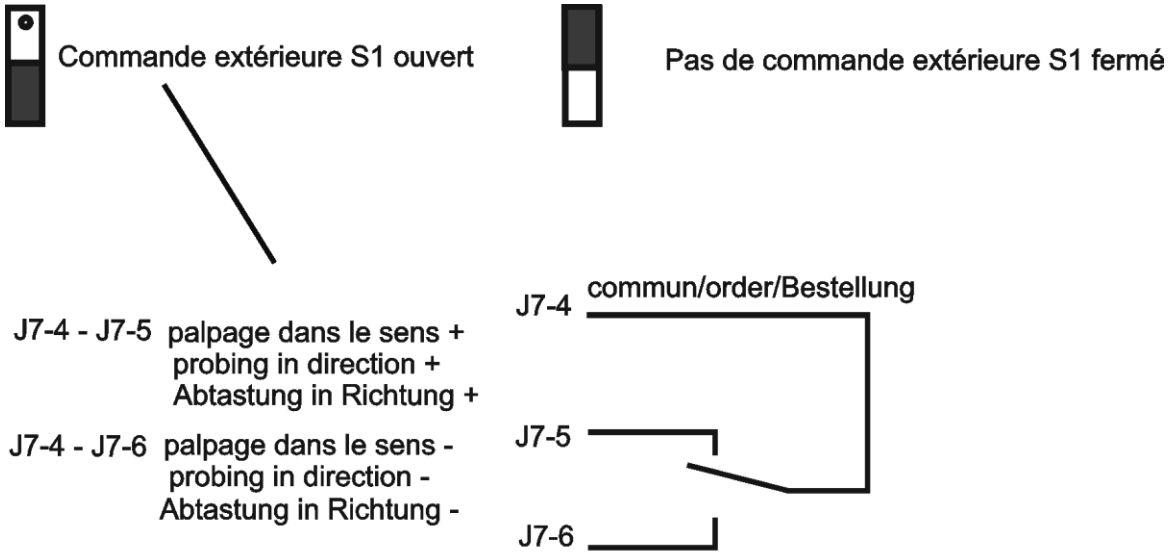
⇒ Insert J7 through the hole and thread the nut (of the connector).

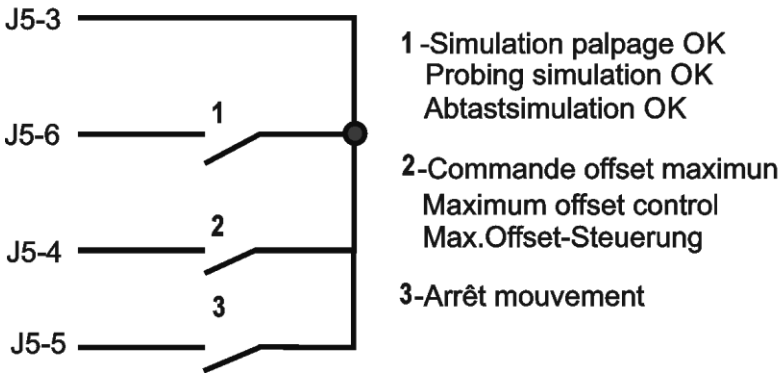
⇒ Connect J7 to the "sheet edge point skip" board.

⇒ Install the connector and tighten the nut.

⇒ Connect the SYNC cable between the 2 connectors item 8.

Controls available internally on connectors J5 and J7 on board ref. W000140790, to be wired in the factory.





Contact J5-3 and 6 closed:
- the welding control information (J5-9 and 10 is still validated even in the event of a probing error.

Contact J5-3 and 4 closed:
- imposes a maximum offset on the probe (adjustable internally with R29). This makes it easier to track a joint on an uneven surface; this control should be suppressed during probing.

Contact J5-3 and 5 closed :

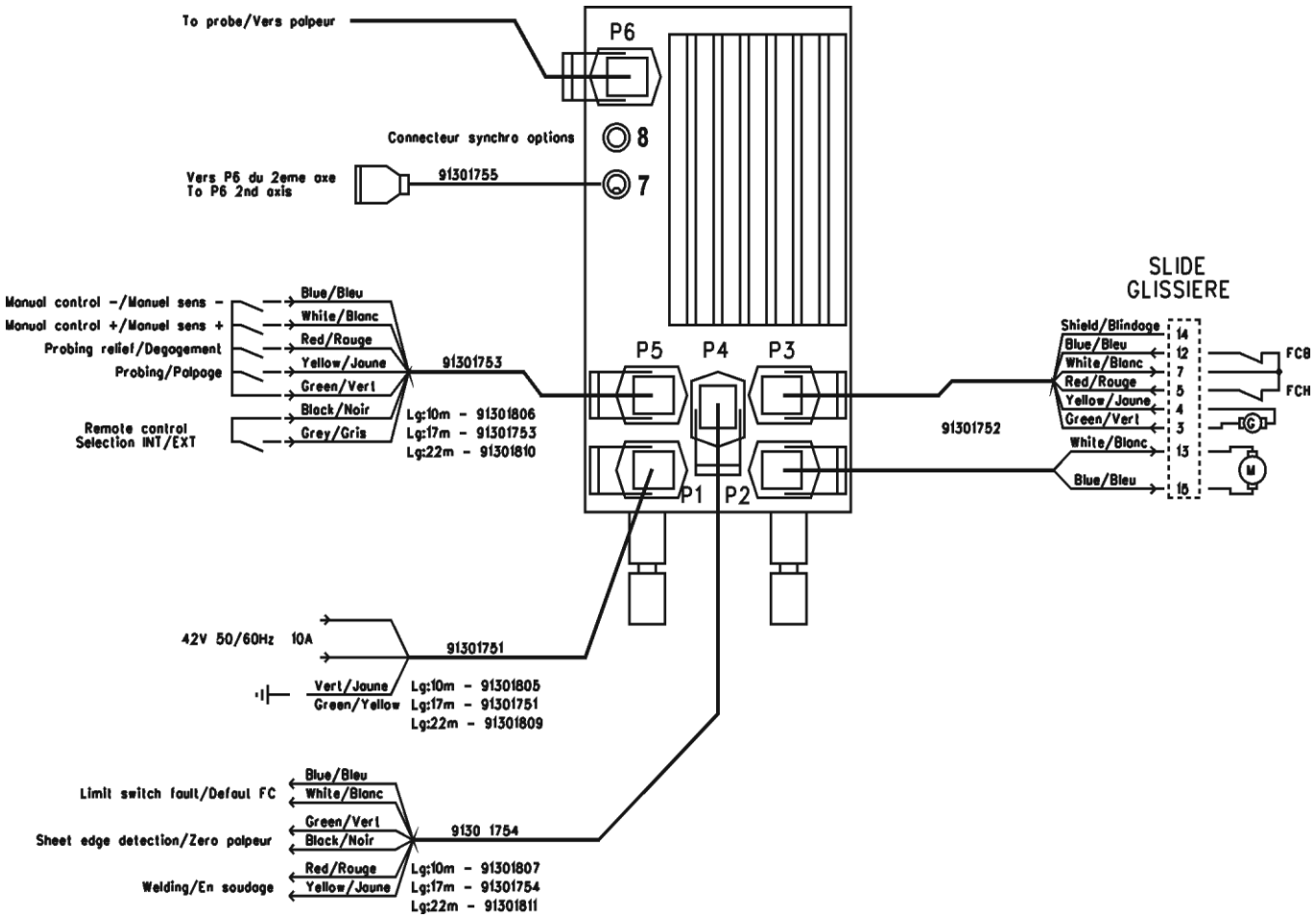
- stops movement

CAUTION : THE FINGER MAY BE DAMAGED.

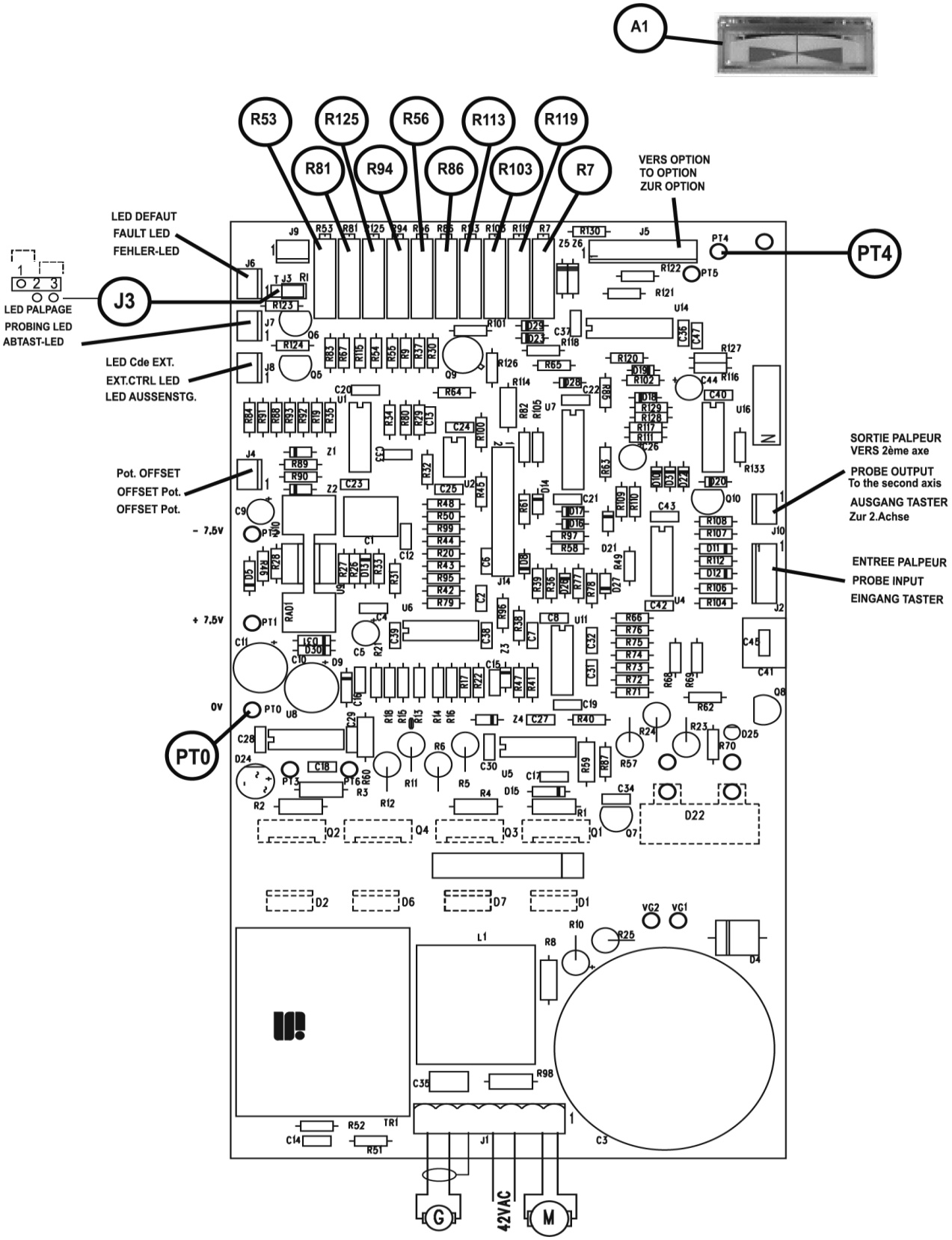
Contact J5-1 and 2 closed :

- sets the offset at zero (front panel potentiometer inoperative).

PROBING UNIT - CONNECTION DIAGRAM



3 - CONFIGURATION



A) CONFIGURATION

In order to accede to configurations and settings, the four 4x16 screws should be removed on the back panel because this is where the board is attached.

Only the type of speed control of the motor is to be selected using staple in **J3**.

- Staple between 2 and 3 for a control without tacho generator.

- Staple between 1 and 2 for a control with tacho generator.

⚠ An inversion of connection of the tacho-generator leads to a rotation at maximum speed of the motor which can no longer be controlled.

B) ADJUSTMENT TRIMMERS

1) PROBING ADJUSTMENT

R103: probe zero adjustment.
➢With finger **W000315597**
Connect a digital voltmeter between PT0 and PT4. The probing finger should not be in contact. Adjust R103 to read 0v +/- 5mv.
➢With finger **9130 4155**
Set the finger potentiometers to the mid position (position 5), and set R103 to obtain get zero on the display, ref. A1.

NOTE: the probe may be associated with two displacement units and only one potentiometer is associated with each display.

⚠ Any new positioning of the finger requires the zero to be adjusted again.

- **R119** : Displacement speed during probing.
A too high speed may result in oscillations on the machine. A speed too slow may lead to a probing fault as the point fault is not caught up.

- **R86** : Probing gain adjustment.
The potentiometer is placed on the front panel and bears reference P1
(see page E46).

The increase of the gain reduces errors in the probing value. Too high a gain may result in oscillations on the machine. A compromise should be made between adjustments of R119 and R86.

This gain affects the probing finger measurement and the front panel P1 potentiometer used to adjust the offset.

- **R113** : Adjustment of the detection sensitivity of the probing value.
Sensitivity too high may provoke probing fault information with the slightest unevenness on the part to be probed.
- If adjustment is difficult, increase gain P1 while reducing speed (R119)

- A sensitivity too low eliminates any probing fault information as well as the removal of the finger stress safety device in manual mode.

- **R125** : Displacement speed adjustment in manual or withdrawal mode. During the withdrawal, the probing finger goes up for a fixed time at a speed adjustable with potentiometer R125, thus defining the withdrawal distance. In all cases, the probing finger should no longer touch the part when there is no probing selected.

2) VARIABLE SPEED UNIT ADJUSTMENT

NOTE:
NO ADJUSTMENT IS NEEDED THESE ARE DONE IN THE FACTORY

- **R56** : Motor maximum rotation speed adjustment.

For an A77 motor **N°W000315489**, without tacho generator.

The adjustment consists of turning motor A77 in manual mode with R125 to the maximum and of adjusting its rotation speed using R56 to obtain 5,000 rpm.

For an SANYO engine **N°9130 1881**, the setup procedure is identical however adjusted the speed of rotation to 1250 tr / min.

- **R53** : Variable speed unit zero adjustment. In manual mode with R125 to the maximum, adjust R53 so that the motor does not turn.

- **R81** : Variable speed unit gain adjustment during control without tacho generator.

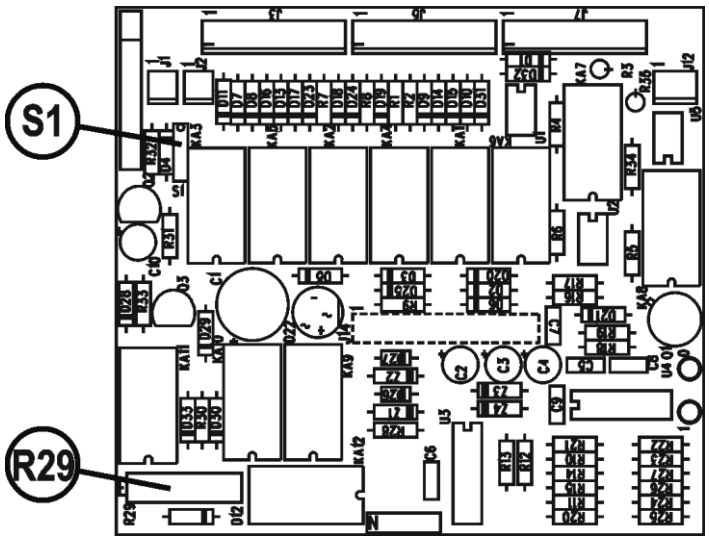
This adjustment can be improved if the motor turns at too low a speed (too much gain) or is not regulating (lack of gain).

- **R94** : Intensity limit adjustment (factory adjusted at 7 Amp. for an A77 motor and at 5,5 Amp for an SANYO motor).
NOT TO BE TOUCHED.

- **R7** : The triangular signals of the variable speed unit are factory adjusted
NOT TO BE TOUCHED.

The probing control board **W000140790** is connected to the main board

Another board is connected to the probing board. It receives the information from the limit switches of the slide or motorization and from the input/output dialogue with a controller or another control console.

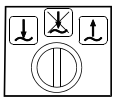


- **R29 :** maximum offset speed setting

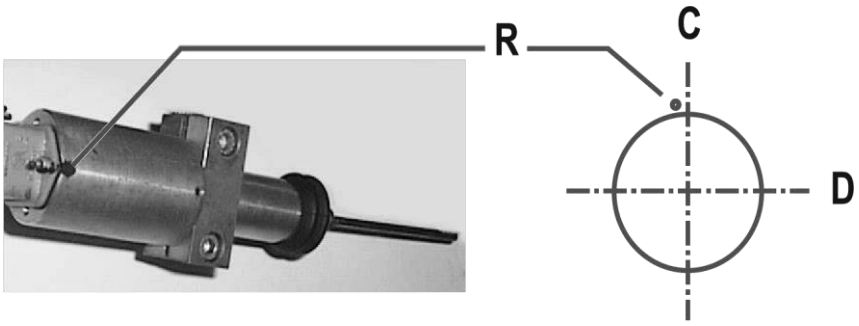
S1	Validation of the external probing direction (see page 27)
	without
	with

4 - START-UP

Start-up only requires the probe zeros to be set (potentiometer R103)
page 33

Before putting undervoltage the probing unit, select the "probing stop" mode on the selector.  .	 **You must take away the probing finger from the workpiece before switch on the probing mode.**	**Any new positioning of the probing finger before switching on must involve resetting the potentiometers (page 33**

DEFINITION OF AXES

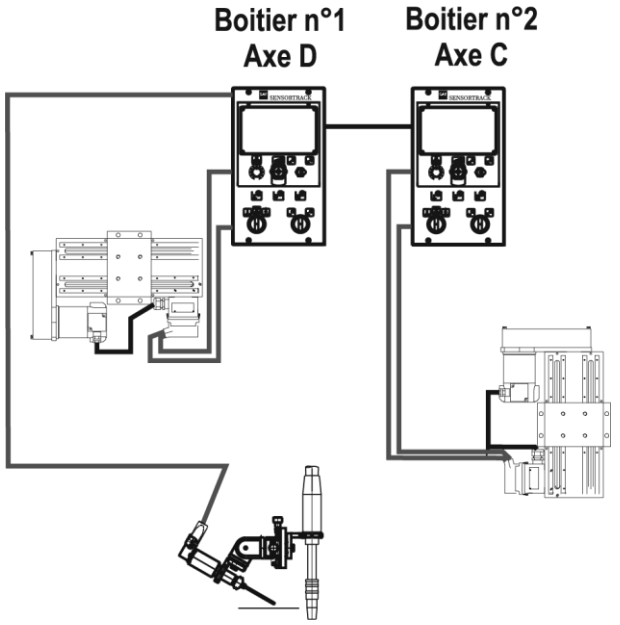


The probing finger can probe on 2 axes: **C and D.**

Axis **C** passes by the point with red varnish **(item R)** on the probing finger connector.

2-axis probing:

Box no. 1 connected to the probing finger controls axis D, and Box no. 2 (connected to box no.1) controls axis C.



One-axis probing :

In the case of one-axis probing, it is the axis perpendicular to the point (item R) which is active (axis D).

Where this axis is not in the desired probing direction, simply rotate the finger through a quarter of a turn to change the probing axis.

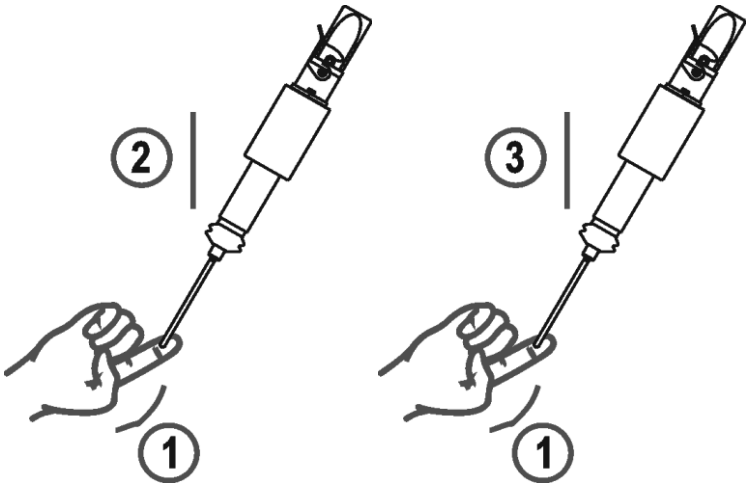
This first step has enabled the probing and slide movement directions to coincide.

The probing direction must then be checked.

CHECKING PROBING DIRECTION

⚠ **In order to prevent jamming, the probing finger must be taken away from the part, leaving space underneath the finger.**

a) Identification of the probing direction :



Operate the probing control to lower the finger.

⇒ ① Block the lowering with the hand. There are 2 possibilities :

⇒ ② the probe tends to rise :
the probing direction is **correct**

⇒ ③ the probe tends to lower :
the probing direction is incorrect

Note: if the probing direction is correct, start-up is finished

b) Remedies for incorrect probing direction :

- **One-axis probing**

- Rotate the finger through 180°.

- Reverse the direction of the button.

- **Bidirectional probing**

There are 2 cases :

1°) The probing direction is reversed on both axes:
- rotate the finger through 180°
- reverse the direction of the button.

⇒ Check that the probing direction is correct.

2°) Only one axis is reversed:
- rotate the finger through 90°
- invert the 2 slide cables (on probing unit or slide side)
- adapt the direction of the button.

Test again the probing direction on both axes:
- either everything is correct:
⇨ start-up is finished
- or both axes are reversed:
⇨ apply paragraph 1°).

No movement

5 - ASSEMBLY OF THE OPTIONS

EXTERNAL CONTROL CABLE OPTION

Ref : W000315493 length 10 m
Ref : W000315483 length 17 m
Ref : 9130 1810 length 22 m

CONNECTION

see page 22.

COOLER OPTION

N° W000315482

This option is recommended in the case of intensive use.

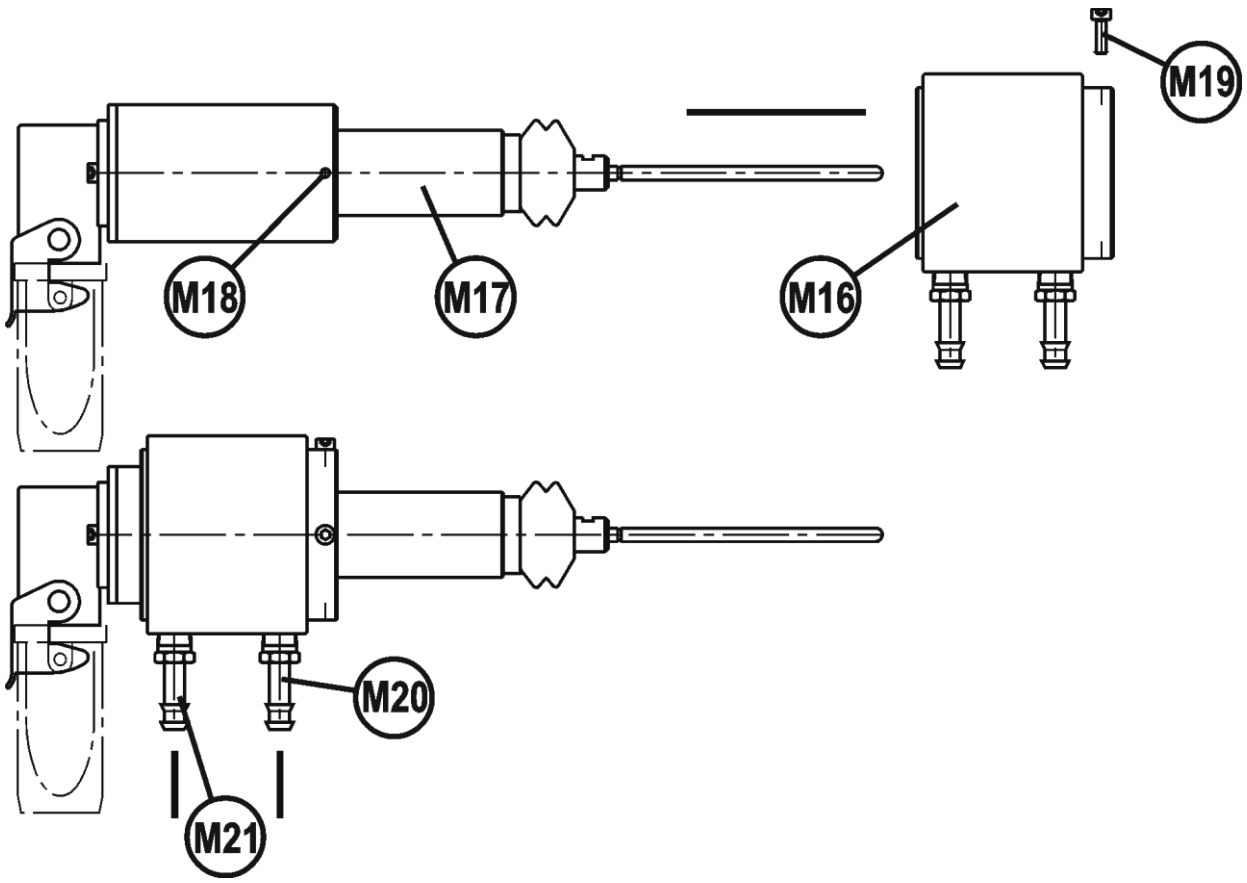
ASSEMBLY

Engage the cooler (Item M16) on the probing finger (Item M17).

Tighten the screw (Item M19) in the bore (Item M18).

Connect two pipes for the water circuit to the joining pieces (Items M20 and M21) of the cooler.

The pipes are connected to a REFRIJET. See instructions No.**8695 5807.**



OPTIONAL SHEET EDGE DETECTION

N° W000315486

ASSEMBLY

Unscrew the four round head screws 4x16 of the front panel.

Unscrew the four nuts (Item B) inside the unit.

Disconnect the galvanometer

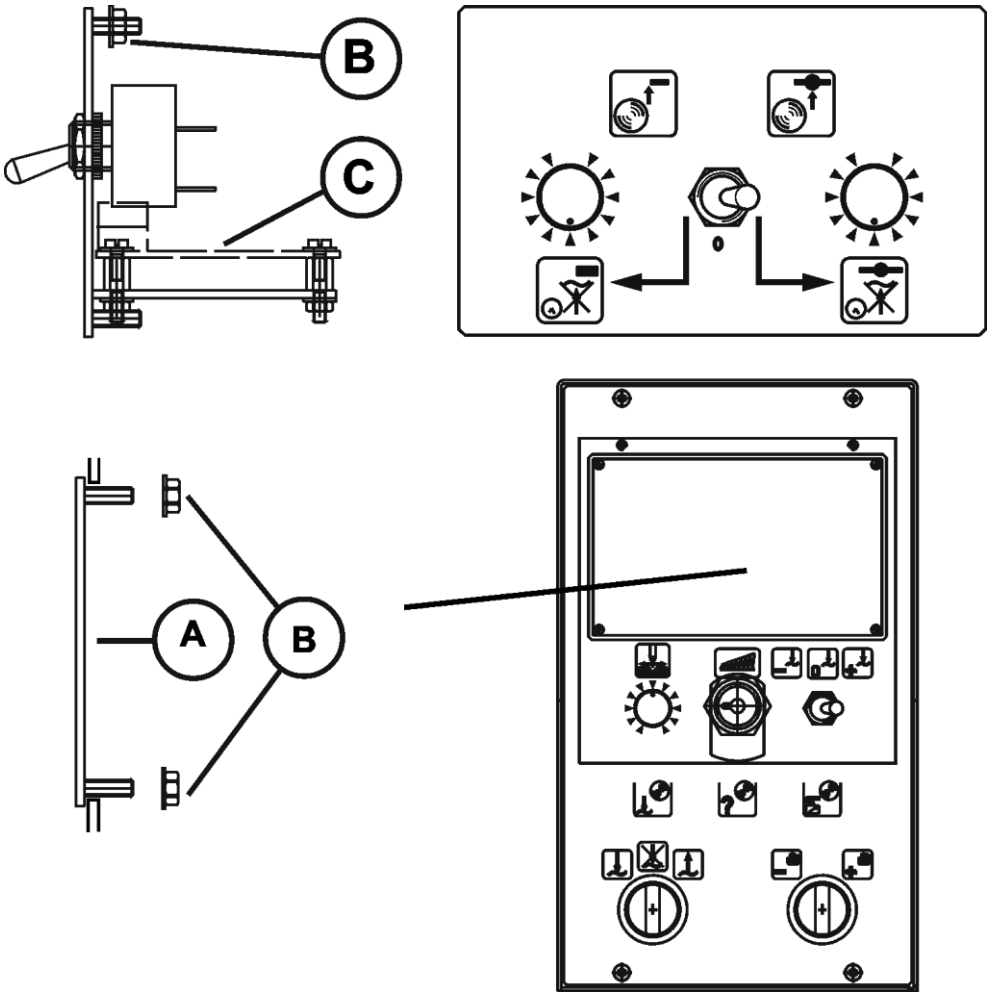
Remove the galvanometer support plate (Ref A)

Important: the galvanometer and the sheet edge detection option cannot be installed in the same unit.

Put the sheet edge detection option in place on the front.

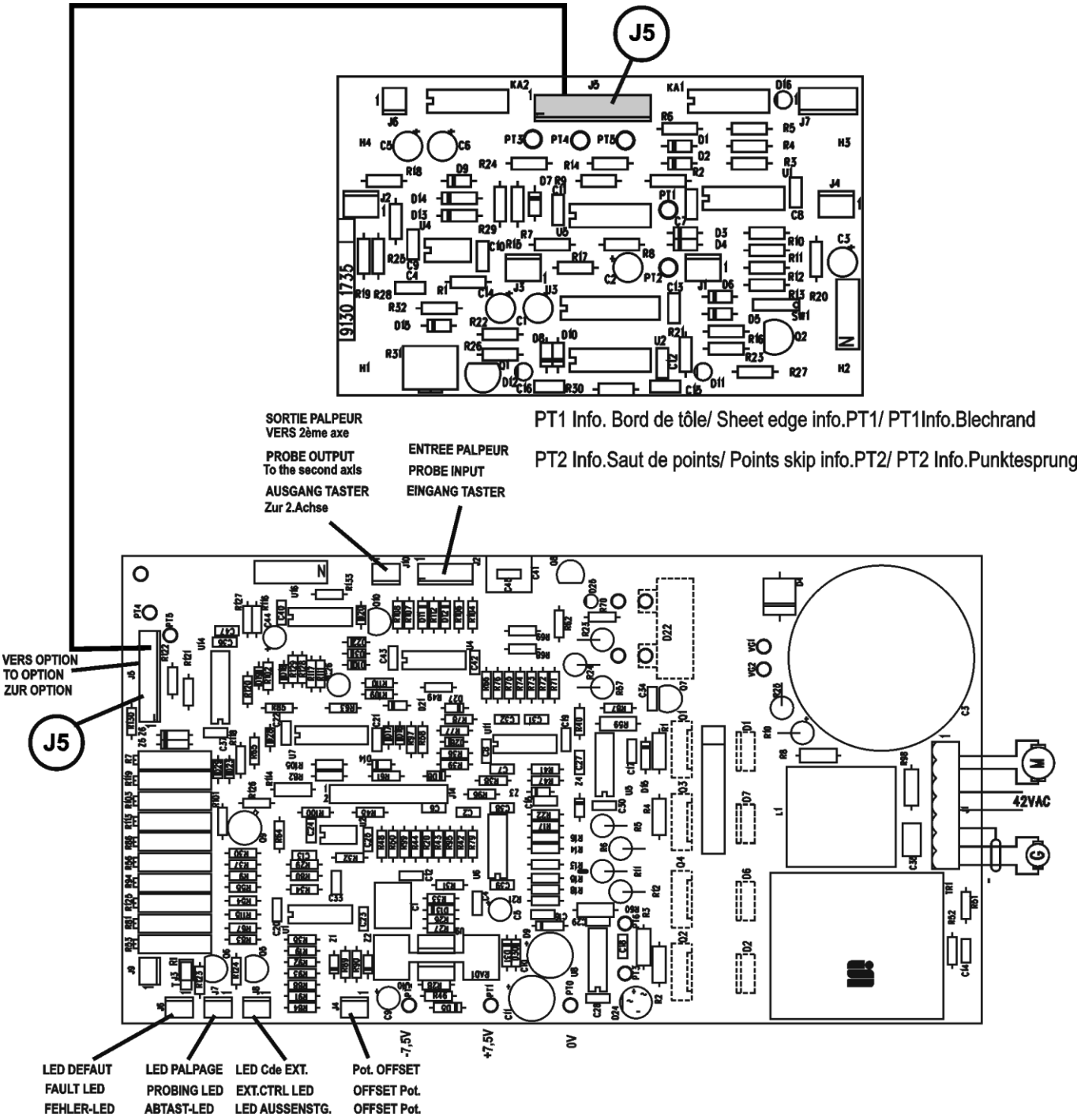
Tighten the four nuts (Item B) holding the option.

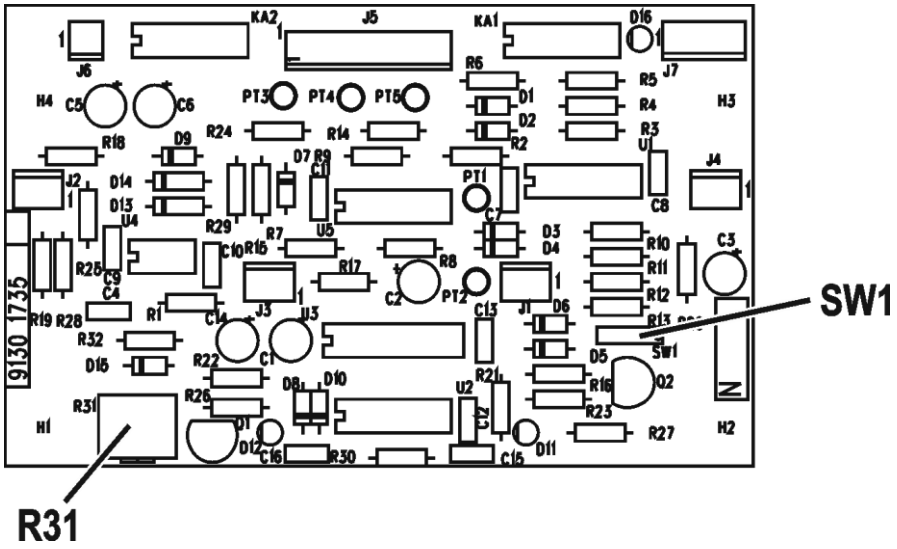
The board (Item C) is fixed to the support.



CONNECTION

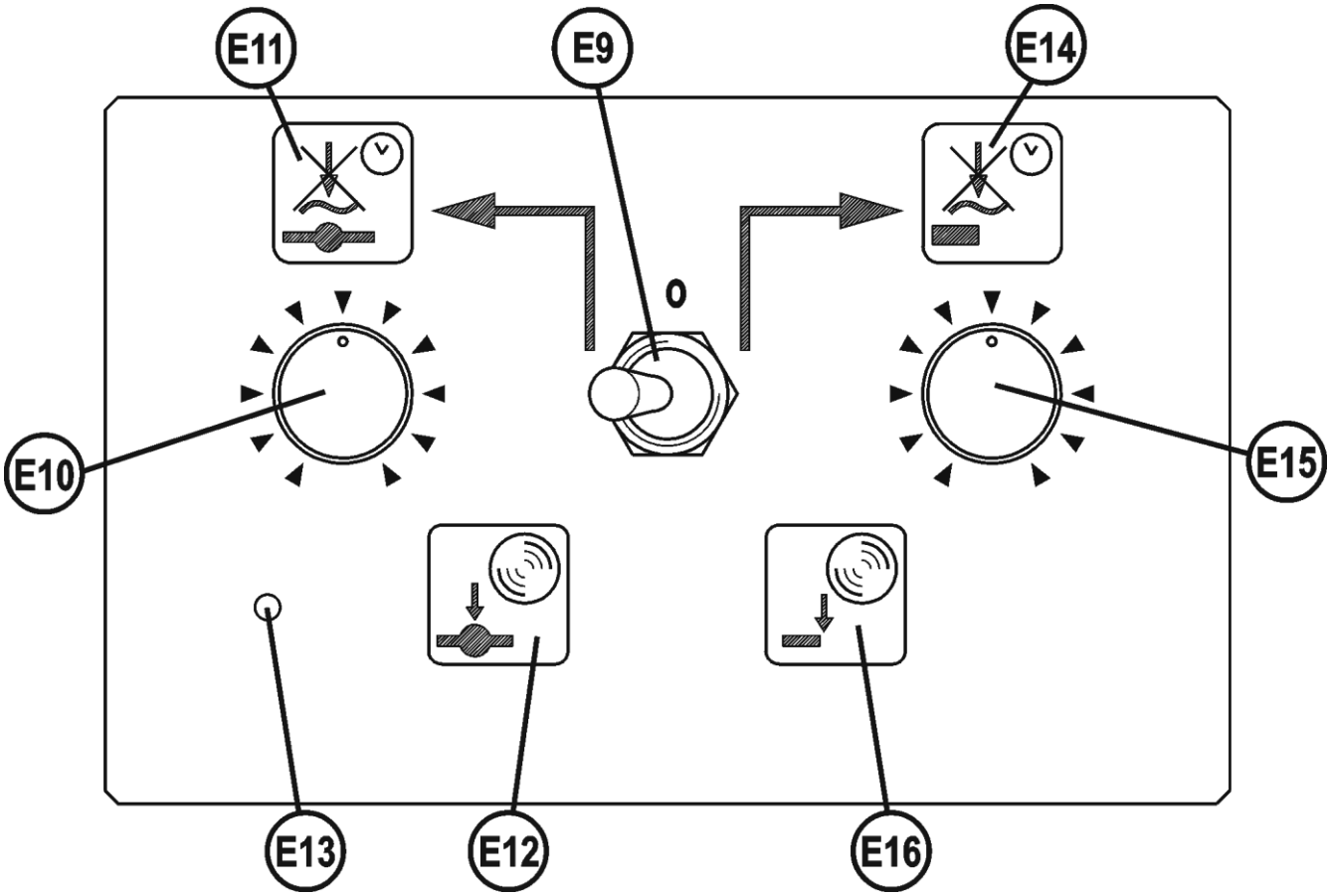
Connect the harness to the main board in J5, the other end being connected to J5 of the option board.





PT1	Sheet edge info.
PT2	Point skip info.
PT3	+ 7.5 volts.
PT4	0 volts.
PT5	- 7.5 volts.
D11	Lit up during the sheet edge timeout.
D12	Lit up during the point skip timeout.
D16	Lit up during the point skip timeout of the 2nd axis with sync option
SW1	Deactivates the sheet edge detection during the detection of a point.
R31	Point skip detection sensitivity adjustment.

DESCRIPTION



E9	Selection of point skip detection and sheet edge detection.
E10	Point skip timeout adjustment.
E15	Sheet edge timeout ajdustment.
E10	When the point skip detection is activated by E9, the quick change in probing value due to the excess thickness of the points blocks probing for a time adjustable by E10. The indicator E12 lights up during probing stop. The welding control signal is not interrupted.
E12	Probing blocked indication lamp after a point detection during the timeout adjustable by E10.
E13	Point skip sensitivity adjustment (to be done using a screwdriver).
E14	When the probing finger is no longer in contact during probing, the edge of the sheet is considered to be reached. Probing is blocked at once and a timeout adjustable by E15 starts to maintain the welding control. The E16 led lights up during the timeout.
E16	Indication lamp of the sheet edge timeout.

THE SHEET EDGE DETECTION IS INOPERATIVE

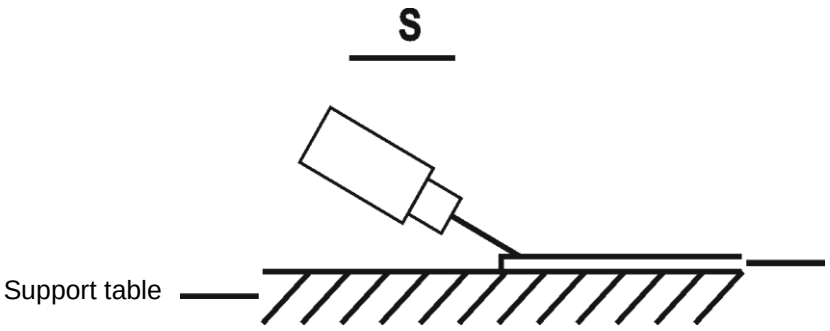
- Check that switch E9 is on 

- Problème d'offset palpeur (O V □ 5 mV entre PT0 et PT4 réglable par R103).

- Make sure that the finger release distance is greater than the probing offset value.

E.g.: probing offset setting on the front panel = 3 mm

Release value 2 mm ⇒ no sheet edge detection.



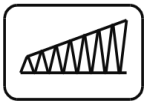
THE SHEET EDGE DETECTION ACTIVATES UNIMPORTUNELY

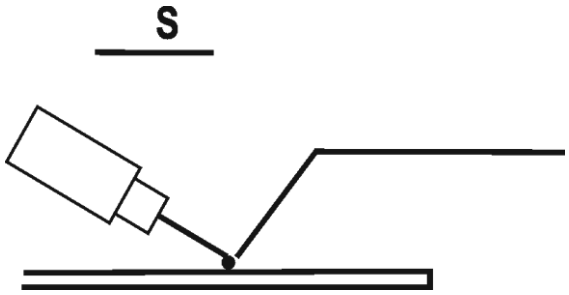
- If the probing finger is no longer in contact with the part, it is considered as a sheet edge detection.

- If the probing offset is set at a value < 1, sheet edge detection will occur.

- The solution consists in increasing the front panel offset (potentiometer R1).

- If the probing gain is too high, the probing slide may oscillate, thus activating the sheet edge detection.

Reduce the gain  on the front panel of the TRACKMATIC ST without setting it to the minimum.



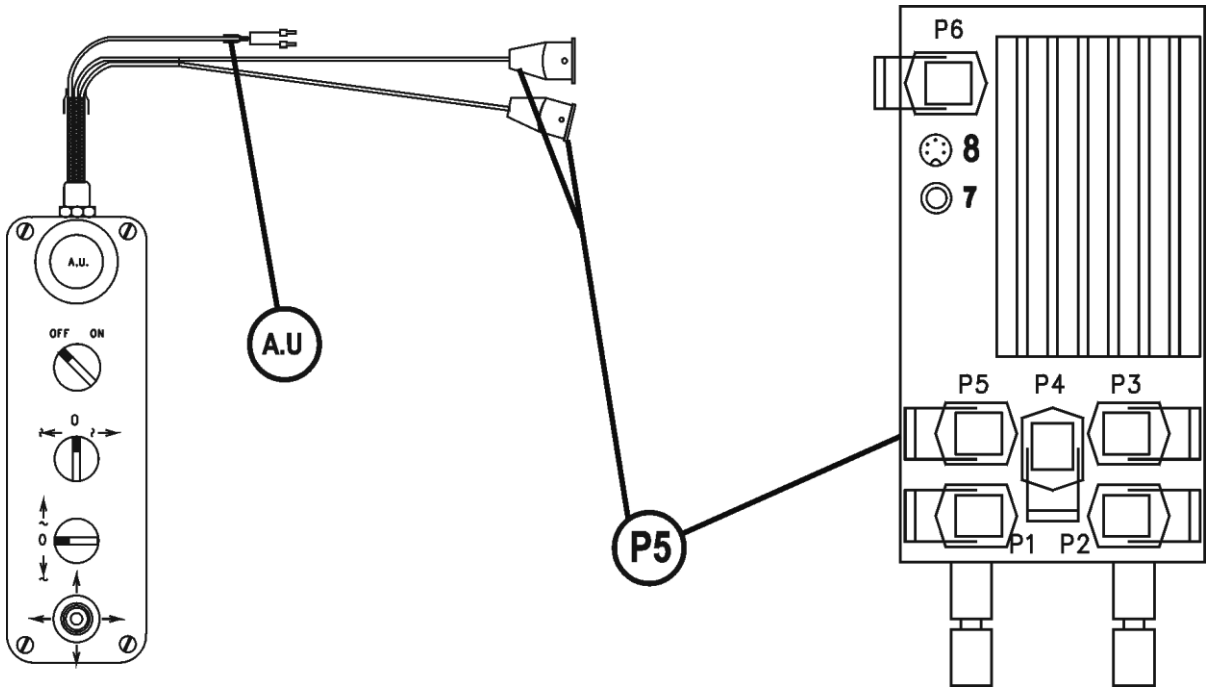
REMOTE CONTROL OPTION

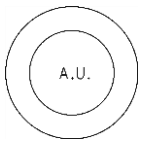
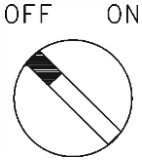
N° W000315488

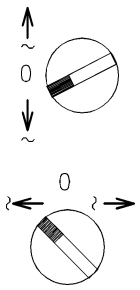
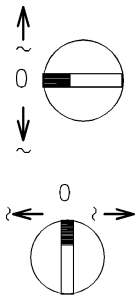
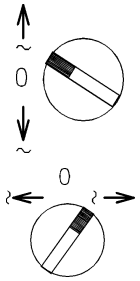
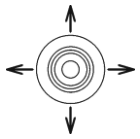
DESCRIPTION AND :

The remote control enables 2 TRACKMATIC ST probing units to be controlled on 2 axes.

Connect the 2 terminals to the back of the units to connectors P5.

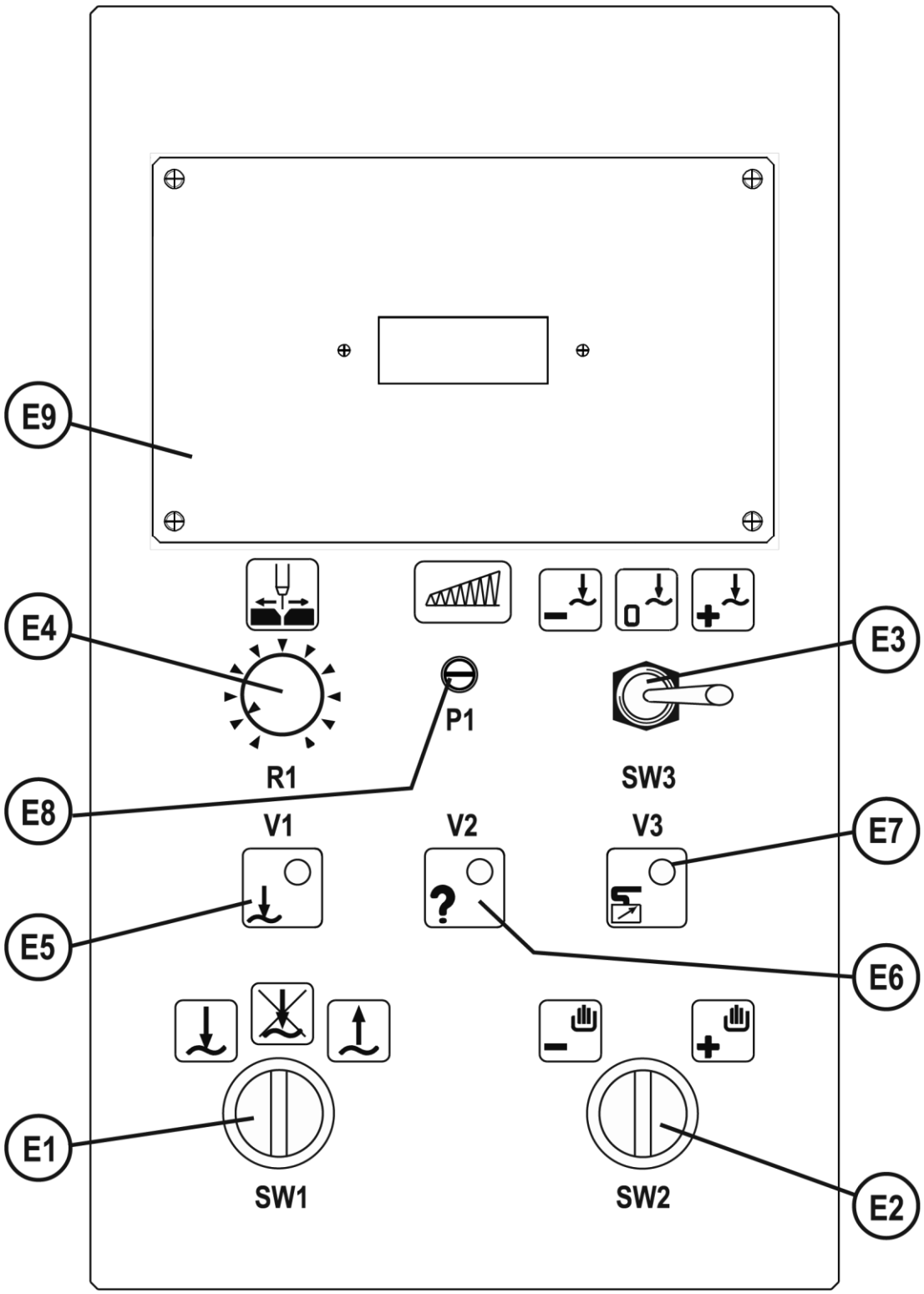


	Cable emergency stop button to be connected to the installation.
	OFF: remote control is inactive. ON: remote control box is operational.

	Probing start. If the probing finger is not in contact with the part, there is a motion in the direction selected in order to find the part and to locate the probing value. This position deactivates the key switch.
	Probing stop. It is the stop position of the system which enables manual motions to be made; when probing is stopped, a slight automatic withdrawal occurs.
	Probing relief. This position of the button allows for a displacement in the opposite direction to that of the probing.
	Manual displacement key switch, for displacement in manual mode at the speed selected by R125. If the finger meets an obstacle, the motion stops.
← →	Motion in the horizontal direction
↑ ↓	Motion in the vertical direction
	During the assembly of the unit, these two controls may be inactive as long as the probe "zero" has not been set.

E - OPERATOR MANUAL

PROBING FRONT PANEL



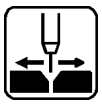
E9	Probe zero display

E1	SW1: Probing button.
	Probing start. If the probing finger is not in contact with the part, there is a motion in the direction selected by SW3 in order to find the part and to locate the probing value. This position prohibits SW2.
	Probing stop. It is the stop position of the system which enables manual motions to be made.
	Probing withdrawal. This position of the button allows for a displacement in the opposite direction to that of probing.

E2	SW2: Manual displacement button. This switch allows for a displacement in manual mode at the speed set on R125. If the finger meets an obstacle, the motion stops.
	Motion in direction −
	Motion in direction **+**

E3	SW3 : Probing direction selection button.
	⚠ During the assembly of the unit, these two controls may be inactive as long as the probe "zero" has not been set.
	Probing in direction −
	No direction and no probing positioning nor withdrawal
	⚠ - **A MANUAL WITHDRAWAL SHOULD BE MADE EACH TIME PROBING IS STOPPED.**
	Probing in direction **+**

E4 R1 : Offset adjustment.



This potentiometer allows the probing value to be adjusted, in order to adjust the position of the torch in relation to the joint.

No action when the switch is on direction 0.

E5

V1 : This indicator lights up when the probing value has been reached.

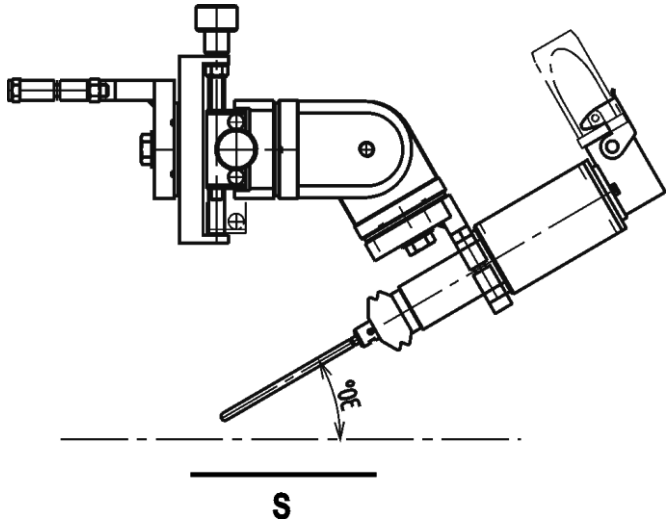
E6

V2 : This indicator means that the probing value has been lost or indicates a limit switch fault.

E7

V3 : This indicator lights up when the external controls are active.

E8 P1 : Gain adjustment (to be made with a screwdriver).



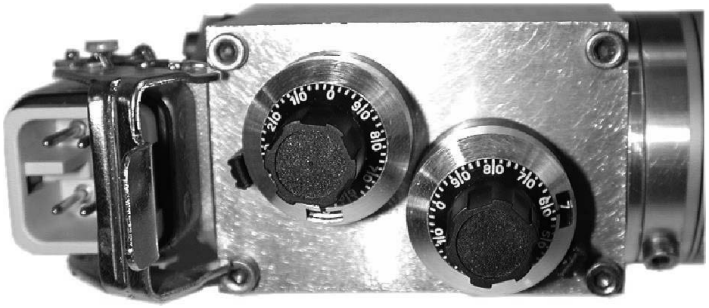
Finger position for proper use.

There is a different offset and gain setting for each mechanical position of the probing finger and for each joint.

If, in an installation, a TRACKMATIC ST probing finger must track the joint in various positions, the offset and gain settings are necessarily different depending on these positions.

Such special cases should be dealt with by the engineering and design department and require to be set in the factory.

In order to adjust the probe zero setting, modify the position of the potentiometers



F - MAINTENANCE

1 - SERVICING

- So that the machine continues to provide good service for as long as possible, a certain minimum of care and maintenance is necessary
- The frequency of this maintenance work is given on the basis of the production of one work station per day. Maintenance should be more frequent if production is greater.

Your maintenance department may photocopy these pages so that it can follow up maintenance dates and operations (tick as appropriate)

The tip is an expendable part: change it according to its state of wear which may vary greatly in relation to the roughness of the surface used.

Daily		
		Clean and apply every day a splash inhibitor on the probe (AEROSOL- Ref 9159 0020).

Weekly		
Date of maintenance: / /		
		Clean the probe body and the link once a week.

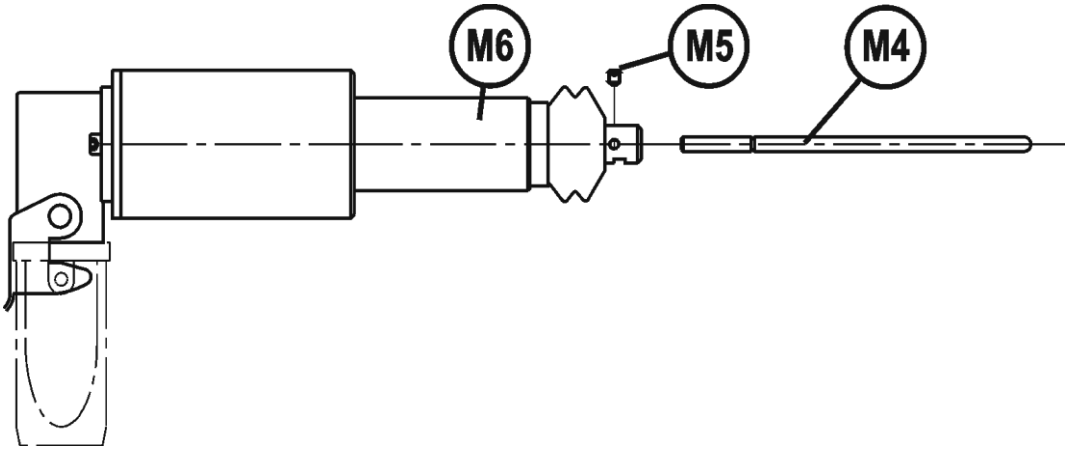
To replace a straight tip.

Unscrew the screw (M5)

Remove the remaining end of the tip from the probing finger (M6).

Replace by a new one (Rep M4).

Tighten the screw (M5) moderately.



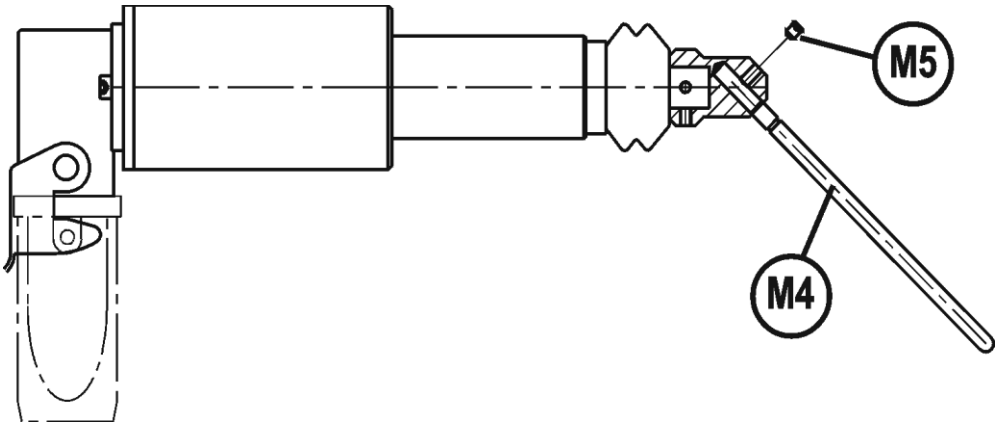
To replace a tip on a 45°.

Unscrew the screw (M5).

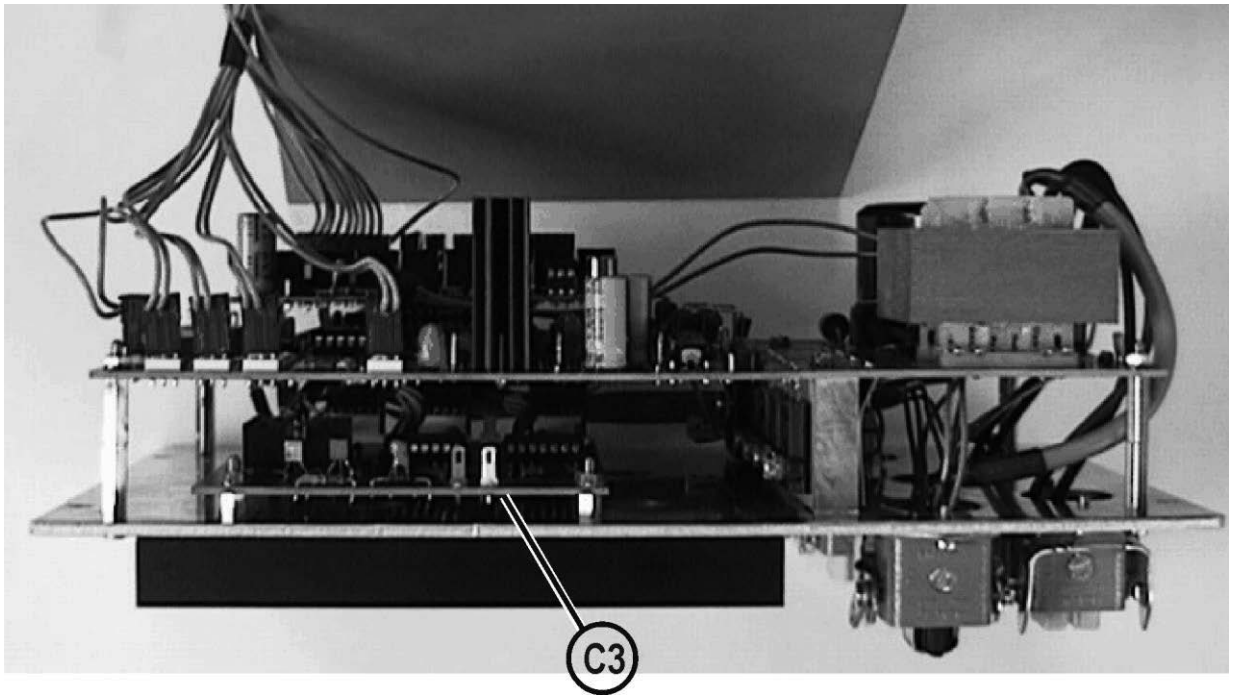
Remove the remaining end of the tip from the probing finger.

Replace by a new one (M4).

Tighten the screw (M5) moderately.



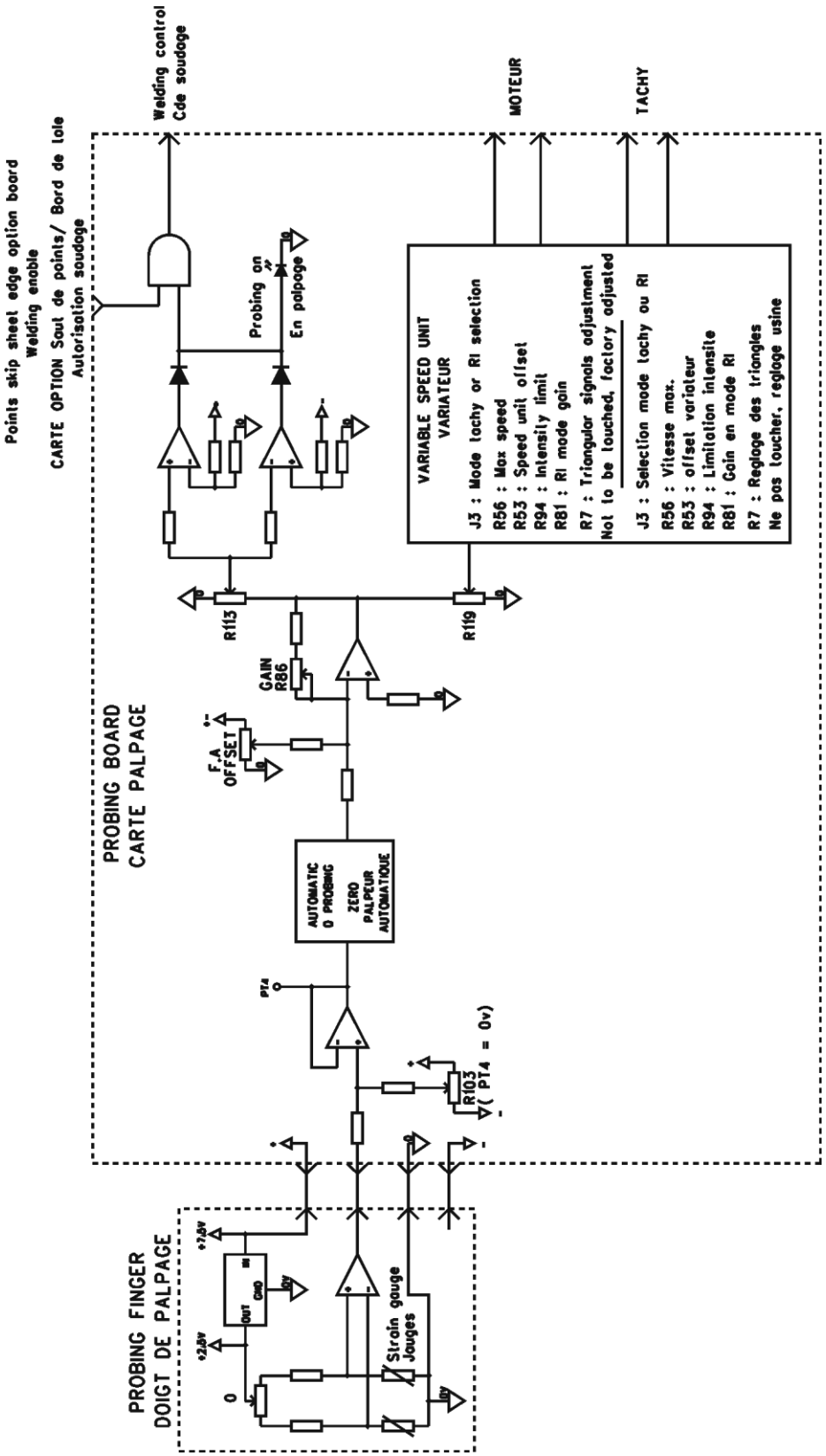
2 - CHANGING THE BOARD ON MODEL NO 101 TO 202

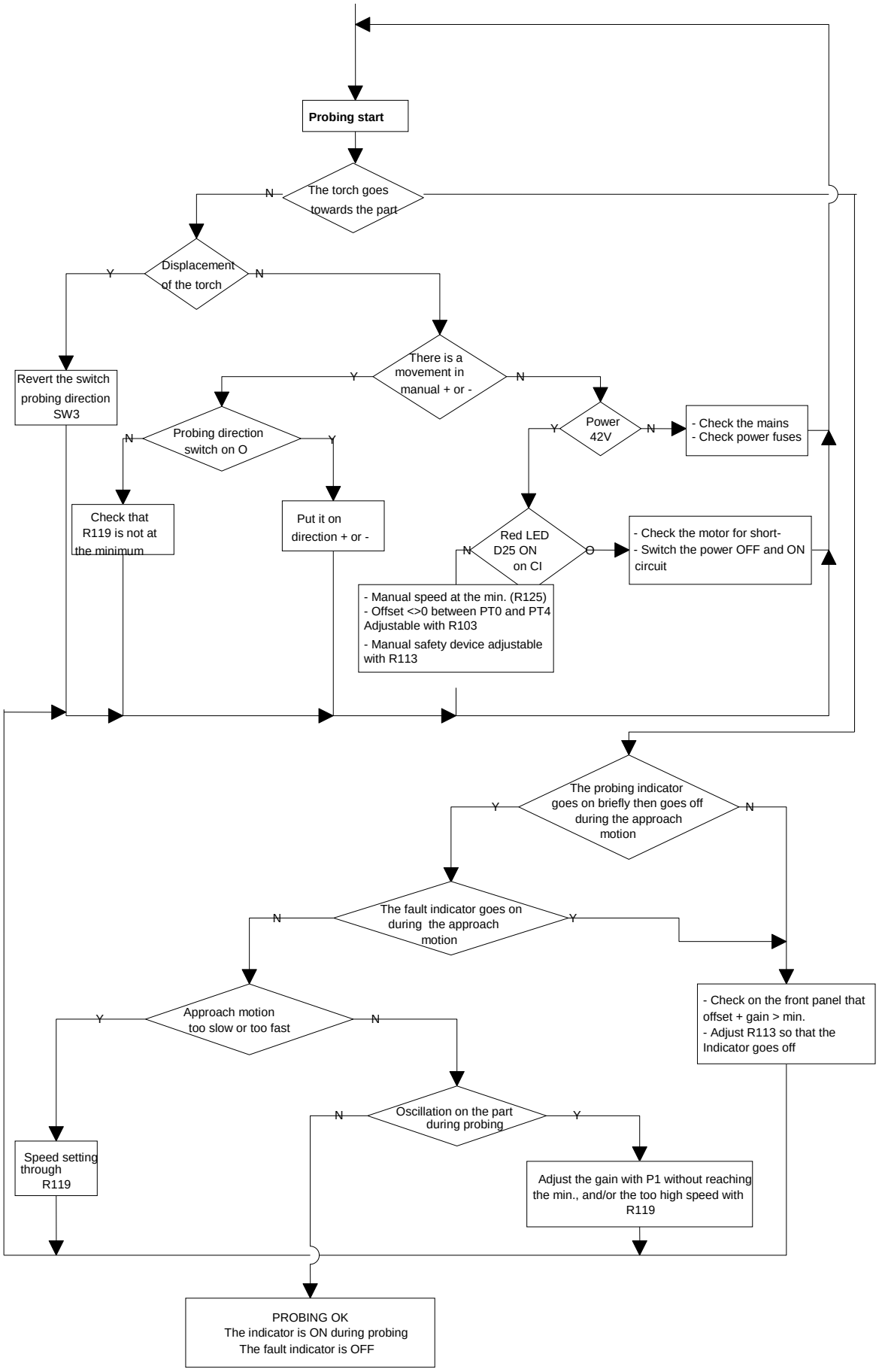


CAUTION

- Suppress the reset board 9130 1890 item C3.
- The probing board W000140725 is no longer compatible with the back panel sub-assembly: order board W000140790.

3 - ADJUSTMENT ORGANIZATION CHART AND SYYNOPTIC




Probing start
The torch goes towards the part
N
Displacement of the torch
Y
N
Revert the switch probing direction SW3
There is a movement in manual + or -
Y
N
Probing direction switch on O
N
Y
Check that R119 is not at the minimum
Put it on direction + or -
Power 42V
Y
N
- Check the mains
- Check power fuses
Red LED D25 ON on CI
N
O
- Check the motor for short-
- Switch the power OFF and ON circuit
- Manual speed at the min. (R125)
- Offset <>0 between PT0 and PT4 Adjustable with R103
- Manual safety device adjustable with R113
The probing indicator goes on briefly then goes off during the approach motion
Y
N
The fault indicator goes on during the approach motion
N
Y
Approach motion too slow or too fast
Y
N
- Check on the front panel that offset + gain > min.
- Adjust R113 so that the Indicator goes off
Oscillation on the part during probing
N
Y
Speed setting through R119
Adjust the gain with P1 without reaching the min., and/or the too high speed with R119
PROBING OK
The indicator is ON during probing
The fault indicator is OFF

4 - 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.)

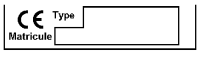
For items noted on the photos or sketches but not in the tables, send a copy of the page concerned, highlighting the particular mark.

Exemple :

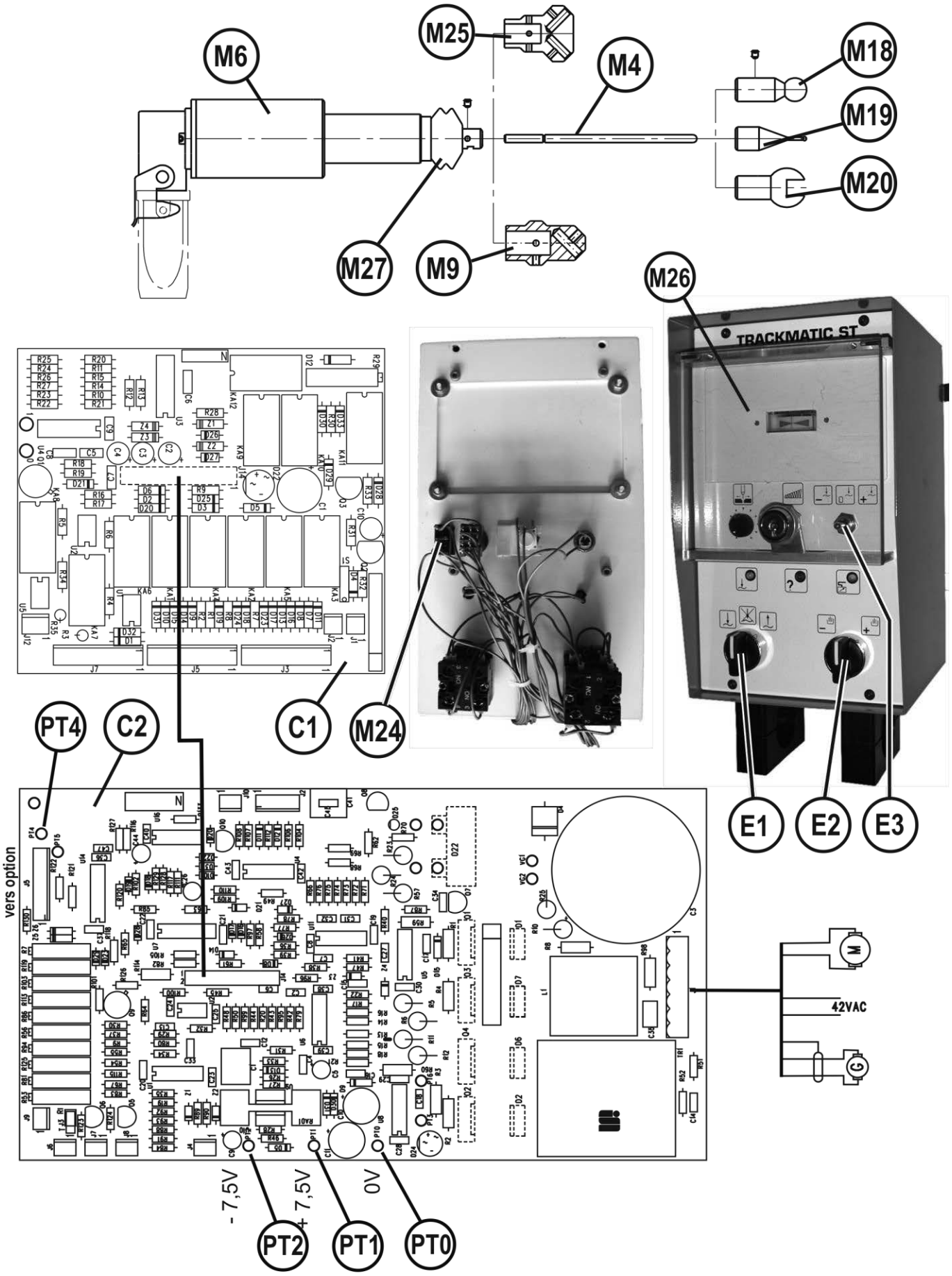
✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
E1	W000XXXXXX	✔		Machine interface board
G2	W000XXXXXX	✘		Flowmeter
A3	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.



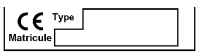
TYPE :
Number :


M6
M25
M4
M18
M19
M20
M27
M9
M26
TRACKMATIC ST
M24
C1
C2
PT4
E1
E2
E3
vers option
42VAC
- 7,5V
+ 7,5V
0V
PT2
PT1
PT0

✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
M4	W000140720	✔		Set of 2 standard straight tips Ø 4 steel
M18	W000140742	✔		Skittle-shaped end piece Ø 12 copper
M19	W000140741	✔		Thin key end piece Ø 2 steel
M20	W000140743	✔		Forked end piece Ø 20 copper
	W000140721	✔		Set of 2 straight tips, 2 ninepin-shaped ends steel
M9	9130 1709			45° joining piece
M25	9224 0541			Multiple 45° end piece
M27	W000140723	✔		Set of 2 bellows
M6	W000315597	✔		Probe
	9130 4155			Probe with two potentiometers
	W000315486	✔		Points skip sheet edge option
M24	.560 6085			Relay 12 V DC 2RT
E3	W000161037	✔		Three-pole switch 3 fixed positions
E1	W000137817	✔		3 position switch 2 spring-centered
E2	W000137820	✔		3 fixed position switch
C1	W000140790	✔		Probing control board for **TRACKMATIC** ST N°203 and up *except **BEAM-MATIC***
	9130 1901			Probing control board for **BEAM-MATIC**
C2	W000140791	✔		Back panel sub-assembly for **TRACKMATIC ST** N°203 and up with A77 motor
	W000140725	✘		Probing control board for **TRACKMATIC ST** N°101 to 202 with A77 motor
	9130 1885			Back panel sub-assembly for **TRACKMATIC ST** with SANYO motor
M26	9130 1865			Probing indicator kit

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



TYPE :

Number :

PERSONAL NOTES

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