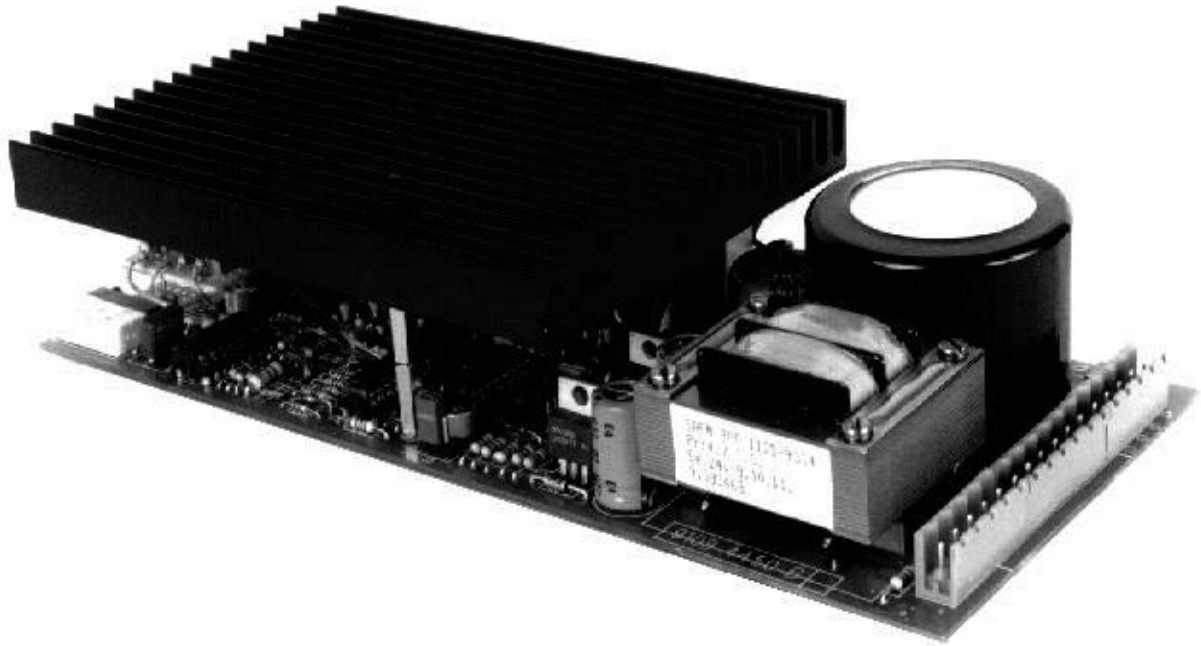
ELECTRONIC VARIABLE SPEED UNIT

MOTOVAR MV 20

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

DEVICE **N°W000139784**
N°W000139834
N°W000140676
N°W000139910
N°W000237668
N°9109 7542
N°9109 7543



EDITION: EN
REVISION: M
DATE: 06-2019

Instructions for use

REF: **8695-5832**

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

REVISIONS

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Creation in several languages	

REVISION K **10/08**

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Complete update + spareparts newoffer	-

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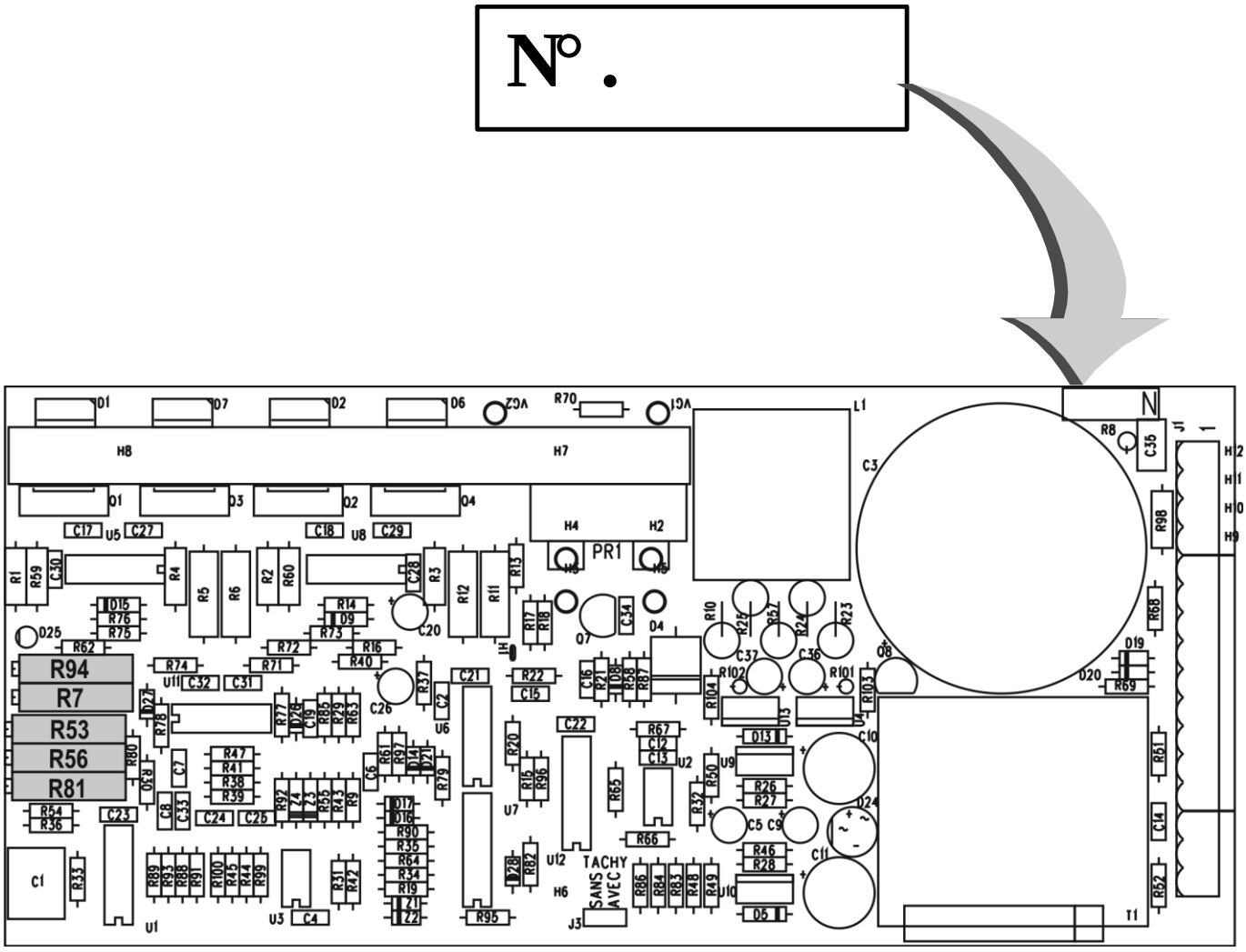
Update	D-7 ; D-8 ; D-9

A - IDENTIFICATION

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

Quote this information in all correspondence.

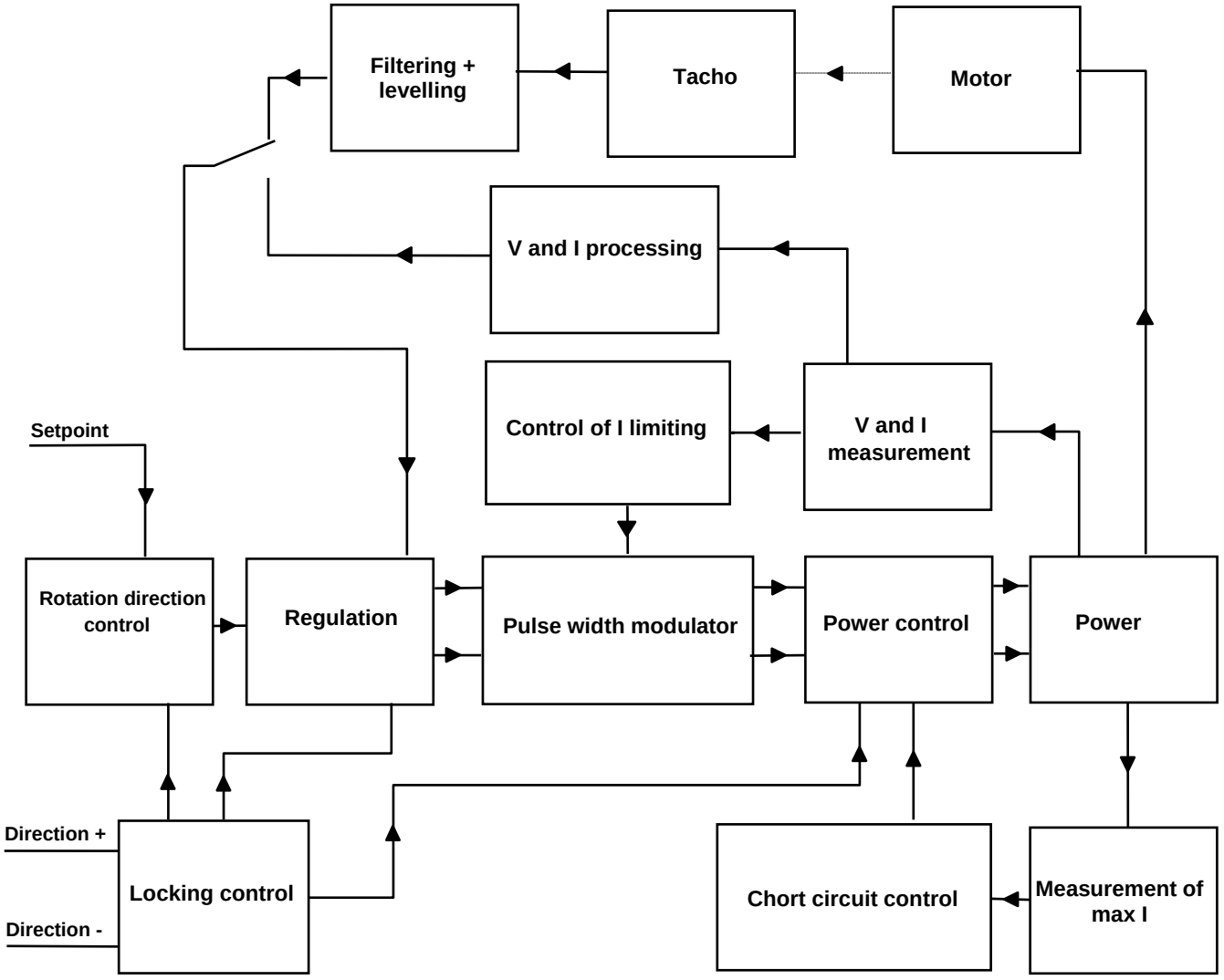


B - SAFETY INSTRUCTIONS

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

C - DESCRIPTION

FLOW CHART OF THE VARIABLE SPEED UNIT



PRESENTATION

The **MOTOVAR MV 20** is a four-quadrant switching variable speed unit with dimensions 220x100x50 ; it can deliver 500 W of power.

The variable speed unit is autonomous and is supplied by 42V 50/60 Hz 10A. An external fuse protection is to be provided for on the 42V power supply.

The **MOTOVAR MV 20** has two unlocking inputs :

- a (+) input allows at a given setpoint to turn in one direction
- the other input (-) allows to turn in the other direction.

If the setpoint varies from + 10V to - 10V, the motor will reverse its direction of rotation at the 0V setpoint.

Two modes of regulation are available : regulation with or without tacho generator.

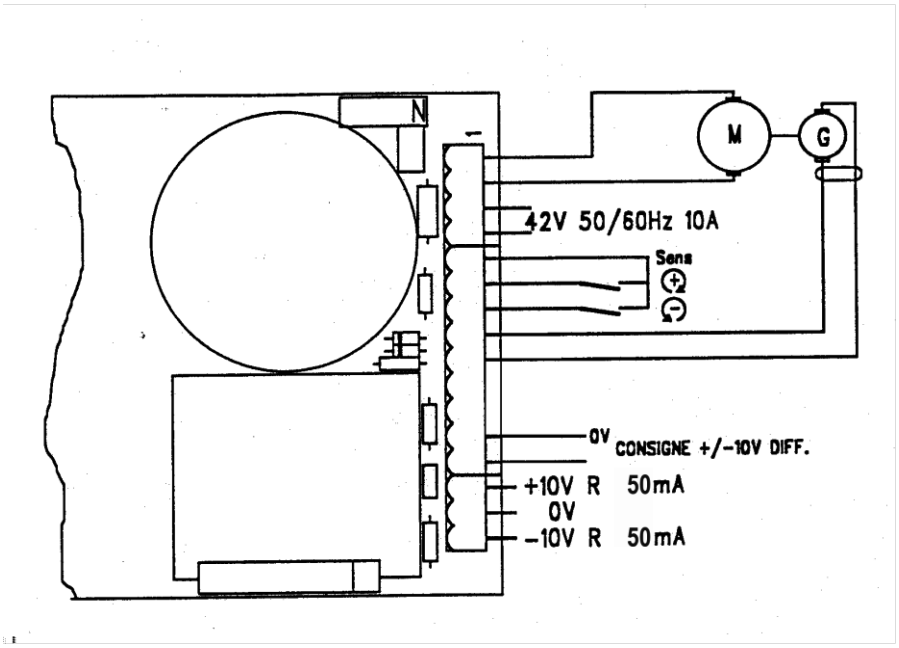
This variable speed unit is protected against motor short-circuits and has a thermal circuit breaker at 80°C.

SPECIFICATIONS OF MOTOVAR MV 20

CHARACTERISTICS :	
- Connection by draw-out terminal block	(wire 2,5 ^{2} max.)
- Power supply =	42V $\pm$ 10% 50/60 Hz 10A
- Setpoint (differential input) :	$\pm$ 10V 22 KΩ
- Regulation with or without tacho generator.	
- Unlocking direction +	(closing 5 and 6 J1).
- Unlocking direction -	(closing 5 and 7 J1).
If the 2 inputs are activated simultaneously, the + direction has priority.	
- 4 quadrants, switching power	
- Switching frequency =	12Khz
- Memorized protection against short circuits	(indication by red led).
- Thermal protection = 80°C on the radiator.	
- Operating temperature =	0 to 40°C
- Adjustable intensity limiting	(factory adjustment = 10A).
- If a power transistor is disconnected or shorts-out, the motor stops.	

D - ASSEMBLY - INSTALLATION

1 - CONNECTION



2 - START UP

WARNING

⇒ **Regulation with tacho generator.**

When the variable speed unit-motor assembly is switched on for the first time, the latter may race, no control being possible. Switch off the 42V power supply then check the following points :
- Short circuit in the tacho generator
- Faulty connection between the variable speed unit and the tacho generator,
- Tacho generator connected on the wrong side.

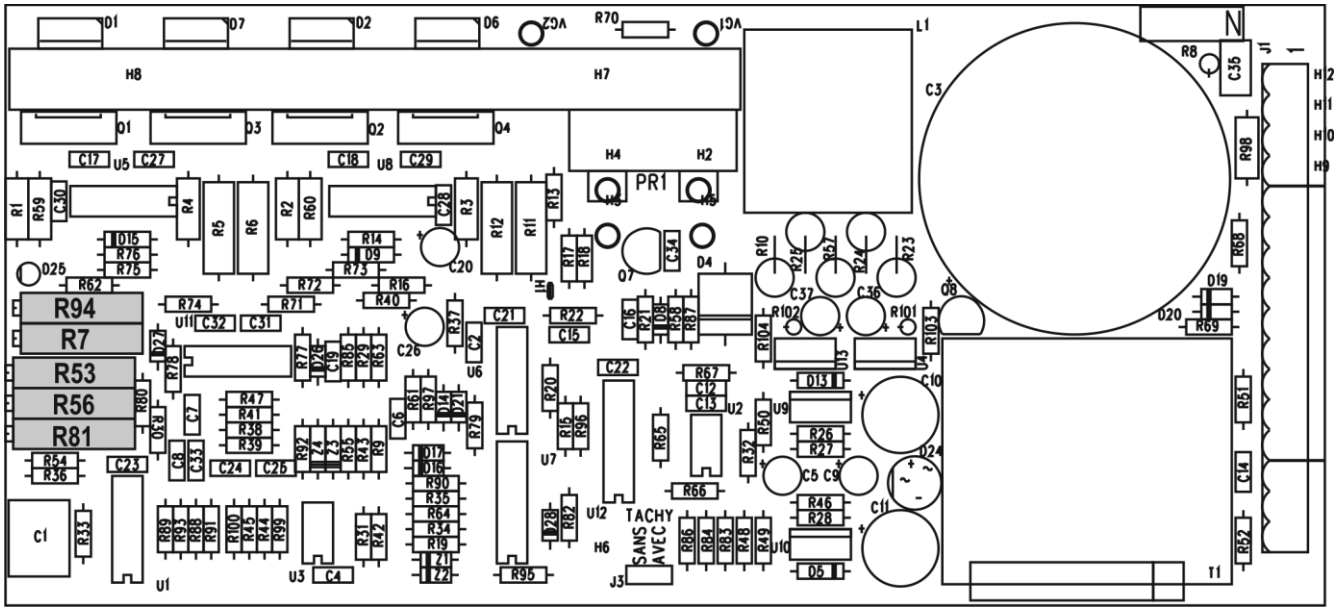
When the motor runs properly at a speed that is proportional to the setpoint voltage but in the direction opposite to the one required, it is necessary to switch off the current and to interchange the 2 wires of the motor as well as the 2 wires of the tacho generator.

⇒ **Regulation without tacho generator.**

If the configuration staple (**J3**) is not properly positioned, the motor can race, no control being then possible.

Immediately switch off the 42V power supply and put the staple (**J3**) in the other position.

3 - ADJUSTMENTS AND CONFIGURATIONS OF THE VARIABLE SPEED UNIT



CAUTION :
DO NOT CHANGE R7
(FACTORY ADJUSTMENT)

R81 Adjustment to obtain similar speed of the motor whether in load or off load.

R53 Adjustment to obtain motor stop with a 0V setpoint.

R56 Adjustment to obtain the required speed with a 10V setpoint.

R94 Adjustment to obtain the maximum required intensity. This adjustment is made after having connected an ammeter in series with the motor and the motor being locked.

J3 Configuration according to the regulation mode, i.e. with or without tacho generator.

WITH => « AVEC »

WITHOUT => « SANS »

ADJUSTING THE VARIABLE SPEED UNIT

a) Select the regulation mode with or without tacho generator using staple J3.

With **SANYO** motors, the tacho generator must always be selected.

The **MOTOVAR MV 20** is factory adjusted. A control can be made using the following procedure.

b) Adjustment of maximum speed.

The adjustment can be made by **R56** with a 10V DC setpoint..

Motor **SEM**	**W000139784**	1600 tr/mn without tacho
Motor **A77**	**W000140676**	5000 tr/mn without tacho
Motor **PARVALUX**	**W000139834**	4000 tr/mn with tacho
Motor **SANYO V730**	**W000139910**	1200 tr/mn with tacho
Motor **SANYO V404**	**W000237668**	1600 tr/mn with tacho
Feed motor **MEGATRAC 5**	**9109 7542**	3000 tr/mn without tacho
Carriage motor **MEGATRAC 5**	**9109 7543**	3000 tr/mn without tacho

c) Offset adjustment

The trimmer **R53** allows motor stop when the setpoint is at 0V.

d) Gain adjustment.

The trimmer **R81** makes it possible to maintain the rotation speed of the motor constant with the tacho generator mode not selected (±1%) when the load varies from 0 to the selected maximum I.

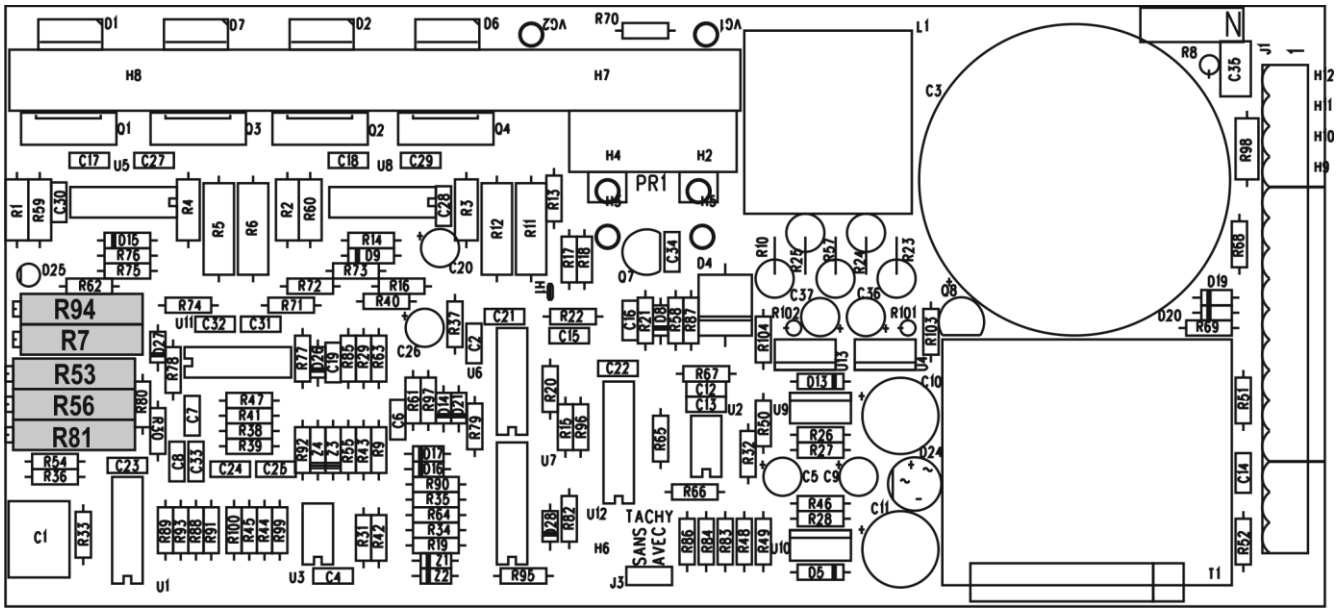
e) Adjustment of Intensity limiting

Connect an ammeter in series with the motor, lock the motor, and switch on the variable speed unit.
Adjust the required intensity with **R94** (factory adjustment 7A for **A77** motor and 5,5A for **SANYO** motor **V730**, 1A for **SANYO** motor **V404**, 3.75A for **MEGATRAC 5** feed motor, 2.5A for **MEGATRAC 5** Carriage motor).

Connect an ammeter in series with the motor, lock the motor, and switch on the variable speed unit.
Adjust the required intensity with **R94** (factory adjustment **7A** for **A77** motor and 5,5A for **SANYO** motor **V730**, 1A for **SANYO V404**).

According to motor type, the response curve can be adjusted by modifying the values of **C1** and **R33**.

Two outputs + 10V and - 10V are provided to supply the setpoint



E - MAINTENANCE

1 - TROUBLESHOOTING

SITUATION	REMEDIES
The motor does not run (the red led D25 is off)	If the motor is OK, - Check the power supply of the variable speed unit - Check motor connections - Check that the motor is not jammed - Check that the setpoint is not at 0 - Check that the variable speed unit is unlocked - Check that the temperature of the radiator is <70°C **Otherwise : Change the variable speed unit**.
The motor does not run (the red led D25 is lit on)	This indicates variable speed unit overload. - Check the absence of short circuit. - Check that the self of the motor is not too low. - Check that the intensity limiting is not too high.
The motor races	- Check the connections of the tacho generator (see first switching on).
The motor starts slowly	- Intensity limiting too low - Load of the motor too high - Check the setpoint
The motor does not reach the required speed	- Variable speed unit has reached intensity limiting - Check the setpoint

PERSONAL NOTES

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