

ARC VOLTAGE CONTROL
AVC
N° 9557 7418 - 9557 7419 - 9557 7420

EDITION: EN
REVISION: B
DATE: 05-2018

Instructions for use

REF.: **8695 5506**

Original instructions

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

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

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

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

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

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

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REVISIONS

REVISION B

05/18

DESIGNATION	PAGE
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1 - DESCRIPTION

The autonomous AVC assembly enables the height of the welding torch in a TIG or Plasma installation to be regulated.

The welding arc voltage depends directly on the distance between the electrode and the part to be welded, all other parameters being constant (gas intensity, nature and flowrate).

Keeping the electrode/part distance constant is the equivalent of keeping the arc voltage constant. To do this, an arc voltage regulating device has been developed.

2 - OPERATION OF THE ARC VOLTAGE CONTROL ASSEMBLY

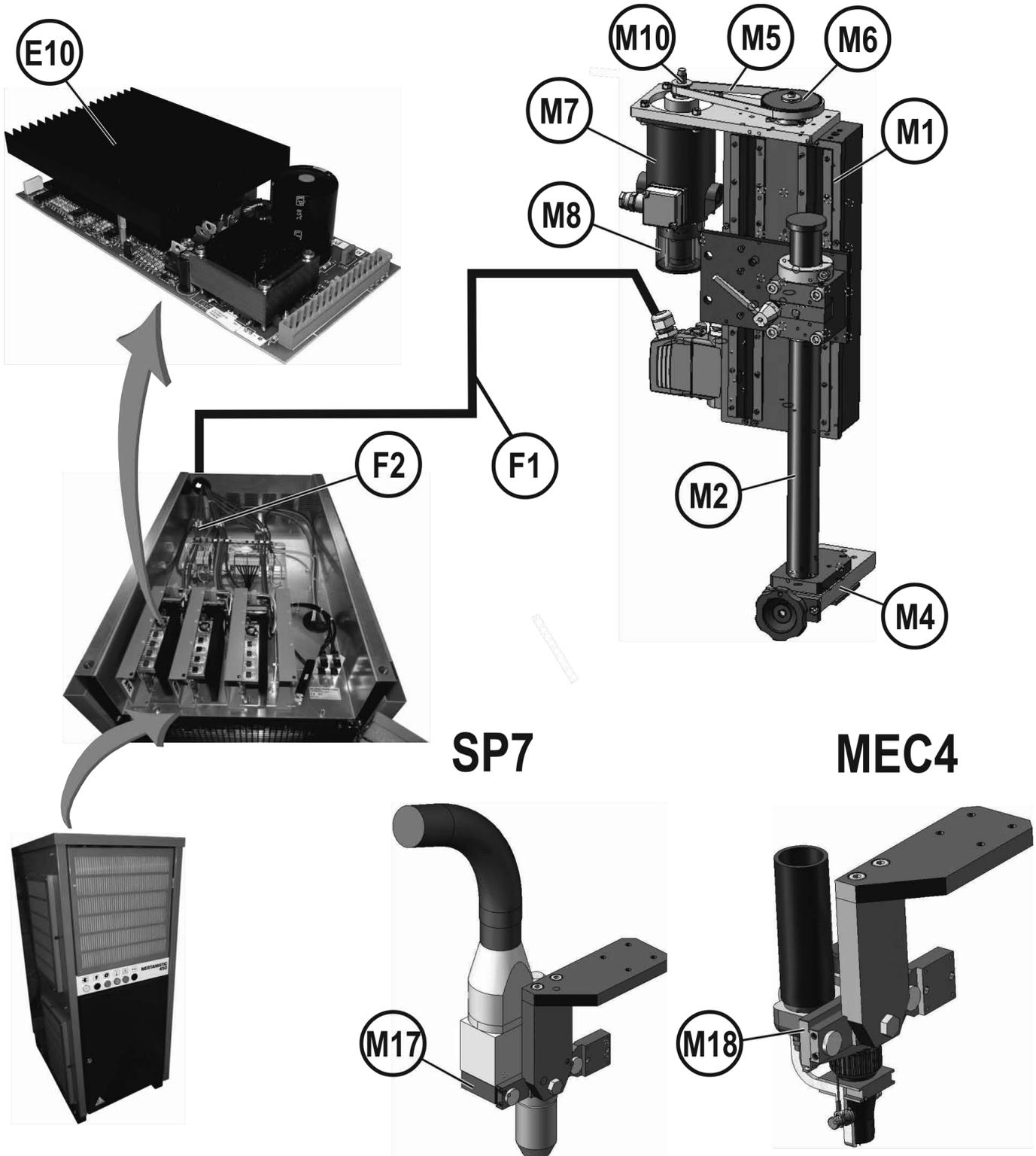
The real welding arc voltage is compared with a reference value. The error signal, processed and amplified, causes a motorized slide bearing the welding torch to start moving

If the arc voltage is lower than the reference voltage, the slide removes the electrode from the part, thus increasing the arc voltage until the balance is restored, and vice versa if the arc voltage is greater than the reference voltage

The arcing sequence is fully automated.

- The torch is lowered to detect the part to be welded.
- The torch stops moving down upon arcing.
- The prewelding arc height adjustment is started up.
- The switch to the welding regulation voltage occurs after a configurable delay.
- When the welding is completed and after postgas time, the torch is raised after a configurable delay.

3 - COMPOSITION



Item	Designation
M1	Translation unit
M2	Rotating pole assembly Ø 40
M4	Manual slide 75*50
M5	180 XL 037 belt
M6	Driven pulley 48 XL 037
M7	A 77 motor
M8	Tacho generator
M10	Drive pulley 12 XL 037
E10	Varisaf 20 A77 Adjustment with tacho generator
	Varisaf 20 A77 Adjustment without tacho generator
F1	10 m limit switch + AVC control bundle
	17 m limit switch + AVC control bundle
	22 m limit switch + AVC control bundle
F2	AVC control / power source bundle

4 - ASSEMBLY - INSTALLATION

ASSEMBLY OF MECHANICAL ELEMENTS

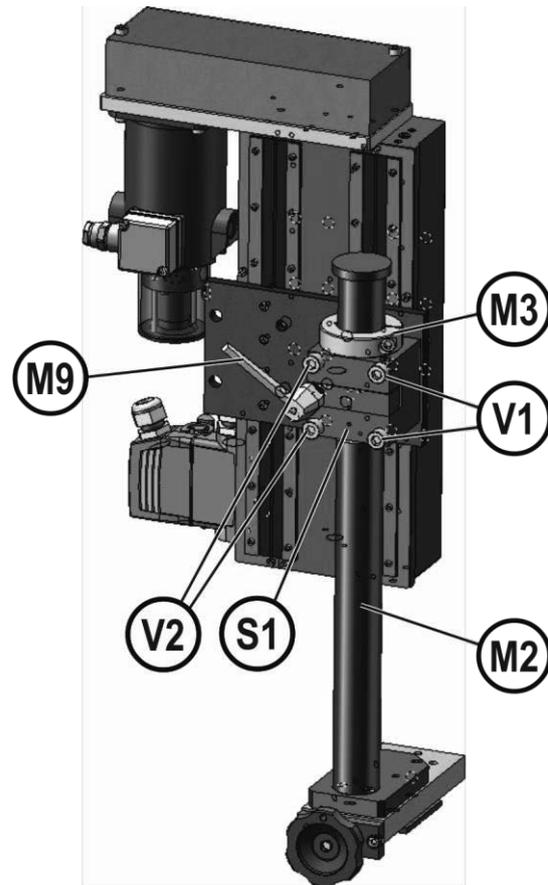
The main elements are assembled upon delivery.

However, it is necessary to assemble the support **S1** and the rotating pole **M2** using the two screws **V1**, the two screws **V2**, the ring **M3** and the handle **M9** making it possible to lock the rotation and displacement of the rotating pole.

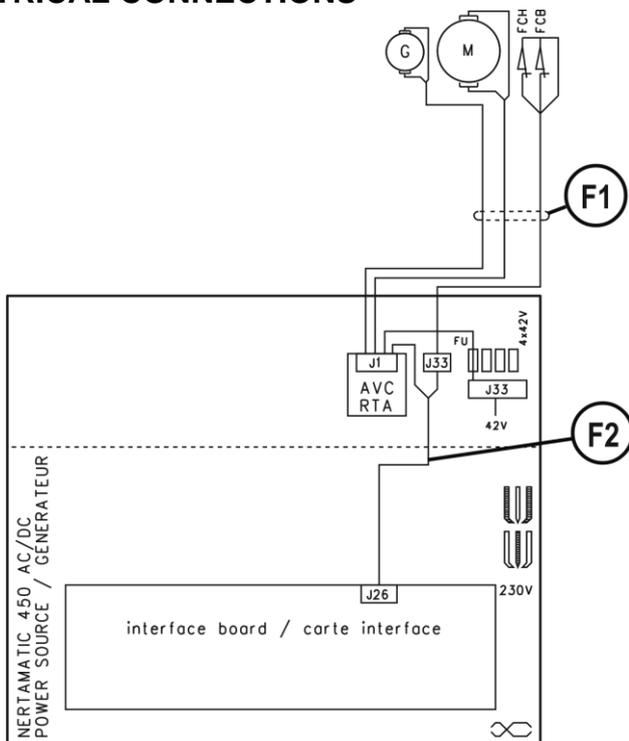
Each element may also be dismantled in order to best suit the customer's welding installation.

Attach the assembly to the welding machine (refer to the slide instructions 8695 6844)

The slide is designed to work with the motor up. However, it may be used in the other direction, but it is imperative to reverse the rotation direction of the motor **M7**, the tacho generator **M8** and the upper and lower limit switches.



ELECTRICAL CONNECTIONS



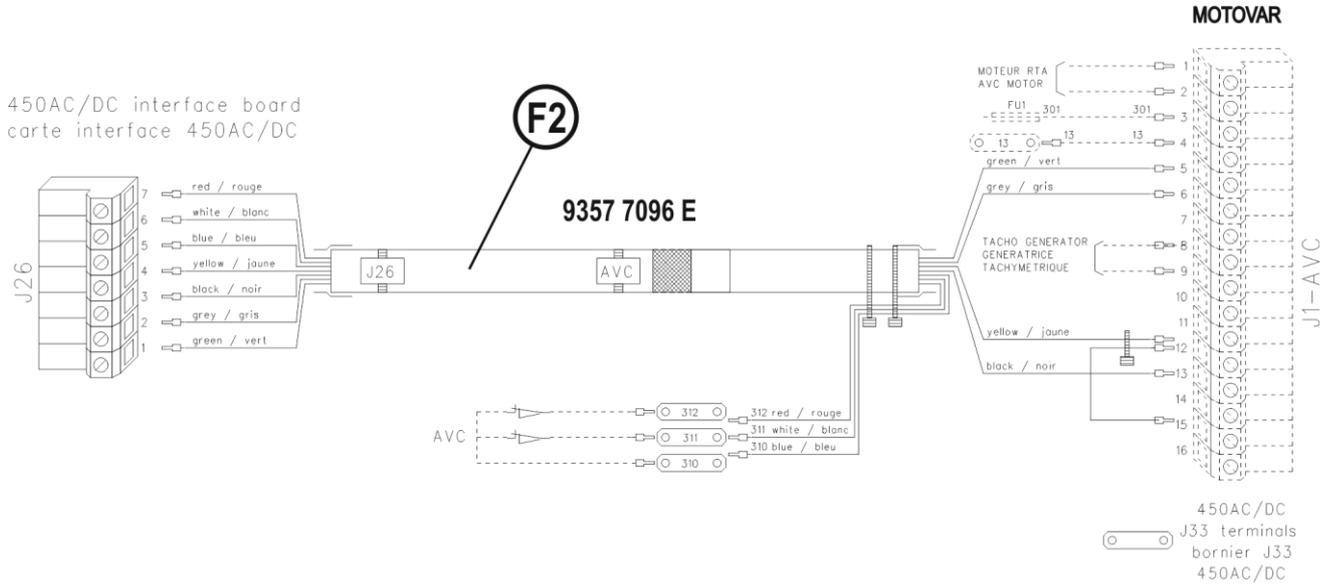
Connecting the AVC control and limit switch bundle (F1)

Connect the bundle to the slide connector. Connect the other end to J1 of MOTOVAR MV 20 and J33 of the power source.

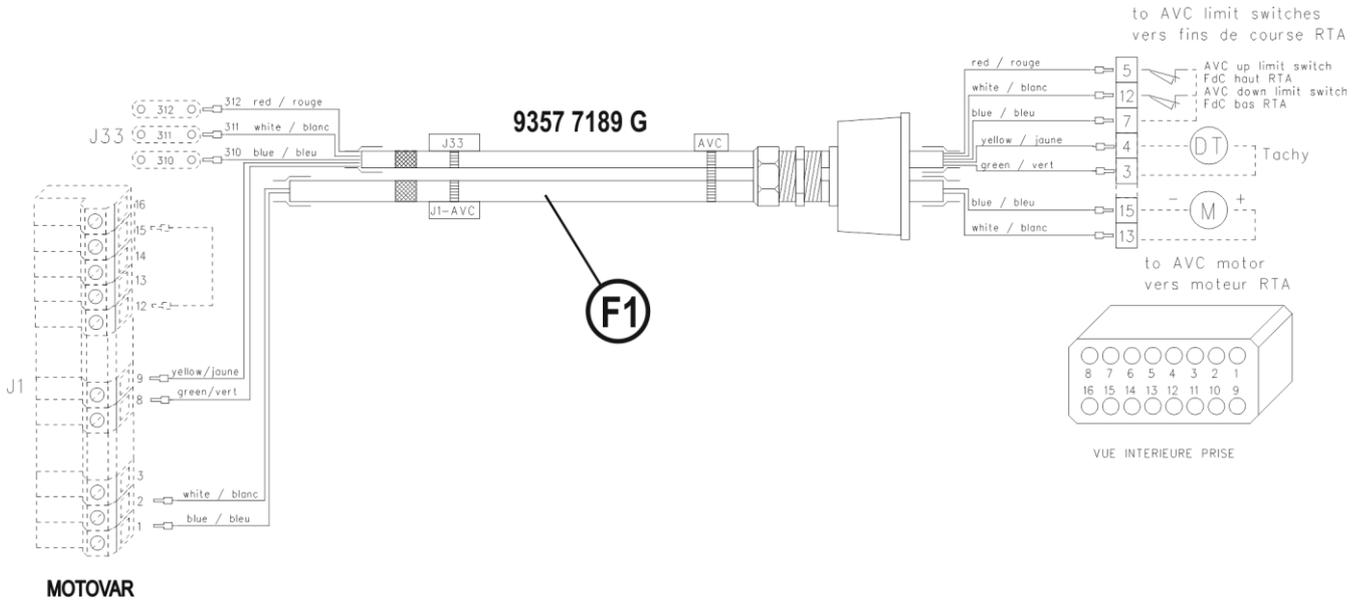
Connecting the AVC control / power source bundle (F2)

Connect the first end to J33 and J1. Connect the other end to J26 of the power source interface board.

J1-J26 BUNDLE



SLIDE BUNDLE



5 - ADJUSTING MOTOVAR MV 20

Adjust the variable speed drive as indicated in I.S.E.E 8695 5832.

6 - OPERATOR'S MANUAL WITHOUT HPW

Refer to the installation instructions for Nertamatic 450 n° 8695 5510

In the automatic mode, you can validate or disable sensing by pressing key **P6** .

The AVC mode must be validated in the installation configuration.

```

LANGUAGE GB
DC ►AVC=1  WIRE=0
Vr WIRE=999cm/mn
Vr AVC=120cm/mn
  
```

The AVC mode must be selected (AVC = 1 in the program configuration) in each program in which sensing is to be used.

```

PROGRAM 1
PLASMA DC FLAT
►AVC=1 WIRE=0 MD=0
MVT1=0  HOT WIRE =0
  
```

The settings for sensing are as follows:

- **U1: Prewelding voltage**
- **T7: Welding sensing delay time**
- **U2: Welding voltage**
- **T16: AVC clearance time (time for raising the torch after postgas).**

7 - OPERATOR'S MANUAL WITH HPW

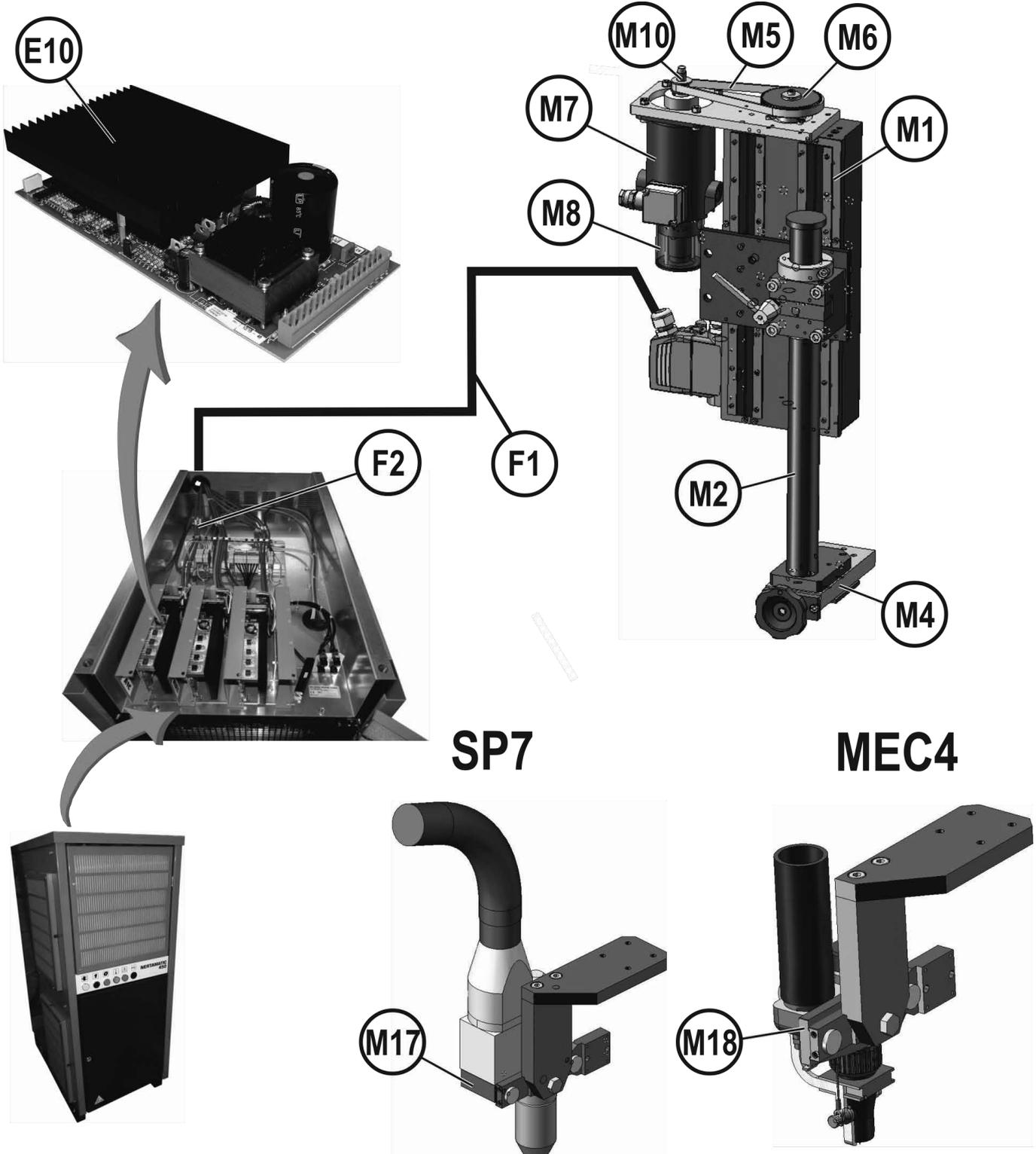
Refer to the instructions of HPW n° 8695 5570

8 - SERVICING

The AVC option requires no particular maintenance, with the exception of the displacement unit (please refer to instruction 8695 6844).

9 - SPARE PARTS

☞ In order to avoid errors when supplying spare parts, 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.



SP7

MEC4

✓	normally in stock
✗	not in stock
	on request

Item	Ref.	Stock	Order	Designation
M1	W000315480	✓		Displacement unit, travel 200mm
M2	W000375805	✓		Rotating pole assembly Ø 40
M4	W000315508	✗		Manual slide 75*50
M5	W000140719	✓		180 XI 037 belt
M6	W000375806	✓		Driven pulley 48 XL 037
M10	W000352137	✓		Drive pulley 12 XL 037
M7	W000164864	✓		A 77 motor
M8	W000315477	✓		Tacho generator
M17	W000375807	✓		Torch collar SP7
M18	W000375808	✓		Torch collar MEC4
	W000375810	✓		Wire adjustment assembly support
E10	W000352135	✗		Varisaf 20 A77 Adjustment with tacho generator
	W000140676	✓		Varisaf 20 A77 Adjustment without tacho generator
F1	W000366102	✗		10 m limit switch + AVC control bundle
	W000366103	✗		17 m limit switch + AVC control bundle
	W000366104	✗		22 m limit switch + AVC control bundle
F2	W000366105	✗		AVC control / power source bundle

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

	TYPE:
	Number:

