WIRE FEED DEVICE

SAFETY INSTRUCTIONS FOR OPERATING AND MAINTENANCE

No P95577370NG ; P95577371NG ; P95577372NG ; P95577373NG ; P95577374NG

ISSUE : EN
REVISION : F
DATE : 06 - 2023

Instruction manual

REF : 8695 5507

Original instructions

LINCOLN® ELECTRIC

Thank you very much for the trust you have shown by choosing this piece of equipment. It will give you trouble-free service if it is used and maintained as recommended.

Its design, component specifications and manufacturing are in accordance with applicable European directives.

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

The manufacturer shall not be liable for any combination of parts not recommended by it.

For your safety, please follow the non-limitative list of recommendations and obligations, a large part of which are included in the Labour Code.

Please inform your supplier if you find any error in this instruction manual.

Contents

INFORMATION

This technical literature is intended for the following machines or products:

- **Wire option 10 meters**
- **Wire option 17 meters**
- **Wire option 22 meters**
- **Wire option 25 meters**
- **Wire option 30 meters**

These instructions and the product covered by them refer to the applicable standards.

Please read these instructions carefully before installing, using or maintaining the machine. Keep these instructions in a safe place for future reference. These instructions must accompany the described machine or equipment if there is a change in ownership, up to the time of destruction.

Display and pressure gauge:

Measurement instruments or displays of voltage, intensity, speed, accuracy etc. are to be considered as indicators, whether they are analogue or digital.

For operating instructions, adjustments, troubleshooting and spare parts, please refer to the special instructions for safe operating and maintenance.

The installation is an assembly of several products. Please read all the sections of the literature before starting to use the machine, as they contain information about residual risks and the ways to protect yourself from all its components.

REVISIONS

REVISION : B DATE : 06/17

DESCRIPTION	PAGE
Update	

REVISION : C DATE : 05/18

DESCRIPTION	PAGE
Change logos	

REVISION : D DATE : 10/19

DESCRIPTION	PAGE
Update	7; 17-19

REVISION : E DATE : 04/22

DESCRIPTION	PAGE
Update	

REVISION : F DATE : 06/23

DESCRIPTION	PAGE
Update **LINC-MASTER** installation added	

MEANING OF SYMBOLS

	Reading the manual/instructions is mandatory.		Indicates a hazard.
	Mandatory use of safety shoes.		Warning of an electricity risk or hazard.
	Mandatory use of hearing protection.		Warning of a risk or hazard due to an obstacle on the floor.
	Mandatory use of a safety helmet.		Warning of a risk or hazard of falling with a level change.
	Mandatory use of safety gloves.		Warning of a risk or hazard due to suspended loads.
	Mandatory use of safety glasses.		Warning of a risk or hazard due to a hot surface.
	Mandatory use of a safety visor.		Warning of a risk or hazard due to moving mechanical parts.
	Mandatory use of safety clothing.		Warning of a risk or hazard due to a closing movement of mechanical parts of a machine.
	Make sure you clean the working zone.		Warning of a risk or hazard due to laser radiation.
	Mandatory use of breathing protection.		Warning of a risk or hazard due to an obstacle at a height.
	Visual inspection required.		Warning of a risk or hazard due to the presence of a pointed part.
	Indicates a lubrication operation.		Wearers of pacemakers may not be admitted in the designated area.
	Requires maintenance action.		

1 - Description

Installation length	10 metres	17 metres	22 metres	25 metres	30 metres
Part number	P95577370NG	P95577371NG	P95577372NG	P95577373NG	P95577374NG

With Automatic PLASMA Welding (electric arc welding with infusible electrode under gas protection), it is often necessary to feed the melting bath with metal during the operation in order to:

- Prevent the seam from showing hollows
- Supply soft steels with deoxidizing elements
- For successive seams
- For build-up welding

The equipment described in these instructions is used to supply metal in the form of a continuous wire unwound from a spool.

The principle involved is that of the “pushed” wire, i.e. that the wire feed geared motor is not located near the welding point.

The drive system pushes the wire in a flexible sheath of adjustable length to a system providing precise mechanical adjustments of wire impact in the arc.

Wire diameter 1 and 1.2 mm can be used (0.8mm optional).
The optional wire diameters which may be used with light alloys are 1.2 and 1.6mm.
The wire feed speed is programmable from 0 to 6m/min.

2 - Wire feed geared motor unit

The pushed wire principle is used: That is to say that the geared motor unit pushes the wire into in the adjustable length flexible sheath (maximum 3 meters).

At the other end this sheath is connected to a mechanical device which has two manual adjustments for the wire impact in the arc.

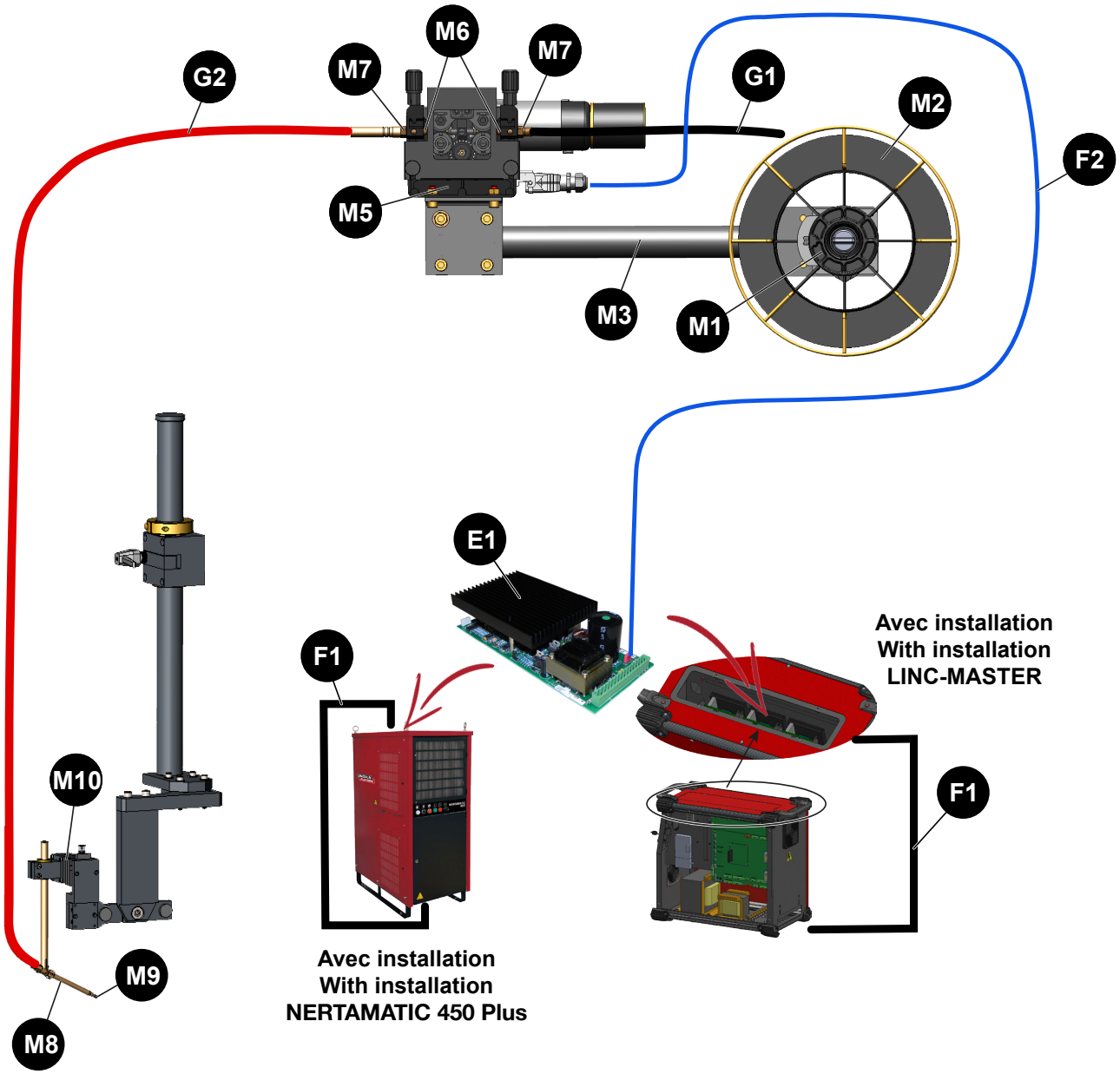
The motor unit + geared motor + tacho generator + speed measurement encoder is isolated in several different ways with respect to the arc starting High Frequency which is always liable to jump between the torch electrode and the end of the wire and return to the motor and tacho generator windings and to the power and control electronics, when these insulation devices are not present.

This situation will always result in the destruction of sensitive components.
Firstly, the feed plate equipping the reducer output shaft is isolated from the motor.
These successive insulation systems protect the geared motor unit and its electronics from all the disturbances on the ground or installation frame sides.

3 - The wire feed sheath

It is comprised of a no more than 3m-long flexible tube which can easily be set to the required length.

The sheath varies depending on the diameter and material of the wire.

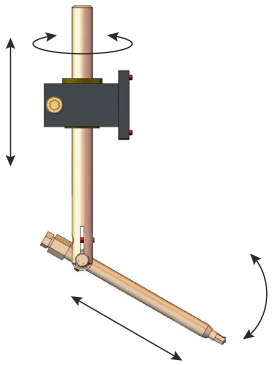

G2
M6
M7
M7
G1
M2
F2
M5
M3
M1
E1
F1
Avec installation
With installation
LINC-MASTER
F1
M10
M9
M8
Avec installation
With installation
NERTAMATIC 450 Plus

Item	Description
M1	Spool support shaft
M2	Wire spool box
M3	L-shaped support tube
M5	Wire feed mechanical assembly
M6	Wire gland
M7	Wire guide clamp
M8	Wire feed assembly
M9	Wire guide: • Ø 0.8 • Ø 0.9 • Ø 1.0 • Ø 1.2 • Ø 1.6
M10	Wire adjustment cross slide assembly
G1 - G2	Sheath: (for steel wire) • Ø 0.8 • Ø 1.0 • Ø 1.2
	Sheath: (for aluminium wire) • Ø 1.2 • Ø 1.6
F1	3 m power source/Wire control bundle
F2	10m motor control bundle + tacho generator
	17m motor control bundle + tacho generator
	22m motor control bundle + tacho generator
	25m motor control bundle + tacho generator
	30m motor control bundle + tacho generator
E1	**MOTOVAR MV20**

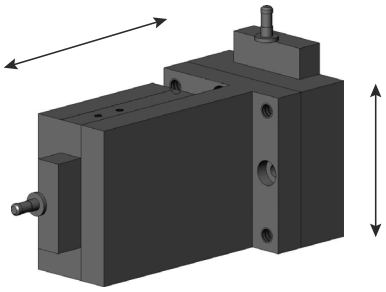
5 - Wire impact adjustment unit in the welding arc

The wire feed can be adjusted via:

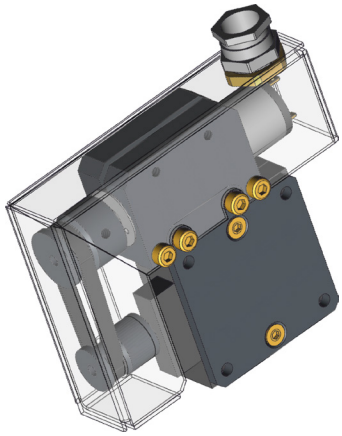
4 coarse adjustments:



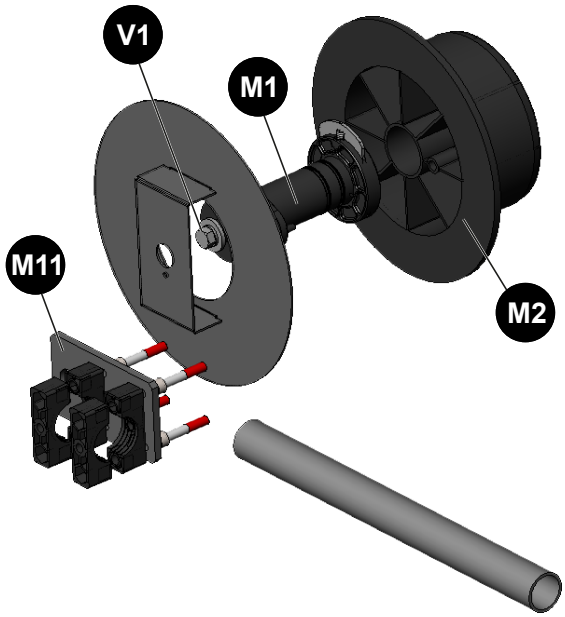
2 progressive fine welding travel adjustments:



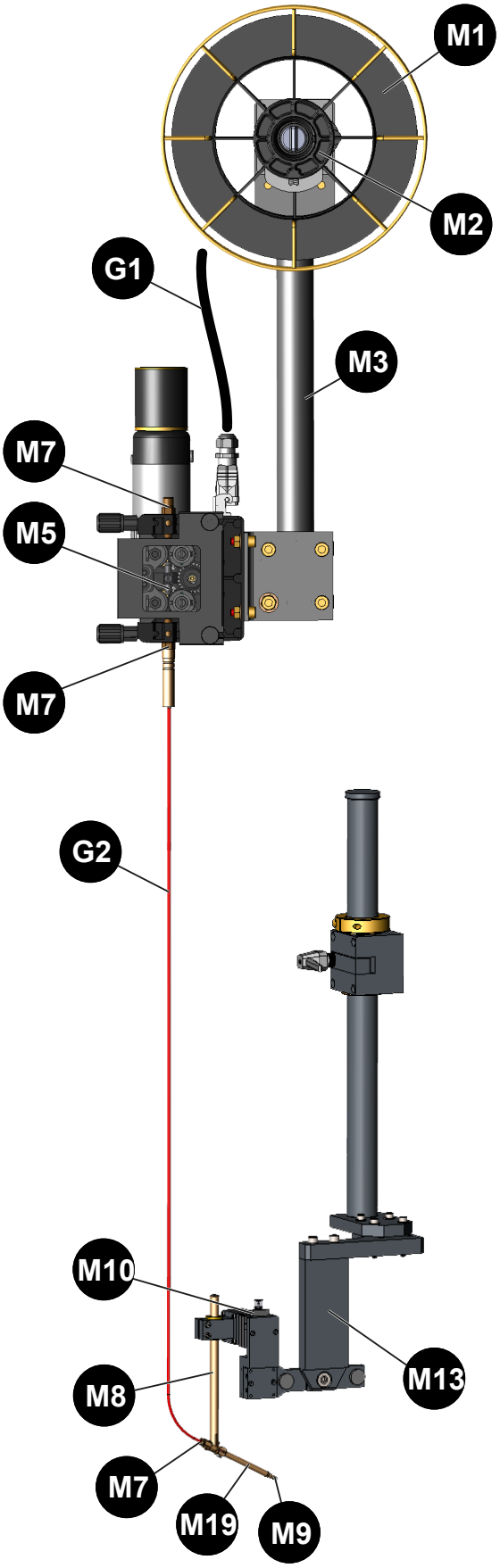
The fine adjustment slides may be power driven:



6 - Assembly - installation



The wire spool box (**ref.M2**) is to be fixed to its support (**ref.M11**) using the spool shaft (**ref.M1**) and its screw (**ref.V1**).



The wire feed mechanical assembly (**ref.M5**) is to be fixed to the tube (**ref.M3**) and positioned depending on the needs of the installation using the 2 brackets (the positions of the brackets and electrical terminal block may be swapped.)

Mount the sheath (**ref.G1**) between the spool and the wire feed plate as shown on the photo opposite.

The assembly is then fixed to the tube in the desired position (**ref.M3**).

The wire guiding sheath between the spool box (**ref.M1**) and the wire feed unit should be as direct as possible.

Then fix the equipped tube to your welding installation using the 2 brackets.

The wire adjustment cross slide assembly (**ref.M10**) is to be assembled on its support (**ref.M13**).

SHEATH ASSEMBLY (ref.G2)

Length to be determined by the respective installation of the adjustment system and wire feed unit.

That length should be as short as possible but with high bend radii.

The equipment is delivered with a 3-meter sheath (exterior and interior).

It is advisable to use a metal cutting saw or a knife to cut these sheaths to required length (do not use wire cutters).

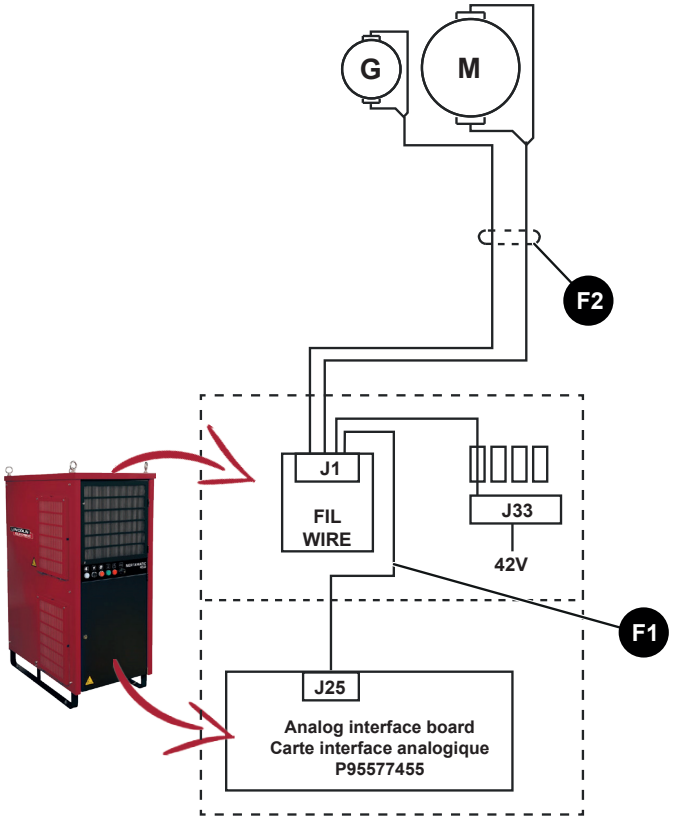
Check if the insulating gun (**ref M16**) located in the wire feed (**ref.M19**) is present.

Cut the interior sheath leaving an excess length of 25 mm and reassemble the wire guide (**ref M9**).

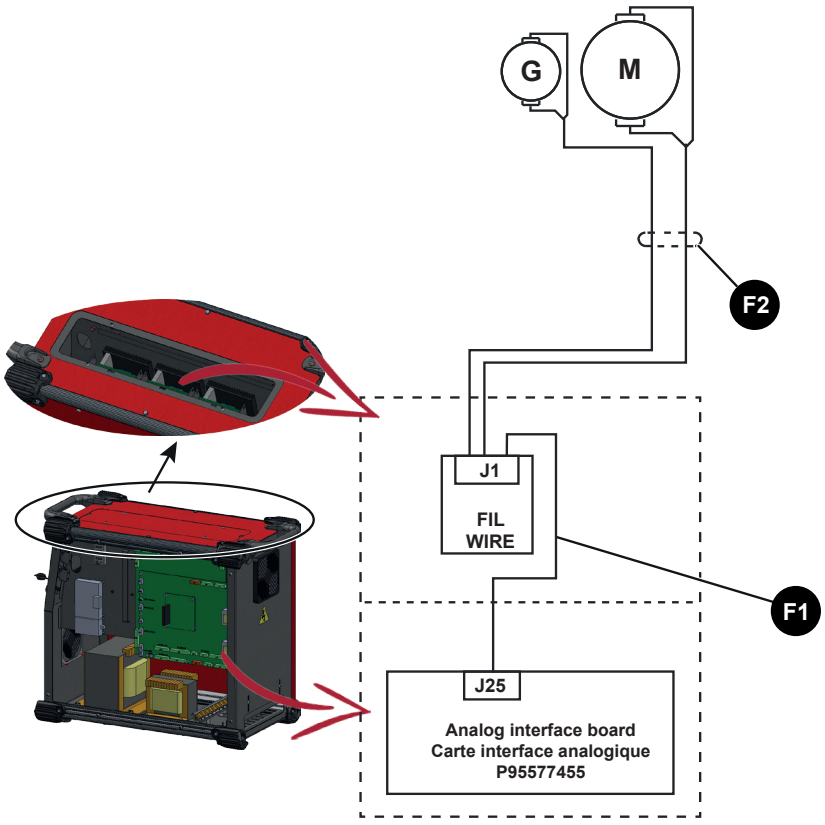
Slightly screw the wire guide clamp (**ref M7**) into the wire feed mechanical assembly (**ref.M5**) and in the wire feed (**ref.M19**).

Insert the sheath (**ref.G2**) in the wire guide clamp (**ref M7**).

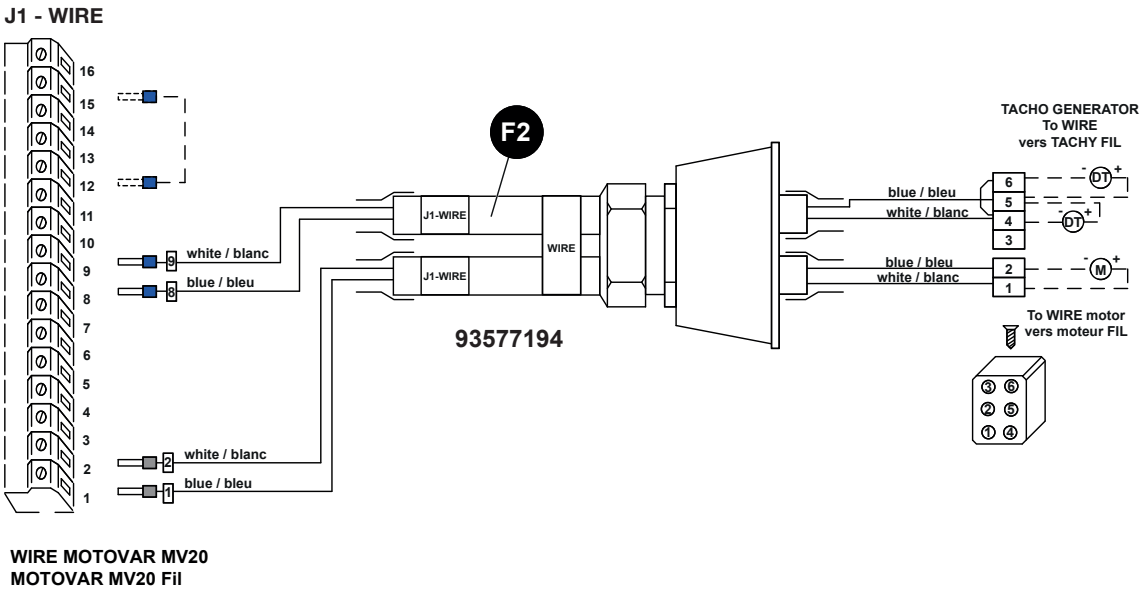
7.1 With NERTAMATIC 450 Plus installation



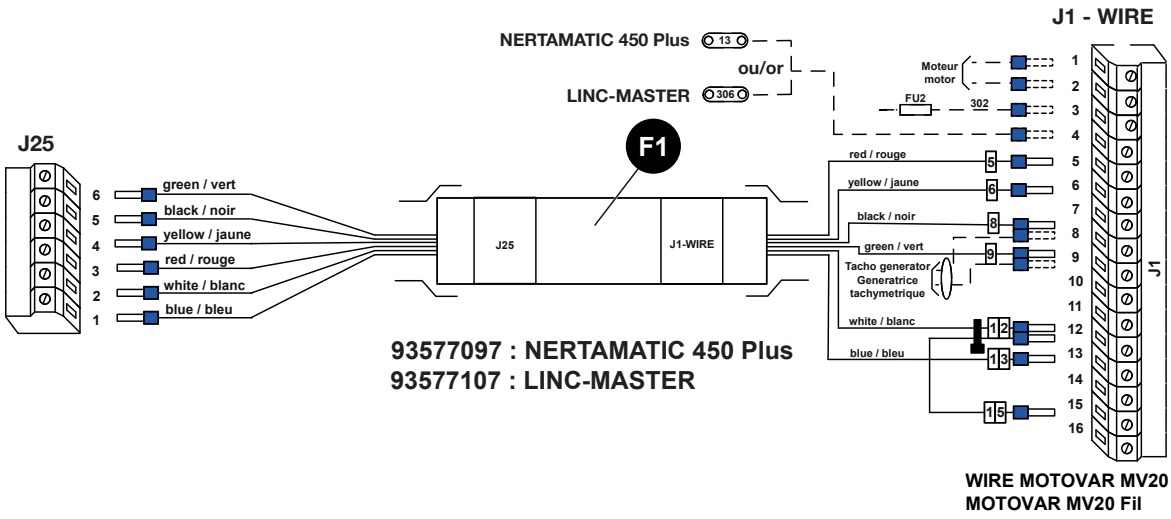
7.2 With LINC-MASTER installation



7.3 Bundles



WIRE MOTOVAR MV20
MOTOVAR MV20 Fil



WIRE MOTOVAR MV20
MOTOVAR MV20 Fil

8 - Adjusting MOTOVAR MV20

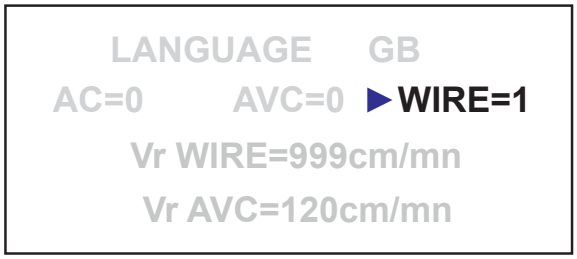
For adjusting the **MOTOVAR MV20** variable drive, refer to the following technical documentation:

- 86955832: **MOTOVAR MV20**

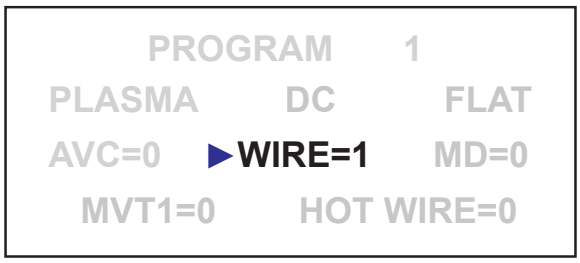
Please refer to the document:
- **86955510**: **NERTAMATIC 450 Plus** installation
- **86955520**: **LINC-MASTER installation**

In the automatic mode, you can validate or disable wire feeding by pressing key **P5**.

The wire mode must be validated in the installation configuration.



The wire mode must be validated in each program in which the wire feeding function is to be used.



The wire feed settings are as follows:
- **T4**: Wire start delay time
- **T18**: Wire up time
- **Vf**: Wire feeding speed
- **T10**: Wire stop delay time
- **T22**: Wire pause time
- **T23**: Wire feed time during peak
- **T13**: Wire retraction time.

10 - Servicing

In order for the machine to continue to provide good service for as long as possible, a certain minimum of care and maintenance is necessary.

The frequency of such maintenance work is given on the basis of production in one shift 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).

Weekly		
Date of maintenance: / /		
		Clean the driving roller of the feed plate with compressed air to remove metallic powder.

11 - Troubleshooting

Possible symptoms	Probable causes	Possible remedies
No feeding or retract	Mechanical block in the wire feed system	Clear the mechanical assembly
	Variable speed drive failure	Change the variable speed drive
	No setpoint on the variable speed drive	Check if the wire feed or retract signal is being received from the interface board between J25-1 and 2
No speed display during the cycle	Wire motor tacho blocked or faulty	Change the tacho.

Ordering procedure:

Almost all the parts of a machine or installation are referenced in the photographs and sketches.

The descriptive tables contain three types of item:

- items normally held in stock: ✔
- items not held in stock: ✘
- items upon request: no reference

(For such parts, please complete the list of parts page and send us a copy. In the Order column, state the number of parts required and indicate the type and number of your equipment.)

For items referenced in the photographs or sketches but not included in the tables, please send us a copy of the relevant page and highlight the relevant reference.

Example:

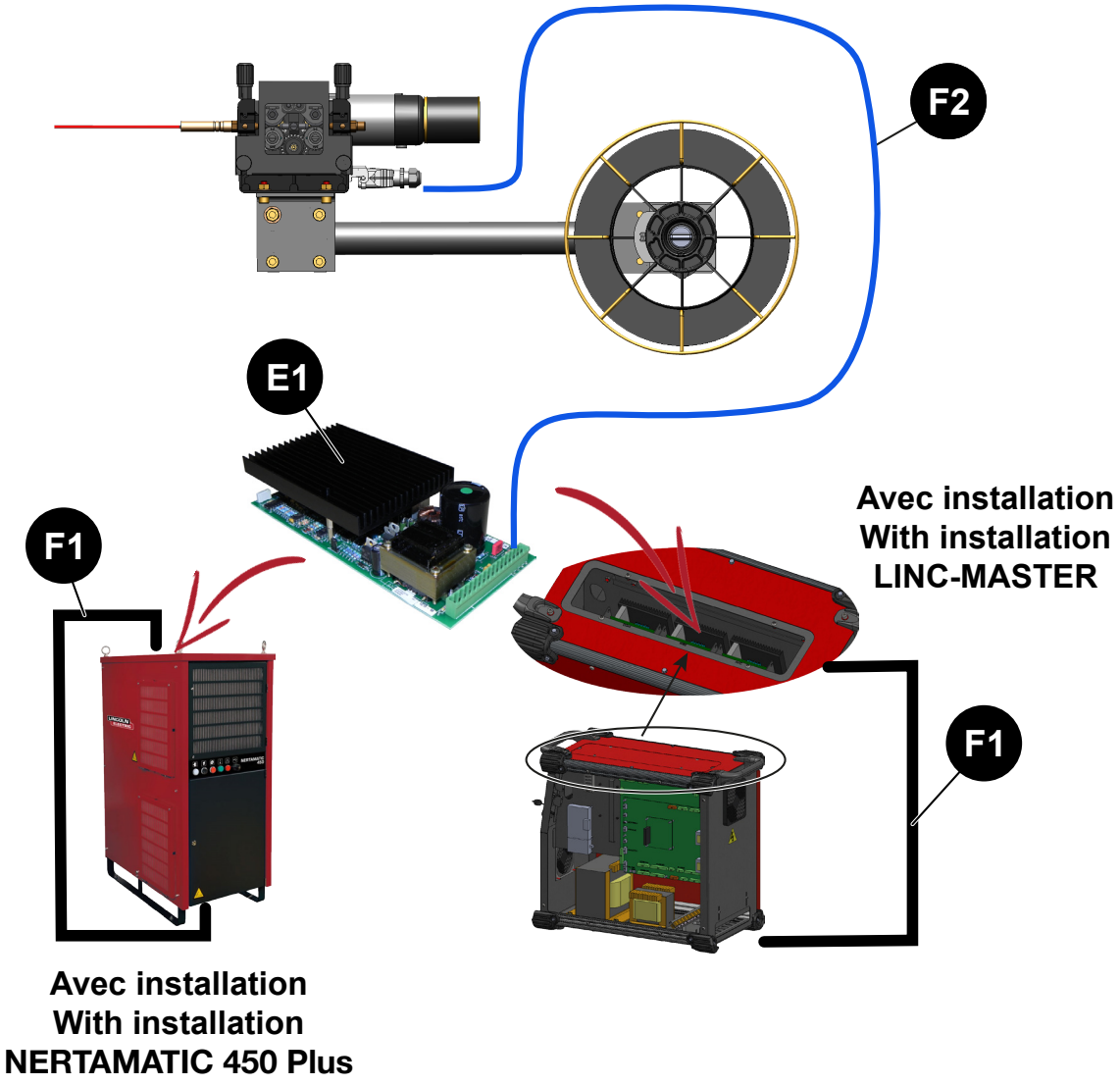
✔	normally held in stock.
✘	not in stock
	upon request.

Ref.	Part no	Stock	Order	Description
E1	W000XXXXXX	✔		Machine interface board
G2	W000XXXXXX	✘		Flow meter
A3	P9357XXXX			Printed front plates

- While ordering parts, please indicate the quantity and note the number of your machine in the box above.

CE Type
Matricule

TYPE:
Number:



✔	normally in stock
✘	not in stock
	on request

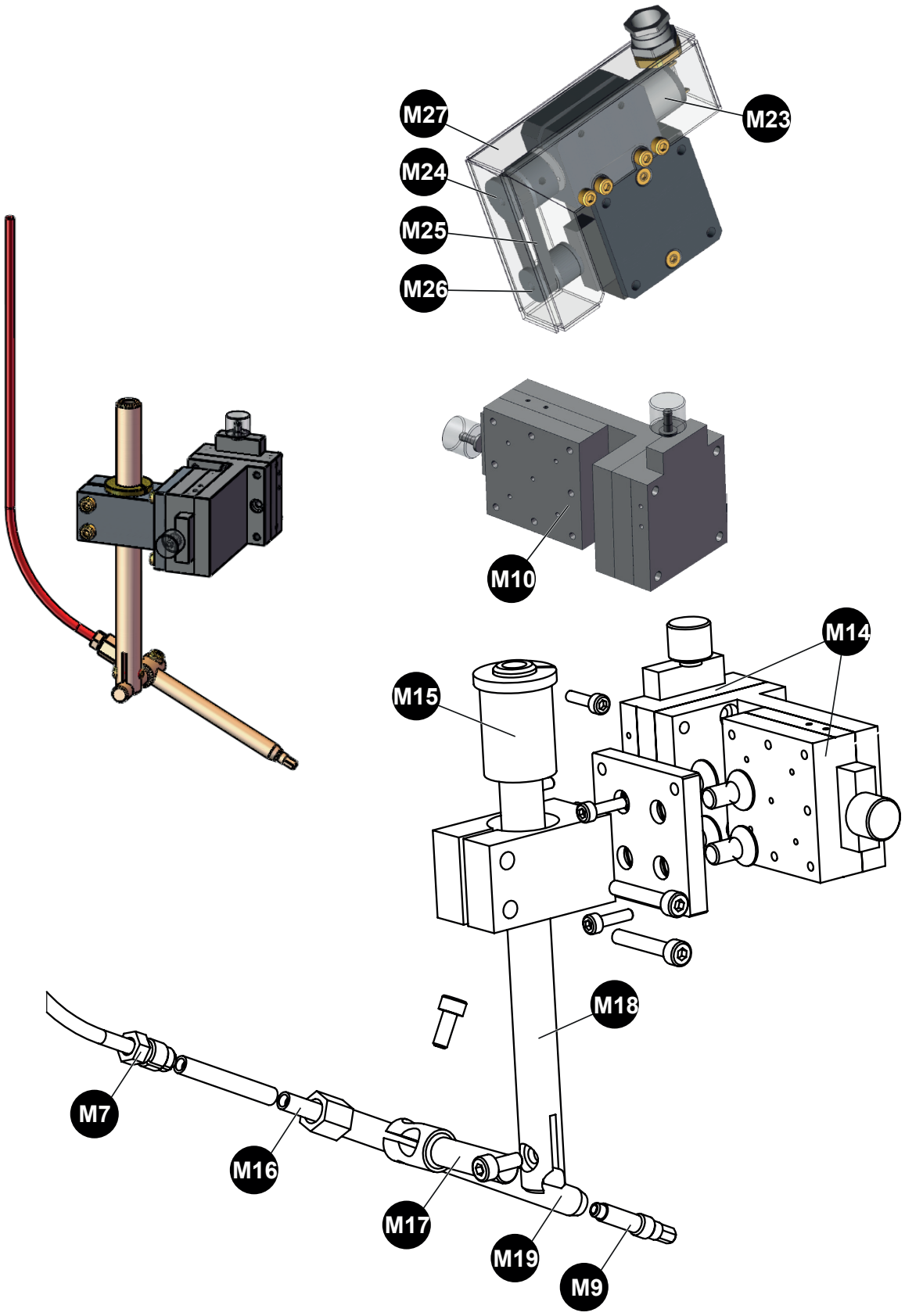
Item	Part no	Stock	Order	Description
E1	W000139834	✔		**MOTOVAR MV20**
F2	W000366106	✘		10m motor control bundle + tacho generator
	W000366107	✘		17m motor control bundle + tacho generator
	W000366108	✘		22m motor control bundle + tacho generator
	P93577560			25m motor control bundle + tacho generator
	P95577193			30m motor control bundle + tacho generator
F1	W000366109	✘		Power source/control bundle, 3 metres => For **NERTAMATIC 450 Plus** installation
	P93577107			Power source/control bundle, 1.5 metres => For **LINC-MASTER** installation

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

CE Type
Matricule

TYPE:
Number:

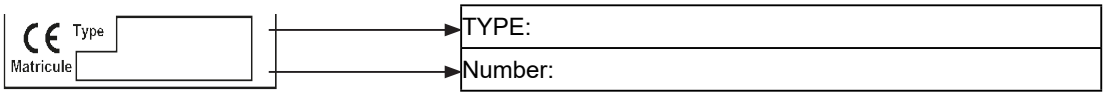
Wire support assembly

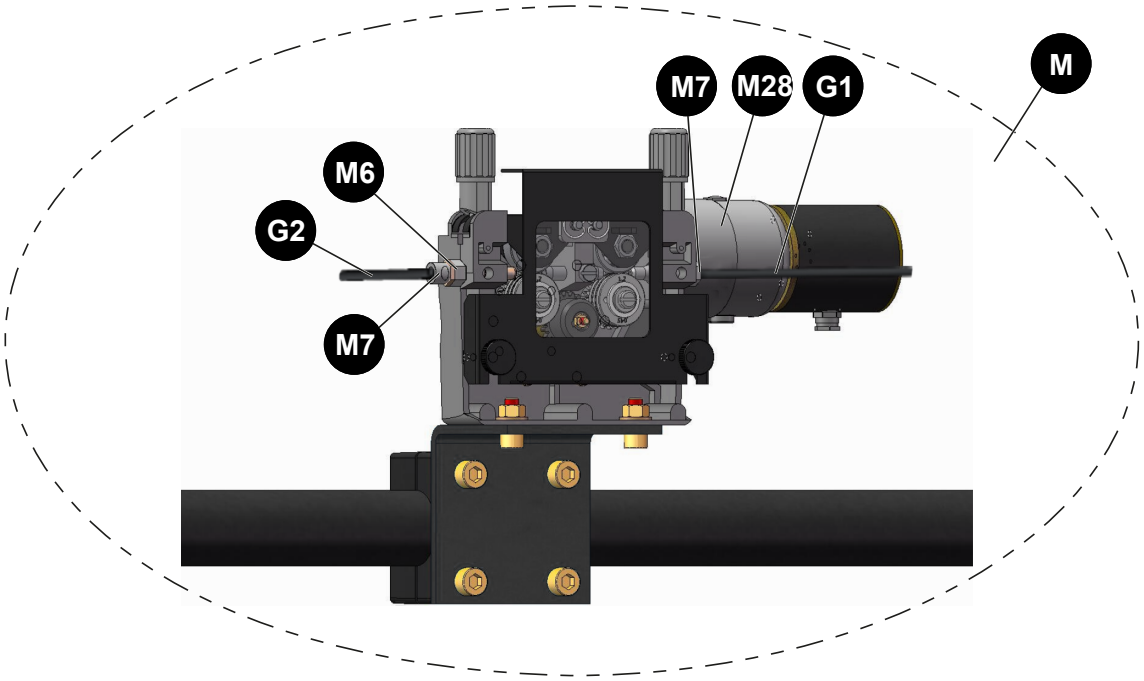


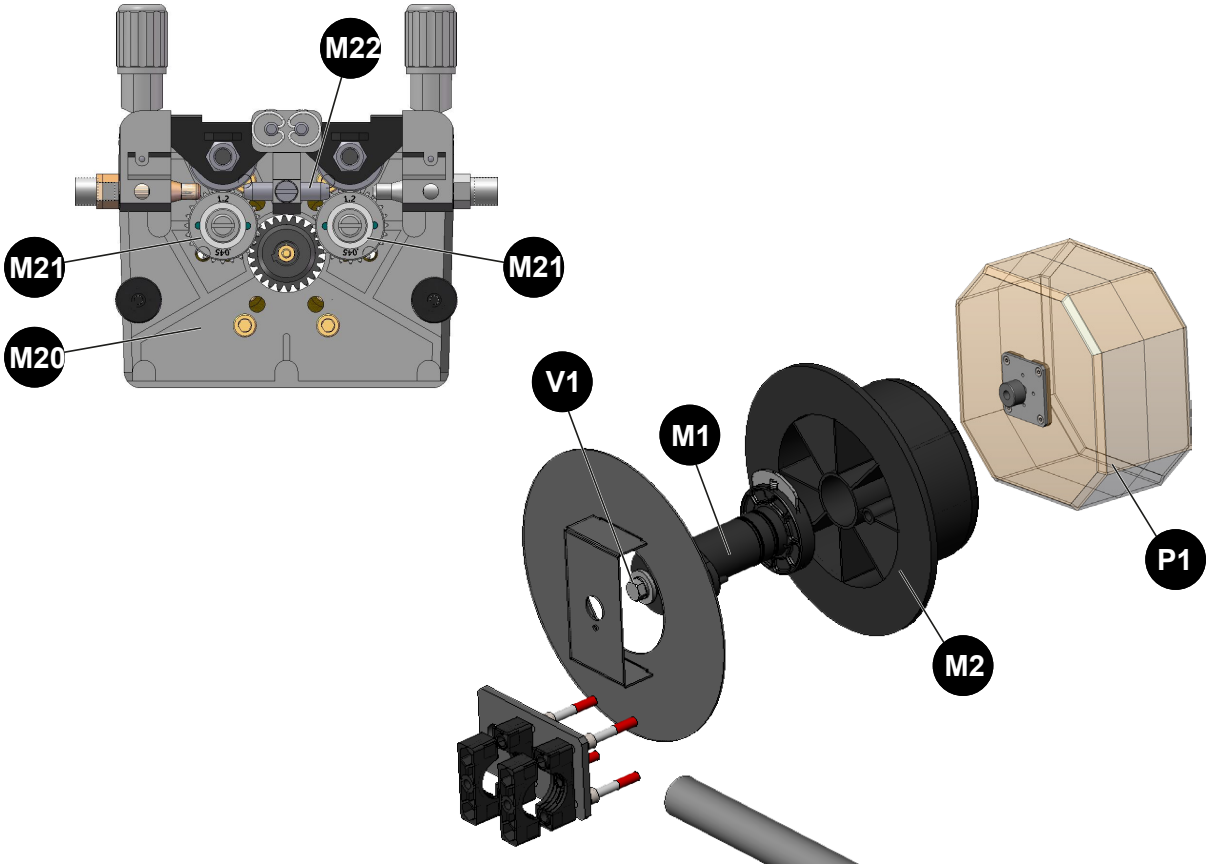
✔	normally in stock
✘	not in stock
	on request

Item	Part no	Stock	Order	Description
M10	W000375963	✘		Wire adjustment cross slide assembly
M14	W000375966	✔		Slide C14 XEG40
M7	W000346038	✔		Nut SH270 for METZ DINSE PP
M9	W000267694	✔		Bag of 2 guides for Ø 0.8mm steel wire
	W000373557	✔		Bag of 2 guides for Ø 0.9mm steel wire
	W000267695	✔		Bag of 2 guides for Ø 1.0mm steel wire
	W000376075	✔		Bag of 2 guides “stainless steel” for Ø 1.0mm steel wire
	W000267696	✔		Bag of 2 guides for Ø 1.2mm steel wire and Ø 1.2mm al wire
	W000374519	✔		Bag of 2 guides for Ø 1,6mm al wire
M15	W000375967	✔		Insulating ring
M16	W000375968	✔		Insulating gun
M17	AS-WS-95570028			Necklace D8 brass
M18	AS-WS-95570027			Brass stem
M19	W000375969	✔		Wire lead
	W000377082	✔		Motorized slide assembly
M23	P95570032	✔		Geared motor 24v
M24	PC6202295	✔		Pulley Z20
M25	PC6202285	✔		Belt 4L100
M26	P95570033	✔		Pulley Z14
M27	P95570073	✔		Guard cover

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



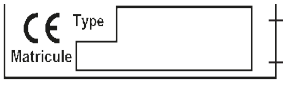

M
M7
M28
G1
M6
G2
M7


M22
M21
M21
M20
V1
M1
P1
M2

✔	normally in stock
✘	not in stock
	on request

Item	Part no	Stock	Order	Description
M	W000315541	✔		Complete gear motor
M1	K162-1	✔		Spool support shaft
M2	W000378887	✔		Spool support
V1	W000403688			Spool guard
P1	W000315533			Waterproof box
M20	W000375811	✘		Mounting plate assembly
M28	W000141567	✔		Geared motor with tacho generator
M6	W000375809	✔		Wire gland
M7	W000346038	✔		Nut SH270 for METZ DINSE PP
				Stainless wire Ø 0.8 - 1.0mm
M21	W000305147	✔		Roller (x1)
M22	W000305153	✔		Intermediate wire guide
G1 G2	W000010736	✔		Sheath (3m)
				Stainless wire Ø 1.0 - 1.2mm
M21	W000305148	✔		Roller (x1)
M22	W000305153	✔		Intermediate wire guide
G1 G2	W000010736	✔		Sheath (3m)
				Stainless wire Ø 1.2 - 1.6mm
M21	W000305149	✔		Roller (x1)
M22	W000305153	✔		Intermediate wire guide
G1 G2	W000010745	✔		Sheath (3m)
				Aluminium wire Ø 1.0 - 1.2mm
M21	W000305160	✔		Roller (x1)
M22	W000305165	✔		Intermediate wire guide
G1 G2	W000010736	✔		Sheath (3m)
				Aluminium wire Ø 1.2 - 1.6mm
M21	W000305161	✔		Roller (x1)
M22	W000305165	✔		Intermediate wire guide
G1 G2	W000010745	✔		Sheath (3m)

- 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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