MANUALE OPERATIVO
USER'S MANUAL
MANUAL DE USUARIO

arcweld®
BY LINCOLN ELECTRIC

LINCOLN ELECTRIC ITALIA S.R.L
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MIG/MAG
Wirematic

3003 S

CE

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1 TECHNICAL FEATURES

1.1 OVERALL DESCRIPTION

The Wirematic 3003 S are made up of constant voltage power sources with adjustable step control of the welding voltage, which allow the continuous wire (MIG/MAG) welding of iron and not iron material with solid and cored wire.

1.2 TECHNICAL FEATURES

MODEL	MAIN SUPPLY	POWER	WELDING	CURRENT	STEPS	OCV MAX	WIRE	IP	DIMENSION			WEIGHT
	50/60Hz	CONSUMPTION	CURRENT	RANGE			Ø		→	↑	↗	
	V	KVA	A	A	Nr.	V	mm		cm	cm	cm	Kg
			35% 60% 100%									
Wirematic 3003 S	3x230/400	14	290 220 180	25 - 300	2x10	47.5	0.6–1.2	21	40	80	84	68

1.3 WIRE FEEDER UNIT TECHNICAL FEATURES

MODEL	INPUT	MOTOR POWER	ROLLS	SPOOLS	WIRE SPEED FROM TO	DIMENSION			WEIGTH
						→	↑	↗	
	50 - 60 Hz V	W	n°	mm	[m/min]	cm	cm	cm	Kg
wf 221	0 – 24 - 48	40	2	200/300	1.5 - 21	22.5	47	59	16.5

2 GENERAL PRECAUTIONS

! WARNING !

ARC WELDING AND CUTTING CAN BE INJURIOUS TO YOURSELF AND OTHERS.
TAKE PRECAUTIONS WHEN WELDING. ASK FOR YOUR EMPLOYER'S SAFETY PRACTICES WHICH SHOULD BE BASED ON MANUFACTURER'S HAZARD DATA.

ELECTRIC SHOCK - Can kill
- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from earth and the work-piece.
- Ensure your working stance is safe.

FUMES AND GASES - Can be dangerous to health
- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.

ARC RAYS - Can injure eyes and burn skin.
- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screen or curtains.

FIRE HAZARD
- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby.

NOISE - Excessive noise can damage hearing
- Protect your ears. Use ear defenders or other hearing protection.
- Warn bystanders of the risk.

MALFUNCTION - Call for expert assistance in the event of malfunction.

= READ THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHER PEOPLE

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LIFTING

- It is suggested for lifting a lifting fork, the generator can be lifted also using the 2 couplings placed on the bonnet

PROTECTION LEVEL

- The generators marked IP 21 are not suitable to be used with rain

USE OF INERT GAS CYLINDER

- When compressed air systems or gas cylinders are used it is necessary to comply with all the prescribed requirements.
- Cylinders containing compressed gas are to be used according to the prescriptions of the relevant regulations.
- Never use a cylinder that is broken or visibly damaged..
- Don't use cylinders that are not positioned in their holding bin.
- Don't move or transport a cylinder without the prescribed protection.
- Don't use the gas of the cylinders for applications different from the originally intended for.
- Don't lubricate the valves of the cylinders with oil or grease.
- Don't allow electric contact between the cylinders and the welding machine.
- Don't expose the cylinders to excessive heat, sparks, slag or flames ever.
- NEVER try to repair a defective cylinder but send it back to the gas supplier.

The welding machine can not be used for any different purpose which is not described in this user manual
EX: It is not allowed the use of the welding machine to melt tubes

= READ THE INSTRUCTION MANUAL BEFORE INSTALLING OR OPERATING.

PROTECT YOURSELF AND OTHER PEOPLE

S **The generators that show this mark are suitable to work in welding places with increasing risk of electric shock. Ref. ART.3.46, 11.1 IEC 974-1.**

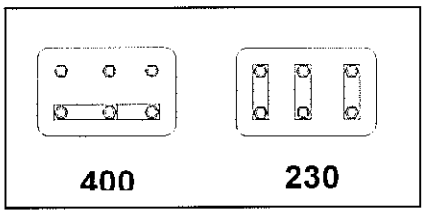
3 INSTALLATION AND CONNECTION

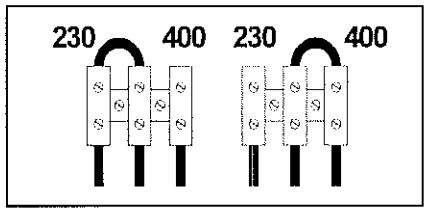
3.1 INSTALLATION

The welding machine installation room must be carefully chosen in order to assure a safe and satisfactory work.
The air-cooled welding machine must be placed in a correct position so that the air can be easily taken and discharged.
Install the machine in a place without humidity and dust, in an approachable place for its cleaning and maintenance.

3.2 POWER SUPPLY CABLE CONNECTION

Before connecting the power source to the electric line, check if the switch is on "0" position and if the data on the rating plate are according to the main supply and frequency.
The Wirematic 3003 S have the possibility of the double voltage supply (230/400V).
The machines are usually connected to the 400V three-phase voltage, so it must be checked if this voltage corresponds to that of the power supply. If not, connect the bars of the reverse voltage terminal-board and the bridge for the auxiliary transformer power supply according to the following figure (indications also placed close to the bars).





In all the three-phase machines the power supply cable is made up of three wires which must be connected to the main supply, meanwhile the YELLOW-GREEN cable (4th wire) must be grounded.
The socket where the power source is connected must be grounded and provided with delayed fuses whose value is shown on the following table.

MODEL	POWER SUPPLY VOLTAGE (V)	MAIN DELAYED FUSE	CABLE AREA
Wirematic 3003 S	230/400	32A/25A	4X4 mmq

3.3 Wirematic 3003 S AND wf 221 DESCRIPTION

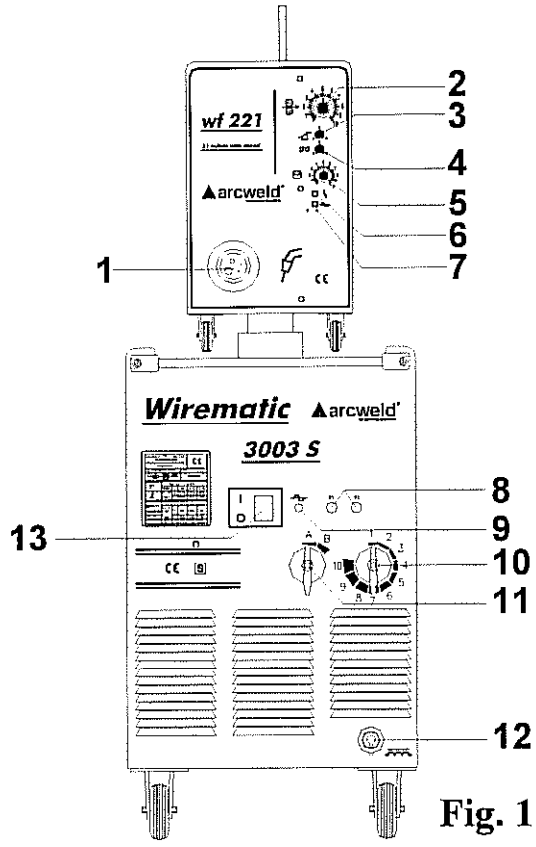


Fig. 1

On the front panel of the wire feeder are placed:
(1) Euro torch connector (positive);
(2) Wire speed setting;
(3) Wire start up slope setting;
(4) Burn-back setting;
(5) Timer setting;
(6) Led on;
(7) Thermal protection led;

On the front panel of the power source are placed:
(8) Fuse holder with fuses;
(9) On/Off lamp;
(10) 10 position welding regulation switch;
(11) Main (a,b) welding regulation switch;
(12) Ground socket (negative);
(13) On/Off switch;

3.4 TORCH CONNECTION AND WIRE LOADING

All the wire feed units are provided with centralised Euro connection for the welding torch connection. The torch connection must be inserted to the Euro connection in accordance to the referring invitation and with the external ring nut completely screwed.
It is important to check, inside the centralised connection, if there is the proper pipefitting which drives the wire from the rolls of the motoreducer up to the beginning of the torch liner.
Following instructions must be followed when loading the spool:

a) Clean up the compartment from any possible external elements;
b) Check if the groove of the roll is according to the diameter of the wire to be used;
c) Unscrew the plastic ring of the spool holder and insert the spool, insert the metallic pin of the spool holder on the seat; put back the plastic ring and adjust the internal screw friction;
d) Release the pressure arm and insert the wire through making it pass over the rolls and inserting it in the connection torch pipe;
e) Lock the pressure arm checking if the wire is duly entered inside the groove of the roll.

4 WELDING EQUIPMENT DESCRIPTION

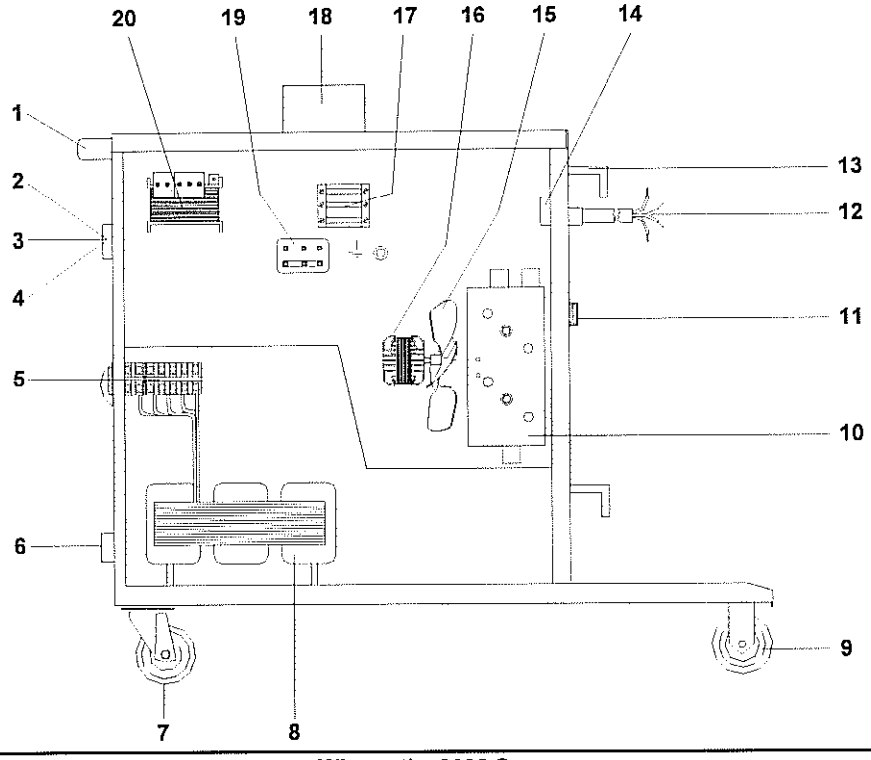
4.1 PARAMETERS' SET UP

Once the type of gas and the wire diameter are chosen, the only remaining parameters to be set are the welding voltage and the welding wire speed.
The welding voltage is set up through the switch on the front panel of the power source and it depends on the needed arc power.
The welding wire speed is set up through the potentiometer (Ref. 2 Fig. 1) and it can be continuously adjusted from 1 to 21 m/min.

4.2 SPOT WELDING

All the power sources have the automatic spot welding device.
Set the spot timer using the potentiometer (Ref 5. Fig. 1). So, every time the torch button is pushed, the power source supplies current and wire just for the time set through the above mentioned potentiometer.

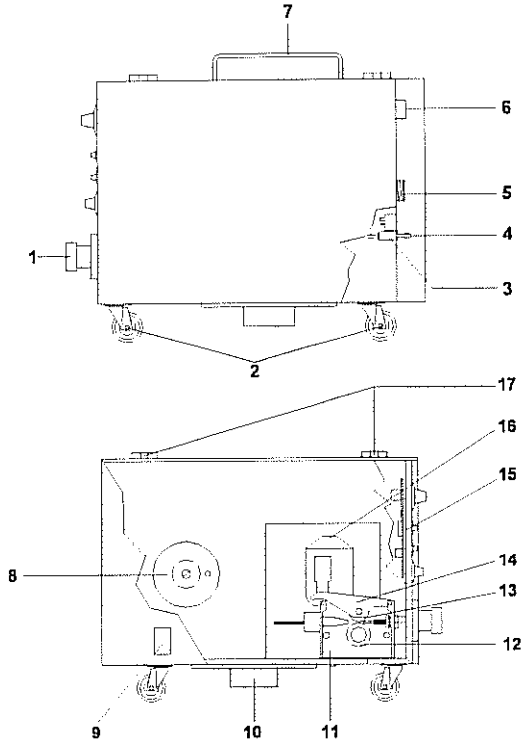
5 PARTI DI RICAMBIO – SPARE PARTS - REPUESTOS

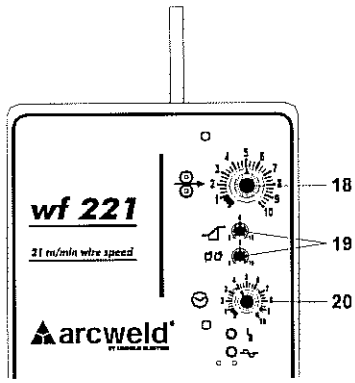


Wirematic 3003 S					
CODE	DESCRIZIONE	Rif.	CODE	DESCRIZIONE	Rif.
10209014	TUBO MANICO	1	12802011	RADDRIZZATORE	10
10510017	SUPPORTO MANICO	1	12205501	PRESA 14 POLI	11
12028002	PORTA FUSIBILI	2	12002302	CAVO 4X4 mmq	12
12026004	LAMPADINA ON/OFF	3	10203204	PORTABOMBOLA	13
12104205	INTERRUTTORE ON/OFF	4	10503006	PRESSACAVO	14
12101003	COMMUTATORE 2 POS.	5	11308012	VENTOLA	15
12101063	COMMUTATORE 10 POS.	5	11306101	MOTORE	16
10921002	PRESA 35/50 mmq	6	12103050	TELERUTTORE	17
10402126	RUOTA ANTERIORE	7	10530002	SUPPORTO CARRELLO	18
11001008	TRASFORMATORE DI POTEN.	8	12201001	BASETTA CAMBIO TENSIONE	19
10404126	RUOTA POSTERIORE	9	11101101	TRASFORMATORE AUX	20

Wirematic 3003 S					
CODE	DESCRIPTION	Rif.	CODE	DESCRIPTION	Rif.
10209014	HANDLE (TUBE)	1	12802011	RECTIFIER BRIDGE	10
10510017	HANDLE (SUPPORT)	1	12205501	SOCKET 14 POLE	11
12028002	FUSE HOLDER	2	12002302	CABLE 4X4 mmq	12
12026004	ON/OFF LAMP	3	10203204	GAS BOTTLE HOLDER	13
12104205	ON/OFF SWITCH	4	10503006	CABLE HOLDER	14
12101003	2 POS. SWITCH	5	11308012	FAN BLADE	15
12101063	10 POS. SWITCH	5	11306101	MOTOR	16
10921002	SOCKET 35/50 mmq	6	12103050	CONTACTOR	17
10402126	FRONT WHEEL	7	10530002	WIRE FEEDER HOLDER	18
11001008	TRANSFORMER	8	12201001	VOLTAGE	19
10404126	REAR WHEEL	9	11101101	AUXILIARY TRANSFORMER	20

Wirematic 3003 S					
CÓDIGO	DESCRIPCIÓN	Ref.	CÓDIGO	DESCRIPCIÓN	Ref.
10209014	TUBO ASA	1	12802011	RECTIFICADOR	10
10510017	SOPORTE ASA	1	12205501	TOMA 14 POLOS	11
12028002	PORTAFUSIBLES	2	12002302	CABLE 4X4 mmq	12
12026004	BOMBILLA ON/OFF	3	10203204	PORTABOMBONA	13
12104205	INTERRUPTOR ON/OFF	4	10503006	PRENSACABLE	14
12101003	CONMUTADOR 2 POS.	5	11308012	VENTILADOR	15
12101063	CONMUTADOR 10 POS.	5	11306101	MOTOR	16
10921002	TOMA 35/50 mmq	6	12103050	TELERRUPTOR	17
10402126	RUEDA DELANTERA	7	10530002	SOPORTE CARRITO	18
11001008	TRANSFORMADOR DE POTENCIA.	8	12201001	BARRITA CAMBIO TENSIÓN	19
10404126	RUEDA TRASERA	9	11101101	TRANSFORMADOR AUX.	20





CODE	DESCRIZIONE	Rif.	CODE	DESCRIZIONE	Rif.
10901010	ATTACCO EURO	1	11312039	RULLO 0.8 – 1.0 GOLA V	12
10403061	RUOTA	2	11312040	RULLO 1.0 – 1.2 GOLA V	12
10702002	ELETTROVALVOLA	3	11312068	RULLO 1.0 – 1.2 GOLA U	12
10710061	PORTAGOMMA	4	11312032	POMELLO FERMA RULLO	12
12205502	SPINA 14 POLI	5	11312031	RULLO LISCIO	13
10921002	PRESA 35/50 mmq	6	11312042	BRACCETTO	14
10510018	MANIGLIA	7	1300108101	SCHEDA ELETTRONICA	15
10530001	PORTABOBINA	8	11306004	MOTORE	16
10508020	CHIUSURA	9	10508025	CERNIERA	17
10530004	SUPPORTO CARRELLO	10	10520051	MANOPOLA	18
11312102	PIASTRA COMPLETA	11	10520049	MANOPOLA	19
11301021	MOTORIDUTTORE COMPLETO	11	10520148	COPRIDADO	20
11312041	RULLO 0.6 – 0.8 GOLA V	12	10520147	MANOPOLA	20

CODE	DESCRIPTION	Rif.	CODE	DESCRIPTION	Rif.
10901010	EURO TORCH CONNECTOR	1	11312039	ROLL 0.8 – 1.0 V GROOVE	12
10403061	WHEEL	2	11312040	ROLL 1.0 – 1.2 V GROOVE	12
10702002	SOLENOID VALVE	3	11312068	ROLL 1.0 – 1.2 U GROOVE	12
10710061	GAS PIPE CONNECTOR	4	11312032	SCREW WITH KNOB	12
12205502	PLUG 14 POLE	5	11312031	IDLER ROLL	13
10921002	SOCKET 35/50 mmq	6	11312042	PRESSURE ARM	14
10510018	HANDLE	7	1300108101	PCB	15
10530001	SPOOL HOLDER	8	11306004	MOTOR	16
10508020	LATCH	9	10508025	HINGE	17
10530004	WIRE FEEDER HOLDER	10	10520051	KNOB	18
11312102	COMPLETE PLATE	11	10520049	KNOB	19
11301021	COMPLETE MOTOREDUCER	11	10520148	COVER NUT	20
11312041	ROLL 0.6 – 0.8 V GROOVE	12	10520147	KNOB	20

CÓDIGO	DESCRIPCIÓN	Ref.	CÓDIGO	DESCRIPCIÓN	Ref.
10901010	EMPALME EURO	1	11312039	RODILLO 0.8 – 1.0 RANURA V	12
10403061	RUEDA	2	11312040	RODILLO 1.0 – 1.2 RANURA V	12
10702002	ELECTROVÁLVULA	3	11312068	RODILLO 1.0 – 1.2 RANURA U	12
10710061	PORTAGOMA	4	11312032	BOTÓN SUJECIÓN RODILLO	12
12205502	ENCHUFE 14 POLOS	5	11312031	RODILLO LISO	13
10921002	TOMA 35/50 mmq	6	11312042	BRAZO	14
10510018	MANILLA	7	1300108101	TARJETA ELECTRÓNICA	15
10530001	PORTABOBINA	8	11306004	MOTOR	16
10508020	CIERRE	9	10508025	BISAGRA	17
10530004	SOPORTE CARRITO	10	10520051	BOTÓN	18
11312102	PLANCHA COMPLETA	11	10520049	BOTÓN	19
11301021	MOTORREDUCTOR COMPLETO	11	10520148	CUBRETUERCA	20
11312041	RODILLO 0.6 – 0.8 RANURA V	12	10520147	BOTÓN	20

7 SCHEMA ELETTRICO – ELECTRIC DIAGRAM - DIAGRAMA ELÉCTRICO