

TECNA[®]

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INTRODUCTION

CAREFULLY READ THIS MANUAL BEFORE INSTALLING AND OPERATING WELDER.

⚠ This manual is addressed to the factory responsible in charge who must release it to the personnel in charge of the welder installation, use and maintenance. He/she must check that the information given in this manual and in the enclosed documents have been read and understood. The manual must be stored in a well-known place, easy to reach, and must be looked up each time even little doubts should arise.

⚠ This welder must be installed in industrial environments only. There could be some difficulties in ensuring the electromagnetic compatibility in any other environment. All modifications, even slight ones, are forbidden because they should invalidate both the welder EC certification and warranty.

The welder has been designed for resistance welding of both ferrous and not ferrous (aluminium, brass) materials. The welder must not be used for other application, i.e. pieces heating, mechanical working carried out by using the cylinder force.

⚠ TECNA S.p.A. is not responsible for any damage to both people, animals, things and to the welder itself caused by either a wrong use or the lack or the superficial observance of the safety warnings stated on this manual, nor it is responsible for damages coming from even slight tampering or from the use of not-suitable spare parts, or of spare parts other than the original ones.

TAB. 1 - TECHNICAL FEATURES

Spot welder	Art.	7911	7913	7915
Synchronous timer with SCR		.	.	.
Time adjustment	cycles	2 ÷ 65	2 ÷ 65	2 ÷ 65
Current adjustment 40 ÷ 100%		.	.	.
Cooling		Aria	Water	Water
Water	l/h	—	100	100
Thermal current at 100%	A	660	1520	1520
Insulation class		F	F	F
Mains supply 50 Hz *	V	380	380	380
Nominal power at 50%	kVA	2,5	6	6
Secondary no load voltage	V	2,7	2,7	2,7
Max. welding power	kVA	18	18	18
Max. short circuit current	kA	8,2	8,2	8,2
Pneumatic operation	bar	6,5	6,5	6,5
Air consumption for 1000 spots	Nm ³	1	1	1
Max. force on electrodes	daN	125	120	120
Throat depth L	mm	125	150	150
Arms gap S	mm	94	94	94
Max. electrodes stroke	mm	40	40	40
Weight with arms 125 mm	kg	12,8	16	13
Weight with arms 500 mm	kg	14,8	19	15
Aerial noise	dB(A)	<70	<70	<70
Level of vibrations	m/s ²	≤ 2,5	≤ 2,5	≤ 2,5
Measurement conditio:				
working stroke	mm	20	20	20
welding time	cycles	4	6	6
welding current	kA	4,1	6,1	6,1
working rating	weld/ml n.	11	15	15

* Different voltages and frequency available on request

STANDARD ACCESSORIES

The welder is supplied equipped with:

- N° 1 Allen keys set 5-4-3-2 mm.
- N° 1 additional handle (only for items 7911-7915).
- N° 1 electrode sharpener Ø 12 (only items 7911).
- N° 1 air assembly.
- N° 1 air supply hose Ø 6, length 4 m.
- N° 1 electric supply hose 2,5 mm², length 4 m.
- N° 1 pair of arms item 7401 L=125 mm (only items 7911).
- N° 1 Installation, use, maintenance and spare parts manual.

INSTALLATION

⚠ On receipt of the welder, verify the perfect integrity of the outer package; communicate to a responsible in charge possible anomalies which should be noticed. Possible damages on the outer package should arise some doubts on the integrity of its content. Remove the package and visually verify the welder integrity. Check that the welder is equipped with all the standard components; immediately inform the manufacturer in case some components should lack. All the material forming the package must be removed according to the present environmental protection regulations.

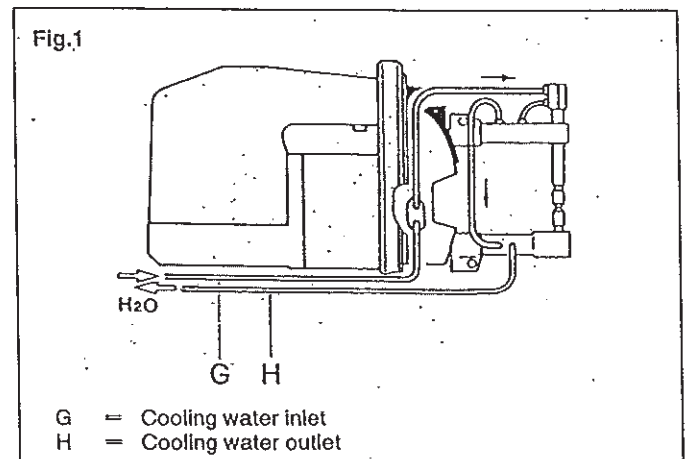
PNEUMATIC INSTALLATION

⚠ For a correct compressed air supply to the welder, it is necessary either a centralised system or a compressor capable of supplying at least 1500 N litri/h of dry air cooled at 6,5 bar (650kP). The welder must be supplied by means of the air assembly 74 supplied with the standard accessories. The welder has been assembled by using components which do not require lubrication. The insertion of a lubricator in the circuit causes no problems to the welder; nevertheless, pay attention to the fact that this brings the emission of oil mist in the environment.

COOLING CIRCUIT INSTALLATION (ONLY ITEMS. 7913-7915)

⚠ For a correct cooling of the welder it is necessary clean water at a maximum temperature of 30 °C. When connecting the unit to the water line check for dirt or packing scraps in the hoses and connect the supply to the inlet G, and the drain to the outlet H, this to allow that still cool water immediately reaches the parts of the welder most subject to heating.

Different cooling circuit systems are available: with city supply water, with re-circulating water, with heat exchanger (air-water) or with refrigerator. If the circuit is with city supply or refrigerator and you are working in presence of high humidity, we suggest to avoid the use of low temperature water, as this could produce moisture inside the machine. In presence of hard water it is necessary to install a water softener at the inlet hose, this to avoid that deposits obstruct or reduce the water softener must be placed on the supply of the tank, an insertion before the machine generate damages.



SUSPENSION SYSTEM INSTALLATION (ITEM 7913)

⚠ Install a suspension system suitable for the work to be carried out. Hang the spot gun to a balancer. The function of balancer is to use the gun without effort. After hanging the spring balancer and the safety chain to the structure (see instructions enclosed to the balancer), balancer capacity must be adjusted: allow a light tendency up to get the best results.

Once completing the balancing check if the entire cable can get out freely, and it is not stopped by an overloaded spring. During maintenance lock the balancer (for further notice check balancer operating manual). Last adjustment is to balance the gun longitudinally. This adjustment is carried out by slackening screw 1 and nut 8 and by shifting the machine according to the working needs (notice that with long arms machine must be moved backward, while with short arms it must be moved forward).

ELECTRICAL INSTALLATION

⚠ Installation must be carried out by specialised personnel only, aware of all safety rules. As this unit can be supplied for different power supply versions, before connecting the unit to the power line, check if the voltage shown on the features plate corresponds to the one of your power supply.

Consult table 1 to determine the capacity of the plug which must be installed on the supply cable; all use without plug is forbidden. It is compulsory to connect the grounding; the supply cables are brown and pale blue, the ground cable is green/yellow. The cables section to be used according to their length is stated on the same table. Examples of possible connections are stated on figure 4; the solution assuring the best safety is that with a differential magnetothermal switch. On the contrary, install fuses of the type stated on table 1.

SAFETY RULES

⚠ For a safe welder employ, the installation must be carried out by qualified personnel only; the welder maintenance must be carefully carried out by following all the safety instructions stated on the «MAINTENANCE» paragraph. In particular, notice that the electrodes maintenance must be carried out with the welder switched off. The welder must be used in a place fulfilling the following features:

- In an inner place. The welder has not been designed for being used in an open place.
- Room temperature included between 0 and 40 °C (if water is removed, storage is allowed down to 20 °C below 0); 1000 m. maximum altitudes.
- In a well ventilated area, free from dust, steam, and acid exhalations.
- The working place must be free from inflammable materials because the working process can produce spatters of melted metal.

If the welder is used to carry out welding processes which can cause smoke exhalations, a proper aspirator must be installed.

The welder should be operated only by trained personnel; in any case, users operating the welder must be aware of the possible risks and must have both read and understood this manual. It is forbidden to have more people working on the welder at the same time.

No admittance allowed to the working area to people other than the operator.

⚠ The welder main risk is the squashing of the upper limbs caused by the moving of the electrodes. For this reason, it is necessary to pay great attention and to follow all the instructions stated on this manual. In particular, adjust the working stroke to the minimum allowed value, and avoid working with the hands nearby the mobile components. In case of water entering the welder, immediately stop the electrical supply.

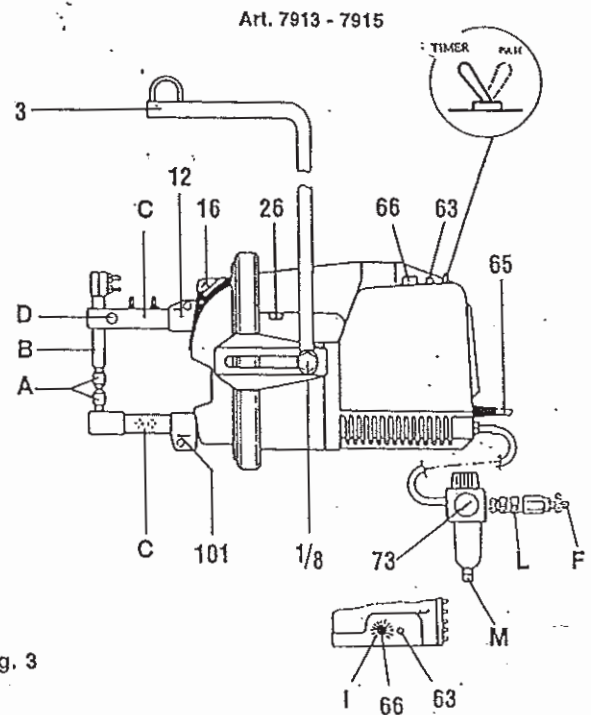
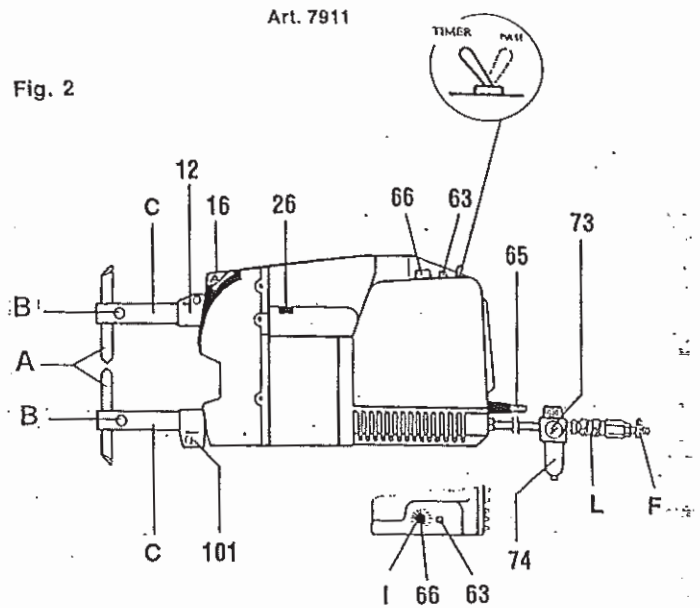
⚠ Notice that these types of machines generate strong magnetic fields attracting metals and damaging watches and magnetic cards. Since these magnetic fields can affect pace-makers, the wearers must consult their doctor before approaching to the welding area. The personnel must wear both safety glasses and gloves. Avoid wearing rings, metal watches and clothes with either metal accessories or components. When operating heavy working, high thickness and pieces with a difficult coupling, wear safety shoes and aprons, and use protection screens to protect the operator from possible spilt of melted materials.

The safety shoes must be worn each time the pieces, because of their shape or weight, bear risks requiring them.

The noise produced by the welder depends mainly from the adjustments. To reduce the noise: adjust the working stroke to the minimum value allowing to carry out the operation.

Never carry the spotter by its cable or yank it to disconnect it from the socket. Keep the cable away from heat, oil and sharp edges. In case of fire do not use water but proper fire extinguishers.

⚠ In addition to the information stated on this chapter, always operate in accordance with all the relevant laws in force.



- A = Electrodes
- B = Electrode-locking
- C = Arms
- D = Arm-holder adjustment
- F = Air inlet
- G = Cooling water inlet
- H = Cooling water outlet
- I = Welding time scale
- L = Compressed air circuit breaker
- M = Moisture discharge
- 1/8 = Longitudinal adjustment (only for item 7913)
- 3 = Suspension (only for item 7913)
- 12 = Arm holder
- 16 = Stroke adjustment
- 26 = Trigger
- 63 = Welding current adjustment
- 65 = Mains cable
- 66 = Weld time adjustment
- 73 = Pressure gauge
- 74 = Regulator filter
- 101 = Fix arm holder

MAINTENANCE

ORDINARY MAINTENANCE

The maintenance operations must be carried out by specialised personnel only, trained to accomplish them under safety conditions. The welder must be disconnected from electric supply.

GENERAL WARNINGS

- Always check that the screws (17-26-40-41) of electrodes and arm-holders (48-66), as well as flexible connection 15 are well tightened.
- Remove oxide traces on the secondary circuit with fine sand paper.
- Periodically oil axes 2-13-35-36.
- Keep the spot gun free from dust and metal particles attracted by the magnetic field formed by the welder when operating.
- Neither wash the welding unit with jets of water which could enter it, nor use strong solvents, thinner, nor benzine that could damage either painting or the machine plastic components.

ITEM 7034-7034B ONLY:

- If, during the winter time, the welder must be stored up in cool rooms, it is necessary to carefully drain first the cooling circuit to prevent from possible damages caused by frozen water.

ELECTRODES

- When operating, the electrodes must be kept clean and their diameter must be kept suitable for the work to be carried out. Too worn electrodes must be replaced.
- With water cooled arms, do not use sealing products to remove water leakage on the electrode taper. To facilitate the electrode removal and to prevent from both taper seizure and leakage, use high conductivity grease similar to the standard one.

COOLING CIRCUIT (ON ITEM 7034 -7034B ONLY)

- Check that cooling water circulates freely and in the required quantity and that the input temperature is included within 10 and 30°C.
- Check the status of both water hoses (72-68) and corresponding connections.
- If, during the winter time, the welder must be stored up in cool rooms, it is necessary to carefully drain first the cooling circuit to prevent from possible damages caused by frozen water.

ELECTRIC CIRCUIT

- Periodically check ground efficiency.
- Periodically check the power supply cable.
- Periodically check the switch (81) on Items 7034.

EXTRAORDINARY MAINTENANCE

If the welder overheats, check that the duty cycle* is not too high (table 2), the electrode tip diameter is correct (table 2); on water cooled models check that water flow is adequate. Item 7034 is equipped with a thermostatic protection which stops the welder in case of insufficient water. The thermostat does not protect the transformer against work overloading.

If performances are lower than expected check:

- that, when welding, line voltage drop is lower than 15%;
- that the supply cables section is adequate;
- that the electrodes diameter is appropriate for the work to be carried out;
- on item 7034 that the cooling water flows in the required quantity.
- that the set welding force is adequate for the work in process.

SPARE PARTS

The first number of the code has the following meaning:

- 1 standard components widely available from industrial suppliers (e.g. screws, washers, nuts, etc.).
- 2 commercial components which, providing that the same quality parameters are adopted, can be purchased anywhere (filter lubricator regulator units, thyristors, pressure gauges, hoses, switches etc.).
- 3 components manufactured by TECNA.
- 4 components manufactured by TECNA.
- 5 electronic circuits and assemblies manufactured by TECNA.
- 7 assemblies composed of parts belonging to any or all of the above codes but which for the sake of simplicity are available ready-assembled.

All spare parts, standard, commercial or TECNA, are available from TECNA. When ordering please always state: item, code number, quantity, voltage and frequency, the number and year of manufacture. The number followed by an asterisk warns that you must state both voltage and working frequency.

* The duty cycle is the maximum number of welds per minute which the welder can carry out without any damage. It changes according to the spot welder adjustment and it decreases the thicker the pieces to weld are.

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REMEDIES FOR WELDS IMPERFECTIONS

This chapter has been introduced in order to facilitate the troubleshooting of the most common imperfections caused by a wrong adjustment. Notice that each one can be caused by different causes as there are many parameters affecting the welding process. The following table specifically refers to low carbon steel spot welding, but, with the due considerations, it can be useful also for other applications.

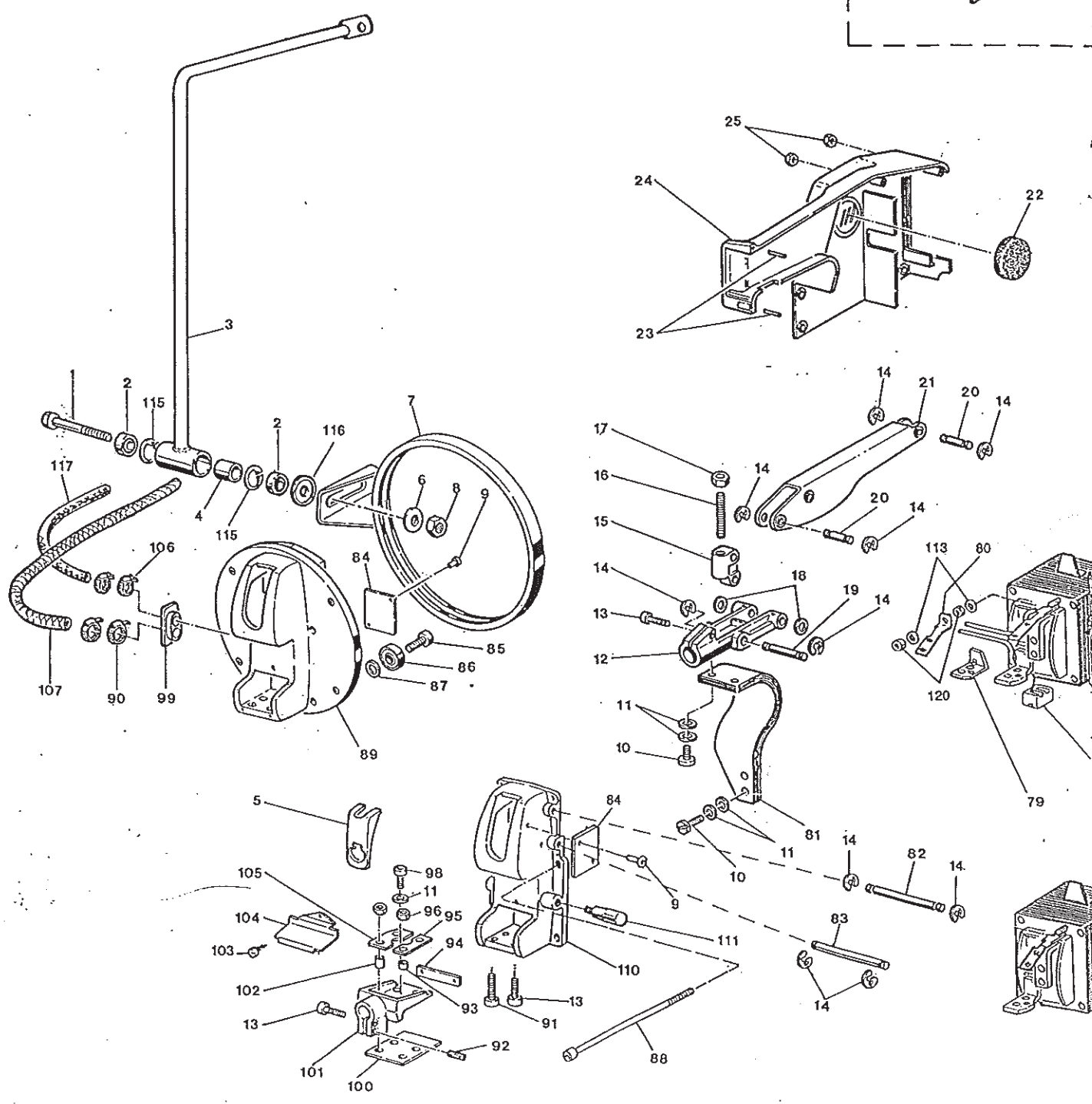
FAULT	POSSIBLE CAUSE	POSSIBLE REMEDY
Weak welding	Low welding current.	Increase it.
	Low welding time.	Increase it.
	Too high electrodes force.	Reduce pressure.
	Lacking electrodes maintenance or too high electrodes diameter.	Clean and line up the electrodes, restore their dimensions.
	Faulty pieces contact.	Increase the electrodes force.
Spatter of melted material	Paint or dirt among pieces.	Clean the pieces.
	Inadequate electrodes cooling.	Check the cooling circuit.
	Faulty pieces contact or pieces and electrodes faulty contact.	Increase the electrodes force by increasing pressure.
	Too high welding current.	Reduce it.
	Too high welding time.	Reduce it.
	Too small electrodes diameter.	Adjust diameter to the value shown on the table.
	Inadequate welding force.	Increase pressure.
	Electrodes faulty clamping of the pieces.	Check stroke.
Burned welds or welds showing either craters or fissures.	Too high welding current.	Reduce it.
	Inadequate welding force.	Increase welding pressure.
	Oxidised pieces to weld.	Clean them by means of emery paper.
	Faulty pieces contact or pieces and electrodes faulty contact.	Increase electrodes force.
	Faulty pieces lining up.	Correct it.
	Electrodes tips deformations.	Restore them to the correct seize.
Pieces stuck weld on the electrode	Too high welding current.	Reduce it.
	Inadequate electrodes diameter.	Restore it to the correct dimensions
	Inadequate welding force.	Increase the welding pressure.
Electrodes and connections reduced life (position 81)	Under-seized electrode in comparison with the work to carry out.	Check both seize and contact diameter.
Secondary connection reduced life and oxidation.	Heating caused by an inadequate clamping of the flexible connection.	Carefully tighten the clamping screws.
	Too high heating caused by a too high welding rate.	Reduce it.

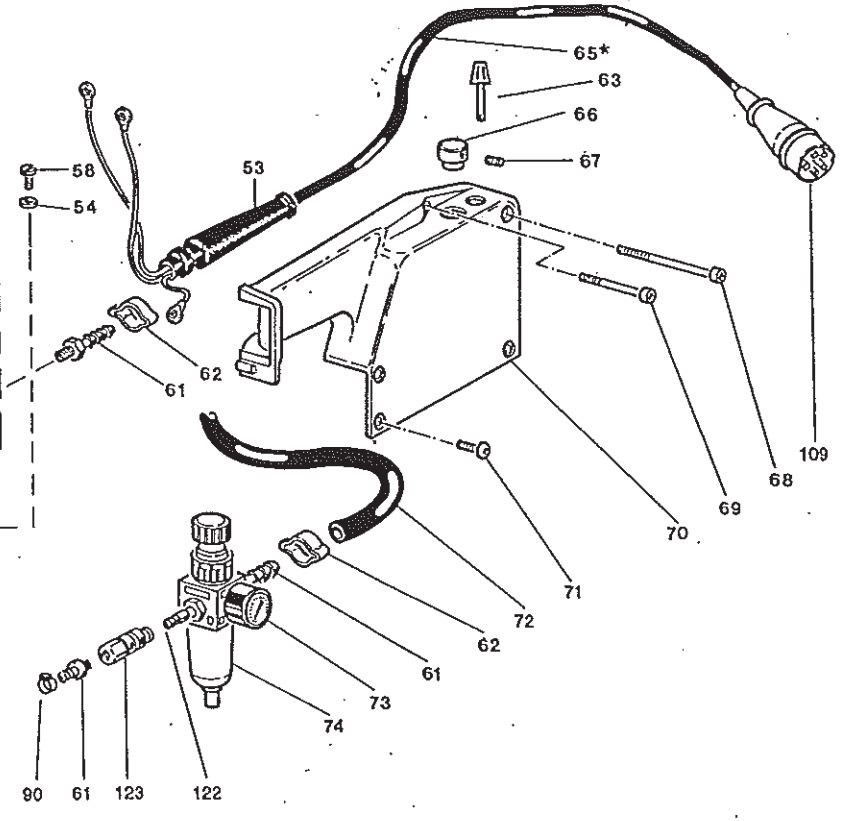
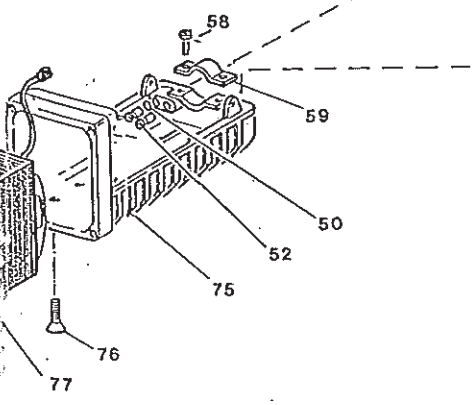
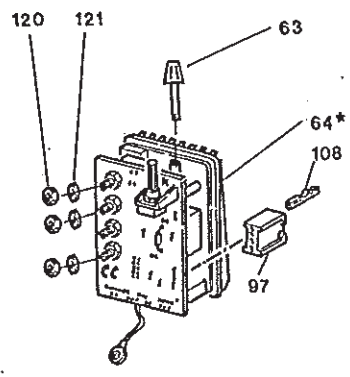
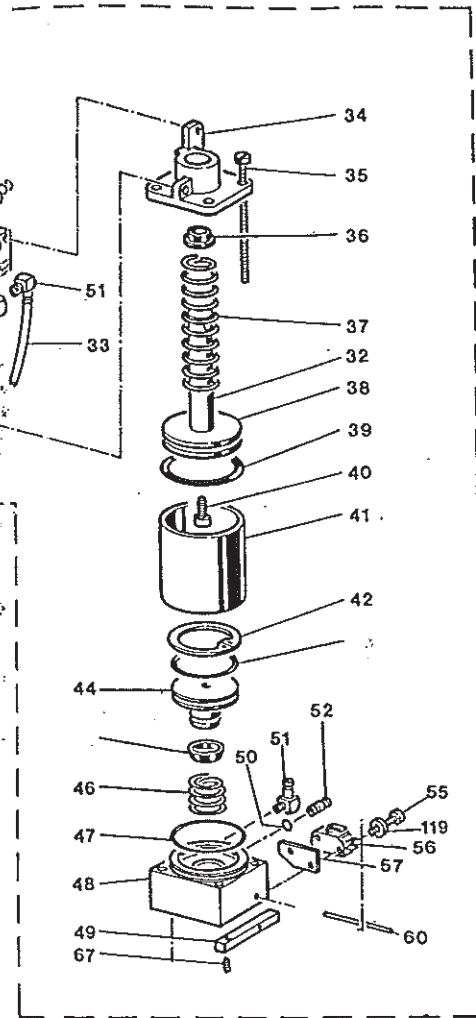
7911	7913	7915	POS.	QT.	CODICE	DENOMINAZIONE	DENOMINATION	DENOMINATION	DENOMINACION	BEZEICHNUNG
.	.	.	1	1	10087	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	2	2	10319	Cuscinetto	Bearings	Roulements	Cojnetes	Lager
.	.	.	3	1	38044	Sospensione	Suspension	Suspension	Suspension	Kreiselauflangung
.	.	.	4	1	31369 31370	Boccola	Bush	Bague	Casquillo	Büchse
.	.	.	5	1	44450	Protezione	Protection	Protection	Proteccion	Schutz
.	.	.	6	1	10090	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	7	1	44002	Anello	Ring	Bague	Aro	Ring
.	.	.	8	1	10425	Dado	Nut	Ecrou	Tuerca	Mutter
.	.	.	9	2	10416	Rivetti	Rivets	Rivets	Remaches	Nieten
.	.	.	10	4	10660	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	11	9	10008	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	12	1	38021	Porta braccio	Arm-holder	Porte-bras	Portabrazo	Armhalter
.	.	.	13	4	10023	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	14	10	10054	Anelli di fermo	Circlips	Bague de tenue	Anillos elasticos	Feststellringe
.	.	.	15	1	30126	Biella	Rod	Bielle	Biela	Pleuelstange
.	.	.	16	1	10083	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	17	1	10369	Dado	Nut	Ecrou	Tuerca	Mutter
.	.	.	18	2	30097	Isolanti	Insulators	Isolants	Aislante	Isolierer
.	.	.	19	1	30071	Asse	Axe	Axe	Eje	Achse
.	.	.	20	2	30042	Assi	Axes	Axes	Ejes	Achsen
.	.	.	21	1	30124	Leva	Lever	Levier	Leva	Hebel
.	.	.	22	1	31265	Silenziatore	Silencer	Silencieux	Silenciador	Stossdampfer
.	.	.	23	2	10285	Spine	Pins	Goupilles	Clavijas	Stifte
.	.	.	24	1	49158	Impugnatura	Handle	Polgnee*	Empunadura	Griff
.	.	.	25	2	10158	Dadi	Nuts	Ecrous	Tuercas	Muttern
.	.	.	26	1	38642	Pulsante	Push-button	Poussoir	Pulsador	Knopf
.	.	.	27	1	31266	Perno	Pin	Tourillon	Perno	Stift
.	.	.	28	1	20585	Raccordo	Connection	Raccord	Racord	Anschluss
.	.	.	29	1	20077	Distributore	Distributor	Distributeur	Distribuidor	Verteller
.	.	.	30	2	10311	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	31	2	10277	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	32	1	30248	Stelo	Stem	Tige	Vastago	Spindel
.	.	.	33	m.0,5	20588	Tube	Tube	Tuyau	Tube	Schlauch
.	.	.	34	1	38583	Supporto	Support	Support	Soporte	Halter
.	.	.	35	4	10501	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	36	1	30127	Boccola	Bushing	Douille	Casquillo	Bochse
.	.	.	37	1	31245	Molla	Spring	Ressort	Muelle	Feder
.	.	.	38	1	30118	Pistone	Piston	Piston	Piston	Kolben
.	.	.	39	1	10080	O Ring	O Ring	O Ring	Aro	O-Ring
.	.	.	40	1	10028	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	41	1	31247	Cilindro	Cylinder	Verin	Cilindro	Zylinder
.	.	.	42	1	10196	Anello di fermo	Circlip	Bague d'arret	Anillo elastico	Feststellring
.	.	.	44	1	30373	Pistone TOR	Piston	Piston	Piston	Kolben
.	.	.	46	1	30381	Molla	Spring	Ressort	Muelle	Feder
.	.	.	47	1	10500	O Ring	O Ring	O Ring	Aro	O-Ring
.	.	.	48	1	44407	Supporto	Support	Support	Soporte	Halter
.	.	.	49	1	31244	Leva	Lever	Levier	Leva	Hebel
.	.	.	50	3	10120	O Ring	O Ring	O Ring	Aro	O-Ring
.	.	.	51	3	20584	Raccordi	Connections	Raccords	Racords	Anschlosse
.	.	.	52	3	20587	Raccordi	Connections	Raccords	Racords	Anschlosse
.	.	.	53	1	30040	Passacavo	Cable guide	Guide du cable	Pasabornes	Kabelschutz
.	.	.	54	1	10065	Rondella	Washer	Rondelle	Arandela	Scheibe
.	.	.	55	2	10195	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	56	1	20000	Microinterruttore	Microswitch	Microinterrupteur	Microinterruptor	Mikroschalter
.	.	.	57	1	30130	Isolante	Insulator	Isolant	Aislante	Isolierer
.	.	.	58	3	10044	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	59	1	31243	Fermacavo	Cable clamp	Serre-cable	Pasabornes	Kabelklemme
.	.	.	60	3	31249	Spina	Pin	Goupille	Clavija	Stift
.	.	.	61	2	30848	Resche	Nippel	Nippel	Pitorro	Nippel
.	.	.	62	2	20401	Fascette	Clamps	Colliers	Abrazaderas	Schellen
.	.	.	63	1	31267	Pomello	Knob	Molette	Pomo	Knopf

7911	7913	7915	POS.	QT.	CODICE	DENOMINAZIONE	DENOMINATION	DENOMINATION	DENOMINACION	BEZEICHNUNG
.	.	.	64*	1	50142	Timer	Timer	Temporisateur	Temporizador	Zeitgeber
.	.	.	64	1	50143	Timer/Pulse	Timer/P	Timer/P	Timer/P	Timer/P
.	.	.	65	1	20060*	Cavo aliment. m. 4	Mains cable 4 m	Cable reseau 4 m	Cable alimentacion 4 m	Anschlusskabel 4 m
.	.	.	66	1	31264	Manopola	Knob	Molette	Mango	Griff
.	.	.	67	2	10463	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	68	1	10498	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	69	1	10497	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	70	1	49159	Impugnatura	Handle	Poignee	Empunadura	Griff
.	.	.	71	6	10326	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	72	m 4	20101	Tubo aria	Air hose	Tuyau air	Tubo de aire	Luftschlauch
.	.	.	73	1	20229	Manometro	Pressure gauge	Manometre	Manometro	Manometer
.	.	.	74	1	20070	Filtro riduttore	Filter unit	Filtre detendeur	Filtro reductor	Druckreduzierfilter
.	.	.	75	1	47212	Calotta posteriore	Back housing	Carter posterieur	Carcasa posterior	Hinteres Gehäuse
.	.	.	76	4	10066	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	77	1	44426*	Trasformatore	Transformer	Transformateur	Transformador	Transformator
.	.	.	78	1	31250	Bobina	Coil	Bobine	Bobina	Spule
.	.	.	79	1	30090	Fermo	Stop	Arret	Tope	Feststeller
.	.	.	80	1	32419	Connessione	Connection	Connexion	Conexion	Anschluss
.	.	.	81	1	38022	Connessione	Connection	Connexion	Conexion	Stromband
.	.	.	82	1	30160	Asse	Axe	Axe	Eje	Achse
.	.	.	83	1	32426	Asse	Axe	Axe	Eje	Achse
.	.	.	84	1	32416	Targa	Plate	Plaque	Tarjeta	Schild
.	.	.	85	4	10028	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	86	4	10088	Cuscinetti	Bearings	Roulements	Cojinetes	Lager
.	.	.	87	4	10024	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	88	4	10013	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	88	4	10060	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	89	1	49142	Calotta anteriore	Front housing	Carter avant	Carcasa anterior	Vorderes Gehäuse
.	.	.	90	2	20033	Fascette	Circlips	Circlips	Abrazadera	Schellen
.	.	.	91	2	10147	Viti	Screws	Vis	Tornillos	Schrauben
.	.	.	92	1	10101	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	93	2	30075	Isolanti	Insulators	Isolants	Aislantes	Isolierer
.	.	.	94	1	30078	Isolante	Insulator	Isolant	Aislante	Isolierer
.	.	.	95	1	30076	Isolante	Insulator	Isolant	Aislante	Isolierer
.	.	.	96	4	10009	Dadi	Nuts	Ecrous	Tuercas	Muttern
.	.	.	97	1	20451	Connettore	Connector	Connecteur	Conector	Anschluss
.	.	.	98	1	10059	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	99	1	30159	Isolante	Insulator	Isolant	Aislante	Isolierer
.	.	.	100	1	30079	Isolante	Insulator	Isolant	Aislante	Isolierer
.	.	.	101	1	38020	Portabraccio	Arm holder	Porte-bras	Portabrazo	Armhalter
.	.	.	102	2	30074	Isolanti	Insulators	Isolants	Aislantes	Isolierer
.	.	.	103	1	10061	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	104	1	30070	Protezione	Protection	Protection	Proteccion	Schutz
.	.	.	105	1	30088	Isolante	Insulator	Isolant	Aislante	Isolierer
.	.	.	106	2	20080	Fascette	Clamps	Colliers	Abrazadera	Schellen
.	.	.	107	m 9	20082	Tubo	Tube	Tuyau	Tubo	Schlauch
.	.	.	108	4	20452	Contatti	Contacts	Contacts	Contactos	Kontakte
.	.	.	109	1	***	Spina	Plug	Fiche	Enchufe	Stecker
.	.	.	110	1	44171	Calotta	Housing	Carter	Carcasa	Gehaose
.	.	.	110	1	44847	Calotta	Housing	Carter	Carcasa	Gehaose
.	.	.	111	1	20002	Impugnatura	Handle	Poignee	Empunadura	Griff
.	.	.	112	1	10316	Vite	Screw	Vis	Tornillo	Schraube
.	.	.	113	2	10804	Rondelle	Washers	Rondelles	Arandelas	Scheibe
.	.	.	114	1	10483	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	115	2	10654	Anello	Ring	Bague	Aro	Ring
.	.	.	116	1	31370	Rondella	Washer	Rondelle	Arandela	Scheibe
.	.	.	117	m 0,35	20081	Tubo acqua	Water cable	Tuyau eau	Tubo	Wasserschlauch
.	.	.	118	1	44341*	Trasformatore	Transformer	Transformateur	Transformador	Transformator
.	.	.	119	2	10148	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	120	5	10627	Dadi	Nuts	Ecrous	Tuercas	Muttern
.	.	.	121	3	10098	Rondelle	Washers	Rondelles	Arandelas	Scheiben
.	.	.	122	1	21234	Innesto	Coupling	Raccord	Racord	Einsatz
.	.	.	123	1	21233	Rubinetto automatico	Automatic tap	Robinet automatique	Valvula automatica	Autom. hahn
.	.	.		1	70231	Cilindro completo	Complete cylinder	Vérin complet	Cilindro completo	Zylinder kompl.

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70231





Tab. 1

Sezione della linea e dei fusibili
 Size of mains cables and fuses required
 Action des câbles de l'installation et fusibles
 Querschnitt der Leitung und Schmelzsicherungen
 Sección de la línea y fusibles

Distanza contatore / puntatrice Distance electric metric / spot welder Distance compteur / soudeuse par points Abstand Distancia contador / maquina	Tensione di alimentazione Power supply Tension d'alimentation Anschlußspannung Tensión de alimentación	
	230 Volt *	400 Volt *
15 m - 45 feet 25 m - 30 yards 60 m - 66 yards	4 mm ² 6 mm ² 10 mm ²	2.5 mm ² 4 mm ² 6 mm ²
Spina - Plug - Fiche - Enchufe - Stecker	25 A	16 A
Fusibili - Fuses - Fusibles - Sicherungen - Fusibles	25 A	16 A
Fusibili ritardati - Delayed fuses - Fusibles à grande Inertie - Verzögerte Sicherungen - Fusibles retardados	20 A	12 A
Interruttore magnetotermico - Earth leakage switch - Disjoncteur magnétothermique - FI-Schutzschalter - Interruptor magneto-térmico	25 A	20 A

* Solo se non è disponibile un conduttore di fase e con disponibilità di potenza elevata.
 Only if a phase conductor is not available and you have the necessary power.
 Seulement si un conducteur de phase n'est pas disponible et il y a la disponibilité d'une puissance élevée.
 Nur wenn keine Phasenleitung vorhanden ist und bei hohem Leistungsvermögen.
 En caso de conexión entre fase y neutro siempre que sea disponible la potencia necesaria.

La tensione di allacciamento deve corrispondere a quella della puntatrice.
 The mains voltage must correspond to that of the spot welder.
 La tension d'alimentation doit être la même que celle de la soudeuse par points.
 Die Netzspannung muss der Spannung der Punktschweißanlage entsprechen.
 La tensión de alimentación debe corresponder a la de la máquina.

Fig. 4

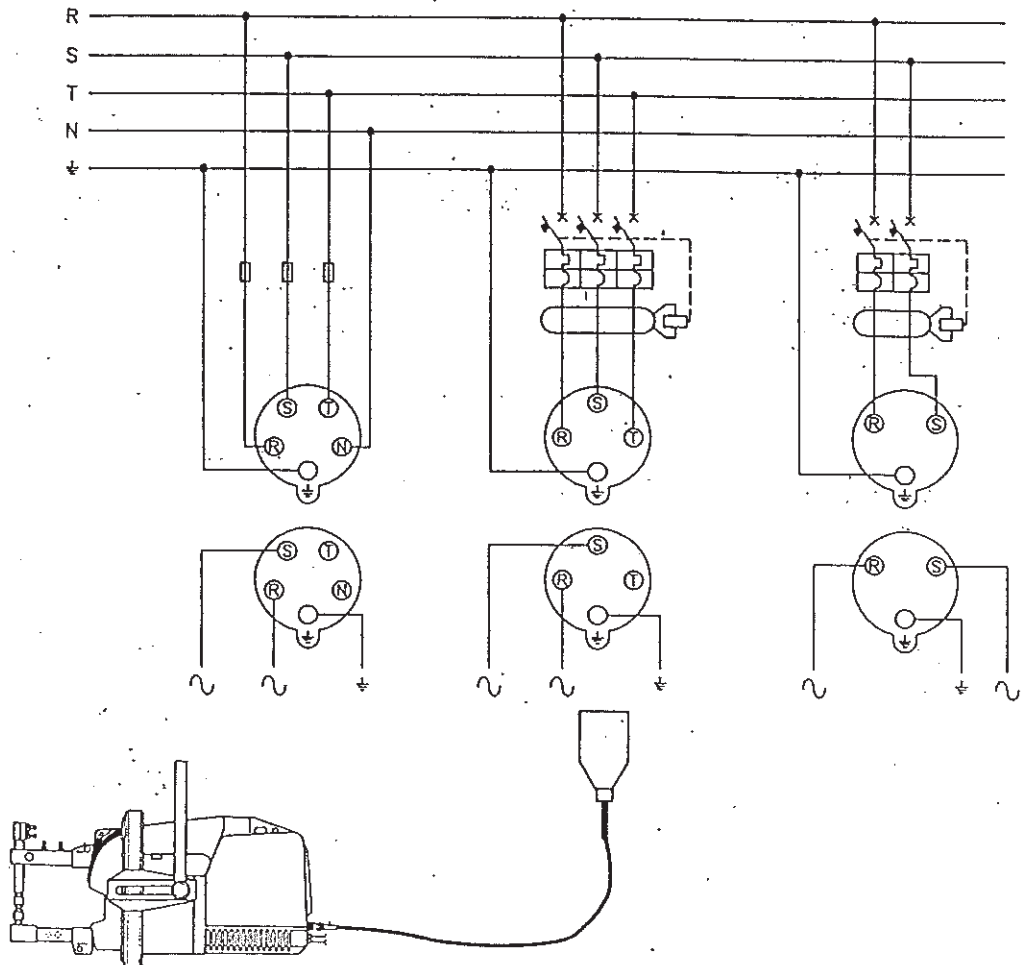


Tabella utile per le prestazioni e regolazioni della puntatrice / Tables useful for performances and adjustments of the spot gun / Tableaux utiles pour les prestations et les réglages de la pince à souder / Tabellen für Leistung und Einstellung der Punktschweißanlage / Tablas útiles para las prestaciones y regulaciones de la pinza

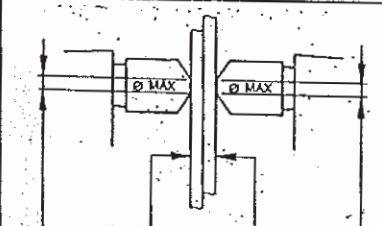
Tab. 2

Forza agli elettrodi per differenti lunghezze di bracci e diverse pressioni di lavoro
 Force on electrodes for different arms lengths and different working pressures
 Force aux électrodes pour des longueurs différentes de bras et des pressions de travail différentes
 Elektrodendruck bei verschiedenen Armlängen und verschiedenen Arbeitsdrücken
 Fuerza entre electrodos para diferentes longitudes de brazos y diversas prestaciones de trabajo

Forza agli elettrodi con bracci - avec bras with arms - mit Armen - con brazos	Electrodes force	Effort aux électrodes	Elektrodenkraft	Fuerza entre electrodos	
		150 mm	250 mm	350 mm	500 mm
Pressione aria compressa - Air pressure Pression air comprimé - Druckluft - Presion aire comprimido					
bar = 6,5	135	120 da N	80 da N	58 da N	42 da N
bar = 6	125	110 da N	72 da N	54 da N	38 da N
bar = 5	105	92 da N	60 da N	44 da N	32 da N
bar = 4	85	73 da N	48 da N	36 da N	25 da N
bar = 3,5	75	64 da N	42 da N	31 da N	---
bar = 3	62	55 da N	36 da N	27 da N	---
bar = 2,5	52	46 da N	30 da N	---	---

Tab. 3

Esempi di saldatura / Welding examples / Exemples de soudage / Schweißbeispiele / Ejemplos de soldadura

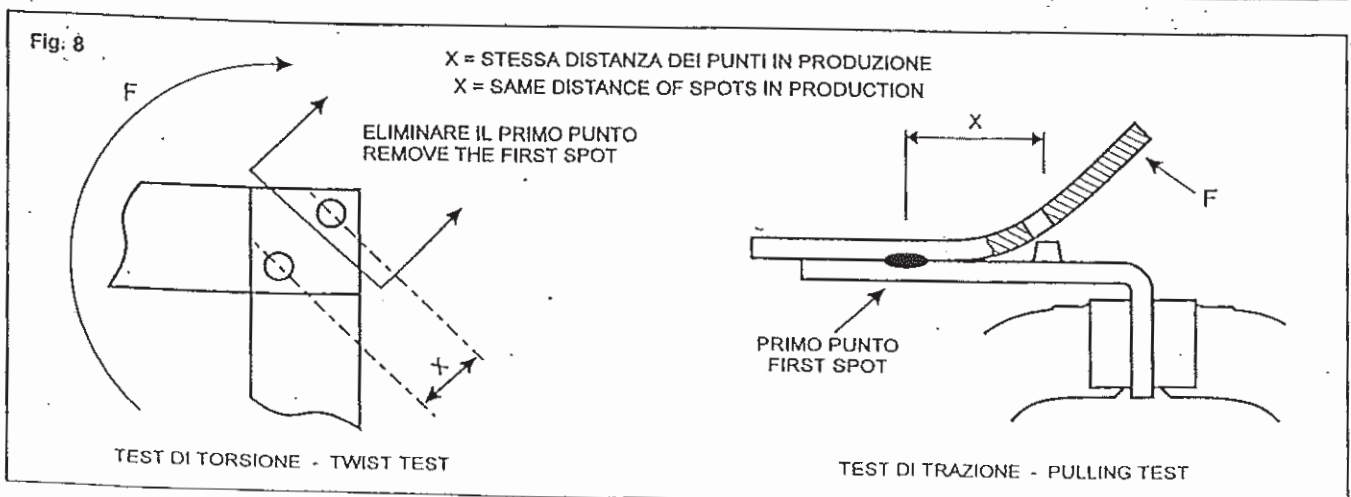
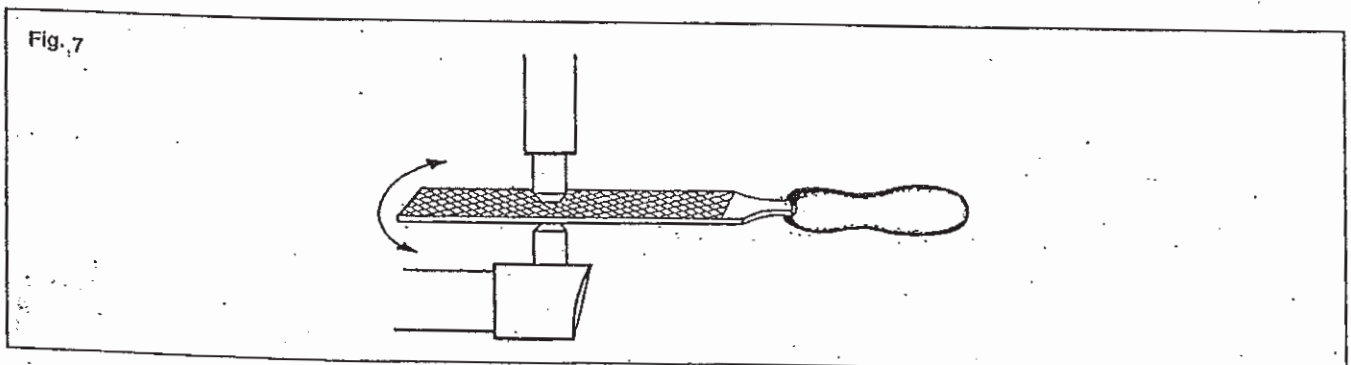
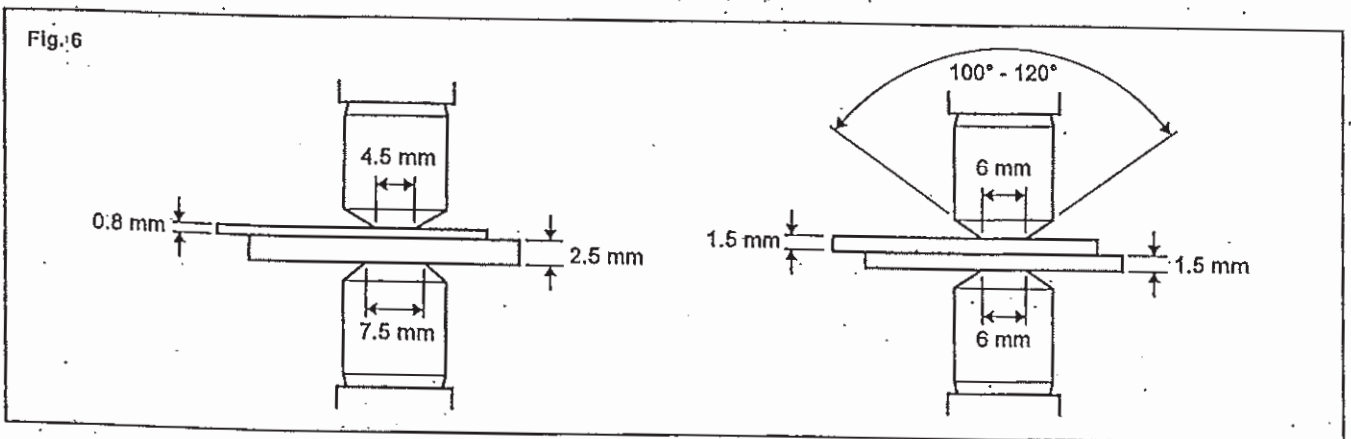
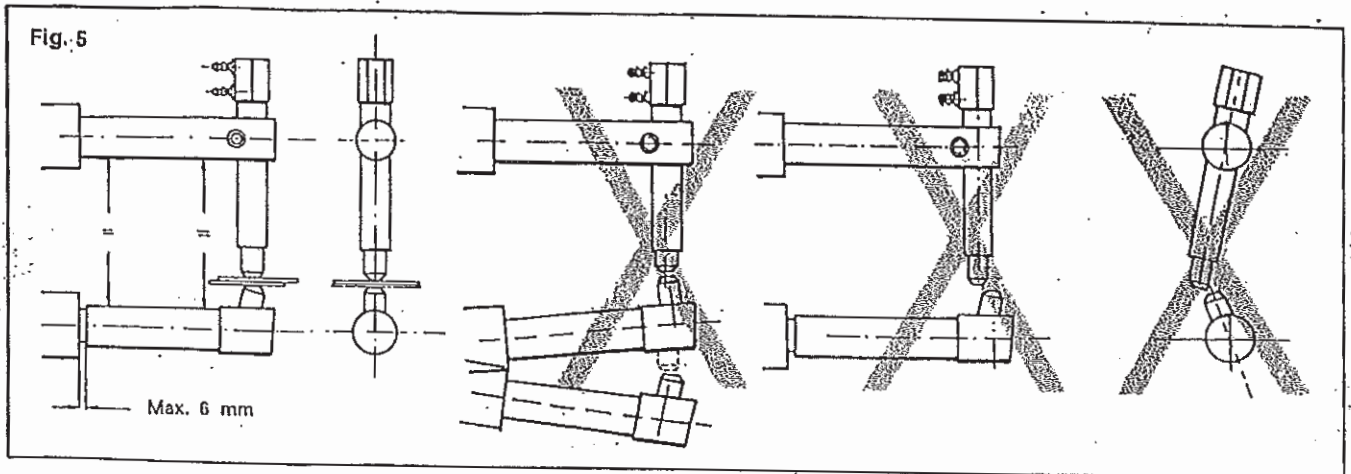
				Lunghezza bracci Throat depth Profondeur util Länge der Arme Longitud brazos	Tempo saldatura Welding times Temps de soudage Schweißzeiten Tiempo soldadura	Forza elettrodi Electrodes force Effort aux électrodes Elektrodenkraft Fuerza entre electrodos	Pressione Pressure Pression Druck Presión	Punti/min. Spots/min. Points/min. Schweißpunkte pro min. Puntos/min.		
Ø MAX	Ø MAX	Ø MAX	Ø MAX		cicli/cycles		bar	KPa	7911	7913-7915
3,5 mm	0,6 mm	0,6 mm	3,5 mm	150 mm	4	64 da N	3,5	350	10	44
4 mm	0,8 mm	0,8 mm	4 mm	150 mm	6	73 da N	4	400	6	35
4,5 mm	1 mm	1 mm	4,5 mm	150 mm	14	82 da N	4,5	450	5	25
5,5 mm	1,5 mm	1,5 mm	5,5 mm	150 mm	20	110 da N	6	600	2	13
6 mm	1,8 mm	1,8 mm	6 mm	150 mm	50	120 da N	6,5	650	2	12
4 mm	0,8 mm	0,8 mm	4 mm	250 mm	8	60 da N	5	500	6	35
4,5 mm	1 mm	1 mm	4,5 mm	250 mm	10	72 da N	6	600	5	25
5,5 mm	1,5 mm	1,5 mm	5,5 mm	250 mm	55	80 da N	6,5	650	11	10
4,5 mm	1 mm	1 mm	4,5 mm	350 mm	25	54 da N	6	600	10	22
4,5 mm	1 mm	1 mm	4,5 mm	500 mm	40	42 da N	6	600	10	20
12	Ø 5	Ø 5	12	150	12	92 da N	5	500	8	40
12	Ø 6	Ø 6	12	150	30	110 da N	6	600	10	15

Tab. 4

Capacità massima di saldatura su acciaio dolce
 Maximum welding capacity on mild steel
 Capacité de soudage maxi, sur acier doux
 Max. Schweißleistung bei Stahlblech
 Capacidad máxima de soldadura en acero dulce

Lunghezza bracci Arms length Longueur bras Ausladung Arme Longitud brazos	Forza massima agli elettrodi Max. force on electrodes Effort max. aux électrodes Max. Elektrodenkraft Fuerza máxima entre electrodos	Apertura elettrodi Electrodes opening Ouverture électrodes Öffnung der Elektroden Apertura electrodos	Spessore massimo Max. thickness Epaisseur maximum Max. Materialstärke Espesor máximo
mm	da N	mm	mm
125	125	35	2 + 2
150	120	40	2 + 2
250	80	60	1,8 + 1,8
350	58	75	1,5 + 1,5
500	42	90	1,2 + 1,2

Messa a punto della puntatrice - Adjusting the spot welder - Réglage de la soudeuse par points -
Einstellung der Punktschweißzange - Puesta a punto de la pinza

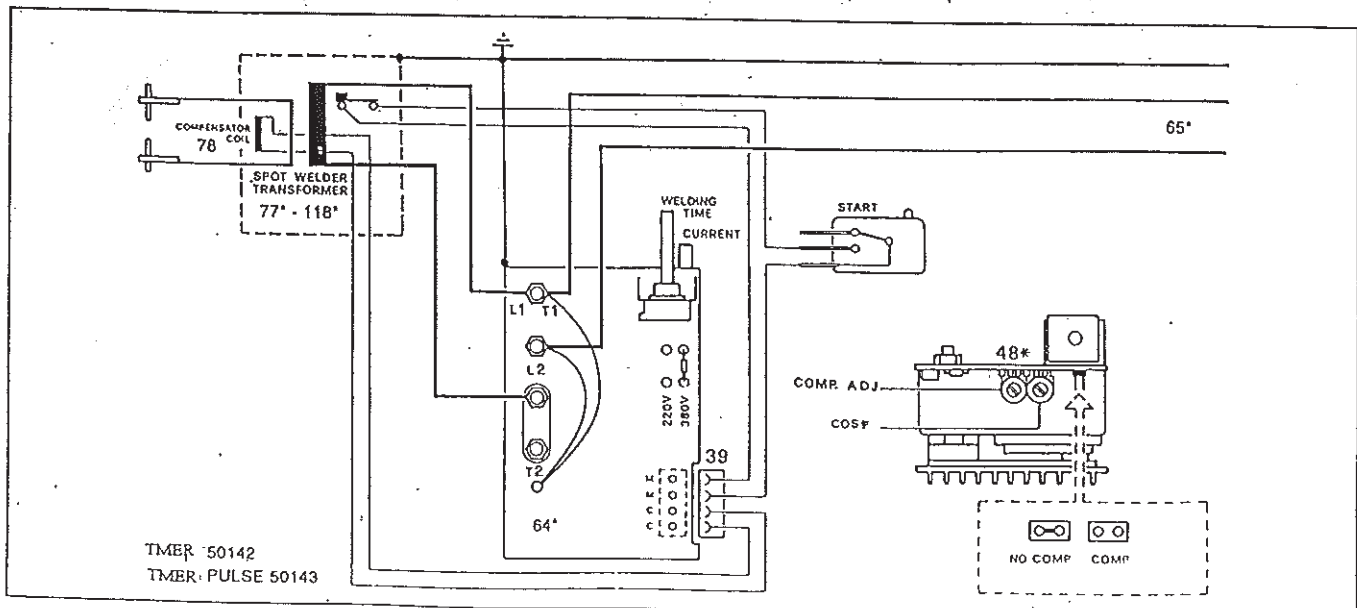


Tab. 5

Cadenza massima di lavoro / Maximum spots per minute / Cadence maxi. de travail / Max. Arbeitstakt / Cadencia maxima de trabajo

Spessore mm Thickness mm Epaisseur mm Materialstärke mm Espesor mm	Cadenze punti/minuto Spots/min Cadence points/min Schweißpunkte pro min Cadencia, puntos/mm		Ø del punto mm Spots Ø mm Ø points mm Ø Schweißpunkte mm Ø del punto mm
	7910-7911	7912-7913	
0.6 + 0.6	10	44	3.5
0.8 + 0.8	6	35	4
1 + 1	5	25	4.5
1.2 + 1.2	4	18	5
1.5 + 1.5	2	13	5.5
1.8 + 1.8	2	12	6
Ø 5 + 5	8	40	—
Ø 6 + 6	3	15	—

- Schema elettrico / Wiring diagram / Schéma électrique / Schaltplan / Esquema eléctrico



Art. 7401 L=125 mm
 Art. 7402 L=250 mm
 Art. 7403 L=350 mm
 Art. 7404 L=500 mm
 Art. 7405 L=650 mm
 Art. 7451 Ø 12 ▲

Art. 7463
 Ø 12 mm ▲

Art. 7462 Ø 12

Art. 7406 L=350 mm
 Art. 7407 L=500 mm
 Art. 7453 Ø 12 elettrodo inferiore/lower electrode/
 electrode inférieure/untere Elektrode/electrodo inferior
 Art. 7454 Ø 12 elettrodo superiore/upper electrode/
 électrode supérieure/obere Elektrode/electrodo superior

Art. 7516
 Art. 7523 Ø 10

Art. 7510
 Art. 7533
 Ø 10 + Ø 12 ▲

Art. 7301 L=105 mm
 Art. 7302 L=230 mm
 Art. 7303 L=330 mm
 Art. 7304 L=480 mm

Art. 7351
 Art. 5740

Art. 7308 L=105 mm
 Art. 7312 L=230 mm
 Art. 7305 L=330 mm

Art. 5740 ■ Art. 5741 ■ Art. 5742 ■ Art. 5743 ■ Art. 5744 ■

Art. 7307

Art. 3830 ▲ Art. 3831 ▲ Art. 3833 ▲ Art. 3834 ▲ Art. 3835 ■

Art./item 7512 L=150 mm
 Art./item 7513 L=250 mm
 Art./item 7514 L=350 mm
 Art./item 7515 L=500 mm

con elettrodi 3830
 with electrodes 3830
 avec électrodes 3830
 mit Elektroden 3830
 con electrodos 3830

Art. 3830 ▲ Art. 3831 ▲ Art. 3833 ▲ Art. 3834 ▲ Art. 3835 ■

240
 580
 215
 22
 Ø15
 Ø12
 94
 520

▲ Coppia di elettrodi / ▲ Pair of electrodes / ▲ Paire d'électrodes / ▲ Elektrodenpaar / ▲ Par de electrodos.

■ Elettrodo / ■ Electrode / ■ Électrode / ■ Elektrode / ■ Electrodo.

**DICHIARAZIONE DI CONFORMITÀ
DECLARATION OF CONFORMITY
CERTIFICAT DE CONFORMITE
KONFORMITÄT SERKLÄRUNG
CERTIFICADO DE CONFORMIDAD**

Nome e indirizzo del costruttore
Name and address of manufacturer
Nom et adresse du constructeur
Name und Adresse des Herstellers
Nombre y dirección del constructor

TECNA S.P.A.
Via Grieco 25/27
40024 Castel S. Pietro Terme (BO)
ITALIA

Dichiariamo sotto la nostra unica responsabilità che il prodotto
We declare under our sole responsibility for manufacture of the product
Nous déclarons sous notre seule responsabilité que le produit
Wir erklären unter einziger Verantwortung, dass das Produkt
Certificamos bajo nuestra sola responsabilidad que el producto

SALDATRICE A RESISTENZA
RESISTANCE WELDER
SOUDEUSE PAR RESISTANCE
WIDERSTANDSSCHWEISSMASCHINE
EQUIPO DE SOLDADURA POR RESISTENCIA

Modello Model Modèle Type Modelo
Numero di serie Serial number Nombre de sérial
Serien-Nummer Número de serie

7911/7911P - 7913/7913P - 7915/7915P
da/from/de/von/de 02000
a/to/à/bis/a 03999

A cui si riferisce la presente dichiarazione è conforme al seguente standard:
To which this declaration relates is in conformity with the following standard:
Auf die sich die gegenwärtige Erklärung bezieht, mit folgendem Standard: EN 50063
Objet de certificat, est conforme à la norme suivante:
Objeto de este certificado, es conforme a la norma siguiente:

Ai sensi delle direttive CEE:
Following the provisions of EEC Directives:
Conforme aux prescriptions des Directives CEE:
Gemäss CCE-Normen übereinstimmt:
Conforme a las prescripciones y directivas de la CEE:

98/37/EEC

Nome e firma della persona autorizzata
Name and signature of authorised person
Nom et signature de personne autorisée
Name und Unterschrift der autorisierten Person:
Nombre y firma de la persona autorizada


Ezio Amadori

CASTEL S. PIETRO T. 07/03/2001

PUNTATRICE PUNKTSCHWEISSZANGE	SPOT WELDER PINZA DE SOLDADURA	PINCE A SOUDER	ART. ITEM	<input type="text"/>
N° MATRICOLA SERIEN-NR.	SERIAL NUMBER MATRICULA	NUMERO DE SERIE		<input type="text"/>
VOLT	/	Hz		<input type="text"/>
COLLAUDO PRÜFPROTOKOLL	TEST PRUEBA	ESSAI		<input type="text"/>