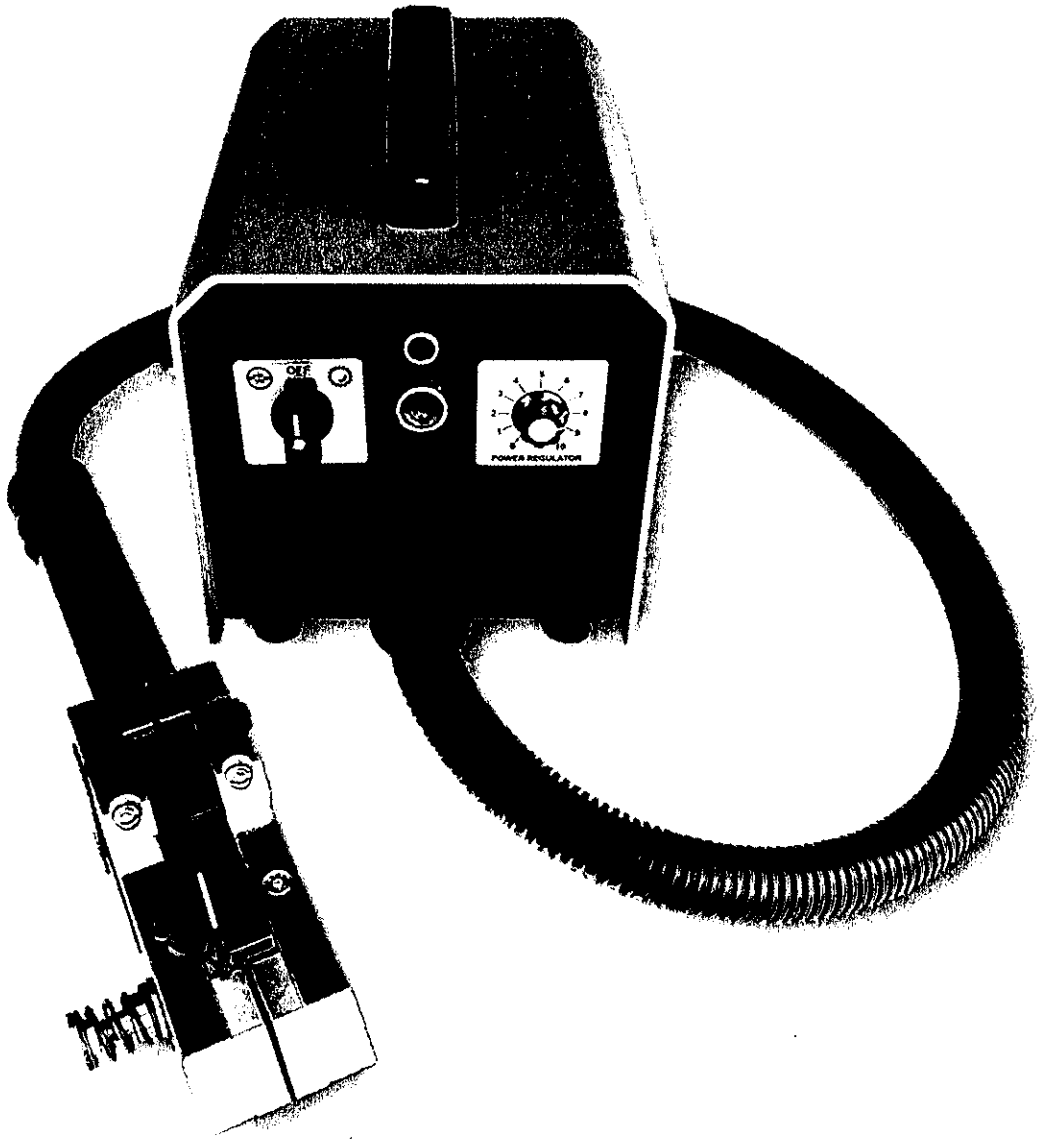
バット溶接機　1φ 100/110V 仕様取扱説明書



USER AND MAINTENANCE MANUAL

English translation from the original Italian language text

This manual is an integral part of the equipment and it should be kept in a proper manner to maintain its integrity and allow the consultation during the lifetime of the equipment the equipment.

Carefully consult this manual before carrying out any operation on the appliance

株式会社トーキン

Manual code : 150922

CONTENTS

1. GENERAL INFORMATION

Thank you for the preference you have given us with the purchase our butt-welding machine. Please follow the instructions contained in this manual, this will be of great help for the optimal use and to maintain over time the features of your equipment.

This manual forms an integral part with the equipment supplied and constitutes the indispensable support for proper use.

The manual must accompany the equipment in case of resale.

1.1 Definitions and symbols

Below is a set of definitions, terminology and symbols used in this manual

NOTE
Important information that must be read with particular attention for the best use of the equipment

DANGER
Situation that could cause injury or death, or serious damage to health.

ATTENTION
Situation that could cause damage, directly or indirectly, to people, to property and to the environment with also economic consequences

WARNING
Follow with particular attention the instructions. Possibility of malfunction or danger or damage.

1.2 MANUFACTURER IDENTIFICATION

The following illustration is an example the label, it is attached at the back of the machine, in fig. 1.2.1. it is shown an example of data plate

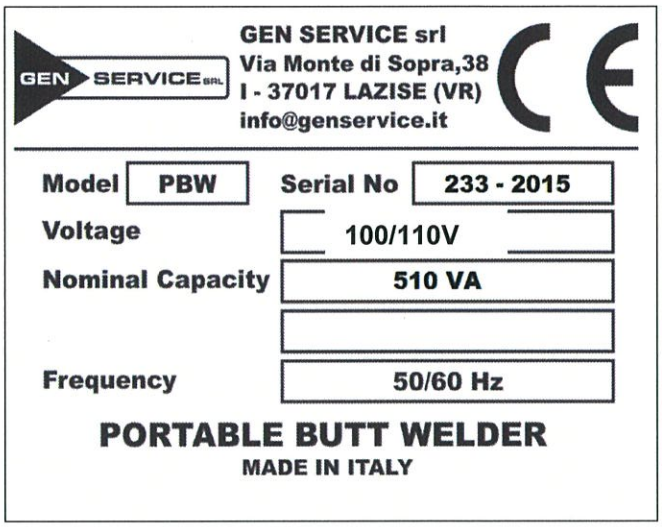


Fig. 1.2.1

Removing or tampering with the equipment identification label is absolutely forbidden.
In case of accidental damage, immediately contact the manufacturer to request a duplicate.

1.3 INFORMATION ABOUT TECHNICAL SUPPORT AND MAINTENANCE

In case of failure or defective functioning, contact the Service Center:

GEN SERVICE srl
Via Monte di Sopra, 38
37017 LAZISE (VR)-ITALY

Phone/Fax +39 045 6470864
e-mail: info@genservice.it

For communications or any request for information or for spare parts, send to the service center the form: "REPLACEMENT ORDER, FAILURE REPORTS, REQUEST FOR INFORMATION" that can be found in paragraph 8.

In order to maintain the warranty, strictly follow the instructions indicated on this manual. Failure to comply with the requirements and instructions contained in this manual will waive GEN SERVICE liability for malfunctions and damage to the equipment or to third parties. (carefully read the warranty attachment).

In order to meet new technological improvements or specific production requirements, the Manufacturer reserves the right to make changes to the equipment without notice and without incurring in any obligation to upgrade former models and their manuals. Even if the illustrations in this manual slightly differ from your equipment, safety and operating instructions are guaranteed.

2. FEATURES AND TECHNICAL INFORMATION

Features and technical information	**50/60 Hz**
Supply voltage input:	**100/110V**
Electrical power:	**0,6 KVA**
Secondary no load voltage[1]:	**2,6 V~**
Overload protection:	**Single-pole thermal switch**
Operating environment:	
□ Temperature:	**10 °C – 50 °C**
□ Relative humidity:	**10 - 85% non condensing**
□ Atmospheric pressure (atm):	**0,7 ÷1,04**
Storage conditions:	
□ Temperature:	**-20÷ 50 °C**
□ Relative humidity:	**≤95% non condensing.**
Equipment classification for electrical hazards:	**Class I**
Casing protection degree:	**IP40[2]**
Weldable material	**Steel** **Φ 0,8 ÷ 2 mm**
Equipment weight	**13 Kg**
Power distribution System	**TT – TN**

1.4 REFERENCE TO NORMATIVES

The legislative references applied to the construction of the equipment are:

- □ **2006/95/EC LVD directive**
- □ **2011/65/CE RoSH2 directive**

National and harmonized technical standards applied for the respect of legislative references are:

- □ **EN 62135-1 (2008-11)**
- □ **50581 (2012-09)**

[1] The Voltage is measured between the electrodes, when the secondary circuit is open and when is applied to the welding the nominal supply voltage. The secondary voltage is supplied by a safety insulating transformer (EN 61558-2-6).

[2] Equipement for indoor use

3. GENERAL DESCRIPTION

The butt welder PWB is capable of welding steel wires with a diameter ranging between 0.8 and 2 mm. The weld power adjustment for the various diameters can be effected by adjusting the welding current with the two-position switch (1 = normal, 2 = maximum power - see section "operating instructions for a detailled description of this feature).

The materials and technologies employed in its construction, contribute to make the butt welder PBW extremely safe during normal use. In particular it is equipped with a safe transformer with total separation between the primary and the secondary winding, in accordance with EN 61558-2-6. The voltage applied to the welding wire electrodes is of a type SELV (safety extra-low voltage).

1.5 Controls to be carried out upon receipt of the equipment

Remove all outer packaging and verify the integrity of the equipment.

In case of damage, missing items or defects, do not attempt to repair the butt welder but promptly contact the service center reporting model, code and serial number of the equipment (see fig. 1.2.1. Data plate label).

1.6 Storage

In the case of no use of the equipment for long periods, protect the unit from dust and moisture.

4. EQUIPMENT FUNCTIONS AND COMMANDS

The proper functioning of the equipment and its safe performance are only guaranteed if it is connected to the electrical system in strict compliance with the local laws and regulations.
Gen Service srl undertakes no responsibility for whatsoever damage to the equipment or to third parties which is resulting from the connection to an installation not conforming with the law and regulations.

Do not use this equipment at locations with presence of explosive atmosphere or explosive or flammable materials.
The welding process is done by melting the material. At the joint and the nearby area, the steel can reach a high temperature (steel fusion temperature) with possible electric shock.

To improve the safety conditions and as a protection against the electrical shock it is recommended to install upstream a differential circuit breaker of a type A with a nominal residual current not exceeding 30 mA.

5. OPERATING INSTRUCTIONS

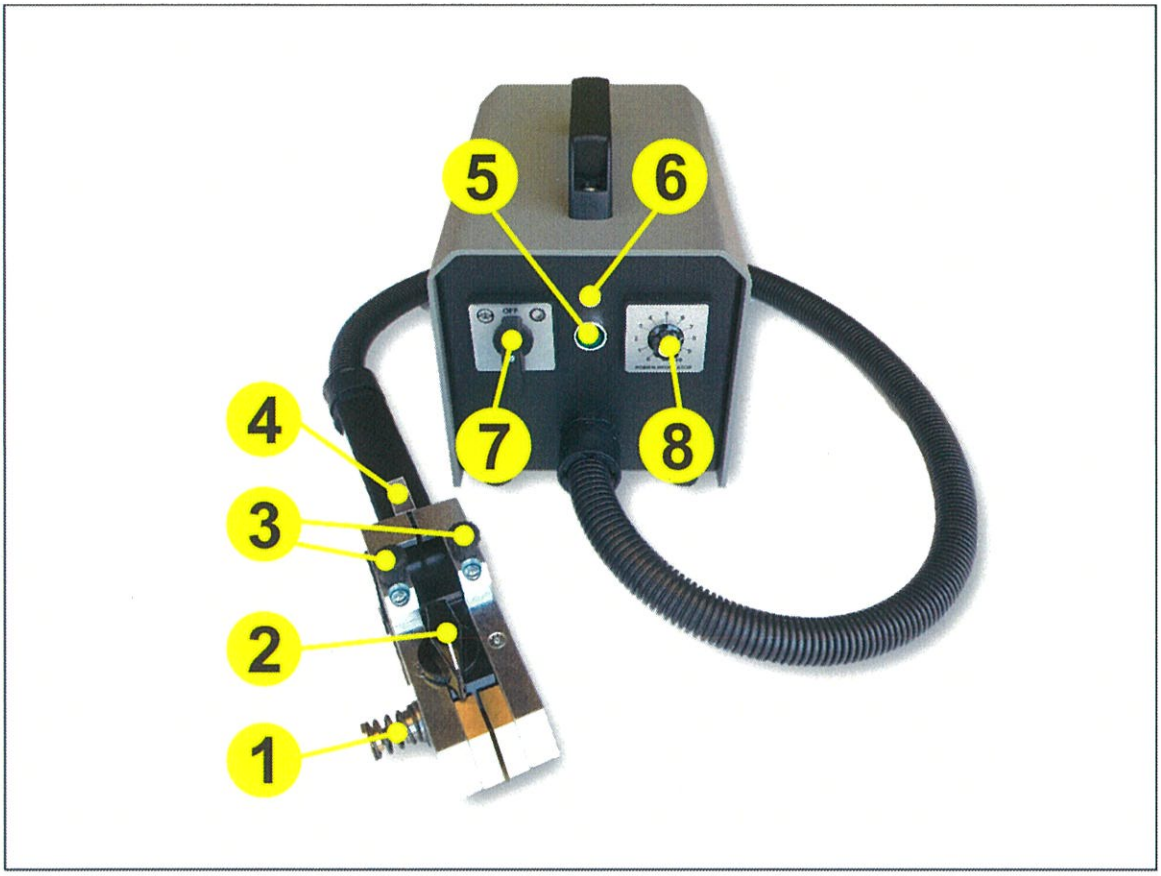


Fig. 4.1.1

Fig. 4.1.1 butt welder description

1. clamp pressure adjustment
2. clamp opening lever
3. locking knobs
4. welding start button

5. function light indicator
   Off: equipment is switched off if switch is in the OFF position
   if the function light remains off with switch in position LEFTor RIGHT it indicates the thermal switch intervention.
   On: function light on indicates that the equipment is ready-to-use (with selector in LEFT or RIGHT position)

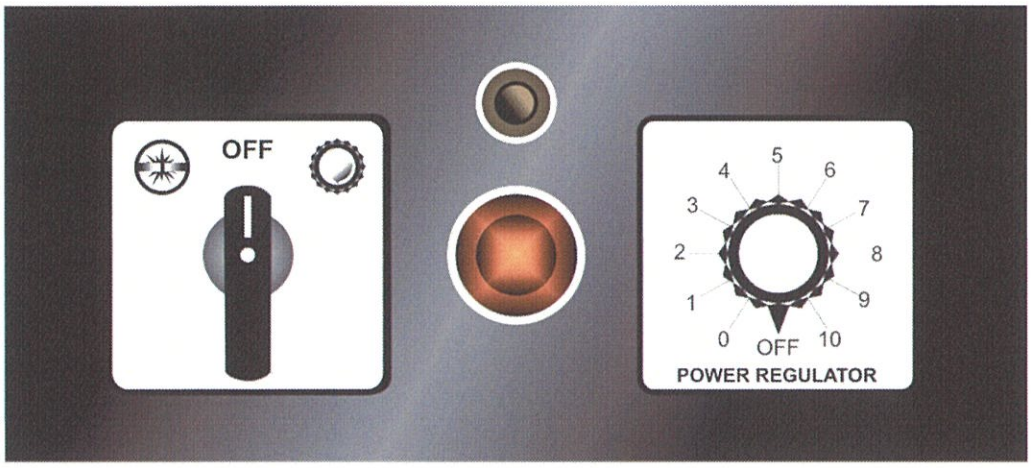
6. manually resettable thermal circuit breaker

7. multifunction Selector:
   centre position: equipment is switched off
   left position: equipment on normal output power
   right position: equipment on manually adjustable output power selector

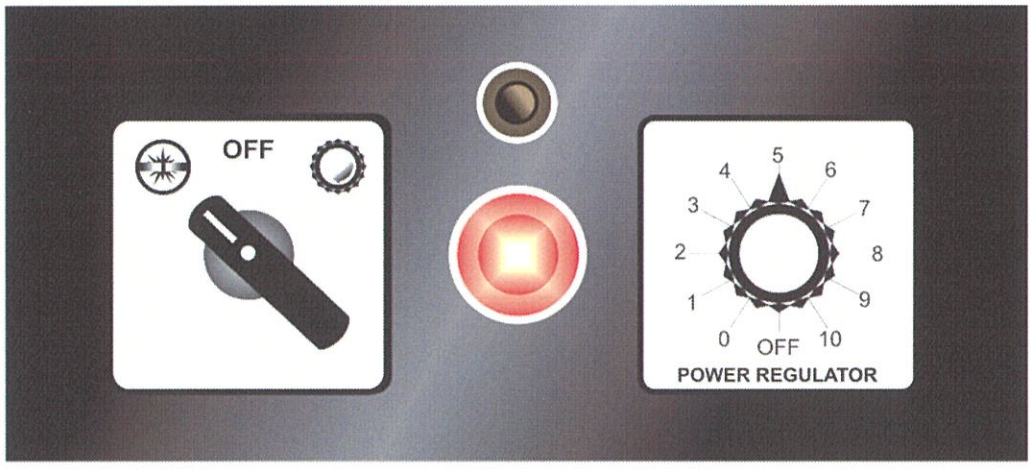
8. manual selector of power output when the switch is in the RIGHT position.

Detailled descripton of Selector Positions and functions:

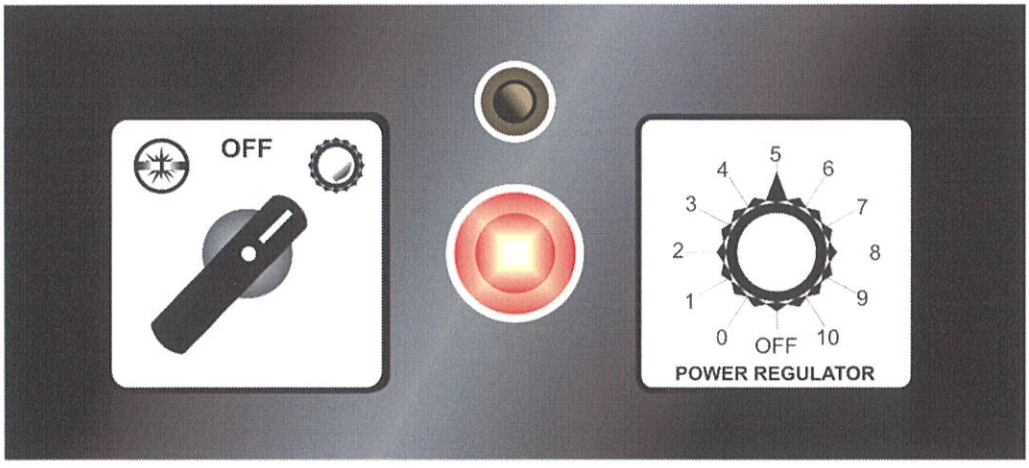
1. Selector set to OFF position: (the function light is turned off). The butt welder is switched off.



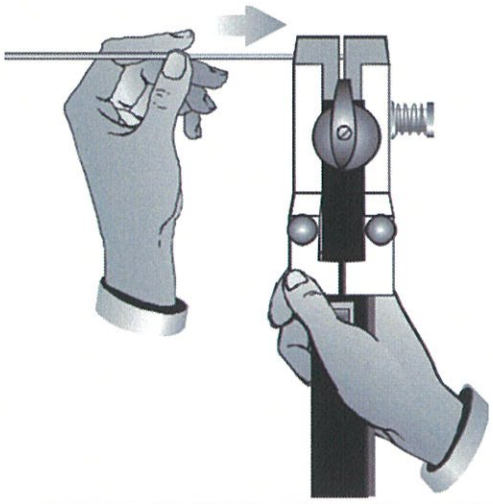
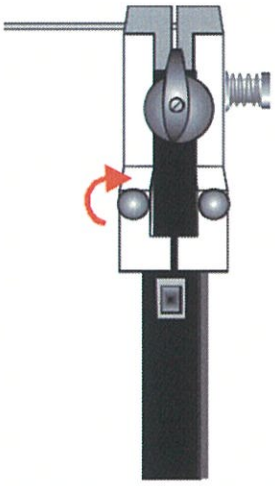
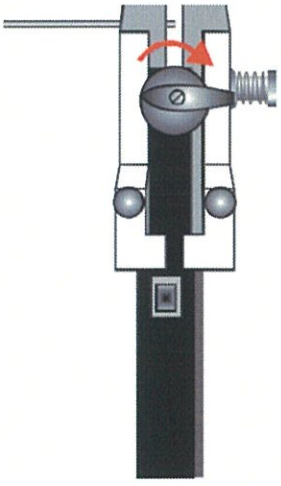
2. Selector in the LEFT position (the function light is on) : the butt welder is set to a maximum fixed power output

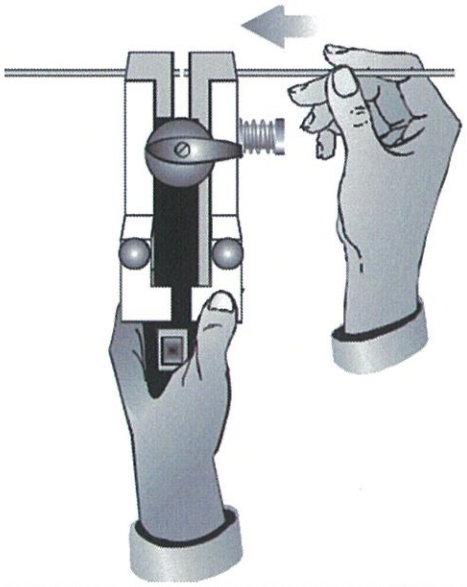
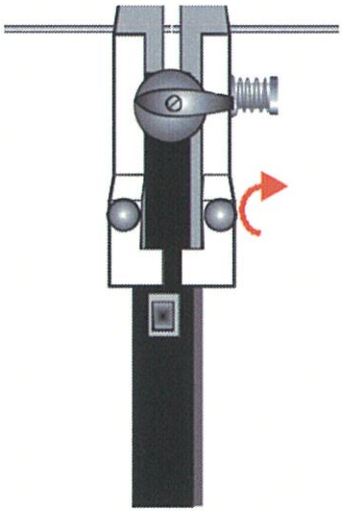
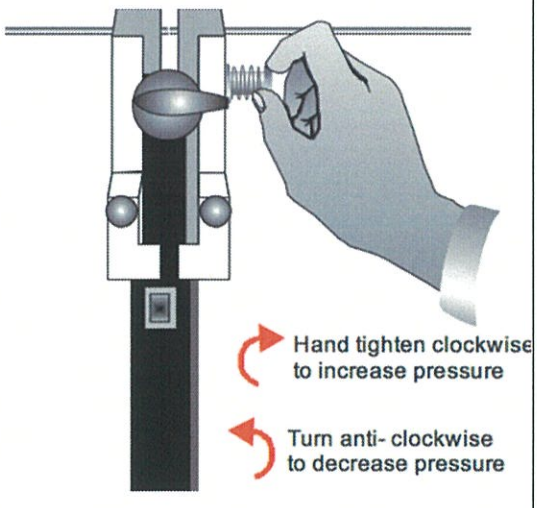


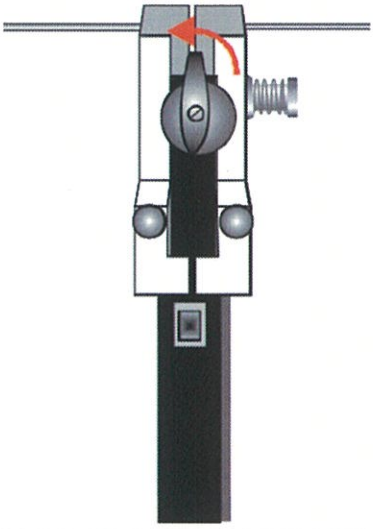
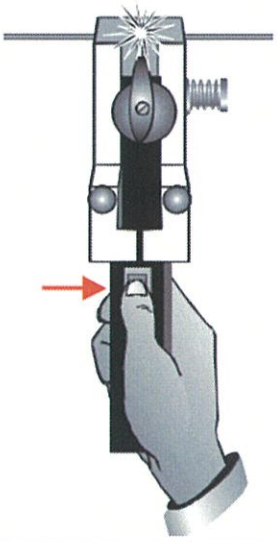
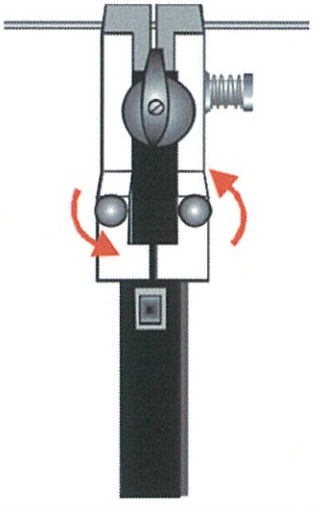
3. Selector in the RIGHT position (the function light is on) : the power output of the butt welder can be manuall adjusted. This control function is particularly recommended with thinner diameter wires, flux cored welding wires, softer steel wires or any wires which require a power output different than the maximum adjustment of selector in the above position (selector on LEFT position).
This function allows a controlled annealing of the butt welded joint.

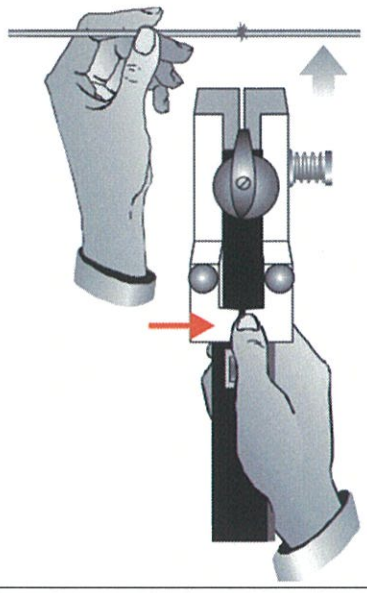


In the below tables are reported the steps for a correct welding procedure:

1	While squeezing the left clamp clip, slide the left wire end into the groove of the left clamp and push it until the wire tip touches the right clamp.	
2	Lock the left wire by hand tightening the left small locking knob clockwise. This will secure the clamp's grip on the left wire and will prevent it from slipping out of the groove.	
3	Turn the main central knob clockwise to open the right clamp.	

4	Slide the second wire into the groove of the right clamp until both wire ends touch at the centre of the gap formed between the two clamps. Make sure the two wires are perfectly aligned. Important: always ensure that the two wire ends are neatly cut and that they offer the maximum surface contact. Trim the edge with nippers if necessary.	
5	Once you have verified that : 1. the two wires are well aligned 2. their ends touch each other Hand tighten the right smaller locking knob similar to section 2. This will secure the clamp's grip on the right wire and will prevent it from slipping out of the groove.	
6	Adjust pressure on right clamp spring depending on the wire diameter you are welding. ❑ Hand tighten with large wire diameters ❑ Loosen with smaller wire diameters IMPORTANT: It might take several attempts to achieve the optimal pressure adjustment for the wire diameter you are welding. Once adjusted, however, it will work fine until you change wire diameter.	

7	Close the right clamp by rotating the main central knob counter clock wise. The welder is now ready to butt weld the two wires.	
8	Hold the welding button pressed for a few seconds. An internal timer will automatically shut the power off, once the two wires have been joined.	
9	Rotate both locking knobs counter-clockwise to release the grip of clamps on the joined wire.	

10	Squeeze the two clamp clips together to pull the joined wire free.	

6. SAFETY WARNINGS AND INFORMATION:


During the welding process it is mandatory the use of protection glasses as means of individual protection for the operator



During the welding process the circulating current generates a magnetic field near the connecting cables of the clamp.
Field levels detected during the welding process are below the maximum limits specified by the normative 1999/519/EC:
As a precaution, we recommend to:

- keep the cables far from the body;
- avoid wearing objects sensitive to magnetic fields;
- carriers of peace makers should refrain from using the equipment

6.1 MAINTENANCE

The following operations should always be carried out with the equipment unplugged from the electrical network.

Periodically:

- clean the outer casing of the unit using a soft cloth moistened with a neutral and non-aggressive detergent and dry using a dry cloth;
- Verify the integrity of the protective sheath screening the wires between the power source and the welding clamp. If damaged, do not use the butt welder and contact the service center immediately.

6.2 PROBLEMS AND ANOMALIES

Problem	Probable cause	Corrective actions/Notes
The equipment is ready for operation but does not weld. Status light is off.	Intervention of the thermal or differential switch	Reset or reactivate the thermal or differential switch.

If the proposed corrective action does not resolve the malfunctions encountered, stop operations and contact the service center.

Never open the housing of the equipment unless expressly authorized in writing by Gen Service srl. Non-compliance with this rule will result in an immediate termination of the guarantee and shall release the Manufacturer/Supplier from any liability related to the safety and the correct functioning of the equipment.

7. DISPOSAL

INFORMATION FOR USERS

Pursuant to art. 13 of Legislative Decree n. 151 July 25, 2005 "implementation of directives 2002/95/CE, 2002/96/CE and 2003/108/CE, regarding the reduction use of hazardous substances in electrical and electronic equipment, as well as waste disposal"

The crossed bin symbol on the appliance indicates that the product at the end of its life must be collected separately from other waste. The user must therefore hand the equipment at the end of its life to the suitable separate waste collection centers of electronic and electrical waste, or return it to the retailer when purchasing a new equipment of the same type, at a rate of one to one. The appropriate differentiated collection and subsequent equipment recycling, treatment and environmentally compatible disposal helps to avoid possible negative effects on the environment and health and promote the recycling of the materials of which it is composed. Improper disposal of the product by the user entails the administrative sanctions provided by law.

8. INTERVENTION OR SPARE PARTS REQUEST FORM

株式会社トーキン
〒432-8006
静岡県浜松市西区大久保町１５０９番地
TEL:053-485-5555 FAX:053-485-5505
E-mail eigyou@tokinarc.co.jp

TOKIN CORPORATION
1509 Okubo-cho, Nishi-ku,Hamamatsu-shi,
Shizuoka Japan 432-8006

Data _____.

REPLACEMENT PARTS ORDER – NOTIFICATION OF FAULTS – INFORMATION

Client:	Model
Location	Code
Address	Serial Number
Phone:	
Fax :	Trasmitted by:

Spare parts table:

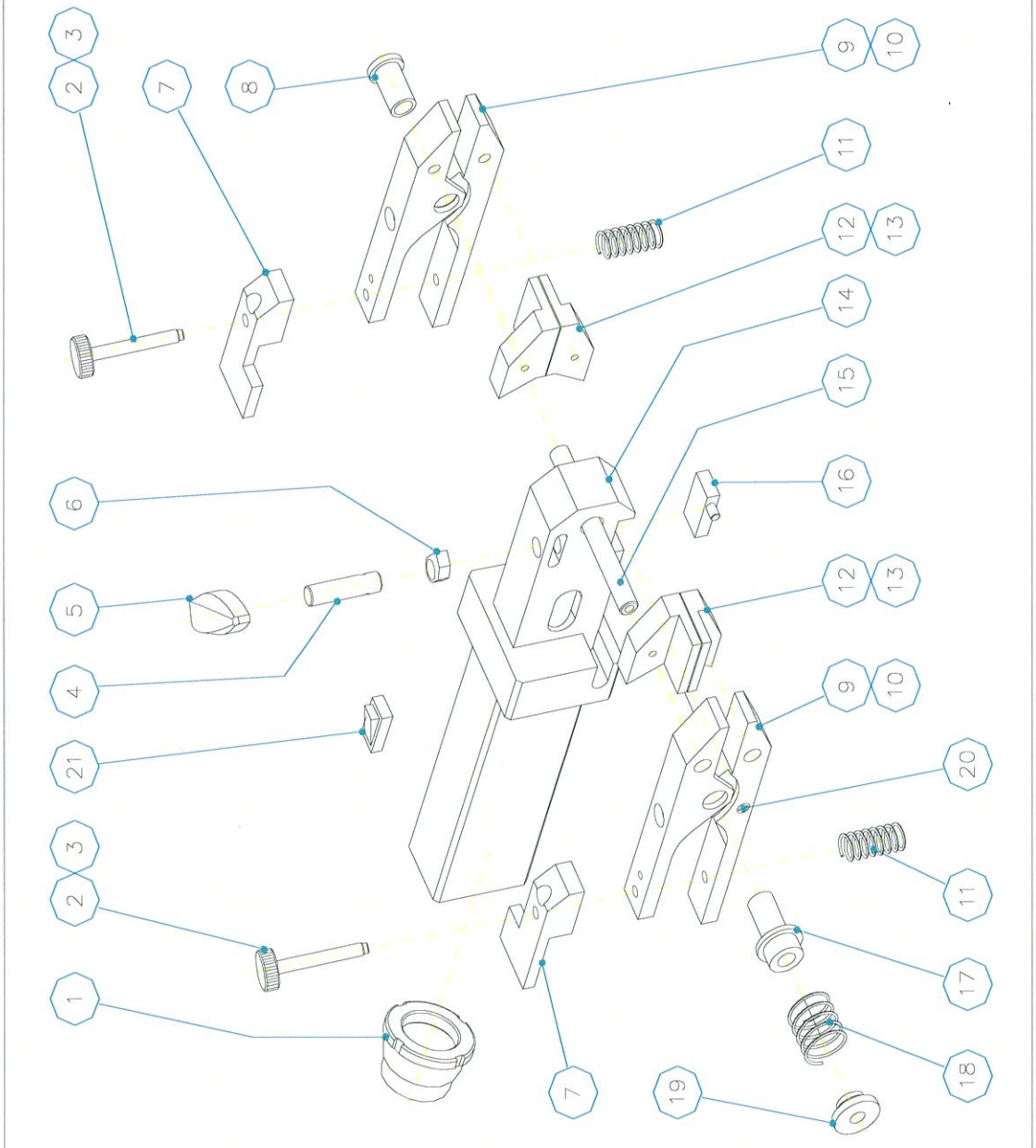
Article code	Qty	Notes

_____

STAMP AND SIGNATURE OF THE APPLICANT

Technical visit request due to the presence of the following problems:
Notes or description of the problems

9. SPECIAL DESIGN CLAMP WELDING MACHINE - LIST OF COMPONENTS AND PARTS



POS.	DESCRIZIONE
1	Pressacavo
2	Volantino di Bloccaggio
3	Perno di Bloccaggio
4	Perno di Apertura
5	Manopola di Apertura
6	Eccentrico di Apertura
7	Staffe per Braccetti
8	Boccola in Plastica
9	Braccetto Inferiore
10	Braccetto Superiore
11	Molla per Braccetti
12	Ganascia Superiore
13	Ganascia Inferiore
14	Manico
15	Albero Rotazione
16	Micro di Chiusura
17	Boccola di Scorrimento
18	Molla di Scorrimento
19	Boccola Registro Molla
20	Registro Micro Chiusura
21	Tasto di Azionamento
22	

10. EC DECLARATION OF CONFORMITY

GEN SERVICE SRL ASSISTENZA - RIPARAZIONE

AUTOMAZIONI INDUSTRIALI
PROGRAMMAZIONE PLC

EC – Declaration of Conformity

In accordance with EC-Low Voltage Directive 2006/95/EC, 2011/65/CE Directive RoHS2
Translation of the EC -Conformity declaration

Manufacturer	**GEN SERVICE s.r.l.** Via Monte di Sopra, 38 37017 LAZISE (VR) ITALY
Authorized person for the technical documentation	**Fabio Perazzoli** Address – see address of manufacturer
Product Description	Resistance Portable Butt Welder able to join mild steel welding wires of various diameter (0,80mm to 2,00mm)
Trade Name	**PBW**

We herewith declare that the device described below complies with the relevant essential EC safety and health requirements with respect to their construction, design and version place in the market by us.

This declaration ceases to be valid in case of a modification of the device without our authorization.

Aplicable EC directives

2006/95/EC Low Voltage Directive

2011/65/CE Directive RoHS2

Harmonized standard used

DIN EN 62135-1	Resistance welding equipment. Part 1: Safety requirements for the design, manufacture and the installation(2008-11)
DIN EN 50581	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Lazise, lì 25 marzo 2014

Fabio Perazzoli

11. WARRANTY

CONDITIONS AND LIMITATIONS:

GEN Service Srl guarantees the equipment for the duration of **12 months.**

The warranty starts from the date of purchase indicated on the commercial invoice issued upon delivery of the equipment.

GEN Service Srl undertakes to repair or replace free of charge within the warranty period, any parts showing manufacturing defects and failure; this warranty, however, does not include any form of compensation for direct or indirect damages to persons or things.
During the warranty period, if the customer requires that the repair is to be carried out by the technicians of the GEN Service srl, he must send a written request to GEN Service Srl. and he shall bear all the travel and accomodation expenses incurred by the GEN Service technicians.

In case of repairs of defects or faults which are not attributable to the material or the manufacturer, all related expenses, repair and/or replacement of parts shall be charged to the customer.

No additional warranty extension will be granted following a repair intervention.

In case of a return of any equipment parts, the customer will be authorized to effect the shipment only after having received the written permission by the GEN Service Srl. The packaging and shipping costs will be charged to the customer (unless otherwise agreed).

The following occurrances are excluded from warranty: accidental damage during transport and handling, negligence, improper use not in accordance with the instructions in this manual and all those occurrances not related with the normal use of the equipment.

The warranty is void if the butt welder is repaired by unauthorized technicians or if non original equipment or accessories are used which are not recommended or approved by Service Srl or, in the case of unathorized removal or alteration of the serial number during the warranty period.

The warranty validity shall immediately be terminated in the case of the customer's delayed payment or non-payment, partial or complete.

GEN Service Srl declines any responsibility for damage to persons or things caused by misuse or imperfect use of the equipment.

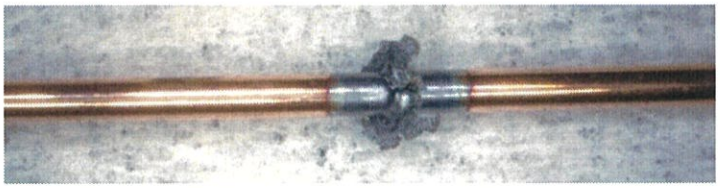
For any controversy the competent Court is the Judicial Forum in Verona (ITALY).

出力調整機能について

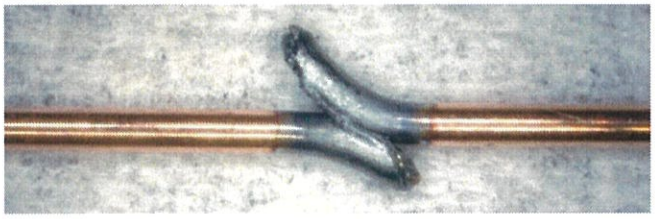
（1）　左側スイッチ②の時、出力調整が出来ます。POWER REGULATOR
POWER REGULATOR目盛10➡6に向かって出力が下がっていきます。 目盛5～0は使いません。

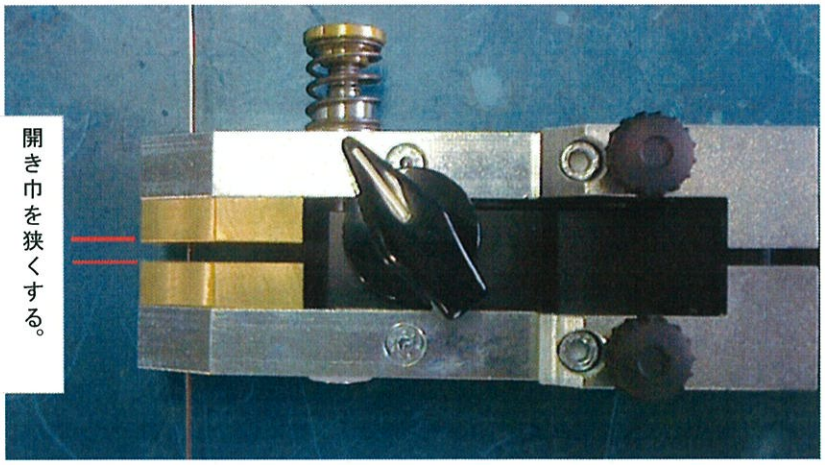
（2）　細径ワイヤ0．9mmの溶接例

左側スイッチ②　　出力調整目盛9　程度を推奨します。



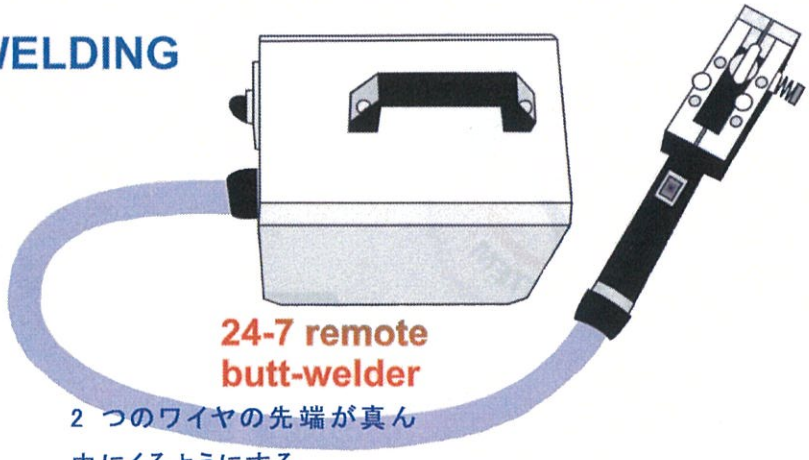
（3）　細径ワイヤ溶接で、下写真の結果になった場合は、
ワイヤセット時のclamp opening leverを全開の2/3程度にすると改善できます。



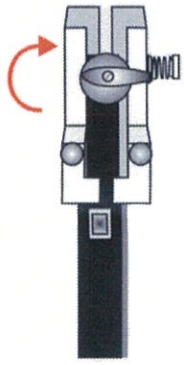


24-7 ROBOTIC CONTINUOUS WIRE SYSTEM

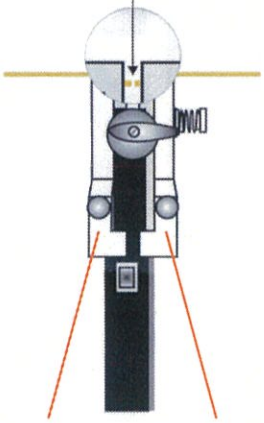
WIRE BUTT WELDING



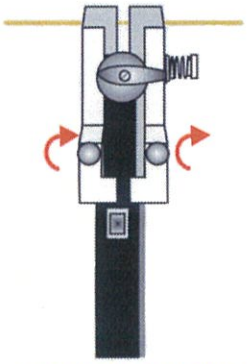
2 つのワイヤの先端が真ん中にくるようにする。



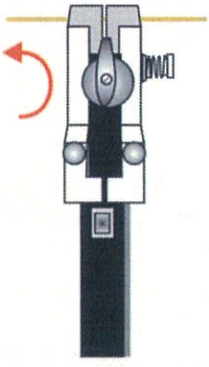
1） つまみを時計回りに回しクランプを開く。



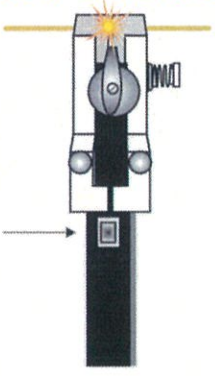
2） ここを押し,クランプを開きながらワイヤを片方ずつ溝にはさむ。



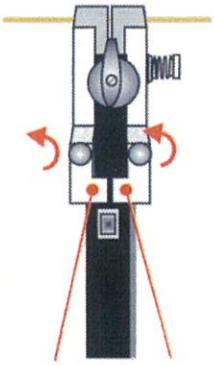
3） 2つのネジを時計回りに締め,ワイヤが動かないようにする。



4） つまみを反時計回りに回し,クランプを閉める。



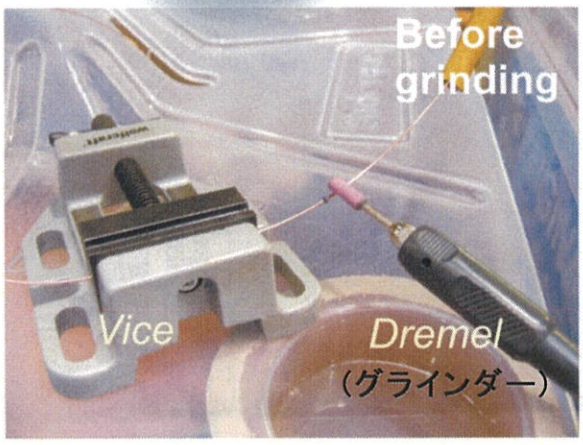
5） ボタンを押し,自動的に止まるまで3,4秒間押し続ける。



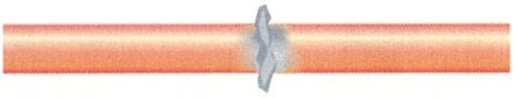
6） ワイヤを締め付けている2つのネジを緩め,ここを押してクランプを開きワイヤを外す。

24-7 ROBOTIC CONTINUOUS WIRE SYSTEM

バット溶接部の研磨によるスラグの除去



バット溶接では,2 本のワイヤをつなぐ場所でスラグが発生します。
このスラグはトーチやコンタクトチップへのワイヤの通りを円滑にするために完全に取り除かなければなりません。このようなスラグを経済的に,効果的に取り除く方法としては,グラインダー(研磨機)の使用が挙げられます。ただし過度の研磨や高速での研磨は,バット溶接を弱くしたり,送給不良の原因を引き起こすため,操作には注意が必要です。
また,上の写真にあるような小さく持ち運びできる Vice はワイヤをしっかりつかめ、研磨の失敗を防ぐのにとても便利です。



研磨前

研磨し過ぎた場合

正しく研磨された場合