ORTHODONTIC
SPOT WELDER

WELDMAN

User Guide

No warranty

Both the manufacturer and the distributors shall not be liable, neither express nor implied, as to the range of application possibilities of our spot welding appliance WELDMAN.

We assume no liability for damages resulting directly or indirectly, from the delivery, use and working results of WELDMAN in connection with a random choice of materials. In each individual case, the materials and their joining qualities are to be tested in trial welding, and checked by an expert.

Both the manufacturer and the distributors are liable for damages only within the framework of legal requirements.

Safety Instructions – please read carefully!

The general safety instructions as quoted here are to be followed during use, maintenance or repair of this spot welding device. Any disregard of the instructions or warnings printed in this brochure represents a breach of safety standards as regards the range of applications for which the welder is designed. The manufacturer and distributors will assume no liability for any resulting damage arising from the disregard of these instructions and warnings.

The Welding Unit must have earthing equipment!

This spot welder belongs to Safety Class 1 (provided with protective grounding). In order to minimize the danger of electric shock, the casing should be grounded and therefore has to always be operated with a three-conductor cable with earthing conductor and be connected to a socket installed according to regulations.

If electrostatic charging cannot be excluded (dry air, floor covering, clothing made from synthetic material etc.), preventive measures have to be applied. For example, the welder could be placed on a conductive base which is connected to the grounding plug socket in the front panel of the welder. The operator has to touch this conductive base before using the device. If not, there is a possibility that the switched-on welder will become active in case of electro-static discharge between the operator and the welder, which however is not in itself harmful.

If the welder is switched on while both electrodes are in contact with each other, a short circuit is likely to result. The fuse will react correspondingly. In case of a supposed fault in the welder it is necessary to check the fuse.

Do not open Casing!

All maintenance and repair to be done by trained service personnel only.

Operator must wear protective goggles!

Orthodontic Spot Welder WELDMAN

The WELDMAN spot welder is a compact and powerful unit, combining a newly designed electronic control system with precise mechanics.

Through the electronic control system, the welding force is infinitely variable and guarantees an excellent performance.

The operation is made easy through a few switches and buttons, arranged in a logical design and easily accessible position. The pneumatic switch for remote control is part of the unit.

The delivery also comprises a handset for the soft-annealing of wires.

Technical Data

Size	Height 170 mm (6.7 in.), Width 105 mm (4.15 in.), Depth 290 mm (11.4 in.)
Weight	4,3 kg (9.5 lb.)
Voltage	230 V 50 Hz (115 V 50/60Hz option)
Max. Impulse power	ca. 2200 VA
Fuse	3,15 A, miniature, time-lag

Welding:

Max. Impulse current	app. 800 A
No load running voltage	app. 2,7 V
Ambient temperature	+15 °C ÷ +30 °C
Humidity	up to 95 % (not condensing)

For use only inside workshops

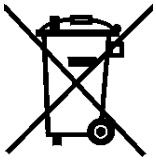
Please check the voltage before connecting to mains!

Equipment and scope of delivery

Air bellows for pneumatic remote control
One extra pair of welding electrodes
File
Main connection cable
Handset for soft-annealing

Service and maintenance

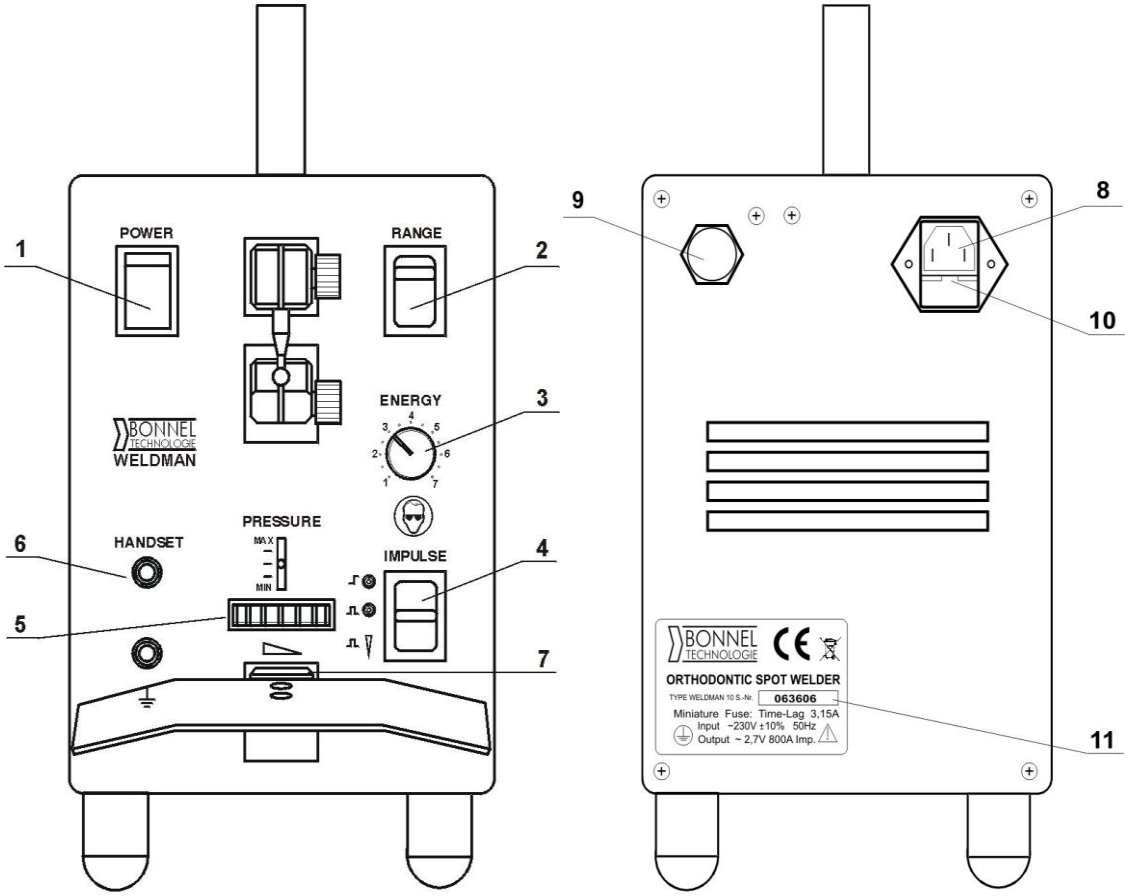
The set operates generally without maintenance. The welding electrodes have to be cleaned and filed regularly



Disposal of Waste Equipment by Users in Private Household in the European Union

This symbol on the product or on its packaging indicates that this product must not be disposed of with your other household waste. Instead, it is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you

Control Elements



1 Power

Mains switch for turning welding unit on and off. When turned on, the switch shows green light.

2 Operating Range

The range button regulates the duration of the welding impulse.
Position 1: results in a short, position 2 in a longer impulse.
Position 2: is mainly used for brackets and the welding of thin wires.

3 Energy used

The energy button regulates the current intensity, which is infinitely variable

4 Impulse

Spot Welding:

Switch is in middle position. Produce welding impulse by pressing the button
down or by generating the pressure bellows.

The Intensity of impulse is regulated by the elements RANGE (2) and ENERGY (3).
The duration of the generation of the pressure bellows is of no special importance.

Soft annealing:

Impulse button must be in the upper position. Current is supplied as long as the bellows remain pressed. The current intensity is infinitely variable and can be selected by pressing the button ENERGY (3). RANGE (2) is inoperable.

5 PRESSURE

The pressure between the electrodes is controlled by the regulating screw.

6 HANDSET - sockets for the handset

Attention: When working with the handset, the welding electrodes must not touch each other. Please use slide.

7 Slide

By using the slide in the lower operation arm, the operation arms can be fixed after having been pressed down so that the electrodes can no longer touch each other.

8 Mains Connection

The mains connection socket and the fuse are at the rear of the set.
The socket holds a spare fuse.

9 Pressure bellows

The tube of the bellows is connected to the rear of the set.
The bellows can be operated by hand, knee, elbow or foot.

10 Fuse

The fuse compartment can easily be opened with a screwdriver.

11 Serial number

In case of inquiries, please state serial number of the unit.

General Information

Welding

The parts to be welded are heated by the current impulse which melts the material.

The pressure of the electrodes welds the molten material durably together.

The amount of heat energy produced in the metal is influenced in proportion to the following criteria:

- material
- contact area
- contact pressure
- surface (oxidation layers, grease)
- shape of electrodes
- intensity of current

The last two parameters can be determined by selection.

Soft annealing

By using the handset, wire can be heated through the current flow of certain duration so that its molecular structure is changed.

Attention: When sending the welding unit, please use original packing

Recommended Settings for Welding

1 **Brackets, tubes and auxiliary part to bands**
RANGE 1
ENERGY 3 to 7

2 **Stainless steel wire from 0.010“ to 0.020“**
RANGE 1
ENERGY 2 to 7

3 **Stainless steel wire from 0.022“ to 0.045“**
RANGE 2
ENERGY 4 to 7

4 **TMA –wires from 0.016“ to 0.022“**
RANGE 1
ENERGY 5 to 7

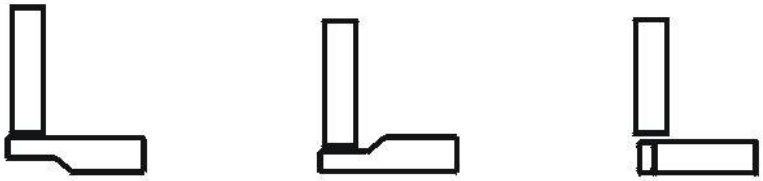
5 **TMA – wires from 0.032“ to 0.036“**
RANGE 2
ENERGY 6 to 7

The recommended settings are approximate values. Precise welds depend on the thickness of materials and the pressure of the electrodes.

Recommended position of welding electrodes

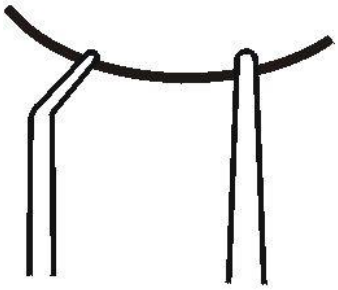
process: bracket or attachment on band

process: wire on band, wire on wire

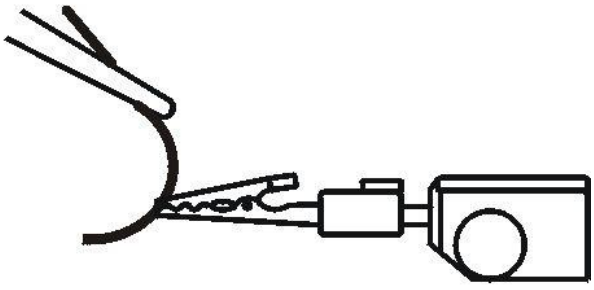


Soft annealing

with handset



forceps - connection to handset on top



'third hand' on the lower electrode

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