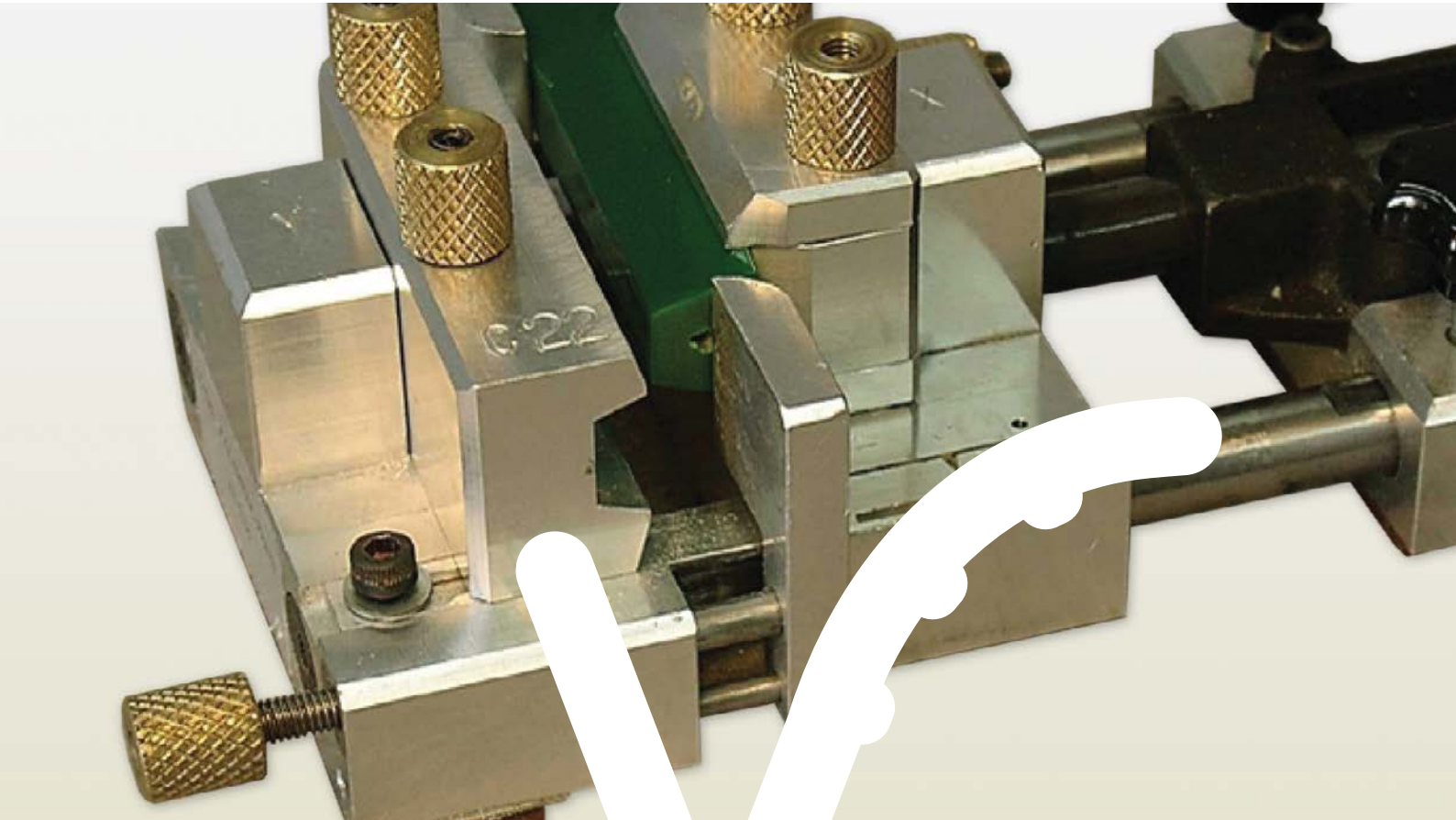




## The Next Step in Belting



Welding & Fabrication Tools  
**Easy Overlap**  
Instruction Manual



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Thank you for buying the Volta Easy Overlap Welding Kit.  
If you have any questions about the use of this tool please contact our  
Technical Service Department at email: [sales@voltabelting.com](mailto:sales@voltabelting.com)  
or visit our website [www.voltabelting.com](http://www.voltabelting.com).

## How to Use this Manual

This manual has been designed to provide the operator with all the necessary information on how to use correctly the above tool. Warnings in the manual should be carefully followed for your personal safety. Be sure you carefully read the instructions in this manual before using the tool. This will ensure use in compliance with safety standards.

## Symbols Used in the Manual



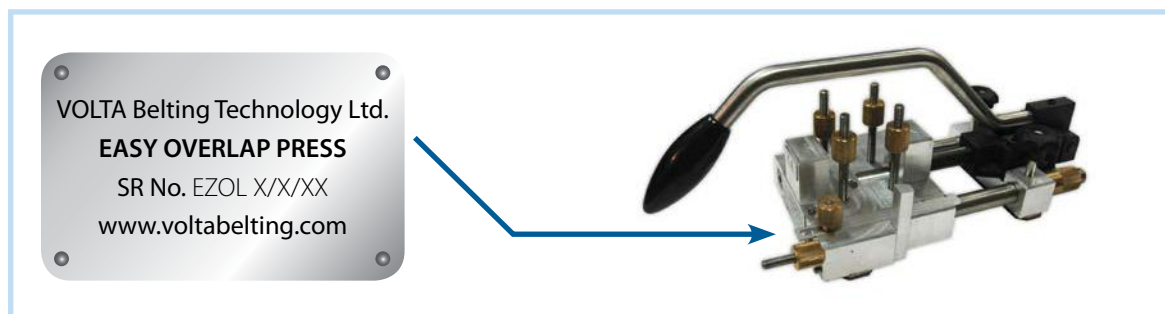
This symbol is used for important Notes & Tips.



This symbol is used to warn you of actions that are dangerous for the operator.  
Read the associated warnings and instructions carefully.

## Identification Data

The identification plate is on the front of the clamp. You should include the model and serial number in all inquiries to Volta Belting about this tool.



Identification Plate Example



**Important:** the identification plate should never be removed.  
The data on the plate should not be modified.

## Uses and Applications

The “Easy Overlap” welding kit is designed for customer use in welding VOLTA ROUND, V and Ridge Top reinforced profiles of various lengths. “Technical Specifications” below.



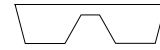
Round Profile



'V' Profile



Ridge Top Profile



Double-V Profile



Any use other than the one provided for in this Manual is to be avoided as the dangers associated with such use is unknown!

## Unauthorized Use

It is forbidden to use the above tool for applications other than those provided for by the Manufacturer. Furthermore, it is also forbidden:

- | To use the tool for sections of belts having sizes other than those stated in “Technical Specifications”.
- | To use the tool for belt types made of materials other than those stated in “Technical Specifications”.
- | To use the tool in an explosive atmosphere or in environments where there is a risk of fire breaking out.

## Technical Specifications

- | Profiles` size capacity:  
V-Profiles: Z/10; A/13; B/17; C/22  
Round Profiles diameters: 5mm up to 20mm  
Ridge Top: A/13; B/17; C/22  
Double V: A/13  
SuperGrip and MultiGrip coated Profiles: A/13; B/17; C/22
- | Belt Material Types: This unit is designed to weld profiles of VOLTA M, H and L materials
- | Welder voltage (Volts AC) 220 VAC for Europe, 110 VAC for USA.
- | Welder capacity (Watts) 120 W.
- | Welder protection rating (amps) 1 amp at 220 VAC/2 amps at 110 VAC.
- | Total weight of kit – Approx. 5 kg (11 lbs)

## Kit Contents

1. Case
2. Welder
3. Welder Stand
4. Clamp
5. Manual drill, D-11
6. Knife
7. Double-sided adhesive tape
8. Dies for specific belts.

The Dies are not included in the basic kit (See page 6).

|                                     |                  |
|-------------------------------------|------------------|
| VaR Easy Overlap Welding Kit (110V) | Cat. No. 8140016 |
| VaR Easy Overlap Welding Kit (230V) | Cat. No. 8140019 |



Fig. 1

## Clamp Components

1. Stud bolt for fastening Dies (4 each)
2. Die locking nut (4 each)
3. Fixed (Y) base
4. Reference bar
5. Nut for reference bar
6. Belt clamp
7. Belt clamp locking nut (2 each)
8. Main shaft (2 each)
9. Movable (X) base
10. Nut, clamp base adjusting (2 each)
11. Lever
12. Main shaft (2 each)
13. Latching clamp
14. V Profile adapter, upper section
15. V Profile adapter, lower section

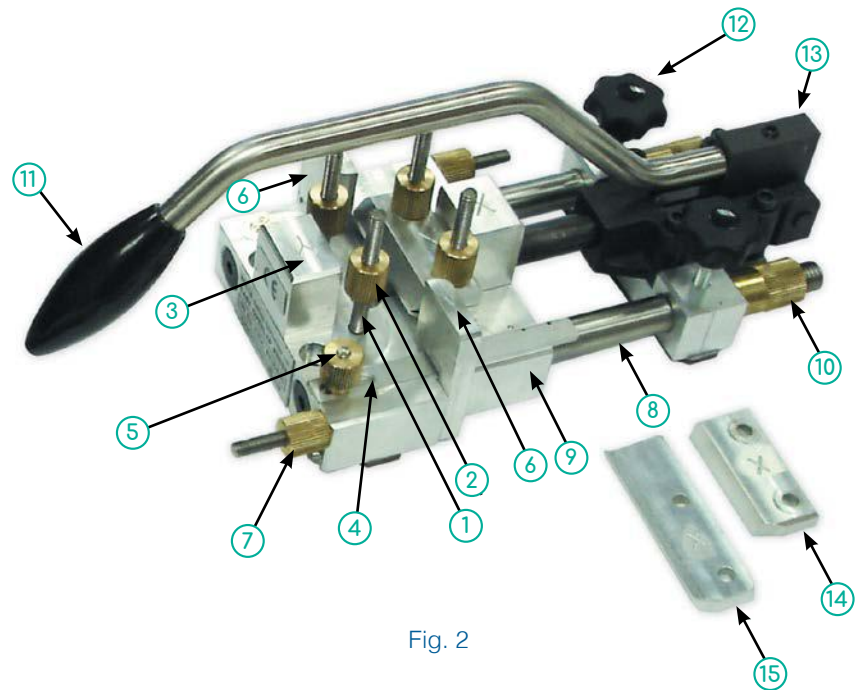


Fig. 2

## General Instructions

Use Personal Protection Devices (PPDs) in compliance with local regulations and European Union regulations and Council Directive 89/391/EEC, in order to avoid the following hazards: crushing, burns, grazes. The work area should always be kept clean, dry and orderly. Avoid accumulation of materials in work area. Use only a clean dry cloth to clean the welder rod. Never use solvents or other flammable liquids.

## Hazard and Dangerous Areas

When welding, always avoid the following dangerous situations:

1. Crushing of fingers during belt pressing.
2. Burns from touching the welder rod.
3. Inhalation of toxic substances while welding - It is important to avoid burning the profiles during welding. When the material burns it may release toxic fumes.

## Personal Protection Devices

Subject to the standard regulations in the user's country, the operator working with the tool may be required to use personal protection devices.

It is recommended to use:

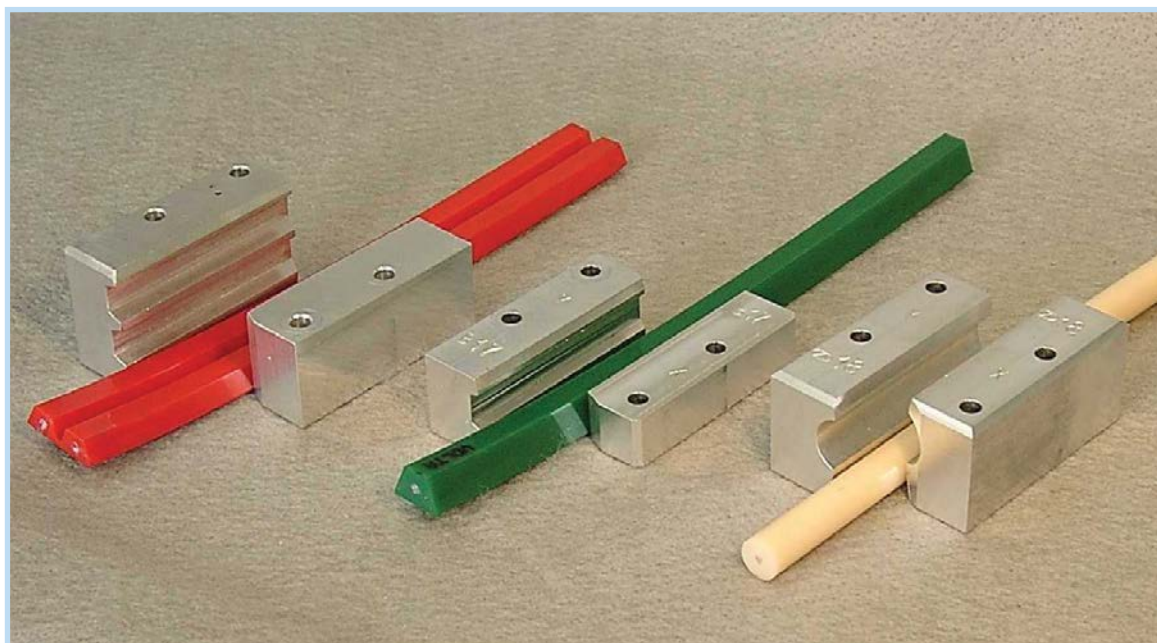
- | Gloves: EN 388 compliant: mechanical risks while welding.
- | Mask: EN 149 compliant: while welding, when belts containing toxic components are used.

## Dies

The dies are selected by the customer based on the belt sections and dimensions that will be worked with.

| Description                      | Cat. Number |
|----------------------------------|-------------|
| V-belt Die, sec. Z/10            | 8151604     |
| V-belt Die, sec. A/13            | 8151605     |
| V-belt Die, sec. B/17            | 8151606     |
| V-belt Die, sec. V/20            | 81516060    |
| V-belt Die, sec. C/22            | 8151607     |
| V-belt Die, sec. 25 mm           | 81516070    |
| V-belt Die, sec. A/13 SG         | 8151623     |
| V-belt Die, sec. B/17 SG         | 8151624     |
| V-belt Die, sec. C/22 SG         | 8151625     |
| V-belt Die, sec. A/13 MG         | 8151626     |
| Double V belt die, sec. A/13     | 8151630     |
| Ridge Top belt Die, sec. A/13 RT | 8151618     |
| Ridge Top belt Die, sec. C/22 RT | 8151622     |

| Description                      | Cat. Number |
|----------------------------------|-------------|
| Round Belt Die, diam. 5 mm       | 8151609     |
| Round belt Die, diam. 6.3 mm     | 8151608     |
| Round belt Die, diam. 7 mm       | 81516080    |
| Round belt Die, diam. 8 mm       | 8151610     |
| Round belt Die, diam. 9/9.5 mm   | 8151611     |
| Round belt Die, diam. 10 mm      | 8151612     |
| Round belt Die, diam. 10.5 mm    | 81516120    |
| Round belt Die, diam. 12/12.5 mm | 8151613     |
| Round belt Die, diam. 14 mm      | 8151614     |
| Round belt Die, diam. 15 mm      | 8151615     |
| Round belt Die, diam. 18 mm      | 8151617     |
| Round belt Die, diam. 20 mm      | 81516170    |



## Welder Stand

The welder stand has been designed so that the user can safely prepare it for use by bending the stamped section to the form shown on the right in the picture below.



## Preparing the Welder for Use

Place the welder on its stand (photo below). Make sure there are no flammable objects nearby. Make sure the supply voltage is the same as the welder's rated voltage, and then insert the welder's plug in a power socket. The welder must be allowed to warm-up for about 10 minutes before welding. This will ensure that the welder is at the correct operating temperature. The welder should always rest on the stand provided. This ensures correct heating of the welding tip and also prevents burning of work surfaces. Never hang the welder by its cord. This will cause overheating of the element and inconsistent heating of the welder tip. Both conditions will damage the tool.





## Preparing the Clamp for Use

The following paragraphs describe the procedures for assembling the dies in the Easy Overlap Welder Clamp. Select the Dies according to the belt section you are going to weld. Refer to the following paragraphs for specific belt sections.

- A. Assembling the Dies - Round Profiles
- B. Assembling the Dies - V- Profiles
- C. Assembling the Dies - Ridge Top Profiles
- D. Assembling the Dies - SuperGrip / MultiGrip Profiles



The Fixed base has a Y stamped on it and the moveable base has an X stamped on it. The Die label (i.e. Z-10, R9.5) is on the upper surface of the Die and will be visible when mounted.

## Assembling the Dies - Round Profiles

1. Remove 4 Die Locking Nuts (Fig. 3).
2. Remove the V-Belt Adapters from the Moveable Base (Fig. 4).



These two adapters are used for mounting V-Belt profiles only.

3. Position the X die on the Fixed Base (Fig 5).

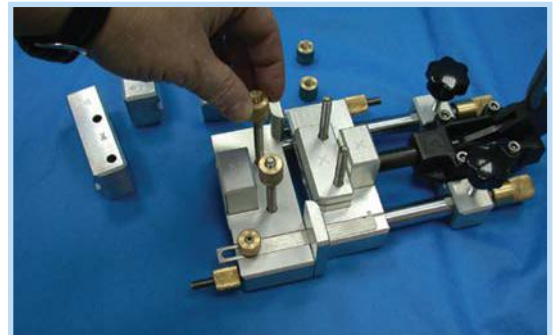


Fig. 3

4. Position the Y die on the Movable base (Fig 5).

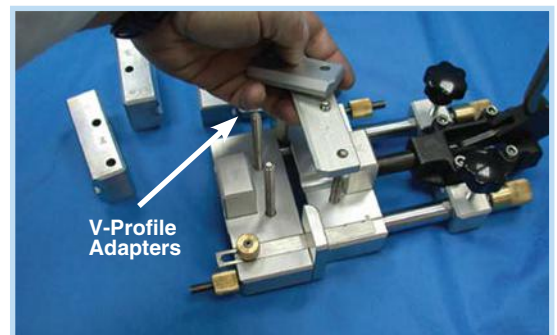


Fig. 4

5. Set the four Die Locking nuts in place and tighten by hand only. Do not use pliers.

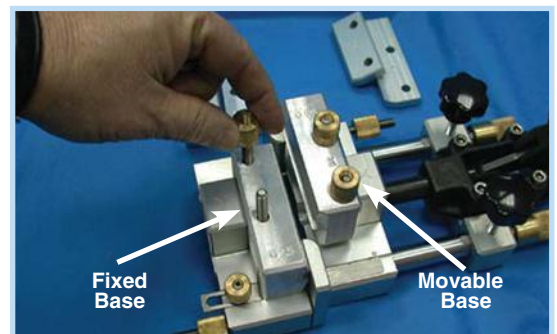


Fig. 5

## Assembling the Dies - V-Profiles

When welding V-Profile you must use both the upper and lower V-Profile Adapters (Fig. 6).

1. Set the V-Profile Adapter Lower Section in place (Fig. 7) on the Movable (X) base.



The stamped labels (X) are on the upper surface of the part and will be visible after mounting.

2. Position the X Die on the V-Profile Lower Section (Fig. 8).

3. Set the V-Profile Adapter Upper Section in place on the X Die (Fig. 9).

4. Set the V-Profile Y Die on the Fixed Base (Fig. 10).

5. Set the 4 Die Locking nuts in place (Fig. 11) and tighten by hand only. Do not use pliers.

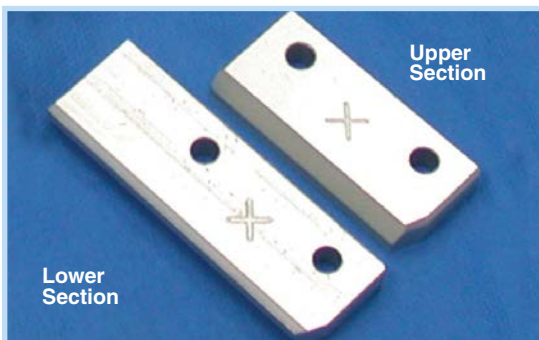


Fig. 6

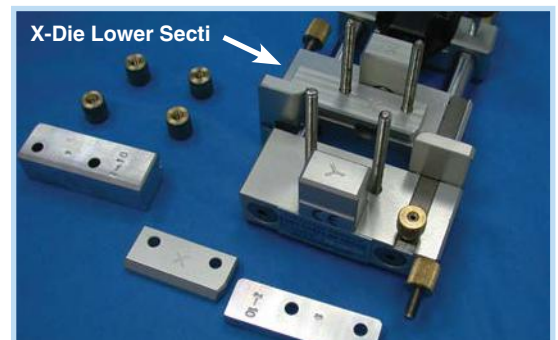


Fig. 7

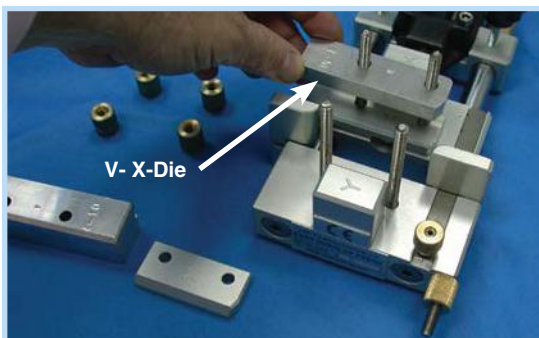


Fig. 8

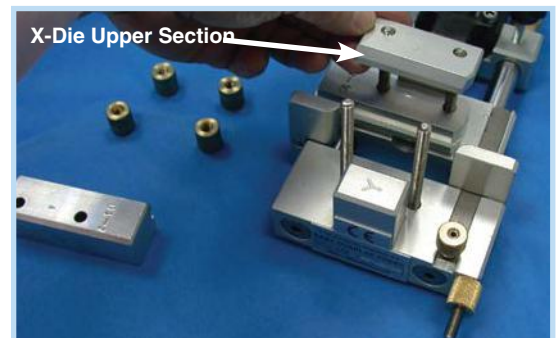


Fig. 9



Fig. 10

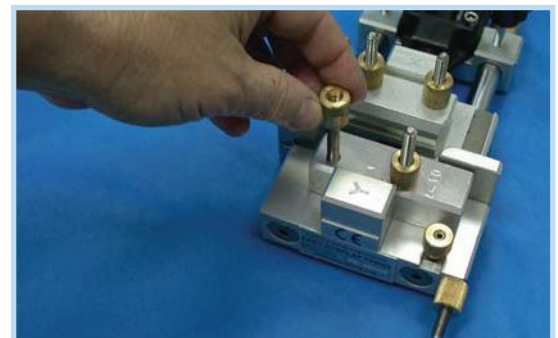


Fig. 11

## Assembling the Dies - Ridge Top Profiles

When welding Ridge Top Profiles you must use both the upper and lower V-Profile Adapters (Fig. 6) in addition to the Ridge Top Dies (Fig. 12).

1. Set the V-Profile Adapter Lower Section in place (Fig. 13) on the Movable (X) base.



The stamped labels (X) are on the upper surface of the part and will be visible after mounting.

2. Position the Ridge Top X Die Spacer on the V-Profile Lower Section (Fig. 14).
3. Set the Ridge Top X Die Adapter on the Spacer (Fig. 15).
4. Set the V-Profile Adapter Upper Section on the Ridge Top X Die Adapter (Fig. 16).
5. Set the Ridge Top Y Die in on the Fixed (Y) Base (Fig. 17).
6. Set the 4 Die Locking nuts in place and tighten by hand only. Do not use pliers.



Fig. 12

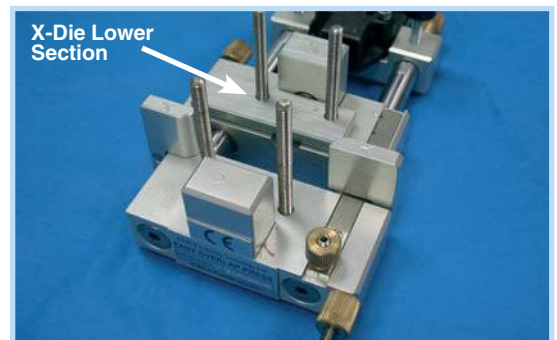


Fig. 13

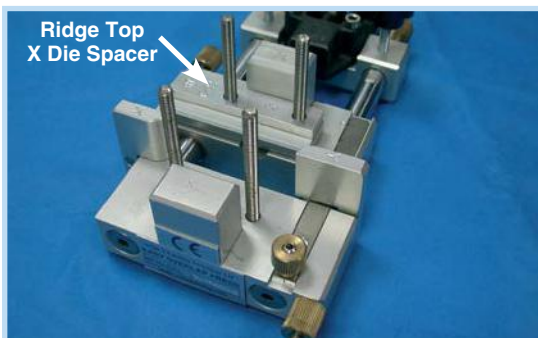


Fig. 14

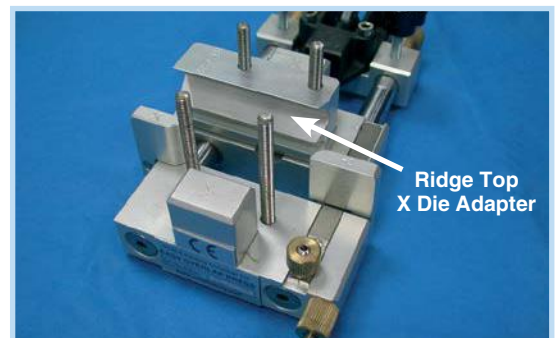


Fig. 15

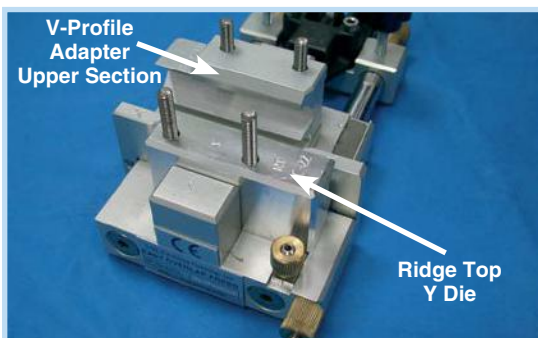


Fig. 16

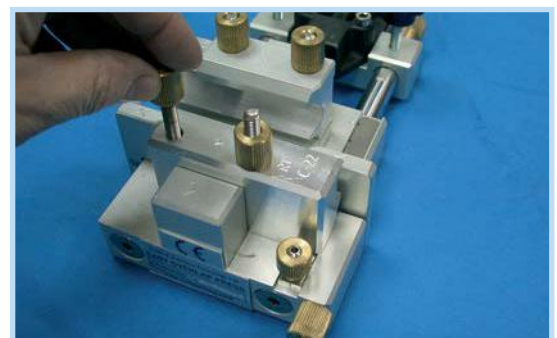


Fig. 17

## Assembling the Dies - SuperGrip / MultiGrip Profiles

When welding SuperGrip or MultiGrip Profiles you must use both the upper and lower V-Profile Adaptors (Fig. 6) in addition to the SuperGrip/MultiGrip Dies (Fig. 18).

1. Set the V-Profile Adapter Lower Section in place (Fig. 19) on the small m for movable or large B for base.



The stamped labels (X) are on the upper surface of the part and will be visible after mounting.

2. Position the SuperGrip/ MultiGrip X Die Adapter on the V-Profile Lower Section (Fig. 20).
3. Set the V-Profile Adapter Upper Section on the SuperGrip/ MultiGrip X Die Adapter (Fig. 21).
4. Set the SuperGrip / MultiGrip Y Die Adapter in on the Fixed (Y) Base (Fig. 22).
5. Set the 4 Die Locking nuts in place and tighten by hand only (Fig. 23). Do not use pliers.



Fig. 18

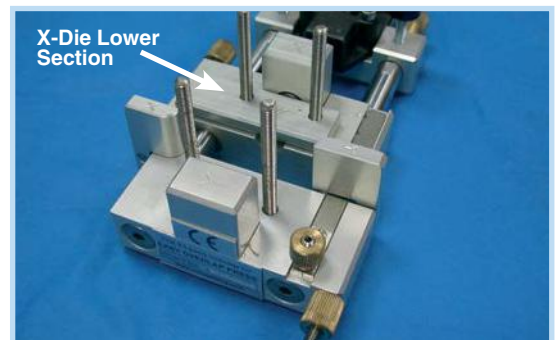


Fig. 19

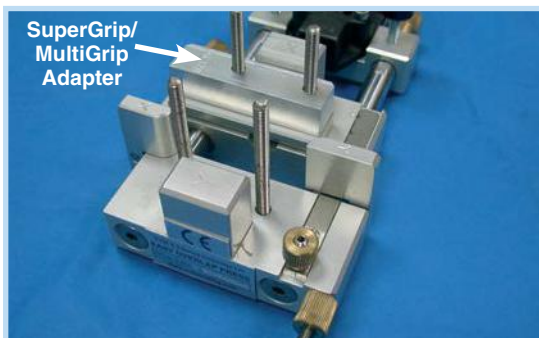


Fig. 20

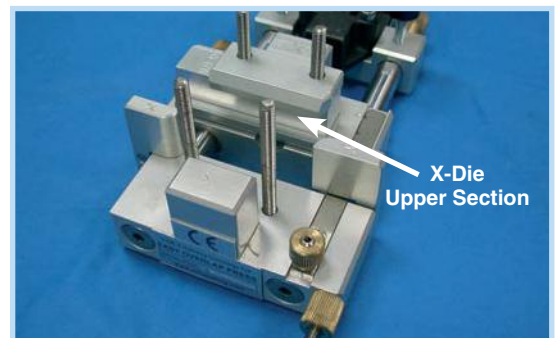


Fig. 21

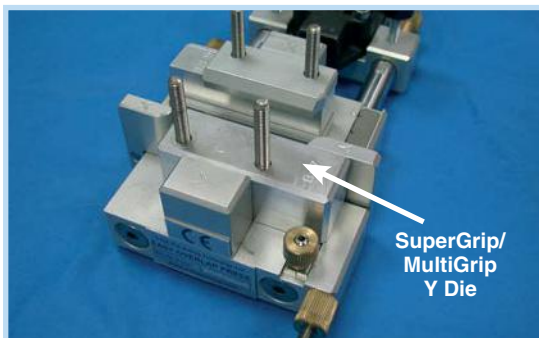


Fig. 22



## Profile Measuring and Cutting

The Easy Overlap Tool provides an overlap of the reinforcing cord of 60 mm (2 3/8"). In order to ensure the correct finished belt length you must add 60 mm (2 3/8") to the original profile length (Fig. 3). For example, when preparing a belt with a length of 1000 mm (39 3/8"), cut the profile to a length of 1060 mm (41 3/4").

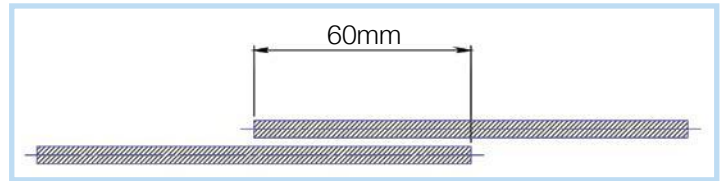


Fig. 24

When producing more than one belt of a specific length, lay profiles next to each other on a clean work surface, then mark and cut the full quantity of belts needed. This will ensure that the full set of belts have a consistent length.

## Preparation of Profile Ends

1. Place one end of the Profile in the "Y" Die so that it extends about 5 mm (3/16") out of the die.
2. Secure the Profile to the Die by tightening the Y-Die Profile clamp.
3. Close the lever to hold the Profile in place.
4. Select the correct drill bit for the Profile diameter/section Profile being welded.



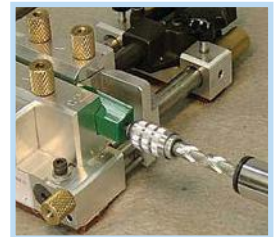
The Technical Data sheet for the profile has the recommended Drill Bits for all Volta Reinforced V and Round Profiles.

5. Set the Bit in the D-11 Driller and remove the reinforcing cord from the Profile to a depth of at least 5 mm (3/16").
6. Alternatively, an electric drill can be used.



Make sure the Drill is secured safely, parallel to the reinforcement cord and that the profile is clamped in the jig. When using an electric drill it is recommended to clamp the jig to the work surface. Start drilling at a low speed and increase slowly.

7. Repeat the same procedure for the other Profile end.
8. Remember to clean the belt ends before welding.



D-11 Driller with Bit



Electric Drill with Bit

## Welding the Profiles

### Setting the Lever Locking Position

Mount one end of the profile in the X-die and move the clamp lever as far position. If the lever does not 'Lock' into position (either too loose or too tight) perform the following procedure.

1. Loosen the two Clamp Base Locking Nuts (Fig. 26).
2. Loosen the two Clamp Base Adjusting Nuts (Fig. 26).
3. Bring the Lever forward until the profile in the X Die is snug against the Y Die. The lever should be fully forward without pressure being applied.
4. Tighten the two Clamp Base Adjusting Nuts until they are snug.
5. Open the lever fully. Turn the Clamp Base Adjusting Nuts an additional half turn CW (clockwise).
6. Tighten the two Clamp Base Locking Nuts (Fig. 26).
7. Move the lever forward to its closed position and ensure that the Clamp closes with a click.
8. Repeat steps 2 to 3 until the clamp closes with a noticeable locking sensation.



Without removing the Profile from the "X" die, adjust the melt mark

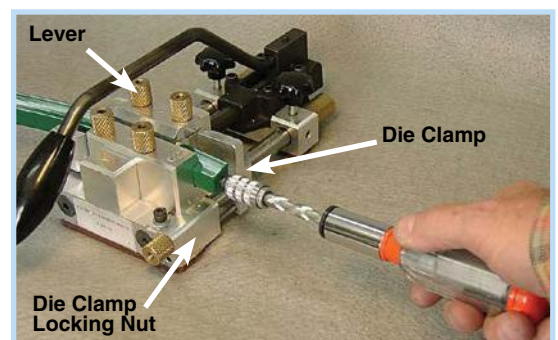


Fig. 25

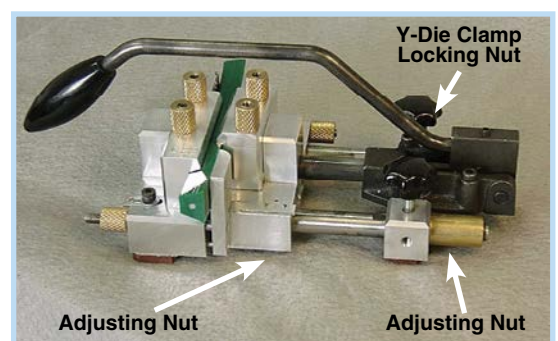


Fig. 26

## Adjusting the Melt Mark

The EZ Overlap has three marks to guide the welding process (Fig. 12). One reference mark is on the movable base. A slider mounted on the fixed base and extending over the movable base has two marks; the Setup Mark and the Melt Mark.

- A. With one end of the Profile mounted in the movable (X) die, move the lever forward until it reaches the fully forward position when you will feel a noticeable locking action.
- B. The Setup Mark should be aligned with the Reference Mark. If it is not, loosen the Reference Bar Locking Nut (Fig. 28) and adjust the Reference Bar until the Setup Mark is opposite the Reference Mark. Tighten the Reference Bar Locking Nut.

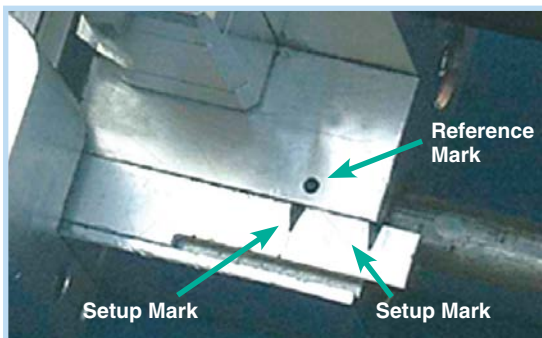


Fig. 27

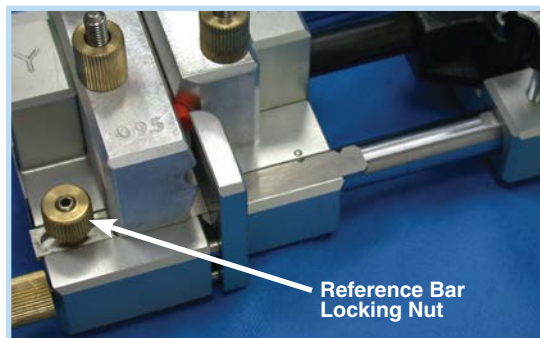


Fig. 28



The EZ Overlap Welding Clamp is now properly adjusted. The above procedures must be repeated every time you weld a different profile or cross section.

## Welding Profiles

Round Profiles: Apply a thin strip of double-sided adhesive tape, 10-12 mm (3/8–1/2”) wide and 50 mm (2”) long, to the belt ends as shown in (Fig. 29).

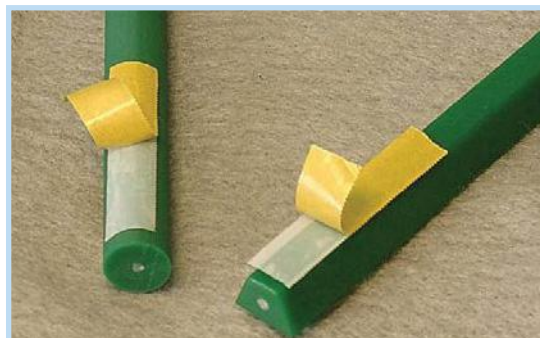


Fig. 29



Lay the Round belt out on a flat surface. The two ends of the belt should have tape on opposite sides to avoid the belt twisting when mounted on the conveyor.

- | V Profiles: Attach a thin strip of double sided adhesive tape, 10-12 mm (3/8–1/2”) wide and 50 mm (2”) long (Fig. 29), to the narrow portion of the V-Profile.
- | Double V: Same as for V Profiles above.
- | Special Profiles (Ridge Top, SG and MG): Apply double-sided tape in a manner to ensure that the upper portion of the Profiles is held in the Y die firmly.

## Mounting - Round Profiles

1. Position one end of the belt in the "X" die, so that it contacts the belt clamp (Fig. 30). Press the belt onto the X Die so the tape sticks.
2. Secure the belt to the "X" Die by tightening the belt clamp locking nut (see parts breakdown on page 9).
3. Mount the opposite belt end in the "Y" Die.
4. Cut a bevel on the inside of each belt end (Fig. 31-32).

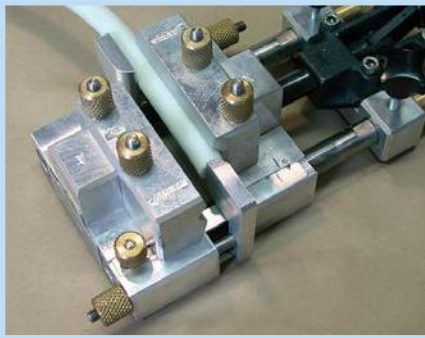


Fig. 30

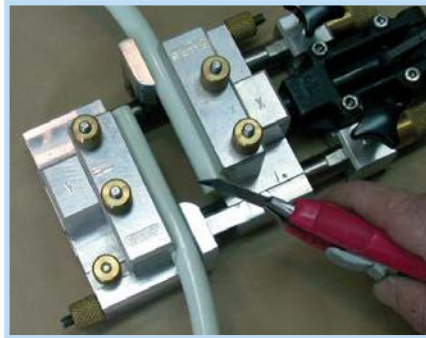


Fig. 31



Fig. 32

## Mounting - V-Profiles

Ensure that the "X" and "Y" Dies have been mounted according to the instructions.

1. Loosen the two Die Locking Nuts for the "X" Die. Lift the Upper V-Belt Adapter (Fig. 33) slightly and set the broad portion of the V-belt against the "X" Die. The belt end must be touching the Belt Clamp.
2. Tighten the two "X" Die Locking Nuts. The nuts should be finger-tight only.
3. Set the opposite belt end (narrow surface with double-sided tape) in the Y die. The end of the belt must touch the Belt Clamp. Press the belt against the "Y" Die so the tape sticks.
4. Tighten both the Belt Clamps to hold the belts in place.
5. Cut a bevel on the inside of each belt end (Fig. 34).

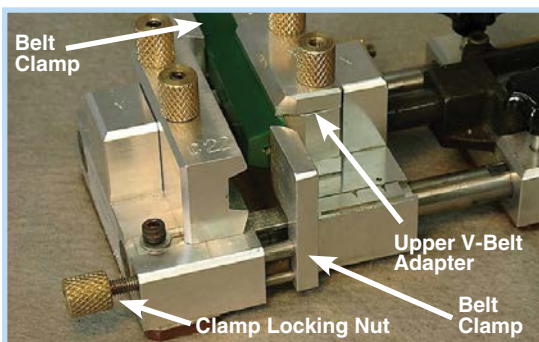


Fig. 33

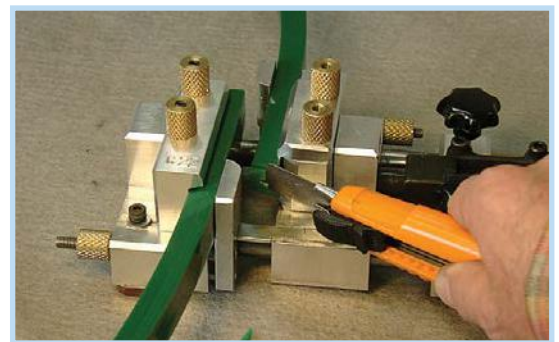


Fig. 34

## Special Products

When welding V-Profiles that have a top section or layer, such as the Ridge Top or SuperGrip or MultiGrip Profiles, it is necessary to remove the top section from one end of the Profile before welding.

## Mounting - Ridge Top Profiles

When welding Ridge Top belts it is necessary to remove approximately 50 mm of the Ridge Top from the Profile end in the Y Die as shown in Fig. 35. This provides space for the welder tip. Using a sharp knife remove the ridge section down to the top of the V as shown in Fig 35. Figure 36 shows a safe procedure for removing the ridge section by securing the Profile in the Easy Overlap Tool. This procedure can be performed with a sharp knife or grinding tool.

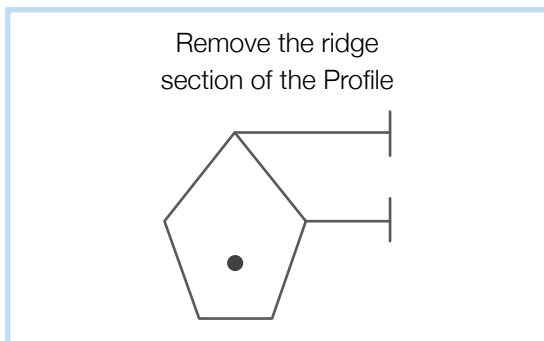


Fig. 35



Fig. 36

## Mounting - SuperGrip (SG) and MultiGrip (MG) Profiles

When welding SG and MG Profiles it is necessary to remove approximately 50 mm of the top covering from the Profile end in the Y Die as shown in Fig. 37. This provides space for the welder tip.

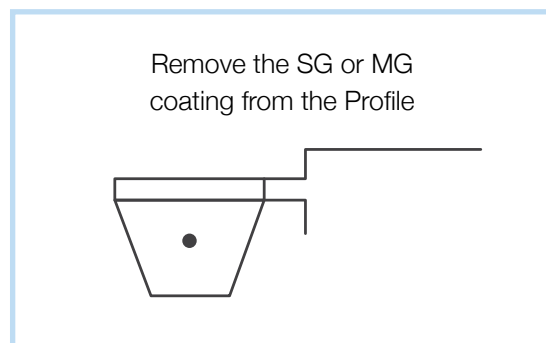


Fig. 37



Connecting the welder to an incorrect source may cause damage to the welder.



## Welding

The welder is designed to operate correctly at its listed voltage. If your supply voltage varies from that listed on the welder you must check the temperature of the welder tip. Correct and consistent welding is assured in the temperature range of 230°C to 250°C (446°F to 485°F).

1. Open lever. The movable base will slide back and provide room for the welder tip.
2. Insert the welder's tip between the two Profile ends. The welder tip will rest on the fixed and movable bases.
3. Move the Lever forward until the ends of the Profile come into contact with the welder tip (Fig. 38).
4. Maintain constant pressure on the lever and make sure that the material is melting.
5. Watch the reference bar. The Melt mark (Fig. 39) will gradually move towards the Reference mark on the movable base.
6. After the Melt mark is aligned with the Reference mark wait an additional 10 seconds. This will ensure that the reinforcing cords are compressed inside the welding area.

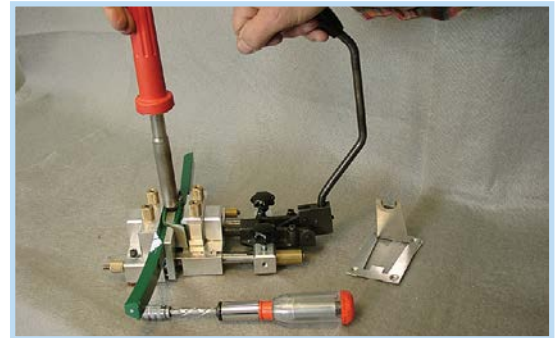


Fig. 38

### The following steps must be performed without delays between each step.

7. Open the Clamp by pulling the lever back.
8. Remove the welder.
9. Push the lever downwards until the Clamp is closed and the lever makes a clicking (locked) sound.
10. Place the welder on its stand.

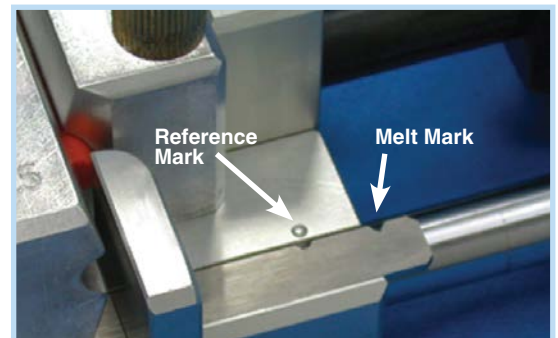


Fig. 39

Leave the material to cool until it reaches room temperature. This will take between 5 and 10 minutes depending on the room temperature. You can use high pressure air to speed up the cooling process if necessary.

## How to Remove the Welded Profiles

1. Loosen both Belt Clamp Locking Nuts.
2. Gently open the lever. The belt will pull away from the double sided tape.
3. Gently pull the belt away from the X and Y dies.



For V-Belts you must loosen the V Belt Adapter Upper Section.

4. Remove the Double-sided adhesive tape from the belt and dies.
5. Trim the flush from the belt using the knife provided in the kit.

## How to Clean the Welder

- | Be careful when you remove the melted material from the welder's Teflon coated tip. The tip is extremely hot.
- | Only use a cotton cloth. Avoid using synthetic fabric or sharp-edged tools to remove material. These will damage the welder's Teflon coating.
- | To ensure clean accurate and reliable welds the Teflon coating on the welder's tip must be maintained in good condition.



Before servicing or repairing the welder, make sure it is not plugged in and that the tip is at room temperature.

## Warnings!

The manufacturer can accept no liability for applications other than those specified in this USER MANUAL. Liability is also excluded for any unauthorized modifications or changes to any part of the supplied equipment. Carefully read the instructions and warnings in this manual. Keep the manual near the welder for ease of reference. Failure to follow warnings can cause accidents and harm people.

1. Do not use the welder in damp environments.
2. Always weld on a non-flammable surface and maintain a suitable distance from surrounding materials, as heat can damage them.
3. When not in use, store the welder in its case in a dry and safe place.
4. Only use the welder at its rated voltage (see page 4 - Technical Specifications).
5. Make sure the work environment is well ventilated.
6. This welder has been built in compliance with the strictest safety standards. Do not carry the welder by its power cord. Do not use the welder for purposes other than those it was designed for. Protect the power cord from heat and contact with sharp edges. Do not pull the cord to remove the plug from a power socket.
7. To ensure quality welding always keep the welder tip clean. Ensure that the Teflon is not scratched or peeled away.
8. Before replacing the tip unplug the welder and ensure that it has completely cooled off.
9. Make sure the power socket is properly grounded before connecting the welder.
10. Use a finger guard when engaging in various activities that involve the use of sharp objects. Handle the knife with care. Cut away from your body, not toward it.

## Maintenance

1. Make sure the welder's power cord is intact. If it is damaged after accidentally coming into contact with the welder's hot parts or sharp objects, have it replaced by qualified service personnel.
2. Wipe the Clamp with a cotton cloth after use, removing any residue.
3. Wipe the Clamp's guides with a cotton cloth.
4. Apply a small quantity of machine oil to moving parts at regular intervals.

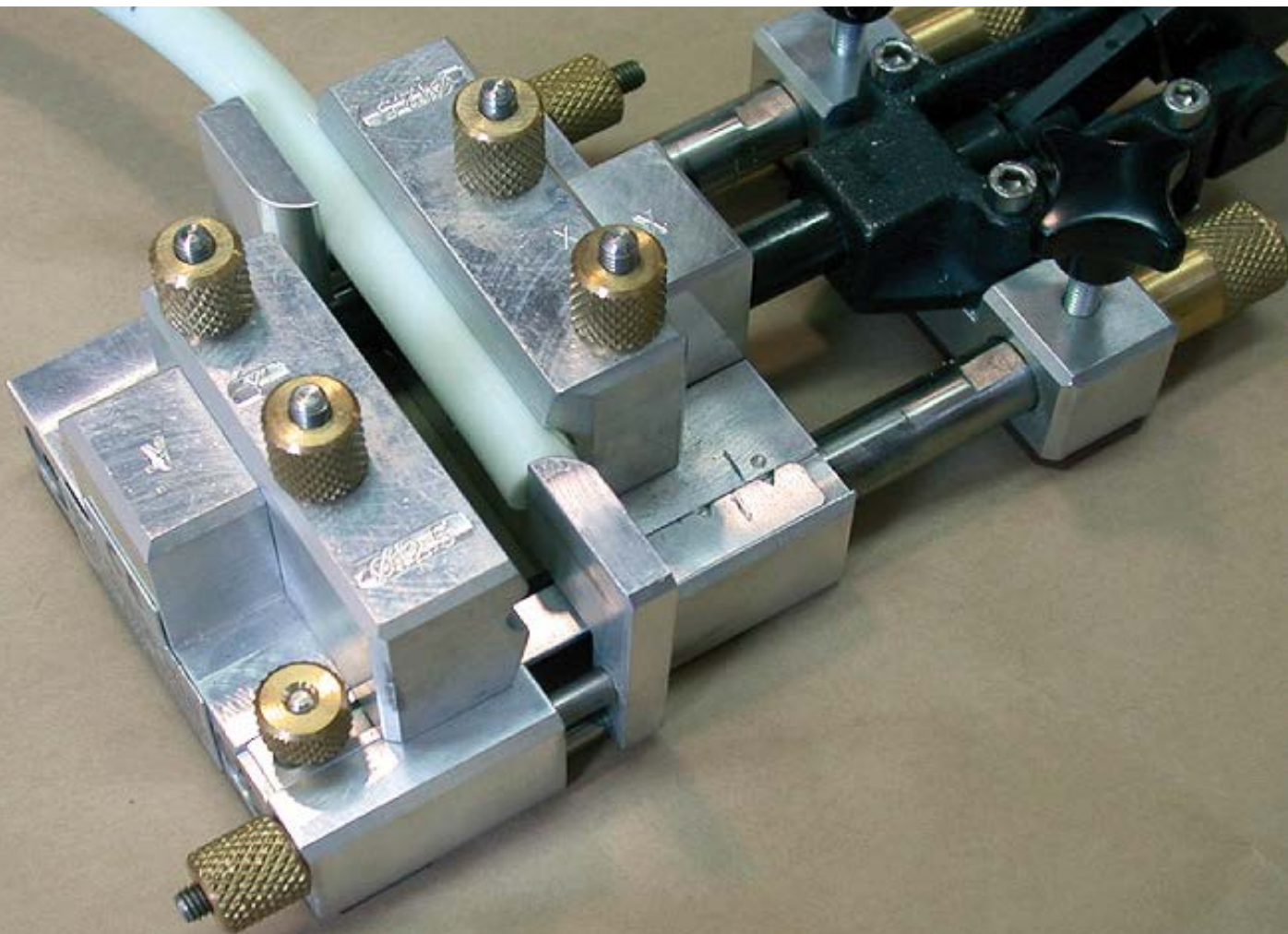
## Spare Parts

In the case that the welder, clamp or other related tools and equipment require repair, contact your nearest Volta Belting Technology distributor.



# With Volta Tools You Can Never Go Wrong!

- ✓ Fast and simple belt installation.
- ✓ Unique and versatile design - compact, rugged and easy-to-use.
- ✓ Designed for both shop and field use.
- ✓ Light-weight construction.
- ✓ Usually does not require cooling water or air pressure.
- ✓ Convenient design and method of storing and carrying your tools.
- ✓ Welds and fabrications are strong, reliable and will last as long as your belt life.



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