EAGLE FREESTYLE® BY FENNER DRIVES

Welding Kit Instructions

WARNINGS

1. **Heater blade becomes extremely hot during operation. Use caution to prevent burns.**
2. **Remove batteries from welder and allow to cool before servicing or storing to prevent fire, burns, and unintentional activation.**
3. **Do not allow the welder to overheat belt material; doing so may produce hazardous fumes.**
4. **Do not use welder in the presence of highly flammable or explosive materials or atmospheres.**
5. **Use the Eagle Freestyle Welder only with Fenner Drives Eagle Belts. Using this welder with other materials or belts may result in a hazardous situation.**

About the Batteries and Chargers

Although the Eagle Freestyle Welder is designed to use standard D size batteries, it is considered a high current drain device and consequently, it will not function with regular alkaline batteries. For proper performance, high power capacity rechargeable NiMH batteries are required. Most D size rechargeable NiMH batteries available in retail outlets typically have relatively low power capacities (2,500mAh). While the Eagle Freestyle Welder will function with these low power capacity batteries, you will only be able to achieve 4 or fewer welds. Likewise, commonly available chargers are only designed to charge these low power capacity batteries. This is why your Eagle Freestyle Welding Kit is supplied with special high power capacity rechargeable NiMH batteries (11,000mAh) and a charger designed to quickly and effectively charge these batteries (see charger and battery instructions for details). While the exact number of welds you will achieve will vary based on belt size, ambient temperature, air circulation and your efficiency with the welder, you should realistically expect to make between 15 and 30 welds on a fully charged set of the supplied batteries.

A proper butt weld will yield 100% of the non-reinforced belt's ultimate tensile strength. Note: A clean environment is necessary for a good weld. Make sure the area is well ventilated and free of dirt, dust and draft.

Note: This welder is suitable for use with Eagle belting up to 18mm and 5/8" diameter round, B section Vee, Twin A Vee and 1.5" wide flat. For larger profiles, use Fenner Drives' Butt Welding Kit.

To help as you follow the instructions, please take a moment to familiarize yourself with the components of the Eagle Freestyle Welding Kit. For flat and twin Vee size belts use the supplied flat plate adapters as shown below.

Scale has been altered on select items to show detail.



Welder

- **A** Heater Blade
- **B** Battery Cover
- **C** Belt Clamp
- **D** Belt Clamp Lock Screw
- **E** Weld Clamp
- **F** Weld Clamp Knob

Kit

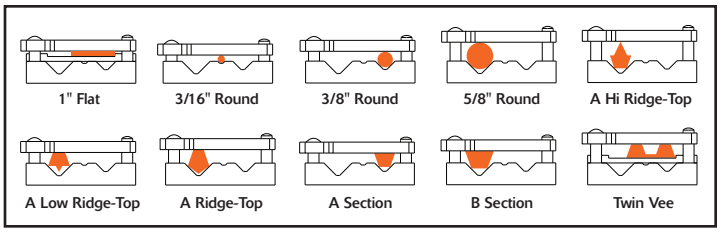
1. Battery Charger
2. **(4)** D Cell NiMH Batteries
3. Cutting Shears
4. Flash Cutter
5. Tool Bag
6. Welder
7. Flat Plate Adapters

Patent No. 7,730,921 B2

CE

Cross Section	Use Drill Bit
3/32"-5/16", 2mm-8mm, Z/10-A/13	5/64", 2mm
3/8"-5/8", 10mm-18mm, B/17	9/64", 3.5mm

Table 1



Note: Examine heater blade and remove any belt residue with a plastic scraper.

1. For optimum weld, ensure batteries (2 — D cell NiMH) are fully charged (see included charger and battery instructions for details on charging). Install the batteries into the welder by unscrewing the battery cover and inserting, positive ends of the batteries first, into the welder.

2. Using the cutting shears provided, cut each end of the belt perfectly square. Under certain circumstances it may be necessary to butt weld a reinforced belt. In these situations the reinforcement at each cut end must be drilled back 5mm – 7mm prior to welding. See Table 1 to determine the appropriate drill bit. If unclear about the circumstances that would require butt welding a reinforced belt, please contact Fenner Drives Applications Engineering Group. Note: Complete instructions on determining correct belt length can be found in the Eagle catalog located at www.fennerdrives.com/catalogs.

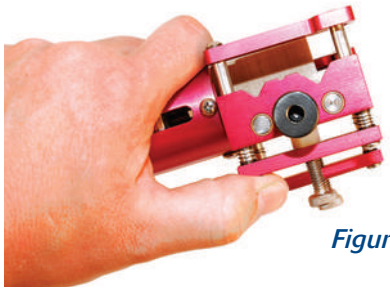


Figure 1

3. Completely retract the belt clamp lock screws. Using weld clamp knobs on both sides of the unit fully open the weld clamp. (Turn counter-clockwise with right-side knob)

4. Slide the battery compartment into unit, thereby exposing the heater blade.

5. While compressing the belt clamp springs (see Figure 1), place both belt ends into belt clamp and tighten belt clamp lock screws. Note: Make sure there are no twists in the belt. Make sure the belt ends are flush against the heater blade (see Figure 2).

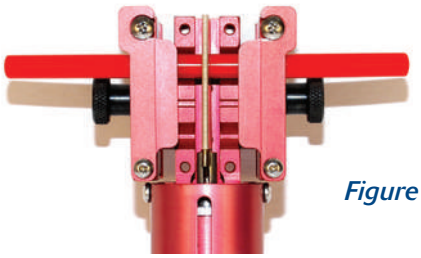


Figure 2

6. Press the belt ends against the heater blade by tightening the weld clamp knobs. (Turn clockwise with right-side knob.) A small amount of preload of the belt ends against the heater blade is required.

7. Switch the heater unit to the ON position by flipping the switch at the end of the battery cover.

8. Allow the heater blade to melt the belt until the desired bead forms (see Figure 3). (1 to 1.5 minutes for 3/8" or 9.5mm belting)

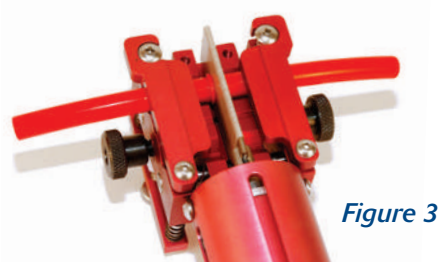


Figure 3

IMPORTANT: STEPS 9-12 NEED TO BE DONE AS QUICKLY AS POSSIBLE TO ENSURE A QUALITY WELD.

9. Switch OFF heater with the flip switch.

10. Release the weld clamp knobs just far enough to allow clearance between the heater blade and belt.

11. Retract the heater blade back into handle.

12. Refer to Figure 4. Quickly tighten weld clamp knobs to bring belt ends together to form the weld. (Turn right-side knob clockwise to tighten weld clamp) Extreme over-compression of the belt ends together may result in a poor weld.

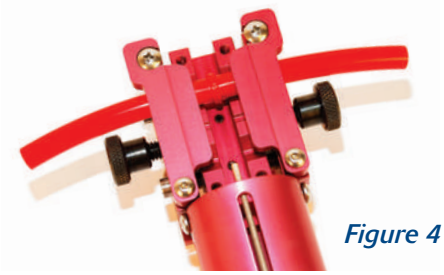


Figure 4

13. Allow the welded joint to cure. Small cross section belts should be left in the welder for a minimum of one minute to allow for initial cooling. Belt cross sections over 1/4" or 6mm should be left in the welder a minimum of three minutes. Note: Allow the belt to cure for a minimum of ½ hour prior to installing, tensioning, or straining the belt weld.

14. Loosen the belt clamp lock screws and compress the springs to release the welded belt. The top bars of the belt clamp will swing away to allow the welded belt to be removed (see Figure 5).

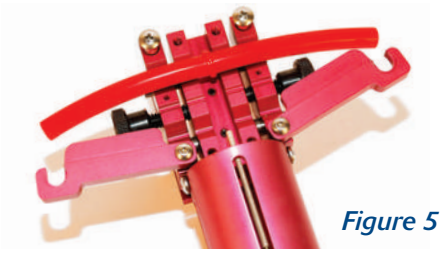


Figure 5

15. Using the flash cutters, remove the bead from the splice.

16. Remove batteries from welder prior to storing.

Fenner Drives accepts no responsibility for damage or injury caused by the misuse of this equipment.

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