

Splicing (Welding) Instructions for Dura-Belt Welding Kits

Caution: Always turn off and lock out all equipment before welding belts on any machinery. Wear safety glasses as hot urethane could splatter. Do not touch the hot plate (also called blade) or metal shank on welder wand, as it will burn flesh. Do not set hot welder on any surface that will burn. Do not weld near flammable materials. Do not weld in a wet environment, as electric shock may result.

Always weld in a well ventilated area because smoke fumes are poisonous. Over heated urethane decomposes, releasing toxic fumes including small amounts of hydrogen cyanide, the death chamber gas, so do not breathe fumes or let them get in your eyes.

Welding instructions should be in the welding kit box, but this is the way you do it:

If you are using a long extension cord, make sure it is thick (14 gauge or lower) so that the voltage will not drop much, and temperature will be hot enough to make good welds.

Make a few test welds on scrap material before welding your belt.

Plug in the heat wand (welder) and let it heat up for 15 minutes. Prop it on the stand to prevent the blade from burning the work surface. While you are waiting, cut the belt at the length you want plus 1/16". Our belt cutter should cut the ends very square. Then place the ends of the belt in the gripper pliers and lock them so the ends protrude about 1/8".

Next place the hot blade in between the belt ends and squeeze the pliers until a bead of melted urethane about 1/32" to 1/16" thick appears on both sides of the blade. If it smokes or bubbles while in contact with the blade, you waited too long, so you must start over. Welds that smoke or bubble like that are usually bad, although welds with just a few tiny bubbles on the outer edge may be acceptable. (In humid environments a short, thin wisp of white steam may be visible immediately after the blade is removed. It may look like smoke, but it usually is just water vapor.)

Quickly open the pliers and remove the blade, and immediately close the pliers and bring the melted ends of the belt together until the total width of the bead is about 1/16" to 3/32" wide. Do not squeeze too hard because that can force out all the molten urethane and cause the weld to break. Now lock the pliers closed and let sit for about 5 minutes.

Remove the belt and inspect the burr (also called the weld joint or flash). If the flash is lop-sided, discolored (e.g., brownish), contains many bubbles, or is soft and sticky, the weld is probably bad, and you must cut it off and start over. Otherwise, clip off the flash with the small clippers, while you again inspect for bubbles. If it looks good (i.e., more or less like the unwelded cord), the belt is ready to use.

Always wipe welder blade after each weld with some soft cloth to prevent the build up of urethane. When urethane builds up and is reheated, it decomposes more readily, foils the weld joint, and gives off toxic fumes.

With a little practice you can get a decent weld. It will not be nearly as strong as is possible with our proprietary RF welding process (joints up to 12 times stronger than you can get in the field). Our welding robots are as big as refrigerators, so if stronger welds are needed, let us weld the belt in our plant.