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CRIMPER AND KNIFE SET-UP TIPS FOR HORIZONTAL FLOW WRAPPERS

While there is no single correct way to set up sealing crimpers and knives on horizontal form/fill/seal flow wrappers, there are some things that can be done to make the task easier. Following are two dozen “tricks of the trade” which you may find helpful.

- 1) Use silicone heat transfer compound on all heaters and thermocouples. This will improve heat conductivity and also make it easier to remove the elements when it comes time to replace the crimpers or sealing jaws.
- 2) Be sure to clean the shaft surfaces where crimpers are mounted whenever new parts are installed.
- 3) Use new hardened washers when mounting crimpers to a flat shaft surface. This will help prevent the crimpers from moving out of alignment when the mounting bolts are tightened.
- 4) Use two-piece spherical (equalizing) washers when mounting crimpers to a round shaft surface for the same reason.
- 5) Make sure the crimpers are at operating temperature before final alignment, clearance and pressure adjustments are made and the mounting bolts are fully tightened.
- 6) Tighten the crimper mounting bolts while the sealing faces are in mesh.
- 7) If you are using a horizontal serration pattern (parallel to the knife slot) on your crimpers, make sure backlash is eliminated from the gearing.
- 8) Check the crimper clearance whenever installing new parts. The sealing faces should just make contact with minimal interference. Optimally, it's best to back off on the clearance and adjust the crimpers closer until they are parallel and positioned correctly.

- 9) Once crimper clearance is set properly it does not normally require further adjustment unless there is a film change. Seal improvements are best made by modifying the crimper pressure. This will more effectively “fine tune” results.
- 10) When shifting from high to lower line speeds it may be necessary to reduce temperature settings. Failure to do so is a common cause of sealing problems.
- 11) To clean crimper sealing faces use a brush with either brass or very fine steel bristles to avoid damaging the serrations. Metal scrapers, picks and screw drivers should never be used.
- 12) Always align and adjust crimpers before installing the knife and anvil. Make sure the seal is good before moving on to the cutting operation, and realize that knife adjustments could have a negative impact on seal quality.
- 13) Always change the anvil when you install a new or reground knife. Extra pressure is required for a knife to cut against a worn anvil surface. This will complicate set-up and prematurely dull the knife edge.
- 14) If a knife stops cutting properly and you have no spares available, try changing just the anvil. While not an ideal situation, the knife will often begin cutting again, giving you extra time to find a replacement.
- 15) Measure knife and anvil heights before installing them, especially on reground shim-style parts. This will provide a reference point for further adjustment. (To make things easier, ask your vendor to mark the new height on reground knives and anvils.)
- 16) If you are adjusting the knife and/or anvil with shims, make sure the shims are free of burrs. (Greener can supply rolls or strips of properly sized shim stock.)
- 17) Cut the shim stock slightly longer than the knife or anvil to further decrease the possibility of a burr causing uneven adjustment.
- 18) Use as few pieces of shim as possible to avoid an irregular or “springy” base under the knife or anvil.
- 19) To make zig zag knives easier to set-up and increase part life, use a diagonal zig zag with more (smaller) teeth. The biased knife edge with a reduced width requires less pressure to make a cut.
- 20) Make sure the knife is hot before final height adjustments are made. It will actually grow slightly when heat is applied.
- 21) When adjusting or installing a knife and anvil, check the anvil height first and adjust if necessary so that it is at or slightly below the midway point between the crown and root of the crimper serrations, then adjust the knife out until it cuts properly.

- 22) When installing new knives and anvils make sure the slots are clean. Material or product build-up in the slots can make parallel adjustment difficult or impossible, especially with shim-adjusted parts.
- 23) Before installing a new knife and anvil, check the clearance and temperature setting and adjust if necessary. These may have been changed in an (unadvised) attempt to get a dull knife to cut.
- 24) In order to avoid getting caught in a “problem loop” when setting up crimpers and knives, modify one thing at a time and gauge the effect before moving on. It’s not uncommon for an adjustment to solve one problem but cause another.

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