

## BALL CRIMPER

### A. General Procedures

1. Protect yourself. When using the “Hand Crimper” and the “Air Pot Crimper” you must use a full face shield.

**Note:** No face shield is required for the hydraulic operated crimper.

2. Any other employee working in the immediate area is included in procedure #1 above.
3. Always use the right crimper for the job being done and make sure that the correct size Acrimping dies are used to make a quality crimp.
4. To prepare the ball assembly for installation.
  - a. Using an offset screwdriver, or a similar tool, open the split on the mounting shell by twisting quarter of a turn.
  - b. Insert ball into mounting shell, then close split by twisting the screwdriver quarter of a turn. Be careful not to pinch you hand.
  - c. Fill gap in mounting shell with a sealant. Do not overfill. Put sealant in just before you are ready to use ball, otherwise the silicone can become too hard and will not allow the shell to compress.

**Note:** Use AKleen-flo Gasket Black @ silicone gasket maker.

- d. Line up grease zerk hole in ball with the grease zerk hole in the mounting shell.
5. Start the tapered side of the mounting shell into the large side of the tapered hole on you work piece, again lining up the grease zerk hole on the mounting shell with the grease zerk hole in your work piece.
  6. Always make sure that the crimping dies are in good shape - not chipped, cracked and the crimping tips not worn down.
  7. Keep your crimping dies clean. Remove any build up of paint, grease, caulking etc. using a wire brush.

### B. Hand Crimper Operation

1. Use a hammer and a ball driver; drive the ball assembly all the way into the work piece. Ball assembly should be slightly lower than the work piece.

**Caution:** Check the ball driver to make sure that the end is not mushroomed and the hammer should be in safe condition before using.

2. Never hit directly on the shell or ball.
3. Never use a mushroomed ball driver; it could chip causing serious injury.
4. Insert the handle of the hand crimping tool through the ball assembly from the same side you drove the ball assembly through the work piece.

## BALL CRIMPER PROCEDURE

5. Hold the handle with your left hand, pulling the crimping tool head against the work piece, and then hit each of the crimping tips several times sharply with the hammer.
6. Turn the crimping tool so that the tips are midway between the last positions, and repeat procedure #5 above.
7. Check to make sure that the edges of the work piece where the crimping tips hit are crimped over top of the mounting shell.
8. Be careful not to damage the seals in the ball, they come out very easily.

### C. Air Pot Crimper Procedures

1. Use a hammer and a ball driver; drive the ball assembly all the way into the work piece. Ball assembly should be slightly lower than the work piece.

**Caution:** Check the ball driver to make sure that the end is not mushroomed and the hammer should also be in safe condition before using.

2. Check the diaphragm of the air pot before using for cracks or any unsafe condition. An unsafe diaphragm could explode causing serious injury.
3. Check the air line and connectors for any defects, before plugging into air supply.
4. Check the cables on the weight transfer mechanism for damage or wear, check cable clamps to make sure that they are tight.
5. The weight pot limiting chain should be in place.
6. Always watch out so that no part of the Air Pot Crimper or the weight transfer mechanism will catch on the paint track.
7. Slide the correct size crimping die onto the bolt of the Air Pot Crimper, then slide the bolt through the ball assembly from the opposite side of the work piece where the assembly was installed from. Slide on the second crimping die onto the bolt and tighten with nut as much as possible by hand.
8. With one hand on the main handle, push the crimper, activating button with the other hand.

**Caution:** Keep hands and all body parts away from the two crimping plates which open and close and also from the crimping bolt area.

9. Always stand to the side, never directly behind the Air Crimper or in front of it.
10. Pull out the button to deactivate the crimper, retighten the nut. Repeat crimping operation about 2-3 times, or until you cannot tighten the nut anymore.
11. Release tightening nut, turn crimping die so that the tips are mid-way between the last position and repeat first crimping procedure.

## BALL CRIMPER PROCEDURE

### D. Hydraulic Operated Crimper

1. Check all electrical supply cables and connectors for any defects or damage before plugging into a 600 volt outlet.
2. Breaker must be OFF@ before plugging in a 600 volt cable to avoid shock.
3. Visually inspect the hydraulic lines before turning on the hydraulic unit, for any leaks or line damage. Even a pin-hole in hydraulic line can inject oil into a person=s skin causing serious or fatal injury. Hydraulic leaks are extremely dangerous.
4. Make sure electrical cables and hydraulic lines are protected if you have to place it under the paint line.
5. Check switch and switch cables for damage.
6. Plug in electrical cable and turn the breaker AON@. Turn AON@ the hydraulic pump, place the correct size crimping die on the shaft of the hydraulic cylinder and slide cylinder shaft through the ball assembly which has been started into the work piece.
7. Slide the second crimping die onto the shaft, if needed, (some applications need to be crimped only on one side). Hand tighten using the nut supplied with crimper.

**Note:** When tapered shells are crimped in to tapered bore holes, only the side from which the shell is inserted in to the bore hole needs to be crimped.

8. Keep hands and all body parts clear of crimper and stand to the side. Turn rocker switch AON@ to crimp, repeat 2 - 3 times tightening nut each time.
9. Release nut, turn crimping die so that the tips are mid-point between the first position and repeat crimping procedures.
10. Check work piece to make sure that the ball assembly is securely crimped in place.
11. Never drop hydraulic cylinder, handle it with care.
12. Do not use the cylinder as pry bar.
13. Never stand directly in front or behind the cylinder when crimping.
14. Never attempt to fix or repair any part of the hydraulic ball crimper yourself. Report any abnormal or unsafe condition to your supervisor immediately.
15. Make sure the hydraulic oil reservoir is full of oil, wipe cap and surrounding area before opening. Extremely important to keep oil clean.
16. Turn off power supply when crimper is not in use.

### E. Hands on Training

1. Take each individual employee and do a >one on one = >hands on = training to familiarise each employee with the different operations of the three different crimpers.
2. Allow them to ask questions that they may have.