



# KENT-MOORE

## INSTRUCTIONS

## Heavy-Duty Division

### PT-7300 / PT-7310 PORTA TOOL STITCH CRACK REPAIR KIT

**FUNCTION:** Metal stitching is a cold repair process by which cracked castings are drilled, tapped, and restored with high tensile strength threaded pins which provide greatest holding strength and positive seal. The Stitch Crack Repair Kit should be used with our PT-7320 or PT-7330 Lock Crack Repair Kit on large cracks or high stress area repair work.

#### Step-by-Step Instructions

USE OF SAFETY GLASSES IS RECOMMENDED

1. **Locate the crack-** Thoroughly clean and degrease the part, then identify the crack using the PT-7191 Flaw Finder dye penetrant system.
2. **Punch Mark the Crack-** Using the hole spacer punch tool, punch location for first drill hole approximately 1/8" beyond the end of the crack. PT-7307 Punch is for PT-8800 or PT-8805 (Std.) Pins, PT-7311 is for PT-8810 (Lg.) Pins.

Continue center punching by using indicating point of tool to space from the previous punch mark. Allow punch to float in tool and strike punch sharply one time only. Continue punching until drill spacing has been laid out throughout entire length of crack (Fig. 1).

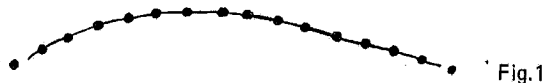


Fig. 1

3. **Drill-** Using drill bit provided, drill holes skipping every other punch mark. (Fig. 2)

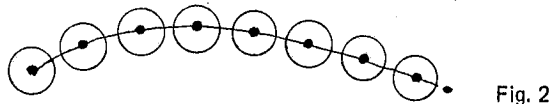


Fig. 2

4. Tap the holes using the special taps provided in the Kit. A variable speed, reversible air or electric drill may be used to run the taps. Keeps taps lubricated with good quality tapping fluid.

**IMPORTANT—CARE MUST BE TAKEN TO TAP HOLES AT THE SAME ANGLE AS THEY WERE DRILLED**  
(Fig.3)

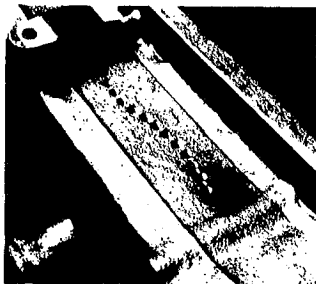


Fig. 3 Series of holes precision drilled and tapped along crack line for threaded pins.

5. Blow out the tapped holes with compressed air to assure clean threads, and spray with Loctite T.
6. Place a bead of PT-7260 Loctite Special Retaining Compound in each hole.
7. Install pins in holes using 3/8" air impact wrench or ratchet. Make sure pins are installed at the same angle as they were tapped. Tops of pins will twist off when they become tight enough. This assures all pins are installed at a uniform torque. (Fig.4)

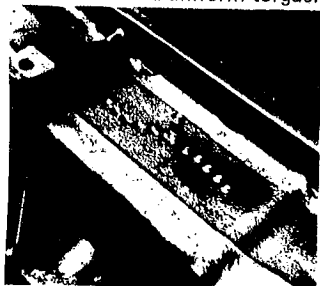


Fig. 4 Precision metal stitching pins are inserted into first series of drilled holes.



Fig. 5 Tops of threaded pins break off at specified torque and pins are ground to finish.

8. Grind off any of the pins that are left exposed above the surface. Leave a small portion (1/16") of each pin visible to easily identify its location. (Fig. 5)
9. Drill a second series of holes at every other punch mark. This is to prevent from drilling on both sides of any pin, which could cause it to become loose. (Fig. 6A & 6B)

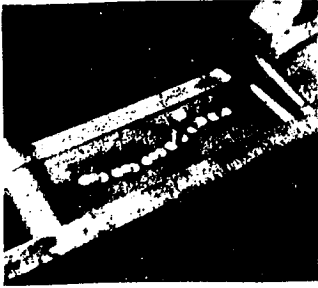


Fig. 6A Pins are installed in holes between first series of pins in overlapping pattern.

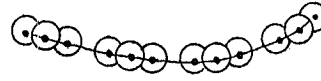


Fig. 6B

10. Repeat steps 5 through 8 to onstall second set of pins.
11. Drill last series of holes in remaining punch marks and complete instation of pins as per Steps 4 through 8. (Fig. 7)



Fig. 7 Last series of pins is also ground to surface of work to complete casting repair.

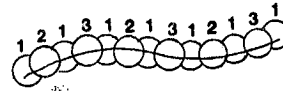


Fig. 8 Pin pattern overlaps leaving no gaps in between.

12. Finish grind the pins to complete the repair.  
**IMPORTANT: ALL PINS MUST OVERLAP EACH OTHER SLIGHTLY, LEAVING ABSOLUTELY NO SPACES IN BETWEEN.** (Fig. 8)
13. Repairs on rough cast surfaces should be ground flush with surface and peened completely with pointed tool in air hammer.
14. Repairs on machined surfaces or gasket surfaces require special attention to assure a flawless finish. Approximately 1/16" of the pins should be left above the surface to be peened down. Flattening out the exposed portion of the pin seals the top thread of the pin and gives a flawless finish when the excess material is removed by machining, grinding, or filing.
15. Some situations require installing pins one at a time (See Fig. 9). This process is acceptable but slower because of time lost in changing tools. It is necessary to always make sure that there are absolutely no spaces left between the pins no matter which installation process is used.

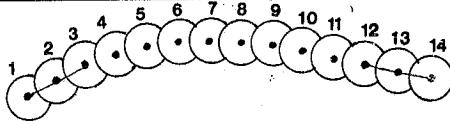


Fig. 9 Pin overlap pattern when installed one at a time.

**EXAMPLES WHERE IT MAY BE NECESSARY TO INSTALL ONE PIN AT A TIME INCLUDE:**

- a. Castings with cracks following awkward contours.
- b. Hard to get at areas.
- c. Sharp turns.
- d. Wherever the center punch cannot be used.
- e. Irregular shapes.
- f. Freeze plug holes, ports, or bore areas.
- g. Small cracks requiring as few as three pins.

16. All repairs should be tested to assure that there are no leaks. If any leaks are detected, they can be easily sealed by either peening ar installing more pins.

**SERVICE PARTS**

PT-7300 Porta-Tool Stitch Crack Repair Kit (Standard Size)  
PT-7310 Porta-Tool Stitch Crack Repair Kit (Large Size)

**Consists of:**

Qty.	Part No.	Description	Qty.	Part No.	Description
			1	PT-7270	Loctite Primer T
1	PT-8800	1/2" Stitch Pin Pack (100 pcs)	1	PT-7300-10	Storage Box
1	PT-8805	11/16" Stitch Pin Pack (50 pcs)	1	PT-8810	11/16" Lg. Stitch Pin Pack (50 pcs)
1	PT-7305	Drill Set (3 pieces)	1	PT-7308	Tap Set (2 pcs)
1	PT-7306	Tap Set (3 pieces)	1	PT-7309	Drill Set (2pcs)
1	PT-7307	Hole Spacer Punch	1	PT-7311	Hole Spacer Punch
1	PT-7260	Loctite Special Retainer Compound	1	PT-7310-10	Storage Box

