



# Concrete Crack Polyurethane Resin Injection Repair Guide

Low pressure crack injection with Leakmaster epoxies and foams allows for superior repairs with less investment in time and tools compared to high pressure injection. The low pressure system enables injection material to flow completely to all parts of the crack without "backing-up." The surface mounted injection ports are mounted to the pool surface directly over the crack using the same epoxy that seals the surface of the crack. No drilling is required. For added reinforcement use Carbon Fiber Staples to spread load and prevent future cracking.

## Repair Kit Contents:

This kit includes all of the materials and accessories for low pressure injection and repair of approximately 30 linear feet of cracks.

- 3 dual cartridges LeakMaster C301D Surface Seal and Port Adhesive
- 3 dual cartridges LeakMaster C102D Urethane Foam
- 1 syringe 455-0.5 Fast port adhesive/blow hole repair
- 1 Jake 300/300/150 manual dispensing tool
- 4 1/4 x 24 element mixers & 4 retaining nuts (for use with Injection Resin)
- 6 crossover restrictors
- 50 surface ports and caps
- 4 hose assemblies
- 5 pair nitrile gloves
- 1 plastic trowel & 1 wire brush
- Safety glasses
- 1 tool box
- 1 squeeze bottle
- Complete instructions & instructional DVD
- Product Data Sheets & MSDS/How to use the Jake Tool

## Crack Preparation:

Place drop cloth on the floor in front of work area. Clean the surface surrounding the crack using the wire brush. Remove loose or flaking concrete, efflorescence, paint or coating to approximately 1-2 inches on either side of the crack. Wipe the surface clean of dust after brushing. The surface must be dry for proper installation of injection ports and surface seal. For best results if the surface is wet, wait until dry, or if necessary, use a hot air gun, hair drier, or oil free compressed air to dry.

## Surface Port Attachment and Crack Sealing:

1. Starting at a point closest to the base of the pool (vertical cracks), mark port locations on the wall. Ports are placed apart the thickness of the concrete wall, usually about 6-8" apart. Center ports over the crack (no drilling necessary).
2. Prepare LeakMaster C102D Crack seal and port adhesive by dispensing (using the Jake Tool, instructions on page 4) a sufficient amount of the surface seal on to a paper plate or scrap piece of cardboard and mix with the supplied mixer sticks (repeat this step each time you run out of mixed adhesive).
3. Remove the cap from the surface port, then apply a small amount of mixed adhesive to the bottom of the port base. Place the first port starting at the bottom of the crack and repeat every 6-8" until the entire crack is ported. **Note! Do not allow the epoxy to block the bottom of the port opening or the crack beneath the port.**
4. The next step is to work the mixed surface seal epoxy paste along the entire length of the crack using the plastic trowel. The recommended epoxy paste application is 1/8" thick and 2" wide. Make sure to mound sufficient extra epoxy around the base of the ports. Expect to use 20 ounces per 10-feet of crack. Do not work epoxy "into" the crack, just over the surface.
5. Let the surface seal and port adhesive cure before beginning the injection, about 20 minutes until fingernail hard. (Not recommended or necessary to wait overnight.)



# Injection Procedure:

1. Using the squeeze bottle, flush the crack with 1-2 cups of water poured into the top port. Water should come out every port below the top port indicating that the crack is continuous and that ports are not being blocked by epoxy. Water is also useful to flush the crack and aid in resin activation.
2. Place the LeakMaster C102D Injection Resin dual cartridge into the Jake Tool (instructions on page 4). Remove the plastic cap and then twist and pull to remove the plastic seal. Replace seal with restrictor, place the 1/4 X 24 mixing nozzle on top of restrictor over the end of the cartridge attaching with plastic nut.
3. Attach the flexible hose assembly (wide end) over the mixer tip by pushing firmly.
4. For vertical cracks attach the small end of the hose assembly into the lowest port by pressing firmly. For horizontal cracks begin at either end if one is not lower than the other.
5. Begin injecting slowly with low pressure (allowing the resin time to flow into and fill all small fissures) until the resin begins to flow from the port above it. Use the white plastic pinch valve on the hose assembly to turn off resin flow, plugging the first port with the cap provided and move up to the next port. Repeat this procedure until the entire crack has been injected with LeakMaster C102D Urethane Resin.
6. After foaming is complete in about 3 or 4 hours the ports can be removed by striking with a hammer. Use a hand grinding wheel to remove Surface Seal for a smooth finish. The Surface Seal epoxy is paintable if desired.
7. V-cut crack and apply plaster repair product to finish job. Crack will be sealed all the way through pool wall.



## HINTS:

- To improve the ability to penetrate very small & hairline cracks, heat the injection urethane system by placing the injection cartridge in a pail of hot tap water for 15-20 minutes. This temperature exposure should thin the material so that it can flow into the crack with less resistance as before.
- The secret to effective crack injection is patient low pressure introduction of the resin. Small or hairline cracks will require 3-4 minutes at each port for proper filling to take place.

# How to Use the Jake 300 Tool:

1. Attach mixer to the tube set.
2. Load the Jake 300 Tool as follows:
  - A. Depress brake plate with thumb and while holding it, pull back on the back knob and plate attached to the pushrods.
  - B. With the tool facing upward, slide the dual cartridges in (largest tube first in) until the cartridge front and retaining nut are within the notch of the carriage. Match piston ratio (i.e. 300/300 - 300/150 - 150/150). Line up the tube set with the pistons and begin squeezing the trigger handle slowly making sure the drive rod is riding inside the cartridge on the right side, and the pistons are inserted directly into each tube.
  - C. Before pressure is applied, recheck the front of the tube set to make sure it is in the notched opening of the tool front, so when pressure is applied it will lock into place.
  - D. Hold the tool with installed tube set pointing upward; squeeze the trigger handle until the pistons make contact with the plungers, checking that the front is still locked in place. This will also remove any air trapped in the tube set. (Cannot stop material flow if air is trapped in cartridge.)
  - E. Begin squeezing, allowing excess energy generated to be absorbed and stored in the spring. **Do not allow spring to bottom out.** This extends the life of the tool and controls force generated.
  - F. The tool is now loaded and ready for operation.
  - G. **To release the pushrods depress the thumb plate while squeezing the trigger handle. This relieve the pressure on the thumb plate and allows the pushrods to release.**

## OVERSQUEEZING OF THE TRIGGER HANDLE MAY CAUSE:

1. Leaking of material from rear cartridges.
2. Cutting of the Drive rod.

LET THE SPRING DO THE WORK

KEEP TOOL CLEAN— WIPE CLEAN EVERY TIME THE CARTRIDGES ARE CHANGED—FOR BEST RESULTS DON'T LEAVE EMPTY OR PARTIALLY USED CARTRIDGES IN TOOL

**To change ratios, just use the appropriate plungers. The rod position(s) remain the same.**