

by Jeff Griffin, Senior Editor

## Manhole Repair System Offers Unique Approach

Do family members and friends call Michael K. Crites "Mr. Manhole?"

If they do, it's easy to understand why; if they don't, perhaps they should.

Crites is president of Critex, LLC, a small Ohio company that manufactures and markets the Mr. Manhole manhole leveling system. Crites is certain his company's patent-pending products are going to change the way manhole chimneys – the top section of a manhole structure – are removed and repaired. Indeed, he estimates in the last two years, hundreds of manholes across the country have been repaired using the system.

The Mr. Manhole system, says Crites, can dry-cut through asphalt or concrete and lift out the manhole frame in 10 minutes or less without the need for manual labor, then in a few more minutes, rebuild the manhole's chimney to be perfectly level with the grade of the street or other surface.

*The process works as follows:*

The Mr. Manhole cutter/extractor, mounted on a skid-steer loader or any equipment with 20 gpm hydraulic flow, cuts a circular groove around a manhole frame and removes the frame and road over cut in one simple operation. Cuts can be made from

42- to 72-inches in diameter by adjusting the position of the cutting arms.

The basic cutting unit includes a speed plate which centers the cutter's shaft and keeps the unit cutting a true circle, cutting stand, lifting device, debris shield, tooth weld jig, four extra teeth, bars and four single teeth. Crites says the speed plate also allows the extractor to pull the frame and over cut from the road after cutting. The debris containment system prevents material from spraying out during cutting.

### Kit

The Mr. Manhole kit contains everything needed to remove manhole frames except the power source vehicle with a standard post-hole auger. Any skid-steer make and model can be used, although track models tend to be more stable than wheel units, says Crites. No special connectors or hydraulic system modifications or special controls are required.

The cutter uses 16 teeth, and Crites says on average a set of teeth cuts 100 to 200 holes, depending on conditions. Teeth are easily replaced by unbolting the tooth plate and attaching a new one. The jig that comes with the cutter unit facilitates welding new teeth to the plate.



Crites says many first-time buyers acquire the cutting/extractor to remove frames and plan to make repairs with concrete adjusting rings as they have in the past.

"But when they see how fast and easy our system is," he adds, "they want to use it, too."

The basic repair material kit contains an insert liner of heavy-wall nylon pipe which protects the inside of the repair from gasses in the manhole, epoxy-coated rebar rings, tubes of white urethane sealant, water-stop material which is water activated, pourable

# Manhole Repair

asphatic edge seal for joints between the repair and existing road, and black concrete dye to repair 20 manholes. The insert liner comes in 3½-foot lengths and is available in 27-, 30- and 40-inch widths.

*Crites describes the steps in making a repair:*

- After removing the manhole frame from the road and removing any adjusting rings, the insert liner is placed on the cone and bonded to it with the provided urethane sealant;
- The ring saw is placed on the road surface and trims the liner to the exact height and slope of the road;
- Additional seal is applied to the top of the liner to bond the liner to the manhole frame; and
- When approximately 10 manholes are cut out and leveled, ready mix concrete is used as fill around the repair. Epoxy-coated rebar is vibrated and dyed black to match the surrounding road.

"The repair exceeds the HS20 loading requirements by four times," says Crites, "and can be returned to service in 24 hours. Load-carrying capacities increase as the concrete cures. The result is the repair can

support heavier loads than the manhole itself."

## Quick turnaround

An accessory includes a casting lifter that allows two men to carry the manhole frame to better facilitate repairs.

"A trained, four-person crew can expect to complete 10 repairs a day," Crites says. "And the system can reduce repair costs by 50 percent compared to conventional repair methods."

The Mr. Manhole system was developed about two years ago. Marketing efforts since then have helped prospects understand how the cutter/extractor works, says Crites.

"We have found that potential buyers easily grasp the cutting and extracting a manhole frame," he continues. "But the repair process is harder to visualize, and demonstrations are the best way to understand the process and benefits. Videos at trade shows and on the company's web site also provide an effective visual presentation of how easily repairs are made."

Crites believes a key to his system's success is helping buyers use the system effectively.

"Every Mr. Manhole system comes with

an instructional CD," he says. "We have developed software that includes data bases that allow customers to input data, pricing and other project information. When the project is complete, it generates invoices, a full report of every manhole repair, and a cost analysis to document whether the job was profitable. In addition we will train and certify personnel in the use of the system."

A specification CD, available in several file formats, facilitates incorporating the system in design work and contains videos showing how a repair is made, explaining each facet of the specification. A DVD with demonstration videos also is available.

To date, Crites says the largest categories of buyers are municipalities, who often want their crews certified, excavation contractors and contractors who specialize in rehabilitating manholes with spray lining methods.

Mr. Manhole products are available from authorized dealers or directly from the company's on-line store.

## FOR MORE INFORMATION:

### **Manhole replacement system:**

Mr. Manhole, (419) 229-3015,  
[mrmanhole.com](http://mrmanhole.com)