

Better Roads

www.BetterRoads.com

MARCH 2002

For The Government/Contractor Project Team

Maddock **Grader as Grinder**

At last, an attachment that might get
your under-utilized grader
working again



Grader as Grinder

At last, an attachment that might get your under-utilized grader working again.

INFORMATION STATION



RG-72 Rotary Grader Attachment

Manufacturer: Maddock Corp., 3905 Farmer, Ave., Bloomington, IN 47403.

Type: Hydraulically driven rotary cutter drum attachment for road and shoulder maintenance and light milling of asphalt.

Power Unit: Self-contained 125-horsepower John Deere 4045T turbo-diesel, hydraulic pump and reservoir skid-mounted to front scarifier bracket or as a rear attachment.

Approximate weight:2,000 lb.

Hydrostatic Drive: 130cc variable displacement pump; 100cc fixed displacement motor.

Cutter Head: Rotating steel drum with 108 conical, tungsten-carbide bits.

Length72 inches
Diameter18 inches
Speed100-425 rpm
Approximate weight1,800 lbs.

Controls: Single-axis joystick controls drum speed, engine throttle, pump engage/disengage, and emergency stop functions.

Dave Maddock grew up in the family road construction and maintenance business and is now combining that experience with his engineering expertise and entrepreneurial zeal to produce unique new products for highway agencies and contractors.

The RotoGrader RG-72 (patent pending) is exhibit A. It is designed to answer two converging trends: under-utilized motor graders, especially among county agencies; and a proliferation of light milling work that doesn't require a purpose-built milling machine but tests the capacity of a loader-mounted milling attachment.

Attached to the moldboard of a motor grader, the RotoGrader's 72-inch-long rotary cutter drum equips the machine to cut and pulverize road shoulders and gravel roads and perform light surface milling of asphalt pavement. The cutter head has a diameter of 18 inches and holds 108 conical, tungsten-carbide cutting teeth. Optional cutter-drum widths are available.

The cutter can work at rotation speeds ranging from 100 to 425 rpm. The cutter drum can be angled to the work, producing a nearly smooth, cross-



By operating the RotoGrader on an angle, it yields a smoother surface than conventional milling machines.



Above: The RotoGrader's skid-mounted power unit attaches to the grader's front scarifier bracket. The unit includes a 125-horsepower Deere diesel engine and a hydraulic pump.



Left: The RotoGrader mounts on a grader's moldboard; standard moldboard controls allow the operator to raise, lower and angle the attachment.

In the field

The RotoGrader can be mounted on a motor grader in less than two hours, according to Maddock, though a crew's first installation can take up to four hours, he says.

Once mounted, Maddock says a good motor-grader operator will become efficient with the attachment in a matter of hours.

Better Roads editors observed a product demonstration with the Elkhart County, Indiana Department of Public Services last winter that supported Maddock's point. Maddock was invited in by Jeff Taylor, the county's manager of transportation, and the work was directed by assistant manager Bob Ganger. The demonstration unit was provided by Maddock, but it was operated by Elkhart County machine operator Bruce Huser.

Ganger's itinerary for the RotoGrader was a succession of asphalt milling tasks, planing off various lumps and bumps in local roads.

After watching several small jobs, it was obvious that the RotoGrader has plenty of milling power for these kinds of applications, and that the machine concept has many practical benefits. The unit can work on one lane without blocking the other. The grader can be driven, rather than trailered, to work areas that are within a mile or two of each other.

hatch pattern in the asphalt, rather than the grooved pattern of a cutting drum that can only be set parallel to the machine's axles.

The cutting teeth are the same bits used in many cold planers and reclaimers — Kennametal 0.875-inch shank bits. Wear rates will vary with the applications, but Maddock expects bits to last a month or so in the applications the RotoGrader takes on.

Power for the hydrostatic cutter comes from a self-contained, skid-mounted unit which includes a four-cylinder, 125-horsepower John Deere turbo-diesel, cooling system, muffler, battery, fuel tank, hydraulic pump, and reservoir. The skid bolts easily to the motor grader's front scarifier bracket, or it can be mounted in the rear.

A single-axis joystick in the cab controls drum speed, engine throttle, pump engagement, and the emergency stop function. Drum height, cutting angle, and horizontal extension are adjusted by the moldboard controls.

NEW GENERATIONS

The RotoGrader has the power to grind away an inch or two of asphalt on each pass.



A passing car demonstrates one of the benefits of the RotoGrader: it can mill pavement in one lane without obstructing traffic in the other.



The RotoGrader is easily side shifted with the blade to cut and pulverize road shoulders in a single pass.



The powerful rotary action of the cutter drum provides uniform penetration and excellent gradation of the surface material.

And the crew can set up a work zone, level off the bump, and move on in fairly rapid order.

For the Elkhart County crew, the first operational adjustment was helping the operator get the RotoGrader drum in parallel with the pitch of the street. The next challenge is for the operator to find the touch for lowering the drum into the work at the beginning of the problem area, then lifting out of the work at the end of the area. By the third task, operator Huser was picking up the knack of the tool.

While the RotoGrader won't replace a milling machine in any production job, it brings substantially more power to a milling task than loader attachments, and the extra power opens up a number of new possibilities. In addition to shoulder and surface touch up work, Maddock recommends the unit for correcting areas in intersections where pavement shoves due to high traffic braking forces. The RotoGrader has the power to grind away an inch or two of asphalt on each pass, and its 72-inch drum length lets the operator remove the shoved areas while producing a surface that provides more skid resistance.

Maddock sells the RotoGrader factory direct, with transaction prices running around \$50,000, depending on how the unit is specified. **BR**

Maddock products are sold direct from the manufacturer to contractors and governmental agencies responsible for the maintenance and recycling of roadways. All service and parts support comes directly from the manufacturer. We utilize first line, field proven, components combined with robust structures to give you years of reliable operation and ease of maintenance.

Maddock Company started nearly 20 years ago as a specialty road maintenance and rehabilitation contractor. We recognized the need for more versatile and productive equipment and started building our own specialized equipment to fulfill that need. We have carefully developed our new products in collaboration with municipal and governmental authorities and specialty contractors in answer to their needs for more versatile and affordable

equipment for road maintenance and repair.

We are committed to provide you with reliable, innovative products to expand your equipment versatility and increase your productivity.

Please call us for additional information or visit our web site where you can see our product line and view video demonstrations.

Dave Maddock, President
Maddock Industries

Maddock

3905 Farmer Ave. Bloomington, IN 47403
1-888-825-4300 www.maddockcorp.com