

Success Story: MudPuppy International

Market Served:
Well drilling



"We are so confident in Eaton products and the technical support we receive from Spencer Fluid Power that we rarely consider using products from any other supplier."

Tony Tibban, MudPuppy owner

Eaton Products Are MudPuppy's Best Friends

Location:

Apple Valley, California

Segment:

Oil & gas

Challenge:

Upgrade hydraulic system for auxiliary drilling equipment

Solution:

Streamlined, load-sensing system package from Eaton, including manifold/valve assemblies, pumps, motors, and fluid conveyance products

Results:

Eaton system provides superior heavy-duty capability, smarter system packaging, and a more user-friendly system

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Background

End users the world over know, like, and trust Eaton products. It's the description of friendship and the reason why Eaton products and MudPuppy International of Apple Valley, California, are the best of friends.

Mud Puppy relies on Eaton products supplied by Spencer Fluid Power of Ontario, California, to provide the hydraulics muscle for its Sand Guzzler™ submersible, hydraulic-driven, pick-up pump and MudPuppy™ mud systems, which are auxiliary drilling machines that work in tandem.

In the drilling process, mud acts as a lubricant for a drill bit as it tunnels its way down a well passageway. As the drill bit rotates, the drilling mud and any earth removed during the drilling process are fluted

back to the surface. The Sand Guzzler's job is to recover "new" or "regurgitated" mud and pump it into a recovery system.

Next the MudPuppy goes into action as it "recycles the mud and dumps the crud." The system picks up and cleans up to 500 gallons of mud per minute, enabling approximately 98 percent of a mud payload to be reused. The process results in a clean jobsite and significant raw material cost savings and enables spoiled earth to be removed so clean mud can be reused.

Challenge

MudPuppy previously relied on competitive hydraulic components supplied by a local distributor for its drilling machinery. However, when poor design, high costs, and on-time delivery of a bent-axis motor for the Sand Guzzler became issues, MudPuppy looked for another source.

Tony Tibban, owner of MudPuppy and developer of its equipment, called on Sandy Barnes, Spencer Fluid Power territory manager,

for a complete design recommendation.

Sizing up the power requirements of the Sand Guzzler, Barnes realized that an axial piston motor would be better suited for the application.

"The unit was equipped with a heavy-duty, high-pressure bent-axis motor that was overkill for the application, not to mention the fact that it was expensive, too," Barnes says.

"I recommended that MudPuppy use Eaton's 74318 Series axial piston motor that offers high-pressure capacity beyond the actual requirement, yet can be used with a variety of pumping systems for customers requiring only the Sand Guzzler pump."

Impressed with Barnes' cost-saving candor and what-he-would-do-differently approach, Tibban listened up when Barnes commented on a MudPuppy setting on the shop floor that was ready for customer delivery.

"I simply mentioned that there might be a better, more

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efficient way to produce the torque that the machine needed," Barnes says, "and after thoughtful consideration, Tony asked me to come up with a new system design."

Barnes and Eaton's Bill Potterf, area sales manager, powered up the MudPuppy to hear it hum. They quickly realized that not only was the gas engine not powerful enough to do the job, it also caused the accompanying pump, an Eaton 420 Series load-sensing pressure-compensated design, to act erratically.

Solution

Barnes' system design sense immediately went into action. "I approached it as I do most systems by designing the most simple and direct method to accomplish the work required.

"Using Bill's product recommendations, I converted the previous plumbing nightmare into a streamlined

Eaton custom manifold, using two MRV-16 Series two-position rotary valves, FAR1-16 Series threaded cartridge valves for the system's load-sensing circuit and flow controls, and Aeroquip® hose assemblies."

They then went to work to declutter the company's most powerful MudPuppy that offers an additional 100 horsepower.

"The previous supplier had designed a hydraulic system that was complicated, confusing, and impossible to service in the field, costing MudPuppy \$40,000 in hydraulic components. We added an Eaton 6422 Series hydrostatic pump and Eaton 3333 Series motor to our newly designed circuitry for the basic model, resulting in a net cost to the customer of under \$9,000 for the total system."

The new system utilizes one consistent design that fits all



An Eaton® 420 Series pump is an important part of the hydraulic circuitry on the MudPuppy 170-25C mud system.

four models of the MudPuppy, making assembly and parts inventory easy.

The redesigned MudPuppy is a far cry from the former design, Tibban says.

"Our previous mud system worked well, but it was highly complicated and expensive," he says, "and as a result, we weren't competitive in the marketplace. Spencer and Eaton were instrumental in helping us develop a streamlined system that is user friendly."

Results

Oil and water well drillers need equipment that is easy to set up and adjust in order to get the job done on time and on budget, and MudPuppy machinery fits the requirements to a tee.

In addition to a neat appearance, the MudPuppy's Eaton product-equipped

hydraulic system is almost fully automated, Tibban says.

"The original MudPuppy required up to 40 adjustments. Now with the assistance of Eaton products, the operator only needs to turn it on, and the mud system is ready to go. Overall, Eaton products are very reliable, and Eaton is very good about providing application assistance.

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In just over two years, MudPuppy has become one of Spencer Fluid Power's top OEM customers.



Equipped with an Eaton 3333 Series motor, the high-performing MudPuppy 255-100 mud system "cleans" mud, resulting in a clean drilling hole and clean jobsite

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