

POWERSOURCE

A publication of John Deere Power Systems

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ON THE COVER

The village of Chenega on Prince William Sound is among some 200 remote communities in Alaska that depend on John Deere-powered generator sets as a prime source of electricity.

POWERSOURCE

COVER STORY

8 Because of its low population density, rural Alaska is a patchwork of unconnected grids. As a result, most communities with populations below 300 depend on John Deere-powered generator sets as their prime source of electricity. The Alaska Energy Authority reports that nearly 1,000 John Deere-powered prime-power generator sets now supply electricity to rural communities, such as the Chenega, pictured on our cover. Marsh Creek Energy Systems of Anchorage is credited for supplying generator sets to many Alaskan communities like Chenega, as well as pump stations along the Trans-Alaska Pipeline System.



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John Deere Power Systems
Attn: Marketing Communications Dept.
P.O. Box 5100 Waterloo, IA 50704-5100
Phone: (800) 533-6446 in the U.S.
Email: jdpower@JohnDeere.com


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Editor: Christine McClintic
European Contributing Editor: Hester Regoort

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TURN ON THE HEAT



The trailer-mounted GT-200 heater can heat 63,600 liters (16,800 gallons) of water from zero to 30 degrees Celsius (32 to 86 degrees Fahrenheit) in just 23 minutes while consuming only 242 liters (64 gallons) of diesel fuel.

GenTex industrial heaters warm up fracking fluids fast

What heats 63,600 liters (16,800 gallons) of water from its freezing point to 30 degrees Celsius (86 degrees Fahrenheit) in just 23 minutes flat?

If you guessed a GenTex industrial heater, you'd be right. If you didn't, you may warm up to one, especially if you need to heat large volumes of fluids quickly.

GenTex Oilfield Manufacturing Inc. of Red Deer, Alberta, Canada is the mastermind behind this mega heater. The company's roots are anchored in decades of designing, manufacturing, and operating hot-oiling equipment that dissolve the paraffin deposits, which build up in the well bore. "In fact, the company holds the world record for manufacturing the largest trailer-mounted hot-oil unit for the Alaskan oilfield.

Along those same lines, GenTex also manufactures three industrial heaters

whose primary job is to heat fracking fluids. "Fracking has been going on for a long time, but the difference now is that the volume of water needed for fracking has increased, and that requires a lot of heat," says salesman Connor Cupples.

GenTex heaters are not limited to heating water. They can warm any viscous fluid, such as production oil and diesel fuel, to improve flow rate in cold temperatures. "We continually modify our equipment to make it simpler to operate and more flexible and cost-effective for the customers to offer a variety of different services."

The GT-200 heating unit is the company's largest diesel-fired heater and has the capacity to move 1,430 liters (378 gallons) of fluid per minute. The heater doesn't hold water, rather it contains three heating coils that quickly warm water as it flows through the unit.

One hydraulically powered pump operates a centrifugal pump that circulates the fluid through the heater. A PowerTech Plus 9.0L engine is the prime mover of the hydraulic system. The engine drives a blower, centrifugal pump, and a gear pump that creates suction to move water through the heater.

Not every job requires that much capacity, however. The company also manufactures the GT-70, which features a single 7,000,000 Btu output heater (also called a 70M TEXHEATER) driven by a PowerTech M 4.5L engine. It's been clocked warming 575 liters (125 gallons) of water to a 58-degree Celsius (137-degrees Fahrenheit) temperature rise in one minute.

Combine two 70M TEXHEATERS together and you have the GT-140 powered by a PowerTech Plus 6.8L engine. The heaters can work independently or together, offering flexibility depending on the needs of the job.



A GT-140 powered by a PowerTech Plus 6.8L engine heats water at a fracking site in central Alberta.



A PowerTech Plus 9.0L engine is the prime mover of the hydraulic system. The engine drives a blower, centrifugal pump, and a gear pump that creates suction to move water through the 200M ThermoGen heater.



Powered by a PowerTech M 4.5L engine, the GT-70 will warm the temperature of 575 liters (125 gallons) by 58-degree Celsius (137-degrees Fahrenheit) in one minute.

“We continually modify our equipment to make it simpler to operate and more flexible and cost-effective for the customers to offer a variety of different services.”

— Connor Cupples, GenTex Oilfield Manufacturing Inc.

Gen-Tex purchases the engines from Frontier Power Products in Calgary, Alberta. “We’ve been using John Deere engines since day one when we started building heating units, and that’s been since 2009,” recalls Cupples.

Recently the John Deere distributor assembled a custom power unit with an Eaton Fuller transmission. It would be GenTex’s first heli-portable pump unit. “The transmission spins a drive shaft, and the drive shaft spins a belt drive that spins the crank on a tri-plex pump. It’s very customized and very new.”

Reliability is the main reason for the company’s loyalty to John Deere. “I know a lot of guys who work in our industry, and they don’t mind paying a little more as long as it doesn’t break down or fail on a jobsite. They don’t have backup equipment on a remote site. The engine needs to run.”

Cupples says he’s always looking for ways to improve their existing heaters to make them more efficient, simple, and user friendly to operate. But he’s extremely confident in components that make up the system.

“Everyone has their own design for heating water. We purchased the TEXSTEAM heating division because they’ve been around since the ‘50s — it was the name that everyone trusted for heating products.”

The same holds true for the John Deere engines that power the heaters.

“John Deere is a trusted name in the industry. Spare parts are easy to come by, and the people at Frontier Power know their stuff and provide us with great support.”

 Distributor: Frontier Power Products in Delta, British Columbia, Edmonton and Calgary, Alberta; www.frontierpower.com