

Yanmar Powered Generator Drives Custom Irrigator System

Irrigating a long and skinny paddock provided a challenge which has been successfully met by the Yanmar Dealer at Boonah, (Qld.) Dover & Sons. With a Yanmar 4TNV98 at the heart of the system, crop farmer Bill Bowen is impressed with the efficiency of the new irrigation system.



Bill Bowen's property, Glenroy, is located between the Condamine River and Glengallen Creek just outside Warwick, Qld. While Glenroy has a water rights allocation from the river, bore water is also available on the property at a depth of 18 meters.



Until recently this paddock was watered with a side roll irrigator, a cumbersome and labour intensive system. Finding a solution to the task of bringing water to a paddock that measured roughly 400m wide by 2000m long, one which is also off the power grid, was met by Bob Dover and his team.

The solution to Bill Bowen's application was to supply a single centre pivot irrigator, some 200m long. A series of five concrete pads were installed in line and evenly spaced down the centre of the paddock, with a water feed line and hydrant run to each pad in series.

The irrigation unit selected for the task is a US built Zimmatic Four-Wheel Mobile Pivot. This is ideal for Bill Bowen's application where pivot points are arranged in a straight line, allowing the whole 200 long irrigator to be easily towed from one pad to the next. With the exception of the water supply, this is a completely self-contained irrigator.



Mounted to the frame of the Zimmatic unit is a purpose built Yanmar Centre Pivot Generator (CPG) pack. This is supplied as a complete turn-key system by the Australian Yanmar Distributor, Power Equipment.

The Yanmar CPG unit installed at Glenroy comprises a Yanmar 4TNV98 diesel engine which drives a three phase Sincro alternator. The unit is rated at 16.5 kVA at 1500 rpm continuous. The 4 cylinder Yanmar 4TNV98 diesel engine is a robust and durable water cooled diesel engine, which in "G" configuration is specifically configured for gen set operation.

The complete Yanmar CPG package includes a 400 litre in-built fuel tank, radiator, Power Equipment's EC150 Engine Protection System and weather proof canopy. The added benefit of the Yanmar CPG pack is that by simply undoing a few bolts, the whole unit can be lifted off the irrigator and used wherever there is the need for power on the property. This is a real added plus for the property owner.

When the irrigator is started, the Yanmar CPG unit generates the electrical power that drives the motors which turn the wheels on the irrigator. Each tower on the irrigator has two ¾ HP electric motors which gradually move the irrigator through its 360° arc. There are four towers down the line.

The fully programmable system allows Bill Bowen to specify the amount of water to be applied on his land. Typically at Glenroy this would amount to an application of 37 mm through Nelson low pressure sprinklers and at this rate, it takes the irrigator 2

½ days to go through the 360° arc. The system has the capacity to pump up to 67,000 litres of water an hour when required.

With a rotation completed, the water feed line to the irrigator is removed from the hydrant and the entire system is towed 400m down the paddock to the next concrete pad. The water line is hooked up to the hydrant and irrigation can commence watering straight away. It is a very simple and easy system to operate.

With 870 hours already logged on the system, Bill Bowen rates this as “a great system.”

“I couldn’t be happier,” said Bill Bowen,

“The Yanmar engine is set to operate at 1500 rpm with noise level impressively low so there is no impact at all on my neighbours.”

“I’m also impressed by the fuel economy with the Yanmar. The fuel usage is quite minimal and the service intervals of 250 hours make this an easy system to own and operate.”

Bill Bowen’s farm is situated on low lying land, prone to periodic flooding. Because the irrigator is portable, it can be towed to higher land when necessary. The crops grown at Glenroy include beans, barley, chickpeas and sorghum.

Relevant web links:

Power Equipment

www.powerequipment.com.au

Yanmar 4TNV98

<http://www.powerequipment.com.au/products/industrial-engines/tnv-series-13-3-83-8hp/4tnv98t-83-8hp/>

Dover & Sons

<http://www.doverandsons.com.au/>

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