



Yanmar 2 TNV70 Pumps Air To Clean Parks

As far as vacuum machines go, this one is about as impressive as they come. Peter Shead of Vacuum Loaders in Sydney has developed a purpose built mobile industrial vacuum.



The demand for this particular unit, the Litter Master 9000, came from a group of local Councils looking for collection equipment which could be used in the field. The technical specification called for a vacuum unit which could be carried on a conventional drop sided ute, be operated by a two man crew and be used by workers in parks and gardens to keep public spaces clean of litter, such as litter and broken glass, and seasonal garden green waste.



Like all projects of this kind, the product often designs itself. Peter Shead had produced similar units in the past, but this model was larger again.

“The biggest constraint in the project is the collection bag,” Peter Shead said. “There is a physical and weight limit to what can be manhandled in the field.”

With previous smaller models Vacuum Loaders had specified and fitted the Yanmar L Series single cylinder diesel engines. With optimum performance and high client satisfaction, Peter had no hesitation in using a larger Yanmar model diesel engine to power the Litter Master 9000.

For this larger model, the Yanmar 2TNV70 was specified. This model Yanmar diesel engine develops 12.5hp (9.2kW) at 3100 rpm. It is a compact, state of the art, two cylinder engine noted for its quiet operation and low fuel consumption. Being a water cooled engine greatly assists in keeping the noise levels low and well within the required OH&S standards, especially important in residential areas.

An integrated 11 litre fuel tank was installed on the self-contained Litter Master 9000. With the Yanmar 2TNV70 typically only using 1.7 litres of fuel per hour at 75%, the integrated fuel tank carries more than enough fuel on board for a day out in the field.

Direct coupled via a stub shaft to the flywheel, the Yanmar engine drives the large diameter suction fan which spins at crankshaft speed. The rating of the Litter Master 9000 comes from the capacity of the fan which shifts air at the rate of 9000 cfm.

Collection is achieved via a 200 mm diameter flexible hose which is supported by a high and long boom. As an indication of capability, the Litter Master 9000 can suck up a complete glass stubbie, with broken glass, aluminium cans and leaf litter, proving easy to remove.

“The real challenge that we faced in the development of the Litter Master 9000 was the fan. This is a custom, purpose designed unit. It has a unique proprietary shape which generates the critical airflow that we specifically require for this job.”

Unlike some other designs, no material passes through the fan. Air is drawn through the collection hose and then into the collection bag. The bag is made from an open weave fabric. While air is able to pass through to the Yanmar driven fan, debris is collected and trapped in the 400 litre capacity bag.

“For our application, I’m sold on the Yanmar brand,” said Peter Shead.

“The market demands diesel engines these days, so light weight petrol engines are not even a consideration. I’ve been in the diesel engine market for near on 30 years and I personally believe that Yanmar builds the very best of the smaller diesel engines.”

“In addition to supplying a great base product, Power Equipment has a support service which is the very best in the business.”

The Yanmar 2TNV70 is supplied to Vacuum Loaders as a Power Pack. This is a ready-made, ready to install solution. The Power Pack includes the base engine with cooling system, engine mounts, air cleaner, muffler and Power Equipment EC090 engine protection system all pre-fitted prior to delivery to the customer.

“This is a really efficient way for us to purchase an engine. It’s ready to go and saves us a heap of time in sourcing, then fitting the ancillary equipment. These days OEMs need much more than an engine delivered in a box and Power Equipment understand this better than most.”

The Litter Master 9000 is designed and manufactured by Vacuum Loaders for Applied Cleaning Solutions, in Melbourne.

Power Equipment is the exclusive and authorised Australian, New Zealand, Papua New Guinea and South Pacific Distributor of Yanmar Marine and Industrial diesel engines, JCB DieselMax, MASE diesel marine generators, Gori high quality folding sailboat propellers, PSS Shaft Seals, Electromaax and Arctic Steel products.

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