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A PUBLICATION OF POWER EQUIPMENT: AUSTRALIA, NEW ZEALAND & THE SOUTH PACIFIC





COX MARINE SETS NEW DIESEL OUTBOARD WORLD SPEED RECORD

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Powernews is produced and distributed by Power Equipment Pty Ltd, Australia

General Enquiries: 1800 069 469

www.powerequipment.com.au info@powerequipment.com.au

VIC (HEAD OFFICE)

Marine & Industrial Phone (03) 9709 8500

NSW

Marine & Industrial Phone 1800 069 469

QLD

Marine & Industrial Phone (07) 5644 9600

WA/NT

Marine & Industrial Phone (08) 9435 2700

NEW ZEALAND

Marine & Industrial Phone +64 (9) 3582 050

New Zealand's largest commercial fleet trials OXE Diesel outboards

A pair of 300hp OXE Diesel Outboards have made their commercial debut in New Zealand on the back of a Protector 12.5 RIB, one of the ex-America's Cup vessels donated to Coastguard New Zealand. Power Equipment and OXE Marine offered invaluable expertise, experience and support with the fitting of these cutting-edge diesel outboards. The move to OXE Diesel offers big advantages in their job of saving lives, with a significant savings in cost and emissions over the long term.

It is an imposing – if not righteous – display of power. The first two commercially-fitted OXE Diesel 300hp outboards have been fitted to one of the ex-America's Cup 12.5m Protector vessels donated to Coastguard New Zealand.

Te Awarua is the first commercial fit out of the OXE 300hp in twin outboard format, and signals a significant change in direction with outboard regime for Coastguard NZ, and particularly for the Coastguard Mana.

Says Coastguard Head of Operations Rob McCaw: "Coastguard had outstanding support on this ground-breaking project, especially from Rayglass, OXE Marine and Power Equipment, all of which provided industryleading experience, technology and skills."

"As one of the first Coastguard units to explore the diesel option, Mana should be very proud to fly this flag for Coastguard."

The move to diesel outboards is something that Coastguard, which has the largest commercial fleet in New Zealand, has been considering for several years.

"The new Coastguard Mana vessel will be at the cutting-edge of technology and test the viability of rolling diesel outboards out across the rest of the outboard fleet in the future," explained Rob McCaw. David Low, Power Equipment's New Zealand Branch Manager, says bringing the OXE Diesel outboard transition to Coastguard NZ had been a "very enjoyable project to be involved with."

"We have worked with Coastguard on previous projects using our Yanmar inboard diesels for new build projects, but this was the first opportunity to be involved in a refit project using the OXE," David said.

"Emission standards, fuel economy, range, towing capacity, service intervals and reliability make the OXE an obvious choice over petrol-powered engines."

The new Coastguard
Mana vessel will be at the
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and test the viability of
rolling diesel outboards
out across the rest of the
outboard fleet in the future.

Rob McCaw, NZ Coastguard

Diesel performance

The numbers are impressive from these BMW engine-based outboards, but proof is on the water and the OXE Diesel 300hp does not disappoint.

Coastguard Mana President Tara Doak has labelled their new diesel-powered Protector "a gamechanger" for the operation, citing the fact that the vessel is equipped with latest technology throughout.

"The outboards have been set up to provide pulling power and a useful cruising speed, giving us that extra advantage on the water when it's crucial," Tara said.

Keen observers will notice the BMW badge displayed conspicuously below the cowl. The powerhead of the OXE300 is a marinised, bi-turbo version of a BMW engine most commonly seen in their X5 SUV. It provides a stonking 680Nm (502ft-lb) of torque at the crankshaft at just 1,750rpm.

This outboard is putting out 500Nm of torque at just 1,000rpm – so it is no wonder the pulling power and hole-shot performance for Te Awarua is something to behold.

Propeller shaft torque numbers are, (comparative to petrol horsepower







equivalents), off the charts! A turning force of 945Nm at the prop shafts have allowed the use of 15 inch propellers, giving both massive pulling power and good cruise and WOT throttle performance.

Engine power is transferred from the head of the outboard via a belt down the leg to the prop shaft. This allows not only multiple gearing configuration options, counterrotation changes and brilliant crash-stop resilience, but also a quieter-running machine. With communication between Coastguard crew vital during rescue and recovery operations, a quieter engine is no doubt a nice advantage.



Considering this Protector is pulling 32 knots at WOT, (just a few knots less than its top speed with twin 350hp petrol outboards), and using not far off 40 per cent less fuel, there are even more numbers stacking up in favour of the OXE diesel outboard.

It cruises easily between 20 to 30 knots, using around 3L of fuel per nautical mile combined.

The OXE is a significantly more expensive outboard than a petrol horse powered comparison, but with an expected service life some five times that of petrol outboards, the commercial advantages are very real. Add the

fact that service intervals for the diesels are up to four times longer than petrol, and the longterm advantages are unbeatable.

For Coastguard New Zealand, it means better operational availability with the bonus of a dramatically reduced carbon footprint.

OXE Diesel - designed for the toughest jobs on the water

"OXE Marine's OXE Diesel was developed for arduous situations just like those Coastguard needs to be prepared for," said President of OXE Marine, Douglas Natoce.

"Reliability is key when it comes to these often-critical situations, and combining the high torque of the OXE300 with safety functions like crash-stop capability and low-speed control, our demanding users can rely on their OXE to get them out there and back, safe and sound," he said.

"The incredible fuel efficiency of the OXE300 means more ocean covered and more time saving lives. And if run on biofuel, total net CO² emissions are reduced by up to 94.2%."

Coastguard Mana operates in the northern entrance of the Cook Strait – a seaway with more than its fair share of testing conditions.



Tara Doak says the whole unit is grateful to be receiving the new boat, which will improve the safety of the operation when dealing with call-outs in what can be a very rough body of water.

She said Coastguard Mana's operations area "provides constant challenges - not only dealing with the lee shore, but once you're out there, there's no harbours or places of refuge, so if you get into trouble, it's often very big trouble."



POWER PROFILE

Vessel Name Te Awarua

Application Commercial RIB

Length 12.5m

Weight 5.5 tonnes

Engine Model 2 x OXE300

Power Rating 300hp

680Nm @ 1750rpm

Top Speed 32 knots
Cruise Speed 25 knots



Gavin Crocker has been using Yanmars in a wide variety of small engine applications for more than 20 years. His business is about supplying the machines that invariably keep other machines maintained or doing the hard slog around the farm, so reliability and reputation are everything. Those are just two of the reasons he uses Yanmar's L100N5 lightweight diesel power in his Megajet 4-in-1 workstations.

The "workstation" that does it all with a powerful Yanmar heart

If you have ever looked seriously at your options for better quality generators, pumps, spray units, pressure washers or the like, you have probably come across the name "Megajet".

They build a wide variety of small machines for many applications, but the jewel in their crown, (so to speak), is possibly the Megajet "4-in-1" Workstation that combines a generator, welder, air compressor and battery charger in one neat unit.

Gavin Crocker builds Megajet machines with the Yanmar L100N5 air-cooled diesel in the Industrial MJIY10E version of the Megajet 4-in-1 Workstation, giving plenty of good reasons for using Yanmar:

"In my years of working in engine-based businesses, Yanmar is simply a better engine," explains Gavin. "For a start, they're smoother and more reliable - and the brand is better accepted by customers too."

Customers want to know the specifications of Megajet's workstations and are keenly interested in the brand of engine running it. The 10hp Yanmar-driven MJIY10E provides a 6kW generator, 14CFM compressor, (with 30L tank), and 200amp welder in a compact 180kg, framed unit.

Considering you get all that ability in a package measuring 950mm X 760mm, it's not hard to understand why this Queensland manufactured 4-in-1 Workstation is a favourite on literally thousands of service vehicles and other mobile work trucks across the country. They're the dream tool of many a farmer and working property owner too.

"The compact size of the Yanmar is what we need to fit in the frame size," says Gavin also.

Given that Yanmar are the pioneers of miniaturised and lightweight diesel engines, the L100N range weighs in at around just 50kg, the synergy with Megajet's 4-in-1 Workstation design is easy to see.











Yanmar's proprietary direct injection technology, (coupled with a combustion chamber design that matches perfectly to the injection system to give cleaner fuel burning), gives this single-cylinder diesel a virtually unbeatable advantage.

The Yanmar L100N5's 10hp output helps deliver one of the biggest advantages of Megajet's 4-in-1 Workstation – simultaneous use of both the generator and welder.

"The welder is a DC (direct current) unit, while the generator is a brushed alternator. I always impress on people the fact that they can both be used at the same time and the brushed alternator gives a better contact and strike for the welding function too," Gavin

Anyone who works with machines for long enough always understands the imperative of servicing and Gavin is no different.

He laughs when he says: "It never ceases to amaze me the number of guys who have our units on their service trucks, doing servicing for a living, who rarely service their units!"

"Servicing your gear is always important and I always recommend using the genuine Yanmar parts and filters on the engine," Gavin said, "you're spending nearly \$10,000 on these Industrial 4-in-1 units so it's worth spending the time and relatively small amount on genuine parts to keep it good."

Megajet - the original 4-in-1 workstation with a Yanmar option

The "4-in-1" workstation concept was pioneered by Megajet and many years of research and development have gone into both the "Ozy" and "Industrial" variants that are available today.

The Industrial-spec units include double 15amp outlets (complete with safety switch) and other higher specifications like IP66 switch ratings.

Customisation options of these multi-use machines are almost endless, including the ability to add MIG (gas or gassless) wire feed to the welder or larger air compressor tanks for higher-volume air compressor needs.

The Megajet 4-in-1 Workstation is still considered the best of its type on the market and Gavin Crocker is more than happy to have the Yanmar brand attached to that hard earned reputation.

"Many of our units go into remote areas where getting parts and support is a factor," Gavin said, "but if people recognise the engine brand they're getting, they're usually more comfortable."

"Yanmar engines have a good name in rural Australia and are known for good availability of parts, so that helps the brand be better accepted by customers."

"Having both electric and pull start on the Yanmar L100N is important as well customers want electric start on a diesel, but also want to know they can pull start it if they have to."

Learn more about Megajet's all-in-one workstations at megajet.com.au.









Cox Marine's CX0300 achieves marine industry's first ever diesel outboard world speed record!

In a world first for diesel outboard motor propulsion, Cox Marine (COX) attended this year's Coniston Powerboat Records Week, with the aim of setting a new world and British record for the fastest diesel outboard motor powered boat.

Participating in this year's 50th Anniversary Speed Week, held at Coniston Water in Cumbria, England, Cox Marine has achieved the industry's first ever Diesel Outboard World Speed Record.*

The Cox Marine team and their vessel "Pegasus", surpassed their own three prior speed records recorded earlier in the week during trials and testing runs, to clinch a coveted world record title for the World's Fastest Diesel Outboard". The feat was accomplished on Thursday 3rd November, achieving an average speed of 62.27 mph or 100.2 kmh.

Measured across a kilometre long course requiring a flying start, Pegasus, a 21ft Hallett Vector piloted by experienced powerboat racer Adam Brown, was required to travel the course's distances in both directions, within an hour to minimise any potential wind advantage. With official Water Speed Record timekeepers' oversight, both time and the speed in both

directions are recorded and then averaged over the two runs which constitutes the final recorded speed.

Returning to shore following the successful completion of the second and final run, Adam said: "While there will, of course, be faster boats out on the lake today, it's a great honour to be able to set a new record. There may be future diesel outboard powered record attempts, but Cox Marine will always be the first."



"62.27mph is a great speed for a 300hp engine which is straight off the production line and not having been optimised for powerboat racing." Adam gleefully added.

It is perhaps unsurprising that the boat and engine behaved impeccably during the runs. "The CXO300 simply did everything it was supposed to", continued Adam, "It was quiet, responsive, smooth and the overall experience was not the usual noisy seat-of-the-pants drama that a modified gasoline outboard record run often provides."

The Pegasus project was supported by a team of four Cox Marine staff during Coniston Speed Week, and was lead by their Head of Research and Development, James Eatwell who said;

"For the project team of Pegasus, we set out our stall early. We wanted to demonstrate that power and performance









can still be achieved without damaging our environment. It's one of the founding principles at Cox Marine and continues to drive our pursuit of innovation through technology today."

"We couldn't think of a better forum in which to emphasis this, than vying for a World Speed Record and simultaneously debuting the CXO300 use of HVO fuel."

The Pegasus team, went to great length to protect the integrity of their record attempt, limiting modifications to only the essential foot pedal, dictated by Coniston's Race Week Regulations and a custom fabricated lift plate to allow for the low transom height of the GRP Hallet Vector.

Aside from that, alterations during the event were limited only to the use of different propellers, which ranged in size, shape and pitch angle and the propellent.

With initial runs being carried out on regular diesel before switching over to

HVO100 biofuel, Cox Marine's internal testing carried out lakeside during the runs have shown a 28% fuel saving over an equivalent 300hp petrol engine and net CO² emissions reductions of 92%.

Great news for existing Cox Marine customers and prospective new ones, is that the Coniston debut will mark the company's official support of HVO biofuel use in their outboards without impacting warranties, service schedules or requiring any modification to the engine.

To find out more about the CXO300's capabilities and advantages, visit powerequipment.com.au/cox

*Record awaiting full official ratification by Union Internationale Motornautique (UIM)



POWER PROFILE

Vessel Name Pegasus

Application Recreation / Powerboat

Length 6.4m

Engine Model Cox CXO300 V8

Power Rating 300hp

Top Speed 100 km/h (62.27 mph)

Cruise Speed n/a



Blue marlin, beer horns and Yanmar 6CXBM-GT engines!

When John Lau's Viking 37 game boat "Stephanie" sank at her mooring two years after her delivery, it seemed like an all-too-early and inglorious end for a very pretty girl. With no fear of a boating challenge however, Steve Philp got her back on the water in better shape than she ever was before with the help of Yanmar 6CXBM-GT engines.



Steve Philp has a serious thirst for a challenge. Among his other adventures, Steve has run the dive shop in Rabaul, (before the disastrous 1994 volcano eruption in the area), and dived on the wrecks of Japan's WW2 Pacific fleet in over 200ft of water.

No fear of a serious challenge has paid off for Steve in a project which saw him help rebuild world-famous lure maker John Lau's Viking 37 game boat with Yanmar diesels.

To understand just how big this particular repower challenge was, you need to go back a few years. Back to 2017 to be exact.

The Viking 37 "Stephanie" was purchased brand new from the USA in 2017 and delivered via its Gold Coast dealer to Rabaul, PNG, where it was to serve its primary purpose as a game fishing vessel in the amazing fishing grounds in and around the Bismark Archipelago off New Britain, in eastern PNG.

Disaster struck early for this classic designed, compact flybridge game fishing vessel however. Via a series of misfortunes, she sank at her mooring. After recovery, the next year saw Stephanie sit ashore in a sorry and written-off state, wondering what was next.

"We looked at all the options of a brand new boat for John, but it was either just too hard to get one built or would take too long," said Steve about the process of getting John and his marlin lures back on the water.

"So the hull was purchased off the insurance company with a plan to rebuild it," he said.

"We weren't happy with the structure of the vessel at all – basically we rebuilt the front section of the boat and strengthened the engine beds," Steve explained.





"In fact, we re-built entire panels and structure on front parts of the boat and sorted out issues that we believe would have been allowing the hull to flex way too much in its original state."

On top of significant hull and superstructure work, the electrics, refrigeration and air conditioning were all reconfigured. In all, around AUD\$1m was spent on the restoration.

Steve is no newbie when it comes to boats, his family heritage is the famous Burns Philp shipping company that dominated shipping along the east coast of Australia and the South Pacific for decades from the late 19th Century.

"I used an engineering firm I know well to fit the new engines and we made some changes with running gear also," explained Steve.

While the Viking 37 originally came with American-branded 550hp engines, (the only option offered at the time by the builder), they opted for the dedicated marine propulsion option of Yanmar 6CXBM-GT 509mph @ 2700rpm engines for Stephanie's new life.

"They're a mechanical engine and that's a good thing in remote areas like PNG," says Steve. Steve is not alone with many leisure and commercial users who operate in remote areas preferring to opt for less electronic and digital technology in their engines.

In fact, this is not the first time Steve has had experience with the 6CXBM-GT engine, having fitted them to a similar-sized game boat previously, with faultless service.

Other upgrades for Stephanie's Yanmar refit included five-bladed props and strengthened Aquamet 22 survey-grade propeller shafts.

"We are also running gearboxes that can handle the horsepower of these engines (Twin Disc 5075A @ 2.05:1 ratio) so she is stronger right through in terms of running gear now."

Strength and reliability are the name of the game for Yanmar, yet this more robust propulsion regime has not come at the expense of performance according to Steve. The Viking is achieving a nice run of 22 knots at 2,000rpm, an even nicer 27 knots at 2,400rpm and 34 knots at WOT, (logged at 2,780rpm in sea trials).

Considering in her factory configuration with nearly 100 more horsepower the Viking 37 had a top speed of 34 knots, it's no wonder that even Power Equipment's Jim Kibblewhite was impressed with this repower.

"Jim came on the sea trials and he said it's one of the best re-fits he's ever seen," Steve says proudly.

High-end cabinetry in the living areas of Stephanie and a reconfiguration of berths helps create a great new feel in the vessel too.

Sticking with Yanmar reliability made the decision for generator power easy, with a Mase power plant supplied by Power Equipment completing the restoration.

All that remained after the hard work was the return trip to her home port of Rabaul. Steve was happy to take on that adventure too, "but I've done it plenty of times so we know what we're doing with transferring a boat between Cairns and PNG," says Steve.

Carrying around 1,600L of fuel and displacing 13t loaded, the Yanmars are throttled back to run the vessel at the nine-knot mark giving a 900 to 1000 nautical mile range.

"We'll carry some extra fuel on the deck for safety, but even at those speeds you can't run at night up there, there's just too many logs and other stuff floating around to travel safely," Steve says of his experience of these amazing waters.

Upon Stephanie's return to Rabaul however, the fun can really start.

"We love chasing blue marlin from the flybridge and spacious cockpit of this compact game boat...we usually run out at gentleman's hours, 9am or later sometimes, and we're usually enjoying a beer or two during the fishing."

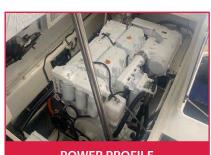
In fact, says Steve, there is even a dedicated "beer horn" on the flybridge; "One honk on the beer horn is the signal for the deckhand to bring one beer, two honks mean bring two beers and so on..." quips Steve.

Their preferred fishing grounds are about an hour's run off Rabaul, past a chain of islands not far off shore, that provide water depths in excess of 2,000m and game fishing that many keen anglers could probably only dream of.

"I suppose John would put around 500 hours on the engines each year and I will do most of the servicing to be sure things get done."

"I'll get our local Yanmar dealer Greg Sims from Cairns SIM Trans, (a Cairns-based local engine supplier and marine diesel expert), for the more technical servicing aspects though."

Sounds like a good plan and certainly good fishing ahead Steve. Hoooonnnkkk!!!!



POWER PROFILE

Vessel Name Stephanie

Application Pleasure Craft

Construction Fibreglass

Length (LOA) 11.48m

Weight 13.3 tonnes

Engine Model 2 x Yanmar 6CXBM-GT

Power Rating 509 mhp @ 2700rpm (each)

Top Speed 34 knots @ 2780rpm

Cruise Speed 22 knots @ 2000rpm







Power Equipment and Yanmar have played their part in a recent unveiling at the newly upgraded Yaringa Boat Harbour. The plans for this already bustling marina may surprise you – and promise something very good for the Victorian boating industry and community.

It's not every day you get to see a 75 tonne boat lifter doing its thing for the first time, but that's exactly what happened during a somewhat auspicious launching ceremony at Yaringa Boat Harbour on Victoria's Western Port Bay earlier this year.

Unveiling Yaringa Boat Harbour's brand new boat lift was done in conjunction with the launch of Hart Marine's latest pilot boat that is using Yanmar diesel engines, a popular choice with many pilot boat builders across the globe.

The event was attended by various local dignitaries, including politicians and Power Equipment representatives.

Whilst Power Equipment was excited to be part of such a special occasion, (and of course proud to have provided the everreliable Yanmar 6HYM-WET diesel engines for the Hart Marine pilot boat), the bigger story is what is planned down the track for this once sleepy marine facility.

To understand the whole story, you probably need to look at the organisation behind Yaringa Boat Harbour, Hart Marine.

Hart Marine – leaders in composite boat building and based in Mornington for more

than 40 years – knew they were outgrowing their original facility and had to find a new home. More accurately, their long-time base in Mornington had gotten too busy.

"We were basically driving pilot boat builds down the road to the Mornington Pier, then launching by crane from there," explains Hart Marine General Manager Graeme Taylor, "and when boats have to come out of the water, sometimes that has to happen in reverse."

"That was probably fine in the early days, but Mornington – the whole area – has developed significantly and gotten much busier. It's becoming less viable to do that kind of thing there."



Graeme explained that Hart Marine identified as far back as 2015 that new premises were needed. The search began for a new home for this long-standing, family-tradition marine business.

Purchasing Yaringa Boat Harbour in 2018 was quickly seen as more than just an opportunity to move facilities for this "best-of-breed" builder of ORC pilot, police and rescue vessels.

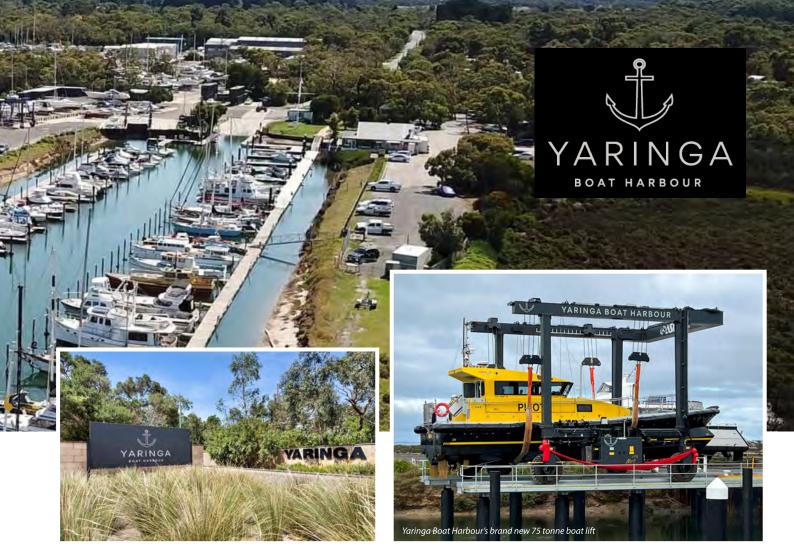
"We want Yaringa to be the best boat storage and servicing facility in the state of Victoria," Graeme says with measured confidence.

"Now that we have the in-water side of things sorted at the harbour, we're looking to build a new 6,000m² facility to bring our entire Hart Marine boat building process to the site."

With around 50 acres of land forming part of the Yaringa Boat Harbour onshore area however, the vision doesn't stop there.

"There are literally hundreds of marine suppliers spread all over the south-east corridor of Melbourne," Graeme said, "and ultimately we would like to attract a lot of them to this site."

Waterside property with commercial zoning is difficult to get, but with the location and land available, Graeme and Hart Marine owner Mal Hart see Yaringa as potentially Victoria's "jewel in the crown" of marine precincts.



"We've replaced the pontoons and docks, got the new travel lifts, (including the heavy-lift 75t and 38t hydraulic travel trailer for wider vessels like catamarans), and we have up to 600 boats stored here at any one time," Graeme said.

Notwithstanding current successes and grand plans however, Graeme is circumspect about how quickly things will happen.

"It's going to involve a lot of ongoing work as we move ahead. Even our planned new facility for Hart Marine's boat building still has quite a bit of planning and approvals to get through."

Things are happening however, just as surely as demand for Hart Marine ORC pilot vessels continues strongly across the globe.

"We recently finished the refurbishment of Captain Jack's, a quality restaurant and

already popular venue for waterside dining, and hope to attract other restaurants and hospitality businesses here in the future," Graeme says with enthusiasm.

In fact, says Graeme, Captain Jack's has already proven popular with Power Equipment Chairman Allan Foster who has returned to the restaurant since the initial launch event.

Hart Marine ORC Pilot Boat launch

Utilising the 650hp 6HYM-WET which is a Yanmar model very popular with commercial users, the Hart Marine pilot boat launched in May at Yaringa Boat Harbour was also an official unveiling of the Harbour's new 75-tonne Ascom lift.

The Pilot Vessel Tura was built for Flinders Ports in South Australia and is the sixth pilot vessel Hart Marine has built for this client. It is the worldwide respected ORC 17.3 pilot boat design, perhaps most famous for its self-righting characteristics, extraordinary strength and sea-worthiness, (these boats are expected to deliver pilots to and from ships in all conditions, day and night).

With the proven service longevity and fuel savings of the 6HYM-WET engines, it is no secret that commercial users who want engines as tough and reliable as these vessels often choose, (and stick with), Yanmar for their working fleets.

To find out more about Hart Marine's services visit hartmarine.com.au.

You can head down for a visit to Yaringa Boat Harbour and Captain Jack's restaurant at 1 Lumeah Road in Somerville, or visit them online at yaringa.com.au.













HARDWOOD MILLS AUSTRALIA INTRODUCES YANMAR POWER TO THEIR RANGE OF SAWMILLS

Hardwood Mills Australia had never really considered small diesel engines as a viable power source for their application. After incorporating the smooth, unbeatable torque of the Yanmar L100N into one of their portable mill models however, you will be seeing plenty more Yanmars powering these quality lumber-making machines into the future.

"I have to say first that I couldn't be happier with Power Equipment's service," says Geoff Lloyd of Hardwood Mills Australia, recounting his experience with introducing Yanmar air-cooled diesel engines to his mill range.

Hardwood Mills Australia build Australian-designed portable bandsaw mills that can be easily towed. The largest model in their range, (the GT40 Ultra) is capable of cutting standard logs up to 6.8 metres long and cuts up to a metre wide.

Geoff introduced the Yanmar L100N to his GT34 Deluxe portable bandsaw sawmill model this year and couldn't be happier with the performance, or the service offered by Power Equipment.

"We had a small technical issue with the first GT34 mill we were putting a Yanmar on, but they, (Power Equipment), immediately sent someone to help us out," Geoff said, "and they really know their product and sorted out the issue straight away."

You just can't beat the torque these Yanmars deliver – the cutting doesn't even look like making the engine work too hard. It's got heaps!

Hardwood Mills Australia prides its product as the only Australian company with a portable bandsaw saw mill that can reliably cut all types of Australian hardwood. Aussie hardwood is renowned as some of the hardest to cut in the world!

"We always thought that diesels run too rough, are overly noisy and just weren't suitable for portable mills," explained Geoff.

"That's absolutely not the case with the Yanmar – it runs very smoothly and as it turns out the decibel rating is actually better than most petrol engines."

Smooth running power is essential in milling equipment of the kind built by Hardwood Mills Australia to deliver even, level cuts through logs.

"If you don't have a smooth-running engine, you risk uneven cuts," Geoff said.

After running the L100N for its first few test cuts, Geoff was equally impressed with the torque delivered by this direct-injection champion of Yanmar's lightweight industrial engine range.

"You just can't beat the torque these Yanmars deliver – the cutting doesn't even look like making the engine work too hard. It's got heaps!"

The GT34 can mill a 4.9m board, deliver a cutting depth of 18 inches (457mm) and handle 34 inch (865mm) log diameters.

Like his own product, Geoff loves the finish of the Yanmar L100N too;

"The build quality of the Yanmar is really beyond anything else on the market and I really like that," he said.

With the orders stacking up for Hardwood Mills Australia portable bandsaw mills

in recent months, there will no doubt be many more Yanmars on these useful Australian-designed mills with happy saw millers using them for many years to come!

Explore their range of portable sawmills at hardwoodmills.com.au



Yanmar L-Series diesel engine











Gold Coast-based marine engineering specialists D'Aprix Marine Services know that getting the installation right is as important as the engines you are installing. Two recent re-powers have showcased this by installing the best marine propulsion on the market – Yanmar and John Deere marine diesel engines.

It's been a busy 12 months for D'Aprix Marine Services, a marine engineering business based at the bustling Gold Coast City Marina and Shipyard in Queensland.

Two recent installations by D'Aprix Marine Services have transformed two very different power boats – one opting for the dedicated marine engine option of Yanmar and the other choosing the long-trusted name of John Deere marine diesel engines.

Yanmar 6LPA install for Larson 370

"The Larson 370 exceeded all expectations by a very long way with her Yanmar 6LPA installation," says Tim D'Aprix. Tim D'Aprix is the managing director and chief engineer of D'Aprix Marine Services and about the only thing exceeding his enthusiasm is his expertise in marine installation work.

After the boat owner recently returned the vessel home to Yeppoon on the Central Queensland Coast, (via a nice visit to Lady Musgrave Island on the way), Tim calculated the Larson 370 was running at 20-22 knots cruise speeds and using an average of 70L of fuel per hour (combined).

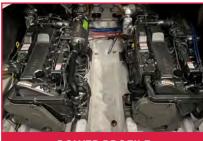
"This gave the owner a range of 312 nautical miles which is absolutely incredible," said Tim.

"The previous big-block petrol engines in that vessel would have been lucky to deliver half that range at double the fuel consumption."

As builders of dedicated marine diesel engines, Yanmar is very particular about how their engines are installed into vessels. In fact, most warranties on Yanmar marine engines will require proof of proper fitting from a qualified expert like Tim, so it pays to get such work done by a professional.

Client and boat owner Peter Stocks is as enthusiastic as Tim in his praise of his new Yanmar power, reporting after the return voyage:





POWER PROFILE

Vessel Name Mo'orea

Application Pleasure Craft

Construction Fibreglass

Length 11.3m

Weight 7.5 tonnes

Engine Model 2 x Yanmar 6LPA-STP2

Power Rating 315mhp @ 3800rpm (each)

Top Speed 29.7 knots @ 3880rpm Cruise Speed 19.4 knots @ 3000rpm



"The difference is just chalk and cheese. There is literally no smoke, no petrol fumes and (the Yanmars) are so quiet we could easily have a conversation at the helm doing 20 knots. Ecstatic!"

The finished job has revealed not just a better, (and easier to access), engine room, but a vessel that is better all over thanks to other D'Aprix Marine Services work that included a new Mase generator (also from Power Equipment), full dash upgrade, complete electrical upgrade, (including all new battery system), and new head and plumbing installation.

The Larson 370 is typical of production leisure vessels in Australia that can benefit far beyond the cost of their refit with new engines like those available from Yanmar. With good power-to-weight performance for horsepower, significantly better fuel burn and torque figures that leave some other brands embarrassed, Yanmars can give a whole new lease of life to vessels like this.

Coming in at just over 400kg without transmission, the 6LPA is a 315hp straight six-cylinder diesel that gives its all, (horsepowerwise), at the 3,800rpm mark.

Turbocharged and intercooled, the 6LPA is a direct-injection 4.2L displacement diesel with mechanical fuel injection. Sophisticated in its own right, it has been a favourite of both boat builders and experienced boat owners for years because of its simple maintenance regime and proven longevity.

Twin John Deere 4045SFM85 for power cat

Meanwhile the custom-built 52ft alloy catamaran Sea-R got a brand new pair of John Deere Marine diesels whilst Tim managed a total of eight different trades in a major refit for this very comfortable live-aboard cruising explorer.

Installing a pair of 4.5L PowerTech 4045SFM85's, Sea-R is now benefitting from the lower RPM, lower noise, and high torque advantage that comes with John Deere marine propulsion.

Sea-R had a top speed of 14 knots with her old engines and the owners were hopeful of at least 16 knots with the new John Deeres. Fast-forward to sea trials and the numbers are spectacular to say the least!

This catamaran now has a WOT performance of 22 knots, (yes, you read that right, 22!). "It has a seriously smooth run across the water at planing speeds now and the John Deere repower has completely transformed this catamaran," reports Tim.

The high-pressure common rail fuel system in the 4045SFM85 delivers fantastic John Deere performance and excellent fuel economy with low emissions.

Coupled with the integrated components for a water-cooled exhaust manifold (eliminating external hoses and fittings) and air-to-



POWER PROFILE

Vessel Name Sea-R

Application Pleasure Craft

Construction Aluminium Catamaran

Length 14m

Weight 16.5 tonnes

Engine Model 2 x John Deere 4045SFM85

Power Rating 315 mhp @ 2800rpm (each)

Top Speed 23.4 knots @ 2850rpm

seawater aftercooling on the turbocharging, this engine can deliver much higher performance than might be expected from such a compact engine.



The difference in space around each engine compared to its old propulsion regime has to be seen to be appreciated. Legendary John Deere longevity should ensure Sea-R is running sweetly (and quieter!) for many, many years.

D'Aprix Marine Services also got a new John Deere dash installation, Mase generator and some other nice upgrades including full electronic control, battery system management upgrade and spectacular new underwater lighting.

Being a one-stop shop for such extensive, quality work, it's no wonder there is a line-up of boat owners looking to revitalise their pride and joy with D'Aprix Marine Services at Gold Coast City Marina. Couple that ability and experience with the quality of Yanmar and John Deere marine propulsion provided by Power Equipment and you really are looking at the best way to transform your pride and joy on the water!

You can find out more about D'Aprix Marine Services at daprixmarine.com.au



Research, development and production all in one place.

Torqeedo GmbH, the global market leader for marine electric drives, celebrated the grand opening of a brand-new 8,300m² building near Munich where all company activities, including research, development, and production, will now take place.

The company, its business partners, and members of the press gathered for remarks from Fabian Bez, Torqeedo's chief executive officer, and Dr Florian Herrmann MdL, Head of the Bavarian State Chancellery and State Minister for Federal Affairs and Media.

"Torgeedo is a global champion for cleantech and electric mobility on water and enriches the location with its new company headquarters. It is great that

another milestone in Torqeedo's impressive company history is being written, combined with a clear commitment to the region and its people. Climate protection and zeroemission mobility are key issues in Bavaria on the way to climate neutrality, in which we are investing over 22 billion euros by 2040 with a climate protection offensive. We are proud that companies like Torqeedo are helping to open up new dimensions in sustainable mobility with innovation and a pioneering spirit," Dr Herrmann said during his welcoming address.

Bez said: "Whether by road, rail, air or water, sustainable forms of propulsion are needed to achieve the climate targets. In the transport sector, in particular, there is still a lot to be done. At Torqeedo, we recognised this trend early on and developed batteryelectric drives for watercraft. Today, we are the global technology leader for zeroemission mobility on the water. We will soon produce our two hundred thousandth electric motor and have already filed more than 250 patents. Electric mobility on water, "Made in Germany" - this is what Torqeedo will continue to stand for in the future."

"Over the past year, Torqeedo has strengthened its award-winning product lineup, production capabilities and internal processes and is fully prepared to continue to lead the transformation of the marine industry. The new facility allowed us to implement lean manufacturing strategies which reduce waste, improve product quality, and ready the company for sustained, rapid growth. Torgeedo's production lines were formerly split







between three remote facilities, but with the new production hall, all lines are now run side-by-side," said Bez.

The key concept of lean manufacturing is waste reduction, which increases efficiency and improves quality. Lean management concepts have also been implemented throughout the company, starting with product design and continuing through the manufacturing, distribution and after-sales support stages.

Torqeedo's key customers, strategic partners, boatbuilders, dealers and distributors visited the new headquarters for a series of strategy and technology workshops in the days preceding the event. The topics included product innovations such as Deep Blue's new advanced hydrogeneration algorithm, which improves energy generation for a sustainable sailing experience, and a new interface for smart DC generator management and ultimate luxury and convenience on board.

Over the past few years, Travel and Ultralight models have become quieter and more responsive and are available

with an extended-capacity battery and an easy way to charge from onboard solar. The Cruise motor lineup was recently relaunched with 50% more power and increased durability.

Torqeedo has become the preferred electrification partner for the world's biggest and most reputable boatbuilders and technology partners because of its holistic system architecture for e-mobility on the water. The company integrates mechanical components from tech leaders in the marine industry, such as ZF for the development of 50kW and 100kW Deep Blue saildrives and Poseidon for steerable azimuth thrusters for water taxis and commercial ferry operations, into its proven reliable Deep Blue infrastructure.

Torqeedo is also proud to be a trusted supplier for a wide variety of both commercial and recreational OEMs around the globe, and was recently named the electrification partner for Groupe Beneteau's sailing, real estate on the water, and mindful cruising business areas.

Bez said: "Over the past 17 years, Torgeedo

has developed the most comprehensive product lineup for electrification in the marine industry. Within our global network, we have developed the technology, institutional knowledge, quantitative experience and partnerships that will allow us to define and create the emission-free future of the marine industry. We will stay ahead and propel beyond."



The popular Torqeedo Cruise 3.0T (6hp)





Whether it's training for a dealer, a question about the operation of an air-cooled Yanmar pump, or breakdown troubleshooting of a tug boat engine at a multibillion-dollar port facility or a tightly-scheduled Sydney ferry, the Engineering and Technical Support team are just a few of the experts that help continue building Power Equipment's reputation.

If you like to have your day sorted out and planned far ahead in advance, and without change, Power Equipment's Engineering & Technical Support team probably isn't the place for you!

The daily challenges are only outnumbered by the sheer variety of customer applications that Power Equipment products can be installed in. None are more aware of just how diverse those applications can be than Power Equipment's National Operations & Engineering Manager Nick Lee.

Like most engineers, Nick likes to stick to the facts and look for sound technical solutions, but he is also acutely aware of just how important contact and communication with the customer is.

"Allan Foster, and now Luke Foster, have always insisted that we are contactable by our dealers and clients – and that's one of the big advantage for our customers." explains Nick.

Nick oversees the Engineering and Technical Support team, a group with real-world engine knowledge, a can-do attitude, and well over a century of combined industry experience.



"You really don't know what the next challenge will be - or when it will appear," says Nick, "Our jobs really are pretty fullon, but the rewards in terms of customer satisfaction can make that worthwhile."

Whether it's helping with a simple operating procedure for a recreational engine or an

issue with a 'time is money' commercial application, Nick's team never back down from a problem, big or small!

It's not all troubleshooting of course, with much of their work revolving around helping deliver the myriad of solutions that Power Equipment's products can power.

Says Senior Service Engineer & Training Manager Jim Kibblewhite: "I get questions about anything from a 4 horsepower engine through to 1,800 horsepower engines!"

"But a big part of my role is also assisting customers and OEMs with integrating things like industrial control applications to their machines and helping apply our products to the endless applications across agricultural and industrial uses - it really is so varied."

One important role of the team is training. Both Nick and Jim are pleased that relaxations in Covid restrictions have allowed dealer and OEM training sessions to recommence this year.



"The more knowledge our dealers have of course, the better direct support the customer can get which is always our preference," Nick explained.

Yanmar training for the team at Sydney Ferries

Power Equipment is a growing company, with an increasingly impressive range of products. "The company started with a only a few recreational and commercial engines," says Jim Kibblewhite, "but that changed, particularly since the GFC when commercial engines sales increased significantly and probably became our bread and butter."

"Moving forward to today and we have expanded to include John Deere engines, OXE and Cox diesel outboard engines, and even the Torqeedo range of electric marine engines - we've grown immensely and there has been a lot to learn that's for sure."

Power Equipment's service regions extend across the Asia Pacific region and any one of the team can find themselves deployed from one end of Australia to the other, or New Zealand, or the Philippines, or Indonesia, or even Papua New Guinea.

"You've got to love what you do in this job and if you don't have a passion for it, you've probably just got to get out," Jim explains with honest reflection.

From left: Nick Lee, Aaron Kouyoumtzoglou & Craig Tucker



"But the best part of the job is the look on the customer's face when it's all fixed and working as it should – that's just great!"

The team's expertise in remote locations sees them traverse Australia and the globe to assist and train clients on a range of engines, and in particular the new diesel outboard range. One day they're in the office, the next they are on a remote island in Far North Queensland, or even further abroad.

Nick recalls that "working overseas and in remote areas forced me to think outside my comfort zone. It also makes you aware of just how reliant our customers are on us when it comes to tech support, especially having been in their situation myself."

Craig Tucker has been a diesel mechanic for over 30 years and has seen every problem there is when it comes to diesel engines. Our newest team member, Aaron Kouyoumtzoglou, joins us with a background in the RAAF as an aviation technician and as a heavy diesel mechanic.

"I like to solve problems and fix things. There's nothing better than making something work how it should." Craig says. We couldn't agree more!



When you can't count on the rain, depend on John Deere irrigation power.

John Deere gives you irrigation power choices ranging from 24kW to 367kW on all irrigation equipment.

When an entire crop is at stake, you'll see why more farmers choose John Deere power for their irrigation units.









Cruising Coomera with Cove Cruises

Neil and Margit Warburton are people of many talents – not only both being qualified skippers who have run vessel-based businesses on the Gold Coast for the last few years, but Neil with a guitar and microphone onboard! While their abilities are many, their preference for marine diesel propulsion has always been with one brand - the ever-trustworthy Yanmar.

Neil Warburton is a self-confessed Yanmar fan, having enjoyed Yanmar reliability and simplicity in the many boats he has sailed and owned over the years.

When Neil and wife Margit took over MV Kilkie in 2015 to run the well-known Cove Cruises on the Coomera River on the Gold Coast, an engine repower was going to be inevitable, given the engine they bought her with was installed in 1965.



In 2021, Kilkie was relaunched with a 54hp Yanmar 4JH5E, and according to Margit the vessel was "probably in the best condition it has ever been in".

"When we bought her, a lot of previous repairs hadn't been done properly and she was in a fairly poor state, it needed a lot of work," explained Margit.

"The previous engine, (a marinised 60hp Fordson diesel), was much bigger and heavier, and the engine sat quite a bit forward in the boat," Margit said, "so because of that, under power the bow of the boat would actually push down a bit."

"The new Yanmar is smaller and lighter and now the boat sits much better – under power the bow actually pushes up." As one of the oldest commercial vessels still operating in Queensland, and believed to be the oldest commercial vessel operating amongst the glitz and glamour of the Gold Coast, Kilkie was built in 1955 at Thompson's shipyard in Bulimba, Brisbane.

At 30 feet in length and 12 feet in beam, she is a very stable, shady, smooth-water cruiser and delights all who join her for scheduled cruises or on private charters.

Her life started as a school ferry and mail boat on the Maroochy River on Queensland's Sunshine Coast, then on the famous Noosa everglades until being moved to Sanctuary Cove on the Gold Coast in 1988.

She will happily slip around the Coomera River, Sovereign Island and connected waterways of the Gold Coast at six knots, cruising past multi-million dollar properties and all the excesses that the Gold Coast offers.

Kilkie is now plying her waterway cruises and private charters quieter and cleaner than ever with the new Yanmar, doing little to disturb the wide array of wildlife that these waterways also call home.

"Because the engine sits within an engine box inside the boat, if Neil is playing music for our guests onboard I'll usually drop the Yanmar down to around 1,300rpm – it's very quiet then and doesn't interrupt the music at all," Margit says.

The 2.19L 4JH5E is a brilliant naturally aspirated (non-turbo) all-rounder offered by Yanmar. It has been a favourite of both recreational sailors and commercial operators with lower horsepower needs like Cove Cruises for decades.

Weighing in at a pinch over 200kg, this Yanmar delivers all its torque at the low end of its rev range whilst giving some nice bonuses along the way – including a 125amp alternator output and EPA Tier 2 emissions certification.

You don't need to convince Margit and Neil of the 4JH5E brilliance – after a year of running the Yanmar in Kilkie they couldn't be happier!

"The thing is, you can always trust a Yanmar, you can always get the parts and they're relatively cheap," say Margit.

Find out more about Neil and Margit's Cove Cruises at covecruises.com.au



POWER PROFILE

Vessel Name Kilkie

Application Commercial Cruiser

Construction Fibreglass & timber

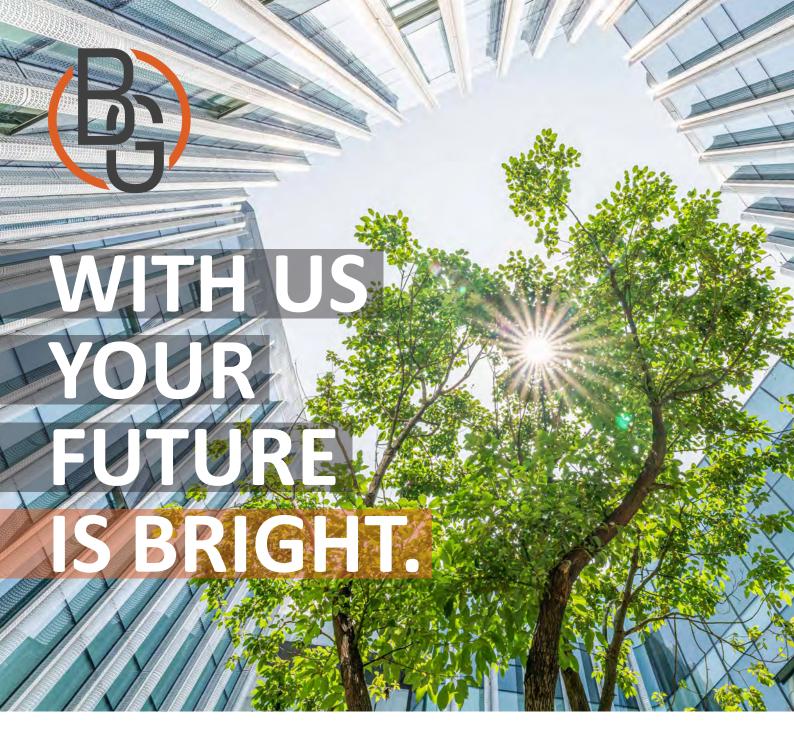
Length 9.1m

Weight 12 tonnes

Engine Model Yanmar 4JH5E

Power Rating 54 hp

Cruise Speed 6 knots @ 2000rpm



Experience. Expertise. Innovation. Solutions.

We envision a world where sustainability is interwined in every organisation's core operations, producing greater output, reducing costs and helping preserve the environment for generations to come.

We work with a range of private companies and government departments to research, plan, design and manage a range of engineering services that incorporates impactful sustainability outcomes and leads our clients on their road to Net Zero.

Our services include:

- Net Zero Planning
- Energy & Renewables
- Building Services Engineering
- Energy Efficiency & Asset Strategy









Bridgeford Group, a subsidiary of Power Equipment, was a passion and dream started by Power Equipment's CEO Luke Foster, and award winning engineer Nick Tassigiannakis.

It all began at university, where Nick and Luke studied Aerospace Engineering together. Fast forward a few years and Nick provided his design and energy expertise for Power Equipment's 99kW rooftop solar energy system.

This initial project, and its success, led Luke and Nick to form Bridgeford Group. Three years later and the firm has helped hundreds of clients meet their energy goals, sustainability needs and assist them on the path to net-zero



It was an incredible and proud occasion for Nick Tassigiannakis, Bridgeford Group's Managing Director, and his team of engineers to be named in the Australian Financial Review's Fast Starters list for 2022.

Just three short years ago the Bridgeford team consisted of just two team members, including Nick himself. Since these humble beginnings, the team has grown to include twelve staff. A very meteoric rise in just three short years.

"Energy prices have drastically increased over the past few years, and are continuing to rise as we speak. The business landscape is being continually disrupted with new players and technology, while customers expect companies to do more for our environment. We offer the know-how and technical resources to help our clients save money and save on energy use." says Nick.

"Our advice and design services offer our clients bankable and reliable solutions to high energy costs, whether that's through controls improvements, high efficiency heating and cooling, or renewable energy systems. Cost and energy savings have a direct impact year

on year on both the environment and the bottom line." Nick states.

What makes Bridgeford Group different is the scope of services on offer, and the ability to solve complex problems.

"We assist our clients through the entire journey, from simply identifying immediate savings opportunities through to designing new energy systems and upgrades to existing complex systems. Our services include design, procurement, project management and post project reporting." Nick says.







OXE300 Dare to be different

reduce our impact on the environment. Due to the low fuel consumption and unique design, operational range Learn more about the OXE300 diesel outboard at powerequipment.com.au.





Diesel Outboards garner plenty of interest at Land Forces 2022 - the southern hemisphere's largest defence exhibition

Representatives from Power Equipment's marine division gathered in Brisbane recently for Australia's largest defence event that showcases the latest products and innovations in defence technologies, and also provides a platform for businesses and industries to network and contribute ideas to the sector.

Power Equipment showcased their latest diesel outboard engines, designed to provide torque, reliability and power for a range of heavy duty commercial uses, including defence operations.

The Cox Marine CXO300 and OXE Diesel models on display gained plenty of interest from a range of parties that were intrigued with the new technology on show.

Matthew Wheare, Marketing Manager at Power Equipment, states "Our diesel outboards offer so many advantages over more traditional petrol power, especially within heavy duty environments such as defence and emergency response situations. A single fuel source, huge amounts of torque and long service intervals are just the beginning."





> YANMA



Australia's largest renewable energy exhibition provided a valuable opportunity for Power Equipment's industrial power products team to showcase our range of Yanmar generators - the perfect back-up power option.

As one of the world's premier events in energy products, over 30,000 people attended the event over two magnificent (and busy) days. Our team were on hand to provide valuable technical advice and information on our range of generators.

The star of the show was in no doubt our all new Yanmar powered 8kVA (6.4kW) compact diesel generator, which generated enormous interest amongst visitors. This unit is due to go into production in 2023 and there seems to be plenty of interest already. Stay tuned for more details on this exciting product!

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