

# POWER

FOR MARINE PROFESSIONALS | NO 3

EUROPEAN  
EDITION

Welcome to the  
commercial world  
of Volvo Penta!



## POWERED BY VOLVO PENTA

The Volvo Ocean Race is finally at an end. For nine months, each of the seven teams has relied on the power of the wind — and Volvo Penta — to carry them 38,739 nautical miles across the world. It's the toughest offshore competition on Earth, and the Volvo Penta D2-75 engine is the heart and soul of the Volvo Ocean 65 Class racing yacht — without it the teams have no electricity, no fresh water, no propulsion and no hydraulics. It cannot fail.

I had the personal privilege of visiting the Volvo Ocean Race village during its stopover in Lisbon, Portugal, along with some customers from Benelux. While we were there, we visited the Volvo Ocean Race pavilion. Our host explained that AB Volvo has produced an impressive 550 000 D13 engines for the Volvo Group over the years. These have been used in all kinds of applications, from trucks to excavators, marine gensets to mining machines. Finally we joined the start of the Lorient leg. Witnessing the teamwork onboard and the power of the boats from our vantage point nearby was such a memorable experience.

This brings me to the next visit I made to Seawork 2015, held in Southampton in the UK; it's a show that primarily targets the

fast workboat sector. The number of "powered by Volvo Penta" boats that I saw at the show's outdoor quayside has doubled (or even tripled) in just a few short years. Marine professionals have recognized and adopted Volvo Penta as a true marine commercial player that offers reliable products and invaluable customer support. From Norsafe's small rigid-hulled inflatable boat equipped with two D4-300 aquamatic drive, to Damen Shipyards's D9 MH-powered tugboat, to the impressive MC522 fitted with two Volvo Penta IPS 1050 pods owned by CTruk Boats.

This presence corresponds to the overwhelming growth we've seen over the last few months. During this time we've been delivering some very interesting projects for specific applications, which I'd like

to share with you in this latest issue of POWER for Marine Professionals. If you'd like more information about any of the applications in this issue, please contact us.

I wish you an enjoyable summer holiday.

Best regards,



Jan-Willem Vissers  
Director Marine Commercial  
Region Europe



**Business as usual** in Amsterdam thanks to Volvo Penta >> [Page 3](#)



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**VOLVO  
PENTA**



The D9 to D16 are now available with Open Can Interface.



## VOLVO PENTA OPENS UP

To meet customer demand for Volvo Penta engines without electric vessel control (EVC) or a marine commercial control box (MCC), D9, D13 and D16 engines are now available to order with optional Open Can Interface. Marine customers now have more choice, thanks to Volvo Penta.

In a bid to serve OEMs working in a wider variety of applications, Volvo Penta now offers boat builders the option of ordering an engine with Open Can Interface, as well as the further option of shut down switches. The new opportunities are available to D9, D13 and D16 marine gensets, as well as fixed and variable speed auxiliary diesel engines.

Since late April new modules have been available to order that are stripped of the MCC box, the power control unit (PCU), the marine control unit (MCU) and the shutdown unit (SDU). Power supply redundancy has remained, although the customer needs to supervise the two main power supplies for the alarm.

"To be able to effectively communicate with the engine, an interface is needed," explains Thomas Lantz, chief product manager at Volvo Penta. "We felt it was important to offer customers the option of using

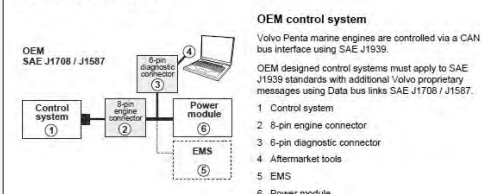
their own interface, instead of Volvo Penta's. By creating an open system, where customers can cherry-pick the parts that suit them, we're making our engines far more accessible to a wider audience."

The new options, available for the MG and MH varieties of the D9, D13 and D16 engines, are extremely flexible because customers can choose how many or how few of Volvo Penta's full-range electrical controls the engines are delivered with — including overspeed sensor, stop relay and vodia interface.

"In the past we delivered engines with a full electrical system as standard, but we excluded some customers who wanted to use their own software," Thomas says. "By opening up and sharing data about the engine, OEMs can customize the boat's interface to their own preferences, while still benefiting from all the key features of a Volvo Penta engine."

### Engine control interface

#### CAN bus interface



### Communication

#### J1939 Backbone 1 (BB1) - EMS

**NOTICE!** All unused signals must be set to 'Not available'.  
All unused bits in the messages must be set to 1.

Identifier	PGN	SPN	Frame Name / Signal name	Update period Tx = transmit Rx = receive
0x18FEC400			<b>DM1 - Active Diagnostic trouble codes</b> Description: The message contains the first active diagnostic trouble code, but requires the multipacket transport TP_CM	Tx 1000ms
0x18FEE300	65251		<b>EC1 - Engine configuration</b>	
	188		Engine speed at idle P1	
	539		Engine percent torque at idle P1	
	528		Engine speed at P2	
	540		Engine percent torque at P2	
	529		Engine speed at P3	
	541		Engine percent torque at P3	
	530		Engine speed at P4	
	542		Engine percent torque at P4	
	531		Engine speed at P5	
	543		Engine percent torque at P5	
	532		Engine speed at high idle P6	
	544		Engine reference torque	
	533		Engine maximum momentary override speed P7	
0x0CF00400	61444		<b>EEC1 - Electronic engine controller 1</b>	
	512		Drivers demand engine - percent torque	
	513		Actual engine - percent torque	Tx 20ms
	190		Engine speed	
0x0CF00300	61443		<b>EEC2 - Electronic engine controller 2</b>	
	91		Accelerator pedal position 1	
0x18FEEF00	65247		<b>EEC3 - Electronic engine controller 3</b>	
	514		Nominal friction - percent torque	Tx 50ms
	27		Engine exhaust gas recirculation 1 valve position	
	94		Engine fuel delivery pressure	Tx 250ms
	100		Engine oil pressure	
	109		Engine coolant pressure (1)	
0x18FEE000	65262		<b>ET1 - Engine temperature 1</b>	
	111		Engine coolant temperature	
	175		Engine oil temperature 1	Tx 1000ms





# BUSINESS AS USUAL ON AMSTERDAM'S CANALS

Time to comply with new emissions output regulations has now expired for Amsterdam's famous Canal boats, but, thanks to Volvo Penta, it's still business as usual on the canals of the Dutch capital — and now NOx emissions are down by as much as 45%.

Amsterdam receives over 20 million tourist visitors per year, and with hundreds of thousands taking to the canals to enjoy the city by water, Canal boats ferries contribute considerably to the collective emissions output in the Dutch capital.

In 2005 Amsterdam's local governing body laid down an ultimatum for operators of the city's famous glass Canal boats — as of January 1 2015, all boats of this kind had to either be fitted with a repowered engine and aftertreatment system, or replaced by an electric alternative.

Terlouw Rotterdam, the Volvo Penta Center in the Netherlands, worked with Slot Jachtbouw, an Amsterdam shipyard, between 2012 and 2014 to systematically swap out many of the old engines and replace them with repowered new ones that are fitted with STT Emtec's marine DNOx® after-treatment system.

Since repowering ended at the beginning of this year, a total of 50 out of 150 canal boats operating on Amsterdam's waterways are powered by Volvo Penta D5A TA marine diesel engines. Ferry companies now enjoying the benefits of a Volvo Penta engine include Canal Company, Blue Boat, Rederij Kooij and Rederij Lovers.

"Amsterdam is one of the most popular urban tourist destinations in Europe — thousands come every year to experience the magic of this city," explains Jeroen van Liefeland, sales

manager for Terlouw Rotterdam. "The canal boat operators needed to find an engine and aftertreatment combination that met the requirements of the local authorities and didn't result in a long repowering process that would cause costly downtime. Volvo Penta and STT Emtec proved to be a winning combination."

## CLEANING UP AMSTERDAM

The Volvo Penta D5A TA engine is a highly reliable, type-approved marine diesel engine that boasts low exhaust emissions and excellent fuel efficiency. Because of the high level of tourist trade in the Dutch capital, canal boat operators required an engine that they could trust — and Volvo Penta offered just that.

"Volvo Penta is well known in the Netherlands for its dependability — the boats' operators can't afford to take their Canal boats out of the water for lengthy repairs or maintenance, especially during peak times," says Jeroen. "Maximizing uptime is paramount to our customers; they chose Volvo Penta because it's a partner they know they can rely on."

Prior to the repowering operation — which fitted the ferries with 4-cylinder engines — the ferries ran on 6-cylinder engines. This additional power was less of a help and more of a hindrance; because the speed limit on the Amsterdam canals is only 6 kph, the sightseeing vessels had a very low specific load profile.

But, thanks to Volvo Penta's engines, which are smaller with a lower maximum output, the ferries can now run at a higher load at low speed limits, resulting in higher exhaust temperatures. These high exhaust temperatures allowed for the use of the DNOx® aftertreatment system, developed by STT Emtec.

## THE AFTERTREATMENT SYSTEM

The D5 engines were fitted with a marine DNOx® system, which reduces NOx by diluting the charge air with recirculated exhaust gas. The amount of NOx being produced since the repowering project has significantly declined — thanks to Volvo Penta and fellow Swedish company STT Emtec.

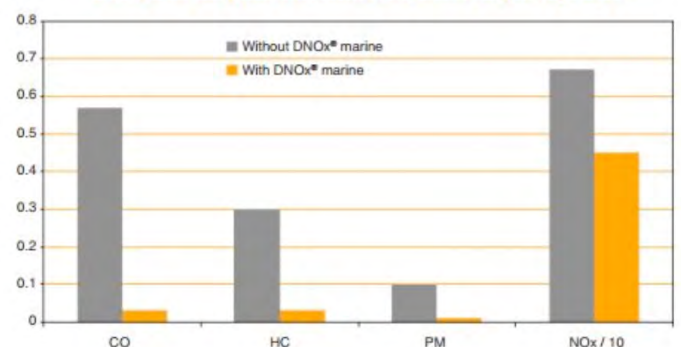
The exhaust gas recirculation (EGR) system operates with a patented EGR valve, which precisely controls the exhaust and inlet air mixture. In addition, the Catalytic Combustion Technology (CCT) active uses the

“Maximizing uptime is paramount to our customers; they chose Volvo Penta because it's a partner they know they can rely on.”

on-board fuel as a reacting agent to help control the soot loading in the diesel particulate filter (DPF). Soot can be burned automatically when exhaust temperatures are high enough but, given the low speed limit in the city, which prevent the exhausts from consistently reaching high temperatures, the CCT active controls soot buildup at lower temperatures. Using the system, the engine's carbon monoxide, hydro carbon and carbon particle emissions are all reduced by up to 90%, and NOx emissions are reduced by up to 45%.

Together, Volvo Penta and STT Emtec tested the D5 engine with and without the DNOx® system, and found the results to be exceptional. The D5 engine's lower fuel consumption and cleaner performance, coupled with STT Emtec's advanced system, are helping Amsterdam work towards its goal of becoming a zero emission city by 2025.

Example of weighted emissions from diesel engine, cycle E3





## FULL SPEED AHEAD WITH VOLVO PENTA QUAD IPS

Volvo Penta's IPS drive system celebrated a decade in production this year — coinciding with the inaugural launch of the Volvo Penta IPS quad commercial installation in four Njord Offshore crew transfer catamarans.

A lot can happen in 10 years. Just a decade ago Volvo Penta introduced its revolutionary Inboard Performance System (IPS), forever changing the face of the leisure and commercial marine industries.

Coinciding with this milestone anniversary, the company is celebrating another breakthrough achievement

that's set to redefine crew transfer in the offshore renewable industry: the first quadruple Volvo Penta IPS pods installed in commercial boats — a fleet of transfer vessels managed by Njord Offshore.

"We have been delighted with the performance of our new catamarans in the few short months since their

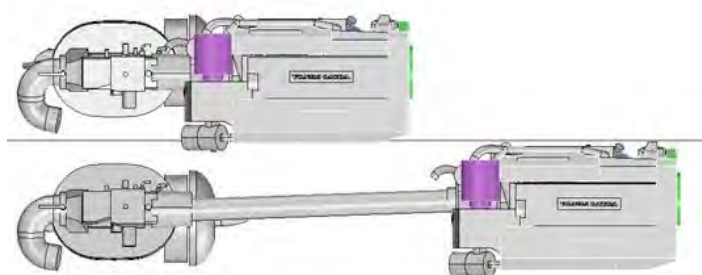
arrival," says Tom Mehew, director of Njord Offshore. "The quadruple system is a resounding success with our customers, especially thanks to the greatly improved redundancy, maneuverability, speed and fuel efficiency. Strategic Marine, the boat builder, also noted how easy the installation process was."

As the commercial and technical manager of a fleet of 21-meter and 26-meter transfer vessels, UK-based Njord Offshore recently received two new 26-meter catamarans with quadruple Volvo Penta IPS installations, which are now in operation — another two have been commissioned and will be delivered in September 2015. These complete propulsion systems are built with

“ The quadruple system is a resounding success with our customers, especially thanks to the greatly improved redundancy, maneuverability, speed and fuel efficiency. ”

Volvo Penta D13 marine engines and IPS900 pod units controlled by Volvo Penta EVC system. "Njord Odin, the first of four Volvo Penta-powered catamarans to be delivered to us, worked in the North Helgoland cluster earlier this year," explains Tom. "Of around 30 vessels that regularly work on and around the windfarms there, Njord Odin was the only one to continue work during a bout of bad weather in the area."

"Our charterers have been very pleased with the performance of Njord Odin — it provides them and their technicians with a much more reliable and effective logistical solution. With three additional 26-meter new builds, all containing quad Volvo Penta IPS, on the way later this year, we're >>>



The IPS propulsion package is staggered in the hull to fit in



looking forward to Njord Freyr, Njord Magni and Njord Thor offering even more charterers the same excellent advantages."

### THE BIGGER THE BETTER

With crew transfer vessels in the marine commercial industry growing in size year on year, Volvo Penta is able to offer highly efficient quadruple installations, with the added redundancy that comes with four separate engines and drivelines.

In demanding work environments, Volvo Penta IPS outperforms standard inboard shafts in fuel efficiency, performance, acceleration and noise levels — offering operators a high-performing system in every respect. And now, with the option of a quad installation, a greater range of customers can benefit from the innovative system.

"In recent times Volvo Penta has gained considerable strength in the 24- to 30-meter range, which includes patrol and pilot boats, passenger ferries and service vessels," says Gerard Törneman, sales project manager for Volvo Penta Marine Commercial. "In this type of boat the quad installation will take up less space than inboard shafts, and, being three to five tons lighter than other propulsion and engine systems, it offers more speed, a longer range and lower fuel consumption."

### THE POWER OF FOUR

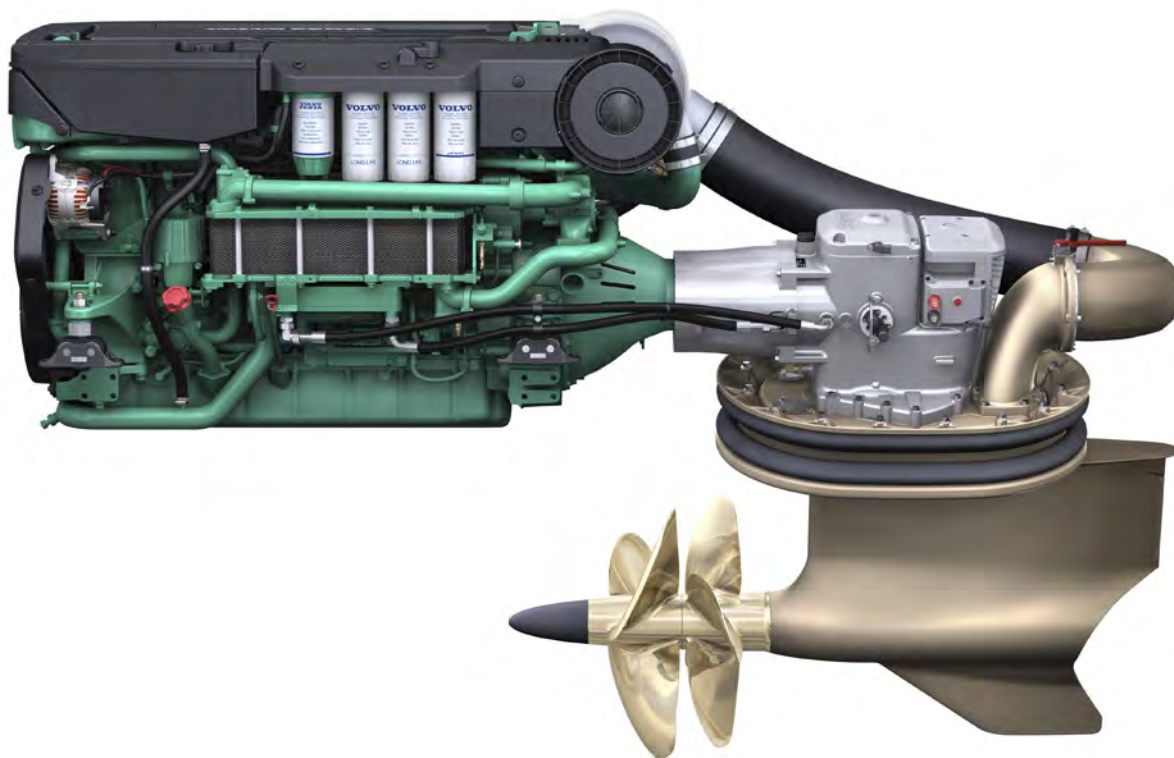
"The expert maneuverability and handling of a vessel fitted with Volvo Penta's quad installation means that it can be held in a steady position against the wind turbine, more or less undisturbed by current, wind or waves, thanks to the steering and high thrust," Gerard explains. "Increasing numbers of commercial customers, such as Njord Offshore, are realizing that Volvo Penta IPS, with its precision maneuverability and positioning functionalities, is a good match for crew transfer in the offshore industry."

The active propulsion system is supported by Volvo Penta's EVC system that controls all four drive units in the quad installation. The Volvo Penta IPS joystick docking system allows the operator to move the vessel sideways, rotate it on the spot and position it precisely against the wind farm pylon.

Volvo Penta IPS is designed to make life easy for shipyards — the engines, drive and the control system are all perfectly matched and ready to connect, keeping installation time to a minimum. And with one supplier taking full responsibility for the complete system, lag time during the commissioning phase is limited.



The engine room in one of the hulls of the Njord Odin







Our engines need to perform under hard conditions

## SEIZING THE DAY

Volvo Penta is looking more closely than ever at the potential to expand in the auxiliary market. Already it has extended its reach in Norway, working with a number of pump customers on a variety of marine-based applications.

Seizing on what it perceives as an excellent opportunity, Volvo Penta is moving more aggressively into the marine genset market, where it sees potential to power a variety of applications. With 100 OEM customers in Europe manufacturing pumps, cranes, air compressors, high pressure-water systems, rust removal, recoating and firefighting equipment, there is potentially a market for as many as 2,000 engines per year in Volvo Penta's size range. Similar to Volvo Penta's Industrial business, this segment has many high-volume customers and requires standardized engines, and sales often result in long, close relationships with customers.

In the Norwegian market alone, Volvo Penta has recently captured three customers for marine genset engines.

Multi Pump Innovation, a leading provider of manual and remote-operated net cleaning systems for fish farms, supplies high pressure units (with a working range of 100 to 2,750 bar) that are powered by Rating 1 Volvo Penta D7C and Volvo Penta

D9 and D13 auxiliary MH propulsion engines. Volvo Penta has worked closely with the Slependsen-based company, providing comprehensive service, quick delivery and outstanding access to spare parts. "We help MPI do extensive fitting, testing and commissioning — we've been very hands-on with them throughout the entire process. A comprehensive spares package and aftersales help and advice are also among the services we provide them," says Thomas Brauner, owner of La-Sa Boat and Motor, one of Volvo Penta's marine centers in Norway.

"We chose Volvo Penta for an obvious reason: it's the best," says Jarle Fagerheim, technical manager and production manager at MPI. "The service we've received from La-Sa has been extraordinary. Our customers work long hours, and they need our machines to work as long and as hard as they do. Volvo Penta has the ability to get to our customers quickly and help them if an MPI system breaks down, no matter where they are based in the world."

JB Safe Diesel, based in Bryne, Norway, specializes in converting diesel engines for use in Zone II hazardous areas, such as oil rigs or plants where there is a high potential

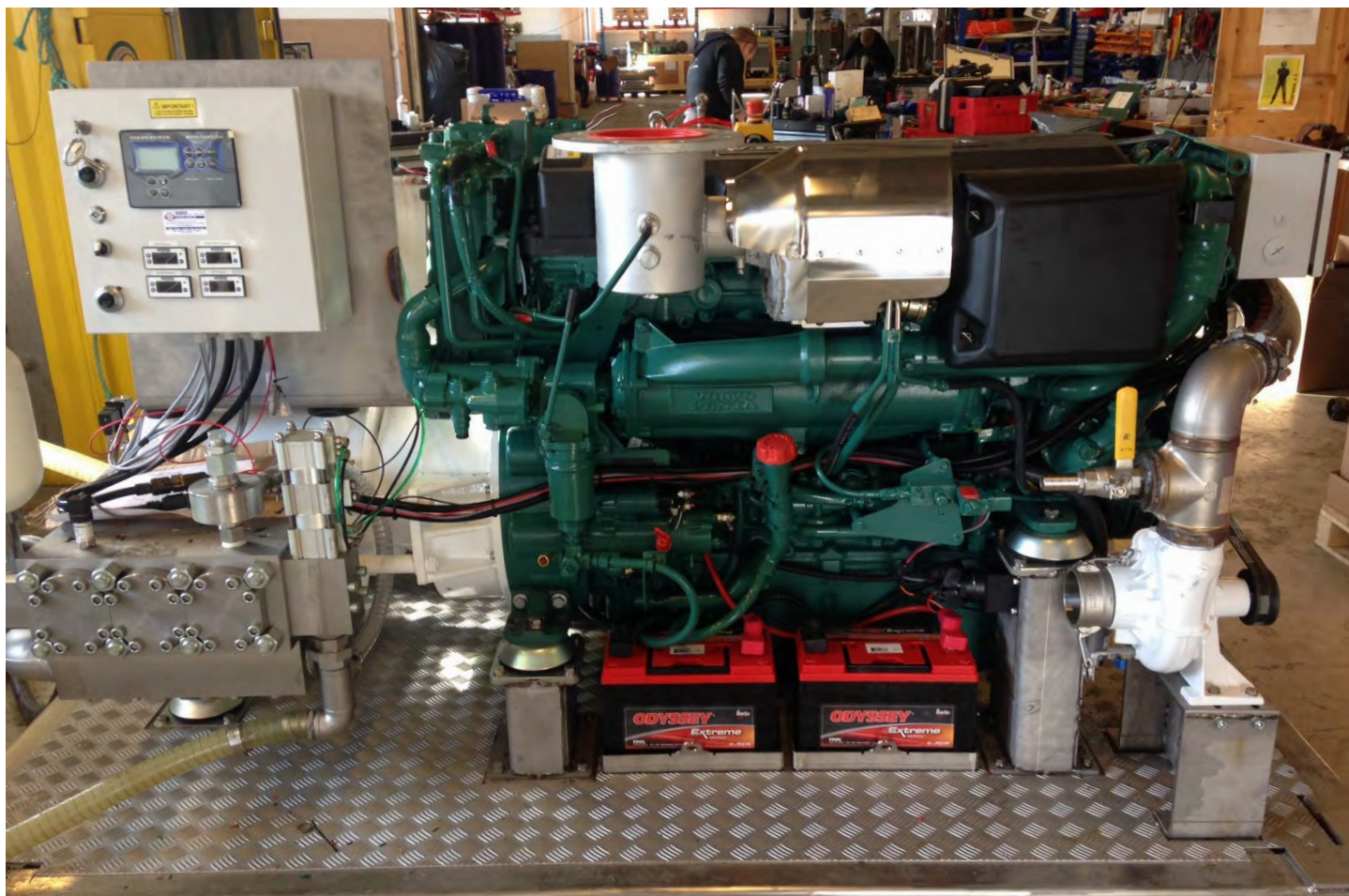
**“** We chose Volvo Penta for an obvious reason: it's the best. **”**

for gas leaks. Typical applications include pumps, compressors and generator sets. Such demanding applications require engines that can operate at safe temperatures and >>



A converted D5 engine for ATEX by JB Safe Diesel





The D9 is build together at MPI with a high pressure pump

meet the ATEX and International Electrotechnical Commission's IECEx regulations for units working in hazardous areas.

This sometimes calls for standard engines without electronics, which Volvo Penta is able to supply. After running a number of in-depth temperature tests, JB Safe Diesel chose Volvo Penta's D5 and D7 engines, ranging from 89 to 265 hp.

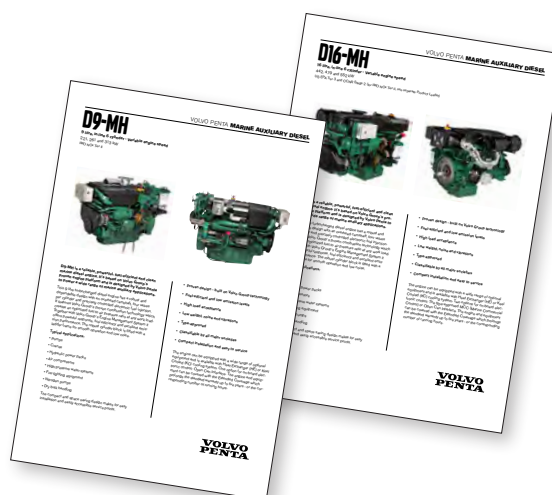
The company had looked at several alternatives for mechanically governed engines in the 100-200 hp range. After contacting Volvo Penta's Ålesund-based dealer Gulliksen and making a visit to the factory in Gothenburg, JB Safe Diesel realized Volvo Penta could accommodate its requirements for technical input, in addition to lending its test cell.

Soon after beginning discussions with Volvo Penta, JB Safe Diesel received an urgent customer request for a 100 hp mechanical engine. The customer wanted a complete package within eight weeks to be shipped by plane to Australia. Volvo Penta agreed to supply an engine on short notice. JB Safe diesel designed an ATEX conversion kit to make sure exhaust gas temperature and skin temperature stayed below 200°C during full load at the required ambient temperature. Everything came together smoothly,

and the package was shipped in time. "We received a lot of technical input from Gulliksen, as well as the Volvo Penta teams in Gothenburg and Oslo," says Arild Anda, managing director of JB Safe Diesel. "This included rush mobilization of a newly calibrated fuel pump on very short notice."

Fire Fighting Systems, based in Moss with production in Amål, Sweden, leads the marine market in building and supplying complete external firefighting systems for use in tugs, offshore vessels, fire boats and work boats. Volvo Penta supplies D4 inboard, D9 MH and D16 MH engines for its portable container systems, augmented with service from Imatech in Sweden.

"FFS was attracted to Volvo Penta because Volvo engines are connected with quality and durability. We were also able to adapt our solution to specifically meet their needs," says Martin Waktel, marine commercial sales manager at Imatech. "Furthermore, Volvo Penta is a more environmentally conscious choice, with a low total cost of ownership for customers."







# VOLVO PENTA KEEPS KOOLE ON THE LEVEL

Achieving excellent fuel efficiency with level-specific fuel consumption, Volvo Penta's D13 and D5 marine gensets are helping Koole Terminals usher in a new class of inland waterway vessel on the canals of the Netherlands.

With over 6,000 km of inland waterways, the Dutch canal network is one of the densest in Europe. Around 2,200 km of this highly complex transport system is utilized purely for commercial purposes, linking the Netherlands with importers and exporters the world over.

Navigating the country's intricate network of rivers and canals are inland waterway vessels such as the Volharding 6, the latest addition to a fleet owned by Koole Terminals — an international storage company that provides logistics solutions for edible oils and fats to the Netherlands and beyond.

Only recently delivered to the water, Volharding 6 represents a unique change in the company's traditional product portfolio. In addition to the three Volvo Penta D13 marine gensets and one Volvo Penta D5 marine genset installed, the vessel's unconventional design means it's optimized for bulk quantity transportation — a feature that Koole Terminals naval architect Dries van Gorkum says was the project's key driver.

"Volharding 6 was designed to transport bulk quantities of a single product throughout the larger

waterways surrounding our main ports of Rotterdam, Amsterdam and Antwerp," he explains. "The boat is wider than some of Koole Terminals's other vessels, but it also has some interesting features that mean manpower and maintenance costs are reduced."

## LOW MAINTENANCE, LOW COST

By using pod propulsion, instead of a traditional direct drive, the vessel's maneuverability and handling are improved, meaning manpower onboard the Volharding 6 is reduced — lowering labor costs. Another benefit is that the V-Pod propulsion system requires no tunnels, which typically generate more drag, and no ballast when the ship is empty. Used in combination with three Volvo Penta D13 marine gensets, Dries and the team found that the pod propulsion offered higher efficiency than conventional propulsion systems.

Specific fuel consumption (SFC) is the gensets' fuel consumption per kilowatt of power take off. Generally, diesel engines are optimized for 100% power take-off, resulting in high SFC at times when engines are running at 50% or 75% — in some cases up to 25% more fuel per kilowatt is burned when engines aren't running

at 100%. This relatively high fuel consumption with lower engines loads was something that Koole Terminals wanted to avoid.

"With Volvo Penta's D13 engines, SFC is almost level at 50%, 75% and 100%, meaning roughly the same amount of fuel is used per kilowatt regardless of how the engine is loaded," Dries explains. "When the power demand goes above the optimum load of 100%, a second or third engine is needed, usually causing a dip as the load is spread across multiple units and resulting in higher SFC."

"With Volvo Penta, there is a level SFC across the full range of power — we've noticed that fuel consumption is more

“ Volvo Penta's recent partnership with Koole Terminals proves to shipyards and OEMs that inland waterway vessels are evolving. ”

economical in the Volvo Penta D13s when compared with similar units from other manufacturers. It's a real plus point for our customers."

"Volvo Penta's recent partnership with Koole Terminals proves to shipyards and OEMs that inland waterway vessels are evolving," says Jan-Willem Vissers, head of marine commercial segment, Region Europe. "Using our marine gensets, Koole Terminals has been able to lower its fuel costs, increase reliability and reduce maintenance costs due to high maintenance intervals and reduced running hours per genset when compared with a conventional propulsion system. All in all, Volharding 6 is a great success."



The Volharding 6 continues his journey to the Port of Amsterdam





## LOOKING BACK...

In June Volvo Penta participated in two important industry events, Nor-Shipping and Seawork International, which solidified its position in the marine commercial segment.

### NOR-SHIPPING, JUNE 2-5

In early June, delegates from Volvo Penta headed to Oslo, Norway, for four days of networking and customer meetings with visitors and fellow exhibitors — of which there was close to 1,000. As one of the most important events on the year's marine commercial calendar, Nor-Shipping offered Volvo Penta a unique chance to connect with key decision makers from operators, yards and naval

architects across Europe. In addition, new contacts and contracts were also established during the show.

At Volvo Penta's indoor stand, a Volvo Penta IPS3 drive unit and a Volvo Penta D13 marine genset were on display. The Volvo Penta IPS system in particular generated a lot of interest from many of the 35,000 visitors attending the show. Both products were chosen to demonstrate that

Volvo Penta is a key player within the marine commercial industry, says Jan-Willem Visser, director of Marine Commercial Europe:

"Volvo Penta IPS reinforced our position as an industry innovator in propulsion technology, and the marine genset was our recognition of Nor-Shipping's target audience," he explains. "Nor-Shipping attracts maritime professionals from the

shipping industry across Europe; with the offering at Volvo Penta's stand, we were determined to make our mark and prove our worth in this sector."

Volvo Penta has been very successful in this segment in recent years, thanks in part to its auxiliary and genset engine sales.



### SEAWORK INTERNATIONAL, JUNE 15-18

Later in the month Volvo Penta was in Southampton, England, for another industry highlight. This time it was exhibiting at Seawork International, Europe's largest marine and workboat exhibition held in a working port. With over 600 exhibitors and 10,000 products and services

on offer at Seawork, local, national and international exhibitors received high levels of interest from key decision-makers in the commercial maritime sector.

Volvo Penta went with a mission to showcase its suitability for workboats of all sizes and all applications. The indoor stand offered visitors a chance to see Volvo Penta's D4-225 DPH



(solas) and D13-700 MP engine. At the quayside a total of eight boats docked were installed with Volvo Penta engines, including four that were available for sea trial — offering high exposure to Volvo Penta's IPS system. It was a tremendous achievement for Volvo Penta, as Jan-Willem explains:

"We've been coming to Seawork for several years, but in the past

we typically displayed our smaller engines," he says. "Having boats out at sea trial or moored at the quayside that were equipped with our larger D9 or D13 engines was a really positive sign. It sends a message to the industry that Volvo Penta is a strong player in the commercial market, even when it comes to larger applications."



## EXHIBITIONS & EVENTS

### SEPTEMBER

**NEVA 2015**  
**September 22-25**  
**St. Petersburg, Russia**  
<http://neva.transtec-neva.com>

Helping to support Russia's commercial maritime industry, NEVA has been drawing an international crowd of designers and manufacturers to its annual exhibition and conference since 1991. As the premier marine B2B event in Russia, NEVA continues to strengthen ties between Russian shipbuilders and international companies.

### OCTOBER

**Interferry Conference**  
**October 3-7**  
**Copenhagen, Denmark**  
[www.interferry.com](http://www.interferry.com)

Interferry facilitates networking and cooperation within the ferry industry via its annual conference — an event that has been held in venues all around the world for almost 40 years. The networking opportunities at Interferry offer visitors a chance to meet other delegates from around the world to discuss a wide range of industry topics.

**Offshore Energy 15**  
**October 13-14**  
**Amsterdam, the Netherlands**  
<http://offshore-energy.biz>

Offshore Energy is one of the fastest growing gatherings of offshore industry professionals. The two-day event in 2015 will include an exhibition, where an expected 650+ supply chain companies will showcase their products and services to visitors from around the world.

### NOVEMBER

**Europort**  
**November 3-5**  
**Rotterdam, the Netherlands**  
[www.europort.nl/eng](http://www.europort.nl/eng)

Europort, held in Rotterdam, is the international maritime meeting place for visitors to discuss innovative industry technologies and complex shipbuilding concepts. Europort focuses strongly on special purpose ships, including offshore vessels, naval vessels, workboats, inland vessels and super yachts.

### DECEMBER

**WorkBoat Show & Annual Conference**  
**December 1-3**  
**New Orleans, Louisiana**  
[www.workboatshow.com](http://www.workboatshow.com)

Thousands of large fleet owners and independent vessel operators travel to the WorkBoat Show each year to meet with product experts and quality marine suppliers. The event is designed to keep attendees and exhibitors up to date with what's going on in today's industry, as well as what the future has in store.

**Marintec China 2015**  
**December 1-4**  
**Shanghai, China**  
[www.marintecchina.com/en-us](http://www.marintecchina.com/en-us)

Marintec China has grown considerably in recent years, becoming an international marketplace for buyers to source from and for international sellers to showcase in. Expanding to reflect the size and importance of the Asian maritime market, Marintec China 2015 offers a chance for over 1,700 exhibitors to connect with new customers and re-connect with existing contacts.

**VOLVO  
PENTA**