

TECHNOLOGY MATCHMAKING WORKSHOP

Jan-Willem Vissers Volvo Penta

Monday March 20th 2023

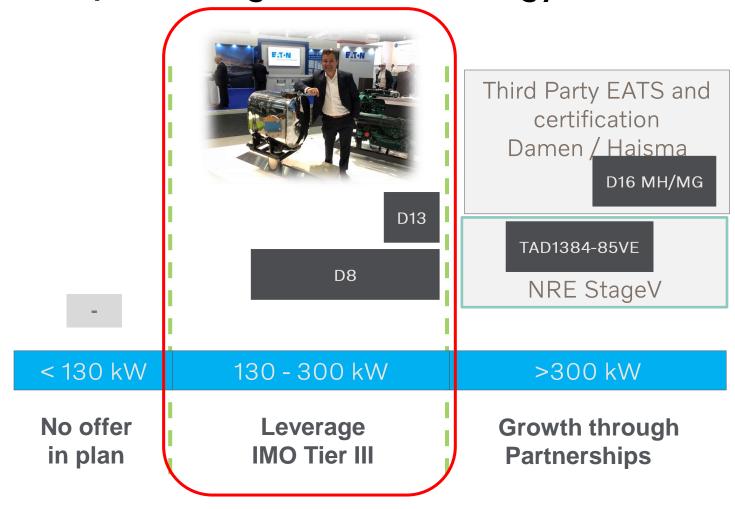




VOLVO PENTA & PARTNER SOLUTIONS FOR STAGE V MARINE

J.W. Vissers, Director Marine Commercial Global

Volvo Penta EU/IWW Stage V marine strategy





Volvo Penta Stage V <300 KW

- Based on IMO III offer
- High volume platform (>750 units in the field)
- Pure marine solution
- Type approved for all major class societies
- Very compact solution
- Flexible to install
- Available for Propulsion and Genset use
- For D8 and D13
- HVO 100 approved







Example of a Diesel Electric vessel, based on 4x D13 MG stage V (<300kW)



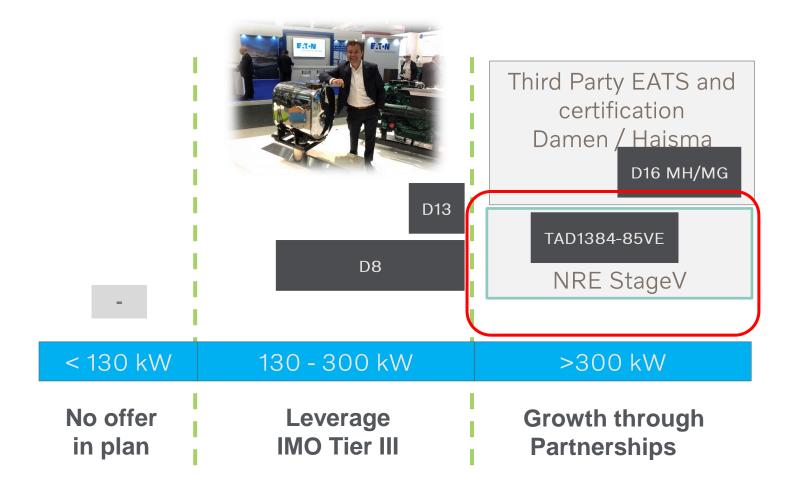


Example of 2x D13 Stage V propulsion on one gearbox (600kW)

Twin in - Single out Gearbox (Masson)



Volvo Penta EU/IWW Stage V marine strategy





Why convert an industrial Stage V engine?

- High volume, cost efficient, compact and proven product leveraging Volvo Group technology.
 - AB Volvo produces appr. 130.000+ 13L engines for all Volvo Group Companies including Volvo Penta.
- **No manipulation** of engine management system and no testing required. (EATS remains untouched)
- Synergy with marine engine, allowing to install *Volvo Penta marine parts*, reducing "special parts". Standard availability of parts guaranted for after market channels.
- Volvo Penta *factory warranty* on Volvo Penta engine and all Volvo Penta components if installed and used according to the Volvo Penta installation and operator instructions.
- Volvo Penta remains the certificate holder of the final product
- Industrial derate disabled for safe operations and according to ESTRIN regulations





Marine conversion of TAD1384-85 VE

by Visscher Scheepsreparatie B.V. & VMIC Antwerpen

As much as possible standard marine parts used:

- Aftercooler
- Waterpump and piping for LT cooling circuit
- Engine brackets
- Front end of engine rebuild to marine lay out
- Alternators from marine used
- Belt cover marine used
- Extra fly wheel PTO available for 1000NM





To market

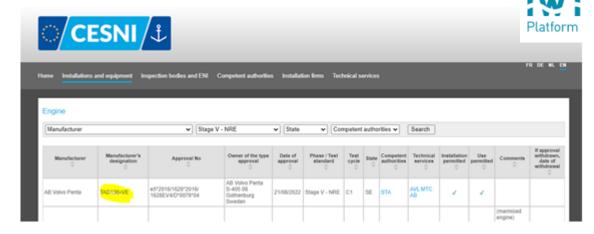
Certificate available now

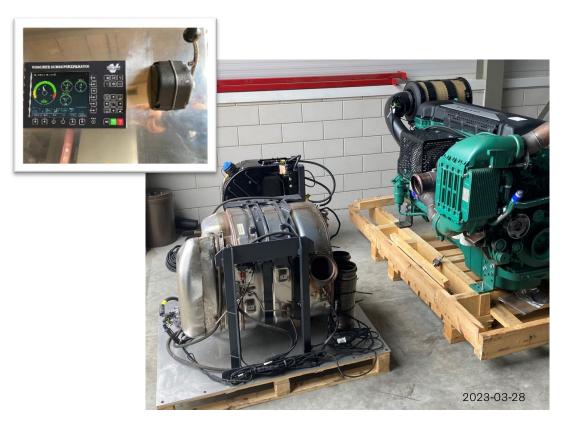
Delivery included:

- Powersetting 510 or 550 hp @1700 1900 rpm.
- Marine conversion (works and Hardware)
- Complete after treatment system incl. cabling and daytank for urea
- Engine control and 8" remote display.
- Engine control cabinet in engine room incl. display.
- Delivery in Benelux.
- Stage V marine certificate or NRE equivalent.

Mandatory Installation check and commissioning to be carried out by an authorised Volvo Penta dealer (not incl.)

No class certificate available @ launch of product (in progress)









To market

For further information on price and leadtimes

Please contact;

Theo de Paus, Visscher Scheepsreparatie B.V.

- theo@visscherscheepsrep.nl, +31 184 49 63 63

Tommy Sluyts, Volvo Marine & Industrie Center

- tommy.sluyts@volvo.com, +32 479 88 51 32

Jan-Willem Vissers, AB Volvo Penta

– jan-willem.vissers@volvo.com



Volvo Penta EU/IWW Stage V marine strategy



Damen / Haisma D16 Stage V marine

- Collaboration between **Damen Sustainable solutions B.V** and **Haisma Scheeps & Industriemotoren B.V.** (VP dealer)
- Based on Volvo Panta D16 IMO II marine engine platform.
- Full D16 range (propulsion and gensets) Stage V certified.
- Certified for 100% HVO
- Type approved
- Pure marine engine and after treatment
- One unit containing all equipment with flexible in/outlets
- Tests done, paperwork in progress.
- Supported by Volvo Penta
- Expected availability after summer 2023.







To market

For further information on price and leadtimes

Please contact;

Oene Rozendal, Haisma Scheeps & industriemotoren B.V.

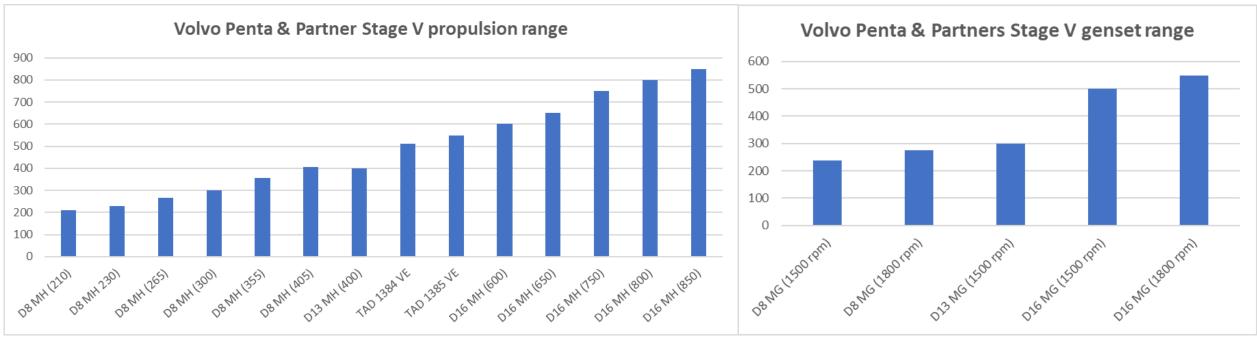
- ORozendal@HaismaScheepsMotoren.nl +31 517 418 411

Wolter Haisma, Haisma Scheeps & Industriemotoren B.V.

- whaisma@haismascheepsmotoren.nl +31 517 418 411



Volvo Penta & Partner Stage V marine overview



| | Cert Owner | Engine | Engine marinisation | After treatment |
|-------------|----------------|-------------|---------------------|-----------------|
| D8 MH / MG | Volvo Penta | Volvo Penta | Volvo Penta | Volvo Penta |
| D13 MH / MG | Volvo Penta | Volvo Penta | Volvo Penta | Volvo Penta |
| TAD 1385/85 | Volvo Penta | Volvo Penta | Visscher | Volvo Penta |
| D16 MH / MG | Damen / Haisma | Volvo Penta | Volvo Penta | Damen / Haisma |