PMP | Germany

Questionnaire for Torsional Vibration Analysis (TVA)

Customer: _____ Date: _____

New Customer ☐ Address: _____

E-Mail: _____ Phone: _____

Existing Customer ☐ Customer Number: _____

Customer-Project-No.: _____ PMP-Project-No.: _____

(Optional) Boat Type: _____

Classification society: _____ ☐ no classification required

☐ F-PTO **YES**	☐ Engine	☐ Gearbox	☐ PTO-Generator **YES**
☐ F-PTO **NO**	☐ E-Motor	☐ Generator	☐ PTO-Generator **NO**
		☐ Impeller	☐ Propeller **YES**
		☐ Miscellaneous	☐ Propeller **NO**

Please create an example representation of your drive in relation to your above stored requirements.

****This predefined representation is used as an example.***

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Necessary data for running a Torsional Vibration Analysis:

- Every mass moment of inertia with absolute damping and stiffness between the parts of the application.
- Relative damping of the whole system.
- In most cases a sketch will help to understand the structure of the system.

ENGINE, DAMPER, FLYWHEEL DATA

Engine data

Engine manufacturer & type: _____

Type of drive (Main / Auxiliary): _____

Power (kW) / Speed (rpm): _____ / _____

Nominal torque (Nm): _____

Direction of rotation: ☐ CW ☐ CCW

Mounting: _____

Crankshaft stress limits [N/mm²]: _____

Torsional vibration scheme of engine available ☐ Yes ☐ No

The torsional vibration scheme should at least contain the following information:

Number of cylinders: _____

Bore (mm) / Stroke (mm): _____ / _____

Calculated displacement per cylinder (cm³): _____

Displacement (cm³): _____

Connecting rod length (mm): _____

Number of cycles: _____

Type of engine: _____

_____

Reciprocating mass per cylinder (kg): _____

Firing angle (°): _____ / _____

Moment of inertia (kgm²): _____

Dynamic torsional stiffness (Nm/rad): _____

Absolut damping (Nms/rad): _____

Relative damping (Nms/rad): _____

Excitation torques / harmonic analysis if available: _____

Damper data

Damper type: _____

Data sheet of damper available ☐ Yes ☐ No

The data sheet should at least contain the following information:

Damper ring moment of inertia (kgm²): _____

Damper housing moment of inertia (kgm²): _____

Dynamic torsional stiffness (Nm/rad): _____

Absolut damping (Nms/rad): _____

Relative damping: _____

Type damping: _____

Max. allowable power loss of the damper (W): _____

Need more space for sketch or remark? ☐ Yes ☐ No

Flywheel

Number of flywheel data sheet (part number): _____

Flywheel inertia (kgm²): _____

Mounting SAE size: _____

or

Flange diameter (mm): _____

Housing SAE size: _____

Main Coupling

☐ CENTA Coupling Series: _____

☐ Other Coupling _____

Mounting of coupling:

Engine side: _____

Driven side: _____

Engine side:

If SAE flange is used then choose the SAE size: _____

If no SAE flange is used then fill in the flange or shaft diameter (mm): _____

Driven side:

Fill in flange or shaft diameter (mm): _____

Total installation length (mm): _____

Ambient temperature (temp. °C): _____

Need more space for sketch or remark? ☐ Yes ☐ No

Gearbox

Manufacturer / Model: _____

Gear reduction ratio: i: _____

Clutch: _____

Torsional vibration scheme of gearbox available? ☐ Yes ☐ No

If no torsional vibration scheme is available, the following information is required:

Dynamic torsional stiffness (of each part) (Nm/rad): _____

Moment of inertia (of each part) [kgm²]: _____

Diameter of the shafts (mm): _____

Need more space for sketch or remark? ☐ Yes ☐ No

SHAFT ARRANGEMENT & PROPELLER DATA

Shaft arrangement

Intermediate shaft installed? ☐ Yes ☐ No

Propeller shaft

Number of data sheet: _____

If no data sheet is available, the following information is required:

Moment of inertia (kgm²): _____

Dynamic torsional stiffness (Nm/rad) / Diameter (mm): _____ / _____

or

Diameter (mm) / Length (mm): _____ / _____

Need more space for sketch or remark? ☐ Yes ☐ No

Propeller data

Propeller type: _____

Number of data sheet: _____

If no data sheet is available, the following information is required:

Number of blades: _____

Inertia: in air [kgm²] / in water (kgm²): _____ / _____

Inertia: zero pitch (kgm²): _____

Need more space for sketch or remark? ☐ Yes ☐ No