



QUESTIONNAIRE

FOR TORSIONAL VIBRATION ANALYSIS

Front PTO (Yes)	Engine	Gearbox	PTO-Generator Yes	Propeller Yes	1PD
Front PTO (No)	E-Motor	Pump Drive	PTO-Generator No	Propeller No	2PD
		Generator			3PD
		Impeller			4PD
		Miscellaneous			

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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.

General Information

Filled out by	
Customer	
Project Reference	
Other information	
Classification society	
Other classification societies	

Engine data

Engine manufacturer & type	
Type of drive (Main / Auxiliary)	
Power [kW] / Speed [rpm]	/
Nominal torque [Nm]	
Direction of rotation	
Mounting	
Crankshaft stress limits [N/mm ²]	
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 [cm ³]	
Displacement [cm ³]	
Connecting rod length [mm]	
Number of cycles	
Type of engine	
	For V-type: Angle
Reciprocating mass per cylinder [kg]	
Firing angle [°]	
Moment of inertia [kgm ²]	
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 [kgm ²]	
Damper housing moment of inertia [kgm ²]	
Dynamic torsional stiffness [Nm/rad]	
Absolut damping [Nms/rad]	
Relative damping [Nms/rad]	
Type of damping	
Max. allowable power loss of the damper [W]	

Flywheel data

Number of flywheel data sheet (part number)	
Flywheel inertia [kgm ²]	
Mounting SAE size	
or	
Flange diameter [mm]	
Housing SAE size	

Main coupling

Type of coupling	Series	
CENTA coupling		
Other coupling		
Mounting of the 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) [kgm ²]	
Diameter of the shafts [mm]	

Shaft arrangement

Intermediate shaft installed?	Yes / No
Propeller shaft	
Data Sheet Reference	
If no data sheet is available, the following information is required	
Moment of inertia [kgm ²]	
Dynamic torsional stiffness [Nm/rad] / Diameter [mm]	/
or	
Diameter [mm] / Length [mm]	/

Propeller data

Propeller type	
Data Sheet Reference	
If no data sheet is available, the following information is required	
Number of blades	
Inertia: in air [kgm ²] / in water [kgm ²]	/
Inertia: zero pitch [kgm ²]	



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