Essential information for torsional vibration calculations

Reliability of torsional vibration calculations depends on the completeness and accuracy of the input data. The information below should be available to make a proper calculation.

NAME	SUPPLIER
Engine	
Engine type	
MCR, kWt	
Engine speed at MCR, rpm	
MIP (or MEP efficiency coefficient), Mpa/bar	
Cylinder number	
Firing order or firing angles	
Cylinder diameter, mm	
Stroke, mm	
Angle between banks for V-engine, degree	Engine Manufacturer
Connection rod length, mm or Crank/Conrod ratio λ	
Crank pin and journal diameter, mm	
Tensile strength of crankshaft material, Mpa	
Reciprocating mass, kg	
Harmonic coefficients and phases table for normal mode	
Mass-elastic system characteristics	
Absolute and Relative damping data	
Phase angle between Master and Slave engines for two engine installations	

Misfiring Mode data:

- allowable power, kWt

- allowable speed, rpm

- MIP (MEP), МПа

- harmonic coefficients and phases table

Damper	
Type, manufacturer	Damper Manufacturer
Casing part inertia, kgm^2	
Inner part inertia, kgm^2	
Stiffness, Nm/rad	
Relative damping data	
Flexible coupling	
Type, manufacturer	Flexible coupling Manufacturer
Inertia, kgm^2	
Stiffness, Nm/rad	
Relative damping data	
Gear box	
Type, manufacturer	Gear box Manufacturer
Mass-Elastic system characteristics	
Gear ratio	
Tensile strength of gear shafts, Mpa	
Shafting	
Shafting drawings	Shaft Designer
Tensile strength of propeller and intermediate shafts, Mpa	

Propeller	
Diameter, mm	
Pitch, mm	Propeller Designer
Expanded area ratio	
Polar Inertia of dry propeller, kgm^2	
Other equipment connected to propulsion shafting	
Characteristics of the equipment substantial for TVC	Equipment Manufacturer