X52-S2.0

Countermeasures for dynamic effects

The following table indicates where special attention is to be given to dynamic effects and the countermeasures required to reduce them. Where installations incorporate PTO arrangements further investigation is required and Winterthur Gas & Diesel Ltd. should be contacted.

External mass moments

Number of cylinders	2nd order compensator
5	balancing countermeasure is likely needed
6	balancing countermeasure is unlikely needed
7	balancing countermeasure is not relevant
8	balancing countermeasure is not relevant

Lateral and longitudinal rocking

Number of cylinders	Lateral stays	Longitudinal stays
5	A	C / A[3)]
6	B	C
7	C [1)] / B [2)]	C
8	A	C

Remarks :

1) For $n_{cmcr} \leq 113$ rpm
2) For $n_{cmcr} > 113$ rpm
3) For installations having the main torsional critical above nominal speed (installations with increased shaft diameters).

A: The countermeasure indicated is needed

B: The countermeasure indicated may be needed and provision for the corresponding countermeasure is recommended.

C: The countermeasure indicated is usually not needed.

Torsional & Axial vibrations of the shafting

Number of cylinders	Torsional vibrations	Axial vibrations
5 - 8	Detailed calculations have to be carried out for every installation, countermeasures to be selected accordingly (shaft diameters, critical or barred speed range, flywheel, tuning wheel, TV damper).	An integrated axial damper is fitted as standard to reduce the axial vibration in the crankshaft. However, the effect of the coupled axial vibration to the propulsion shafting components should be checked by calculation.