FUNCTION

A viscous damper consists of a housing which comprises an inertia ring. This ring can rotate within the housing. The narrow gap between ring and housing is filled with silicone fluid. During uniform vibration of the crankshaft (no torsional vibrations), the inertia ring rotates without any slippage. However, as soon as additional torsional vibration amplitudes are superimposed, a relative motion between housing and inertia ring occurs. This relative motion causes shear stress in the silicone fluid layer and thus, an alternating damping torque is generated between the housing and the ring. This damping torque reduces the torsional vibrations to amplitudes which are not harmful to the crankshaft. Therefore a viscous damper can be described as a device which generates the required torsional vibration damping.

PRINCIPLE
CHECK OF DAMPER FUNCTIONALITY

Wear of the damper and analysis of silicone fluid samples:
The silicone fluid wears out over time due to temperature and shear stress. With increasing operating hours the viscosity decreases. Towards the end of its life time, depending on operating hours and application, the silicone fluid will start its gelling phase. The viscosity will increase, eventually turn into a solid mass.

In brief: Either too low viscosity, or too high viscosity will lead to a significant change in the damper’s functionality. This can cause damage to the system the damper is supposed to protect.

Based on a wide range of experience from customers, classification societies and Hasse & Wrede’s business over many years a damper’s functionality according to specifications is defined within:

-30% to +10% of nominal value of the viscosity

To give the customer a status of the individual damper wear we analyze silicone fluid samples. These samples can be drawn in a simple manner by staff on board/on site. For doing so, H&W offers sample kits for silicone fluid extraction.

The sample kit contains:
- Detailed manual
- Data label
- Sample container
- Postal package with our address

Finally please send the full sample container and address label in the post package of the sample kit to Hasse & Wrede.

Analysis can be performed within 24 hrs. by our experienced staff.

The laboratory report will be sent to you via fax or e-mail. The report will state, whether the damper operates in the tolerable range or not.
After Sales Program from H&W

Major diesel, gas and gasoline engine manufactures are relying on H&W dampers (CATERPILLAR, DEUTZ, GE, MAK, MAN / B&W, MTU, MWM, SKL, SULZER, WÄRTSILÄ)

Our after sales program offers different options to meet individual customer’s needs:

Sample kits for damper silicone fluid analysis to determine Visco-Damper condition
Analysis results are provided within short period of time. No need to remove damper from engine.

Remanufacturing service
Once the damper has reached its end of life, no new damper is necessary. H&W can remanufacture the old one. You will save both money and time.

On site and on-board service
When timing is curial, on-board / on-site remanufacturing service can be provided.

New dampers
If you want start an exchange program, or you don't have an old part available, new dampers can also be offered.