

Voith Hydrodamp in Massey Ferguson





Economical and Comfortable on Fields and Meadows

Voith Turbo has been producing vibration dampers for 35 years. They are installed worldwide, for example in tractors made by ACGO, CNH, John Deere, JCB, Claas and SDF, as well as in construction machinery, buses and rail vehicles. The damper is arranged between engine and transmission or cardan shaft.

Longer and longer operating hours, faster and faster vehicles, more and more output – structural changes in agriculture are a reality. Vibrations in the driveline are a major consequence of increasingly powerful machines, as are vibrations in the driveline. They lead to wear and material fatigue and also cause discomfort for the driver. This is why international manufacturers of agricultural machinery such as the American ACGO Group (Duluth, Georgia) install the Hydrodamp torsional vibration damper from Voith.

How much farming has changed can be seen especially during the grain harvest, where contractors use heavy machinery on fields and roads in round the clock operation. ACGO builds tractors, combine harvesters, balers and soil cultivating machines for these extreme conditions.



Hyrodamp HTSD 300

Fast and Reliable Damping of Load Shocks

Be it large, medium-size or compact tractors, vibrations in the driveline are undesirable. For this reason, Voith Hydrodamp torsional vibration dampers type HTSD 300 are installed between engine and transmission of the Massey Ferguson series MF 6400 (130 to 150 HP). In the event of resonances, load shocks and peak torques, the damping effect takes load off the driveline. This is particularly beneficial for the transmission input shaft, which is protected against overload fractures. Vehicle breakdowns are thus avoided.

In the event of load shocks, the vibration damper must be capable of producing a high damping effect, quickly and reliably. At the same time it must also efficiently isolate vibrations with lower amplitudes, in order to ensure driving comfort and prevent unpleasant noises and vibrations. With the Hydrodamp HTSD 300, Voith Turbo has



1 Series 6400 Massey Ferguson in service.

2 Dampers ensure higher economy and availability for increasingly heavier and faster machines.

found an excellent solution for this target conflict. In an extensive development and optimization process, the Hydrodamp was adapted specifically to the Massey Ferguson tractors. The desired result was achieved by a special curve characteristic and improved isolation behaviour in idling mode. The Hydrodamp is manufactured in Garching near Munich. So far, Voith has sold more than 1 million torsional vibration dampers for tractors worldwide

Reduced Fuel Consumption due to Lower Speeds

The Hydrodamp HTSD 300 is a highly elastic torsional vibration damper with a spring-mass system. Divided into an isolating and a hydraulic damping section, it recognizes the specific need for damping or isolation during driving operation and reacts flexibly due to its hydraulic operating principle. It protects drive components against overloads and therefore prolongs their useful life and availability.

The damper ensures higher comfort on the tractor, extends its service life and offers better economy. It allows longer driving periods in the more economical lower speed range, which also results in reduced fuel consumption. How vibrations in agricultural machinery can be isolated is described in a paper by Prof. Dr. Henning Meyer of Berlin Technical University. The vibrations lead to back and spine problems and have a negative impact on the concentration of the driver.

The effect of vibration damping therefore reaches beyond more driving comfort. In the vehicle, vibrations result in material fatigue. More recently, their negative impact on the environment has now also come into focus. In his paper, Dr. Meyer specifically points out noise and also increasing soil compaction. This is an area where the Hydrodamp can score points: it reduces the noise and vibration levels of the series MF 6400 machines.

Hyrodamp HTSD 300 Advantages at a Glance:

- + Damping is proportional to speed, i.e. high frequencies or amplitudes result in high damping
- + Wear-free damping
- + Extremely effective isolation plus strong damping effect
- + No adhesive phases with subsequent tear-off, unlike conventional friction damping
- + The damping effect can be adapted to individual operating ranges

Voith Turbo, the specialist for hydrodynamic drive, coupling and braking systems for road, rail and industrial applications, as well as for ship propulsion systems, is a Group Division of Voith GmbH.

Voith sets standards in the markets energy, oil & gas, paper, raw materials and transportation & automotive. Founded in 1867, Voith employs almost 40 000 people, generates € 5.2 billion in sales, operates in about 50 countries around the world and is today one of the biggest family-owned companies in Europe.

Media contact

Voith Turbo GmbH & Co. KG

Central Advertising / PR

Rainer Schopp

Alexanderstraße 2

89522 Heidenheim, Germany

Phone: +49 7321 37 8388

Fax: +49 7321 37 7110

E-Mail: rainer.schopp@voith.com

www.voithturbo.com

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