

Press release

Voith Turbo GmbH & Co. KG
Voithstr. 1
74564 Crailsheim, Germany
Tel.: +49 7951 32-429
Fax: +49 7951 32 665
www.voith.com

No empty promises – the variable speed planetary gearbox “Vorecon” from Voith delivers impressive availability of 99.98%

May 2013

The results speak for themselves: The latest survey taken in 2013 confirms the high reliability of the variable speed planetary gearbox “Vorecon” from Voith. The mean time between failures (MTBF) of the Vorecon is an impressive 48 years, and its statistical reliability of 99.98% is just as notable. This translates into reduced overall operating costs and increased productivity for the entire system.

A total of 201 Vorecons (model years 1987 to 2010) with a power of up to 31 MW were subjected to reliability testing. When compared with previous testing from 2005, the statistical overall operating time of the variable speed planetary gearbox increased by a factor of almost four, from 2,095,921 hours to 8,065,000 operating hours. The test results yielded an impressive availability statistic of 99.98%.

The reliability of drive components is an important factor when calculating the lifecycle costs of a system. Not only does the extremely high reliability of the Vorecon decrease drive system downtimes, it also reduces the associated operating costs.

The Vorecon controls the speed of pumps, compressors, and fans. It is most often used in the oil and gas industry as well as in thermal power plants. Based on the hydrodynamic principle, the variable speed planetary gear can reach powers of more than 50 MW and can be operated at speeds in excess of 20,000 rpm. The hydrodynamic power transmission is wear-free. You can rely on the Vorecon – its service life is several decades and is more than three times longer than variable frequency drives (VFD).

The Vorecon is being deployed around the world

The technology speaks for itself and is exciting customers everywhere! Currently, more than 500 Vorecons are in use around the world. Voith delivered its 500th Vorecon to the operators of the "Cessao Onerosa" oilfield, part of the gigantic "pre-salt-cluster" 250 km off the coast of Brazil. Extreme environments such as heat, cold, sand storms, and tropical

conditions present no special challenge for the variable speed planetary gearbox. It can even be used in potentially explosive environments.

A glance into the future – the new Vorecon

The latest advance in Vorecon technology is the use of two torque converters to control the speed. The dual converters allow the Vorecon RWC-M-D to attain even higher efficiency across the entire control range. Type RWC-M-D Vorecons are already being built. The first delivery to the USA is scheduled for May 2013.

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Figure 1: The 500th Vorecon by Voith is to be used in the "Cessao Onerosa" oil field, part of the gigantic "pre-salt cluster" off the coast of Brazil.

Vorecon Reliability Study 2013

	2005	2013
Objective		
Power rating [kW]	600 to 11 931	600 to 31 200
Output speed [rpm]	495 to 16 482	495 to 16 735
Reported units	69	201
Reported operating hours [h]	2 095 921	8 065 000
Reported downtime [h]	546	1 743
Results		
Reliability [%]	99.97	99.98
Mean time between failure (MTBF) [years]	39	48

Source: Voith

Tab. 1: A current study shows that the availability of the Voith Vorecon variable speed planetary gear is 99.98% and its MTBF is 48 years.

Voith sets standards in the energy, oil & gas, paper, raw materials and transportation & automotive markets. Founded in 1867, Voith now employs more than 42,000 people, generating €5.7 billion in sales and operating in about 50 countries in all regions of the world. It is now one of the largest family-owned companies in Europe.

Contact:

Alena Eisele

alena.eisele@voith.com

Tel: +49 7951 32-429

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