

Newsletter

ABS Wind Division October 2018



Dear Customers,

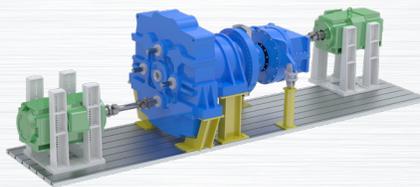
ABS has the honor to have Mr. Edwin Hahlbeck as part of the team. He is in charge of Grupo Penoles Clipper Gearbox study and repair project.

Mr. Hahlbeck was responsible for the mechanical system design and operation of the “The Quantum Distributed Generator drivetrain” system and the mechanical test method. Ed was also responsible for the rotating machinery test apparatus design.

He is a co-inventor of the patented DGENQ technology (The Quantum Distributed Generator drivetrain. The next generation of distributed generation drive-train technology tested on the NREL). Began his gear related career in 1958, completing a mechanical drafting apprenticeship in 1961 at Falk Corporation in Milwaukee, WI. Mr. Hahlbeck served in progressive management positions at Falk and later at Milwaukee Gear Company. His experience included VP responsibilities involving manufacturing, manufacturing engineering and product engineering. His innovative work included instruction in manufacturing methods, computer applications in manufacturing, and gear design.

Powertrain is a recognized face in alternative energy equipment design and development with extensive experience in wind turbine drive lines and water current turbine drives. Mr. Hahlbeck has participated in US government review panels for alternative energy program obstacles to attainment of 2030 goals.

Mr. Hahlbeck is joining the multidisciplinary team created by ABS and SKF Mexico for this unique project. This team also counts with the important collaboration of MGS Gears (Italy), The Timken Company, Solid Works/Cosmo FEM analysis department, consultants PhD. J. Dulon (welding science), PhD. JM Escanaverino (AGMA), Jake/Bradford (Original manufactured for the Clipper Gearbox internal gears) and others.





US007069802B2

(12) **United States Patent** (10) Patent No.: **US 7,069,802 B2**
Mikhail et al. (45) Date of Patent: **Jul. 4, 2006**

(54) **DISTRIBUTED POWER TRAIN (DGD) WITH MULTIPLE POWER PATHS** 3,545,296 A * 12/19/70 Eggers 74,410
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6,384,611 B1 * 4/20/02 Manuda et al 416/170 R

(75) Inventors: **Anie S. Mikhail, Santa Barbara, CA (US); Edwin C. Hahlbeck, Penaukes, WI (US)** * cited by examiner

(73) Assignee: **Clipper Windpower Technology, Inc., Carpinteria, CA (US)**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 464 days.

(21) Appl. No.: **10/449,342**

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(51) Int. Cl. **F16H 57/00** (2006.01)

(52) U.S. Cl. **74/410; 74/665 GD**

(58) **Field of Classification Search** 74/410, 74/458, 665 G, 665 GA, 665 GD
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS
2,823,558 A * 2/1958 Sear et al. 74,665 B

21 Claims, 4 Drawing Sheets

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