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Mechanical Engineer-Gear Design & Automation

AUGUST 3, 2017 *by* SHANNON WEISS (HTTPS://WWW.CGIMOTION.COM/AUTHOR/SHANNON-WEISS/)

Job Summary:

The Mechanical Engineer-Gear Design and Automation Engineer designs various types of gears, gearing arrangements and complete Planetary Gearboxes to meet customer requirements and new CGI product requirements. Designs and supports electro-mechanical test equipment for testing and improving new and existing gear and gearbox designs. Creates design specifications for (use of CGI products in) customer applications, new CGI products and existing CGI catalog improvement. Works closely with Sales (applications engineering) and has direct customer contact to gather design requirements and offer customer engineering support. Able to aid in customer applications / motion control / automation designs in order to incorporate CGI products. Assists in Engineering Department functions such as Engineering Change Orders, Bills of Material creation, Engineering Design inquiries and Order Processing as required. Works with Manufacturing Engineering to improve designs for ease of manufacturability.

Functions:

Design (and review designs for) gears, gear arrangements and gearboxes (utilizing the following gear types and arrangements: spur, helical, worm, bevel, planetary face gearing, etc.)

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Perform analysis and calculations to support the required performance and specifications of gear design projects and follow through with appropriate documentation

Incorporate gearbox system components into designs with regards to motors, shafting, bearings, seals, coatings, lubrication, material selection, hardware, etc.

Design tools and/or machines of varying types (some of complex nature) for use in the testing of company products (along with verifying intended function and providing schematics and operational documentation)

Support customer inquiries regarding customer (custom) applications, application of standard CGI products and engineering assistance (including occasional travel to customer facilities, assisting in customer application design of motion control / automation systems, participating in trade show booths and advertisement opportunities such as engineering white papers)

Knowledge, skills, and abilities:

Knowledge and experience concerning design and use of gears, gearing arrangements, gearbox (system) design, mechanical principles and general gear manufacturing practices is essential

Experience using gear design software such as KissSoft, TKSolver, GearTrax or similar

Strong drafting skills using solid modeling software programs

SolidWorks experience desirable

Knowledge and experience building mechanical and electro-mechanical machinery for testing and automation is essential

Experience in the field of motion control, automation and robotics is highly desirable

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Knowledge concerning modern fabrication, assembly techniques and machine-shop practices and techniques is desirable

Familiarity with Statistical Analysis

Familiarity with ISO9000 quality management systems and related requirements

Self-initiating and able to work effectively with little direction and/or few guidelines

Able to communicate effectively both orally and in writing at all levels within the organization as well as with external customers and suppliers

Working knowledge of computer systems and office software (MS Word, Excel, Outlook, etc.)

Familiarity with MRP/ERP systems

Visual Manufacturing (ERP) experience a plus

B.S.M.E. degree or a B.S. degree with a concentration of coursework in Machine Design, Product Design or engineering applicable to Motion Control and Automation

Not less than three (3) years' experience as a Mechanical Engineer / Machine Designer / Motion Control Automation Designer

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