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Objective: Mechanical Design Engineer/Manufacturing Engineer developing projects from concept through manufacturing process.

Career Experience:

2017-present **Employer:** Stanley Black & Decker, Access Technologies, Farmington, CT
Senior R & D Mechanical Design Engineer
Responsibilities:
Use Creo (Pro/E) and Windchill to create/modify solid models for product improvement, cost reductions, and ease of assembly. Use FEA within Creo to verify design feasibility/integrity. Design test fixtures and conduct durability testing to test and verify components. Designed aluminum and polymer extrusions for new products.

2010-2017 **Employer:** SIG SAUER, Exeter, NH
R & D Engineer - Rifle Department
Responsibilities: Project engineer for development of the SIG 716 rifle (AR-based 7.62 x 51 NATO / .308 Win.). Reverse engineer similar competitor rifles.
Use SolidWorks solid modeling to create prints and in-house prototype SLA parts. Use GDT and MIL standards for prints and ISO standards for data management. Perform field testing to prove functionality. Interact with vendors for forged, MIMed, extruded, and molded parts, also outsourced finished parts such as barrels, bolts, carriers, and springs. Agile product lifecycle management; some experience with Six Sigma 5S.
Accomplishments: Filed several new patent applications. Awarded three patents (nos.: 9,151,557; 9,389,032; 9,423,195) for components of a rifle.

SIG 716-G2	Developed a lightweight Designated Marksman Rifle (DMR) which won the CANSOF submission tests. This rifle will now also be offered to the commercial market.
SIG P320	Involved in early development of which won the US Army Contract for its new modular handgun. Contributed the ability to field strip without first pulling the trigger, a serious issue with competitor guns.
SIG 716	Moved the rifle from prototype to production. Developed new four-position valve controlling piston / gas system for improved functionality over wide range of barrel lengths, ammunition, suppressors and with patent application for one feature.
SIG 516	Some of new gas system features were also added to this rifle (AR-based 5.56 NATO / .223 Rem.).

1995-2010 **Employer:** U.S. Fire-Arms Manufacturing Company, Inc., Hartford, CT
Chief Engineer - Research & Development and Manufacturing
Responsibilities: Reverse engineered and created detailed prints for six Colt firearms: Bisley, Woodsman, 1878 Double-action revolver, 1905 Semi-automatic handgun, Single-action revolver, and Lightning rifle. As contractor (1995), used AutoCAD. As full-time employee (2000), used Pro/ENGINEER solid modeling to create prints and prototype SLA parts. Worked with local sub-contractors. Designed fixtures; set up manufacturing processes. Some Mazatrol and G-code programming. Followed firearms from print through to manufacturing/assembly.
Accomplishments: Set up factory to reduce dependency on imported (Uberti) parts and local sub-contractors. Assisted owner in choosing suitable facility to purchase; assisted in capital equipment purchase of MAZAK millers, EDM machines, auto lathe/mill, screw machine, and HVAC. Assisted in hiring personnel to program and run machines.
Cost: $5 million dollars.

1987-2000 **Employer:** Merrow Machine Company, Newington, CT
Chief Product Design Engineer - Research and Development Department
Responsibilities: Designed high-speed over-edge sewing machine exceeding 7000 RPM with lower noise level. Supervised a ten-person team for drafting, fabrication, heat treat and performance testing. Created polynomial cam equations for CNC manufacturing using MATH-CAD to perform matrix inversions and equation iterations. Responsible for cam and drive system design, bearing selection, high-speed shafting/rotating systems and linkages. Interfaced with management, board of directors and vendors. Updated manufacturing processes. **Accomplishments:** Conceived/invented a novel cam and follower system (patent no. 5,275,116) that exceeds 8000 RPM with low wear and tear and significantly less noise generation. Followed through to production and worldwide distribution. Designed test fixtures for high-speed rotating systems using hydraulics, pneumatics, strobe light, db Meter, oscilloscope, vibration transducers and position sensors.

1983-1987 **Employer:** Stanadyne Diesel Systems, Inc., Windsor, CT
Project Engineer - Advanced Products Department (2 years)
Responsibilities: Design/develop precision diesel fuel injection equipment. Duties included: test engineering (fixture design, instrumentation, prototype testing, documentation and automation of test procedures), preparing management proposals, ensuring optimal manufacturability, vibration analysis, hydraulic system/servo design, tolerance studies, reliability engineering, vendor interface, customer sample procurement and technician supervision. **Accomplishments:** Conceived/invented a two-way powered servo speed advance with internal remote light-load advance for high-speed V8 engines. Implementation of design recommendations resulted in ongoing yearly savings of over 1.5 million dollars in manufacturing, building, and testing costs.
Project Engineer - Current Product Department (2 years)
Responsibilities: Maximize product performance to minimize warranty claims for fuel injection equipment. Duties included: development of cost reduction/value analysis concepts, engineering representation on Material Review Board (MRB), involvement in FMEA on components prior to production. **Accomplishments:** Cost reduction designs saved approx. $750,000 annually.

1977 - 1983 **Employer:** Combustion Engineering, Inc., Power Systems Group, Windsor, CT
Senior Design Engineer - Performance Design Department
Responsibilities: Troubleshoot and propose modifications on existing utility and industrial steam generators. Duties included: boiler performance calculations (Thermodynamic, Heat Transfer, Chemical/Fluid Flow), coordination of project workflow through various specialty engineering and design graphics departments, and proposal development. **Accomplishments:** Proposals sold totaled approx. one hundred million dollars.

Consultant Experience:

LazerData Corporation, Sanford, FL. Modified laser diode assembly with appropriate TE cooler and specifically-designed mount and heat fins. Used AUTOCAD 12 for prints; machined prototypes.
Accomplishment: Modified laser design was first implemented to fix a problem at Denver airport opening.

PC Skills: SolidWorks, Creo/Pro/ENGINEER, Pro/MECHANICA, AutoCAD, CADKEY, Agile PLM; Assemble a PC system from components; troubleshoot; familiar with DOS, Windows 95-2008; some networking experience

Education: University of Hartford, West Hartford, CT
Bachelor of Science, Mechanical Engineering, 1977
Hartford State Technical College, Hartford, CT
Associates in Mechanical Engineering, 1974

Avocation:

Electronic/Optical

- Designed and prototyped an internally-mounted laser diode sight suitable for most handguns, with interest in patent/development/sales.
- Designed and built CCD-based optical spectrum analyzer capable of 1 nanometer wavelength resolution. Designed circuitry for drive and output amplifier. This project incorporated a quadrant detector, dispersing prism, cube beam splitter, and LCD readout.
- Designed high-speed light meter for converting 30 MHz optical pulses to display on oscilloscope.
- Mentor for Kingswood Oxford school robotics team.

Machining/Repair

- Gunsmithing, small equipment repair, engine rebuilding, general machining (milling, turning and welding), specialty designs and fabrications work in home garage.

References: Furnished on request.