



AKASH AMBADAS KHARATMOL

Mechanical Engineer | Manufacturing & Additive Manufacturing Specialist

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Profile

Practical and solutions-driven Mechanical Engineer with proven success in medical device manufacturing, additive manufacturing, and production optimization. Skilled in designing, installing, validating, and maintaining tools and systems in ISO 13485-regulated environments. Founder of a 3D printing business, delivering high-precision components and automation-ready tooling. Passionate about building reliable systems, reducing cycle time, and boosting production throughput.

Professional Experience

Mechanical & Manufacturing Engineering Technologist

Orpyx Medical Technologies – Calgary, AB

July 2023 – Present

Mechanical Design & Manufacturing

- Design mechanical components, assemblies, and production drawings for medical devices
- Develop CNC programs, BOMs, and work instructions
- Install, assemble, validate, and repair new and existing tools, machines, and jigs
- Create and update CAD models and manufacturing documentation to support design changes and production revisions

Tooling, Automation & Process Optimization

- Engineer custom fixtures and process improvements, increasing throughput by up to 700%
- Design and implement an 8-board PCBA programming fixture to increase programming throughput
- Design and evaluate battery potting fixture concepts, demonstrating 50%+ reduction in cleanup time and improved demolding workflow
- Implement laser engraving processes, improving accuracy by 50%
- Standardize tooling and processes to improve repeatability and reduce rework
- Create and optimize CNC milling files for production parts and in-house machining, reducing cycle time and improving surface finish and part quality

Quality, Validation & Compliance

- Execute IQ/OQ/PQ validations for new, repaired, and relocated equipment
- Manage equipment calibration and preventive maintenance
- Author and maintain QMS documentation in compliance with ISO 13485
- Perform process validation testing, analyze results, and prepare validation documentation and summaries

Production Support

- Troubleshoot manufacturing issues related to design, materials, and processes
- Train production staff on assembly, equipment operation, and safety

Owner & Lead Engineer

simple3d (Self-employed) – Calgary, AB

March 2022 – Present

- Own and operate an additive manufacturing and rapid prototyping business
- Deliver 160–200 precision parts per month using 3D printers
- Design CAD models, fixtures, and tooling for functional and production parts
- Assemble, commission, and maintain custom-built and production 3D printers
- Implement open-source firmware (Klipper) with Raspberry Pi systems
- Provide 3D printer maintenance, calibration, and repair services
- Manage procurement of printers, electronics, materials, and tooling
- Support B2B clients with DFM, prototyping, and small-batch production

Jr Mechanical Designer
CDR Systems - Calgary, AB
Nov 2021 - July 2023

- Designed components for Total Body Irradiation Systems (\$95K+)
- Produced engineering drawings, BOMs, and manufacturing documentation
- Installed, assembled, and repaired tooling, jigs, and mechanical assemblies
- Designed machining fixtures and optimized 3D printing processes (-40% print time)
- Performed machining, mold layups, assembly, and quality inspections

Early Career Experience

- Front-End Associate – Real Canadian Superstore (2020-2022): Customer service, POS, teamwork in high-volume environment
- Trainee Engineer – Phoenix Enterprises (2018-2019): Installation/testing support; drawings and shop-floor coordination
- Design Intern – Board of Radiation & Isotope Technology (2017): Thermal design project; published peer-reviewed paper

Education

Bachelor's in Mechanical Engineering, 2014 - 2018
Savitribai Phule Pune University, Pune, India

Mechanical Engineering Technology, Design and Automation, 2020 - 2021
Southern Alberta Institute of Technology (SAIT), Calgary, AB

Skills

Manufacturing & Engineering

Lean / Continuous Improvement; Manufacturing Process Optimization
CNC Programming & Machining Support; Laser Engraving
Additive Manufacturing (3D Printing, Rapid Prototyping)
Jigs, Fixtures & Tooling Design
Troubleshooting, Root Cause Analysis
BOMs; Engineering Drawings; Work Instructions
Quality Control; ISO 13485 / ISO Compliance
Equipment Calibration, Installation & Preventive Maintenance
Assembly Process Planning & Automation Support
Injection Molding; Hot Bar Bonding; ACF Processes

Software & Technical Tools

CAD: SolidWorks, Fusion 360, AutoCAD
Automation & Controls (Academic): PLC Programming (Ladder Logic); ABB RobotStudio (robot programming);
Industrial I/O, sensors/actuators, basic troubleshooting
Manufacturing Tools: CNC Milling, Laser Engraving and Cutting
Microsoft Office: Excel, Word, PowerPoint, Outlook, Teams, Project
Documentation / PM Tools: GitHub, Atlassian Confluence, Notion
Systems: Raspberry Pi, Linux, Klipper (3D printing firmware)

Professional Skills

Cross-functional Collaboration & Leadership
Procurement, Supply Chain & Vendor Coordination
Time Management; Process Improvement
R&D; Regulatory / Technical Documentation