

AKASH KARUKAPILLI VARGHESE

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Address: Huddersfield, West Yorkshire, UK

PROFESSIONAL SUMMARY

Mechanical Design Engineer with about 8 years of industrial experience. Possesses technical expertise in generic engineering concepts and capabilities in providing high quality mechanical components design and development support, as well as project management skills. Along with the understanding of processes related to both service and product-based engineering corporations, has experience in customer and supplier relationship management.

Possesses expertise in applying GD&T in mechanical component and system drawings, and is a certified global Drawing Quality Checker for Cummins Filtration Engineering. Experienced in various inspection methodologies such as CMM, Profile projector, and Height Gauges, with awareness of CNC Machining and Programming. Has experience working with Six Sigma methodologies (12 Step problem solving, 7 QC tools, RCA), and possesses domain expertise in design and detailing of sheet metal, casting, plastic, welding and installation assemblies. Certified Solidworks Professional (CSWP) with expertise in CAD and firm grasp of FEA (Finite Element Analysis) and design model simulation.

EMPLOYMENT HISTORY

CUMMINS INC.

Junior Manager (Drawing Checking Lead)

Pune, India

Apr 2018 – Aug 2022

Roles and Responsibilities:

- Certified Global Drawing Quality Checker (Change Activity Reviewer) for Cummins Filtration Engineering.
- Provided design & development support for automotive & industrial application filters and their components (Air, Lube and Fuel Filters) with Design for Manufacturing (DFM) and Design for Assembly (DFA) considerations.
- Assisted engineering functions in developing CAD models, engineering drawings and related technical specification sheets for product subsystems, components, and assemblies for Value Package Introduction (VPI), and Value Package Change Requests (VPCR).
- Applied Geometric Dimensions and Tolerances (GD&T) as per ASME Y14.5-2009 to manufacturing drawings for effectively communicating the design intent.
- Checked and verified all types of Cummins Filtration engineering drawings to conform to applicable drafting and technical standards, and to ensure the release of drawings Right First Time (RFT) – achieved an average of over 98% RFT.
- Worked closely with engineering teams of global tech centers in India, US, China, Mexico, Brazil and France. These included cross-functional teams such as manufacturing, quality, procurement, reliability.
- Performed engineering change & data management activities such as bill of materials (BOM) & variants control, product release and co-ordination using Product Lifecycle Management (PLM) and Product Data Management (PDM) tools.
- Actively participated in Cross-Functional Design Reviews representing the Design and Drafting function.
- Liaised with multiple stakeholders from various cross-functions and the drafting team to implement the design and engineering drawing requirement.
- Supported engineering activities such as Design Failure Mode and Effect Analysis (DFMEA), Dimensional Variation Analysis (DVA), tolerance stack-up analysis, and performed Engineering Change Activity reviews accordingly.
- Core team member of the Cummins Filtration global drafting council (Drafting and Release Functional Excellence- DRFE).
- Compiled new engineering and drafting standards for Cummins Filtration based on the corporate practices, and participated in updating the existing standard operating procedures (SOPs) to concurrent practices.
- Led the drawing checking team and managed the quality control processes for Cummins Filtration Drafting and Release group.
- Compiled timely reports for drafting team KPI metrics and supported drafting team leads in developing improvement plans for drafters at individual and team level.
- Coached and developed drawing checking team for Cummins Filtration India and 2 other global tech centres (China and France).
- Participated as active member in 3 Six-sigma (DMAIC) projects to develop drafting and release, quality control processes and workload management for Cummins Filtration Drafting and Release group.
- Proficiently used CAD/PLM tools like Creo Parametric, Windchill, Enovia MatrixOne to support various product detailing and product lifecycle management activities.

EASI LLC. (THE ALLEGIS GROUP)

Designer (Product Design and Engineering)

Bangalore, India

Nov 2015 to Mar 2018

Roles and Responsibilities:

- Prepared the Documents of Understanding (DOU) for new projects and communicated with customers for their approval of the understanding of scope of work and necessary process deviation/waivers.
- Planned the project schedules and milestones, and estimated key delivery timelines.
- Managed resource allocation and project completion tracking based on the work breakdown structure and key project milestones.
- Regularly communicated with both internal and external customers and suppliers to discuss project/ task status in a multi-project environment.
- Created preliminary concept models and related engineering specifications (such as engineering drawing packs) of mechanical parts and assemblies using CAD software such as Solidworks and PTC Creo Parametric.
- Conducted design feasibility study, mechanical design/performance and material selection calculations based on product application requirements.
- Designed and developed 2D and 3D models for plastic, sheet-metal and casting parts as well as assemblies.
- Worked closely with on-site engineering teams in coordinating product development, drafting and related product lifecycle management tasks.
- Developed engineering drawings and related technical specifications sheets using the preliminary concepts and finished 3D CAD models.
- Checked and verified the correctness of engineering drawings and their conformance to various applicable design standards such as ASME Y14.5-2009 and thereby ensure that the drawings are approved Right First Time.

- Documented project learnings and prepared training documents with best working practices.
- Trained the design and drafting team based on technical learnings from the projects.
- Different types of industries supported: Off road vehicles (Agricultural, construction and stone-crushing machine); Bulk material handling systems; Electro-mechanical components.

SMC MEDICAL MANUFACTURING PVT. LTD.

Tool Room Trainee (Injection Moulding)

Mandatory Industrial training as a part of NTTF Diploma curriculum

Bangalore, India

Apr 2014 – Apr 2015

- Underwent training on Injection Mould tooling for precision components.
- Learnt Machining techniques and processes such as Milling, Lathe, EDM and Surface Grinding.
- Attained hands on experience in Injection Mould maintenance (preventive as well as breakdown).
- Underwent trainings on various production engineering best working practices.
- Was responsible for maintaining the mould history card, status tag and tool maintenance history.
- Handled supplier interaction and vendor relationship management.
- Worked closely with senior toolmakers in mould making and trial production run.
- Participated in analysis of defects in plastic components and assisting in mould troubleshooting (investigation and rectification).

ADDITIONAL PROFESSIONAL SKILLS

Technical competencies:

- Drawing Quality Checking.
- Geometric Dimensioning and Tolerancing (GD&T) as per ASME Y14.5-2009.
- Product problem solving using Design for Six Sigma (DFSS) - Define, Measure, Analyze, Design, and Verify (DMADV) approach.
- Design For Manufacturing (DFM), Design for Assembly (DFA).
- Design failure mode and effect analysis (DFMEA), Dimensional variation analysis (DVA), Tolerance stack-up analysis.
- Design Verification Plan and Report (DVP&R).

Managerial competencies:

- Process improvement using Six Sigma Define, Measure, Analyze, Improve, and Control (DMAIC) approach.
- Project planning and Resource management.
- Training and mentorship for young engineering team members.

Software competencies:

- CAD: Solidworks certified professional, Creo Parametric.
- CAE: Abaqus CAE (Contact Stress Analysis), ANSYS Fluent (Drag Analysis).
- PLM/ PDM: Windchill, Enovia - Matrix One (Bill of material management, product release and configuration management).
- Microsoft Office Tools.

EDUCATION

UNIVERSITY OF HUDDERSFIELD

MSc Mechanical Engineering Design

Modules: Advanced Static Analysis, Advanced Dynamic Analysis, Advanced Thermofluids, Advanced CAD (Computer-Aided Design), Modern Vehicle Systems (Electric and Hybrid), New Product Development, Project Management

Project: Contact Stress Analysis (FEA) of Diabetic Foot Ulcer and footwear interface, and design of specialized footwear for managing the ulcers.

Huddersfield, West Yorkshire, UK

Sep 2022 – Sep 2023

NTTF (NETTUR TECHNICAL TRAINING FOUNDATION)

Diploma in Tool and Die Making

Modules: Mould Technology, Press Tool Technology, Inspection and Metrology, Tool Design Technology, CNC Technology, Manufacturing Technology

Bangalore, India

2011 – 2015

CERTIFICATIONS

- **Certified Drawing Quality Checker for Cummins Filtration Engineering:** This certification, post all associated assessment and review from the certifying body, qualifies the holder to review all types of manufacturing drawings and associated technical documentation of Cummins Filtration Engineering. Certification authorizes to review details on the drawings such as dimensioning and associated tolerance analyses, GD&T, manufacturing notes, special characteristics, and permits the responsibility of reviewing, coordinating and completing the engineering change management process via Windchill PLM system.
- **Certified Solidworks Professional – CSWP.**

VOLUNTEERING

- **SAE BAJA:** Participated in SAE BAJA as “Technical Judge” for Design Evaluation in 2021 and 2022 editions.
- **Quality Circle Conventions:** Participated in regional and national level Quality Circle Conventions organized by QCFC and CII. These conventions are for real time product and process problem solving case studies using techniques such as Kaizen, Lean manufacturing, 7 QC tools and 12 step problem solving methodologies.