



## Key Issues for Product Development Gates & Checkpoints [www.sigmadesign.net](http://www.sigmadesign.net)

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### **1. CONCEPT STAGE:**

#### **PRELIMINARY INVESTIGATION**

- MARKET RESEARCH
- CONCEPT DESCRIPTION
- PATENT DISCLOSURES
- TARGET SPECIFICATIONS
- TARGET COSTS
- FORECAST BY SIZE & MATERIAL
- MARKET SIZE – EXPECTED SHARE
- COMPARISON TO COMPETITION

FEATURES, STRENGTH VS.  
WEAKNESS

- ID BARRIERS TO NEW MANUFACTURING TECHNIQUES

- ASSEMBLY REVIEW – KEY INSPECTION POINTS, TOOLING & FIXTURES

### **2. TECHNICAL FEASIBILITY STAGE:**

- MARKETING PLAN
- R & D PLAN
- PRODUCTION DEVELOPMENT PLAN
- ID SAFETY ISSUES
- PRODUCTION FEASIBILITY
- PRELIMINARY PRODUCT DESIGN
- PRELIMINARY PRODUCT MANUFACTURING PROCESS
- COST ESTIMATE
- SCHEDULE
- MARKET FOCUS
- DEVELOP TEST PLAN
- DEVELOP PRODUCTION PLAN
- QA/QC TESTS
- OIM WARNING LABELS

### **3. DEVELOPMENTAL STAGE:**

- ID CRITICAL MATERIALS
- ID CRITICAL PROCESSES
- PROOF OF PERFORMANCE
- DESCRIPTION OF ROUTINGS, MACHINES & MATERIALS
- COSTED BOM
- FLOW CHART ROUTING
- ASSEMBLY DRAWINGS
- DETAIL DESIGN DRAWINGS
- QA/QC TESTS
- OIM WARNING LABELS
- FINANCIAL REVIEW

### **4. PRODUCTION PREPARATION STAGE:**

- LEAN MANUFACTURING REVIEW
- TESTING & VALIDATION
- SUPPLIER REVIEW
- QUALITY REVIEW
- COMPLETE FIRST PROTOTYPE
- TEST RELIABILITY
- INSPECTION DRAWINGS
- SPARE PARTS PLAN
- BOM RELEASE
- SALES DRAWINGS
- PROMOTIONS, BROCHURES, PRICE STRUCTURE
- REVIEW FINANCIAL
- CUSTOMER TEST SITES

### **5. FULL SCALE PRODUCTION:**

- RELEASE ECN
- TRIAL RUN MANUFACTURING
- ROUTINGS
- MPS UPDATE
- STOCK TRANSFER
- APPROVAL OF FINAL PRODUCTION PLAN
- APPROVAL OF FINAL MARKETING PLAN

### **6. REVIEW – FEEDBACK:**

- QUALITY REVIEW
- CUSTOMERS' COMMENTS
- DESIGN CHANGES, SHOP CHANGES, ECNS