

C.E.S. REPAIR PROCESS FLOW MAP

- 1.0 **Order Entry**
- 2.0 **Pick-Up / Transportation**
- 3.0 **Equipment Receipt**
- 4.0 **Assignment / Administration**
- 5.0 **Disassembly**
- 6.0 **Inspection**
- 7.0 **Job Preparation**
- 8.0 **Storage**
- 9.0 **Evaluation**
- 10.0 **Quotation**
- 11.0 **Order Admin. / Purchasing**
- 12.0 **Materials Management**
- 13.0 **Repair Processes**
- 14.0 **Manufacturing / Machining**
- 15.0 **Assembly**
- 16.0 **Testing**
- 17.0 **Shipping Preparation**
- 18.0 **Delivery**
- 19.0 **Order Administration / Documentation**

1.0 ORDER ENTRY

- 1.1 Customer Contact
- 1.2 MSDS / Safety Paperwork
- 1.3 Decontamination (Customer)
- 1.4 Order Receipt
- 1.5 Order Entry
- 1.6 Generate Documentation Package

2.0 PICK-UP / TRANSPORTATION

- 2.1 Identify Method
- 2.2 Pick-Up Notice
- 2.3 Route Instructions

3.0 EQUIPMENT RECEIPT

- 3.1 Decontaminate (Internal)
- 3.2 Mark / Tag
- 3.3 Record Nameplate Data
- 3.4 Document Condition
- 3.5 Photo
- 3.6 Storage

4.0 ASSIGNMENT / ADMINISTRATION

- 4.1 Assign Job Number
- 4.2 Schedule
- 4.3 Complete Order Entry Date

SHOP PRIORITY

1. Emergency Breakdown: Overtime / First Priority
2. Urgent: Overtime / Second Priority
3. Rush: Priority Status, No Overtime
4. Routine: Normal
5. Fill-in: Last priority
6. Hold: Storage

JOB TYPE

- A. Service / Planned Maintenance - Routine
- B. Breakdown / Trouble Shoot - Immediate Evaluation
- C. Open / Inspect - Hold for Review
- D. Internal - Internal Customer

5.0 DISASSEMBLY

- 5.1 **Inspection Report / Documentation**
- 5.2 **Stamp / Mark Parts**
- 5.3 **Visually Inspect**
- 5.4 **Photos / Sketches**
- 5.5 **Disassemble**
- 5.6 **Storage**

6.0 INSPECTION

- 6.1 **Visually inspect component parts**
- 6.2 **Measure critical fits**
- 6.3 **Indicate Shafts (TIR)**
- 6.4 **Record information on disassembly report**
- 6.5 **Dye Check if required**
- 6.6 **Identify tolerances on disassembly report**

7.0 **JOB PREPARATION**

- 7.1 **Sandblasting**
- 7.2 **Caustic Bath**
- 7.3 **Glass Bead**
- 7.4 **Hand Cleaning**
- 7.5 **Note on disassembly report / repair recommendation forms any discrepancies after final cleaning**

8.0 **STORAGE**

- 8.1 **Containerize**
- 8.2 **Shaft storage**
- 8.3 **Mark with shop order number**

9.0 **EVALUATION**

- 9.1 **Repair recommendation form**
- 9.2 **Identify “cause of failure”**
- 9.3 **Identify “options” for improved reliability**
- 9.4 **Review job costing data**

10.0 **QUOTATION**

- 10.1 **Complete repair recommendation form**
- 10.2 **Identify failure assessment**
- 10.3 **Identify New parts, Repaired Parts, Dynamic balancing, Assembly**
- 10.4 **Identify “options” for improved reliability**
- 10.5 **Identify delivery date (after formal approval)**
- 10.6 **Email or fax formal quotation to customer**
- 10.7 **Copy to appropriate sales personnel**

11.0 ORDER ADMIN. / PURCHASING

- 11.1 **Receive Approval**
- 11.2 **Purchase Materials**
- 11.3 **Purchase Parts**
- 11.4 **Purchase Outside Services**
- 11.5 **Schedule**

12.0 MATERIALS MANAGEMENT

- 12.1 **Receive Incoming Parts**
- 12.2 **Receive Incoming Materials**
- 12.3 **Receive Incoming Services**
- 12.4 **Inspection**
- 12.5 **Storage**

13.0 REPAIR PROCESSES

- 13.1 **Establish Repair Parameters (method)**
- 13.2 **Establish Size and Tolerances (prints)**
- 13.3 **Gage Control**
- 13.4 **Set-Up**
- 13.5 **Application**
- 13.6 **Inspection**
- 13.7 **Parts Storage**
- 13.8 **Assembly Report Documentation**

14.0 MANUFACTURING / MACHINING

- 14.1 **Establish Size and Tolerances**
- 14.2 **Gage Control**
- 14.3 **Set-Up**
- 14.4 **Tooling**
- 14.5 **Roughing**
- 14.6 **Finishing**
- 14.7 **Inspection**
- 14.8 **Parts Storage**
- 14.9 **Assembly Report Documentation**

15.0 ASSEMBLY

- 15.1 **Set-Up**
- 15.2 **Instruction Manual**
- 15.3 **Assembly Report**
- 15.4 **Cleaning Inspection**
- 15.5 **Parts Inspection**
- 15.6 **Sub-Assembly**
- 15.7 **Dynamic Balancing**
- 15.8 **Balancing Certification**
- 15.9 **Final Assembly**
- 15.10 **Coupling Alignment**
- 15.11 **Lubrication**
- 15.12 **Final Adjustment / Clearance**
- 15.13 **Tag / Identification Marks**
- 15.14 **Paint**
- 15.15 **Assembly Report Documentation**

16.0 TESTING

- 16.1 **Testing Methods**
- 16.2 **Test Parameters**
- 16.3 **Test Equipment**
- 16.4 **Gage Control**
- 16.5 **Testing**
- 16.6 **Testing Compliance**
- 16.7 **Documentation / Certification**

17.0 SHIPPING PREPARATION

- 17.1 **Packaging**
- 17.2 **Tagging (shop tag)**
- 17.3 **Tagging (safety tag)**
- 17.4 **Tagging (other - Lube, Rotation, etc.)**
- 17.5 **Delivery Paperwork**
- 17.6 **Carrier Paperwork**
- 17.7 **Order Administration**

18.0 DELIVERY

- 18.1 **Load**
- 18.2 **Secure**
- 18.3 **Paperwork**
- 18.4 **Delivery Receipt**

19.0 TESTING

- 19.1 **Final Order Administration**
- 19.2 **Job Costing Summary**
- 19.3 **Work Scope Summary**
- 19.4 **Documentation Package Summary**
- 19.5 **Customer Follow-Up**
- 19.6 **Accounting/Invoicing**