 JOB NAME: JobName

SALES ORDER: JobNum

LINE NUMBER: Item

PRODUCTION #: PONum

SHIP DATE: ShippingDate

DUE DATE: DueDate

CAR NUMBER: CARNUMBER

CONTROLLER TYPE: MATERIAL

ENGINEER: EngName., OR RON.

FORMS WILL SHOW: **EngName.**

ENTERED BY: ConfigGuy

|  |  |  |
| --- | --- | --- |
| JOB NAME: JobName | | |
| SALES ORD/ LINE #: / | PROD ORD #: | |
| JOB TYPE: | SHIP DATE: | |

**DO NOT** WRITE ABOVE THIS POINT

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **ESTACIÓN** | **RETRABAJO (MIN)**  **CODIGO** | | | | | **NOMBRE** | **FECHA** | **TIEMPO DE INICIO** | **TIEMPO DE TERMINO** |
| **KITEO** |  | | | | |  |  |  |  |
| **GABINETE** |  |  |  |  |  |  |  |  |  |
| *CARTOP* | #ORDEN: |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **MECANICO** |  |  |  |  |  |  |  |  |  |
| *CARTOP* | #ORDEN: |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **ETIQUETADO** |  |  |  |  |  |  |  |  |  |
| *CARTOP:* | #ORDEN |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **CABLEADO (1)** |  |  |  |  |  |  |  |  |  |
| **CABLEADO (2)** |  |  |  |  |  |  |  |  |  |
| **CABLEADO (3)** |  |  |  |  |  |  |  |  |  |
| *CARTOP:* | #ORDEN: |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **HEAVY GAUGE** |  |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **PXP (1)** |  |  |  |  |  |  |  |  |  |
| **PXP (2)** |  |  |  |  |  |  |  |  |  |
| *CARTOP:* | #ORDEN: |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **TEST** |  |  |  |  |  |  |  |  |  |
| *CARTOP:* | #ORDEN: |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **FINAL** |  |  |  |  |  |  |  |  |  |
| *CARTOP:* | #ORDEN: |  |  |  |  |  |  |  |  |
| *OTRO:* | #ORDEN: |  |  |  |  |  |  |  |  |
| **EMBARQUES** |  |  |  |  |  |  |  |  |  |
| COMENTARIOS: |
|  | | | | | | | | | |
|  | | | | | | | | | |

|  |
| --- |
| JOB NAME: JobName |

|  |  |
| --- | --- |
| SALES ORD/ LINE #: / | PROD ORD #: |
| JOB TYPE: | SHIP DATE: |

**DO NOT** WRITE ABOVE THIS POINT: WILL CORRUPT OCR SCANNER.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DEPARTMENT: | | QTY.  ERROR CODE | | | | | | | | | | | | | | | INITIAL | DATE | ADDITIONAL ERROR CODES/ COMMENTS |
| 1 | ENGINEERING |  | | | | | | | | | | | | | | | ENGNAME. |  | Car #: CARNUMBER |
| 2 | ENG. CONF / DATA ENTRY |  | | | | | | | | | | | | | | |  | DueDate |  |
| 3 | KITTING |  | | | | | | | | | | | | | | |  |  |  |
| 4 | (MECH) LAYOUT  INSP. & APPROVAL |  | | | | | | | | | | | | | | |  |  |  |
| 5 | MECHANICAL QC INSP. |  |  | | | |  | | |  | | |  | | |  |  |  |  |
| 6 | Rework Time (Min.) |  |  | | | |  | | |  | | |  | | |  | Filled out by: |  |  |
| 7 | ENCLOSURE QC INSP. CHECKLIST |  | |  | | |  | | |  | | |  | | |  |  |  |  |
| 8 | Rework Time (Min.) |  | |  | | |  | | |  | | |  | | |  | Filled out by: |  |  |
| 9 | LABELING |  | | | |  | |  | | |  | | |  |  | |  |  |  |
| 10 | Rework Time (Min.) |  | | | |  | |  | | |  | | |  |  | | Filled out by: |  |  |
| 11 | WIRE ASSEMBLY |  | | |  | | | |  | |  | | |  |  | |  |  |  |
| 12 | Rework Time (Min.) |  | | |  | | | |  | |  | | |  |  | | Filled out by: |  |  |
| 13 | POINT 2 POINT INSP. |  | |  | | |  | | |  | | |  | | |  |  |  |  |
| 14 | Rework Time (Min.) |  | |  | | |  | | |  | | |  | | |  | Filled out by: |  |  |
| 15 | TESTING |  | |  | | |  | | |  | | |  | | |  |  |  |  |
| 16 | Rework Time (Min.) |  | |  | | |  | | |  | | |  | | |  | Filled out by: |  |  |
| 17 | ENG. APPROVAL |  | | | | | | | | | | | | | | |  |  |  |
| 18 | FINAL ASSEMBLY |  | |  | | |  | | |  | | |  | | |  | *Reference:*  *42-FR-0004, Final Assembly Quality Inspection form* | |  |
| 20 | FINAL QC/ PRODUCT RELEASE |  |  | | | |  | | |  | |  | | | |  |
| **COMMENTS (SHORTAGES, ENGINEERING CHANGES, ERROR CLARIFICATIONS)**  **Note: Reference row number with each comment.** | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | |

|  |  |
| --- | --- |
| SALES ORD #: JobNum | JOB NAME: JobName |
| PRD ORD #: PONum | **Error Codes:**  **1= CUSTOMER CHANGE 2= PART SHORTAGE 7= SPACE LIM.**  **3= ENG. ERROR 4= ORDERING ERROR**  **5= DATA ENTRY 6= OTHER** |
| Car #: CARNUMBER |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Qty.  DELETE | Qty. ADDED | MCE PART NUMBER | DESCRIPTION / COMMENTS | Date | Error Code | Eng. Initial |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SALES ORD # | | | | JOB NAME: JobName | | | | | | | | | | | | |
| PRD ORD # | | TYPE: | | | | | | | | SHIP DATE: | | | | CAR:  CARNUMBER | | |
| QC of Raw Material: **Inspector:** \_\_\_\_\_\_\_\_\_\_\_\_ | | | **Qty.** Bad | | **Time.** (Min.).Rework **by** | | | Inspection Checklist at Assembly or Enclosure Stage [Not used for ICE, TRICON, & HMC] | | | | | | | | |
| Wrong Part Used | | | **15** | |  | | |
| **Inspector: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | | | | **Check if Pass** | | **Qty.**  Bad | **Time.** (Min.).Rework **by** |
| Damaged Part | | | **23** | |  | | |
| Resistor Mounted Straight? | | | | |  | | **5** |  |
| Defective Part | | | **24** | |  | | | Resistor Values Correct? | | | | |  | | **14** |  |
| Sub-plate Dirty | | | **26** | |  | | | Resistor Not Damaged? | | | | |  | | **23** |  |
| Sub-plate Scratched | | | **27** | |  | | | Resistor Label Correct / Straight? | | | | |  | | **20** |  |
| Kitting Errors | | | **7** | |  | | | Are components in the BOM appropriate for this build? | | | | |  | | **15** |  |
| Dents on Enclosure | | | **29** | |  | | | Vent Kit Properly Installed? | | | | |  | | **2** |  |
| Complete the Following: | | | **Initial**  **When Completed** | | | Fan Mounted in Correct Direction? | | | | | | |  | | **12** |  |
| Enclosure Paint Free of Scratches? | | | | | | |  | | **28** |  |
| Job Prints Placed with Controller | | |  | | | Sub-plate Free of Scratches? | | | | | | |  | | **27** |  |
| Place Ground Labels | | |  | | | Enclosure Free of Dents? | | | | | | |  | | **29** |  |
| Identify all Back Ordered Parts | | |  | | | Controller have AC? | | | | | | |  | |  |  |
| Create & Place Controller ID Label | | |  | | | Approved AC mount? | | | | | | |  | |  |  |
| Mark Any Missing Parts | | |  | | |  | | | | | | | | | | |
| Log Job Out | | |  | | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | | |
| Comments or OTHER CODES (code \ Qty): | | |  | | | Supervisor/Engineering signature | | | | | | | | | | |
|  | | |  | | |  | | | | | | | | | | |
| **Back Ordered Parts (Parts not available at time of Mechanical Inspection)** | | | | | | |  | | | | | | | | | |
| **Part Number** | **Description** | | | | | | | | **Qty.** | | **Parts Due Date** | **Notes:** | | | | |
|  |  | | | | | | | |  | |  |  | | | | |
|  |  | | | | | | | |  | |  |  | | | | |
|  |  | | | | | | | |  | |  |  | | | | |
|  |  | | | | | | | |  | |  |  | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SALES ORD # | | | | | JOB NAME: JobName | | | | | | | | | | | |
| PRD ORD # | | TYPE: | | | | | | | SHIP DATE: | | | | CAR:  CARNUMBER | | | |
| **Error Code Documentation:** | | | | | | | | | | | | | | | |
| **Labeling Dept. Findings:** | | | | | | | **Wiring Dept. Findings:** | | | | | | | | |
| Error Description | | | QtyError Code | | | **Time**  **(Min)** Reworked By | Error Description | | | | | QtyError Code | | | Time (Min)  **reworked By** |
|  | | |  | | |  |  | | | | |  | | |  |
|  | | |  | | |  |  | | | | |  | | |  |
|  | | |  | | |  |  | | | | |  | | |  |
|  | | |  | | |  |  | | | | |  | | |  |
| **SUB-PLATE STAGE CHECKLIST** | | | | | | | **ENCLOSURE STAGE CHECKLIST** | | | | | | | | |
| Verify The Following: | | | | INITIAL | | | INSPECTION ITEMS: | | | | | | | INITIAL | |
| All Components Labeled. | | | |  | | | All Components Labeled. | | | | | | |  | |
| All terminal Connections Tight. | | | |  | | | All terminal Connections Tight. | | | | | | |  | |
| No Burned Wires. | | | |  | | | No Burned Wires Installed. | | | | | | |  | |
| All Jumpers Installed. | | | |  | | | All Jumpers Installed. | | | | | | |  | |
| All Call Labels Installed. | | | |  | | | All Resistor Connections Tight. | | | | | | |  | |
| Are Header(s) Complete. | | | |  | | | All Crimp Connections Correct. | | | | | | |  | |
| All Resistor Connections Tight. | | | |  | | | Starter Connections Complete. | | | | | | |  | |
| All Crimp Connections Correct. | | | |  | | | All Relay Coils Connected (both sides). | | | | | | |  | |
| Starter Connections Complete. | | | |  | | | All Relays Have Connections To The Moveable. | | | | | | |  | |
| All Relay Coils Connected (both sides). | | | |  | | | All Solder Connections Secure. | | | | | | |  | |
| All Relays Have Connections per prints | | | |  | | | Heavy Gage Wire Complete. | | | | | | |  | |
| All Solder Connections Secure. | | | |  | | | Prints and Traveler Signed. | | | | | | |  | |
| Heavy Gage Wire Complete. | | | |  | | | All PMTs Torqued. | | | | | | |  | |
| All Cables Available. | | | |  | | |  | | | | | | |  | |
| Prints and Traveler Signed. | | | |  | | |  | | | | | | |  | |
| All PMTs Torqued. | | | |  | | |  | | | | | | |  | |
| Heavy Gage Assembler: | | | | | | | | | | Date Completed: | | | | | | |
| Inspector: | | | | | | | | | | Date Completed: | | | | | | |
| **Back Ordered Parts (Parts not available at time of Wire Assembly)** | | | | | | | | | | | | | | | | |
| **Part Number** | **Description** | | | | | | | **Qty.** | | **Parts Due Date** | **Notes:** | | | | | |
|  |  | | | | | | |  | |  |  | | | | | |
|  |  | | | | | | |  | |  |  | | | | | |
|  |  | | | | | | |  | |  |  | | | | | |
| Comments: | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | | | | |
| SALES ORD # | | | JOB NAME: JobName | | | | | | | | | |
| PRD ORD # | | TYPE: | | | | SHIP DATE: | | | CAR:  CARNUMBER | | | |
| **Assigned Technician (1):** | | | | | **Assigned Technician (2):** | | | | | | |
| **Area** | **Issue/ Discrepancy** | | | **Cause/ Corrective Action** | | | Date | **Qty**    **Error**  **Code** | | **Time**  **(min)**  **Rework By:** | **RE-INSP. BY** |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |
|  |  | | |  | | |  |  | |  |  |

**Root Cause Code: (you are NOT required to only use these codes, additional codes are at the end of the traveler)**

|  |  |  |
| --- | --- | --- |
| 11) Engineering Error | 3) Wiring Errors | 23) Damaged Parts |
| 1) Bad Sub-Assembly Component | 19) Label Illegible/ Crooked/Missing/Errors | 24) Defective Parts |
| 6) Mechanical Layout | 15) Wrong Part Used | 7) Kitting Errors |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Start |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Stop |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Date |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| INIT |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SALES ORD # | | | JOB NAME: JobName | | | | | |
| PRD ORD # | | TYPE: | | CAR:  CARNUMBER | | | | |
| **Categories** | | **Inspect the following [Inspector: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ]** | | | | **Pass?** | **Error Code** | | **Time**  **(min)** Reworkby |
| **Perform QC Inspection** | | Paint and color scheme correct | | | |  | **30** | |  |
| All labels are straight and legible | | | |  | **19** | |  |
| Correct torque labels are installed | | | |  | **21** | |  |
| Correct Silver Label installed. The serial (silver) tag information matches the | | | |  | **18** | |  |
| Missing parts | | | |  | **8** |  | |
| **Cosmetic, Aesthetic and Assembly Concerns** | | **Perform the following [Assembler: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ]** | | | | **Done?** | **Notes:** | | |
| Enclosure clean | | | |  |  | | |
| Clean and touch up enclosure exterior | | | |  |  | | |
| Neatly route all wires in the cable tray | | | |  |  | | |
| Trough cover(s) installed | | | |  |  | | |
| Tie wrap all remaining wires | | | |  |  | | |
| High Voltage wires tie wrap separately from Low Voltage wire | | | |  |  | | |
| Secure loose wires | | | |  |  | | |
| Install all missing “Plug-able” Terminals | | | |  |  | | |
| Secure swing panel with tie wrap | | | |  |  | | |
| Install either the EPROM label or pass-code label | | | |  |  | | |
| Vacuum and remove all debris from inside each cabinet | | | |  |  | | |
| All hardware is installed and use the proper torque tool to tight | | | |  |  | | |
| Thumbscrew Torgue @ 16 in lb. | | | |  |  | | |
| D-sub connectors screws are tight | | | |  |  | | |
| PCB/Assembly mounting screws are properly torque to their specification | | | |  |  | | |
| Seal Nema enclosure with silicon RTV | | | |  |  | | |
|  | | | |  |  | | |
| **Car Verification** | | All ribbon cables are properly installed, latched and secured | | | |  |  | | |
| All other plug in connectors are fully seated | | | |  |  | | |
| Ground wires, lugs and power tap wires are straight and tight | | | |  |  | | |
| Transformers and Drivers have covers | | | |  |  | | |
| All fuses are seated in their holders with their rating visible | | | |  |  | | |
| The correct relay clips are installed | | | |  |  | | |
| ESD labels are installed | | | |  |  | | |
|  | | | |  |  | | |
| **Key Job Information** | | Com Port Labels installed | | | |  |  | | |
| The correct component manuals are included with the controller | | | |  |  | | |
| All PCB boards serial numbers are recorded on serial # log sheet | | | |  |  | | |
|  | | | |  |  | | |

|  |
| --- |
| Product Release Authorization: Date: |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Errors are only assigned when there is stoppage of work for any measurable length of time or scrap generated.** | | |
|  | **Code:** | **Error:** | **Description:** |
| **Man** | **1** | Bad Sub-Assembly Component |  |
|  | **2** | Vent kit improperly installed |  |
|  | **3** | Wiring Error | When wiring does not match what’s on the prints |
|  | **4** | Wiring/PTP Error | When error is found in Testing Department |
|  | **5** | Resistor mounted crooked |  |
|  | **6** | Mechanical Layout Error |  |
|  | **7** | Kitting Errors | Refers to a part that is in the kit but is NOT in the BOM |
|  | **8** | Missing Parts | Refers to a part that is on the BOM but is missing from the kit |
|  | **9** | Software Error |  |
|  | **10** | Design (R&D) | Must be approved by Production Manager |
|  | **11** | Engineering Error | When job prints or BOM are found to be in error. |
|  | **12** | Fan mount in wrong direction |  |
|  | **13** |  |  |
|  | **14** | Incorrect resistor values | A special case of Kitting Error |
|  | **15** | Wrong Part used | When the kitted part matches the BOM but, nonetheless, still is not the correct part for the construction |
|  | **16** | Missing Components | Refers to a part that is missing a subpart for which there is no MCE part number for. |
|  | **17** | Documents (i.e.Missing customer data sheet) |  |
|  | **18** | Silver labels not installed or serial not matching |  |
|  | **19** | Label Illegible/Crooked/Missing/Errors |  |
|  | **20** | Resistor label wrong | A special labeling error; refers to the resistor labels on the chassis. |
|  | **21** | Missing / Incorrect torque labels | A special Labeling error. |
|  | **22** | *Simulation* |  |
| **Material** | **23** | Damaged Part | Dented, Scratched, Torn or otherwise not usable. Detectable with the naked eye. |
|  | **24** | Defective Part | Part is not usable or reliable. Detected through other means. |
|  | **25** | Tech (Bad Board) | Only if Board has been NCI'ed |
|  | **26** | Sub-Plate Dirty |  |
|  | **27** | Sub-Plate Paint Scratched |  |
|  | **28** | Enclosure Paint Scratched |  |
|  | **29** | Dents on enclosure |  |
|  | **30** | Missmatch color scheme (i.e.Door color does not match enclosure color) |  |
|  | **31** | Configuration Engineering error |  |
|  | **50** | NCI | When bad part requires NCI procedures |
|  | **51** | ECO | When bad part requires ECO procedures |