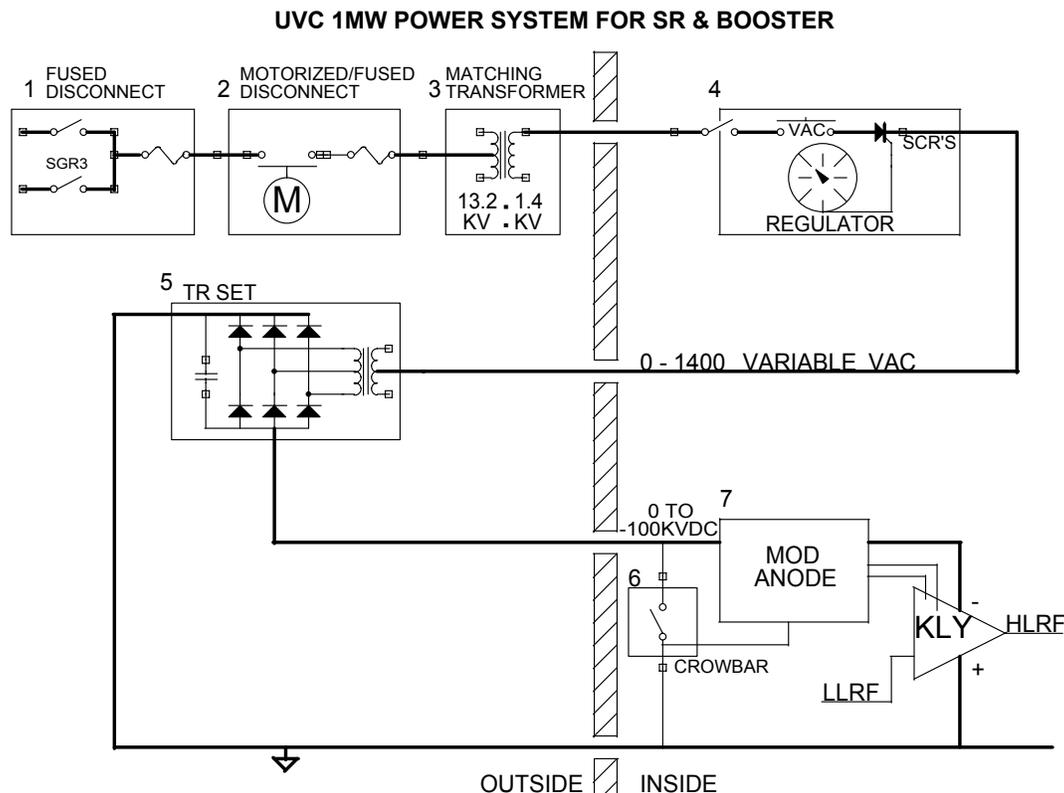


Documentation Generation Guidelines.

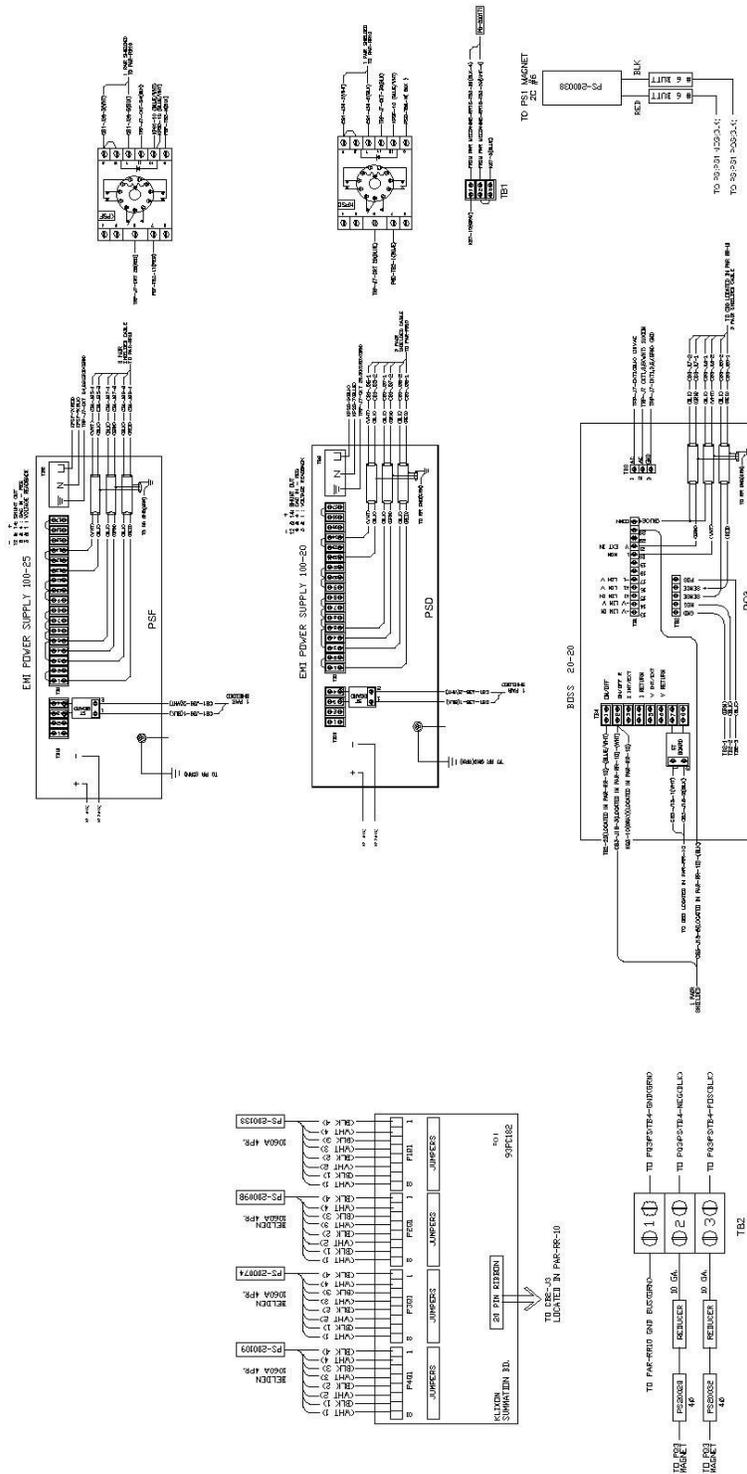
They break down into 14 different categories. If there is some addition or change that you think should be on this list please tell me.

- 1. Design Specifications:** This is for the team that will work on the project. This defines what the device is supposed to do, and also defines the performance requirements of this the device as well as to what is not expected and should not do. The original design engineers should be referenced and any important design notes he may have should be included.
- 2. Development Items of Historic Value:** These are bits & pieces of information by their self may not have great value, but together will produce a more complete view and history of the project.
 - a) Theory of Operation:** The how's and why's of a circuit, chassis, or system. Used to understand the operation of something as well as for its troubleshooting.
 - b) Design tools used:** Microsoft's Excel, Word and VISO CAD tools like AutoCAD, PRO-E, Orcad Capture and Orcad's Pspice.
 - c) What control software was used:** Did you use industry standard packages like ALLEN BRADLEY PLC, GNU-C++ on Linux or a system you developed in house like EPICS.
 - d) Review Documents:** This is an archived copy of design reviews, safety reviews, Readiness reviews and any other major or important review that occurred.
- 3. The Single Line or Block Diagram:** This is a system or "top" level diagram that is very basic in nature, it lacks any detail but presents a good overall view.



Documentation Generation Guidelines.

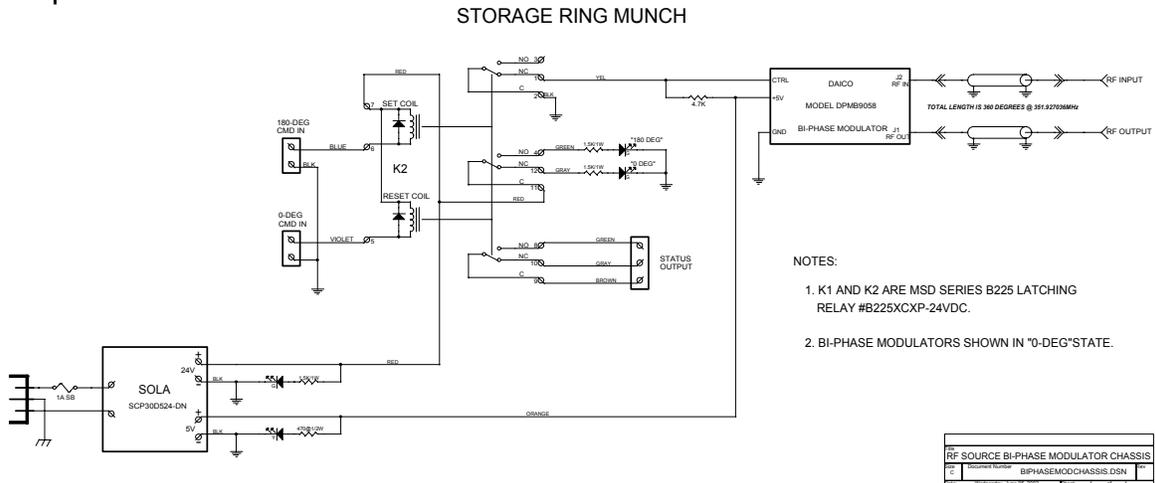
6. **Wiring diagrams:** Are generally a point to point type diagram inside of a chassis or rack. It would indicate wire number, color, type, gauge, and termination type. Example:



Documentation Generation Guidelines.

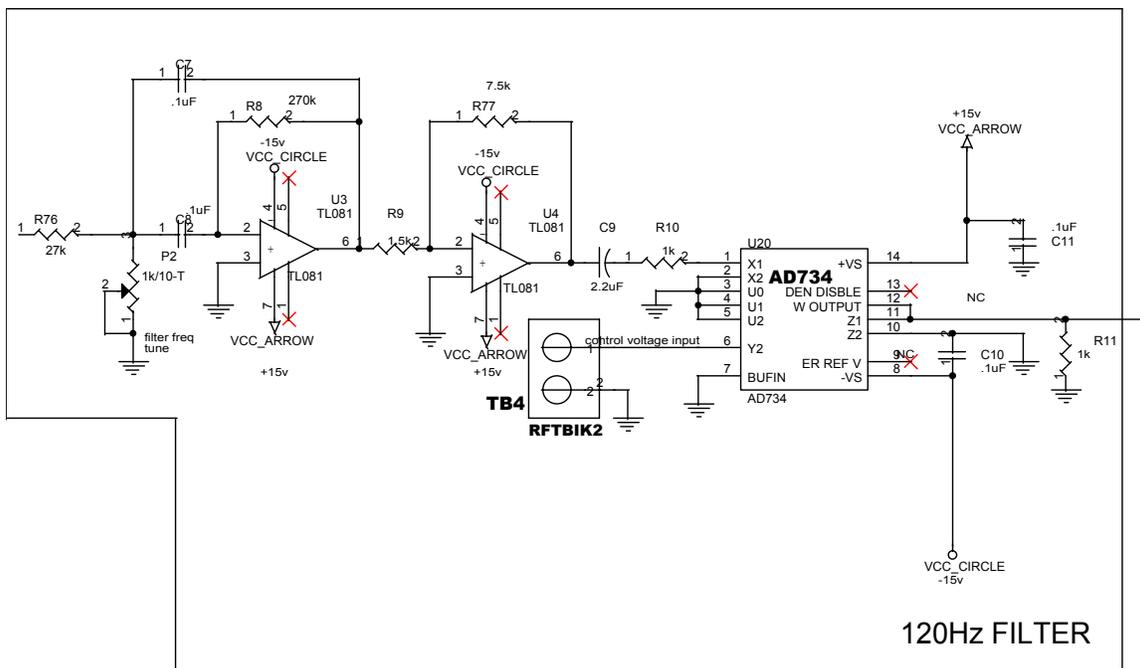
7. **Chassis level schematic / Chassis Interconnection diagram:** This should show all of the input and output connections in a particular piece of equipment as well as all of the internal connections between separate parts above the printed circuit board level.

Example:



8. **The printed circuit board schematic:** It should indicate all the separate component attributes and all of the connections between them. It might also indicate various voltage and power levels during different operating modes.

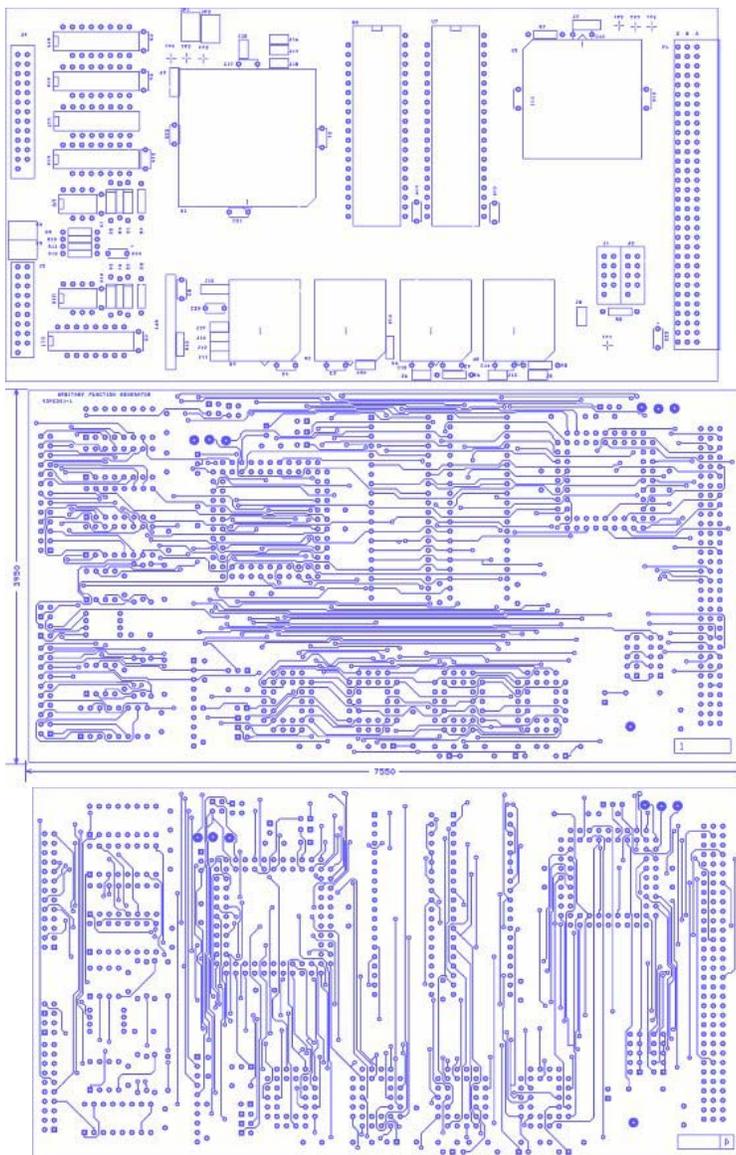
Example:



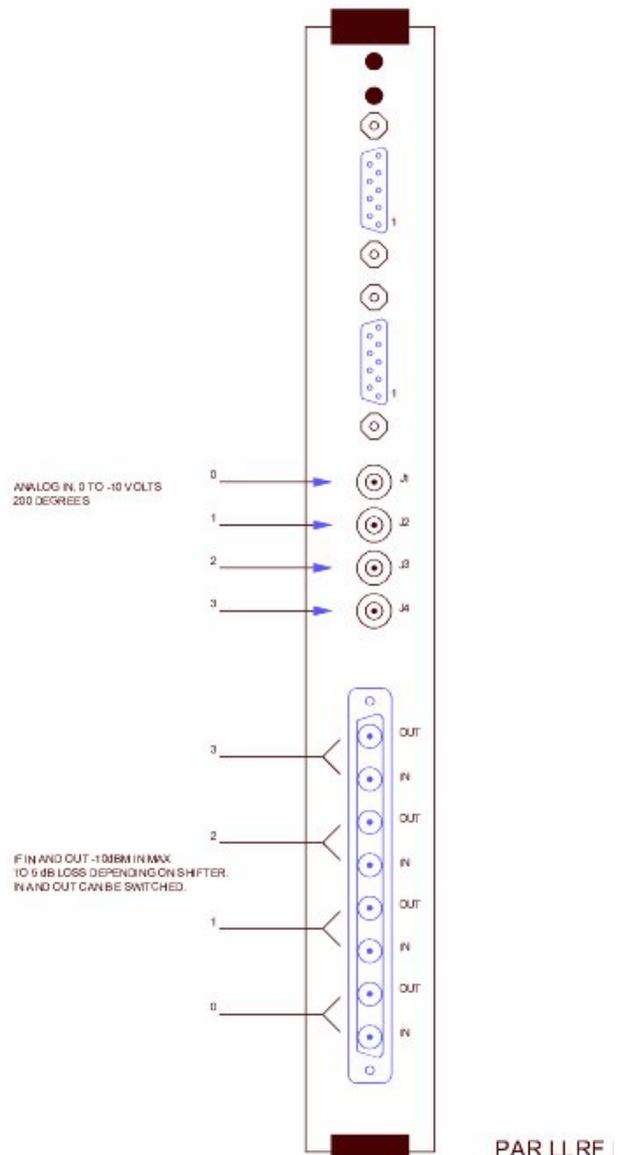
Documentation Generation Guidelines.

9. **Electronic Assembly Drawings:** Pictorials of chassis front or back panel layouts, rack layouts, or chassis layouts. P.C.B. pictorials showing traces, silkscreen(s), or parts placement. Chassis front panel labeling, dimensioning of racks, chassis's, or trays and a spare/repair parts list. Bills of material, P.C.B. net lists, and special handling or construction techniques would also fall within this type of document.

Examples:

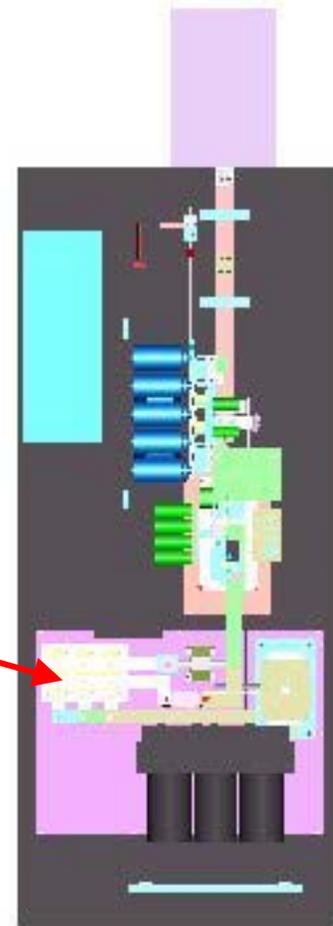
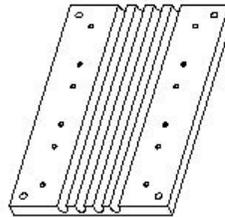
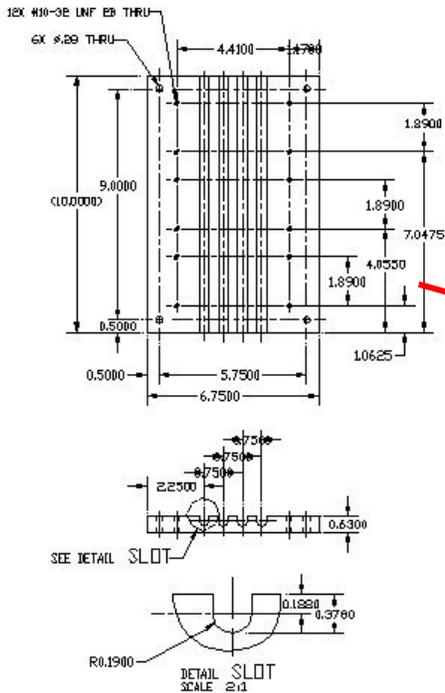


PHASE SHIFTER B+K



Documentation Generation Guidelines.

10. Mechanical and Assembly Drawings: These usually cover the physical assembly or manufacture of equipment. The drawing types could be the details of each piece used in an assembly as well as a graphical representation of the expected final item.



11. Inspection Criteria or QA checklist: This document will tell the person performing an inspection what is and is not acceptable during a particular inspection.

SR Corrector Control Power Assembly Inspection List

1. Verify solder connections to resistor and proper color code:
Outboard: red
Inboard: white/red

2. Verify wires do not pull out of crimps, crimps are not on insulation, and screws are tightened. Check color code:
(+) orange
(-) white/orange

3. Verify wires do not pull out of crimps and crimps do not pull out of connectors. The metal tabs should be visible through the window in the connector and it should be easy to verify that the sockets are seated all the way down in the connector. Verify color code:

-AC	-DC
(left to right):	(left to right):
black	gray
empty	white/gray
white	yellow
empty	orange
empty	empty
empty	white/orange
empty	empty
empty	white/red
(top to bottom):	white/red
brown	red
red	red
empty	empty

4. Turn assembly upside down and shake. Make sure no loose hardware falls out.

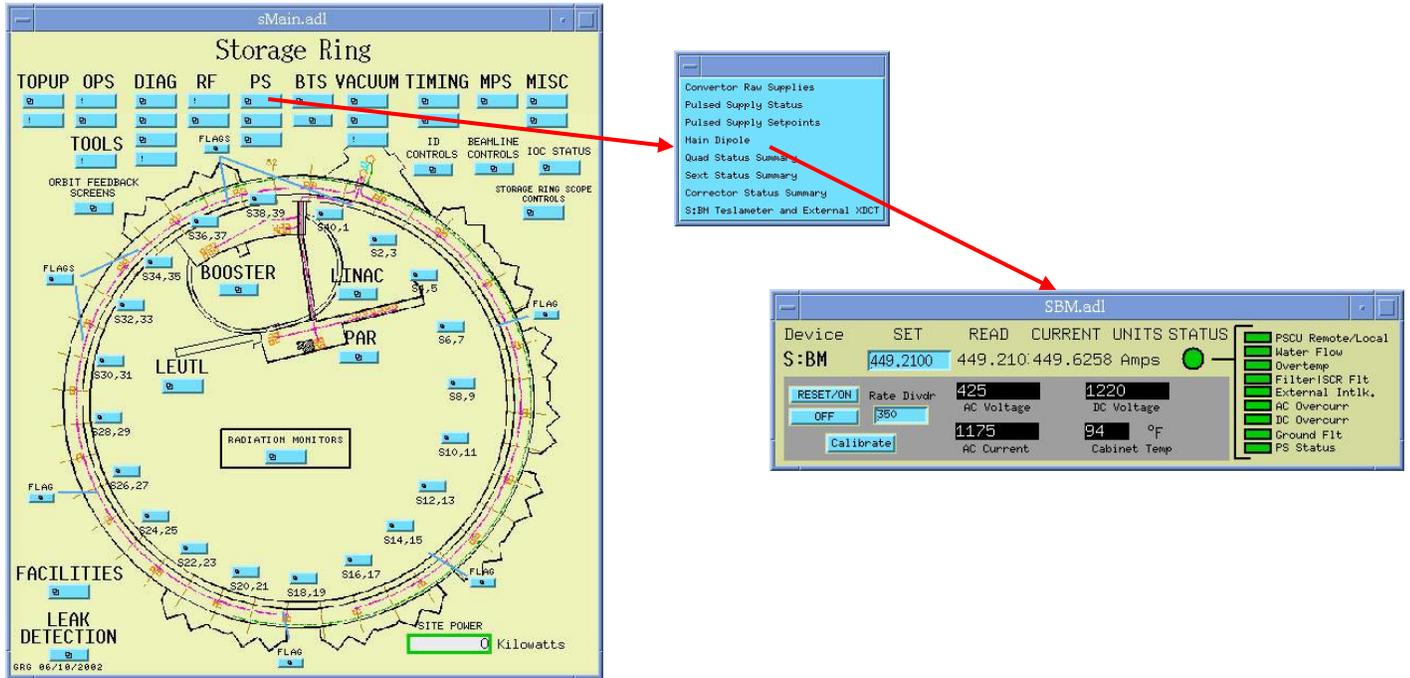
5. Verify proper installation of connectors J1, J2, J3, and J6 - retaining clips all point outboard. Verify D1 polarity.

6. Verify solder connections to board and verify proper color code:
J4(-) white
J4(+) black
J10-1 orange
J10-2 white/orange
J9-1 red
J9-2 white/red
J8-1 white/orange
J8-2 orange
J8-3 yellow
J8-4 white/gray
J8-5 gray
J5-1 brown

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Documentation Generation Guidelines.

12. **Software Code:** This document and listing will tell the person(s) that are debugging the operation of a system as to what is expected to take place. Altera Code, PLC Code, Gespac Code, ADL files for the MEDM screens i.e. What do the control displays look like, where can they be found.



13. **Calibration, alignment, Maintenance, Repair or Modification:** This type of document deals with the process of alignment and calibration of either purchased or specially made equipment. It could include such documents as level and adjustment procedures, a standard modification list, inspection forms, preventive maintenance schedules as well as any safety inspections / precautions. Example:

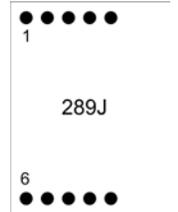
- 1) Insure that all power has been removed.
- 2) Remove the regulator board (93PC0086) from corrector chassis.
- 3) Remove U1 (289L or J)
- 4) Cut trace from R9 to U5 pin 2.

- 5) Install board adapter 00PC180B into the U1 position (Previously 289L or J).



- 6) Add jumper from R9 (the side that was cut in step 4) to U1 pin 10.

- 7) Add jumper from U1 pin 8 to U7 pin 4.



- 8) Cut jumper in the R46 position.

Documentation Generation Guidelines.

14. **Manufactures Literature:** OEM Information supplied with equipment, like manuals. This can be a wide range of information from daily maintenance procedures to the operating specifications, a recommended spare parts list, the OSHA approved safety requirements, etc.

Example:

