CHAPTER 6

CONCLUSSION AND SUGGESTION

6.1. Conclusion

Based on the data analysis and discussion which has been accomplished, it able to make some conclussion which answered the objective of this research. The following conclussion are:

1. Identify effect, causes, and currently detection

a. FMEA process analysis following three approaches, there are:

i. Severity approaches which founded three effects has severity scale that equal 7 and one effect with severity scale 8.

ii. Occurrence approaches which has two causes with occurrence rating is 7, and four causes with occurrence rating is 8.

iii. Detection approaches which has 5 currently detection with highest scale 8.

iv. RPN value is make prioritize by seen the failure mode, and get seven failure modes which the rpn value is above 100. The highest RPN is equal 448.

b. FMEA design analysis following three approaches, there are:

i. Severity approaches which founded two effects has severity scale that equal 7.

ii. Occurrence approaches which has three causes with occurrence rating is 8.

iii. Detection approaches which has 5 currently detection with highest scale 7.

iv. RPN value is make prioritize by seen the failure mode, and get five failure modes which the rpn value is above 100. The highest RPN is equal 440.

2. Take an action to reduce the highest failure mode based on RPN value

a. Recomendation action For FMEA Process

i. Remind and training worker to use proper tools

ii. Remind and training worker to performing job follow SOP

iii. Avoid ID Plate put in stacking way, it should aligned in the board

iv. Remind and give instruction to Dept. Engineering to make a new jig and standard/SOP

v. Fix the the oldest tools, like rivets in polishing placement board.

b. Recomendation action For FMEA Design

i. Remind and training worker to use proper tools

ii. Remind and training worker to performing job follow SOP

iii. Avoid ID Plate put in stacking way, it should aligned in the board

iv. Remind and give instruction to Dept. Engineering to make a new jig and standard/SOP

3. Comparing failure modes before and after implementing FMEA

a. Comparison for FMEA process

i. Failure mode grazes has been decreased from 448 to 343

ii. Failure mode unperfect installed (rivets not in the proper place) has been decreased from 320 to 80

iii. Failure mode many defect escape to next process has been decreased from 294 to 54

iv. Failure mode gravure not in the special frame has been decreased from 280 to 224

v. Failure mode many defect escape to send abroad has been decreased from 100 to 8.

vi. Remind and training worker to performing job follow SOP

vii. Avoid ID Plate put in stacking way, it should aligned in the board

viii. Remind and give instruction to Dept. Engineering to make a new jig and standard/SOP

b. Comparison for FMEA design

i. Failure mode grazes has been decreased from RPN value equal 440 became 128

ii. Failure mode paint chip on the edge has been decreased from 440 became 128

iii. Failure mode gravure not in the proper depth has been decrease from 272 became 38

iv. Failure mode rivets not in the proper position has been decrease from 245 to 147

v. Failure moe gravure not in the special frame has been decrease from 160 to 20

6.2. Suggestion

1. For company

a. It expected to remind worker perform better in validation and verification process by make training for them.

b. Remind worker to always write down the result of each process and design verification and validation, so that the failure modes will be avoid by evaluation result by finding solution as soon as possible.

c. Remind Dept. Engineering to immediately create a jig for printing machine.
d. For preference, it will be better when Dept. Head. QA and Dept. Head. Engineer often held brief visit to the production floor and worker give feedback by communicate with them if there is any difficulties. Do not be shut the difficulties from them. Not only both worker and dept. Head but also with supplier it should have good communication, because supplier already give the basically part and need improvement if there is any issues.

a. For next researchers

Because of in the research, the implementation just only limit from Feb 2016 until March 2016. It should perform better on next period for seen others recommendation that accomplish yet and re-calculate when whole recomendation finish.

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APPENDICES 1

STANDAR OPRATION PROCESS (SOP) TO IMPLEMENT FMEA

APPENDICES 2

FMEA DESIGN

APPENDICES 3

FMEA PROCESS

APPENDICES 4

OBSERVATION RESULT FOR FINDING OCCURRENCE SCALE (FMEA DESIGN)

APPENDICES 5

OBSERVATION RESULT FOR FINDING OCCURRENCE SCALE (FMEA PROCESS)

APPENDICES 6

SUFFICENCY TEST

APPENDICES 7

STANDARD OPERATION PROCESS (SOP) BROKEN TOOLS