

# MISTAKE PROOFING MATRIX

## 21 MISTAKE PROOFING TECHNIQUES

1. Layout & Arrangement
2. Parcel Out
3. Positive Stop
4. Space Separation
5. Confirmation of Existence
6. Alternative use of Resources
7. Visual Management
8. Go/NoGo
9. Time Separation
10. Conditional Stop
11. Eliminate Replacement Alternative (ERA)
12. Kitting
13. 5S
14. Kanban
15. Templates
16. Checklists
17. Highlight
18. Information Transfer
19. Trend Prediction
20. Simplify Information
21. Document Control

|                                  |                     | SELECT SYSTEM WITH MISTAKE PROOFING OPPORTUNITY |               |            |               |               |               |               |                  |                |                |                     |                 |             |               |               |                  |
|----------------------------------|---------------------|---|---------------|------------|---------------|---------------|---------------|---------------|------------------|----------------|----------------|---------------------|-----------------|-------------|---------------|---------------|------------------|
|                                  |                     | Operating Stock                                 | Fasteners     | Code       | Component     | Assembly      | Fixture       | Tool          | Manual Operation | Planning       | Design         | Automatic Operation | Connection      | Safety      | e-Forms       | Paper Form    | Decision         |
| SELECT POSSIBLE DEFECT / MISTAKE | Alignment           | 6, 15, 8  | 1, 4, 13, 9   |            | 1, 7, 13      | 1, 16, 9      | 5, 16, 9      | 5, 16         | 1, 13, 15, 16    | 20, 17, 16     | 20, 17, 16     | 1, 13, 15, 16       | 1, 15, 13, 16   | 1, 3, 8     | 3, 7, 13      | 7, 13         | 17, 19           |
|                                  | Scratches           | 5, 7  | 4, 9          |            | 4, 7, 5, 9    | 4, 7, 5, 9    | 4, 7, 5, 9    | 4, 7, 5, 9    | 4, 7, 5, 9       | 1, 7, 13       | 1, 4, 13       | 1, 8, 16            | 5, 4, 10, 9     | 8           |               |               |                  |
|                                  | Contamination       | 5, 4, 9   | 12, 11, 4, 9  |            | 5, 4, 11, 9   | 5, 4, 11, 9   | 5, 4, 11, 9   | 5, 4, 11, 9   | 5, 4, 11, 9      | 1, 7, 16       | 5, 2           | 4, 10, 9            | 4, 5, 13, 9     | 2, 10, 16   |               |               |                  |
|                                  | Non-Processed Parts | 16, 13, 12, 9                                   | 12, 16, 9, 13 | 3, 17, 20  | 16, 13, 12, 9 | 16, 13, 12, 9 | 15, 16, 12, 9 | 13, 16, 12, 9 | 13, 16, 12, 9    | 1, 7, 16, 17   | 3, 7, 16       | 8, 10, 12, 13, 9    | 16, 5, 12, 9    | 2, 13, 8    | 8, 3, 17      | 15, 17        | 17, 19           |
|                                  | Size                | 8, 15, 9  | 8, 15         | 20, 13, 11 | 8, 15         | 8, 15         | 16, 8         | 16, 8         | 16, 8, 9         | 1, 4, 16       | 4, 1           | 8, 12               |                 | 8, 3        |               |               | 19               |
|                                  | Weight              | 8, 5, 3   | 8, 5, 3       |            | 8, 5, 3       | 8, 5, 3       | 8, 5          | 8, 5          | 3, 4, 17, 9      | 1, 4, 16       | 6, 8, 10       | 8, 12, 9            |                 | 8, 3        |               |               | 19               |
|                                  | Holes               | 7, 5, 1   | 1, 15         |            | 7, 5          | 7, 5, 9       | 7, 5          | 7, 5          | 3, 4, 17, 9      | 1, 5, 14       | 1, 7, 10       | 5, 10               | 1, 8, 10        | 8, 3        |               |               |                  |
|                                  | Mismatch            | 12, 17, 9                                       | 12, 15        | 16, 7      | 12, 15, 9     | 12, 15        | 16, 1         | 16, 1         | 16, 1, 9         | 1, 4, 15       | 1, 4, 8        | 16, 1               | 16, 13, 17      | 10, 8, 1    | 3             | 17            | 17, 19           |
|                                  | Solvents Mix        | 16, 10, 9                                       | 16            |            | 16            | 16            | 16, 11        | 16, 11        | 4, 9             | 2, 12          | 2, 5, 12       | 16, 7, 6, 9         |                 | 2, 3, 12, 9 |               |               | 16, 19           |
|                                  | Cutting             | 3, 6, 1, 8, 17                                  | 1, 8          |            | 1, 8          | 1, 8          | 1, 8          | 1, 8          | 1, 8, 16, 9      | 1, 5, 15       | 1, 5, 16       | 1, 8, 16, 9         | 3, 8            | 1, 8, 10, 9 |               |               |                  |
|                                  | Shaping             | 15, 1, 8  | 8             |            | 16, 15, 8     | 16, 15, 8     | 6, 15, 8      | 6, 15, 8      | 4, 17, 9         | 1, 17          | 1, 7, 15       | 1, 8, 10, 9         | 3, 8            | 10, 3, 7    |               |               |                  |
|                                  | Bending             | 8, 1, 11, 9                                     | 8, 1, 11      |            | 8, 1, 11      | 8, 1, 11      | 8, 1, 11      | 8, 1, 11      | 4, 17, 9, 6      | 1, 10, 6       | 10, 7, 15      | 10, 8, 9, 16        | 3, 8            | 1, 3, 8     |               |               |                  |
|                                  | Location            | 12, 15, 9, 4                                    | 1, 15, 12     | 1, 13, 16  | 12, 15, 1     | 12, 15, 1     | 12, 15, 1     | 12, 15, 1     | 16, 11, 9, 13    | 1, 5           | 1, 7           | 16, 11, 9, 13       | 16, 13, 1       | 1, 3, 8     | 1, 17, 13     | 1, 17, 14     | 13, 20, 16       |
|                                  | Mounting Torque     | 10, 5, 16                                       | 10, 5, 16     |            | 10, 5, 16     | 10, 5, 16, 9  | 10, 5, 16     | 10, 5, 16     | 8, 10, 1, 9      | 5, 8, 17       | 16, 17, 7      | 10, 5, 3, 9         | 16, 5, 8        | 10, 3       |               |               |                  |
|                                  | Wrong Placement     | 1, 15, 6, 17                                    | 1, 15         | 1, 16, 17  | 1, 16, 17     | 1, 16, 17     | 1, 16, 17     | 1, 16, 17     | 16, 11, 9, 13    | 20, 17, 16     | 20, 17, 16     | 16, 11, 9, 13       | 16, 1, 13, 8    | 1, 8, 15    | 17, 13, 5, 10 | 17, 13, 5, 10 | 5, 13, 17        |
|                                  | Protrusions         | 8, 3  | 8, 5, 3       |            | 8, 5, 3, 9    | 8, 5, 3, 9    | 8, 5, 3, 9    | 8, 5, 3, 9    | 3, 17, 9         | 1, 5, 16       | 7, 8, 10       | 8, 5, 3, 9          | 3, 8, 9         | 5, 8        |               |               |                  |
|                                  | Missing             | 12, 3, 15, 17                                   | 12, 15        | 17, 13     | 12, 15, 17    | 12, 15, 17    | 12, 15, 17    | 12, 15, 17    | 3, 17, 9         | 4, 7, 13       | 3, 15, 13      | 5, 8, 17, 9         | 7, 5, 16, 13    | 3, 2, 8     | 5, 17, 10     | 5, 17, 10     | 5, 7, 13, 16     |
|                                  | Delay               | 17, 14  | 17, 14        | 5, 17      | 17, 14        | 17, 14        | 16            | 16            | 16, 11, 9, 13    | 20, 17, 16, 13 | 20, 17, 16, 13 | 16, 11, 9, 13       | 17, 16          | 3, 16, 15   | 3, 20, 18     | 20, 18        | 5, 7, 13, 19     |
|                                  | Incorrect           | 5, 12, 17                                       | 5, 12, 17     | 17, 18, 21 | 5, 12, 17     | 5, 12, 17     | 5, 16         | 5, 16         | 16, 11, 13, 9    | 20, 17, 16, 13 | 20, 17, 16, 13 | 16, 11, 9, 13       | 16, 7, 8, 1, 13 | 16, 7, 8    | 5, 10, 17     | 5, 10, 17     | 5, 8, 19, 17, 16 |

### Algorithm for Mistake Proofing

