Gage R&R Study - ANOVA Method

**\* NOTE \* There are no operator values, or they are all the same. The operator factor will be  
omitted from the analysis.**

Gage R&R for Found Blob 1 Count

|  |  |
| --- | --- |
| Gage name: | Staking |
| Date of study: | 06/24/2022 |
| Reported by: | AIS Technologies Group |
| Tolerance: |  |
| Misc: |  |

One-Way ANOVA Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | DF | SS | MS | F | P |
| Part No | 9 | 0 | 0 | \* | \* |
| Repeatability | 20 | 0 | 0 |  |  |
| Total | 29 | 0 |  |  |  |

*α to remove interaction term = 0.05*

Gage R&R

Variance Components

|  |  |  |
| --- | --- | --- |
| Source | VarComp | %Contribution (of VarComp) |
| Total Gage R&R | 0 | \* |
| Repeatability | 0 | \* |
| Part-To-Part | 0 | \* |
| Total Variation | 0 | \* |

Lower process tolerance limit = 0

Gage Evaluation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source | StdDev (SD) | Study Var (6 × SD) | %Study Var (%SV) | %Tolerance (SV/Toler) |
| Total Gage R&R | 0 | 0 | \* | 0.00 |
| Repeatability | 0 | 0 | \* | 0.00 |
| Part-To-Part | 0 | 0 | \* | 0.00 |
| Total Variation | 0 | 0 | \* | 0.00 |

Number of Distinct Categories = \*

Probabilities of Misclassification

**\* WARNING \* Degenerate bivariate detected:  The variance-covariance matrix has determinant =  
0. Unable to proceed.**

Gage R&R for Found Blob 1 Count

Gage R&R Study - ANOVA Method

**\* NOTE \* There are no operator values, or they are all the same. The operator factor will be  
omitted from the analysis.**

Gage R&R for Found Blob 2 Count

|  |  |
| --- | --- |
| Gage name: | Staking |
| Date of study: | 06/24/2022 |
| Reported by: | AIS Technologies Group |
| Tolerance: |  |
| Misc: |  |

One-Way ANOVA Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | DF | SS | MS | F | P |
| Part No | 9 | 0 | 0 | \* | \* |
| Repeatability | 20 | 0 | 0 |  |  |
| Total | 29 | 0 |  |  |  |

*α to remove interaction term = 0.05*

Gage R&R

Variance Components

|  |  |  |
| --- | --- | --- |
| Source | VarComp | %Contribution (of VarComp) |
| Total Gage R&R | 0 | \* |
| Repeatability | 0 | \* |
| Part-To-Part | 0 | \* |
| Total Variation | 0 | \* |

Lower process tolerance limit = 0

Gage Evaluation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source | StdDev (SD) | Study Var (6 × SD) | %Study Var (%SV) | %Tolerance (SV/Toler) |
| Total Gage R&R | 0 | 0 | \* | 0.00 |
| Repeatability | 0 | 0 | \* | 0.00 |
| Part-To-Part | 0 | 0 | \* | 0.00 |
| Total Variation | 0 | 0 | \* | 0.00 |

Number of Distinct Categories = \*

Probabilities of Misclassification

**\* WARNING \* Degenerate bivariate detected:  The variance-covariance matrix has determinant =  
0. Unable to proceed.**

Gage R&R for Found Blob 2 Count

Gage R&R Study - ANOVA Method

**\* NOTE \* There are no operator values, or they are all the same. The operator factor will be  
omitted from the analysis.**

Gage R&R for Found Radius

|  |  |
| --- | --- |
| Gage name: | Staking |
| Date of study: | 06/24/2022 |
| Reported by: | AIS Technologies Group |
| Tolerance: |  |
| Misc: |  |

One-Way ANOVA Table

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Source | DF | SS | MS | F | P |
| Part No | 9 | 223.786 | 24.8651 | 35.6458 | 0.000 |
| Repeatability | 20 | 13.951 | 0.6976 |  |  |
| Total | 29 | 237.737 |  |  |  |

*α to remove interaction term = 0.05*

Gage R&R

Variance Components

|  |  |  |
| --- | --- | --- |
| Source | VarComp | %Contribution (of VarComp) |
| Total Gage R&R | 0.69756 | 7.97 |
| Repeatability | 0.69756 | 7.97 |
| Part-To-Part | 8.05585 | 92.03 |
| Total Variation | 8.75341 | 100.00 |

Process tolerance = 40

Gage Evaluation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Source | StdDev (SD) | Study Var (6 × SD) | %Study Var (%SV) | %Tolerance (SV/Toler) |
| Total Gage R&R | 0.83520 | 5.0112 | 28.23 | 12.53 |
| Repeatability | 0.83520 | 5.0112 | 28.23 | 12.53 |
| Part-To-Part | 2.83828 | 17.0297 | 95.93 | 42.57 |
| Total Variation | 2.95862 | 17.7517 | 100.00 | 44.38 |

Number of Distinct Categories = 4

Probabilities of Misclassification

Joint Probability

|  |  |
| --- | --- |
| Description | Probability |
| A randomly selected part is bad but accepted | 0.000 |
| A randomly selected part is good but rejected | 0.000 |

Conditional Probability

|  |  |
| --- | --- |
| Description | Probability |
| A part from a group of bad products is accepted | 0.301 |
| A part from a group of good products is rejected | 0.000 |

Gage R&R for Found Radius