Descriptive statistics

SHEET1

**General Linear Model: Performance versus PWM, Feed Ratio,**

WORKSHEET 1

**General Linear Model: Performance versus PWM, Feed Ratio, Diameter**

**Method**

|  |  |
| --- | --- |
| Factor coding | (-1, 0, +1) |

**Factor Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor** | **Type** | **Levels** | **Values** |
| PWM | Fixed | 2 | 200, 255 |
| Feed Ratio | Fixed | 2 | 5, 30 |
| Diameter | Fixed | 2 | 3, 5 |

**Analysis of Variance**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source** | **DF** | **Adj SS** | **Adj MS** | **F-Value** | **P-Value** |
| PWM | 1 | 0.3351 | 0.3351 | 0.65 | 0.464 |
| Feed Ratio | 1 | 0.1075 | 0.1075 | 0.21 | 0.671 |
| Diameter | 1 | 0.3529 | 0.3529 | 0.69 | 0.453 |
| Error | 4 | 2.0510 | 0.5127 |  |  |
| Total | 7 | 2.8464 |  |  |  |

**Model Summary**

|  |  |  |  |
| --- | --- | --- | --- |
| **S** | **R-sq** | **R-sq(adj)** | **R-sq(pred)** |
| 0.716064 | 27.95% | 0.00% | 0.00% |

**Coefficients**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Term** | **Coef** | **SE Coef** | **T-Value** | **P-Value** | **VIF** |
| Constant | 15.571 | 0.253 | 61.50 | 0.000 |  |
| PWM |  |  |  |  |  |
| 200 | 0.205 | 0.253 | 0.81 | 0.464 | 1.00 |
| Feed Ratio |  |  |  |  |  |
| 5 | 0.116 | 0.253 | 0.46 | 0.671 | 1.00 |
| Diameter |  |  |  |  |  |
| 3 | -0.210 | 0.253 | -0.83 | 0.453 | 1.00 |

**Regression Equation**

|  |  |  |
| --- | --- | --- |
| Performance | = | 15.571 + 0.205 PWM\_200 - 0.205 PWM\_255 + 0.116 Feed Ratio\_5 - 0.116 Feed Ratio\_30 - 0.210 Diameter\_3 + 0.210 Diameter\_5 |

**Diameter**

**Method**

|  |  |
| --- | --- |
| Factor coding | (-1, 0, +1) |

**Factor Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Factor** | **Type** | **Levels** | **Values** |
| PWM | Fixed | 2 | 200, 255 |
| Feed Ratio | Fixed | 2 | 5, 30 |
| Diameter | Fixed | 2 | 3, 5 |

**Analysis of Variance**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source** | **DF** | **Adj SS** | **Adj MS** | **F-Value** | **P-Value** |
| PWM | 1 | 0.74118 | 0.74118 | 1.03 | 0.367 |
| Feed Ratio | 1 | 0.01561 | 0.01561 | 0.02 | 0.890 |
| Diameter | 1 | 0.32520 | 0.32520 | 0.45 | 0.538 |
| Error | 4 | 2.86852 | 0.71713 |  |  |
| Total | 7 | 3.95051 |  |  |  |

**Model Summary**

|  |  |  |  |
| --- | --- | --- | --- |
| **S** | **R-sq** | **R-sq(adj)** | **R-sq(pred)** |
| 0.846835 | 27.39% | 0.00% | 0.00% |

**Coefficients**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Term** | **Coef** | **SE Coef** | **T-Value** | **P-Value** | **VIF** |
| Constant | 16.478 | 0.299 | 55.04 | 0.000 |  |
| PWM |  |  |  |  |  |
| 200 | 0.304 | 0.299 | 1.02 | 0.367 | 1.00 |
| Feed Ratio |  |  |  |  |  |
| 5 | 0.044 | 0.299 | 0.15 | 0.890 | 1.00 |
| Diameter |  |  |  |  |  |
| 3 | -0.202 | 0.299 | -0.67 | 0.538 | 1.00 |

**Regression Equation**

|  |  |  |
| --- | --- | --- |
| Perfomance | = | 16.478 + 0.304 PWM\_200 - 0.304 PWM\_255 + 0.044 Feed Ratio\_5 - 0.044 Feed Ratio\_30 - 0.202 Diameter\_3 + 0.202 Diameter\_5 |