WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	35649	17824.7	2904.75	0.000
Error	594	3645	6.1		
Total	596	39294			

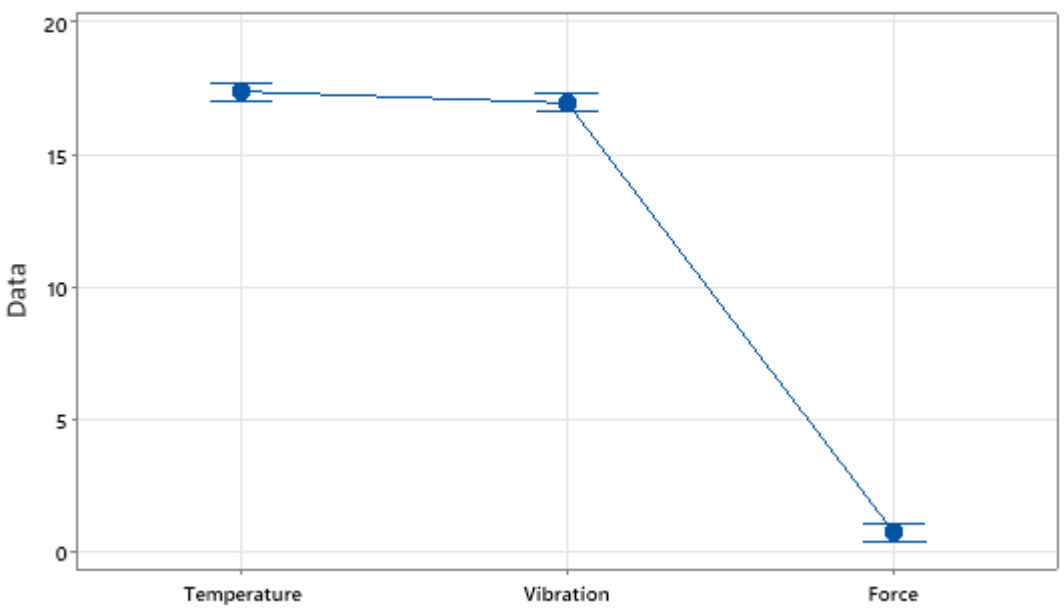
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.47718	90.72%	90.69%	90.63%

Means

Factor	N	Mean	StDev	95% CI
Temperature	199	17.357	3.881	(17.012, 17.702)
Vibration	199	16.923	1.419	(16.578, 17.268)
Force	199	0.7518	1.1535	(0.4069, 1.0966)

Pooled StDev = 2.47718



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	31093	15546.3	1262.39	0.000
Error	594	7315	12.3		
Total	596	38408			

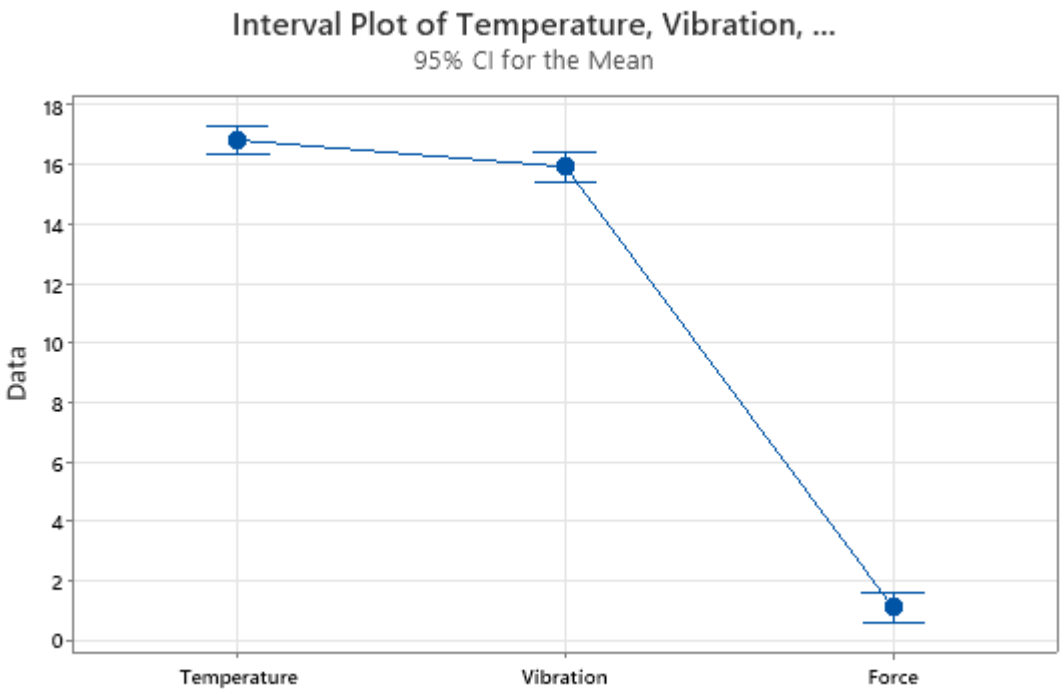
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
3.50928	80.95%	80.89%	80.76%

Means

Factor	N	Mean	StDev	95% CI
Temperature	199	16.819	4.635	(16.331, 17.308)
Vibration	199	15.921	3.805	(15.433, 16.410)
Force	199	1.0811	0.9891	(0.5925, 1.5697)

Pooled StDev = 3.50928



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	39932	19965.8	1649.48	0.000
Error	594	7190	12.1		
Total	596	47121			

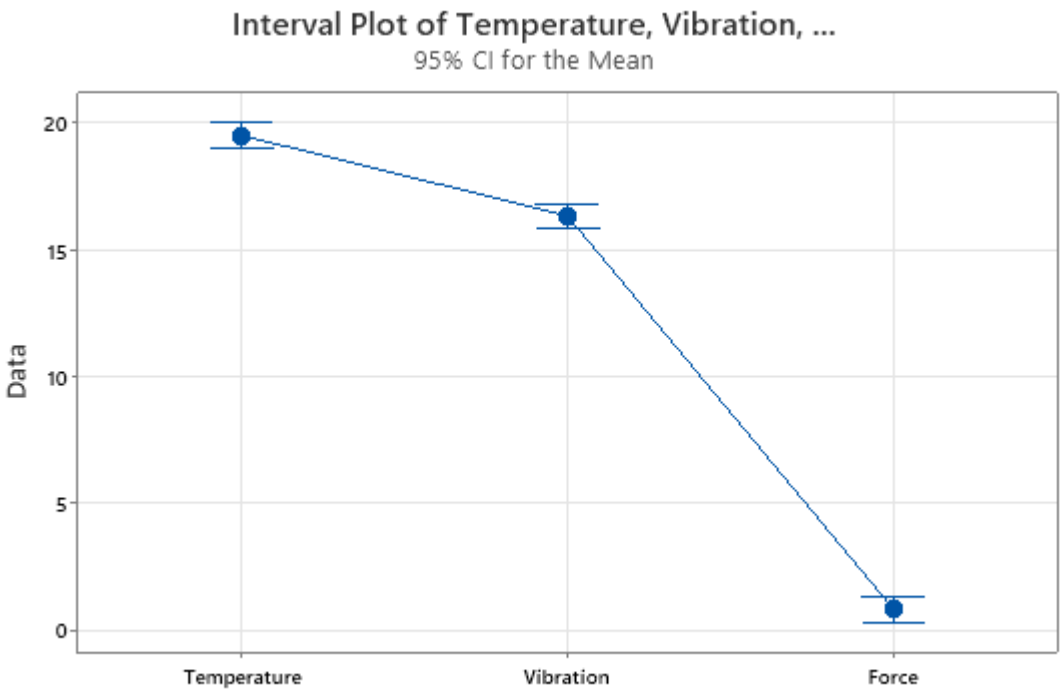
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
3.47912	84.74%	84.69%	84.59%

Means

Factor	N	Mean	StDev	95% CI
Temperature	199	19.507	4.887	(19.022, 19.991)
Vibration	199	16.328	3.240	(15.843, 16.812)
Force	199	0.7878	1.3897	(0.3035, 1.2722)

Pooled StDev = 3.47912



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	50828	25413.9	12321.16	0.000
Error	597	1231	2.1		
Total	599	52059			

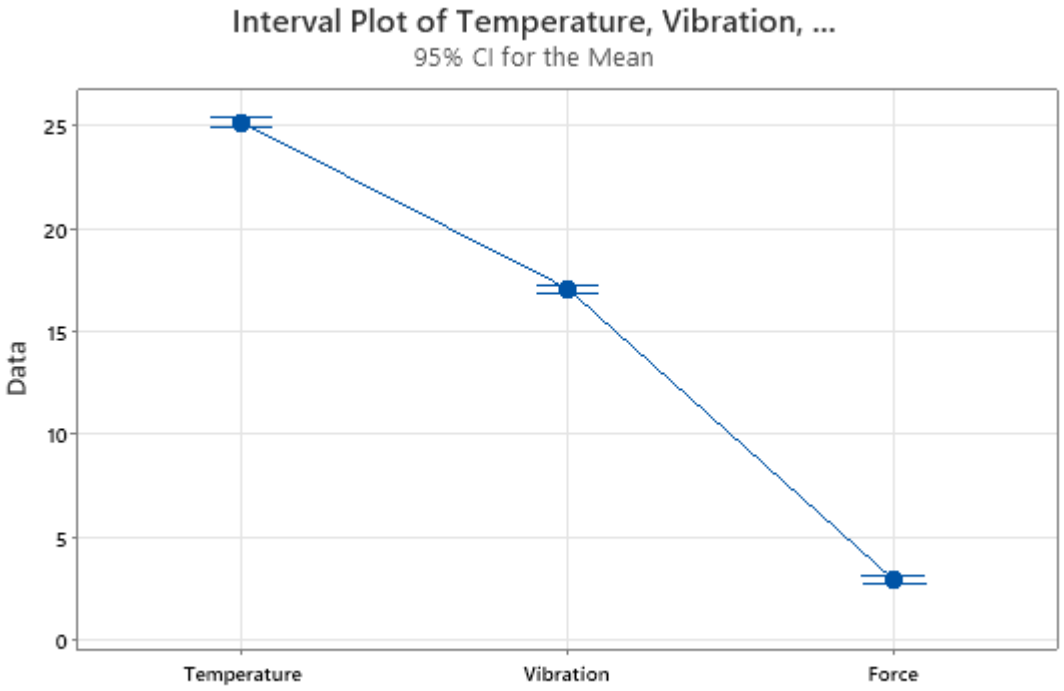
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.43618	97.63%	97.63%	97.61%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	25.1728	1.2921	(24.9734, 25.3722)
Vibration	200	17.079	2.016	(16.880, 17.279)
Force	200	2.9030	0.6751	(2.7035, 3.1024)

Pooled StDev = 1.43618



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	56492	28245.9	5797.50	0.000
Error	597	2909	4.9		
Total	599	59400			

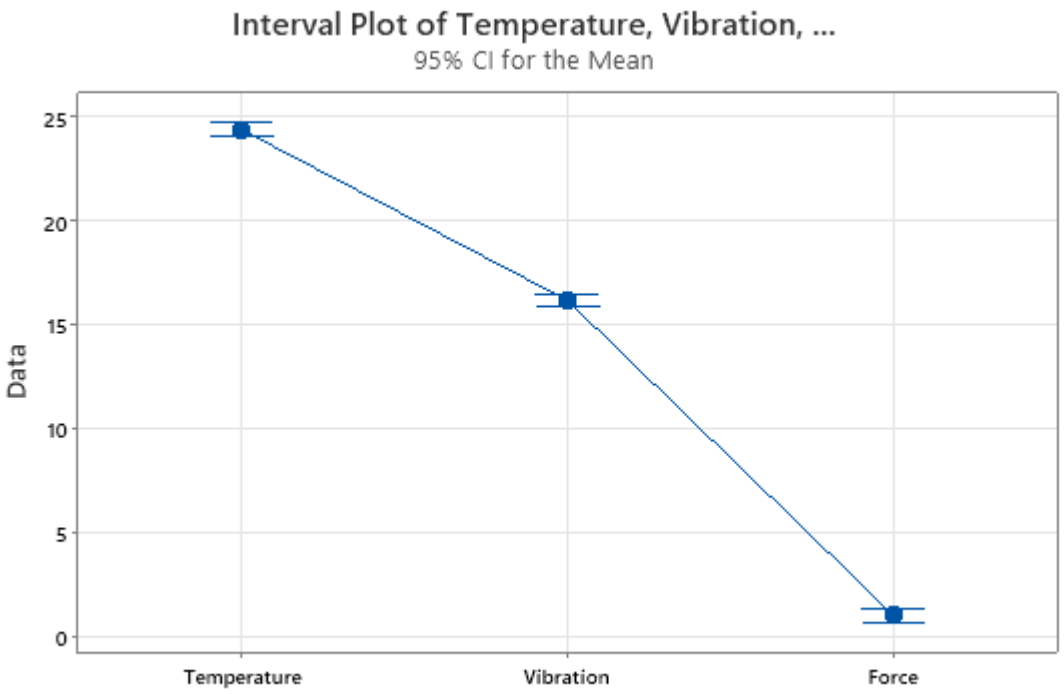
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.20728	95.10%	95.09%	95.05%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	24.423	1.651	(24.116, 24.729)
Vibration	200	16.184	3.051	(15.877, 16.490)
Force	200	0.996	1.606	(0.689, 1.302)

Pooled StDev = 2.20728



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	58423	29211.4	12558.73	0.000
Error	597	1389	2.3		
Total	599	59811			

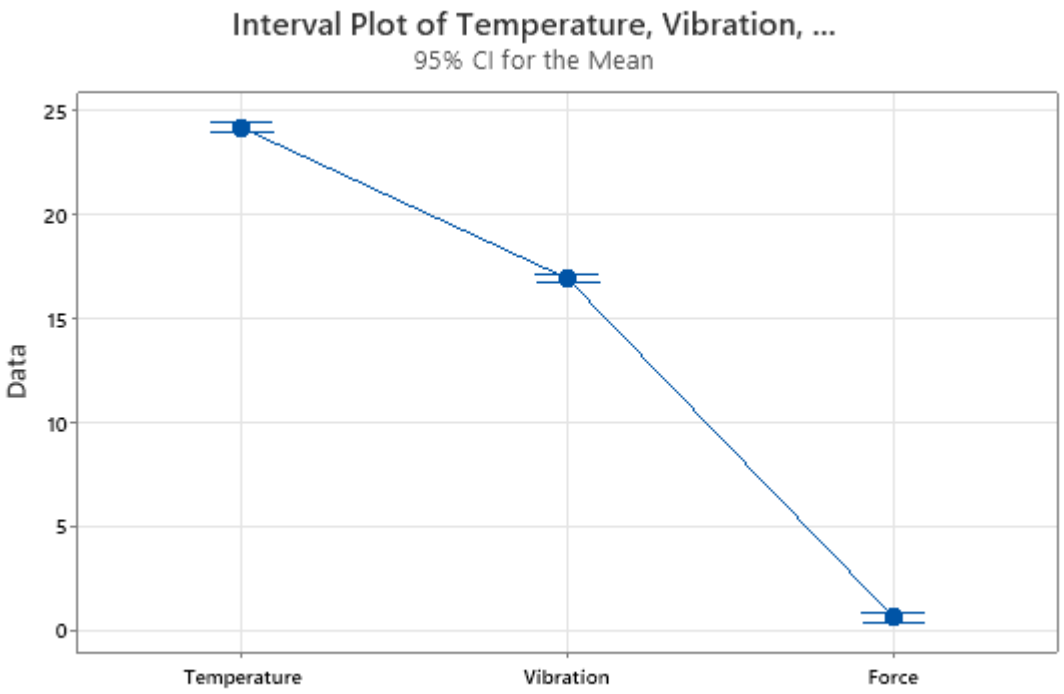
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.52512	97.68%	97.67%	97.65%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	24.1745	1.0664	(23.9627, 24.3862)
Vibration	200	16.900	2.410	(16.688, 17.111)
Force	200	0.5751	0.1825	(0.3633, 0.7869)

Pooled StDev = 1.52512



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	64153	32076.3	19052.52	0.000
Error	597	1005	1.7		
Total	599	65158			

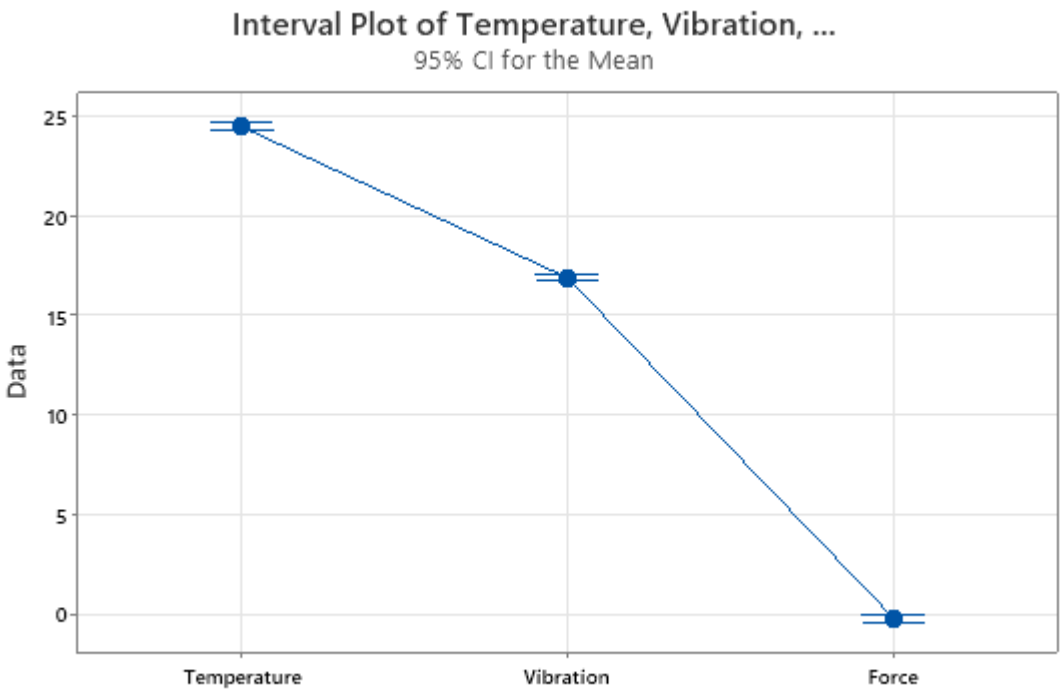
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.29753	98.46%	98.45%	98.44%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	24.4862	0.7322	(24.3060, 24.6664)
Vibration	200	16.887	2.112	(16.707, 17.067)
Force	200	-0.2379	0.2330	(-0.4181, -0.0578)

Pooled StDev = 1.29753



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	65516	32757.8	14578.70	0.000
Error	597	1341	2.2		
Total	599	66857			

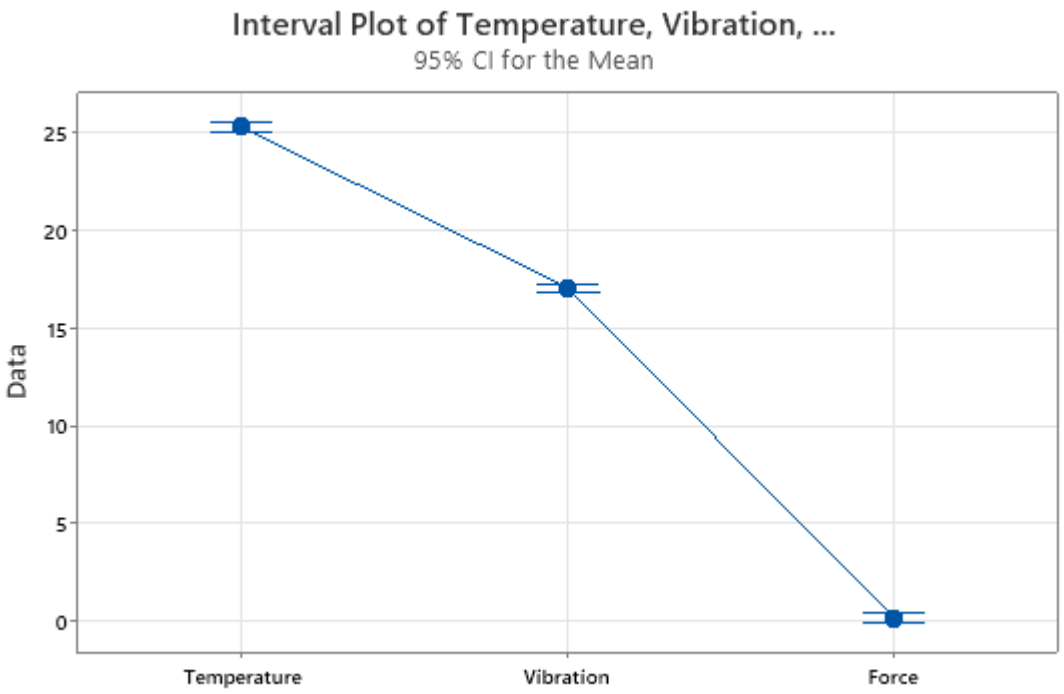
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.49899	97.99%	97.99%	97.97%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	25.2609	0.9546	(25.0527, 25.4691)
Vibration	200	17.049	2.371	(16.841, 17.257)
Force	200	0.1600	0.4538	(-0.0482, 0.3682)

Pooled StDev = 1.49899



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	56662	28331.0	4433.62	0.000
Error	597	3815	6.4		
Total	599	60477			

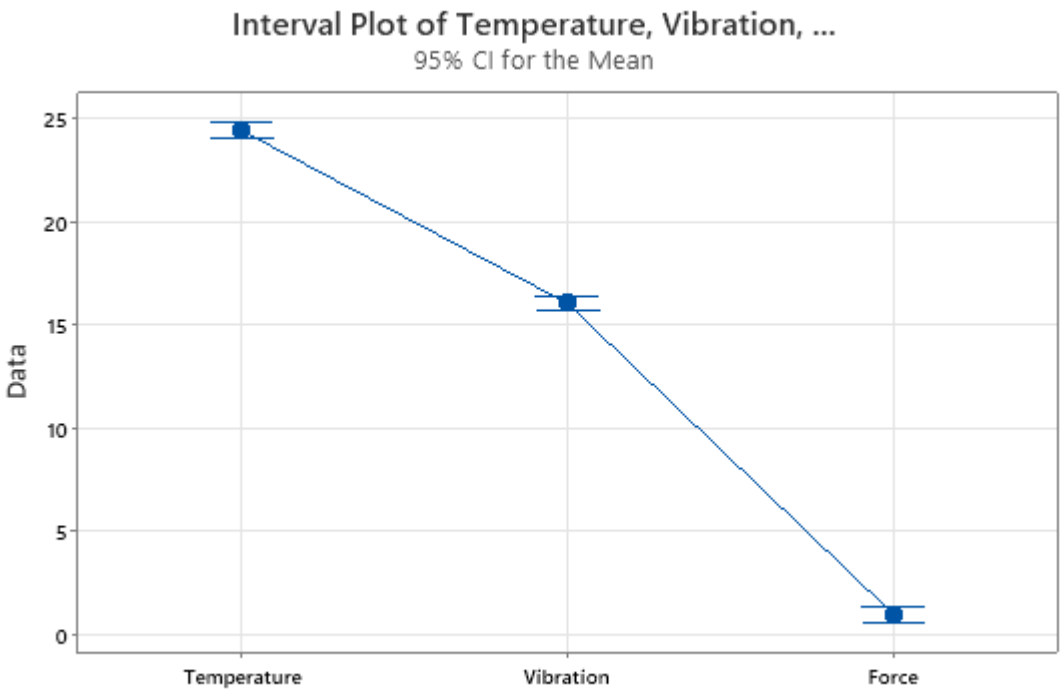
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.52785	93.69%	93.67%	93.63%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	24.4376	0.7419	(24.0866, 24.7886)
Vibration	200	16.046	3.439	(15.695, 16.397)
Force	200	0.951	2.607	(0.600, 1.302)

Pooled StDev = 2.52785



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	64093	32046.3	7005.13	0.000
Error	597	2731	4.6		
Total	599	66824			

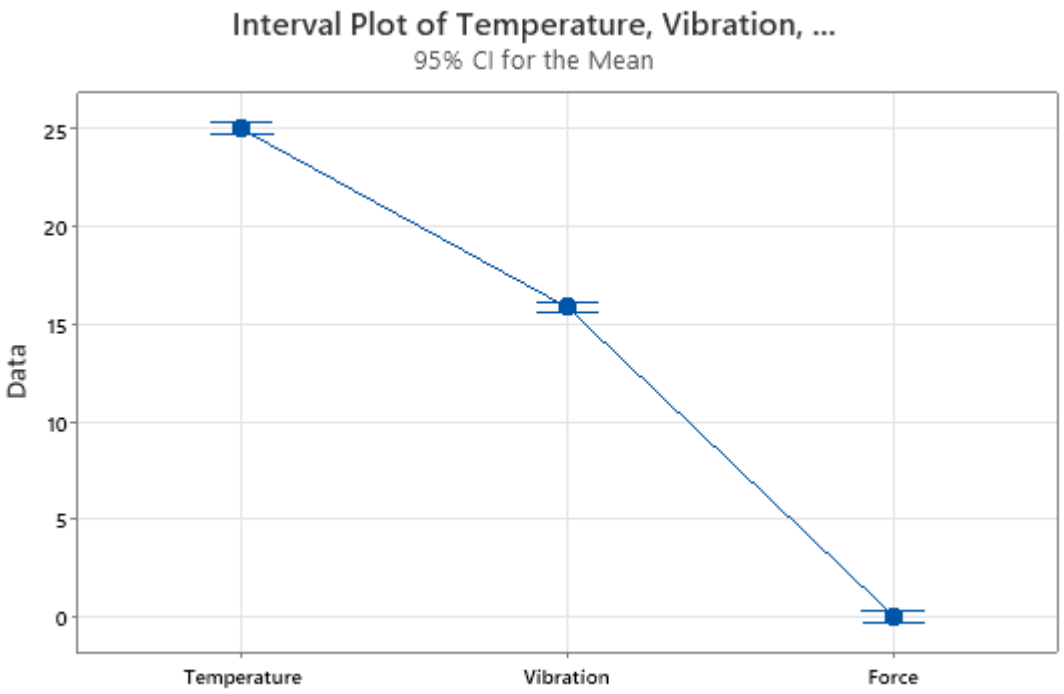
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.13885	95.91%	95.90%	95.87%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	25.0284	1.2091	(24.7314, 25.3254)
Vibration	200	15.861	3.451	(15.564, 16.158)
Force	200	0.0078	0.5935	(-0.2892, 0.3049)

Pooled StDev = 2.13885



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	55416	27708.2	3638.80	0.000
Error	597	4546	7.6		
Total	599	59962			

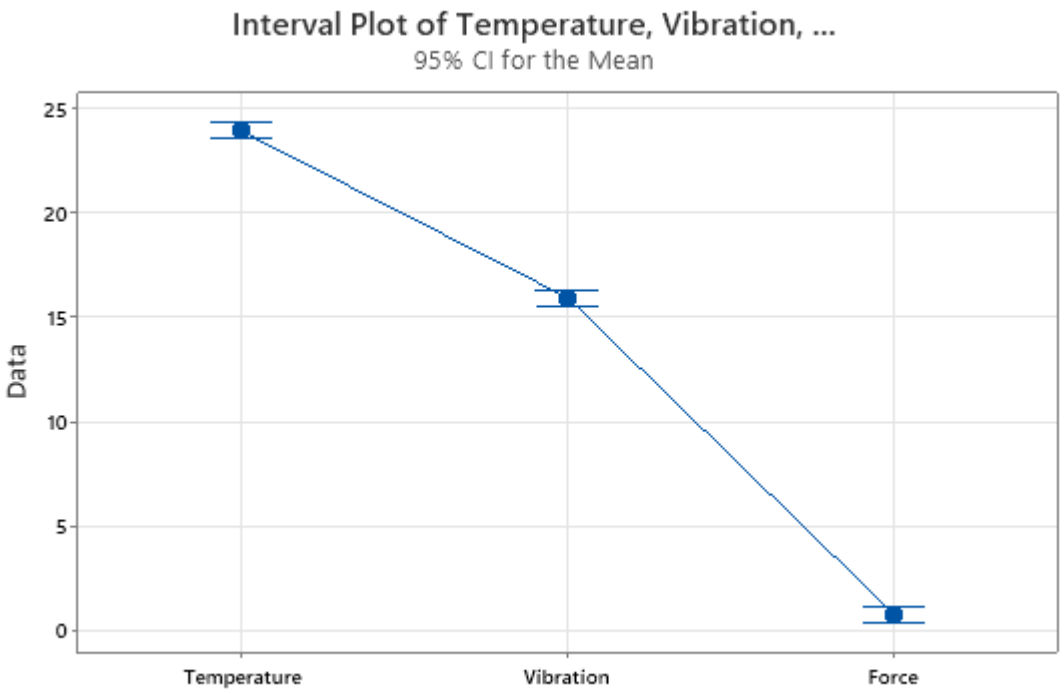
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.75946	92.42%	92.39%	92.34%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	23.9347	1.0090	(23.5515, 24.3179)
Vibration	200	15.937	4.560	(15.554, 16.321)
Force	200	0.7617	1.0180	(0.3785, 1.1449)

Pooled StDev = 2.75946



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	58157	29078.7	9402.76	0.000
Error	597	1846	3.1		
Total	599	60004			

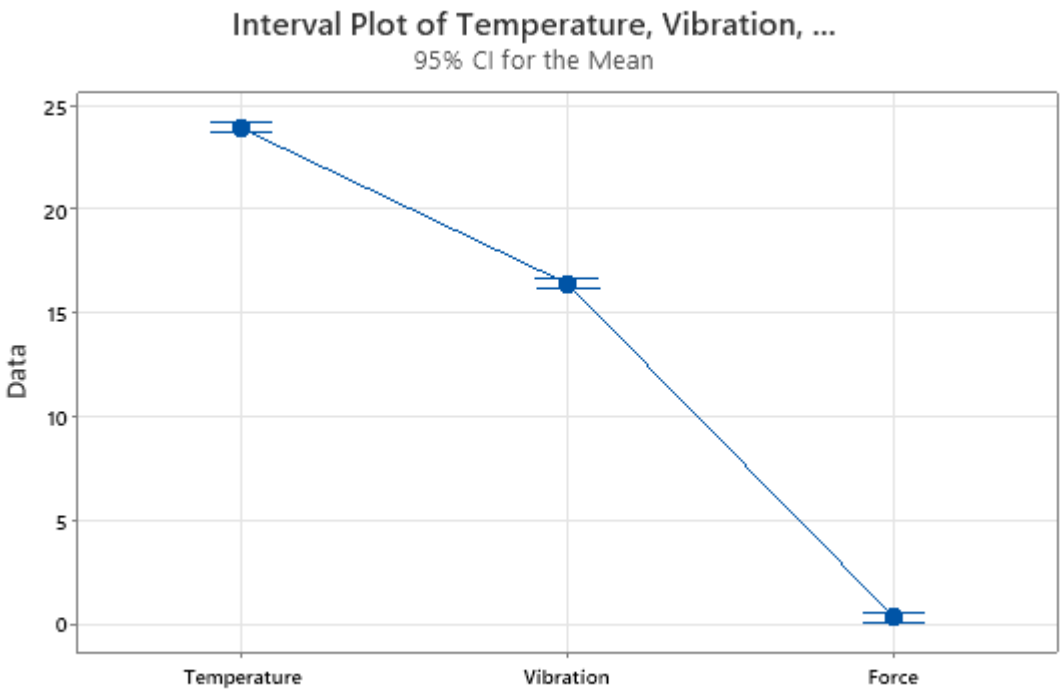
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.75857	96.92%	96.91%	96.89%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	23.9169	1.0099	(23.6727, 24.1611)
Vibration	200	16.403	2.775	(16.159, 16.647)
Force	200	0.3146	0.7465	(0.0704, 0.5588)

Pooled StDev = 1.75857



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05
Rows unused	1

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	65897	32948.4	3731.92	0.000
Error	596	5262	8.8		
Total	598	71159			

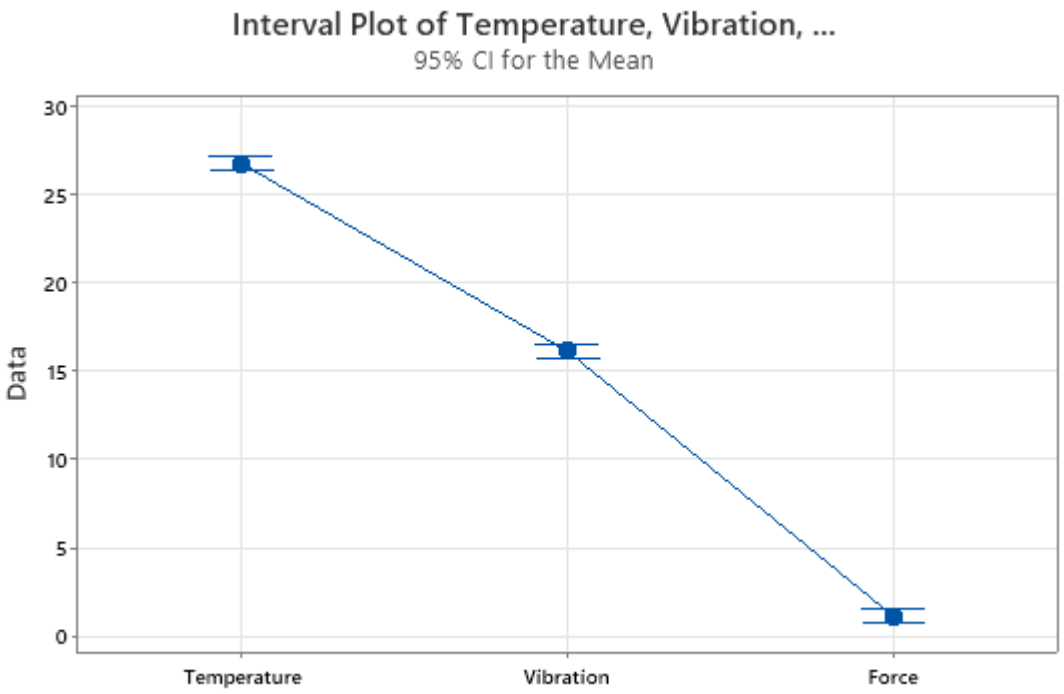
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
2.97133	92.61%	92.58%	92.53%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	26.6757	1.3091	(26.2631, 27.0883)
Vibration	200	16.067	4.135	(15.654, 16.479)
Force	199	1.094	2.769	(0.680, 1.507)

Pooled StDev = 2.97133



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	60519	30259.7	2731.18	0.000
Error	597	6614	11.1		
Total	599	67134			

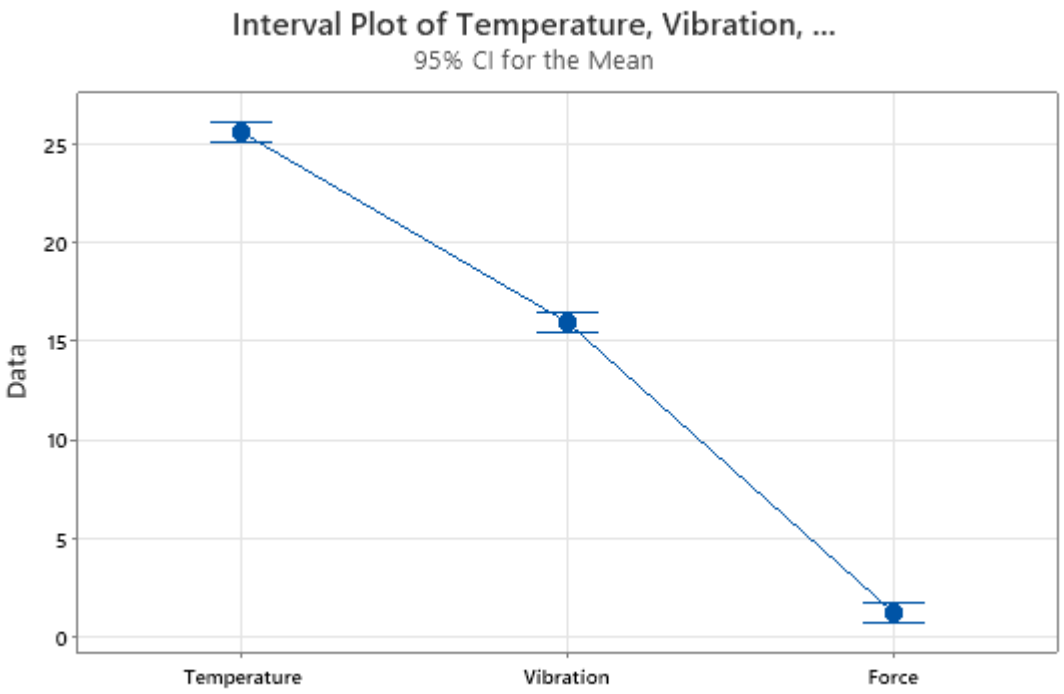
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
3.32857	90.15%	90.11%	90.05%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	25.618	1.802	(25.155, 26.080)
Vibration	200	15.951	4.753	(15.489, 16.413)
Force	200	1.193	2.721	(0.731, 1.655)

Pooled StDev = 3.32857



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	52578	26289.0	7897.08	0.000
Error	597	1987	3.3		
Total	599	54565			

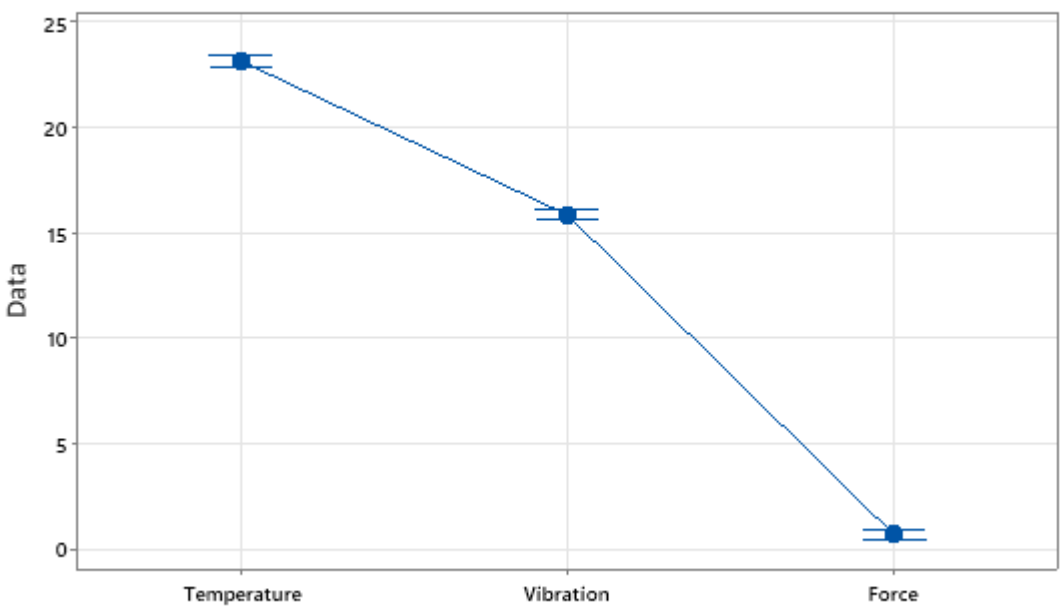
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.82454	96.36%	96.35%	96.32%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	23.140	1.687	(22.887, 23.394)
Vibration	200	15.830	2.622	(15.576, 16.083)
Force	200	0.6636	0.5135	(0.4102, 0.9169)

Pooled StDev = 1.82454



The pooled standard deviation is used to calculate the intervals.

WORKSHEET 1

One-way ANOVA: Temperature, Vibration, Force

Method

Null hypothesis	All means are equal
Alternative hypothesis	Not all means are equal
Significance level	α = 0.05

Equal variances were assumed for the analysis.

Factor Information

Factor	Levels	Values
Factor	3	Temperature, Vibration, Force

Analysis of Variance

Source	DF	Adj SS	Adj MS	F-Value	P-Value
Factor	2	53072	26536.1	14710.07	0.000
Error	597	1077	1.8		
Total	599	54149			

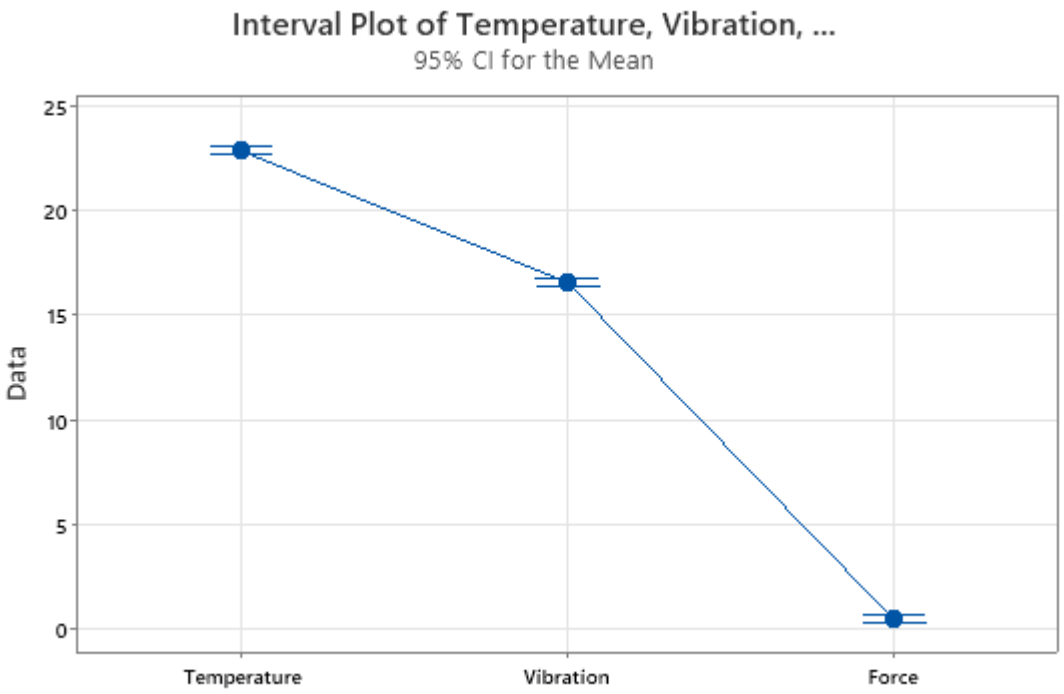
Model Summary

S	R-sq	R-sq(adj)	R-sq(pred)
1.34311	98.01%	98.00%	97.99%

Means

Factor	N	Mean	StDev	95% CI
Temperature	200	22.7845	0.4917	(22.5980, 22.9710)
Vibration	200	16.530	2.106	(16.344, 16.717)
Force	200	0.4557	0.8582	(0.2692, 0.6422)

Pooled StDev = 1.34311



The pooled standard deviation is used to calculate the intervals.