JMP Output for Foam Molding Data

Response Pressure - Full Factorial (Orifice, Pump, Temperature)

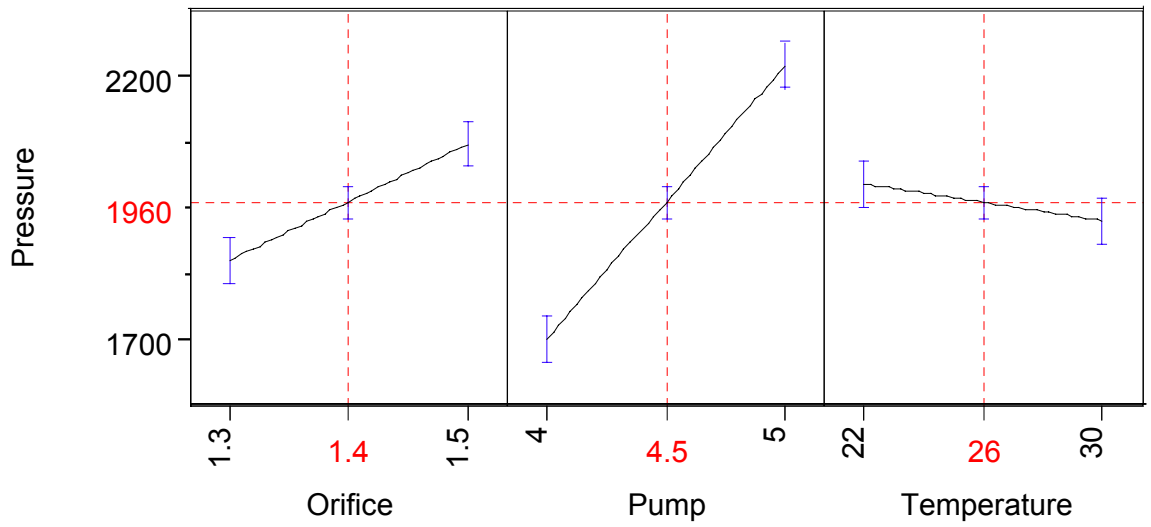
Summary of Fit

RSquare	0.962407
RSquare Adj	0.945959
Root Mean Square Error	70.35624
Mean of Response	1960
Observations (or Sum Wgts)	24

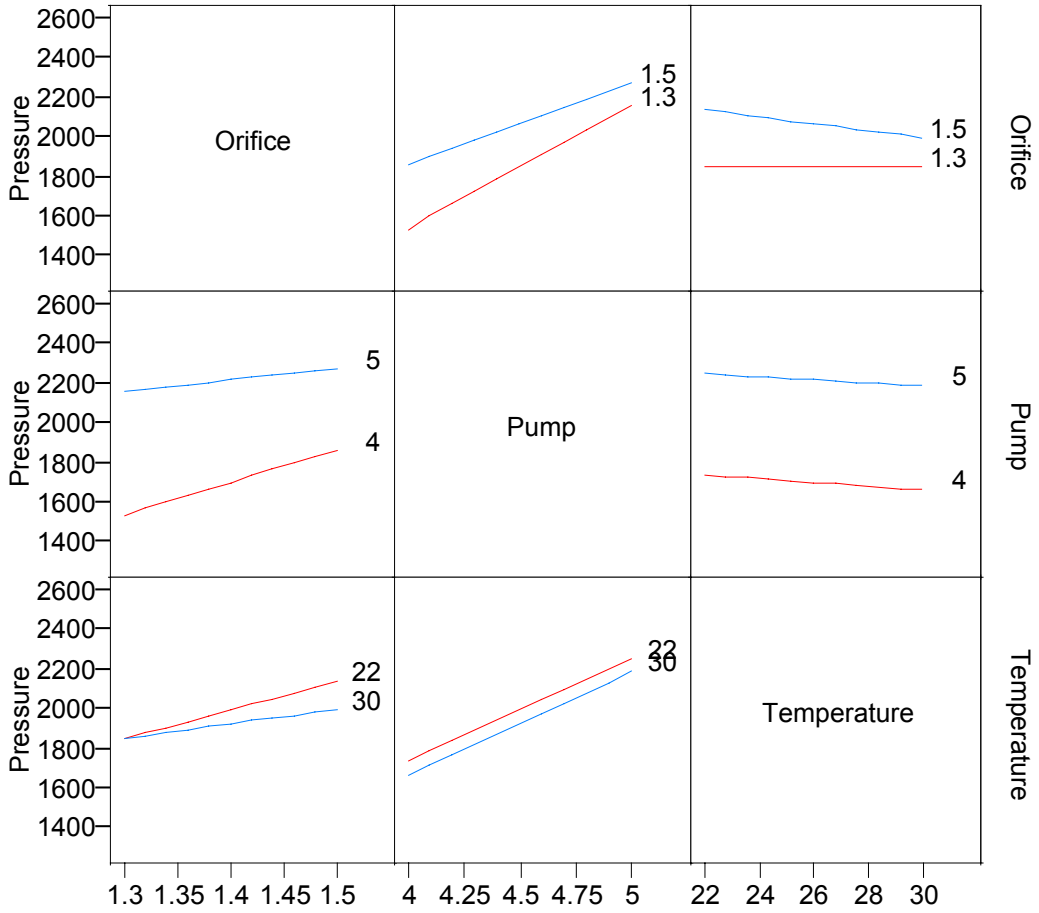
Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	7	2027550.0	289650	58.5152
Error	16	79200.0	4950	Prob > F
C. Total	23	2106750.0		<.0001

Prediction Profiler



Interaction Profiles



Response Pressure - Full Factorial (X1, X2, X3)

Summary of Fit

RSquare	0.962407
RSquare Adj	0.945959
Root Mean Square Error	70.35624
Mean of Response	1960
Observations (or Sum Wgts)	24

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	7	2027550.0	289650	58.5152
Error	16	79200.0	4950	Prob > F
C. Total	23	2106750.0		<.0001

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	1960	14.36141	136.48	<.0001
X1	110	14.36141	7.66	<.0001
X2	258.75	14.36141	18.02	<.0001
X1*X2	-53.75	14.36141	-3.74	0.0018
X3	-35	14.36141	-2.44	0.0269
X1*X3	-35	14.36141	-2.44	0.0269
X2*X3	3.75	14.36141	0.26	0.7973
X1*X2*X3	-8.75	14.36141	-0.61	0.5509

Response Pressure - Reduced Model (X1, X2, X1X2)

Summary of Fit

RSquare	0.933464
RSquare Adj	0.923483
Root Mean Square Error	83.71828
Mean of Response	1960
Observations (or Sum Wgts)	24

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	3	1966575.0	655525	93.5295
Error	20	140175.0	7009	Prob > F
C. Total	23	2106750.0		<.0001

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	1960	17.08892	114.69	<.0001
X1	110	17.08892	6.44	<.0001
X2	258.75	17.08892	15.14	<.0001
X1*X2	-53.75	17.08892	-3.15	0.0051

Effect Tests

Source	Nparm	DF	Sum of Squares	F Ratio	Prob > F
X1	1	1	290400.0	41.4339	<.0001
X2	1	1	1606837.5	229.2616	<.0001
X1*X2	1	1	69337.5	9.8930	0.0051