

TABLE XIV, e

Angular Deflection Measurements

Type of spring-pin - 0.014 inch, 2-coil Ortholoy

Batch number: 0911007

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
136.0°	0°		
131.5°	5°	135.0°	1.5°
126.5°	10°	134.0°	2.5°
121.5°	15°	134.0°	2.5°
116.5°	20°	133.5°	3.0°
111.5°	25°	133.0°	3.5°
106.5°	30°	132.5°	4.0°
101.5°	35°	132.0°	4.5°
96.5°	40°	131.5°	5.0°
91.5°	45°	131.0°	5.5°
86.5°	50°	130.5°	6.0°
81.5°	55°	129.5°	7.0°
76.5°	60°	129.0°	7.5°
71.5°	65°	129.0°	7.5°
66.5°	70°	128.5°	8.0°
61.5°	75°	128.0°	8.5°

Marked as: E

TABLE XIV, f

Angular Deflection Measurements

Type of spring-pin - 0.014 inch, 2-coil Ortholoy

Batch number: 0911007

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
141.0°	0°		
136.0°	5°	140.0°	1.0°
131.0°	10°	139.5°	1.5°
126.0°	15°	139.5°	1.5°
121.0°	20°	139.5°	1.5°
116.0°	25°	139.0°	2.0°
111.0°	30°	138.5°	2.5°
106.0°	35°	138.5°	2.5°
101.0°	40°	138.0°	3.0°
96.0°	45°	137.0°	4.0°
91.0°	50°	136.5°	4.5°
86.0°	55°	136.5°	4.5°
81.0°	60°	135.5°	5.5°
76.0°	65°	134.5°	6.5°
71.0°	70°	133.5°	7.5°
66.0°	75°	132.5°	8.5°

Marked as: F

TABLE XIV, g

Angular Deflection Measurements

Type of spring-pin - 0.014 inch, 2-coil Ortholoy

Batch number: 0911007

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
133.5°	0°		
128.5°	5°	132.0°	1.5°
123.5°	10°	131.0°	2.5°
118.5°	15°	130.5°	3.0°
113.5°	20°	130.0°	3.5°
108.5°	25°	129.5°	4.0°
103.5°	30°	129.5°	4.0°
98.5°	35°	129.0°	4.5°
93.5°	40°	127.5°	6.0°
88.5°	45°	128.0°	5.5°
83.5°	50°	127.0°	6.5°
78.5°	55°	126.0°	7.5°
73.5°	60°	125.0°	8.5°
68.5°	65°	124.5°	9.0°
63.5°	70°	124.5°	9.0°
58.5°	75°	124.0°	9.5°

Marked as: G

TABLE XIV, h

Angular Deflection Measurements

Type of spring-pin - 0.014 inch, 2-coil Ortholoy

Batch number: 0911007

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
132.5°	0°		
127.5°	5°	131.5°	1.0°
122.5°	10°	131.0°	1.5°
117.5°	15°	130.5°	2.0°
112.5°	20°	130.5°	2.0°
107.5°	25°	130.0°	2.5°
102.5°	30°	129.5°	3.0°
97.5°	35°	129.0°	3.5°
92.5°	40°	128.5°	4.0°
87.5°	45°	128.0°	4.5°
82.5°	50°	127.5°	5.0°
77.5°	55°	127.0°	5.5°
72.5°	60°	126.0°	6.5°
67.5°	65°	125.5°	7.0°
62.5°	70°	125.0°	7.5°
57.5°	75°	124.5°	8.0°

Marked as: H

TABLE XV, a

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
143.0°	0°		
138.0°	5°	142.5°	0.5°
133.0°	10°	141.0°	2.0°
128.0°	15°	140.0°	3.0°
123.0°	20°	139.5°	3.5°
118.0°	25°	139.0°	4.0°
113.0°	30°	138.5°	4.5°
108.0°	35°	138.0°	5.0°
103.0°	40°	138.0°	5.0°
98.0°	45°	137.0°	6.0°
93.0°	50°	136.5°	6.5°
88.0°	55°	136.0°	7.0°
83.0°	60°	135.5°	7.5°
78.0°	65°	134.5°	8.5°
73.0°	70°	134.0°	9.0°
68.0°	75°	133.5°	9.5°

Marked as: A

TABLE XV, b

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection.	Reading After Deflection	Angular Difference
144.0°	0°		
139.0°	5°	142.5°	1.5°
134.0°	10°	142.0°	2.0°
129.0°	15°	141.5°	2.5°
124.0°	20°	141.5°	2.5°
119.0°	25°	141.0°	3.0°
114.0°	30°	140.5°	3.5°
109.0°	35°	140.0°	4.0°
104.0°	40°	139.5°	4.5°
99.0°	45°	139.0°	5.0°
94.0°	50°	138.0°	6.0°
89.0°	55°	137.0°	7.0°
84.0°	60°	136.5°	7.5°
79.0°	65°	136.0°	8.0°
74.0°	70°	135.5°	8.5°
69.0°	75°	135.5°	8.5°

Marked as: B

TABLE XV, c

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
143.0°	0°		
138.0°	5°	142.5°	0.5°
133.0°	10°	141.0°	2.0°
128.0°	15°	140.5°	2.5°
123.0°	20°	140.0°	3.0°
118.0°	25°	139.0°	4.0°
113.0°	30°	138.5°	4.5°
108.0°	35°	137.5°	5.5°
103.0°	40°	137.0°	6.0°
98.0°	45°	136.5°	6.5°
93.0°	50°	136.0°	7.0°
88.0°	55°	135.5°	7.5°
83.0°	60°	134.5°	8.5°
78.0°	65°	133.5°	9.5°
73.0°	70°	133.0°	10.0°
68.0°	75°	133.0°	10.0°

Marked as: c

TABLE XV, d

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.5°	0°		
132.5°	5°	136.0°	1.5°
127.5	10°	135.5°	2.0°
122.5	15°	134.0°	3.5°
117.5°	20°	133.0°	4.5°
112.5°	25°	133.0°	4.5°
107.5°	30°	132.5°	5.0°
102.5°	35°	132.0°	5.5°
97.5°	40°	131.0°	6.5°
92.5°	45°	131.0°	6.5°
87.5°	50°	130.5°	7.0°
82.5°	55°	130.0°	7.5°
77.5°	60°	130.0°	7.5°
72.5°	65°	129.0°	8.5°
67.5°	70°	128.5°	9.0°
62.5°	75°	128.5°	9.0°

Marked as: D

TABLE XV, e

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.5°	0°		
132.5°	5°	136.5°	1.0°
127.5°	10°	135.5°	2.0°
122.5°	15°	134.5°	3.0°
117.5°	20°	133.5°	4.0°
112.5°	25°	133.0°	4.5°
107.5°	30°	133.0°	4.5°
102.5°	35°	132.5°	5.0°
97.5°	40°	132.0°	5.5°
92.5°	45°	131.5°	6.0°
87.5°	50°	131.5°	6.0°
82.5°	55°	131.0°	6.5°
77.5°	60°	130.5°	7.0°
72.5°	65°	130.5°	7.0°
67.5°	70°	129.5°	8.0°
62.5°	75°	128.5°	9.0°

Marked as: E

TABLE XV, f

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
146.0°	0°		
141.0°	5°	145.0°	1.0°
136.0°	10°	144.5°	1.5°
131.0°	15°	144.0°	2.0°
126.0°	20°	143.5°	2.5°
121.0°	25°	143.0°	3.0°
116.0°	30°	142.5°	3.5°
111.0°	35°	142.0°	4.0°
106.0°	40°	141.5°	4.5°
101.0°	45°	140.5°	5.5°
96.0°	50°	139.5°	6.5°
92.0°	55°	139.0°	7.0°
86.0°	60°	138.5°	7.5°
81.0°	65°	138.0°	8.0°
76.0°	70°	137.0°	8.5°
71.0°	75°	136.5°	9.5°

Marked as: F

TABLE XV, g

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
136.0°	0°		
131.0°	5°	135.0°	1.0°
126.0°	10°	132.5°	3.5°
121.0°	15°	131.0°	5.0°
116.0°	20°	130.5°	5.5°
111.0°	25°	129.5°	6.5°
106.0°	30°	129.0°	7.0°
101.0°	35°	129.0°	7.0°
96.0°	40°	128.5°	7.5°
91.0°	45°	128.5°	7.5°
86.0°	50°	128.0°	8.0°
81.0°	55°	127.0°	9.0°
76.0°	60°	126.0°	10.0°
71.0°	65°	125.0°	11.0°
66.0°	70°	124.5°	11.5°
61.0°	75°	123.5°	12.5°

Marked as: G

TABLE XV, h

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil, Australian

Batch number: 1132025

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
149.0°	0°		
144.0°	5°	148.0°	1.0°
139.0°	10°	147.0°	2.0°
134.0°	15°	145.0°	4.0°
129.0°	20°	144.5°	4.5°
124.0°	25°	143.5°	5.5°
119.0°	30°	143.5°	5.5°
114.0°	35°	142.5°	6.5°
109.0°	40°	142.0°	7.0°
104.0°	45°	141.0°	8.0°
99.0°	50°	140.5°	8.5°
94.0°	55°	139.5°	9.5°
89.0°	60°	138.5°	10.5°
84.0°	65°	138.0°	11.0°
79.0°	70°	137.5°	11.5°
74.0°	75°	137.0°	12.0°

Marked as: H

TABLE XVI, a
Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
131.5°	0°		
126.5°	5°	130.0°	1.5°
121.5°	10°	129.5°	2.0°
116.5°	15°	128.0°	3.5°
111.5°	20°	126.0°	5.5°
106.5°	25°	125.0°	6.5°
101.5°	30°	123.5°	8.0°
96.5°	35°	122.5°	9.0°
91.5°	40°	122.0°	9.5°
86.5°	45°	121.0°	10.5°
81.5°	50°	120.5°	11.0°
76.5°	55°	119.5°	12.0°
71.5°	60°	118.5°	13.0°
66.5°	65°	118.5°	13.0°
61.5°	70°	117.5°	14.0°
56.5°	75°	117.0°	14.5°

Marked as: A

TABLE XVI, b

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
126.0°	0°		
121.0°	5°	124.0°	2.0°
116.0°	10°	123.5°	2.5°
111.0°	15°	122.0°	4.0°
106.0°	20°	120.5°	5.5°
101.0°	25°	120.0°	6.0°
96.0°	30°	119.0°	7.0°
91.0°	35°	118.0°	8.0°
86.0°	40°	117.5°	8.5°
81.0°	45°	117.0°	9.0°
76.0°	50°	116.5°	9.5°
71.0°	55°	115.5°	10.5°
66.0°	60°	115.0°	11.0°
61.0°	65°	114.5°	11.5°
56.0°	70°	113.5°	12.5°
51.0°	75°	112.0°	14.0°

Marked as: B

TABLE XVI, c

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
128.0°	0°		
123.0°	5°	125.5°	2.5°
118.0°	10°	125.5°	2.5°
113.0°	15°	124.5°	3.5°
108.0°	20°	122.5°	5.5°
103.0°	25°	122.0°	6.0°
98.0°	30°	120.5°	7.5°
93.0°	35°	120.0°	8.0°
88.0°	40°	119.5°	8.5°
83.0°	45°	120.0°	8.0°
78.0°	50°	119.0°	9.0°
73.0°	55°	117.5°	10.5°
68.0°	60°	116.5°	11.5°
63.0°	65°	116.0°	12.0°
58.0°	70°	115.5°	12.5°
53.0°	75°	114.5°	13.5°

Marked as: C

TABLE XVI, d

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
132.5°	0°		
127.5°	5°	131.0°	1.5°
122.5°	10°	129.5°	3.0°
117.5°	15°	128.5°	4.0°
112.5°	20°	127.0°	5.5°
107.5°	25°	126.0°	6.5°
102.5°	30°	125.5°	7.0°
97.5°	35°	124.0°	8.5°
92.5°	40°	123.0°	9.5°
87.5°	45°	123.0°	9.5°
82.5°	50°	122.0°	10.5°
77.5°	55°	121.0°	11.5°
72.5°	60°	120.0°	12.5°
67.5°	65°	120.0°	12.5°
62.5°	70°	119.0°	13.5°
57.5°	75°	118.0°	14.5°

Marked as: D

TABLE XVI, e

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
134.0°	0°		
129.0°	5°	133.0°	1.0°
124.0°	10°	132.0°	2.0°
119.0°	15°	131.0°	3.0°
114.0°	20°	129.5°	4.5°
109.0°	25°	128.5°	5.5°
104.0°	30°	127.5°	6.5°
99.0°	35°	126.5°	7.5°
94.0°	40°	126.0°	8.0°
89.0°	45°	125.0°	9.0°
84.0°	50°	124.5°	9.5°
79.0°	55°	123.5°	10.5°
74.0°	60°	123.0°	11.0°
69.0°	65°	122.5°	11.5°
64.0°	70°	121.0°	13.0°
59.0°	75°	120.5°	13.5°

Marked as: E

TABLE XVI, f

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
129.5°	0°		
124.5°	5°	128.0°	1.5°
119.5°	10°	127.0°	2.5°
114.5°	15°	126.0°	3.5°
109.5°	20°	124.5°	5.0°
104.5°	25°	123.5°	6.0°
99.5°	30°	122.0°	7.5°
94.5°	35°	122.0°	7.5°
89.5°	40°	121.0°	8.5°
84.5°	45°	120.0°	9.5°
79.5°	50°	119.5°	10.0°
74.5°	55°	118.5°	11.0°
69.5°	60°	118.0°	11.5°
64.5°	65°	117.5°	12.0°
59.5°	70°	116.5°	13.0°
54.5°	75°	116.5°	13.0°

Marked as: F

TABLE XVI, g

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
136.5°	0°		
131.5°	5°	135.0°	1.5°
126.5°	10°	134.0°	2.5°
121.5°	15°	133.0°	3.5°
116.5°	20°	131.5°	5.0°
111.5°	25°	130.5°	6.0°
106.5°	30°	131.0°	5.5°
101.5°	35°	130.0°	6.5°
96.5°	40°	129.0°	7.5°
91.5°	45°	127.5°	9.0°
86.5°	50°	126.5°	10.0°
81.5°	55°	126.0°	10.5°
76.5°	60°	125.0°	11.5°
71.5°	65°	124.0°	12.5°
66.5°	70°	123.0°	13.5°

Marked as: G

TABLE XVI, h

Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
132.0°	0°		
127.0°	5°	130.0°	2.0°
122.0°	10°	129.0°	3.0°
117.0°	15°	128.5°	3.5°
112.0°	20°	127.0°	5.0°
107.0°	25°	125.5°	6.5°
102.0°	30°	124.5°	7.5°
97.0°	35°	123.5°	8.5°
92.0°	40°	123.0°	9.0°
87.0°	45°	122.5°	9.5°
82.0°	50°	121.5°	10.5°
77.0°	55°	121.0°	11.0°
72.0°	60°	120.0°	12.0°
67.0°	65°	119.5°	12.5°
62.0°	70°	118.5°	13.5°
57.0°	75°	118.5°	13.5°

Marked as: H

TABLE XVII, a

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
130.5°	0°		
125.5°	5°	129.5°	1.0°
120.5°	10°	129.5°	1.0°
115.5°	15°	129.0°	1.5°
110.5°	20°	129.0°	1.5°
105.5°	25°	128.5°	2.0°
100.5°	30°	128.5°	2.0°
95.5°	35°	127.5°	3.0°
90.5°	40°	127.0°	3.5°
85.5°	45°	127.0°	3.5°
80.5°	50°	126.5°	4.0°
75.5°	55°	126.0°	4.5°
70.5°	60°	125.0°	5.5°
65.5°	65°	124.5°	6.0°
60.5°	70°	123.5°	7.0°
65.5°	75°	123.0°	7.5°

Marked as: A

TABLE XVII, b

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
131.0°	0°		
126.0°	5°	130.5°	0.5°
121.0°	10°	130.5°	0.5°
116.0°	15°	130.0°	1.0°
111.0°	20°	130.0°	1.0°
106.0°	25°	129.5°	1.5°
101.0°	30°	129.5°	1.5°
96.0°	35°	129.5°	1.5°
91.0°	40°	129.0°	2.0°
86.0°	45°	129.0°	2.0°
81.0°	50°	128.5°	2.5°
76.0°	55°	128.0°	3.0°
71.0°	60°	127.5°	3.5°
66.0°	65°	126.5°	4.5°
61.0°	70°	126.0°	5.0°
56.0°	75°	125.5°	5.5°

Marked as: B

TABLE XVII, c

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
129.0°	0°		
124.0°	5°	129.0°	0.0°
119.0°	10°	128.5°	0.5°
114.0°	15°	128.5°	0.5°
109.0°	20°	128.0°	1.0°
104.0°	25°	127.5°	1.5°
99.0°	30°	127.5°	1.5°
94.0°	35°	127.0°	2.0°
89.0°	40°	127.0°	2.0°
84.0°	45°	126.5°	2.5°
79.0°	50°	126.0°	3.0°
74.0°	55°	125.5°	3.5°
69.0°	60°	125.0°	4.0°
64.0°	65°	124.5°	4.5°
59.0°	70°	123.5°	5.5°
54.0°	75°	123.5°	5.5°

Marked as: C

TABLE XVII, d

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
131.0°	0°		
126.0°	5°	130.5°	0.5°
121.0°	10°	130.0°	1.0°
116.0°	15°	130.0°	1.0°
111.0°	20°	129.0°	2.0°
106.0°	25°	129.0°	2.0°
101.0°	30°	128.5°	2.5°
96.0°	35°	128.5°	2.5°
91.0°	40°	128.0°	3.0°
86.0°	45°	127.5°	3.5°
81.0°	50°	127.0°	4.0°
76.0°	55°	126.5°	4.5°
71.0°	60°	126.0°	5.0°
66.0°	65°	125.5°	5.5°
61.0°	70°	124.5°	6.5°
56.0°	75°	124.5°	6.5°

Marked as: D

TABLE XVII, e

Angular Deflection Measurements

TP Spring-pin 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
138.0°	0°		
133.0°	5°	137.5°	0.5°
128.0°	10°	137.5°	0.5°
123.0°	15°	137.0°	1.0°
118.0°	20°	137.0°	1.0°
113.0°	25°	136.5°	1.5°
108.0°	30°	136.0°	2.0°
103.0°	35°	135.5°	2.5°
98.0°	40°	135.5°	2.5°
93.0°	45°	135.0°	3.0°
88.0°	50°	134.5°	3.5°
83.0°	55°	134.0°	4.0°
78.0°	60°	133.5°	4.5°
73.0°	65°	133.0°	5.0°
68.0°	70°	132.5°	5.5°
63.0°	75°	132.0°	6.0°

Marked as: E

TABLE XVII, f

Angular Deflection Measurements

TP Spring-pin 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
129.5°	0°		
124.5°	5°	129.0°	0.5°
119.5°	10°	129.0°	0.5°
114.5°	15°	128.5°	1.0°
109.5	20°	128.5°	1.0°
104.5°	25°	128.0°	1.5°
99.5°	30°	128.0°	1.5°
94.5°	35°	127.5°	2.0°
89.5°	40°	127.5°	2.0°
84.5°	45°	127.0°	2.5°
79.5°	50°	126.5°	3.0°
74.5°	55°	125.5°	4.0°
69.5°	60°	125.0°	4.5°
64.5°	65°	124.5°	5.0°
59.5°	70°	124.0°	5.5°
54.5°	75°	123.5°	6.0°

Marked as: F

TABLE XVII, g

Angular Deflection Measurements

TP Spring-pin 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
134.0°	0°		
129.0°	5°	133.5°	0.5°
124.0°	10°	133.5°	0.5°
119.0°	15°	133.0°	1.0°
114.0°	20°	133.0°	1.0°
109.0°	25°	133.0°	1.0°
104.0°	30°	132.5°	1.5°
99.0°	35°	132.5°	1.5°
94.0°	40°	132.0°	2.0°
89.0°	45°	131.5°	2.5°
84.0°	50°	131.0°	3.0°
79.0°	55°	130.5°	3.5°
74.0°	60°	130.0°	4.0°
69.0°	65°	129.0°	5.0°
64.0°	70°	128.5°	5.5°
59.0°	75°	128.5°	5.5°

Marked as: G

TABLE XVII, h

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Australian

Batch number: 0712010

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
140.5°	0°		
135.5°	5°	140.5°	0.0°
130.5°	10°	140.0°	0.5°
125.5°	15°	139.5°	1.0°
120.5°	20°	139.5°	1.0°
115.5°	25°	138.5°	2.0°
110.5°	30°	138.0°	2.5°
105.5°	35°	137.5°	3.0°
100.5°	40°	137.5°	3.0°
95.5°	45°	137.0°	3.5°
90.5°	50°	136.5°	4.0°
85.5°	55°	136.0°	4.5°
80.5°	60°	135.5°	5.0°
75.5°	65°	135.5°	5.0°
70.5°	70°	135.0°	5.5°
65.5°	75°	134.0°	6.5°

Marked as: H

TABLE XVIII, a

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.0°	0°		
132.0°	5°	136.5°	0.5°
127.0°	10°	136.0°	1.0°
122.0°	15°	135.5°	1.5°
117.0°	20°	135.5°	1.5°
112.0°	25°	135.0°	2.0°
107.0°	30°	135.0°	2.0°
102.0°	35°	134.5°	2.5°
97.0°	40°	134.0°	3.0°
92.0°	45°	133.5°	3.5°
87.0°	50°	133.0°	4.0°
82.0°	55°	132.5°	4.5°
77.0°	60°	132.0°	5.0°
72.0°	65°	131.5°	5.5°
67.0°	70°	131.5°	5.5°
62.0°	75°	130.5°	6.5°

Marked as: A

TABLE XVIII, b

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
134.5°	0°		
129.5°	5°	133.5°	1.0°
124.5°	10°	133.5°	1.0°
119.5°	15°	133.0°	1.5°
114.5°	20°	133.0°	1.5°
109.5°	25°	132.5°	2.0°
104.5°	30°	132.0°	2.5°
99.5°	35°	132.0°	2.5°
94.5°	40°	131.5°	3.0°
89.5°	45°	131.0°	3.5°
84.5°	50°	130.5°	4.0°
79.5°	55°	130.0°	4.5°
74.5°	60°	129.5°	5.0°
69.5°	65°	129.0°	5.5°
64.5°	70°	128.5°	6.0°
59.5°	75°	127.5°	7.0°

Marked as: B

TABLE XVIII, c

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
139.0°	0°		
134.0°	5°	138.0°	1.0°
129.0°	10°	137.0°	2.0°
124.0°	15°	136.5°	2.5°
119.0°	20°	136.0°	3.0°
114.0°	25°	135.5°	3.5°
109.0°	30°	135.5°	3.5°
104.0°	35°	135.0°	4.0°
99.0°	40°	135.0°	4.0°
94.0°	45°	134.0°	5.0°
89.0°	50°	133.5°	5.5°
84.0°	55°	133.5°	5.5°
79.0°	60°	132.5°	6.5°
74.0°	65°	132.0°	7.0°
69.0°	70°	132.0°	7.0°
64.0°	75°	131.0°	8.0°

Marked as: C

TABLE XVIII, d

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
129.0°	0°		
124.0°	5°	128.0°	1.0°
119.0°	10°	127.5°	1.5°
114.0°	15°	127.0°	2.0°
109.0°	20°	126.5°	2.5°
104.0°	25°	126.0°	3.0°
99.0°	30°	126.0°	3.0°
94.0°	35°	126.0°	3.0°
89.0°	40°	125.5°	3.5°
84.0°	45°	124.5°	4.5°
79.0°	50°	124.5°	4.5°
74.0°	55°	123.5°	5.5°
69.0°	60°	123.0°	6.0°
64.0°	65°	122.5°	6.5°
59.0°	70°	121.5°	7.5°
54.0°	75°	120.5°	8.5°

Marked as: D

TABLE XVIII, e

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
138.0°	0°		
133.0°	5°	136.5°	1.5°
128.0°	10°	136.0°	2.0°
123.0°	15°	136.0°	2.0°
118.0°	20°	135.5°	2.5°
113.0°	25°	135.0°	3.0°
108.0°	30°	135.0°	3.0°
103.0°	35°	135.0°	3.0°
98.0°	40°	133.5°	4.5°
93.0°	45°	132.5°	5.5°
88.0°	50°	132.0°	6.0°
83.0°	55°	132.0°	6.0°
78.0°	60°	130.5°	7.5°
73.0°	65°	129.5°	8.5°
68.0°	70°	129.0°	8.0°
63.0°	75°	129.5°	8.5°

Marked as: E

TABLE XVIII, f

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.5°	0°		
132.5°	5°	137.5°	0.0°
127.5°	10°	137.0°	0.5°
122.5°	15°	136.5°	1.0°
117.5°	20°	136.5°	1.0°
112.5°	25°	136.0°	1.5°
107.5°	30°	136.0°	1.5°
102.5°	35°	135.5°	2.0°
97.5°	40°	134.5°	3.0°
92.5°	45°	134.0°	3.5°
87.5°	50°	133.5°	4.0°
82.5°	55°	133.0°	4.5°
77.5°	60°	132.0°	5.5°
72.5°	65°	131.0°	6.5°
67.5°	70°	130.5°	7.0°
62.5°	75°	130.5°	7.0°

Marked as: F

TABLE XVIII, g

Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
132.0°	0°		
127.0°	5°	131.0°	1.0°
122.0°	10°	130.5°	1.5°
117.0°	15°	130.5°	1.5°
112.0°	20°	130.0°	2.0°
107.0°	25°	130.0°	2.0°
102.0°	30°	129.5°	2.5°
97.0°	35°	129.0°	3.0°
92.0°	40°	128.5°	3.5°
87.0°	45°	128.5°	3.5°
82.0°	50°	127.5°	4.5°
77.0°	55°	127.0°	5.0°
72.0°	60°	126.0°	6.0°
67.0°	65°	125.5°	6.5°
62.0°	70°	125.5°	6.5°
57.0°	75°	125.0°	7.0°

Marked as: G

Angular Deflection MeasurementTP Spring-pin - 0.016 inch, 2-coil OrtholoyBatch number: 143002

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.5°	0°		
132.5°	5°	137.0°	0.5°
127.5°	10°	136.5°	1.0°
122.5°	15°	136.0°	1.5°
117.5°	20°	136.0°	1.5°
112.5°	25°	135.0°	2.5°
107.5°	30°	135.0°	2.5°
102.5°	35°	134.5°	3.0°
97.5°	40°	134.5°	3.0°
92.5°	45°	134.0°	3.5°
87.5°	50°	133.5°	4.0°
82.5°	55°	133.5°	4.0°
77.5°	60°	132.0°	5.5°
72.5°	65°	132.0°	5.5°
67.5°	70°	131.0°	6.5°
62.5°	75°	130.0°	7.5°

Marked as: H

TABLE XIX, a

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.0°	0°		
132.0°	5°	136.0°	1.0°
127.0°	10°	135.5°	1.5°
122.0°	15°	134.5°	2.5°
117.0°	20°	134.5°	2.5°
112.0°	25°	133.5°	3.5°
107.0°	30°	132.5°	4.5°
102.0°	35°	132.0°	5.0°
97.0°	40°	131.5°	5.5°
92.0°	45°	131.0°	6.0°
87.0°	50°	131.0°	6.0°
82.0°	55°	130.5°	6.5°
77.0°	60°	130.0°	7.0°
72.0°	65°	130.0°	7.0°
67.0°	70°	129.5°	7.5°
62.0°	75°	129.0°	8.0°

Marked as: A

TABLE XIX, b

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
133.5°	0°		
128.5°	5°	132.5°	1.0°
123.5°	10°	132.5°	1.0°
118.5°	15°	132.0°	1.5°
113.5°	20°	131.5°	2.0°
108.5°	25°	131.5°	2.0°
103.5°	30°	131.0°	2.5°
98.5°	35°	129.5°	4.0°
93.5°	40°	129.5°	4.0°
88.5°	45°	128.0°	5.5°
83.5°	50°	127.5°	6.0°
78.5°	55°	127.0°	6.5°
73.5°	60°	126.5°	7.0°
68.5°	65°	125.5°	8.0°
63.5°	70°	124.5°	9.0°
58.5°	75°	124.0°	9.5°

Marked as: B

TABLE XIX, c

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
142.0°	0°		
137.0°	5°	140.5°	1.5°
132.0°	10°	140.5°	1.5°
127.0°	15°	139.5°	2.5°
122.0°	20°	140.0°	2.0°
117.0°	25°	139.0°	3.0°
122.0°	30°	138.0°	4.0°
107.0°	35°	137.5°	4.5°
102.0°	40°	136.5°	5.5°
97.0°	45°	136.5°	5.5°
92.0°	50°	136.0°	6.0°
87.0°	55°	135.5°	6.5°
82.0°	60°	135.5°	6.5°
77.0°	65°	135.0°	7.0°
72.0°	70°	135.0°	7.0°
67.0°	75°	134.5°	7.5°

Marked as: C

TABLE XIX, d

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
131.5°	0°		
126.5°	5°	130.5°	1.0°
121.5°	10°	130.0°	1.5°
116.5°	15°	129.0°	2.5°
111.5°	20°	128.5°	3.0°
106.5°	25°	128.0°	3.5°
101.5°	30°	127.0°	4.5°
96.5°	35°	127.0°	4.5°
91.5°	40°	126.5°	5.0°
86.5°	45°	125.5°	6.0°
81.5°	50°	125.0°	6.5°
76.5°	55°	124.5°	7.0°
71.5°	60°	123.5°	8.0°
66.5°	65°	123.5°	8.0°
61.5°	70°	122.5°	9.0°
56.5°	75°	122.0°	9.5°

Marked as: D

TABLE XIX, e

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
143.5°	0°		
138.5°	5°	143.0°	0.5°
133.5°	10°	142.0°	1.5°
128.5°	15°	142.0°	1.5°
123.5°	20°	141.0°	2.5°
118.5°	25°	140.5°	3.0°
113.5°	30°	140.0°	3.5°
108.5°	35°	139.0°	4.5°
103.5°	40°	139.0°	4.5°
98.5°	45°	138.5°	5.0°
93.5°	50°	138.0°	5.5°
88.5°	55°	137.5°	6.0°
83.5°	60°	136.5°	7.0°
78.5°	65°	136.5°	7.0°
73.5°	70°	136.0°	7.5°
68.5°	75°	135.5°	8.0°

Marked as: E

TABLE XIX, f

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
142.0°	0°		
137.0°	5°	141.0°	1.0°
132.0°	10°	141.0°	1.0°
127.0°	15°	141.0°	1.0°
122.0°	20°	140.5°	1.5°
117.0°	25°	140.0°	2.0°
112.0°	30°	139.5°	2.5°
107.0°	35°	138.5°	3.5°
102.0°	40°	139.0°	3.0°
97.0°	45°	137.5°	4.5°
92.0°	50°	136.5°	5.5°
87.0°	55°	135.0°	7.0°
82.0°	60°	134.5°	7.5°
77.0°	65°	133.5°	8.5°
72.0°	70°	133.5°	8.5°
67.0°	75°	133.0°	9.0°

Marked as: F

TABLE XIX, g

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
131.0°	0°		
126.0°	5°	130.5°	0.5°
121.0°	10°	129.5°	1.5°
116.0°	15°	129.5°	1.5°
111.0°	20°	129.0°	2.0°
106.0°	25°	128.5°	2.5°
101.0°	30°	128.0°	3.0°
96.0°	35°	127.5°	3.5°
91.0°	40°	127.0°	4.0°
86.0°	45°	127.0°	4.0°
81.0°	50°	126.5°	4.5°
76.0°	55°	126.0°	5.0°
71.0°	60°	125.0°	6.0°
66.0°	65°	124.5°	6.5°
61.0°	70°	124.0°	7.0°
56.0°	75°	123.0°	8.0°

Marked as: G

TABLE XIX, h

Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

Initial Reading	Angular Deflection	Reading After Deflection	Angular Difference
137.5°	0°		
132.5°	5°	136.5°	1.0°
127.5°	10°	136.0°	1.5°
122.5°	15°	135.0°	2.5°
117.5°	20°	134.5°	3.0°
112.5°	25°	134.0°	3.5°
107.5°	30°	133.5°	4.0°
102.5°	35°	133.0°	4.5°
97.5°	40°	133.0°	4.5°
92.5°	45°	133.0°	4.5°
87.5°	50°	132.5°	5.0°
82.5°	55°	131.5°	6.0°
77.5°	60°	131.0°	6.5°
72.5°	65°	130.5°	7.0°
67.5°	70°	129.5°	8.0°
62.5°	75°	128.5°	9.0°

Marked as: H

TABLE XX, a

Means and Standard Deviations Derived From
Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil Ortholoy

Batch number: 0911007

<u>Angle</u> (degrees)	<u>Mean</u> (degrees)	<u>S.D.</u> (degrees)
5°	1.4°	0.35°
10°	2.0°	0.46°
15°	2.4°	0.50°
20°	2.6°	0.64°
25°	3.1°	0.69°
30°	3.5°	0.66°
35°	4.0°	0.80°
40°	4.4°	1.02°
45°	5.0°	0.80°
50°	5.4°	0.82°
55°	6.0°	1.07°
60°	6.9°	0.95°
65°	7.4°	0.92°
70°	8.0°	0.60°
75°	8.7°	0.46°

Marked as: 1

TABLE XX, b

Means and Standard Deviation Derived From
Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 2-coil Australian

Batch number: 1132025

<u>Angle</u> (degrees)	<u>Mean</u> (degrees)	<u>S.D.</u> (degrees)
5°	1.0°	0.38°
10°	2.1°	0.58°
15°	3.2°	0.96°
20°	3.8°	1.07°
25°	4.4°	1.19°
30°	4.8°	1.13°
35°	5.3°	1.07°
40°	5.8°	1.13°
45°	6.4°	0.99°
50°	6.9°	0.90°
55°	7.6°	1.06°
60°	8.3°	1.31°
65°	8.9°	1.45°
70°	9.6°	1.32°
75°	10.0°	1.46°

Marked as: 2

TABLE XX, c

Means and Standard Deviation Derived From
Angular Deflection Measurements

TP Spring-pin - 0.014 inch, 3-coil Ortholoy

Batch number: 3511018

<u>Angle</u> (degrees)	<u>Mean</u> (degrees)	<u>S.D.</u> (degrees)
5°	1.7°	0.46°
10°	2.5°	0.38°
15°	3.6°	0.32°
20°	5.2°	0.37°
25°	6.1°	0.35°
30°	7.1°	0.78°
35°	7.9°	0.78°
40°	8.6°	0.69°
45°	9.3°	0.71°
50°	10.0°	0.66°
55°	10.9°	0.56°
60°	11.8°	0.71°
65°	12.2°	0.53°
70°	13.2°	0.53°
75°	13.9°	0.58°

Marked as: 3

TABLE XX, d

Means and Standard Deviation Derived From
Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Australian

Batch number: 0712010

<u>Angle</u> (degrees)	<u>Mean</u> (degrees)	<u>S.D.</u> (degrees)
5°	0.5°	0.32°
10°	0.6°	0.23°
15°	1.0°	0.27°
20°	1.2°	0.37°
25°	1.6°	0.35°
30°	1.9°	0.44°
35°	2.3°	0.60°
40°	2.5°	0.60°
45°	2.9°	0.58°
50°	3.4°	0.58°
55°	3.9°	0.56°
60°	4.5°	0.66°
65°	5.1°	0.50°
70°	5.8°	0.66°
75°	6.1°	0.69°

Marked as: 4

TABLE XX, e

Means and Standard Deviation Derived From
Angular Deflection Measurements

TP Spring-pin - 0.016 inch, 2-coil Ortholoy

Batch number: 143002

<u>Angle</u> (degrees)	<u>Mean</u> (degrees)	<u>S.D.</u> (degrees)
5°	0.8°	0.46°
10°	1.3°	0.53°
15°	1.7°	0.46°
20°	1.9°	0.68°
25°	2.4°	0.68°
30°	2.6°	0.62°
35°	2.9°	0.58°
40°	3.4°	0.56°
45°	4.1°	0.82°
50°	4.6°	0.78°
55°	4.9°	0.68°
60°	5.9°	0.84°
65°	6.4°	1.00°
70°	6.6°	0.80°
75°	7.5°	0.76°

Marked as: 5

TABLE XX, f

Means and Standard Deviation Derived From
Angular Deflection Measurements

TP Spring-pin - 0.018 inch, 2-coil Ortholoy

Batch number: 318900

<u>Angle</u> (degrees)	<u>Mean</u> (degrees)	<u>S.D.</u> (degrees)
5°	0.9°	0.32°
10°	1.4°	0.23°
15°	1.9°	0.62°
20°	2.3°	0.53°
25°	2.9°	0.64°
30°	3.6°	0.82°
35°	4.3°	0.54°
40°	4.5°	0.85°
45°	5.1°	0.74°
50°	5.6°	0.64°
55°	6.3°	0.65°
60°	6.9°	0.62°
65°	7.4°	0.70°
70°	7.9°	0.82°
75°	8.6°	0.78°

Marked as: 6

TABLE XXI, a

Analysis of Variance for Force-Deflection Readings

30 gm Loading

<u>Source of Variation</u> (S of V)	<u>Degrees of Freedom</u> (d.f.)	<u>Sum of Squares</u> (S.S.)	<u>Mean Square</u> (M.S)	<u>F</u> (\bar{F})
Between 1, 2, & 3	2	12.5625	6.2813	
Between 4 & 5	1	1.000	1.000	
Between groups	<u>2</u>	<u>89.4167</u>	<u>44.7083</u>	
Due to differences between springs)))) 5	102.9792	20.5958	69.2
Within Sample (or Error)	<u>42</u>	<u>12.5</u>	0.2976	
Total	47	115.4792		

$$F_{5,42}(.95) = 2.44$$

<u>Mean deflections</u>	1	2	3	4	5	6
Spring type	7.6875	6	6.375	4.0625	4.5625	3.4375

95% Scheffe simultaneous bounds for differences ± 0.9528

Conclude that there are no differences in mean angle deflections between

(a) Springs 2 and 3

(b) Springs 4 and 5

Differences between groups are highly significant.

TABLE XXI, b

Analysis of Variance for Force-Deflection Readings

Loading: 80 gms

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 1,2 & 3	2	9.1875	4.5938	
Between 4 & 5	1	25	25	
Between groups	<u>2</u>	<u>679.2135</u>	<u>339.6068</u>	
due to springs	5	713.4010	142.6802	65.97
Within samples (or Error)	<u>42</u>	<u>90.8438</u>	2.1629	
Total	47	804.2448		

Mean deflections:

Spring type	1	2	3	4	5	6
	18.4375	16.9375	17.5	10.1875	12.6875	8.3125

95% Scheffé simultaneous bounds for differences ± 2.568

Conclude that there are no differences in mean angle deflections between

- (a) Spring 1,2 and 3
- (b) Springs 4 and 5 (marginally)

Differences between groups are highly significant.

TABLE XXI, c

Analysis of Variance for Force-Deflection Readings

Loading: 130 gms

<u>(S of V)</u>	<u>(d.f)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 1,2 and 3	2	32.333	16.17	
Between 4 and 5	1	23.766	23.766	
Between groups	<u>2</u>	<u>1,970.651</u>	<u>985.33</u>	
due to springs	5	2,026.75	405.35	125.18
Within samples	<u>42</u>	<u>136.0</u>	3.238	
Total	47	2,162.75		

Mean deflections:

Spring type	1	2	3	4	5	6
	27.5625	26.8125	29.5625	16.5	18.9375	11.875

95% Scheffé simultaneous bounds for differences ± 3.1426

Conclude that there are no differences in mean angle deflections between

(a) Springs 1,2, and 3

(b) Spring 4 and 5

Differences between groups are highly significant.

TABLE XXI, d

Analysis of Variance for Force-Deflection Readings

Loading: 180 gms

<u>(S of V)</u>	<u>(d.f)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 1,2 & 3	2	166.333	83.167	
Between 4 & 5	1	2.25	2.25	
Between groups	<u>2</u>	<u>3860.834</u>	1930.42	201.47
due to springs	5	4029.417	805.883	
Within samples	<u>42</u>	<u>168</u>	4.0	
Total	47	4197.417		

Mean deflections:

Spring type	1	2	3	4	5	6
	35.25	37	41.5	22.75	23.5	15.75

95% Scheffé simultaneous bounds for differences ± 3.4928

Conclude that there are no differences in mean angle deflections between

(a) Springs 1 and 2

(b) Springs 5 and 4

Differences between groups are highly significant.

TABLE XXI, e

Analysis of Variance for Force-Deflection Readings

Loading: 230 gms

<u>(S of V)</u>	<u>(d.f)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 1,2 & 3	2	172.3958	86.198	
Between 4 & 5	1	5.0625	5.0625	
Between groups	<u>2</u>	<u>5,578.0209</u>	2,789.01	
due to springs	5	5,755.4792	1,151.096	212.5
Within samples	<u>42</u>	<u>227.5</u>	5.417	
Total	47	5,982.9792		

Mean deflections:

Spring type	1	2	3	4	5	6
	42.5	45.9375	49.0625	27.5625	28.6875	19.125

95% Scheffe simultaneous bounds for differences ± 4.0646

Conclude that there are no differences in mean angle deflections between

(a) Springs 3 and 2

(b) Springs 4 and 5

Differences between groups are highly significant.

TABLE XXI, f

Analysis of Variance for Force-Deflection Readings

Loading: 280 gms

<u>(S of V)</u>	<u>(d.f)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 1,2 & 3	2	160.1458	80.073	
Between 4 & 5	1	5.6406	5.6406	
Between groups	<u>2</u>	<u>6,620.901</u>	3,310.45	
due to springs	5	6,786.6875	7,357.33	187.76
Within sample	<u>42</u>	<u>303.625</u>	7.229	
Total	47	7,090.3125		

Mean deflections:

Spring type	1	2	3	4	5	6
	48.4375	52.875	54.5625	32.125	33.3125	22.8125

95% Scheffé simultaneous bounds for differences ± 4.6956

Conclude that there are no differences in mean angle deflections between

(a) Springs 2 and 3

(b) Springs 4 and 5

Differences between groups are highly significant.

TABLE XXI, g

Analysis of Variance for Force-Deflection Readings

Loading: 380 gms

(S of V)	(d.f)	(S.S.)	(M.S.)	(F)
Between 1,2 & 3	2	186.5208	93.26	
Between 4 & 5	1	0.5625	0.5625	
Between groups	<u>2</u>	<u>8,290.8177</u>	4,145.41	
due to springs	5	8,477.901	1,695.58	230.86
Within samples	<u>42</u>	<u>308.469</u>	7.3445	
Total	47	8,786.37		

Mean deflections:

Spring type	1	2	3	4	5	6
	58.0625	64.5625	63.125	40.5625	40.1875	29.3125

95% Scheffe simultaneous bounds for differences ± 4.7329

Conclude that there are no differences in mean angle deflections between

(a) Springs 2 and 3

(b) Springs 4 and 5

Difference between groups are highly significant.

TABLE XXI, h

Analysis of Variance for Force-Deflection Readings

Loading: 480 gms

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 1,2, & 3	2	212.33	106.17	
Between 4 & 5	1	4	4	
Between groups	<u>2</u>	<u>9,582.95</u>	4,791.47	
due to springs	5	9,799.28	1,959.86	223.8
Within samples	<u>42</u>	<u>367.84</u>	8.758	
Total	47	10,167.12		

Mean deflections:

Spring type	1	2	3	4	5	6
	65.8125	73.0625	70.0625	45.8125	46.8125	34.75

95% Scheffé simultaneous bounds for differences ± 5.1684

Conclude that there are no differences in mean angle deflections between

(a) Springs 2 and 3

(b) Springs 4 and 5

Differences between groups are highly significant.

TABLE XXI, i

Analysis of Variance for Force-Deflection Readings

Loading: 580 gms

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 4 & 5	1	0.3906	0.3906	
Between groups	<u>1</u>	<u>748.1304</u>	748.1304	
due to springs	2	748.521	374.26	42.2
Within samples	<u>21</u>	<u>186.437</u>	8.878	
Total	23	934.958		

$$F_{2,21}(.95) = 3.47$$

Mean deflections:

Spring type	4	5	6
	52.5625	52.25	40.5625

95% Scheffe simultaneous bounds for differences ± 3.9247

Conclude that there is no difference in mean angle deflection between springs 4 and 5 but that these springs differ significantly from spring 6.

TABLE XXI, j

Analysis of Variance for Force-Deflection Readings

Loading: 680 gms

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
Between 4 & 5	1	4.5156	4.5156	
Between groups	<u>1</u>	<u>764.0052</u>	764.0052	
due to springs	2	768.5208	384.2604	54.96
Within samples	<u>21</u>	<u>146.8125</u>	6.991	
Total	23	915.3333		

Mean deflections:

Spring type	4	5	6
	57.4375	56.375	44.9375

95% Scheffe simultaneous bounds for differences ± 3.4827

Conclude that there is no difference in mean angle deflection between springs 4 and 5 but that these springs differ significantly from spring 6.

TABLE XXII, a

Analysis of Variance for Angular Deflection Readings

Angular Deflection 5°

$$F_{5,42}(.95) = 2.44$$

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	7.6667	1.5333	10.304
Within samples	<u>42</u>	<u>6.25</u>	0.1488	
Total	47	13.9167		

Mean of angular deflections:

Spring type:	1	2	3	4	5	6
	1.375	1	1.6875	0.4375	0.8125	0.9375

95% Scheffe simultaneous bounds for differences ± 0.6737

Angular Deflection 10°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	18.4844	3.6969	20.45
Within samples	<u>42</u>	<u>7.5937</u>	0.1808	
Total	47	26.0781		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	2	2.125	2.5	0.625	1.3125	1.375

95% Scheffe simultaneous bounds for differences ± 0.7426

TABLE XXII, b

Analysis of Variance for Angular Deflection Readings

Angular Deflection 15°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	36.7760	7.3552	22.72
Within samples	<u>42</u>	<u>13.5938</u>	0.3237	
Total	47	50.3698		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	2.4375	3.1875	3.5625	1	1.6875	1.9375

95% Scheffe simultaneous bounds for differences ± 0.9936

Angular Deflection 20°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	81.6667	16.3333	38.11
Within samples	<u>42</u>	<u>18.00</u>	0.4286	
Total	47	99.6667		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	2.625	3.75	5.1875	1.1875	1.9375	2.3125

95% Scheffe simultaneous bounds for differences ± 1.1433

TABLE XXII, c

Analysis of Variance for Angular Deflection Readings

Angular Deflection 25°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	102.4010	20.4802	40.78
Within samples	<u>42</u>	<u>21.0938</u>	0.5022	
Total	47	123.4948		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	3.125	4.375	6.125	1.625	2.4375	2.875

95% Scheffe simultaneous bounds for differences ± 1.2377

Angular Deflection 30°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	135.0885	27.0177	45.33
Within samples	<u>42</u>	<u>25.0313</u>	0.5960	
Total	47	160.1198		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	3.5	4.75	7.0625	1.875	2.5625	3.5625

95% Scheffe simultaneous bounds for differences ± 1.3482

TABLE XXII, d

Analysis of Variance for Angular Deflection Readings

Angular Deflection 35°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	163.75	32.75	58.38
Within samples	<u>42</u>	<u>23.5625</u>	0.5610	
Total	47	187.3125		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	4	5.3125	7.9375	2.25	2.875	4.25

95% Scheffe simultaneous bounds for differences ± 1.3081

Angular Deflection 40°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	183.8385	36.7677	52.74
within samples	<u>42</u>	<u>29.2813</u>	0.6972	
Total	47	213.1198		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	4.4375	5.8125	8.625	2.5	3.4375	4.5

95% Scheffe simultaneous bounds for differences ± 1.4582

TABLE XXII, e

Analysis of Variance for Angular Deflection Readings

Angular Deflection 45°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	193.2760	38.6552	62.82
within samples	<u>42</u>	<u>25.8438</u>	0.6153	
Total	47	219.1198		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	5	6.375	9.25	2.875	4.0625	5.125

95% Scheffe' simultaneous bounds for differences: ± 1.370

Angular Deflection 50°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	210.3385	42.0677	77.13
within samples	<u>42</u>	<u>22.9063</u>	0.5454	
Total	47	233.2448		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	5.4375	6.9375	10	3.375	4.5625	5.625

95% Scheffe simultaneous bounds for differences: ± 1.290

TABLE XXII, f

Analysis of Variance for Angular Deflection Readings

Angular Deflection 55°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	236.9635	47.3927	73.30
within samples	<u>42</u>	<u>27.1563</u>	0.6466	
Total	47	264.1198		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	6	7.625	10.875	3.9375	4.9375	6.3125

95% Scheffe simultaneous bounds for differences: ± 1.4043

Angular Deflection 60°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to spring	5	246.9010	49.3802	63.88
within samples	<u>42</u>	<u>32.4688</u>	0.7731	
Total	47	279.3698		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	6.875	8.25	11.75	4.5	5.875	6.9375

95% Scheffe simultaneous confidence bounds for differences:

± 1.5355

TABLE XXII, g

Analysis of Variance for Angular Deflection Readings

Angular Deflection 65°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	241.6042	48.3208	58.19
within sample	<u>42</u>	<u>34.875</u>	0.8304	
Total	47	276.4792		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	7.375	8.9375	12.1875	5.0625	6.4375	7.375

95% Scheffe' simultaneous confidence bounds for differences:

$$\pm 1.5914$$

Angular Deflection 70°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	273.2917	54.6583	77.33
within samples	<u>42</u>	<u>29.6875</u>	0.7068	
Total	47	302.9792		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	8	9.5	13.1875	5.75	6.75	7.9375

95% Scheffe simultaneous confidence bounds for differences:

$$\pm 1.4683$$

TABLE XXII, h

Analysis of Variance for Angular Deflection Readings

Angular Deflection 75°

<u>(S of V)</u>	<u>(d.f.)</u>	<u>(S.S.)</u>	<u>(M.S.)</u>	<u>(F)</u>
due to springs	5	283.8125	56.7625	78.33
within samples	<u>42</u>	<u>30.4375</u>	0.7247	
Total	47	314.25		

Mean of angular deflections:

Spring type	1	2	3	4	5	6
	8.6875	10	13.875	6.125	7.5	8.5625

95% Scheffe simultaneous confidence bounds for differences:

$$\pm 1.4867$$

