List of Tables

Page

Table 2.1 Index values and the corresponding bounds on NCPPM for a normally distributed process……..……..……..……...8

Table 2.2 Some minimum capability requirements of C_{pk} for existing, new, special processes……..……..……..……...9

Table 2.3 Five commonly used capability requirements with nonconformities and the corresponding process conditions……..……10

Table 3.1(a) Critical values of $\hat{C}_{pk}$ for w =1.00, p = 0.90…..……..……64

Table 3.1(b) Critical values of $\hat{C}_{pk}$ for w =1.00, p = 0.95…..……..…64

Table 3.1(c) Critical values of $\hat{C}_{pk}$ for w =1.00, p = 0.99…..……..…64

Table 3.2(a) Critical values of $\hat{C}_{pk}$ for w =1.33, p = 0.90…..……..…65

Table 3.2(b) Critical values of $\hat{C}_{pk}$ for w =1.33, p = 0.95…..……65

Table 3.2(c) Critical values of $\hat{C}_{pk}$ for w =1.33, p = 0.99…..……65

Table 3.3(a) Critical values of $\hat{C}_{pk}$ for w =1.67, p = 0.90…..……..…66

Table 3.3(b) Critical values of $\hat{C}_{pk}$ for w =1.67, p = 0.95…..……66

Table 3.3(c) Critical values of $\hat{C}_{pk}$ for w =1.67, p = 0.99…..……..…66

Table 3.4(a) Critical values of $\hat{C}_{pk}$ for w =2.00, p = 0.90…..……67

Table 3.4(b) Critical values of $\hat{C}_{pk}$ for w =2.00, p = 0.95…..……67

Table 3.4(c) Critical values of $\hat{C}_{pk}$ for w =2.00, p = 0.99…..……67

Table 3.5 Critical values of $\tilde{C}_I$ for w = 1.25, p = 0.99, 0.975, 0.95……...68

Table 3.6 Critical values of $\tilde{C}_I$ for w = 1.45, p = 0.99, 0.975, 0.95……...68

Table 3.7 Critical values of $\tilde{C}_I$ for w = 1.60, p = 0.99, 0.975, 0.95……...68

Table 3.8 A total of 150 observations for the grooves of the piston……..……32

Table 3.9 A total of 100 observations of EEPROM chips……..……33

Table 4.1 The minimum values of $C^*(p)$ for $\hat{C}_p^*/w$, with $m = 2(2)10, 15$, $n = 10(5)30$ required to ensure p = 0.99……69

Table 4.2 The minimum values of $C^*(p)$ for $\hat{C}_p^*/w$, with $m = 2(2)10, 15$, $n = 10(5)30$ required to ensure p = 0.975…..……69

Table 4.3 The minimum values of $C^*(p)$ for $\hat{C}_p^*/w$, with $m = 2(2)10, 15$, $n = 10(5)30$ required to ensure p = 0.95…..……69

Table 4.4(a) Critical values of $\hat{C}_{pk}^*$ for multiple samples with m = 2(2)10, n = 10, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.00, p = 0.95……..……70

Table 4.4(b) Critical values of $\hat{C}_{pk}^*$ for multiple samples with m = 2(2)10, n = 10, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.00, p = 0.99……..……70

Table 4.5(a) Critical values of $\hat{C}_{pk}^*$ for multiple samples with m = 2(2)10, n = 15, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.00, p = 0.95……..……70

Table 4.5(b) Critical values of $\hat{C}_{pk}^*$ for multiple samples with m = 2(2)10, n = 15, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.00, p = 0.99……..……70

Table 4.6(a) Critical values of $\hat{C}_{pk}^*$ for multiple samples with m = 2(2)10, n = 10, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.33, p = 0.95……..……71

Table 4.6(b) Critical values of $\hat{C}_{pk}^{*}$ for multiple samples with m = 2(2)10, n = 10, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.33, p = 0.99……71

Table 4.7(a) Critical values of $\hat{C}_{pk}^{*}$ for multiple samples with m = 2(2)10, n = 15, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.33, p = 0.95……71

Table 4.7(b) Critical values of $\hat{C}_{pk}^{*}$ for multiple samples with m = 2(2)10, n = 15, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, w =1.33, p = 0.99……71

Table 4.8(a) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 5, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.95……72

Table 4.8(b) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 10, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.95……72

Table 4.8(c) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 15, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.95……72

Table 4.8(d) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 20, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.95……72

Table 4.9(a) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 5, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.99……73

Table 4.9(b) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 10, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.99……73

Table 4.9(c) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 15, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.99……73

Table 4.9(d) Minimum values $C^{*}(p)$ of $\hat{C}_{pm}^{*}/w$ for multiple samples with m = 2(2)10, n = 20, δ =0.5(0.5)2.0, r =0.7(0.1)1.0, p = 0.99……73

Table 4.10(a) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.95, w =1.00……74

Table 4.10(b) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.99, w =1.00……74

Table 4.11(a) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.95, w =1.25……74

Table 4.11(b) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.99, w =1.25……74

Table 4.12(a) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.95, w =1.45……75

Table 4.12(b) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.99, w =1.45……75

Table 4.13(a) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.95, w =1.60……75

Table 4.13(b) Critical values of $\tilde{C}_{I}^{*}$ for multiple samples with m = 2(2)10, n = 5(5)15, r =0.7(0.1)1.0, p = 0.99, w =1.60……75

Table 4.14 The 10 subsamples of 15 observations for the thickness of the resistor…45

Table 4.15 The calculated sample mean and the sample variance for the 10 subsamples……46

Table 4.16 The 15 subsamples of 10 observations with calculated sample statistics..47