

Protocol of the gage capability R&R study

Variation B - Evaluation is based on total variation TV (variability of production process)

Gage user: **MOJE FIRMA, s.r.o.**
 Gage title: **Posuvné měřidlo digitální 0-150 mm**
 Gage registration number: **2025**

Upper tolerance limit: **1.2** USL
 Lower tolerance limit: **0.2** LSL
 Workers count: **3**
 Repetition count: **2**
 Parts count: **10**

Pcs	Worker 1		Worker 2		Worker 3	
	Measure 1	Measure 2	Measure 1	Measure 2	Measure 1	Measure 2
1	0.65	0.6	0.55	0.55	0.5	0.55
2	1	1	1.05	0.95	1.05	1
3	0.85	0.8	0.8	0.75	0.8	0.8
4	0.85	0.95	0.8	0.75	0.8	0.8
5	0.55	0.45	0.4	0.4	0.45	0.5
6	1	1	1	1.05	1	1.05
7	0.95	0.95	0.95	0.9	0.95	0.95
8	0.85	0.8	0.75	0.7	0.8	0.8
9	1	1	1	0.95	1.05	1.05
10	0.6	0.7	0.55	0.5	0.85	0.8

K1 0.8862
 K2 0.5231
 K3 0.3146
 Rbar 0.038333
 XbarDiff 0.060000
 Rp 0.558333

Equipment Variation EV: **0.03397** EV = Rbar * K1
 Appraiser Variation AV: **0.03045** AV = Sqrt((XbarDiff * K2)^2 - (EV^2)/(10 * 2))
 Repeatability and Reproducibility R&R: **0.04562** R&R = sqrt(EV^2 + AV^2)
 Part Variation PV: **0.17565** PV = Rp * K3
 Total Variation TV: **0.18148** TV = sqrt(R&R^2 + PV^2)

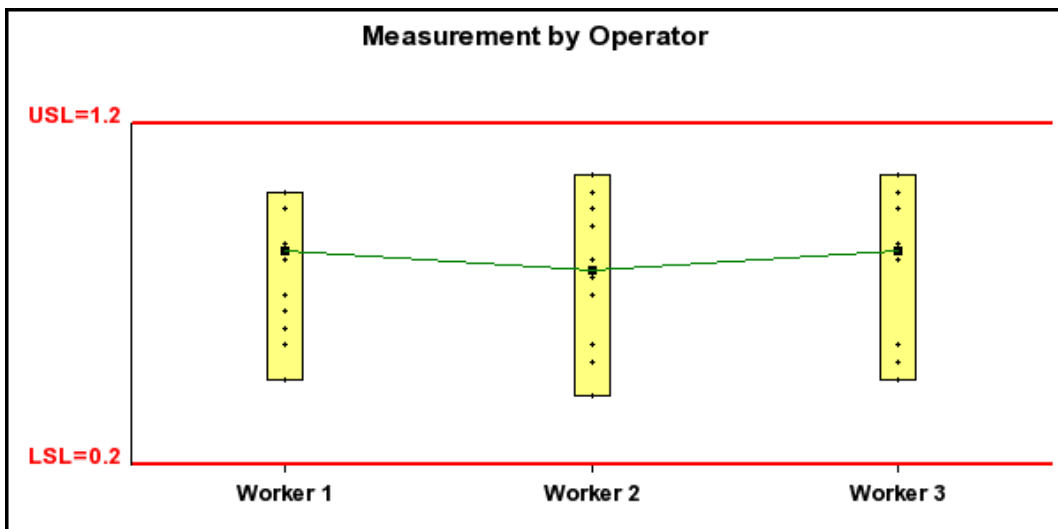
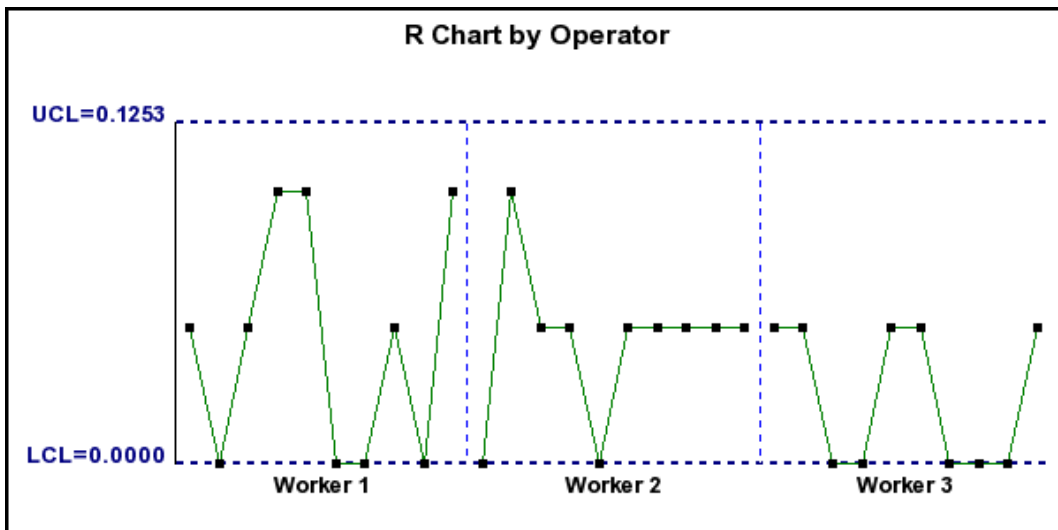
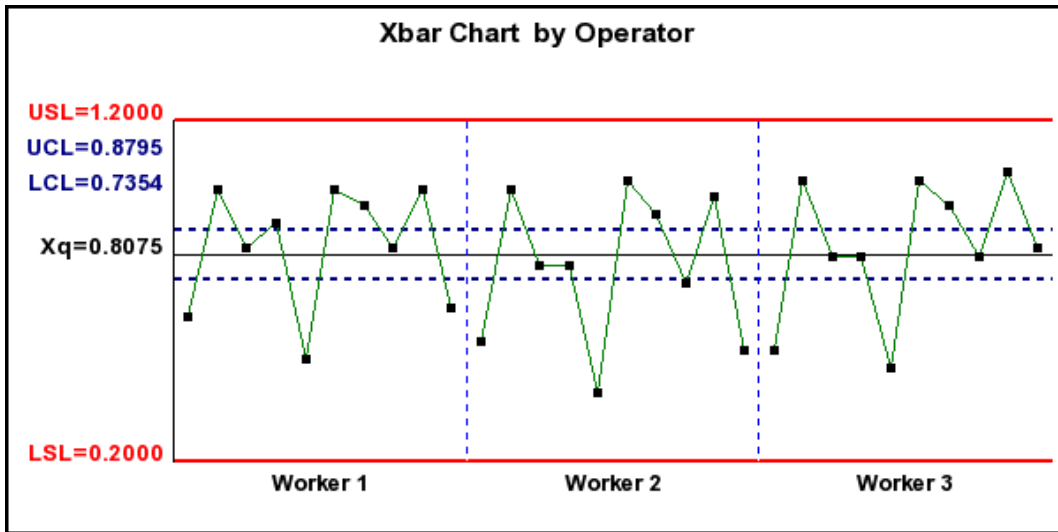
Equipment Variation EV[%]: **18.72** EV[%] = 100 * (EV / TV)
 Appraiser Variation AV[%]: **16.78** AV[%] = 100 * (AV / TV)
 Repeatability and Reproducibility R&R[%]: **25.14** R&R[%] = 100 * (R&R / TV)
 Part Variation PV[%]: **96.79** PV[%] = 100 * (PV / TV)
 Nnumber of distinct categories **5.43** ndc = 1.41 * (PV / R&R)

Final evaluation: **Gage is conditionally suitable (R&R[%] value is inside (10 - 30) interval)! Gage system may be acceptable based on importance of application and costs.**

Comment: Ověřeno na výrobku: PCW20251/CEP/D1
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Produced: **Jan Novák**
 Day: **10.04.2008**

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