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ASSESSMENT OF PROCESS CAPABILITY BY APPLYING THE MSA (MEASUREMENT SYSTEM ANALYSIS) METHOD TO CRITICAL CONTROL POINTS

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Abstract
In this article, a MSA method is used to the critical areas of the product in order to ensure the quality of the used gas companies produced at the Uz Dong Won co. During the analysis, the reliability of measuring instruments, operator's qualifying and measuring process is found concluded.

Keyword: MSA (Measurement System Analysis), process, style, control, detail.

Introduction

Today, the automotive industry and the demand for the quality of cars are increasing. The high-quality production of each manufactured product mainly depends on the standard. Bringing the car to the state of the finished product is important for the quality production of every detail. The second guide of the automotive industry prevents inconsistency one of the effective methods used in obtaining MSA-measurement system analysis (Measurement System Analysis, The second guide of the automotive industry prevents inconsistency one of the effective methods used in obtaining MSA-measurement system analysis (Measurement System Analysis,, which was developed in the 1960s by the American Automotive Industry Standardization Group (AIAG) and (ASQC) Quality Management. developed by the automotive division of the American Society. In 1990, the Supplier Certification and Quality Assessment Group of Chrysler, Ford and General Motors, in agreement with the AIAG, developed the MSA method as a guide and began to require suppliers to apply

it. The manual has been updated several times since 1992 by the standardization group.

MSA METHOD

Clauses 7.1.5.1.1 of the International Standard for Automotive Quality Management System IATF 16949:2016 require:

- Each type of measurement and testing tools for variation analysis conducting statistical surveys where the results of the system are obtained;
- This applies to the measurement system specified in the demand management plan;
- Applied analytical methods and acceptance criteria, measurement analysis by system Consumer Guide (MSA) sida conforming to the mentioned method and criteria
- Another analytical method only when approved on the consumer side and use of admission criteria.

MSA-measurement system analysis advantage:

- Statistical indicators of the description of measurement and control processes evaluates;
- Measurement and control instrument comparison (calibration) Intermediate Period guarantees;
- Upgrade, repair of out-of-turn measurement and control tools, determines whether replacement and improvement is necessary;
- It is permissible to measure the volatility of processes when measuring and adjusting basic principle to measurement and control processes for detection and establishes evaluation methods;
- In the measurement process, the actual produced sample, the real external environment, and provides qualified measurer (operator) participation;
- Identifies statistical techniques for measurement and control processes.[1]

In order to ensure the quality of used gas exhaust systems produced in the joint enterprise of “Uz Dong Won Co” LCC, the MSA method is applied to the critical points of the product. used gases front the output system conducted an MSA analysis on one of the cryric points. Analyze three operators for transfer and ten products by selection will need. Initially, the detail is placed on a special check table, and the handles fastened and given on the control sheet using a shop liner measurements are performed at a special point. Measurement tool during analysis summarizing about reliability, operator qualifications and suitability of the measurement process is obtained.[2]

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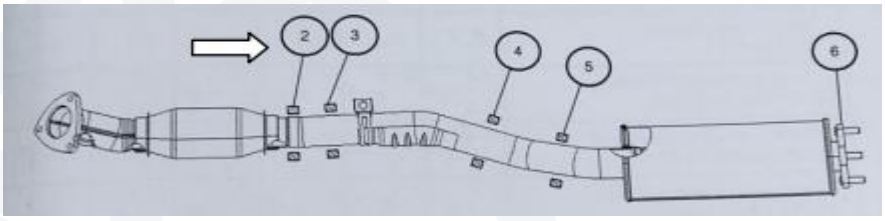
1-table. Criteria for adopting a measurement system.

%R&R	Summary on the adoption of the measurement process
Error from 10% Cam	Usually in this case, if the measurement process is accepted Is
Error 10%<30%	In this case, the measurement process depends on the importance of can be taken out, measuring tool price, repair cost and taking into account others
Error from 30% high	In this case, the measurement process cannot be accepted, it is necessary to focus on improving all strength[3]
ndc≥5	ndc is the number of differentiations of categories (≥5, or greater be) break down the process scattering (break up can)



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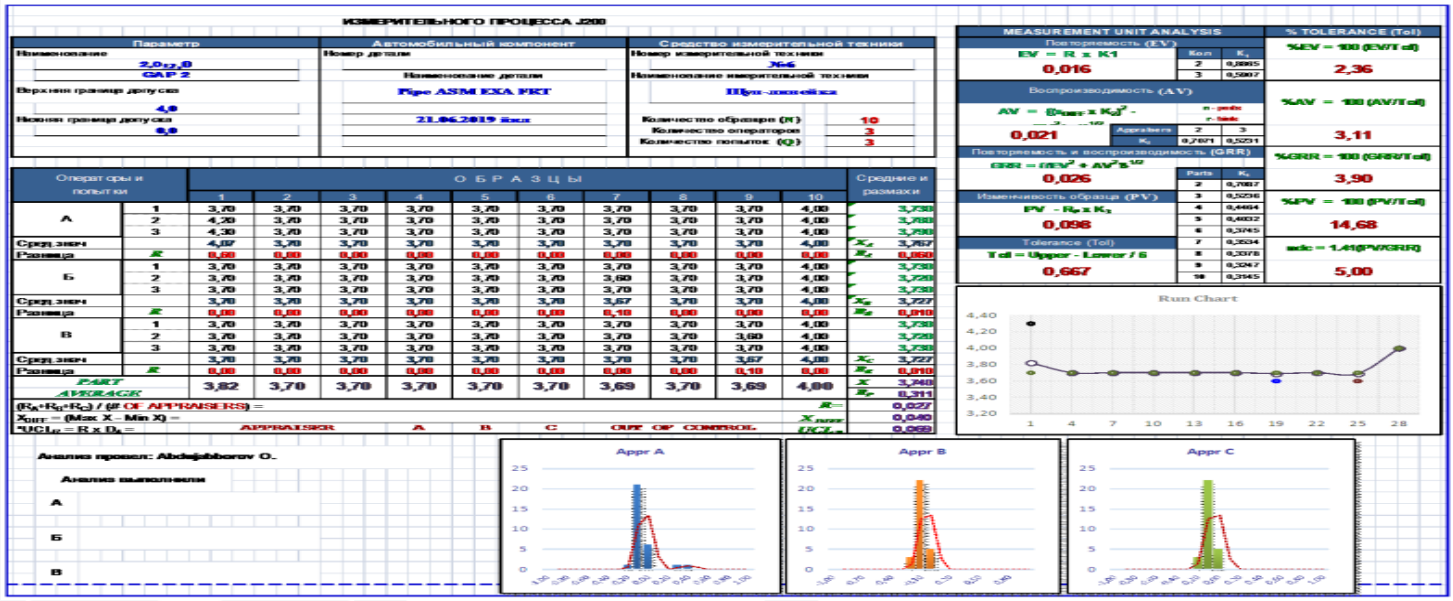
Operator		Samples										Medial
		1	2	3	4	5	6	7	8	9	10	
A	1	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,730
	2	4,20	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,780
	3	4,30	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,790
Average score		4,07	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,767
deviation	R	0,60	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,060

Operator		Samples										Medial
		1	2	3	4	5	6	7	8	9	10	
B	1	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,730
	2	3,70	3,70	3,70	3,70	3,70	3,70	3,60	3,70	3,70	4,00	3,720
	3	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,730
Average score		3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,727
deviation	R	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,010

Operator		Samples										Medial
		1	2	3	4	5	6	7	8	9	10	
C	1	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,730
	2	3,70	3,70	3,70	3,70	3,70	3,70	3,60	3,70	3,70	4,00	3,720
	3	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,730
Average score		3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	3,70	4,00	3,727
deviation	R	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,010

The information received into the MSA program is entered.



According to the results obtained, it can be said using the table to measure can you accept the process.[4]

CONCLUSION

The results of this process mean that the use of the SPC method in the statistical management of product production processes allows for a high increase in product production efficiency and economic efficiency.

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