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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 17989.8-2022

Statistical method of quality control in production process - Control charts - Part 8: Charting techniques for short runs and small mixed batches

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1.Structure and Drafting Rules of Standardization Documents" drafted.

This document is part 8 of GB/T 17989.GB/T 17989 has released the following parts.

--- Control Charts Part 1.General Guidelines;

--- Control Charts Part 2.General Control Charts;

--- Control Charts Part 3.Acceptance Control Charts;

--- Control Charts Part 4.Cumulative and Control Charts;

--- Statistical method control charts for quality control in production processes - Part 5.Special control charts;

--- Statistical method control chart for quality control of production process Part 6.Exponentially weighted moving average control chart;

--- Statistical method control chart for quality control in production process Part 7.Multivariate control chart;

--- Statistical method control chart for quality control in production process Part 8.Control method for short cycle and small batch;

--- Statistical methods for quality control of production process control charts Part 9.Stationary process control charts.

This document is revised and adopted ISO 7870-8.2017 "Control Charts - Part 8.Control Methods for Short Cycle Small Batches".

The technical differences between this document and ISO 7870-8.2017 and their reasons are as follows.

--- Scope paragraph 1, line 2, 4.2b), 4.2c), 6.2.1a), 6.2.2a), 6.3.1a), 6.3.2a), 6.4.1a), 6.4.2a),

"Sample size" in 6.5.1a) and 6.5.2a) is changed to "subgroup size" to keep the terminology consistent with this series of standards;

--- Add the explanation of different types of control charts in the explanation of the symbols "LCL" "UCL" in 3.2;

--- Change the "precision" in Figure 1 and Figure 2 to "process spread", which is in line with the commonly used Chinese usage of this meaning;

--- Change the "subgroup serial number" in the description of the index serial number in Figure 6 to "measured value serial number", and make it clear that the serial number refers;

--- Redraw Figure 7, and the positions of some points in the original image are not accurate.

The following editorial changes have been made to this document.

--- Change the standard name to "Production Process Quality Control Statistical Methods Control Chart Part 8.Control Methods for Short Cycle Small Batches"

Law";

--- Modify the "X" in the description of the index number in Figure 7 to "percentage";

--- Modify "variation pattern of characteristics" in 6.2.2f), 6.4.2f) to "fluctuation of characteristics";

--- Modify the "individual value" and "range" in the header row of Table 7 and the header row of Table 11 to "Individual Value Control Chart" and "Moving Range Control Chart" respectively;

--- Put "Rexp=(1.128 x Expected Standard" in footnote a of Table 7, footnote a of Table 9, footnote a of Table 11 and footnote a of Table 13

difference) when the moving range is 2" is modified to "Rexp=(1.128xexpected standard deviation), when considering the moving range of adjacent data

Time";

--- Modify "based on the moving range of 2" in the second row of paragraph 2 of 6.2.4 to "based on the moving range of adjacent data";

--- Modify the "subgroup number" in the index number description X of Figure 9, Figure 10, Figure 11, and Figure 12 to "measurement value number";

--- Modify "Moving Average" and "Moving Range" in the header of Table 9 and Table 13 to "Moving Average Control Chart" and "Moving Range Control Chart";

--- In 6.3.3b), "calculate and draw the point corresponding to every two adjacent (XT) values" is modified to "calculate and draw every two

The point corresponding to the moving average of the adjacent (XT) values";

--- Amend "Table 7" in the second sentence of paragraph 1 of 6.3.4 to "Table 8";

--- Modify the title of Figure 10 "Moving Average and Moving Range Control Chart for Variable Targets" to "Moving Average Control for Variable Targets"

picture";

--- Change "Table 10" in the Note to Table 11 to "Table 11";

--- Modify "single sample" at the beginning of paragraph 2 of 6.4.4 to "single observation";

--- Change "Table 12" in 6.5.3f) to "Table 13";

--- Modify "Single Value" in Figure 12 Legend Y to "Moving Average";

--- Modify "Xvariable" in Figure A.1 to "X", and "range" to "moving range";

--- In Figure A.3, "mean Xmoving" is changed to "single value X", and "range" is changed to "moving range";

---Add "target" to the header space part of the fifth line from the bottom of Figure A.3;

--- Delete "Xmoving" in the header of the second last line of Figure A.3;

--- In Figure A.2 and Figure A.4, "Average" is modified to "Moving Average", and "Range" is modified to "Moving Range".

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Charting is a commonly used statistical tool in process control to monitor deviations in the process and keep the process stable. GB/T 17989 Control Chart

The series of standards is divided into the following 9 parts.

--- Control Charts Part 1.General Guidelines. The purpose is to give the basic terms, principles and classification of control charts, and to select control charts

guide.

--- Control charts Part 2.General control charts. The purpose is to establish guidelines for process control using conventional control charts.

--- Control charts Part 3.Acceptance control charts. The purpose is to establish guidelines for the use of acceptance control charts for process control, and to specify

General procedures for determining subgroup sample sizes, action limits, and decision criteria are described.

--- Control Charts Part 4.Cumulative and Control Charts. The purpose is to establish the application of cumulative and techniques for process monitoring, control and review

Statistical methods for sex analysis.

--- Statistical methods for quality control of production process control charts Part 5.Special control charts. The purpose is to establish the understanding and application of

A guide to statistical process control with special control charts.

--- Production process quality control statistical methods control charts Part 6.Exponentially weighted moving average control charts. The purpose is to establish

A guide to understanding and applying exponentially weighted moving average (EWMA) charts for statistical process control.

--- Statistical methods for quality control of production process control charts Part 7.Multivariate control charts. The purpose is to establish the construction and application of multiple

A guide to statistical process control with meta-control charts and establishes routine methods for using and understanding multi-variable control charts for measurement data.

--- Statistical methods of production process quality control control chart Part 8.Control methods for short cycle and small batches. The purpose is to establish

When the subgroup size is 1, the conventional metrology control chart is used to detect the method of short cycle and small batch production process.

--- Statistical methods for quality control of production process control charts Part 9.Stationary process control charts. The purpose is to establish the construction and application of

A guide to controlling stationary processes with control charts.

It is generally recommended to collect at least 25 subgroups as the basis for constructing conventional quantitative control charts, so that some constructive analysis can be carried out.

analysis. This is the application of statistical process control to plot a control chart for a single product characteristic (such as diameter) or a process parameter (such as temperature) in mass production

the best way. However, many potential applications of statistical process control are