

Statistical Process Control

SPC
Second Edition



***STATISTICAL PROCESS
CONTROL
(SPC)***

REFERENCE MANUAL

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STATISTICAL PROCESS CONTROL SPC

FOREWORD to Second Edition

This Reference Manual was developed by the Statistical Process Control (SPC) Work Group, sanctioned by the DaimlerChrysler/Ford/General Motors Supplier Quality Requirements Task Force, and under the auspices of the American Society for Quality (ASQ) and the Automotive Industry Action Group (AIAG). The Work Group responsible for this Second edition was prepared by the quality and supplier assessment staffs at DaimlerChrysler Corporation, Delphi Corporation, Ford Motor Company, General Motors Corporation, Omnex, Inc. and Robert Bosch Corporation working in collaboration with the Automotive Industry Action Group (AIAG).

The Task Force charter is to standardize the reference manuals, reporting formats and technical nomenclature used by DaimlerChrysler, Ford and General Motors in their respective supplier assessment systems. Accordingly, this Reference Manual can be used by any supplier to develop information responding to the requirements of either DaimlerChrysler's, Ford's or General Motors' supplier assessment systems. This second edition was prepared to recognize the needs and changes within the automotive industry in SPC techniques that have evolved since the original manual was published in 1991.

The manual is an introduction to statistical process control. ***It is not intended to limit evolution of SPC methods suited to particular processes or commodities.*** While these guidelines are intended to cover normally occurring SPC system situations, there will be questions that arise. These questions should be directed to your customer's Supplier Quality Assurance (SQA) activity. If you are uncertain as to how to contact the appropriate SQA activity, the buyer in your customer's purchasing office can help.

The Task Force gratefully acknowledges: the leadership and commitment of Vice Presidents Peter Rosenfeld at DaimlerChrysler Corporation, Thomas K. Brown at Ford Motor Company and Bo Andersson of General Motors Corporation; the assistance of the AIAG in the development, production and distribution of the manual; the guidance of the Task Force principals Hank Gryn (DaimlerChrysler Corporation), Russ Hopkins (Ford Motor Company), and Joe Bransky (General Motors Corporation). Therefore this manual was developed to meet the specific needs of the automotive industry.

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ACKNOWLEDGEMENTS to Second Edition

The joint consensus on the contents of this document was effected through Task Team Subcommittee Members representing DaimlerChrysler, Ford, and General Motors, respectively, whose approval signatures appear below, and who gratefully acknowledge the significant contribution of Gregory Gruska of Omnex Inc., Gary A. Hiner of Delphi Corporation, and David W. Stamps of The Robert Bosch Corp.

The latest improvements were updating the format to conform to the current AIAG/ ISO/ TS 16949:2002 documentation, more clarification and examples to make the manual more user friendly and additional areas which were not included or did not exist when the original manual was written.

The current re-write subcommittee is chaired by Mike Down from General Motors Corporation and consists of Todd Kerkstra and Dave Benham from DaimlerChrysler Corporation, Peter Cvetkovski from Ford Motor Company, Gregory Gruska, as a representative of the Omnex Inc. and ASQ, Gary A. Hiner of Delphi Corporation, and David W. Stamps of The Robert Bosch Corp.

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The ASQC/AIAG Task Force charter is to standardize the reference manuals, reporting formats and technical nomenclature used by Chrysler, Ford and General Motors in their respective supplier assessment systems: Supplier Quality Assurance, Total Quality Excellence and Targets for Excellence. Accordingly, this Reference Manual can be used by any supplier to develop information responding to the requirements of either Chrysler's, Ford's or General Motors' supplier assessment systems. Until now, there has been no unified formal approach in the automotive industry on statistical process control. Certain manufacturers provided methods for their suppliers, while others had no specific requirements. In an effort to simplify and minimize variation in supplier quality requirements, Chrysler, Ford, and General Motors agreed to develop and, through AIAG, distribute this manual. The work team responsible for the Manual's content was led by Leonard A. Brown of General Motors. The manual should be considered an introduction to statistical process control. It is not intended to limit evolution of statistical methods suited to particular processes or commodities nor is it intended to be comprehensive of all SPC techniques. Questions on the use of alternate methods should be referred to your customer's quality activity.

The Task Force gratefully acknowledges: the senior leadership and commitment of Vice Presidents Thomas T. Stallkamp at Chrysler, Clinton D. Lauer at Ford, and Donald A. Pais at General Motors; the technical competence and hard work of their quality and supplier assessment teams; and the invaluable contributions of the Automotive Industry Action Group (under AIAG Executive Director Joseph R. Phelan) in the development, production and distribution of this Reference manual. We also wish to thank the ASQC reading team led by Tripp Martin of Peterson Spring, who reviewed the Manual and in the process made valuable contributions to intent and content.

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