URN etd-0407109-183723-1901
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Statistics This thesis had been viewed 50 times. Download 0 times.
Department
Year 2006
Semester 2
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Combining Process Capability Index and Loss Function to Evaluate the CFRP Products
Date of Defense 0000-00-00
Page Count 90
Keyword
Loss Function
Process Capability Index
Diagnostics Theories of Process Capability
Carbon Fiber Reinforced Polymer

Abstract
This research combining both LF and PCI tools to provide duo methods to appraise production processes. Also it calculates PCI ratio between the forward/backward processes with the diagnostics model established in our research, by inserting the PCI differences of these two processes. Since it’s crucial to identify the bottleneck process right before optimizing the entire production processes, the research introduces tools mentioned above to establish principles and procedures for bottleneck management. It’s expected to approach the following two objects: (1) Identify certain process under the conditions of both high LF and low PCI exist; (2) Build up the diagnostics model of two sorts of PCI, and find out certain process that brings lower PCI ratio with its forward one. Throughout the analyze routines can we identify so-called crucial process, therefore we can prescribe specific treatments for “illness”, or quality gaps existed in production. This research takes CFRP (Carbon Fiber Reinforced Polymer) products as the experimental target to examine the quality diagnostics model established in this research, to promote PCI value and production yield, thus lowering the average quality costs per output unit.The conclusion is as follows: the PCI value, production yield, and average quality costs, are all promoted obviously after the crucial process is identified and fixed. Therefore, these efforts took on CFRP production processes, by applying tools as LS, PCI and diagnostics theories of process capability, are surely approaching both efficiency and effectiveness desired.
Advisory Committee - advisor

Files No Any Full Text File.
Date of Submission 2007-07-24