

Identifying Waste On The Shopfloor The Shopfloor Series

The Zero Quality Control System (ZQC) is a mistake-proofing approach that prevents defects by monitoring processing conditions at the source and correcting errors that cause defects. Since it is human nature to make mistakes, ZQC does not blame people for errors, but instead finds ways to keep errors from becoming defects. In this breakthrough approach, mistake-proofing devices called poka-yoke are used to check and give feedback about each product or operation in the process, not just a sample. This book introduces operators and assembly workers to the basic methodology of ZQC in an easy-to-read format that covers all aspects of this important manufacturing improvement strategy. Mistake-Proofing for Operators includes the instructional features that are the signature of the Shopfloor Series. In this series Productivity Press has taken the lead in adult education by teaming with instructional designers to develop complete programs for frontline learning. The goal: to place powerful and proven improvement tools such as ZQC and mistake-proofing in the hands of your company's entire workforce. Winner of the 1990 Shingo Prize for Excellence in Manufacturing, Mistake-Proofing for Operators is based on Zero Quality Control: Source Inspection and the Poka-Yoke System by Shigeo Shingo. The philosophy of kaizen, which simply means continuous improvement, needs to be adopted by any organization seeking to implement lean improvements that go beyond cost cutting. Kaizen events are opportunities to make focused changes in the workplace. Kaizen for the Shopfloor takes readers through the critical steps for conducting a very effective kaizen event: one that is well planned, well implemented, and well documented. As the newest addition to the Shingo Prize Winning Shopfloor Series, Kaizen for the Shopfloor distills the complexities of jumpstarting lean processes into an easily accessible format for those frontline employees who make lean possible. About the Shopfloor Series: Put proven improvement tools in the hands of your entire workforce. Progressive shopfloor improvement techniques are imperative for manufacturers who want to stay competitive and to achieve world class excellence. And it's the comprehensive education of all shopfloor workers that ensures full participation and success when implementing new programs. The Shopfloor Series books make practical information accessible to everyone by presenting major concepts and tools in simple, clear language and at a reading level that has been adjusted for operators by skilled instructional designers. One main idea is presented every two to four pages so that the book can be picked up and put down easily. Each chapter begins with an overview and ends with a summary section. Helpful illustrations are used throughout. Other topics in the Shopfloor Series: Kanban, 5S, Quick Changeover, Mistake-Proofing, Just-in-Time, TPM, Cellular Manufacturing. Value-stream maps are the blueprints for lean transformations and Learning to See is an easy-to-read, step-by-step instruction manual that teaches this valuable tool to anyone, regardless of his or her background. This groundbreaking workbook, which has introduced the value-stream mapping tool to thousands of people around the world, breaks down the important concepts of value-stream mapping into an easily grasped format. The workbook, a Shingo Research Prize recipient in 1999, is filled with actual maps, as well as engaging diagrams and illustrations. The value-stream map is a paper-and-pencil representation of every process in the material and information flow, along with key data. It differs significantly from tools such as process mapping or layout diagrams because it includes information flow as well as material flow. Value-stream mapping is an overarching tool that gives managers and executives a picture of the entire production process, both value and non value-creating activities. Rather than taking a haphazard approach to lean implementation, value-stream mapping establishes a direction for the company. To encourage you to become actively involved in the learning process, Learning to See contains a case study based on a fictional company, Acme Stamping. You begin by mapping the current state of the value stream, looking for all the sources of waste. After identifying the waste, you draw a map of a leaner future state and a value-stream plan to guide implementation and review progress regularly. Written by two experts with practical experience, Mike Rother and John Shook, the workbook makes complicated concepts simple. It teaches you the reasons for introducing a mapping program and how it fits into a lean conversion. With this easy-to-use product, a company gets the tool it needs to understand and use value-stream mapping so it can eliminate waste in production processes. Start your lean transformation or accelerate your existing effort with value-stream mapping. [Source : 4e de couv.]

TPM leads to soaring productivity when your operators are positively and energetically involved in the maintenance of their own equipment. Autonomous Maintenance for Operators teaches specific autonomous maintenance activities. For operators, supervisors, team leaders, and TPM coordinators, this book provides useful guidance and case study examples on autonomous maintenance. Activity boards, one-point lessons, photos, cartoons, and actual examples of implementation demonstrate the huge benefits of developing informed, motivated operators who take ownership of and improve their equipment. Shopfloor operators will learn: 4 skills they can develop to keep equipment running smoothly. how to inspect for problems as they clean equipment. ideas for containing debris that shortens equipment life. tips for effective lubrication management. how to use activity boards, meetings, and one-point lessons to promote TPM goals. This book assumes some familiarity with the steps of autonomous maintenance and focuses on specific autonomous maintenance activities.

If your goal is 100% zero defects, here is the book for you — a completely illustrated guide to poka-yoke (mistake-proofing) for supervisors and shop-floor workers. Many poka-yoke ideas come from line workers and are implemented with the help of engineering staff or tooling or machine specialists. The result is better product quality and greater participation by workers in efforts to improve your processes, your products, and your company as a whole. The first section of the book uses a simple, illustrated format to summarize many of the concepts and main features of poka-yoke. The second section shows 240 examples of poka-yoke improvements implemented in Japanese plants. The book: Organizes examples according to the broad issue or problem they address. Pinpoints how poka-yoke applies to specific devices, parts and products, categories of improvement methods, and processes. Provides sample improvement forms

for you to sketch out your own ideas. Use Poka-yoke in study groups as a model for your improvement efforts. It may be your single most important step toward eliminating defects completely. (For an industrial engineering perspective on how source inspection and poka-yoke can work together to reduce defects to zero, see Shigeo Shingo's Zero Quality Control.) Kanban is the name given to the inventory control card used in a pull system. The primary benefit of kanban is to reduce overproduction, the worst of the seven deadly wastes. A true kanban system produces exactly what is ordered, when it is ordered, and in the quantities ordered. It is essentially a dynamic work order that moves with the material. Each kanban identifies the part or subassembly unit and indicates where each one came from and where each is going. Used this way, kanban acts as a system of information that integrates your plant, connects all processes one to another, and connects the entire value stream to customer demand. Kanban for the Shopfloor provides a working manual for those seeking to implement this method of production control in any operation. It defines the various terms and methods employed in kanbans, and illustrates how when adhered to, kanban is an element of continuous improvement that ultimately leads to the ideal of one-piece flow." In addition to reducing the waste of overproduction, kanban will help your company increase flexibility to respond to customer demand, coordinate production of small lots and wide product variety, and simplify the procurement process. About the Shopfloor Series: Put proven improvement tools in the hands of your entire workforce! Progressive shopfloor improvement techniques are imperative for manufacturers who want to stay competitive and to achieve world class excellence. And it's the comprehensive education of all shopfloor workers that ensures full participation and success when implementing new programs. The Shopfloor Series books make practical information accessible to everyone by presenting major concepts and tools in simple, clear language and at a reading level that has been adjusted for operators by skilled instructional designers. One main idea is presented every two to four pages so that the book can be picked up and put down easily. Each chapter begins with an overview and ends with a summary section. Helpful illustrations are used throughout. Other topics in the Shopfloor Series: Kanban, 5S, Quick Changeover, Mistake-Proofing, Just-in-Time, TPM, Cellular Manufacturing

Accessible to the Lean novice and shop floor employee, The Basics of Line Balancing and JIT Kitting explores line balancing and the pre-assembly of components into a finished product in a just-in-time fashion (JIT Kitting). It explains how to use time studies, develop yamazumi charts, discover and eliminate waste, balance your line, and create new "The documented benchmarks for success and the many examples help explicate the complexities for the reader. The book is organized and written so that it will be useful as an introduction to the field and also as a reference when special challenges arise for the practicing manager." -- DR. JOHN J. COYLE, Professor Emeritus of Logistics and Supply Chain Management, Department of Supply Chain and Information Systems, Smeal College of Business, Pennsylvania State University "The book is a must-read for all supply chain managers seeking to drive down costs and improve profits and must be read before any investment is made in your supply chain. Get copies for your controller and all senior managers...this book lays it all out." -- DR. RICHARD LANCIONI, Chair, Marketing & Supply Chain Management, Fox School of Business, Temple University Expert Strategies for Improving Supply Chain and Logistics Performance Using Lean This practical guide reveals how to identify and eliminate waste in your organization's supply chain and logistics function. Lean Supply Chain and Logistics Management provides explanations of both basic and advanced Lean tools, as well as specific Lean implementation opportunities. The book then describes a Lean implementation methodology with critical success factors. Real-world examples and case studies demonstrate how to effectively use this powerful strategy to realize significant, long-term improvements and bottom-line savings. COVERAGE INCLUDES: * Using Lean to energize your supply chain * The eight wastes * Lean opportunities and JIT in supply chain and logistics * Lean tools and warehouse * Global lean supply chain and logistics * Lean opportunity assessment, value stream mapping, and Kaizen event management * Best-in-class use of technology with Lean * Metrics and measurement * Education and training Valuable training slides are available for download.

Praise for The Lean Six Sigma guide to Doing More with Less "At Frito Lay, we have applied many of the concepts and tools in this book, and we are realizing a five to seven times return on our annual Lean Six Sigma investment." —Tony Mattei, Lean Six Sigma Director, Frito Lay "Ecolab has experienced a sustainable, competitive advantage through Lean Six Sigma. The principles in this book are helping us drive greater value for our share-holders, better service for our customers, and talent development opportunities for our associates." —Jeffrey E. Burt, Vice President and Global Deployment Leader, Lean Six Sigma, Ecolab "This book gives excellent insights into Lean Six Sigma and its strong impact within different industries. We used Lean Six Sigma in numerous process improvement projects, which, in turn, helped to create momentum and set up a process improvement culture. Amid a challenging economic environment, we are accelerating this initiative globally." —Satheesh Mahadevan, Directeur des Processus, Société Générale "Our Lean Six Sigma deployment of the concepts and tools described in this book is transforming our business—with tangible benefits for our employees, customers, suppliers, and shareholders." —Jeffrey Herzfeld, Sr. Vice President and General Manager, Teva Pharmaceuticals USA "We have deployed the holistic Lean Six Sigma strategy described by Mark George across our enterprise. It is providing remarkable returns for Unum." —Bob Best, Chief Operating Officer, Unum "The Lean Six Sigma Guide to Doing More with Less presents a comprehensive view of operations transformation, the approaches required for success, leadership's role, and the competitive advantage that results. Transformational changes are enabling us to do more with less, by investing and working smarter." —Ted Doheny, President and COO, Joy Mining Machinery

While it is a given that most Lean companies adopt methods to standardize cyclical activities, they often fail to apply the same rigor to noncyclical work, believing that it cannot be measured. Standardized Work for Noncyclical Processes cuts to the core of this mistaken belief and shows you how to measure nonrepeating job processes and eliminate w Like all Shopfloor Series books, Identifying Waste on the Shopfloor presents concepts and tools in simple and accessible

language. The book includes many illustrations and examples to explain basic concepts and some of the challenges that are encountered when looking for and eliminating waste. Identifying Waste on the Shopfloor is the ideal compliment to 5S, TPM, and other tools for building a lean manufacturing operation. Productivity's Shopfloor Series books offer a simple, cost-effective approach for building basic knowledge about key manufacturing improvement topics. Identifying Waste on the Shopfloor and all our Shopfloor Series books include innovative instructional features that are the signature of the series. The goal: to place powerful and proven improvement tools in the hands of your entire workforce.

In a "pull" production system, the final process pulls needed parts from the previous process, which pulls from the process before it, and so on, as determined by customer demand. This allows you to operate without preset schedules and avoid unnecessary costs, wastes, and delays on the manufacturing floor. Pull Production for the Shopfloor introduces Identifies the most prominent forms of waste in factories, suggests how to combine and simplify operations, and provides practical examples

This book develops best practices for collaboration between teams within large organizations, and demonstrates how an optimal environment for teamwork can improve business processes. To do so, it analyzes the system dynamics of living organisms and applies the results to the business environment. The book employs a consistent approach, applying recent advances in molecular biology to the structure and design of large industrial organizations. These insights from molecular biology are used to define the requirements for a practicable business management system based on the ISO 9000 criteria. The outcome is a viable and feasible system that can be used to design large organizations, e.g. by manufacturers of industrial equipment. In addition, four case studies are used to show how such a biologically inspired system can be implemented to positively and significantly impact business.

Content of this proceedings discusses emerging trends in structural reliability, safety and disaster management, covering topics like total quality management, risk maintenance and design for reliability. Some papers also address chemical process reliability, reliability analysis and engineering applications in chemical process equipment systems and includes a chapter on reliability evaluation models of chemical systems. Accepted papers from 2019 International Conference on Reliability, Risk Maintenance and Engineering Management (ICRRM 2019) are part of this conference proceeding. It offers useful insights to road safety engineers, disaster management professionals involved in product design and probabilistic methods in manufacturing systems.

This open access book presents the proceedings of the 3rd Indo-German Conference on Sustainability in Engineering held at Birla Institute of Technology and Science, Pilani, India, on September 16–17, 2019. Intended to foster the synergies between research and education, the conference is one of the joint activities of the BITS Pilani and TU Braunschweig conducted under the auspices of Indo-German Center for Sustainable Manufacturing, established in 2009. The book is divided into three sections: engineering, education and entrepreneurship, covering a range of topics, such as renewable energy forecasting, design & simulation, Industry 4.0, and soft & intelligent sensors for energy efficiency. It also includes case studies on lean and green manufacturing, and life cycle analysis of ceramic products, as well as papers on teaching/learning methods based on the use of learning factories to improve students' problem-solving and personal skills. Moreover, the book discusses high-tech ideas to help the large number of unemployed engineering graduates looking for jobs become tech entrepreneurs. Given its broad scope, it will appeal to academics and industry professionals alike.

Are you ready to implement a just-in-time (JIT) manufacturing program but need some help orienting employees to the power of JIT? Here is a concise and practical guide to introduce equipment operators, assembly workers, and other frontline employees to the basic concepts, techniques, and benefits of JIT practices. Like all Shop Floor Series books, Just-in-Time for Operators presents concepts and tools in simple and accessible language. The book includes ample illustrations and examples to explain basic JIT concepts and some of the changes people may encounter in a JIT implementation. Key definitions Elimination of process waste Leveled production, kanban, and standard work U-shaped cells and automation JIT support techniques The JIT approach is simple and universal -- it works in companies all over the world. Educating employees ensures their full participation and allows them to share their experiences and ideas more effectively.

Cellular Manufacturing: One-Piece Flow for Workteams introduces production teams to basic cellular manufacturing and teamwork concepts and orients them for participating in the design of a new production cell. Use this book to get everyone on board to reduce lead time, work-in-process inventory, and other profit-draining wastes. Each chapter includes an overview and a summary to reinforce concepts, as well as reflection questions, which can be used to encourage group discussions. This volume is part of Productivity Press' Shopfloor Series, which offers a simple, cost-effective approach for building basic knowledge about key manufacturing improvement topics

This handbook focuses on two sides of the lean production debate that rarely interact. On the one hand, management and industrial engineering scholars have presented a positive view of lean production as the epitome of efficiency and quality. On the other hand, sociology, industrial relations, and labor relations scholars focus on work speedups, management by stress, trade union positions, and self-exploitation in lean teams. The editors of this volume understand the merits of both views and present them accordingly, bridging the gaps among five disciplines and presenting the best of each perspective. Chapters by internationally acclaimed authors examine the positive, negative and neutral possible effects of lean, providing a global view of lean production while adjusting lean to the cultural and political contexts of different nation-states. As the first multi-lens view of lean production from academic and consultant perspectives, this volume charts a way forward in the world of work and management in our global economy.

Overall Equipment Effectiveness (OEE) is a crucial measure in TPM that reports on how well equipment is running. It factors three elements ---the time the machine is actually running, the quantity of products the machine is turning out, and

the quantity of good output - into a single combined score. Directly addressing those who are best positioned to track and improve the effectiveness of equipment, OEE for Operators defines basic concepts and then provides a systematic explanation of how OEE should be applied to maximize a piece of equipment's productivity and recognize when its efficiency is being compromised. Features

Production and manufacturing management since the 1980s has absorbed in rapid succession several new production management concepts: manufacturing strategy, focused factory, just-in-time manufacturing, concurrent engineering, total quality management, supply chain management, flexible manufacturing systems, lean production, mass customization, and more. With the increasing globalization of manufacturing, the field will continue to expand. This encyclopedia's audience includes anyone concerned with manufacturing techniques, methods, and manufacturing decisions.

As distinguished from autonomous maintenance, where the main goal is to restore basic conditions of cleanliness, lubrication, and proper fastening to prevent accelerated deterioration, FEI looks at specific losses or design weaknesses that everyone previously thought they just had to live with. Once your TPM operator teams are progressing with their daily autonomous maintenance activities, you will want to take the next advanced step in TPM training with this book. Key Features: a simple and powerful introduction to P-M Analysis hints for unraveling breakdown analysis numerous ideas for simplifying and shortening setups ideas for eliminating minor stoppages and speed losses basic concepts of building quality into processing real-life examples from a leading Japanese tool company Educate and empower all your workers to support your TPM improvement activities with

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Standard work is an agreed upon set of work procedures that effectively combines people, materials, and machines to maintain quality, efficiency, safety, and predictability. Work is described precisely in terms of cycle time, work in process, sequence, time, layout, and the inventory needed to conduct the activity. Standard work begins as an improvement baseline and evolves into a reliable method. It establishes the best activities and sequence steps to maximize performance and minimize waste. In this book you will learn about: The characteristics of standards Key benefits and applications of standardization Standard work concepts and calculations Standard work steps and documentation Using standard work manuals, charts, and worksheets Cell staffing (line balancing and full work) Productivity's Shopfloor Seriesbooks offer a simple, cost-effective approach for building basic knowledge about key manufacturing improvement topics. Like all our Shopfloor Seriesbooks, Standard Work for the Shopfloor includes innovative instructional features that are the signature of the Shopfloor Series. The goal: to place powerful and proven improvement tools such as pull production techniques in the hands of your entire workforce. Productivity's Shopfloor Seriesbooks offer a simple, cost-effective approach for building basic knowledge about key manufacturing improvement topics. Like all our Shopfloor Seriesbooks, Standard Work for the Shopfloor includes innovative instructional features that are the signature of the Shopfloor Series. The goal: to place powerful and proven improvement tools such as pull production techniques in the hands of your entire workforce.

This book presents the select proceedings of the International Conference on Advances in Sustainable Technologies (ICAST 2020), organized by Lovely Professional University, Punjab, India. This book caters to the industrial and production engineering aspects. It covers the industrial and production engineering areas such as sustainable manufacturing systems, decision sciences, supply chain management, Just in Time (JIT), logistics and supply chain management, rapid prototyping and reverse engineering, quality control and reliability, six sigma, smart manufacturing, time and motion study, six sigma, ergonomics, operations management, manufacturing management, metrology, manufacturing process optimization, machining and machine tools, casting, welding, and forming. This book will be useful for industry professionals and researchers working in the area of mechanical engineering, especially industrial and production engineering. What does it take to manage an organization to success? No matter what industry you are in, an organization is primarily a group of people. This book focuses on that ever-important human element. In the rush to get 'lean', many organizations focus solely on tools for increasing productivity, but where do these tools come from? In this book, Collin McLoughlin and Toshihiko Miura look back on their decades of international consulting experience to examine how organizations around the world have transformed on a cultural level by respecting the people who work within them and leveraging their creativity to solve problems. As our workforce becomes more knowledgeable, skillful, and more perceptive of their needs and wants as employees, the ability to reach the true potential of an organization becomes more and more difficult. Managers must look at each individual element of an equation like this in order to fully understand how to achieve an answer. They must begin to answer more focused questions, such as: 1. How productive is the existing work climate and culture? 2. How do employees, as individuals, navigate the existing work climate? (How do they deal with day-today issues with each other?) 3. Where and how are individuals and their work processes assessed? 4. What obstacles do employees face every day, and are they empowered to fix these obstacles? 5. What role does leadership play at each level of the organization? (Looking at the organization in layers of management.) To address these challenges, this book focuses on three main aspects of leadership and management: 1. Addressing and Improving the Perspective of Management -- The ideas presented in this book are not limited to a certain industry or field of work, but can be applied in any setting because they speak to a universal human element. 2. Exploring and Improving Work Climate -- Organizations are social entities, operating within their own controlled environment. This book will explore the factors that contribute to, and encourage, a positive work climate. 3. Observing and Eliminating Wasteful Work Processes -- Observing wasteful activities and work processes requires a refined perspective. The case studies presented illustrate the How and Why to help refine expertise. This will also lead to the joy and benefits

If you currently employ knowledge workers who do most of their work on computers or with computers, access the Internet, utilize internal and external databases, use e-mail or other new messaging technology, then this book is for you. Quite simply, this handbook is for any organization with a lot of Web DNA that wishes to cut costs, improve performance, and stay perpetually competitive. It is for change agents or managers within those organizations who work with information and want to leverage the latest crop of tool sets to deliver on the promise of Lean for the modern, information-rich office. ... packed with new ideas ... breaks new ground in so many directions — John Bicheno, Director, Lean Enterprise Research Centre, Cardiff Business School ... excellent ... on several levels teaches us how to visualize the depth of hidden wastes in our complex information flows and the large opportunity for improvement that this suggests. — Keith Russell, PhD, Global Continuous Improvement Leader R&D, AstraZeneca Pharmaceuticals Very interesting view on operational excellence, helpful to readers without a background in this area of expertise. — Bert Nordberg, President and CEO. Sony Ericsson Congratulations to all the readers holding this book! ... These Lean ideas must be an integral part of the daily operations of your business. I am going to get each and every one of my management team a copy of this brilliant book at the start for our own Lean journey. — Lennart Käll, CEO, Wasa Kredit It's one thing to develop a concept. It's another to make it sing. This is the hymnal. — Dr. Don V. Steward, CEO Problematics, Professor Emeritus, Sacramento State University, inventor of DSM ... a must read for CIOs everywhere." — Julian Amey, Principal Fellow, Warwick University Examines Japan's innovative, highly successful production methods

Although office and administrative activities are usually 60 percent of the production costs in most manufacturing organizations, these areas often get excluded during lean initiatives. To achieve lean, office activities must fully support shop floor manufacturing operations to eliminate waste. The adoption of 5S throughout all office and administrative

