



# SECO'S STEP LIBRARY: STRUCTURE & ABSTRACTS

# SECO STEP LIBRARY – STEP BY STEP TO KNOWLEDGE

## UNDERSTANDING THE PRINCIPLES OF OUR STEP LIBRARY

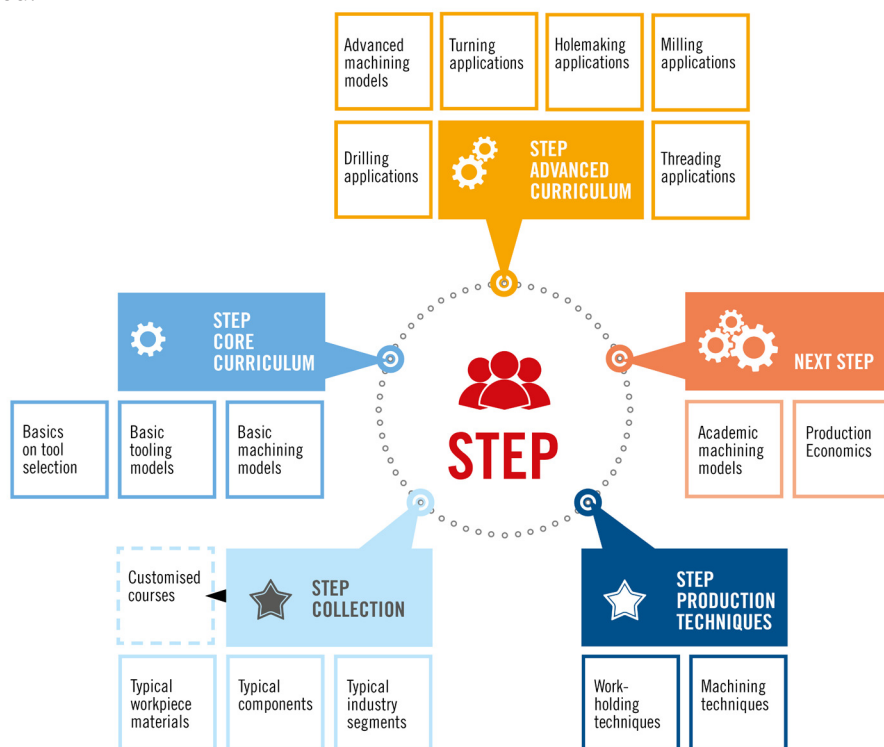
The diagram below shows Seco's ambition to give metal cutting professionals and machining technologists in a written form a full picture of the present status in metal cutting science and technology.

The book Metal Cutting - Theories and Models describe in a scientific way the metal cutting process.

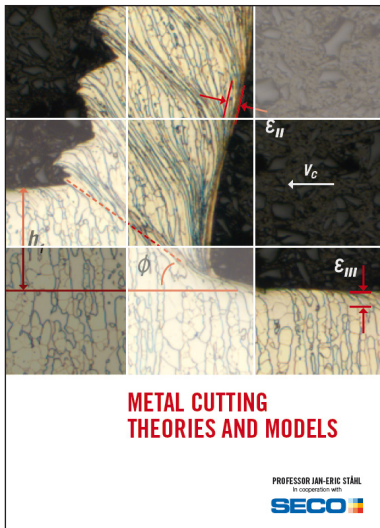
The book Metal Cutting - Theories in Practice forms the bridge between the science of metal cutting and the practical technology and engineering which is called for in the modern machining company.

The other books in the series deepens and widens insight in the different subjects from the first two books. The main target is to have an insight in how to translate scientific insights into technological possibilities to optimise the metal cutting process.

The information published in this series is educational in nature and intended to provide general guidelines for the analysis and evaluation of cutting processes based upon Seco's years of experience manufacturing cutting tools and applying them in various applications in our customer's workshops. It is not intended to be a rigid set of practices as not all cutting tools are manufactured to the same high standards as ours, and the results may vary depending upon the machine tool condition, the quality of the cutting tools, the accuracy of the selection process, and the general conditions under which the cutting tools are used.



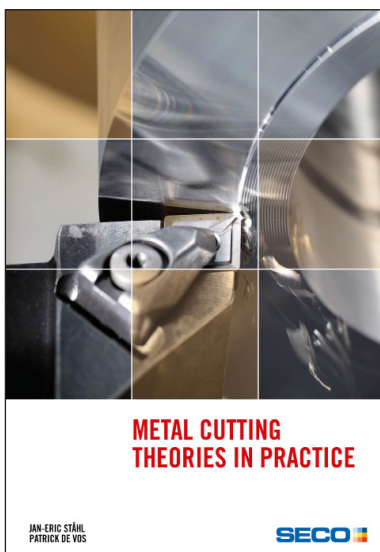




### METAL CUTTING, THEORIES AND MODELS

This text book describes in a scientific and mathematical way the state-of-the-art machinability models for modern machining in different workpiece materials; including stainless steels, super alloys and Titanium alloys. The book gives an overview of all aspects that determine the machining process. It is the reference book for all the other books in the series published by Seco.

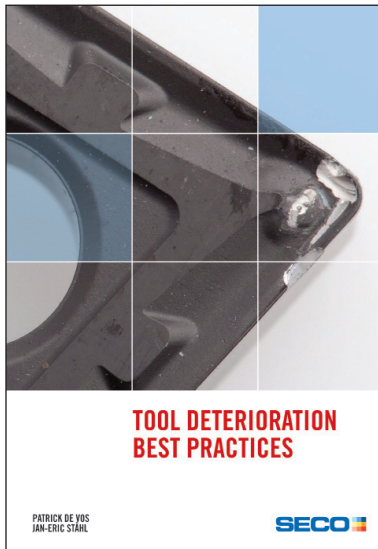
The target group for this book is all academic educated people who want to update their knowledge on the metal cutting process. These people can be situated at universities and educational institutes (professors and lecturers, Master students, PhD students ...) but also high ranking personnel at manufacturing companies and machine tool builders (process planning, production engineering, production research ...)



### METAL CUTTING, THEORIES IN PRACTICE

This book is based on the text book Metal Cutting, Theories and Models. It describes the same principles and models but from a practical perspective. Core in this book is to present the machinability models in such a way that they become of practical usage in the workshop and surrounding departments.

The target group for this book is all well-educated people who want to update their knowledge on the metal cutting process. These people can be situated at universities and educational institutes (professors, teachers and lecturers, students, ...) but the most important target group are all well-educated personnel in the machining departments and machining support departments at manufacturing companies and machine tool builders (production department, process planning, production engineering, programming, calculation ...). This text book is of interest and relevance for all manufacturing companies and of special relevance for companies in the aerospace and energy production industry segments.



## TOOL DETERIORATION, BEST PRACTICES

This text book deals with only one element in the machining process, namely tool deterioration. Tool deterioration is the balancing point for machinability models. Most problems in machining processes can be classified as tool deterioration related events. And the final evaluation of modifications done to the process to bring balance is based on tool deterioration again. As such, tool deterioration is balancing element, balancing point and balance measurement system for problem free machining; all at the same time.

This book deals with all the different applications in metal cutting. This book is a basic and indispensable tool in every machining expert's toolbox. The target group for this book is all people who want to have both a good insight in the phenomena that cause tool deterioration and also want to possess a 'Best Practices' overview on how to handle tool deterioration processes and how to control them.



## APPLIED METAL CUTTING PHYSICS, BEST PRACTICES

This book presents a comprehensive overview of the different physical models used to describe and analyse a machining process and the basic mechanisms associated with it. A considerable number of practical models and guidelines are outlined and explained to provide an adequate understanding of the machining process. The primary purpose of this book is to present practical models to work towards a reliable, productive and cost efficient metal cutting process.

The target group for this book is everybody who wants to have a good insight in the phenomena that define a machining process and also want to possess a 'Best Practices' overview on how to influence and modify the cutting process. The book is completed with a brief overview of how the different technological elements in machining links to the overall economical targets of the machining process.



## KNOWLEDGE, INSIGHT AND SKILLS MAKE SUSTAINABLE MACHINING: REPORTS 2014-2019

This book collects in a chronological order, the original manuscripts of a selected number of technical articles published worldwide in the period 2014–2019 in numerous leading technical magazines. These selected articles illustrate how insights in machining processes and systems and the role of machining in the total production system developed over that period.

Starting out with the pure focus on cutting tool technology toward total tooling concepts and total manufacturing systems, the journey leads on to the economical side of machining, talking about „optimized machining“ and „global production economy“. Nowadays, the market requirements and the manufacturing environment have changed drastically, moving away from traditional mass production (High Volume Low Mix) towards High Mix Low Volume production, which imply a complete new array of challenges for production people. Today, where the pressure on productivity and cost-efficiency is higher than ever and traditional approaches do not always help anymore, NEXT STEP aims to link in a practical way machining science and production organization to total production economics.

If you would like to order one of the books, please contact:  
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