



# TRENDS & STANDARDISATION

What is ongoing in tooling

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# Topics

- **Who**
  - am I ?
  - is SECO-EPB ?
- **Technological trends in tooling and machining**
  - High performance machining
  - High precision tooling
- **Standardisation**
  - Why ?
  - Who ?

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# Who am I ?

- **My background:**

- I studied mechanical engineering in a french engineer school
- I joined EPB now SECO-EPB in 1988 as R&D manager which is still my position

- **My standardisation activities**

- Involved on an international level as
  - President of ISO TC 29 (small tools)
  - Chairman of ISO TC 29 SC2 (High speed steel cutting tools and their attachments)
- Involved on a national level
  - in France with the similar functions as on ISO level
  - in Germany as member of different committees

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# Who is Seco-EPB



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# Bouxwiller, Alsace centre of EEC

Seco-EPB is located in Bouxwiller, historical town of 3 700 inhabitants, near **Strasbourg**.

**Alsace** abound in both French and German influences. The region is situated in mid-eastern to north-eastern France. It is bound to the north by **Germany** and to the east by the Rhine River [with Germany across the Rhine], to the south by **Switzerland**.

Bouxwiller



# Seco-EPB, 50 years experience with Tooling Systems



**1924** Emile Pfalzgraf began his activities at Bouxwiller (E.P.B) while being a subcontractor for the automotive sector (Bugatti, Mathis or DeDietrich)



**1961** Production and marketing of EPB's own brand of toolholders.



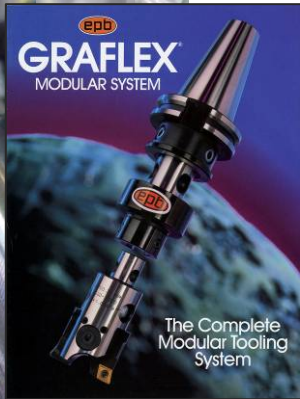
**1978** Strategy to become leader in the equipment of machining centers



A SECO TOOLS COMPANY



# Seco-EPB, 50 years experience with Tooling Systems



**1982** Launch of the **Graflex Modular System** with a complete range of boring system

**1986** EPB becomes leader in France and begins to export (own subsidiaries in USA and Germany)



**1991** Extension for production facilities and technical office

**1995** Certification ISO 9001

**1998** Introduction of a complete range dedicated to HSM.



A SECO TOOLS COMPANY



# Seco-EPB, 50 years experience with Tooling Systems



A SECO TOOLS COMPANY



**2000** EPB becomes a Seco Tools Company

**2001** Extension of the production for Custom Tooling facilities

**2006** . Production under licence of Seco-Capto for rotative holders

. Certification ISO 14001

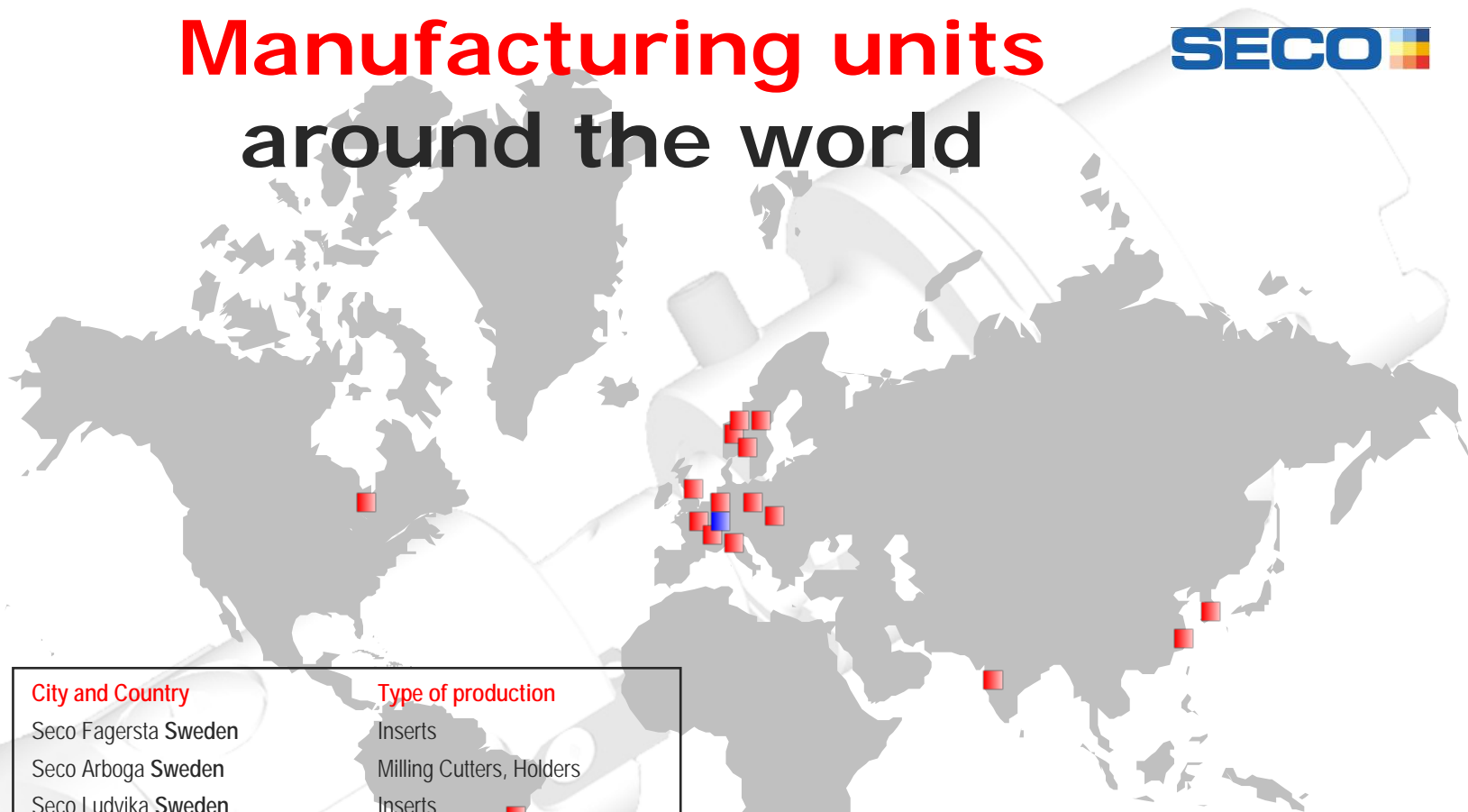


A SECO TOOLS COMPANY





# Manufacturing units around the world

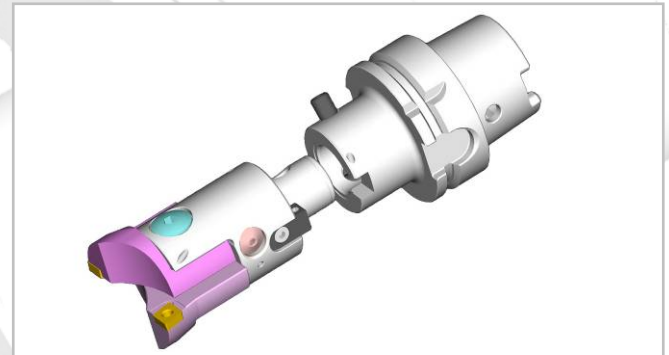


City and Country	Type of production
Seco Fagersta Sweden	Inserts
Seco Arboga Sweden	Milling Cutters, Holders
Seco Ludvika Sweden	Inserts
Seco Norrköping Sweden	Drills
Seco Bourges France	Milling Cutters, Inserts
Seco Erkrath Germany	Milling Cutters, Holders, Drills
Seco Alcester UK	Milling Cutters, Holders
Seco Guanzate Italy	Milling Cutters, Holders
Seco Huntingwood Australia	Milling Cutters, Holders
Seco Kyonggi Korea	Milling Cutters, Holders
Seco Shanghai China	Milling Cutters, Holders

City and Country	Type of production
Seco Tools Lenoir City US	Milling Cutters, Holders, Drills
Seco Pune India	Milling Cutters, Holders, Drills, Inserts
<b>EPB Bouxwiller France</b>	<b>Tooling Systems</b>
Planche La Tour Du Pin France	Reamers
Jabro Lottum Netherlands	Solid End Mills
Genos Sorocaba Brazil	Milling Cutters, Holders
Pramet Sumperk Czech Rep.	Inserts

# Seco-EPB, **product centre** for Tooling Systems

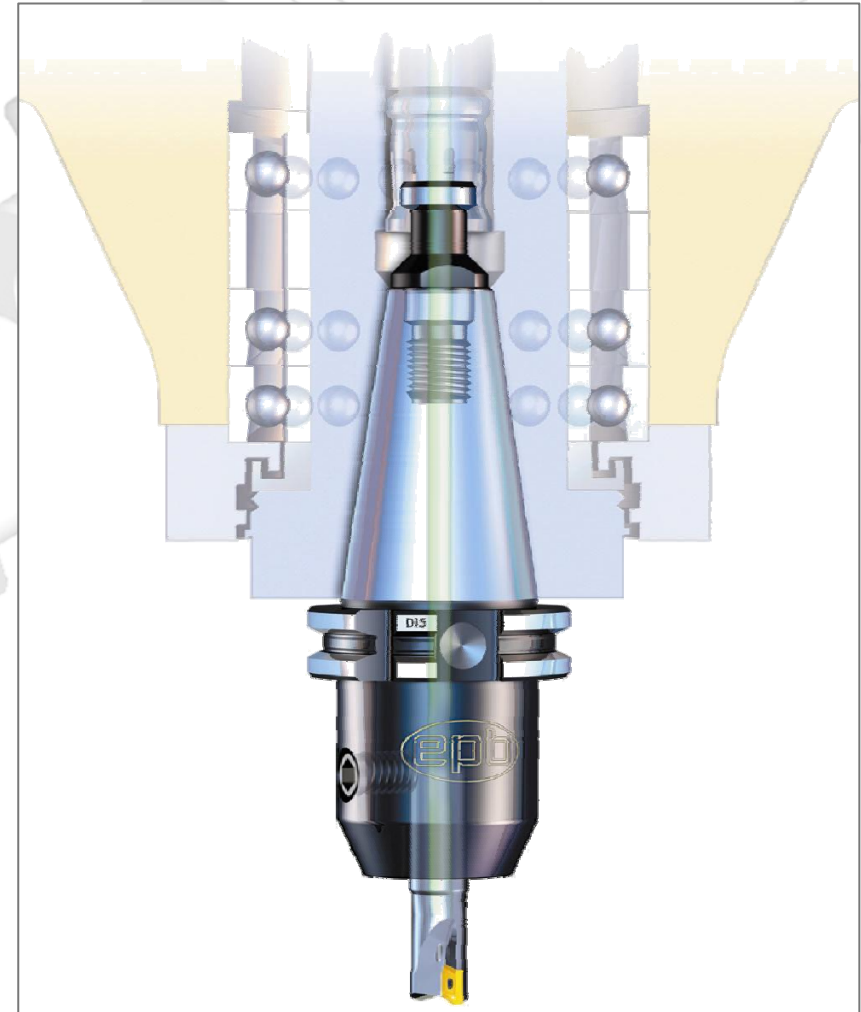
- ➔ **Research & Development**
- ➔ **Production**
- ➔ **Product management, Marketing & Sales support**



# Specialist for **Tooling Systems**

- ◆ **The toolholder:  
Link between  
machine spindle and  
cutting tool that has  
the most effect on  
overall concentricity,  
rigidity, and balance.**

**Not just a commodity  
hardware !**



A very large range on the **market**



# Seco-EPB product families



▶ MONOBLOC HSK & SA holders



▶ GRAFLEX Modular System



▶ COMBIMASTER holders

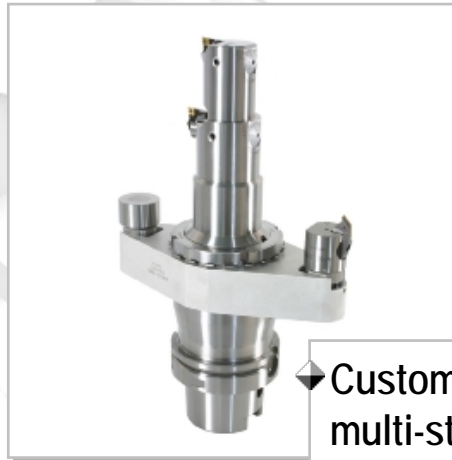


▶ Boring heads

# Seco-EPB product families



▶ Additional equipment  
(pull studs, collets...)



▶ Custom made holders and  
multi-step boring bars



▶ Shrinkfit devices



▶ Seco-Capto rotating  
toolholders

# Seco-EPB **uniques**



AccuFit®



Type D  
collet chucks



Combimaster  
holders



AxiaBore®  
Fine boring  
heads



Graflex®  
Modular System



Seco-Capto  
holders



NanoBore®  
Fine boring head



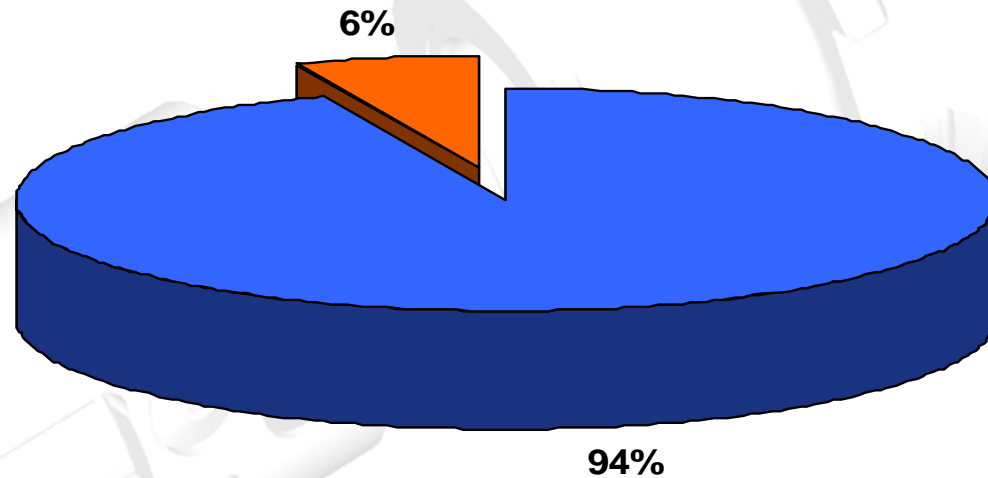
Jumbo  
Bridge bars



EasyShrink® 20  
Shrinkfit devices

# Seco-EPB in figures

◆ **Share** within Seco Tools turnover, year 2007 :

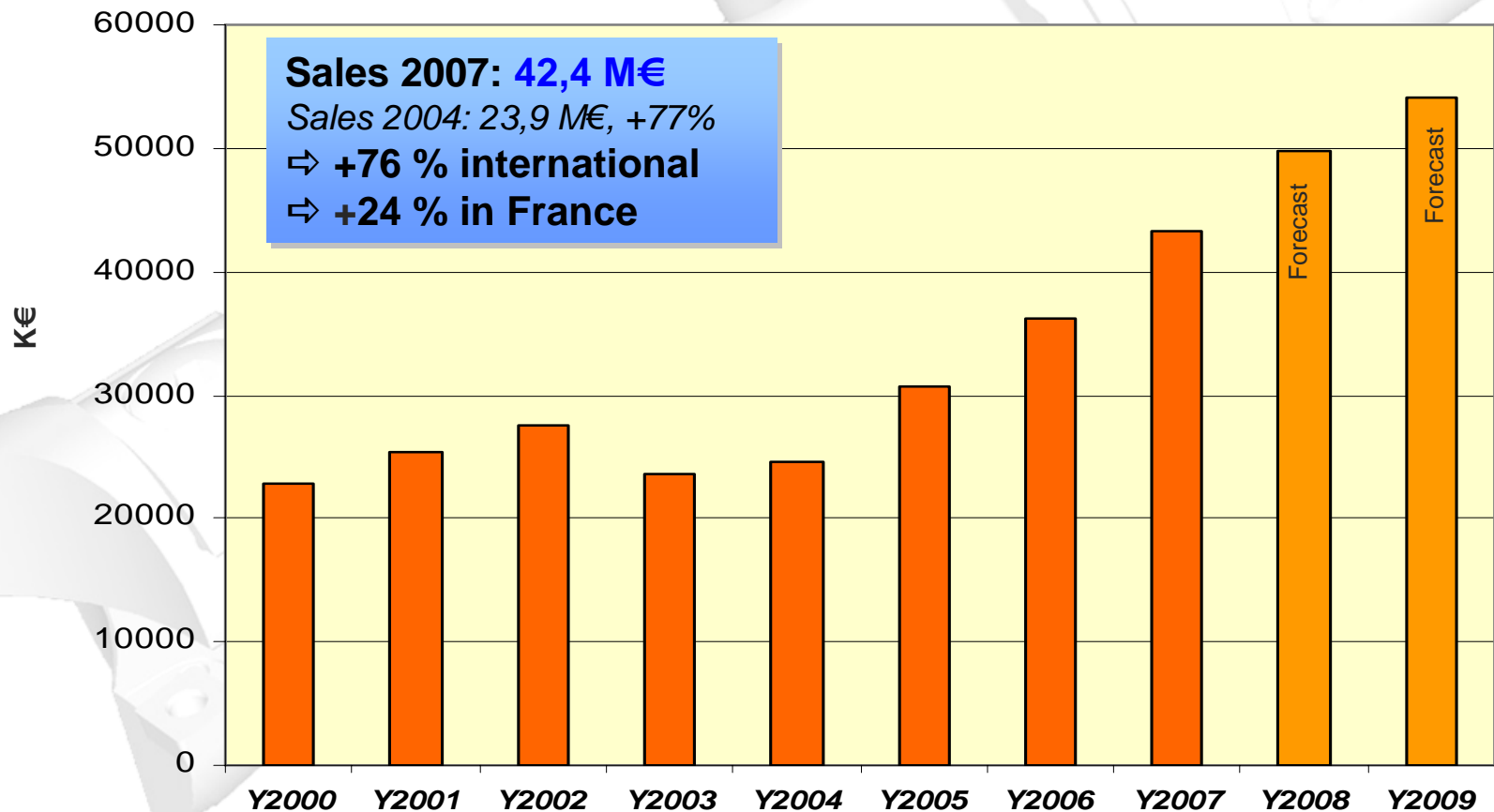


Seco-EPB	43 millions €
Seco Tools	640 millions €



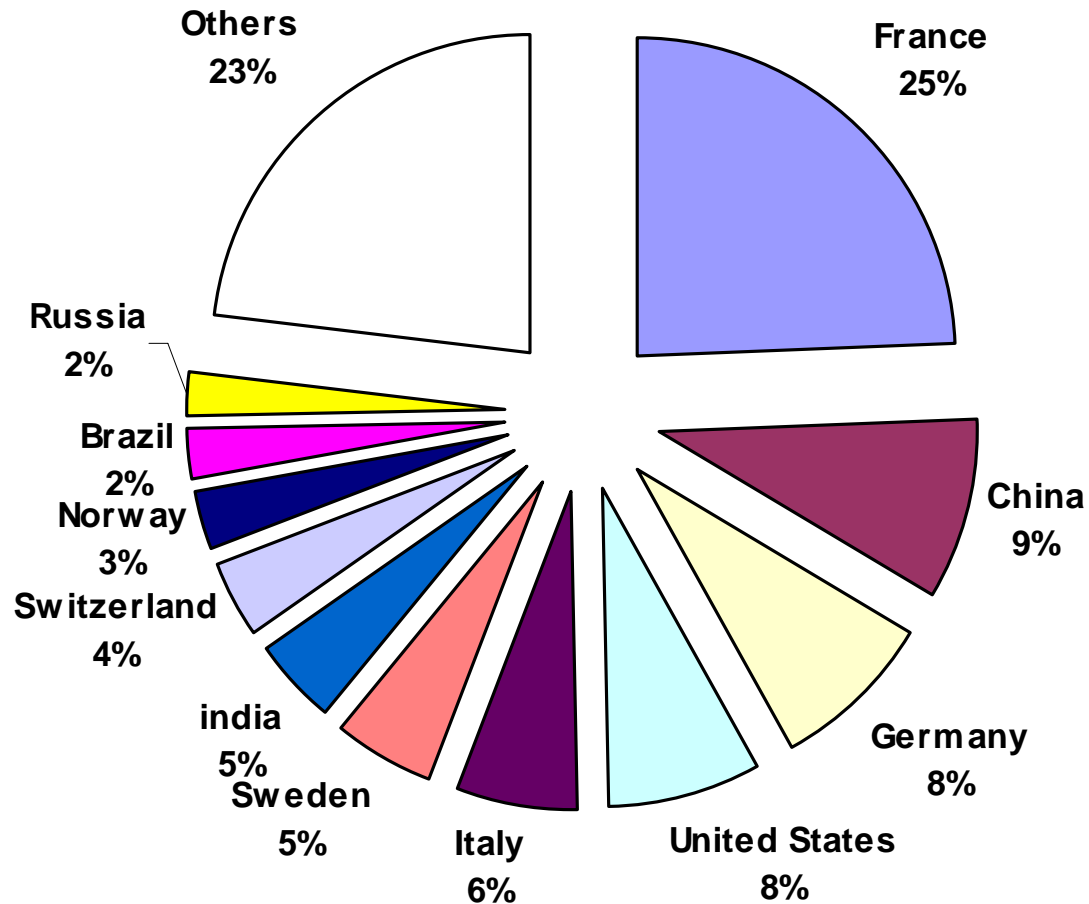
# Seco-EPB in figures

➤ Sales growth (invoiced by subsidiaries to end users):



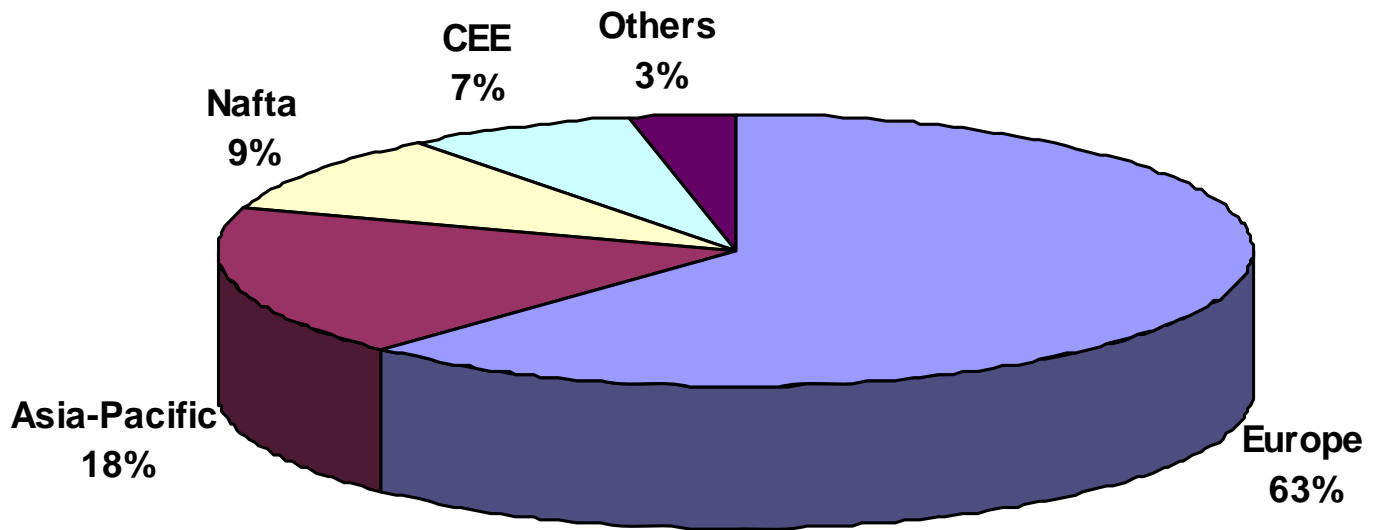
# Seco-EPB in figures

➤ Biggest selling countries (year 2007):



# Seco-EPB in figures

➤ Sales per **area** (year 2007):



## Trends & Standardisation

### Technical evolution

High performance machining

High precision tools and toolholders

New machining methods

Environmental friendly machining

## Trends & Standardisation

# High performance machining

**High speed machining**

RPM over 20000

**High power milling**

big chip removal rate

**High feed milling**

table feeds over 10m/min

**High pressure coolant machining**

Jetstream

# Trends & Standardisation

## High precision tools

### Reduced runout

runout down to less than 3  $\mu\text{m}$

### More precise tools

high precision grinding

### More precise and new generation toolholders

low geometrical defaults

optimum surface finish

HSK, Seco-Capto

shrinkfit holders ...

### Better balance

unbalance low to minimize bearing load

# Trends & Standardisation

## New machining methods

### Peal milling

high axial DOC, low radial DOC

### Plunge milling

use the milling cutter in axial direction

### High feed milling

big radius milling cutter  
low axial DOC & high table feed

### High pressure turning

to brake chip (pressure on the chip around 100bar)

...

## Trends & Standardisation

### Environmental friendly machining

#### Near shape machining

low stock

#### Dry machining

Drilling  
Milling

#### With MQL machining

Minimum Quantity Lubricant

#### Recycling

Iso 14000 ...



## Trends & Standardisation

### New materials machining

#### Multi-layer material

Carbon fiber-aluminium

Aluminium-carbon fiber-Titanium

...

#### Other material

New Titanium

Inconel

Asperloy

...

## Trends & Standardisation

# Means before producing the pieces

### Eco-design

integrate the ecological aspects from start in design

new methodology for design

to be applied on all product stages

...

### Near shape design

possible due to new machining methods (HSM)

High speed pressing

...

## Trends & Standardisation

# Standardisation

### Why?

To speak about the same things  
(imagine every power plug different,  
how would be life? Here we speak  
standardisation)

We need interchange ability, compatibility,  
exchangeability

Cost savings

Time saving

Wide appliance

## Trends & Standardisation

# Standardisation

### Who?

Your national committee (China Standardisation committee “GB”)

DIN in Germany

AFNOR in France

JIS in Japan

SIS in Sweden

ANSI in USA

...

ISO on an international level

# Trends & Standardisation

## ISO

The ISO standardisation is splitted into comitees called ISO Technical Comitees (TCs)

Our concern are mainly:

TC 29: small tools

TC39: machine tools

## Trends & Standardisation

### ISO TC29 sub committees

**SC 2: High speed steel cutting tools and their attachments**

**SC 5: Grinding wheels and abrasives**

**SC 8: Tools for pressing and moulding**

**SC 9: Tools with cutting edges made of hard cutting materials**

**SC 10: Assembly tools for screw and nuts, pliers and nippers**

## Trends & Standardisation

# ISO TC29 Work Groups

**WG 33: Hollow tool shank interface**

**WG 34: Cutting tool data representation and exchange**

**WG 35: Designation of HSS cutting materials and application for corresponding cutting tools**

**WG36: Tool to spindle interface**

## Trends & Standardisation

### TC29 P Members

**Austria**

**China**

**France**

**Germany**

**India**

**Israel**

**Italy**

**Japan**

**Korea**

**Netherlands**

**Poland**

**Romania**

**Russian Federation**

**South Africa**

**Spain**

**Sweden**

**Switzerland**

**United Kingdom**

**USA**



## Trends & Standardisation

### Active Members

France  
Germany  
Japan

Sweden  
United Kingdom  
(USA)

## Trends & Standardisation

### Latest standard information

HSK T(turning) ISO 12164-3, -4

Steep taper ISO 7388-1, -2, -3  
(regroups DIN, ANSI-CAT, BT, NF and former ISO)

#### Coming soon

ISO 26623-1, -2 polygonal taper interface: PSC  
(polygonal shank coupling)

ISO 26622-1, -2 modular taper interface with ball track system: MTS (modular taper shank)

More to come with your help??

# THANK YOU FOR YOUR ATTENTION

