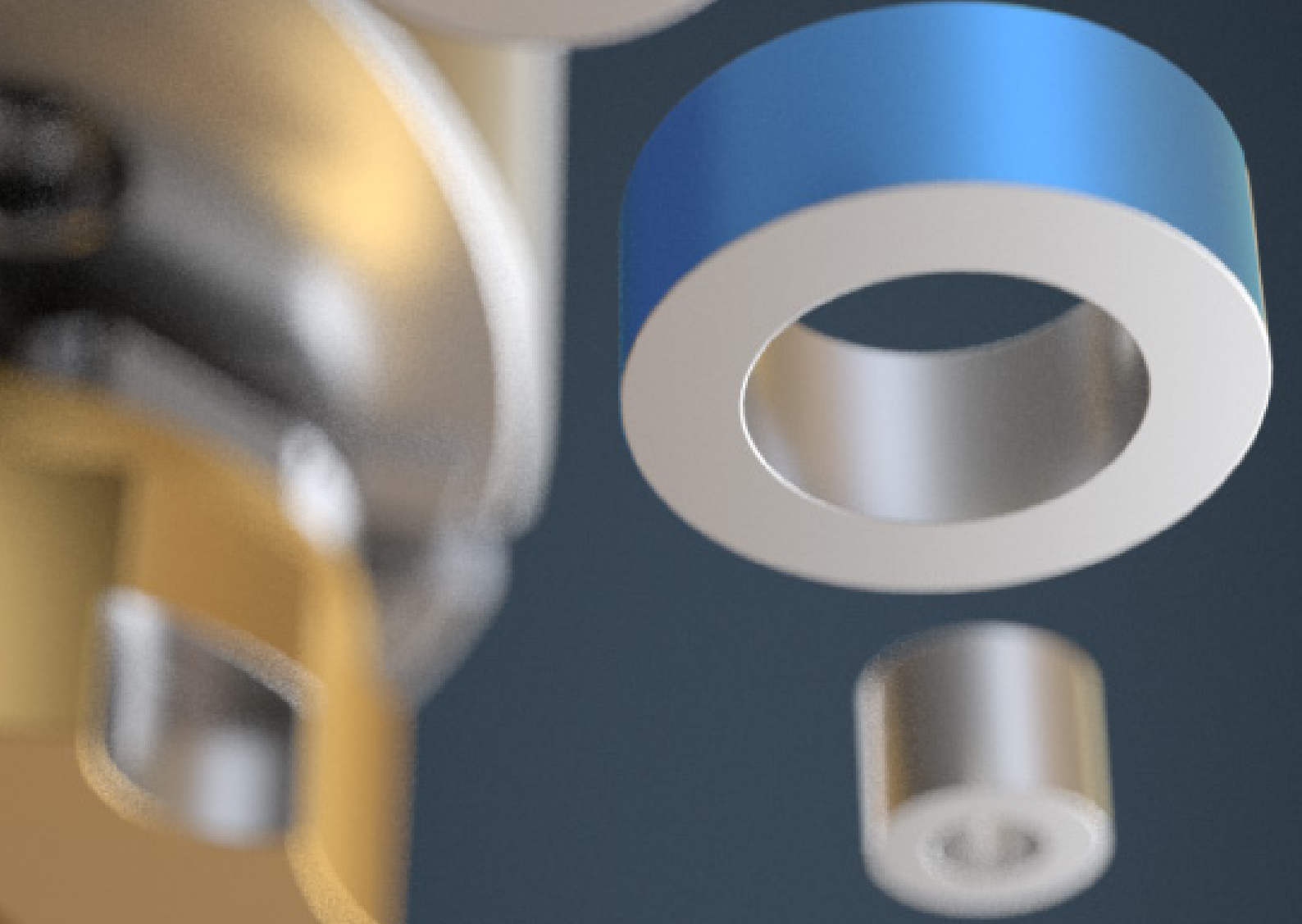


CALCULUS

MPC AUTOMATION SYSTEMS

www.rindex.com

MADE IN SWEDEN

mpc AUTOMATION SYSTEMS

GLOBAL DISTRIBUTION LOCATIONS TO THIS DATE

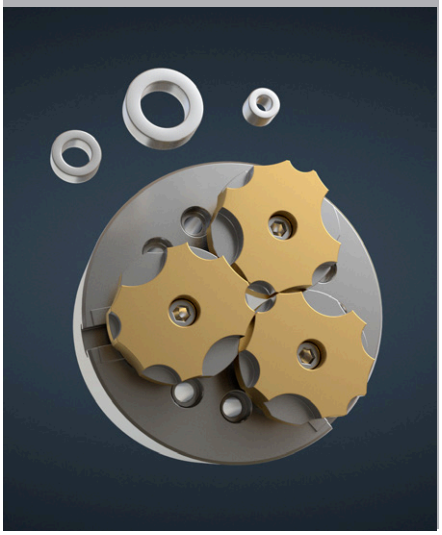
MPC AUTOMATION SYSTEMS PRODUCTS

GRIPPEX BAR PULLER

* COOLANT DRIVEN
* INSTANT SET-UP
* COVER 2-105 MM

RINDEX MULTI JAWS

* SIX JAWS IN ONE
* QUICK CHANGE
* 100 % CLAMPING SURFACE



RINDEX C-WEIGHTS

* CENTRIFUGAL COMP.
* DETACHABLE WEIGHTS
* EXTRA WEIGHTS OPTIONAL

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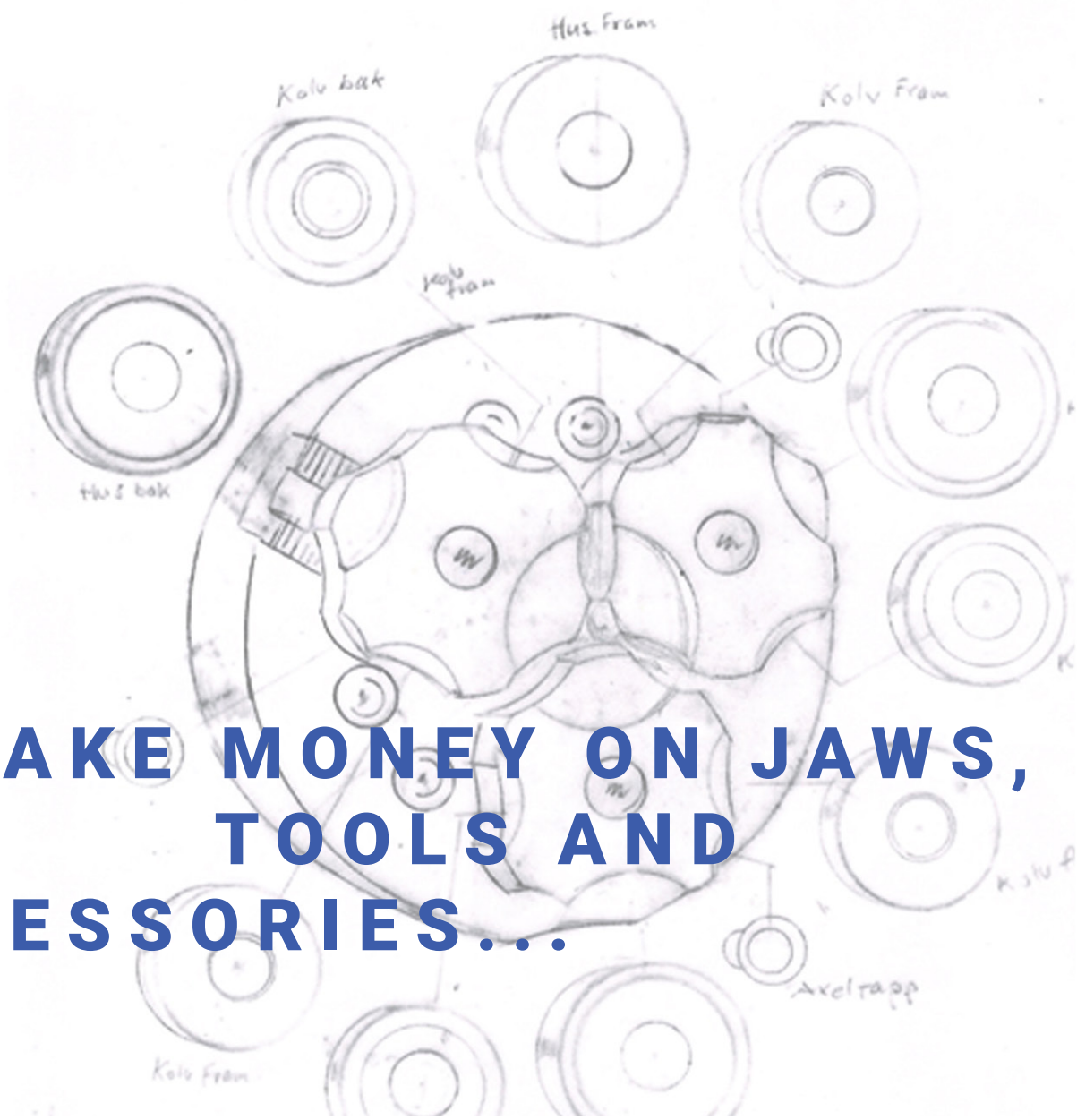

MAKE MONEY ON JAWS, TOOLS AND ACCESSORIES...

RINDEX MULTI JAWS - RESULTS FROM INCREASED MACHINING

* INCREASE GROSS MARGIN WITH 10 %...

* BY REDUCING SET-UP COST WITH 95 %...

* THAT IS 38 € SAVED PER JAW CHANGE...

RINDEX COUNTERWEIGHTS - RESULTS FROM INCREASED PARTS / MINUTES

* DECREASE COMPONENT COST WITH UP TO 80+ %
* BY INCREASING SPINDLE SPEED WITH UP TO X3,
* CUTTING REWORK AND INSPEC-TION TIME
* RESULTING IN ... 50% INCREASE GROSS MARGIN

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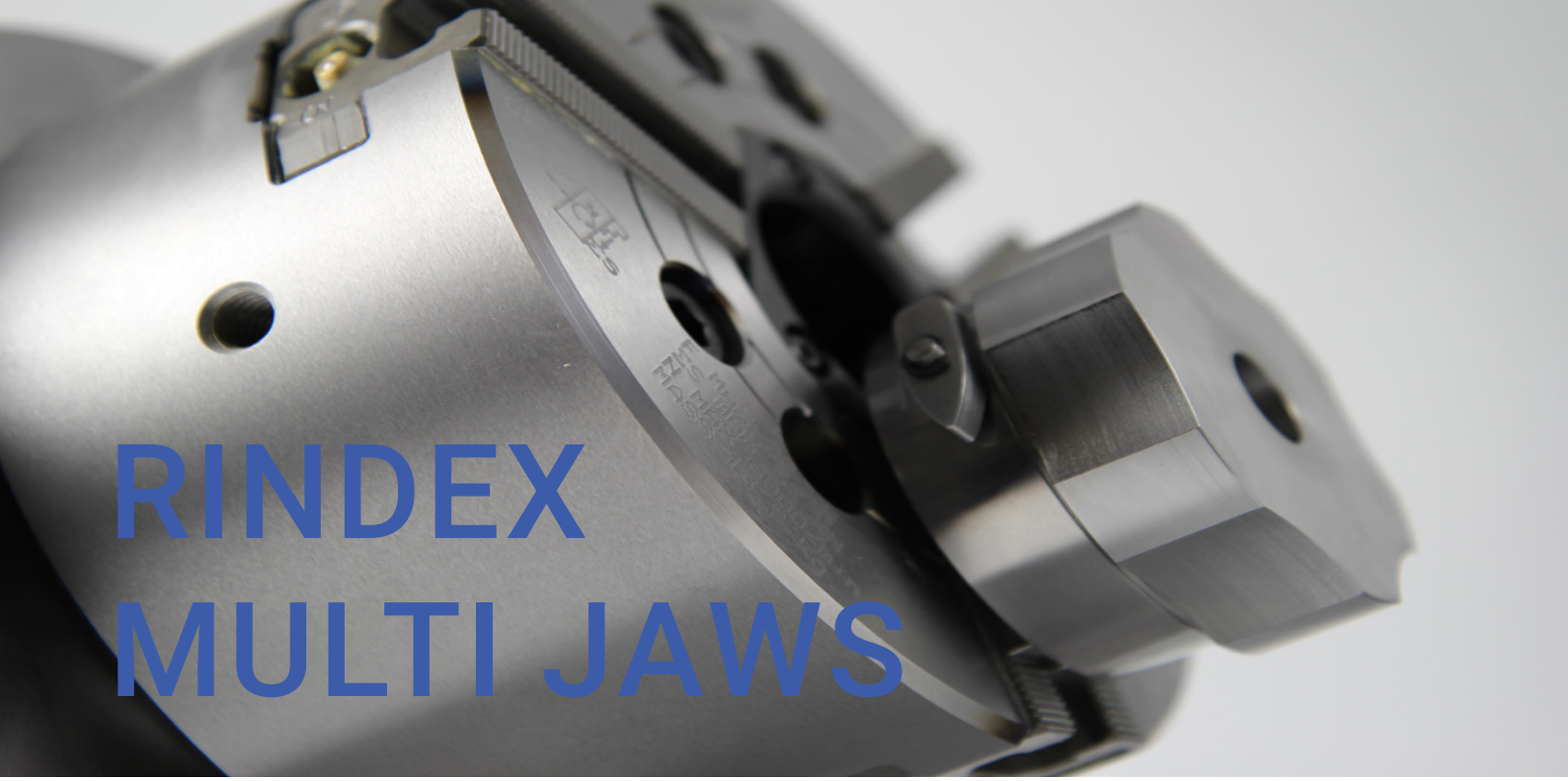
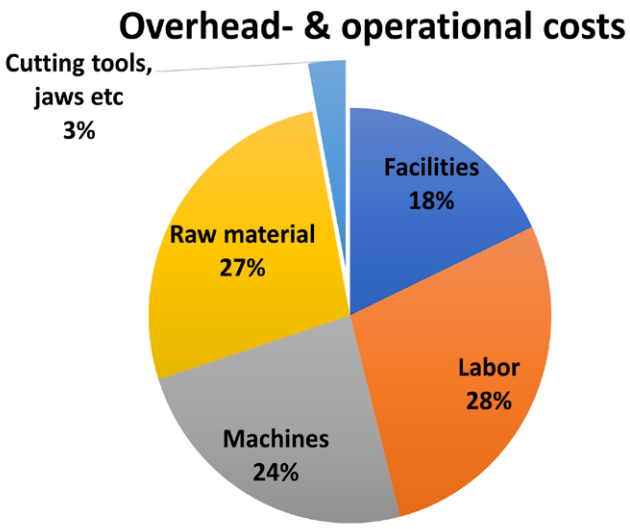


RINDEX MULTI JAWS

BASIC MANUFACTURING

DATA BY SANDVIK COROMANT*



30% TOOL CUTTING COST = **1%** COMPONENT COST

50% MACHINE USAGE = **25%** GROSS MARGIN

50% CUTTING DATA = **25%** COMPONENT COST

SAVINGS ON TOOLS IS A FALSE ECONOMY

Cutting tools, jaws etc. amounds to abput 3% of total costs.

A quality jaw system will reduce your machine- and labor costs, which amount to over 50% of the total costs.

HOW MUCH CAN YOU MAKE?

* Increase gross margin up to 65%,

* By reducing setup costs by 95% AND

* Reducing rework- and inspection time

* https://www.sandvik.coromant.com/sv-se/services/manufacturing/pages/default.aspx

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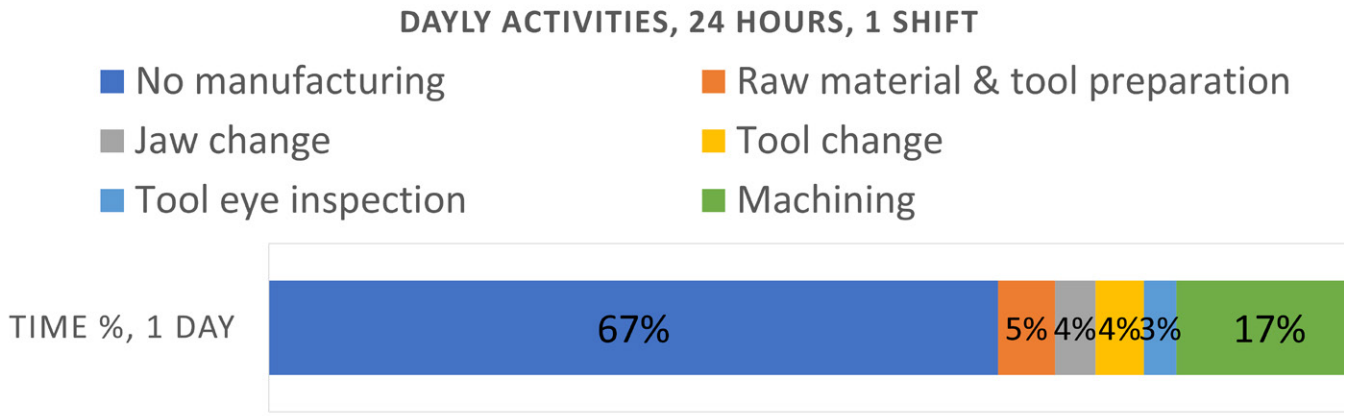
24 HOURS IN A MANUFACTURING COMPANY

WHEN USING AN 8 HOUR SHIFT, MACHINE OPERATING TIME IS EQUAL TO ABOUT 4 HOURS. OUT OF THESE 4 HOURS, AS MUCH AS HALF COULD BE SPENT ON REWORK AND MEASURMENT TIME.



CALCULATIONS MADE BY MPC, USING SANDVIK COROMANTA DATA

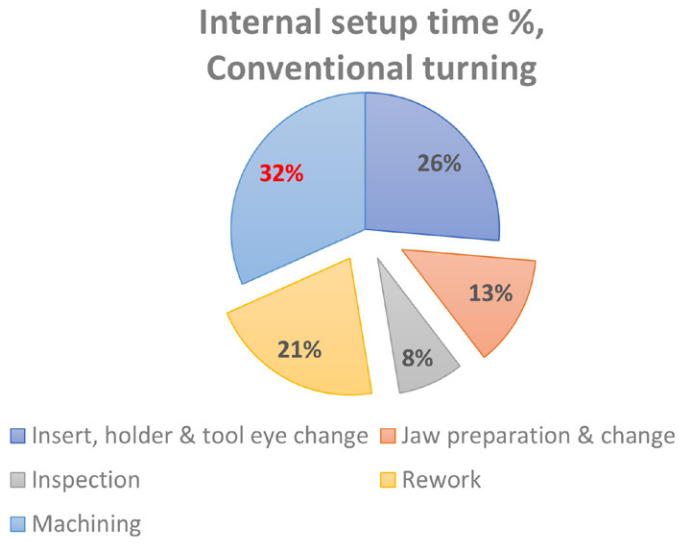
By reducing Inspection time, rework and jaw change you can increase machine time with more than 100 %.

Jaw change amounts to 13% of internal set up time and machining. Adding inspection- and rework time, non productive tasks amount to 42% that could be spent on machining instead.

IF RINDEX MULTI JAWS CUTS JAW CHANGE - , INSPECTION AND REWORK TIME TO ZERO, YOU WILL GET:

- 134% INCREASED MACHINE TIME
- 65% INCREASED GROSS MARGIN
- OR 11 500 € PER YEAR AND MACHINE

Calculations from case study*



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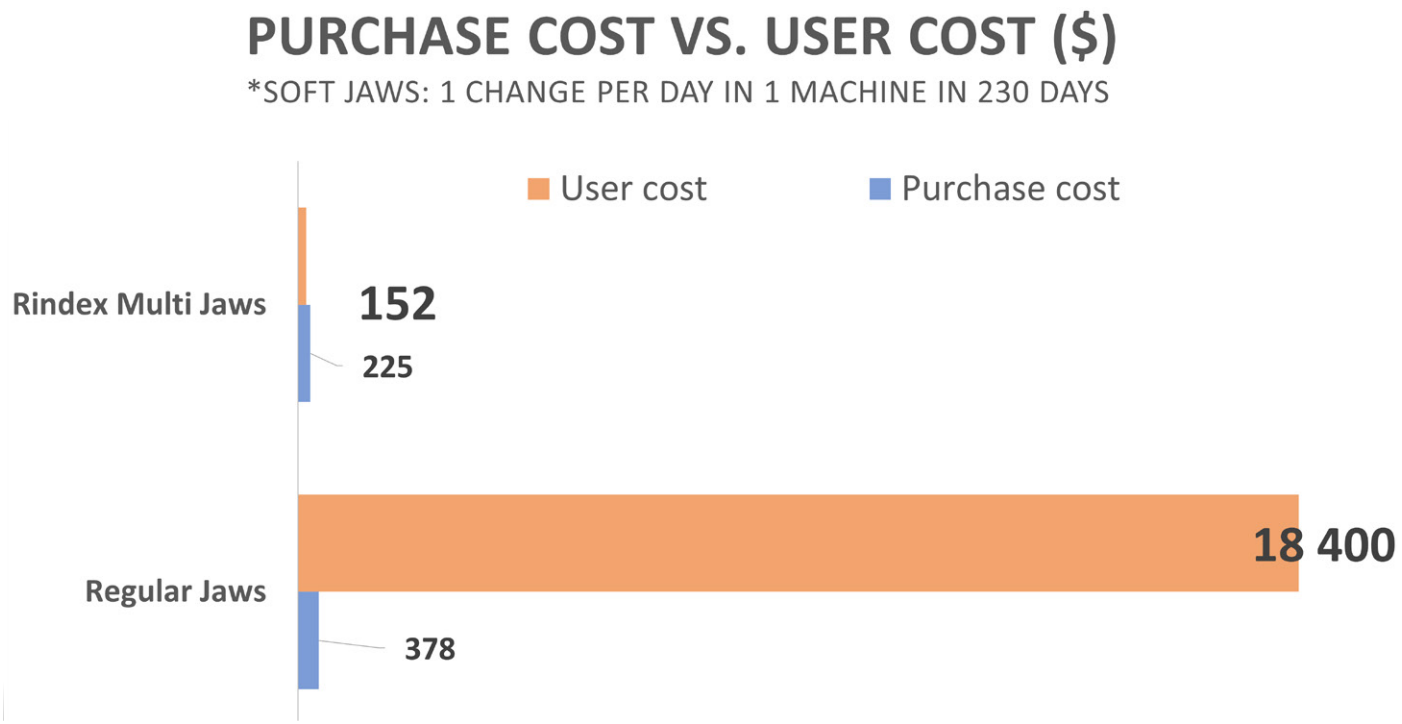
* "Head & Base Production Optimization: Setup Time Reduction" Haiqing Guo, 2007

MONEY MAKING TOOLS

YEARLY USER COSTS

THE PURCHASE COST OF REGULAR JAWS IS A TINY FRACTION OF THE TOTAL COST WHEN ONE TAKES USER COSTS INTO ACCOUNT.



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GOODBYE SET UP COSTS

The ”profit per year” example in the table suggests that a company that makes 2 jaw changes in two machines during a year of 230 workdays would make a profit of $ 42 300, given an hourly machine rate of $ 80.

This is due to the time saved by using Rindex Multi Jaws, quality aspects aside. Make your own calculations by changing the varibles in the table on our website.

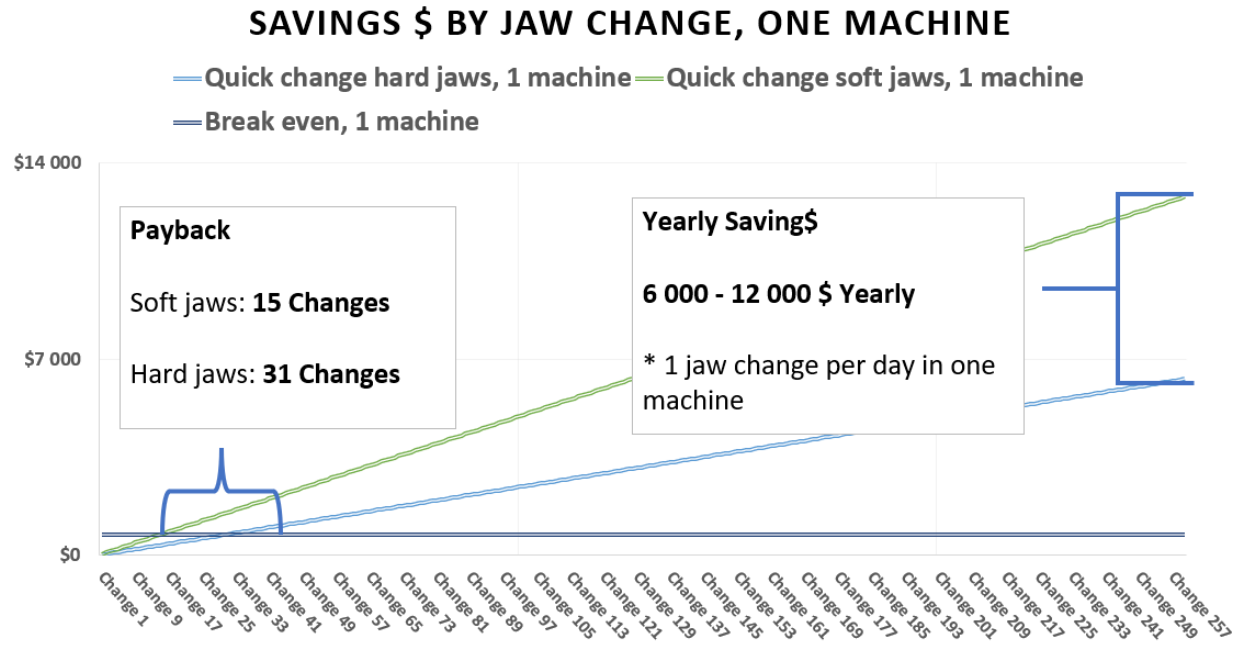
HOW IT´S DONE

* MINIMAL SET-UP & CHANGE OVER TIME
* TOP JAWS CAN TAKE ON 12 DIFFERENT POSITIONS.
* CHANGE DIAMETER IN 30 SECONDS.
* CHANGE TOP JAWS IN LESS THAN A MINUTE, WHEN NEEDED

Operation	Conventional Jaws	Rindex Jaws
Locating jaws	5 min	0
Jaw change	10 min	30 sec
Reboring of jaws	20 min	0
Jaw Change / day	2	2
Number of machines	2	2
Working days / year	230	230
Machine cost/ $ hour	$ 80	$ 80
Total cost	$ 43 000	$ 600
Profit per Year		$ 42 300

PAYBACK TIME AND YEARLY PROFITS

By making simple assumptions about the time a machinist spend on changing conventional jaws and an estimated investment cost for Rindex Multi Jaws, you can calculate beak even and yearly profits.



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RINDEX COUNTERWEIGHTS

24 HOURS IN A MANUFACTURING COMPANY

WHEN USING AN 8 HOUR SHIFT, MACHINE OPERATING TIME IS EQUAL TO ABOUT 4 HOURS. OUT OF THESE 4 HOURS, AS MUCH AS HALF COULD BE SPENT ON REWORK AND MEASURMENT TIME.

SPEED UP - FOR FAST RETURNS

Thin walled and/or sensitive parts need low initial clamping force. Size, weight and location of jaws
will greatly reduce clamping forces as spindle speed (RPM) increase.

HOW MUCH CAN YOU MAKE?

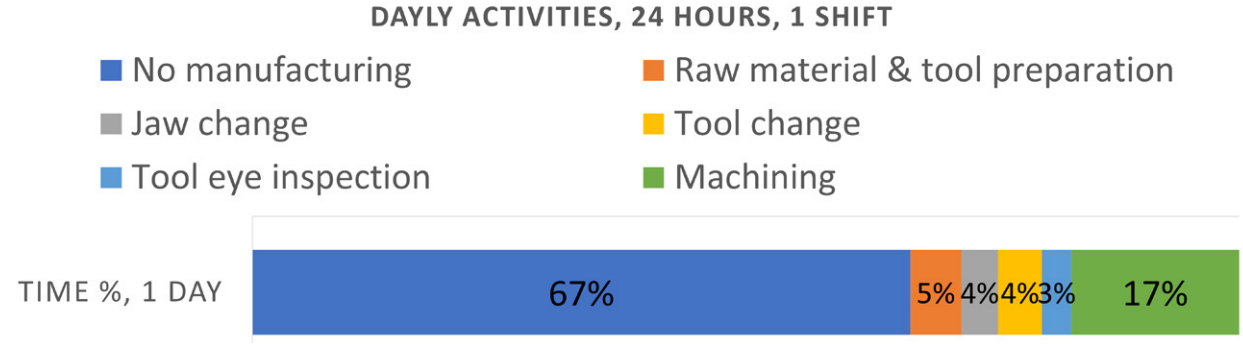
Decrease component cost with up to 80+ %...
By Increasing spindle speed with up to 3 times...
Cutting rework and inspection time...

Resulting in 250% increase gross margin

30% TOOL CUTTING COST = **1%** COMPONENT COST

50% MACHINE USAGE = **25%** GROSS MARGIN

50% CUTTING DATA = **25%** COMPONENT COST



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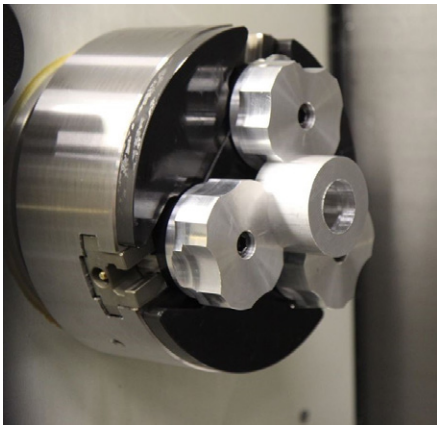
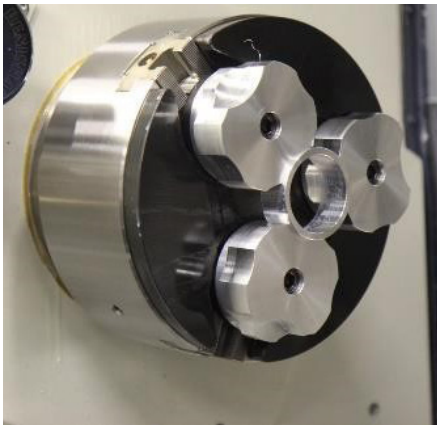
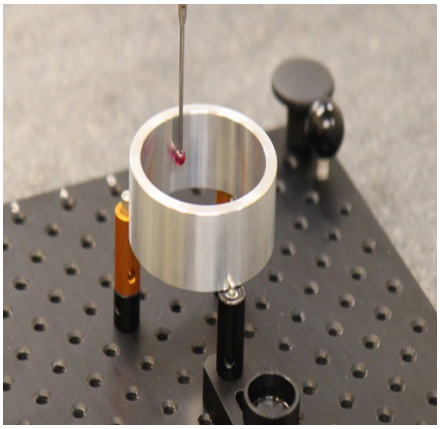


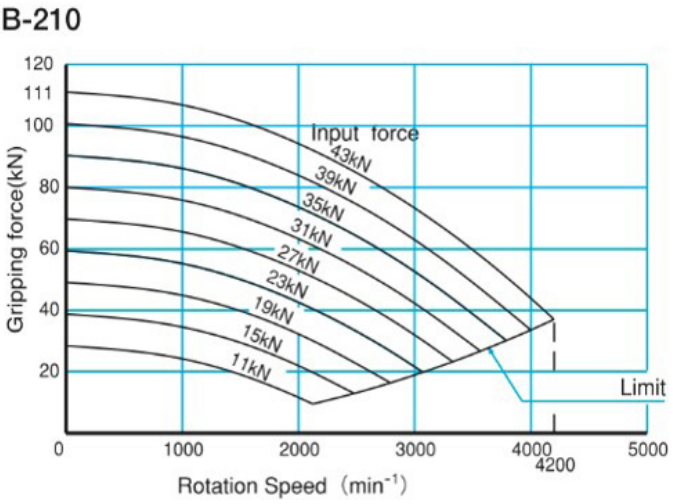




TRADE OFF - CLAMPING FORCE VS RPM

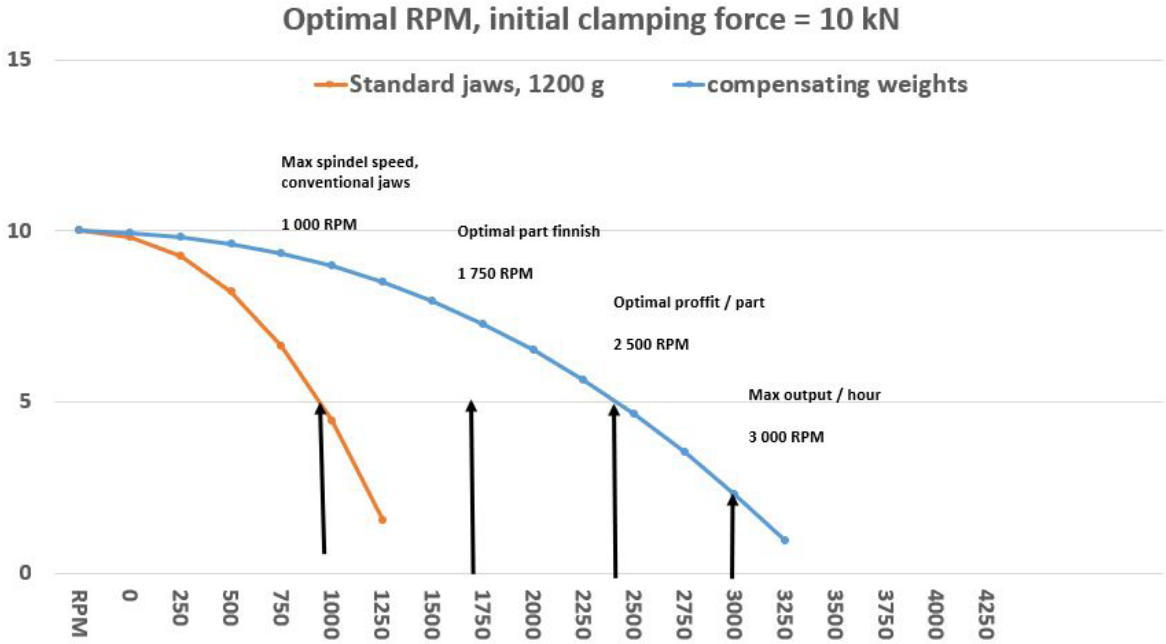
When clamping force is set to 10 kN, the maximal spindle speed is about 1000 RPM.

This effects number of parts/ minute, surface
structure and cutting tool life. You will not be able to follow recommendations from your cutting tool provider.



HIGH OUTPUT, LOW COST

Counterweights can increase metal removal rate by a factor of 3, or 200%, when applicable. A 200% increase equals a 70% lower component cost and a 3 times increase in gross margin.



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MACHINE TIME ↑ 600%

EXAMPLE

Output = 50 pieces an hour (32% in diagram)

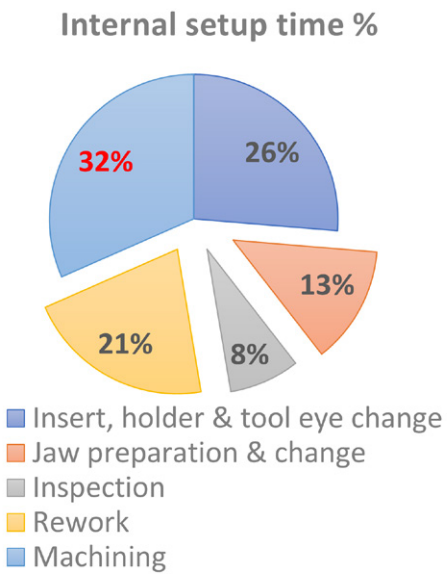
By cutting rework (21%), inspection (8%) and jaw change time (13%) you can produce an extra 65 pieces an hour. That is an increase by 131% to a total of 115 pieces.

When turning 3 times faster = 115 * 3 = 345 pieces can be made.

That is an increase with 600%. According to sandviks calculations, that equals a gross margin increase with 300 %, or...

A DECREASE IN COMPONENT COST BY 85%.

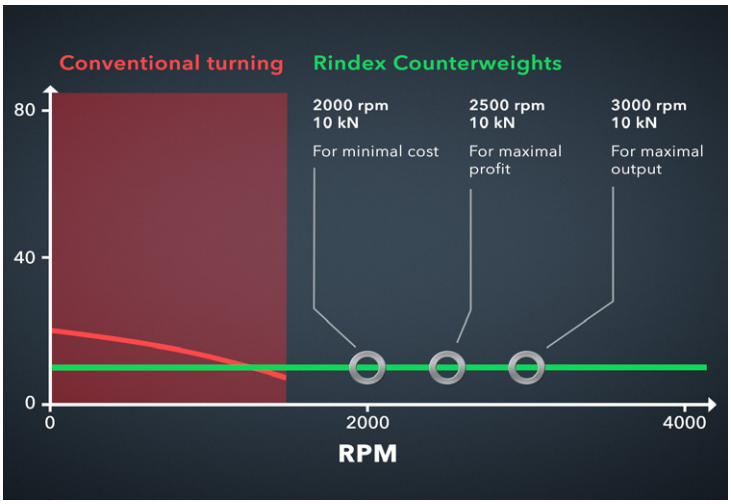
Calculations from case study*



OPTIMIZE ... OPTIMIZE ... OPTIMIZE

When clamping force need to be low, you will not be able to follow recomendations from your cutting tool provider. Compromizes used to be made. Not any more.

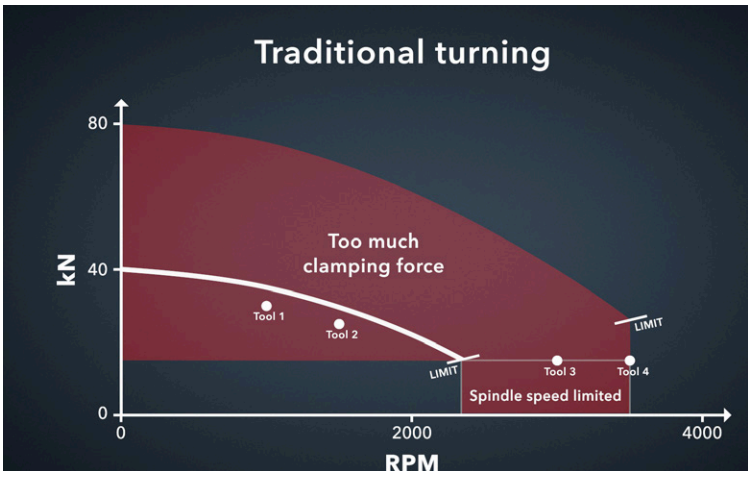
Let each assignment have its own target, choose between ´high quality, cost efficiency, profit or parts per minute.



CUSTOMER SATISFACTION

Your machine time is extreamly valuable. So is your customer relations as well as your ability to bring in new business.

By increasing productivity (turn faster) and quality (soft clamping), you will be able to take on more customers.



* Case Study: Mass Production in Small Scale Industries
IJRRCME | Vol 1 Issue 1 April 2014-September 2014
Velpuri Gopi Krishna

MPC AUTOMATION SYSTEMS

MPC Automation Systems AB was founded in 1986. Since then, we have marketed CNC-machines, developed accessories and software for automation of CNC machines. One of our best selling pcoducts, the Grippex Barpuller, has been a world wide success and represents our strive to make great things better. Our latest product line, flexable quick jaws with counter weights for takes our legacy into the 21st century.

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