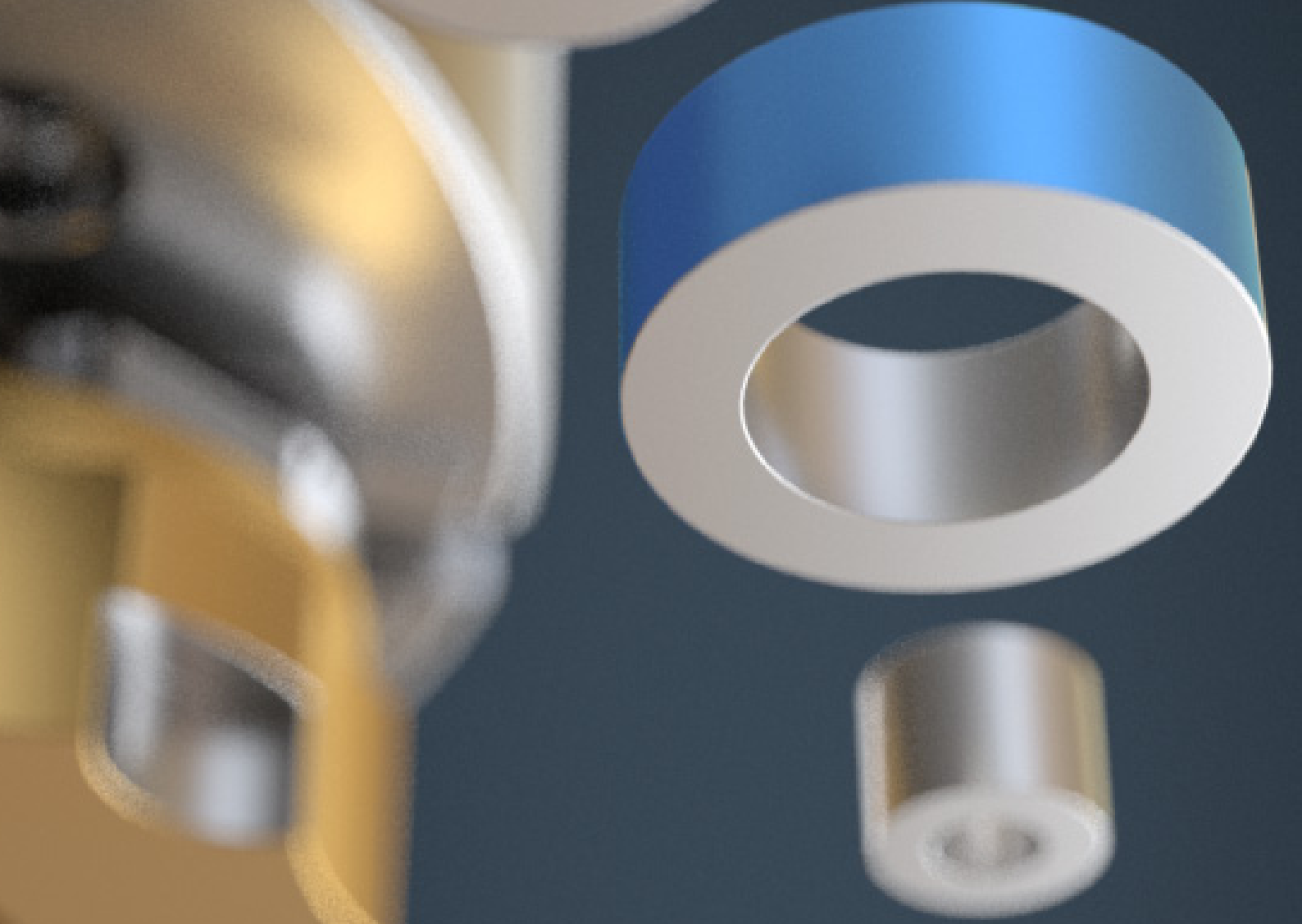

CALCULUS

MPC AUTOMATION SYSTEMS

www.rindex.com

MADE IN SWEDEN

mpc AUTOMATION SYSTEMS

GLOBAL DISTRIBUTION LOCATIONS TO THIS DATE

OUR 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 COUNTER WEIGHTS

* CENTRIFUGAL COMP.
* DETACHABLE WEIGHTS
* EXTRA WEIGHTS OPTIONAL

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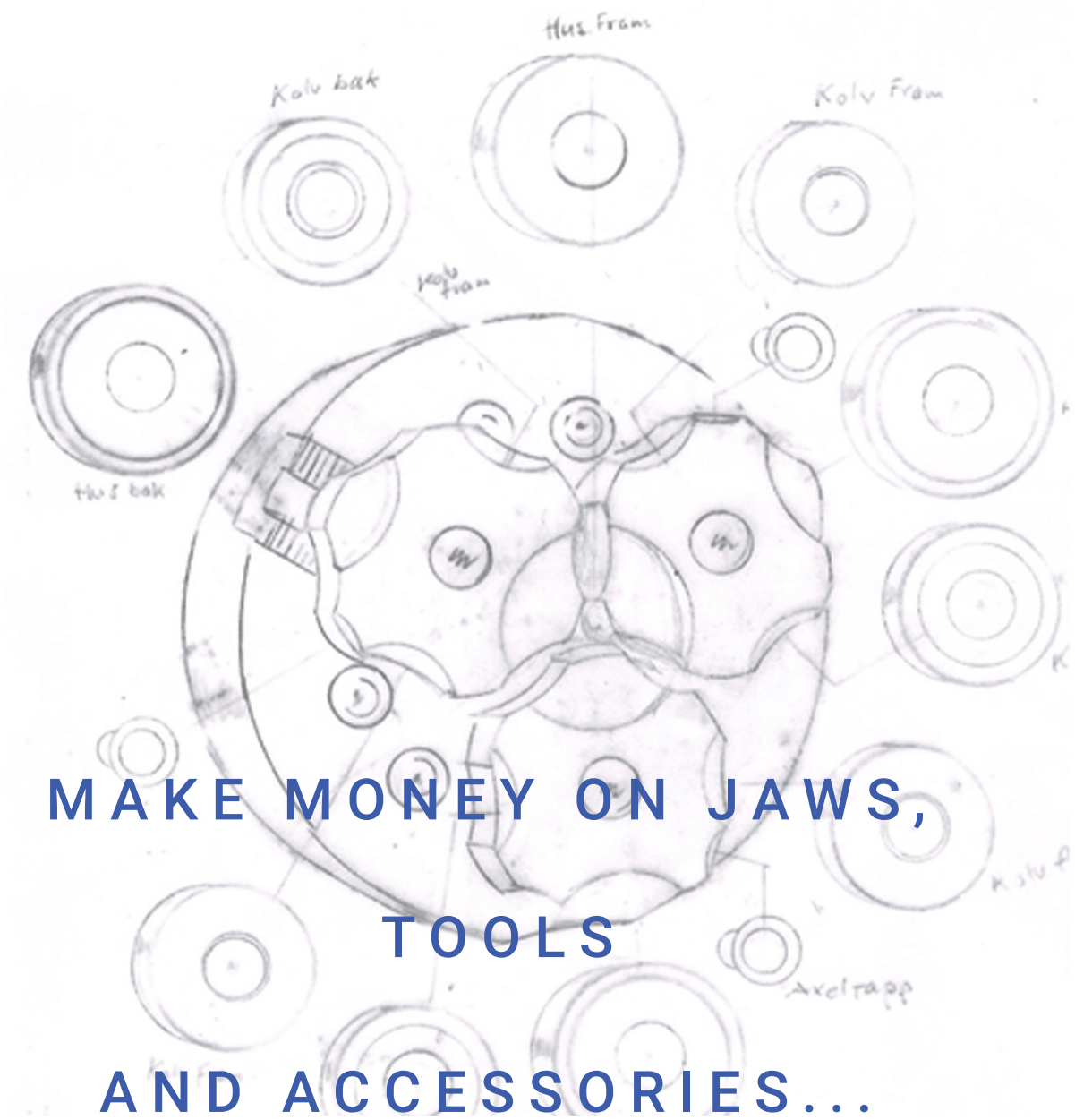

MAKE MONEY ON JAWS,

TOOLS

AND ACCESSORIES...

RINDEX MULTI JAWS

* INCREASE GROSS MARGIN WITH 65 %...

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

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

RINDEX COUNTERWEIGHTS

* UP TO 80% LESS COMPONENT COST

* BY TURNING THREE TIMES FASTER

* LESS REWORK AND INSPECTION TIME

* 300% INCREASED GROSS MARGIN

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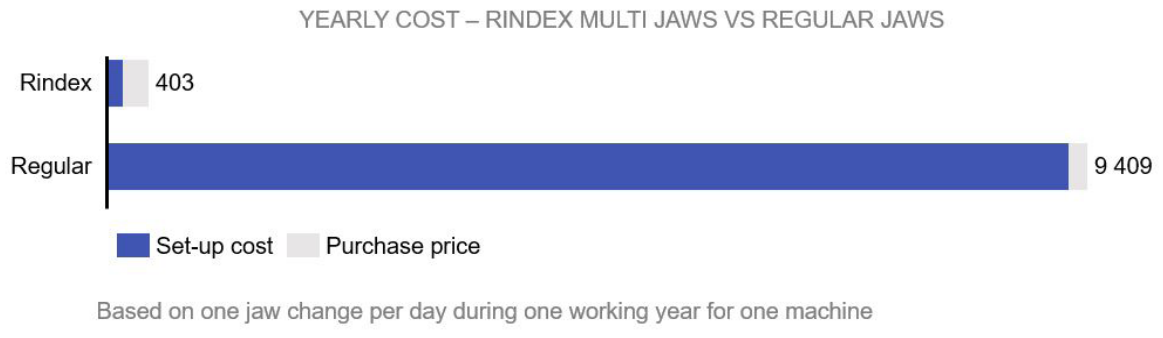
RINDEX MULTI JAWS

USER COST REDUCTIONS

The purchase cost of regular jaws is a tiny fraction of the user cost. The total cost (purchase and user cost) for Rindex Multi Jaws is about 3.5% of total cost of regular jaws*.

23x MORE COST EFFICIENT COMPARED TO REGULAR JAWS



Based on one jaw change per day during one working year for one machine

* We are assuming that 3 sets of regular soft jaws are consumed in one year, compared to one set of Rindex Multi Jaws

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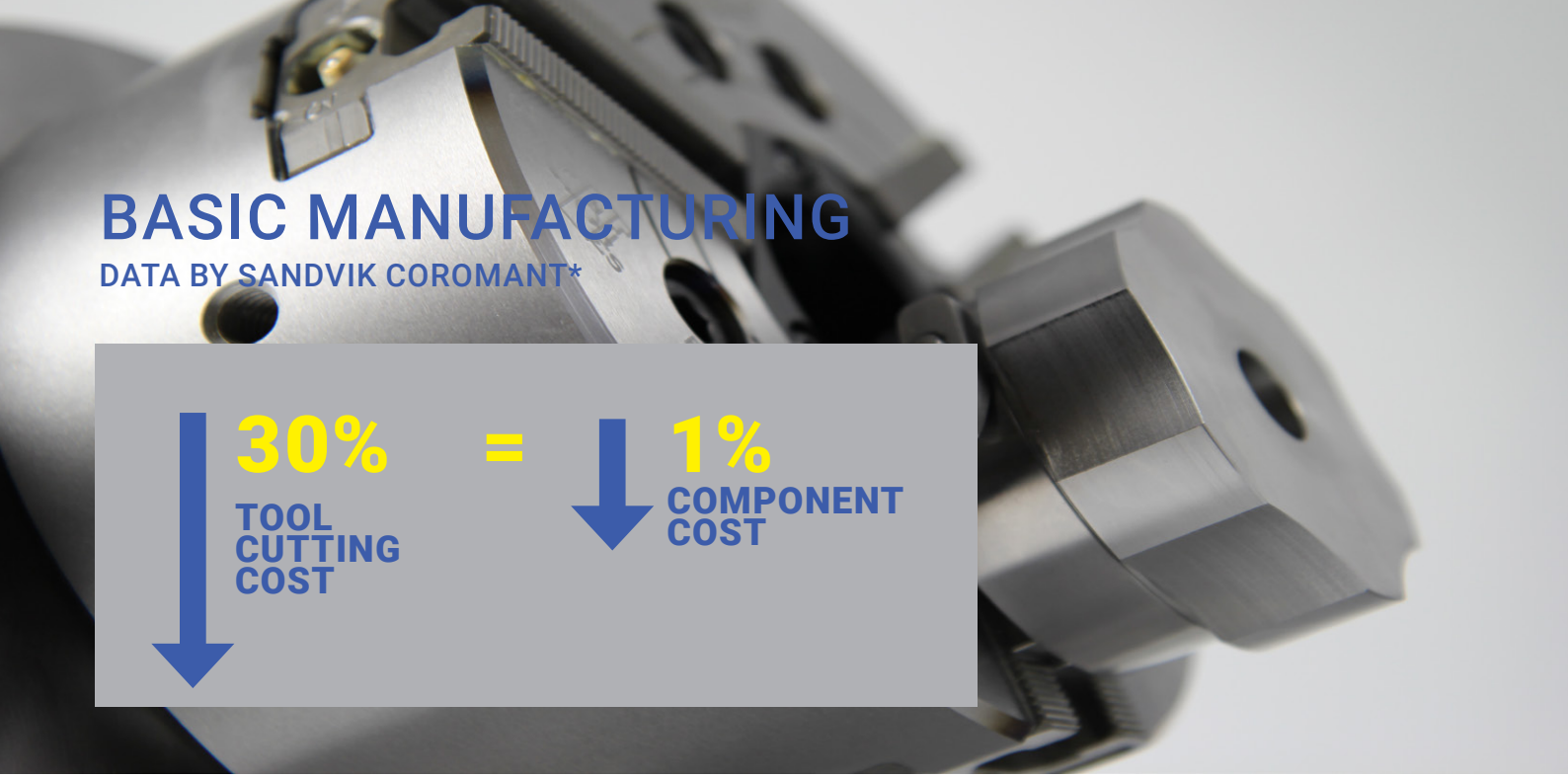


BASIC MANUFACTURING

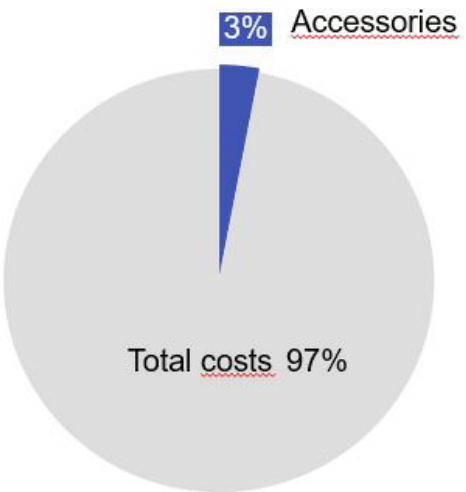
DATA BY SANDVIK COROMANT*

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

SAVINGS ON TOOLS IS A FALSE ECONOMY

Cutting tools, jaws etc. amounds to about 3% of total costs. Because of this, savings on accessories does not effect on total costs. A quality jaw system will reduce your machine- and labor costs, which amount to over 50% of the total costs.

ACCESSORIES AMOUNTS TO 3% OF TOTAL COST



A SMART CHANGE

RINDEX MULTI JAWS HAVE BOTH QUALITY AND QUANTITY ENHENCING CHARACTERISTICS.

* MORE MACHINING
* LESS OPERATOR DOWN TIME
* LESS MATERIAL WASTE

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

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HOW MUCH CAN I MAKE?

* INCREASE GROSS MARGIN UP TO 65%,

* BY REDUCING SETUP COSTS BY 95% AND...

* CUTTING REWORK- AND INSPECTION TIME

DATA BY SANDVIK COROMANT*

50% → **25%**

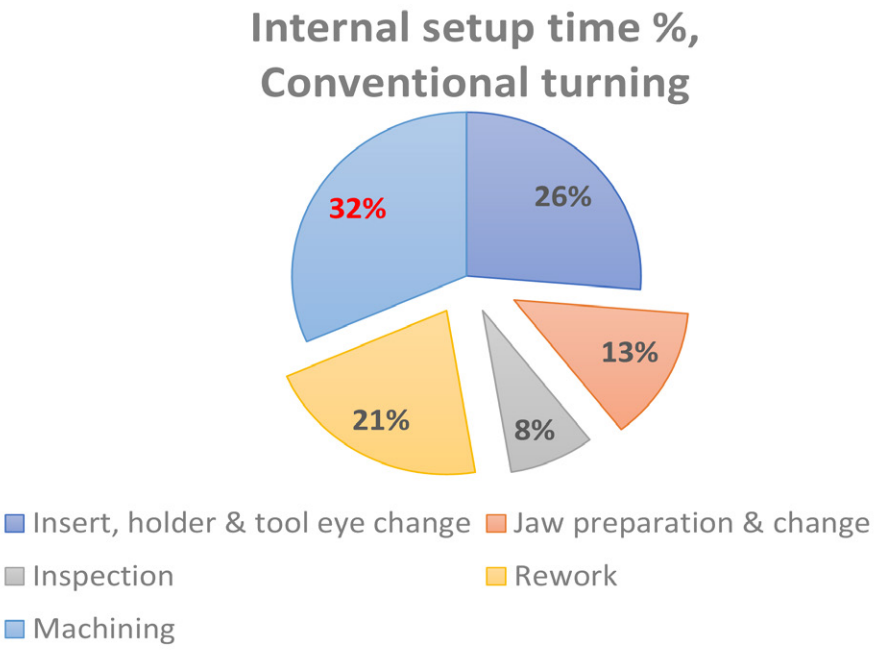
INCREASE IN MACHINE UTILISATION → **IMPROVED GROSS MARGIN**

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.

By eliminating inspection-, rework and jaw change time you can increase machine time by 134%. Given Sandvik Coromants data, you could increase gross margin by up to 65% or **decrease component cost by 57%. Here is how.**

CALCULATIONS FROM CASE STUDY**

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.



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

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

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GOODBYE SET-UP COSTS

HOW TO MAKE $42 300 IN ONE YEAR

The ”profit per year” example in the table below 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 at:

www.rindex.com

HOW IT´S DONE

* MINIMAL SET-UP & CHANGE OVER TIME
* TOP JAWS WITH 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

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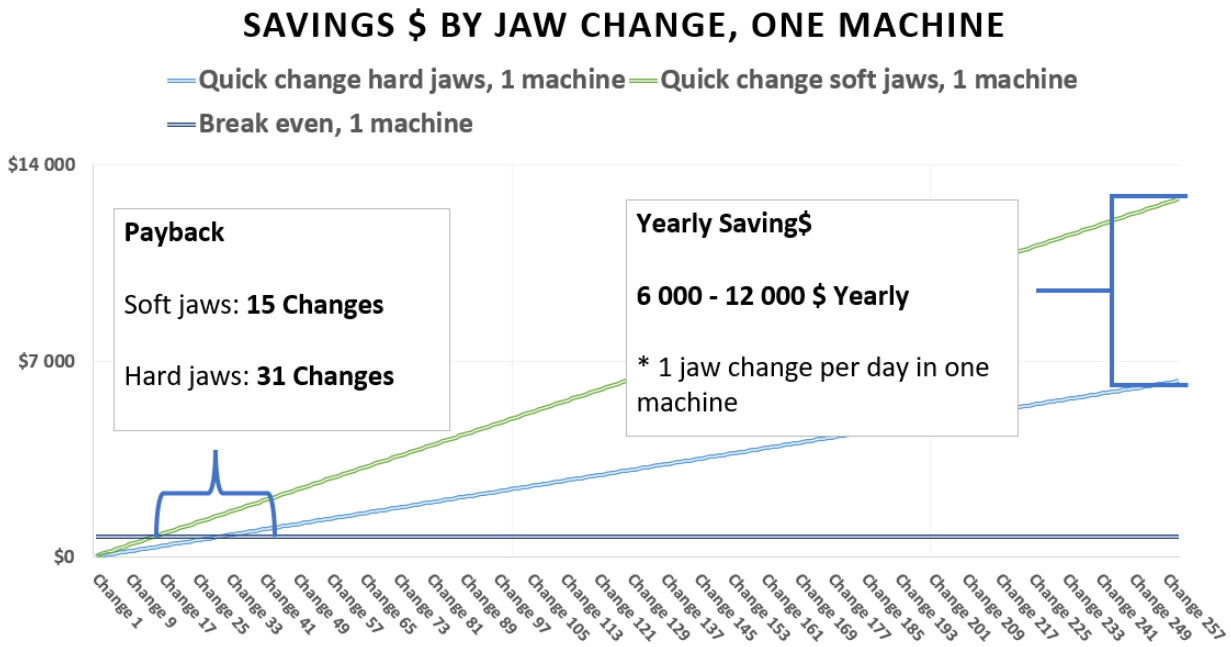
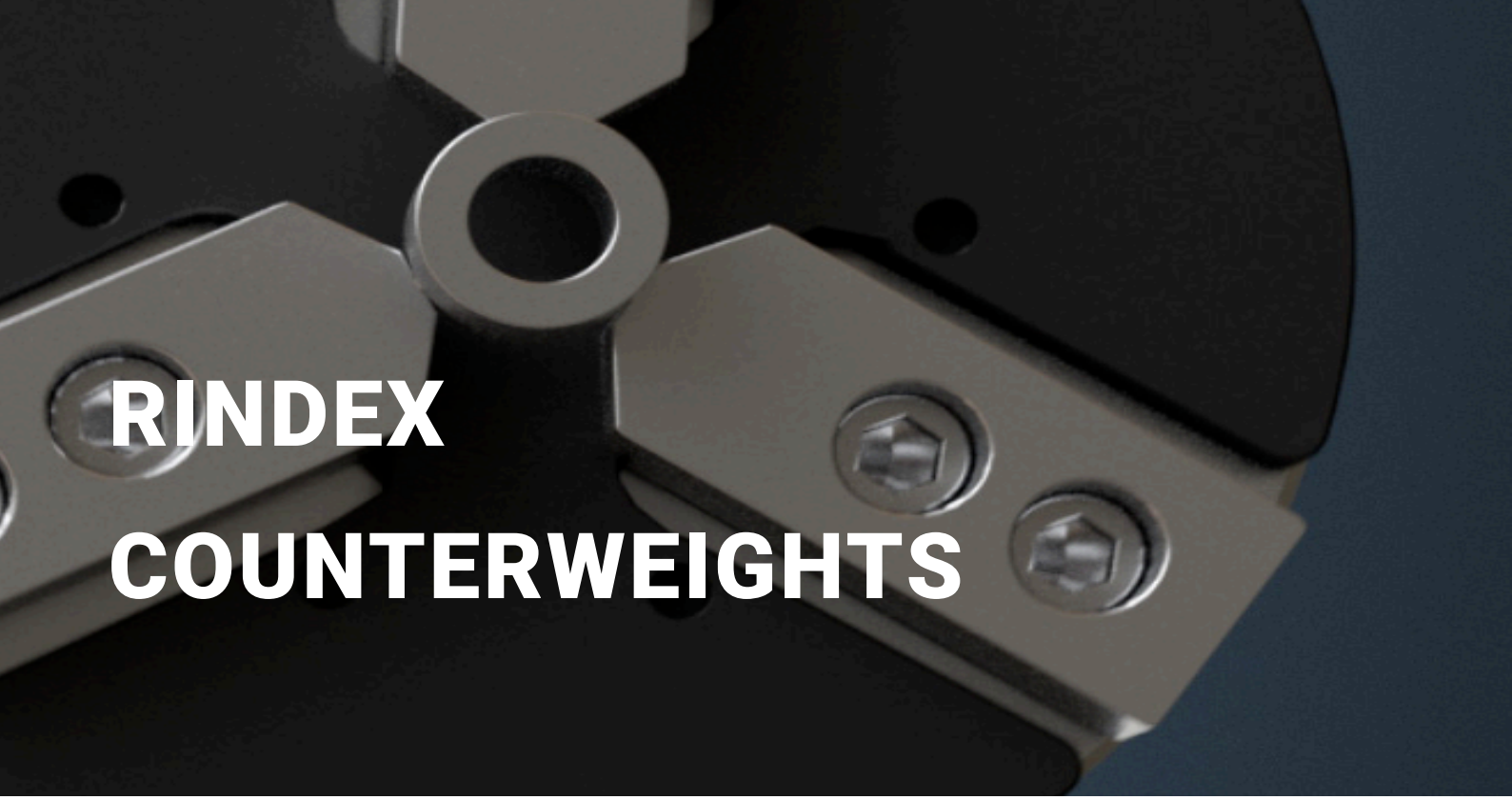
PAYBACK TIME AND YEARLY PROFITS

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.





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.

HOW MUCH CAN I MAKE?

* 3 TIMES RPM INCREASE POSSIBLE
* CUT REWORK & INSPECTION TIME

=

80% LESS IN COMPONENT COSTS

GAIN 300% GROSS MARGIN

DATA BY SANDVIK COROMANT*

25% IMPROVED GROSS MARGIN

THROUGH

50% INCREASE IN MACHINE UTILISATION

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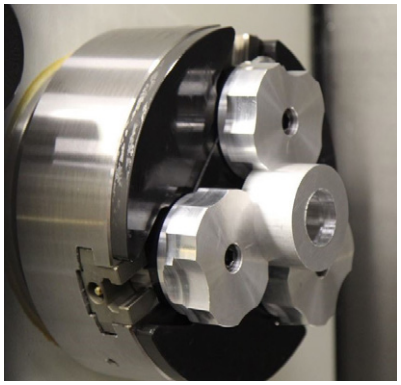
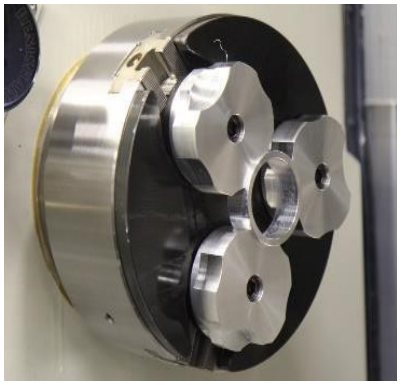
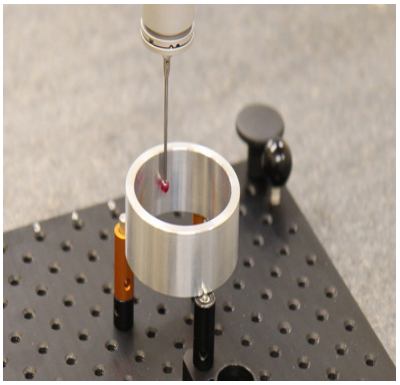






SPEED UP - FOR FAST RETURNS

Sensitive or thin walled parts need low initial clamping force. You want to use large, enclosing jaws for best results.

The size, weight and location of jaws will greatly reduce clamping forces as spindle speed (RPM) increase.

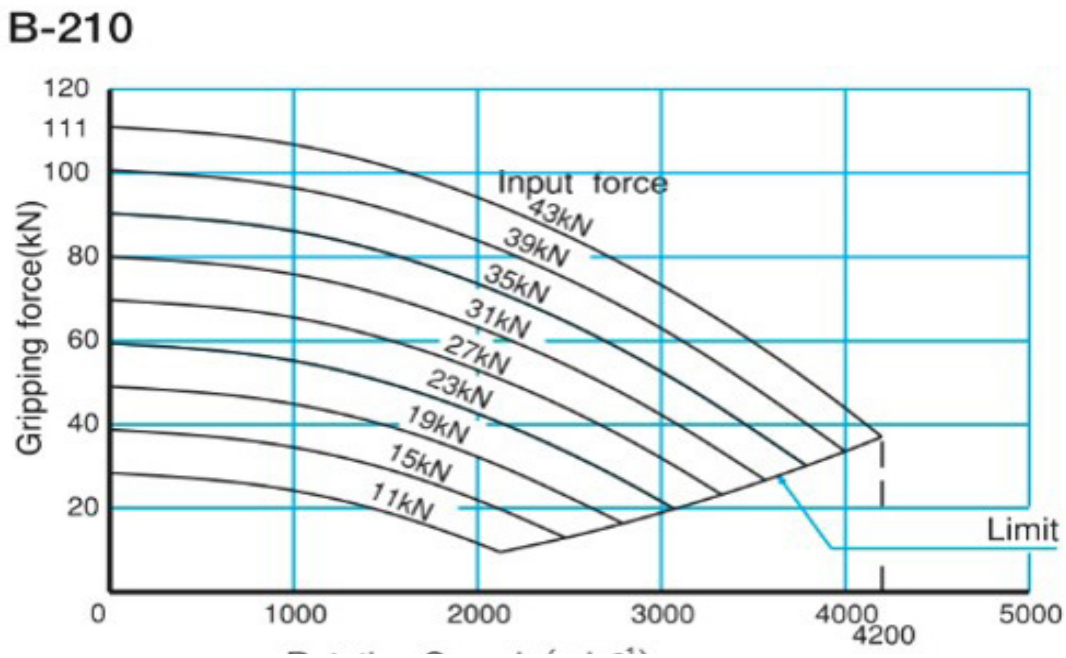
This leaves you with a problem: **soft clamping or high RPM?**

TRADE OFF - CLAMPING FORCE VS RPM

If clamping force is set to 5 kN, then spindle speed limit is about 500 RPM.

This effects: parts/ minute, surface structure and cutting tool life oppertunities.

You will not be able to follow recommendations from your cutting tool provider.



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MACHINE TIME

+600%

COMPONENT COST

-85%

AN EXAMPLE

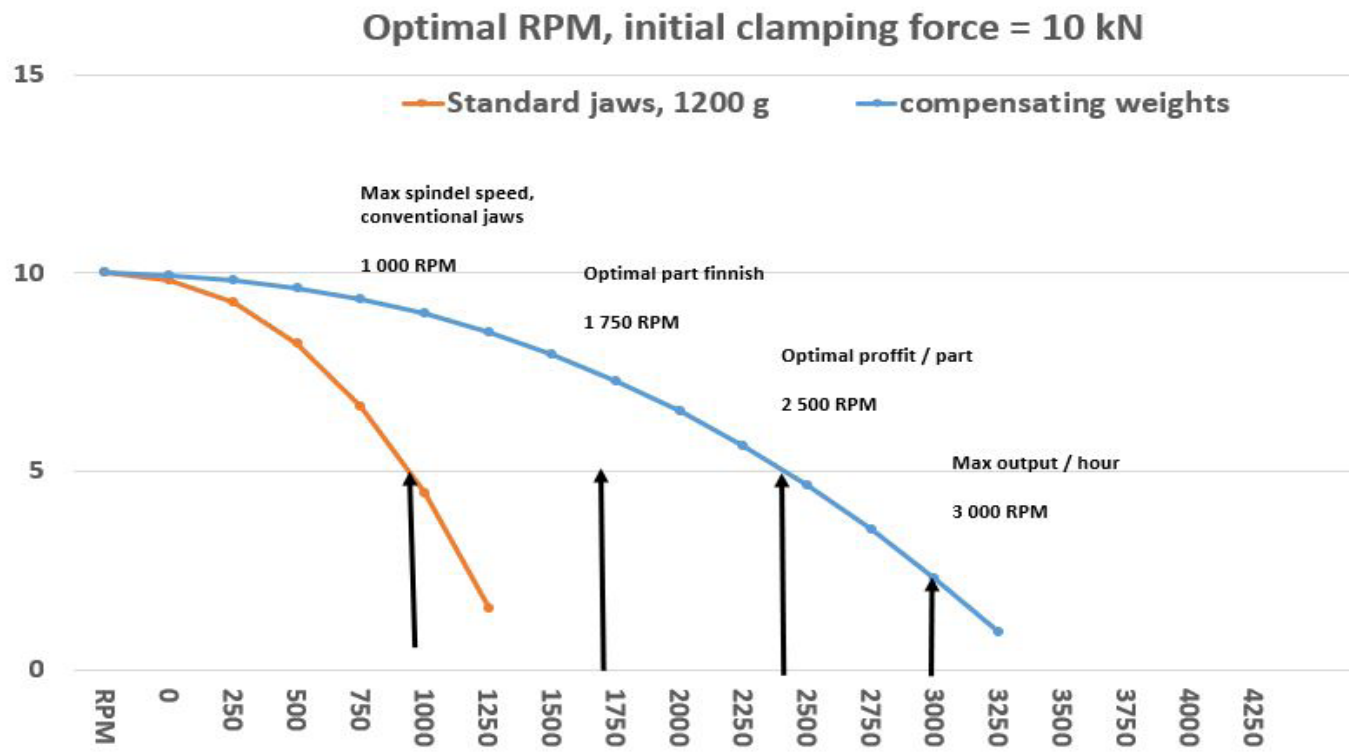
Average Output = 50 pieces an hour

Cut rework-, inspection and jaw change time and make 115 pieces (+131%).

Turn 3 times faster = 3 * 115 = 345 pieces

THAT IS AN INCREASE WITH 600%. Or, According to Sandviks calculations, **A DECREASE IN COMPONENT COST BY 85%.**

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



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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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