



PRECISION BENDING, SIMPLIFIED

# STRAIGHTENING

[& FORMING MACHINES]

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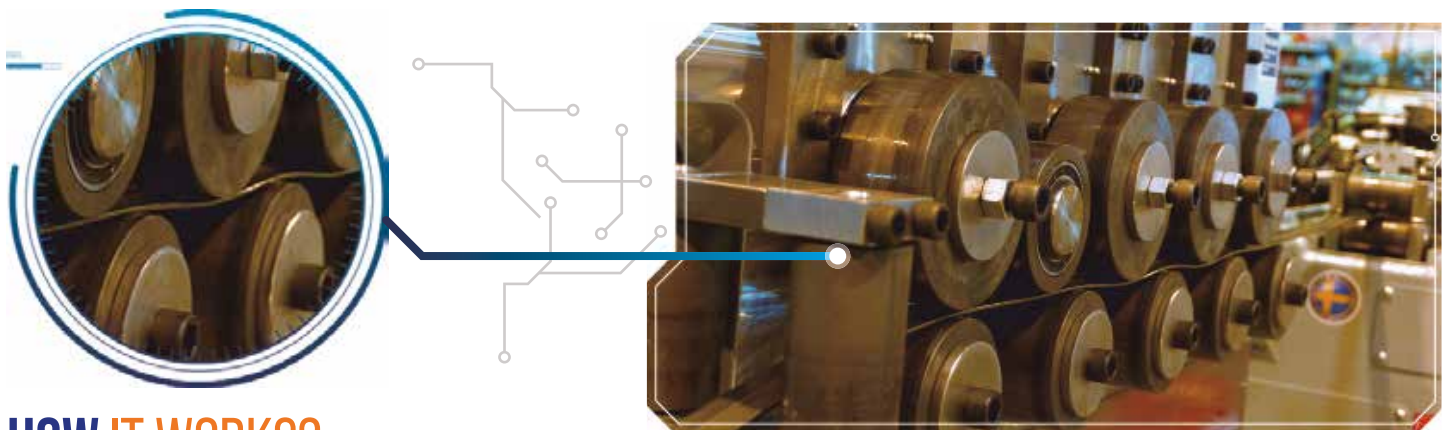
As the fourth industrial revolution is upgrading the industry, we set out on a mission to equip our clients to take full advantage of this boost in production quality and efficiency. Faster production with tighter tolerances and better precision technology is only achievable if the material inserted into the machine is straight and level and precisely prepared for the processing that follows. Through our CNC control equipped with advanced measuring possibilities, cameras to see and connectivity to communicate, we introduce you to the most precise, effective and technologically superior straightening machines on the market. Our machines are ALWAYS tailored to our clients' exact requirements, so tell us if there is a function or feature that you'd like us to incorporate!

**Peter Nilsson**, *Technical Director & CEO*



## WHY LEVEL A SEEMINGLY LEVELED PLATE?

A leveled plate is necessary for any type of metal processing, whether it is laser/plasma/flame cutting, pressing, shearing or bending. The most common problem with sheet metal is non-planarity and variation in thickness. Disregarding these problems usually causes delays and costly re-work. Our CNC control executes based on your input data and uses fine-tuned algorithms which are constantly learning from previous results. If the processes before or after should encounter a delay, the CNC control automatically adjusts the speed of leveling together with the input and output rolls to accommodate for this delay and keep your production running smoothly.



## HOW IT WORKS?

1. Automatic material transporters (optional) bring forth the material to be leveled. The pinching rolls creates a friction to move the material (especially necessary if the plate is thin)
2. The leveling begins with the first top roll bending the plate beyond the yield point (to achieve plastic deformation in the material)
3. To increase the flatness of the plate the following straightening rolls are positioned incrementally to have less deformation after every pass.
4. A re-run might be required depending on the number of straightening rolls and the required tolerance for the leveling. The straightening process requires fewer passes if the machine is equipped with more rolls (down to only a single pass).



# THE POWER OF SWEBEND

SweBend's machines are all developed with Swedish engineering, built to Swedish manufacturing standards and primed through years of success building superior quality machines.

## [ADVANTAGES OF SWEBEND PLATE STRAIGHTENERS]

- **Built for YOU!** Eliminates ALL curvature and corrugation within your determined time requirement.
- **Versatile!** Crowned rolls or Supported rolls or both - adjusted to meet your demands, budget and maximize your ROI.
- **Heavily proportioned stress-relieved main frame and components.** This helps increase stiffness and reduce flexing of the machine, insuring optimal leveling results
- **Stronger.** More drive torque than any comparably sized machine.
- **SKF Bearings.** Only genuine SKF bearings used throughout the machine.
- **Superior Quality Steel.** World famous German steel used for all roll tooling.
- **Safe.** Multiple safety systems available to keep operator and operations safe and secure.

## CAN YOUR MACHINE HANDLE MY PLATE DIMENSIONS?

ANSWER

YES

**We virtually have no limits for the machines we design and build**

**Width:** Plates normally have a width range up to 4.2m (165")

*Ask us for wider plates!*

**Thickness:** Our machines normally handle thicknesses up to 100mm (4")

*Ask us for thicker plates!*



## [SPECIAL REQUIREMENTS]

With our standard range of models as a foundation, we design and produce custom-built and adapted machines for specific customer needs. This can mean producing a machine with a unique roll diameter, special roll length or even a customized shape of the rolls. Request help with integrating the machine in your product line, demand special features and ask for what you think is impossible; we'll gladly prove you wrong!

## MADE IN SWEDEN BECAUSE QUALITY MATTERS

Made in Sweden means a machine that guarantees the highest quality in all details resulting in longer lifetime, less maintenance and repairs, higher output, better production quality and an unmatched return-on-investment!



# CHOOSING THE SIZE, ROLLS AND FUNCTIONS

Dimensioning the plate straightener ultimately comes down to defining the material to be leveled and how it may vary over time. Depending on how straight the input material is together with your acceptable processing time will determine if the machine should have 5, 7 or 9 rolls. The straightening rolls (top rolls) are all fully adjustable at both ends. The more rolls in the machine, the fewer passes are necessary to reach the desired flatness. The thickness of the plate will determine the potential crowning or support of the straightening rolls. The roll crowning has a function of resisting the forces from the plate. Using support rolls instead of crowning the straightening rolls will increase the versatility of the machine as the supported rolls now can withstand stronger forces from thicker plates. Even the support rolls can be adjustable - for true versatility.

*Ask us or your closest reseller to make an assessment for you!*

## TILTED ROLLS

### VERSATILE FLATTENING THROUGH ACCURACY

Tilt the rolls to compensate for input material of low quality (straightness and thickness). Our roll positioning technique is the finest in the industry with an accuracy of 1/10mm. (0.004")

## FRAME

### DIMENSIONED FOR POWER, DIMENSIONED FOR SUCCESS

The frames and components are heavily proportioned and stress-relieved. This helps increase stiffness and reduce flexing of the machine, ensuring optimal leveling results.

## PRE-SET PINCHING PRESSURE

To compensate for thickness variation in the plate, our hydraulic "floating" control of the rolls keeps the pinching pressure constant, which will ensure movement of the plate through the straightening process.





## SPEED

### OPTIMAL INTEGRATION INTO YOUR PRODUCTION

Forget high torque on low speed and low torque on high speed. **Experience full torque throughout the entire speed range** for full compatibility with your other machines. Standard operating speed is between 0-7m/minute (0-23 feet/minute) but through our unmatched expertise we can tailor any function of our machines: *Ask us for higher speeds!*

## SUPPORT



## MAINTENANCE

### SWEBEND SUPPORT, ONLY ONE CLICK AWAY

SweBend machines are built for easy maintenance yet equipped with online support - diagnostics and problem solving are only one click away!

## BEARINGS FROM SKF

Perfect float-ability with single spherical bearings (*NEVER double, ask us why*) from SKF, the world's best bearing company. *We guarantee that no bronze bushings are ever used for our roll journals, unlike many other brands!*

## DRIVE

### TORQUE THROUGHOUT THE ENTIRE SPEED RANGE

We guarantee higher torque compared to any similarly sized machine. The electric and hydraulic motors are sized to match the capacity of the machine with extra margin, which results in smoother operation.

# THE SEVEN CNC SYSTEM



Built for the Fourth Industrial Revolution, promoting interconnectivity between machines allowing machines talk to each other. **The SEVEN CNC system** is built to receive, adjust to and send data from other machines and systems. This allows for powerful integration of new features, measurement systems and processes.

## [ DYNAMIC ADJUST ]

Adjust for varying plate thickness, and for slower or faster production in the processes before and after the machine with Dynamic Adjust. Each independently hydraulically driven roll is adjusted by the CNC system to avoid rolls spinning or braking on the material, damaging both material and rolls.

## POSSIBLE DATA OUTPUT & MEASUREMENTS

Integrate precise controls and data output for the operator to have full control of the machine.  
*See some of the possibilities below.*

### MATERIAL DATA

- Location in Machine (Laser)
- Location in Machine (Camera)

### BOTTOM ROLLS DATA

- Rotation Speed
- Roll Load Forces from Material
- Flex/Curvature of Roll

### STRAIGHTENING ROLLS DATA

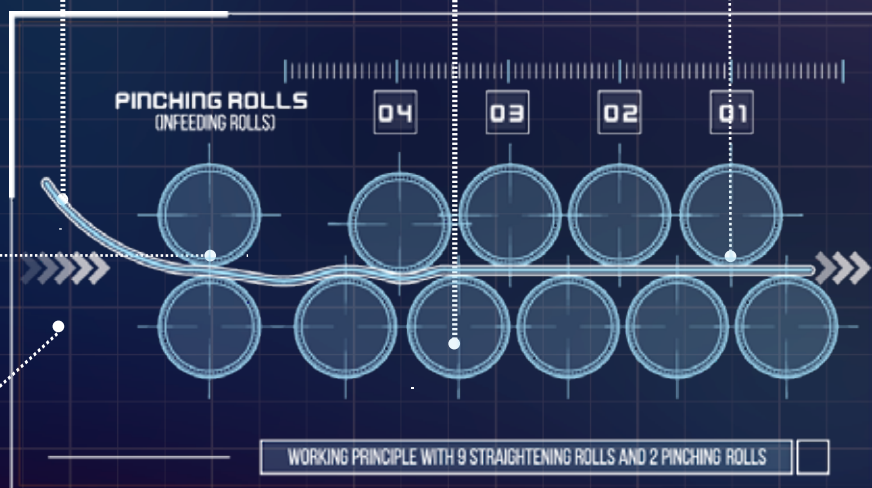
- Position Data (Both Ends)
- Rotation Speed
- Roll Load Forces from Material
- Roll Load Forces from Support Roll
- Flex/Curvature of Roll

### PINCHING ROLL

- Pinch Pressure
- Position (Both Ends)
- Rotational Speed

### FEED ROLLS DATA

- Rotation Speed







# EXTRA EQUIPMENT

Expand and integrate almost anything into the control of the machine with the **SEVEN CNC system.**

Start operations as another machine delivers the plate, control the flatness and position of the plate with lasers, secure a perimeter around the machine with cameras and export all process data to machines that are next in the production line.

*Ask us for more features and remember - if you can dream it, we can build it!*

## LASERS

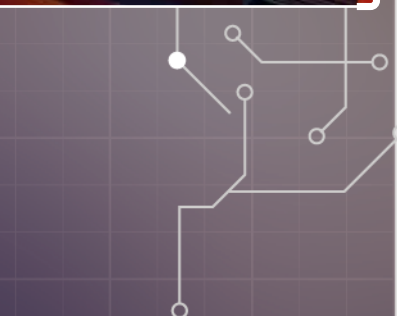
Measure the position of the material, the speed through the machine as well as the flatness in the end. All data can then be analyzed, processed and sent to other machines.

## LIVE FEED CAMERAS

With live feed cameras, nothing slips by the operator. See inside and around the machine and set up security perimeters that cut the machine power if an unsafe condition is detected.

## STATUS LIGHTS

Determine the position of the material by turning on a status light as the laser detects the material.



## YOUR EQUIPMENT?

There's nothing as valuable as being able to build upon one's already existing equipment and devices.

**The SEVEN CNC** can talk to almost any other control system or device on the market.

*Tell us about what you'd like to integrate!*



# STANDARD RANGE CAPACITY

Based on our standard machines, we produce customized machines to meet your specific requirements. Consider any model to be adjustable to your request.

**SweBend - Customized for you**

**Capacity Sheet HSM Machines**

Machine Type	Max Plate Width	Max Thickness @Max Width		Roll Ø (in.)		Connected Power (HP)		
		36000 PSI	52,000 PSI	Straightening	Pinching	5 roll version	7 roll version	9 roll version
5 roll version	Ft.							
HSM-5-4-2	2	1/4"	10 ga.	4	4	2	3	4
HSM-5-4-3	3	11 ga.	14 ga.	4	4	2	3	4
HSM-5-4-4	4	14 ga.	16 ga.	4	4	2	3	4
HSM-5-5-2	2	1/2"	3/8"	5	5	3	4	5
HSM-5-5-3	3	5/16"	1/4"	5	5	3	4	5
HSM-5-5-4	4	1/4"	3/16"	5	5	3	4	5
HSM-5-5-5	5	3/16"	10 ga.	5	5	3	4	5
HSM-5-6-2	2	11/16"	1/2"	6	5	5	7,5	10
HSM-5-6-3	3	3/8"	9/32"	6	5	5	7,5	10
HSM-5-6-4	4	5/16"	1/4"	6	5	5	7,5	10
HSM-5-6-5	5	1/4"	3/16"	6	5	5	7,5	10
HSM-5-6-6	6	3/16"	10 ga.	6	5	5	7,5	10
HSM-5-8-2	2	1"	3/4"	8	6	7,5	10	15
HSM-5-8-3	3	9/16"	7/16"	8	6	7,5	10	15
HSM-5-8-4	4	1/2"	3/8"	8	6	7,5	10	15
HSM-5-8-5	5	3/8"	9/32"	8	6	7,5	10	15
HSM-5-8-6	6	5/16"	1/4"	8	6	7,5	10	15
HSM-5-8-8	8	1/4"	3/16"	8	6	7,5	10	15
HSM-5-10-3	3	1"	3/4"	10	7	15	20	25
HSM-5-10-4	4	7/8"	5/8"	10	7	15	20	25
HSM-5-10-5	5	11/16"	1/2"	10	7	15	20	25
HSM-5-10-6	6	9/16"	7/16"	10	7	15	20	25
HSM-5-10-8	8	1/2"	3/8"	10	7	15	20	25
HSM-5-10-10	10	3/8"	1/4"	10	7	15	20	25
HSM-5-12-3	3	1-1/4"	1"	12	8	25	30	40
HSM-5-12-4	4	1-1/8"	13/16"	12	8	25	30	40
HSM-5-12-5	5	7/8"	5/8"	12	8	25	30	40
HSM-5-12-6	6	11/16"	9/16"	12	8	25	30	40
HSM-5-12-8	8	5/8"	1/2"	12	8	25	30	40
HSM-5-12-10	10	1/2"	3/8"	12	8	25	30	40
HSM-5-12-12	12	3/8"	1/4"	12	8	25	30	40
HSM-5-14-4	4	1-9/16"	1-1/4"	14	9	40	50	60
HSM-5-14-5	5	1-1/4"	1"	14	9	40	50	60
HSM-5-14-6	6	1-1/16"	3/4"	14	9	40	50	60
HSM-5-14-8	8	13/16"	5/8"	14	9	40	50	60
HSM-5-14-10	10	11/16"	9/16"	14	9	40	50	60
HSM-5-14-12	12	9/16"	7/16"	14	9	40	50	60
HSM-5-14-14	14	1/2"	3/8"	14	9	40	50	60
HSM-5-16-5	5	2"	1-1/2"	16	10	60	67	75
HSM-5-16-6	6	1-9/16"	1-1/4"	16	10	60	67	75
HSM-5-16-8	8	1-1/4"	1"	16	10	60	67	75
HSM-5-16-10	10	1-1/16"	3/4"	16	10	60	67	75
HSM-5-16-12	12	7/8"	11/16"	16	10	60	67	75
HSM-5-16-14	14	3/4"	9/16"	16	10	60	67	75
HSM-5-18-5	5	2-3/8"	1-7/8"	18	10	75	80	100
HSM-5-18-6	6	2"	1-1/2"	18	10	75	80	100
HSM-5-18-8	8	1-9/16"	1-1/4"	18	10	75	80	100
HSM-5-18-10	10	1-3/8"	1"	18	10	75	80	100
HSM-5-18-12	12	1-3/16"	7/8"	18	10	75	80	100
HSM-5-18-14	14	1"	3/4"	18	10	75	80	100
HSM-5-20-5	5	2-3/4"	2-1/8"	20	11	100	120	135
HSM-5-20-6	6	2-3/8"	1-7/8"	20	11	100	120	135
HSM-5-20-8	8	2"	1-1/2"	20	11	100	120	135
HSM-5-20-10	10	1-9/16"	1-1/4"	20	11	100	120	135
HSM-5-20-12	12	1-3/8"	1"	20	11	100	120	135
HSM-5-20-14	14	1-1/4"	7/8"	20	11	100	120	135
HSM-5-22-5	5	3-3/8"	2-3/4"	22	12	135	150	167
HSM-5-22-6	6	2-3/4"	2-1/8"	22	12	135	150	167
HSM-5-22-8	8	2-3/8"	1-13/16"	22	12	135	150	167
HSM-5-22-10	10	2"	1-9/16"	22	12	135	150	167
HSM-5-22-12	12	1-5/8"	1-1/4"	22	12	135	150	167
HSM-5-22-14	14	1-7/16"	1-1/16"	22	12	135	150	167
HSM-5-24-6	6	4"	3"	24	12	160	175	195
HSM-5-24-8	8	3-1/4"	2-9/16"	24	12	160	175	195
HSM-5-24-10	10	2-3/4"	2-1/8"	24	12	160	175	195
HSM-5-24-12	12	2-3/8"	1-11/16"	24	12	160	175	195
HSM-5-24-14	14	2-1/8"	1-5/8"	24	12	160	175	195



# TAILORED FORMING

The SEVEN CNC system gives you endless possibilities to expand and integrate almost anything into the control sphere of the machine. We specialize in providing integrated solutions to optimize our client's processes. As with everything we design and develop, YOU are the final voice. Propose and request any desired feature  
**- we will happily develop it for you!**

## FROM DECOILER TO FINISHED COMPONENT

Working with a world-famous lawn mower producer, we designed and built a complete system producing precisely bent and curved blades. Coming off a coil, the material is first straightened vertically and then horizontally. The material is then precisely curved and twisted and cut to the correct length,  
**all controlled by the CNC.**



*"The design restriction most often boils down to what our clients are able to envision. When it comes down to bending, straightening and forming - there's almost nothing that we're not able to design, develop and build"*

**PONTUS HANSSON  
LEAD MECHANICAL DESIGN**

## STRAIGHT, BEND & CUT

We produced a multi-dimensional straightening machine accompanied by a bending and cutting system. This type of multi-function machine substantially decreases the time and improves the accuracy of production. This combination prepares material from a coil to a ring, ready for welding and continued downstream processing.



**PRECISION**

TUNED TO CLIENT NEEDS.

**SPEED**

INFINITELY VARIABLE UP TO SPEED REQUESTED BY CLIENT

**POWER**

ACCORDINGLY, YET ALWAYS STRONGER THAN SIMILARLY DIMENSIONED COMPETITOR'S MACHINES

# ABOUT SWEBEND

The story of SweBend originates with Roundo®, once considered the world's best bending machine manufacturer, with clients such as Rolls-Royce, John Deere, Toyota, Volvo and over 16,000 machines delivered all over the world. When the founder passed away, Peter Nilsson, whom he had mentored for almost 30 years, was appointed as his successor. Following a change of ownership at the company and the ensuing bankruptcy and closing of the Roundo factory in Sweden, Peter decided to work on a new venture, and joined by Roundo's best, brightest and most experienced team members, they combined their bending machine expertise – **and SweBend was born.**

Now, our sophisticated yet user-friendly machines supply the world's leading bending companies such as Barnshaws, Danvals, Den Oudsten, Kersten Europe, Sjölund, Van Rijsoort, etc. with precise bending results which are produced effortlessly yet efficiently. Through innovation, profound quality thinking and unmatched engineering expertise, we take great pride in building machines that have the market's highest return on investment, a reason why so many loyal clients **keep coming back to us to solve their toughest bending problems.**

By breaking down our clients' bending challenges and then explaining to our customers the fundamental theory behind it, we produce modern, powerful and specifically purposed bending machines. The sophisticated functionality of our machines is easily mastered by our clients as they **get assisted in becoming expert benders.**

Located in Sweden, with renowned Swedish quality and a client-focused mindset, our passion for developing superior bending machines has been recognized by clients all over the world. Through our vast knowledge of bending increasingly challenging materials, we continuously update our machines' technology with more sensors, better controls and improved software functionality. Ask us about our renowned CNC system "SEVEN"; we can update old and even analog machines.

Our clients value long term quality investments and choose the path of innovation, unmatched expertise and a powerful worldwide support network consisting of an increasing list of trusted resellers.

We look forward to working with you. Ask us about our Section-, Plate- and Tube bending rolls, CNC systems, Flighting, Augers and Spiraling machines, Special rolls, tooling **and more!**



## SWEBEND

The Roundo name is now a registered trademark of Boldrini S.r.l.

SWEBEND



# LONG TERM RESELLERS

We continuously expand our network of resellers

**Ask us for a reseller close to You!**



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[ MOST RELIABLE BENDING MACHINES ON THE MARKET ]  
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