RMT

REVOLUTION MACHINE TOOLS

PLATE **ROLLS**

ECO, FAB, SMART, GENIUS, HYBRID SERIES **PLATE ROLLS**

ABOUT **RMT**

Some of the Revolution Machine Tools Team

Revolution Machine Tools (RMT), founded by long time industry leader Kyle Jorgenson, is a metal fabrication machine tools company. RMT's design team has created the most innovative and precise tools in the North American market today. We have partnered with leading manufacturers to build our designs to our stringent specifications in state of the art manufacturing facilities.

Kyle Jorgenson started in the Machine Tool industry working with his father, Roger Jorgenson, who founded Jorgenson Machine Tools in 1974. Roger taught Kyle how important relationships and customer service are, and Kyle has built his reputation on those principles. RMT is supported by an ever expanding team of industry professionals, which include design, marketing, service and support, who have these same values and respect Kyle's vision. Together, they are creating a revolution in the Machine Tool industry.

RMT's main focus is in large cutting, forming, and rolling machines for the metal fabrication industry. RMT's research and development team has created the most innovative, fast, durable and accurate machines in the industry. Our machines are all backed by a strong warranty and an outstanding service team dedicated to keeping your machines operational. We understand the time value of money and how expensive downtime can be.

Atakan Nerminer / R&D Manager

RMT offers several innovative machines including Fiber Lasers, Press Brakes, Plate Rolls, Ironworkers, Angle Rolls, Shears, Structural Steel Drills, Band Saws, and much more. All RMT product designs are built for durability, precision, repeatability, and speed.

Kyle Jorgenson / President

PRE-SALE CONSULTATION

RMT's commitment to service begins with our site assessment consultation. Before we even discuss purchasing equipment we make an assessment of your production area to determine whether the equipment will work well in your manufacturing environment. We look at where the equipment will be placed on the production floor, how it will be brought into the facility, and even ways to make the disposal of scrap and waste easier to remove. We will also recommend the proper installation of our equipment, or we can even come install it for you. More importantly, we can verify adequate electrical, pneumatic or hydraulic requirements and we look at the surrounding equipment to assess if there are any electro-magnetic or vibration interference issues.

We take pleasure in helping our customers be successful.
Many of our customers have become lifelong friends which has carried over through several generations.

REVOLUTIONARY**SERVICE**

QUALIFIED SERVICE TECHNICIANS

Join the Revolution with service technicians from Revolution Machine Tools that can maintain, troubleshoot and fix your machines. Our goal at RMT is to ensure our customers experience smooth operations and greater return on investment by having their machines repaired and maintained by qualified personnel who are committed to the customer's success.

The service team at Revolution Machine Tools is experienced and able to diagnose, repair and install your equipment when you need it. Twenty-four hours a day, you will reach a live service technician 365 days out of the year. We know that you can't wait for days or weeks to keep your production deadlines, and we are committed to minimizing your downtime and keeping your manufacturing processes moving forward.

PREVENTATIVE MAINTENANCE PROGRAM

Keeping your machines operating at their peak performance is key to successful manufacturing. At Revolution Machine Tools, we have the right preventative maintenance plan to fit your needs; thus, keeping your machines performing at their most efficient levels.

Our service technicians will create the perfect preventative maintenance plan for you. They will evaluate your machines, and provide you with a customized maintenance plan. Each plan will include general maintenance, safety evaluations, suggested repairs and part replacement.

SERVICE WHEN YOU NEED IT

Twenty-four hours a day, seven-days a week, you can count on Revolution Machine Tools to be there when you need them. How many times have you needed customer service for a machine breakdown? Each and every breakdown equates to a loss in opportunity cost and profit. At Revolution Machine Tools, we are committed to making sure you get the most out of your equipment, and when it does breakdown, providing repair services in a timely manner.

So, if you are in need of a troubleshooting or repair, you can call our service team anytime, 24-hours a day/7-days a week. Anytime you run into a machine problem, you can reach a service technician by phone or e-mail and we will answer or respond.. You don't need help in two days, you need it now.

SERVICE HOTLINE
844-RMT-SERV (768-7378)
SERVICE@RMTUS.COM

PARTS&**TOOLING**

SUPERIOR PARTS AND TOOLING

Every machine used in the chipping, fabrication and forming of metal has consumables and tooling to keep them performing efficiently. These consumables and tools range from hydraulic oil, laser nozzle tips, replacement parts, software and more. Making sure you have the right products to take care of your machines is what we at Revolution Machine Tools specialize in. We stock the highest grade consumables, replacement parts and tooling to fit your needs; and, if on the rare occasion we don't have the part, we most likely know where to find it.

Our parts and tooling department is constantly looking for ways to maximize the potential of your machines. Specialized tooling can be ordered and shipped to your location. We have qualified customer service representatives who can help you find solutions and answers to your manufacturing needs.

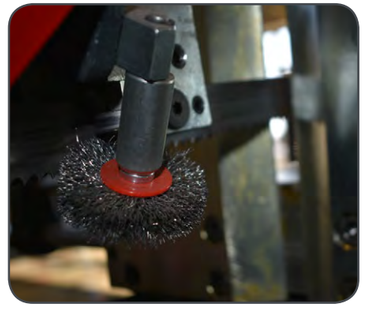
Talip, Parts and Tooling Manager

Revolution Machine Tools and its staff are committed to providing you the most effective service possible. We encourage you to call, even if we don't carry your brand of machine, and see if we can support you in making sure you have the right parts and tooling to fulfill your production goals and needs.

REPLACEMENT PARTS AND ACCESSORIES

REPLACEMENT BLADES

BLADE COOLANT



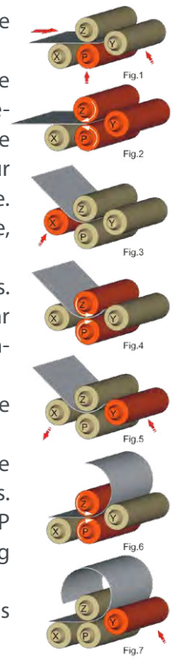
MACHINE PARTS

REVOLUTION MACHINE TOOLS, PARTS AND TOOLING: 844.768.4636 OR PARTS@RMTUS.COM

store.rmtus.com

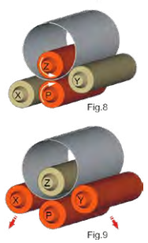
BENEFITS OF **RMT 4 ROLL** PLATE BENDING MACHINES

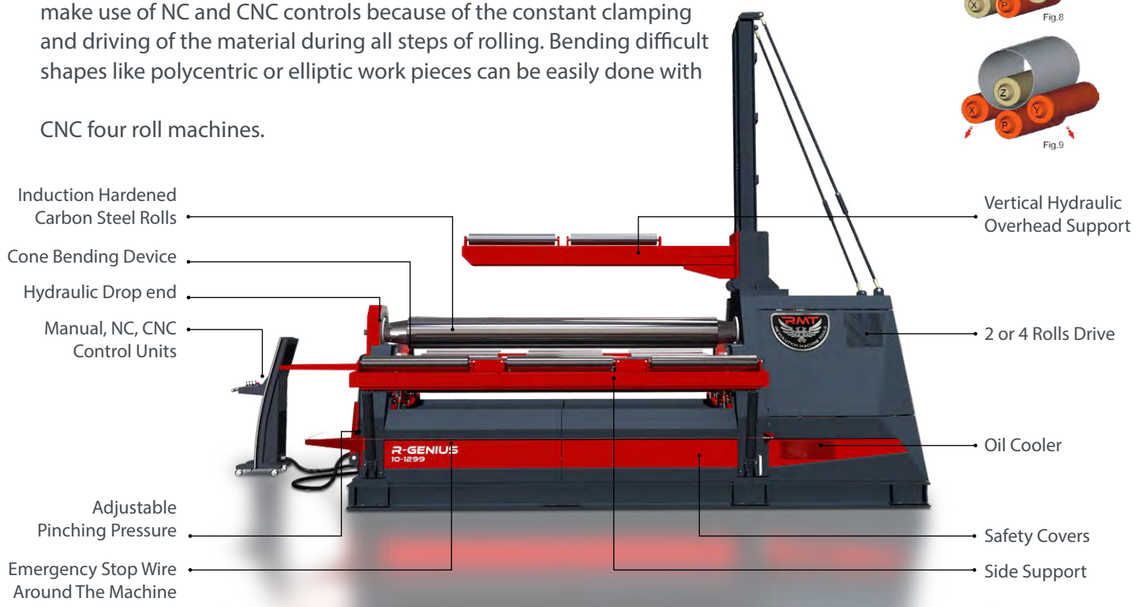
• The fastest and most accurate bends are made by four roll machines. The plate is held securely in place between the top and bottom rolls while the side rolls move vertically to create the bend.
• The bottom roll moves up to hold the plate edge securely against the top roll while the side roll is raised to form an accurate pre-bend, minimizing the flat zone on the plate edge. Pre-bending on a double pinch three roll machine requires that plates be tilted down as they are being fed. In contrast, plates are loaded horizontally at the feed level for pre-bending on a four roll machine, which allows the use of horizontal motorized roller tables to help feed the plate.
• Plate feeding can take place on either side of a four roll machine. If fed from only one side, they can even be placed up against a wall to save floor space.
• The side rolls are positioned to the right and left of the bottom roll and are on their own axes. The independent axis of each roll helps make a perfect bend. The "back" side roll (at the far side of the feeding point) also functions as a back gauge to square the plate for proper alignment (see figure 1). This eliminates the need for someone to assist the operator.
• The plate is kept square without slipping during both pre-bending and rolling because of the constant secure clamping of the top and bottom rolls.
• Four roll machines do not require the operator to remove, flip, and then try to square the plate a second time after pre-bending, as is the case with three roll initial pinch (IP) machines. Keeping the material in the machine makes four rolls 50% more efficient than three roll IP machines, and allows a cylinder to be rolled to the required diameter immediately following pre-bending.
• Bending the back edge takes place after the cylinder is rolled, for a one direction, single pass operation.



• Cone rolling is easier on a four roll machine. The side rolls can be tilted to establish the cone angle and the bottom roll can also be tilted to clamp and drive the plate.
• Four roll machines are the only type of plate rolls that can effectively make use of NC and CNC controls because of the constant clamping and driving of the material during all steps of rolling. Bending difficult shapes like polycentric or elliptic work pieces can be easily done with

CNC four roll machines.





With many solutions available, we can configure any machine to exactly match your requirements.

BENEFITS OF **RMT 4 ROLL** PLATE BENDING MACHINES

Accuracy
RMT machines are designed with state-of-the-art technologies that provide unparalleled accuracy and precision. This is the result of our world-class Research and Development department that has been constantly perfecting our machines for decades, allowing us to consistently outperform competitor machines year after year.

Reliability
RMT machines are designed from the ground up by our expert engineers with only one goal: to build the best machines imaginable. By combining our unique machine designs with the highest quality materials available, we realized our goal and invented some of the most reliable and durable machines in the world!

Efficiency
We understand the importance of a disruption-free production to your success, and have done everything in our power to maximize the efficiency of our RMT machines. We have meticulously identified and removed every hindrance to efficiency in our machines, providing you with the most seamless manufacturing experience imaginable.

Safety
Safe operation of heavy machinery for the operator and any bystanders is paramount to any successful enterprise, which is why RMT machines have a multitude of safety features in place, ofttimes exceeding industry standards. We have even implemented our own innovative safety features when existing ones were inadequate or non existent.

Flexibility
RMT is committed to the universalization of machinery and machine tools, because it not only prevents our customers from having to reinvest in new tooling and accessories, but allows for remarkable flexibility. The enhanced flexibility and longevity of our machines provides for a significantly broader range of applications, maximizing value.

Customizability
The high customizability of RMT machines allows them to be individually configured for a plethora of projects, significantly reducing the quantity of machines you will need. We also specialize in custom engineered machines for those projects that simply cannot come to fruition without one. Regardless of the project, RMT can help realize it!

R-ECO SERIES

These initial pinch rolls are designed for small part bending with low operation cost. R-ECO rolls feature robust cast iron frames (or steel welded frame depend on size), chain and gearbox drive systems and electric motors with a magnetic break which eliminates drifting. They also offer foot pedals with forward, reverse, and emergency stop along with a safety wire and limit switch. A very economical, reliable, and efficient choice for your small parts needs. See pages 19-22.

R-ECO-A Series
Motorized Initial Pinch Three Roll
3' ~ 6' Bending Lengths
1.81" ~ 2.95" Top roll diameter
Up 14 Ga Capacity

R-ECO-B Series
Motorized Initial Pinch Three Roll
3' ~ 6' Bending Lengths
3.54" ~ 3.74" Top roll diameter
Up 10 Ga Capacity

R-ECO-C Series
Motorized Initial Pinch Three Roll
3' ~ 8' Bending Lengths
4.33" ~ 5.51" Top roll diameter
Up 8 Ga Capacity

R-ECO-D Series
Motorized Initial Pinch Three Roll
3' ~ 10' Bending Lengths
5.91" ~ 8.66" Top roll diameter
Up 3/8" Capacity

R-FAB SERIES

These more robust initial pinch rolls are designed for small to medium part bending while still maintaining low operation cost. R-FAB rolls feature robust steel frames, chain and gear driven drive systems and electric motors with a magnetic break which eliminates drifting. They also offer foot pedals with forward, reverse, and E-stop along with a safety wire and limit switch. A very economical, reliable, and efficient choice for your small parts needs. See pages 23-24.

Hydraulic Initial Pinch Three Roll
2' ~ 10' Bending Lengths
3.15" ~ 9.84" Top roll diameter
24 Ga ~ 1/2" Capacity

R-SMART SERIES

R-SMART series 4 Roll plate rolls are developed specifically for the most demanding applications. Achieve obtainable production speeds that have never been realized before. See pages 25-28.

Planetary Type Hydraulic Four Roll
3' ~ 13' Bending Lengths
3.14" ~ 10.23" Top roll diamater
24 Ga ~ 5/8" Capacity

R-GENIUS SERIES

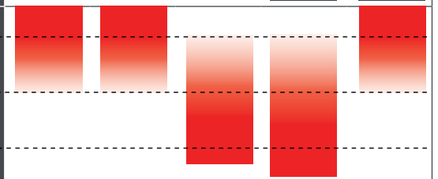
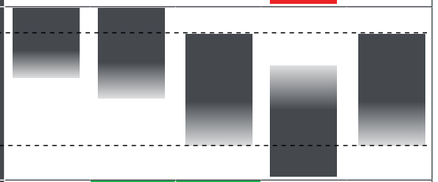
R-GENIUS series 4 Roll plate rolls are built for extreme precision and full CNC applications. These machines are built for production and speed creating a perfect balance. These machines are the culmination of our many years of experience. See pages 29-32.

Rectilinear Type Hydraulic Four Roll
6' ~ 20' Bending Lengths
11.02" ~ 26.77" Top roll diamater
8 Ga ~ 3-3/8" Capacity

R-HYBRID SERIES

The variable-geometry plate rolls, which really operates more like a press brake than a traditional plate roll, is making such extreme rolling possible. The two lower rolls are very similar to adjustable V die, and the top roll can be operated like the ram of a press brake. That's why we called this machine R-HYBRID. They are suitale for medium and thick plate bending. See page 33-38.

Variable Geometry Hydraulic Th[illegible]
8' ~ 13' Bending Lengths
15.75" ~ 51" Top roll diamater
1/2" ~ 2-3/8" Capacity

		R-ECO	R-FAB	R-SMART	R-GENIUS	R-HYBRID
Bending Length Range		3′ - 10′	2′ - 10′	3′ - 13′	6′ - 20′	8′ - 13′
Top Roll Diameter		1.81″-866″	3.15″-9.84″	3.14″-10.23″	11.02″-26.77″	15.75″-22.05″
Thickness Range		Up to 3/8″	Up to 1/2″	Up to 5/8″	Up to 3 3/8″	Up to 2 3/8″
Custom Lengths and Thickness		N/A	N/A	O	O	O
Obtainable Production Tolerances	Fine … Excelent					
Part Geometries (without experienced operator)	Simple / Moderate / Complex					
Production Speed	Medium … High					
Controls	Digital Read-out	O	S	S	N/A	N/A
	PLC	N/A	N/A	N/A	S	S
	NC	N/A	N/A	O	O	O
	CNC	N/A	N/A	O	O	N/A
Software	ESA Offline Simulator (Available on CNC models)	N/A	N/A	O	O	N/A
Frame	Cast Iron	S	N/A	N/A	N/A	N/A
	Stress Relieved Steel Construction	N/A	S	S	S	S
Rolls	AISI 1050 Carbon Steel Rolls	S	S	S	S	S
	AISI 4140 High Strength Alloy Steel Rolls	O	O	O	O	O
	Induction hardening	O	S	N/A	N/A	N/A
	Induction hardening + Polish	O	O	S	S	S
	Induction hardening + Ground	O	O	O	O	O
Rolls Drive System	Electrical Motor + Gearbox (Top - Bottom Rolls)	S	S	N/A	N/A	N/A
	Electrical Motor + Planetary Gearbox (Top & Bottom Rolls)	N/A	N/A	S	N/A	
	Hydraulic Motor + Planetary Gearbox (Top & Bottom Rolls)	N/A	N/A	S	N/A	
	Hydraulic Motor + Planetary Gearbox (Top & Side Rolls)	N/A	N/A	N/A	S	N/A
	Hydraulic Motor + Planetary Gearbox (Top Roll)	N/A	N/A	N/A	N/A	S
Roll Positioning System	Manual Bottom & Side Roll	S	N/A	N/A	N/A	N/A
	Motorized Side Roll	O	N/A	N/A	N/A	N/A
	Motorized Side Roll (Ø5.91″ – Ø8.66″)	S	N/A	N/A	N/A	N/A
	Motorized Bottom Roll	O	N/A	N/A	N/A	N/A
	Hydraulically Acted with Digital Readout Bottom & Side Rolls	N/A	S	S	S	N/A
	Hydraulically Acted with Electronically Positioned and Synchronized Bottom & Side Rolls	N/A	N/A	O	O	S

S = Standard / O = Option / N/A = Not Applicable

		R-ECO	R-FAB	R-SMART	R-GENIUS	R-HYBRID
Lubrication Systems	Permanent lubrication	S	S	S	S	S
	Automatic central lubrication	N/A	N/A	O	O	O
Safety	Safety Wire Around the Machine and Emergency Stop Button	S	S	S	S	S
Oil Cooler / Heater	Oil Cooler	N/A	O	O	O	O
	Oil Heater	N/A	O	O	O	O
Variable Speed	Variable Speed for Roll Rotation (Std. on CNC Control)	N/A	O	O	O	O
Special Color	Special Color	O	O	O	O	O
Air Conditioning	Air Conditioning for Electrical panel	N/A	O	O	O	O
Hydraulic Vertical Overhead Support Systems	Vertical support - Hydraulic	N/A	O	O	O	O
	NC inclusion for vertical support control (Available on CNC control)	N/A	N/A	N/A	O	N/A
Hydraulic Side Support Systems	Side Support System (Both Side)	N/A	O	O	O	O
	NC inclusion for side support control (Available on CNC control)	N/A	N/A	O	O	N/A
Feeding Systems	Material Feeding Table - L=10′	N/A	O	O	O	O
	Material Feeding Table - Motorised - L=10′	N/A	O	O	O	O

BENDING CAPACITIES AND CALCULATIONS

Our machines capacities are defined for (36Ksi) yield strength plates on multistep bending. For different yield, length and thickness plates you can use "Bending Capacity Chart"

SELECT MACHINE	R-GENIUS 10-1299
BENDING LENGTH	122"
	10' 2"
PREBENDING CAPACITY	0,375
ROLLING CAPACITY	0,625
TOP ROLL DIAMETER	12,99"

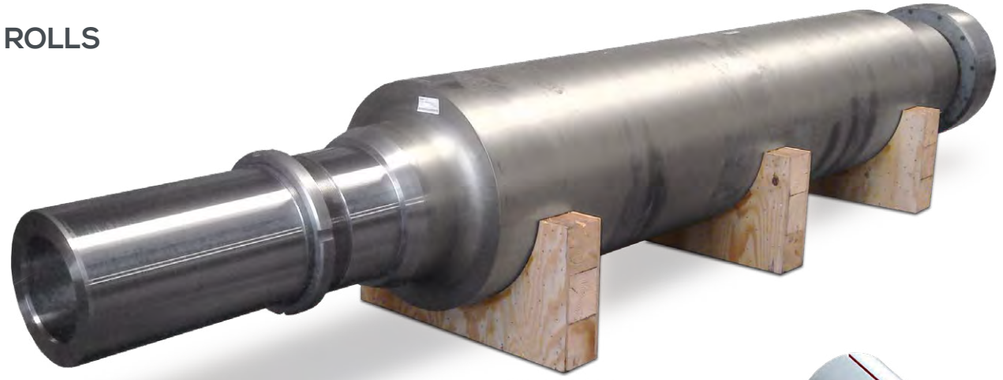
RMT Plate Roll Calculator

www.rmtus.com

PLATE WIDTH		122" 10' 2" 100% Width		110" 9' 2" 90% Width		98" 8' 2" 80% Width		85" 7' 1" 70% Width		73" 6' 1" 60% Width		61" 5' 1" 50% Width		49" 4' 1" 40% Width		37" 3' 1" 30% Width		24" 2' 0" 20% Width	
MATERIAL TYPE	Inside Diameter	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness	Pre-Bending Thickness	Rolling Thickness
CLASS-1 MATERIAL Max Yield Strength 207 30.000 N/mm² PSI	14,29"	0,343"	0,505"	0,362"	0,532"	0,384"	0,565"	0,410"	0,604"	0,443"	0,652"	0,486"	0,714"	0,543"	0,798"		0,922"		
	16,89"	0,384"	0,539"	0,405"	0,568"	0,429"	0,602"	0,459"	0,644"	0,495"	0,695"	0,543"	0,762"		0,852"		0,983"		
	19,49"	0,404"	0,560"	0,426"	0,590"	0,452"	0,626"	0,483"	0,669"	0,521"	0,723"	0,571"	0,792"		0,886"				
	25,98"	0,418"	0,576"	0,441"	0,607"	0,467"	0,644"	0,500"	0,688"	0,540"	0,743"	0,591"	0,814"		0,910"				
	38,98"	0,446"	0,607"	0,470"	0,640"	0,499"	0,679"	0,533"	0,726"	0,576"	0,784"		0,859"		0,960"				
	51,97"	0,462"	0,641"	0,487"	0,676"	0,516"	0,717"	0,552"	0,766"	0,596"	0,827"		0,906"						
	64,96"	0,485"	0,678"	0,511"	0,710"	0,542"	0,753"	0,579"	0,805"		0,869"		0,952"						
	129,92"	0,493"	0,729"	0,519"	0,769"	0,551"	0,815"	0,589"	0,871"		0,941"								
CLASS-2 MATERIAL Max Yield Strength 248 36.000 N/mm² PSI	14,29"	0,319"	0,469"	0,336"	0,494"	0,356"	0,524"	0,381"	0,560"	0,412"	0,605"	0,451"	0,663"	0,504"	0,741"	0,582"	0,856"		
	15,59"	0,356"	0,500"	0,376"	0,527"	0,398"	0,559"	0,426"	0,598"	0,460"	0,645"	0,504"	0,707"	0,563"	0,791"		0,913"		
	19,49"	0,375"	0,520"	0,395"	0,548"	0,419"	0,581"	0,448"	0,622"	0,484"	0,671"	0,530"	0,735"	0,593"	0,822"		0,949"		
	25,98"	0,388"	0,534"	0,409"	0,563"	0,434"	0,597"	0,464"	0,639"	0,501"	0,690"	0,549"	0,756"		0,845"		0,976"		
	38,98"	0,414"	0,564"	0,437"	0,594"	0,463"	0,630"	0,495"	0,674"	0,535"	0,728"	0,586"	0,797"		0,891"				
	51,97"	0,429"	0,595"	0,452"	0,627"	0,479"	0,665"	0,512"	0,711"	0,553"	0,768"		0,841"		0,941"				
	64,96"	0,450"	0,625"	0,474"	0,659"	0,503"	0,699"	0,538"	0,747"	0,581"	0,807"		0,884"		0,988"				
	129,92"	0,458"	0,677"	0,482"	0,713"	0,512"	0,757"	0,547"	0,809"	0,591"	0,874"		0,957"						
CLASS-3 MATERIAL Max Yield Strength 345 50.000 N/mm² PSI	14,29"	0,266"	0,391"	0,280"	0,412"	0,297"	0,437"	0,318"	0,467"	0,343"	0,505"	0,376"	0,553"	0,421"	0,618"	0,486"	0,714"	0,595"	0,875"
	16,89"	0,297"	0,417"	0,313"	0,440"	0,332"	0,466"	0,355"	0,499"	0,384"	0,539"	0,420"	0,590"	0,470"	0,660"	0,543"	0,762"		0,933"
	19,49"	0,313"	0,434"	0,330"	0,457"	0,350"	0,485"	0,374"	0,519"	0,404"	0,560"	0,442"	0,614"	0,495"	0,686"	0,571"	0,792"		0,970"
	25,98"	0,324"	0,446"	0,342"	0,470"	0,362"	0,498"	0,387"	0,533"	0,418"	0,576"	0,458"	0,631"	0,512"	0,705"	0,591"	0,814"		0,997"
	38,98"	0,346"	0,470"	0,364"	0,496"	0,387"	0,526"	0,413"	0,562"	0,440"	0,607"	0,489"	0,665"	0,547"	0,744"		0,859"		
	51,97"	0,358"	0,496"	0,377"	0,523"	0,400"	0,555"	0,427"	0,593"	0,462"	0,641"	0,506"	0,702"	0,565"	0,785"		0,906"		
	64,96"	0,375"	0,521"	0,396"	0,550"	0,420"	0,583"	0,449"	0,623"	0,485"	0,673"	0,531"	0,737"	0,594"	0,825"		0,952"		
	129,92"	0,382"	0,565"	0,402"	0,595"	0,427"	0,631"	0,456"	0,675"	0,493"	0,729"	0,540"	0,799"		0,893"				

All specifications are subject to change without notice.

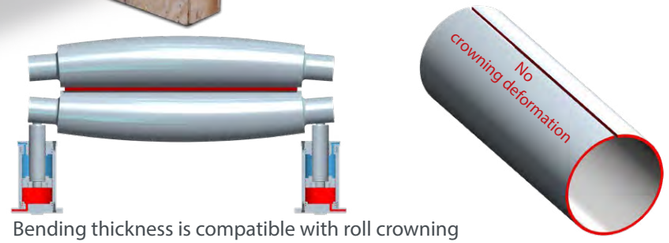
ROLLS



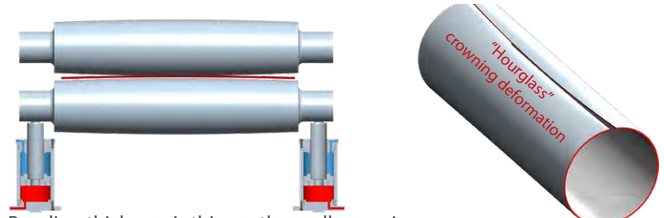
The most important elements of a plate roll machine are the rolls themselves. Most machines in the market have smaller diameter, weak rolls that deform during the pre-bending process and create a flat spot on the plate edge.

RMT designed the rolls with larger diameter and uses high tensile forged steel rolls that are machined by high precision CNC lathes. The working surfaces of the rolls are CNC induction hardened to HRC 54-58 (5-6 mm deepness) with hardness tests performed at varying points on the rolls. The smallest bending diameter of 1.1 x top roll diameter is easily achieved.

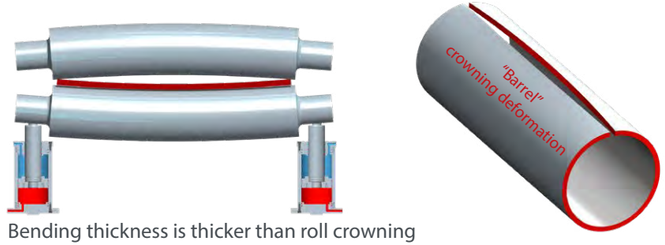
The rolls are machined with a crown to compensate for roll deflection during the pre-bending process. Custom crown machined rolls for different materials or thickness can be applied free of charge when ordering.



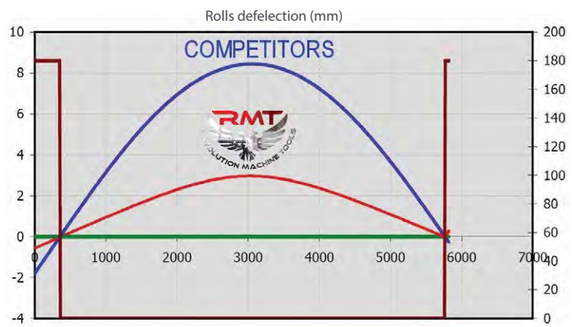
Bending thickness is compatible with roll crowning



Bending thickness is thinner than roll crowning



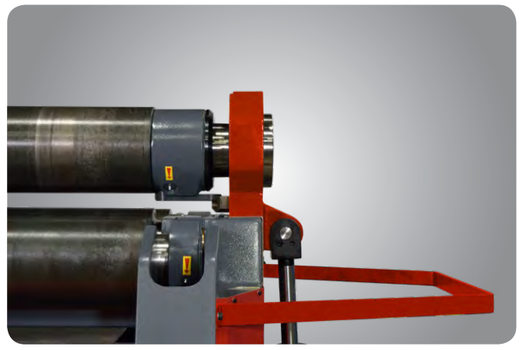
Bending thickness is thicker than roll crowning

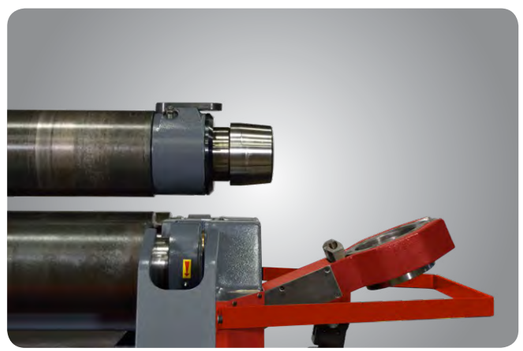


Crown is exaggerated for demonstration purposes.

HYDRAULIC DROP END

Hydraulic drop ends on R-Smart 4 Rolls - allow for easy removal of formed pieces. Cone snubber is a standard feature that is placed on a top roll bearing allowing easy rotation of snubber (so it can not interfere with extraction)
On our R-GENIUS 4 Rolls - the heavy duty roller snubber system is mounted to the main frame of the machine. The top roll is hydraulically tilted up to allow for easy removal of formed parts.



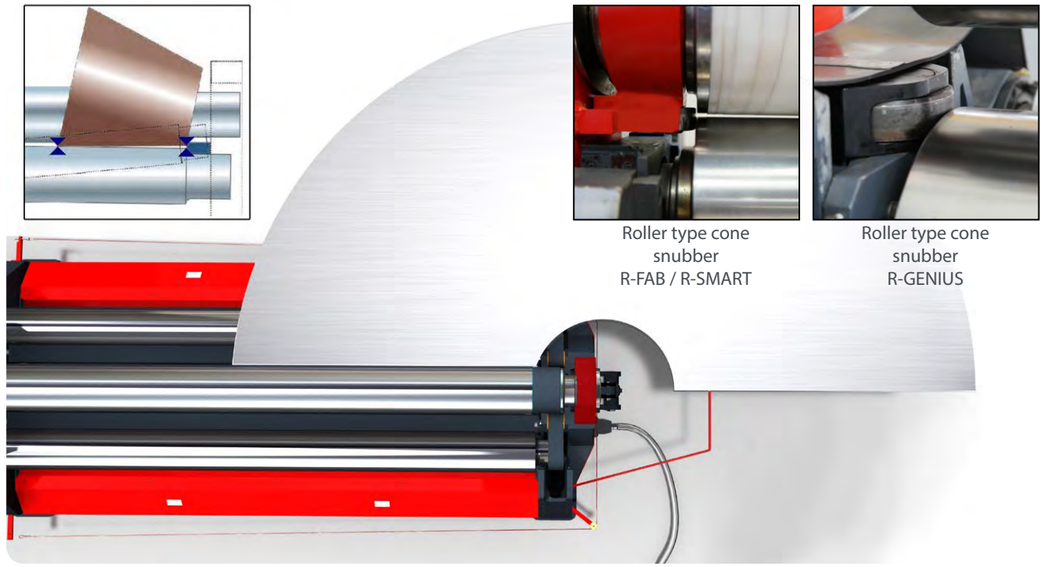


R-SMART Series: Fixed top roll

R-GENIUS Series: Tiltable top roll

CONE BENDING

Through superior construction, a massive body and the ability to angle the bottom and side rolls, you can easily bend wide angle and small diameter conical parts.
While most machines on the market can conically bend 3 times the diameter of the top roll, RMT 4 roll plate bending machines can conically bend 1.5 times the top roll diameter (or tighter).



Roller type cone snubber
R-FAB / R-SMART

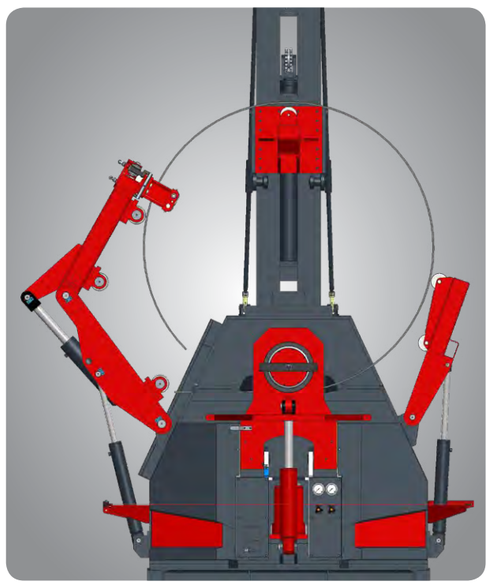
Roller type cone snubber
R-GENIUS

SIDE AND OVERHEAD SUPPORT SYSTEM

Optional hydraulic side or overhead supports help prevent distortion of the cylinder in large shaped bends.
Side supports have hydraulic double cylinders which are produced with heavy-duty steel construction.
The vertical support capacity can be manufactured to different tonnage and height requirements.

CUSTOM APPLICATION SHEET SUPPORT SYSTEMS

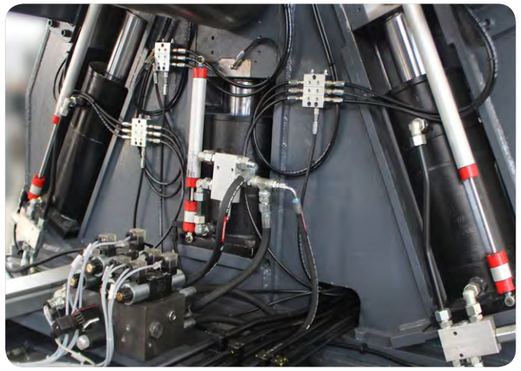
Cartesian type overhead support



Dual knuckle side support with edge alignment clamps

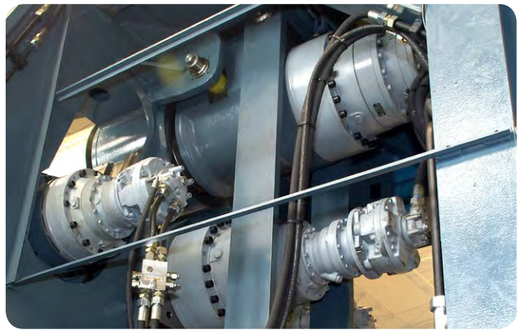
HYDRAULIC & ELECTRIC SYSTEM

Our R-SMART and R-GENIUS machines movements are triggered by hydraulic components. The precision of all axes are acquired by world leader Parker valves' high speed response ability along with pressure safety valves used against peak pressures and overload, provides protection for motors and other components. The electrial system is designed to be compatible with CE safety regulations. The system consists of well known electrical components such as Siemens, Schneider, Phoenix and Opkon.



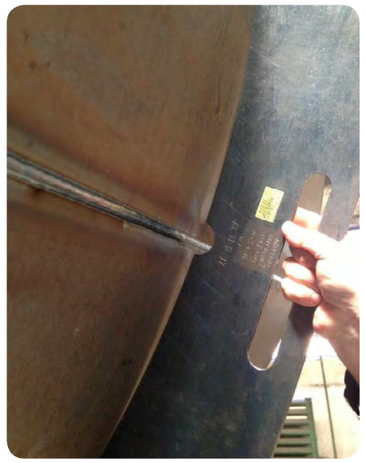
HIGH TORQUE DRIVE SYSTEM

With its high torque, RMT plate rolls can bend the sheet with fewer steps. Rolls are triggered by independent high torque AC or hydro motors and planetary gearboxes. A trigger system is positioned on the same axis as the roll, which transfers the torque to the sheet without losing torque strength. Strong Electric / Hydraulic Brakes : Especially during the pre-bend, our system does not allow the sheet to slip back and create safety problems.



OPTIONAL GAS SHOCK ABSORBER

When the sheets are bent, welding process begins on machine. In particular, the combination of tension that occurs during welding of thin sheet point inward pulling thus causes the deterioration of cylindrical form. So, expressed as re-rolling must be done after the welding operation in calibration. However, often the welding would be thicker than the sheet thickness and shall not be cleaned. On standard machines welding cannot pass through between top and bottom rolls. If clamping pressure too much and welding area too thick, rolls have chances of getting damaging dents to roll face. RMT has developed gas shock absorber. Each end of the lower roller system on the hydraulic accumulators we connected to the rollers and bottom roller when the desired deflection controlling valves consists of. Thus, when welding passing through the roller, lower roller moves up and down automatically.



DIGITAL READOUT

A quality digital readout with a numeric display of the roll positions which are easily set to hi/low positions allow the operator to work faster, smarter, and with much greater accuracy. This also makes dialing in your machine for large quantity, repeatable production a snap! It will also reduce your scrap waste created from trial and error processes and ultimately save you money.

OPTIONAL NC

The NC control system can work manually, with teach-in, and automatic modes of operation. In manual mode, the use of all functions are provided by the operator. With Teach-in mode, the operator records all bend sequences respectively. In automatic mode, all recorded movements are repeated, respectively by the machine. The NC control system has the capacity to save 2500 programs consisting of a maximum 255 steps.

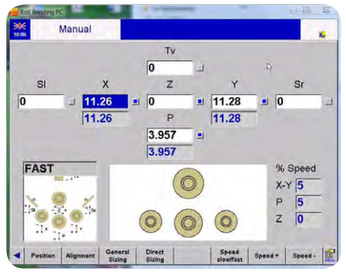
NC Unit (MT 8073 iE)

Dedicated scratch-proof, oil-proof, acid-resistant IP65 sealed membrane push buttons with 51 keys
Fiberoptic communication lines.
PLC: SIEMENS
CPU and core logic: 32Bit RISC 400MHz processor
DRAM: 64 MB DDR2 on board
Storage: 128 MB flash memory on board,
Display: 7" (diagonal)
Resolution (800 x 480, (R.G.B)) 65536 colors
Communication ports:
3 serial ports:Com1: RS-232/RS-485 2w/4w,
Com2: RS-232, Com3: RS-232/RS-485 2w
1 USB 1.1 host, 1 USB 2.0 high speed device
Operating temperature: 0° ~ 45°C (32° ~ 113°F)
Relative humidity: 10% ~ 90% @ 40°C, non-condensing
Software
Manual, Teach, Semi Auto and Automatic working modes,
Standard 4 axes (X, Y, Z, S,)
Optional 7 axes (X, Y, Y2, Z, Z2, S, S2)
Parallelism control
Optional conical control
Adjustable speeds
255 step, 2500 program memory
User friendly program editor
USB port for program backup
Working hours counter
mm / inch system
English, German, French, Spanish, İtalian, Russian, Polish, languages
Alarm list

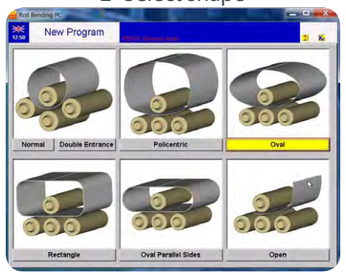
OPTIONAL CNC

The CNC unit, with its graphical control system allows the bending to be done step by step or by automatically calculating the bending steps. Due to changes in the structure of the material, corrections must be entered for pre-bending and bending steps after the first bended plate to get the desired bending form. Correction coefficients can be recorded to software for using them in similar characteristic material bending operations. With the CNC control you can easily bend parts into shapes such as: cylindrical, polycentric, elliptical, oval, parallel side, rectangular, and arc. CNC unit has interpolation capability due to proportional valves. The CNC unit can store more than 2,000,000 programs. The easy to use editor page also allows for simple editing of any saved programs. The unit also comes with a USB port allowing for easy up or downloading of your programs. You can also connect the control directly with your computer using an Ethernet cable. This also allows our service team to remote in if diagnosis is ever necessary. This also allows our service team to remotely access the machine if diagnosis is ever necessary. Lubrication system (offered as an option) operating times can be set at the control unit. Plate feeder, vertical and side sup-ports (offered as an option) can be included as NC functions (teachable) into control unit. So supports can be programmed in teach-in mode and provided automatically during bending.

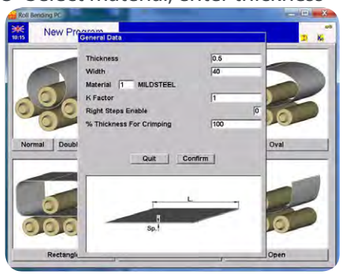
1- Manual Mode



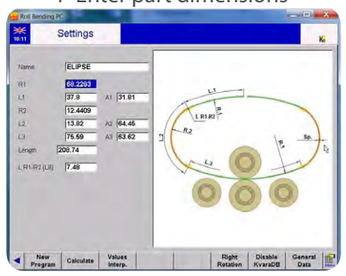
2- Select shape



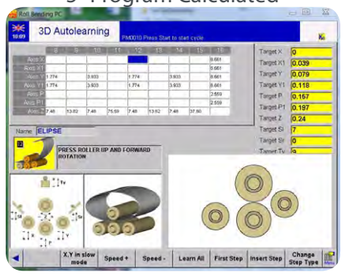
3- Select material, enter thickness



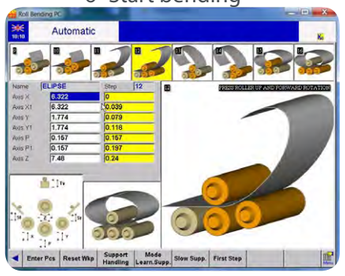
4- Enter part dimensions



5- Program Calculated



6- Start bending

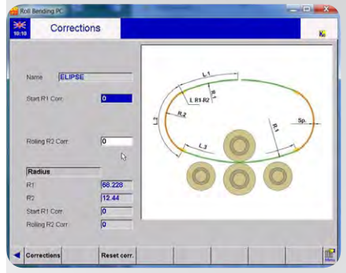


CNC Unit (S550)

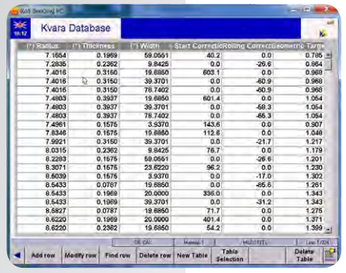
Dedicated scratch-proof, oil-proof, acid-resistant IP65 sealed membrane push buttons with 28 keys
External industrial QWERTY keyboard with 88 keys.
Fiberoptic communication lines.
PLC: Esa/Gv
CPU: CPU AMD Geode ETX-LX800 500Mhz, 128Mb of RAM.
Memory: Silicon hard disk
Display:15”TFT XGA colour display with antiglare screen
Resolution (1024 x 768, (R.G.B)) 262,144 colors
Communication ports:
1 Ethernet Port
2 CAN interfaces
2 RS232C Serial Port 2 USB Port
1 VGA out
1 PS2 Port
Temperature -13 / 140°F

Software
Manual, teach-in and automatic working modes,
Standard 7 axes (X1, X2, Y1, Y2, P, P1, Z)
Conic and parallelism control
Adjustable turning speed by hand wheel, X-Z / Y-Z axes interpolation capability
User friendly program editor
Automatic bending sequence calculation, Cylindrical, polycentric, oval, oval parallel sides, rectangular, arc bending s hapes
Material database entry available
USB port for programs backup
1000 step, 1.000.000 program memory
Program editing
Part counter
Working hours counter
mm / inch system
Automatic turn off programming
English, German, French, Spanish, İtalian, Russian, Polish, languages
Alarm list

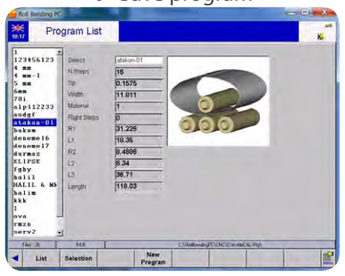
7- Make corrections



8- Insert corrections to database



9- Save program



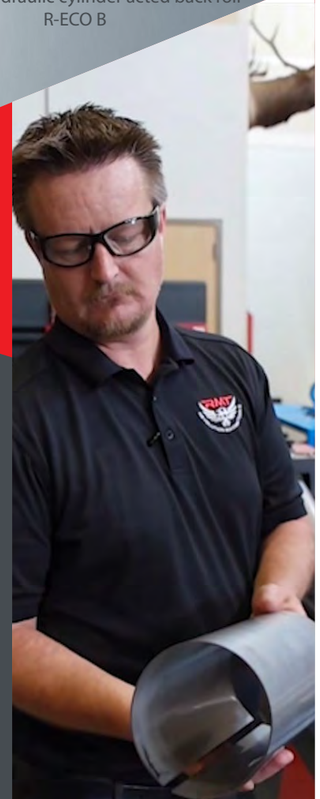
R-ECO A / B

MOTORIZED INITIAL PINCH THREE ROLLS

Optional hydraulic cylinder acted back roll
R-ECO B

BENDING THIN SHEET METAL?

These initial pinch rolls are designed for small part bending with low operation cost. R-ECO rolls feature robust cast iron frames (or steel welded frame depend on size), chain and gearbox drive systems and electric motors with a magnetic break which eliminates drifting. They also offer foot pedals with forward, reverse, and emergency stop along with a safety wire and limit switch.
A very economical, reliable, and efficient choice for your small parts needs.



R-ECO C / D

MOTORIZED INITIAL PINCH THREE ROLLS

RMT R-ECO series initial pinch plate rolls are generally for lighter capacity applications and come in manual, motorized or hydraulic. They work by “pinching” the flat sheet between top and bottom rolls while the side (back) roll moves upward to contact and then bend the sheet. When rotation of the rollers is activated, the sheet exits at a given radius. With the sheet cut to the developed length and the bending roll properly positioned; the part is rolled into a cylindrical form, where it can then be welded at the seam to produce a cylinder. The top roll is in a fixed position; the bottom pinch roll can move up/down to pinch the material. The side roll is also adjustable by manually, motorized or hydraulically. To remove a rolled cylinder, it must be extracted from off of the top roll. Machines are generally equipped with release mechanism on the top roll to allow extraction of the cylinder. Typical methods are either a forward tilting or releasing top roll or a removable end yoke. In most applications, these machines require removal and re-insertion of the sheet in order to pre-bend both ends. They are cost effective but in contrast may be more labor intensive in a production setting.

R-ECO-A Series

ø1.81″-ø2.95″

R-ECO-B Series

ø3.54″-ø3.74″

R-ECO-C Series

ø4.33″-ø5.51″

R-ECO-D Series

ø5.91″-ø8.66″

R-ECO Series	Bending Length	Bending Capacities	Central Rolls	Main Motor Power	Back Roll Motor Power	Length	Width	Height	Weight
	L (inch)	T (inch)	Ød (inch)	(HP)	(HP)	L (inch)	W (inch)	H (inch)	(LBS)
R-ECO-A 3-181	3′ 5″	20 Ga	1.81	1.0	-	60	28	45	463
R-ECO-A 3-220	3′ 5″	18 Ga	2.20	1.0	-	60	28	45	529
R-ECO-A 3-268	3′ 5″	16 Ga	2.68	2.0	-	64	28	46	750
R-ECO-A 3-295	3′ 5″	14 Ga	2.95	2.0	-	64	28	46	849
R-ECO-A 4-268	4′ 2″	18 Ga	2.68	2.0	-	73	28	46	827
R-ECO-A 4-295	4′ 2″	16 Ga	2.95	2.0	-	73	28	46	882
R-ECO-A 5-268	5′ 1″	20 Ga	2.68	2.0	-	84	28	46	882
R-ECO-A 5-295	5′ 1″	18 Ga	2.95	2.0	-	84	28	46	948
R-ECO-A 6-295	6′ 8″	20 Ga	2.95	2.0	-	103	28	46	1301
R-ECO-B 3-354	3′ 5″	10 Ga	3.54	1.5	-	65	28	48	1003
R-ECO-B 4-354	4′ 2″	12 Ga	3.54	1.5	-	73	28	48	1080
R-ECO-B 5-354	5′ 1″	14 Ga	3.54	2.0	-	84	28	48	1202
R-ECO-B 6-374	6′ 8″	16 Ga	3.74	2.0	-	104	28	48	1466
R-ECO-C 3-433	3′ 5″	8 Ga	4.33	3.0	1.0	87	30	40	2183
R-ECO-C 3-512	3′ 5″	6 Ga	5.12	3.0	1.5	109	26	41	2646
R-ECO-C 4-472	4′ 2″	8 Ga	4.72	3.0	1.0	98	30	40	2447
R-ECO-C 4-551	4′ 2″	6 Ga	5.51	3.0	1.0	98	30	40	2976
R-ECO-C 5-433	5′ 1″	10 Ga	4.33	3.0	1.0	107	30	40	2646
R-ECO-C 5-551	5′ 1″	8 Ga	5.51	3.0	1.0	107	30	40	3131
R-ECO-C 6-433	6′ 8″	14 Ga	4.33	3.0	1.0	126	30	40	3042
R-ECO-C 6-512	6′ 8″	10 Ga	5.12	3.0	1.0	126	30	40	3307
R-ECO-C 6-551	6′ 8″	8 Ga	5.51	3.0	1.0	126	30	40	3638
R-ECO-C 8-551	8′ 4″	12 Ga	5.51	3.0	1.0	146	30	40	4079
R-ECO-D 3-669	3′ 5″	5/16″	6.69	5.5	1.5	113	29	42	3527
R-ECO-D 3-748	3′ 5″	3/8″	7.48	5.5	2.0	126	38	52	5401
R-ECO-D 5-591	5′ 1″	1/4″	5.91	4.0	1.5	128	27	41	3638
R-ECO-D 5-748	5′ 1″	5/16″	7.48	5.5	2.0	146	38	52	6063
R-ECO-D 6-591	6′ 8″	8 Ga	5.91	4.0	1.5	148	27	41	4156
R-ECO-D 6-669	6′ 8″	6 Ga	6.69	5.5	1.5	152	29	42	4630
R-ECO-D 6-748	6′ 8″	1/4″	7.48	5.5	2.0	166	38	52	6834
R-ECO-D 8-591	8′ 4″	10 Ga	5.91	4.0	1.5	168	26	52	4740
R-ECO-D 8-709	8′ 4″	8 Ga	7.09	5.5	2.0	172	38	52	6724
R-ECO-D 8-748	8′ 4″	6 Ga	7.48	5.5	2.0	186	38	52	7496
R-ECO-D 8-866	8′ 4″	1/4″	8.66	7.5	3.0	186	46	56	11023
R-ECO-D 10-630	10′ 2″	14 Ga	6.30	5.5	1.5	191	29	42	5842
R-ECO-D 10-748	10′ 2″	10 Ga	7.48	5.5	2.0	205	38	52	8267
R-ECO-D 10-787	10′ 2″	8 Ga	7.87	5.5	2.0	205	38	52	8818
R-ECO-D 10-866	10′ 2″	6 Ga	8.66	7.5	3	205	46	56	13228

- All specifications are subject to change without notice.
- The mentioned values above only work for 36 KSI.
- Please take a look at the RMT Roll Bending Calculator to calculate min. dia. on different material types and part width.
- Conic bending capacity depends on the angle and is basically half value of above mentioned values.
- Optional features may increase the machine weight and motor power.
- Min. pre-bending capacity is half of the above mentioned values with std. roll crowning.

STANDARD (R-ECO-A SERIES)

- Top and bottom rolls are powered by a helical type gear-box and AC motor
- AISI 1050 Quality Certificated steel rolls with high tensile strength
- Spheroid cast iron frame.
- Mechanical manual mechanical drop-end.
- Foot pedal.
- Conical bending device
- Precision bending with brake motor
- Wire grooves at the end of the rolls (.157″/.275″/.354″)

OPTIONAL (R-ECO-A SERIES)

- Digital Read-Out for rear (back) roll
- Induction hardened rolls

STANDARD (R-ECO-B SERIES)

- Top and bottom rolls are powered by a helical type gear-box and AC motor
- AISI 1050 Quality Certificated steel rolls with high tensile strength
- Spheroid cast iron frame.
- Mechanical manual mechanical drop-end.
- Foot pedal.
- Conical bending device
- Precision bending with brake motor
- Wire grooves at the end of the rolls (.157″/.275″/.354″)

OPTIONAL (R-ECO-B SERIES)

- Digital Read-Out for rear (back) roll
- Induction hardened rolls
- Motorised adjustment of back roll
- Hydraulic adjusted back-roll with fast tilt function

STANDARD (R-ECO-C SERIES)

- Top and bottom rolls are powered by a helical type gear-box and AC motor
- AISI 1050 Quality Certificated steel rolls with high tensile strength
- Spheroid cast iron frame.
- Mechanical manual mechanical drop-end.
- Foot pedal.
- Conical bending device
- Precision bending with brake motor
- Wire grooves at the end of the rolls (.157″/.275″/.354″/.511″)

OPTIONAL (R-ECO-C SERIES)

- Digital Read-Out for rear (back) roll
- Induction hardened rolls
- Motorised adjustment of back roll

STANDARD (R-ECO-D SERIES)

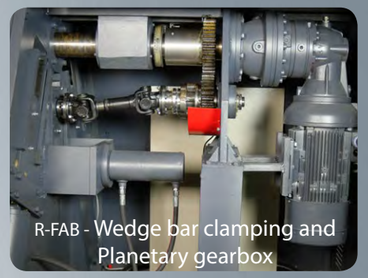
- Top and bottom rolls are powered by a helical type gear-box and AC motor
- AISI 1050 Quality Certificated steel rolls with high tensile strength
- Steel welded frame.
- Mechanical manual mechanical drop-end.
- Mobile control panel
- Conical bending device
- Central lubrication system
- Top roll support system
- Precision bending with a motor brake
- Motorised adjustment of back roll

OPTIONAL (R-ECO-D SERIES)

- Digital Read-Out for rear (back) roll
- Induction hardened rolls
- Extended roll shafts for profile and pipe bending operations
- Profile and section bending rolls set
- Motorised bottom roll (pinching)
- Segmented plastic rolls for composite bending

R-FAB

HYDRAULIC INITIAL PINCH THREE ROLLS



R-FAB - Wedge bar clamping and Planetary gearbox

NEED A ECONOMIC ROLL ?

These hydraulic initial pinch rolls make small part bending easier and more efficient. R-FAB rolls feature robust steel frames, cardan joint and gear driven top and bottom rolls with electric motor and a magnetic brake which eliminates drifting. They also offer foot pedals with forward, reverse, and E-stop along with a safety wire and limit switch. A very economical, reliable, and efficient choice for your small parts needs.

STANDARD

- Steel welded main frames
- Hydraulic Drop-End
- Mobile control panel
- Motor powered central rolls
- Hydraulic movement of back roll and bottom roll
- Main motor with brake system
- Conical bending, Pre-Bending available
- Support system for top roll
- Planetary Gearbox two rolls driven
- Back roll with ball bearings for thin sheet works
- AISI 1050 certificated forged steel rolls with high tensile strength
- Hardened rolls
- 2 pcs. digital Read-Outs

OPTIONAL

- Overhead crane for large Diameter
- Hydraulic lateral side supports for large Diameter
- Ground and polished rolls for special rolls
- Infinitively Variable Speed
- 2 Speed Working system
- Wire Grooves on rolls

R-FAB Series	Bending Length	Pre-Bending Capacities	Bending Capacities	Central Rolls	Side Rolls	Motor Power	Length	Width	Height	Weight
	L (inch)	T (inch)	T (inch)	Ød (inch)	Ød (inch)	(HP)	L (inch)	W (inch)	H (inch)	(LBS)
R-FAB 2-315	2′1″	12 Ga	10 Ga	3,15	3,15	1,5+1	77	38	38	1764
R-FAB 3-315	3′5″	16 Ga	14 Ga	3,15	3,15	1,5+1	93	38	38	2028
R-FAB 4-315	4′2″	20 Ga	16 Ga	3,15	3,15	1,5+1	101	38	38	2094
R-FAB 4-394	4′2″	16 Ga	14 Ga	3,94	3,54	1,5+1	101	38	38	2535
R-FAB 4-512	4′2″	10 Ga	8 Ga	5,12	5,12	3+1	119	45	44	3858
R-FAB 4-591	4′2″	8 Ga	1/4″	5,91	5,12	3+1,5	119	45	44	4023
R-FAB 4-709	4′2″	1/4″	5/16″	7,09	5,91	5.5+1,5	121	53	51	4630
R-FAB 4-787	4′2″	5/16″	3/8″	7,87	7,09	5,5+2.2	121	53	51	4850
R-FAB 5-315	5′1″	24 Ga	18 Ga	3,15	3,15	1,5+1	112	38	38	2425
R-FAB 5-394	5′1″	20 Ga	16 Ga	3,94	3,54	1,5+1	112	38	38	2646
R-FAB 5-512	5′1″	12 Ga	10 Ga	5,12	5,12	3+1	130	45	44	4079
R-FAB 5-591	5′1″	10 Ga	8 Ga	5,91	5,12	3+1,5	130	45	44	4409
R-FAB 5-787	5′1″	1/4″	5/16″	7,87	7,09	5.5+2.2	132	53	51	5401
R-FAB 5-866	5′1″	5/16″	3/8″	8,66	7,09	7,5+2.2	138	59	54	7165
R-FAB 5-984	5′1″	3/8″	1/2″	9,84	7,87	10+2.2	138	59	54	7937
R-FAB 6-512	6′8″	14 Ga	10 Ga	5,12	5,12	3+1	150	45	44	4519
R-FAB 6-591	6′8″	10 Ga	8 Ga	5,91	5,12	3+1,5	150	45	44	4960
R-FAB 6-709	6′8″	8 Ga	1/4″	7,09	5,91	5.5+1,5	152	53	51	5930
R-FAB 6-787	6′8″	1/4″	5/16″	7,87	7,09	5.5+2.2	152	53	51	6504
R-FAB 6-984	6′8″	5/16″	3/8″	9,84	7,87	10+2.2	158	59	54	9259
R-FAB 8-591	8′4″	14 Ga	10 Ga	5,91	5,12	3+1.5	169	45	44	5512
R-FAB 8-709	8′4″	10 Ga	8 Ga	7,09	5,91	5.5+1.5	171	53	51	6768
R-FAB 8-787	8′4″	8 Ga	1/4″	7,87	7,09	5.5+2.2	171	53	51	7606
R-FAB 8-984	8′4″	1/4″	5/16″	9,84	7,87	10+2.2	177	59	54	10582
R-FAB 10-709	10′2″	14 Ga	10 Ga	7,09	5,91	5.5+1.5	191	53	51	7606
R-FAB 10-787	10′2″	10 Ga	8 Ga	7,87	7,09	5.5+2.2	191	53	51	8708
R-FAB 10-866	10′2″	8 Ga	1/4″	8,66	7,09	7.5+2.2	197	59	54	10472
R-FAB 10-984	10′2″	6 Ga	5/16″	9,84	7,87	10+2.2	197	47	54	11905

- All specifications are subject to change without notice.
- The mentioned values above only work for 36 KSI.
- Please take a look at the RMT Roll Bending Calculator to calculate min. dia. on different material types and part width.
- Conic bending capacity depends on the angle and is basically half value of above mentioned values.
- Optional features may increase the machine weight and motor power.
- Min. pre-bending capacity is half of the above mentioned values with std. roll crowning.

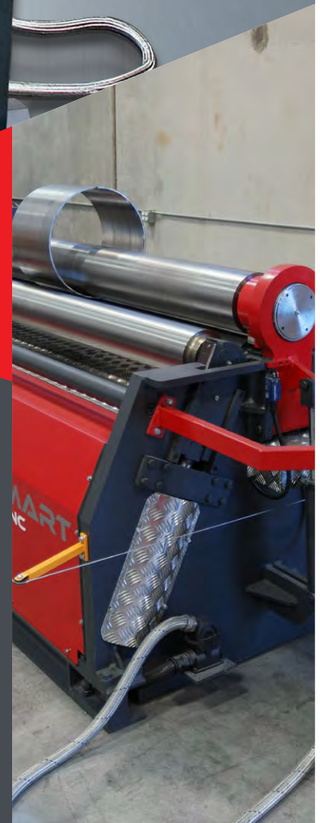
R-SMART

HYDRAULIC FOUR ROLL BENDING MACHINE

R-SMART - Wedge bar clamping and Planetary gearbox

WANT A WORKHORSE?

R-SMART machines have robust frames built with high quality steel construction and are fully hydraulic. Top and bottom roll are powered by hydraulic motor, gearbox and cardan drive. This is an ideal machine for shops that need an easy machine to operate using a 4 roll design, and working with material ranging from 24 gauge to 5/8". These machines come standard with conical bending for making cone shaped parts and hydraulic bottom and side roll adjustments. The R-SMART machine is available from 3'-13' lengths making it very flexible for a wide range of applications, so you get the right machine for your needs… Not a one size fits all approach.



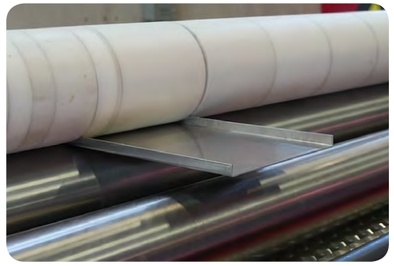
OPTIONAL RECTILINEAR WORKING SYSTEM

Although our planetary swing guide system works very well - Some of our customers applications require a very "robust" system - We can optionally build our R-SMART with Rectilinear Guide System

OPTIONAL CONICAL ROLLS

OPTIONAL PLASTIC / METAL COLLARS

We can build a machine to suit your particular requirements - (Collars can be a nice option if you are planning on forming composite panels & column covers with inside/up flange)



MODEL TYPE	Bending Lenght	Min. Int. Dia Ø Dmin			Central Rolls	Side Rolls	Max. Pass Through	Lenght	Width	Height	Working Height	Weight	Motor Power	Hydraulic Tank Capacity
		Ødx1.5	Ødx5	Ødx5										
	L (inch)	t (inch)	t (inch)	T (inch)	Ød (inch)	Ø (inch)	A (inch)	L (inch)	W (mm)	H (inch)	C (inch)	(LBS)	(HP)	(Gal)
R-SMART 3-314	3’5”	16 Ga	14 Ga	12 Ga	3.14	3.14	0.60	93	38	38	35.43	2,535	3.0	16
R-SMART 3-393	3’5”	14 Ga	12 Ga	10 Ga	3.93	3.93	0.60	93	46	38	35.43	2,756	4.0	21
R-SMART 3-511	3’5”	10 Ga	8 Ga	6 Ga	5.11	5.11	0.75	110	46	44	35.43	4,520	5.5	21
R-SMART 3-590	3’5”	8 Ga	1/4”	5/16”	5.90	5.11	0.75	35.43	21	46	35.43	4,078	5.5	21
R-SMART 3-669	3’5”	6 Ga	9/32”	3/8”	6.69 / 6.29	5.90	0.86	122	34	46	35.43	4,630	5.5	21
R-SMART 5-314	5’1”	24 Ga	20 Ga	16 Ga	3.14	3.14	0.60	113	38	38	35.43	2,866	3.0	16
R-SMART 5-393	5’1”	20 Ga	16 Ga	14 Ga	3.93	3.93	0.60	113	46	38	35.43	3,197	4.0	21
R-SMART 5-511	5’1”	14 Ga	10 Ga	8 Ga	5.11	5.11	0.75	129	46	44	35.43	5,181	5.5	21
R-SMART 5-590	5’1”	10 Ga	8 Ga	1/4”	5.90	5.11	0.75	35.43	21	46	35.43	4,960	5.5	21
R-SMART 5-669	5’1”	8 Ga	1/4”	5/16”	6.69 / 6.29	5.90	0.86	142	34	46	35.43	5,512	5.5	21
R-SMART 6-511	6’8”	16 Ga	14 Ga	10 Ga	5.11	5.11	0.75	149	46	44	35.43	5,842	5.5	21
R-SMART 6-590	6’8”	14 Ga	10 Ga	8 Ga	5.90	5.11	0.75	162	34	46	35.43	5,843	5.5	21
R-SMART 6-669	6’8”	10 Ga	8 Ga	1/4”	6.69 / 6.29	5.90	0.86	162	34	46	35.43	6,393	5.5	21
R-SMART 6-748	6’8”	8 Ga	1/4”	5/16”	7.48	5.90	1.00	162	41	52	37.00	7,716	7.5	21
R-SMART 6-866	6’8”	1/4”	5/16”	3/8”	8.66	6.29	1.00	148	47	52	37.00	8,818	7.5	21
R-SMART 6-964	6’8”	5/16”	3/8”	1/2”	9.64	7.08	1.00	158	61	59	43.30	11,244	10.0	32
R-SMART 6-1023	6’8”	3/8”	1/2”	5/8”	10.23	7.87	1.00	158	63	63	43.30	13,162	10.0	32
R-SMART 8-748	8’4”	10 Ga	8 Ga	1/4”	7.48	5.90	1.00	181	41	52	37.00	8,818	7.5	21
R-SMART 8-866	8’4”	8 Ga	1/4”	5/16”	8.66	6.29	1.00	168	47	52	37.00	9,920	7.5	21
R-SMART 8-964	8’4”	1/4”	5/16”	3/8”	9.64	7.08	1.00	177	61	59	43.30	13,448	10.0	32
R-SMART 8-1023	8’4”	5/16”	3/8”	1/2”	10.23	7.87	1.00	177	63	63	43.30	14,860	10.0	32
R-SMART 10-748	10’2”	14 Ga	10 Ga	6 Ga	7.48	5.90	1.00	201	41	52	37.00	9,920	7.5	21
R-SMART 10-866	10’2”	10 Ga	6 Ga	9/32”	8.66	6.29	1.00	187	47	52	37.00	12,125	7.5	21
R-SMART 10-964	10’2”	8 Ga	1/4”	5/16”	9.64	7.08	1.00	197	61	59	43.30	14,550	10.0	32
R-SMART 10-1023	10’2”	1/4”	5/16”	3/8”	10.23	7.87	1.00	197	63	63	43.30	16,490	10.0	32
R-SMART 13-1023	13’5”	10 Ga	8 Ga	1/4”	10.23	7.87	1.00	237	63	63	43.30	20,503	10.0	32

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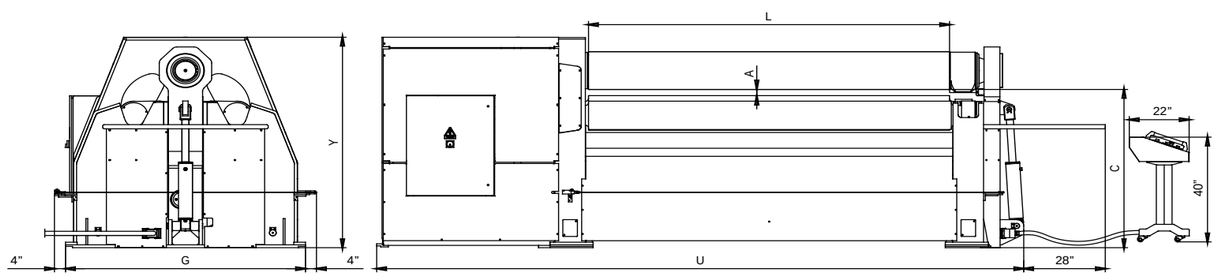
- Optional features may increase the machine weight and motor power.
- Min. pre-bending capacity is half of the above mentioned values with std. roll crowning.

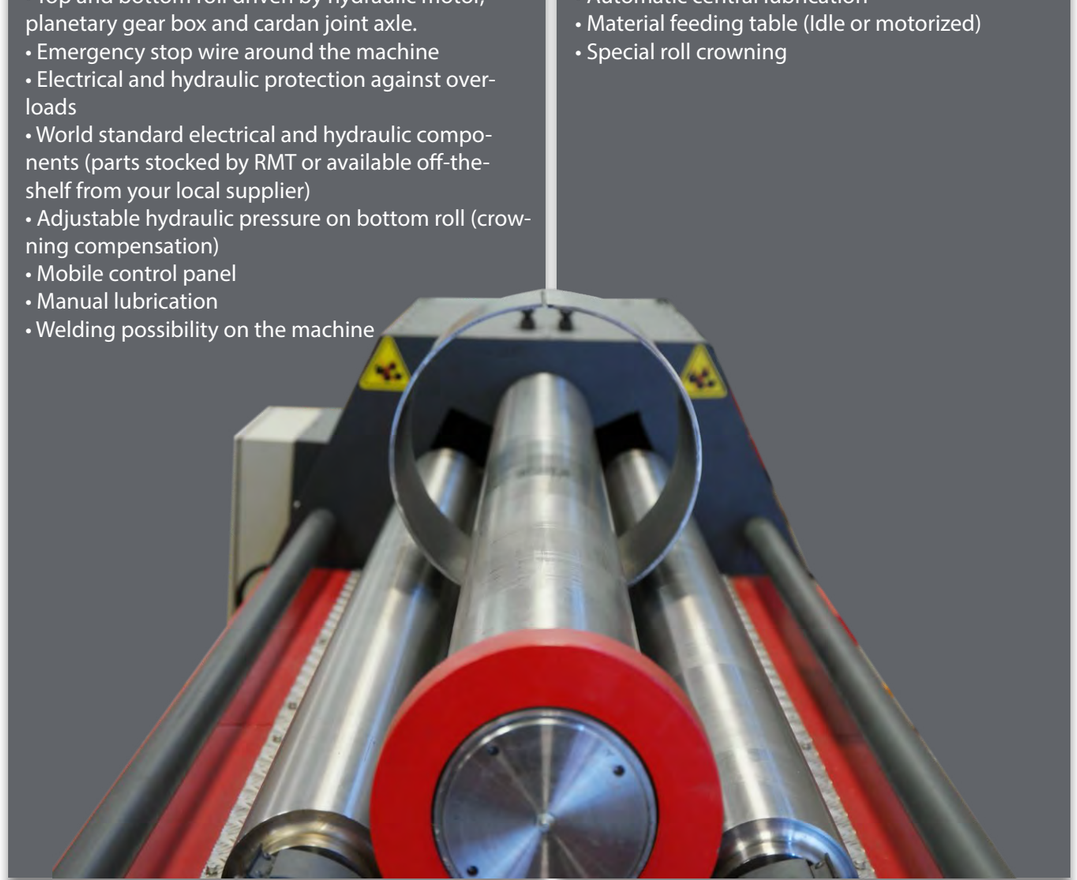


STANDARD

- Planetary type side roll movement.
- Three digital readouts for easy roll positioning.
- Dual speed.
- Cone bending
- Induction hardened rolls (HRC 54-58)
- AISI 1050 Carbon steel rolls machined by CNC Lathes with optimal crown (special crown upon request)
- Polished rolls
- Hydraulic balancing system on the side rolls
- Wedge bar clamping system on the bottom roll
- Automatic rolls peripheral speed compensation (optimum distribution of torque)
- Machine body constructed of stress-relieved high-yield steel
- Rolls seated in spherical bearings
- Top roll hydraulic opening device (drop end) with easy pull out system
- Top and bottom roll driven by hydraulic motor, planetary gear box and cardan joint axle.
- Emergency stop wire around the machine
- Electrical and hydraulic protection against over-loads
- World standard electrical and hydraulic components (parts stocked by RMT or available off-the-shelf from your local supplier)
- Adjustable hydraulic pressure on bottom roll (crowning compensation)
- Mobile control panel
- Manual lubrication
- Welding possibility on the machine

OPTIONAL

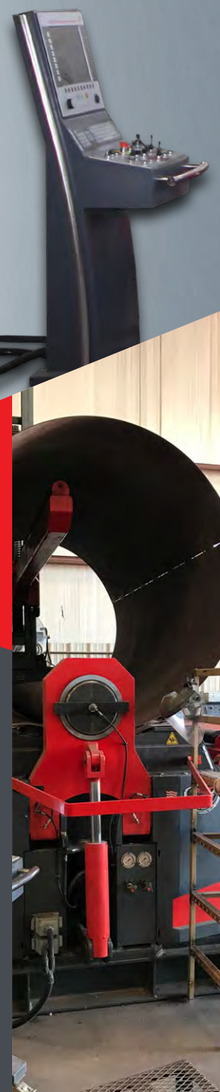
- Rectilinear type side roll movement.
- NC Control Unit
- CNC Control Unit with color graphical control
- All axis positioning with adjustable speed on CNC machines
- AISI 4140 High strength alloy steel rolls
- Ground rolls
- Variable speed control
- Oil cooler
- Oil heater
- Hydraulic side support system (both sides)
- Vertical overhead support system
- Preparation for vertical support system
- NC inclusion for vertical support control (Available on CNC control)
- NC inclusion for side support control (Available on CNC control)
- Changeable top roll for smaller Diameter
- Automatic central lubrication
- Material feeding table (Idle or motorized)
- Special roll crowning



R-GENIUS

RECTILINEAR TYPE HYDRAULIC FOUR ROLLS

R-GENIUS - Planetary gearbox



MASS PRODUCTION?

The foundation of all RMT R-Genius Plate Rolls is a box type frame made from mill-certified, high-yield steel. As a result, RMT R-Genius Plate Rolls perform accurately and reliably year after year. We're so confident in our frames that we offer a 10-year warranty with our standard machines. Hydraulic cylinders located on either side of the frames provide roll positioning. The cylinders are synchronized to provide smooth motion resulting in precise roll positions to accuracies within .004″

Hydraulic drop ends on RMT Plate Rolls allow for easy removal of formed pieces. Also the top roll is hydraulically tilted up to allow for easy removal of formed parts. A roller type cone bending attachment is a standard feature that is placed on the lower roll housing. All RMT plate rolls also include a safety wire surrounding the machine to automatically shut off the machine if necessary.

MODEL TYPE	Bending Lenght	Min. Int. Dia Ø Dmin			Central Rolls	Side Rolls	Max. Pass Through	Lenght	Width	Height	Working Height	Weight	Motor Power	Hydraulic Tank Capacity
		Ødx1.5	Ødx5	Ødx5										
	L (inch)	t (inch)	t (inch)	T (inch)	Ød (inch)	Ø (inch)	A (inch)	L (inch)	W (mm)	H (inch)	C (inch)	(LBS)	(HP)	(Gal)
R-GENIUS 6-1102	6′ 8″	1/2″	5/8″	3/4″	11.02	8.66	2.55	191	67	73	50.19	18,850	22	80
R-GENIUS 6-1259	6′ 8″	5/8″	3/4″	1″	12.59	9.44	3.14	193	71	77	53.14	23,700	26	80
R-GENIUS 6-1377	6′ 8″	3/4″	1″	1-5/32″	13.77	10.23	3.14	193	75	77	53.14	25,353	31	106
R-GENIUS 6-1496	6′ 8″	1″	1-5/32″	1-5/8″	14.96	11.81	3.14	193	89	93	64.56	34,833	42	132
R-GENIUS 6-1574	6′ 8″	1-5/32″	1-3/8″	1-3/4″	15.74	11.81	3.14	193	89	93	64.56	36,376	52	132
R-GENIUS 6-1811	6′ 8″	1-3/8″	1-3/4″	2″	18.11	14.96	3.34	193	91	93	64.56	43,210	52	132
R-GENIUS 6-1968	6′ 8″	1-5/8″	1-3/4″	2-1/4″	19.68	15.74	5.11	219	111	115	77.16	73,854	80	198
R-GENIUS 6-2165	6′ 8″	1-3/4″	2″	2-3/8″	21.65	17.71	5.51	225	115	117	77.16	88,185	88	198
R-GENIUS 8-1102	8′ 4″	3/8″	1/2″	5/8″	11.02	8.66	2.55	209	67	73	50.19	20,283	22	80
R-GENIUS 8-1259	8′ 4″	1/2″	5/8″	3/4″	12.59	9.44	3.14	213	71	77	53.14	25,905	26	80
R-GENIUS 8-1377	8′ 4″	5/8″	3/4″	1″	13.77	10.23	3.14	213	75	77	53.14	28,660	31	106
R-GENIUS 8-1496	8′ 4″	3/4″	1″	1-5/32″	14.96	11.81	3.14	213	89	93	64.56	38,140	42	132
R-GENIUS 8-1574	8′ 4″	1″	1-5/32″	1-5/8″	15.74	11.81	3.14	213	89	93	64.56	39,683	52	132
R-GENIUS 8-1811	8′ 4″	1-5/32″	1-3/8″	1-3/4″	18.11	14.96	3.34	213	91	93	64.56	49,604	52	132
R-GENIUS 8-1968	8′ 4″	1-3/8″	1-5/8″	2″	19.68	15.74	5.11	239	111	115	77.16	79,366	80	198
R-GENIUS 8-2165	8′ 4″	1-5/8″	1-3/4″	2-1/4″	21.65	17.71	5.51	244	115	117	77.16	95,901	88	198
R-GENIUS 10-1102	10′ 2″	5/16″	3/8″	1/2″	11.02	8.66	2.55	231	67	73	50.19	22,046	22	80
R-GENIUS 10-1259	10′ 2″	3/8″	1/2″	5/8″	12.59	9.44	3.14	231	71	77	53.14	28,109	26	80
R-GENIUS 10-1377	10′ 2″	1/2″	5/8″	3/4″	13.77	10.23	3.14	231	75	77	53.14	33,070	31	106
R-GENIUS 10-1496	10′ 2″	5/8″	3/4″	1″	14.96	11.81	3.14	231	89	93	64.56	41,447	42	132
R-GENIUS 10-1574	10′ 2″	3/4″	1″	1-5/32″	15.74	11.81	3.14	231	89	93	64.56	44,092	52	132
R-GENIUS 10-1811	10′ 2″	1″	1-5/32″	1-5/8″	18.11	14.96	3.34	234	91	93	64.56	54,366	52	132
R-GENIUS 10-1968	10′ 2″	1-5/32″	1-3/8″	1-3/4″	19.68	15.74	5.11	260	111	115	77.16	84,878	80	198
R-GENIUS 10-2165	10′ 2″	1-3/8″	1-5/8″	2″	21.65	17.71	5.51	266	115	117	77.16	103,617	88	198
R-GENIUS 10-2283	10′ 2″	1-5/8″	1-3/4″	2-3/8″	22.83	18.89	5.51	266	117	117	77.16	110,231	88	198
R-GENIUS 10-2440	10′ 2″	2″	2-3/8″	2-3/4″	24.40	20.47	5.70	284	128	128	86.22	136,686	165	528
R-GENIUS 10-2677	10′ 2″	2-3/8″	2-3/4″	3-3/8″	26.77	22.83	7.28	304	138	142	94.48	181,881	200	528
R-GENIUS 13-1102	13′ 5″	8 Ga	1/4″	5/16″	11.02	8.66	2.55	270	67	73	50.19	28,660	22	80
R-GENIUS 13-1259	13′ 5″	1/4″	5/16″	3/8″	12.59	9.44	3.14	274	71	77	53.14	32,519	26	80
R-GENIUS 13-1377	13′ 5″	5/16″	3/8″	1/2″	13.77	10.23	3.14	274	75	77	53.14	41,887	31	106
R-GENIUS 13-1496	13′ 5″	3/8″	1/2″	5/8″	14.96	11.81	3.14	274	89	93	64.56	48,502	42	132
R-GENIUS 13-1574	13′ 5″	1/2″	5/8″	3/4″	15.74	11.81	3.14	274	89	93	64.56	51,809	52	132
R-GENIUS 13-1811	13′ 5″	5/8″	3/4″	1″	18.11	14.96	3.34	274	91	93	64.56	66,139	52	132
R-GENIUS 13-1968	13′ 5″	3/4″	1″	1-3/8″	19.68	15.74	5.11	300	111	115	77.16	95,901	80	198
R-GENIUS 13-2165	13′ 5″	1″	1-5/32″	1-5/8″	21.65	17.71	5.51	305	115	117	77.16	119,049	88	198
R-GENIUS 20-1377	20′	8 Ga	1/4″	5/16″	13.77	10.23	3.14	353	75	77	53.14	52,910	31	106
R-GENIUS 20-1496	20′	1/4″	5/16″	3/8″	14.96	11.81	3.14	353	89	93	64.56	62,280	42	132
R-GENIUS 20-1574	20′	5/16″	3/8″	1/2″	15.74	11.81	3.14	353	89	93	64.56	66,139	52	132
R-GENIUS 20-1811	20′	3/8″	1/2″	5/8″	18.11	14.96	3.34	353	91	93	64.56	88,185	52	132
R-GENIUS 20-1968	20′	1/2″	5/8″	3/4″	19.68	15.74	5.11	378	111	115	77.16	117,947	80	198
R-GENIUS 20-2165	20′	5/8″	3/4″	1″	21.65	17.71	5.51	384	115	117	77.16	154,323	88	198
R-GENIUS 20-2440	20′	3/4″	1″	1-5/32″	24.40	20.47	5.70	402	128	128	86.22	195,109	165	528

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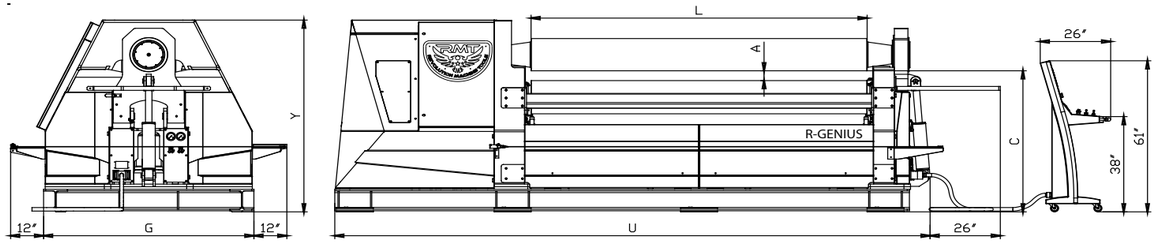
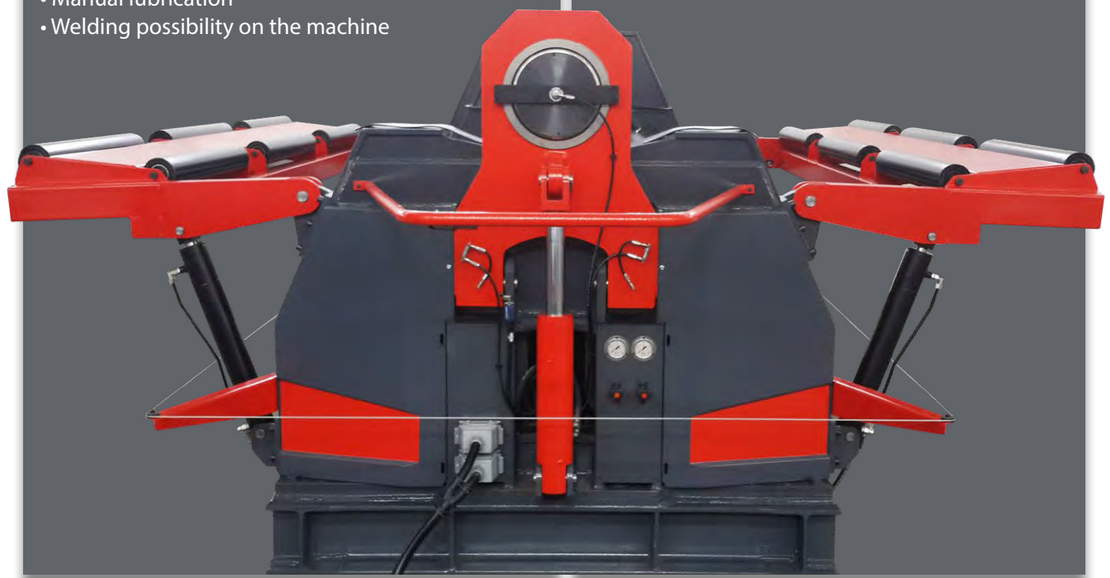


STANDARD

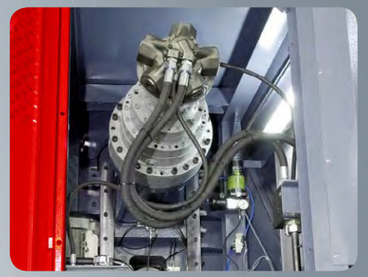
- Rectilinear type side roll movement.
- Three digital readouts for easy roll positioning.
- Cone bending
- Dual speed of rolling
- Induction hardened rolls (HRC 54-58)
- AISI 1050 Carbon steel rolls machined by CNC Lathes with optimal crown (special crown upon request)
- Polished rolls
- Hydraulic balancing system on the side rolls
- Automatic rolls peripheral speed compensation (optimum distribution of torque)
- Machine body constructed of stress-relieved high-yield steel
- Rolls seated in dual spherical bearings
- Top roll hydraulic opening device (drop end) with easy pull out system
- Bottom and top rolls driven with hydraulic motor and planetary gear box
- Rolls with rectilinear guides.
- Emergency stop wire around the machine
- Electrical and hydraulic protection against over-loads
- World standard electrical and hydraulic compo-nents (parts stocked by RMT or available off-the-shelf from your local supplier)
- Adjustable hydraulic pressure on bottom roll (crow-ning compensation)
- Mobile control panel
- Manual lubrication
- Welding possibility on the machine

OPTIONAL

- NC Control Unit
- CNC Control Unit with color graphical control
- All axis positioning with adjustable speed on CNC machines
- AISI 4140 High strength alloy steel rolls
- Ground rolls
- Variable speed control
- Four rolls drive
- Wired or wireless remote
- Oil cooler
- Oil heater
- Easy slide hydraulic side support system (both sides)
- Vertical overhead support system
- Preparation for vertical support system
- NC inclusion for vertical support control (Available on CNC control)
- NC inclusion for side support control (Available on CNC control)
- Plate alignment unit
- Seperated power cabin
- Automation system
- Changeable top roll for smaller Diameter
- Special roll crowning
- Special plate support systems
- Automatic central lubrication
- Material feeding table (Idle or motorized)
- Special roll crowning



R-HYBRID
VARIABLE GEOMETRY HYDRAULIC THREE ROLLS

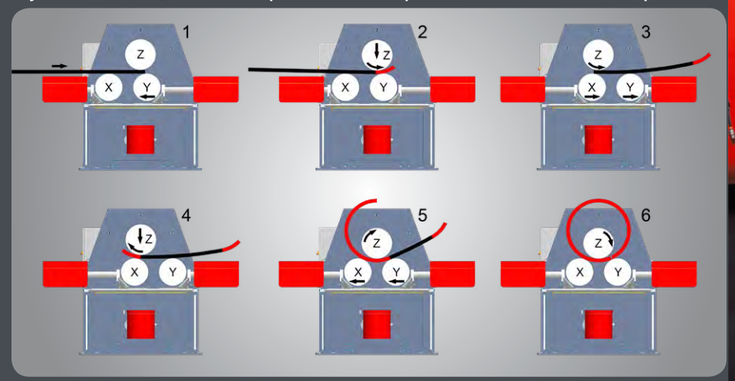


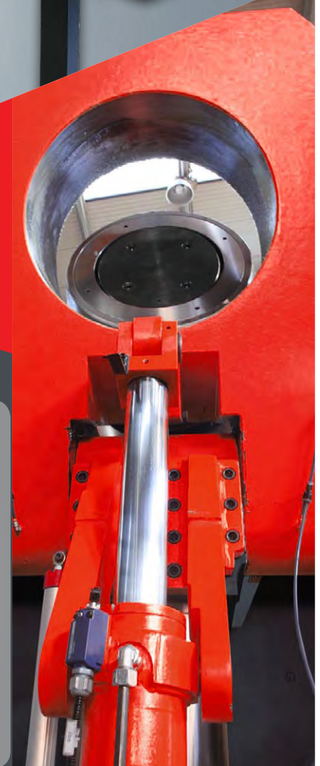
R-HYBRID - Planetary gearbox

BENDING THICK PLATES?

The variable-geometry plate rolls, which really operates more like a press brake than a traditional plate roll, makes not only extreme rolling possible, but much simpler. The two lower rolls are very similar to an adjustable V die, and the top roll can be operated like the ram of a press brake.

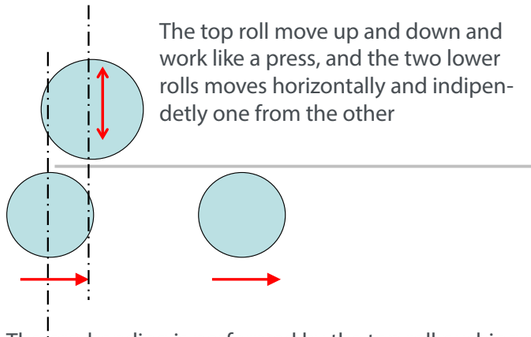
That's why we called his machine R-HYBRID. They are suitable for medium and thick plate bending.



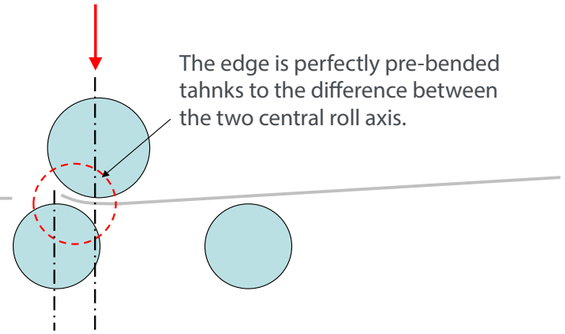


PRE-BENDING ADVANTAGE

Position of the rolls for the pre-bending execution on the first edge of the plate. The right lateral roll supports the plate, while the left one works like a lower mould.
The top roll pushes directly on the first side of the plate deforming it according to the required radius. The top roll through its thrust force pushes the plate against the left lateral roll that, being displaced in respect to the top roll, allows the first side of the plate to get deformed. The bigger the top roll thrust is, the lower the flat-end and the plate bending radius are.

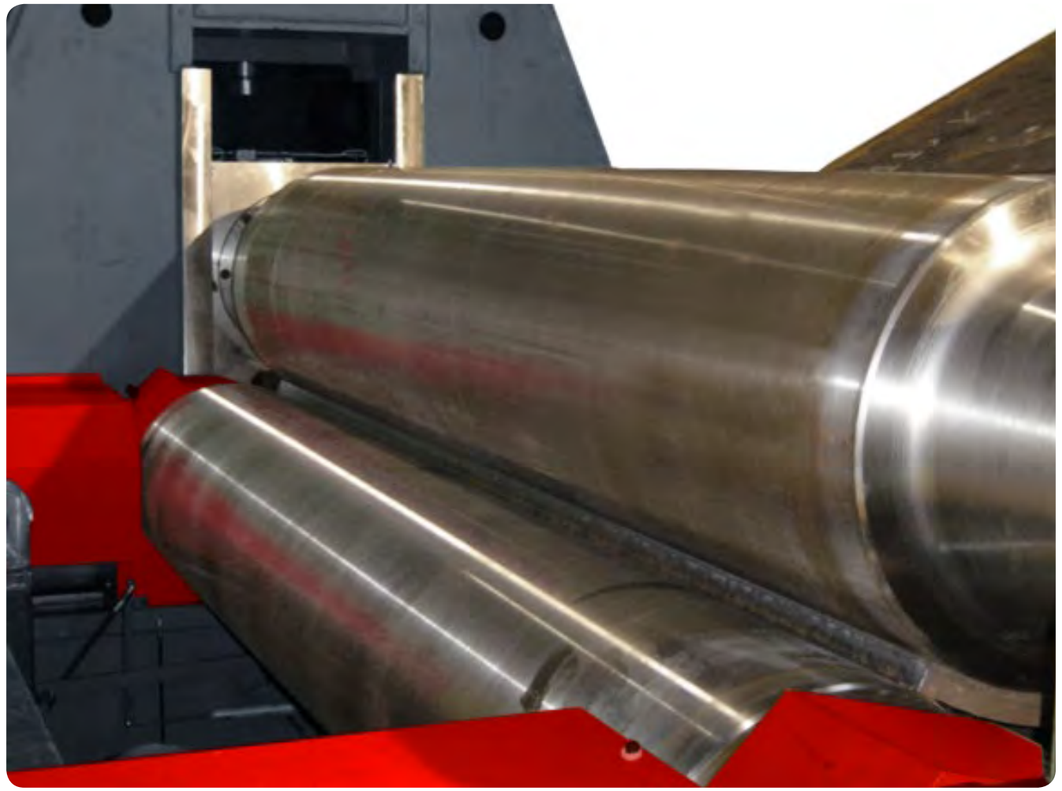


The top roll move up and down and work like a press, and the two lower rolls moves horizontally and indipen-detly one from the other



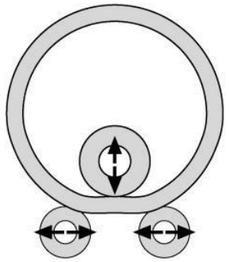
The edge is perfectly pre-bended tahnks to the difference between the two central roll axis.

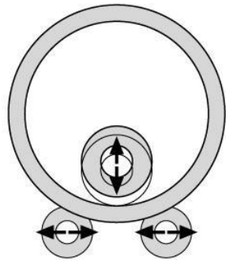
The pre-bending is performed by the top roll pushing directly against the first side of the plate, leaving a very short or null flat-end; the following rotation increases the curved initial side of the plate.



CALIBRATION AFTER THE WELDING

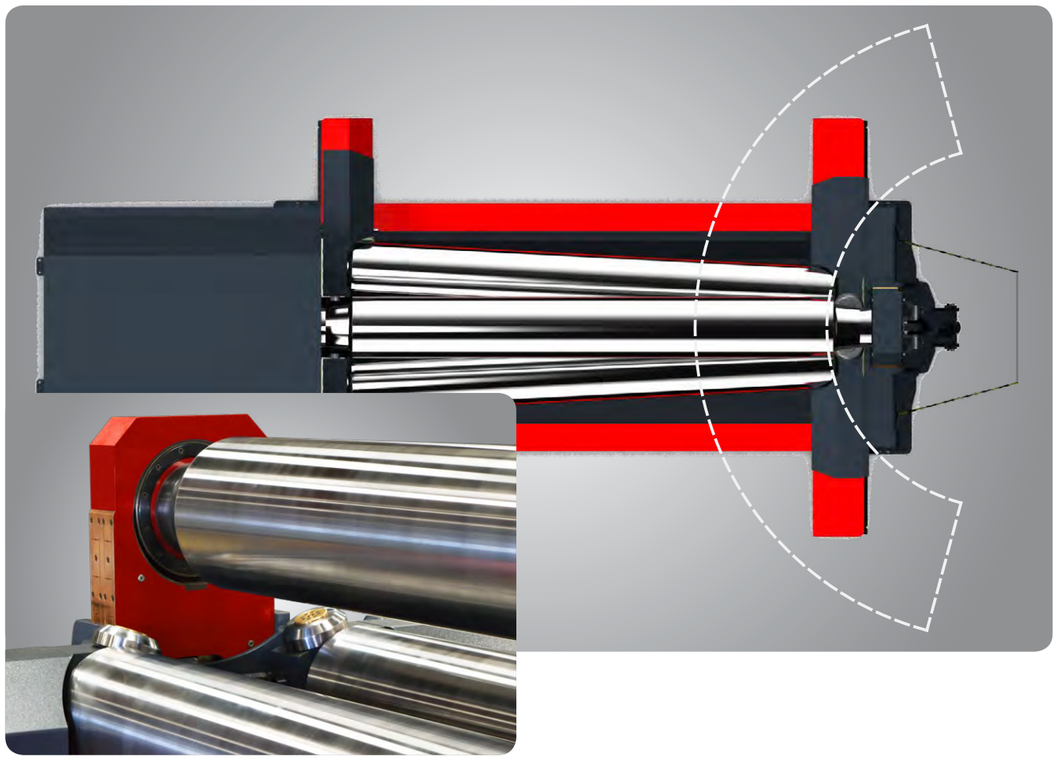
Another important feature of the R-HYBRID plate roll, is the press like system of the top forming roll. In fact, the top forming roll can be used as a traditional press allowing perfect rerolling operation and calibration of the produced tubes. In the same way it is also possible to obtain cones with heavy thicknesses by bending the plate with several strokes.





CONE BENDING

R-HYBRID plate rolls ability to tilt all 3 axis allow for the best and easiest production of conical shapes. Material blank also moves linear through the machine and not radial as on 4 rolls and traditional 3 rolls



Dual cone bending bearings

MODEL	Bending Length	Min. Int. Dia Ø Dmin			Top Roll	Lower Rolls	Top Roll Bending Force	Max. Pass Through	Length	Width	Height	Working Height	Weight	Main Motor	Hydraulic Tank Capacity
		Ødx1,5	Ødx5	Ødx5											
		Pre-Bending Capacities	Pre-Bending Capacities	Bending Capacities											
	L (inch)	t (inch)	t (inch)	T (inch)	Ød (inch)	Ø (inch)	US Tons	A (inch)	L (inch)	W (inch)	H (inch)	C (inch)	(Lbs)	(HP)	(Gal)
R-HYBRID 8-1575	8′ 6″	1″	1 3/16″	1 9/16″	15.75″	14.17″	220	3.94″	215″	101″	77″	50″	40,786	50	106
R-HYBRID 8-1772	8′ 6″	1 3/16″	1 7/16″	1 7/8″	17.72″	16.54″	286	4.72″	220″	114″	86″	57″	51,147	60	159
R-HYBRID 8-1969	8′ 6″	1 3/8″	1 5/8″	2 5/32″	19.69″	18.11″	352	5.31″	228″	121″	94″	61″	67,241	75	198
R-HYBRID 8-2205	8′ 6″	1 9/16″	1 7/8″	2 3/8″	22.05″	19.69″	484	5.91″	238″	138″	105″	69″	93,696	60+25	238
R-HYBRID 10-1575	10′ 2″	25/32″	1″	1 3/8″	15.75″	14.17″	220	3.94″	234″	101″	77″	50″	44,092	50	106
R-HYBRID 10-1772	10′ 2″	1″	1 3/16″	1 5/8″	17.72″	16.54″	286	4.72″	240″	114″	86″	57″	55,116	60	159
R-HYBRID 10-1969	10′ 2″	1 3/16″	1 3/8″	1 7/8″	19.69″	18.11″	352	5.31″	248″	121″	94″	61″	72,753	75	198
R-HYBRID 10-2205	10′ 2″	1 3/8″	1 5/8″	2 5/32″	22.05″	19.69″	484	5.91″	258″	138″	105″	69″	99,208	60+25	238
R-HYBRID 13-1575	13′ 5″	1/2″	5/8″	1″	15.75″	14.17″	170,5	3.94″	274″	101″	77″	50″	50,706	50	106
R-HYBRID 13-1772	13′ 5″	3/4″	15/16″	1 3/8″	17.72″	16.54″	220	4.72″	280″	114″	86″	57″	59,084	60	159
R-HYBRID 13-1969	13′ 5″	1″	1 3/16″	1 9/16″	19.69″	18.11″	286	5.31″	287″	121″	94″	61″	78,264	75	198
R-HYBRID 13-2205	13′ 5″	1 1/8″	1 1/4″	1 3/4″	22.05″	19.69″	385	5.91″	297″	138″	105″	69″	104,940	60+25	238

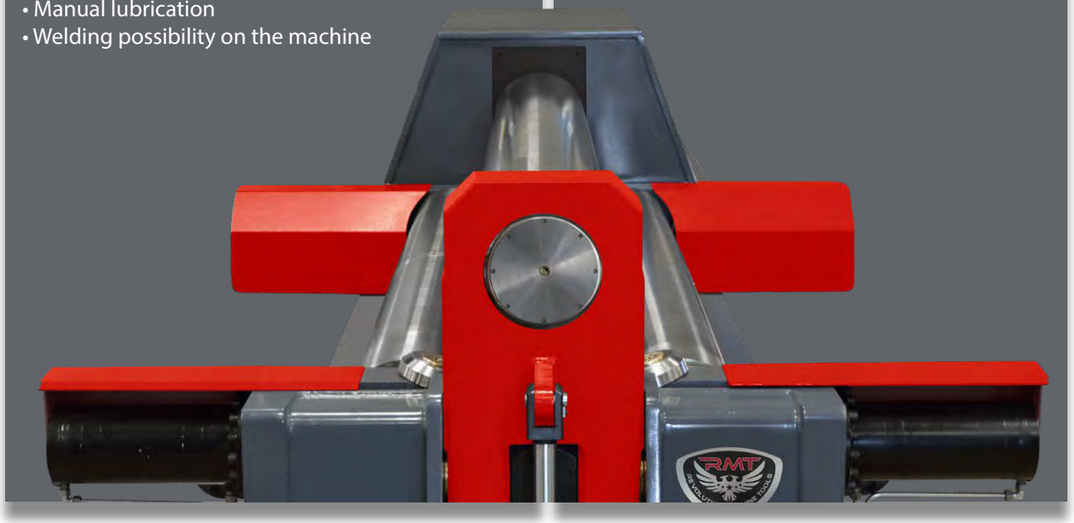
- All specifications are subject to change without notice.
- The mentioned values above only work for 36 KSI.
- Please take a look at the RMT Roll Bending Calculator to calculate min. dia. on different material types and part width.
- Conic bending capacity depends on the angle and is basically half value of above mentioned values.
- Optional features may increase the machine weight and motor power.
- Min. pre-bending capacity is half of the above mentioned values with std. roll crowning.

STANDARD

- Variable geometry type rolls movement.
- PLC control unit
- Dual speed
- Cone bending with dual cone bending roller bearing
- Induction hardened rolls (HRC 54-58)
- AISI 1050 Carbon steel rolls machined by CNC Lathes with optimal crown (special crown upon request)
- Polished rolls
- Top and lower rolls electronically positioned and synchronized with PLC and high-end precision digital scales
- High stroke top roll
- Braking system on side rolls
- Protected slide surfaces
- Machine body constructed of stress-relieved high-yield steel
- Rolls seated in spherical bearings
- Top roll hydraulic opening device (drop end) with easy pull out system
- Top roll driven with hydraulic motor and planetary gear box
- Safety barrier
- Electrical and hydraulic protection against overloads
- World standard electrical and hydraulic components (parts stocked by RMT or available off-the-shelf from your local supplier)
- Adjustable hydraulic pressure on bottom roll (crowning compensation)
- Mobile control panel
- Manual lubrication
- Welding possibility on the machine

OPTIONAL

- NC Control Unit
- All axis positioning with adjustable speed on NC machines
- AISI 4140 High strength alloy steel rolls
- Ground rolls
- Variable speed control
- Wired or wireless remote
- Oil cooler
- Oil heater
- Hydraulic side support system (both sides)
- Vertical overhead support system
- Preparation for vertical support system
- Material feeding table (Idle or motorized)
- Plate alignment unit
- Seperated power cabin
- Changeable top roll for smaller Diameter
- Automatic central lubrications
- Automation system
- Special roll crowning
- Special applications for wind tower production



VARIABLE-GEOMETRY PLATE ROLLS TACKLE UNBELIEVABLY THICK PLATE

RMT-Seravasi plate rolls have gotten seriously big. Machine pits are deeper, the frames more massive, the rolls ever larger. Certain machines have specifications stating they can roll plate of certain yield strengths to 4, 6, and 7, even 11 inches cold. Vessel designs that would have been forged just a decade ago are now being sent to fabrication houses. RMT R-HYBRID rolls, which really operates more like a press brake than a traditional plate roll, is making such extreme rolling possible.

F-FAB

VARIABLE GEOMETRY MOTORIZED THREE ROLL FUSELAGE PANELS AND WING EDGE BENDING MACHINE

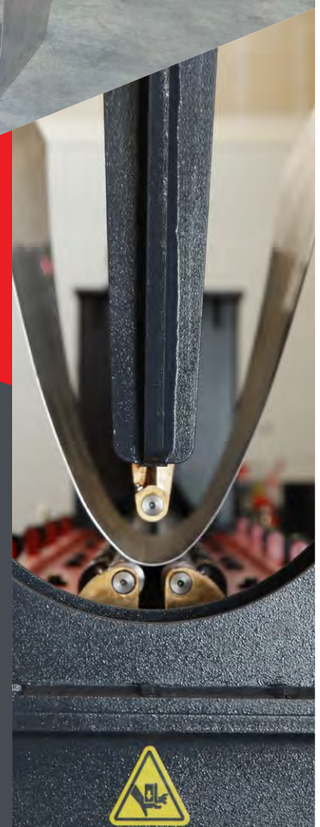
NEED MULTI RADIUS BENDING?

As with all RMT designs, these special rolls are designed and engineered here in the USA. Built with quality components and extremely intelligent design, these rolls are built to last decades.

No other machines match the speed, simplicity and precision for the aviation industry as the RMT F-Fab Series machines. These machines bend aluminium or titanium alloyed sheets even with one or more radius, including hyperbolic shapes, to get precise cylindrical or tapered forms. The RMT R&D teams experience and expertise can even help create custom machines to solve any problem specific to your project.

There was a time when several companies fought over the aircraft and aerospace industry in forming leading edge's, helicopter propellers, and other special projects. Almost all of those companies are gone now and their used machines are very difficult to find.

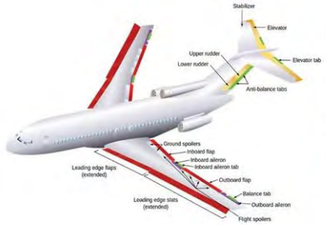
RMT F-Fab series rolls have filled the need and brought back with even more unique features the machine that makes these difficult parts, simple again.

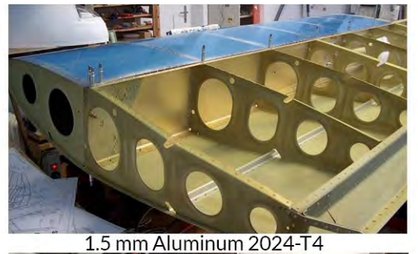


ADVANTAGES

The movement of the upper beam is powered by separate dual speed AC motors, gearboxes, screw jacks and zero backlash couplings. Upper beam positions are monitored by very sensitive linear encoders and digital readouts.

Top and bottom rolls are driven by a high torque dual speed AC motor and gear set. Gearbox rotation transferred to the rolls by sensitive cardan joints. The strong magnetic disk brakes prevent the sheet from sliding back during pre-bending operation.

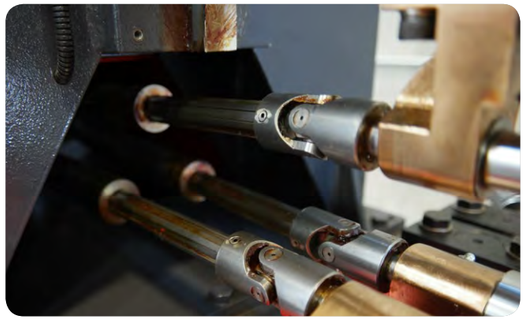




1.5 mm Aluminum 2024-T4

0,8 mm Titanium 6Al4V

If you have ever tried to form relatively thin titanium, then you know exactly how flexible and elastic it is. Overcoming the ultra high yield point to allow the material to take on the new shape you need requires not only special knowledge, but special machinery that takes into consideration the challenges that such materials bring to the table. RMT Rolls are all designed to perform with a wide range of materials to suit each customer's need.



MODEL TYPE	Bending Lenght	Bending Capacities			Upper Roll	Lower Rolls	Max. Pass Through	Lenght	Width	Height	Working Height	Weight	Motor Power
		Aluminium 5754-H22 Capacities	Mild Steel & Aluminium 6061-T6 Capacities	Titanium 6242 Capacities									
	L (inch)	T (inch)	T (inch)	T (inch)	Ød (inch)	Ø (inch)	A (inch)	U (inch)	G (mm)	Y (inch)	C (inch)	(LBS)	(HP)
F-FAB 6-100	6′	12 Ga	14 Ga	16 Ga	1.00	1.75	2.00	139	34	84	39.37	4,270	5.5
F-FAB 10-100	10′	14 Ga	16 Ga	20 Ga	1.00	1.75	2.00	187	34	84	39.37	5,823	5.5
F-FAB 12-100	12′	14 Ga	16 Ga	20 Ga	1.00	1.75	2.00	211	34	84	39.37	6,600	5.5
F-FAB 16-100	16′	16 Ga	18 Ga	22 Ga	1.00	1.75	2.00	259	34	84	39.37	8,153	5.5
F-FAB 20-100	20′	16 Ga	18 Ga	22 Ga	1.00	1.75	2.00	307	34	84	39.37	9,706	5.5
F-FAB 10-150	10′	0.156	0.125	14 Ga	1.50	2.00	2.50	187	34	84	39.37	10,390	9.0
F-FAB 12-150	12′	0.156	0.125	14 Ga	1.50	2.00	2.50	211	34	84	39.37	11,660	9.0
F-FAB 16-150	16′	0.125	12 Ga	16 Ga	1.50	2.00	2.50	259	34	84	39.37	14,190	9.0
F-FAB 20-150	20′	0.125	12 Ga	16 Ga	1.50	2.00	2.50	307	34	84	39.37	16,730	9.0
F-FAB 10-200	10′	0.250	0.210	10 Ga	2.00	2.36	3.00	190	44	96	39.37	14,960	13.5
F-FAB 12-200	12′	0.250	0.210	10 Ga	2.00	2.36	3.00	214	44	96	39.37	16,720	13.5
F-FAB 16-200	16′	0.210	0.187	12 Ga	2.00	2.36	3.00	262	44	96	39.37	20,240	13.5
F-FAB 20-200	20′	0.210	0.187	12 Ga	2.00	2.36	3.00	310	44	96	39.37	23,760	13.5

Weight and motor powers optionally goes higher levels with additional features.

STANDARD

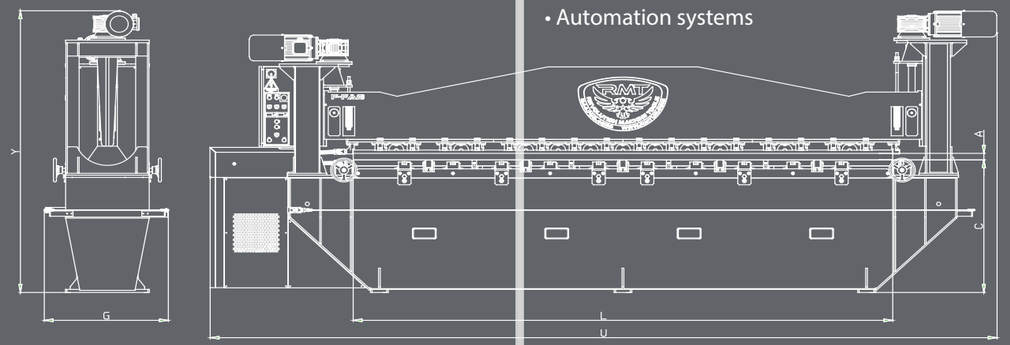
- Digital readout
- Dual speed
- Induction hardened rolls (HRC 54-58)
- AISI 1050 Carbon steel rolls ground and chrome coated.
- Upper beam is powered by separate dual speed AC motors, gearboxes, screw jacks and zero backlash couplings
- Machine body constructed of stress-relieved high yield steel
- Rolls seated in bronze roller bushings
- All rolls driven by AC motor and helical gear box with cardan shafts
- Emergency stop wire around the machine

STANDARD (CONTINUED)

- Electrical and mechanical protection against overloads
- World standard electrical components (parts stocked by RMT or available off-the shelf from your local supplier)
- Manual lubrication

OPTIONAL

- NC Control Unit
- Motorized bottom rolls
- Motorized and NC controlled bottom rolls
- All axis positioning with adjustable speed on NC machines
- Hydraulic side support system (both sides)
- Material feeding table (Idle or motorized)
- Automatic central lubrication
- Automation systems



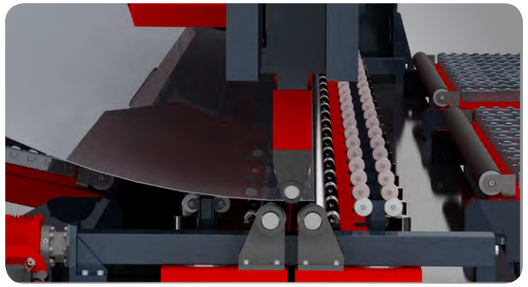
F-SMART

NUMERIC CONTROLLED VARIABLE GEOMETRY SERVO DRIVEN THREE ROLLS FUSELAGE PANELS AND WING EDGE BENDING MACHINE

Aircraft and Aerospace projects require superb precision and repeatability and the RMT F-SMART series can make it easy to reliably form part after part that you can count on.

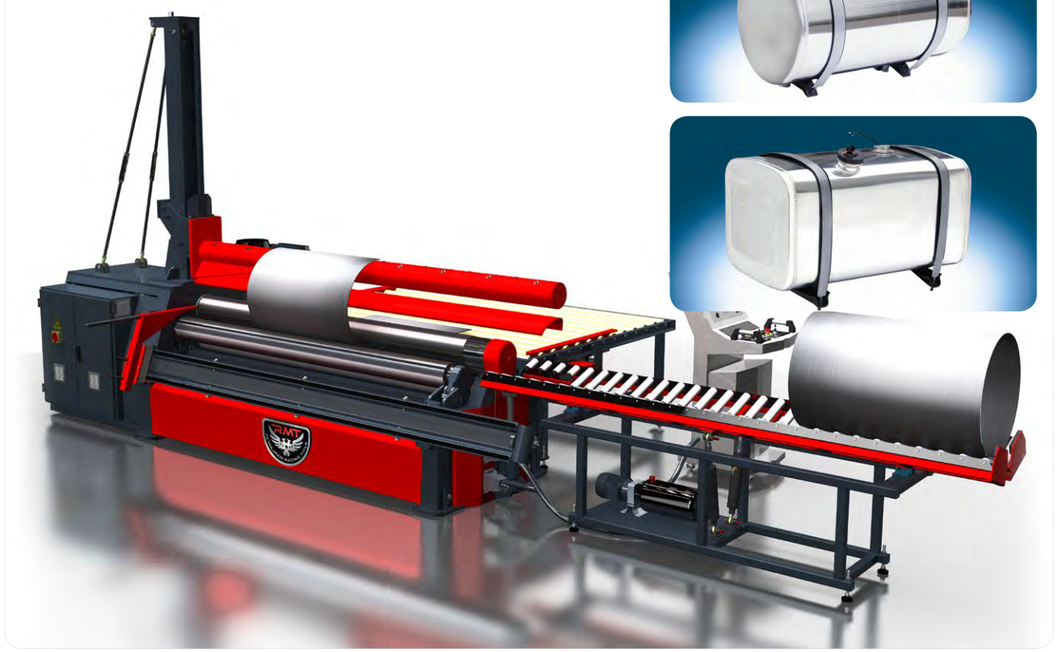
ADVANTAGES

Superior springback control on thin, high yield materials, by using precise roll positioning and narrow roll geometry. This allows for almost flawless repeatability on even hard to form pieces.
Gearbox disc braking system allows for perfect press bending without allowing the material to slide.
Excessive upper beam daylight lets you easily remove parts.
Portable NC control unit moves with you so you can monitor the forming process anywhere in the work area.
Independent tiltable infeed and outfeed tables provide support to protect your forming radius.



CUSTOM **SOLUTIONS**

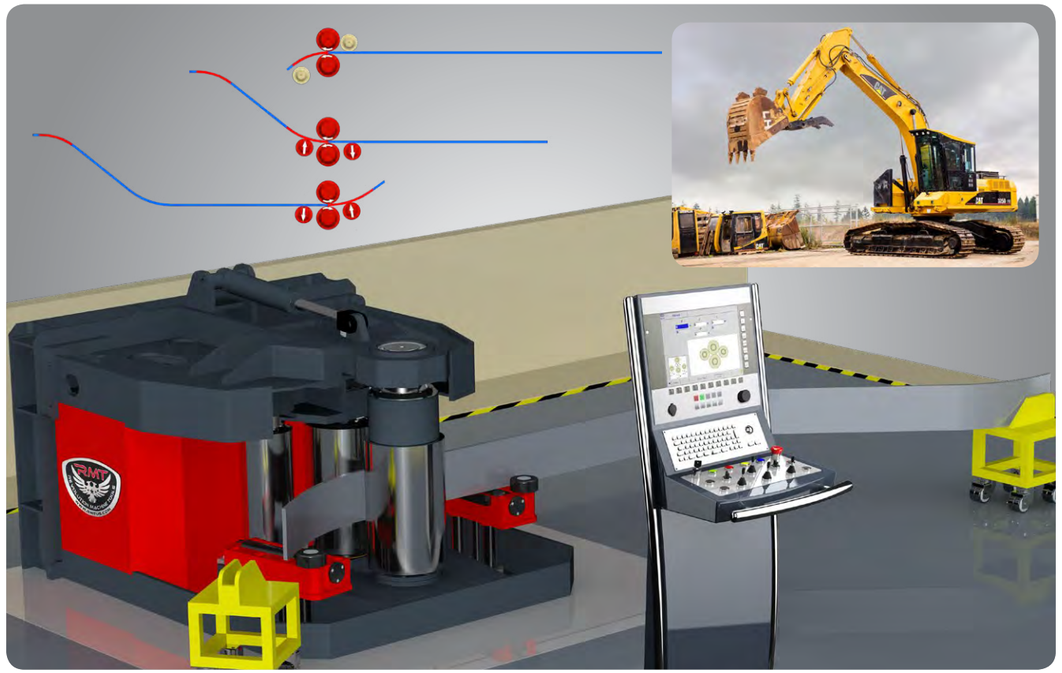
AUTOMATIC LIQUID TANK BENDING LINES

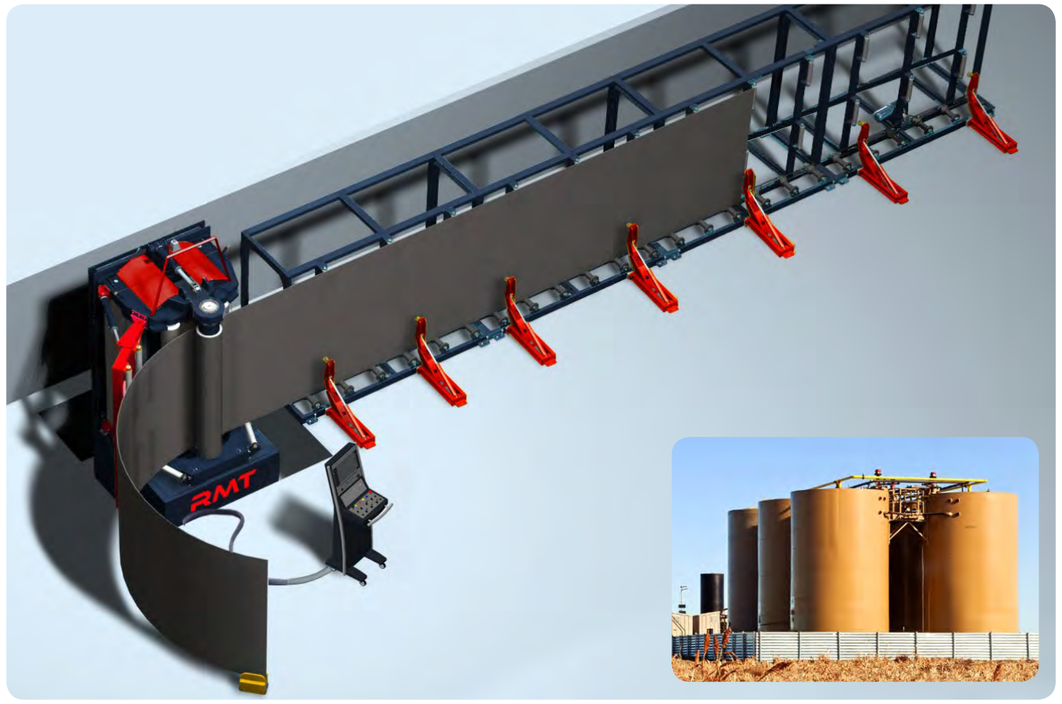


WIND TOWER BENDING LINES

PIPE BENDING SOLUTION

VERTICAL BENDING SOLUTIONS





AUTOMATIC VERTICAL COIL FEEDING, EDGE CUTTING, BENDING, WELDING SYSTEM

TRAFFIC BARRIER BENDING ROLL

CORRUGATED SHEET BENDING MACHINE

SPACE ROCKET FUEL TANK BENDING MACHINE

Our team at RMT has developed some very unique / amazing solutions for the aerospace industry.

ISOGRID & ORTHOGRID FORMING MACHINE

High strength and light weight structures are key factors of the Aviation & Space Industry.
This structures are fabricated from aluminum alloys and titanium to provide desired strength, rigidity, etc. and called Isogrid or Orthogrid panels. These panels are usually manufactured in CNC milling machines creating triangular or rectangular pattern pockets from a single piece of aluminum alloy. While the bottom part is the shell (or skin), the ribs are formed between pockets and are generally vertical to the shell and give rigidity to the structure. Machining the pockets give high strength to the sheet while keeping the weight low. These panels are commonly used in Aviation & Aerospace applications for aircraft, missle, and rocket fuselage, spacecraft, launch vehicles and satellites among others.

The challenge with isogid and orthogrid structures is forming them after they have been machined. To keep the structural integrity and rigidity great care and time is usually taken to press the structure into the desired radius using multi-step bump-bending. A panel which has a width of 142", length of 225" and is 1.4" thick needs more than 500 steps of bumping. This operation can take 4 to 8 days to complete, especially if any mistakes are made and need correction. This makes isogrid and orthgrid manufacturing very time consuming and expensive.

RMT R&D engineers have designed a special machine and automation system to provide to solve this problem. This involves combining the strength and precision of press brake bending along with the continuous forming process of a plate roll. Using our dynamic crowning system, which is placed along the entire bending length, the material is formed precisely at every point along the part. The machine also allows for reverse bending in case of over bending.

MILLIMETER / DECIMAL / FRACTION CONVERSION CHART

Milli-meter	Decimal	Fraction (inches)	Milli-meter	Decimal	Fraction (inches)	Milli-meter	Decimal	Fraction (inches)	Milli-meter	Decimal	Fraction (inches)	Milli-meter	Decimal	Fraction (inches)
0.1	.0039		5.159	.2031	13/64	10.2	.4016		15.3	.6024		20.3	.7992	
0.2	.0079		5.2	.2047		10.3	.4055		15.4	.6063		20.4	.8031	
0.3	.0118		5.3	.2087		10.319	.4063	13/32	15.478	.6094	39/64	20.5	.8071	
0.397	.0156	1/64	5.4	.2126		10.4	.4094		15.5	.6102		20.6	.8110	
0.4	.0157		5.5	.2165		10.5	.4134		15.6	.6142		20.638	.8125	13/16
0.5	.0197		5.556	.2188	7/32	10.6	.4173		15.7	.6181		20.7	.8150	
0.6	.0236		5.6	.2205		10.7	.4213		15.8	.6220		20.8	.8189	
0.7	.0276		5.7	.2244		10.716	.4219	27/64	15.875	.6250	5/8	20.9	.8228	
0.794	.0313	1/32	5.8	.2283		10.8	.4252		15.9	.6260		21.0	.8268	
0.8	.0315		5.9	.2323		10.9	.4291		16.0	.6299		21.034	.8281	53/64
0.9	.0354		5.953	.2344	15/64	11.0	.4331		16.1	.6339		21.1	.8307	
1.0	.0394		6.0	.2362		11.1	.4370		16.2	.6378		21.2	.8346	
1.1	.0433		6.1	.2402		11.113	.4375	7/16	16.272	.6406	41/64	21.3	.8386	
1.191	.0469	3/64	6.2	.2441		11.2	.4409		16.3	.6417		21.4	.8425	
1.2	.0472		6.3	.2480		11.3	.4449		16.4	.6457		21.431	.8438	27/32
1.3	.0512		6.350	.2500	1/4	11.4	.4488		16.5	.6496		21.5	.8465	
1.4	.0551		6.4	.2520		11.5	.4528		16.6	.6535		21.6	.8504	
1.5	.0591		6.5	.2559		11.509	.4531	29/64	16.669	.6563	21/32	21.7	.8543	
1.588	.0625	1/16	6.6	.2598		11.6	.4567		16.7	.6575		21.8	.8583	
1.6	.0630		6.7	.2638		11.7	.4606		16.8	.6614		21.828	.8594	55/64
1.7	.0669		6.747	.2656	17/64	11.8	.4646		16.9	.6654		21.9	.8622	
1.8	.0709		6.8	.2677		11.9	.4685		17.0	.6693		22.0	.8661	
1.9	.0748		6.9	.2717		11.906	.4688	15/32	17.066	.6719	43/64	22.1	.8701	
1.984	.0781	5/64	7.0	.2756		12.0	.4724		17.1	.6732		22.2	.8740	
2.0	.0787		7.1	.2795		12.1	.4764		17.2	.6772		22.225	.8750	7/8
2.1	.0827		7.144	.2813	9/32	12.2	.4803		17.3	.6811		22.3	.8780	
2.2	.0866		7.2	.2835		12.3	.4843		17.4	.6850		22.4	.8819	
2.3	.0906		7.3	.2874		12.303	.4844	31/64	17.463	.6875	11/16	22.5	.8858	
2.381	.0938	3/32	7.4	.2913		12.4	.4882		17.5	.6890		22.6	.8898	
2.4	.0945		7.5	.2953		12.5	.4921		17.6	.6929		22.622	.8906	57/64
2.5	.0984		7.541	.2969	19/64	12.6	.4961		17.7	.6968		22.7	.8937	
2.6	.1024		7.6	.2992		12.7	.5000	1/2	17.8	.7008		22.8	.8976	
2.7	.1063		7.7	.3031		12.8	.5039		17.859	.7031	45/64	22.9	.9016	
2.778	.1094	7/64	7.8	.3071		12.9	.5079		17.9	.7047		23.0	.9055	
2.8	.1102		7.9	.3110		13.0	.5118		18.0	.7087		23.019	.9063	29/32
2.9	.1142		7.938	.3125	5/16	13.097	.5156	33/64	18.1	.7126		23.1	.9094	
3.0	.1181		8.0	.3150		13.1	.5157		18.2	.7165		23.2	.9134	
3.1	.1220		8.1	.3189		13.2	.5197		18.256	.7188	23/32	23.3	.9173	
3.175	.1250	1/8	8.2	.3228		13.3	.5236		18.3	.7205		23.4	.9213	
3.2	.1260		8.3	.3268		13.4	.5276		18.4	.7244		23.416	.9219	59/64
3.3	.1299		8.334	.3281	21/64	13.494	.5313	17/32	18.5	.7283		23.5	.9252	
3.4	.1339		8.4	.3307		13.5	.5315		18.6	.7323		23.6	.9291	
3.5	.1378		8.5	.3346		13.6	.5354		18.653	.7344	47/64	23.7	.9331	
3.572	.1406	9/64	8.6	.3386		13.7	.5394		18.7	.7362		23.8	.9370	
3.6	.1417		8.7	.3425		13.8	.5433		18.8	.7402		23.813	.9375	15/16
3.7	.1457		8.731	.3438	11/32	13.891	.5469	35/64	18.9	.7441		23.9	.9409	
3.8	.1496		8.8	.3465		13.9	.5472		19.0	.7480		24.0	.9449	
3.9	.1535		8.9	.3504		14.0	.5512		19.050	.7500	3/4	24.1	.9488	
3.969	.1563	5/32	9.0	.3543		14.1	.5551		19.1	.7520		24.2	.9528	
4.0	.1575		9.1	.3583		14.2	.5591		19.2	.7559		24.209	.9531	61/64
4.1	.1614		9.128	.3594	23/64	14.288	.5625	9/16	19.3	.7598		24.3	.9567	
4.2	.1654		9.2	.3622		14.3	.5630		19.4	.7638		24.4	.9606	
4.3	.1693		9.3	.3661		14.4	.5669		19.447	.7656	49/64	24.5	.9646	
4.366	.1719	11/64	9.4	.3701		14.5	.5709		19.5	.7677		24.6	.9685	
4.4	.1732		9.5	.3740		14.6	.5748		19.6	.7717		24.606	.9688	31/32
4.5	.1772		9.525	.3750	3/8	14.684	.5781	37/64	19.7	.7756		24.7	.9724	
4.6	.1811		9.6	.3780		14.7	.5787		19.8	.7795		24.8	.9764	
4.7	.1850		9.7	.3819		14.8	.5827		19.844	.7813	25/32	24.9	.9803	
4.763	.1875	3/16	9.8	.3858		14.9	.5866		19.9	.7835		25.0	.9843	
4.8	.1890		9.9	.3898		15.0	.5906		20.0	.7874		25.003	.9844	63/64
4.9	.1929		9.922	.3906	25/64	15.081	.5938	19/32	20.1	.7913		25.1	.9882	
5.0	.1969		10.0	.3937		15.1	.5945		20.2	.7953		25.2	.9921	
5.1	.2008		10.1	.3976		15.2	.5984		20.241	.7969	51/64	25.3	.9961	
												25.400	1.0000	1

GAUGE CONVERSION CHART

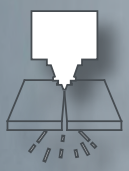
Gauge	Fraction	Stainless inches (mm)	Galvanized inches (mm)	Sheet Steel inches (mm)	Aluminum inches (mm)
30		0.0125 (0.33)	0.0157 (0.40)	0.0120 (0.30)	0.0100 (0.25)
29		0.0141 (0.36)	0.0172 (0.44)	0.0135 (0.34)	0.0113 (0.29)
28	1/64	0.0156 (0.41)	0.0187 (0.47)	0.0149 (0.38)	0.0126 (0.32)
27		0.0172 (0.43)	0.0202 (0.51)	0.0164 (0.42)	0.0142 (0.36)
26		0.0187 (0.48)	0.0217 (0.55)	0.0179 (0.45)	0.0159 (.40)
25		0.0219 (0.56)	0.0247 (0.63)	0.0209 (0.53)	0.0179 (0.46)
24		0.025 (0.64)	0.0276 (0.70)	0.0239 (0.61)	0.0201 (0.51)
23		0.0281 (0.71)	0.0306 (0.78)	0.0269 (0.68)	0.0226 (0.58)
22	1/32	0.0312 (0.79)	0.0336 (0.85)	0.0299 (0.76)	0.0253 (0.64)
21		0.0344 (0.86)	0.0366 (0.93)	0.0329 (0.84)	0.0285 (0.71)
20		0.0375 (0.95)	0.0396 (1.01)	0.0359 (0.91)	0.0320 (0.81)
19		0.0437 (1.1)	0.0456 (1.16)	0.0418 (1.06)	0.0359 (0.91)
18		0.0500 (1.27)	0.0516 (1.31)	0.0478 (1.21)	0.0403 (1.02)
17		0.0562 (1.4)	0.0575 (1.46)	0.0538 (1.37)	0.0453 (1.1)
16	1/16	0.0625 (1.59)	0.0635 (1.61)	0.0598 (1.52)	0.0508 (1.29)
15		0.0703 (1.8)	0.0710 (1.80)	0.0673 (1.71)	0.0571 (1.4)
14	5/64	0.0781 (1.98)	0.0785 (1.99)	0.0747 (1.90)	0.0641 (1.63)
13	3/32	0.094 (2.4)	0.0934 (2.37)	0.0897 (2.28)	0.072 (1.8)
12	7/64	0.1094 (2.78)	0.1084 (2.75)	0.1046 (2.66)	0.0808 (2.05)
11	1/8	0.1250 (3.18)	0.1233 (3.13)	0.1196 (3.04)	0.0907 (2.30)
10	9/64	0.1406 (3.57)	0.1382 (3.51)	0.1345 (3.42)	0.1019 (2.59)
9	5/32	0.1563 (3.97)	0.1532 (3.89)	0.1495 (3.80)	0.1144 (2.91)
8	11/64	0.1719 (4.37)	0.1681 (4.27)	0.1644 (4.18)	0.1285 (3.26)
7	3/16	0.1875 (4.76)		0.1793 (4.55)	0.1443 (3.67)
6	13/64	0.2031		0.1943 (4.94)	0.162 (4.1)
5	7/32	0.2187		0.2092 (5.31)	0.1819
4	15/64	0.2344		0.2242 (5.69)	0.2043
3	1/4	0.25		0.2391 (6.07)	0.2294

ASTM SPECIFICATIONS

ASTM NR.	DESCRIPTION	GRADE	TENSILE STRENGTH K.S.I.	YIELD STRENGTH K.S.I.
A-36	STRUCTURAL STEEL	-	60	36
A-131	STRUCTURAL STEEL FOR SHIPS	-	71	34
A-242	HIGH-STRENGTH LOW-ALLOY STRUCTURAL STEEL	-	70	50
A-283 GRADE A	LOW & INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES OF STRUCTURAL QUALITY	A	55	24
A-283 GRADE B		B	60	27
A-283 GRADE C		C	65	30
A-283 GRADE D		D	72	33
A-285 GRADE A	LOW & INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES FOR PRESSURE VESSEL	A	65	24
A-285 GRADE B		B	70	27
A-285 GRADE C		C	75	30
A-299	CARBON MANGANESE SILICON STEEL PLATE FOR PRESSURE VES- SELS	-	95	42
A-514	HIGH-YIELD STRENGTH, QUENCHED AND TEMPERED ALLOY STEEL PLATE SUITABLE FOR WELDING	-	130	100
A-515 GRADE 55	CARBON STEEL PLATES FOR INTERMEDIATE AND HIGHER TEMPERA- TURE SERVICE FOR PRESSURE VESSELS	55	75	30
A-515 GRADE 60		60	80	32
A-515 GRADE 65		65	85	35
A-515 GRADE 70		70	90	38
A-516 GRADE 55	CARBON STEEL PLATES FOR MODERATE AND LOWER TEMPERATURE SERVICE FOR PRES- SURE VESSELS	55	75	30
A-516 GRADE 60		60	80	32
A-516 GRADE 65		65	85	35
A-516 GRADE 70		70	90	38
A-517	HIGH STRENGTH, AL- LOY STEEL QUENCHED AND TEMPERED PLATES FOR PRESSU- RE VESSEL	-	135	100
A-537 CLASS I	HEAT TREATED, CAR- BON MANGANESE-SILI- CON STEEL PLATE FOR PRESSURE VESSEL	CLASS I	90	50
A-537 CLASS II		CLASS II	100	60
A-572 GRADE 42	HIGH-STRENGTH LOW-ALLOY COLUMBI- UM-VANADIUM STEELS OF STRUCTURAL QUALITY	42	60	42
A-572 GRADE 50		50	65	50
A-572 GRADE 60		60	75	60
A-572 GRADE 65		65	80	65
A-588	HIGH-STRENGTH LOW-ALLOY STRUC- TURAL STEEL	ALL	70	50
A-606 H.R.	STRIP, HOT ROLLED AND COLD ROLLED, HIGH -STRENGTH, LOW-ALLOY WITH IMPROVED CORROSION RESISTANCE	H.R.	70	50
A-606 C.R.		C.R. ANNEAL. NORM.	65	45
A-633 GRADE A-B	NORMALIZED HIGH- STRENGTH LOW-ALLOY STRUCTURAL STEEL	A-B	83	42
A-633 GRADE C-D		C-D	90	50
A-633 GRADE E		E	100	60
A-656 GRADE 50	HOT-ROLLED STRUC- TURAL STEEL, HIGH- STRENGTH LOW-ALLOY STEEL PLATE WITH IMPROVED FORMA- BILITY	50	60	50
A-656 GRADE 60		60	70	60
A-656 GRADE 70		70	80	70
A-656 GRADE 80		80	90	80
STAINLESS STEEL	302, 304, 304L,316, & 316L	302, 304, 304L,316, & 316L	90	54
ALUM. 3004-H34	3004-H34	3004-H34	35	21
ALUM. 5052-H32	5052-H32	5052-H32	33	28
ALUM. 6061-T6	6061-T6	6061-T6	42	37
Weldox 700	Weldox 700 is a general structural steel with a minimum yield strength of 95 - 100 Ksi depending on thickness. Typical applications are demanding loadbearing structures.		125	100
Weldox 900/960	Weldox 960 is a general structural steel with a minimum yield strength of 120 - 140 Ksi depending on thickness. Typical applications are demanding loadbearing structures.		155	140
Weldox 1100	Weldox 1100 is a general structural steel with a minimum yield strength of 160 Ksi. Typical applications are demanding loadbearing structures.		195	160
Hardox 400	Hardox 400 is the wear resistant steel for combined payload and service life solutions.		185	145
Hardox 450	Hardox 450 is an abrasion resistant steel with a nominal hardness of 450 HBW. Typical applications are components and structures subject to wear.		205	175
Hardox 500	Hardox 500 is an abrasion resistant steel with a nominal hardness of 500 HBW. Typical applications are components and structures subject to wear.		225	185

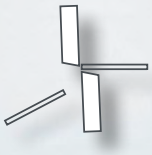
NOTES

KYSON

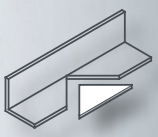


Fiber Lasers

Press Brakes



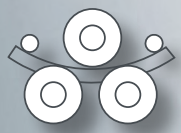
Shears



Ironworkers

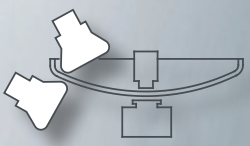
Bandsaws

Plate Rolls



Angle Rolls

Dishing Presses



Flanging Machines

Drilling Machines

"If you need a machine and don't buy it, you'll find that you have paid for it anyway, but don't have it."
Henry Ford

Revolution Machine Tools

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