

# PLATE ROLLS



## ABOUT RMT



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.





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.



#### 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.



#### 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





#### 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.

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.



Talip, Parts and Tooling Manager

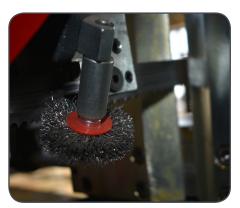
#### REPLACEMENT PARTS AND ACCESSORIES



REPLACEMENT BLADES



LUBRICATION

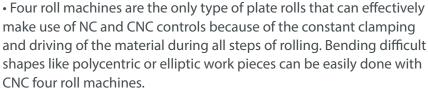


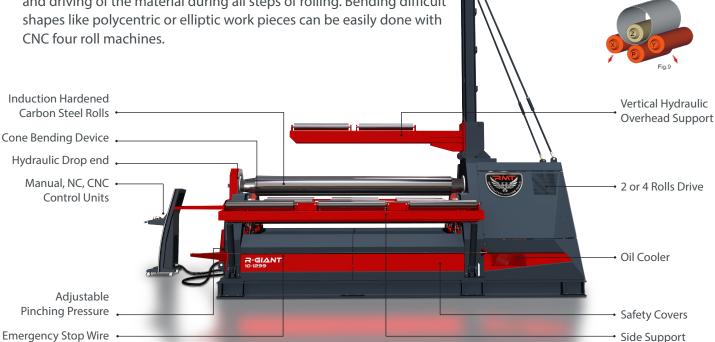
**MACHINE PARTS** 

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





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

Around The Machine

### 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

RMT machines are highly customizable and because RMT manufactures our own designs, we have the capability to tailor-make machines to fit our customers needs. Put us to the test and see what we can come up with to help you complete difficult or otherwise impossible jobs. 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 limits witch. A very economical, reliable, and efficient choice for your small parts needs. See pages 21-26.



R-ECO-A Series Motorized Initial Pinch Three Roll 3' ~ 6' Bending Lengths 2.67" ~ 2.95" Top roll diamater Up 14 Ga Capacity



R-ECO-B Series Motorized Initial Pinch Three Roll 3' ~ 6' Bending Lengths 3.54" ~ 3.93" Top roll diamater Up 10 Ga Capacity



R-ECO-C Series Motorized Initial Pinch Three Roll 3' ~ 8' Bending Lengths 4.33" ~ 5.51" Top roll diamater Up 5 Ga Capacity



R-ECO-D Series Motorized Initial Pinch Three Roll 3'~ 10' Bending Lengths 5.90" ~ 7.08" Top roll diamater Up 3/8" 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 27-30.

Planetary Type Hydraulic Four Roll 4' ~ 14' Bending Lengths 5.51" ~ 16.93" Top roll diamater 1/8" ~ 1-3/4" Capacity



# **R-GIANT** SERIES

R-GIANT 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 31-34.

Rectilinear Type Hydraulic Four Roll 6' ~ 14' Bending Lengths 18.11" ~ 29.92" Top roll diamater 3/4" ~ 3-1/2" 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 35-40.

Variable Geometry Hydraulic Three Roll 8' ~ 14' Bending Lengths 13.77" ~ 26.77" Top roll diamater 3/8" ~ 3" Capacity



		R-ECO	R-SMART	R-GIANT	R-HYBRID
Bending Length Ra	nge	3'- 10'	4' - 14'	6'-14'	8'-14'
Top Roll Diameter		2.67"-7.08"		18.11"-29.92"	
Thickness Range		Up to 3/8"	Up to 1-3/4"	Up to 3 1/2"	Up to 3"
Custom Lengths an	d Thickness	0	0	0	0
Obtainable Production Tolerances	Fine Excelient				
Part Geometries (without experienced operator)	Simple Moderate Complex				
Production Speed	Medium High				
	Digital Read-out	0	N/A	N/A	N/A
	PLC	N/A	S	S	S
Controls	NC	N/A	0	0	0
	CNC	N/A	0	0	N/A
Software	ESA Offline Simulator (Available on CNC models)	N/A	0	0	N/A
	Cast Iron	S	N/A	N/A	N/A
Frame	Stress Relieved Steel Construction	N/A	S	S	S
	AISI 1050 Carbon Steel Rolls	S	S	S	S
	AISI 4140 High Strength Alloy Steel Rolls	0	0	0	0
Rolls	Induction hardening	0	N/A	N/A	N/A
	Induction hardening + Polish	0	S	S	S
	Induction hardening + Ground	0	0	0	0
	Electrical Motor + Gearbox (Top - Bottom Rolls)	S	N/A	N/A	N/A
	Hydraulic Motor + Planetary Gearbox (Top Roll)	N/A	N/A	N/A	S
Rolls Drive System	Hydraulic Motor + Planetary Gearbox (Top & Bottom Rolls)	N/A	S	S	N/A
	Hydraulic Motor + Planetary Gearbox (All Rolls)	N/A	0	0	N/A
	Manual Bottom & Side Roll	S	N/A	N/A	N/A
	Motorized Side Roll	0	N/A	N/A	N/A
Roll Positioning	Motorized Side Roll (Ø5.91" – Ø7.08")	S	N/A	N/A	N/A
System	Motorized Bottom Roll	0	N/A	N/A	N/A
	Hydraulically Acted with Electronically Positioned and Synchronized Bottom / Side Rolls	N/A	S	S	S

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

		R-ECO	R-SMART	R-GIANT	R-HYBRID
Safety	Safety Wire Around the Machine and Emergency Stop Button	S	S	S	S
Lubrication	Manual lubrication	S	S	S	S
Systems	Automatic central lubrication	N/A	0	0	0
Oil Carley (Hartey	Oil Cooler	N/A	0	0	Ο
Oil Cooler / Heater	Oil Heater	N/A	0	0	0
Variable Speed	Variable Speed for Roll Rotation (Std. on CNC Control)	N/A	0	Ο	Ο
Special Color	Special Color	0	0	0	0
Air Conditioning	Air Conditioning for Electrical panel	N/A	0	Ο	Ο
Hydraulic Vertical	Preparation for vertical support system	N/A	0	0	0
Overhead Support	Vertical support - Hydraulic	N/A	0	0	Ο
Systems	NC inclusion for vertical support control (Available on CNC control)	N/A	N/A	0	N/A
	Preparation for side support system	N/A	0	0	0
Hydraulic Side Support Systems	Side Support System (Both Side)	N/A	0	0	0
- Support Systems	NC inclusion for side support control (Available on CNC control)	N/A	0	0	N/A
Facility of Contains	Material Feeding Table - L=10'	N/A	0	0	0
Feeding Systems	Material Feeding Table - Motorised - L=10'	N/A	0	0	0

## BENDING CAPACITIES AND CALCULATIONS

Our machines capacities are defined for (38Ksi) yield strength plates on multistep bending. For different yield, length and thickness plates you can use "Bending Capacity Chart"

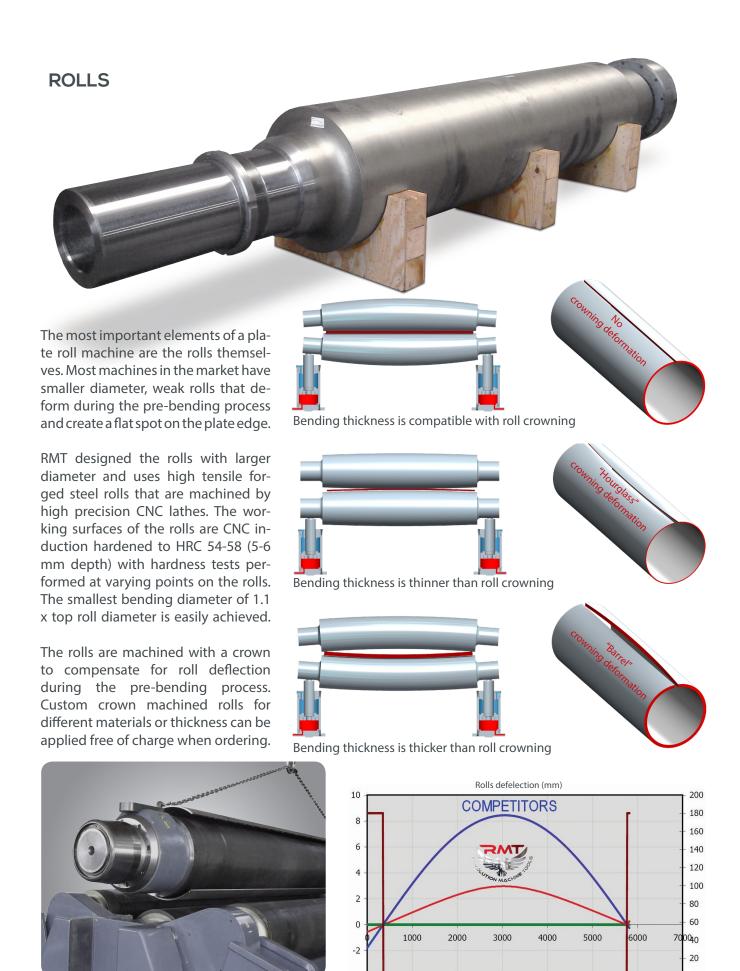


# RMT Plate Roll Calculator www.rmtus.com



		12	2"	110	)"	98	-	85		73	;"	61		49	-	37		24	
PLATE WIDTH		10°		9' 2	2=	8' 2	·-	7" 1		6":	1-	5' 1		4" 1		3' 1		2' (	)"
		100%	Width	90% V	Vidth	80% V	Vidth	70% Width		60% \	Vidth	50% Width		40% Width		30% Width		20% V	Vidth
M ATERIAL TYPES	Inside Diameter	Pre-Bending Thickness	Rolling Thickness																
	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"	0,627"	0,922"	0,768"	1,129"
CLASS-1	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"		
MATERIAL Max Yield Strength	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"	0,639"	0,886"	0,737"		0,903"	
	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"				
207 30.000	38,98"	0,446"	0,607"	0,470"	0,640"	0,499"	0,679"	0,533"	0,726"	0,576"	0,784"	0,631"	0,859"	0,706"	0,960"	0,815"		0,998"	
207 50.000	51,97"	0,462"	0,641"	0,487"	0,676"	0,516"	0,717"	0,552"	0,766"	0,596"	0,827"		0,906"						
N/mm² PSI	64,96"	0,485"	0,673"	0,511"	0,710"	0,542"	0,753"	0,579"	0,805"	0,626"	0,869"	0,686"	0,952"	0,766"		0,885"		1,084"	
N/mm= PSI	129,92"	0,493"	0,729"	0,519"	0,769"	0,551"	0,815"	0,589"	0,871"		0,941"								
	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"	0,713"	1,048"
CLASS-2	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"		
MATERIAL Max Yield Strength	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"	0,685"	0,949"	0,839"	
	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"		
248 36.000	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"	0,655"	0,891"	0,757"		0,927"	
246 30.000	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"				
N/mm² PSI	64,96"	0,450"	0,625"	0,474"	0,659"	0,503"	0,699"	0,538"	0,747"	0,581"	0,807"	0,636"	0,884"	0,712"	0,988"	0,822"		1,006"	
N/IIIII- PSI	129,92"	0,458"	0,677"	0,482"	0,713"	0,512"	0,757"	0,547"	0,809"	0,591"	0,874"		0,957"						
	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"
CLASS-3 MATERIAL	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"
Max Yield Strength	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"	0,700"	0,970"
	25,98"	0,324"	0,446"	0,341"	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"
345 50.000	38,98"	0,346"	0,470"	0,364"	0,496"	0,387"	0,526"	0,413"	0,562"	0,446"	0,607"	0,489"	0,665"	0,547"	0,744"	0,631"	0,859"	0,773"	
30.000	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"		
N/mm² PSI	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"	0,685"	0,952"	0,840"	
Nymm: PSI	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"				

Due to ongoing product development, specifications may change at any time.



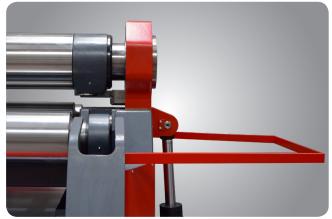
Crown is exaggerated for demonstration purposes.

#### 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-GIANT 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.











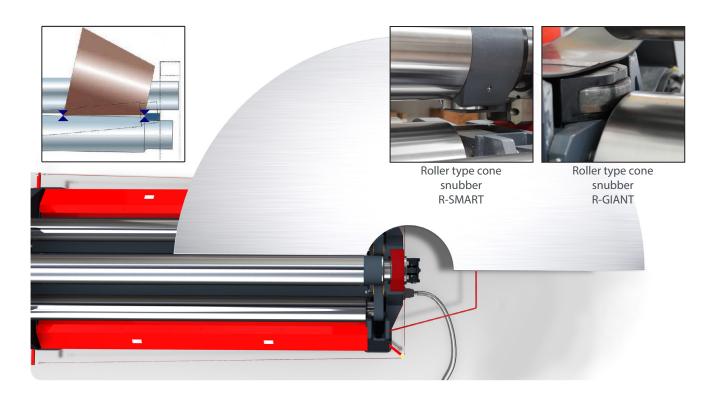
R-SMART Series: Fixed top roll

R-GIANT 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).





## SIDE AND OVERHEAD SUPPORT SYSTEM

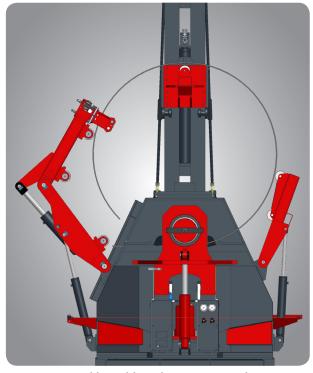
Optional hydraulic side or overhead supports help prevent distortion of the cylinder in large shaped bends. Side supports have hydraulic double cylinders which are produced with heavy-duty steel construction. The vertical support capacity can be manufactured to different tonnage and height requirements.



## **CUSTOM APPLICATION SHEET SUPPORT SYSTEMS**



Cartesian type overhead support



Dual knuckle side support with edge alignment clamps

#### HYDRAULIC & ELECTRIC SYSTEM

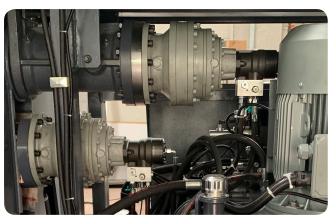
Our R-SMART and R-GIANT machines movements are actuated by hydraulic components. The precision of all axes are acquired by world leader Duplomatic valves' high speed response ability along with pressure safety valves used against peak pressures and overload, provides protection for motors and other components. 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.



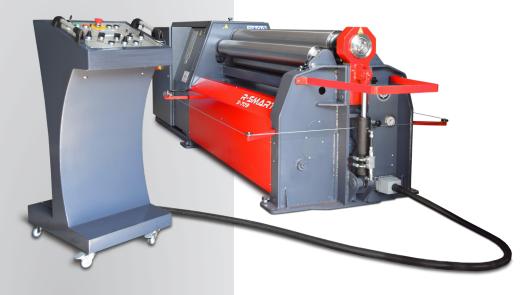
#### **OPTIONAL GAS SHOCK ABSORBER**

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.

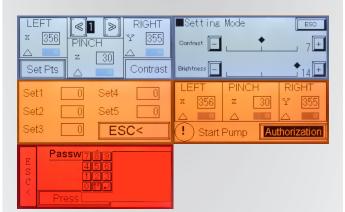


#### PLC CONTROL SYSTEM

PLC control system ensures the machine's bottom and side rollers' synchronous operation. This process is provided via the PLC with 6-axis control and touch screen operator panel. In addition, prior experience, the circular bending with the facility for bending up to 5 steps of the program, is ease of use and saves time.







#### **PLC Control Unit**

• Dedicated scratch-proof, oil-proof, acid-resistant IP65

sealed touch panel

PLC

Panasonic 32 I/O

Memory

5 Mbyte

Display

Monochrome LCD 3"ekran

Resolution

128 (W) x 64 (H)

3 colors led backlight (green,red, orange)

Communication port 1 RS232C Seri Port

Temprature -20 / 60°C

#### Software

Manual working mod,

Standard 6 axies (X1,X2,Y1,Y2,P,P1),

3 colors display for machine situation

Conic and parallelism control

5 set point programing,

5 set point programmig

Contrast adjusting,

Turkish, English, German, French, Spanish, Polish,

Hungarian, Croation languages.

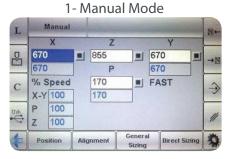
Alarm list.

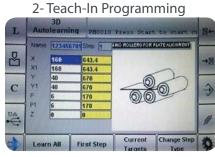
## **OPTIONAL NC (SIMPLE CNC)**

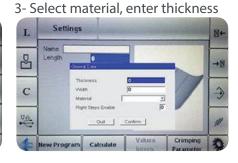


NC control system, in addition to the PLC control system, has the property to work manual, teach-in and automatic modes of operation. In manual mode, the use of all functions are provided by the operator. In teaching mode for the operator to twist all the steps are recorded respectively. In automatic mode all recorded movements are repeated, respectively by the machine.

The NC control unit is also capable of calculating bending steps one by one. NC control system has the capacity to save 2500 programs consisting of Max 100-steps.









NC Control Unit (S530)

Dedicated scratch-proof, oil-proof, acid-resistant IP65 sealed membrane push buttons with 51 keys Fiberoptic communication lines.

PLC Esa/Gv

CPU AMD Geode™ LX800 500MHz

Memory 256 Mbyte DRAM for CPU 1 Mbyte SRAM for parameters

#### Display

Color TFT-LCD 7" WVGA (16:9) Resolution (800 x 480, (R.G.B)) 262,144 colors

Communication ports 1 Ethernet Port 1 CAN interface 1 RS232C Serial Port 2 USB Port, 1 VGA Out

Temprature -25 / 70°C

#### Software

Alarm list.

Manuel, teach-in and automatic working modes, Standard 7 axies (X1,X2,Y1,Y2,P,P1,Z), Conic and parallelism control Adjustable speeds, 100 step, 2500 program memory, User friendly program editor, USB port for programs backup, Part pcs programing, Working hours counter, mm / inch system, Automatic turn off programing, Turkish, English, German, French, Spanish, İtalian, Russian, Polish, languages.



4- Enter radius and arc angle / length

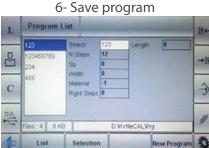
->

Select Step PM0001 Pump off

Quit Confirm Tipo RAL

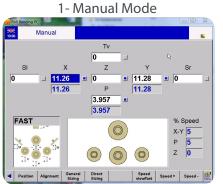


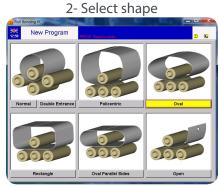
5- Program Calculated

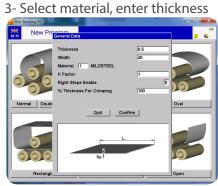


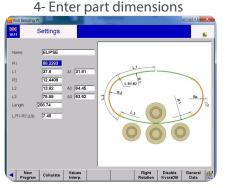


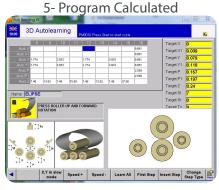
The CNC unit, with its graphical control system allows the bending to be done step by step or by automatically calculating the bending steps. Due to changes in the structure of the material, corrections must be entered for pre-bending and bending steps after the first bended plate to get the desired 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.

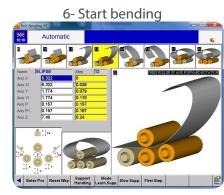














#### CNC Unit (S550)

Standard 7 axes (X1,X2,Y1,Y2,P1,P2,Z) Standard 32 inputs and 32 outputs

15"TFT XGA color touch display with antiglare screen

Dedicated scratchproof, oil-proof IP65 keyboard with 28 keys 2.5" Hard disk drive 20GBytes or more

Hand wheel for adjustable turning speed Industrial keyboard (USB)

#### Technology:

CPU PC: Intel Atom N270 1,6Ghz with 1Gb of RAM CPU CNC: AMD Geode ETX-LX800 500 Mhz, with 128Mb

#### **Communication ports:**

1 serial ports RS-232, 3 USB ports,2 Ethernet port on the PC 2 serial ports RS-232, 2 USB, 1 Ethernet port, 1 Can Open Port on CNC

Fiber optic interface

Local area network

#### **User memory:**

Hard disk for more than 2.000.000 part programs,

#### **Software specifications:**

Windows® 10 operating system

Manual, teach-in and automatic working modes,

Conic and parallelism control,

Interactive 2D graphic editor for work-pieces and tools data entry ,

2D graphic display of machine rolls,

2D automatic identification of the best bending sequence, Programming of the axes positions in tabular mode with automatic syntactical checks,

Automatic calculation of the X,R,P and Z axes positions for cylindrical, polycentric, oval, oval parallel sides, rectangular, arc bending shapes,

Material database of common steel plates,

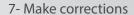
X-Z / Y-Z (Side Roll & Rotation) axes interpolation capability Bending and working hours counter,

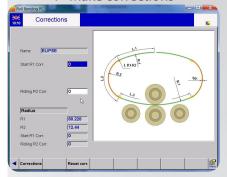
Metric and imperial units,

Off-line programming

English, German, French, Spanish, İtalian, Russian, Polish, languages.

Alarm messages

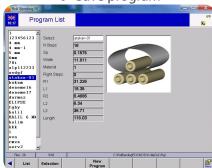




8- Insert corrections to database

₩ Kva	ra	Databa	00						
10:12	ıa	Databa	30						- 9
(*) Radiu	•	(^) Thick	ness	(	) Width	Start Corre	cticRolling	Correctised	metric Targ
7.1	354		.1969		59.0551	4	0.2	0.0	0.785
7.2	335		.2362		9.8425		0.0	-26.6	0.864
7.4	016	C	.3150		19.6850	60	3.1	0.0	0.968
7.4	016	₽ C	.3150		39.3701		0.0	-60.9	0.968
7.4	016	0	.3150		78.7402		0.0	-60.9	0.968
7.4	903	0	.3937		19.6850	60	1.4	0.0	1.054
7.4	303		.3937		39.3701		0.0	-58.3	1.054
7.4	303		.3937		78.7402		0.0	-65.3	1.054
7.4	961		.1575		3.9370	14	3.6	0.0	0.907
7.8	346		.1575		19.6850	11	2.6	0.0	1.048
7.9	921		.3150		39.3701		0.0	-21.7	1.217
8.0	315		.2362		9.8425	7	6.7	0.0	1.179
8.2	283		.1575		59.0551		0.0	-26.6	1.201
8.3	071		.1575		23.6220	9	6.2	0.0	1.230
8.5	039		.1575		3.9370		0.0	-17.0	1.302
8.5	433		.0787		19.6850		0.0	-85.6	1.261
8.5	433		.1969		20.0000	33	6.0	0.0	1.343
8.5	433		.1969		39.3701		0.0	-31.2	1.343
8.5	327		.0787		19.6850	7	1.7	0.0	1.275
8.6	220	0	.1969		20.0000	40	1.4	0.0	1.371
8.6	220	C	.2362		19.6850	5	4.2	0.0	1.399
					DB: CAL	Material: 1		ALDSTEEL	Line: 17
◀ Add row	N	lodify row	Find	row	Delete row	New Table	Table Selection		Delete Table

9- Save program



# R-ECO A / B MOTORIZED INITIAL PINCH THREE ROLLS





# 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 transdepend on size), chain and gearbox drive systems and electric motors with a magnes. break which eliminates drifting. They also offer foot pedals with forward, reverse, and emergestop 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

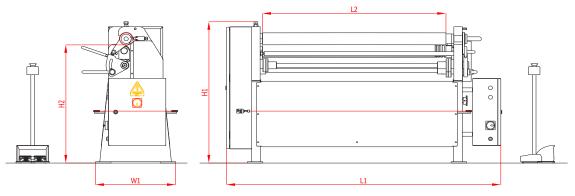


RMT R-ECO series initial pinch plate rolls are generally for lighter capacity applications and come in manual, motorized or hydraulic. They work by "pinching" the flat sheet between top and bottom rolls while the side (back) roll moves upward to contact and then bend the sheet. When rotation of the rollers 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, R-ECO C 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.





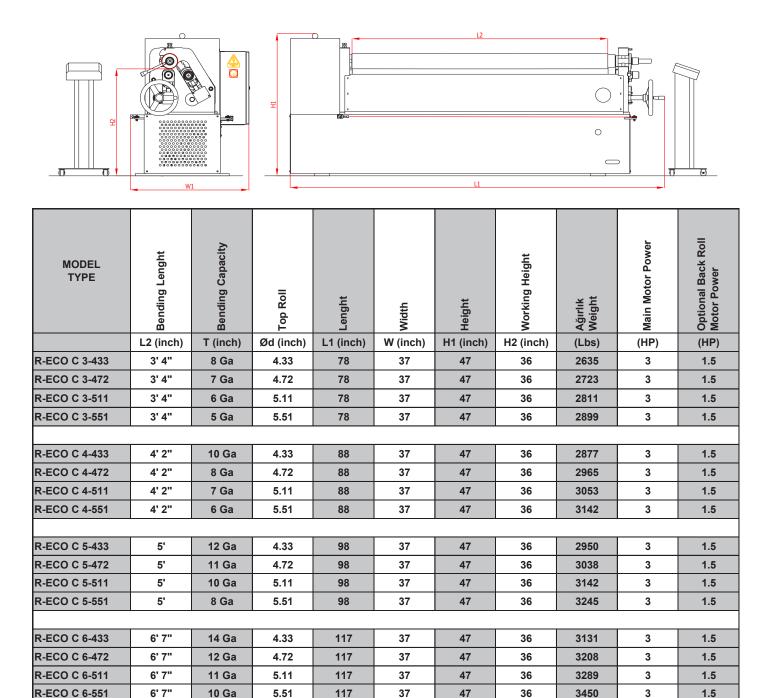
# R-ECO A-B



MODEL TYPE	Bending Lenght	Bending Capacity	Top Roll	Lenght	Width	Height	Working Height	Ağırlık Weight	Main Motor Power	Optional Back Roll Motor Power
	L2 (inch)	T (inch)	Ød (inch)	L1 (inch)	W (inch)	H1 (inch)	H2 (inch)	(Lbs)	(HP)	(HP)
R-ECO A 3-267	3' 4"	16 Ga	2.67	66	22	27	35	838	1	0.5
R-ECO A 3-295	3' 4"	14 Ga	2.95	66	22	27	35	849	1	0.5
R-ECO B 3-354	3' 4"	12 Ga	3.54	66	22	27	35	992	2	0.75
R-ECO B 3-393	3' 4"	10 Ga	3.93	66	22	27	35	1069	2	0.75
									•	
R-ECO A 4-267	4' 2"	18 Ga	2.67	75	22	27	35	981	1	0.5
R-ECO A 4-295	4' 2"	16 Ga	2.95	75	22	27	35	1003	1	0.5
R-ECO B 4-354	4' 2"	14 Ga	3.54	75	22	27	35	1168	2	0.75
R-ECO B 4-393	4' 2"	12 Ga	3.93	75	22	27	35	1268	2	0.75
						•			•	
R-ECO A 5-267	5'	22 Ga	2.67	86	22	27	35	1102	1	0.5
R-ECO A 5-295	5'	20 Ga	2.95	86	22	27	35	1168	1	0.5
R-ECO B 5-354	5'	16 Ga	3.54	86	22	27	35	1323	2	0.75
R-ECO B 5-393	5'	14 Ga	3.93	86	22	27	35	1455	2	0.75
									•	
R-ECO A 6-295	6' 7"	25 Ga	2.95	105	22	27	35	1290	1	0.5
R-ECO B 6-354	6' 7"	22 Ga	3.54	105	22	27	35	1499	2	0.75
R-ECO B 6-393	6' 7"	16 Ga	3.93	105	22	27	35	1653	2	0.75

The mentioned values above is only works for 38 KSI yield point material Different material types and plate widths; can be calculated with RMT Roll Bending Calculator Conical bending capacities depends on cone angle and half value of mentioned values above. Weight and motor powers may increase with optional features. Due to ongoing product development, specifications may change at any time

## R-ECO C



The mentioned values above is only works for 38 KSI yield point material Different material types and plate widths; can be calculated with RMT Roll Bending Calculator Conical bending capacities depends on cone angle and half value of mentioned values above. Weight and motor powers may increase with optional features. Due to ongoing product development, specifications may change at any time

12 Ga

5.51

137

37

47

36

8' 3"

R-ECO C 8-551

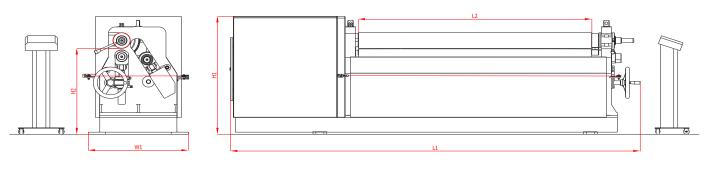
**Larger or Custom Machines Available** 

3

1.5

3655

# R-ECO D



MODEL TYPE	Bending Lenght	Bending Capacity	Top Roll	Lenght	Width	Height	Working Height	Ağırlık Weight	Main Motor Power	Back Roll Motor Power
	L2 (mm)	T (mm)	Ød (mm)	L1 (mm)	W (mm)	H1 (mm)	H2 (mm)	(kg)	(kW)	(kW)
R-ECO D 3-590	3' 4"	1/4"	5.90	101	35	45	33	4784	5.5	4
R-ECO D 3-629	3' 4"	9/32"	6.29	101	35	45	33	4960	5.5	4
R-ECO D 3-669	3' 4"	5/16"	6.69	101	35	45	33	5170	5.5	4
R-ECO D 3-708	3' 4"	3/8"	7.08	101	35	45	33	5390	5.5	4
R-ECO D 4-590	4' 2"	7/32"	5.90	111	35	45	33	5071	5.5	4
R-ECO D 4-629	4' 2"	1/4"	6.29	111	35	45	33	5269	5.5	4
R-ECO D 4-669	4' 2"	9/32"	6.69	111	35	45	33	5490	5.5	4
R-ECO D 4-708	4' 2"	5/16"	7.08	111	35	45	33	5721	5.5	4
R-ECO D 5-590	5'	3/16"	5.90	121	35	45	33	4883	5.5	4
R-ECO D 5-629	5'	7/32"	6.29	121	35	45	33	5115	5.5	4
R-ECO D 5-669	5'	1/4"	6.69	121	35	45	33	5379	5.5	4
R-ECO D 5-708	5'	9/32"	7.08	121	35	45	33	5644	5.5	4
R-ECO D 6-590	6' 7"	5/32"	5.90	141	35	45	33	5445	5.5	4
R-ECO D 6-629	6' 7"	3/16"	6.29	141	35	45	33	5710	5.5	4
R-ECO D 6-669	6' 7"	7/32"	6.69	141	35	45	33	5897	5.5	4
R-ECO D 6-708	6' 7"	1/4"	7.08	141	35	45	33	6239	5.5	4
R-ECO D 8-590	8' 3"	1/8"	5.90	160	35	45	33	5952	5.5	4
R-ECO D 8-629	8' 3"	5/32"	6.29	160	35	45	33	6140	5.5	4
R-ECO D 8-669	8' 3"	3/16"	6.69	160	35	45	33	6471	5.5	4
R-ECO D 8-708	8' 3"	7/32"	7.08	160	35	45	33	6889	5.5	4
R-ECO D 10-629	10'	1/8"	6.29	180	35	45	33	8267	5.5	4
R-ECO D 10-708	10'	5/32"	7.08	180	35	45	33	9370	5.5	4

The mentioned values above is only works for 38 KSI yield point material Different material types and plate widths; can be calculated with RMT Roll Bending Calculator Conical bending capacities depends on cone angle and half value of mentioned values above. Weight and motor powers may increase with optional features. Due to ongoing product development, specifications may change at any time

Larger or Custom Machines Available

#### **STANDARD (R-ECO A Series)**

- Top and bottom rolls are powered by a helical type gearbox and AC motor
- AISI 1050 Quality Certificated steel rolls with high tensile strength
- Solid steel frame.
- Mechanical manual mechanical drop-end.
- Foot pedal.
- Conical bending device
- Manual lubrication points
- Precision bending with brake motor
- Wire grooves at the end of the rolls (.157"/.275"/.354")

#### **STANDARD (R-ECO B Series)**

- Top and bottom rolls are powered by a helical type gearbox and AC motor
- AISI 1050 Quality Certificated steel rolls with high tensile strength
- Solid steel frame.
- Mechanical manual mechanical drop-end.
- Foot pedal.
- Conical bending device
- Manual lubrication points
- Precision bending with brake motor
- Wire grooves at the end of the rolls (.157"/.275"/.354")

### **STANDARD (R-ECO C Series)**

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

#### STANDARD (R-ECO D Series)

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

#### **OPTIONAL (R-ECO A Series)**

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

### **OPTIONAL (R-ECO B Series)**

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

### **OPTIONAL (R-ECO C Series)**

- Digital Read-Out for rear (back) roll
- Induction hardened and polished rolls
- Motorised adjustment of back roll
- Extended roll shafts for profile and pipe bending operations

## **OPTIONAL** (R-ECO D Series)

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



## **OPTIONAL CONICAL ROLLS**

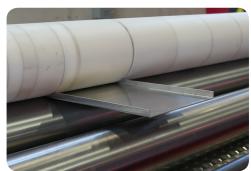




## OPTIONAL PLASTIC / METAL COLLARS

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)



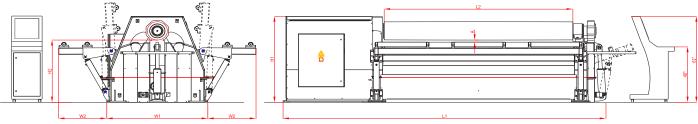








# **R-SMART**



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			Min. Int. Dia	1													
		Ødx1,5	Ø Dmin Ødx3	Ødx5													λ
		Duxi,o			-			듄					Support				Hydraulic Tank Capacity
MODEL	爑		Capacity	Capacity				Through				벌	Sup			al ster	ž C
	Bending Lenght	Pre-Bending Capacity	S S	Cap		Roll	un.					Height	Side		wer	. Additional roll diameter	Тап
	l gu	end	ng (	ng (	Roll	E	Rolls	Pass	¥	_		l Bu	o J	¥	ě.	\ddi	ig
	bue	e-B apac	Bending	Bending	Top R	Bottom	용	Мах.	Lenght	Width	Height	Working	Width	Weight	Motor Power	Min. / top ro	ydra
	L2 (inch)	t (inch)	T (inch)	T (inch)	Ød (inch)	Ø (inch)	Ø (inch)	A (inch)	L1 (inch)	W (inch)	H1 (inch)	H2 (inch)	✓ W2 (inch)	(Lbs)	(HP)	Ø (inch)	(Gal)
R-SMART 4-551	4' 2"	5/32"	3/16"	1/4"	5.51	5.51	5.12	1/2"	123	39	45	35	22	5,357	5.5	5.51	24
R-SMART 4-591	4' 2"	3/16"	1/4"	5/16"	5.91	5.91	5.12	1/2"	123	39	45	35	22	5,490	7.5	5.51	24
R-SMART 4-669	4' 2"	1/4"	5/16"	11/32"	6.69	6.69	5.51	5/16"	123	39	45	35	22	5,864	7.5	5.51	24
R-SMART 5-551	5' 1"	1/8"	5/32"	3/16"	5.51	5.51	5.12	1/2"	123	39	45	35	22	5,357	5.5	5.51	24
R-SMART 5-591 R-SMART 5-669	5' 1" 5' 1"	5/32" 3/16"	3/16" 1/4"	1/4" 5/16"	5.91 6.69	5.91 6.69	5.12 5.51	1/2" 5/16"	123 123	39 39	45 45	35 35	22	5,490 5,864	7.5 7.5	5.51 5.51	24 24
K-SWAKT 5-005	] ] ]	3/10	1/-4	3/10	0.03	0.03	3.31	3/10	123	33	45	33	22	3,004	7.5	3.31	
R-SMART 6-551	6' 8"	5/64"	1/8"	5/32"	5.51	5.51	5.12	1/2"	142	39	45	35	22	5,732	4	5.51	24
R-SMART 6-591	6' 8"	1/8"	5/32"	3/16"	5.91	5.91	5.12	1/2"	142	39	45	35	22	5,930	5.5	5.51	24
R-SMART 6-669	6' 8"	5/32"	1/4"	9/32"	6.69	6.69	5.51	5/16"	142	39	45	35	22	6,437	7.5	5.51	24
R-SMART 6-787	6' 8"	1/4"	5/16"	3/8"	7.87	7.87	7.48	1-3/16"	151	46	47	34	27	9,568	10	7.87	42
R-SMART 6-827 R-SMART 6-906	6' 8" 6' 8"	5/16" 3/8"	3/8" 1/2"	1/2" 5/8"	8.27 9.06	7.48 8.27	7.09 7.48	1-3/16"	151 151	46 46	47 47	33	27 27	9,370 10,075	15 15	7.87 7.87	42 42
R-SMART 6-906 R-SMART 6-1063	6' 8"	1/2"	5/8"	11/16"	10.63	9.84	7.48 8.66	2"	168	66	63	46	32	17,637	20	10.63	105
R-SMART 6-1181	6' 8"	5/8"	3/4"	7/8"	11.81	10.63	8.66	2"	168	66	63	45	32	18,739	25	10.63	105
R-SMART 6-1299	6' 8"	3/4"	1"	1-1/8"	12.99	11.81	9.45	2"	168	66	63	45	32	20,283	30	10.63	105
R-SMART 6-1417	6' 8"	1"	1-3/16"	1-5/16"	14.17	12.99	10.63	2-3/8"	178	82	81	60	42	30,754	40	14.17	158
R-SMART 6-1575	6' 8"	1-3/16"	1-3/8"	1-1/2"	15.75	14.57	11.42	2-1/2"	178	82	81	59	42	33,731	50	14.17	158
R-SMART 6-1693	6' 8"	1-3/8"	1-9/16"	1-3/4"	16.93	15.75	12.60	2-3/4"	178	82	81	59	42	36,112	60	14.17	158
R-SMART 8-787	8' 4"	5/32"	1/4"	1/4"	7.87	7.87	7.48	1-3/16"	171	46	47	34	27	10,957	10	7.87	42
R-SMART 8-827	8' 4"	1/4"	5/16"	3/8"	8.27	7.48	7.09	1-3/16"	171	46	47	33	27	10,692	15	7.87	42
R-SMART 8-906	8' 4"	5/16"	3/8"	1/2"	9.06	8.27	7.48	1-3/16"	171	46	47	33	27	11,574	15	7.87	42
R-SMART 8-1063	8' 4"	3/8"	1/2"	5/8"	10.63	9.84	8.66	2"	188	66	63	46	32	19,489	20	10.63	105
R-SMART 8-1181	8' 4"	1/2"	5/8"	11/16"	11.81	10.63	8.66	2"	188	66	63	45	32	21,164	25	10.63	105
R-SMART 8-1299	8' 4"	5/8"	3/4"	7/8"	12.99	11.81	9.45	2"	188	66	63	45	32	23,149	30	10.63	105
R-SMART 8-1417	8' 4" 8' 4"	3/4" 1"	1"	1-1/8"	14.17	12.99	10.63	2-3/8"	198	82	81	60	42	33,400	30	14.17	158
R-SMART 8-1575 R-SMART 8-1693	8' 4"	1-3/16"	1-3/16" 1-3/8"	1-5/16"	15.75 16.93	14.57 15.75	11.42 12.60	2-1/2"	198 198	82 82	81 81	59 59	42 42	36,200 39,132	40 50	14.17 14.17	158 158
10000		1 0/10	1 0.0		10.00	10.1.0	12.00	2 0/1		02	٠.			00,102			
R-SMART 10-827	10' 2"	5/32"	1/4"	1/4"	8.27	7.48	7.09	1-3/16"	193	46	47	33	27	11,464	11	7.87	42
R-SMART 10-906	10' 2"	1/4"	5/16"	3/8"	9.06	8.27	7.48	1-3/16"	193	46	47	33	27	12,787	15	7.87	42
R-SMART 10-1063	10' 2"	5/16"	3/8"	1/2"	10.63	9.84	8.66	2"	210	66	63	46	32	21,385	15	10.63	105
R-SMART 10-1181	10' 2"	3/8"	1/2"	5/8"	11.81	10.63	8.66	2"	210	66	63	45	32	23,369	20	10.63	105
R-SMART 10-1299 R-SMART 10-1417	10' 2" 10' 2"	1/2" 5/8"	5/8" 3/4"	11/16" 7/8"	12.99 14.17	11.81	9.45 10.63	2"	210 219	66 82	63 81	45 60	32 42	25,574 36,707	25 30	10.63 14.17	105 158
R-SMART 10-1417	10'2"	3/4"	1"	1-1/8"	15.75	14.57	11.42	2-3/6	219	82	81	59	42	40,345	40	14.17	158
R-SMART 10-1693	10' 2"	1"	1-3/16"	1-5/16"	16.93	15.75	12.60	2-3/4"	219	82	81	59	42	45,195	50	14.17	158
R-SMART 12-965	12' 1"	5/32"	1/4"	1/4"	9.65	9.06	7.48	5/16"	225	47	52	40	27	18,298	15	7.87	42
R-SMART 12-1063	12' 1"	1/4"	5/16"	3/8"	10.63	9.84	8.66	2"	249	66	63	46	32	25,133	15	10.63	105
R-SMART 12-1181 R-SMART 12-1299	12' 1" 12' 1"	5/16" 3/8"	3/8" 1/2"	1/2" 5/8"	11.81 12.99	10.63	8.66 9.45	2"	249 249	66	63 63	45 45	32 32	27,999 31,085	20	10.63	105 105
R-SMART 12-1299	12'1"	1/2"	5/8"	11/16"	14.17	12.99	10.63	2-3/8"	259	82	81	60	42	42,659	25	14.17	158
R-SMART 12-1575	12' 1"	5/8"	3/4"	7/8"	15.75	14.57	11.42	2-1/2"	259	82	81	59	42	46,958	30	14.17	158
R-SMART 12-1693	12' 1"	11/16"	7/8"	1"	16.93	15.75	13.39	2-3/4"	259	82	81	59	42	52,492	40	14.17	158
R-SMART 14-965	14' 1"	1/8"	3/16"	7/32"	9.65	9.06	7.48	5/16"	225	47	52	40	27	18,298	15	7.87	42
R-SMART 14-1063 R-SMART 14-1181	14' 1" 14' 1"	5/32" 1/4"	1/4" 5/16"	1/4"	10.63	9.84	8.66	2"	249 249	66	63	46	32 32	25,133	15 20	10.63 10.63	105 105
R-SMART 14-1181	14' 1"	5/16"	3/8"	3/8"	11.81 12.99	10.63	8.66 9.45	2"	249	66	63 63	45 45	32	27,999 31,085	20	10.63	105
R-SMART 14-1417	14' 1"	3/8"	1/2"	5/8"	14.17	12.99	10.63	2-3/8"	259	82	81	60	42	42,659	25	14.17	158
R-SMART 14-1575	14' 1"	1/2"	5/8"	11/16"	15.75	14.57	11.42	2-1/2"	259	82	81	59	42	46,958	30	14.17	158
R-SMART 14-1693	14' 1"	5/8"	3/4"	7/8"	16.93	15.75	13.39	2-3/4"	259	82	81	59	42	52,492	40	14.17	158

The mentioned values above is only works for 38 KSI yield point material Different material types and plate widths; can be calculated with RMT Roll Bending Calculator Conical bending capacities depends on cone angle and half value of mentioned values above. Weight and motor powers may increase with optional features. Due to ongoing product development, specifications may change at any time

Larger or Custom Machines Available

#### **STANDARD**

- Planetary type side roll movement.
- PLC Electronic balancing system
- Cone bending
- Induction hardened rolls (HRc 56±4)
- Polished rolls
- Single speed control of all axis
- Dual speed control of all axis (NC machines)
- Variable speed control of all axis (CNC machines)
- Machine body constructed of stress-relieved
- Highly durable carbon steel rolls machined by CNC Lathes with optimal crown (special crown upon request)
- Rolls seated in spherical bearings and bronze bushings
- Hydraulic bracket (drop end) with easy pull out system
- Top and bottom rolls driven with hydraulic motor and planetary gear box
- Automatic rolls peripheral speed compensation (optimum distribution of torque)
- Adjustable hydraulic pressure on bottom roll (crowning compensation)
- Emergency stop wire around the machine
- Electrical and hydraulic protection against overloads
- World standard electrical and hydraulic components
- Mobile control panel
- Manual lubrication
- Welding possibility on the machine

#### **OPTIONAL**

- NC Unit (Simple CNC)
- CNC Control Unit with color graphical control
- AISI 4140 High strength alloy steel rolls
- Four rolls drive
- · Wired or wireless remote control
- Oil cooler
- Oil heater
- Side support system (both sides)
- Vertical hydraulic overhead support system
   4, 6, 8 TON (10' 14' 16' 20' tall)
- Preparation for side or 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
- Automation system
- Changeable top roll for smaller diameter
- Special roll crowning
- Special plate support systems
- Automatic central lubrication
- Material feeding table (Idle or motorized)



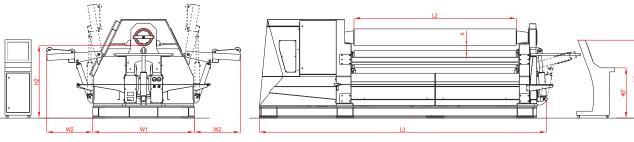




Hydraulic drop ends on RMT Plate Rolls allow for easy removal of formed pieces. Also the top roll is hydraulically tilted up to allow for easy removal of formed parts. A roller type cone bending attachment is a standard feature that is placed on the lower roll housing. All RMT plate rolls also include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



# **R-GIANT**



			Min. Int. Dia Ø Dmin	1													
		Ødx2	Ødx4	Ødx5													₹.
MODEL	Bending Lenght	Pre-Bending Capacity	Bending Capacity	Bending Capacity	Top Roll	Bottom Roll	Side Rolls	Max. Pass Through	Lenght	Width	Height	Working Height	Width of Side Support	Weight	Motor Power	Min. Additional top roll diameter	Hydraulic Tank Capacity
	L2 (inch)	t (inch)	T (inch)	T (inch)	Ød (inch)	Ø (inch)	Ø (inch)	A (inch)	L1 (inch)	W (inch)	H1 (inch)	H2 (inch)	W2 (inch)	(Lbs)	(HP)	Ø (inch)	l (Gal)
R-GIANT 6-1811	6' 8"	1-1/2"	2"	2-1/4"	18.11	17.32	14.17	4"	183	90	94	70	54	52,470	60+30	16.93	220
R-GIANT 6-1890	6' 8"	2"	2-1/2"	2-3/4"	18.90	17.91	14.57	3-1/2"	183	90	94	70	54	54,675	75+30	16.93	220
R-GIANT 8-1811	8' 4"	1-3/8"	1-1/2"	1-3/4"	18.11	17.32	14.17	4"	203	90	94	70	54	58,202	45+30	16.93	220
R-GIANT 8-1890	8' 4"	1-1/2"	2"	2-1/4"	18.90	17.91	14.57	3-1/2"	203	90	94	70	54	70,989	60+30	16.93	220
R-GIANT 8-2126	8' 4"	2"	2-3/8"	2-1/2"	21.26	20.47	16.54	5-3/4"	218	104	110	81	62	93,696	50+50	19.69	290
R-GIANT 10-1811	10' 2"	1-3/16"	1-3/8"	1-1/2"	18.11	17.32	14.17	4"	224	90	94	70	54	69,446	50+30	16.93	220
R-GIANT 10-1890	10' 2"	1-3/8"	1-1/2"	1-3/4"	18.90	17.91	14.57	3-1/2"	224	90	94	70	54	77,162	60+30	16.93	220
R-GIANT 10-2047	10' 2"	1-1/2"	2"	2-1/4"	20.47	19.69	16.14	6-1/2"	240	104	110	81	62	99,208	40+40	19.69	290
R-GIANT 10-2283	10' 2"	1-3/4"	2-3/8"	2-1/2"	22.83	22.05	17.32	4"	240	104	110	80	62	110,231	50+50	19.69	290
R-GIANT 10-2559	10' 2"	2"	2-3/4"	3"	25.59	24.02	19.69	6"	251	128	145	112	71	158,733	60+60	24.80	450
R-GIANT 10-2992	10' 2"	2-3/4"	3-1/2"	3-1/2"	29.92	28.35	23.62	7-1/2"	280	150	169	132	71	242,508	75+75	28.74	580
R-GIANT 12-1811	12' 1"	1"	1-3/16"	1-5/16"	18.11	17.32	14.17	3-1/2"	284	91	100	74	54	85,980	50	16.93	220
R-GIANT 12-1890	12' 1"	1-1/8"	1-3/8"	1-1/2"	18.90	17.91	14.57	3-1/2"	264	90	94	70	54	94,799	50+30	16.93	220
R-GIANT 12-2047	12' 1"	1-3/16"	1-1/2"	1-5/8"	20.47	19.69	16.14	6-1/2"	279	104	110	81	62	110,231	40+40	19.69	290
R-GIANT 14-1811	14' 1"	3/4"	1"	1-1/8"	18.11	17.32	14.17	3-1/2"	284	91	100	74	54	85,980	50	16.93	220
R-GIANT 14-1890	14' 1"	1"	1-3/16"	1-5/16"	18.90	17.91	14.57	3-1/2"	264	90	94	70	54	94,799	50+30	16.93	220
R-GIANT 14-2047	14' 1"	1-1/8"	1-3/8"	1-1/2"	20.47	19.69	16.14	6-1/2"	279	104	110	81	62	110,231	40+40	19.69	290

The mentioned values above is only works for 38 KSI yield point material Different material types and plate widths; can be calculated with RMT Roll Bending Calculator Conical bending capacities depends on cone angle and half value of mentioned values above. Weight and motor powers may increase with optional features. Due to ongoing product development, specifications may change at any time

Larger or Custom Machines Available



#### **STANDARD**

- Rectilinear type side roll movement.
- PLC Electronic Balancing System
- Cone bending
- Induction hardened rolls (HRC 54-58)
- Polished rolls
- Single speed control of all axis
- Dual speed control of all axis (NC machines)
- Variable speed control of all axis (CNC machines)
- AISI 1050 Carbon steel rolls machined by CNC Lathes with optimal crown (special crown upon request)
- Automatic rolls peripheral speed compensation (optimum distribution of torque)
- Machine body constructed of stress-relieved highyield steel
- Rolls seated in dual spherical bearings
- Hydraulic titable top roll and bracket (drop end) with easy pull out system
- Top and bottom rolls driven with hydraulic motor and planetary gear box
- Emergency stop wire around the machine
- 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 Unit (Simple CNC)
- CNC Control Unit with color graphical control
- AISI 4140 High strength alloy steel rolls
- Four rolls drive
- · Wired or wireless remote control
- Oil cooler
- Oil heater
- Side support system (both sides)
- Vertical hydraulic overhead support system
   6, 8, 15 TON (10' 14' 16' 20' tall)
- Preparation for side or 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
- Automation system
- Changeable top roll for smaller diameter
- Special roll crowning
- Special plate support systems
- Automatic central lubrication
- Material feeding table (Idle or motorized)
- Seperated power cabin

# R-HYBRID VARIABLE GEOMETRY HYDRAULIC THREE ROLLS

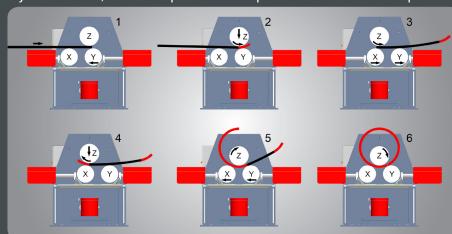




# BENDING THICK PLATES

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.

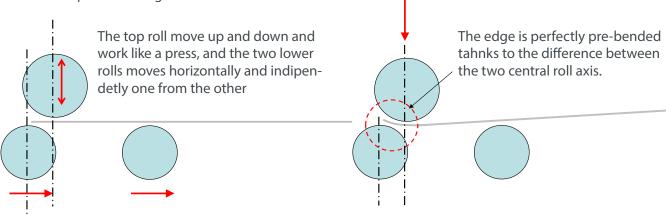
That's why we called his machine R-HYBRID. They are suitable for medium and thick plate bending.



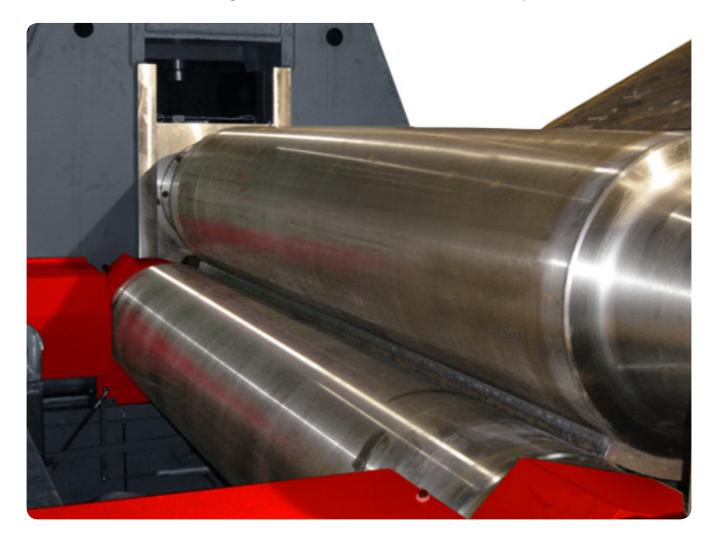
### PRE-BENDING ADVANTAGE

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 flatend and the plate bending radius are.

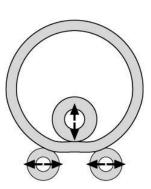


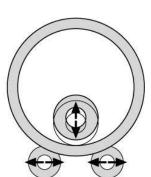
The pre-bending is performed by the top roll pushing directly against the first side of the plate, leaving a very short or null flat-end; the following rotation increases the curved initial side of the plate.



### **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 thick plates. In the same way it is also possible to obtain cones with heavy thicknesses by bending the plate with several strokes.

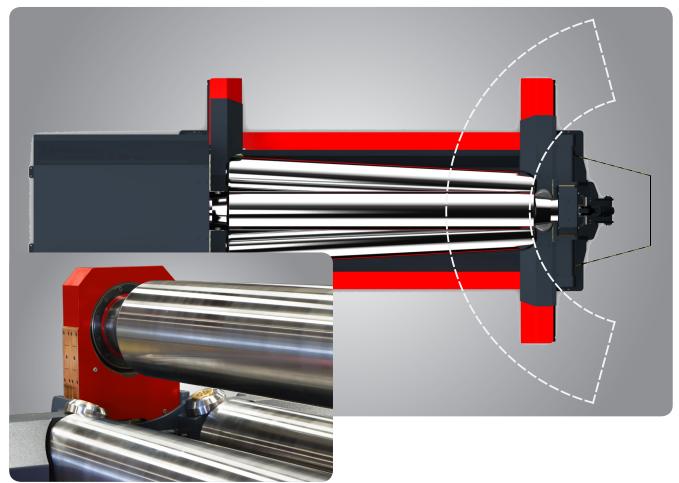






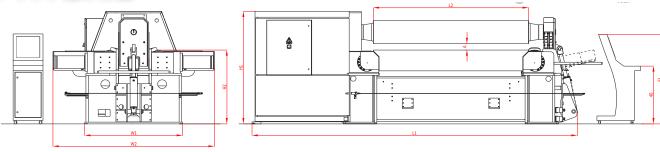
## **CONE BENDING**

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

# R-HYBRID



		I	Min. Int. Dia Ø Dmin													
		Ødx1,5	Ødx5	Ødx5			8									īţ
MODEL TYPE	Ending Lenght	Pre-Bending Capacities	Pre-Bending Capacities	Bending Capacities	Md (inch)	Lower Rolls	SOLUTION TOP Roll Bending Force	Max. Pass Through	Lenght	W1 (inch)	Total Width	Height	Working Height	(sqT)	(d) Main Motor	Hydraulic Tank Capacity
		t (inch)	t (inch) 7/8"	1-1/8"	13.77"	12.99"	187	A (inch)	192"	65"	106"	77"	49"	36,486	(HP) 40	106
R-HYBRID 8-1377	8' 6"	1"	1 3/16"	1 9/16"	15.77"	14.17"	231	4"	215"	65"	106"	77"	50"	40,786	50	106
R-HYBRID 8-1575 R-HYBRID 8-1772	8' 6" 8' 6"	1 3/16"	1 7/16"	1 7/8"	17.72"	16.54"	286	4-3/4"	220"	73"	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	5-3/8"	228"	78"	121"	94"	61"	67,241	75	198
	8' 6"	1 9/16"	1 7/8"	2 3/8"	22.05"	19.69"	484	6"	238"	89"	139"	105"	69"	93,696	60+25	238
K-HTBKID 0-2203	R-HYBRID 8-2205 8' 6"   1 9/16"   1 7/8"   2 3/8"   22.05"   19.69"   484   6"   238"   89"   139"   105"   69"   93,696   60+25   238															
R-HYBRID 10-1377	10' 2"	5/8"	3/4"	1"	13.77"	12.99"	176	4"	214"	65"	106"	77"	49"	39,792	40	106
R-HYBRID 10-1575	10' 2"	3/4"	7/8"	1-1/8"	15.75"	14.17"	220	4"	234"	65"	106"	77"	50"	44,092	50	106
R-HYBRID 10-1772	10' 2"	1"	1 3/16"	1 5/8"	17.72"	16.54"	286	4-3/4"	240"	73"	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	5-3/8"	248"	78"	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	6"	258"	89"	139"	105"	69"	99,208	60+25	238
R-HYBRID 10-2440	10' 2"	2"	2 1/2"	3"	24.40"	22.04"	616	7"	354"	111"	173"	78"	118"	143,000	60+60	238
R-HYBRID 10-2677	10' 2"	2 1/2"	3"	3 1/2"	26.77"	23.62"	880	8"	362"	114"	178"	80"	120"	165,000	75+75	238
R-HYBRID 12-1377	12' 1"	1/2"	5/8"	1"	13.77"	12.99"	150	4"	238"	65"	106"	77"	49"	45,406	40	106
R-HYBRID 12-1575	12' 1"	5/8"	3/4"	1"	15.75"	14.17"	176	4"	274"	65"	106"	77"	50"	49,706	50	106
R-HYBRID 12-1772	12' 1"	3/4"	7/8"	1-1/8"	17.72"	16.54"	220	4-3/4"	280"	73"	114"	86"	57"	58,084	60	159
R-HYBRID 12-1969	12' 1"	1"	1 3/16"	1 9/16"	19.69"	18.11"	286	5-3/8"	287"	78"	121"	94"	61"	77,264	75	198
R-HYBRID 12-2205	12' 1"	1 1/8"	1 1/4"	1 3/4"	22.05"	19.69"	385	6"	297"	89"	139"	105"	69"	103,940	60+25	238
R-HYBRID 14-1377	14' 1"	3/8"	1/2"	3/4"	13.77"	12.99"	150	4"	262"	65"	106"	77"	49"	46,406	40	106
R-HYBRID 14-1575	14' 1"	1/2"	5/8"	1"	15.75"	14.17"	176	4"	274"	65"	106"	77"	50"	52,706	50	106
R-HYBRID 14-1772	14' 1"	3/4"	7/8"	1-1/8"	17.72"	16.54"	220	4-3/4"	280"	73"	114"	86"	57"	61,084	60	159
R-HYBRID 14-1969	14' 1"	1"	1 3/16"	1 9/16"	19.69"	18.11"	286	5-3/8"	287"	78"	121"	94"	61"	80,264	75	198
R-HYBRID 14-2205	14' 1"	1 1/8"	1 1/4"	1 3/4"	22.05"	19.69"	385	6"	297"	89"	139"	105"	69"	106,940	60+25	238

The mentioned values above is only works for 38 KSI yield point material Different material types and plate widths; can be calculated with RMT Roll Bending Calculator Conical bending capacities depends on cone angle and half value of mentioned values above. Weight and motor powers may increase with optional features. Due to ongoing product development, specifications may change at any time.







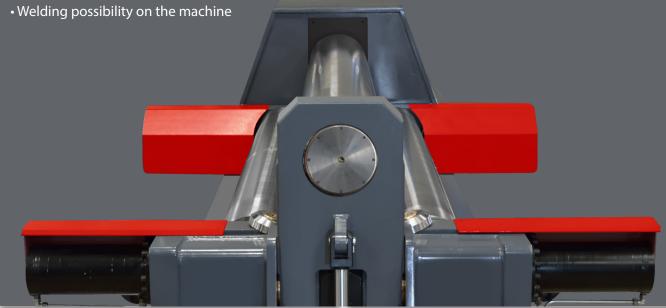
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### **STANDARD**

- Variable geometry type rolls movement.
- PLC control unit
- Dual speed
- Cone bending with dual cone bending roller bea-
- 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 highvield 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 over-
- World standard electrical and hydraulic components (parts stocked by RMT or available off-theshelf from your local supplier)
- Adjustable hydraulic pressure on bottom roll (crowning compensation)
- Mobile control panel Manual lubrication

### **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 heavy plate roll technology has grown to never seen before bend thickness capability. 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.



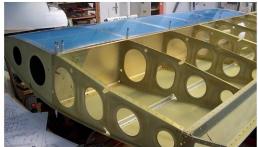


## **ADVANTAGES**

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.









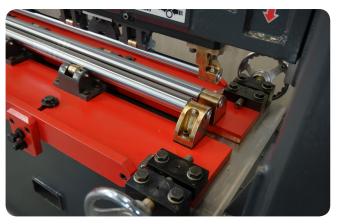




If you have ever tried to form relatively thin titanium, then you know exactly how flexible and elastic it is. Overcoming the ultra high yield point to allow the material to take on the new shape you need requires not only special knowledge, but special machinery that takes into consideration the challenges 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.

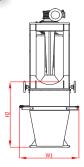


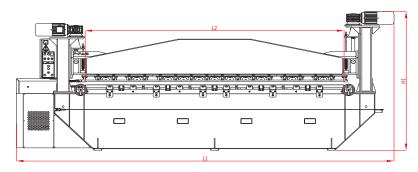






# F-FAB





		Bending Capacities												
MODEL	Bending Lenght	Aluminium 5754- H22 Capacities	Aluminium 6061-T6 Capacities	Mild Steel Capacities	Titanium 6242 Capacities	Upper Roll	Lower Rolls	Max. Pass Through	Lenght	Width	Height	Working Height	Weight	Motor Power
	L2 (inch)	T (inch)	T (inch)	T (inch)	T (inch)	Ød (inch)	Ø (inch)	A (inch)	L1 (inch)	W1 (mm)	H1 (inch)	H2 (inch)	(LBS)	(HP)
F-FAB 6-100	6'	12 Ga	14 Ga	14 Ga	16 Ga	1"	1-3/4"	2"	139"	34"	84"	39"	4,270	6.0
F-FAB 10-100	10'	14 Ga	16 Ga	16 Ga	20 Ga	1"	1-3/4"	2"	187"	34"	84"	39"	5,823	6.0
F-FAB 12-100	12'	14 Ga	16 Ga	16 Ga	20 Ga	1"	1-3/4"	2"	211"	34"	84"	39"	6,600	6.0
F-FAB 16-100	16'	16 Ga	18 Ga	18 Ga	22 Ga	1"	1-3/4"	2"	259"	34"	84"	39"	8,153	6.0
F-FAB 20-100	20'	16 Ga	18 Ga	18 Ga	22 Ga	1"	1-3/4"	2"	307"	34"	84"	39"	9,706	6.0
F-FAB 10-150	10'	0.156	0.125	0.125	14 Ga	1-1/2"	2"	3"	187"	34"	84"	39"	10,390	9.0
F-FAB 12-150	12'	0.156	0.125	0.125	14 Ga	1-1/2"	2"	3"	211"	34"	84"	39"	11,660	9.0
F-FAB 16-150	16'	0.125	12 Ga	12 Ga	16 Ga	1-1/2"	2"	3"	259"	34"	84"	39"	14,190	9.0
F-FAB 20-150	20'	0.125	12 Ga	12 Ga	16 Ga	1-1/2"	2"	3"	307"	34"	84"	39"	16,730	9.0
							·						·	
F-FAB 10-200	10'	0.250	0.210	0.210	10 Ga	2"	2-3/8"	3"	190"	44"	96"	39"	14,960	13.5
F-FAB 12-200	12'	0.250	0.210	0.210	10 Ga	2"	2-3/8"	3"	214"	44"	96"	39"	16,720	13.5
F-FAB 16-200	16'	0.210	0.187	0.187	12 Ga	2"	2-3/8"	3"	262"	44"	96"	39"	20,240	13.5
F-FAB 20-200	20'	0.210	0.187	0.187	12 Ga	2"	2-3/8"	3"	310"	44"	96"	39"	23,760	13.5

- · Larger machines available, please contact with us.
- All specifications are subject to change without notice.
   Weight and motor powers optionally goes higher levels with additional features.
- · Due to ongoing product development, specifications may change at any time

**Larger or Custom Machines Available** 

### **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 vield 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 loca 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



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.

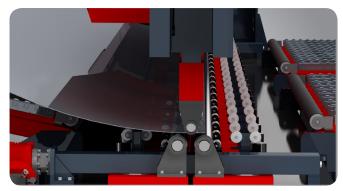
#### **ADVANTAGES**

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.









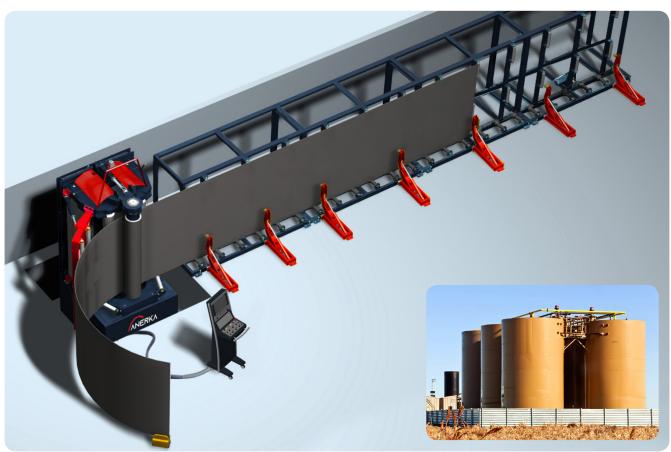
# WIND TOWER BENDING LINES





# **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.

# WE ALSO RETROFIT OLD MACHINES







UPGRADE TO DRO





1977 Bertsch #30











# **EQUIVALENT CHART**

	nes	Metric	inc	hes	Metric	inc	nes	Metric	Inc	ches	Metric
ractional	Decimal	mm	Fractional	Decimal	mm	Fractional	Decimal	mm	Fractional	Decimal	mm
	0.0039	0.1000	3/8	0.3750	9.5250	59/64	0.9219	23.4156		2.6378	67.000
	0.0079	0.2000	25/64	0.3906	9.9219		0.9252	23.5000		2.6772	68.000
_	0.0118	0.3000		0.3937	10.0000	15/16	0.9375	23.8125		2.7165	69.000
1/64	0.0156	0.3969	13/32	0.4063	10.3188		0.9449	24.0000	2 3/4	2.7500	69.850
1704			10/02			04/04			2 3/4		
	0.0157	0.4000	:-	0.4134	10.5000	61/64	0.9531	24.2094		2.7559	70.000
	0.0197	0.5000	27/64	0.4219	10.7156		0.9646	24.5000		2.7953	71.000
	0.0236	0.6000		0.4331	11.0000	31/32	0.9688	24.6063		2.8346	72.000
	0.0276	0.7000	7/16	0.4375	11.1125		0.9843	25.0000		2.8740	73.000
1/32	0.0313	0.7938		0.4528	11.5000	63/64	0.9844	25.0031		2.9134	74.000
	0.0315	0.8000	29/64	0.4531	11.5094	1	1.0000	25.4000		2.9528	75.000
-		0.9000	15/32		11.9063	<u> </u>		25.5000	<u> </u>		76.000
	0.0354		15/32	0.4688			1.0039			2.9921	
	0.0394	1.0000		0.4724	12.0000		1.0236	26.0000	3	3.0000	76.200
	0.0433	1.1000	31/64	0.4844	12.3031		1.0433	26.5000		3.0315	77.000
3/64	0.0469	1.1906		0.4921	12.5000		1.0630	27.0000		3.0709	78.000
	0.0472	1.2000	1/2	0.5000	12.7000		1.0827	27.5000		3.1102	79.000
-	0.0512	1.3000		0.5118	13.0000		1.1024	28.0000		3.1496	80.000
-	0.0551	1.4000	33/64		13.0969	<u> </u>		28.5000	<u> </u>		81.000
				0.5156		<u> </u>	1.1220		<u> </u>	3.1890	
	0.0591	1.5000	17/32	0.5313	13.4938	<u> </u>	1.1417	29.0000		3.2283	82.000
1/16	0.0625	1.5875	<u> </u>	0.5315	13.5000	<u> </u>	1.1614	29.5000	<u> </u>	3.2677	83.000
	0.0630	1.6000	35/64	0.5469	13.8906		1.1811	30.0000		3.3071	84.000
	0.0669	1.7000		0.5512	14.0000		1.2205	31.0000		3.3465	85.000
-	0.0709	1.8000	9/16	0.5625	14.2875	1 1/4	1.2500	31.7500	l '	3.3858	86.000
	0.0709	1.9000	3/10		14.5000	· '/ <del>'</del>	1.2598	32.0000	<del>                                     </del>	3.4252	87.000
			07/04	0.5709		<u> </u>			<u> </u>		
5/64	0.0781	1.9844	37/64	0.5781	14.6844		1.2992	33.0000		3.4646	88.000
	0.0787	2.0000		0.5906	15.0000		1.3386	34.0000	3 1/2	3.5000	88.900
	0.0827	2.1000	19/32	0.5938	15.0813		1.3780	35.0000		3.5039	89.000
	0.0866	2.2000	39/64	0.6094	15.4781		1.4173	36.0000		3.5433	90.000
	0.0906	2.3000		0.6102	15.5000		1.4567	37.0000		3.5827	91.000
3/32	0.0938	2.3813	5/8	0.6250	15.8750	· ·	1.4961		· ·		92.000
3/32			3/6					38.0000	· · ·	3.6220	
	0.0945	2.4000		0.6299	16.0000	1 1/2	1.5000	38.1000		3.6614	93.000
	0.0984	2.5000	41/64	0.6406	16.2719		1.5354	39.0000		3.7008	94.000
7/64	0.1094	2.7781		0.6496	16.5000		1.5748	40.0000		3.7402	95.000
	0.1181	3.0000	21/32	0.6563	16.6688		1.6142	41.0000		3.7795	96.000
1/8	0.1250	3.1750		0.6693	17.0000		1.6535	42.0000		3.8189	97.000
1/0	0.1378	3.5000	43/64	0.6719		<u> </u>	1.6929	43.0000	· · ·		98.000
					17.0656				· ·	3.8583	
9/64	0.1406	3.5719	11/16	0.6875	17.4625		1.7323	44.0000		3.8976	99.000
5/32	0.1563	3.9688		0.6890	17.5000	1 3/4	1.7500	44.4500		3.9370	100.00
	0.1575	4.0000	45/64	0.7031	17.8594		1.7717	45.0000	4	4.0000	101.60
1/64	0.1719	4.3656	· .	0.7087	18.0000		1.8110	46.0000		4.3307	110.00
-	0.1772	4.5000	23/32	0.7188	18.2563	<del></del>	1.8504	47.0000	4 1/2	4.5000	114.30
2/16			25/52			<del> </del>			-1 1/2		
3/16	0.1875	4.7625	47/04	0.7283	18.5000	<del></del>	1.8898	48.0000	<u> </u>	4.7244	120.00
	0.1969	5.0000	47/64	0.7344	18.6531	<u> </u>	1.9291	49.0000	5	5.0000	127.00
3/64	0.2031	5.1594	<u> </u>	0.7480	19.0000	<u> </u>	1.9685	50.0000		5.1181	130.00
	0.2165	5.5000	3/4	0.7500	19.0500	2	2.0000	50.8000		5.5118	140.00
7/32	0.2188	5.5563	49/64	0.7656	19.4469		2.0079	51.0000	1	5.9055	150.00
5/64	0.2344	5.9531		0.7677	19.5000	Ì	2.0472	52.0000	6	6.0000	152.40
_, .	0.2362	6.0000	25/32	0.7813	19.8438	<del> </del>	2.0866	53.0000	<del>t                                      </del>	6.2992	160.00
1/4			23/32			<del> </del>			<u> </u>		
1/4	0.2500	6.3500		0.7874	20.0000	<u> </u>	2.1260	54.0000	<u> </u>	6.6929	170.00
	0.2559	6.5000	51/64	0.7969	20.2406	<u> </u>	2.1654	55.0000		7.0866	180.00
7/64	0.2656	6.7469		0.8071	20.5000		2.2047	56.0000		7.4803	190.00
	0.2756	7.0000	13/16	0.8125	20.6375		2.2441	57.0000	1	7.8740	200.00
9/32	0.2813	7.1438		0.8268	21.0000	2 1/4	2.2500	57.1500	8	8.0000	203.20
	0.2953	7.5000	53/64	0.8281	21.0344	- '''	2.2835	58.0000	<del>t                                      </del>	9.8425	250.00
0/04			+			<del></del>			10		
9/64	0.2969	7.5406	27/32	0.8438	21.4313	<u> </u>	2.3228	59.0000	10	10.0000	254.00
5/16	0.3125	7.9375	<u> </u>	0.8465	21.5000	·	2.3622	60.0000	20	20.0000	508.00
	0.3150	8.0000	55/64	0.8594	21.8281		2.4016	61.0000	30	30.0000	762.00
21/64	0.3281	8.3344	l .	0.8661	22.0000	l .	2.4409	62.0000	40	40.0000	1016.00
	0.3346	8.5000	7/8	0.8750	22.2250		2.4803	63.0000	60	60.0000	1524.00
1/32			1			2 1/2				80.0000	2032.00
1/32	0.3438	8.7313		0.8858	22.5000	2 1/2	2.5000	63.5000	80		
	0.3543	9.0000	57/64	0.8906	22.6219	<u> </u>	2.5197	64.0000	100	100.0000	2540.00
23/64	0.3594	9.1281	<u> </u>	0.9055	23.0000		2.5591	65.0000			
			00/00	0.0000	22 0100		2.5984	66.0000		1	
	0.3740	9.5000	29/32	0.9063	23.0188		2.0904	00.0000			

Gauge		Stainless	Galvanized	Sheet Steel	et Steel Aluminum		iuge	Stainless	Galvanized	Sheet Steel	Aluminum
	Fraction	inches (mm)	inches (mm)	inches (mm)	inches (mm)		Fraction	inches (mm)	inches (mm)	inches (mm)	inches (mm)
30		0.0125 (0.33)	0.0157 (0.40)	0.0120 (0.30)	0.0100 (0.25)	16	1/16	0.0625 (1.59)	0.0635 (1.61)	0.0598 (1.52)	0.0508 (1.29)
29		0.0141 (0.36)	0.0172 (0.44)	0.0135 (0.34)	0.0113 (0.29)	15		0.0703 (1.8)	0.0710 (1.80)	0.0673 (1.71)	0.0571 (1.4)
28	1/64	0.0156 (0.41)	0.0187 (0.47)	0.0149 (0.38)	0.0126 (0.32)	14	5/64	0.0781 (1.98)	0.0785 (1.99)	0.0747 (1.90)	0.0641 (1.63)
27		0.0172 (0.43)	0.0202 (0.51)	0.0164 (0.42)	0.0142 (0.36)	13	3/32	0.094 (2.4)	0.0934 (2.37)	0.0897 (2.28)	0.072 (1.8)
26		0.0187 (0.48)	0.0217 (0.55)	0.0179 (0.45)	0.0159 (.40)	12	7/64	0.1094 (2.78)	0.1084 (2.75)	0.1046 (2.66)	0.0808 (2.05)
25		0.0219 (0.56)	0.0247 (0.63)	0.0209 (0.53)	0.0179 (0.46)	11	1/8	0.1250 (3.18)	0.1233 (3.13)	0.1196 (3.04)	0.0907 (2.30)
24		0.025 (0.64)	0.0276 (0.70)	0.0239 (0.61)	0.0201 (0.51)	10	9/64	0.1406 (3.57)	0.1382 (3.51)	0.1345 (3.42)	0.1019 (2.59)
23		0.0281 (0.71)	0.0306 (0.78)	0.0269 (0.68)	0.0226 (0.58)	9	5/32	0.1563 (3.97)	0.1532 (3.89)	0.1495 (3.80)	0.1144 (2.91)
22	1/32	0.0312 (0.79)	0.0336 (0.85)	0.0299 (0.76)	0.0253 (0.64)	8	11/64	0.1719 (4.37)	0.1681 (4.27)	0.1644 (4.18)	0.1285 (3.26)
21		0.0344 (0.86)	0.0366 (0.93)	0.0329 (0.84)	0.0285 (0.71)	7	3/16	0.1875 (4.76)		0.1793 (4.55)	0.1443 (3.67)
20		0.0375 (0.95)	0.0396 (1.01)	0.0359 (0.91)	0.0320 (0.81)	6	13/64	0.2031		0.1943 (4.94)	0.162 (4.1)
19		0.0437 (1.1)	0.0456 (1.16)	0.0418 (1.06)	0.0359 (0.91)	5	7/32	0.2187		0.2092 (5.31)	0.1819
18		0.0500 (1.27)	0.0516 (1.31)	0.0478 (1.21)	0.0403 (1.02)	4	15/64	0.2344		0.2242 (5.69)	0.2043
17		0.0562 (1.4)	0.0575 (1.46)	0.0538 (1.37)	0.0453 (1.1)	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		A	55	24
A-283 GRADE B	LOW & INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES OF STRUCTURAL	В	60	27
A-283 GRADE C	QUALITY	C	65	30
A-283 GRADE D		D	72	33
A-285 GRADE A		A	65	24
A-285 GRADE B	LOW & INTERMEDIATE TENSILE STRENGTH CARBON STEEL PLATES FOR PRESSURE	В	70	27
A-285 GRADE C	VESSEL	С	-	
A-283 GRADE C A-299	CARBON MANGANESE SILICON STEEL PLATE FOR PRESSURE VES- SELS	-	75 95	30 42
A-514	HIGH-YIELD STRENGTH, QUENCHED AND TEMPERED ALLOY STEEL PLATE SUITABLE FOR WELDING	-	130	100
A-515 GRADE 55		55	75	30
A-515 GRADE 60	CARBON STEEL PLATES FOR INTERMEDIATE AND HIGHER TEMPERA-TURE SERVICE	60	80	32
A-515 GRADE 65	FOR PRESSURE VESSELS	65	85	35
A-515 GRADE 70		70	90	38
A-516 GRADE 55		55	75	30
A-516 GRADE 60	CARBON STEEL PLATES FOR MODERATE AND LOWER TEMPERATURE SERVICE FOR	60	80	32
A-516 GRADE 65	PRES- SURE VESSELS	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	CLASS I	90	50
A-537 CLASS II	PRESSURE VESSEL	CLASS II	100	60
A-572 GRADE 42		42	60	42
A-572 GRADE 50	LICH STRENGTH LOW ALLOY COLLINDE LIM VANADILIM STEELS	50	65	50
A-572 GRADE 60	HIGH-STRENGTH LOW-ALLOY COLUMBI- UM-VANADIUM STEELS OF STRUCTURAL QUALITY	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	H.R.	70	50
A-606 C.R.	IMPROVED CORROSION RESISTANCE	C.R. ANNEAL. NORM.	65	45
A-633 GRADE A-B		A-B	83	42
	NODMANIZED LIICH, CTRENCTILLOW ALLOY CTRUCTURAL CTER	C-D		
A-633 GRADE C-D	NORMALIZED HIGH- STRENGTH LOW-ALLOY STRUCTURAL STEEL	E E	90	50
A-633 GRADE E			100	60
A-656 GRADE 50		50	60	50
A-656 GRADE 60	HOT-ROLLED STRUC-TURAL STEEL, HIGH- STRENGTH LOW-ALLOY STEEL PLATE WITH IMPROVED FORMA- BILITY	60	70	60
A-656 GRADE 70	WITH IIVIPNOVED FORIVIA- DILITY	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  Weldox 700	6061-T6  Weldox 700 is a general structural steel with a minimum yield strength of 95 - 100  Ksi depending on thickness. Typical applications are demanding loadbearing	6061-T6	125	100
Weldox 900/960	structures.  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

# KYEON



Fiber Lasers



**Press Brakes** 



Shears



Ironworkers



**Bandsaws** 

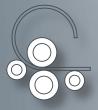


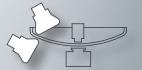
Plate Rolls



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** 

385 N 700 W North Salt Lake, UT 84054



Phone: 844.RMT.INFO 844.768.4636