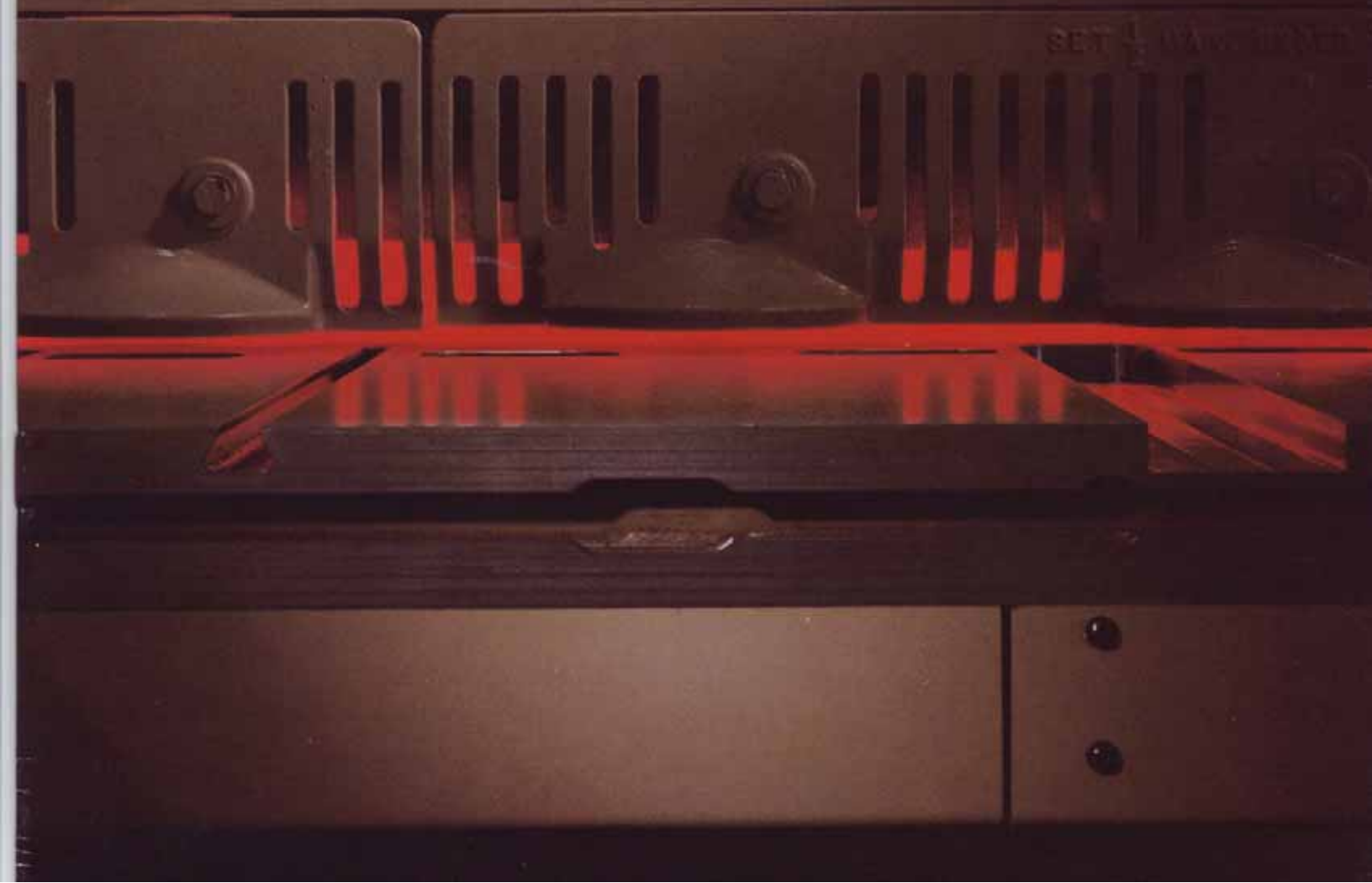
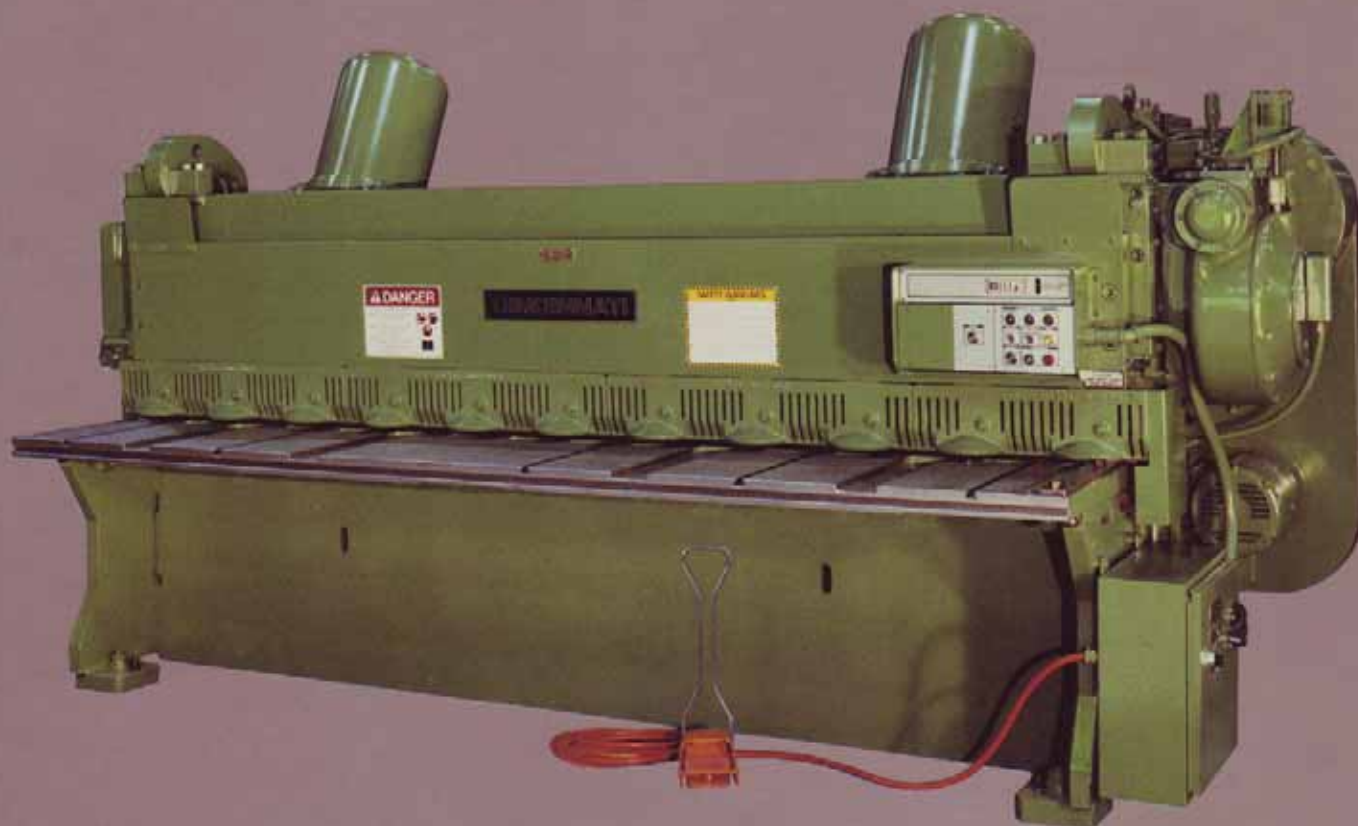


CINCINNATI

# MECHANICAL SHEARS



# SHEAR PRODUCTIVITY STARTS HERE WITH...



- **More Parts per Hour**
- **Superior Quality Blanks**
- **Greater Machine Uptime**
- **Sensible Safety Features**
- **Preferential Service**

**T**he unique design of a CINCINNATI Mechanical Shear lets it process a wide range of material and thicknesses, making it perfectly suited for all types of metal fabricators.

The real story, however, is this machine's productivity advantage.

*Quick and easy setups* translate into more parts every working hour. *Greater cutting accuracy* creates quality blanks and cuts down rejects, to further increase throughput.

*Rugged Reliability* sustains productive uptime. Even the carefully implemented CINCINNATI *Safety features* that protect man and machine ultimately lead to more efficient shearing.

Add in the wide range of options that can help customize a CINCINNATI Mechanical Shear to the most demanding applications and the result is a productivity powerhouse.

## CINCINNATI

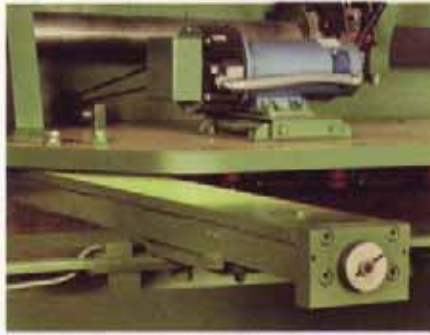


# SUPERIOR QUALITY BLANKS

## Accuracy Made Easy

The cutting accuracy of a CINCINNATI Mechanical Shear does not require special operator skill or manipulation. It is the built-in result of standard CINCINNATI features such as a rigid all-steel frame, low knife rake-angle, inclined ram, powerful hydraulic holdowns and many other design refinements.

Precision knife adjustment, on 12" (305mm) centers, compensates for variations in knife thickness due to grinding tolerances. Adjustable knife clearance along the full length of the machine helps produce the desired edge quality. Stainless steel scales across each end of the table are adjustable with the knife edge to compensate for knife grinding. Users can set extremely close knife clearances – down to 0.0015" (0.04mm) – and successfully cut very thin material. It takes a micrometer to detect any variations in the width of a strip sheared on a CINCINNATI.



Precise and reliable CINCINNATI Backgage.

Rapid forward and reverse control quickly moves the precision backgage. A fine-forward travel moves the gage into final position without backlash for greater blank accuracy.

A fixed, low knife rake-angle helps ensure accurate parts by reducing the amount of bow, camber and twist introduced into the blank during the shearing process. Research tests determined the optimum knife angle to minimize distortion for different materials and thicknesses, from minimum gauge up to machine capacity.

The exclusive CINCINNATI precision guided 2° inclined ram produces a perpendicular cut and helps prevent blanks from binding between the backgage and lower knife. Spring counterbalances prevent ram float and force ram slides against hardened and ground guides during the shearing cycle. A large bearing area helps maintain accurate alignment.

High pressure hydraulic holdowns clamp workpieces securely to prevent slippage regardless of thickness variations.

Blanks of unsurpassed quality are the result of these standard CINCINNATI features and unique design refinements. Operators consistently produce straight and parallel cuts, shearing sheets to size within the most demanding tolerances. Such accuracy does not require special operator skills.

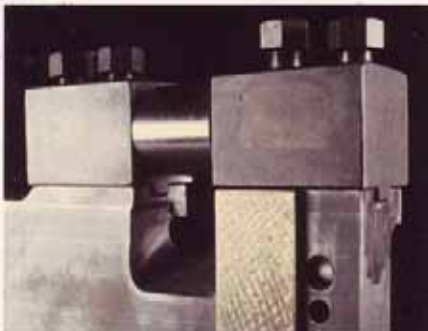
# GREATER MACHINE RELIABILITY

## Rugged and Durable

Heavy steel plate frame members are locked together without welded joints into a nonstressed structure. Hand-scraped, self-aligning bearing shoes and hand-scraped bronze slides help guarantee long life and reliability.

CINCINNATI four-edged knives offer extended service life and can be reground quickly and easily. Their straight side design and fully ground surface also provides superior strength and reduced possibility of cracks.

The positive engagement jaw clutch rides on a hardened steel surface to eliminate the



Hand-scraped bronze slides.

maintenance of systems using friction type materials. This proven design provides dependable service and low maintenance costs.

Automatic pressure lubrication supplies oil to important bearing surfaces and rotating parts to extend machine uptime. Automatic lubrication of

the backgage screws ensures low maintenance and increased gage performance.

Maintaining part accuracy over the life of the shear depends on backgage reliability. CINCINNATI places the cross shaft near the ram to prevent damage from lift trucks and crane hooks. Automatic backlash compensation in the backgage prohibits gage "float" for less maintenance and more accuracy.

Refined through 70 years of shear building experience and backed by an unmatched **five-year parts warranty**, rugged CINCINNATI Mechanical Shears are the industry standard for superior accuracy and reliability.



# SENSIBLE SAFETY FEATURES

Each new CINCINNATI Mechanical Shear proudly displays a compliance tag showing that it meets ANSI B11.4 construction requirements. A copy of this safety standard, which covers the proper care and use of power shears, is included to help users with their safety programs.



Convenient hand slots in the shear table enable safe handling of large plate and small part pieces. Wrench holes in the table allow release of the lower knife bolts from above. A keylock clutch



mode selector switch allows supervision of shearing methods and prevents unauthorized use. Multiple footswitches are available for those jobs requiring more than one operator.

Comprehensive operator, maintenance and safety manuals provide instruction on proper procedures and safety methods. A maintenance

checklist and troubleshooting chart simplify proper equipment maintenance and help assure that the shear is in safe operating condition.

Warning signs are placed at strategic locations on all CINCINNATI Mechanical Shears. A checklist of operator safety guidelines is prominently displayed on the front of the machine. An awareness barrier is placed across the backage area.

The employer is responsible for proper installation and continued use of point-of-operation safeguarding and other machine guards. This helps assure operator safety and compliance with OSHA requirements.

## CINCINNATI PREFERENTIAL SERVICE

CINCINNATI field based service representatives located in all major markets throughout the United States and Canada will supervise the installation of new machines, provide start-up assistance, demonstrate the equipment and furnish instruction on operation, maintenance and safety. Preferential Service also includes a post-installation follow-up visit or call from the service representative to confirm satisfactory operation.

Cincinnati Incorporated stocks replacement parts for all CINCINNATI Mechanical Shears, including the first one built over 70 years ago. A computerized order entry system expedites timely deliveries.

A full **five-year warranty** on all parts —



offered only by CINCINNATI — and one-year of service at no charge attest to the unflinching performance and reliability of CINCINNATI Mechanical Shears.

Our Service Department offers a **Total Knife Service (TKS)** program for sharpening

or installing knives, making machine adjustments and inspecting the shear. A

**Planned Maintenance Service (PMS)** program is available to ensure proper operating condition. Complete machine reconditioning is also available.

Training programs, provided at the customer's plant or at Cincinnati Incorporated, are also available to develop the skills of operators and to instruct personnel on proper maintenance procedures.

Single-source responsibility from Cincinnati Incorporated for installation, parts and service provides optimum performance, maintainability and trouble-free operation.



# OPTIONS ASSIST ACCURACY AND PRODUCTIVITY

## Multi Axis Gage Control Option

Computer controlled Multi Axis Gaging offers greater productivity and blank quality with reduced setup time, faster gage positioning and increased accuracy. The result is a more flexible shearing center that can handle a wide array of jobs more profitably.

Blank width and the number of cuts at that width can be pre-programmed to automatically control the powered backgage, one squaring arm with powered stops, one frontgage arm (and an optional second arm) with powered stops. For easy operator control, an LED readout displays actual and desired gage positions, operation sequence numbers and machine cuts.



Pedestal mounted control is available as an option.

Multi Axis Gaging eliminates error from setting gages manually, dramatically reducing scrap. It is also a practical solution to the problem of shearing pre-punched multiples with minimal error accumulation between blanks.

For unsurpassed throughput and fast setup between jobs, ask your CINCINNATI sales representative about the CINCINNATI CNC Shearing Center.

## Digital Gage Control

For greater accuracy, control and reduction in setup time, the Digital Gage Control option automatically positions a CINCINNATI Shear's backgage. The cut depth of the blank and the number of cuts at each depth can be pre-programmed up to a 99 step cutting pattern with as many as 99 cuts per step. The control positions the gage, displays the number of cuts to be made at that position and then advances to the next step when all cuts are completed.

Frequently used dimensions or complete shearing programs can be stored off-line or in the control memory and recalled by the operator. The need for trial cuts to verify gage position is nearly eliminated. Once gage shearing dimensions have been entered into memory, the gage automatically locates to within  $\pm 0.005"$  ( $\pm 0.13\text{mm}$ ) of the desired position and repeats to within  $\pm 0.002"$  ( $0.05\text{mm}$ ) on each subsequent cut.

The Digital Gage Control is located on a stationary pendant just above the standard shear control station. The standard backgage counter is removed.



## Special Backgage Counter

A decimal counter with increments of 0.005" (numbered every 0.050") can replace the standard backgage counter.

## Pneumatic Sheet Supports

Improve shearing accuracy by locating sheet material properly against the backgage.

Pneumatic Sheet Supports elevate material into a horizontal position flush with the shear table so it can be supported level with the passline.

This virtually eliminates blank inaccuracies due to unsupported and poorly positioned sheets.

Pneumatic Sheet Supports are ideally suited for 20 gauge through 3/8" (1mm through 10mm) mild steel up to a backgage setting of 24" (600mm).

There is no support from 0" to 8" backgage range.

Sheet support arms are mounted on the rear of the bed in place of the standard scrap chute.



A selector switch permits the operator to move the arms to the down position or select automatic operation mode. Benefits include easier material positioning, improved worker safety and less scrap.

## Magnetic Sheet Supports

Light gauge materials (16 gauge or less) can be guided very accurately into position against the backgage with magnetic sheet supports. High intensity permanent magnets mounted to support channels suspend the sheet to a position flush with the shearing table.



## Material Handling Systems



CINCINNATI offers a choice of options to speed material handling, enhance safety and increase part production.

A sheet conveyor safely removes finished blanks for stacking at production line speed. Sturdy material supports guide blanks away from the shear table, minimize sheet sag and allow material to be firmly positioned against the backgage for increased part accuracy. Bar-type supports are available for handling 26 gauge through 1/4" material.

The conveyor can be combined with a separator that automatically separates troublesome scrap from finished product, further boosting production efficiency. A third combination, a conveyor / separator / stacker, eliminates the need to manually stack finished blanks, freeing the operator from a time-consuming task that decreases overall productivity.

## Extended Backgage Range

A 48" (1220mm) backgage range can be purchased in place of the standard 36" (915mm) gage.

## Squaring Arm

An extension squaring arm helps process large sheets or long strips accurately and efficiently. Arms are available in ranges of 6', 8', 10', 12' or 14' (1.8m, 2.4m, 3m, 3.6m, or 4.3m) when measured from the lower knife edge. One swinging stop is included.

## Front Gaging Support Arms

Arms mount into dovetail slots in the shear table to ease material handling. Standard length is 35" (890mm) overall. Front gage support arms can be furnished 24" (610mm) longer than standard, with a support leg. All arms include one disappearing stop for front gaging.

## Stroke Counter

A five-digit, reset-type stroke counter can be used to monitor the number of strokes. A six-digit electronic stroke counter is included with the Digital Gage Control or Multi Axis Gage Control options.



Hold-down/knife guard removed for illustration purposes only.

## Light Beam Shearing Gage

A series of precisely directed lights illuminate the work area and provide a shadow line on the workpiece to indicate the line of cut. It allows shearing to a scribed line. The sharpness and location of the shadow line is controlled by the movement of a slotted mounting bracket and shield strip on the hold-down beam. An "On/Off" selector switch is provided on the operator control panel.

## Material Stops

Stops can be solid or swinging type for use on the squaring arm. Disappearing stops for use in the dovetail slots of the table and support arms are also available.

## Special Scales

Choose a decimal or metric scale in place of the standard fractional scale at no charge. Special scales with 1/16" graduations at one edge and millimeter markings on the other edge are options available for the shear table and squaring arm with ranges of 6', 8', 10', 12' or 14' (1.8m, 2.4m, 3m, 3.6m or 4.3).

## Cushion Clamps

To minimize marking of aluminum, polished stainless steel or other materials, cushioned clamps lower the holddown plungers at a controlled speed until contact is made. Full holddown pressure is then applied for the shearing cycle.

An alternative method to avoid marking soft or polished sheets is the use of neoprene or urethane cups placed over the feet of the hold-down plungers.

The addition of protective cups on the hold-downs can reduce the thickness of the material that can be sheared.



## Auto Shearing

More finished parts and fewer rejects result when electronic contacts sense workpiece position. When the sheet is in the correct position, the shear cycles automatically, producing quality finished blanks. The standard arrangement includes four probes mounted in the backgage angle and controls for selecting the proper probe combination to initiate shearing cycles.



# MECHANICAL SHEAR SPECIFICATIONS

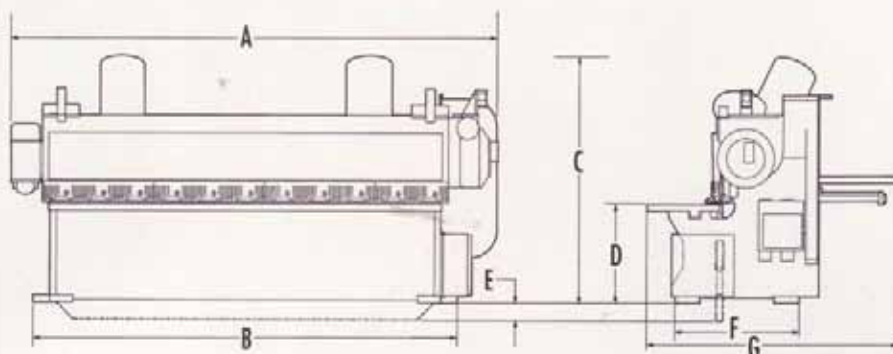
## English Specifications:

MODEL	MILD STEEL CAPACITY (1)	MAXIMUM CUTTING LENGTH	RAKE- IN./FT.	HOLDDOWNS FORCE TONS	NUMBER	DISTANCE UNDER HOLDDOWN GUARD	DISTANCE FROM HOLDDOWN GUARD TO KNIFE EDGE	GAGE RANGE FRONT (2)	BACK	STROKES PER MINUTE	KNIFE SIZE- INCHES	MOTOR- HP	APPROXIMATE SHIPPING WEIGHT- POUNDS
1806RG	1/4"	74-1/4"	1/4	5	7	1/2"	2-1/2"	51-1/2"	36"	60	1 x 5 x 78	7-1/2	12,000
1808G	1/4"	98-1/4"	1/4	6	9	1/2"	2-1/2"	55-1/2"	36"	60	1 x 5 x 102	7-1/2	13,200
1810G	1/4"	122-1/4"	1/4	8	11	1/2"	2-1/2"	55"	36"	60	1 x 5 x 126	7-1/2	16,000
1812G	1/4"	146-1/4"	1/4	9	13	1/2"	2-1/2"	58-1/2"	36"	60	1 x 5 x 150	10	20,000
1814G	3/16"	170-1/4"	15/64	9	15	3/8"	1-1/2"	58-1/2"	36"	60	1 x 5 x 174	10	23,200
2510G	3/8"	122-1/2"	9/32	11	11	5/8"	3-1/2"	56-1/2"	36"	50	1 x 4 x 124	10	24,000
2512G	3/8"	146-1/2"	9/32	13	13	5/8"	3-1/2"	60-1/2"	36"	50	1 x 4 x 148	15	31,000
2514G	1/4"	170-1/2"	1/4	11	15	1/2"	2-3/4"	57-1/2"	36"	50	1 x 4 x 172	15	33,500

Other machine capacities and lengths available on request.

## Metric Specifications:

MODEL	MILD STEEL CAPACITY MM (1)	MAXIMUM CUTTING LENGTH MM	RAKE- ANGLE	HOLDDOWNS FORCE KN	NUMBER	DISTANCE UNDER HOLDDOWN GUARD (MM)	DISTANCE FROM HOLDDOWN GUARD TO KNIFE EDGE	GAGE RANGE (MM) FRONT (2)	BACK	STROKES PER MINUTE	KNIFE SIZE- MM	MOTOR- KW	APPROXIMATE SHIPPING WEIGHT- KG
1806RG	6	1885	1° 12'	45	7	12	63	1305	915	60	25 x 76 x 1980	5.6	5445
1808G	6	2495	1° 12'	55	9	12	63	1360	915	60	25 x 76 x 2590	5.6	5985
1810G	6	3105	1° 12'	70	11	12	63	1395	915	60	25 x 76 x 3200	5.6	7260
1812G	6	3715	1° 12'	80	13	12	63	1485	915	60	25 x 76 x 3810	7.5	9075
1814G	4	4325	1° 7'	80	15	9	38	1485	915	60	25 x 76 x 4420	7.5	10523
2510G	10	3110	1° 21'	100	11	16	89	1435	915	50	25 x 102 x 3150	7.5	10885
2512G	10	3720	1° 21'	115	13	16	89	1535	915	50	25 x 102 x 3760	11.2	14060
2514G	6	4330	1° 12'	98	15	12	70	1460	915	50	25 x 102 x 4370	11.2	15195



- (1) Refer to CINCINNATI Shear Capacity chart for equivalent capacity thickness based on specific grade of ASTM materials. Minimum thickness is 26 gauge (0.018" or 0.46mm) for the standard machine.
- (2) Front gage range based on use of standard length optional front support arms.

Standard gap (nominal) = 4" (100mm) for knife change only.

## English Dimensions:

MODEL	A	B	C	D	E	F	G
1806RG	110-1/4"	89-3/4"	78-3/4"	32"	—	40-1/4"	78-1/4"
1808G	134-1/4"	113-3/4"	78-3/4"	32"	—	40-1/4"	80-1/4"
1810G	158-1/4"	137-3/4"	78-3/4"	32"	—	40-1/4"	81-3/4"
1812G	182-1/4"	161-3/4"	78-3/4"	32"	5-1/2"	40-1/4"	85-1/4"
1814G	206-1/4"	185-3/4"	78-3/4"	32"	8-1/2"	40-1/4"	85-1/4"
2510G	164-5/8"	139-1/2"	85-3/4"	32"	—	49-1/2"	86-1/4"
2512G	188-5/8"	163-1/2"	85-3/4"	32"	12"	49-1/2"	90-1/4"
2514G	212-5/8"	187-1/2"	85-3/4"	32"	12"	49-1/2"	87-1/4"

## Metric Dimensions (MM):

MODEL	A	B	C	D	E	F	G
1806RG	2800	2280	2000	815	—	1020	1990
1808G	3410	2890	2000	815	—	1020	2040
1810G	4020	3500	2000	815	—	1020	2075
1812G	4630	4110	2000	815	140	1020	2165
1814G	5240	4720	2000	815	215	1020	2165
2510G	4180	3545	2180	815	—	1255	2190
2512G	4790	4150	2180	815	305	1255	2290
2514G	5400	4765	2180	815	305	1255	2215

Due to a continuing development program, engineering data and dimensions are subject to change without notice. Certified foundation plans will be furnished for each installation.



The Cincinnati Incorporated plant, offices and Technical Center comprise a world class manufacturing facility.

A technologically advanced manufacturer with over 90 years' experience in metalworking machinery places its worldwide reputation for quality products behind every CINCINNATI Mechanical Shear.

Cincinnati Incorporated maintains one of the most modern manufacturing facilities in America with an ongoing program of capital improvements. A new advanced business system supports all manufacturing, development, sales and other corporate functions to assure unsurpassed customer service and satisfaction.

An experienced, competent staff of engineers conducts research and development in new areas of metalworking technology as well as current product redesign. CAD/CAM machine design contributes to low cost customization and shorter deliveries.

The CINCINNATI Customer Productivity Center demonstrates today's latest high technology products. Customers can schedule visits to watch parts being fabricated and study unique applications to verify production savings.

Like all Cincinnati Incorporated products,

the CINCINNATI Mechanical Shear offers exceptional value. To learn more, contact your CINCINNATI representative, call us at: (513) 367-7100, or FAX: (513) 367-7552. We are constantly at your service.



The Customer Productivity Center demonstrates today's latest shearing, forming, stamping and laser cutting technologies.

# CINCINNATI

CINCINNATI, OHIO 45211

Box 11111  
Phone: (513) 367-7100  
Fax: (513) 367-7552  
E-Mail: [info@cincinnati-tools.com](mailto:info@cincinnati-tools.com)  
Web Site: [www.cincinnati-tools.com](http://www.cincinnati-tools.com)