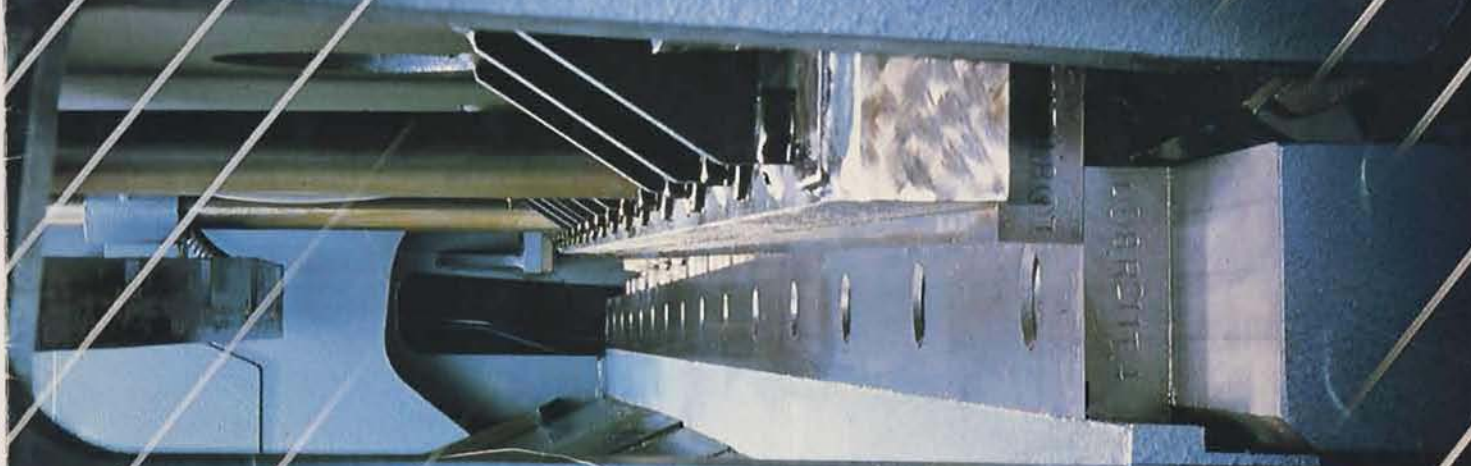


MECHANICAL SHEAR

M-SERIES



THE AMADA MECHANICAL SHEAR HAS BEEN DESIGNED TO BE FAST, ACCURATE, VERSATILE, AND SAFE.

THE RUGGED CONSTRUCTION ENSURES LONG LASTING PERFORMANCE.

High quality components

All Amada mechanical shears have a rigid, rolled steel frame. All electrical and mechanical components are of the highest quality. This assures you of superior accuracy and performance.

Ten models to choose from

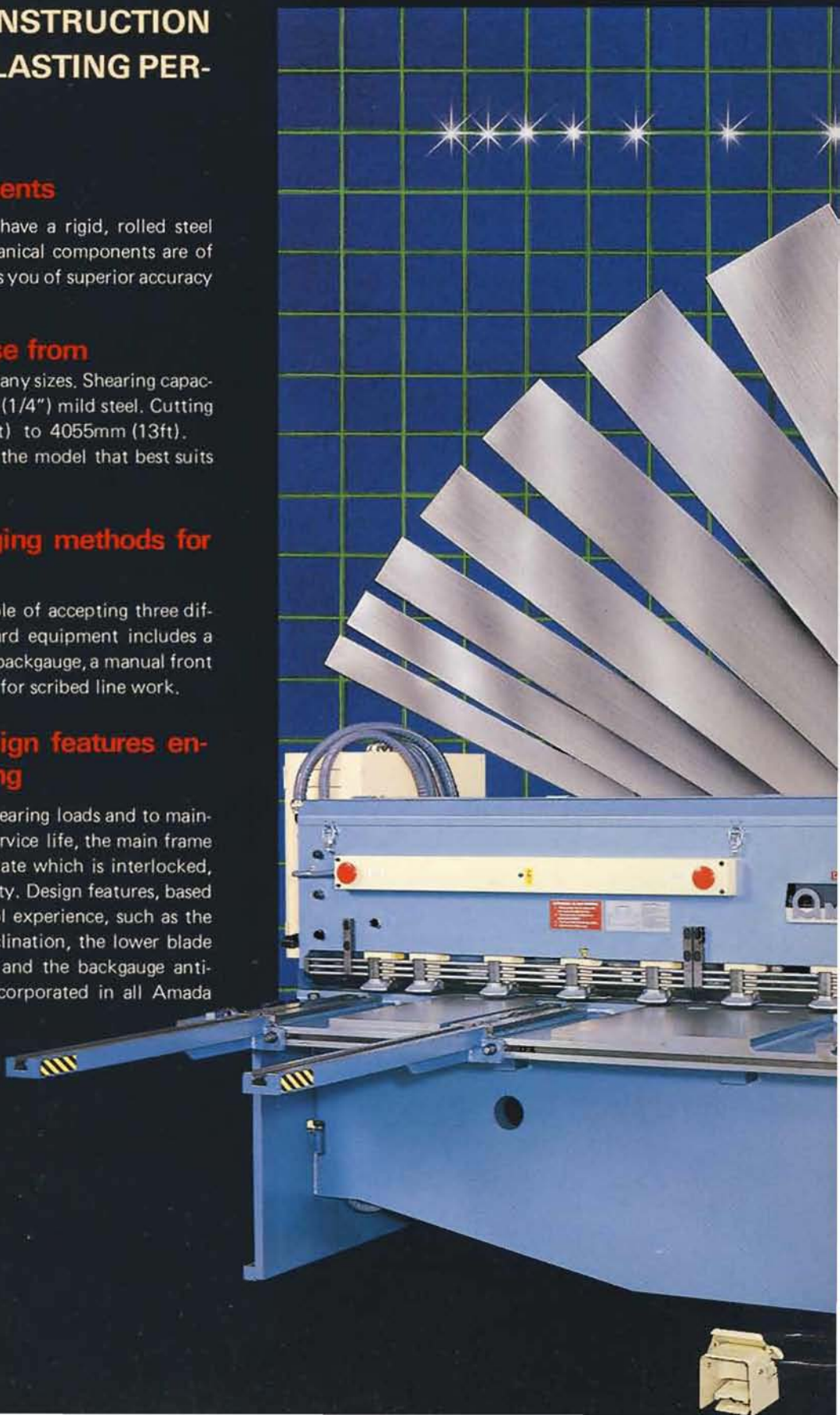
Amada shears are available in many sizes. Shearing capacity is 4.5mm (3/16") or 6.5mm (1/4") mild steel. Cutting lengths are from 1240mm (4ft) to 4055mm (13ft). May we assist you in selecting the model that best suits your company's needs.

Three standard gauging methods for versatility

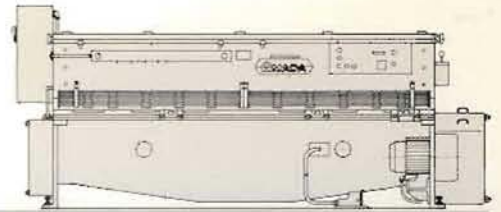
Each mechanical shear is capable of accepting three different gauging systems. Standard equipment includes a front operated, programmable backgauge, a manual front gauge and a shadow light gauge for scribed line work.

Engineering and design features ensure accurate shearing

In order to withstand heavy shearing loads and to maintain accuracy throughout its service life, the main frame is constructed of rolled steel plate which is interlocked, not welded, for structural rigidity. Design features, based on many years of machine tool experience, such as the upper blade rake angle and inclination, the lower blade height adjustment mechanism and the backgauge anti-backlash feature have been incorporated in all Amada mechanical shears.



MECHANICAL SHEAR M-SERIES



CONTROLS

All operator controls are located on a single control panel which is located for the most convenient, safe and efficient operation.

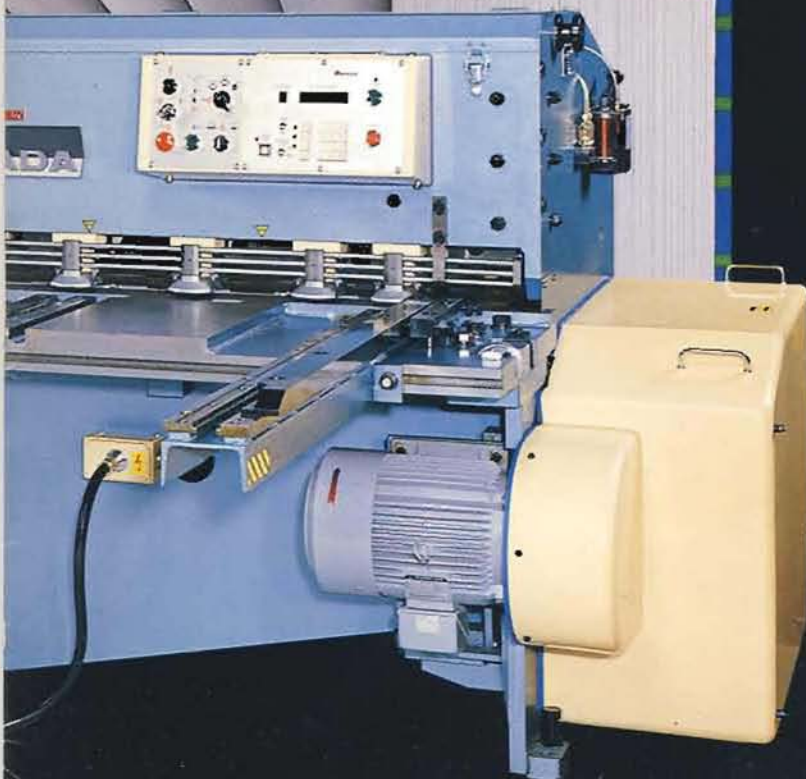


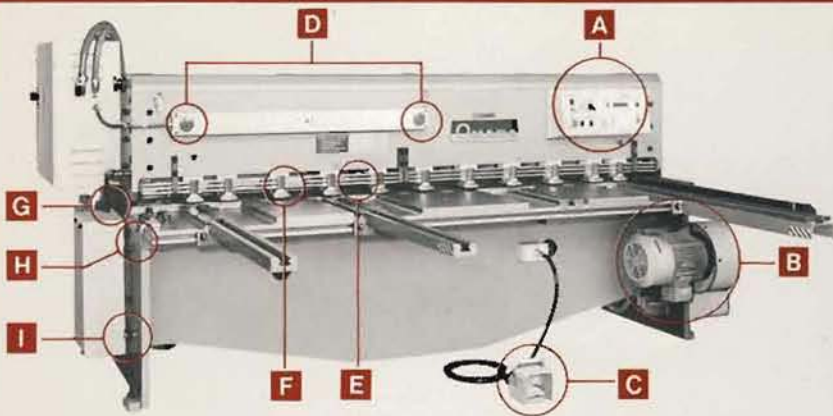
Nine position programmable back-gauge

The programmable backgauge is simple to operate, quick and accurate. The shearing width can be easily set using the tenkey pad in either 0.1mm or 0.001in. units. The backgauge moves quickly, accurately, and automatically to the selected position. The shearing width is shown on the easy-to-read digital display. This makes confirmation easy and helps prevent mistakes.

The NC unit will accept up to 9 different inputs. This will increase efficiency when performing repetitive operations.

The backgauge can be automatically raised up and out of the way when shearing sheets wider than 1000mm (39.37in.).





- A** Control panel for the most convenient, safe and efficient operation
- B** Drive system positioned at the base of the frame
- C** Foot switch with a cover
- D** Emergency stop button
- E** Finger guards for ensuring safety
- F** Powerful, independent hydraulic work hold-downs
- G** Frame gap on each side of the frame
- H** Blade clearance adjustment mechanism
- I** Lower blade height adjustment bolt

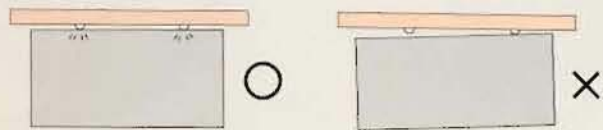
Controls are efficient and easy to use.

Four operating modes

The most suitable operating mode—single stroke, continuous, automatic, or inching—may be selected for each different shearing operation.

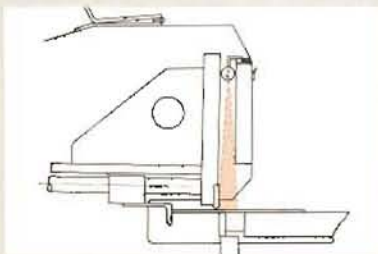
Automatic shearing

In the automatic shearing mode, the shear will cycle as soon as the workpiece touches two contact switches in the backgauge. The foot switch does not need to be pressed. This increases speed since the shear will operate as soon as the sheet is in the proper position and also increase accuracy since the shear will not operate until the sheet is firmly against the backgauge.



Light beam shearing gauge

In cases where the backgauge cannot be used, the work-sheet can be positioned accurately by aligning the scribed line on the worksheet directly under the edge of the shadow cast by the light beam.



Economical 4-edged blades

Both upper and lower blades have four cutting edges to reduce the lost time and the cost of blade regrinding.

A rigid rolled steel frame ensures continued high accuracy shearing.

Rolled steel frame assembly

The main frame is built from high quality rolled steel plate, then shotblasted and heat treated. This does not produce welding stress and prevents frame cracking and distortion. Frame distortion under shearing stress is less than half the distortion of a cast iron frame. This provides the capability of a low rake angle while ensuring main frame integrity.

Drive system positioned at the base of the frame

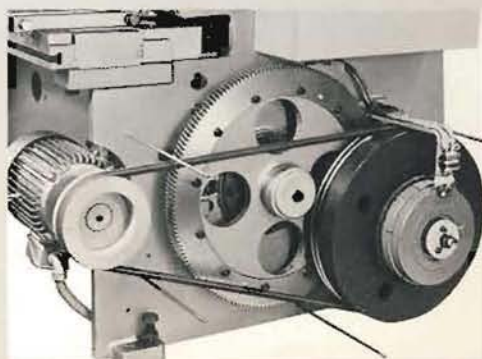
The entire shearing drive unit is located in the lower part of the machine frame. This increases machine stability and reduces vibration.

Frame gap

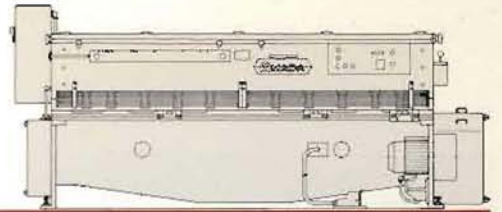
On each side of the frame there is a gap. This increases the flexibility of shearing operations and makes the job of changing blades both easier and safer.

Quiet electromagnetic clutch

A fast-acting electromagnetic friction clutch engages the main gear only during the actual shearing operation. This reduces the overall noise level and operator fatigue—yet allows shearing rates of up to 75 strokes per minute (Model M-1245).

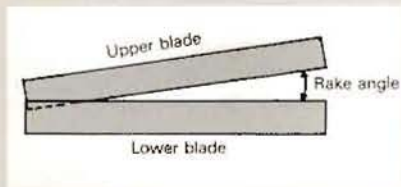


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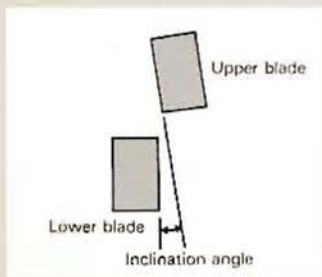
Blade rake angle

The blade rake angle, which has a great influence on part distortion, was determined as a result of extensive research. The blade rake angle used on AMADA's Series 45 mechanical shear (except model M-1245) is $1^{\circ}18'$ and $1^{\circ}28'$ on AMADA's Series 60 and 65 shears. Bow and twist will be minimized and the result will be more accurate blanks.



1° ram inclination

The upper blade in the AMADA mechanical shear inclines 1° from the vertical. The purpose of this inclination angle is not only to cut the workpiece off squarely, but also to prevent narrow worksheets from being jammed between the blade and the backgauge rather than dropping freely.

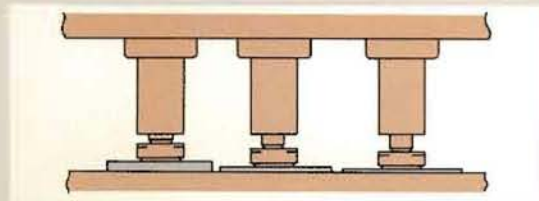


Zero backlash eliminates shearing width errors.

A spring-loaded backgauge eliminates the problem of backlash by exerting constant pressure onto the threads of the backgauge feed screws. This special mechanism enables shearing width errors to be held below $\pm 0.1\text{mm}$ ($\pm 0.004\text{in.}$).

Powerful, independent hydraulic work holddowns

Each work holddown operates separately. When worksheets of different thicknesses are to be sheared simultaneously, the holddowns grip each worksheet with the same pressure, making sure that the worksheets will not slip during shearing. The shearing accuracy is superior to other machines that use spring type work holddowns. There are plastic feet on the bottoms of each holddown to keep the surface of the worksheet from being scratched.



Blade clearance adjustments

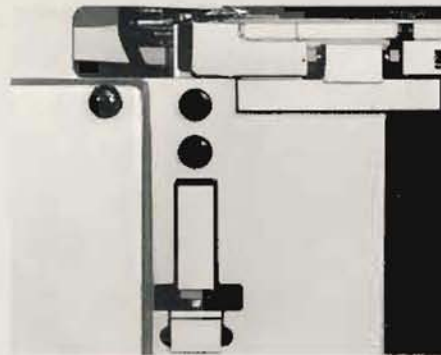
Blade clearance effects shearing accuracy, such as parallelism, burr, and cut surface squareness. Therefore, the right blade clearance must be set for each thickness and material of the worksheet to be sheared.

In the M-series, the blade clearance is easily set by turning the table positioning bolts in either end of the table. This saves time in set up operations.

Lower blade height adjustment with no shims or liners

When installing a reground blade, the blade height must be adjusted so that it is flush with the upper surface of the table.

In the M-series, the blade height can be set by the simple turning of the adjustment bolts on either side of the table. Shims are no longer necessary to adjust your blade height.



Complete safety in operation

Non-repeat safety mechanism

During an operation in single stroke mode, the upper blade of the shear will come to a full stop at its highest position at the end of every shearing cycle. It will not move again until the foot switch is pressed again. This prevents any possible movement of the ram during positioning of the worksheet.

Emergency stop button

Emergency stop buttons are mounted on the front of the machine in addition to the STOP button on the control panel. If an emergency should occur, pushing any one of these buttons will immediately stop the upper blade in its present position.

Other safety devices and features

- * The foot switch has a safety cover to prevent it from being pressed by mistake.
- * Finger guards are located in front of the work holddowns to prevent the operator's fingers from being injured by the holddowns or blades.
- * The drive unit is completely enclosed with covers.

SPECIAL ACCESSORY DEVICES FOR WORK SAVING AND AUTOMATIC OPERATION

Electromagnetic worksheet support



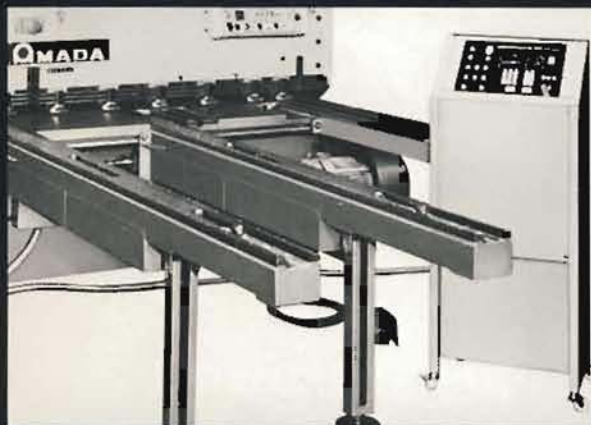
This device supports the worksheet and keeps it from sagging while it is being pushed into the shear. When shearing is completed, the electromagnets are turned off automatically and the sheared blank falls onto the chute. Residual magnetism is not retained in the worksheet.

Pneumatic worksheet support



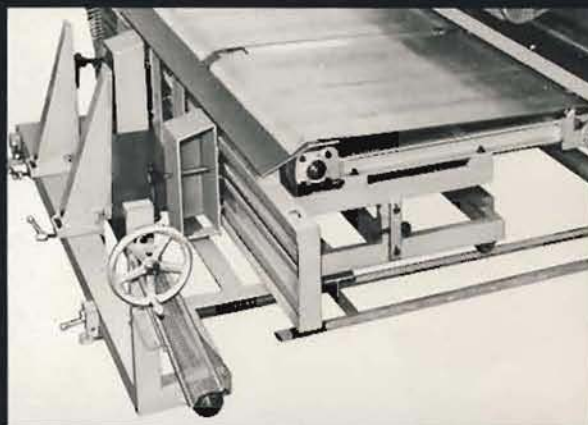
This device is most convenient when shearing thin non-magnetic material. The support bars have plastic rollers so that the worksheet will not be damaged or scratched. An air supply is necessary for this device.

Front gauging system



This is an NC controlled front gauging system. Front gauge positions can be selected by data input through the numeric keypad. The worksheet is correctly positioned by pushing it firmly against the front gauge stops.

Sheet stacker



This unit carries cut sheets on a conveyor and automatically stacks them at the rear of the shear. Scrap is automatically separated by using a selector switch at the front of the shear.

Backgauge retract mechanism (standard equipment on models M-3060 and M-4065).

This device automatically raises the backgauge out of the way when shearing worksheets wider than the maximum travel of the backgauge.

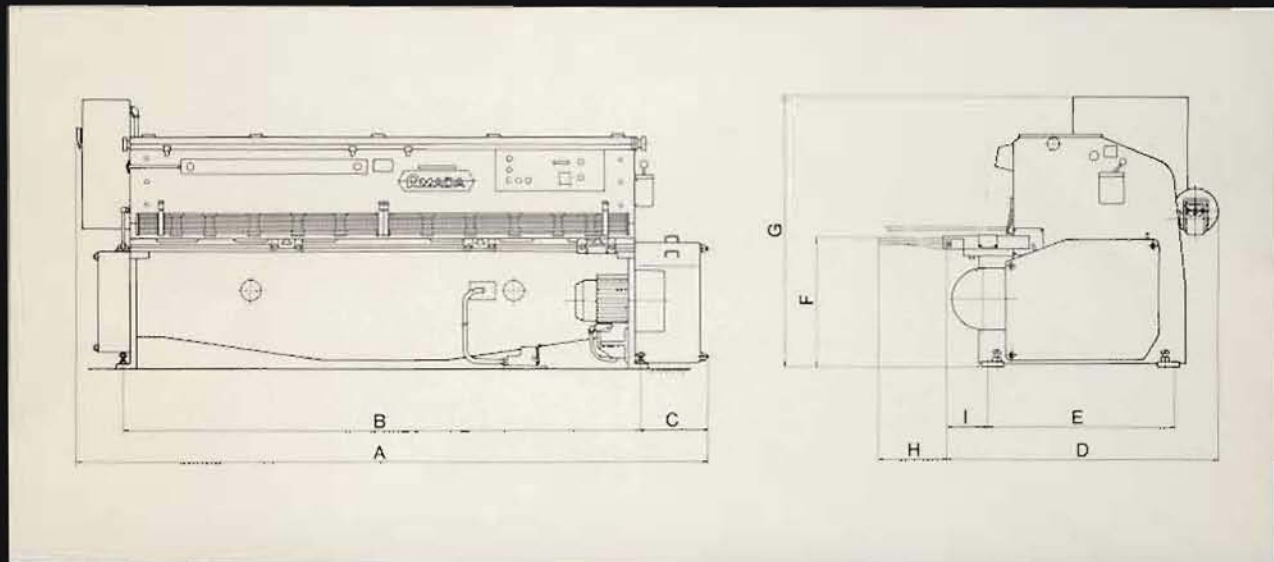
Other special accessories

- Worksheet autofeed
- Return conveyor
- Protractor gauge

SPECIFICATIONS

Unit: mm(in)

Model	M-1245	M-1260	M-2045	M-2060	M-2545	M-2560	M-3045	M-3060	M-4045	M-4065
Item										
Max. thickness of worksheet	4.5	6.5	4.5	6.5	4.5	6.5	4.5	6.5	4.5	6.5
Tensile strength: 45 kg/mm ² (64,000 psi)	(³ / ₁₆)	(¹ / ₄)	(³ / ₁₆)	(¹ / ₄)	(³ / ₁₆)	(¹ / ₄)	(³ / ₁₆)	(¹ / ₄)	(³ / ₁₆)	(¹ / ₄)
Max. cutting length	1240 (48.8)		2000 (78.7)		2500 (98.4)		3070 (120.8)		4055 (159.6)	
Blade length	1340 (52.7)		2300 (90.5)		2800 (110.2)		3380 (133.0)		4430 (174.4)	
Type of blade	Four-edged blade									
Gap depth	65 (2.56)						300 (11.81)			65 (2.56)
Rake angle	1° 28'		1° 18'	1° 28'	1° 18'	1° 28'	1° 18'	1° 28'	1° 18'	1° 28'
No. of strokes (spm)	75	60						50		52
Main motor (kW)	3.7	5.5				7.5		11.0		
Backgauge motor (kW)	0.4									
Backgauge movement range	10 to 1000 (0.39 to 39.37)									
Holddown type	Hydraulic									
No. of holddown units	6		9		11		13		16	
Light beam (No. of bulbs)	40W x 2				40W x 3		40W x 4		40W x 5	
Machine weight	2700	3700	4600	4700	5300	5500	7100	8400	11000	14000
kg (lb)	(5954)	(8159)	(10143)	(10364)	(11687)	(12128)	(15656)	(18522)	(24255)	(30870)



DIMENSIONS

Unit: mm(in.)

	M-1245	M-1260	M-2045	M-2060	M-2545	M-2560	M-3045	M-3060	M-4045	M-4065
A	2270 (89.37)	2350 (92.52)	3165 (124.61)	3245 (127.76)	3680 (144.88)	3745 (147.44)	4390 (172.83)	4560 (179.53)	5445 (214.37)	5580 (219.68)
B	1580 (62.20)	1674 (65.91)	2484 (97.80)		2984 (117.48)		3650 (143.70)		4710 (185.43)	
C	350 (13.78)	345 (13.58)		420 (16.54)	350 (13.78)	420 (16.54)	415 (16.34)	585 (23.03)	410 (16.14)	540 (21.26)
D	1730 (68.11)		1830 (72.05)			1930 (75.98)		1940 (76.38)		2165 (85.24)
E	970 (38.19)	1130 (44.49)				1395 (54.92)		1470 (57.87)	1395 (54.92)	1470 (57.87)
F	790 (31.10)						825 (32.48)			
G	1510 (59.45)				1545 (60.83)		1685 (66.34)	1865 (73.43)	1680 (66.14)	1730 (68.11)
H	800 (31.50)					2820 (111.02)				
I	180 (7.09)	130 (5.12)		230 (9.06)		250 (9.84)	195 (7.68)	190 (7.48)	230 (9.06)	290 (11.42)

Specifications are subject to change without notice.