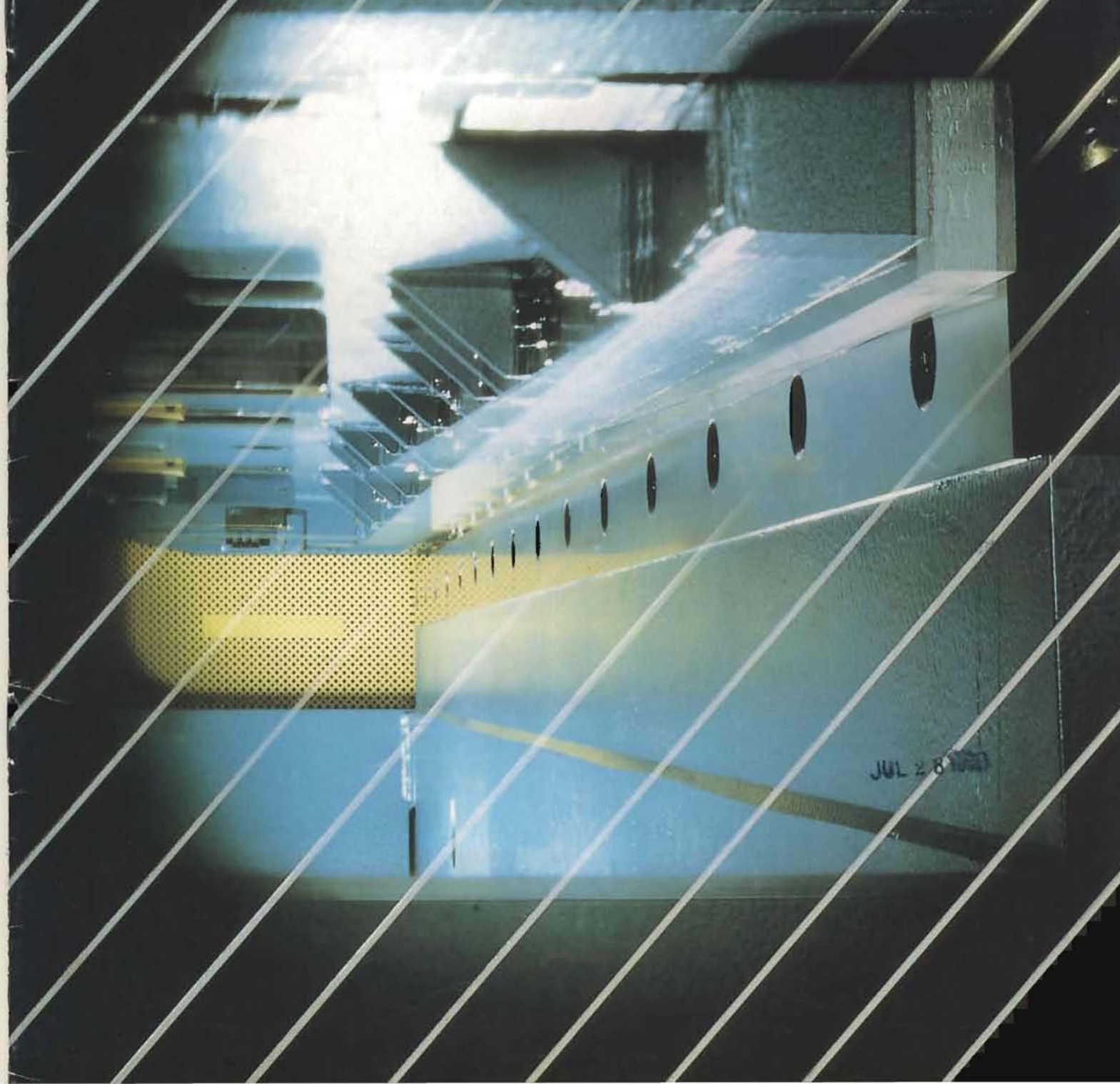


HYDRAULIC SHEAR
H-SERIES





Shearing is the starting point for obtaining accurate products and achieving high productivity.

“Shearing” ----With the use of high technology developed by Amada, we provide a powerful and effective solution to the problems arising when shearing metal.



Model H-3013

After the essential functions of the shearing operation were thoroughly researched and studied, Amada built a high quality gib slide, gap frame type hydraulic shear.



Rake angle and clearance, both which determine the accuracy of the cut, are electronically adjustable.

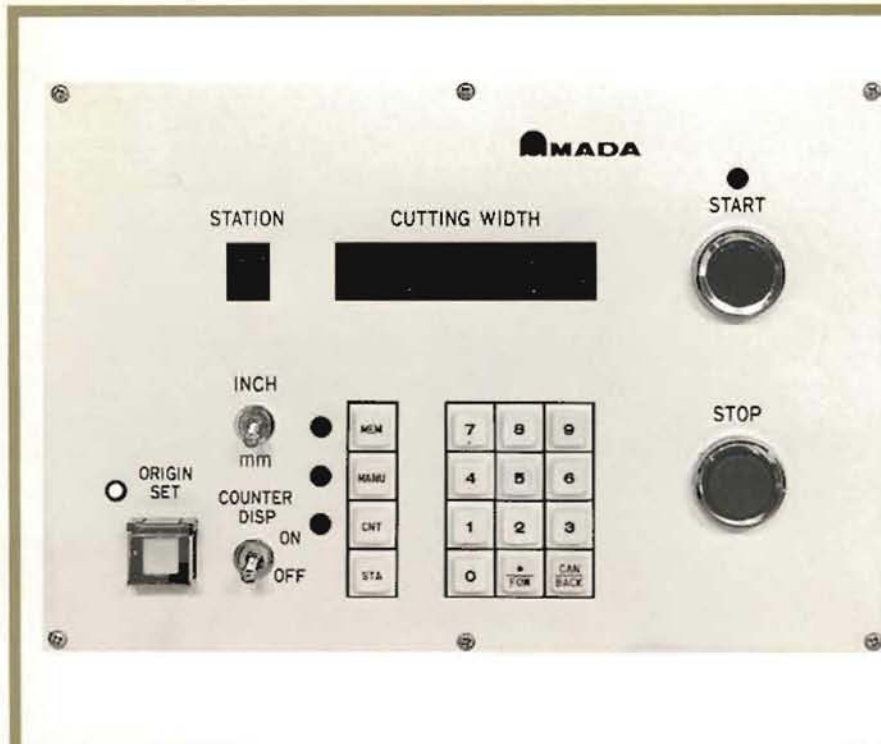
In order to insure high accuracy, it is necessary to set the proper clearance and rake angle for each material type and thickness. Even though this has been well known for a long time, precise adjustment may not have been done because it required a considerable amount of time and skill. Amada's H-Series shear eliminates this problem. A critically important feature of Amada's H-Series shear is that the correct shearing conditions may be set in only a few seconds by pushbutton. In this way, a single shearing machine is capable of cutting a wide variety of materials regardless of their thickness.

Maximum function with minimum effort!

Control of all machine functions is through the front control panel.
This design gives primary consideration to productivity.

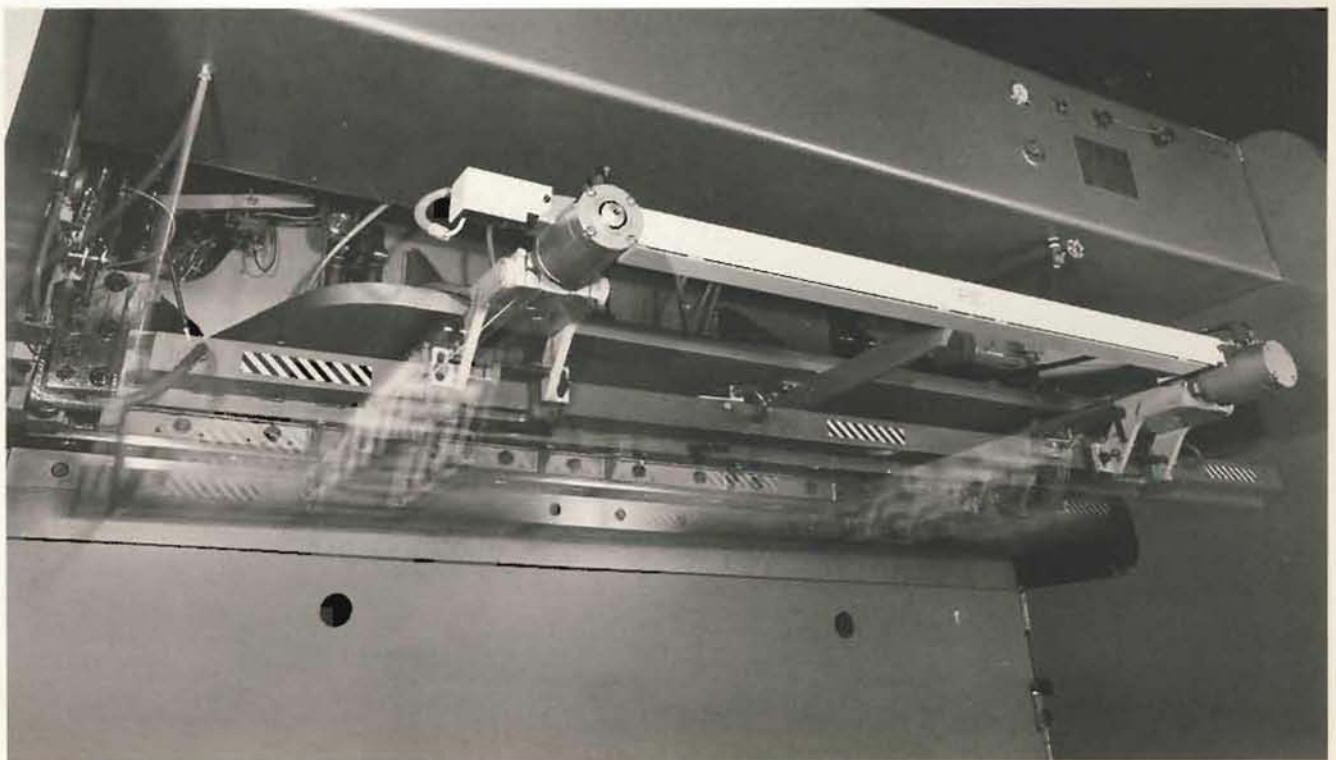


This advanced machine is a product of Amada's engineering skill. Amada's policy of always designing machines from the standpoint of the operator is well demonstrated here.

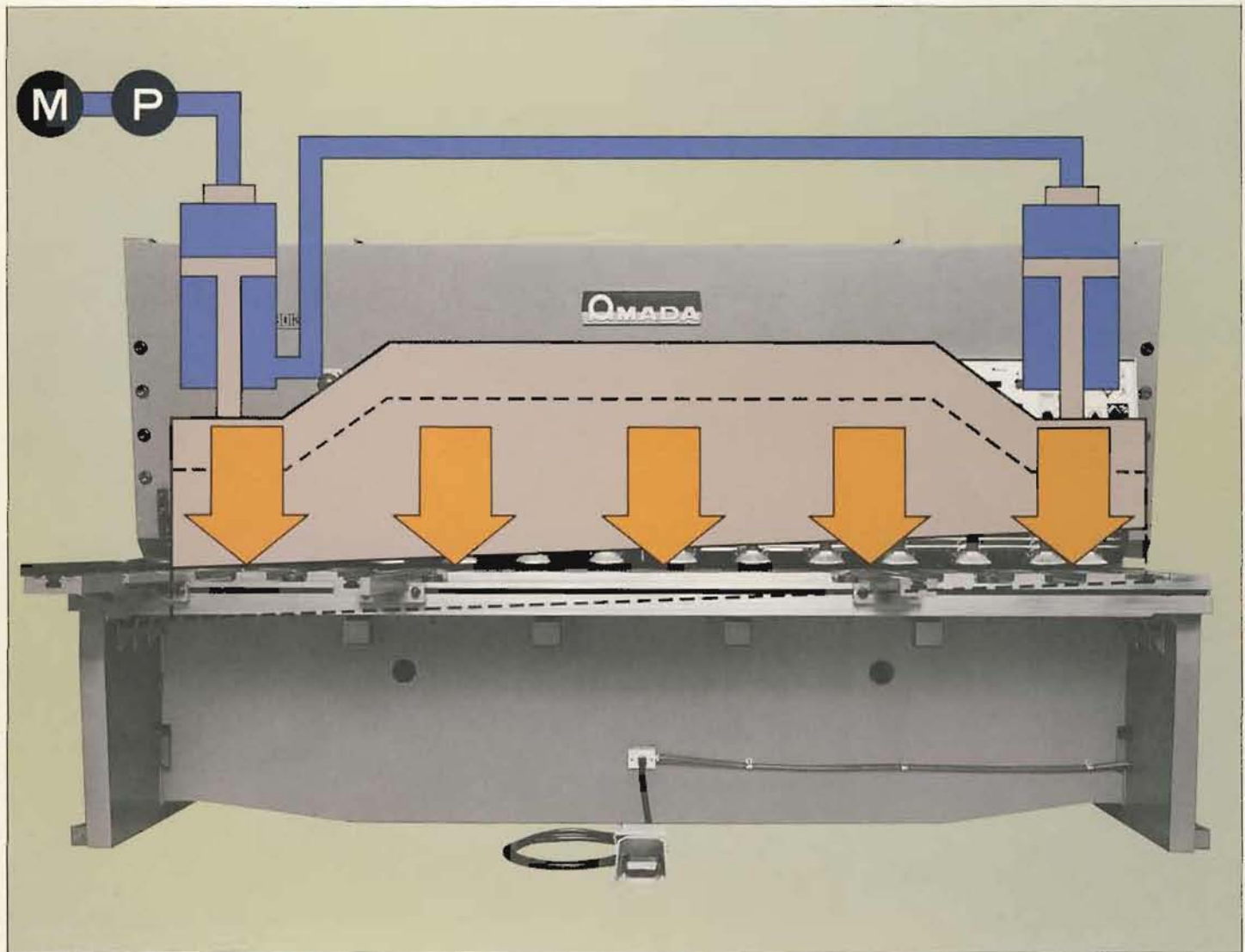


The NC backgauge is standard equipment on the H-Series shear.

A micro-computer controls the backgauge for quick and accurate positioning. The NC backgauge memory capacity is nine positions, input through a tenkey pad. LED-displayed data is clear and easily seen even in bright light. Since all input data is shown on the display, mistakes in entering data are immediately obvious.



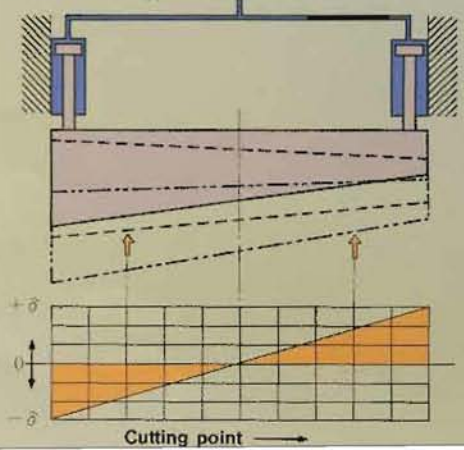
A concept deserving the best machine----- pursuing safety, the highest product accuracy, and productivity from the beginning.



Series-connected hydraulic cylinders minimize frame twist and vibration.

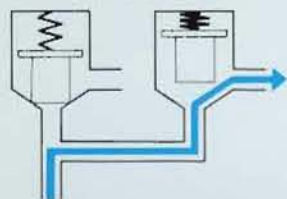
The two hydraulic cylinders that move the shearing blade of the Amada H-Series shear are connected in series. This means that the shearing force is applied evenly over the full length of the cut, creating the best conditions for shearing accuracy. On shearing machines in which the blade cylinders are connected in parallel, the shearing force on the blade is balanced only at the center of the blade. On any cutting point other than the center, the force generated by the cylinder located on the other side of the working cylinder tends to distort the ram and machine frame. This causes uneven edge conditions over the length of the cut, a large camber on the workpiece, and excessive frame vibration.

Parallel-connected type

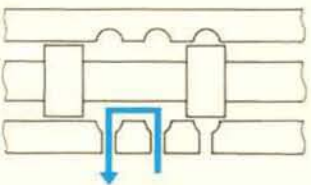
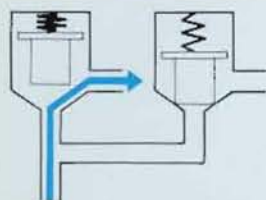
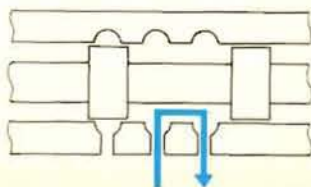




Logic check valve

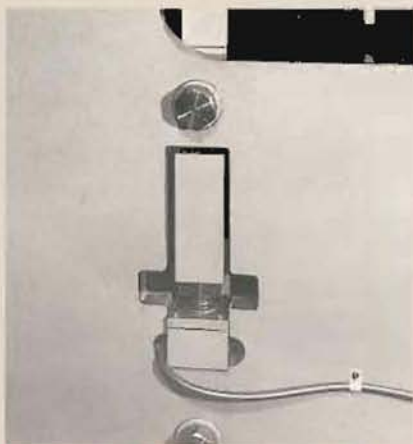


Spool



Logic check valve prevents noise and vibration.

In most shearing machines, the hydraulic fluid flow is controlled by the movement of a spool in the control valve. The direction of the fluid flow is changed instantaneously, which generates a high stress on the hydraulic system. In Amada's H-Series shearing machines, hydraulic fluid flow is controlled by a logic valve, which smooths the flow and suppresses noise and vibration. In addition, the large hydraulic lines hold fluid temperature rise to a minimum, preventing damage to O-rings and seals.

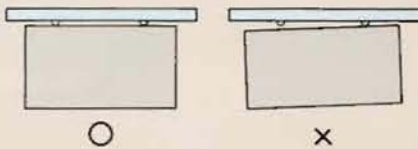


Lower blade adjustment without shims

When a lower shearing blade is replaced, the upper edge of the blade must be adjusted level with the upper surface of the table. In the H-Series shear, the lower blade height can be adjusted by simply turning the jack bolts on the left and right sides of the frame. This is much easier and faster than using shims or liners.

Automatic Shearing

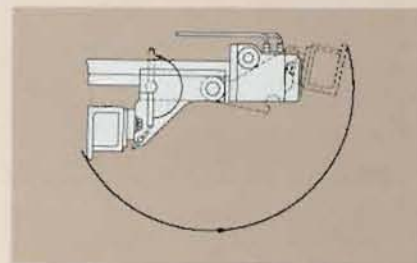
In the automatic mode, the shear operates as soon as the material touches both sensors on the backgauge. It is not necessary to step on the foot pedal.



Material longer than the blades may be cut



The deep gap in the frame and the backgauge pullback feature allow long pieces of material to be easily sheared.

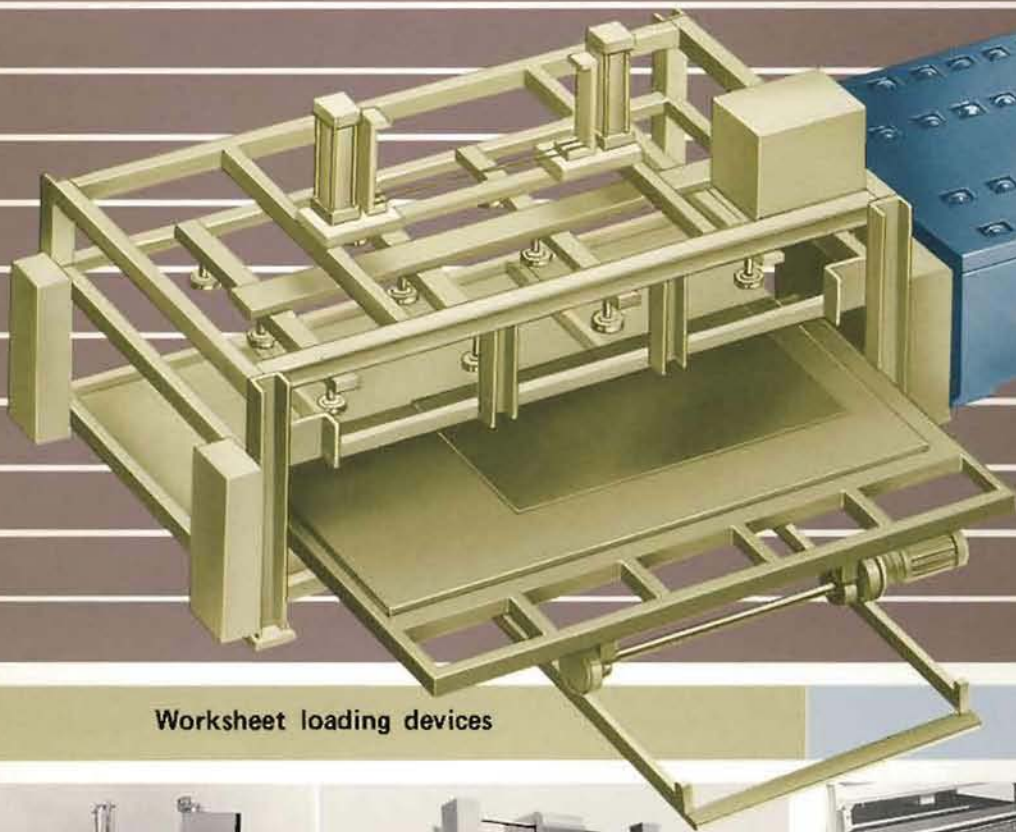
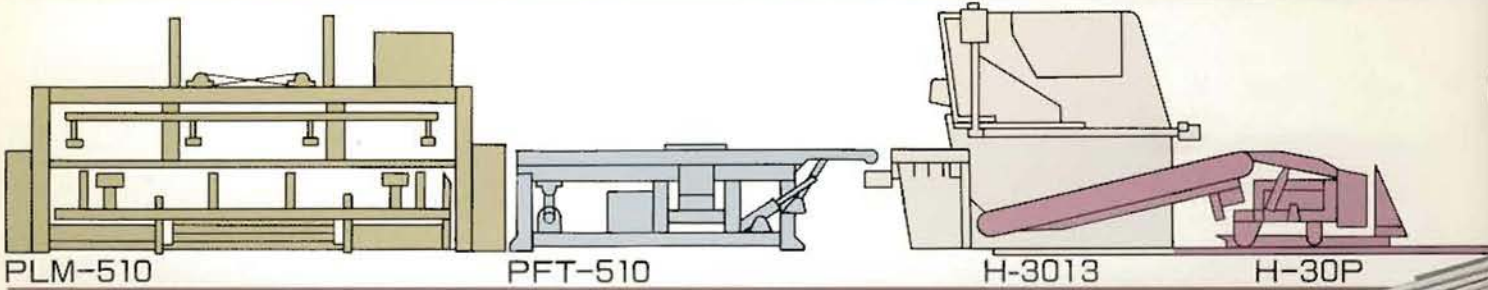


Backgauge swing-up and pullback features

The backgauge may be swung up out of the way when material wider than the backgauge limit is to be sheared. The pullback feature absorbs the shock when the material is butted against the backgauge. Further, this feature retracts the backgauge approximately 10mm (0.39in.) when the upper blade descends, then returns to its previous position when the blade rises to protect the backgauge from excessive stress, therefore, ensuring backgauge accuracy is maintained.

Key to successful shearing automation

Various accessories are available to make the most of the H-Shear.



Worksheet loading devices

Worksheet

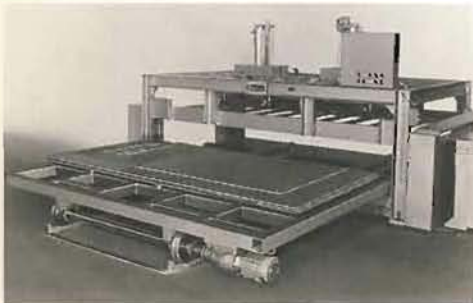


Plate Loading Manipulator PLM-510

This device automatically feeds worksheets of 4' x 8' or 5' x 10' one by one onto the shearing machine table. This enables a single operator to load heavy worksheets into the shear, greatly increasing



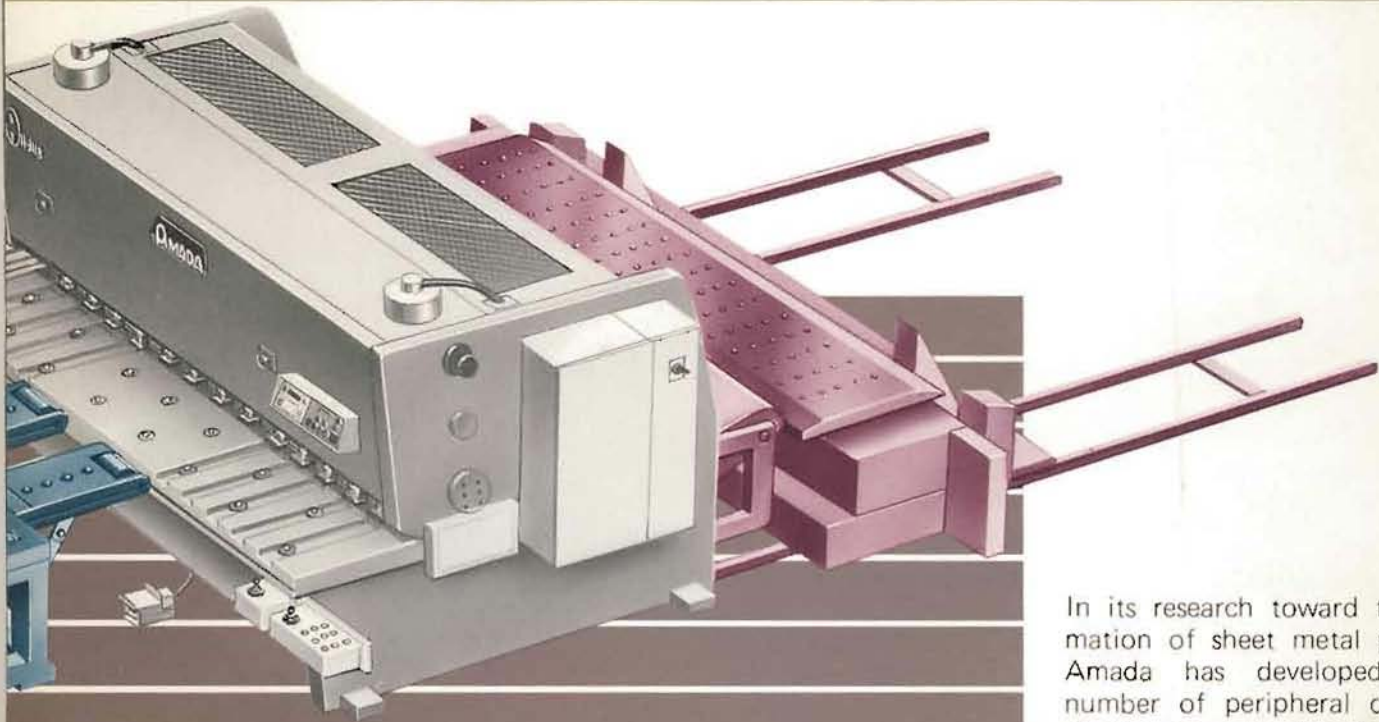
Auto Storage AS-448

This device can store four kinds of worksheets [up to 6.5mm (1/4") thick]. Whenever a worksheet is needed, the lifter rises to the proper shelf, takes the worksheet out, and loads it onto the shear table. The



Plate Feeder Table PFT-510

This table feeds the worksheet onto the shear table. With a simple lever movement, the worksheet is transferred forward or backward and turned easily. One operator can handle heavy worksheets.

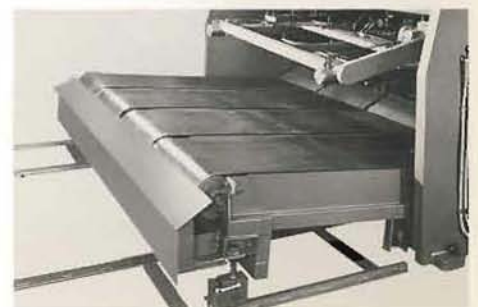
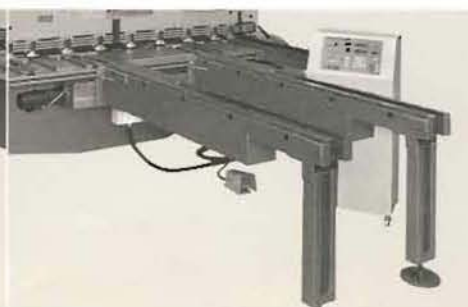
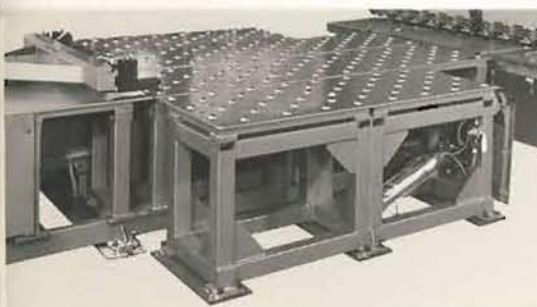


In its research toward total automation of sheet metal processing, Amada has developed a large number of peripheral devices, including sheet feeders and stackers. These devices increase the efficiency of the shearing process. [Please consult Amada whenever you plan automation.]

feeder and positioner

Shear

Worksheet unloading and storage devices



NC Sheet Feeder SF-30

Programmable Front gauge FG-30

Sheet Piler and Return Conveyor

These devices position worksheets on the shear table at high speed with high accuracy. The front gauge shows shearing widths on a digital display. The NC sheet feeder is ready for automatic operation as soon as the shearing width is input through the tenkey pad.

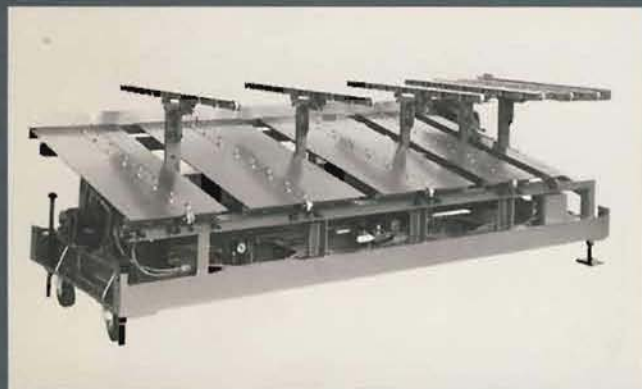
The worksheet cut by the shear is removed and automatically stacked. There are several types of these devices, including a return conveyor which returns cut material to the front of the shear to be sheared

Special accessories and special specifications



Electromagnetic worksheet support

This device eliminates sag of the worksheet in the shear. The magnetic power can be adjusted depending on the thickness of the worksheet.

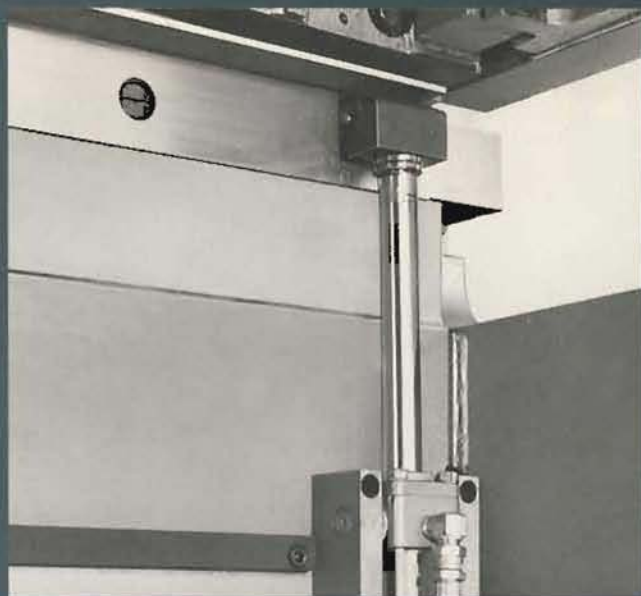


Pneumatic worksheet support

This device is recommended for shearing non-magnetic material. Its supporting arm prevents sag of thin stock and supports the worksheet until shearing is completed. In this way, accuracy is maintained even if the worksheet is long or wide. The support arm has a roller to prevent the worksheet from being scratched.

Extra long front supports and squaring arms with scales

H-Series shearing machines have two one meter (3.28ft) long front supports and a one meter (3.28ft) long squaring arm as standard equipment. Supports and arms of 2, 2.5, and 3 meters (6.56, 8.20, and 9.84ft) length are available. Front supports are also available with scales.

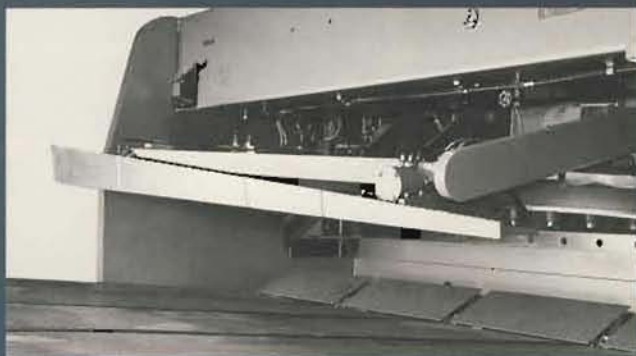


Inverse worksheet clamp

This device holds the worksheet to be sheared against the upper blade. This greatly reduces bow and twist when shearing narrow strips.

Programmable backgauge parallelism adjustment

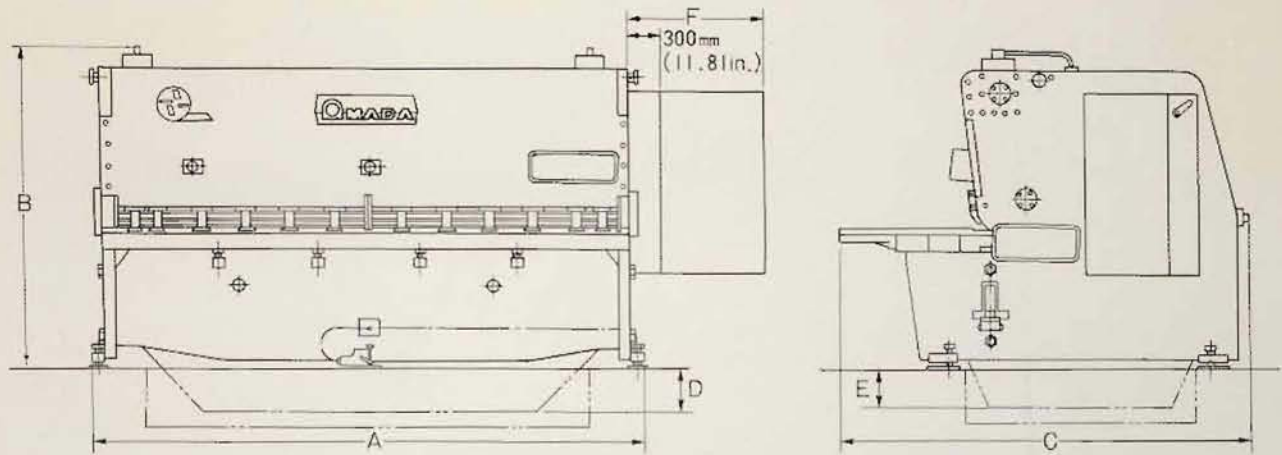
The backgauge parallelism to the shearing blades can be adjusted simply by entering the numerical instructions on the backgauge control panel.



Automatic swing-up backgauge

This feature automatically swings the backgauge upon program command when shearing the worksheet which exceeds the max. travel limit of the backgauge.

SPECIFICATIONS



	H-2565	H-3065	H-4065	H-3010	H-1213	H-2013	H-3013	H-4013	H-3016	H-4016	
A	mm in.	2980 117.32	3480 137.01	4430 174.41	3510 138.19	1730 68.11	2490 98.03	3540 139.37	4490 176.77	3570 140.55	4560 179.53
B	mm in.	1970 77.56	1970 77.56	1970 77.56	2065 81.30	1955 76.97	2030 79.92	2070 81.50	2120 83.46	2255 88.78	2360 92.91
C	mm in.	2190 86.22	2190 86.22	2290 90.16	2065 81.30	2125 83.66	2260 88.98	2260 88.98	2360 92.91	2375 93.50	2775 109.25
D	mm in.	—	—	225 8.86	—	—	—	260 10.24	205 8.07	325 12.80	—
E	mm in.	—	—	—	—	—	—	—	205 8.07	235 9.25	—
F	mm in.	800 31.50			950 37.40	900 35.43	950 37.40			—	

Item	Model	H-2565	H-3065	H-4065	H-3010	H-1213	H-2013	H-3013	H-4013	H-3016	H-4016	
Max. worksheet thickness by tensile strength	45kg/mm ² 64000psi	mm in.	6.5 0.26	10 0.39	13 0.51	16 0.63	19 0.75	24 0.95	28 1.10	32 1.26	37 1.46	
	60kg/mm ² 85400psi	mm in.	5.0 0.20	7 0.28	10 0.39	13 0.51	16 0.63	19 0.75	24 0.95	28 1.10	32 1.26	
	25kg/mm ² 35600psi	mm in.	9.0 0.35	15 0.59	19 0.75	24 0.95	28 1.10	32 1.26	37 1.46	42 1.65	47 1.85	
	With side gauge	mm in.	2550 100.39	3050 120.08	4000 157.48	3050 120.08	1250 49.21	2000 78.74	3050 120.08	4000 157.48	3050 120.08	4000 157.48
	Without side gauge	mm in.	2560 100.79	3100 122.05	4050 159.45	3100 122.05	1300 51.18	2050 80.71	3100 122.05	4050 159.45	3100 122.05	4050 159.45
Blade length	mm in.	2650 104.33	3150 124.02	4100 161.42	3150 124.02	1350 53.15	2100 82.68	3150 124.02	4100 161.42	3150 124.02	4100 161.42	
	Gap depth	mm in.	500 19.69			400 15.75	100 3.94	500 19.69			—	—
Rake angle	Standard	55°-1°30'			55°-2°30'	40°-2°30'	55°-2°30'			40°-3°	40°-2°	
	Minimum	—			0°	—	—			40°	0°	
	Maximum	2°			3°	3°15'	3°			3°30'	3°	
	Adjustment	Motor			Motor	Manual	Motor			Motor	—	
Strokes per minute (50Hz...s.p.m.)		23-50	20-50	15-50	13-50	20-48	15-50	12-50	9-50	12-40	12-40	
Number of holddown units		12	14	18	14	6	9	14	18	12	18	
Main motor	kW	15			22	18.5	30			37		
	HP	20			30	25	40			50		
Backgauge	Movement range	mm in.	10-1000 0.39-39.37									
	Speed	mm/min. in./min.	730 (50Hz)			870 (60Hz)			—			
	Motor	kW HP	0.4			0.5			—			
	Position indication		mm-inch digital readout									
Light beam (No. of bulbs)		8	11			5	7	11				
Machine weight	kg	8900	9500	11000	12800	7500	11500	14200	16500	17000	23000	
	lb	19620	20940	24250	28220	16540	25350	31310	36380	37480	50710	