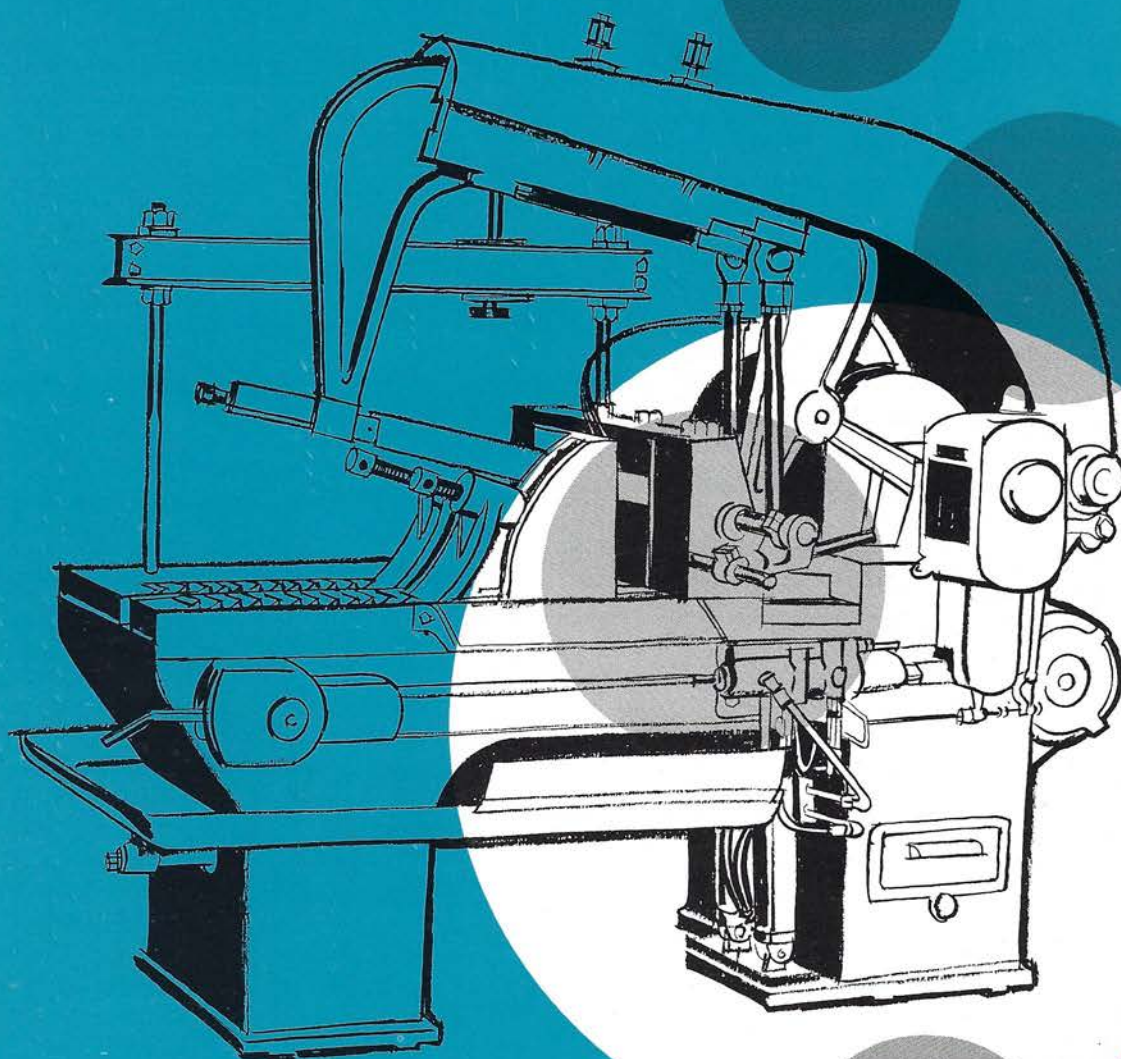


# RACINE HYDRAULIC METAL CUTTING MACHINES



RACINE HYDRAULICS & MACHINERY, INC. • RACINE, WIS. • U.S.A.



## SHEAR CUT

As leaders in progressive development of metal cutting machines, Racine design engineers were the first to originate and develop many of the desirable features found in the metal cutting machine of today.

Racine was first in the application of progressive feed to the reciprocating type of metal cutting machine. It was through the success of this important change in operation that Racine perfected the "shear cut" principle of metal cutting.

This innovation enables the cutting edge of a saw to feed progressively and uniformly, through the metal in a true "shearing" stroke. Each saw tooth takes a long curling chip like an independent cutting tool. Proof of the success of this principle of metal cutting is evidenced by the increased production and greater cutting accuracy experienced in severe tests by steel mills and industrial plants throughout the country.



## CORRECT CUTTING PRINCIPLE

When cutting the full range of metals, different resistances are set up between the saw blade and the metal to be cut. It is therefore essential that the proper rate of cutting feed be predetermined. A simple, ingenious device on all Racine Hydraulic Saws is provided to hydraulically regulate this rate of feed. The blade is applied only as fast as the metal is removed. When the proper feed is used, there is no heavy pressure on the saw blade. The teeth cannot load up, because the controlled feed prevents them from digging into the metal. In this method of cutting, the heel of the blade does not do all the work (as may be the case in ordinary equipment of this kind), and wear on saw teeth is evenly distributed over the entire cutting surface. Result is a smooth, accurate, oil-cushioned, vibrationless operation.

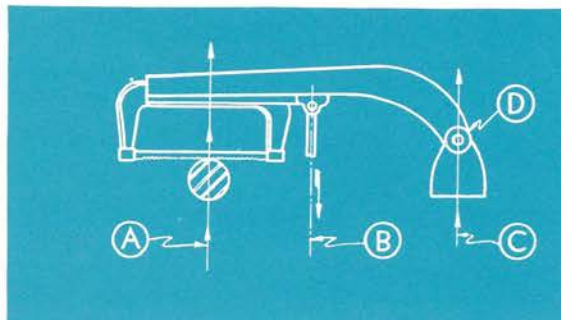
## HYDRAULICS

Racine machines are true Hydraulic Feed Machines. On Racine Saws, hydraulic pressure carries the blade downward throughout the cutting stroke only. During the cutting stroke, the feed is applied progressively. This action is accomplished without the use of cams, levers, or any other mechanical mediums. Since the blade is correctly applied, it cuts faster, more accurately and lasts longer.

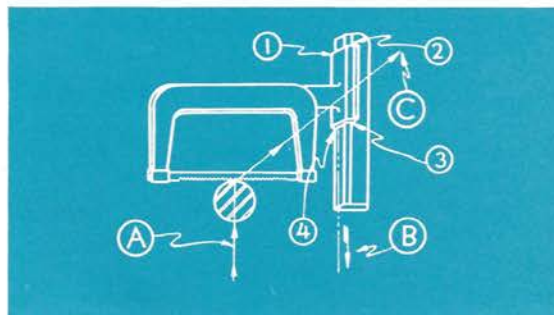
Racine "Pivoted Arm" Construction

VERSUS

"Horizontal Arm" Construction



With D as the pivot point and B the direction of feed pressure, it is apparent that opposing pressures will be straight up at A and C. Pressure from material is taken directly by saw frame slide bearing and by non-rotating pivot bearing, which never requires take-up or adjustment.

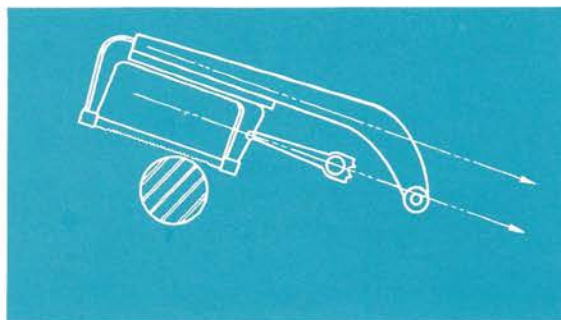


In this construction, feed pressure at B is downward. Opposing pressure at A is upward but is transmitted at right angles to C and upright column bearings, in such a manner as to cause a cocking or binding tendency. Bearings at 1, 2, 3 and 4 are subject to wear and require adjustment.

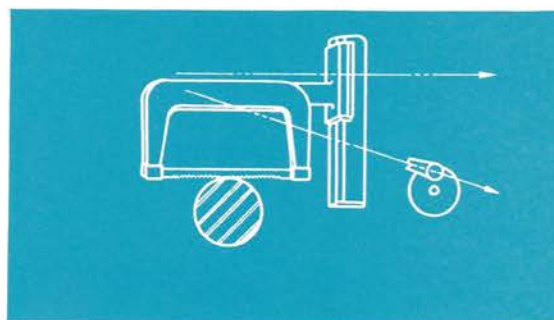
Racine "Straight Line" Connecting Rod Pull

VERSUS

"Angular" Connecting Rod Pull



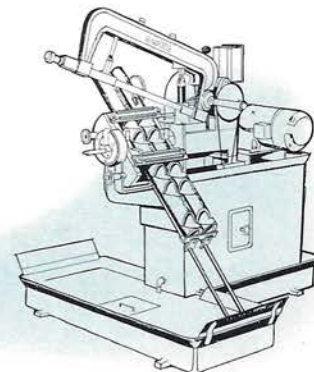
Arrows show that direction of saw frame movement and connecting rod pull are practically in the same plane. This tendency of two lines to remain parallel exists at any height of the saw arm as it passes through its arc. Construction permits connecting rod to be attached in a straight line with the saw frame and not at one side.



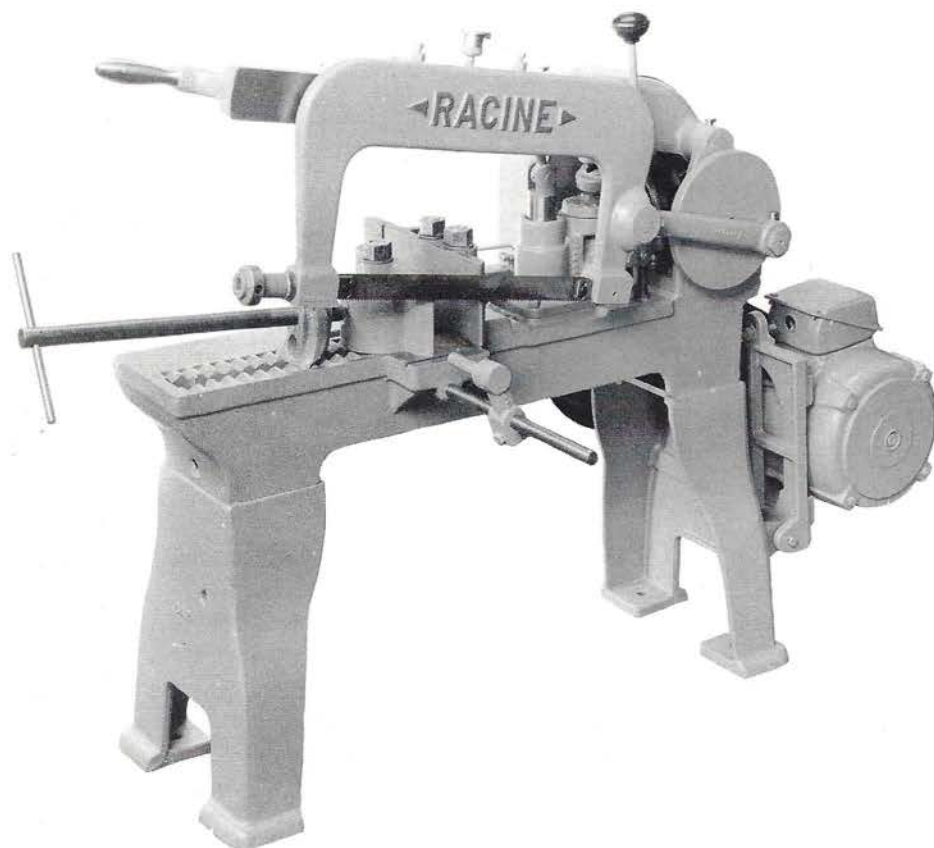
Line of travel of reciprocating frame is obviously at an angle to the line of connecting rod pull. Thus, connecting rod must be attached at the side of saw frame.

Angle of deviation between these two lines will vary according to the height of the saw arm in its vertical, unpivoted movement.

Ninety percent of all metal cutting reciprocating saws are used for the cutting of bar stock. Racine engineers, through years of research, found it desirable to incorporate in the construction of Racine Hydraulic Saws, two basic principles of construction — "Pivoted Arm" and "Straight Line" connecting rod pull.





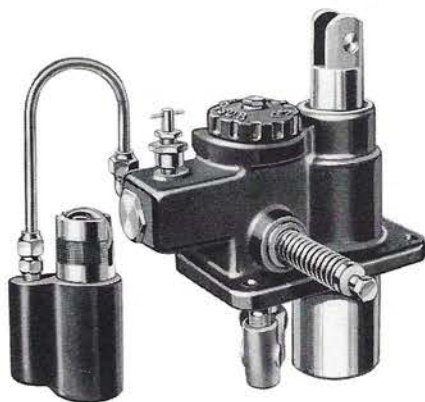


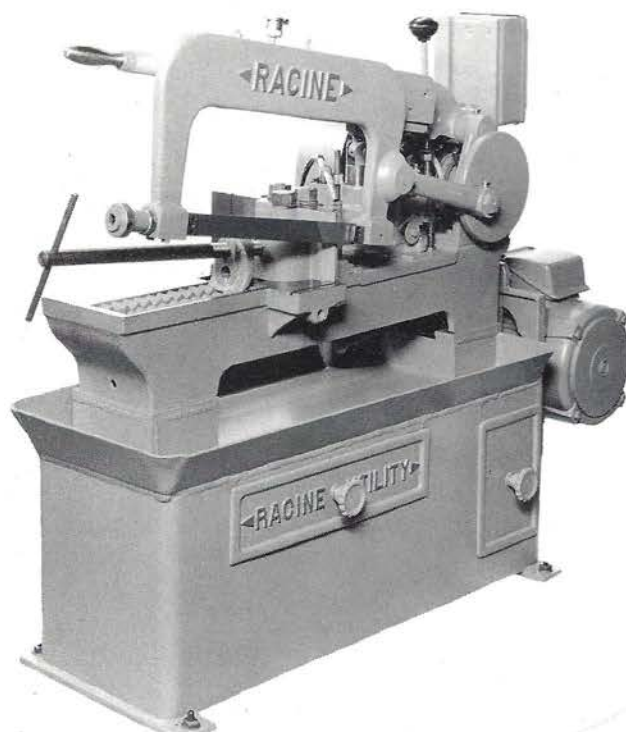
## MODEL 66 SERIES

A modern shop saw designed for all around metal cutting in the tool room or production plant. It supplements the high-priced production machines in the tool room and maintenance departments. It will do all the cutting, from tough tool steel and dies to mild bars, tubing and structural shapes. Racine Utility Saws are a modern development in the design of metal cutting machinery and in the pioneering work of Racine in Oil Hydraulic systems. This simplified system insures accurate feed and pressure control. Each machine is oil-cushioned in operation with feed and control mechanism self-lubricated. No train of gears, levers and ratchet devices to get out of adjustment.

## HYDRAULIC SYSTEM

The hydraulic feed and control system (used on Dry Cut as well as Wet Cut machines) is built into a simple, compact assembly readily removable. The system is leak-proof and packless — all interior parts are self-lubricated — there is nothing to wear or get out of adjustment. To exert feeding pressure, a simple piston pump supplies oil under pressure to the main feed cylinder. Pressures are controlled by a single graduated dial. The rate of feed is controlled by a throttling valve. This design provides a simple, trouble free, oil-cushioned operation with longer life of blades and greater accuracy.





## CABINET BASE, WET CUT

The principle of operation and working parts of Dry Cut and Wet Cut types of machines are the same except that the Wet Cut machines run at higher speeds and have large cabinet base for coolant reservoir and coolant pump. Wet cut utility models are equipped with a two-speed V-belt drive or a four-speed gear shift drive. This drive is an integral part of the motor, completely enclosed with hardened steel gears running in oil and ball bearings free from dust, grit and dirt. All machine bearings are bronze bushed. Cutting speeds 140 strokes per min. for mild Steel, 100 strokes for mild Alloys, 70 strokes for tool Steel and tough Alloys, 35 strokes for material such as Titanium, Monel, etc.

We recommend the four-speed model for cutting tough Alloys, tool Steels and high-speed Steels and the two-speed model for general shop maintenance and auxiliary cutting.

## MODEL 66D2-66W2-66W4

**TWO-SPEED MOTOR DRIVE** . . . Motor at rear of machine mounted on adjustable platform for belt take-up. Two-Speed V-Belt drive from motor to ball bearing pinion then driven by chain from pinion to crankshaft.

**SAW FRAME AND GUIDE** . . . The guide arm on which the saw frame slides is a rectangular cast iron bar giving exceptionally wide bearing surface. The saw frame is fitted with a cast iron gib for vertical adjustments and laminated shims for horizontal adjustments. Frame and guide are counterbalanced and cannot fall.

**BASE** . . . (on wet cut models) are of heavy fabricated ribbed steel construction for extra strength.

**TABLE** . . . Heavy duty — ribbed — close grained — cast iron.

**SWIVEL VISE** . . . is quick acting — self-positioning type for cutting any angle up to 45°.

**COOLANT SYSTEM WET CUT** . . . Fabricated steel base provides large coolant reservoir and a separate dry compartment for coolant pump. There is a wide chip pan — open for easy cleaning. Flexible coolant line — adjustable for direction of flow.

**BEARINGS** . . . Extra large bronze bushed — accurately press fitted — used on all rotating shafts. They are lubricated type — each designed with extra large area for its particular function.

**BLADE HOLDERS** . . . new improved type made of steel with hardened pins for holding blade under proper tension and socket head screws to position and rigidly clamp blade to aligning surfaces.

**HEIGHT GAUGE** . . . Adjustable—limits height to which saw frame will rise.

**STOCK GAUGE** . . . for cutting multiple pieces of same length — substantially built — readily adjustable.

**LIFT** . . . on non-cutting stroke hydraulically raises saw frame and relieves pressure from teeth and blade.

**AUTOMATIC KNOCKOUT** . . . At the completion of each cut — the motor is stopped and the saw frame automatically rises to its highest point.

**SAFETY GUARDS** . . . completely cover all belts and pulleys — and are readily removable.

## UTILITY SAW SPECIFICATIONS

	DRY CUT	WET CUT
Rated capacity	6" x 6"	6" x 6"
Actual capacity	6 3/8" Rd.	6 3/8" Rd.
Capacity at 45°	6" x 4"	6" x 4"
Blades, all models	14" long, 1 1/4" wide	4 or 6 teeth per inch
Stroke	5"	5"
Speeds — (2-speed models)	70 and 100 S.P.M.	100 and 140 S.P.M.
Speeds with transmission (4-speed model)		35-70-100-140 S.P.M.
Motor A.C. or D.C.	1 H.P. 1200 R.P.M.	1 H.P. 1200 R.P.M.
Motor characteristics 25 or 50 cycle AC.	1 H.P. 1450 R.P.M.	1 H.P. 1450 R.P.M.
Floor space, motor driven	15" x 48"	17" x 48"
Height from floor to top of table	21"	21"
Shipping weights, motor driven	550 lbs.	750 lbs.
Four speed		825 lbs.

Note — 4-speed machines must be equipped with a motor at our plant. This motor will include a four-speed gearshift drive.

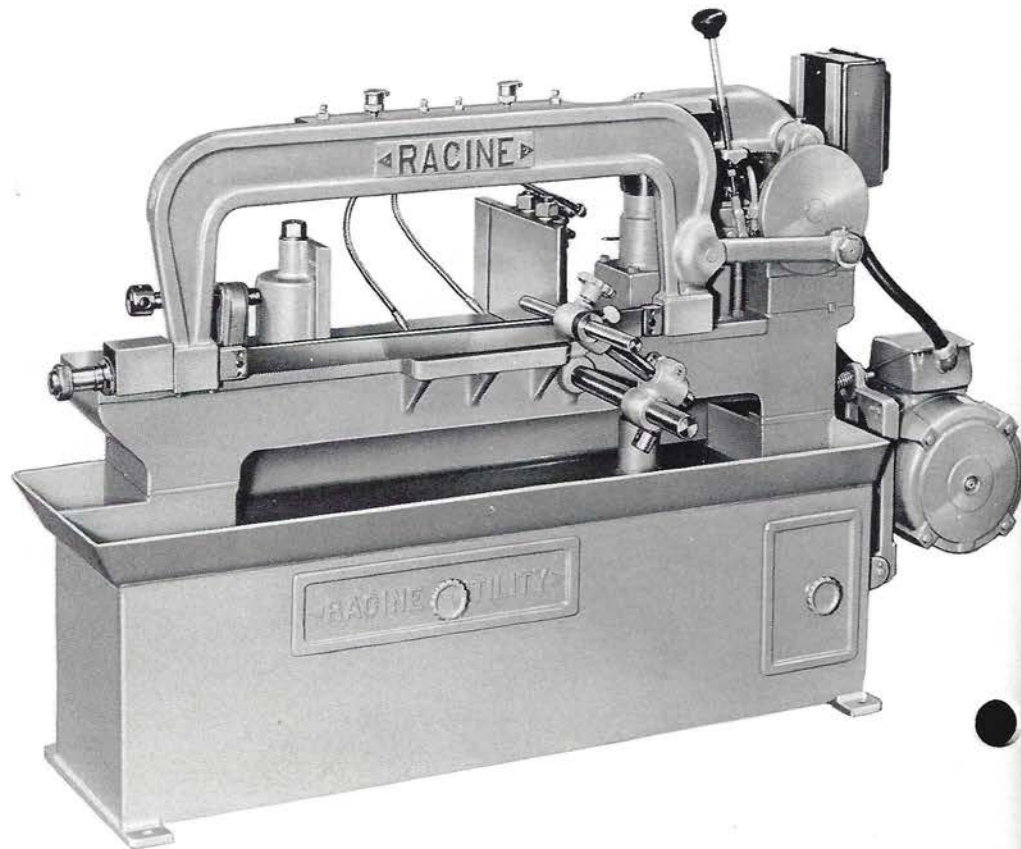




## LOW COST... LARGE CAPACITY

The Model 816 combines the important features of wide utility and large capacity. It will handle the full range of general cut-off work from tough tool steel and dies to mild bars, tubing, and structural shapes up to 8" x 16".

A simple limit switch allows an efficient drive, eliminating the need of a clutch. There are no trains of gears, levers and ratchet devices. At the completion of each cut the motor is stopped, and the saw frame automatically rises to its highest point.



### 1. SWIVEL VISE

Quick acting self-positioning type for cutting any angle up to 45°.

### 2. COOLANT SYSTEM

Provides large coolant reservoir and separate dry pump compartment. Coolant is adjustable for direction of flow.

### 3. WIDE CHIP PAN

Open for easy chip removal.

### 4. SAW FRAME AND GUIDE

The guide arm on which the saw frame slides is a rectangular cast iron bar giving exceptionally wide bearing surface. The saw frame is fitted with cast iron gibs for vertical adjustment and laminated shims for horizontal adjustments. Frame and guide are counter-balanced and can not fall.

### 5. BASE

Is of heavy fabricated ribbed steel construction for extra strength.

### 6 TABLE

Is heavy duty — ribbed — close grain — cast iron.

### 7. BEARINGS

Extra large bronze bushings — accurately press fitted — used on all rotary shafts. They are lubricated — and each is designed with extra area for its particular job.

### 8. BLADE HOLDERS

Are made of steel with hardened pins for tensioning blade and socket head screws to position and rigidly clamp blade to aligning surfaces.

### 9. HEIGHT GAUGE

Adjustable — limits height to which saw frame will rise.

### 10. STOCK GAUGE

For cutting multiple pieces of same length. Substantially built — readily adjustable.

### 11. AUTOMATIC KNOCK-OUT

At the completion of each cut — the motor is stopped and the saw frame automatically rises to its highest point.

### 12. LIFT

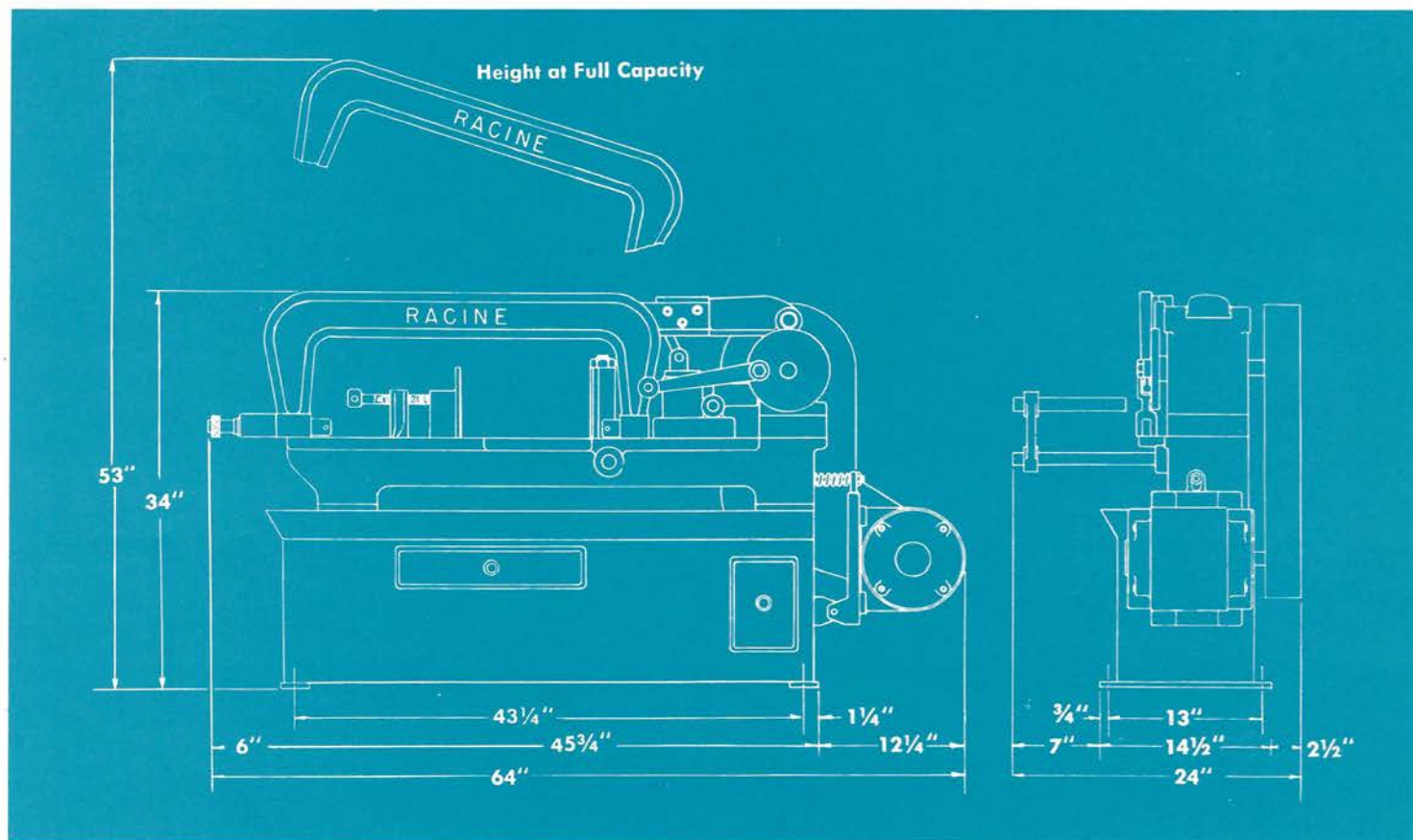
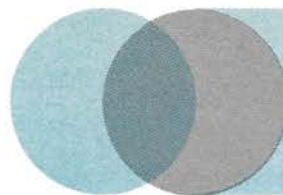
On non-cutting stroke hydraulically relieves pressure from blade.

### 13. SAFETY GUARD

Completely covers all belts — chains — sprockets — and is readily removable.

### 14. HYDRAULIC FEED AND CONTROL SYSTEM

Built into a simple — compact assembly. To exert feeding pressure — a simple piston pump supplies oil under pressure to the main feed cylinder. Pressures are controlled by a single graduated dial. The rate of feed is controlled by a small throttling valve. This feature provides controlled oil-cushioned cutting for greater accuracy and speed with longer blade life.



## SPECIFICATIONS

Rated Capacity ..... 8" x 16"

Capacity at 45° ..... 8" x 10 1/2"

Blades ..... 24" long x 6 teeth per inch  
21" long x 6 teeth per inch

Stroke ..... 5"

Speeds—2-speed model... 100 and 140 SPM

Speeds—  
4-speed model... 35, 70, 100 and 140 SPM

\* Motor—2-speed model..... 60 cycle,  
A.C. and D.C. 1 H.P., 1200 RPM

\* Motor—4-speed model..... 60 cycle,  
A.C. and D.C. 1 1/3 H.P., 1200 RPM,  
gear shift drive

Floor space ..... 24" x 64"

Height from floor to top of table..... 21 1/4"

Shipping weight—2-speed model.... 600 lbs.

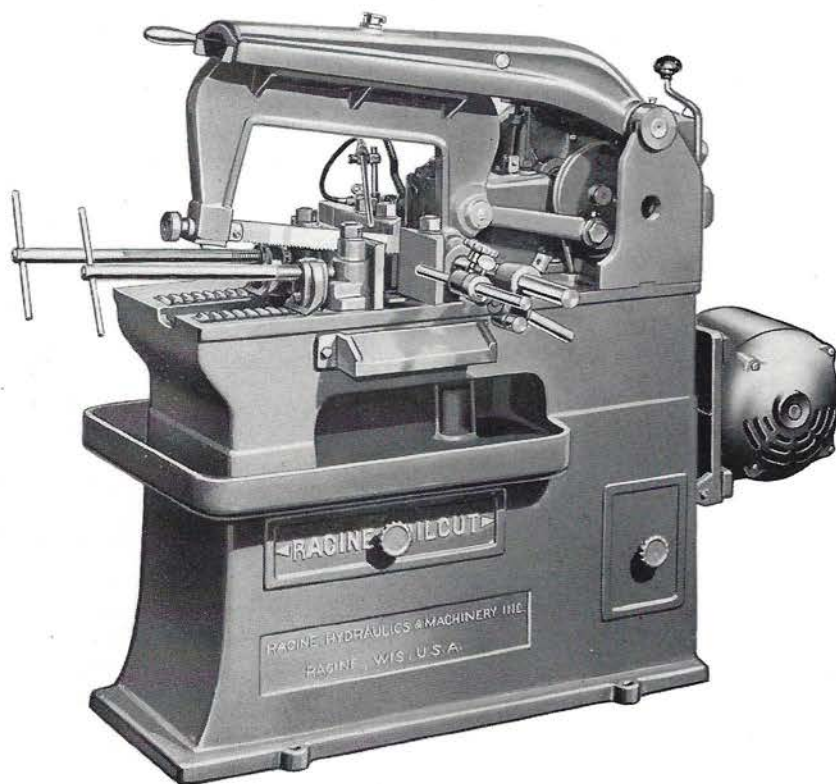
Shipping weight—4-speed model.... 650 lbs.

The following chart gives some examples of machine performance:

Material	Size	Cutting Time
SAE 52100	7 1/8" O.D. x 5 3/8" I.D.	16 min., 45 sec.
SAE 4615	5 1/8" O.D. x 3 3/4" I.D.	5 min., 30 sec.
SAE 1020 CRS	7 1/2" Diameter	20 min.
Boiler Plate	1 1/2" x 14"	8 min., 30 sec.
Structural "I" Beam	7" x 16"—40 lbs.	10 min.
Structural "I" Beam	5" x 12"—32 lbs.	8 min.
Angle Iron	6" x 6" x 3/8"	2 min., 20 sec.
Angle Iron	6" x 4" x 3/8"	1 min., 55 sec.
Channel Iron	8"—18 lbs.	2 min., 20 sec.

\* Four-speed machines must be equipped with a motor at our plant. This motor will include a four-speed gearshift drive. Motor characteristics for other than 60-cycle installations are special, and can be supplied in 25 or 50-cycle A.C. 1 H.P., 1450 R.P.M. for either the two-speed or four-speed model.





## MODEL 66HD

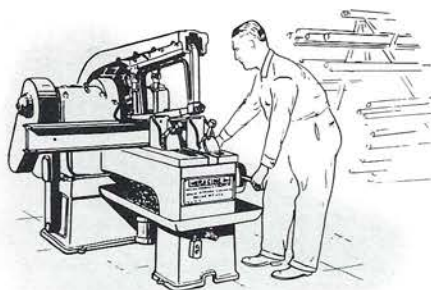
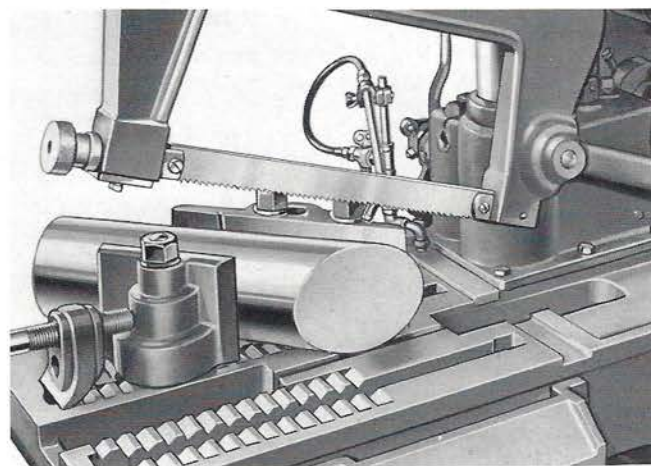
This machine of rugged construction and harmonious lines reflects the complete application of modern machine tool design.

Here is a machine embodying these important features:

1. Single lever control of feed, clutch, rapid traverse and neutral operating positions.
2. Self-compensating, flexible hydraulic feed which regulates itself automatically to the kind, size and shape of work.
3. Simple, yet sensitive adjustments for cutting of thin-walled tubing or solid bar steel, soft metals or tough alloys.
4. Extreme rigidity of construction to insure remarkable cutting accuracy.
5. High speed cutting capacity for volume production and low cost shop service.
6. Compact, precision built, oil-cushioned smoothness. All essentials "built-in" and all working parts running in oil.

## VICE JAWS

Each machine is equipped with two sets of vise jaws for clamping stock on either side of the blade. Movable jaws are quick acting. One set swivels to hold work at any angle up to 45°. See illustration below.





## SPECIFICATIONS

Capacity Rated .....6" x 6"  
 Actual .....6" x 6" or 6<sup>5</sup>/<sub>8</sub>" rd.  
 At 45° .....4" x 6"  
 Stroke .....5"  
 Speeds...3-speed; 70, 100, 140 Strokes per min.  
 Blades.....14" x 1<sup>1</sup>/<sub>4</sub>"—4 to 6 teeth per inch  
 Floor Space .....Motor Driven 24" x 52"  
 Height—To Table Top.....26"  
 Weights—66HD arranged for motor but without  
 motor or electrical equipment..1200 lbs.



### THE HYDRAULIC UNIT

In this unit is concentrated the entire hydraulic system. It is self-contained, self-lubricated, easily removable. No packing is required as complete and direct drainage to oil reservoir is provided. Single lever operates clutch into "Feed," "Neutral" and "Return" positions. Graduated dials control feed and pressure. The control is simplicity itself.



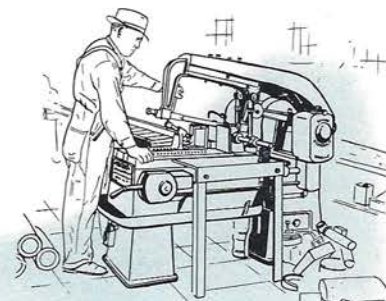
### SAW GUIDE

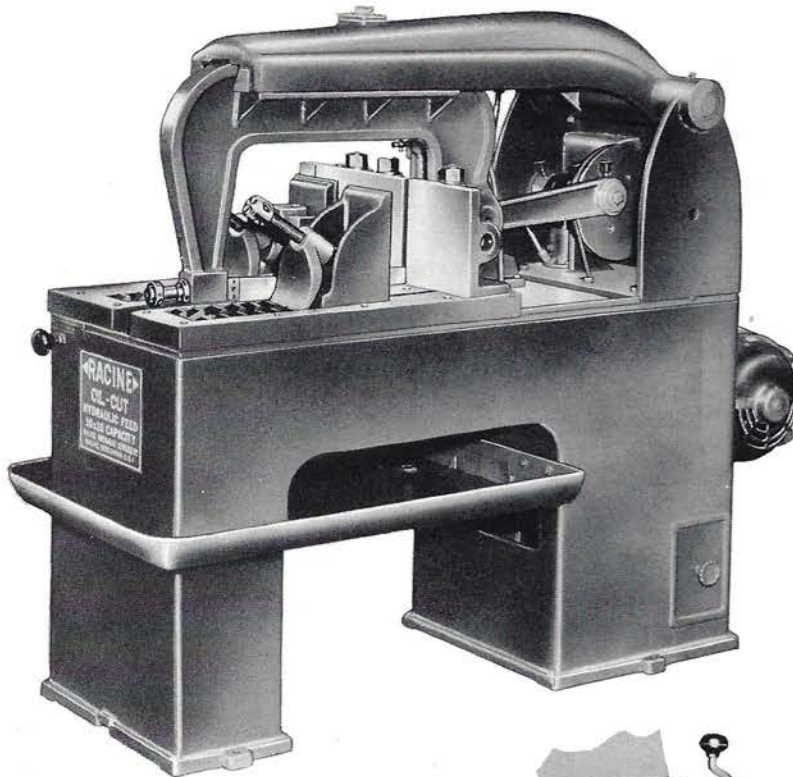
Is extra heavy cast iron "V" type—heavily webbed to provide maximum rigidity. Two cast alloy iron gibs eliminate bearing surfaces in the guide by carrying the sliding movement of the frame on all surfaces. Gibs are replaceable and one is adjustable for bearing take-up. One central oiling point lubricates all bearing surfaces by oil grooves.



### SAW FRAME

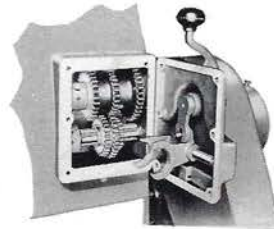
Designed as a ribbed T section to withstand maximum blade tension without distortion. Two special alloy gibs carry the frame in the guide. An unusual width of slide bearing area self-centers the blade under heaviest feed pressure, insuring closest accuracy, seldom requiring adjustment.





## MODEL 60C

This husky, all hydraulic machine combines the important features of wide utility and large capacity. Wherever metal is machined, it will handle the full range of general cutting-off work in all types of metals up to 10" x 10".



### THREE-SPEED TRANSMISSION

A built-in, three-speed, sliding gear transmission develops the proper speeds for the cutting of all classes of metal. Shifting is accomplished by means of a convenient lever. Gears run in a bath of oil to insure long life with minimum maintenance and low upkeep cost.



### HYDRAULIC UNIT

Rapid traverse, lift on non-cutting stroke, feed and pressure control are all smoothly accomplished by this compact, simple assembly. The use of high tensile hydraulic iron insures perfect sealing and freedom from oil leaks. In the event of accidental damage, the entire unit can be easily replaced.



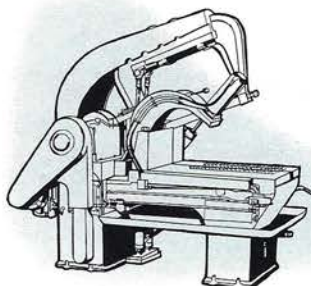
### SWIVEL VISE

A standard swivel vise provides for cutting at any desired angle up to 45°. The vise jaws are removable to permit clamp holding of odd shapes and special work. These jaws, quick-acting and manually operated, slide in table plates which are replaceable.

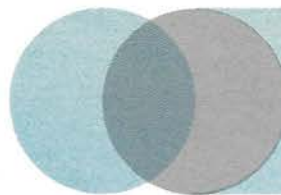


### SAW GUIDE

This heavy duty saw guide with widely spaced back bearings holds the ribbed saw frame and blade accurately in line with the work. Wide "V" type adjustable gibbs permit take-up for wear. Heavy webbing of guide provides maximum rigidity in operation.







## SPECIFICATIONS

Rated Capacity .....	10" x 10"
Actual Capacity .....	10 <sup>3</sup> / <sub>4</sub> " Rd. Stock Only
Capacity at 45° .....	6" x 10"
Blade Length .....	18"
Stroke .....	5"
Strokes per Minute .....	70 - 100 - 140
Motor .....	3 H.P. - 1200 RPM
Height—floor to table top .....	31"
Floor Space .....	35" x 75"
Approximate Weight .....	2500 lbs.

## RUGGED CONSTRUCTION

The design of this machine, developed through long experience, provides simple, heavy duty parts throughout the unit. Wide, thick, replaceable table plates, a sturdy swivel vise and a built-in three-speed, sliding gear transmission are all standard equipment. The saw guide is heavily ribbed and the main shaft bearing is wide and heavy, to maintain perfect alignment of blade to work. Saw frame is carried in wide "V" type gibs with simple, easy adjustment for wear.

## WIDE APPLICATION

This fully hydraulic machine is a consistent and dependable performer over the wide range of general cutting demanded in the average metal working shop. It is long on steady operation and low on maintenance because it has few moving parts and because its vital mechanisms operate in oil.

## HYDRAULIC OPERATION

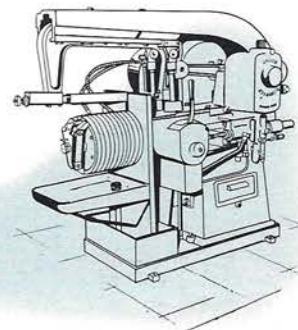
Feed and pressure control, rapid traverse and lift on non-cutting stroke are all hydraulically operated. Feeding action of the blade is progressively applied throughout the cutting stroke. This oil-cushioned progressive feed protects the blade against undue strain and flexing. Thus, blades last longer, producing more accurate cuts at lower cost per piece.

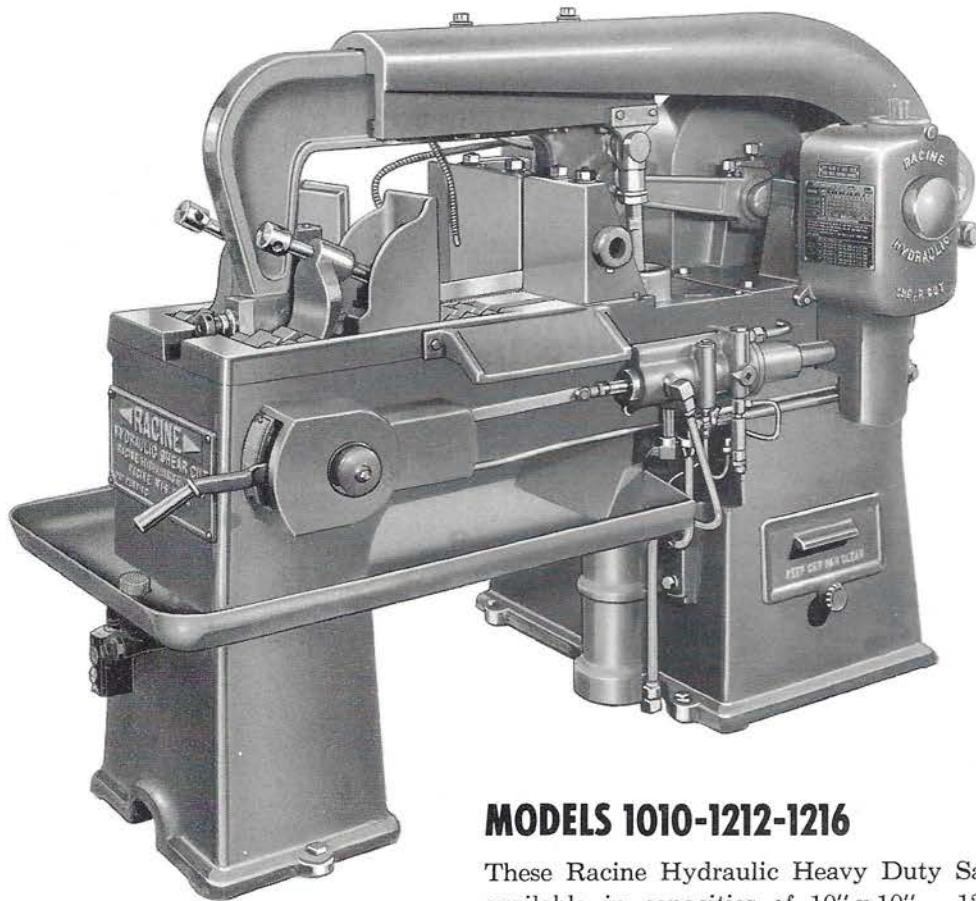
## EASY TO HANDLE

A single lever in an easily accessible side position operates the clutch to fully activate the machine. A hand knob at the front controls the lowering of frame and blade for measuring cut-off lengths of stock. Knock-out may be set to limit upward travel of saw guide to avoid time waste between cuts. An adjustable stock gauge is standard equipment.

## HYDRAULIC VISE

This machine can be supplied with hydraulic vise at extra cost.

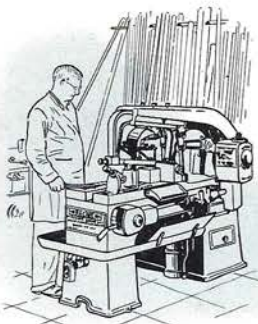




## MODELS 1010-1212-1216

These Racine Hydraulic Heavy Duty Saws are available in capacities of 10" x 10" — 12" x 12" and 12" x 16".

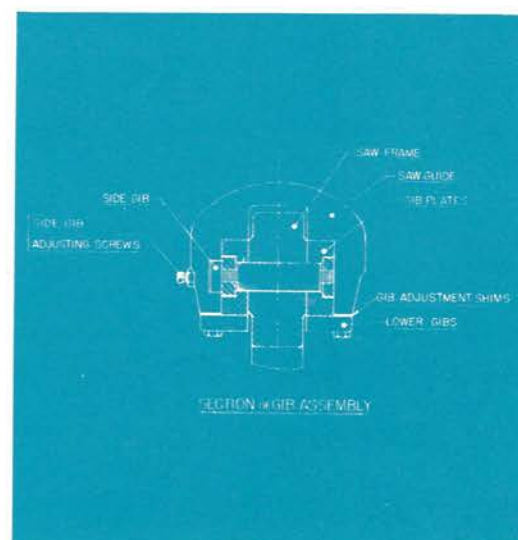
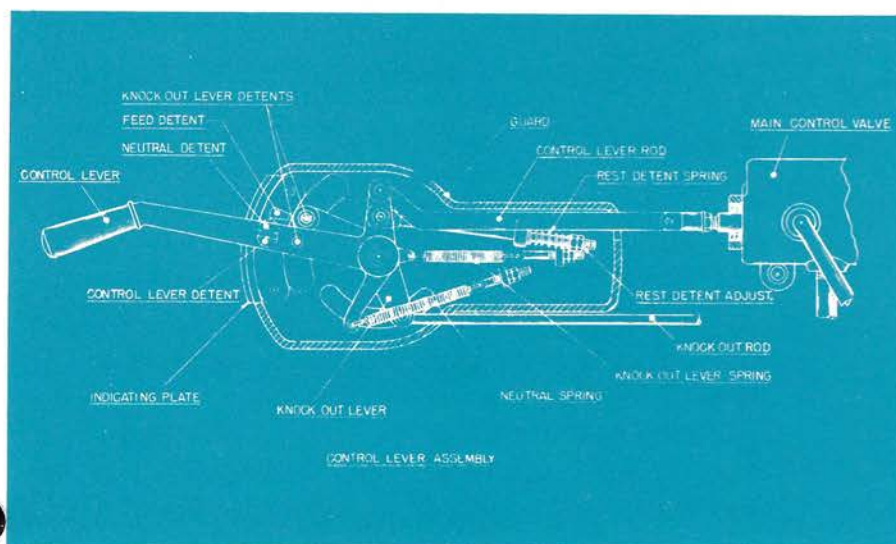
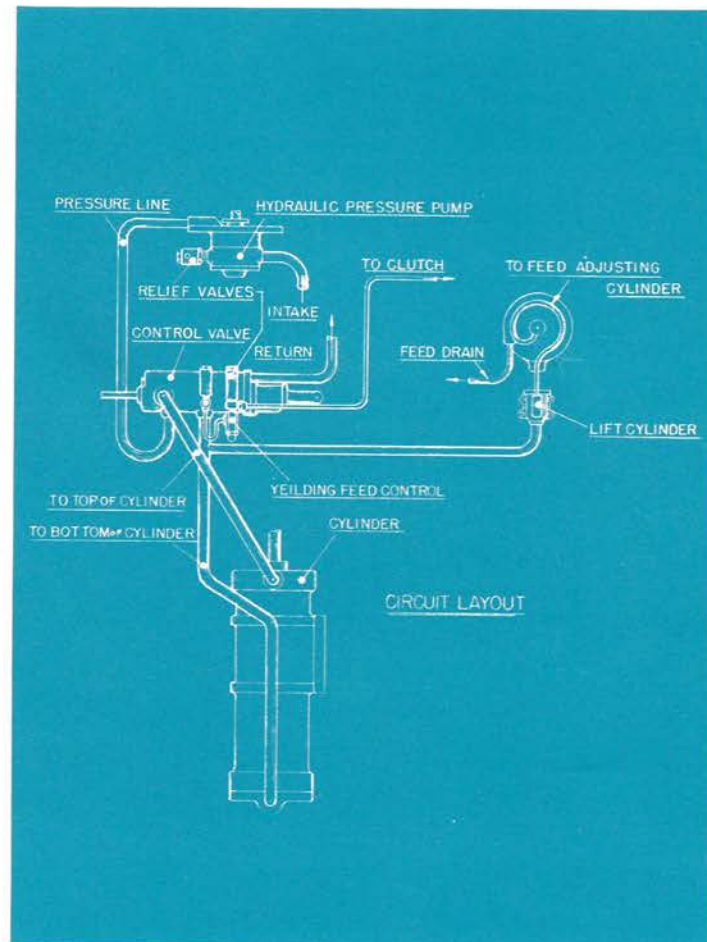
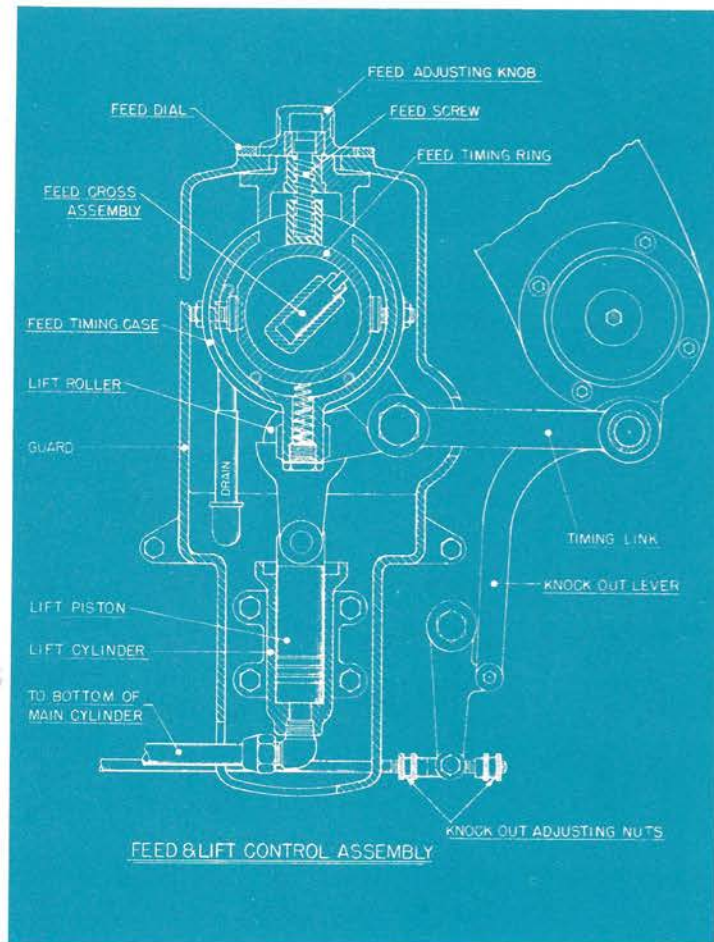
Racine heavy duty metal cutting machines are truly the modern saws for modern industry. They are precision built to meet the highest standard of machine tool design and craftsmanship. They are free from gadgets. A compact low pressure hydraulic system centralizes operating control, provides smooth, oil-cushioned operation. A sensitively controlled hydraulic cutting feed provides for precision sawing of all metals from thin-walled tubing and soft metals through the toughest bars, tool steels and die blocks. See pages 16 and 17 for specifications.

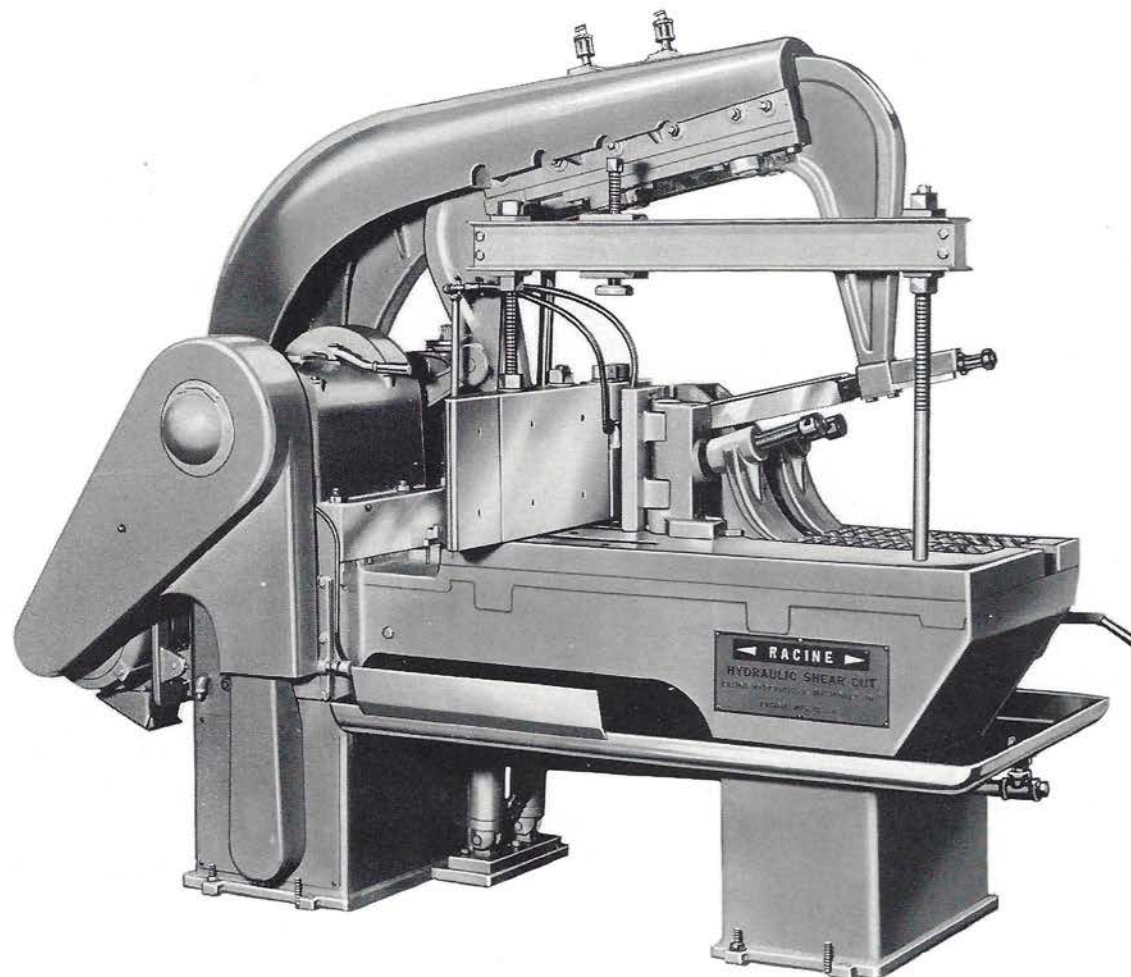




# CIRCUIT LAYOUT

RACINE HYDRAULICS

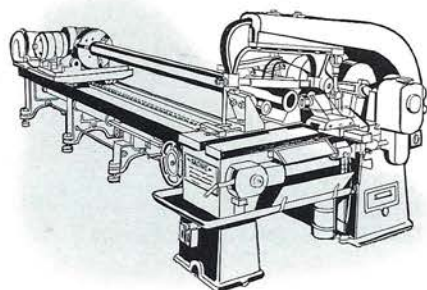




## MODEL 2020

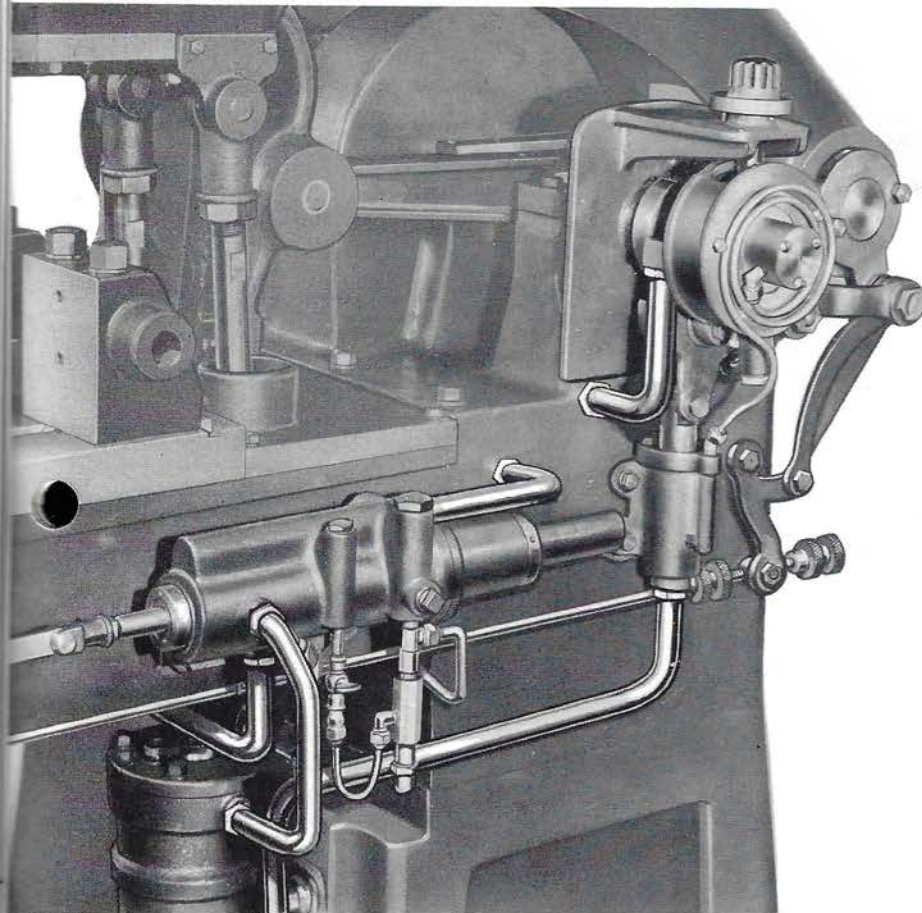
The Model 2020 Racine Hydraulic Metal Cutting Machine is one of the largest hydraulic operated reciprocating metal cutting saws built. Its capacity is 20" x 20". As in all Racine Heavy Duty metal cutting machines, a single lever controls all operating phases of this machine. Likewise, the hydraulic operating and control units are simple and compact, with a minimum of working parts. Only precision built machines, designed with accurately determined and sensitively controlled hydraulic feed provide for precision sawing of all metals and shapes.

See Pages 16 and 17 for further information and specifications.





**Employed on Models 1010-1212-1216-2020  
as well as the Automatic Stock Feed Models**



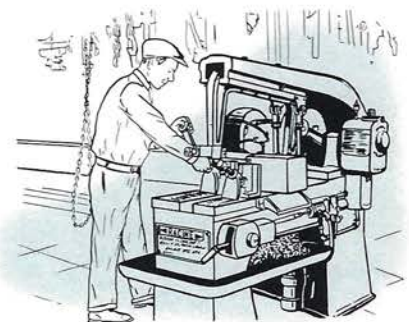
The remarkable simplicity of the Racine Hydraulic System is shown above. All parts with the exception of the simple pressure pump are shown. All parts are accessible and self-lubricating.

**LOW PRESSURE HYDRAULIC SYSTEM** — The simple low pressure pump that furnishes pressure to the entire hydraulic system is located in the oil reservoir. Large cylinder areas and the application of hydraulic power make possible the reduction of pressures in the system to less than 120 pounds per square inch — a positive assurance against leaks, wear in valves, pistons, ports and pump.

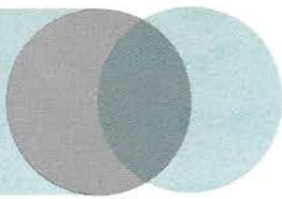
An adjustable, simple plunger metering device, with graduated dial, controls the EXACT amount of oil delivered for each cutting stroke.

**HYDRAULIC FEED CONTROL — DUAL TYPE** — Simply opening or closing a valve changes the feed from positive progressive feed to flexible, constant pressure progressive feed. Positive feed may be used where a constant cutting time is desired in production runs, where each successive cut is made in the same length of time. This is another exclusive Racine feature. It is the fastest and most efficient method of cutting tough, hard tool steels and stainless steels.

The flexible feed is advantageous when the feed must be varied in accordance with the area, shape or density of the material to be cut. In the cutting of round bars, the rate of cutting will be fastest at the beginning and end of cuts, and will yield at the center. The opposite condition will prevail when cutting tubing. It is especially advantageous in cutting mild stock and softer alloys as blade is fed ahead as fast as metal is removed.







## MODELS 1010-1212-1216-2020

**AUTOMATIC HYDRAULIC KNOCKOUT** — At the finish of the cut, the saw frame automatically opens a valve, control lever moves upward, clutch is disengaged and the saw frame rises to its highest position.

**HEIGHT AND DEPTH GAUGES** — These adjustable devices are located on the knockout mechanism. They control the height the saw frame will rise, and the depth to which it will cut.

**AUTOMATIC HYDRAULIC CLUTCH CONTROL** — Built-in as part of geared head transmission. "Twin Disc" machine tool type.

**POSITIVE LIFT ON BLADE** — Hydraulically actuated. Heavy cam operates lift cylinder and piston, which raises saw arm and frame sufficiently to clear teeth of blade on each non-cutting stroke. This action is absolutely positive.

**STROKE** — 6" — actuated by crankshaft.

**TABLE TOP** — The table casting runs the full length of the machine. Its top is covered with replaceable plates, from under the back vise jaws to the front of the machine. Thus, friction and wear will not require replacement of entire table.

**BASE** — Heavy fabricated ribbed steel cabinet type base in rear of machine also serves as a reservoir for coolant. Cabinet type front leg of machine is similar to construction used by lathe builders.

**VISES** — Vises on Racine Heavy Duty Hydraulic Saws are of the quick acting, manually operated type. Vise engages serrations in table plate so that it cannot slip. Two sets of jaws make provision for holding stock on either side of blade. Both sets of front vises are instantly removable, offering an unobstructed table surface for loading from front or side, or for mounting special fixtures.

**HYDRAULIC VISE** for models 1010, 1212 and 1216 is available at moderate cost.

Its use offers great time-saving advantages. Chuck is quick acting — very compact.

**SWIVEL VISE** — For cutting stock at any angle up to 45 degrees, standard on all machines.

**OILING AND LUBRICATION** — Gears, transmission shafts, drive gear and pinion, all run in oil at all times. Hydraulic valves and other parts of the system are self-lubricating. Only four parts of the machine require outside lubrication—connecting rod bearings—crankshaft bearings—saw frame slide and pivot arm bearings.

**CHIP PAN** — Made of heavy gauge sheet metal and is unbreakable. Pan is of liberal proportions to permit easy removal of chips.

**SAFE, SILENT "V" BELT MOTOR DRIVE** — The power transmission from the drive motor to machine is supplied by a two-step drive pulley using the new wide one-piece Poly Vee Belt. All belts completely guarded and are easily removed.

**GEARED HEAD** — Just as is found in modern geared head lathes, the three-speed sliding gear transmission is designed as an integral unit of Racine's Machines. Special alloy steel gears are hardened and heat treated. All gears run in a continuous bath of oil to insure long life and quiet operation. Six speeds are provided for cutting all classes of metal, including present-day tool and alloy steels, at the fastest rate, consistent with accuracy and long blade life.

Any steel or alloy that can be machined with high speed cutting tools can be economically cut on a Racine "Shear Cut" machine.

**SAW FRAME** — Open type construction for easy loading and unloading. Material can be conveniently placed in vise from front or sides. Frame is cast iron, for maximum rigidity. Side bearing plates are bolted through frame casting, an exclusive Racine feature. It permits heavy blade tension without deflecting bearing areas, or side bearing plates. Felt pads in top of frame are oil absorbent and insure long periods of uniform lubrication. Felt pads are kept lubricated by a wick oiling system and oil reservoir in the saw guide.

**CRANKSHAFT** — In a machine such as a reciprocating saw, where a substantial weight must be stopped and started as many as 300 times a minute, it is highly essential that a one-piece crankshaft, with automotive type

connecting rod, be used. This simple and solid driving arrangement, found in Racine Machines, offers extreme rigidity and contributes to stability and long life of the machine.

The crankshaft is made of cast nickel iron, accurately ground. Connecting rod is heavy one-piece alloy casting, with automotive type split bushings (for possible take-up) and bronze pivot bushing.

**SAW GUIDE OR ARM** — Designed exceptionally wide and heavily ribbed, to insure sturdiness and rigidity. Guide Arm is pivoted on a non-rotating shaft—ten inches back of crankshaft. Pivoting of guide arm at back of crankshaft permits greater width of arm and bearings. Saw guide, or slide, has three gibs for accurate adjustment.

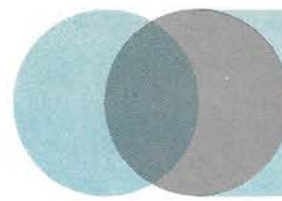
**BEARINGS** — Slide bearings conform to approved standard machine tool practice, as found in shapers, planers, millers, etc., with gib adjustments. Running bearings are bronze bushed. Shaft speeds are low and bearings are designed oversize to stand up under shock loads. Plain and bronze bushed bearings of ample size have been selected, because they can absorb intermittent shock loads and have longer trouble-free service, than do ball or roller type bearings on equipment with reciprocating movement.

**SINGLE LEVER CONTROL** — No experience is required to operate these machines, because Racine has centered all operating phases in a simple, fool-proof control lever. With this lever, operator can rapidly move the blade to any desired position—up or down—can start the sawing operation—or can set the machine in rest position, for removal of stock, blade changing, etc.

**FEW MOVING PARTS** — The use of hydraulic power makes possible a minimum of parts. Workmanship and material throughout are fully guaranteed.

**LUBRICATING SYSTEMS** — Automatic or manual lubricating system can be installed on all Racine saws as extra equipment. A small and compact unit for metering and distributing the proper amount of oil to all the vital points requiring lubrication.





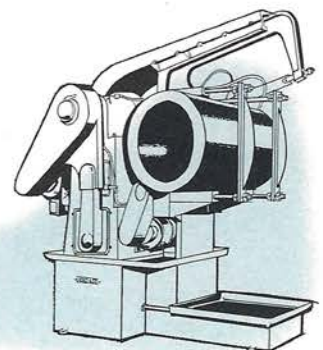
## MODELS 1010-1212-1216-2020

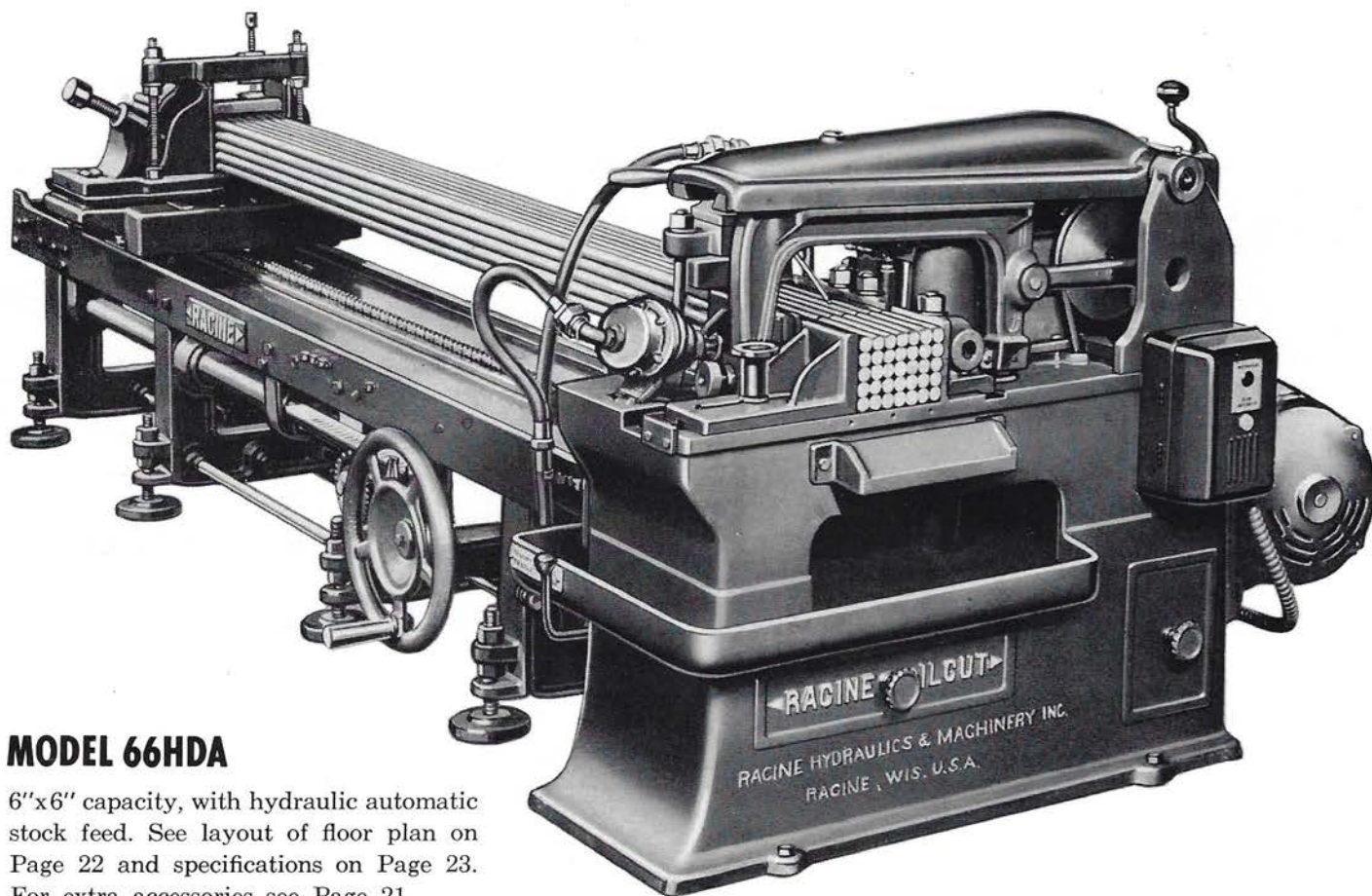
SPECIFICATIONS				
MACHINE MODEL NUMBER	1010	1212	1216	2020
Rated Capacity .....	10" x 10"	12" x 12"	12" x 16"	20" x 20"
Capacity with Swivel Vise at 45° .....	10" x 6 1/2"	12" x 7"	12" x 9"	20" x 14"
Blade Length .....	18"	21" & 18"	24" & 21"	30"
Length of Stroke .....	6"	6"	6"	6"
Strokes per minute .....	150-110-85-80-60 & 45	150-110-85-80-60 & 45	150-110-85-80-60 & 45	115-85-65-60-45 & 35
Motor H.P. (Std. 1200 RPM—2020, 900 RPM) ..	5	5	5	5
Height, Floor to Table Top .....	31"	31"	31"	31"
Floor Space—Motor Driven .....	48" x 84"	48" x 84"	48" x 84"	48" x 90"
Shipping Weight—Motor Drive, Pounds .....	3600	3750	3800	5000
Shipping Weight—Arranged for Motor, Pounds ..	3450	3600	3650	4850

For over 50 years of specialization in the art of metal cutting, "Racine" has developed the correct machine for every range of service. Every machine shown in this catalog was designed for a specific type of metal cutting work. Selection of the proper machine based on Racine recommendations will lower your cutting cost. Note these outstanding Racine features:

At the front of the machine, a single lever affords full hydraulic control of all operating functions. Dual Hydraulic Feed provides quick adjustment of blade application; this is important when cutting materials varying in area and density. Hydraulic feed range is unlimited—you set it at exactly the required rate.

Use this extra heavy duty equipment to cut blooms, billets, large tubing, structural, tough alloys, forgings, castings, die steel and all classes of non-ferrous metals.





## MODEL 66HDA

6"x6" capacity, with hydraulic automatic stock feed. See layout of floor plan on Page 22 and specifications on Page 23. For extra accessories see Page 21.

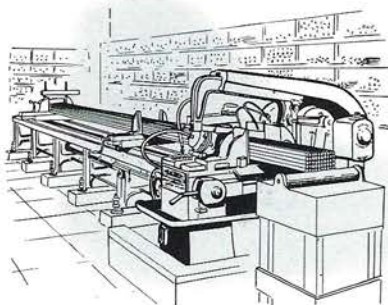
**RACINE HYDRAULIC AUTOMATIC STOCK FEED MACHINES** are a modern development, embodying the experiences of over 50 years in metal cutting machines design—and the pioneering work of "Racine" in Oil Hydraulic systems.

Racine was the first to successfully apply hydraulic power to metal cutting machines and has consistently improved and simplified this application. These high speed automatic production machines are the final word in dependable, smooth, oil-cushioned, accurate and economical metal cutting machines.

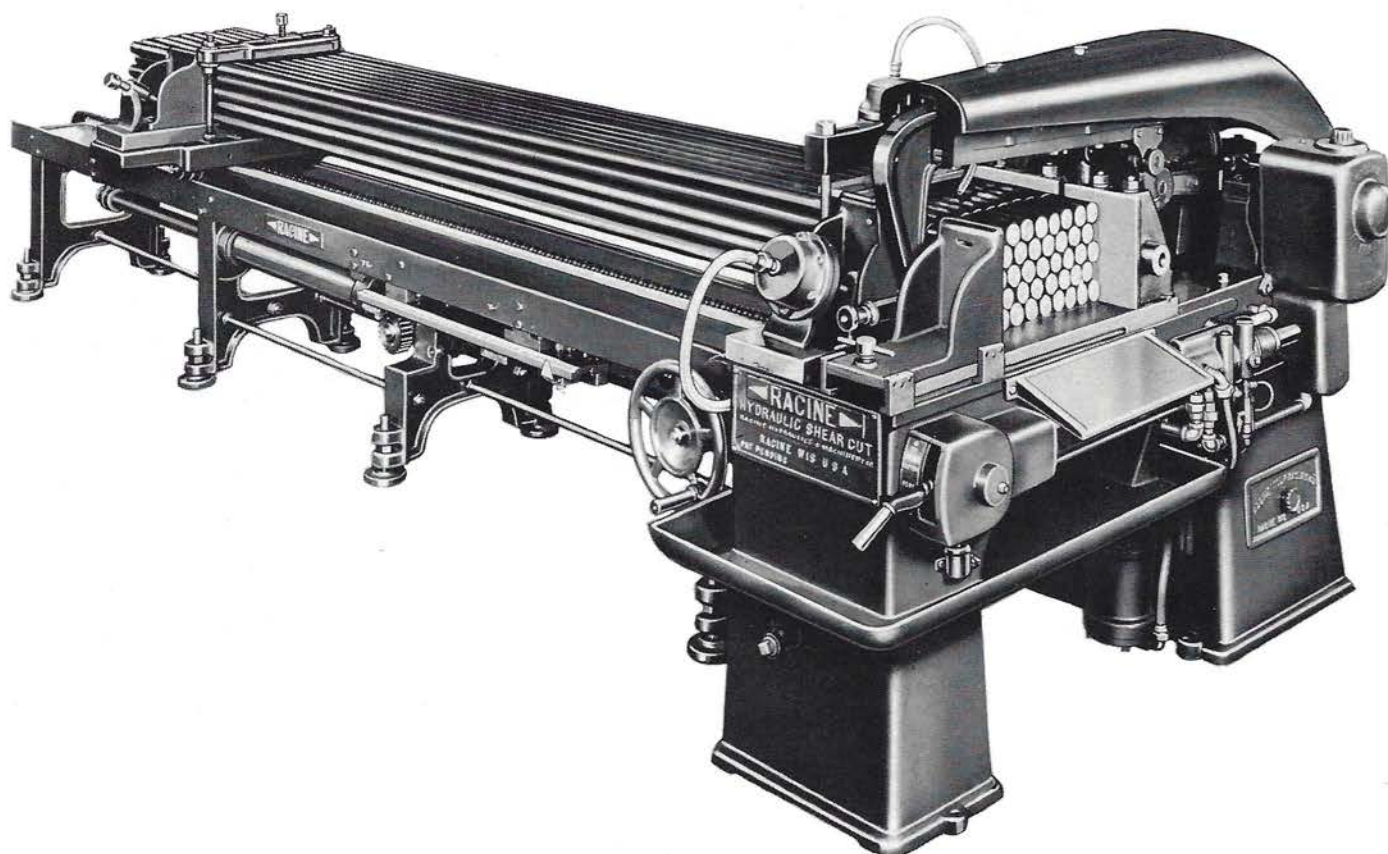
### Note these all-important features:

**Convenient all Front Control.** From one position the operator controls all phases of the automatic cycle. Pointer on scale is quickly adjustable for desired length of cut.

The hydraulic feed moves stock forward by uniformly controlled pressure from cut to cut, automatically measures the length, opens and closes hydraulic chucks, controls cutting and stops when last cut has been completed.



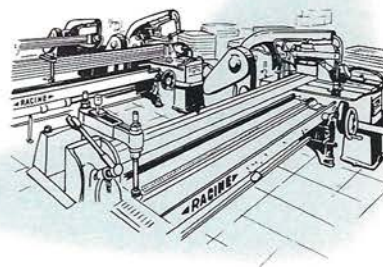


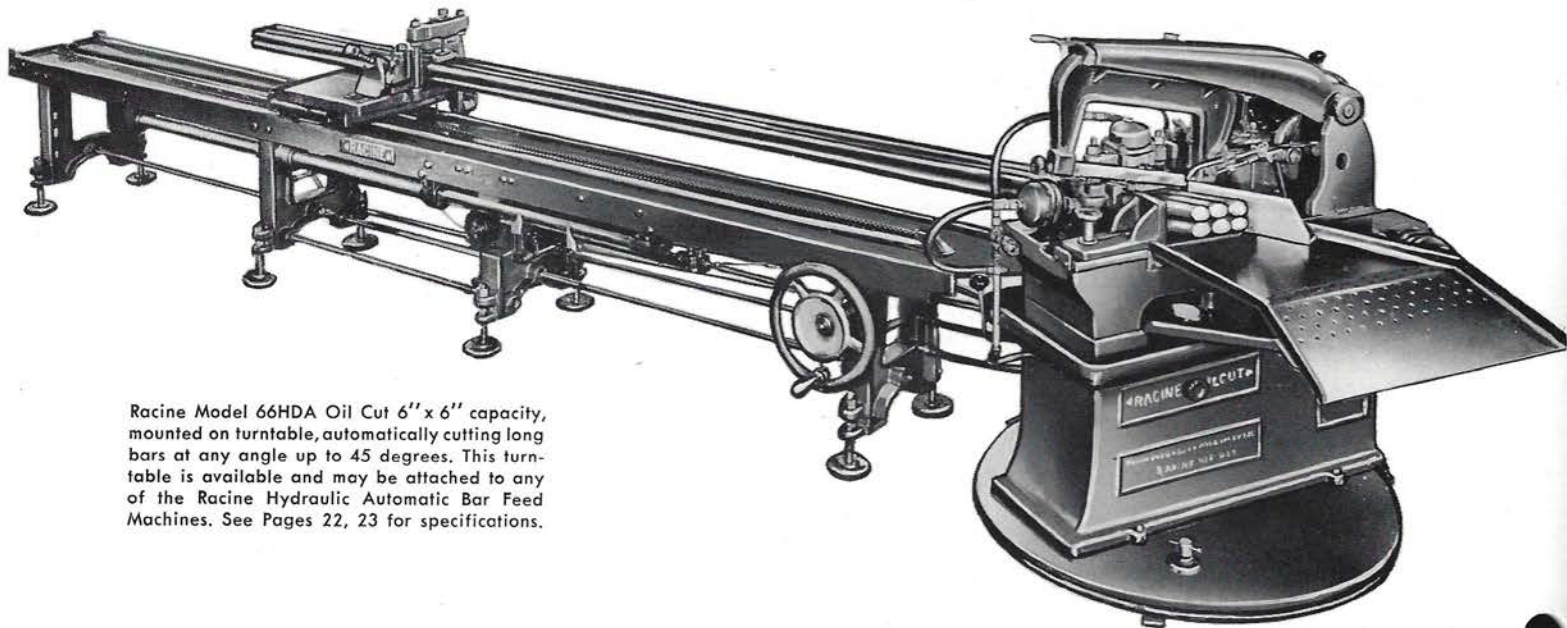


## MODELS 1010A-1212A-1216A

Model 1010, illustrated above, is available in capacities of 10" x 10" — 12" x 12" and 12" x 16". Stock rests in three lengths, 12', 18' and 22'. The hydraulic feed moves the loaded carriage by controlled setting from cut to cut, automatically measures stock, opens and closes hydraulic chucks, controls cutting and stops when last cut has been completed. The simple control makes it possible for one man to operate more than one machine.

For layout of floor plan and other specifications see Pages 22 and 23. Extra accessories are illustrated and described on Page 21.



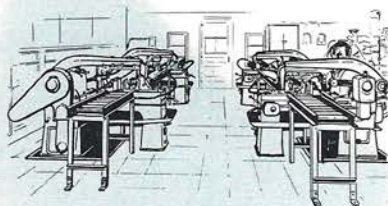


Racine Model 66HDA Oil Cut 6" x 6" capacity, mounted on turntable, automatically cutting long bars at any angle up to 45 degrees. This turntable is available and may be attached to any of the Racine Hydraulic Automatic Bar Feed Machines. See Pages 22, 23 for specifications.

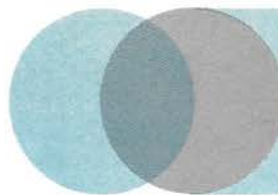
## SWIVEL BASE

The special angle cutting feature shown on Model 66HDA illustrated above permits angle cuts up to 45 degrees. The special swivel base rotates on roller bearings, stopping at any desired angle, where it may be locked in place. This feature is very advantageous when any amount of angle cutting is required. Any Racine Automatic Bar Feed Machine can be equipped with the special swivel base. The swivel base is especially desirable where mitered ends are needed and space for swinging material into an angle position is not available.

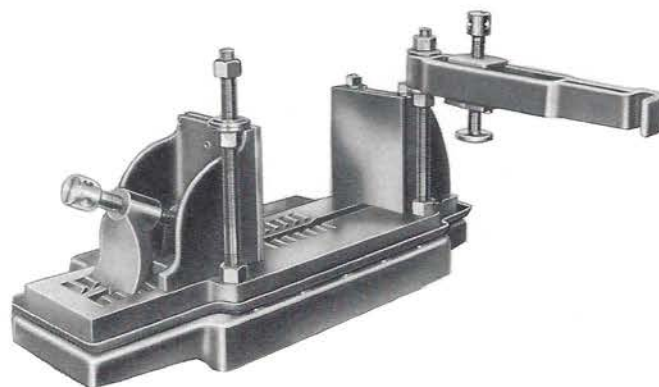
As in all Racine Hydraulic Automatic Machines, a uniformly applied pressure and a powerful hydraulic clutch move the heavy bars or bundled material smoothly. Hydraulic pressure closes and opens the vise jaws automatically and prevents blade chattering or twisting of stock. The time from the finish of the cut to the start of the next, including release and clamping of vise jaws, is a matter of only a few seconds. It is this smooth, powerful application of hydraulic power which insures uniformity and greater production.



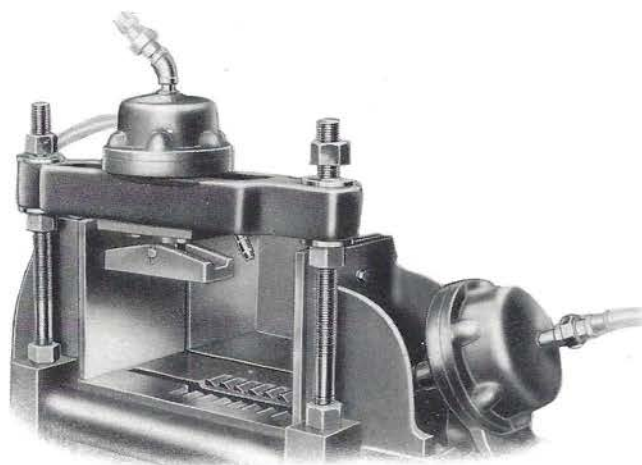




- 1 Traveling Carriage with Manual Overhead Clamp holds bundled or single bar stock. Overhead clamping device, necessary for all bundled material, is optional at extra cost.



1. Traveling Carriage with Manual Overhead Clamp



- 2 To complete fully automatic installation, the Automatic Overhead Hydraulic chuck firmly holds bundled material. Overhead chuck, necessary for bundled stock, is furnished as extra equipment. Hydraulic vise is standard on bar feed machines.

2. Automatic Side and Overhead Hydraulic Chuck on Machine



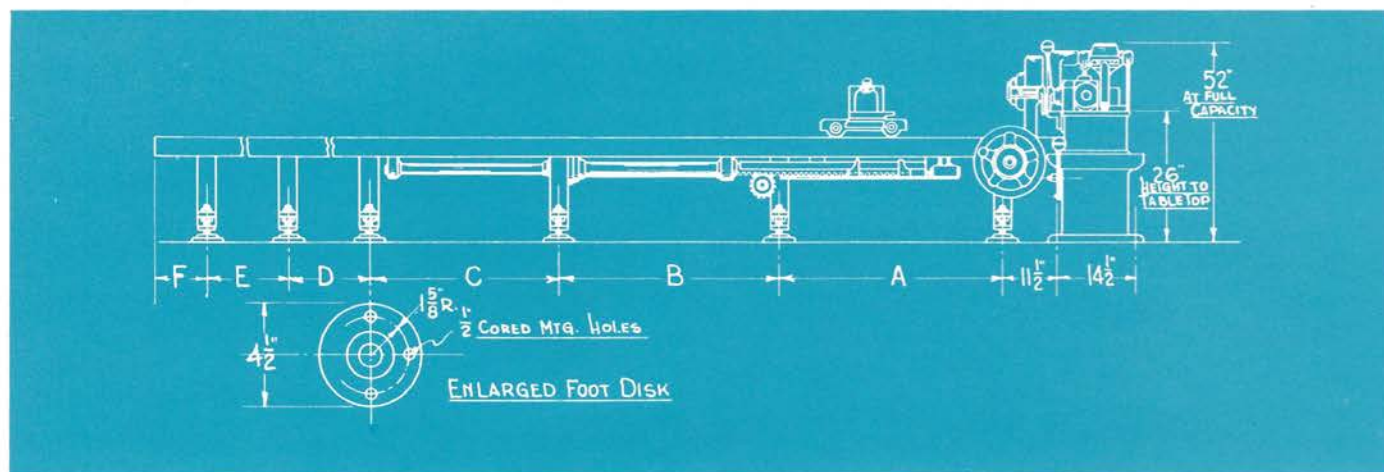
- 3 Auxiliary stock support carriage for supporting stock between machine and traveling carriage assures greater accuracy of cut, where sagging of light stock may occur. Removable without interrupting cutting. Available as an extra.

3. Auxiliary Stock Support Carriage

- 4 Stock clamp, manually adjustable to size of bundled material to be loaded onto machine, is available as an extra.



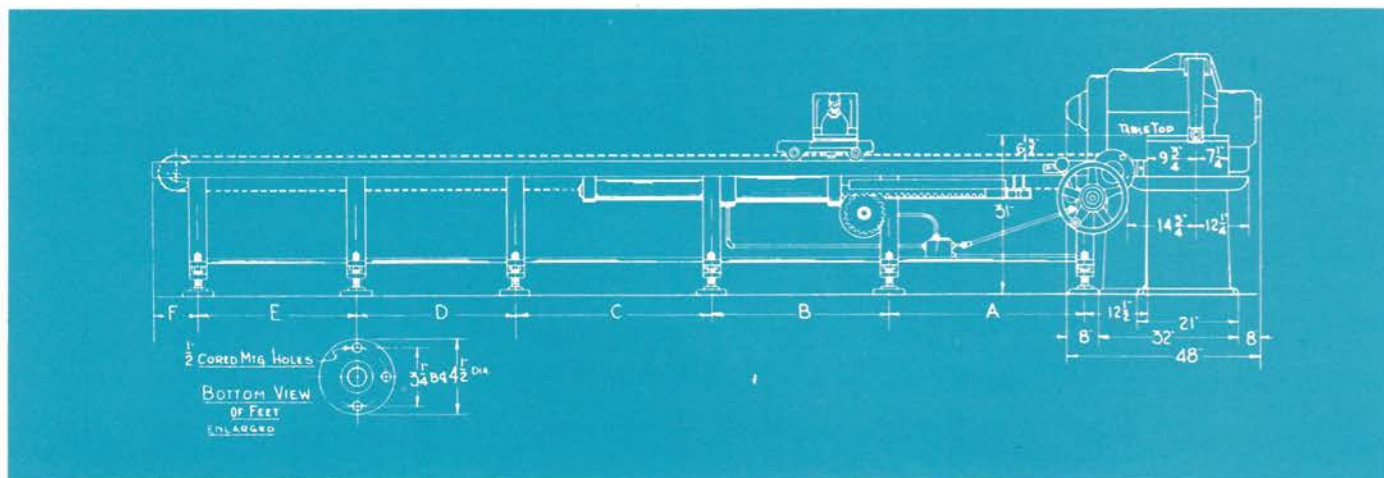
4. Stock Clamps



## MODEL 66HDA

Diagram above illustrates floor plan of Model 66HDA Oil Cut Machine.

Length of Rest in Feet	Length of Travel in Feet	DIMENSIONS IN INCHES						Number of Legs
		A	B	C	D	E	F	
14	12	52 1/8	42 3/4	52 1/8			9	4
18	16	50	42 3/4	50	52 1/4		9	5
22	20	50	42 3/4	50	49 1/4	51	9	6



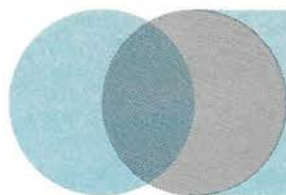
## MODELS 1010A-1212A-1216A

Diagram above illustrates floor plan layout of heavy duty automatic machines.

See specifications on Page 23.

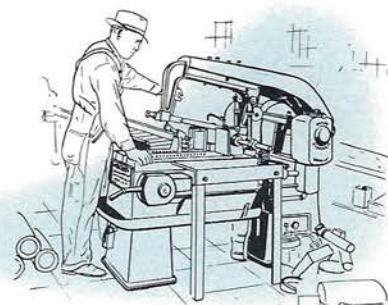
Length of Rest in Feet	Length of Travel in Feet	DIMENSIONS IN INCHES						Number of Legs
		A	B	C	D	E	F	
14	12	52 3/4	42	52 3/4			9	4
18	16	52 3/4	42	52 3/4	48		9	5
22	20	52 3/4	42	52 3/4	48	48	9	6





## MODELS 66HDA-1010A-1212A-1216A

SPECIFICATIONS				
MACHINE MODEL NUMBERS	66HDA	1010A	1212A	1216A
RATED CAPACITY	6" x 6"	10" x 10"	12" x 12"	12" x 16"
BLADE LENGTH	14"	18"	18" & 21"	21" & 24"
LENGTH OF STROKE	5"	6" for all sizes		
STROKES PER MINUTE	70-100-140	45-60-80-85-110-150 for all sizes		
MOTOR 3 Phase — 60 Cycle — 1200 R.P.M. (Standard) or 25 and 50 cycle 1450 R.P.M.	2 H.P.	5 H.P. for all sizes		
HEIGHT OF TABLE TOP	26"	31" for all sizes		
FLOOR SPACE Machine only	24" x 52"	48" x 84" for all sizes		
FLOOR SPACE Stock Feed (attachment only)	Standard stock rests 14' long by 25 1/4" wide, except Model 66HDA, 21 1/4" wide. Extra length rests — 18' and 22' overall.			
SHIPPING WEIGHT Standard Stock Feed and Machine Motor Driven	2300 lbs.	5700 lbs. for all sizes		
SHIPPING WEIGHT Machine with Turntable for 45° Cutting	1340 lbs.	3480 lbs.	3480 lbs.	3500 lbs.
RANGE of Length Gauge Setting on Stock Feed	1/64" to 42"	1/64" to 54" for all sizes		





**RACINE HYDRAULICS & MACHINERY, INC.**

**RACINE, WISCONSIN • U. S. A.**