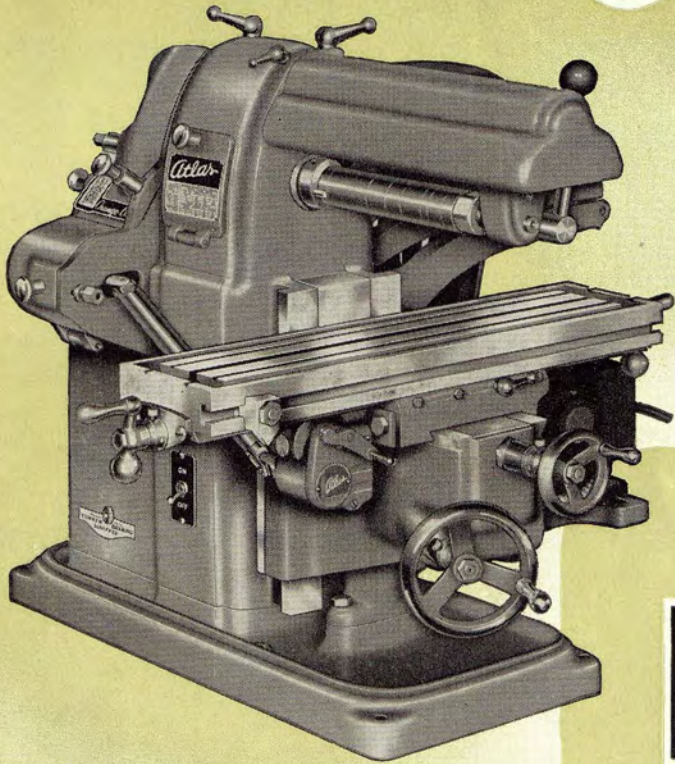


# Atlas



CATALOG  
NO. M43

# MILLING MACHINES

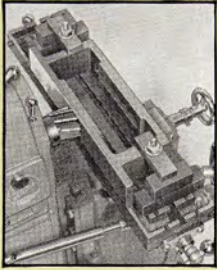


ATLAS PRESS COMPANY • KALAMAZOO • MICHIGAN • U • S • A

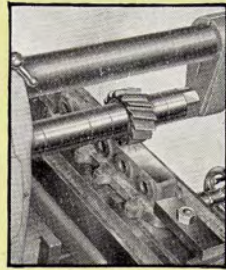
**BOOST SMALL-PARTS PRODUCTION**

*Atlas*

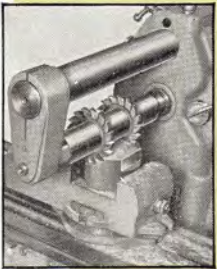
# MILLING MACHINES



FACING



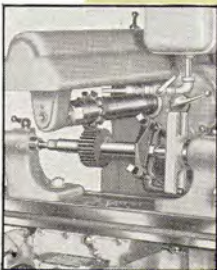
SLABBING



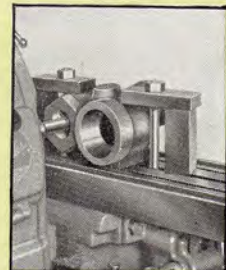
STRADDLE



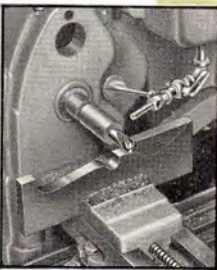
SLOTTING



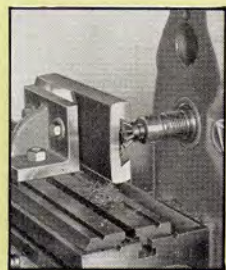
GEAR CUTTING



BORING



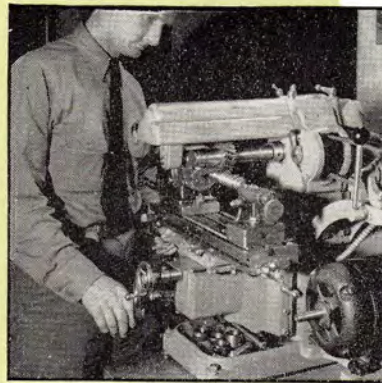
PROFILING



DOVETAILING

*"MATCH THE MACHINE TO THE JOB—use fast precision bench tools to take over the production of small parts so that capacities of larger machines will not be wasted."* That Atlas idea has helped thousands of plants, large and small, step up production efficiently and economically.

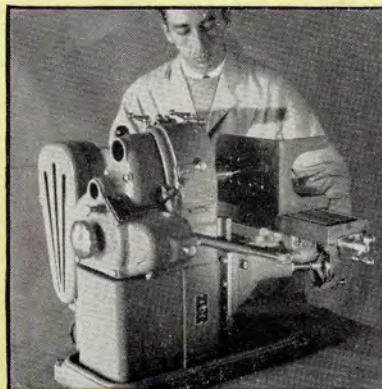
The Atlas milling machine is an important unit in a group of modern compact tools designed by Atlas to simplify the complete range of small-part machining. Check all details of the "Atlas Plan" whenever considering a program of increased production.



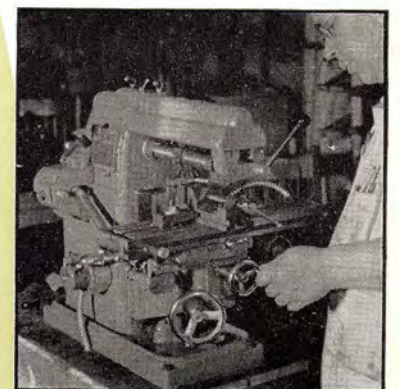
SQUARING SHAFTS



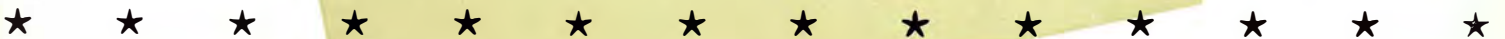
FLUTING



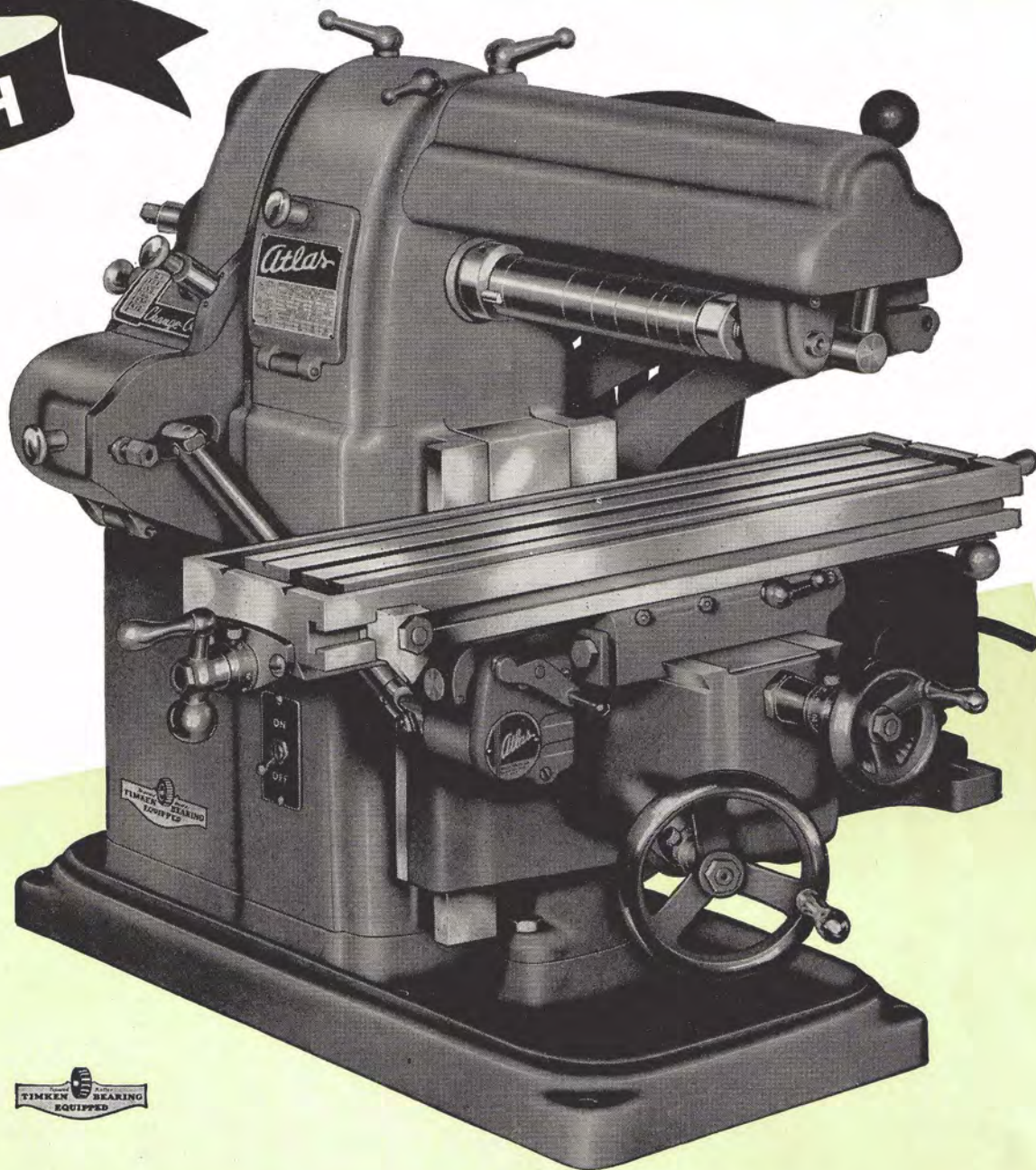
DRILLING — LAYOUT



SIDE MILLING



WITH



## THE FIRST LOW-COST PRECISION BENCH MILLING MACHINE

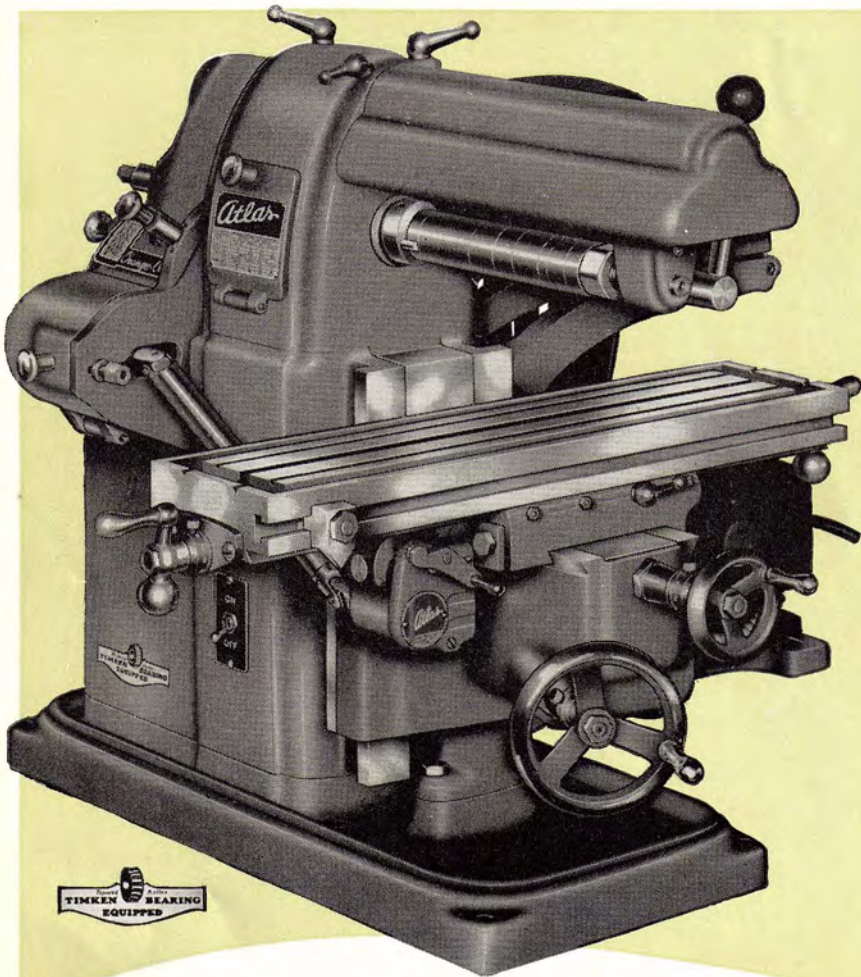
**T**HERE are spots for this handy milling machine in every shop and tool room with any volume of small-part milling. In hundreds of key production plants, it is eliminating the wasted time and effort involved in setting up and operating a large, expensive miller for small pieces of work.

The Atlas Milling Machine will cut your costs on the full range of milling — from slabbing and facing cuts to end milling, keyways, finishing and layout work. The compact Atlas is rugged, accurate, and efficient — economical in investment cost and economical in operation.

Investigate the possibilities for the Atlas Milling Machine in your shop. Your Atlas distributor can describe efficient milling set-ups that may be adapted to your own production. The modern Atlas construction features and complete specifications are presented on the following pages.

# CONSTRUCTION FEATURES of

**T**HES E descriptions explain how every construction detail of the Atlas Milling Machine has been designed to meet these modern machine tool requirements: *rigidity* and rugged strength essential for the firm support of cutter and work — *accuracy* of construction for accuracy in operation, plus provisions to maintain that accuracy — *power* for heavy cuts, a wide range of spindle speeds for all types of cutters and work — *operating efficiency* to reduce set-up and machining time.



**SPINDLE HEAD** — A heavy well-braced iron casting anchored rigidly to the column by four large cap screws. Accurate line boring of bearing bosses for spindle bearings, backgear shaft, and overarm insures positive alignment. Spindle head houses the spindle, bearings, pulley and backgears and provides a rugged support for overarm and cutter guard. An iron guard at the rear of the spindle head covers the spindle gear and has an opening for operating the draw-in bar.

**COLUMN** — A massive thick-walled grey iron casting, ribbed and reinforced to provide a rigid support for spindle head, knee,

and countershaft. Ways for the knee bearings, each  $1\frac{1}{2}$ " wide and  $\frac{1}{2}$ " thick and cast integrally with the column, are precision ground for smooth, accurate knee and table action. Four large cap screws and two dowel pins hold the column securely to the base casting, a broad and heavy foundation for the entire machine. Front of base is shaped to retain oil, and portion below column forms a reservoir for automatic coolant system (page 10). Column bearing surfaces for base, spindle head, and countershaft are all accurately machined. A single phase on-off switch (10 amperes at 110 volt) is built into the column casting. Three phase switch is listed on page 10.

★ **RIGIDITY** — Heavy semi-steel iron castings are used for the column, base, spindle head, knee, saddle, table, and arbor supports. These castings are scientifically proportioned, rib-braced and reinforced, and have large bearing surfaces. Overarm is a solid bar of stress-proof steel,  $1\frac{1}{2}$ " in diameter. The extra weight of all of these parts is the foundation for smooth, accurate cutting action and long service life.

★ **ACCURACY** — The Atlas miller is *entirely precision-machined*. Jigs and fixtures hold each part in exact position during machining, and each operation is inspected for uniformity and accuracy with precision tools and master gauges.

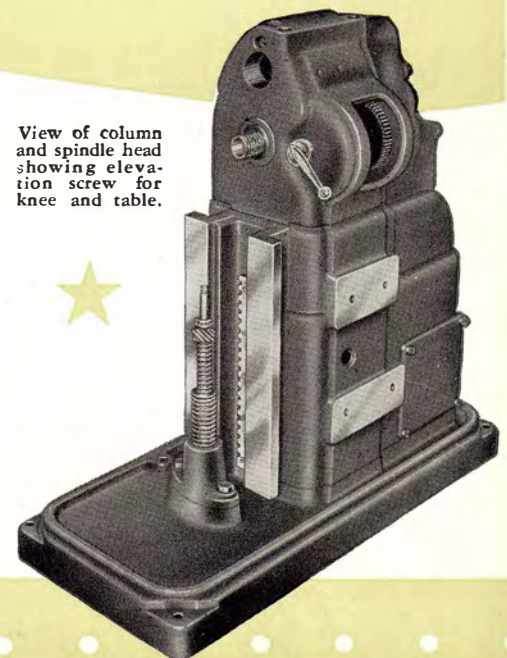
The wide, thick column ways for the knee bearings are precision-ground for smooth, accurate movement of knee and table. Dovetail slides of knee, saddle, and table are accurately machined and hand fitted. Table top and sides are precision ground. Bearing bosses for the spindle bearings, backgear shaft, and overarm are accurately line bored for positive alignment. Precision ground spindle turns on Timken tapered roller bearings. Full provision is made for thorough lubrication of all bearings.

Careful inspection at every stage of assembly and thorough working tests of the completed machine insure accuracy in handling the full range of milling operations.

★ **POWER** — The Atlas backgeared drive, powered completely by V-belts, plus the Timken bearing equipped spindle, transmits maximum power to the cutter with a smooth, even action. This modern design permits the use of an economically operated  $\frac{1}{3}$  HP motor.

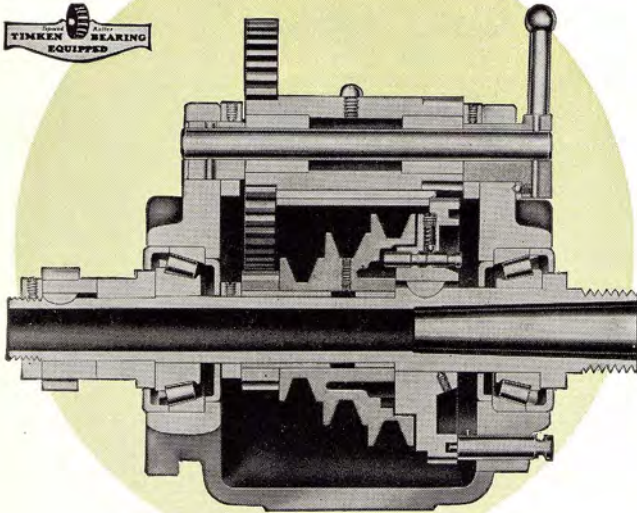
★ **OPERATING EFFICIENCY** — All controls are within easy reach. Twelve spindle speeds between 61 and 2860 RPM provide correct surface speeds for all types of work and cutters. Correct spindle speed is obtained quickly by referring to easy-to-read chart for belt positions. Turning a socket-head screw releases arbor support for changing cutters, and the overarm can be easily removed when mounting cutter on spindle. A convenient 10 ampere 110 volt on-off switch is built into the column.

Three types of table controls are available: hand-operated screw feed (page 8), rapid-production lever feed (page 9), and the Atlas "Change-O-Matic" for instant selection of reversible automatic longitudinal table feeds between 0.183" and 10.300" per minute (see pages 6 and 7).



View of column and spindle head showing elevation screw for knee and table.

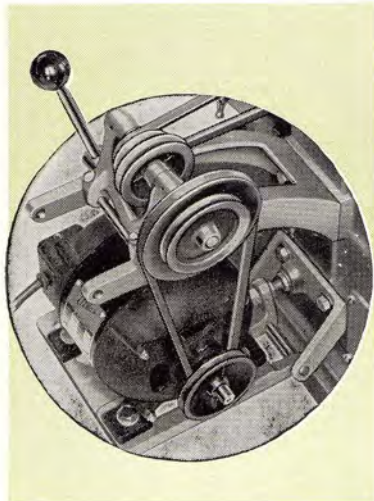
# the Atlas MILLING MACHINES



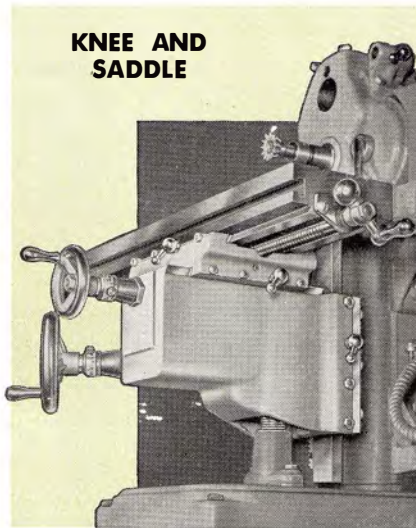
**SPINDLE AND BEARINGS** — The spindle is machined from a solid bar of special fine-grained steel, accurately ground. It is 1" diameter, has 10-pitch National Form threads and 17/32" hole through entire length. Spindle nose is bored for No. 2 Morse taper.

Timken tapered roller bearings maintain accurate spindle alignment and carry both radial and thrust loads with a minimum of friction. Each bearing is lubricated through a large capped felt-wick oil cup. Simple take-up adjustment is provided. These fine bearings permit the wide range of spindle and surface speeds essential for all types of work and cutters.

**BACKGEARED POWER** — The Atlas backgeared drive, powered completely by V-belts, reduces the spindle speed for slabbing and facing, and work requiring large diameter cutters. The back gears, completely housed by the spindle head, are engaged by advancing eccentric lever and shifting pulley lock pin. Pulley and gears are accessible through a door in the left side of the spindle head. Backgears are 3/8" wide, 20 pitch, and have ratio of about 6 1/2 to 1. Backgear shaft turns on oilite bronze bearings.



Side view of Atlas mill machine showing V-belt countershaft attached to column. Two-step pulleys from motor to countershaft and three-step pulleys from countershaft to spindle. Notice convenient position of the countershaft lever.



**KNEE AND SADDLE**

The heavy knee casting travels vertically on the ground column ways and is supported rigidly by full 5 1/2"-long bearings on the ways and by the telescoping elevation screw. Top of knee has an accurately machined dovetail for the saddle. Column bearing plate with laminated shims and an adjustable gib maintain a firm fit between knee and column ways — gib screws have lock nuts. Gib lock permits setting knee rigidly at any height.

The thick heavy saddle casting has dovetail bearings 5" long on the knee and 6" long on the table — forms a rigid table support. Dovetail ways are accurately machined and carefully fitted for smooth table travel. Bearings are equipped with adjustable gibs — gib screws have lock nuts. Gib lock permits setting saddle securely at any point on knee.

**INTEGRAL V-BELT COUNTERSHAFT** — Support brackets for the countershaft and motor base are attached directly to the column, making the Atlas milling machine a compact, self-contained unit. Countershaft is "quick-change" type with belt tension lever in easy reach for speed changes. Lever has two positions — forward to release belts, and back to engage them. Countershaft spindle turns on oilite bearings.

The modern V-belt drive from motor to countershaft to spindle transmits maximum power to the spindle with a smooth, even action at all speeds. Twelve spindle speeds are available between 61 and 2860 RPM — an easy-to-read chart is furnished listing spindle speeds for the various belt positions (see page 7).

**TABLE** — The table is a solid grey iron casting 18" long, 4 1/2" wide and 1 3/8" thick — a massive work support with the extra weight essential for maximum rigidity.

All table surfaces are accurately machined, and the top and sides are precision ground. The table top has a T-slot in the center for bolting work and attachments — a V-groove on each side of this T-slot simplifies the firm gripping of bar stock. An adjustable dog-type stop in the front table T-slot can be set to stop longitudinal table travel at any point.

Table dovetail bearing on the saddle is accurately machined and carefully fitted. This bearing is equipped with an adjustable gib — gib screws have lock nuts. A gib lock sets the table rigidly at any point on the saddle. A sloping recess around the table working surface removes oil and cutting compound.

The overarm is a solid bar of stress-proof steel, 1 1/2" in diameter — a rugged brace for the arbor support at its outer end. It insures accurate work by maintaining the rigid horizontal position of the arbor and cutters. Bearing bosses for the overarm, on each end of the spindle head casting, are accurately line bored for positive alignment with the spindle. Two coordinate-type clamps lock the overarm rigidly in the spindle head. Arbor is described on page 10.

The grey iron arbor support has a split compression-type bearing which clamps tightly to the overarm — socket-head screw releases bearing for changing cutters. Arbor bearing is oilite bronze, lubricated through a ball oiler. Overarm, arbor support, and arbor are covered by an iron safety guard. Overarm and guard can be removed easily.



**OVERARM AND ARBOR SUPPORT**

**TABLE CONTROLS** — The table feed screw for longitudinal travel has a ball crank at each end for hand-feeding the table — screw is supported at each end by an oilite bearing. Vertical travel of the knee and table is controlled by the large front handwheel which operates a telescoping screw with acme threads — ball bearing absorbs end thrust. [Note: MH Models (page 9) have hand lever controls for rapid movement of table vertically and longitudinally.] Table cross feed screw is controlled by the small handwheel in front — cover keeps screw free from dirt and chips. All table feed screws have acme threads. Steel feed screw collars are micrometer-graduated in .001ths and have a knurled screw which permits setting the 0 position at the witness mark for accurately gauging feed.

Three types of table controls are available: hand-operated screw feed, rapid-production lever feed, and the Atlas "Change-O-Matic" for instant selection of reversible automatic longitudinal table feeds between 0.183" and 10.300" per minute. These controls are described between pages 6 and 9.

**MOTOR DATA** — Atlas milling machines are designed to be operated from a 1/3 HP 1740 RPM motor (see page 10). Motor bracket support is attached directly to column. On-off switch built into left side of column is 10 ampere at 110 volts, single phase only (3 phase motor and switch, page 10). A flexible conduit is furnished to cover portion of switch-to-motor cord between machine and motor.

# SERIES MF *Atlas* MILLING MACHINES

**T**HE Series MF Atlas milling machines are equipped with the Atlas "Change-O-Matic" mechanism for instant selection of reversible automatic table feeds between 0.183" and 10.300" per minute. This modern efficiency feature, exclusive with Atlas, speeds up all operations requiring longitudinal movement of the milling machine table.

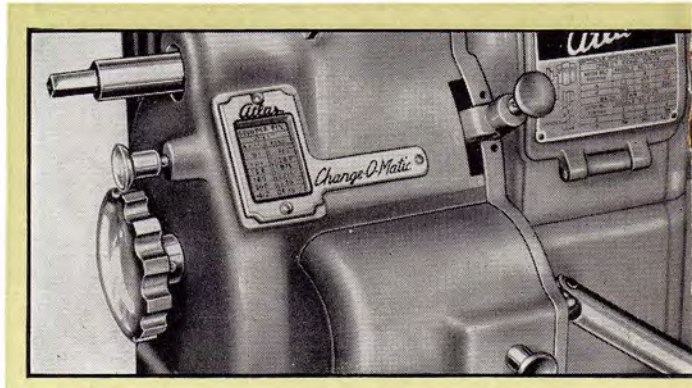
The Atlas Change-O-Matic controls are pictured at the right. Four automatic feeds are available for each of six spindle speeds — twenty-four table feeds in all. The desired feed is selected by simply rotating the large knob at the left end of the milling machine. As this knob is turned, a chart appears through the small window, showing the table feed selected (.003", .006", .0125" or .025" per revolution of spindle) and listing the equivalent in inches per minute for each of six spindle speeds. The table at the right summarizes the data appearing on the four sections of the Atlas Change-O-Matic chart.

Direction of the table feed is reversed instantly by shifting the tumbler lever at the right of the Change-O-Matic chart window. This lever has a neutral position to disengage the power feed, so that table may be fed by hand if desired. A dog in the side T-slot of the table can be set to stop the power feed automatically at any point by tripping a lever on the table feed-gear case. This lever can also be disengaged by hand.

## COMPLETE DESCRIPTION — PAGES 4-5

## THE *Change-O-Matic*

U. S. Patent 2285743



Close-up view of Series MF Atlas milling machine showing Change-O-Matic controls. Notice (1) large notched knob and index plunger for selecting feed; (2) chart window showing feed selected; (3) tumbler lever controlling direction of table travel; (4) feed gear case; and (5) portion of telescoping drive bar to the table feed screw.

### *Change-O-Matic* TABLE FEEDS (Inches per Minute)

SPINDLE SPEED R. P. M.	FEED PER REVOLUTION OF SPINDLE			
	.003"	.006"	.0125"	.025"
61	.183"	.366"	.763"	1.525"
101	.303"	.606"	1.263"	2.525"
158	.474"	.948"	1.975"	3.950"
166	.498"	.996"	2.075"	4.150"
260	.780"	1.560"	3.250"	6.500"
412	1.236"	2.472"	5.150"	10.300"

This table summarizes data appearing on the Change-O-Matic chart, listing 24 different table feeds in inches per minute.

# COMPLETE SPECIFICATIONS: SERIES MF *Atlas* MILLING MACHINES

<b>FEED RANGE</b>	Longitudinal Table Travel .....	10"
	Reversible Automatic Longitudinal Power Feeds with "Change-O-Matic": Per Revolution of Spindle .....	0.003", .006", .0125", or .025"
	Range .....	0.183" to 10.300" per minute
	Cross Table Travel, Hand-Operated .....	3 1/2"
<b>TABLE</b>	Vertical Table Travel, Hand-Operated .....	6"
	Center of Spindle to Table in Lowest Position .....	6"
	Working Surface, Precision Ground .....	4 1/2" x 18"
	Overall Table Dimensions .....	4 1/2" x 18" x 1 3/8" thick
<b>SPINDLE AND ARBOR</b>	T-Slot, Top of Table .....	3/8" x 5/8" x 16"
	T-Slot, Side of Table .....	3/8" x 5/8" x 18"
	Longitudinal Table Feed Screw .....	1/2" diameter, 10-pitch Acme threads
	Telescoping Table Elevation Screw .....	5/8" and 1" diameter, 10-pitch Acme threads
<b>SPINDLE AND ARBOR</b>	Twelve Spindle Speeds between .....	61 and 2860 R.P.M. (see chart, page 7)
	Spindle Bearings .....	Timken Tapered Roller Bearings with thrust take-up nut and collar
	Spindle .....	1" diameter, 10-pitch National Form threads, 17/32" hole through entire length, nose bored for No. 2 Morse Taper
	Arbor Diameter .....	7/8" or 1" (see page 10)
<b>V-BELT DRIVE UNIT</b>	Center of Arbor to Underside of Overarm .....	2 1/8"
	Back Gears .....	20-pitch, 3/8" wide
	Backgear Ratio (approximate) .....	6 1/2 to 1
	Backgear Shaft Bearings .....	oilite bronze
<b>V-BELT DRIVE UNIT</b>	Countershaft and Spindle Pulleys .....	3-step, V-type
	Countershaft Spindle Bearings .....	oilite bronze
	Motor Recommended .....	1/3 H.P. 1740 R.P.M. (page 10)

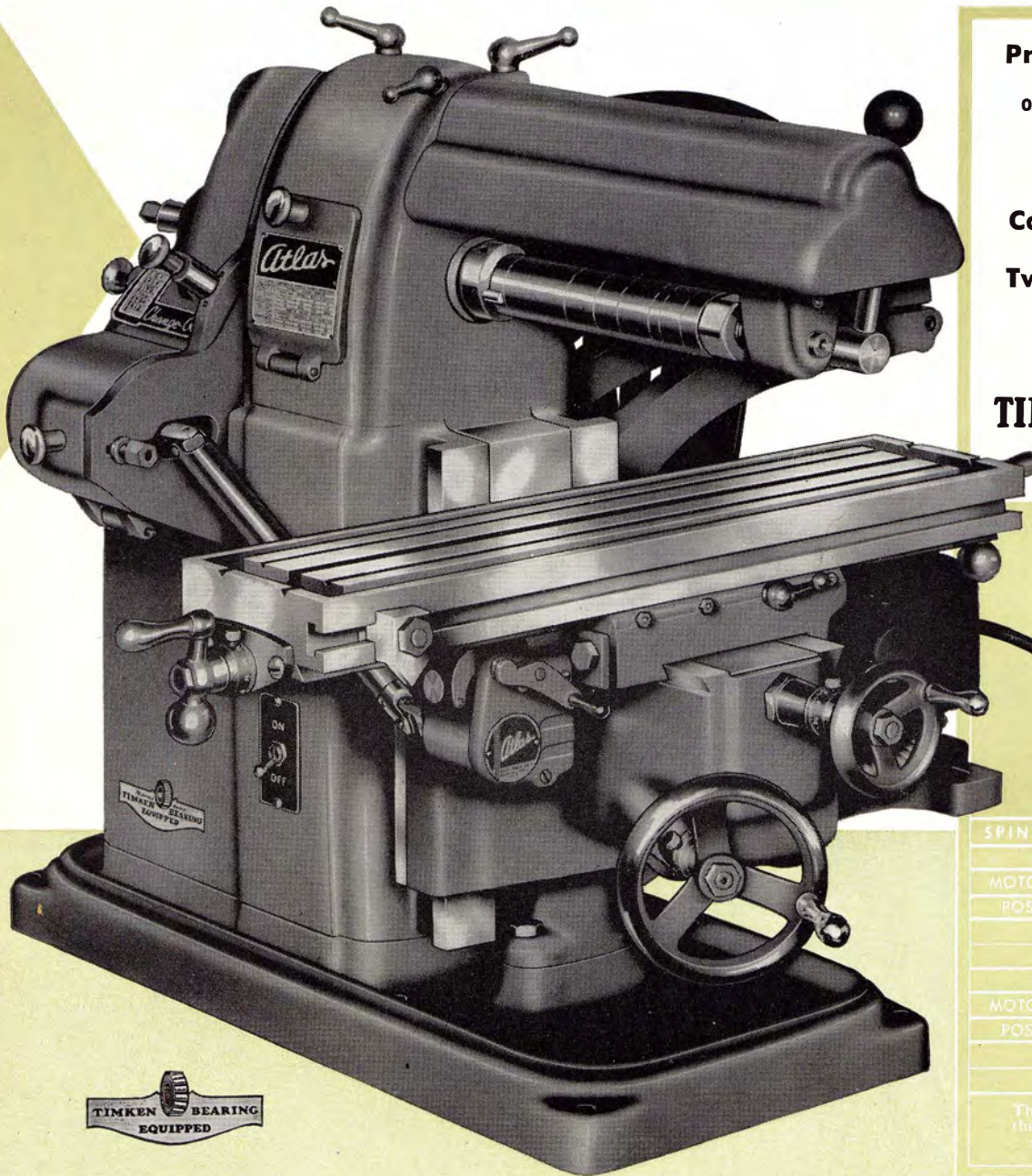
Overall Dimensions ..... 25 1/2" x 32 1/2" x 22" high.

Base Dimensions (Bench Space Required), including motor bracket 20 1/2" x 18 1/2"

## EQUIPMENT FURNISHED

Atlas "Change-O-Matic" Controls for Instant Selection of Reversible Automatic Table Feeds; Integral V-belt Countershaft; Belts and Pulleys for Complete V-belt Drive; Motor pulley furnished is for 1/2" diameter motor shaft — prices of pulleys for other motor shafts on request; Motor Mounting Bracket; 10-Ampere Motor Control Switch and Cord with 18" Flexible Conduit Covering — switch is for single phase current only, 3-phase switch is No. S7-300 (page 10); Operating Instructions.

# with *Change-O-Matic* TABLE CONTROL



## Precision-Ground Table

24 Power Feeds between  
0.183" and 10.300" per minute

## Backgeared Power

## Complete V-Belt Drive

## Twelve Spindle Speeds 61 to 2860 RPM

EQUIPPED WITH

## TIMKEN TAPERED ROLLER BEARINGS



SPINDLE  
SPEEDS

Atlas  
MILLING  
MACHINES

SPINDLE SPEED IN REV. PER MIN.

DIRECT CONE DRIVE			
MOTOR BELT POSITION	SPINDLE BELT POSITION		
POSITION	1	2	3
A	412	677	1112
B	1060	1740	2860
BACK GEAR DRIVE			
MOTOR BELT POSITION	SPINDLE BELT POSITION		
POSITION	1	2	3
A	61	101	166
B	155	260	427

This chart, located on the left side of the Atlas milling machine, shows belt set-ups for twelve spindle speeds.

**No. MF-G** ATLAS MILLING MACHINE, complete with safety belt guards and Change-O-Matic power feeds, less motor. Code ZEVSY, net wt. 205 pounds, shipping wt. 278 pounds.....

**No. MF** ATLAS MILLING MACHINE with Change-O-Matic power feeds, less safety belt guards and motor. Code ZESL, net weight 189 lb., shipping weight 262 pounds.....

### CUTTER ARBOR (Page 10)

**No. M1-560** CUTTER ARBOR for Atlas milling machine, complete with nut, 5 collars and driver. Code ZETYR. Wt. 5 lb.....

Diam. Arbor....  $\frac{7}{8}$ " Shank, No. 2 Morse Taper Diam. Collars  $1\frac{1}{8}$ " Length Shoulder to Nut  $6\frac{1}{4}$ " Collars furnished: two 2", one 1", one  $\frac{3}{4}$ ", one  $\frac{1}{2}$ " (1" diam. cutter arbor is No. M1-560L, page 10.)

**No. M1-576** DRAW-IN BAR. Code word ZEVAM, weight  $1\frac{1}{2}$  lb.....

No. S7-100 CRANK HANDLE for No. M1-576. Code ZEVYS, wt.  $1\frac{1}{2}$  lb.....

### SINGLE PHASE MOTOR (See page 10)

**No. 25205** 1/3 H.P. 1740 R.P.M. SINGLE PHASE CAPACITOR-START BALL BEARING MOTOR. 110/220 volt, 60 cycle,  $\frac{1}{2}$ " single-end shaft, built-in switch, 10 ft. SJ approved cord and plug. Code word ZEWOR, weight 33 lb.....

**No. M1-400** SAFETY BELT GUARDS for Atlas milling machines (page 11). Code word ZESUP, weight 20 lb.....

### THREE PHASE MOTOR (See page 10)

**No. 26305** 1/3 H.P. 1740 R.P.M. THREE PHASE BALL BEARING MOTOR. 220 volt, 60 cycle,  $\frac{1}{2}$ " single-end shaft, BX connector in terminal box. Does not have switch, cord or plug. Code ZEWPE, wt. 28 lb.....

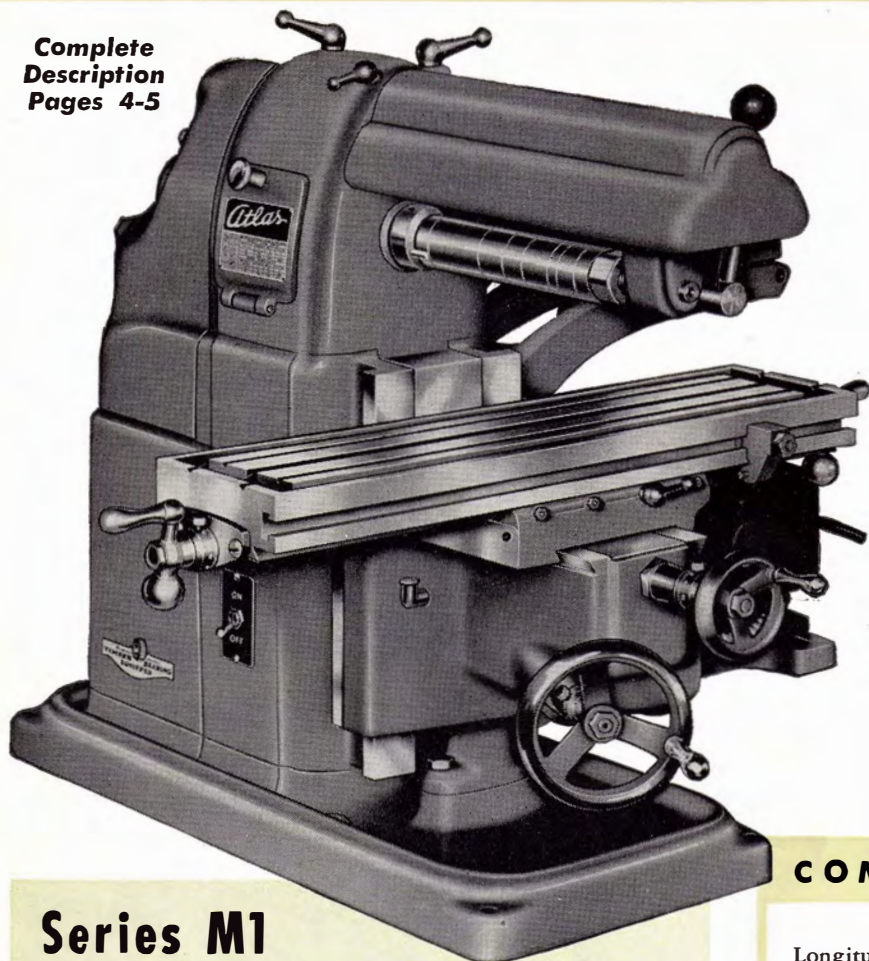
No. S7-300 THREE PHASE SWITCH for Atlas milling machine. Code word ZEBAR, weight 6 lb.....

(A thermal overload 3-pole manual starter. Bracket for bench mounting and flexible cable-covered motor cord are furnished.)

**CUTTERS AND ACCESSORIES — PAGES 10-12**

# SERIES M1 *Atlas* MILLING MACHINES

Complete  
Description  
Pages 4-5



## WITH HAND-OPERATED TABLE CONTROLS

Series M1 Atlas milling machines are equipped with hand-operated screw feeds for table movement— (1) large front handwheel operates knee and table vertically, (2) small front handwheel controls cross feed, and (3) ball crank at each end of table permits maximum longitudinal table travel of 12". All feed screw collars are micrometer-graduated in .001ths and have a knurled screw for setting 0 position at the witness mark for accurately gauging feed. An adjustable dog-type stop in the front table T-slot may be set to stop longitudinal table travel at any point. Three gib locks permit secure setting of position of table, saddle and knee (see illustration, page 5). Vertical feed screw of table is lubricated through capped oiler at side of knee.



PRECISION-GROUND TABLE 4½" x 18"

TWELVE SPINDLE SPEEDS 61-2860 RPM

COMPLETE V-BELT DRIVE

BACKGEARED POWER

## Series M1 ATLAS MILLING MACHINES WITH HAND-OPERATED TABLE CONTROLS

**No. M1-G** ATLAS MILLING MACHINE, complete with safety belt guards and hand-operated table controls, less motor. Code word ZEVNE, net weight 194 pounds, shipping weight 267 pounds.....

**No. M1** ATLAS MILLING MACHINE, with hand-operated table controls, less safety belt guards and motor. Code word ZESAK, net weight 178 lbs., shipping weight 251 lb.

### ATTACHMENTS

Complete Details, Pages 10-11

**No. M1-560** CUTTER ARBOR for Atlas milling machine, complete with nut, 5 collars and driver. Code word ZETYR. Weight 5 lb.....

Diam. Arbor 7/8". For complete details see page 10. 1" diam. arbor is M1-560L (page 10).

**No. M1-576** DRAW-IN BAR. Code ZEVAM, wt. 1½ lb.

**No. S7-100** CRANK HANDLE for No. M1-576. Code ZEVYS. Weight 1½ lb.....

**No. M1-400** SAFETY BELT GUARDS for Atlas milling machines. Code word ZESUP. Weight 20 lb.....

#### SINGLE PHASE MOTOR

**No. 25205** 1/3 HP 1740 RPM SINGLE PHASE CAPACITOR-START BALL BEARING MOTOR. 110/120 volt, 60 cycle, ½" single-end shaft, built-in switch, cord and plug. Code ZEWOR, wt. 33 lb.....

#### THREE PHASE MOTOR

**No. 26305** 1/3 HP 1740 RPM THREE PHASE BALL BEARING MOTOR. 220 volt, 60 cycle, ½" single-end shaft. Code ZEWPE, wt. 28 lb.....

**No. S7-300** THREE PHASE SWITCH. Code word ZEBAR. Weight 6 lb.....

## COMPLETE SPECIFICATIONS

### FEED RANGE

Longitudinal Table Travel, Hand-Operated.....	12"
Cross Table Travel, Hand-Operated.....	3½"
Vertical Table Travel, Hand-Operated.....	6"
Center of Spindle to Table in Lowest Position.....	6"

### TABLE

Working Surface, Precision Ground.....	4½" x 18"
Overall Table Dimensions.....	4½" x 18" x 1⅜" thick
T-Slot, Top of Table.....	⅜" x ⅝" x 16"
T-Slot, Side of Table.....	⅜" x ⅝" x 18"
Longitudinal Table Feed Screw.....	½" diameter, 10-pitch Acme threads
Telescoping Elevation Screw.....	⅝" and 1" diameter, 10-pitch Acme threads

### SPINDLE AND ARBOR

Twelve Spindle Speeds.....	61 to 2860 R.P.M. (see chart, page 7)
Spindle Bearings.....	Timken Tapered Roller Bearings with thrust take-up nut and collar
Spindle.....	1" diam., 10-pitch National Form threads, 17/32" hole through entire length, nose bored for No. 2 Morse Taper Arbor Diameter..... 7/8" or 1" (see page 10)
Center of Arbor to Underside of Overarm.....	2½"

### V-BELT DRIVE UNIT

Back Gears.....	20-pitch, ⅜" wide
Backgear Ratio (approximate).....	6½ to 1
Backgear Shaft Bearings.....	oilite bronze
Countershaft and Spindle Pulleys.....	3-step, V-type
Countershaft Spindle Bearings.....	oilite bronze
Motor Recommended.....	1/3 H.P. 1740 R.P.M. (page 10)
Overall Dimensions.....	25½" x 32½" x 22" high
Base Dimensions (Bench Space Required), including motor bracket.....	20½" x 18½"

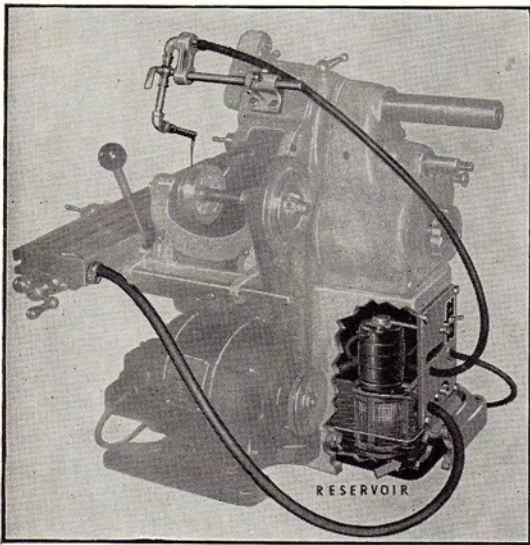
**EQUIPMENT FURNISHED:** Hand-Operated Table Controls; Integral V-Belt Countershaft; Belts and Pulleys for Complete V-belt Drive; Motor pulley furnished is for ½" diameter motor shaft— prices of pulleys for other motor shafts on request; Motor Mounting Bracket; 10-ampere Motor Control Switch and Cord with 18" Flexible Conduit Covering— switch is for single phase current only, 3-phase switch is No. S7-300 (page 10); Operating Instructions.





# ATTACHMENTS AND ACCESSORIES for

## AUTOMATIC COOLANT SYSTEMS FOR ATLAS MILLING MACHINES



**No. M1-600A COOLANT SYSTEM** FOR ATLAS MILLING MACHINES complete as shown. *Motor:* induction-type 3450 RPM for 110/120 volt 50-60 cycle AC. Code word ZEJBE, weight 12 lb.....

**No. M1-600B COOLANT SYSTEM** FOR ATLAS MILLING MACHINES complete as shown. *Motor:* universal 6000 RPM for 110/120 volt AC-DC. Code word ZEKEC, weight 19½ pounds.....

Nos. M1-600A and M1-600B coolant systems meet peak production demands, reduce tool wear, and improve work finish. They are designed especially for use with Atlas milling machines — powered by modern centrifugal-type pumps engineered for continuous service under severe operating conditions and with any cutting fluid. Simplicity of construction increases rigidity, lengthens service life, and insures smooth trouble-free performance.

Pump is installed in 3-pint reservoir compartment in base of the Atlas miller — on-off switch is built into cover plate. Extruded plastic feed line has sliding support arm, and the outlet nozzle is adjustable so that the flow of coolant can be directed easily to any point on the cutter arbor. No priming is necessary. Control valve regulates flow as desired from slow drip to fast washing action. Extruded plastic return hose has screen filter at table outlet.

PUMPING CAPACITIES	Gallons Per Minute	
	Soluble Oil (50% Solution)	Lard Oil (70° F.)
No. M1-600A	3.3	1.3
No. M1-600B	6	1.8

Other pump motors available — details on request

## MOTORS

The 1/3 HP 1740 RPM motors listed below are recommended for the Atlas milling machines. The No. 2520S is single phase, 60 cycle, has ½" diameter single-end shaft, built-in switch, and is furnished with 10 ft. SJ approved cord and plug — it is 110/220 volt capacitor start, developing full power instantly under load without drawing excess current.

### SINGLE PHASE MOTOR

**No. 2520S** 1/3 HP 1740 RPM SINGLE PHASE CAPACITOR-START BALL BEARING MOTOR. 110/220 volt 60 cycle, ½" single-end shaft, built-in switch, 10 ft. SJ approved cord and plug. Code ZEWOR, weight 33 lb.....

### THREE PHASE MOTOR

The Atlas No. 2630S motor is 1/3 HP 1740 RPM, designed for three phase current. It is 220 volt, 60 cycle, and has SKF ball bearings, single-end ½"-diameter shaft, BX connector in terminal box. Does not have switch, cord or plug.

**No. 2630S** 1/3 HP 1740 RPM THREE PHASE, BALL BEARING MOTOR. Code ZEWPE, wt. 28 lb.....

### THREE PHASE SWITCH

No. S7-300 thermal overload 3-pole manual starter switch is required for 3-phase circuits. Bracket for bench mounting and flexible cable-covered motor cord are furnished.

**No. S7-300** THREE PHASE SWITCH. Code word ZEBAR, wt. 6 lb.....

# HIGH SPEED MILLING CUTTERS

## CUTTER ARBORS



Hold cutter for slabbing, straddle cutting, slitting, forming, etc. Arbors are stressproof steel, ground all over—have full-length keyway and No. 2 Morse taper shank for spindle. Driver furnished is threaded for spindle nose. Collars are precision ground. No. M1-576 draw-in bar (right) is required.

Diam. Collars... 1 3/8" Shank..... No. 2 Morse taper Collars Furnished: two 2", one 1", one 3/4", one 1/2" Length Shoulder to Nut 6 1/4"

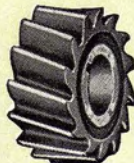
**No. M1-560 CUTTER ARBOR** for Atlas milling machine, complete with nut, five collars and driver. 7/8" Diam. Code ZETYR, wt. 5 lb.....

**No. M1-560L CUTTER ARBOR** for Atlas milling machine, complete with nut, five collars, and driver. 1" Diam. Code ZEWAN, wt. 6 lb.....

## SLAB MILLING CUTTER

For plain surfacing — has RH spiral teeth. Held on M1-560 arbor. Wt. 2 lb., hole 7/8".

No.	Diam.	Face	Code
M1-580	2 1/4"	1"	ZETLA



## ANGULAR CUTTERS



For face-milling and dovetailing. Threaded hole — adapted to No. M1-577 shank-cutter adapter with arbors listed below. Wt. 6 oz. each.

No.	Thick	Diam.	Hole	Thread	Code
574A	7/16"	1 1/4"	3/8"	24	YALIF
574B	9/16"	1 3/8"	1/2"	20	YALJE

## ARBORS FOR ANGULAR CUTTERS

Required for holding No. 574 angular cutters in No. M1-577 shank-cutter adapter. Wt. 8 oz. each.

No.	For No.	Code
572	574A	YEWTE
567	574B	YEWUX

## R. H. SPIRAL END MILLS



For general milling operations — slots, facing and routing, squaring and splining shafts, cutting straight keyways. Straight shank — held in No. M1-577 shank-cutter adapter with bushings below. Wt. 4 oz. each.

No.	Lgth.	Flute	Diam.	Code
576A	5/8"	1/4"	1/4"	YAKCE
576B	1 1/16"	5/16"	5/16"	YAKEC
576C	3/4"	3/8"	3/8"	YAKFO
576D	7/8"	7/16"	7/16"	YAKID
576E	1 5/16"	1/2"	1/2"	YAKOF

## END MILL BUSHINGS



Required to adapt 576 straight shank end mills to No. M1-577 shank-cutter adapter. Not required for No. 576E 1/2" diameter end mill. Wt. 4 oz. each.

No.	For End Mill	Code
563D	No. 576A	YAKYH
563C	No. 576B	YALAC
563B	No. 576C	YALCA
563A	No. 576D	YALDE
563E	Set of 4 Above Bushings	YALED

## SIDE MILLING CUTTER



For slotting, grooving, keyways, etc. — used in pairs for straddle milling. Teeth have cutting edges on three sides. Held on M1-560 arbor.

No.	Diam.	Face	Hole	Code	Wt.
M1-581	2 1/2"	1/4"	7/8"	ZETME	1 lb.

## METAL SLITTING SAWS



For slitting and slotting, cutting small keyways, and cut-off operations. Sides taper-ground for proper clearance. Held on M1-560 arbor. 7/8" hole, wt. 8 oz. each.

No.	Diam.	Thickness	Code
M1-582	2 1/2"	1/32"	ZETOP
M1-583	2 1/2"	1/16"	ZETPO
M1-584	2 1/2"	1/8"	ZETRY

## DRAW-IN BAR



Required to hold M1-560 or M1-560L cutter arbor and M1-577 shank cutter adapter in spindle taper. **No. M1-576** DRAW-IN BAR. Code word ZEVAM, weight 1 1/2 lb.....

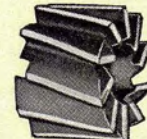
**No. S7-100** CRANK HANDLE required for No. M1-576 and No. M1-300 vise (page 11). Code ZEVYS, weight 1 1/2 lb.....

## SHANK-CUTTER ADAPTER



Holds 1/2" straight shank cutters (angular cutters, end mills, Woodruff keyway cutters). Has No. 2 Morse taper shank and is held in milling machine spindle with M1-576 draw-in bar (required). **No. M1-577** SHANK CUTTER ADAPTER. Code word ZEVEN, weight 1 lb.....

## RH SPIRAL SHELL END MILL



For wide facing cuts, surfacing, and end milling — recommended for heavy-duty work. Has RH spiral teeth. Back of cutter is slotted to fit driving pins of M1-570 driver (required). 2 lb.

No.	Diam.	Thickness	Hole	Code
M1-585	2"	1 3/8"	3/4"	ZEVIP

## SHELL END MILL DRIVER

Required for No. M1-585 end mill. It is threaded for spindle nose and has two driving pins for slot in back of cutter, ground pilot for cutter hole, and large retainer screw.

**No. M1-570** SHELL END MILL DRIVER required for M1-585 shell end mill. ZEVMA, wt 2 lb.....

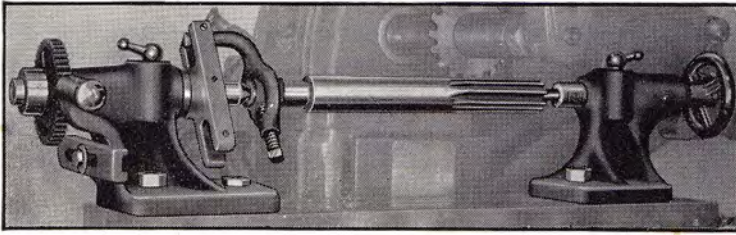
## WOODRUFF KEYWAY CUTTERS

For cutting Woodruff keyways — also used for milling slots, grooves, T-slots, etc. Straight shank — held directly in No. M1-577 shank-cutter adapter. 6 oz. each.

No.	Diam.	Thick	Code
575A	1/2"	1/8"	YALUH
575B	3/4"	3/16"	YALYJ
575C	1"	1/4"	YAMAD
575D	1 1/4"	5/16"	YAMDA
575E	1 3/4"	3/8"	YAMEF



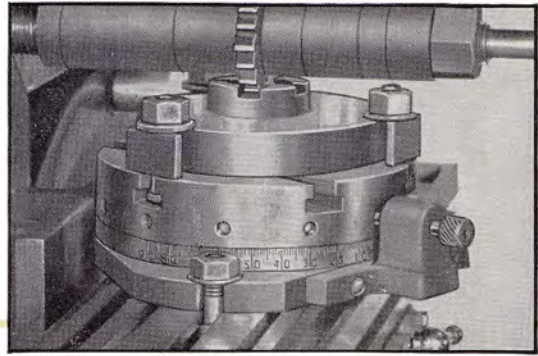
# the Atlas MILLING MACHINES



## INDEX CENTERS

For dividing operations required in such work as splining, fluting, gear cutting, and squaring shafts. Headstock and tailstock are heavy well-braced castings, locked with bolts to T-slot in milling machine table — both have keys at each end to maintain alignment with table T-slot. Centers may be positioned for work lengths up to 9 inches and locked with coordinate clamps. Headstock spindle nose is threaded for double-end dog driver or chucks listed below — outer end of spindle accommodates index gear and lock nut. Lock pin support bracket is adjustable for various gear diameters. Tailstock center has handwheel control.

- No. M1-200 INDEX CENTERS** for Atlas milling machine. Code word ZESLE, wt. 15 lb.....
- Maximum distance between centers.....9"
  - Maximum swing.....6"
- Furnished: Nine indexing gears (36, 40, 44, 46, 48, 52, 54, 56, and 64 teeth); 1½" dog, driver, bolts.
- NOTE: The following chucks are threaded to fit the headstock spindle nose of the M1-200 index centers:
- No. U6-437 4-INCH 3-JAW UNIVERSAL CHUCK complete with 2 sets of jaws (inside and outside) and wrench. Code word YIAJK, weight 9 lb.....
  - No. U6-439 4-INCH 4-JAW INDEPENDENT CHUCK with wrench. Code word YIALM, weight 6 lb.....
  - No. M6-375 JACOBS HEADSTOCK CHUCK capacity 0 to 17/32" complete with key-type wrench. Code YEEBY, wt. 3 lb.....

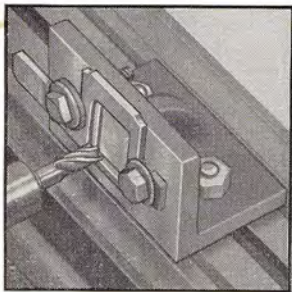


## ROTARY INDEX TABLE

The No. M1-350 rotary index table holds pieces for accurate angular indexing and spacing operations. The table is precision ground on all surfaces and can be swiveled to any angle and locked to base with two bolts furnished. There are three T-slots in the top of the table for positioning and locking the work — one T-slot extends through the center of the table, and the other two T-slots are parallel and 2¼ inches apart. Holes spaced around the side of the table permit indexing the table rigidly every 30° with plunger and knob. The swivel base is graduated from 0 to 90° left and right.

- No. M1-350 ROTARY INDEX TABLE** for Atlas milling machines. Furnished with two base-clamping bolts and wrench. Code word ZESNO, weight 15 pounds.....

Table Diameter .....	5½"
Height to Top of Table.....	1⅞"
Three T-Slots, Top of Table.....	⅜" x ⅝"



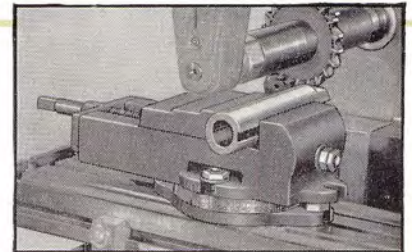
## ANGLE PLATE

The angle plate holds irregular shapes which cannot be gripped in the No. M1-300 vise (right) or bolted to the table. It is a solid well-braced iron casting, accurately machined to a right angle and precision ground on the outer faces. Working face has four holes for bolting work. Base has two holes for bolting to T-slot in the miller table. Base and face each measure 2½" x 4" x 7/16".

- No. S7-430 ANGLE PLATE** with bolts. Code word ZEHUD, weight 3 lb.....

## SWIVEL VISE

Grips work rigidly at any angle. Vise and base are heavy, accurately machined castings — base has machined bolt slot at



each end and 3½" long key in bottom to maintain alignment with T-slot of milling machine table. Vise can be turned in a complete circle and locked in any position — base is graduated from 0 to 90° left and right. Jaws are 3" wide, ⅞" high, open 3/8", and have steel insert plates. Acme-thread screw has tobin bronze nut and take-up adjustment. Vise is operated by No. S7-100 crank handle (page 10).

- No. M1-300 SWIVEL VISE** with clamping bolts. Code ZESON, weight 15 lb.....

Overall height with base 3⅞". Vise may be removed from base and used alone as plain vise.



## COOLANT TANK

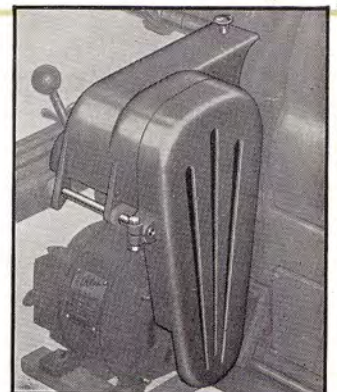
A gravity-flow tank of approximately one quart capacity. Sliding support arm and adjustable nozzle permit directing a flow of coolant to any point on the cutter arbor. Valve regulates flow. Nozzle is tipped with oil-proof extruded plastic — will not be injured if it comes in contact with revolving cutter.

- No. M1-550 COOLANT TANK**, capacity approx. 1 quart. Code word ZETAL, weight 8 lb.....

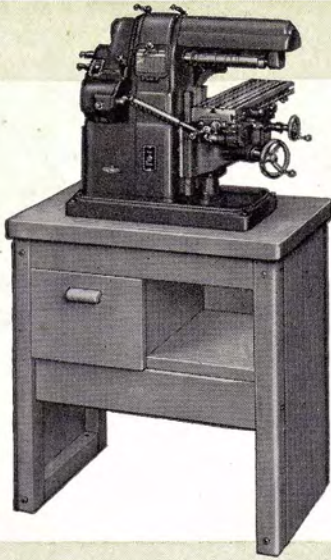
## BELT GUARDS

Eliminate hazards of exposed belting by providing safety cover as required by safety codes. Sturdy, durable castings with pin hinges, ready-tapped for easy installation. Vertical guard covers motor-to-countershaft belt. Horizontal guard covers belt from countershaft to spindle.

- No. M1-400 SAFETY BELT GUARDS** for Atlas milling machines. Code word ZESUP, weight 20 lb.....



## FLOOR CABINET FOR ATLAS MILLING MACHINES



No. M1-750 hardwood floor cabinet provides the rigid support required for accurate milling work and has convenient covered compartments for tools and accessories. It is patterned after modern heavy-duty scientific laboratory furniture. Massive solid-hardwood construction of all principal parts furnishes extra weight and rigidity for smooth, quiet machine operation. All frame joints are glued, screwed and bolt-reinforced. Table board measures 30" x 18" x 1 5/8".

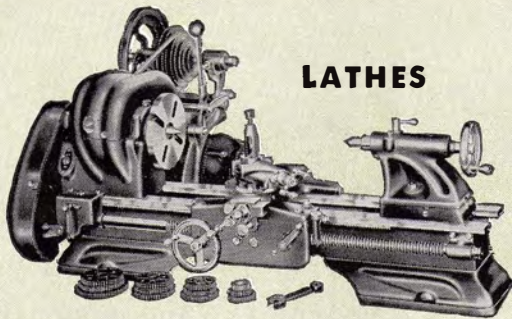
Two roomy cupboards 8 1/4 inches high furnish covered space for storage of accessories and tools—the right-hand cupboard is open-front, and the left cupboard is equipped with pull-down door with catch at horizontal position. Door is flush-front type, and the entire cabinet is round-cornered and natural finished for modern attractive appearance. Each corner has hole for bolting cabinet to floor.

### SPECIFICATIONS — NO. M1-750 HARDWOOD FLOOR CABINET

Order No.	Table Dimensions	Overall Height	Weight	Code Word
M1-750	30" x 18" x 1 5/8"	31 3/4"	140 lb.	ZEWEP

# INSTALL *Atlas* MODERN SHOP EQUIPMENT FOR SMALL-PARTS PRODUCTION

## LATHES



The Atlas F-Series 10" backgeared screw-cutting lathe fills every need as the basic multi-purpose machine tool for tool room and production shop. It is rugged, accurate, powerful. Features: precision-ground bed ways, backgeared power, custom-built spindle bearings, instantly reversible power cross feed and longitudinal feed, wide threading range (4 to 96 per inch), 16 speeds between 28 and 2072 RPM, complete V-belt drive.

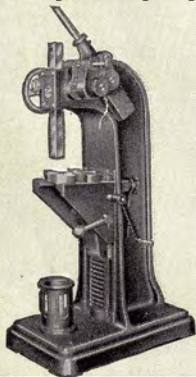
Equipped with lever-type collet chuck, tailstock and carriage turrets, the Atlas lathe becomes a compact hand screw machine for rapid small-part production.

## ARBOR PRESSES

Correct design, rugged materials, thorough testing — three big reasons why Atlas arbor and straightening presses have been accepted for over 30 years as standard production and maintenance equipment in all types of industrial plants. 28 Atlas mechanical and hydraulic presses are available for presses between 1 and 70 tons.

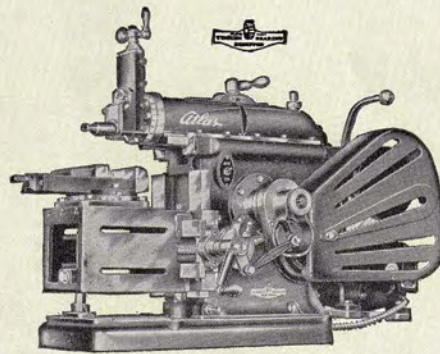
(Left) Atlas No. 4 heavy-duty floor-type compound leverage press with adjustable table. Capacity 12 tons.

● Ask for complete information on Atlas arbor presses including straightening presses, hydraulic presses, wheel-operated and double-column presses.



*"MATCH THE MACHINE TO THE JOB — use fast precision bench tools to take over the production of small parts so that capacities of larger machines will not be wasted."*

That Atlas idea is helping thousands of plants, large and small, step up production efficiently and economically. There are Atlas tools for every machining operation — lathes, drill presses, drilling machines, arbor presses, shapers, milling machines, grinders, motors and equipment. Can this idea of matching the machine to the job be helpful in your plant?



## SHAPERS

Handle all work within a 7" stroke accurately, economically and quickly. Have crank-type bull-gear drive, Timken tapered roller bearings, 4 speeds between 45 and 200 strokes per minute (3 1/2 to 116 feet per minute), 5 automatic cross feeds, complete V-belt drive. Operate on 1/2 H.P. 1740 RPM motor. Ram stroke 1/2" to 7". Horizontal table travel 9 3/8"; vertical 4 7/8".



## DRILL PRESSES AND DRILLING MACHINES

The well-known Atlas floating-drive spindle design equipped with four SKF ball bearings insures long, accurate service under the toughest operating conditions. Savings as high as 60% on small-hole drilling and tapping production are being made with Atlas 15" drill presses. Bench or floor-type, chuck capacity 1 1/2".

Atlas multiple spindle drilling machines speed up production of any part requiring a series of drilled and tapped holes. Heads have Atlas-SKF floating drive. Massive oil table; special head-positioning mechanism; 2, 3 or 4 spindles.

FOR *Atlas*  
EQUIPMENT

SEE—



THE ADAMS-BARRE CO.  
War Machinery  
Columbus, - Ohio

## PRICE LIST FOR Atlas MILLING MACHINES AND ACCESSORIES SHOWN AND LISTED IN CATALOG NO. M43

These prices conform to the 1942 Emergency Price Control Act and confirm previous Atlas price list dated August 25, 1941. All are F.O.B. factory, Kalamazoo, Michigan, U.S.A.

ORDER NUMBER	DESCRIPTION	Code Word	PRICE	Page No. Catalog No. M43
MF-G	Milling Machine with safety guards and Change-O-Matic power feeds .....	ZEVSY	\$306.50	7
MF	Milling Machine with Change-O-Matic power feeds, less guards .....	ZESL	295.00	7
M1-560	Cutter Arbor (7/8" diameter) .....	ZETYR	22.00	7
M1-576	Draw Bar for M1-560 Arbors and No. M1-577 Shank Cutter Adapter .....	ZEVAM	2.50	7
57-100	Crank for No. M1-576 Draw Bar .....	ZEVYS	2.75	7
M1-400	Safety Belt Guards for Atlas Milling Machines .....	ZESUP	13.75	7
25205	1/3 HP 1740 RPM Single Phase Capacitor Start Ball Bearing Motor .....	ZEWOR	23.75	7
26305	1/3 HP 1740 RPM Three Phase Ball Bearing Motor .....	ZEWPE	24.25	7
57-300	Three Phase Motor Control Switch with mounting bracket, etc. ....	ZEBAR	16.50	7
M1-G	Milling Machine with safety guards and hand operated table controls .....	ZEVNE	286.50	8
M1	Milling Machine with hand operated table controls, less safety guards .....	ZESAK	275.00	8
MH-G	Milling Machine with safety guards and production lever controls .....	ZEVUR	296.50	9
MH	Milling Machine with production lever controls, less safety guards .....	ZESKA	285.00	9
M1-560	Cutter Arbor (7/8" diameter) .....	ZETYR	22.00	8 & 9
M1-576	Draw Bar for M1-560 Arbors and No. M1-577 Shank Cutter Adapter .....	ZEVAM	2.50	8 & 9
57-100	Crank for No. M1-576 Draw Bar .....	ZEVYS	2.75	8 & 9
M1-400	Safety Belt Guards for Atlas Milling Machines .....	ZESUP	13.75	8 & 9
25205	1/3 HP 1740 RPM Single Phase Capacitor Start Ball Bearing Motor .....	ZEWOR	23.75	8 & 9
26305	1/3 HP 1740 RPM Three Phase Ball Bearing Motor .....	ZEWPE	24.25	8 & 9
57-300	Three Phase Motor Control Switch with mounting bracket, etc. ....	ZEBAR	16.50	8 & 9
M1-600A	Automatic Coolant System (Induction-Type Motor) .....	ZEJBE	44.50	10
M1-600B	Automatic Coolant System (Universal Motor) .....	ZEKEC	64.50	10
M1-560	Cutter Arbor (7/8" diameter) .....	ZETYR	22.00	10
M1-560L	Cutter Arbor (1" diameter) .....	ZEWAN	26.50	10
M1-580	Slab Milling Cutter .....	ZETLA	7.95	10
574A	1 1/4" Diameter Angular Cutter with Threaded Hole .....	YALIF	5.40	10
574B	1 3/8" Diameter Angular Cutter with Threaded Hole .....	YALJE	6.20	10
572	Arbor for No. 574A 1 1/4" Angular Cutter .....	YEWTE	1.20	10
567	Arbor for No. 574B 1 3/8" Angular Cutter .....	YEWUX	1.20	10
576A	1/4" Diameter RH Spiral Straight Shank End Mill .....	YAKCE	2.30	10
576B	5/16" Diameter RH Spiral Straight Shank End Mill .....	YAKEC	2.45	10
576C	3/8" Diameter RH Spiral Straight Shank End Mill .....	YAKFO	2.60	10
576D	7/16" Diameter RH Spiral Straight Shank End Mill .....	YAKID	2.85	10
576E	1/2" Diameter RH Spiral Straight Shank End Mill .....	YAKOF	3.15	10
563D	Collet Bushing for No. 576A End Mill .....	YAKYH	.40	10
563C	Collet Bushing for No. 576B End Mill .....	YALAC	.40	10
563B	Collet Bushing for No. 576C End Mill .....	YALCA	.40	10
563A	Collet Bushing for No. 576D End Mill .....	YALDE	.40	10
563E	Set of Four Collet Bushings: Nos. 563D, 563C, 563B, and 563A .....	YALDE	1.45	10
M1-581	Side Milling Cutter .....	ZETME	7.15	10
M1-582	Slitting Saw, 1/32" thick .....	ZETOP	3.75	10
M1-583	Slitting Saw, 1/16" thick .....	ZETPO	3.75	10
M1-584	Slitting Saw, 1/8" thick .....	ZETRY	3.85	10
M1-576	Draw Bar for M1-560 Arbors and No. M1-577 Cutter Adapter .....	ZEVAM	2.50	10
57-100	Crank for M1-576 Draw Bar and No. M1-300 Vise .....	ZEVYS	2.75	10
M1-577	Shank-Cutter Adapter .....	ZEVEN	4.55	10
M1-585	Shell End Mill, 2" diameter .....	ZEVIP	10.25	10
M1-570	Driver for No. M1-585 Shell End Mill .....	ZEVMA	9.00	10
575A	1/2" Diameter Straight Shank Woodruff Keyway Cutter .....	YALUH	3.50	10
575B	3/4" Diameter Straight Shank Woodruff Keyway Cutter .....	YALYJ	3.80	10
575C	1" Diameter Straight Shank Woodruff Keyway Cutter .....	YAMAD	4.65	10
575D	1 1/8" Diameter Straight Shank Woodruff Keyway Cutter .....	YAMDA	5.25	10
575E	1 1/4" Diameter Straight Shank Woodruff Keyway Cutter .....	YAMEF	5.75	10
25205	1/3 HP 1740 RPM Single Phase Capacitor Start Ball Bearing Motor .....	ZEWOR	23.75	10
26305	1/3 HP 1740 RPM Three Phase Ball Bearing Motor .....	ZEWPE	24.25	10
57-300	Three Phase Motor Control Switch with mounting bracket, etc. ....	ZEBAR	16.50	10
M1-200	Index Centers for Atlas Milling Machine .....	ZESLE	34.65	11
57-430	Angle Plate with bolts .....	ZEHUD	6.00	11
M1-550	Coolant Tank for Milling Machine, gravity type .....	ZETAL	6.60	11
M1-350	Rotary Index Table for Milling Machine .....	ZESNO	33.00	11
M1-300	Swivel Vise for Milling Machine .....	ZESON	20.35	11
U6-437	4-Inch 3-Jaw Universal Chuck .....	YIAJK	19.00	11
U6-439	4-Inch 4-Jaw Independent Chuck .....	YIALM	11.25	11
M6-375	Jacobs Headstock Chuck, capacity 0 to 17/32" .....	YEEBY	12.00	11
M1-400	Safety Belt Guards .....	ZESUP	13.75	11
M1-750	Floor Cabinet for Atlas Milling Machines .....	ZEWEP	49.95	12