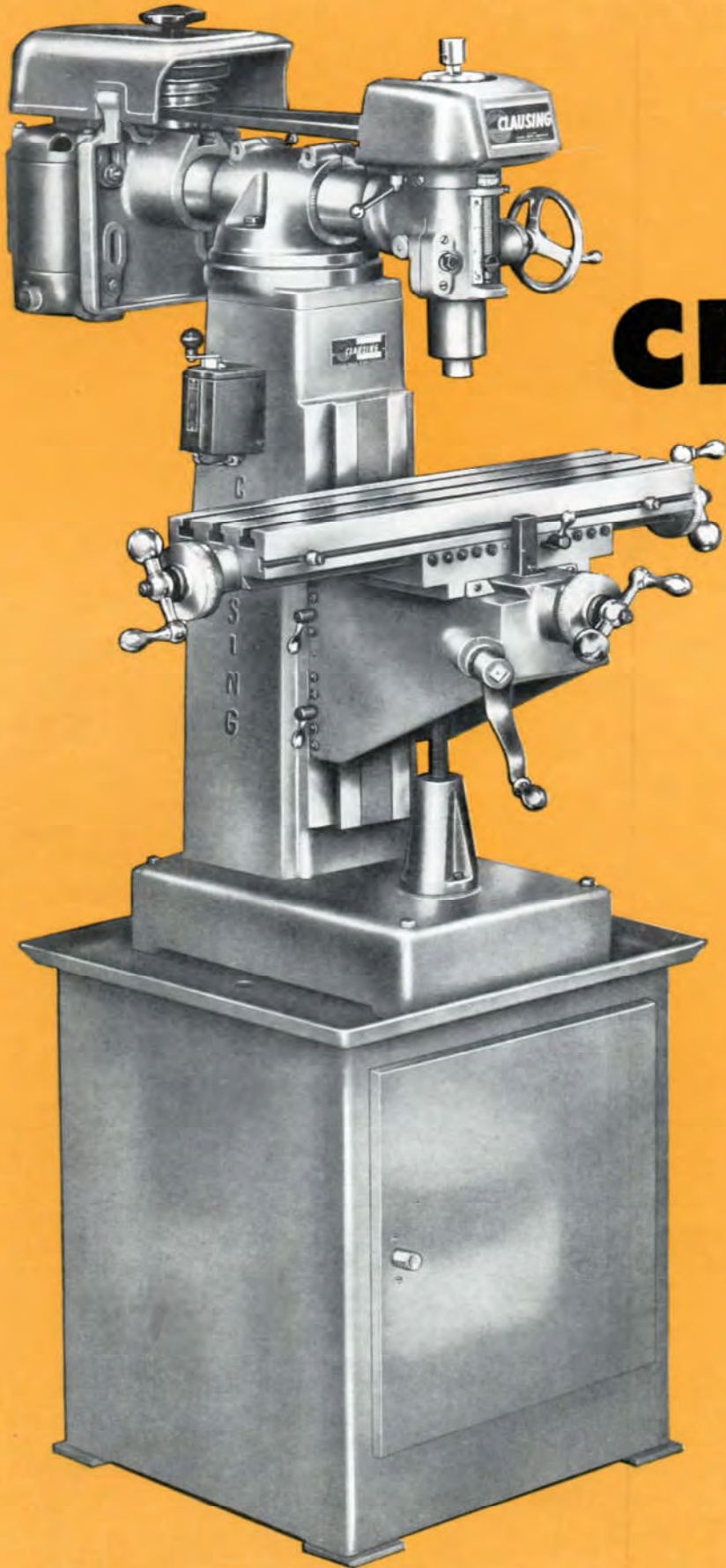


CATALOG 1258-2

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**CLAUSING**

*Precision*

**VERTICAL  
MILLING  
MACHINES**



**SEE YOUR CLAUSING DEALER**

# unequaled accuracy, unmatched versatility

Clausing vertical mills surpass in every comparison of precision, sensitivity, efficiency and value.

## ACCURACY VERIFIED to within TENTHS

Clausing mills are built to tolerances that are "tightest" in the industry. For example, before it leaves the factory, each mill must pass tests such as:

1. Spindle taper (internal) run-out within .0002" at spindle nose.
2. Top of table square with column ways within .0005" in 6" travel.
3. Spindle square with table, front to rear, within .001" TIR in 5" circle.
4. Table T-slots parallel to table dovetail ways within .0005" in 8" longitudinal travel.

The report that accompanies each mill certifies its precision.

## UNMATCHED SENSITIVITY

Clausing's ultra-precision feed screws are ground to gage tolerances. Result — high sensitivity on small work, *plus* unequalled accuracy for layout, light jig bore, and other close-tolerance operations.



## EFFICIENT, PRECISION HEAD

Mill at all angles with one work setup — the head of the Clausing mill swivels in a vertical plane and can be set at any angle — turret head rotates in a horizontal plane.

Quill is ground and hard-chrome plated — bearing surface in head is *full length*. Spindle — hardened and ground chrome nickel steel — turns in three ball bearings. Upper bearing is shielded radial type. Lower bearing is pre-loaded double-row angular contact that absorbs *both* end and radial loads.

Two hand feed controls are furnished for advancing spindle to work — a handwheel for fine feeds — lever for fast feeds. Positive depth stop with graduated dial and easy-to-read scale provides depth control accurate to .001". Brake, controlled by lever on side of head, stops spindle quickly — draw-in bar has collet ejection mechanism.

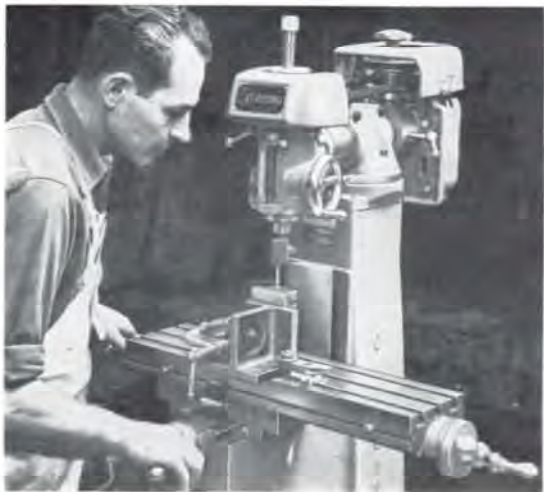
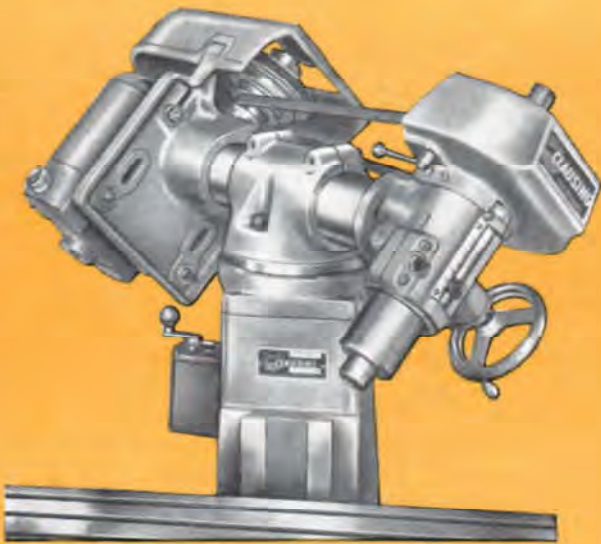
## TWO SPEED RANGES

**180 to 3250 rpm or 360 to 6500 rpm**

Clausing mills are built for high-speed precision machining, as well as general milling — low speed range is obtained with 1725 rpm motor, high range with 3450 rpm.

Power is transmitted to spindle thru a 5-step idler pulley, a 4-step spindle pulley, and an internally splined steel driver. Spindle pulley turns on two ball bearings mounted on a ground steel support anchored to head. Idler pulley turns on two ball bearings. Pulleys are cast aluminum, fully machined and balanced.

*There are seven ball bearings in Clausing's heavy-duty precision drive and spindle!*



"The Clausing vertical miller is the best machine for the money on the market today. It is most versatile . . . and extremely accurate." This statement from Empire Tool Engineering Company is typical of the experience of hundreds of users.



## COLUMN, KNEE, SADDLE, TABLE

Column, knee, saddle and table are heavy normalized iron — have ground ways, full length gibs, gib locks.

Knee elevating screw turns on ball thrust bearing. Control handle shaft turns on two more ball bearings, operates screw thru steel bevel gears.

Feed screws for table and saddle have ground threads — turn on ball bearings. Feed screw dials are 3-3/16" diameter, micrometer-graduated in .001" for easy, accurate feeding.

Reversing switch, furnished, is conveniently located on left side of column. Cabinet is heavy steel, a rigid mount for the machine — top is flanged, has outlet for removal of oil.

**No. 8520** CLAUSING VERTICAL MILLING MACHINE with No. 2 MT spindle, less motor. 650 lb.

**No. 8525** CLAUSING VERTICAL MILLING MACHINE with No. 7 Brown & Sharpe spindle, less motor. 650 lb.

### MOTORS

#### Single Phase Motors

No.	HP	Volt	Cycle	RPM	Shaft Dia.	Wt. Lb.
2790	3/4	115/230	60	1725	5/8"	41

#### Three Phase Motors

No.	HP	Volt	Cycle	RPM	Shaft Dia.	Wt. Lb.
2840	3/4	208/220/440	60*	1725*	5/8"	38
2851	3/4	208/220/440	60	3450	5/8"	50

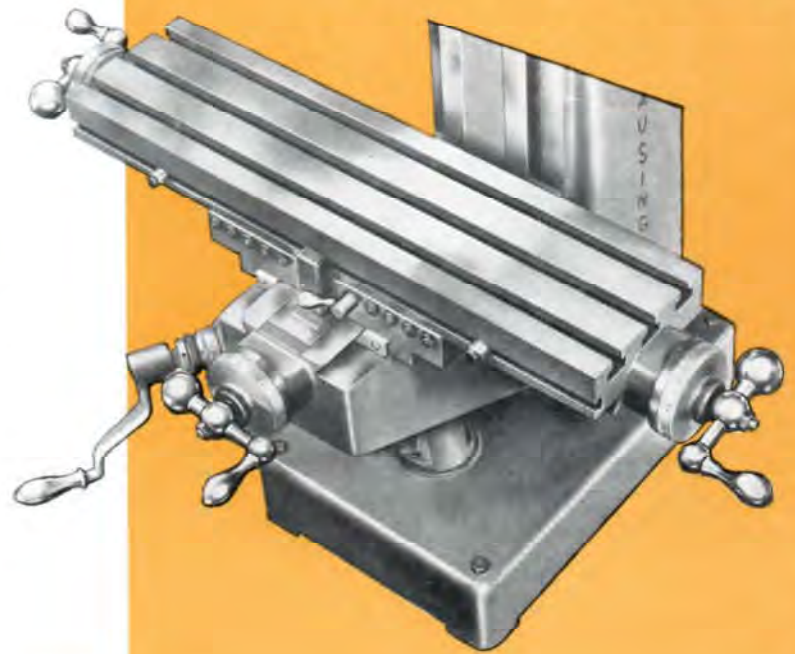
\*Operate on 50 cycle at 1425 rpm.

All motors listed above are ball bearing equipped, have single end shaft with 3/16" x 3/32" key way — do not have switch, cord or plug.

NOTE: All motors listed operate satisfactorily on a 10% voltage variation. Other voltages and cycles available — information on request.

## SPECIFICATIONS

Table Size .....	6" x 24"
Longitudinal Table Travel .....	15"
Cross Table Travel .....	5"
Vertical Table Travel .....	11 3/8"
Spindle Travel .....	3"
Maximum Distance Spindle to Table .....	15 5/8"
Maximum Distance Spindle to Column .....	8 3/4"
T-slot, Top of Table .....	9/16"
T-slot, Front of Table .....	1/4"
Spindle Speeds	
with 1725 rpm Motor	
180, 350, 600, 1000, 1900, 3250 rpm	
with 3450 rpm Motor	
360, 700, 1200, 2000, 3800, 6500 rpm	
Spindle Nose.....	No. 7 Brown & Sharpe or No. 2 MT
Elevation Screw, Knee.....	Stress proof steel 7/8" dia.,
	10 Acme threads per inch
Motor Recommended.....	3/4 hp, 1725 or 3450 rpm
Motor Base Takes NEMA Frame Sizes	
	J56, 1186, 1216B
Over-all Dimensions .....	36" x 40" x 66" high



### TABLE POWER FEED ATTACHMENT For Longitudinal or Cross Feeds

Provides infinitely variable power feeds from 0 to 6" per minute thru dial control. Mounts on table for longitudinal feeds, or on saddle for cross feeds. Switch has forward, neutral and reverse positions — lever control instantly engages mechanism, or disengages for hand feeds.

Unit is ruggedly built—continuous-duty integral motor, steel gears, cast aluminum housing. Slip clutch and fuse protect against overload. Motor is single-phase. 60 cycle. Easily and quickly installed — no holes to drill.

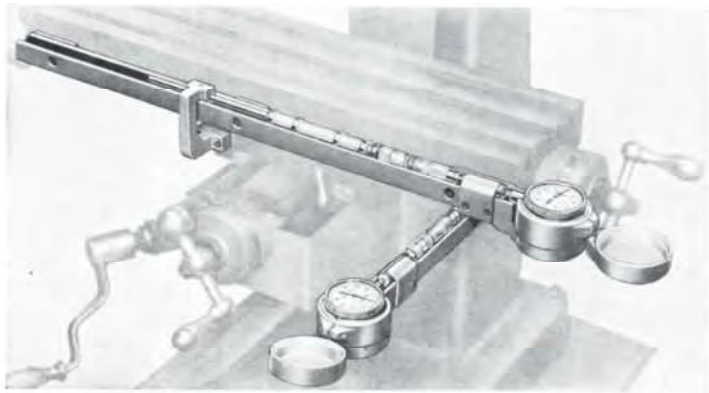
**No. 8635** TABLE POWER FEED ATTACHMENT with 10' cord and plug. 14 lb.

### RISER BLOCK

**No. 8626** RISER BLOCK. Only for Mills serial No. 03459 and lower. Increases spindle to table capacity 4 inches. 23 lb.



# ACCESSORIES



## MEASURING ATTACHMENT

The Clausing Measuring Attachment saves time in all drilling and boring operations where holes must be located to extremely close tolerances, and in the machining of dies, jigs, fixtures.

The Measuring Attachment is built to the highest standards of quality and workmanship — rods are accurate to  $\pm .0001$ ", the two micrometer heads and dial indicators read to  $.0001$ ", troughs are precision machined. Rods are hardened. Threads of micrometer heads are ground, hardened and stabilized. Dial indicators have jeweled bearings, "non-shock" movement, and are protected by a buffer. Measuring attachment is installed when ordered with machine from factory.

**No. 8630** MEASURING ATTACHMENT for Clausing Vertical Milling Machine. Complete with two 1" rods, two 2" rods, two 3" rods, one 5" rod, one 8" rod, two 4"-5" micrometer heads, two dial indicators, table trough and saddle trough with indicator holders, two stop brackets with movable stop rods, storage case for rods and micrometer heads. 20 lb.



## SPLIT HOLDING COLLETS

Collet tool steel, heat-treated, ground inside and outside, and threaded for 3/8"-16 draw bar. Handle round shank tools with diameters between 1/8" to 1/2" in increments of 1/16".

### For No. 2 MT Spindle

<b>No. 8601</b>	1/8"	Collet	1 lb.	<b>No. 8605</b>	3/8"	Collet	1 lb.
<b>No. 8602</b>	3/16"	Collet	1 lb.	<b>No. 8606</b>	7/16"	Collet	1 lb.
<b>No. 8603</b>	1/4"	Collet	1 lb.	<b>No. 8607</b>	1/2"	Collet	1 lb.
<b>No. 8604</b>	5/16"	Collet	1 lb.				

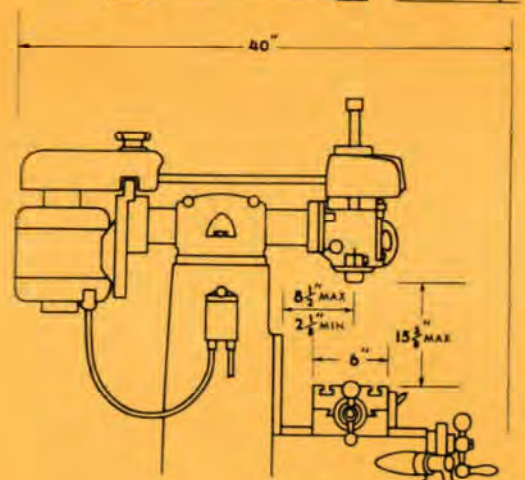
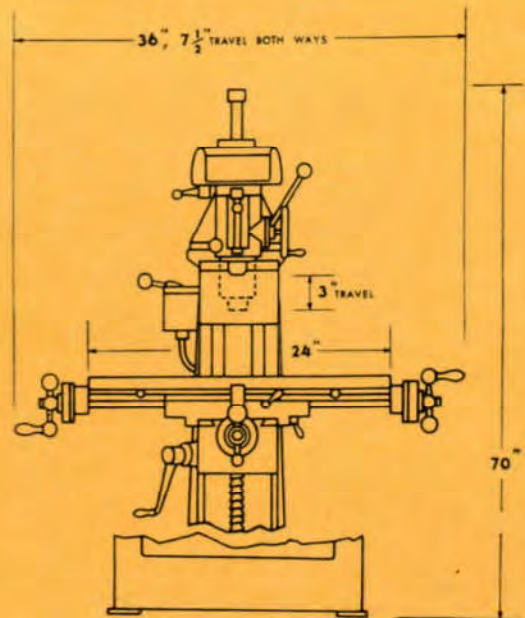
### For No. 7 Brown & Sharpe Spindle

<b>No. 8608</b>	1/8"	Collet	1 lb.	<b>No. 8612</b>	3/8"	Collet	1 lb.
<b>No. 8609</b>	3/16"	Collet	1 lb.	<b>No. 8613</b>	7/16"	Collet	1 lb.
<b>No. 8610</b>	1/4"	Collet	1 lb.	<b>No. 8614</b>	1/2"	Collet	1 lb.
<b>No. 8611</b>	5/16"	Collet	1 lb.				



## BALL BEARING CHUCK

**No. 8615** BALL BEARING CHUCK, capacity No. 70 drill to 1/2". Key-type wrench and 1/2" straight shank arbor furnished. 2-1/2 lb.



## VERIFIED ACCURACY

Every Clausing Vertical Mill must pass the tolerance tests shown below. The report that accompanies each mill certifies its precision.

1. Top of table perpendicular to column ways within  $.0005$ " in 6" travel.
2. T-slots parallel to table dovetails within  $.0005$ " in 6" travel.
3. T-slots square with cross slide dovetails within  $.0005$ ".
4. Table parallel to turret within  $.001$ ".
5. Spindle square with table, front to rear, within  $.001$ " TIR in 5" circle.
6. Spindle taper (internal) run-out within  $.0002$ " at spindle nose.
7. Thickness of cross slide bearing surfaces uniform to within  $.001$ ".
8. Table T-slots parallel to table dovetail ways within  $.0005$ " in 8" longitudinal travel.