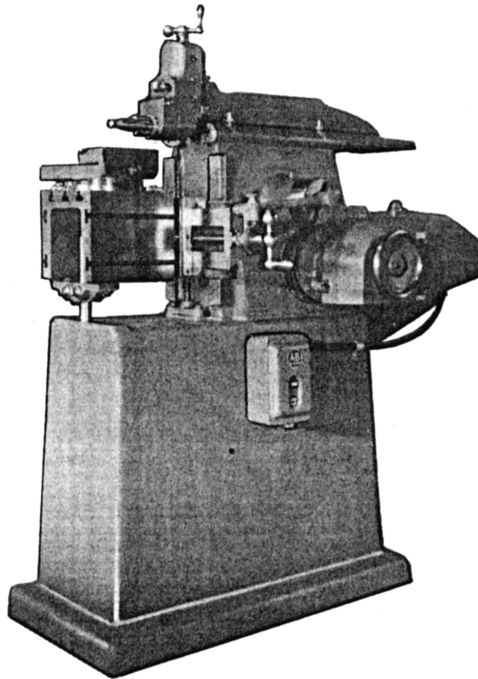


OPERATOR MANUAL

for

8" Stroke

SHAPE-RITE SHAPER



HAVIR MANUFACTURING CO.

ST. PAUL, MINNESOTA

8" Stroke Hy-Duty Shape-Rite Shapers

A PRECISION SHAPER FOR PRECISION WORK

★★★

Shape-Rite Shapers are known the world over for their accuracy, rigidity, and easy performance. Tool and die makers and instrument manufacturers find these shapers indispensable for work that can be machined on an 8" Stroke Shaper. Simplicity in design and the convenient location of the controls adds greatly on quick setups and is easy to operate, saves a great deal of time and money. When you buy a Shape-Rite Shaper you are investing in a machine tool that will serve you for many years.

Hy-Duty Shape-Rite Shapers are designed and built to handle any class of work within the capacity of eight-inch stroke shapers with the highest degree of accuracy. All of the working surfaces are ground and hand scraped, and each part is closely fitted to insure positive accuracy and longer life.

All of the gears except the bull gear and pinion are now enclosed and run in oil. The bull gear and pinion are cut right hand helical angle. The drive gear is cut left hand angle. This feature actually gives you a silent herringbone gear effect and adds extra smoothness; also eliminates gear tooth reproduction on your work. An extremely fine finish can be produced with Shape-Rite Shapers.

All of the gears and drive shaft are mounted on anti-friction bearings throughout the entire shaper.

The column is heavily constructed, cross ribbed and made of special alloy cast iron.

The ways on the ram are Vee type and are extra long and extra heavy to avoid deflection.

The tool head is rugged, heavy constructed to accommodate a heavy tool holder graduated in degrees and swivels to any desired angle.

The rocker arm is linked at the top to the ram drive head and is equipped with needle point bearings. The slide block is made of tool steel, hardened, ground, and closely fitted to insure long life and to reduce wear.

The cross rail and table saddle are heavily constructed to insure extreme rigidity.

Shape-Rite Shapers are furnished with either plain or swivel tables. The swivel tables are very desirable for tool work and plastic moulds and are completely flexible for any type of production work.

The motor is mounted on a hinged bracket to maintain a tight belt. This feature is convenient when changing speeds.

Lubrication is provided with standard alemite fittings throughout.

Standard equipment consists of steel faced jaws, swivel base vise, tool post wrenches, and motor drive arrangement, less electrical equipment.

INSTRUCTIONS FOR STARTING AND OPERATING NEW 8" STROKE SHAPE-RITE SHAPER

INSTALLING

The following instructions should be carried out carefully for best results from the Shape-Rite Shaper. Care should be taken that the Shaper is properly and securely fastened. Clean all parts coated with oil thoroughly with gasoline or kerosene. Wipe all surfaces dry. Raise and lower table on column in a vertical motion. Travel table right to left and keep wiping the surface until the finished surfaces are completely clean, then lubricate the surfaces with clean oil. Oil all parts on the Shaper as per lubricating chart shown on page 5.

Start Shaper by your operating switch after your electrician has checked that the heaters are correct for your voltage. Run Shaper approximately two hours without load after same is installed and properly secured, leveled, and cleaned, before putting into actual use.

SETTING

Loosen four screws approximately half a turn on each clamp plate on the back of cross rail on vertical way on column. Elevate or lower table to the proper height. Tighten the same four screws on clamp plates on both sides of cross rail before adjusting table support and clean the way on which the table support travels. Place finger on the top of the table shaft. Push down firmly, tighten the two front screws firmly on the front of the table which clamps the table support.

Set your work in the vise or fixture as required. Measure the surface that is to be planed to determine the length of cut or stroke required. Bring ram to extreme forward position by the hand wheel on the right side of the Shaper next to the belt guard. Open door on the left side of the Shaper, loosen nut, shown as No. 1 on Page 5, on the slide block in the rocker arm; by either pushing or pulling on the ram you can adjust the Shaper for the proper stroke. Set the indicating pointer on ram to corre-

spond with the index plate, which is graduated in inches on the side of the ram on bearing guide, indicating the correct stroke in inches. Tighten nut, shown as No. 1 on Page 5 firmly.

Loosen hand lever on the top of ram. Position ram so when the tool completes its cutting stroke it will clear the work approximately 1/16" or more. Return ram to the starting position of the cut by hand wheel. Be sure that you have plenty of clearance, approximately 1/4" between your cutting tool and the starting point of cut.

If you do not have sufficient clearance, increase your stroke to give you this extra working clearance. It is very important to get your tool to retard itself into the cutting position when the ram returns to the starting point of the cut.

After you have tightened your clamp lever firmly on the top of your ram, which is now positioned to the correct travel, then you may proceed to adjust your tool and grind your tool according to the requirements of the material which you are to machine.

It is always advisable to have the tool holder in the tool post as far in as possible and the tool projecting from the tool holder as short as possible. Be sure that both screws in tool post and tool holder are tightened firmly. The work should be brought up as close to the ram or the table should be elevated to the highest position possible, keeping the cutting tool close to the bottom of the ram.

The slide on the tool head should never project below the bottom of the ram. Caution should be taken not to project the slide head below the bottom of the ram as serious damage can be done to the Shaper if the tool head should strike the front face of the column. After you have set your Shaper ready to proceed to machine the parts that you have the machine set for, it is always advisable to revolve your ram to at least one complete stroke by the hand wheel on the right hand side of the Shaper, next to

the guard, to see that all of the adjustments are correctly and securely made and that the tool head does not strike the ram ways or the front of the column.

FEEDS

Adjust your dials to the zero mark and proceed to machine the surface required. The feed can be adjusted by loosening the nuts on the connecting rod from the slotted drive head on the right hand of the Shaper, which actuates the feed dog to the ratchet wheel on the cross feed screw which is next to the handle on the right hand side of the Shaper. By turning the feed dog one-half way around you can change the cross feed of your Shaper either direction, right or left.

NOTE

Always be careful and clean Shaper thoroughly after each job is completed before a new job is started. It is well to clean the working surfaces thoroughly and to lubricate all the soft oilers with clean oil, especially the oil cups on the ram. Follow instructions of the lubricating chart carefully as this is most important.

SPEED CHANGES

Speed and feeds can only be determined by the material to be machined, therefore, it is difficult to make a recommendation of the speeds and feeds required. Speeds can be readily changed by opening the guard on the hinge, lifting the motor and shifting the belt to the correct V-step in the motor pulley and the corresponding pulley on the Shaper.

Please note there is no lock on the dials on the cross feed screw or the tool head compound. These are patented thimble type dials and can be adjusted by merely turning to the required position by the knurled ring, machine integral with the dial.

NOTE

DO NOT ATTEMPT TO MOUNT CIRCULAR TABLE OR THE DIVIDING HEADS ON THE TABLE WITHOUT THE SUB-PLATE DESIGNATED NO. A-4752-1-1.

Attach sub-plate designated No. A-4752-

1-1 firmly to your table with the screws furnished with the Shaper for this purpose. Adjust your Shaper table after the rotary table or the index centers are properly mounted on the sub-plate above.

NOTE MOUNTING ROTARY TABLE AND DIVIDING HEADS

You will note that with the standard equipment there are two index plates with the dividing head to give you a complete ratio in accordance with the index cards furnished with the Shaper. Care should be taken before mounting either the index plate or the rotary table to the sub-plate that the bottom of the table or the dividing centers should be thoroughly cleaned and also that the top of the plate is thoroughly cleaned. This applies to installing the sub-plate to the surface of the table. The slightest particle of a chip, or dirt, is liable to change the accuracy of the Shaper decidedly.

CARE

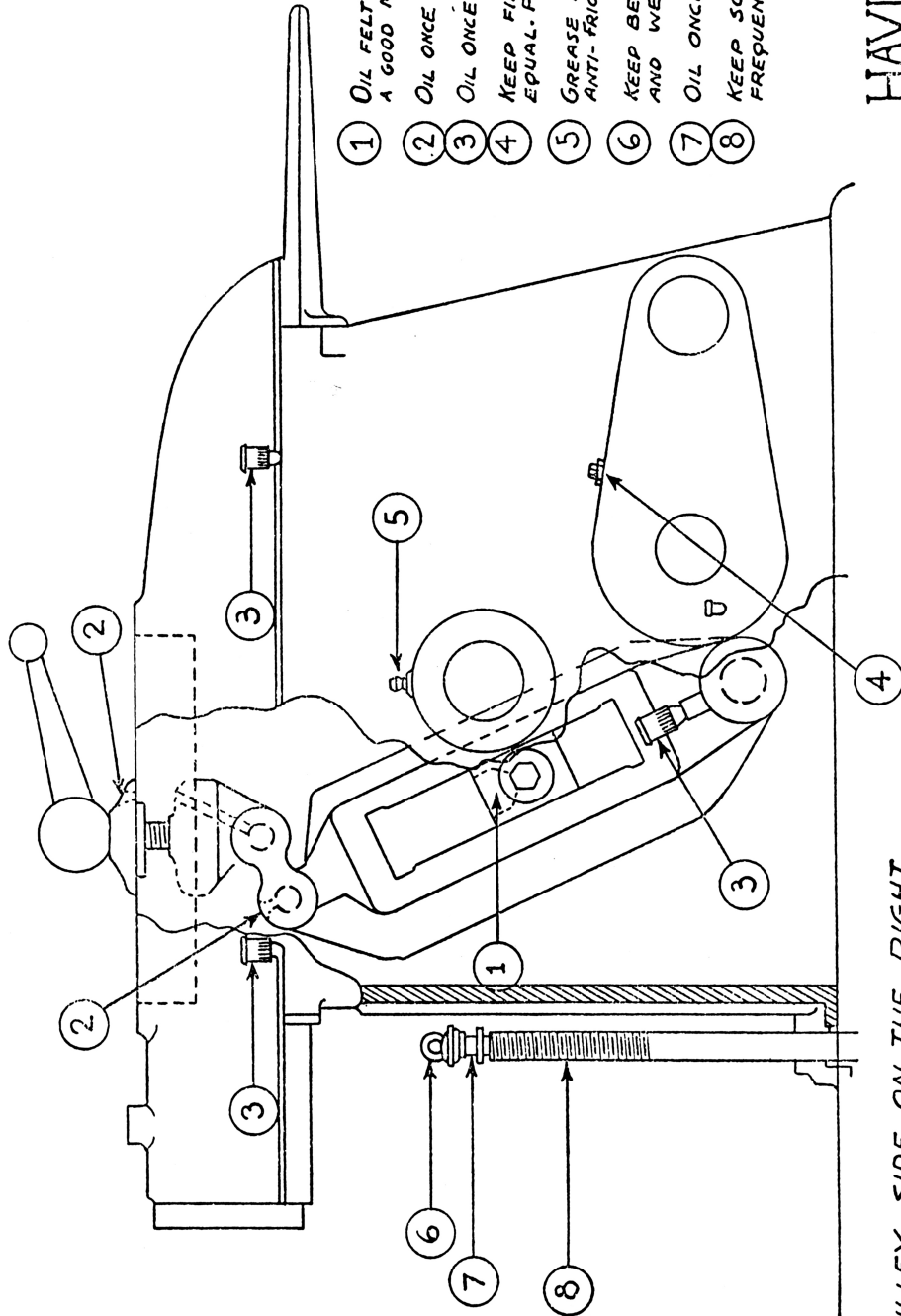
After same is set to the proper height and the clamp plates on the back of the rail are firmly tightened on the column vertical way, great care should be taken that the table support is also adjusted to support the overhang of the dividing head or the rotary table.

There is an index pointer on the side of the rotary table which can be set to correspond with the zero reading when attaching and clamping work on the table. This pointer can be adjusted by loosening the lock and sliding pointer right to left, or left to right, as required.

Care should be taken in handling the dividing heads, the rotary table and the sub-plate, so that same would be handled carefully and not bumped or nicked. The slightest nick on the bottom of either of these heads, where same are attached to the sub-plate or the table, will also throw your machine completely out of line and accuracy will be lost. This is a precision machine and should be treated as such. If these instructions are followed closely, the Shape-Rite Shapers will last for many years and will serve you with the greatest degree of accuracy.

8" SHAPE-RITE SHAPER LUBRICATION CHART

MODEL "B"

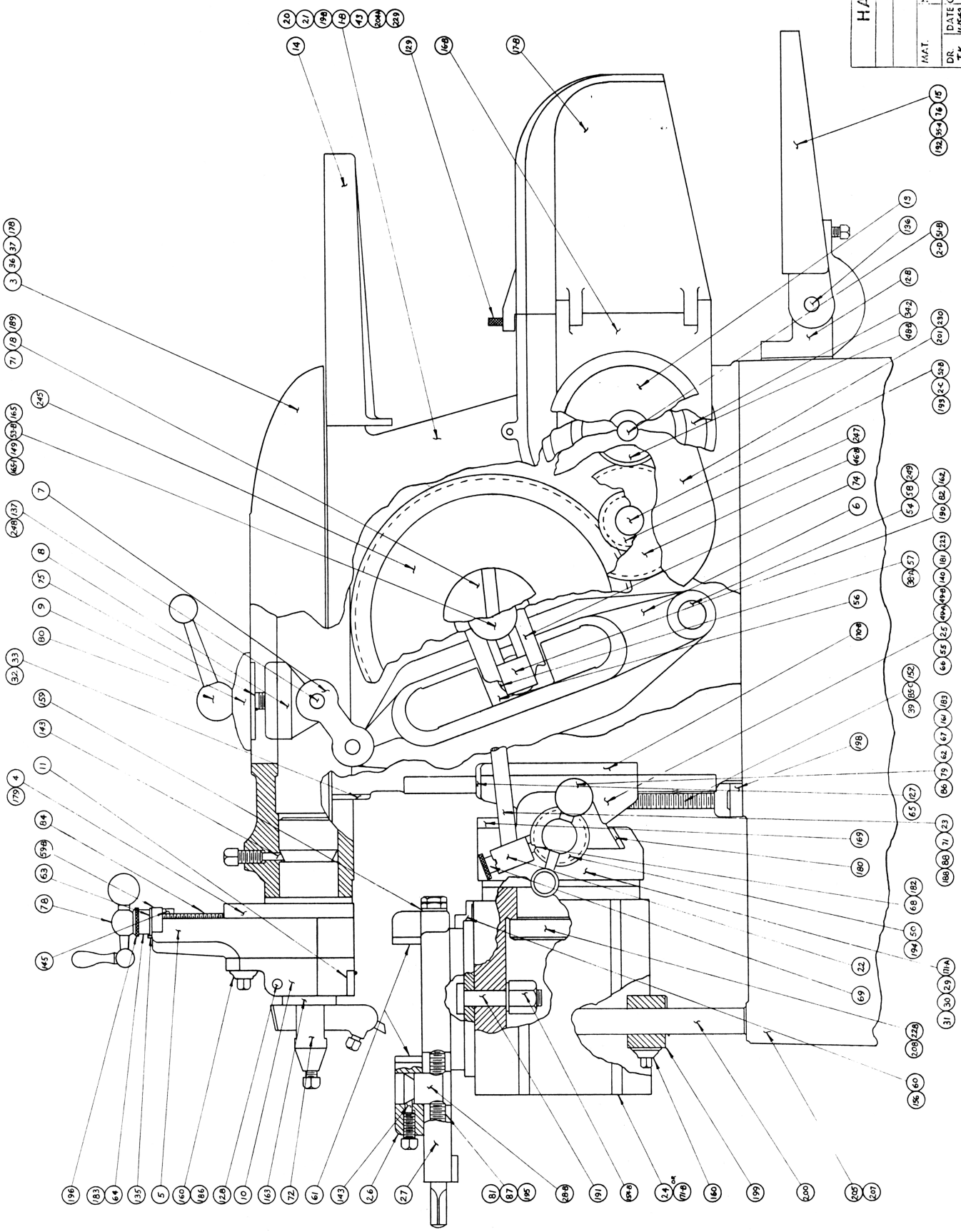


- ① OIL FELT WICK ONCE EVERY 8 OPERATING HOURS WITH A GOOD MACHINE OIL
- ② OIL ONCE EVERY 8 OPERATING HOURS WITH A GOOD MACHINE OIL
- ③ OIL ONCE EVERY 8 OPERATING HOURS WITH A GOOD MACHINE OIL
- ④ KEEP FILLED WITH 600W TRANSMISSION GREASE OR EQUAL. FILL TO LEVEL OF OIL CUP ON SIDE.
- ⑤ GREASE LIGHTLY ONCE EVERY 3 MONTHS WITH ALEMITE ANTI-FRICTION BEARING GREASE NO. 38 OR ITS EQUAL
- ⑥ KEEP BEVEL GEARS FREE OF GRIT AND CHIPS AND WELL OILED
- ⑦ OIL ONCE EVERY DAY
- ⑧ KEEP SCREWS FREE OF GRIT AND CHIPS. OIL FREQUENTLY WITH GOOD MACHINE OIL

PULLEY SIDE ON THE RIGHT

KEEP ALL FACES OF SHAPER GEARS WELL GREASED WITH STICKEY DINION GREASE AND FREE OF GRIT AND CHIPS
OIL ALL OTHER MOVING PARTS FREQUENTLY

HAVIR MFG. CO.
ST. PAUL MINNESOTA
U.S.A.



HAYR MFG. CO.			
ST. PAUL, MINN.			
SHAPER ASSY (8")			
MAT.	11	REQ.	SCALE FOR
DR.	DATE CHKD	APPD.	
T.K.	1/15/52		

PART LIST 8 INCH MODEL B SHAPE-RITE SHAPER

Manufactured by

Havir Mfg. Co., St. Paul, Minnesota

Part No.	Amt. Reg.		Part No.	Amt. Reg.	
1B	1	Column	80	1	Position Handle for Ram Clamp
2C	1	Bearing Cap for Inter. Shaft	81	1	Vise Crank Wrench
2D	1	Bearing Cap for Pulley Shaft	82	1	Cam Block Wrench
3	1	Ram	83	1	Open End Wrench
4	1	Tool Head Swivel Casting	84	1	Feed Screw for Tool Head
5	1	Tool Head Slide	85C	1	Screw - Elevating Acme
6	1	Rocker Arm	86	1	Cross Feed Screw 5/8" Dia. x 10 Pitch
7	1	Rocker Arm Link	87	1	Vise Screw 5/8" Dia.
8	1	Ram Clamp Lug	88	1	Washer - Ratchet Link
9	1	Ram Clamp Cap	127	1	Oil Wiper and Chip Guard (Cross Rail)
10	1	Tool Head Clapper Box	128	1	Taper Pin-Clapper Box
11	1	Tool Head Clapper	129	1	Lock Pin - Belt Guard
12B	1	Motor Mount Bracket	135	1	Pointer - Tool Hd. Feed Ind.
13	1	Inching Hand Wheel	136	1	Pin-Hinge (Motor Platform)
14	1	Ram Guard	137	2	Link Pin - Rocker Arm
15	1	Motor Platform	140	2	Pin - Cross Rail Gib
16B	1	Belt Guard Stationary Section	143	2	Vise and Tool Hd. Clamping Plug
17B	1	Belt Guard Swinging Section	145	1	Collar Tool Hd. Adj. Screw
18	1	Ratchet Feed Adjustment Hub	149	1	Nut - Bull Gear Shaft
19B	1	Door - Column	152	2	Collar - Elev. and Cross Feed Adv. Screw
20	1	Door Knob	154B	1	Nut - Vise Bolt
21	1	Door Catch	156	1	Nut - Vise Slot
22	1	Ratchet Feed Arm	159	1	Washer - Vise Screw
23	1	Feed Ratchet Link	160	1	Washer - Table Jack
24	1	Plain Table (Also See #171)	161	1	Washer - Cross Feed Screw
25	1	Cross Rail	162	1	Washer - Cam Block
26	1	Vise Jaw	163	1	Washer - Tool Post
27	1	Vise Body	165	1	Roller Bearing - Bull Gear Shaft Outer End
28B	1	Vise Jaw Nut	165-1	1	Roller Bearing - Bull Gear Shaft Inner End
29	1	Cross Feed Nut	166	1	Ball Bearing - Pulley Shaft (Wide)
30	1	Oil Wiper - Table	167B	1	Ball Bearing - Int. Shaft (Wide)
31	1	Oil Wiper - Table	168	1	Ball Bearing - Pulley Shaft (Narrow)
32	1	Oil Wiper - Ram - L.H.	168-1	1	Ball Bearing - Int. Shaft (Narrow)
33	1	Oil Wiper - Ram - R.H.	169	1	Top Table Gib
34-2	1	Shaper Pulley - 4 Steps	170A	1	Table Way
35-4	1	Motor Pulley - 4 Steps	170B	1	Cross Rail Way
36	1	Ram Position Indicator	171A	1	Swivel Table Saddle
37	1	Ram Position Pointer	171B	1	Table - Swivel (Also See #24)
38A	1	Cam Block Brg.	172	1	Alemite Fitting On Bull Gear Bearing
39	1	Vertical Feed Nut	175	1	Oil Fitting Saddle over Bevel Gears
40	1	Nut Feed Adj.	176	1	Oil Fitting in Table for Cross Feed
42	3	Shim	177	4	Oil Fitting on Ram Ways
43	1	Pin-Door Knob	178	1	Ram Gib
44	1	Bull Gear Shaft Nut Set Screw Plug	179	1	Gib for Tool Head Slide
46B	1	50 Tooth Intermediate Gear	180	1	Table Gib for Lower Table Way
48B	1	30 Tooth Pinion - Intermediate	181	1	Cross Rail Gib
49A	1	Bevel Gear for Vertical Table Screw	182	1	Ratchet Spring
49B	1	Bevel Pinion for Vertical Table Screw	183	4	Cross Feed Indicator Springs
50	1	Ratchet Gear	184	1	Clapper Spring
51B	1	Pulley Shaft	185	4	Tool Head Indicator Springs
52B	1	Intermediate Shaft	186	1	Clapper Box Lock Screw
53B	1	Bull Gear Shaft	188	1	Shoulder Screw for Ratchet
54	1	Rocker Arm Shaft	189	1	Ratchet Adj. Hub Bolt - Tee Head Type
55	1	Bevel Gear Shaft - Square End	190	1	Cam Block Bolt - Tee Head Type
56	1	Cam Block - Rocker Arm	191	1	Vise Bolt - Vise to Table
57	1	Cam Block Brg.	192	1	#15 Woodruff Key for Pulley Shaft
58	2	Rocker Arm Shaft Collars	193	2	#15 Woodruff Key for Int. Shaft
59B	1	Tool Head Feed Screw Bearing	194	1	#3 Woodruff Key for Ratchet Gear
60	2	Vise Clamps	195	1	Vise Screw Collar
61	2	Vise Jaw Facings	196	1	Washer for Top of Tool Head Feed Indicator
62	1	Cross Feed Dial Indicator	198	1	Base Vertical Table Nut
63	1	Tool Head Dial Indicator Bushing	199	1	Table Jack
64	1	Tool Head Feed Dial	200	1	Table Jack Leg
65	4	Oil Wipers for Cross Rail	201	1	Gear Case Cover
66	1	Elevating Screw Bevel Gear Chip Guard	204	1	Door Hinge Bracket
67	1	Cross Feed Screw Sleeve	205	1	Base
68	1	Ratchet Feed Pawl	207	1	Base Door
69	1	Ratchet Feed Pawl Knob	208	1	Swivel Table Clamp
71	1	Ratchet Adj. Steel Bushing for Feed Link	223	2	Taper Pin - Bevel Gear
72	1	Tool Post	228	3	Stud - Swivel Table Clamp
73	1	Guard Snap Button & Spring	229	1	Chip Guard - Bull Gear
74	2	Bull Gear Crank Pin Slides	230	2	Taper Pin - Gear Case Cover
75	1	Ram Clamp Stud	235	3	Shim for Table Way
76	1	Belt-Start Motor Speed	245	1	120 Tooth Bull Gear
78	1	Ball Crank Handle for Tool Head	247	1	24 Tooth Bull Gear Pinion
79	1	Ball Crank Handle for Cross Feed	248	4	Needle Brg. - Ram Clamp Lug
			249	2	Needle Brg. - Rocker Arm Shaft

SHAPE-RITE-SHAPERS

SPECIFICATIONS

Model B

COLUMN

Length of Ways for Ram.....14 $\frac{1}{4}$ "
Width of Ways for Ram.....5"
Size of Ways for Cross Rail.....7 $\frac{7}{8}$ "x7 $\frac{7}{8}$ "x1 $\frac{1}{8}$ "
Height of Ways for Cross Rail
on Column12"
Width of Face of Ways for Cross Rail.....7 $\frac{3}{4}$ "

RAM

Length of Stroke.....8 $\frac{1}{2}$ "
Adjustment of Ram.....8"
Length of Ram Bearings.....20"
Width of Ram Bearings.....5"
Type of Ways.....Vee
Size of Ways.....1"x1"

TOOL HEAD

Width of Tool Head.....3 $\frac{3}{8}$ "
Vertical Travel of Tool Head.....4"
Size of Tool Holder.....1 $\frac{1}{2}$ "x1 $\frac{3}{8}$ "

CROSS RAIL

Length of Cross Rail.....15 $\frac{5}{8}$ "
Width of Cross Rail.....4 $\frac{5}{8}$ "
Size of Ways on Cross Rail.....7 $\frac{7}{8}$ "x7 $\frac{7}{8}$ "x1 $\frac{1}{4}$ "
Size of Column Bearing on Cross Rail—
Width7 $\frac{3}{4}$ "
Height6 $\frac{1}{4}$ "

SADDLE AND TABLE

Horizontal Travel of Table.....9 $\frac{1}{4}$ "
Vertical Travel of Table.....7"
Max. Distance Top of Table to Ram.....8"
Max. Distance Top of Vise to Ram.....5"
Top Working Surface of Table.....7"x7 $\frac{5}{8}$ "
Swivel Table7"x7 $\frac{5}{8}$ "
Width of Table.....7"
Depth of Table.....6 $\frac{1}{2}$ "
Number of Slots on Top of Table.....Three
Number of Slots on Side of Table.....Two
Size of Slots in Table.....3 $\frac{3}{8}$ " Wide

TYPE OF BEARINGS

Timken roller on Bull Gear with single and double row ball bearings on gear shafts.

FEED

Feed Range.....From 0 to .025"

DRIVE

Number of Speeds.....4
Number of Strokes Per Minute....40-80-120-160
Size of Motor Required,
3 $\frac{3}{4}$ H.P.1140 R.P.M.
Cutting Speeds—
Approx.....26 feet to 106 feet per min.
Higher Cutting Speeds Optional.

WISE

Jaws Open6"
Width of Jaws.....5"
Depth of Jaws.....1"
Has swivel jaw.
Base Swivel190°

WEIGHT

Net Weight (Approximately)—
Floor Model650 lbs.
With Motor and Starter.....755 lbs.
Crated for Domestic Shipment—
Floor Model955 lbs.
Boxed for Export Shipment—
Floor Model1,005 lbs.

DIMENSIONS

Length44"
Width24"
Height51"

STANDARD EQUIPMENT

Included is a swivel table, swivel base vise with steel face jaws, necessary wrenches, hinged motor base, vee belt, motor pulley and belt guard, complete, but less electrical equipment.

— See Your Local Dealer —