



**INSTRUCTION MANUAL  
AND  
PARTS LISTS  
FOR  
HORIZONTAL AND VERTICAL  
MILLING MACHINES  
MODELS  
745, 756, 760, 845, 856**

McLaren Automation & Machine Tool LLC Wells-Index



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# FOREWORD

Your new Wells-Index Milling Machine was designed and manufactured to conform to our high standards of machine tool performance. It was built to conform to set of rigid specifications by trained workmen who take pride in the quality of their work. Each Wells-Index machine must pass a rigid series of final inspection tests including actual metal cutting operations before it is released for packing and shipping. In order that this machine may provide you with a long period of continuous and satisfactory service it is necessary that it be properly installed, operated and maintained, and this manual has been prepared to assist you in carrying out these functions. We urge you to study the contents of this manual and to be guided by the suggestions contained herein.

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## Warranty

The Wells-Index Corporation warrants this machine and all parts and equipment manufactured by them against defects of material or workmanship for a period of one year from the date of sale. The manufacturers liability under this warranty shall be limited to replacing free of charge, F.O.B. Three Rivers, Michigan, any such parts proved defective within the period of the warranty. The manufacturer will not be responsible for transportation charges or consequential damages. Parts which are claimed to be defective, but show tangible evidence of abuse will not be replaced on a no charge basis.

Wells-Index Corporation reserves the right, at its own discretion, without notice, and without making similar changes in articles previously manufactured, to make changes in materials, design, finish, and/or specifications.

Wells-Index Corporation makes no warranty with respect to electrical equipment or purchased parts other than the original manufacturers warranties.

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## DEFECTIVE PARTS

When so called defective parts are replaced, parts shipped out in replacement will be billed at regular prices, and will be shipped charges collect. The determining of credit to be allowed, if any, is left to the discretion of Wells-Index Corporation after receipt and inspection of parts. Parts to be replaced must be returned to Wells-Index within 60 days from the date of Wells-Index's replacement invoice or no credit will be granted.



701 W. Clay Avenue / Muskegon, Michigan 49440-1064 / (231) 759-0950

# INSTRUCTION MANUAL

## For INDEX Horizontal And Vertical Milling Machines

Machine Serial No. \_\_\_\_\_

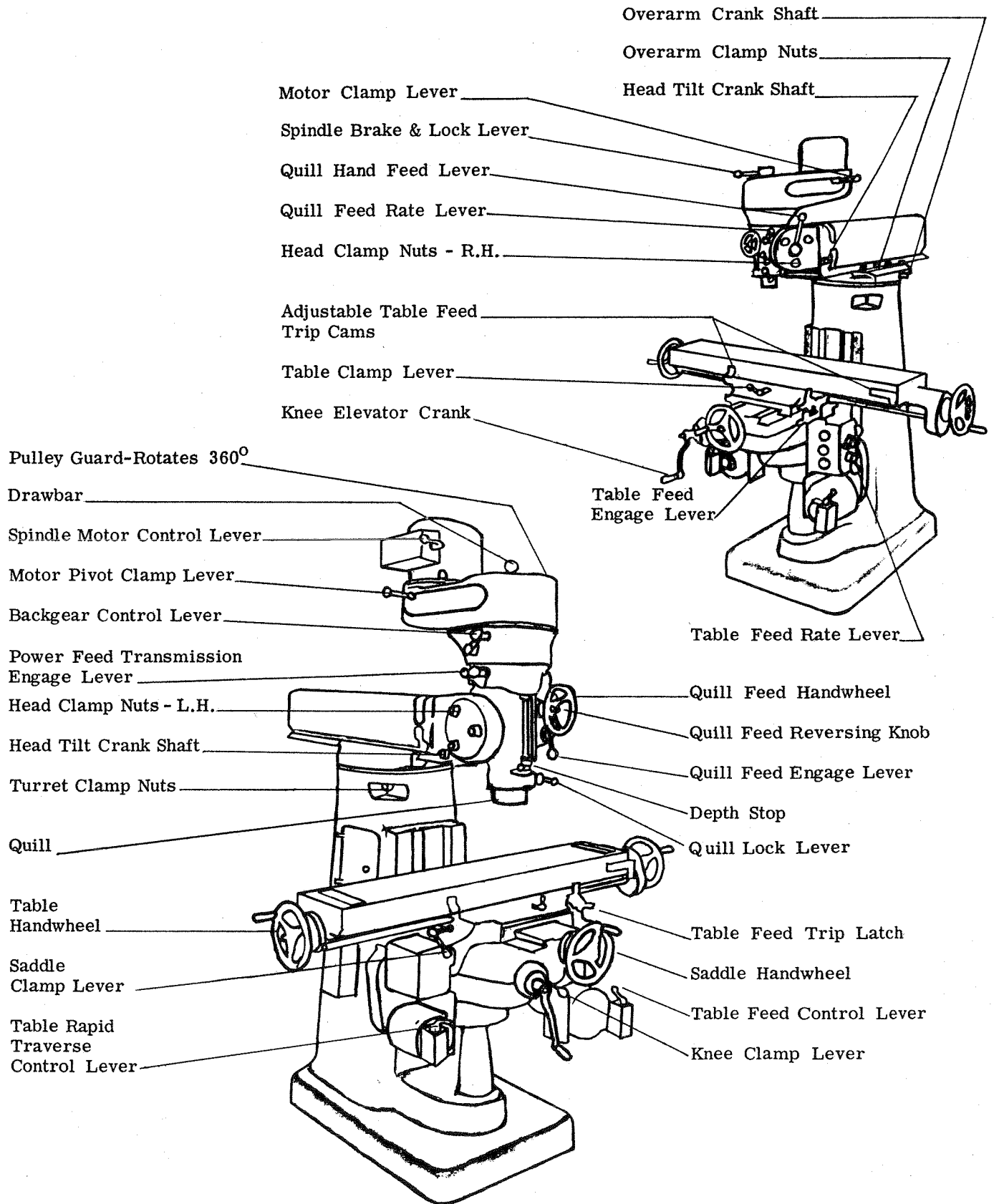
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FOLLOWING THE INSTRUCTION MANUAL ARE PARTS LISTS FOR HORIZONTAL AND VERTICAL MILLS.

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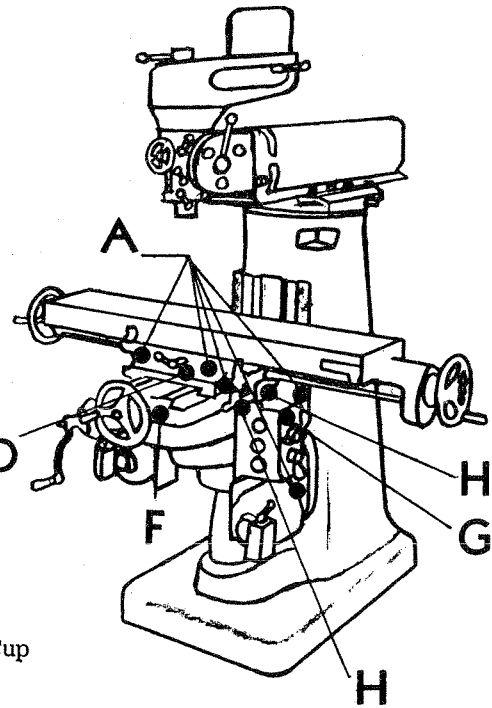
## LOCATION OF CONTROLS & ADJUSTMENTS FOR INDEX MILLING MACHINES



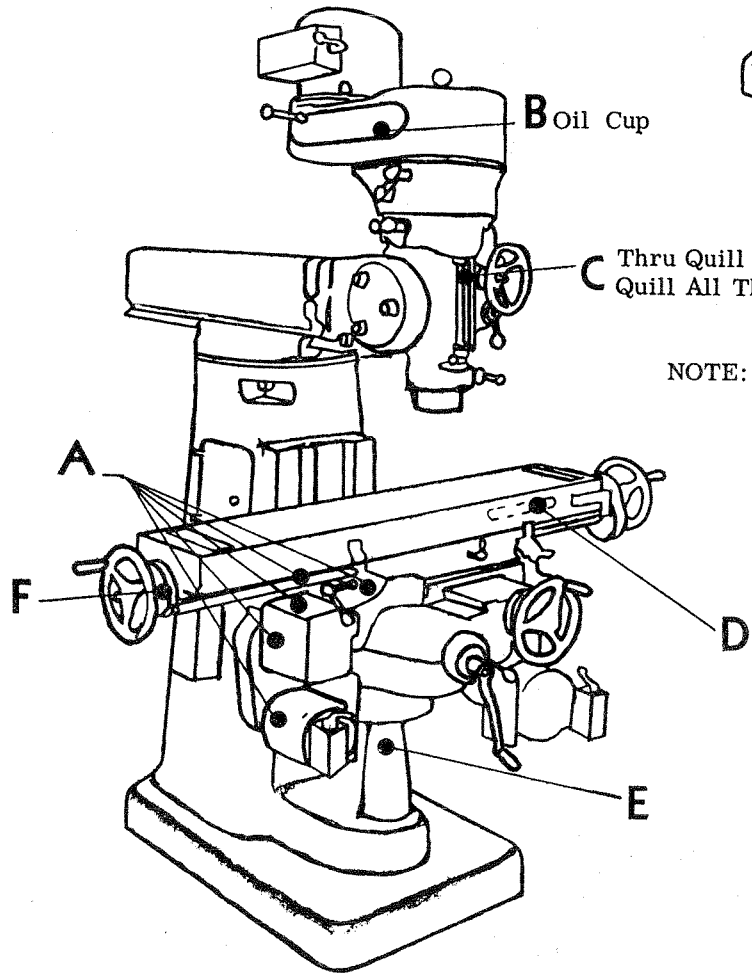


## RECOMMENDED LUBRICATION FOR INDEX MILLING MACHINES

POINT	NO. REQ'D	NAME	MOBIL NO.	FREQUENCY
A	10	Ways	Vactra Oil #2	Weekly
B	1	Mill Head	Vactra Oil #2	Few Drops Twice Weekly
C	1	Spindle Spline	Mobil Grease Special	Weekly
D	2	Lead Screw	Mobil Grease Special	Weekly
E	1	Elev. Screw	Mobil Grease Special	Weekly
F	2	Lead Screw Brg's.	Mobilux Grease #2	6 Months
G	1	Table Feed Box	Vactra Oil #2	Check Weekly
H	2	Table Feed Lever	Mobilux Grease #2	Weekly
NOT SHOWN		Spindle Bearings	Mobil Grease BRB Lifetime	When Re-Placing Brg.
		One-Shot Lube	Vactra Oil #2	Weekly
		Saddle Feed	Mobilux Grease #2	Weekly
		Rapid Traverse	Vactra Oil #2	Check Weekly
		Horizontal Drive Transmission	Vactra Oil #4	Check Weekly
		Overarm Arbor Support	Vactra Oil #4	Daily



Remove 1/2" Snap In Plug, With Saddle All The Way Back, & Hold Grease Gun Nozzle Against Lead Screw



NOTE: Wipe Lube Fittings Clean Before Greasing. Do Not Over Lubricate Ball Bearing.

## III. PRELIMINARY INFORMATION

## A. UNCRATING:

Carefully remove the protective crating and skid so that the machine and parts are not marred, scratched or otherwise damaged. In the event of any damage in transit, notify our representative at once as well as the transportation company making final delivery. The machine should be lifted from the base of the crate by placing a sling under the overarm.

## B. SHORTAGES:

Inspect the complete shipment carefully against the itemized packing list to make sure that all items are present. In the event damage or shortages are noticed they should be reported immediately to the delivering carrier and to the representative from whom the machine was purchased with a clear indication as to which parts have not been received.

## C. CLEANING:

Thoroughly clean the rust preventive materials from the machine with gasoline, kerosene, or other suitable solvents. Do not move the table, saddle, knee or other moving parts until all of the sliding way surfaces have been well cleaned and lubricated. After cleaning carefully move to a limit stop in one direction the table, saddle and knee, and clean and lubricate the exposed way surfaces. Then move each of these units to the opposite limit stop and similarly clean and lubricate the exposed way surfaces. Loosen the four bolts to unlock the overarm and move this forward and backward to the extreme position in order to clean and lubricate.

## D. FOUNDATION:

For best performance it is important that the machine be placed on a solid foundation and that it be level. A solid concrete floor is desirable, but a firm wooden floor, free from vibration, may be suitable. If the machine is to be located on an upper floor or balcony it should be placed as close as possible to a strong supporting pillar or column.

## E. LEVELING:

The machine is provided with four bolt holes one at each corner of the base. Steel wedges or steel plates should be used for leveling. A good machinist's level should be used in the leveling process and the bubble should have adequate time to come to rest. The level should be placed both lengthwise and crosswise on the machine table.

## F. VERTICAL HEAD ON OVERARM:

When the machine leaves the factory the vertical head is positioned on the overarm with the spindle up and the motor down. Before operating the machine it is necessary that the head be returned to its normal operating position by loosening the 4-1/2" Hexagonal nuts located at the head end of the overarm. It will then be possible to tilt the head into normal operating position by using a crank on the 1/2" stud located on the right side of the front end of the overarm. Because of the heavy overhung weight involved, the tilting of the head back to its normal position will be greatly facilitated if a second person can help push it into position.

## G. HANDLES:

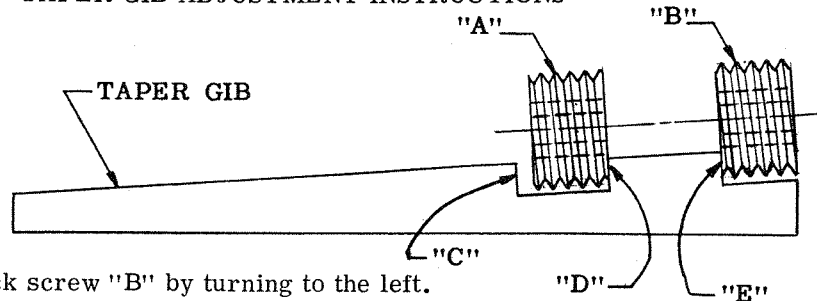
At the time of shipment the three handwheels used for positioning the saddle and table are removed from their normal positions, the dials removed and the handles remounted in reverse position. All are properly marked for remounting: S for Saddle, TL for Left Hand of Table and TR for Right Hand of Table.

## IV. ADJUSTMENTS

## A. GIBS:

As wear occurs, it becomes necessary to adjust the tapered gibs on your Index Mill. The Table of the machine includes two gibs, #4504-Left Hand Gib and #4505-Right Hand Gib, as shown on drawing #9131. The Cross Travel of the Saddle of your machine involves Gib #4365 also shown on drawing #9131. Gib #1852 is the take-up gib for the knee illustrated on drawing #9080. Adherence to the gib adjustment instructions should result in satisfactory adjustment of all of these gibs.

## TAPER GIB ADJUSTMENT INSTRUCTIONS



1. Loosen hollow lock screw "B" by turning to the left.
2. Turn hollow lock screw "A" to the right until it contacts point "C" -- continue turning to the right until all undesired slack is removed.
3. Then reverse lock screw "A" until it makes contact with point "D".
4. Turn lock screw "B" to the right until it makes contact with point "E", then tighten, but only lightly.
5. Be sure to adjust right and left Hand Gibs equally.

WARNING! Tighten lock screw "B" only enough to hold gib in place. Excess tightening of lock screw "B" may cause distortion and binding.

## B. QUILL FEED CLUTCH:

1. When the machine left the factory this clutch was properly adjusted to provide for drilling with a 5/8" dia. drill in mild steel. If in operation larger pressures are developed which cause the clutch to "ratchet" it may be well to assist the clutch in advancing the quill feed by adding downward pressure with the hand feed lever.
2. Quill feed clutch adjustment (See drawing #9200)
  - a. If the clutch should be too difficult to engage or if it should prove to be lacking in power, it can be adjusted by means of the eccentric clutch adjustment nut #2906 which is located on back side of the head. The small hex set screw must first be loosened to allow rotation of the #2906 adjustment nut.
  - b. On Models 756 & 856 it will be necessary to take the following steps to gain access to the #2906 adjustment nut and its set screw:  
Remove the 3-1/2" hexagon nuts that hold R.H. clamp #4542 to right side of head. Hold counterbalance spring cover #2910 in place to prevent quill counterbalance spring from popping out. Remove 2 socket head screws from back of head to remove yoke support plate #7100 and spacer #3164.
  - c. Adjust clutch by turning eccentric clutch adjustment nut #2906.

## C. QUILL COUNTERBALANCE ADJUSTMENT: (Drawing #9200)

1. Remove quill feed trip key #2913 and depth scale #2765. Also remove draw bar.
2. Run quill out by turning quill feed handle #2107 (located on right of head) counter clockwise. Be sure to hold end of quill with left hand to keep it from dropping out of head when rack leaves pinion.
3. When quill is off pinion, continue to turn quill feed handle counter clockwise to tighten springs. When quill feed handle can not longer be turned, the spring tension is at a maximum. To lower tension, turn handle clockwise.

4. Push quill back into head so that rack again contacts pinion. Check spring tension.
5. When spring tension is correct, reinstall quill feed trip key and depth scale.

D. QUILL FEED TRIPS & DEAD STOP ADJUSTMENT:

Refer to drawing #9200. Your Index Vertical Mill is provided with a means for setting an adjustable automatic feed trip device for the downward movement of the quill. Feed trip rod #2961 actuates feed trip plunger #2958 through feed trip arm #2952 to disengage clutch. Disengagement occurs when quill feed trip key #2917 contacts quick shift dial sleeve nut #2763.

Downward feed adjustment is made by loosening knurled thumb screw #1576-A and re-positioning quick shift dial sleeve nut #2763.

E. DRIVE BELTS:

Refer to drawing #9203. To provide the necessary slack for shifting of belt it is only necessary to loosen the motor clamp handle #2955 (on right rear of pulley guard) and move motor forward. Increase belt tension by moving motor back and tightening motor clamp handle. To replace worn or broken belt remove 6 socket head screws from top of #9206 drive pulley cartridge and lift off #9206 cartridge.

V. OPERATION (See Page 1. For Location Of Various Adjustments, Handles & Controls)

A. HORIZONTAL SPINDLE:

1. The spindle Start-Stop -Reverse Control is located at the upper left on the motor.
2. The spindle brake lever is located on the top left of the pulley guard assembly. Move to the left or right to engage the brake. After moving to the left or right this lever may be raised to maintain brake engagement and hold the spindle in a fixed position.

CAUTION: Always be sure spindle brake is disengaged (in the down position) before attempting to start spindle rotation in either direction.

3. Spindle speeds are readily changed by changing the position of the V belt connecting the motor pulley to the spindle pulley and by shifting the back gear lever (high, low, or neutral).

B. BACK GEAR (See Drawing #9203)

The back gear lever (shift lever #2900) is located on the upper left side of the head. The lever has 3 positions; high, low, and neutral. In the high (out) position, spindle drive is geared directly from spindle pulley to spindles (dog clutch #2991 is in up position, in contact with drive cone pulley hub #2999). In the low (in) position, spindle drive is geared through back gear #2985 (dog clutch #2991 is in down position, back gear #2991 is in mesh with back gear #4557).

NOTE: Because of back gear construction, when machine is running in low speed range, spindle rotation is opposite to that of high speed range. Therefore, forward on reversing switch becomes reverse when in low speed range.

NOTE: When shifting from neutral to high or low, turn spindle by hand while pushing back gear lever into position. This allows gears to line up in low speed and dog clutch to line up in high speed.

C. POWER FEED TRANSMISSION ENGAGEMENT CRANK (See Drawing #9200) :

The power feed engagement lever #2900 is located directly below the back gear lever. This lever has 2 positions; "in", to engage spindle power feed transmission, and "out" to disengage spindle power feed transmission.



NOTE: Disengage spindle power feed transmission when it is not being used. This will stop unnecessary wear on power feed worm gear.

D. QUILL (See Drawing #9200):

1. The quill may be locked in a given vertical location by turning the quill-clamp lever in a clockwise direction. Lever is located at bottom of right side of head.

CAUTION: Do not engage quill power feed with quill-clamp lever fully tightened.

2. The quill (or spindle) hand feed lever #2107 can be adjusted to any one of six operating positions by moving outwards (to the right) on the lever hub and rotating to the desired position. The hand feed lever is held on by a spring plunger and can be pulled off when not in use.
3. Any one of three power feeds (in either an upward or downward direction) may be selected by moving the feed shift lever, located on right side of head, to the desired feed (.0015", .003" or .006") per spindle revolution. A neutral position is provided between each of these feed settings. If power feed is not being used it is wise to place the feed shaft lever in one of the neutral positions. It may be somewhat easier to change the position of the feed selector lever when the spindle is rotating.
4. The fine feed handwheel #4545 is placed in operating condition by locating the feed shift lever in a neutral position and engaging the power feed engaging lever #2953. The fine feed handwheel is held on by a spring plunger and can be pulled off when not in use.
5. The knob on the shaft located in the center of the feed handwheel is used to select down-feed (pushed-in position), neutral (mid-position) or upfeed (pulled-out position) for either the power feed or the handwheel feed.

NOTE: Positions noted are for clockwise rotation of spindle. Counter clockwise rotation reverses these positions.

E. VERTICAL SPINDLE DRAWBAR (See Drawing #9200):

Use spindle brake to restrict spindle rotation when tightening or loosening drawbar.

1. To install collet or tool holder in spindle--first, remove drawbar by pulling it out of spindle from top. Then, tap collet or tool holder into spindle. Put drawbar back into spindle and tighten into collet or tool holder.
2. To remove tool from spindle -- loosen drawbar 1 to 2 turns and tap on end to free tool.

CAUTION: Do not loosen drawbar more than 2 turns when removing tool. If drawbar is too loose, the threads may be stripped when tapping on end.

F. HORIZONTAL SPINDLE DRAWBAR (See Drawing #8038-A):

Use handwheel #4035-A located at back of machine to restrict spindle rotation when tightening or loosening drawbar. (Otherwise it is the same as the Vertical Spindle Drawbar).

G. HORIZONTAL SPINDLE AND SPINDLE TRANSMISSION (See Drawing #8038-A):

1. Spindle direction is set by forward-reverse switch located on left side of column, directly above spindle speed selector handles.
2. Spindle speeds are set by the 3 spindle speed selector handles located on left side of column. Speed is changed by shifting these handles.

NOTE: When shifting, make sure spindle is not under power, turn spindle by hand by turning handwheel #4035-A when shifting to insure proper meshing of gear teeth.

#### H. HEAD :

1. Tilting of the head in a front to back plane (turret and overarm models) is readily accomplished by loosening the 3 nuts at the right hand side of the head (around the hand feed lever) and the 3 nuts on the left side of the head, and applying crank to forward head tilting worm stud #2963, located at bottom rear of head -- left side. If it is desired to tilt the head backward a considerable amount it may be found that the pulley guard will strike the overarm and prevent the desired degree of tilting. In such cases it is necessary to pivot the pulley guard about the spindle centerline by loosening the 3 hexagonal nuts located on the lower side of the flange at the top of the spindle housing or head and rotating the pulley guard the amount required to obtain clearance for head tilting.

CAUTION: When returning head to vertical position, sweep the table with an indicator attached to spindle to make sure head is square to table.

2. To tilt head from side to side, loosen the hex nuts which clamp the head to the overarm or the machine column (whichever the case may be). Then tilt head the desired amount by applying crank to the sidewise tilting worm stud at the right to the rear of the spindle head.

CAUTION: When returning head to vertical position, sweep the table with an indicator attached to spindle to make sure head is square to table.

#### I. OVERARM OR RAM :

The back to front position of the head and overarm is readily changed by loosening the 4 hex nuts which clamp the overarm to the turret. Apply a crank to the overarm adjustment shaft extension and move to desired position.

#### J. TURRET (Vertical Mill) :

To index the entire turret - overarm - head assembly on the machine column loosen the 4 large hex nuts visible in the cast pockets just below the top of the machine column and swing the turret to the desired angular position.

NOTE: It is highly recommended that all clamping nuts and bolts (turret to column, overarm to turret, head side-wise tilt and head forward-back tilt) be securely tightened before any machining cuts are taken. Always check these points before starting a cut. Also, when returning overarm to normal position, attach an indicator to the overarm, and slide the overarm in and out, with the indicator riding against a square, which has been squared to front of table to make sure overarm is square with table.

#### K. TURRET (Horizontal Mill) :

1. The turret can be rotated on the column a full 360°.
2. The turret can be tightened down only when the ram is at 90° to the table, or in increments of 45° from this position.
3. The locating pins are effective only when the ram is used with the overarm support for the horizontal spindle. The verticle spindle at this time would be at rear of machine.

NOTE: It is highly recommended that all clamping nuts and bolts (turret to column, overarm to turret, head side-wise tilt and head forward-back tilt) be securely tightened before any machining cuts are taken. Always check these points before starting a cut.

Also, when returning overarm to normal position, attach an indicator to the overarm, and slide the overarm in and out, with the indicator riding against a square which has been squared to front of table to make sure overarm is square with table.

**VI PREVENTIVE MAINTENANCE****A. INSPECTIONS:**

1. Inspect taper of spindle for cleanliness and freedom from chips of foreign matter.  
Frequency - Each time tool holder is inserted.  
Inspection by machine operator.  
No special equipment required.
2. Inspect and adjust gibs of slide ways. (Note: Outer socket set screw is a lock screw. This should be turned out to left -- Allen wrench inserted through it, and gib adjusted by means of inner adjusting screw. Lock screw should then be re-tightened.)  
Frequency - Every 160 hours. Oftener if looseness is noted by operator.  
Inspection and adjustment by machine operator or machine maintenance man.  
No special equipment required other than Allen wrench.  
(See gib adjustment instructions, page 4)
3. Inspect for general cleanliness of machine, paying particular attention to keep dirt and chips from slide ways. Do not use air to remove such dirt and chips -- But wipe off ways or keep them covered. Flood ways with light oil and work slide movements back and forth to wash out foreign matter. Then re-lubricate machine according to lubrication instructions.  
Frequency - Constantly, as far as wiping off chips and dirt are concerned. Every 40 hours ways should be flooded with oil and cleaned as above.  
No special equipment required.
4. Inspect drive belts for wear, hard spots at splice, etc.  
Frequency - Every 40 hours.  
Inspection by machine operator or machine maintenance man.  
No special equipment required.
5. Inspect to see if vertical head is square with table, by mounting indicator on spindle and sweeping table.  
Frequency - Every 80 - 120 hours, or after head has been tilted.  
Inspection by machine operator or machine maintenance man.  
Special equipment required consists of (1) A short accurate arbor to insert in spindle. (2) A clamp for use in clamping a 6" bar to above arbor in a horizontal position. (3) 6" bar approximately 1/2" in diameter. (4) An accurate dial indicator to clamp to above 6" bar in position so when spindle is revolved by hand, nib of indicator in contact with table, sweeps table in a full circle and indicates out of squareness.  
  
NOTE: Table is intentionally left .0005" high in front. This will gradually decrease as machine is used.
6. Inspect electrical equipment.  
Frequency - In accordance with standard plant policy.  
Inspection by machine maintenance man.  
No special equipment required.

**B. PARTS REPLACEMENT :**

None except as indicated by wear or mal-function.  
Frequency or replacement only as above.

**C. LUBRICATION - See Lubrication Sheet, Page 2****VII TROUBLE SHOOTING**

NOTE: Ordinarily trouble will not manifest itself except when actually working with machine.

1. Slide ways working hard or binding.
  - a. Cause - gibs out of adjustment, either too tight or too loose.  
in latter case causing gib to "wedge".  
Remedy - Adjust gibs.
  - b. Cause - dirt in slide ways.  
Remedy - wash out slide ways with light oil.
  
2. Chatter or vibration when cutting.
  - a. Cause - dirt in spindle taper, causing bad fit between tool holder shank and spindle taper.  
Remedy - clean spindle taper and shank of tool holder.
  - b. Cause-- faulty shank on tool holder.  
Remedy - replace shank or dressoff burrs, if due to nicks or burrs.
  - c. Gibs poorly adjusted on slide ways, or dirty.  
Remedy - adjust as in **IV-A**
  - d. Work improperly clamped to table of machine.  
Remedy - check for rocking or movement, and correct by proper clamping.
  - e. Improper grind on cutting tool.  
Remedy - replace or re-grind tool.
  - f. Hard spot at splice of drive belts or worm belts.  
Remedy - replace belts.
  - g. Spindle quill worn in quill head.  
Remedy - tighten quill head lock slightly.
  - h. Incorrect spindle speed, table feed, or both.  
Remedy - ordinarily indrease spindle speed and/or increase or decrease feed to break up vibration period. Experiment by using hand feed to feed table.
  - i. Drive pulleys worn in grooves or loose on shafts.  
Remedy - replace pulleys.
  
3. Boring or milling out of square or at an angle.
  - a. Cause - head not properly aligned with table.  
Remedy - Check head for alignment and correct.
  - b. Work improperly set up; i.e. not square and flat.  
Remedy - Check and re-align work.
  
4. Failure to hold center distance when locating for boring.
 

Cause - Failure to take back-off tension on lead screw after coming up to indicator reading, causing table to "creep", or failure to lock up slide ways with same amount of tension after moving tablee to new position.

#### VIII SPARE PARTS RECOMMENTED

SET OF DRIVE BELTS FOR ALL DRIVES; (See Parts List)

#### IX SPECIAL MAINTENANCE

Should it become necessary to disassemble certain major elements of the machine the following suggestions may prove helpful.

- A. TO REMOVE VERTICAL SPINDLE PULLEY (Drive Cone Pulley), SPINDLE BEARINGS; AND SPINDLE BEARING SUPPORT :
  1. Refer to drawing #9203.
  2. Remove 6 socket head screws holding drive pulley cartridge #9206 to pulley guard.
  3. Lift out drive pulley cartridge (containing drive done pulley, spindle bearings and spindle bearing support).

4. Remove cartridge bearing lock nut #3000.
  5. Put drive pulley cartridge in an arbor press, locating on bottom face of drive cone pulley #7110. Drive out drive cone pulley hub #2999. This frees drive cone pulley (spindle pulley).
  6. Remove cartridge bearing retaining plate #3001 by removing 4 socket head screws.
  7. Flip drive pulley cartridge #9206 over on arbor press and drive out spindle bearings.
- B. TO REMOVE MILLING MACHINE TABLE AND LEAD SCREW:
1. Remove hand wheels and dials from each end of table and remove cover (#2029, Drg. #9131) from right hand table end bracket (#4003).
  2. Remove #1067 gear and key from table lead screw (right end).
  3. Remove end bracket #4003 after removing 2 - 3/8 x 1" hex head cap screws.
  4. Remove 2 locknuts #N-03 from left end of lead screw.
  5. Remove bracket #4514 after removing cap screws which retain it.
  6. The table can now be removed by sliding in either direction. The gibs can be backed off, or removed if necessary, before removing table.
  7. If it is desirable to remove lead screw it will be necessary to remove sleeve #2824 from screw. Now replace hand wheel on right end of lead screw and turn counter-clockwise until threads are free of nut.
- C. TO REMOVE SADDLE:
1. In order to remove saddle it is first necessary to remove the table, as in step B above, "To remove milling machine table"
  2. Remove handwheel and dial, from front of machine.
  3. Remove locknuts #N-03 from saddle feed screw.  
Next remove #4516 bracket after removing (4) retaining cap screws. Drg. #9080  
Replace hand wheel and turn in clockwise direction until screw is free of nut.
  4. Next remove (4) 3/8" - 16 x 1" soc. hd. cap screws (Drg. #9131) which retain the lead screw nut. There are two roll pins which position the nut, and it may be necessary to start the nut with a pry of some kind until it clears the pins.  
Back off #4365 gib until saddle will slide freely.  
Remove #1953 R.H. and L.H. wippers being careful not to loose rubber wiper inserts.  
The saddle can now be removed by sliding forward off from the knee.

# INSTRUCTION MANUAL

# INDEX MILL

## X RECOMMENDED "INDEX" SPEEDS FOR HIGH SPEED FAST SPIRAL END MILLS:

SIZE	TOOL STEEL AND FORGINGS	MACHINE STEEL C.R. STEEL	CAST IRON AND FREE CUTTING STEEL
1/8"	1675	2850	2850
3/16"	1000	1675	1675
1/4"	1000	1000	1675
5/16"	600	1000	1000
3/8"	600	600	1000
7/16"	600	600	600
1/2"	355	600	600
5/8"	355	355	600
3/4"	355	355	600
7/8"	210	355	355
1"	210	355	355

The foregoing should be regarded as approximate, as many factors control the efficient operation of end mills. Always keep cutters sharp, and a steady flow of oil or compound directly on the working point will allow much higher cutting speed. Keep rate of feed consistent with finish required.

## XI GENERAL SPEED RECOMMENDATIONS:

MATERIAL TO BE CUT	FEET PER MINUTE		
	ROUGH CUT	ROUGH AND FINISH	LIGHT AND FINISH CUT
Cast Iron-Soft-(Under 200 Brinnell)	70	80-90	120
Cast Iron-Med.-(200-300 Brinnell)	55	60-70	90
Cast Iron-Hard-(over 200 Brinnell)	40	50-60	70
Steel (Chrome Nickel 40-45 Shore)	30	40	50
Steel (Stainless)	60	80	90
Steel (Low Carbon)	80	90	140
Steel (High Carbon)	40	50	70
Bronze (Medium)	90	120	150
Bronze (Hard)	65	90	130
Brass (Hard)	100	150	200
Copper	150	200	300
Duraluminum	400	---	600
Aluminum	600	---	1000

# INSTRUCTION MANUAL

# INDEX MILL

## XII TABLE OF CUTTING SPEEDS AND FEEDS

DIAMETER, INCHES	REVOLUTIONS PER MINUTE										
	15	20	25	30	40	50	60	70	80	90	100
1/16"	917	1222	1528	1833	2445	3056	3667	4278	4889	5500	6112
1/8"	458	611	764	917	1222	1528	1833	2139	2445	2750	3056
3/16"	306	407	509	611	815	1019	1222	1426	1630	1833	2037
1/4"	229	306	382	458	611	764	917	1070	1375	1375	1528
5/16"	183	244	306	367	489	611	733	856	978	1100	1222
3/8"	153	204	255	306	407	509	611	713	815	917	1019
7/16"	131	175	218	262	349	437	524	611	698	786	873
1/2"	115	153	191	229	306	382	458	535	611	688	764
5/8"	91	122	153	183	244	306	367	428	489	550	611
3/4"	76	102	127	153	204	255	306	357	407	458	509
7/8"	65	87	109	131	175	218	262	306	349	393	437
1"	57	76	95	115	153	191	229	267	306	344	382
1-1/8"	50	67	84	102	136	170	204	238	272	306	340
1-1/4"	45	61	76	91	122	153	183	214	244	275	306
1-3/8"	41	55	69	83	111	139	167	194	222	250	278
1-1/2"	38	50	63	76	102	127	153	178	204	229	255
1-5/8"	35	47	58	70	94	118	141	165	188	212	235
1-3/4"	32	43	54	65	87	109	131	153	175	196	218
1-7/8"	30	40	50	61	81	102	122	143	163	183	204
2"	28	38	47	57	76	95	115	134	153	172	191

**PARTS LISTS**  
**FOR INDEX**  
**HORIZONTAL AND VERTICAL**  
**MILLING MACHINES**

INDEX TO MACHINE ASSEMBLIES

ASS'Y. NO.	NAME
2052, 2053, 2873	General Machines
2853	Electrical, Spindles
2854	Electrical, Table Power Feed
8038-A	Horizontal Spindle and Transmission
9025	Turret and Overarm
9041-A	Table Power Feed
9042	Rapid Traverse
9080	Knee
9097-A	Saddle Feed Unit
9131	Table and Saddle
9200	Vertical Head
9203	Vertical Pulley Guard



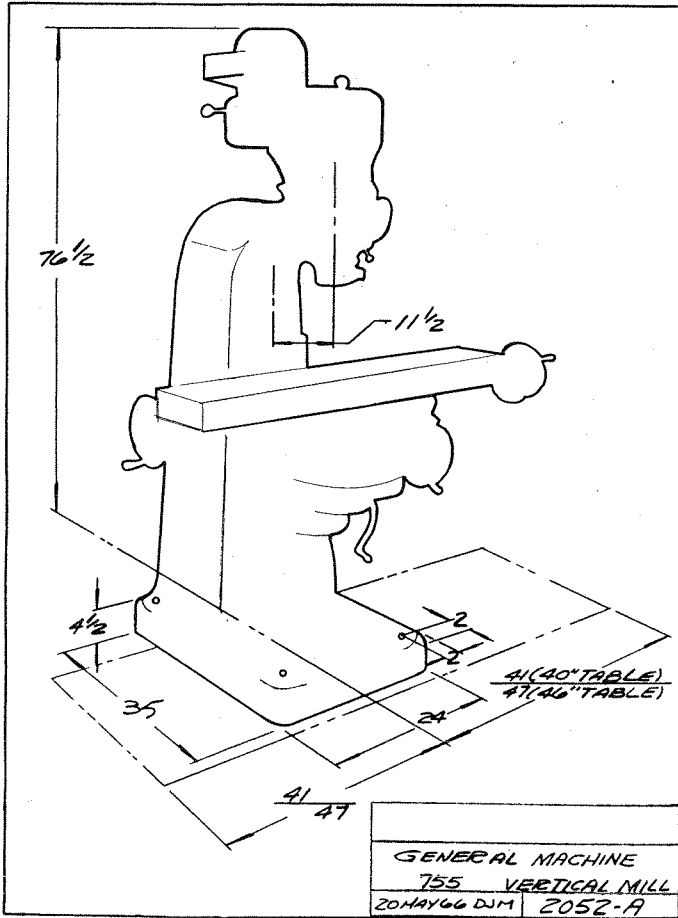
**WELLS-INDEX**

701 W. Clay Ave. Muskegon, MI 49440 / (231)759-0950



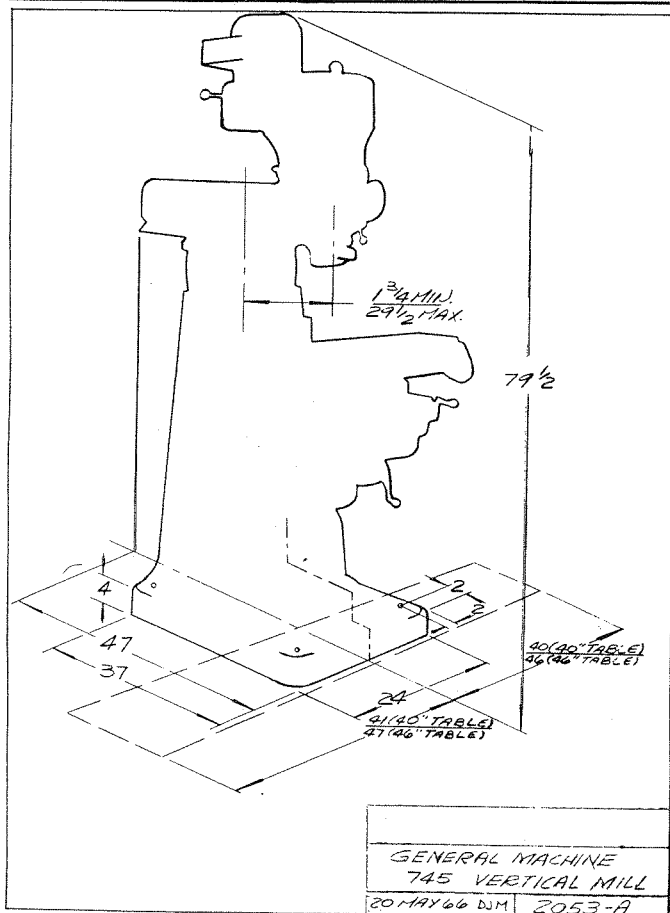
# PARTS LIST

# INDEX MILL



GENERAL MACHINE 755 VERTICAL MILL  
ASSEMBLY NO. 2052-A

PART NO.	NO. REQ'D	NAME
9075	1	Column PATT. 9075
3178	1	Plate-Index Lubrication
	4	#4 x 5/16 Brass Plated Drive Screw Parker - Kalon
4581	2	Shelf STD. Masonite Prestite 1/4 x 6.50 x 13.75

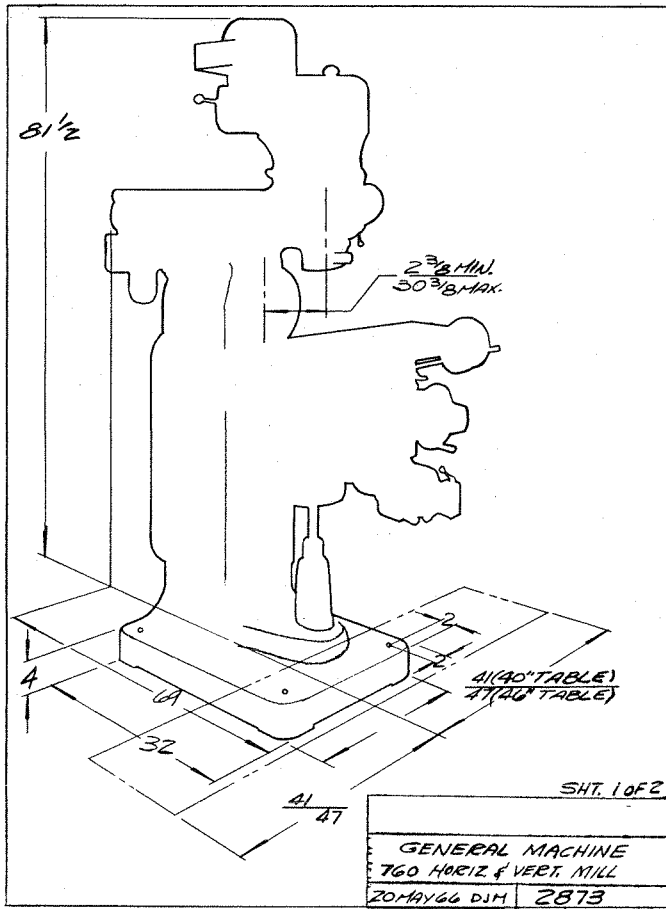


GENERAL MACHINE 745 VERTICAL MILL  
ASSEMBLY NO. 2053-A

PART NO.	NO. REQ'D	NAME
9051	1	Column PATT #9051
3178	1	Plate-Index Lubrication
	4	#4 x 5/16 Drive Screw Parker Kalon Brass Plated
7103	1	Shelf STD. Masonite Prestite 1/4 x 11.00 x 16.00

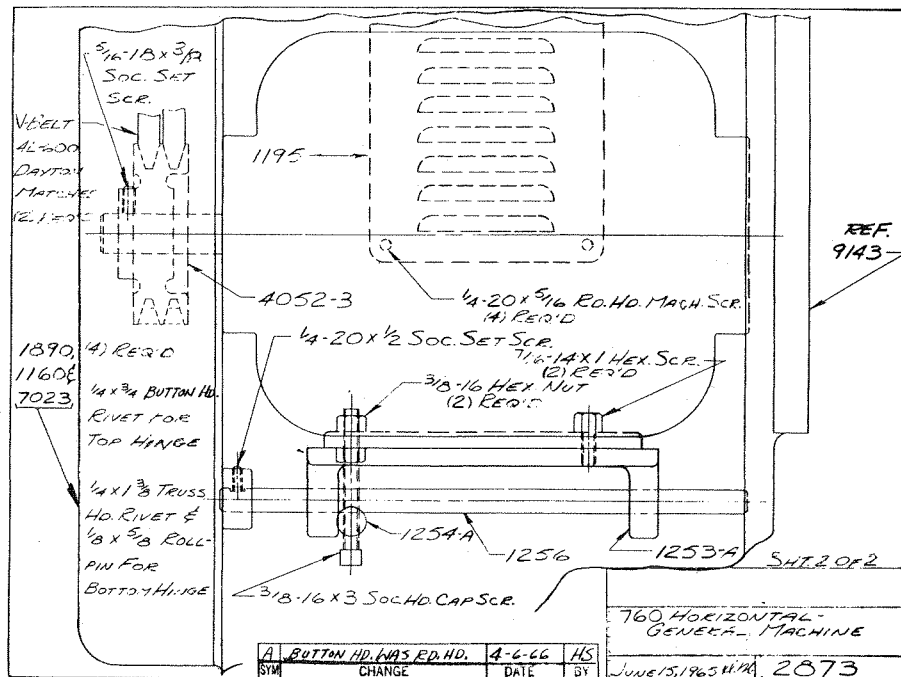
# PARTS LIST

# INDEX MILL



GENERAL MACHINE - 760 HORIZ. & VERT. MILL  
ASSEMBLY NO. 2873

PART NO.	NO. REQ'D	NAME
1160	1	Spring
1195	1	Louver - Vent
1253-A	1	Base - Motor (FR 184) PATT. 1253-A
1254-A	1	Support - Motor 3/4 Dia. x 3-1/2
1256	1	Shaft - Motor Base 5/8 Dia. x 13-5/8
1890	4	Hinge - Column Door 3/8 x 5/8 x 1-1/2
3178	1	Plate - Index Lubrication Stamping
4052-3	1	Sheave - Motor (FR 184) Patt. 4052-A
7023	1	Door - Column Patt. 7023
	2	"V" Belt 4L-600 Matched Dayton
	1	1/4 x 3/4 Button Hd. Rivet
	1	1/4 x 1-3/8 Truss Hd. Rivet
	1	1/8 x 5/8 Rollpin
	4	1/4 - 20 x 5/16 Rd. Hd. Mach. Screw
	1	1/4 - 20 x 1/2 Hex. Soc. Set Screw
	1	3/8 - 16 x 3 Soc. Hd. Cap Screw
	2	3/8 - 16 Nut
	2	7/16 - 14 x 1 Hex. Hd. Cap Screw
	1	5/16 - 18 x 3/8 Hex. Soc. Set Screw



A BUTTON HD. WAS RD. HD.		4-6-66	HS
SYM	CHANGE	DATE	BY
		JUNE 15, 1965 H/A	2873

# PARTS LIST

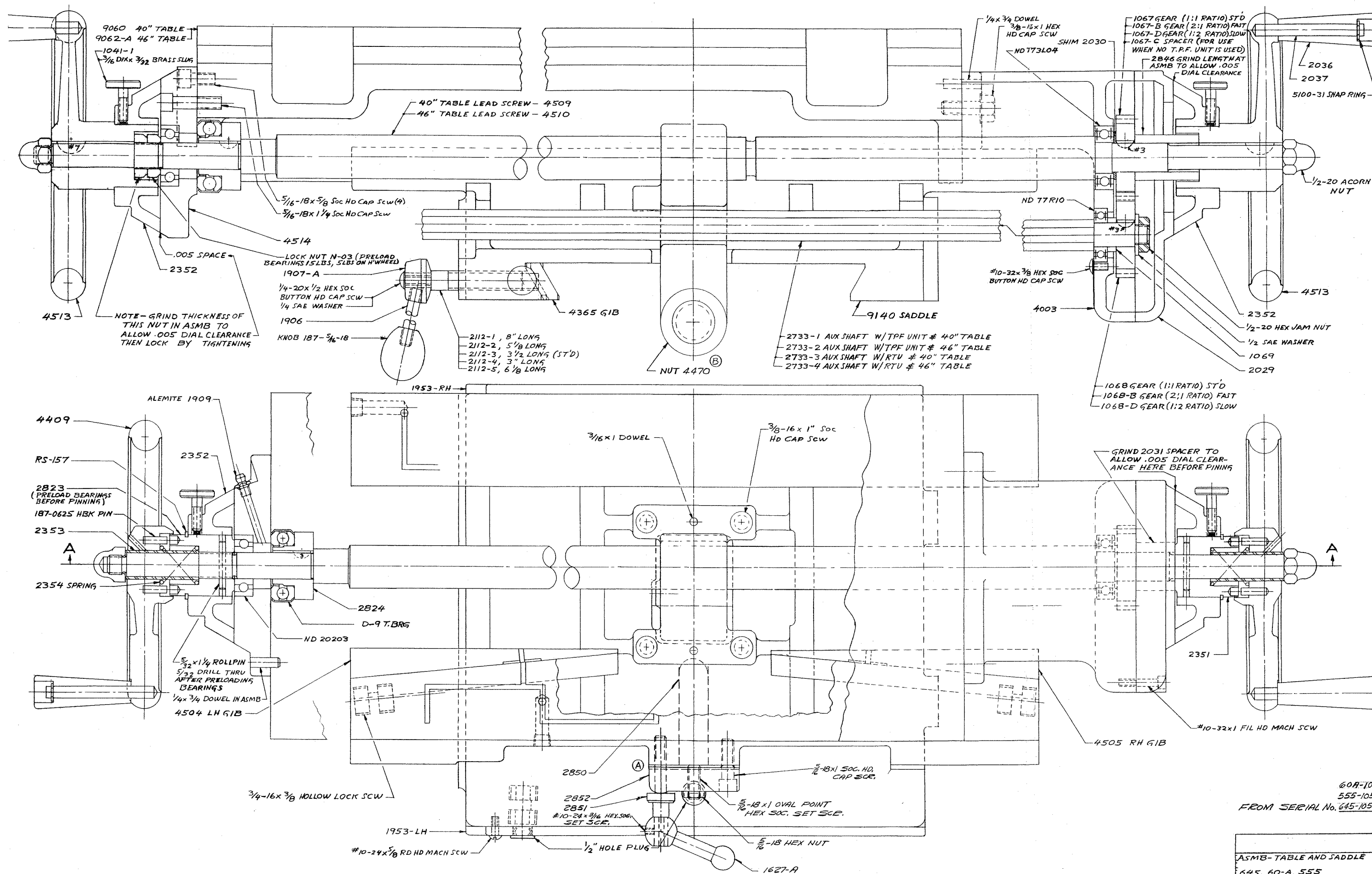
# INDEX MILL

## ELECTRICALS - SPINDLES ASSEMBLY NO. 2853

- MOTOR - 1 H.P., 3 phase, 60 cycle, 220/440 volts, 1800 RPM B.B./T.E.N.V., frame 810  
(Vertical Spindle) reuland drg. #DP-3040-A.
- MOTOR - 1 H.P., 3 phase, 60 cycle, 220/440 volts, 1800 RPM B.B./T.E.N.V. , frame  
(Vertical Spindle) 810 Reuland drg. #DP-3044-A.
- MOTOR - 1 H.P., single phase, 60 cycle, 115/230 volts, 1800 RPM model 71308, frame  
(Vertical Spindle) F66YDoerr-type K.
- MOTOR - 2 H.P., 3 phase, 60 cycle, 1800 RPM, 220/440 volts, T.E.N.V., flange MTD. ,  
(Vertical Spindle) wafer thin, frame 912S, type cooo, 3/4 shaft 3/16 K'way., Reuland.
- MOTOR - 2 H.P., 3 phase, 60 cycle, 1800 RPM, 220/440 volts, T.E.N.V., flange  
(Horizontal Spindle) frame H184, Doerr dwg; #B-3705.
- REVERSING DRUM - Size "O" reversing drum switchCuttler-Hammer #9441H136  
SWITCH

## ELECTRICALS, TABLE POWER FEED ASSEMBLY NO. 2854

- MOTOR - 1/4 H.P., single phase, 60 cycle 115/230 volts, 1800 RPM, T.E.B.B., frame  
F 56, model 63084 Doerr, type KN.
- MOTOR - 1/4 H.P., 3 phase, 60 cycle, 220/440 volts, 1800 RPM, B.B., T.E.N.V.,  
frame 56, Delco model J-7411 A .
- REVERSING DRUM - Size "O" reversing drum wwitch Cuttler-Hammer #9441 H132.  
SWITCH



60A-10572  
555-10571  
FROM SERIAL No. 645-10570

ASMB - TABLE AND SADDLE	
645, 60-A, 555	
15 JAN 64 RVP	9131

**PARTS LIST**

TABLE & SADDLE  
ASSEMBLY NO. 9131

**INDEX MILL**

PART NO.	NO. REQ'D.	NAME
Following Items Used For All Tables & Saddles		
1034-C	1	Gib - L.H. Table To Saddle
1041-1	2	Screw - Dial Thumb
1627-A	1	Handle - Table Lock Screw
1906	1	Handle - Saddle Lock Screw
1907-A	1	Boss - Lock Screw Handle
1953LH	1	Wiper - Saddle To Knee Way - Front
1953RH	1	Wiper - Saddle To Knee Way - Back
2029	1	Cover - Lead Screw Bracket
2030	1	Spacer - Table Gear (On Lead Screw)
2036	2	Handle - Handwheel
2037	2	Pin - Handwheel Handle G & P
2128	1	Gib - R.H. Table To Saddle
2352	2	Dial - Table Feed
2779	1	Collar - Table Lock Screw
2824	1	Sleeve - Thrust Bearing
2850	1	Wedge - Table Lock
2851	1	Screw - Table Lock
2852	1	Block - Table Lock Screw
4003	1	Bracket - Table Lead Screw
4365	1	Gib - Saddle To Knee
4470	1	Nut - Lead Screw
4514	1	Bracket - Table Lead Screw Left End
9140	1	Saddle
1	1	Wiper Strip 31" - Houghton #10V70-VIX-SYN
1	1	Knob (5/16-18) - Dimco-Gray #187
1	1	Ball Bearing ND 20203X1C
1	1	Thrust Bearing - DBB - D-9
1	1	Ball Bearing - ND 773L04XR1C
2	2	Snap Ring - Truarc #5100-31
1	1	#10-32 x 3/16 Hex. Soc. Set Screw
1	1	#10-24 x 3/16 Hex. Soc. Set Screw
4	4	#10-32 x 1" Fil. Hd. Mach. Screw
8	8	#10-24 x 5/8 Rd. Hd. Mach. Screw
1	1	1/4-20 x 1/2 Hex. Soc. But. Hd. Cap Screw
1	1	5/16-18 x 1-1/4 Soc. Hd. Cap Screw
1	1	5/16-18 x 1" Oval Pt. Hex. Soc. Set Screw
2	2	5/16-18 x 1" Soc. Hd. Cap Screw
4	4	5/16-18 x 5/8 Soc. Hd. Cap Screw
4	4	3/8-16 x 1" Soc. Hd. Cap Screw
2	2	3/8-16 x 1" Hex. Hd. Cap Screw
6	6	3/4-16 x 3/8 Mac-It Hollow Lock Screw
6	6	Grease Fitting - Alemite #1612
1	1	1/4 Hex. Soc. Pipe Plug
2	2	3/16 Dia. x 1" Dowel
1	1	5/16-18 Hex. Nut
1	1	1/4 SAE Flat Washer
1	1	3/32 Dia. x 1/2 Rollpin
2	2	1/2-20 Acorn Nut
1	1	#3 Woodruff Key
4	4	1/4 Dia. x 3/4 Dowel
1	1	Grease Fitting - Alemite #1909

Following Items Used For 40" Table

4509	1	Screw - Lead (Stress Proof)
9060	1	Table

Following Items Used For 46" Table

4510	1	Screw - Lead (Stress Proof)
9062-A	1	Table

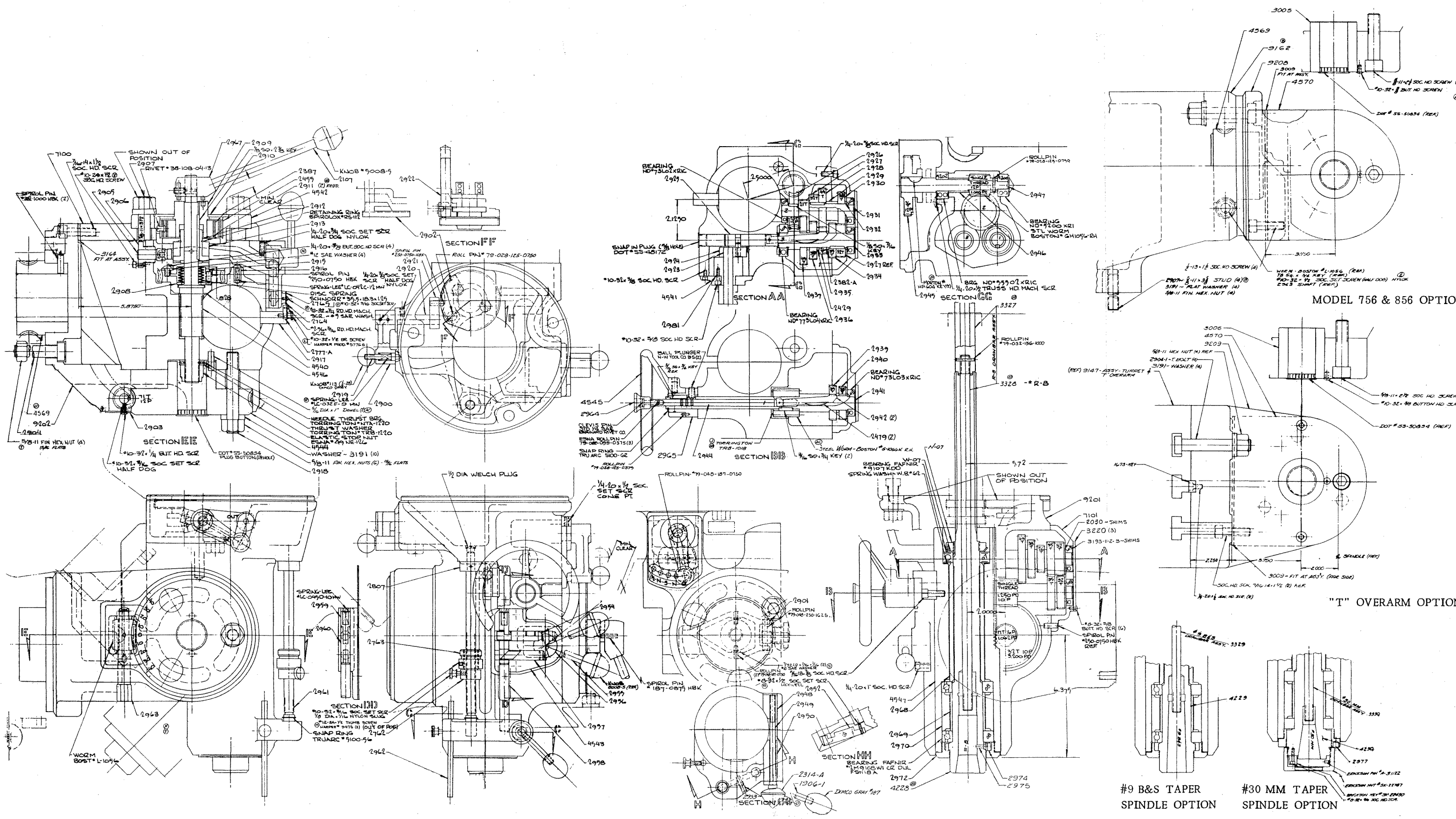
Following Items Used For Saddle W/O Extras

2112-3	1	Screw - Clamp
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Following Items Used For Saddle With RTU

2112-1	1	Screw - Clamp
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PART NO.	NO. REQ'D.	NAME
Following Items Used For Saddle With Verniers		
2112-2	1	Screw - Clamp
Following Items Used For Saddle With Mirco Viewer		
2112-4	1	Screw - Clamp
Following Items Used For Saddle - SFU With Verniers or Rods		
2112-5	1	Screw - Clamp
Following Items Used On All Table & Saddle Units (W/O T.P.F.)		
1067-C	1	Spacer
Following Items Used In Various Quantities		
	*	3/4 Hex. Soc. Pipe Plug
		*2-Req'd. On All Table & Saddle Units
		*1-Req'd. On All Table & Saddle Units With Coolant
Following Items Used On All Spinning Handwheels		
2846	1	Spacer - Table Dial
4512	1	Handwheel
4513	2	Handwheel
	2	Lock Nut (1650 Spacer Temporarily) #N-03
	2	#7 Woodruff Key
Following Items Used On All-Non Spinning Handwheels (Non-Spinning Handwheels To Be Used On All Machines Equipped W/RTU)		
2031	1	Spacer - Table R.H. Dial
2351	1	Sleeve - Dial & Handwheel Drive
2353	2	Spacer - Sleeve
2354	2	Spring - Handwheel
2823	1	Sleeve - Dial & Handwheel Drive
4409	2	Handwheel Non-Spinning
	4	Pin - Spirol #187-0625HBK
	2	Snap Ring - Spirolox #RS-157
	2	5/32 Dia. x 1-1/4 Roll Pin



MODEL 756 & 856 OPTION

"T" OVERARM OPTION

#9 B&S TAPER SPINDLE OPTION

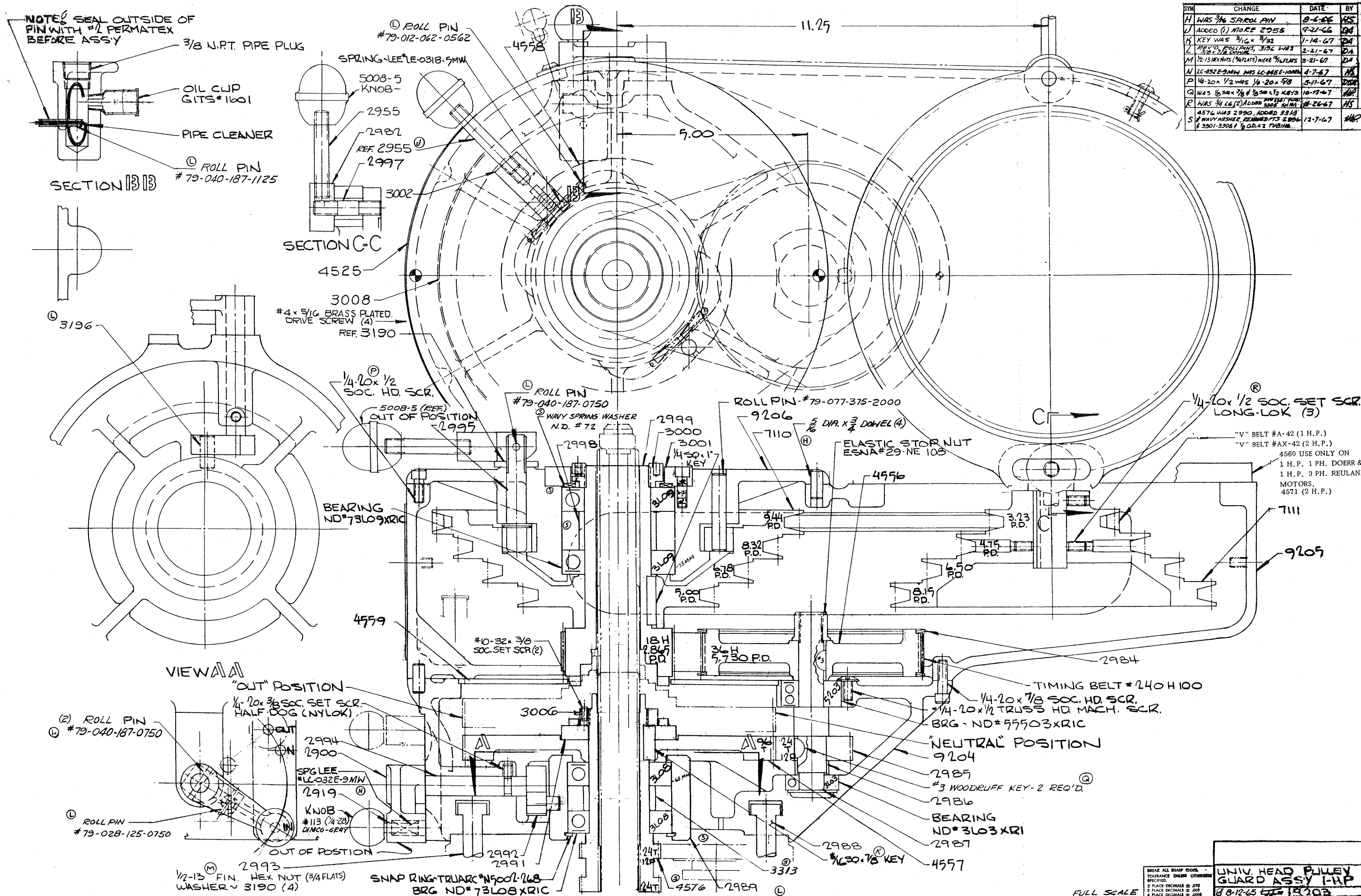
#30 MM TAPER SPINDLE OPTION

UNIVERSAL HEAD ASS'Y 745 WITH R-8	
8-12-65	9200

Last Change  
Letter (AC)



SYM	CHANGE	DATE	BY
H	WAS 3/16 SPIRAL PIN	8-6-66	MS
L	ADDED (1) MORE 2955	9-21-66	DA
K	KEY WAS 3/16 x 3/32	1-14-67	DA
Z	REV'D, ROLL PINS, 3/16 WAS 3/16 x 3/32	2-21-67	DA
M	1/2-13 HEX NUTS (4 FLATS) WERE 1/4 FLATS	3-21-67	DA
N	LC-032E-9MM WAS LC-032E-10MM	4-7-67	MS
P	1/4-20 x 1/2 WAS 1/4-20 x 5/8	5-11-67	DA
Q	WAS 1/8-50 x 7/8 # 1/8-50 x 1/2 KEYS	10-12-67	MS
R	WAS 3/4 L6 (2) ADDED 3000 SHIMS	10-26-67	MS
S	4576 WAS 2990, ADDED 3313 # WAVY WASHER, REMOVED P/S 2996	12-7-67	MS
	# 3301-3306 1/8 OD x 1/2 THICK		



UNIV. HEAD PULLEY GUARD ASSY 1-HP  
8-12-65 LAG 15008  
FULL SCALE

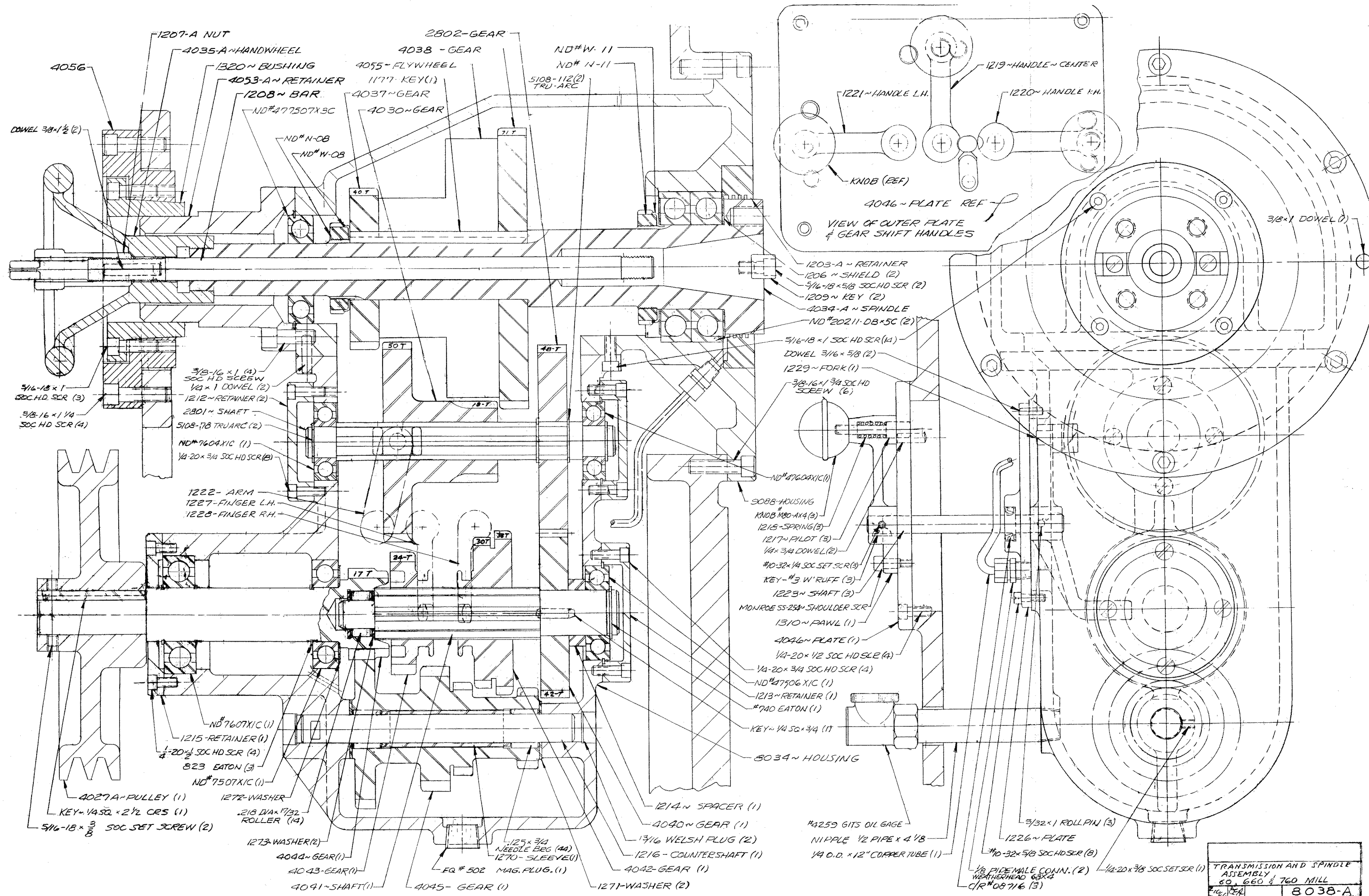


**PARTS LIST**

PULLEY GUARD ASSEMBLY  
ASSEMBLY NO. 9203

**INDEX MILL**

PART NO.	NO. REQ'D	NAME	PART NO.	NO. REQ'D	NAME
2900	1	Lever-Shift		3	Knob (3/8-16) #5008-5
2919	1	Plunger-Shift Lever			Plastic Research Prod.
2955	3	Handle-Feed Control		6	#4x5/16 Brass Pltd. Dr. Scr.
2982	2	Locknut-Motor			Parker-Kalon
2984	2	Flange-Timing Belt Pulley		8	1/4-20 x 7/8 Soc. Hd. Scr.
2985	1	Back Gear-24T		4	1/4-20 x 3/4 Soc. Hd. Scr.
2986	1	Spacer-Back Gear		2	1/4-20 x 1/2 Truss Hd. Mach. Scr.
2987	1	Shaft-Back Gear		3	1/4-20 x 1/2 Soc. Set Scr.
2988	1	Tee Bolt			Long-Lok
2989	1	Bushing-Back Gear Brg.		1	1/4-20 x 3/8 Soc. Set Scr. (Half Dog)
2991	1	Dog Clutch			Nylok
2992	1	Arm-Back Gear Shift		6	1/4-20 x 1/2 Soc. Hd. Scr.
2993	2	Tee Bolt		3	1/2-13 Fin. Hex Nut : Nut
2994	1	Shaft-Back Gear Shift		4	5/16 Dia. x 3/4 Dwl.
2995	1	Cam-Brake		1	3/8 N.P.T. Pipe Plug
2997	2	Stud		1	Key
2998	1	Spacer-Cartridge Brg.			1/8 SQ. x 1/2
2999	1	Hub-Drive Cone Pulley		1	Key
3000	1	Locknut-Cartridge Brg.			1/8 SQ. x 7/8
3001	1	Retaining-Cartridge Brg.		1	Key
3002	1	Handle-Brake			5/16 SQ. x 7/8
3006	1	Nut-Hub Drive		1	Pipe Cleaner
3008	1	Spindle Speed Chart		1	Wavy Spring Washer
3190	4	Washer-Hard			#N.D.-72
3196	1	Pin		1	Key
3313	1	Spacer-Bushing Brg.			1/4 SQ. x 1
4525	1	Name Plate		2	#10-32 x 3/8 Soc. Set Screw
4556	1	Pulley-Timing Belt			
4557	1	Gear-Back	Following Items For 2 H.P. 1800 RPM Motor.		
4558	1	Brake		1	V-Belt (Spindle Pulley)
4559	1	Cover			Dayton #AX-42
4576	1	Hub-Drive	4571	1	Plate-Motor Mounting
7110	1	Cone Pulley-Drive			
7111	1	Cone Pulley-Motor	Following Items For 1 H.P. 1800 RPM Motor		
9204	1	Housing-Back Gear		1	V-Belt (Spindle Pulley)
9205	1	Guard-Belt			Dayton #A-42
9206	1	Cartridge-Drive Pulley	4560	1	Plate-Motor Mounting
	1	Ball Bearing			(For 1 H.P. 1PH Doerr & 1 H.P. 3 PH Reuland Motors )
		ND #55503 x RIC			
	1	Ball Bearing			
		ND #3L03 x RI			
	2	Ball Bearing			
		ND #73L08 x RIC			
	2	Ball Bearing			
		ND #73L09 x RIC			
	1	Snap Ring			
		Truarc #N5002-268			
	4	Pin			
		Rollpin #79-012-062-0562			
	1	Pin			
		Rollpin #79-028-125-0750			
	1	Pin			
		Rollpin #79-040-187-1125			
	3	Pin			
		Rollpin #79-040-187-0750			
	1	Timing Belt			
		Browning # 240H 100			
	1	Rollpin			
		#79-077-375-2000			
	2	Spring			
		Lee #LE-031B-5 MW			
	1	Spring			
		Lee #LC-032E-9 MW			
	1	Oil Cup			
		Gits #1601			
	1	Elastic-Stop Nut			
		Esna #29-NE-108			
	1	Knob (1/4-28)			
		Dimco Gray 113			



- 1207-A NUT
- 4035-A HANDWHEEL
- 4056
- 1320-BUSHING
- 4053-A RETAINER
- 1208-BAR
- ND#477507X3C
- ND#N-OB
- ND#W-OB
- 4055-FLYWHEEL
- 1177-KEY(1)
- 4037-GEAR
- 4030-GEAR
- 2802-GEAR
- 4038-GEAR
- ND#W-11
- ND#N-11
- 5108-112(2) TRU-ARC
- 71-T
- 40-T
- 50-T
- 48-T
- 18-T
- 3/8-16 x 1 (4) SOC HD SCREW
- 1/4 x 1 DOWEL (2)
- 1212-RETAINER (2)
- 2801-SHAFT
- 5108-118 TRUARC (2)
- ND#7604X1C (1)
- 1/4-20 x 3/4 SOC HD SCR (8)
- 1222-ARM
- 1227-FINGER L.H.
- 1228-FINGER R.H.
- 30-T
- 38-T
- 24-T
- 17-T
- 30-T
- 38-T
- 42-T
- ND#7607X1C (1)
- 1215-RETAINER (1)
- 1/4-20 1/2 SOC HD SCR (4)
- 823 EATON (3)
- ND#7507X1C (1)
- 4027A-PULLEY (1)
- KEY-1/4 SQ x 2 1/2 CRS (1)
- 5/16-18 x 3/8 SOC SET SCREW (2)
- 1272-WASHER
- 218 DIA x 1 1/32 ROLLER (14)
- 1273-WASHER (2)
- 4044-GEAR (1)
- 4043-GEAR (1)
- 4041-SHAFT (1)
- 4045-GEAR (1)
- 125 x 3/4 NEEDLE BEG (44)
- 1270-SLEEVE (1)
- EQ # 502 MAG. PLUG (1)
- 1214-SPACER (1)
- 4040-GEAR (1)
- 1 3/16 WELSH PLUG (2)
- 1216-COUNTERSHAFT (1)
- 4042-GEAR (1)
- 1271-WASHER (2)

- 1219-HANDLE-CENTER
- 1221-HANDLE L.H.
- 1220-HANDLE R.H.
- 4046-PLATE REF
- VIEW OF OUTER PLATE & GEAR SHIFT HANDLES
- 3/8 x 1 DOWEL (7)
- 1203-A RETAINER
- 1206 SHIELD (2)
- 5/16-18 x 5/8 SOC HD SCR (2)
- 1209 KEY (2)
- 4034-A SPINDLE
- ND#20211-DB\*5C (2)
- 5/16-18 x 1 SOC HD SCR (14)
- DOWEL 3/16 x 5/8 (2)
- 1229-FORK (1)
- 3/8-16 x 3/4 SOC HD SCREW (6)
- ND#47604X1C (1)
- 3088-HOUSING
- KNOB 180-AX4 (2)
- 1218-SPRING (3)
- 1217-PILOT (3)
- 1/4 x 3/4 DOWEL (2)
- #10-32 x 1/4 SOC SET SCR (3)
- KEY-#3 W'RUFF (3)
- 1223-SHAFT (3)
- MONROE SS-234 SHOULDER SCR
- 1310-PAWL (1)
- 4046-PLATE (1)
- 1/4-20 x 1/2 SOC HD SCR (4)
- 1/4-20 x 3/4 SOC HD SCR (4)
- ND#47506X1C (1)
- 1213-RETAINER (1)
- #740 EATON (1)
- KEY-1/4 SQ x 3/4 (1)
- 8034-HOUSING
- #4259 GITS OIL GAGE
- NIPPLE 1/2 PIPE x 4 1/8
- 1/4 O.D. x 12" COPPER TUBE (1)
- 3/32 x 1 ROLL PIN (3)
- 1226-PLATE
- #10-32 x 5/8 SOC HD SCR (8)
- 1/8 FEMALE CONN. (2)
- WEATHERHEAD 63X4
- 1/4-20 x 3/8 SOC SET SCR (1)
- CR#08716 (3)

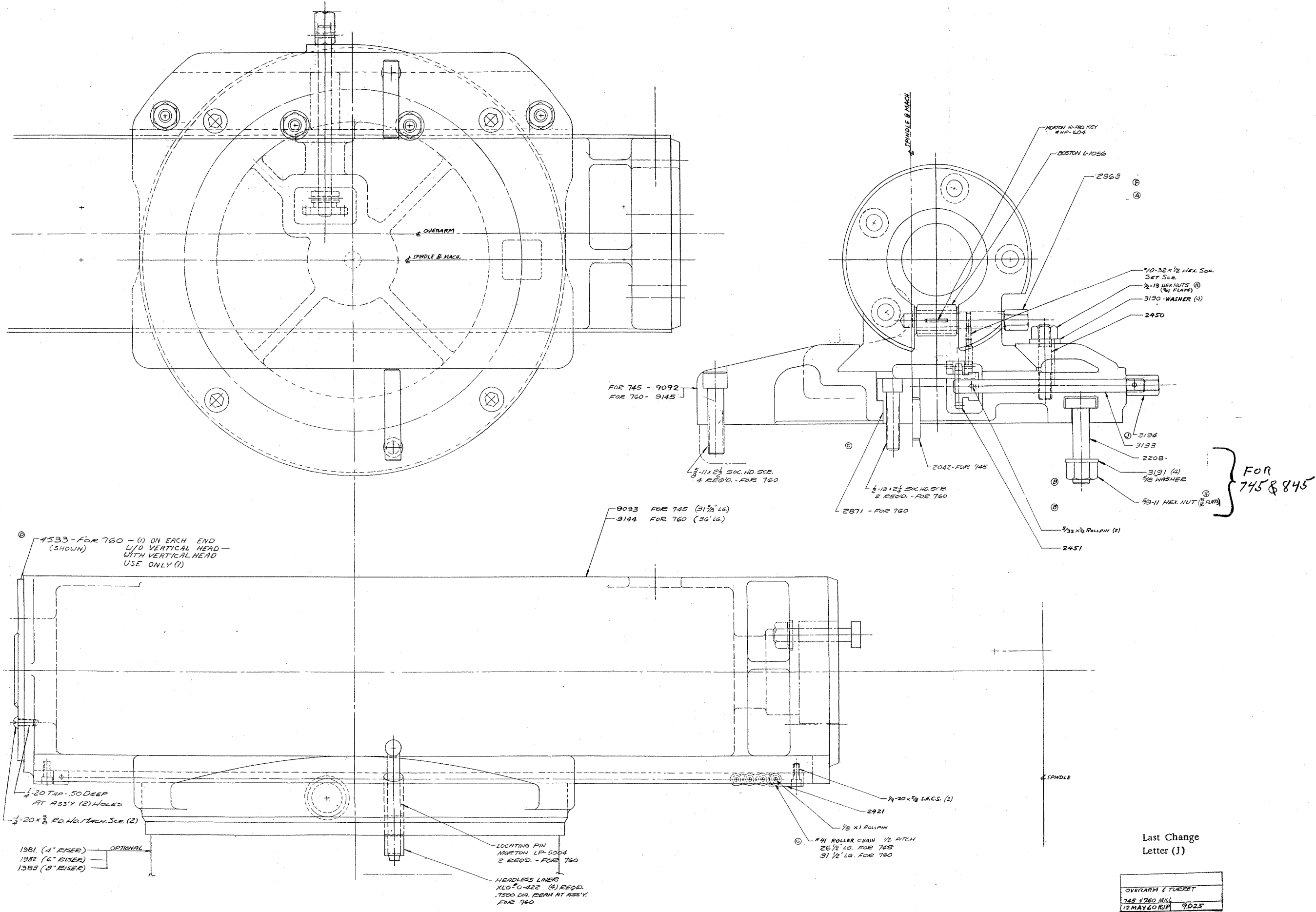
TRANSMISSION AND SPINDLE ASSEMBLY 60, 660 & 760 MILL  
 8038-A

**PARTS LIST**

TRANSMISSION  
ASSEMBLY NO. 8038-A

**INDEX MILL**

PART NO.	NO. REQ'D	NAME	PART NO.	NO. REQ'D	NAME
1177	1	Key - Spindle	44	1	.125 Dia x 3/4 Needle Brg. Roller
1203-A	1	Retainer - Spindle Bearing	2	1	13/16 Dia. Welsh Plug
1206	2	Shield - Front Spindle Bearing	3	1	Oil Seal CR#08716
1207-A	1	Nut - Draw Bar	3	1	Knob #M80-A4X CHI Molded Prod.
1208	1	#40 Draw Bar Arbor	3	1	#10-32 x 1/4 Hex. Soc. Set Screw
1209	2	Key - Spindle Nose	8	1	#10-32 x 5/8 Soc. Hd. Cap Screw
1212	2	Retainer - Bearing	8	1	1/4-20 x 1/2 Soc. Hd. Cap Screw
1214	1	Spacer	1	1	1/4-20 x 3/8 Hex. Soc. Set Screw
1215	1	Retainer - Main Drive Brg.	12	1	1/4-20 x 3/4 Soc. Hd. Cap Screw
1216	1	Countershaft	2	1	5/16-18 x 5/8 Soc. Hd. Cap Screw
1217	3	Pilot - Gear Shift	7	1	5/16-18 x 1" Soc. Hd. Cap Screw
1218	3	Spring	2	1	5/16-18 x 3/8 Hex. Soc. Set Screw
1219	1	Handle - Gear Shift - Center	6	1	3/8-16 x 1-3/4 Soc. Hd. Cap Screw
1220	1	Handle - Gear Shift - R.H.	4	1	3/8-16 x 1 Soc. Hd. Cap Screw
1221	1	Handle - Gear Shift - L.H.	4	1	3/8-16 x 1-1/4 Soc. Hd. Cap Screw
1222	1	Arm - Top Shifter	1	1	3/8 Dia. x 2" Dowel
1223	3	Shaft - Gear Shift	1	1	Copper Tube 1/4 O.D. x 12"
1225	1	Screw - Shoulder	2	1	3/8 Dia. x 1-1/2 Dowel
1226	1	Plate - Inner Gear Shift	2	1	1/4 Dia. x 1" Dowel
1227	1	Finger - L.H. Gear Shift	1	1	1/2 x 4-1/2 Nipple
1228	1	Finger - R.H. Gear Shift	1	1	Key 1/4 Sq. x 2-1/2
1229	1	Fork - Top Shifter	2	1	1/4 Dia. x 3/4 Dowel
1270	1	Sleeve - Cluster Gear	2	1	3/16 Dia. x 5/8 Dowel
1271	2	Washer	3	1	#3 Woodruff Key
1272	1	Shield - Drive Shaft Brg.	3	1	5/32 Dia. x 1" Rollpin
1273	2	Washer - Roller Guide	14	1	.218 Dia. x 17/32 Roller
1310	1	Pawl - Safety Gear Shift	1	1	Key 1/4 Sq. x 3/4
1320	1	Bushing - Split			
2801	1	Shaft - Transmission			
2802	1	Gear - 48T - 10P			
1213	1	Retainer - Shaft Bearing			
4027-A	1	Pulley - Transmission Drive			
4030	1	Gear - Double 19 & 50T - 10P			
4034-A	1	Spindle			
4035-A	1	Handwheel - Spindle			
4037	1	Gear - 40T - 10P			
4038	1	Gear - 71T - 10P			
4040	1	Gear - 42T - 10P			
4041	1	Shaft - Splined			
4042	1	Gear - 30T 8/10P & 33T 8/10P			
4043	1	Gear - 24T 8P			
4044	1	Gear - Main Drive 17T.8P			
4045	1	Gear - Cluster 4 Step			
4046	1	Plate - Outer Gear Shift			
4053-A	1	Retainer - Rear Spindle Brg.			
4055	1	Flywheel - Spindle			
4056	1	Retainer - Split Bushing			
8034	1	Housing - Drive Gear			
9088	1	Housing - Spindle			
	2	Ball Bearing ND#20211DBX5C			
	1	Ball Bearing ND#477507X3C			
	1	Ball Bearing ND#47604X1C			
	1	ND#7604X1C Ball Bearing			
	1	Ball Bearing ND#47506X1C			
	1	Ball Bearing ND#7507X1C			
	1	Ball Bearing ND#7607X1C			
	2	Snapring Truarc #5108-78			
	2	Snapring Truarc #5108-112			
	1	Snapring Eaton #740			
	3	Snapring Eaton #823			
	2	1/8 Male Connector Weatherhead #68X4			
	1	Lock Nut #N-11			
	1	Lock Washer #W-11			
	1	Lock Nut #N-08			
	1	Lock Washer #W-08			
	1	Box Wrench (3/8 Sq.) Fairmount #583			
	1	Oil Gauge 1/2" Gits #4259			
	1	Mag Plug 1/2" FQ #502			



Last Change Letter (J)

OVERARM & TURRET
745 & 760 MILL
13 MAY 60 RJP 9025

## PARTS LIST

OVERARM & TURRET  
ASSEMBLY NO. 9025

## INDEX MILL

PART NO.	NO. REQ'D	NAME
----------	--------------	------

## Following Items Used For All Turret &amp; Overarm Machines

2421	2	Anchor-Chainend
2450	4	Stud-Turret
2451	1	Sprocket-Overarm
2963	1	Shaft
3190	4	Washer, Hard
3191	4	Washer, Hard
3193	1	Shaft, Overarm Adjustment
3194	1	Wrench End
	1	Worm
		Boston L-1056
	2	1/8 Dia. x 1" Lg. Rollpin
		#59-028-125-1000
	2	5/32 Dia. x 3/4 Rollpin
		#59-032-156-0750
	1	#10-32 x 1/2 Hex Soc. Set Scr.
	4	1/4-20 x 5/8 Soc. Hd. Cap Scr.
	4	1/2-13 Hex Nut Finished
		3/4 Flats
	1	Morton Hi-Pro Key #604

## Following Items Used For 745 Machines

2208	4	Bolt-Turret
9092	1	Turret
9093	1	Overarm
	1	Rollerchain (26-1/2" LG.-Inner
		Plates & Rollers Both Ends) #41
	1	Dowel
		5/8 Dia. x 1-1/2
	4	5/8-11 Hex Nut Finished
		15/16 Flats

## Following Items Used For 760 Machines

2871	1	Center Retainer
4533	*	Plate-Overarm Ends
		*(2) Req'd W/O Vertical Head
		*(1) Req'd With Vertical Head
9144	1	Overarm
9145	1	Turret
	2	Locating Pin .7500 Dia.
		Morton LP-5004
	4	Liner Bushing
		Excello #0-422
	1	Rollerchain (31-1/2" LG.-Inner
		Plates & Rollers Both Ends) #41
	2	1/2-13 x 2-1/4 Soc. Hd. Scr.
	4	5/8-11 x 2-1/2 Soc. Hd. Scr.
	*	1/4-20 x 3/8 Rd. Hd. Mach. Scr.
		*(4) Req'd W/O Vertical Head
		*(2) Req'd With Vertical Head

## Following Items Used For Adding 4" Turret Risers

1981	1	Spacer
	4	5/8-11 x 4" Soc. Hd. Cap Scr.

## Following Items Used For Adding 6" Turret Risers

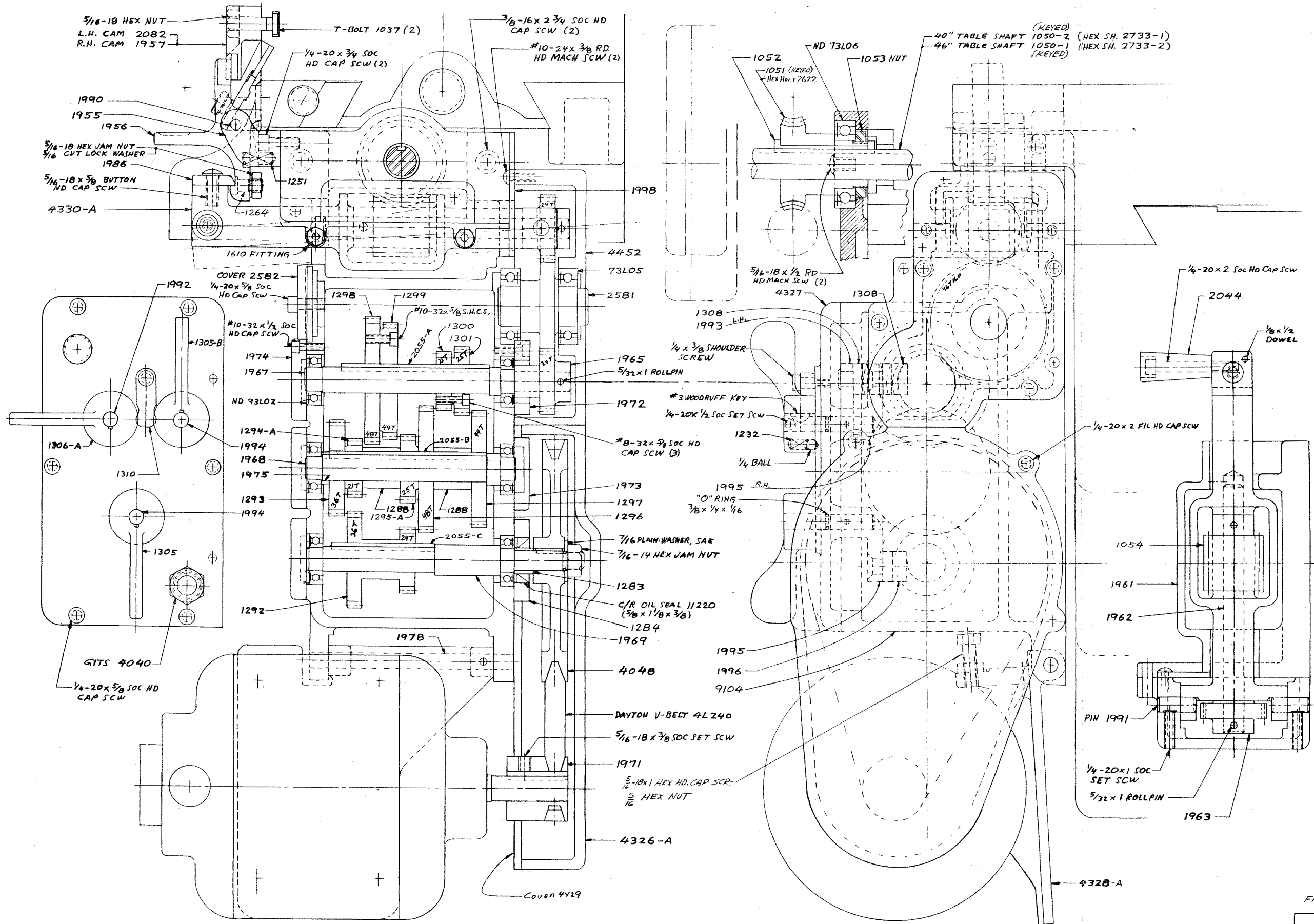
1982	1	Spacer
	4	5/8-11 x 6" Soc. Hd. Cap Scr.

## Following Items Used For Adding 8" Turret Risers

1983	1	Spacer
	4	5/8-11 x 6" Soc. Hd. Cap Scr.

## Following Items Used For 845 Machines

2208	4	Bolt-Turret
9092	1	Turret
9144	1	Overarm
		Rollerchain (31-1/2 LG.-Inner
		Plates & Rollers Both Ends) #41
	1	Dowel
		5/8 Dia. x 1-1/2
	4	Hex Nut-5/8-11 Fin.
		15/16 Flats



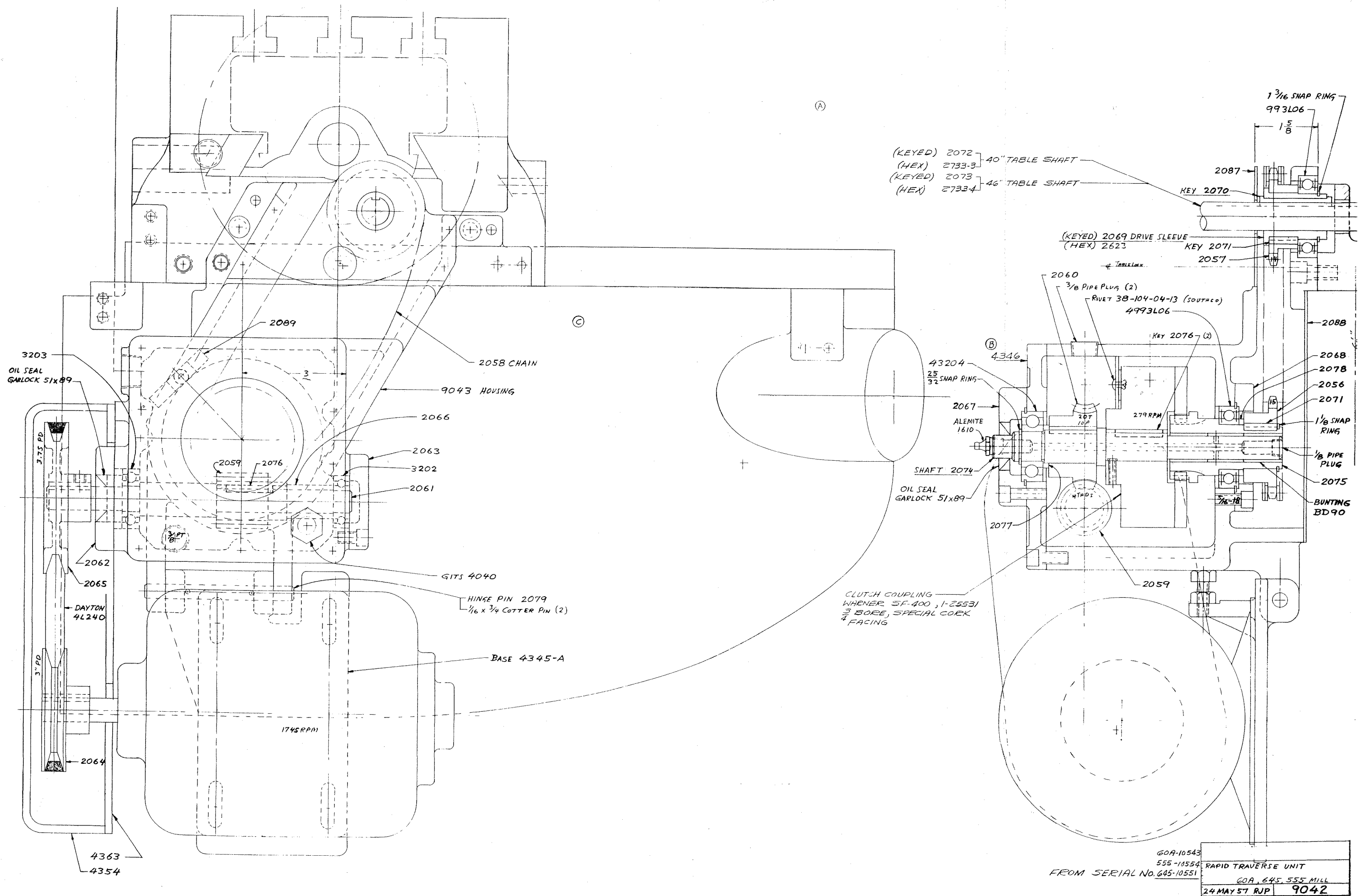
55-7122  
 45-6931  
 60A-9099  
 555-10049  
 FROM SERIAL No. 645-8703  
 TABLE POWER FEED GEAR UNIT  
 8-FERDS  
 #5 x 55 MILL 645, 55A, 60A  
 16 FEB 56 RJP 9041-A

**PARTS LIST**

TABLE POWER FEED  
ASSEMBLY NO. 9041-A

**INDEX MILL**

PART NO.	NO. REQ'D.	NAME	PART NO.	NO. REQ'D.	NAME
Following Items Used For All Table Power Feed Units			1	1	Oil Level Gauge (3/8 M.P.T.) Gits#4040
1037	2	T-Bolt - Table Stop Cam	3	3	"O" Ring (Sketch #24849-5) Garlock #8990
1053	1	Nut - Worm Gear Retaining	3	3	Rollpin #59-028-125-0750
1054	1	Worm - Table Feed	1	1	Rollpin #59-032-156-0750
1069	1	Spacer - Aux. Feed Shaft Gear	1	1	V-Belt Dayton #4L240
1232	6	Spring	1	1	Oilseal C/R #11220
1251	1	Spring - Latch	2	2	Rollpin #59-032-156-1000
1264	1	Insert - Latch	4	4	#0(.073) x 1/4 Drive Screw Parker-Kalon
1283	1	Spacer	3	3	#8-32 x 5/8 Soc. Hd. Cap Screw
1284	1	Retainer - Bearing	12	12	#10-32 x 1/2 Soc. Hd. Cap Screw
1288	2	Spacer - Table Feed Gear	2	2	#10-32 x 3/8 Rd. Hd. Mach. Screw
1292	1	Gear - Sliding Cluster	2	2	#10-32 x 3/8 Button Hd. Cap Screw
1293	1	Gear - 36T-16P	4	4	#10-32 x 1/2 Fil. Hd. Mach. Screw
1294-A	1	Gear - 21T-16P	4	4	#10-32 x 5/8 Soc. Hd. Cap Screw
1295-A	1	Gear - 25T-16P	4	4	1/4 - 20 x 2 Soc. Hd. Cap Screw
1296	1	Gear - 48T-16P	3	3	1/4 - 20 x 1/2 Soc. Set Screw
1297	1	Gear - 44T-16P	3	3	1/4 - 20 x 1-3/4 Soc. Hd. Cap Screw
1298	1	Gear - 48T-16P	2	2	1/4-20 x 1" Soc. Set Screw
1299	1	Gear - 44T-16P	2	2	1/4-20 x 3/4 Soc. Hd. Cap Screw
1300	1	Gear - 21T-16P	1	1	1/4-20 x 1/4 Soc. Set Screw
1301	1	Gear - 25T-16P	1	1	1/4 x 3/8 Shoulder Screw - Allen
1305	1	Lever - Feed Gear Shift (W/O Notch)	2	2	5/16-18 x 1/2 Rd. Hd. Mach. Screw
1305-B	1	Lever - Feed Gear Shift (W/Notch) R.H.	1	1	5/16-18 x 1" Hex. Hd. Cap Screw
1306-A	1	Lever - Feed Gear Shift - Upper L.H.	1	1	5/16-18 x 3/8 Soc. Set Screw - Knurled Cuppt.
1308	2	Fork - Shifter - Upper	1	1	5/16-18 x 5/8 Button Hd. Screw-Allen
1310	1	Pawl - Safety Gear Shift	2	2	3/8-16 x 2-3/4 Soc. Hd. Cap Screw
1955	1	Bracket - Table Feed Latch	1	1	1/8 Pipe Plug
1956	1	Latch - Table Feed	2	2	1/4 Dia. x 1-3/4 Dowel
1957	1	Cam - R.H. Table Feed Stop	2	2	3/16 Dia. x 3/4 Dowel
1961	1	Cover - Table Feed Worm	1	1	3/8 Hex. Soc. Pipe Plug
1962	1	Shaft - Table Feed Worm	6	6	1/4 Dia. Ball
1963	1	Gear - Out Board Table Feed - Top	5	5	#3 Woodruff Key
1965	1	Gear - Out Board Table Feed - Bottom	2	2	5/16 - 18 Hex. Nut
1967	1	Shaft - Table Feed Gear - Top	1	1	7/16 - 14 Hex. Jam Nut
1968	1	Shaft - Table Feed Gear - Middle	1	1	7/16 SAE Plain Washer
1969	1	Shaft - Table Feed Gear Pulley	1	1	1/4 Dia. x 2 Dowel
1971	1	Pulley - Table Feed Motor	1	1	1/4 Dia. x 3/4 Dowel
1972	1	Retainer - Table Feed Bearing	1	1	#2 x 1" Taper Pin
1973	1	Cover - Table Feed Bearing - Back	1	1	1/8 Dia. x 1/2 Dowel
1974	3	Cover - Table Feed Bearing - Front	1	1	5/16 Cut Lock Washer
1975	1	Spacer - Table Feed Gear	2	2	5/16-24 Hex. Nut
1978	1	Shaft - Table Feed Motor Bracket	1	1	1/2 - 20 Hex. Jam Nut
1986	1	Plate - Table Feed Lever Latch	1	1	Key
1988	1	Plate - Table Feed Gear Shaft Instruction	2	2	Grease Fitting - Alemite #1610
1990	1	Pin - Table Feed Latch	Following Items Used For 40" Table Power Feed Units W/O RTU		
1991	2	Pin - Pivot	2733-1	1	Shaft - Aux. Table Feed
1992	1	Shaft - Upper L.H. Shifter	Following Items Used For 46" Table Power Feed Unit W/O RTU		
1993	1	Arm - Upper L.H. Shifter	2733-2	1	Shaft - Aux. Table Feed
1994	2	Shaft - Shifter - Bottom & Upper R.H.	Following Items Used For STD. Table Power Feed Units		
1995	2	Arm - Shifter - Upper R.H. & Bottom	1067	1	Gear - Lead Screw
1996	1	Fork - Lower Shifter	1068	1	Gear - Aux. Feed Shaft
1998	1	Cover - Outboard Bearing Housing	Following Items Used For (2X Feed Rate) Table Power Feed Units		
2044	1	Handle - Worm Carrier	1067-B		Gear - Lead Screw
2055-A	1	Key (3/16 x 3/16 x 3-5/8)	1068-B		Gear - Aux. Feed Shaft
2055-B	1	Key (3/16 x 3/16 x 3-7/8)	Following Items Used For (1/2 Feed Rate) Table Power Feed Units		
2055-C	1	Key (3/16 x 3/16 x 2-5/8)	1067-D		Gear - Lead Screw
2082	1	Cam - L.H. Table Feed Stop	1068-D		Gear - Aux. Feed Shaft
2622	1	Gear - Aux. Feed Shaft Worm	Following Items Used For All Table Power Feed Units W/O SFU		
4048	1	Pulley - Driven	2581	1	Gear - Outboard Table Feed - Middle
4326-A	1	Guard - Table Feed Pulley	2582	1	Cover - Bearing Hole (Top Front)
4327	1	Cover - Table Feed Gear Housing	Following Items Used In Various Quantities		
4328-A	1	Bracket - Table Feed Motor Mounting	*		1/4 - 20 x 5/8 Soc. Hd. Screw
4330-A	1	Lever - Table Feed Engagement	*7 Req'd. On All Table Power Feed Units		
4429	1	Cover - Table Feed Pulley	*3 Req'd. On All Table Power Feed Units W/O SFU		
4452	1	Housing - Outboard Bearing Table Feed			
9104	1	Housing - Table Power Feed Gear			
	6	Ball Bearing ND #93LO2X1C			
	2	Ball Bearing ND #73LO5X1C			
	1	Ball Bearing ND #77-R-10			
	1	Ball Bearing ND #73L06X1C			



(KEYED) 2072 40" TABLE SHAFT  
 (HEX) 2733-3  
 (KEYED) 2073 46" TABLE SHAFT  
 (HEX) 2733-4

(KEYED) 2069 DRIVE SLEEVE  
 (HEX) 2623

3203  
 OIL SEAL  
 GARLOCK 51x89

3.75 PD

DAYTON  
 4L240

3" PD

4363  
 4354

1745RPM

GITS 4040

HINGE PIN 2079  
 1/16 x 3/4 COTTER PIN (2)

BASE 4345-A

2089

2058 CHAIN

9043 HOUSING

2066

2063

3202

2061

2059

2076

(C)

(A)

(B)

43204  
 25  
 32 SNAP RING

2067  
 ALEMITE  
 1610

SHAFT 2074  
 OIL SEAL  
 GARLOCK 51x89

CLUTCH COUPLING  
 WHENER SF-400, 1-25531  
 3 BORE, SPECIAL COEK  
 4 FACING

4346

2060  
 3/8 PIPE PLUG (2)  
 RIVET 38-104-04-13 (SOUTHERN)  
 4993L06

KEY 2076 (2)

207

279RPM

47HDS

2059

1 3/16 SNAP RING  
 993L06  
 1 5/8

2087  
 KEY 2070

KEY 2071  
 2057

2088

2068

2078

2056

2071

1/8 SNAP RING

1/8 PIPE PLUG

2075

BUNTING  
 BD90

60A-10543  
 555-10554  
 FROM SERIAL No. 645-10551

RAPID TRAVERSE UNIT  
 60A, 645, 555 MILL  
 24 MAY 57 RJP 9042



**PARTS LIST**

RAPID TRAVERSE UNIT  
ASSEMBLY NO. 9042

**INDEX MILL**

PART NO.	NO. REQ'D.	NAME
Following Items Used For All Rapid Traverse Units		
1338	1	Bracket - Octal Socket
2056	1	Sprocket - 16 Tooth Drive
2057	1	Sprocket - 14 Tooth Driven - Morse-Per Print
2058	1	Chain - #41 Roller - Bost. Gear Per Print
2059	1	Worm - 4 Thread 10P - Ohio Gear #SW-1010
2060	1	Gear - Worm 20T-10P - Ohio Gear #1W-1020-Q
2061	1	Shaft - Worm
2062	1	Retainer - Oil Seal
2063	1	Cover - Bearing
2064	1	Pulley - Drive 3" PD
2065	1	Pulley - Driven 3-3/4 PD
2066	1	Spacer - Worm
2067	1	Retainer - Oil Seal - Clutch Shaft
2068	1	Retainer - Bearing
2071	3	Key
2074	1	Shaft - Clutch Drive
2075	1	Sleeve - Clutch Drive
2076	3	Key
2077	1	Spacer - Worm Gear
2078	1	Spacer - Drive Sprocket
2079	1	Pin - Motor Base Hinge
2087	1	Cover - Driven Sprocket
2088	1	Cover - Drive Sprocket
2089	1	Strip - Clutch Torque
2093		Wiring Diagram 220/440V, 60Cy. 3 Ph.
2094		Wiring Diagram 3 Line 230V, 60Cy. 1 Ph. - 2609 (Doerr Motor)
2095		Wiring Diagram 2 Line, 115V, 60Cy. 1 Ph.
2623		Sleeve - Aux. Shaft Drive
4345-A	1	Base - Rapid Traverse Motor
4346	1	Cover - Gear Housing
4354	1	Guard - R.T.U. Pulley
4363	1	Cover - Pulley Guard
9043	1	Housing - Rapid Traverse Gear
	1	30MM Ball Bearing ND#993L06X1C
	1	20MM Ball Bearing ND#43204X1C
	1	30MM Ball Bearing ND#4993L06X1C
	1	15MM Ball Bearing ND#3202X1C
	1	17MM Ball Bearing ND#3203X1C
	1	Snap Ring - Truarc #5100-118
	1	Snap Ring - Truarc #5100-78
	1	Snap Ring - Truarc #5100-112
	2	Rollpin - #59-048-250-1000
	1	Oil Level Gauge - GITS #4040
	2	Oil Seal - Garlock #51x89
	1	Rivet - South Co. #38-104-04-13
	2	Bushing - Bunting BD-90
	2	Rollpin - #59-040-187-1500
	1	V-Belt 24" O.L. - Dayton 4L240
	1	Clutch Coupling - Ball Bearing Mounted Field (Spec. Cork Facing) - Warner SF-400(3/4 Bore)
	1	Warner Control Model 5400-24 Input 115 V.A.C., 60Cy. Output 90 V.D.C. 0.09 Amps - #5400-24
	1	Cutler - Hammer Size "O" Drum Switch, Self Centering #9441H268
	1	Delco 1/4 HP., 1745 RPM, 220/440V, 60Cy., 3 Ph. Totally Enclosed 1.2/0.6 AMPS Motor FR. 56
	1	Sealtite Flexible Liquid Tight Electrical Wiring Conduit 1/2" x 3 Ft.
	1	Control Box - EMWCO 4-1/2 x 9 x 3
	2	1/2" Straight Connector - Appleton ST-50

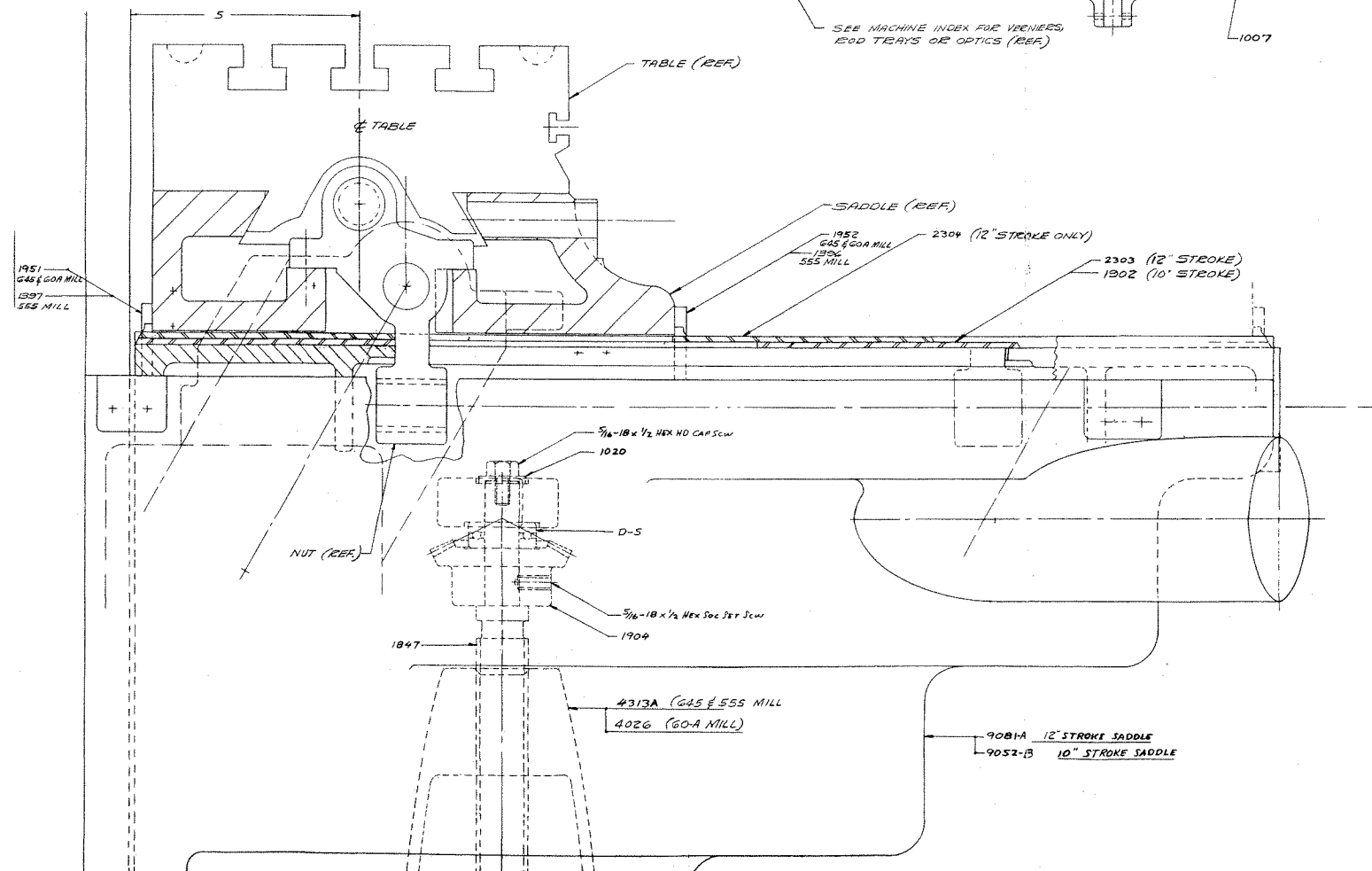
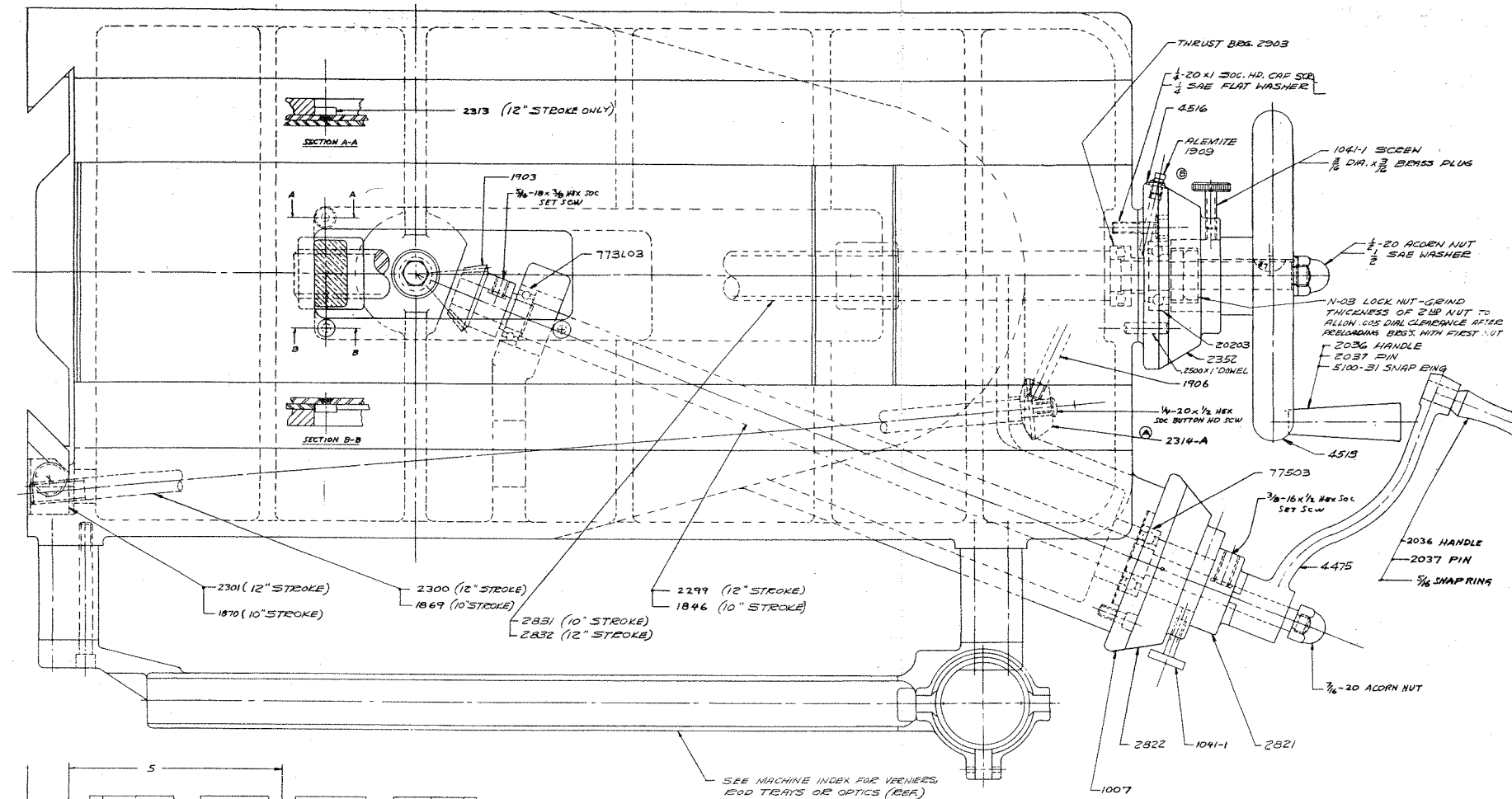
PART NO.	NO. REQ'D.	NAME
	1	S.U.O. Tirex 16-2 3 Ft.
	2	1/2" Straight Connector - T & B #2521
	1	S.O. Tirex 16-3 1 Ft.
	2	1/2" Straight Connector - T & B #2522
	1	Octal Socket CP 309
	1	1/2" Greenfield Cable 1 Ft.
	2	1/2" Straight Connector
	4	#6-32 x 1" Fill Hd. Mach. Screw
	4	#10-24 x 1/2 Button Hd. Cap Screw
	7	#10-24 x 1/4 Rd. Hd. Mach. Screw
	3	1/4-20 x 2-1/2 Fill Hd. Cap Screw
	7	5/16-18 x 3/4 Soc. Hd. Cap Screw
	13	5/16-18 x 1/2 Soc. Hd. Cap Screw
	3	5/16-18 x 7/8 Soc. Hd. Cap Screw
	1	5/16-18 x 1" Hex. Hd. Cap Screw
	2	3/8-16 x 1" Soc. Hd. Cap Screw
	2	1/4 Dia. x 3/4 Dowel
	2	3/8 Pipe Plug
	1	1/8 Pipe Plug
	1	1/8 Grease Fitting - Alemite #1610
	1	5/16-18 Hex. Nut
	2	1/16 Dia. x 3/4 Cotter Pin
	4	#6-32 Hex. Nut
	4	5/16 Plain Flat Washer

Following Items Used For 40" Table RTU

2733-3 1 Shaft - Aux. Feed

Following Items Used For 46" Table RTU

2733-4 1 Shaft - Aux. Feed



60A-10411  
 555-10436  
 FROM SERIAL NO. 645-1432  
 ASMB - KNEE 10" & 12" STROKE  
 SADDLE  
 GAS, GOA & 555 MILLS  
 19 MAR 59 RIP 9080

**PARTS LIST**

KNEE  
ASSEMBLY NO. 9080

**INDEX MILL**

PART NO.	NO. REQ'D	NAME
Following Items Used For All Knee Assembly		
1020	1	Washer
1847	1	Screw - Knee Elevating
1852	1	Gib - Knee To Column
1903	1	Pinion - Bevel Gear - Knee
1904	1	Gear - Knee Bevel
1906	1	Handle - Knee Lock Screw
2036	2	Handle
2037	2	Pin - Knee Crank Handle
2821	1	Retainer - Elevator Shaft Dial
2822	1	Dial - Elevator Shaft
4475	1	Crank - Elevating
	1	Thrust Bearing - Detroit Ball #D-5
	1	Thrust Bearing - MRC #2903
	1	Ball Bearing ND #77503X1C
	1	Ball Bearing - ND #20203X1C
	1	Ball Bearing - ND #773L03X1C
	1	Handle Knob - Dimco-Gray #187-5/16-18
	2	Lock Nut ND #N-03
	2	Snap Ring - Truarc #5100-31
	5	Grease Fitting - Alemite #1610
	4	#10-24 x 1/2 Rd. Hd. Mach. Screw
	1	1/4-20 x 1/2 Hex. Soc. But. Hd. Cap Screw
	1	5/16-18 x 3/8 Hex. Soc. Set Screw
	1	5/16-18 x 1/2 Soc. Set Screw
	1	5/16-18 x 3/4 Hex. Hd. Cap Screw
	1	3/8-16 x 1/2 Hex. Soc. Set Screw
	2	7/16-14 x 1-1/2 Soc. Hd. Cap Screw
	2	3/4-16 x 3/8 Mac-It Hollow Lock Screw
	1	7/16-20 Acorn Nut
	1	1/2-20 Acorn Nut

Following Items Used For 10" Stroke Only

1870	1	Lock - Knee Gib
1902	1	Cover - Knee
9052-B	1	Knee

Following Items Used For 12" Stroke Only

2301	1	Lock - Knee Gib
2303	1	Cover - Knee Long
2304	1	Cover - Knee Short
2313	3	Pin - Knee Cover Stop
9081-A	1	Knee

Following Items Used For 60A Mill Only

4026	1	Support Knee
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Following Items Used For 555 Mill Only

1396	1	Wiper - L.H. Column Way
1397	1	Wiper - R.H. Column Way

Following Items Used For 645 & 60A Mill

1951	1	Wiper - R.H. Column Way
1952	1	Wiper - L.H. Column Way
	1	Wiper Strip (9' Long) - Houghton #10V70-VIX-SYN

Following Items Used For 645 & 555 Mill

4313-A	1	Support - Knee
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PART NO.	NO. REQ'D.	NAME
Following Items Used For All Hand Operated Saddles (Do Not Use With Saddle Feed Unit)		
1007	1	Bracket - Elevator Shaft Dial
1869	1	Screw - Knee Lock
2314-A	1	Boss - Knee Lock Screw Handles
2352	1	Dial - Saddle Feed
4513	1	Handwheel
4516	1	Bracket - Saddle Dial
	1	Grease Fitting - Alemite #1909
	4	1/4-20 x 5/8 Soc. Hd. Cap Screw
	4	1/4-20 x 1" Soc. Hd. Cap Screw
	2	1/4 Dia. x 1" Dowel
	1	#7 Woodruff Key (1/8 x 3/4)

Following Items Used For 10" Stroke Hand Operated Saddles  
(Do Not Use With Saddle Feed Unit)

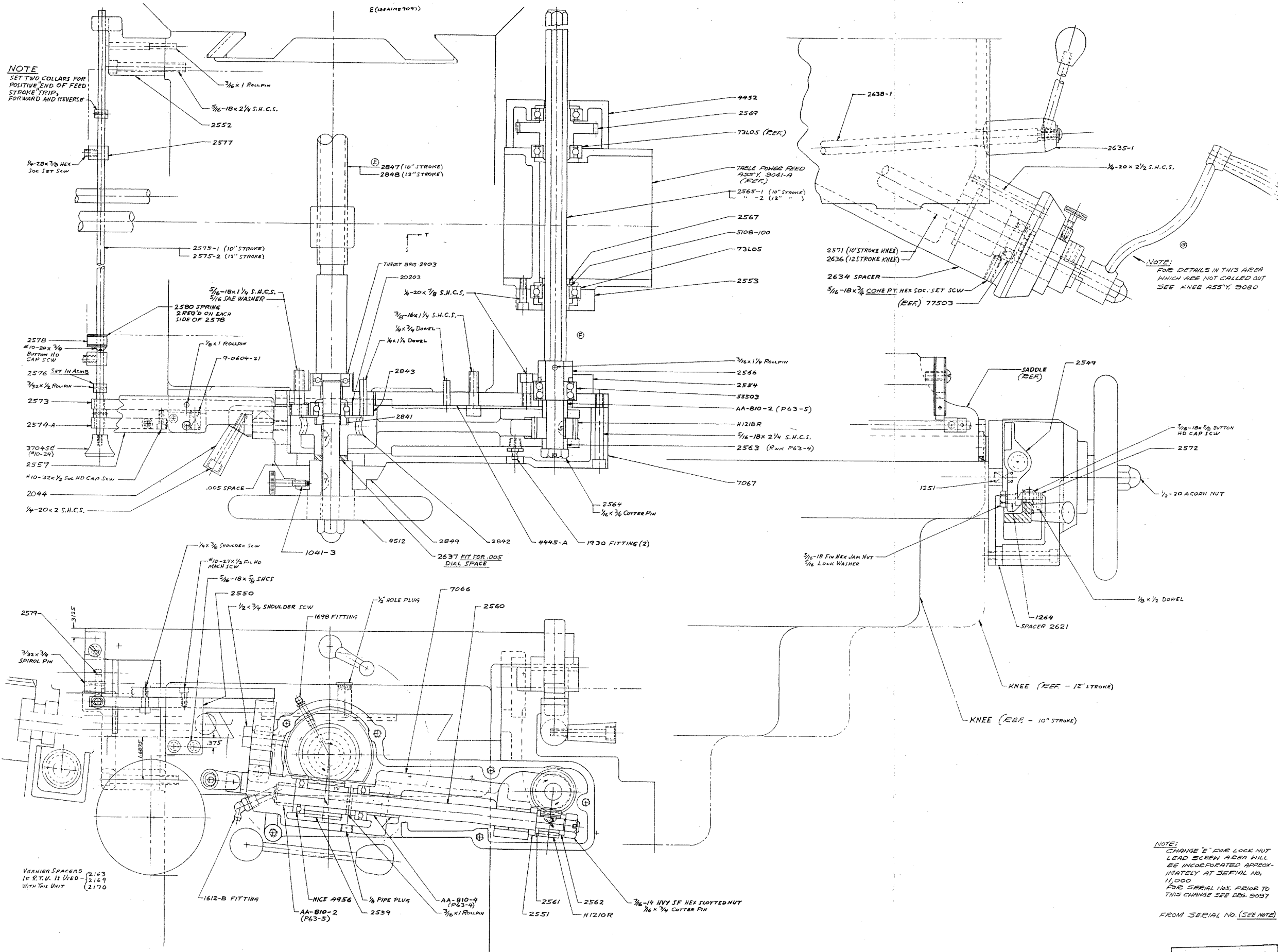
1846	1	Shaft - Knee Elevator Pinion
2831	1	Screw - Saddle Lead

Following Items Used For 12" Stroke Hand Operated Saddles  
(Do Not Use With Saddle Feed Unit)

2299	1	Shaft - Knee Elevator Pinion
2832	1	Screw - Saddle Lead

Following Items Used In Various Quantities

1041-1	*	Screw - Dial Thumb
		* 1-Req'd. On All Knee Ass'y. With SFU
		2-Req'd. On All Knee Ass'y. With Hand Feed
	*	1/4 SAE Washer
		* 1-Req'd. On All Knee Ass'y. With SFU
		5-Req'd. On All Knee Ass'y. With Hand Feed



NOTE  
SET TWO COLLARS FOR  
POSITIVE END OF FEED  
STROKE TRIP  
FORWARD AND REVERSE

NOTE:  
FOR DETAILS IN THIS AREA  
WHICH ARE NOT CALLED OUT  
SEE KNEE ASSY. 9080

VERNIER SPACERS  
IF R.T.V. IS USED  
WITH THIS UNIT

2163
2169
2170

NOTE:  
CHANGE 2" END LOCK NUT  
LEAD SCREW AREA WILL  
BE INCORPORATED APPROX.  
IMATELY AT SERIAL NO.  
11,000  
FOR SERIAL NOS. PRIOR TO  
THIS CHANGE SEE DRS. 9097  
FROM SERIAL NO. (SEE NOTE)

**PARTS LIST**

SADDLE FEED UNIT  
ASSEMBLY NO. 9097-A

**INDEX MILL**

PART NO.	NO. REQ'D.	NAME
Following Items Used On All Saddle Feed Units		
1041-3	1	Screw - Dial Thumb
1251	1	Spring
1264	1	Insert - Latch
2044	1	Handle - Saddle Worm Carrier
2549	1	Latch - Saddle Feed
2550	1	Bracket - Feed Trip Bar
2551	1	Washer - Worm Shaft Thrust
2552	1	Bracket - Feed Trip Rod
2554	1	Cover - Bearing
2556	1	Dial - Saddle Feed
2557	1	Plate - Feed Trip Bar
2559	1	Worm - Saddle Feed
2560	1	Shaft - Saddle Feed Worm
2561	1	Washer - Helical Gear Thrust
2562	1	Spacer
2563	1	Bushing
2564	1	Nut - Slotted Hex. Jam
2566	1	Collar - Thrust
2567	1	Sleeve - Power Take-Off Shaft
2572	1	Plate - Latch
2573	1	Bar - Feed Trip
2574-A	1	Finger - Outer Trip
2576	3	Collar - Feed Trip
2577	2	Cam - Adj. Feed Trip
2578	1	Bracket - Trip Finger
2579	1	Finger - Feed Trip
2580	4	Spring - Leaf
2621	1	Spacer
2634	1	Spacer - Knee Elevating Dial
2635-1	1	Boss - Knee Lock Screw Handle
2637	1	Spacer - Handwheel
2638-1	1	Screw - Knee Lock
2841	1	Nut - Lock
2842	1	Gear - Saddle Feed Worm
2843	1	Bearing - Housing
4445-A	1	Plate - Saddle Feed Unit MTG.
4512	1	Handwheel 7-1/2 Dia.
7066	1	Carrier - Saddle Feed Worm
7067	1	Cover - Saddle Feed Worm
	1	Ball Bearing ND #73L05X1C
	1	Ball Bearing ND #55503X1C
	2	Bushing - Oilite #AA-810-2
	4	Bushing - Oilite #AA-810-4
	1	Snap Ring - Truarc #5108-100
	1	Helical Gear 18T, 12P RH - Boston #H1218R
	1	Helical Gear 10T, 12P RH - Boston #H1210R
	2	Thrust Bearing - Nice 4956
	1	Spring - Danly #9-0604-21
	1	Knob #3704SC (10-24)
	1	Pin - Spirol #094-075HBK
	2	#10-24 x 1/2 Fil. Hd. Mach. Screw
	2	#10-24 x 3/4 But. Hd. Cap Screw
	1	#10-32 x 1/2 Soc. Hd. Cap Screw
	6	1/4-20 x 7/8 Soc. Hd. Cap Screw
	1	1/4-20 x 2 Soc. Hd. Cap Screw
	1	1/4 x 3/8 Hex. Soc. Shoulder Screw
	2	1/4-28 x 3/8 Hex. Soc. Set Screw
	4	1/4-20 x 2-1/2 Soc. Hd. Cap Screw
	1	5/16-18 x 5/8 But. Hd. Cap Screw
	2	5/16-18 x 1-1/4 Soc. Hd. Cap Screw
	7	5/16-18 x 2-1/4 Soc. Hd. Cap Screw
	2	5/16-18 x 5/8 Soc. Hd. Cap Screw
	1	5/16-18 x 3/4 Cone Pt. Set Screw
	2	3/8-16 x 1-1/4 Soc. Hd. Cap Screw
	1	1/2 x 3/4 Hex. Soc. Shoulder Screw

PART NO.	NO. REQ'D.	NAME
	2	1/4 Dia. x 3/4 Dowel
	1	#5 Woodruff Key
	1	3/16 Dia. x 1-1/4 Rollpin
	2	1/16 Dia. x 3/4 Cotter Pin
	1	Grease Fitting (65°) - Alemite #1612-B
	2	Grease Fitting (Slotted) - Alemite #1930
	1	1/8 Pipe Plug (Hex. Soc.)
	1	1/8 Dia. x 1/2 Dowel
	1	#3 Woodruff Key
	1	7/16 - 14 Hvy. SF Hex. Slotted Nut
	2	3/16 Dia. x 1" Rollpin
	1	Grease Fitting - Alemite #1698
	2	#7 Woodruff Key
	2	1/4 Dia. x 1-1/4 Dowel
	2	5/16 SAE Washer
	1	5/16-18 Finish Hex. Jam Nut
	1	5/16 Lock Washer
	1	1/8 Dia. x 1" Rollpin
	3	3/32 Dia. x 1/2 Rollpin

Following Items Used On All Saddle Feed Units With 10" Stroke

2565-1	1	Shaft - Power Take-Off Drive
2571	1	Shaft - Knee Elevator Pinion
2575-1	1	Rod - Feed Trip
2847	1	Screw - Saddle Lead

Following Items Used On All Saddle Feed Units With 12" Stroke

2565-2	1	Shaft - Power Take-Off Drive
2575-2	1	Rod - Feed Trip
2636	1	Shaft - Knee Elevator Pinion
2848	1	Screw - Saddle Lead

Following Items Used On All Saddle Feed Unit With T.P.F.

2553	1	Cover - Bearing
2569	1	Gear - Power Take-Off Feed

# McLaren Automation & Machine Tool LLC.

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sales@wellsindex.com [www.wellsindex.com](http://www.wellsindex.com)

## Rebuild your Wells-Index mill

*Please contact us for current price*



Includes models 745, 747, 845, 847, and 887

Please contact us for quotes on models not listed

Complete tear down and rebuild includes the following;

- 1) New drive belts
- 2) All new bearings
- 3) All labor to tear down to each individual part inspect and reassemble
- 4) Grind spindle taper for R-8, # 9 Brown and Sharpe or #30MMT \*\*  
\*\* Contact us for pricing on spindles not listed.
- 5) New hard chrome on quill. Grind quill and lap head to fit.
- 6) New drawbar
- 7) Replace any worn or broken parts
- 8) Rescrape ways and Grind table
- 9) New drawbar
- 10) New acme screws and nuts

One Year Warranty parts and workmanship

All castings must be in usable condition

### Options:

New Grey Paint

Hard chrome ways

Remove and reinstall your power feeds

Remove and reinstall your 2 axis DRO

*"Please contact us for current pricing on above options"*

**Not included;** Freight to and from our facility.

Any electrical repairs or repairs to optional accessories installed on your mill

Option examples are DRO, power feeds, coolant systems etc...

### Factory Installed Options

Power feeds  
Riser Blocks

Power drawbar  
Digital Readouts

Chip pan Flood coolant  
Special Electrics

