RIVETT

MACHINE TOOLS

RIVETT LATHE & GRINDER, INC.

BRIGHTON 35, BOSTON, MASSACHUSETTS

RIVETT

INCORPORATED

145 NEWTON STREET

BRIGHTON, BOSTON, MASS. 02135

CUST. ORDER NO.	RECEIVER'S NO.	DATE ENTERED	DEALER CODE	INVOICE NO. AND LETTER
015048	CP 73091-H	5-9-66		R33266

PLEASE REFER TO ← INVOICE NUMBER AND LETTER IN ALL CORRESPONDENCE.

SOLD TO: Overgard Machine Tool Co.,Inc.,
2045 West 8th Avenue
Denver, Colorado 80204

SHIP TO: [redacted]

DATE OF INVOICE

DATE SHIPPED

WAYBILL NO.

EXPRESS RCPT. NO.

TRUCK PRO. NO.

REQUESTED ROUTING	F. O. B. BRIGHTON, BOSTON, MASS.	TERMS: net 30

QUANTITY ORDERED	DESCRIPTION	% DISCOUNT	UNIT PRICE	QUANTITY BACK ORD'D	QUANTITY SHIPPED	AMOUNT
	1030F Lathe, serial #501					
1	Rivett No. 1030 Precision Toolroom Lathe-13½" swing over bed, 30" nominal center distance; back geared headstock with super-precision pre-loaded ball bearing spindle, D1-3" camlock nose, handwheel, center and center chuck, driving plate, spindle speed tachometer; gear box with 84 thread and 72 feed changes; flame hardened and ground bed-ways; dial indicator stop for carriage, threading dial; compound rest; quick threading stop; tailstock with hard, full bearing spindle with 1/16" scale graduations and .001" dial feed, hard male center; automatic lubrication throughout; variable speed drive 22 to 400 rpm. through back gears, 400 to 3600 rpm. by open belt *					
1	Motor and Controls including 5 H.P. motor for operation on 440 volt, 60 cycle, 3 phase and electrical equipment installed in accordance with the Machine Tool Electrical Standards adopted by the N.M.T.B.A.					
1	To furnish above machine as 1030F Model with 30" center distance, extra.					
1	Cabinet-for collets and tools					

INVOICE COPY

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BRIGHTON, BOSTON, MASS. 02135

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015048	CP 73091 H	5-9-66		R33266--2

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WAYBILL NO.

EXPRESS RCPT. NO.

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QUANTITY ORDERED	DESCRIPTION	% DISCOUNT	UNIT PRICE	QUANTITY BACK ORD'D	QUANTITY SHIPPED	AMOUNT
1	Taper Attachment-graduated in both degrees and inches per foot					
1	Lamp - gooseneck type					
	* To furnish above machine with ASA 3"D-1 camlock spinde nose in place of Am. St'd. LO long taper key drive nost *					
	Required 7-25 or before.					

INVOICE COPY

INSTRUCTIONS FOR OPERATION & MAINTENANCE OF RIVETT 1020F AND 1030F PRECISION TOOLROOM LATHE

MODEL NO. 1030F

SERIAL NO. 501

WHEN ORDERING REPLACEMENT PARTS PLEASE GIVE:

MODEL AND SERIAL NO.

DRAWING NO. AND PART NO.

RIVETT LATHE AND GRINDER INC.

BRIGHTON 35, BOSTON, MASS.

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OPERATOR'S INSTRUCTION MANUAL

INTRODUCTION

The 1020F precision toolroom lathe qualifies for the finest metal turning in any toolroom, experimental shop or laboratory. Lasting quality has governed the design and selection of material throughout the lathe. The nature of the lathe should be recognized and every care be taken to maintain its original accuracy and appearance. The wide use of anti-friction bearings, automatic lubrication hardened and ground bed-ways and safety interlocks greatly simplify the maintainance.

The 1020S precision toolroom lathe is built from unit assemblies which greatly simplify service and repair. The headstock is an integral assembly and may be removed from the bed-ways. The gear box is an integral assembly and may be removed from the bed enclosure. The drive is an integral assembly and may be removed from the base casting. All parts in the lathe are manufactured to close tolerances and may be replaced without fitting.

The installation, operation and maintainance instructions are made with reference to assembly drawings to clarify the description. At times further information may be required which will gladly be furnished on written request. When writing it is suggested that the serial number of the lathe be included; this information can be taken from the serial number plate mounted at the front right end of the lathe bed.

INSTALLATION INSTRUCTIONS

RECEIVING AND UNPACKING

If any damage is noticed to packaging, machine or parts call representative of delivering carrier to inspect condition before removing crate or taking parts from boxes and enter claim against the transportation company. The shipper holds receipt in good order for the entire consignment.

Carefully unpack, using nail puller for removing crate, box covers and braces. Avoid jarring machine when doing this. Leave the machine mounted on the skid until it has been finally located. Check all items against packing list. If any shortage exists, re-examine packing material before discarding. Small pieces may easily be lost unless all excelsior and wrapping paper is thoroughly overhauled. Immediately report any shortage or discrepancies.

Remove slushing grease using fresh cotton waste or cloth with gasoline or kerosene. Immediately go over all ground, polished and scraped surfaces with an oily rag.

FOR REFERENCE NUMBERS SEE PRINT 1020F

SETTING UP (dwg. 1020S or 1030 M & S)

Machine should be close to its location on its skid; remove wooden clamps from skid and slide lathe off skid using rollers. Lifting hooks can be used on headstock end of base, remove panel #34 to expose lip for lifting hooks. Place machine on concrete or solid foundation.

Level machine using precision level lengthwise and crosswise on bedways. Lengthwise the level should be tested at both the headstock and tailstock ends of eash flat surface. Crosswise the level should rest on two precision parallels each mounted on the flat surfaces of the bedways; the parallels should be of sufficient thickness so the level clears bedway vees. Level directly in front of the headstock and at the extreme tailstock end. Four levelling jacks with jack pads provide adjustment and eliminate the necessity of shims. All readings on level should be within .0005" per foot.

ASSEMBLING

1. Release carriage from bedway by relieving binder stud #13
2. Install draw-in spindle #2 if collets are to be used.
   When not in use draw-in spindle fits in hole provided in collet board on top of tool cabinet.
3. Install dial indicator #11 on bracket at left end of carriage.

WIRING

Machine is wired in accordance with wiring diagrams located on the inside of the electrical panel door. Before connecting lead wires to terminal box at left-rear of lathe base, be sure that disconnect line switch #16 on electrical compartment door is in OFF position. Connect lead wires per wiring diagram; be sure leads are connected so that lathe spindle turns counter-clockwise when FORWARD push button #25 is depressed.

Pilot light #17 indicates when disconnect line switch is in ON position and power is available to the drive.

INITIAL OILING

Headstock, gear box and carriage are self-lubricating. Check the oil level in the gauge glass provided on each assembly and if the oil is not to proper level follow instructions under lubrication. Page 7 and lubrication chart 102CL.. Carriage automatic lubrication also lubricates the bedways.

Tailstock is provided with three oil cups one for each of the bedways and one for the spindle. Those oil cups should be filled with SAE-20 lubricating oil.

FILLING COOLANT SYSTEM (optional)

The coolant tank mounts on slideway inside door at the rear of the machine base. To remove the tank from base first lift the drain tube in the sump of the machine base and then remove screws on the door. The coolant reservoir can be filled through the drain stand-pipe. The maximum capacity of the coolant tank is six gallons.

The coolant pump is driven by a vertically flange-mounted motor controlled by push-buttons #18 on the front of the base.

OPERATION INSTRUCTIONS

MAIN DRIVE

The drive consists of a 5 H. P. U. S. Varidrive Motor and countershaft with multidisc clutch to select one of two drives to the headstock. The main drive motor is controlled by Forward, Reverse, and Stop push buttons at the front of the lathe #25, #26 and #27. The Vari-pitch sheave on the output shaft of the motor belt drives a self adjusting vari-pitch sheave on the countershaft. A small geared motor is used to vary the pitch of the countershaft. A small geared motor is used to vary the pitch of the sheaves. The push-buttons marked FAST AND SLOW at the front of the lathe #29 and #28 control the output speed of the drive. The speed of the lathe spindle indicated on the tachometer #7, may be changed to any desired speed by operating the FAST or SLOW push-buttons. Speed changes cannot be made unless main drive motor is running. The countershaft has two output driving sheaves, one for driving the headstock spindle in open belt and one for driving the headstock spindle in back gears. The selecting clutch is operated by lever #33 with three positions OPEN BELT - NEUTRAL - BACK GEAR.

HEADSTOCK

The spindle may be driven by direct belting or through back gearing. Two sets of back gearing are used to provide a spindle speed range from 22 to 400 rpm. Lever #6 on the front of the headstock selects the spindle drive; it has three positions OPEN BELT - 1st BACK GEAR - 2nd BACK GEAR - with neutral between each. To drive the spindle through back gears, lever #33 operating the countershaft should be positioned in BACK GEAR and the control knob #6 on the headstock should be positioned in either 1st BACK GEAR for speeds from 44 to 400 rpm or in 2nd BACK GEAR for speeds from 22 to 200 rpm. To drive the spindle through open belting the lever #33 controlling the countershaft should be in position OPEN BELT and the control knob #6 on the headstock should be positioned in OPEN BELT. The spindle may be stopped by moving the lever #33 controlling the countershaft to NEUTRAL or by pushing the STOP push button #27. The main drive motor stops instantaneously by action of integral motor brakes. To lock headstock spindle when mounting spindle nose attachments, engage knob #6 in back gear position.

SPINDLE NOSE ATTACHMENTS

These mount on long taper key drive spindle nose, American St'd #L0. Locking Nut #9 is turned clockwise to draw-up and lock face plates, jaw chucks or other attachments to the keyed long taper of the spindle nose. A spanner wrench is provided and may also be used for tightening draw-in spindle.

COLLETS

Rivett 6R draw-in type collets with round hole capacity up to 1-1/8" mount directly in the spindle mouth and are operated by draw-in spindle or by lever chuck closer if furnished.

GEAR BOX

The mechanism is driven through gearing from the headstock controlled by knob #8 on the front of the headstock. This knob has three positions; FEEDS - NEUTRAL - THREAD. When the Gear Box is used for power turning this lever is located at FEEDS. When the gear box mechanism is used for threading this lever is located at THREAD. When the gear box mechanism is not required this lever is located at NEUTRAL.

TO SELECT FEEDS

1. Turn control knob #8 to feeds position.
2. Note setting of gear box controls for desired feed from chart #37 on front of gear box.
3. Turn selecting locking lever #31 counter-clockwise to neutral detented position.
4. Turn selector dial #32 to match desired number with pointer.
5. Turn selector locking lever #31 clockwise as far as it will go to lock selector dial.
6. Turn control knob #35 to A1, A2 or A3 position as indicated by chart.
7. Turn control knob #36, to B1, or B2 position as indicated by chart.
8. Turn control knob #30 to R.H. for power longitudinal feed, in this position the feed rod will drive the carriage from right to left with the headstock spindle running counter-clockwise.
9. Turn control knob #30 to L.H. for power cross feed, in this position the feed rod will drive the cross slide in to reduce stock diameter

1. Drive headstock spindle at proper speed.
2. Turn control knob #8 to THREAD position.
3. Note setting of gear box controls for desired thread from chart #37 on front of gear box. If desired thread is not on chart see Instructions for special English or Metric Threads. Page 6.
4. Turn selector locking lever #31 counter clockwise to neutral detented position.
5. Turn selector dial #32 to match desired number with printer.
6. Turn selector locking lever #31 clockwise as far as it will go to lock selector dial.
7. Turn control knob #35 to A1, A2 or A3 position as indicated by chart.
8. Turn control knob #36 to B1 or B2 position as indicated by chart
9. Turn control knob #30 to R.H. for right hand threading or to L.H. for left hand threading.

CARRIAGE

Carriage locks to lathe bed by stud #13. Lathe is shipped with carriage in locked position. Be sure to release the carriage when setting-up lathe. Test free movement of carriage by using handwheel #24. ~~Clutch #23 may be pulled to release handwheel from gear train.~~ Be sure stops #19 are not locked to stop rod to interfere with desired carriage travel.

Lever #22 on front of lever operates clutch for power longitudinal feed. Horizontal position is neutral and lever may be moved up or down for engaging clutch.

Lever #21 on front of apron operates clutch for power cross travel. Horizontal position is neutral and lever may be moved up or down to engage clutch. Control knob #30 must be in L. H. position for power infeed.

Lever #15 engages the half-nuts with the lead screw for threading operations. An interlock prevents engagement of the half-nuts and the power longitudinal feed at the same time.

COMPOUND AND CROSS SLIDE

The screws have dials graduated in thousandths of radius. The swivel is graduated 180 either side of zero and is locked in position by two binder nuts. The cross slide may be locked by clamping nut located to the rear of the compound.

The cross slide feed screw has adjustable ball stop for retracting and resetting threading tool without losing the micrometer reading. The ball stop is locked in position by knurled screw #12. This provides a positive stop and limits the revolution of the cross slide feed screw to three turns.

THREADING DIAL

The dial mounts on the face of the carriage apron indicated by #14. Threads with the lead divisible by six do not require the use of the threading dial as the half-nuts may be engaged at any point. For all other even whole threads, the half-nuts may be engaged on any number of the threading dial. For all odd whole threads, the half-nuts must be engaged on alternate numbers of the threading dial, namely 1, 3 and 5, or 2, 4 and 6. For all fractional threads, the threading dial cannot be used; the half-nuts must be kept engaged.

DIAL INDICATOR CARRIAGE STOP

The stop assembly consists of an adjustable rod with micrometer stop #10 mounted at the front base of the headstock and dial indicator #11 mounted on the end face of the carriage apron. The dial indicator is graduated to register in thousandths.

ELECTRIC CARRIAGE CONTROL

This mechanism is used when chasing threads to control the travel of the carriage in either or both directions. Stops #19 are set for the desired travel of the carriage. Knurled screw #20 provides final adjustment. Work rotation is stopped automatically at each end of the carriage travel. The carriage travel is reversed by pushing the FORWARD or REVERSE push-button #25, or #26.

SPECIAL ENGLISH OR METRIC THREADS

Special threads not listed on chart #37 are cut using pick-off gears between headstock and gear box. Quadrant on which pick-off gears mount is located at the end of the end of the headstock and gear box. To gain across to quadrant remove guard #4 at left end of headstock and plate #1 at left end of gear box. To remove guard #4 first remove spindle handwheel assembly #3 which is held by nut and compression sleeve.

TAPER ATTACHMENT (optional)

The taper attachment when furnished is fastened to the rear and becomes a fixed part of the carriage. See Assembly Print #1020R-11. To set taper, loosen binder nuts #19A at each end of the slide, turn stud #5 until slide is at desired taper measured either in degrees or in inches per foot, lock binder nuts #19A.

Fasten clamp #25 to the rear of the bed and lock rod #1 between clamp and taper attachment lower slide. Loosen clamping nut #19B on the rear of the taper attachment top plate and tighten clamping bolt on the cross slide. Print 1020R part #32.

When the taper attachment is not in use the slide should be locked at zero taper and the rod #1 and clamp #25 which locks the taper attachment to the lathe bed should be removed. Tighten clamping nut #19B on the rear of the taper attachment top plate and loosen clamping bolt on the cross slide print 1020R-9A, part #32.

MAINTAINANCE INSTRUCTIONS

LUBRICATION

The headstock is automatically lubricated; however, care should be taken to maintain the oil at the level indicated by the guage glass on the front of the machine. To introduce oil to the headstock remove cover plate #38. Use filtered SAE-40 lubricating oil. The headstock should be drained and flushed once a year, the drain cock is located at the rear of the lathe.

The gear box is automatically lubricated; however, care should be taken to maintain the oil at the level indicated by the guage glass at the front of the lathe. To fill the gear box remove plate #1 at the left end of the lathe which gives access to a large filter cup. Use filtered SAE-40 lubricating oil. The gear box should be drained and flushed once a year. Use drain cock at the rear of the lathe. VAC-2V

The carriage is automatically lubricated by a pump driven by the feed rod. When starting machine after a prolonged shut-down, feed rod should be engaged by knob #30 (print 1020S) to insure lubrication of carriage before removing same. Carriage pump may be manually operated by placing knob #30 in neutral and turning feed rod by hand. Care should be taken to maintain the oil at the level indicated by the guage glass on the front of the apron. Use filtered SAE-40 lubricating oil. An oil cup adjacent to the guage glass on the front the apron is furnished for filling the reservoir. The carriage reservoir should be drained and flushed once a year, the drain plus is at the base of the apron.

The tailstock is provided with three oil cups one for each of the bedways and one for the spindle. Use filtered SAE-20 lubricating oil and apply once a week.

The U. S. Vari-drive requires periodic lubrication. See U. S. Vari-drive instruction sheet.

Motor has grease-packed ball bearings which should be re-lubricated once a year. A panel in the rear of the base at the tailstock gives access to the motor.

CARRIAGE GIB

The straight gib is adjusted with four gib screws with locking nuts to hold the adjustment. There should be a free sliding fit between the carriage gib and the hardened bed.

CROSS SLIDE GIB

This straight gib is adjusted with five gib screws having locking nuts to hold the adjustment.

COMPOUND SLIDE GIB

This straight gib is adjusted by three gib screws with locking nuts to hold the adjustment.

LEAD SCREW HALF-NUT GIB

From the right end of the carriage apron three gib screws with locking nuts can be adjusted to compensate the wear in the slide carrying the half-nuts.

LONGITUDINAL AND CROSS FEED CLUTCHES

A slotted nut on the front of each clutch housing adjusts the tension between the clutch faces. Clockwise adjustment of the slotted nut increased the clutch tension.

FEED ROD AND LEAD SCREW

End play may be adjusted. Adjustment on each is the same; remove the end-plate from the bearing housing at the right end of the bed and take up on the adjusting nuts. Lock the adjustment with leaf of winged washer and replace end plate.

CROSS SLIDE NUT

The back lash between the cross slide screw and nut can be adjusted to compensate for wear; see Assembly Print 1020F-9-1000 & 1020F-9A-1000. Lift hinged chip guard #1. Loosen check nut #28 and turn back-lash nut #27 until all play is removed between screw and nut. Lock adjustment with check nut #28.

For lathe with taper attachment see Assembly Print #1020F-9A-1000. Taper attachment connecting arm interferes with adjustment, therefore taper attachment and connecting arm must be removed. Thereafter the adjustment is the same as outlined in preceding paragraph.

COMPOUND SLIDE REST NUT

This nut is adjustable to compensate for wear; see assembly print 1020F-9-1000 and 1020F-9A-1000. Remove bearing collar #15 held by four Allen cap screws #17; push top-slide to the rear exposing feed screw and nut. Loosen check nut #28 and adjust the back-lash nut #48 by turning clockwise until all play between feed screw and feed screw nut is eliminated. Lock adjustment by tightening check nut #28.

MAIN DRIVE CLUTCH

The instructions for adjusting the multi-disc clutch are installation of new belts are detailed on varidrive sheet.

DRIVE BELTS

Two sets of three matched endless vee belts drive headstock. Each set of belts is individually tensioned by adjusting idler. Remove plate #1 at left-end of lathe to reach idlers.

MOTOR BRAKE

A Stearns magnetic disc brake is furnished for the main drive. The brake is an integral part of the motor. After prolonged use, slight wear of the brake linings may occur and require adjustment.

Brake is accessible through door at rear of base by sliding out coolant tank. Instructions for brake adjustment are found inside brake cover.

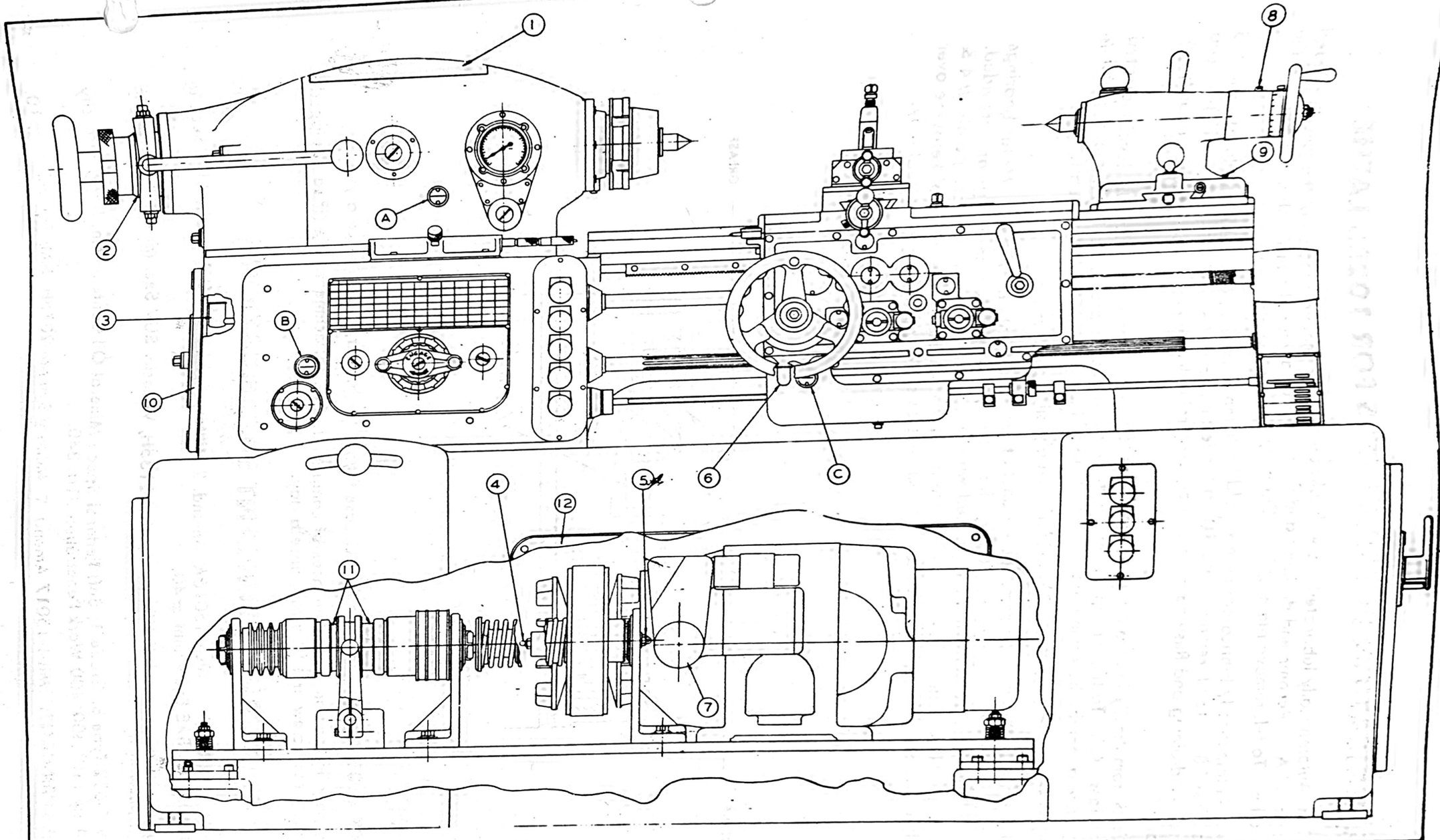
1020F & 1030F TOOL ROOM LATHE

AMOUNT OF CARRIAGE TRAVEL AFTER TRIPPING OF STOP ROD AT FOLLOWING SPINDLE SPEEDS & GEAR BOX SETTINGS

Gear Box Setting	APPROX. CARRIAGE TRAVEL							
	Spindle Speed - Back Gear					Open Belt		
	25	100	200	300	400	500	1000	2000
2 Th'ds	.100	.350						
4 "	.050	.180						
8 "	.025	.090	.250					
16 "	.012	.045	.125	.250		.225		
32 "	.006	.022	.062	.120	.225	.108	.280	
64 "	.003	.011	.031	.060	.110	.050	.140	
100 "						.034	.093	.300

CAUTION: SPINDLE SPEEDS IN EXCESS OF THOSE SHOWN FOR GIVEN GEAR BOX SETTINGS MAY CAUSE CHANGE IN STOP ROD SETTING.
(BRAKE TORQUE = 17FT. LBS.)

5/25/64



BIVETT LATHE & GRINDER, LTD.

LUBRICATION DIAGRAM

1020S—L

LUBRICATION INSTRUCTIONS FOR 1020S LATHE

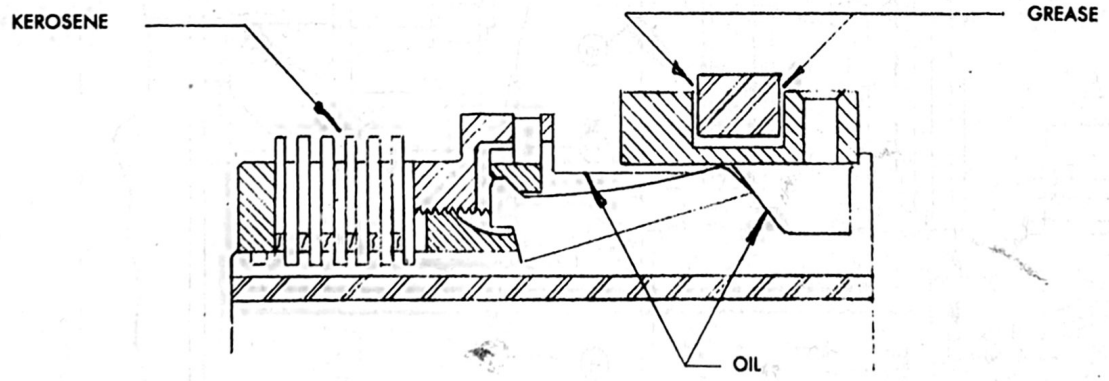
HEADSTOCK: Automatically lubricated; care should be taken to maintain the oil at the level indicated by the gage glass "A" Recommend draining and flushing once a year, the drain plug is located at the rear of the lathe. To fill, remove plate #1 Capacity approx. 10 qts.

GEAR BOX: Automatically lubricated; care should be taken to maintain the oil at the level indicated by the gage glass "B" To fill remove plate 10 at the left end of lathe which gives access to filler cup #3. Recommend draining and flushing once a year, use drain plug at rear of the lathe. Capacity approx. 8 quarts.

CARRIAGE: Automatically lubricated; care should be taken to maintain the oil at the level indicated by the gage glass "C". . To fill, oil cup #6 adjacent to gage glass is provided. Recommend draining and flushing once a month, the drain plug is at the base of the apron. Capacity 1 quart.

TAILSTOCK: Three cups at #8 & #9 provided. Apply oil once a week.

DRIVE: Drive is accessible through removable panel at rear and front panel #12. Motor bearings are grease packed and should require no further lubrication; however, grease fittings are provided. Speed change motor #7 requires to be repacked with grease once a year. Grease points #4 & #5 twice a year. Flush plates of clutch #11, twice a year by pouring small amount of kerosene over them. Apply oil as per chart below, twice a year. Grease as shown applying grease sparingly.



LEVER CHUCK CLOSER: (If so equipped) — Grease fitting #2 at rear, grease twice a year.

GENERAL: Apply light oil on sliding surfaces of compound, taper attachment slide (if so equipped); cross slide screw, lead screw and feed rod, once a day.

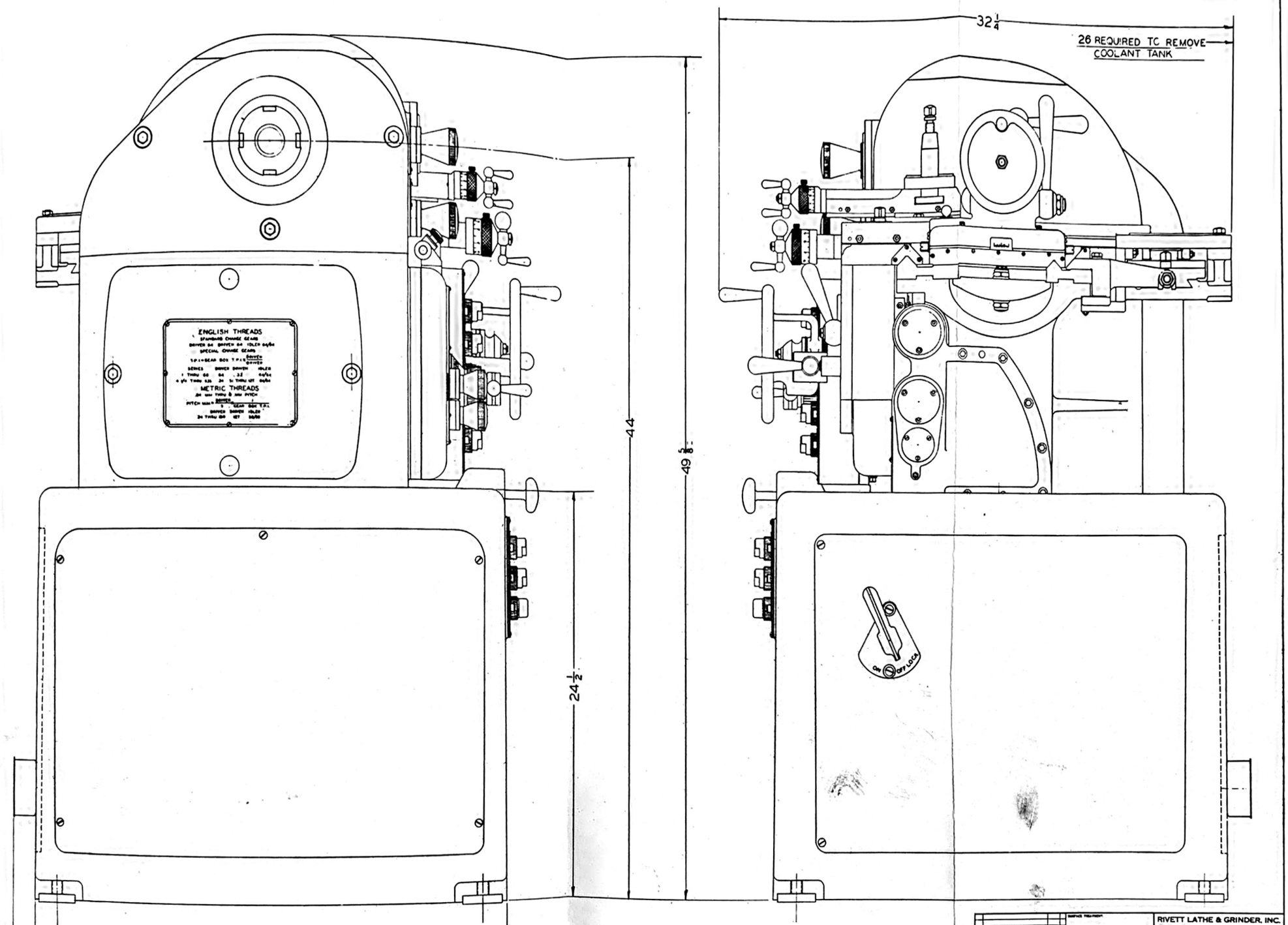
MILITARY LUBRICANT SPECIFICATIONS

HEADSTOCK & GEARBOX: MIL-L-15016A, Amend. 2 Military Symbol 3080, Viscosity SUV Sec. @ 100°C, 818, SAE Equivalent #40.

CARRIAGE: MIL-L-15017, Amend. 2 Military Symbol 2135H, Viscosity SUV Sec. @ 100°F, 305, SAE Equivalent #20.

GREASE: VV-C-632 Type B, Grade 1, Soft Federal Spec.: Mineral Oil Content Min. 85%, Viscosity SSA @ 110° 300/400 Work Penetration 310/340.

GENERAL OIL LUBRICANT: MIL-L-15017 Amend. 2, Military Symbol 2075H, SAE Equivalent #10.

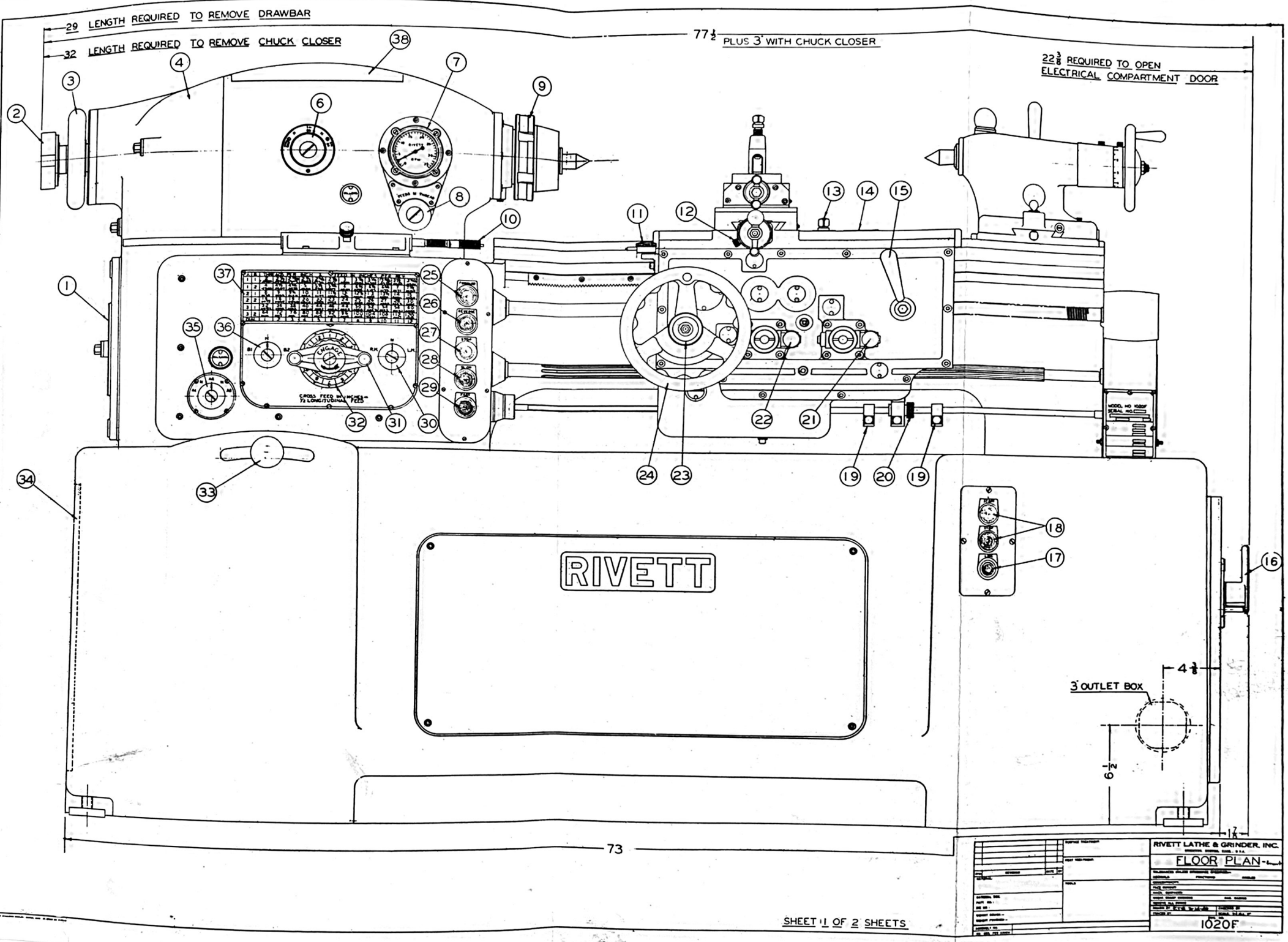


RIVETT LATHE & GRINDER, INC.

FLOOR PLAN - END

1020F

SHEET 2 OF 2 SHEETS

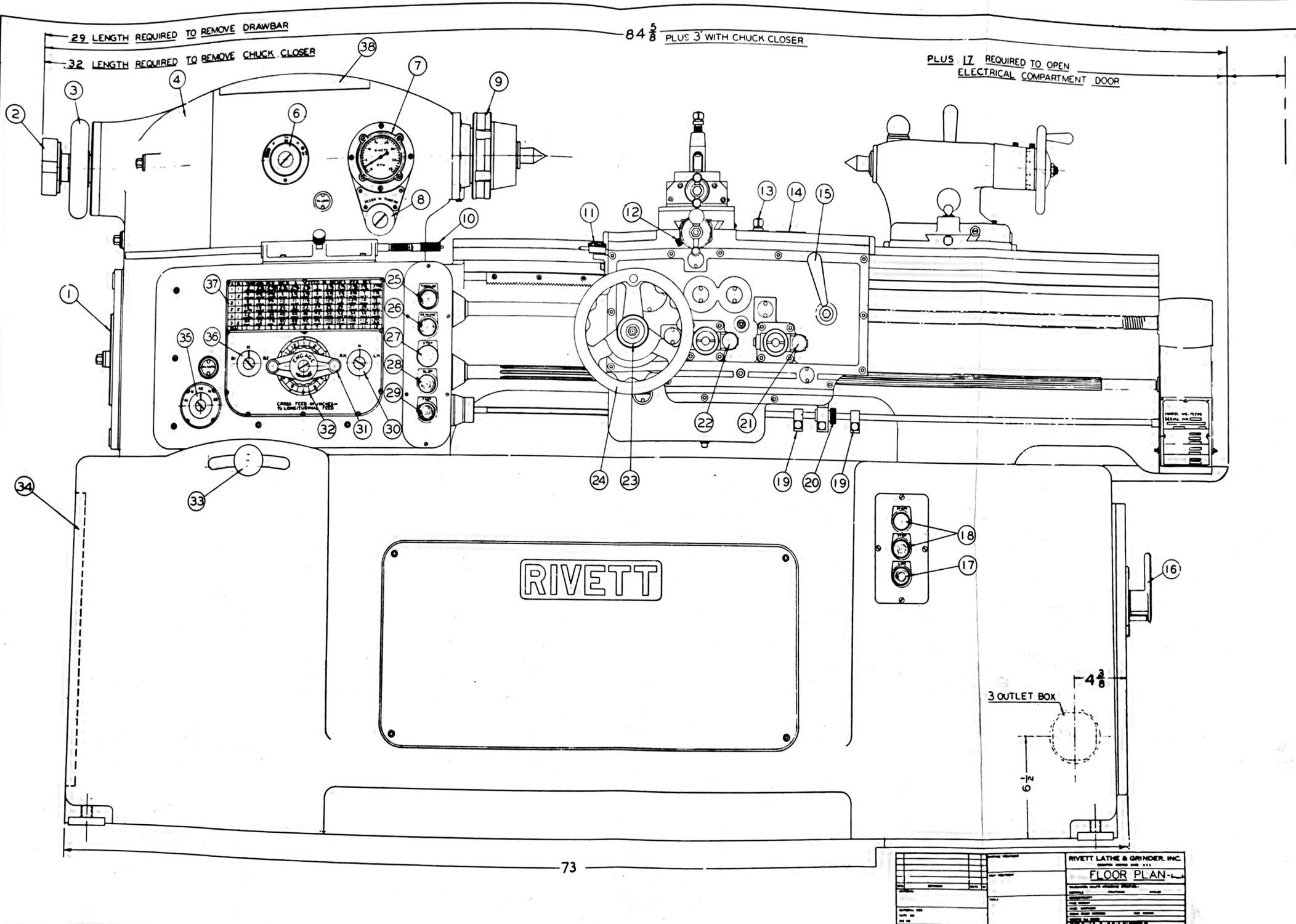


RIVETT LATHE & GRINDER, INC.

FLOOR PLAN

1020F

SHEET 1 OF 2 SHEETS

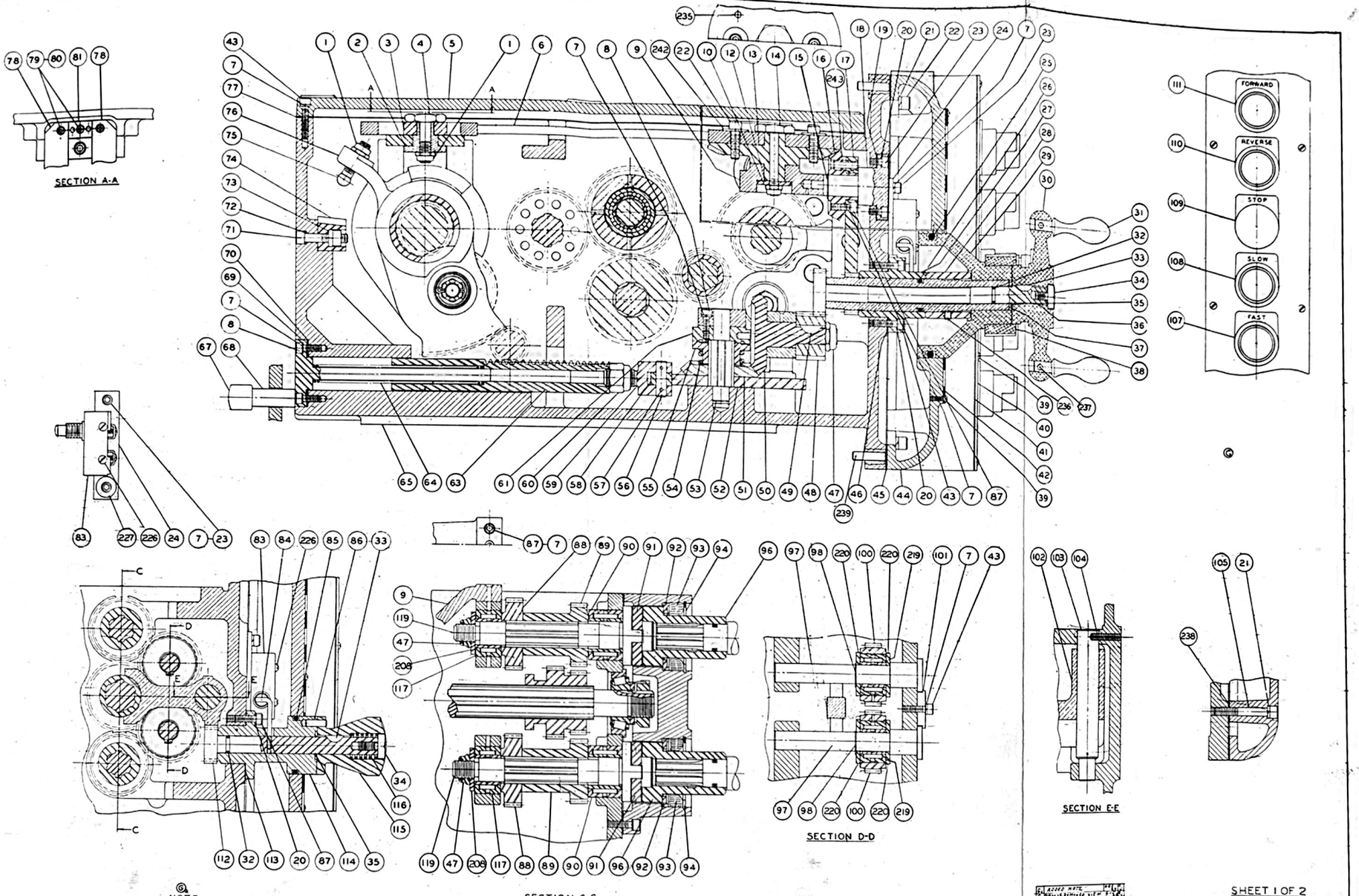


SHEET 1 OF 2 SHEETS

RIVETT LATHE & GRINDER, INC.

FLOOR PLAN

1030 M & F



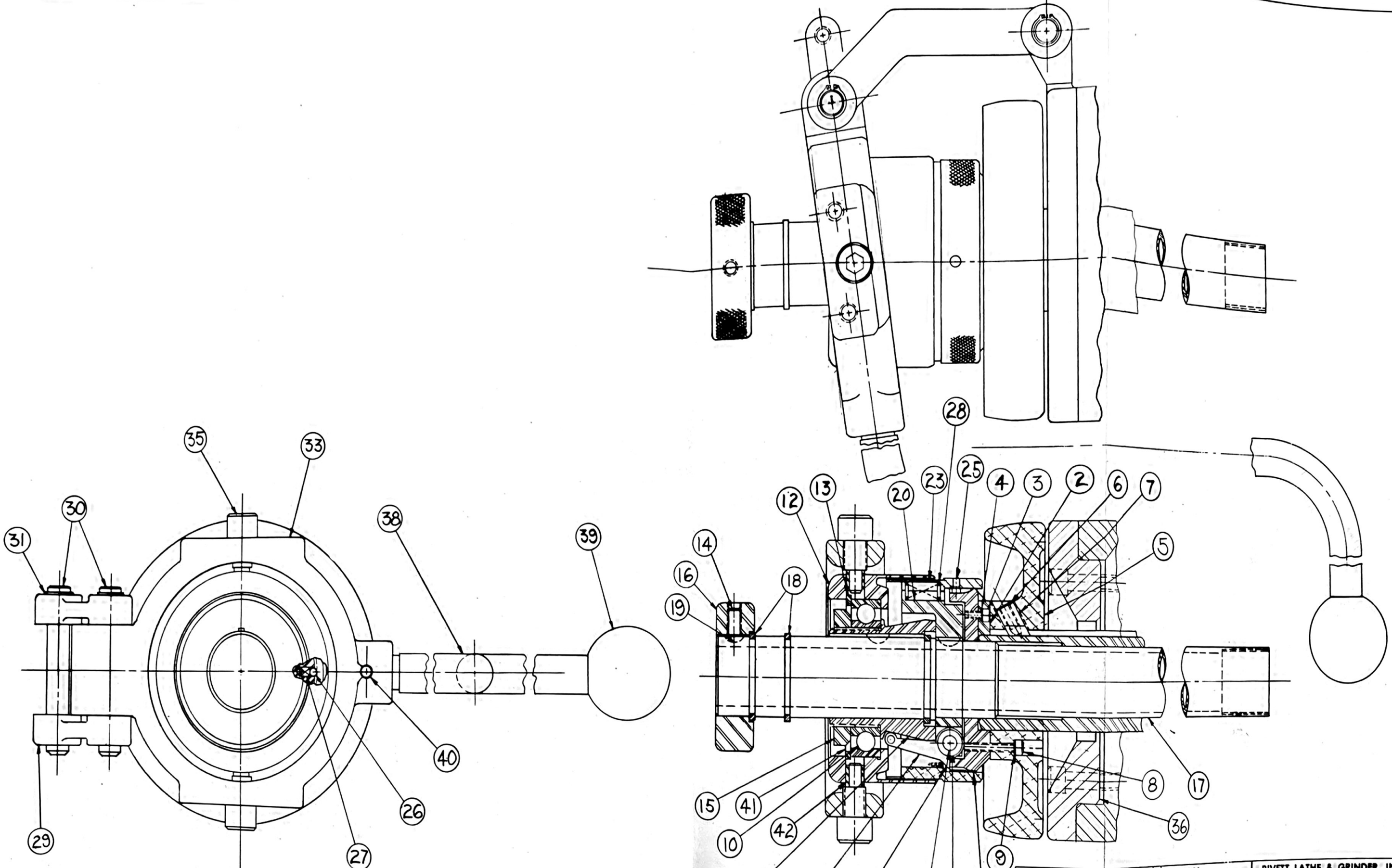
NOTE
REFER TO PARTS LISTS -1020S-20
-73A

SHEET 1 OF 2

RIVETT LATHE & GRINDER, INC.

GEAR BOX

1020S-20



RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS. U.S.A.

COLLET CLOSER
LEVER OPERATED

SYM.	E.C.O.	REVISION	DATE	BY

MATERIAL

MATERIAL SIZE
PATT. NO.
DIE NO.

WEIGHT ROUGH —
WEIGHT FINISHED —

ASSEMBLY NO.
NO. REQ. PER ASSEM.

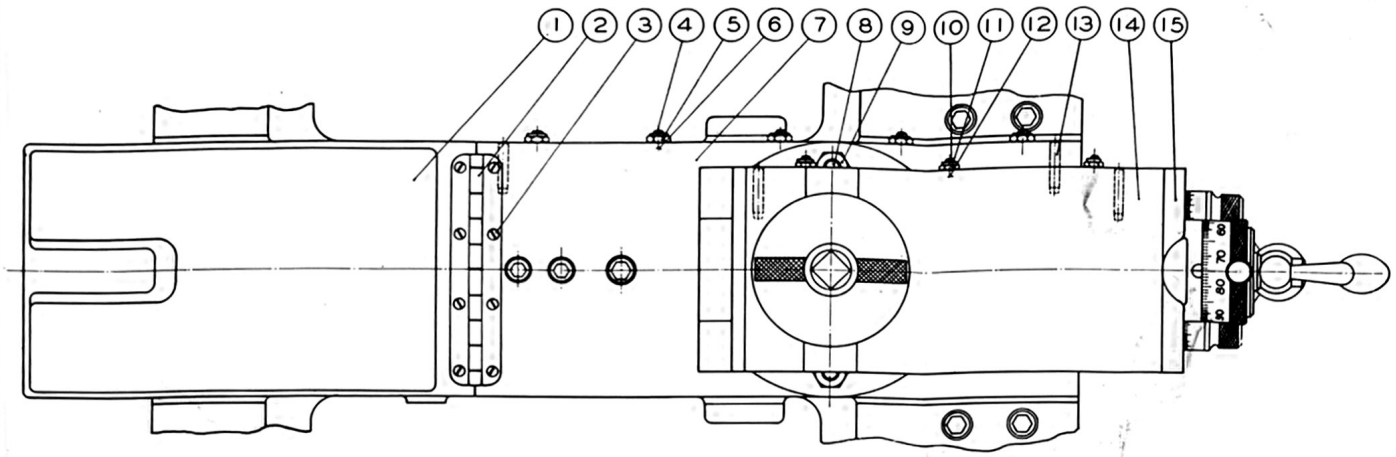
SURFACE TREATMENT

HEAT TREATMENT

TOOLS

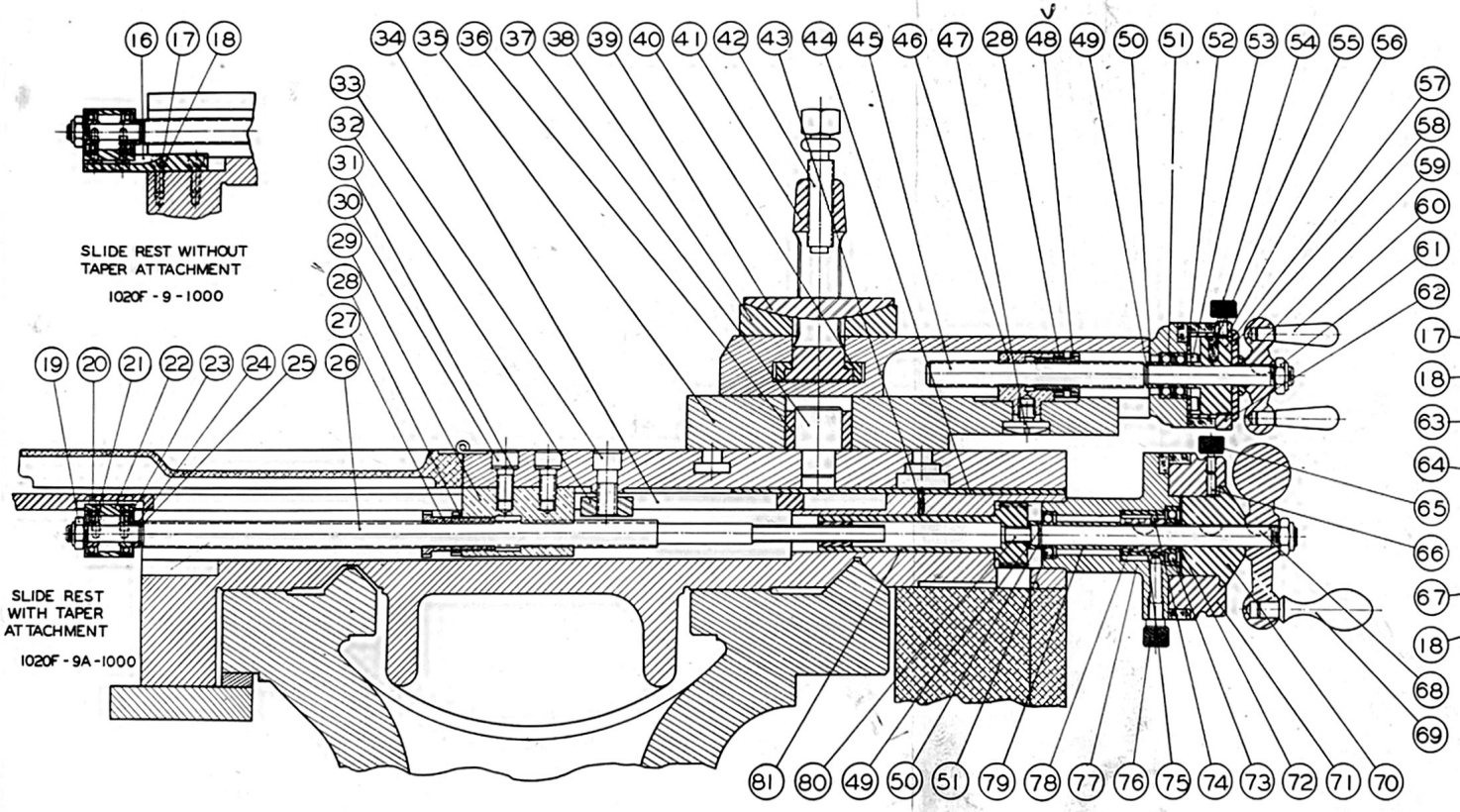
TOLERANCES UNLESS OTHERWISE SPECIFIED —
DECIMALS FRACTIONS ANGLES
CONCENTRICITY
FACE RUNOUT
MACH. SURFACES
BREAK SHARP CORNERS | REMOVE ALL BURRS
ENG. APP'VD | MFG. APP'VD
DRAWN BY K.B. - 7-18-62 | CHECKED BY
TRACED BY | SCALE

DWG SIZE E | DWG NO. 1020F~2~1000 | REV.



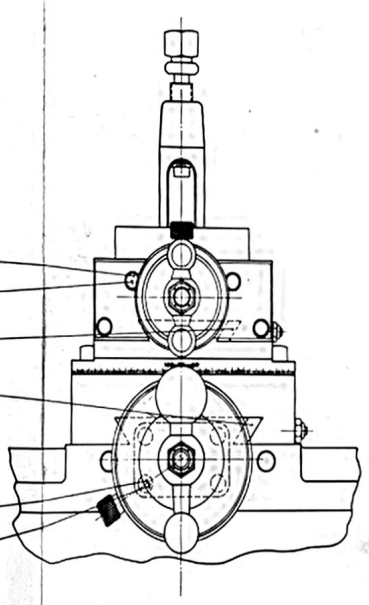
SLIDE REST WITHOUT
TAPER ATTACHMENT

1020F - 9 - 1000



SLIDE REST
WITH TAPER
ATTACHMENT

1020F - 9A - 1000



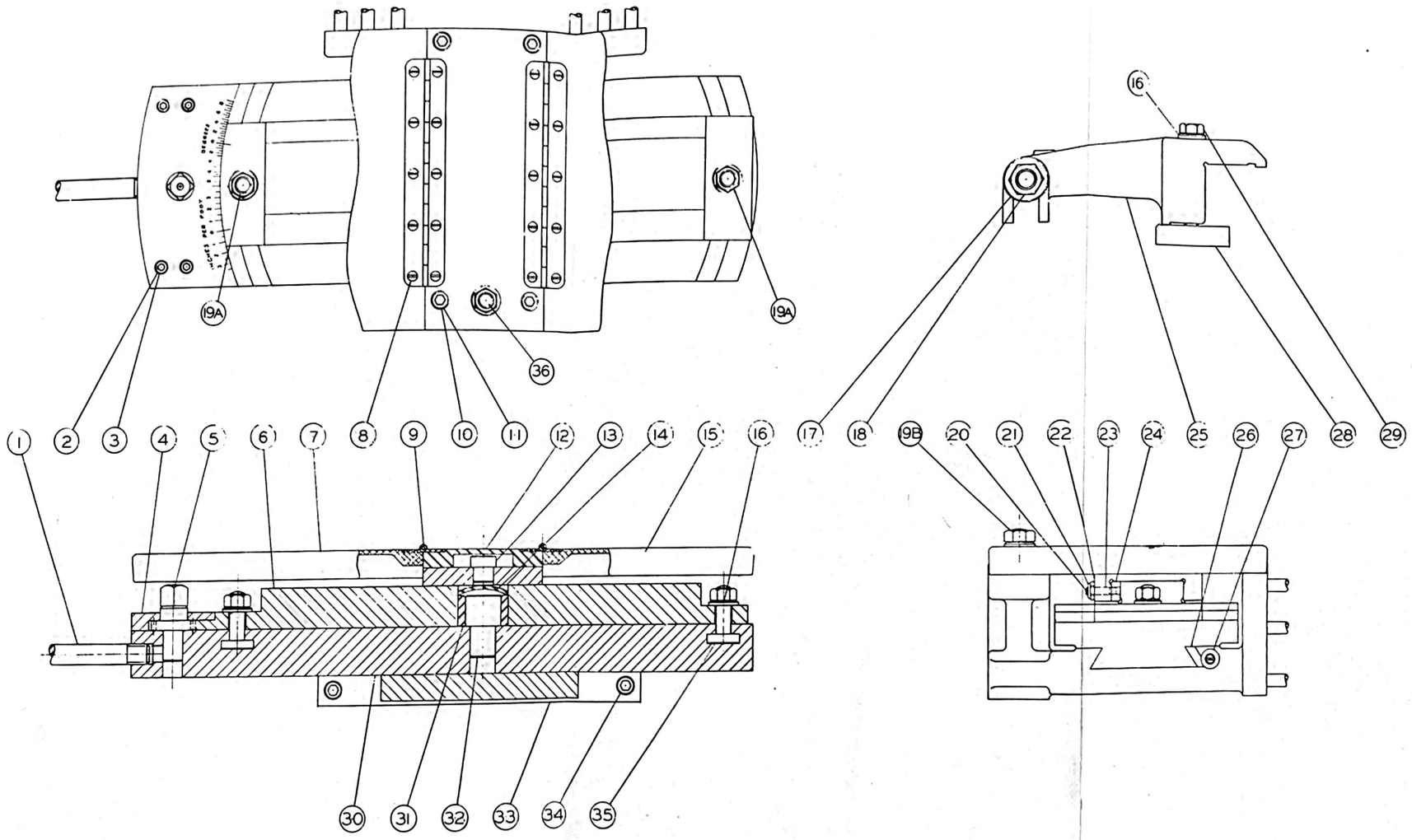
RIVETT LATHE & GRINDER, INC.

SLIDE REST WITH & WITHOUT
TAPER ATTACHMENT

DRAWN BY R.A. 4-6-81

SIZE F

1020F - 9 - 1000
9A - 1000

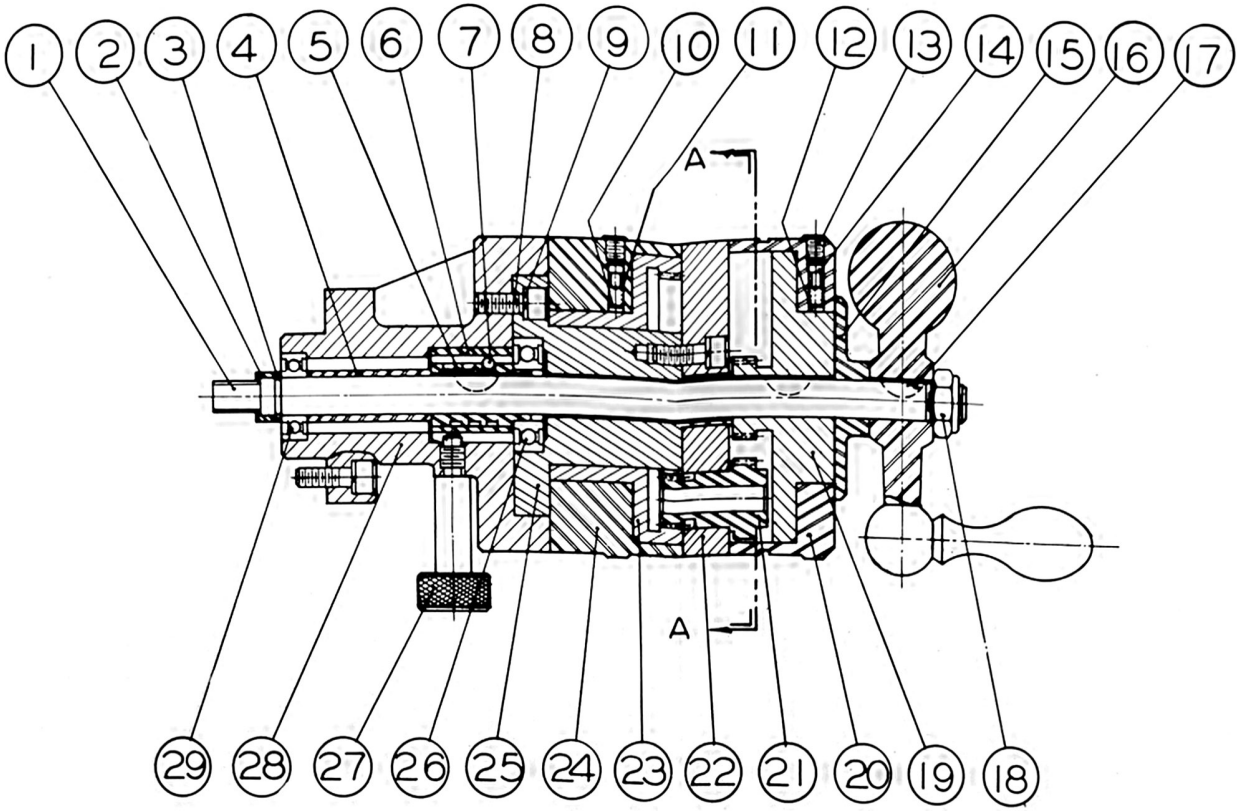


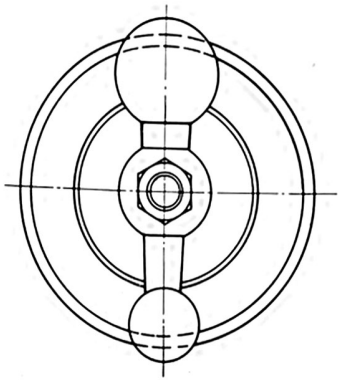
1	1020R-11-424	ROD
2	#10-32 x 1/2 LG.	ALLEN CAP SCREW
3	FOR #10 C.S.	B&H LOCKWASHER
4	1020R-11-374	GRADUATION PLATE
5	1020R-11-226	ADJUSTING GEAR
6	1020R-11-462	SWIVEL SLIDE
7	1020R-11-181	COVER
8	#5-40 x 5/16 LG.	FLAT HEAD MACH. SCREW
9	1020R-11-272	COVER HINGE
10	5/16-18 x 3/4 LG.	ALLEN CAP SCREW
11	FOR 5/16 C.S.	B&H LOCKWASHER
12	1020R-11-375	TOP PLATE
13	1020R-11-347	PIVOT
14	1 1/2 DIA.	WELSH PLUG
15	1020R-11-180	COVER
16	3/8 I.D.	WASHER
17	1/2 I.D.	WASHER
18	1/2-13	REGULAR HEX NUT
19	3/8-24	LIGHT HEX NUT
20	#10-32 x 3/4 LG.	ALLEN HOLLOW SET SCREW
21	#29TM-02	ESNA NUT
22	1020R-11-463	UPPER SLIDE
23	3/16 DIA. x 5/8 LG.	ALLEN DOWEL PIN
24	1020R-11-245	GIB
25	1020R-11-177	CLAMP
26	1020R-11-246	GIB
27	1020R-11-637	SCREW
28	1020R-11-376	PLATE
29	3/8-16 x 3" LG.	REG. HEX. HEAD BOLT
30	1020R-11-461	LOWER SLIDE
31	ACME ST'D	L 1/4 I.D. x 1/2 O.D. x 3/4 LG.
32	1020R-11-346	PIVOT
33	1020R-11-115	BASE
34	5/16-18 x 3/4 LG.	ALLEN CAP SCREW
35	1020R-11-142	TEE BOLT
36	1020R-11-143	TEE BOLT

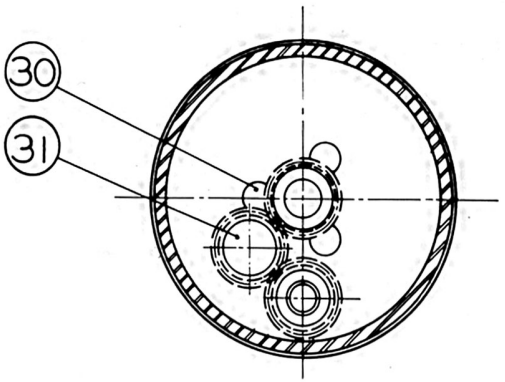
RIVETT LATHE & GRINDER, INC.

TAPER ATTACHMENT

1020R-11







SECTION A-A

SYM	REVISION	DATE	BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH:—
WEIGHT FINISHED:—

ASSEMBLY NO.
NO. REQ. PER ASSEM.

SURFACE TREATMENT:

HEAT TREATMENT:

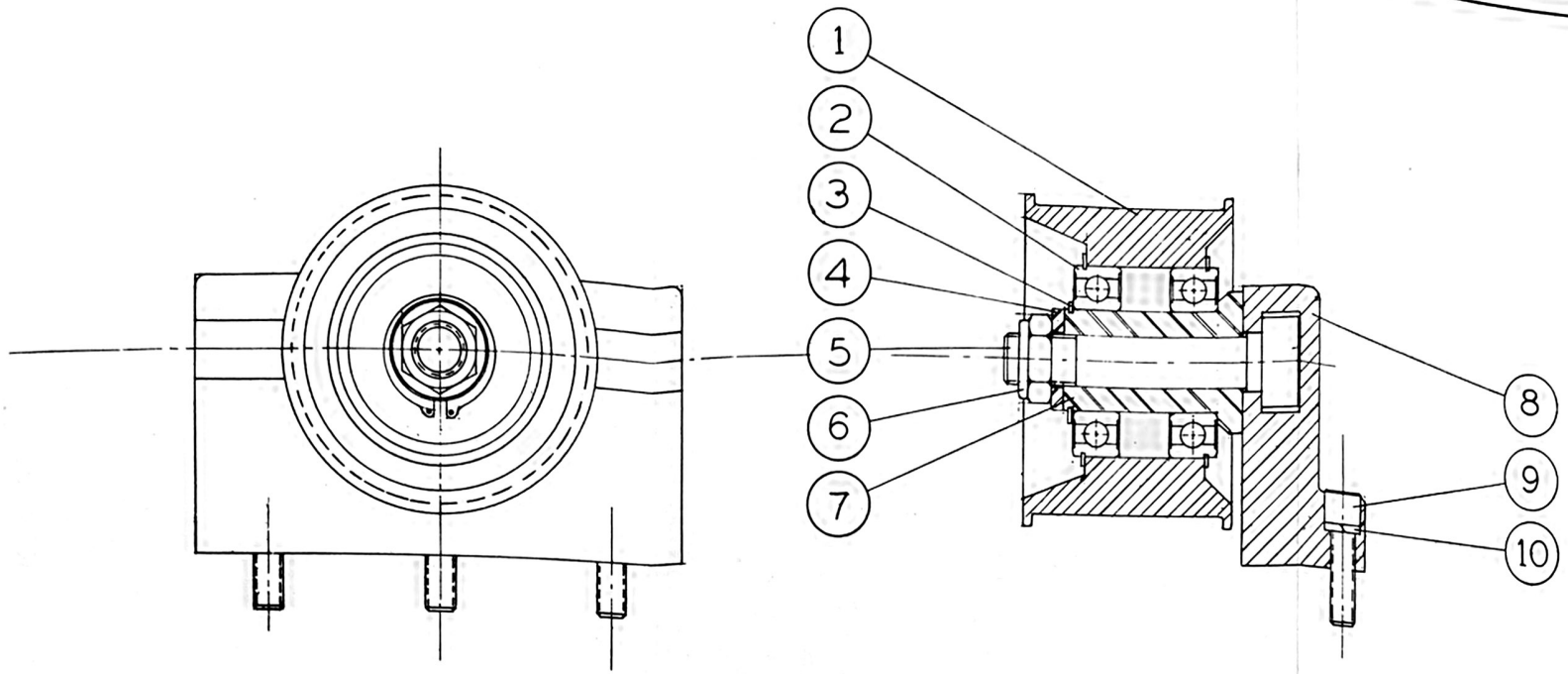
TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

ACCUMULATOR DIAL ASSEMBLY

TOLERANCES UNLESS OTHERWISE SPECIFIED —
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS: REMOVE ALL BURRS
ENG. APPVD: MFG. APPVD:
DRAWN BY: R.G. 4-10-61 CHECKED BY:
TRACED BY: SCALE: FULL SIZE
DWG. NO.

1020F - 9U - 1000



1 1020S-10-384 IDLER PULLEY
2 ND 4973 L05V
3 5100-98 SNAP RING
4 1/2 PLAIN WASHER
5 1020S-10-497 IDLER STUD
6 29TE-080 ESNA NUT
7 1020S-10-456 IDLER SLEEVE
8 1020S-10-145 IDLER BRACKET
9 5/16-18 ALLEN CAP SCREW
10 5/16 LOCK WASHER

SYM	REVISION	DATE	BY
A	REV. TO DETAIL CHGS	5-7-51	RR

MATERIAL:

MATERIAL SIZE:
PATT. NO.
DIE NO.:

WEIGHT ROUGH:—
WEIGHT FINISHED:—

ASSEMBLY NO. 1020S-10
NO. REQ. PER ASSEM 2

SURFACE TREATMENT:

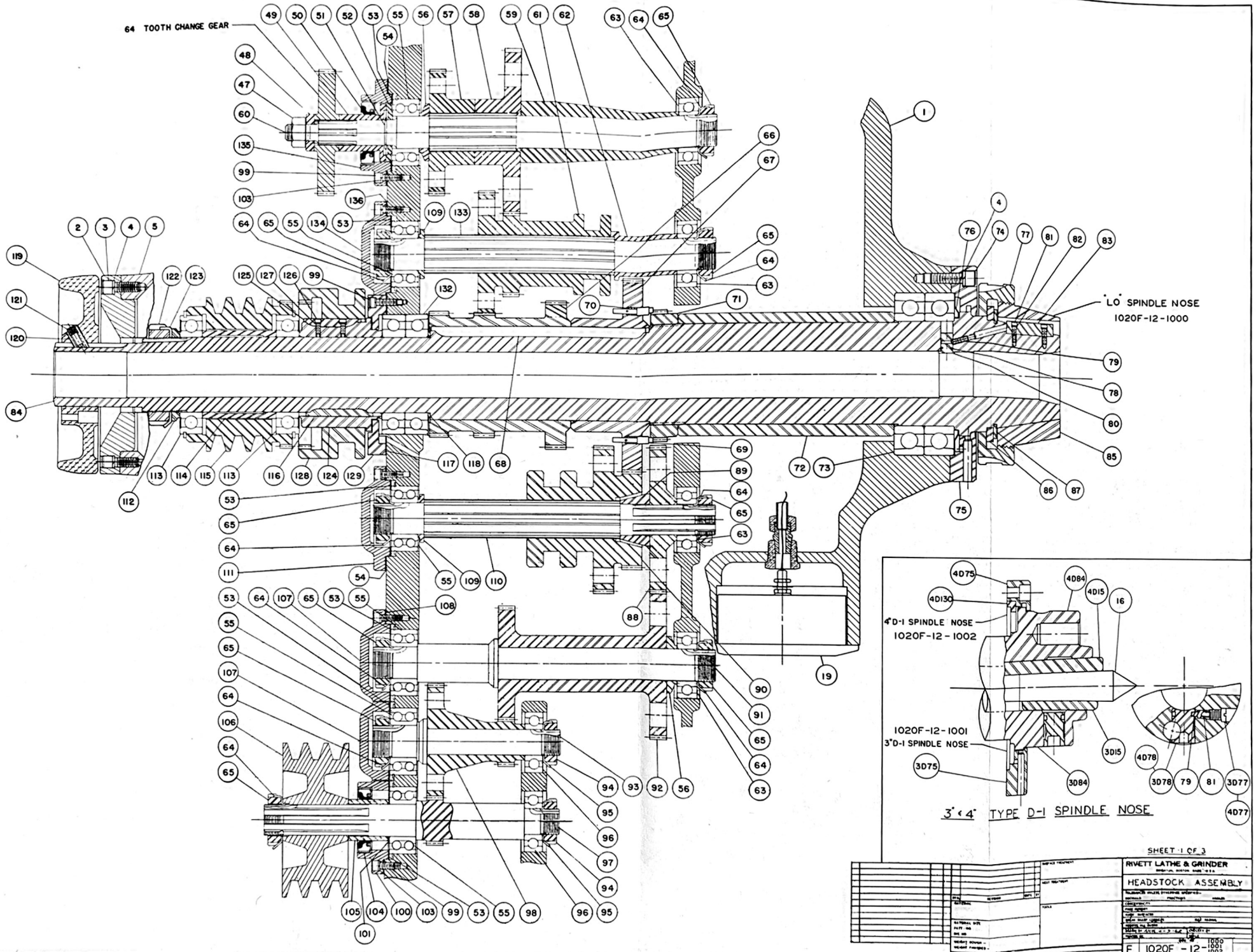
HEAT TREATMENT:

TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

IDLER ASSEMBLY

TOLERANCES UNLESS OTHERWISE SPECIFIED:—
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY: OLR 3-21-49 CHECKED BY:
TRACED BY: SCALE: Full size
DWG. NO.
1020S - 10A

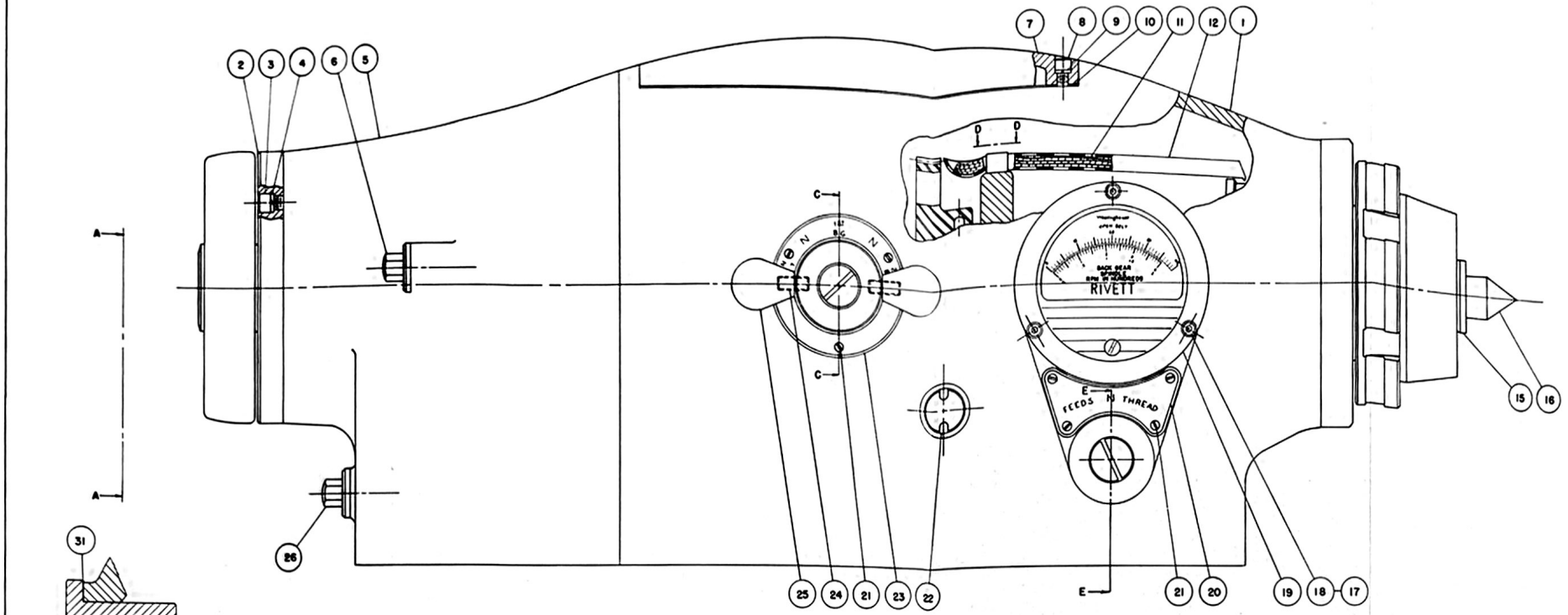


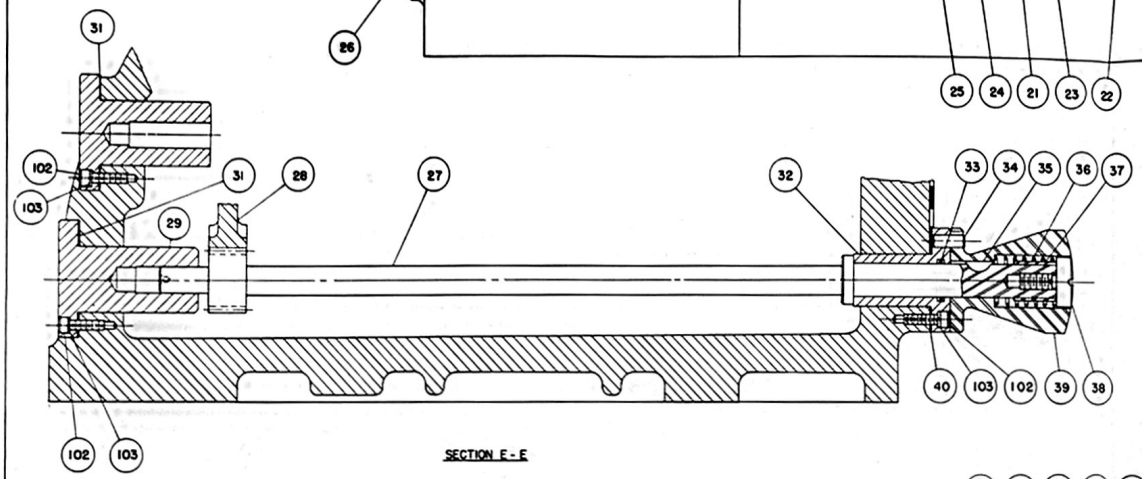
SHEET 1 OF 3

RIVETT LATHE & GRINDER

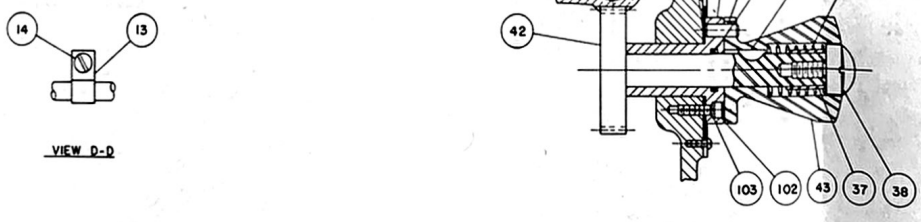
HEADSTOCK ASSEMBLY

F 1020F - 12 - 1000 1001 1002



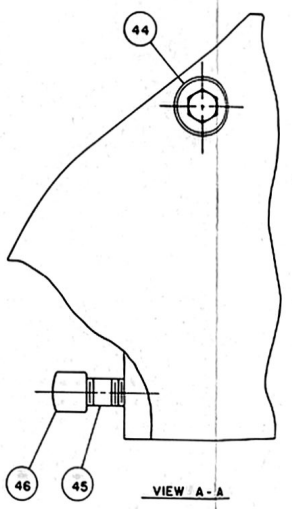


SECTION E - E



SECTION C - C

VIEW D-D



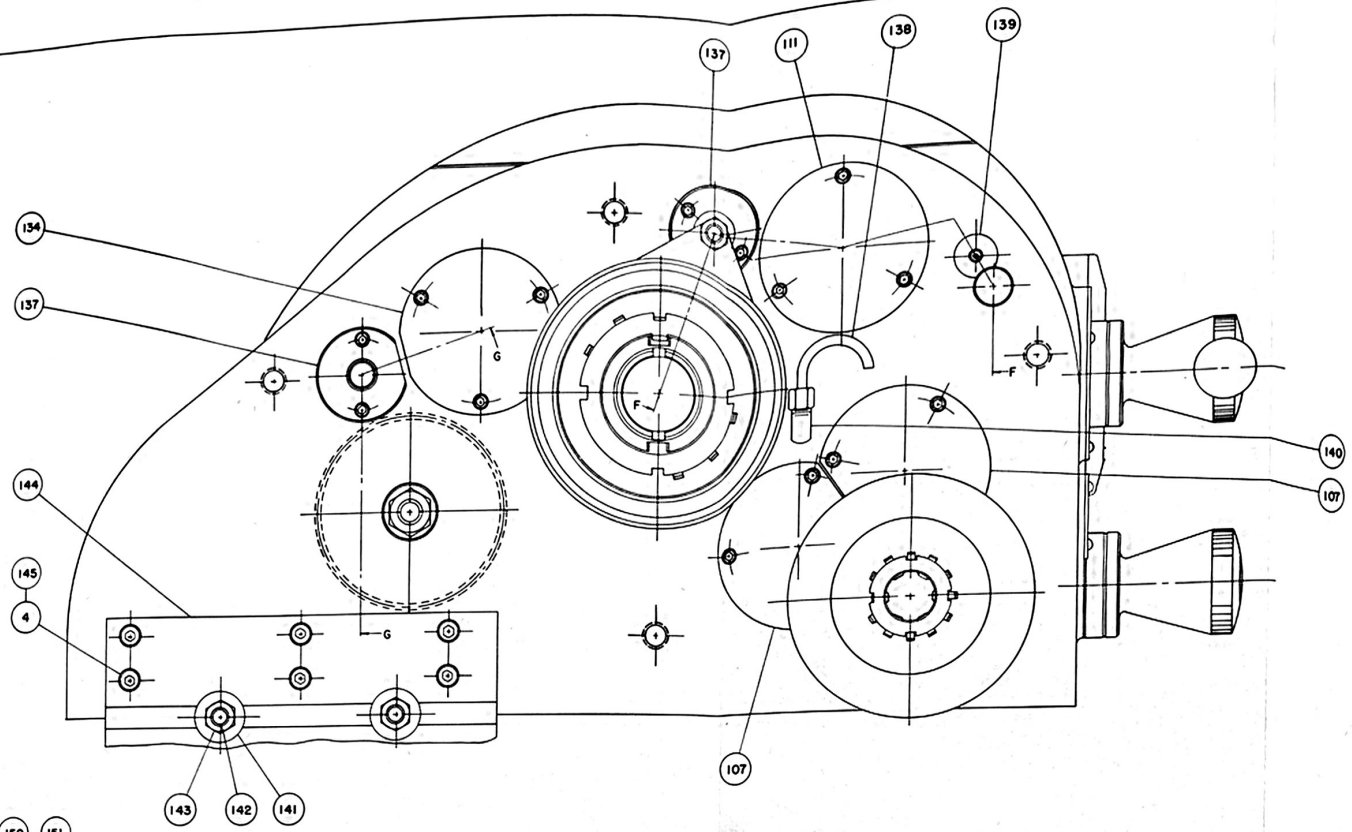
VIEW A - A

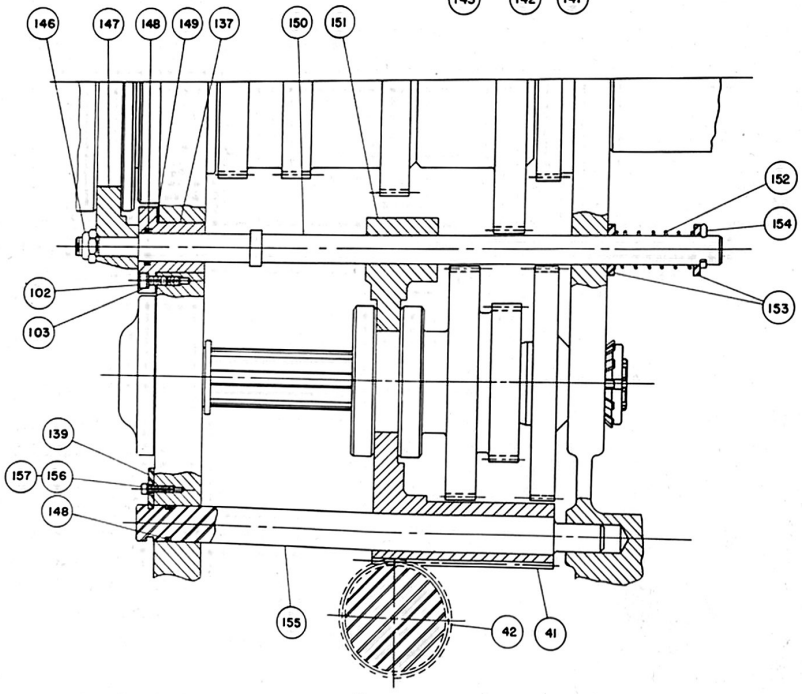
SHEET 2 OF 3

RIVETT LATHE & GRINDER, INC.

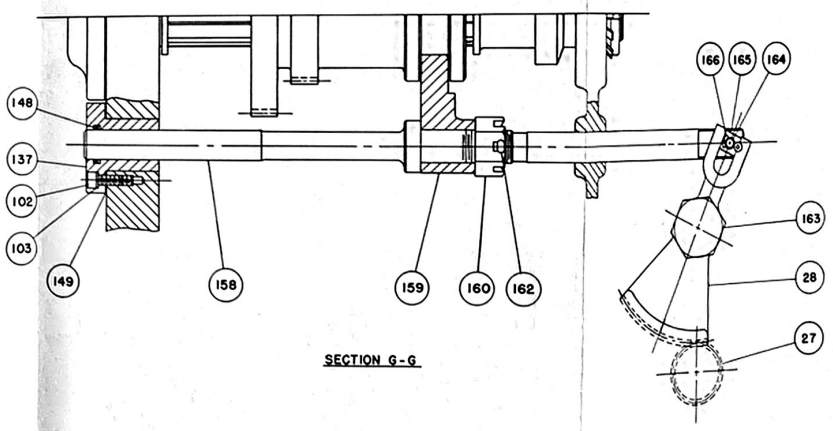
HEADSTOCK ASSEMBLY

1020F - 12 - 1000 1001 1002





SECTION F-F



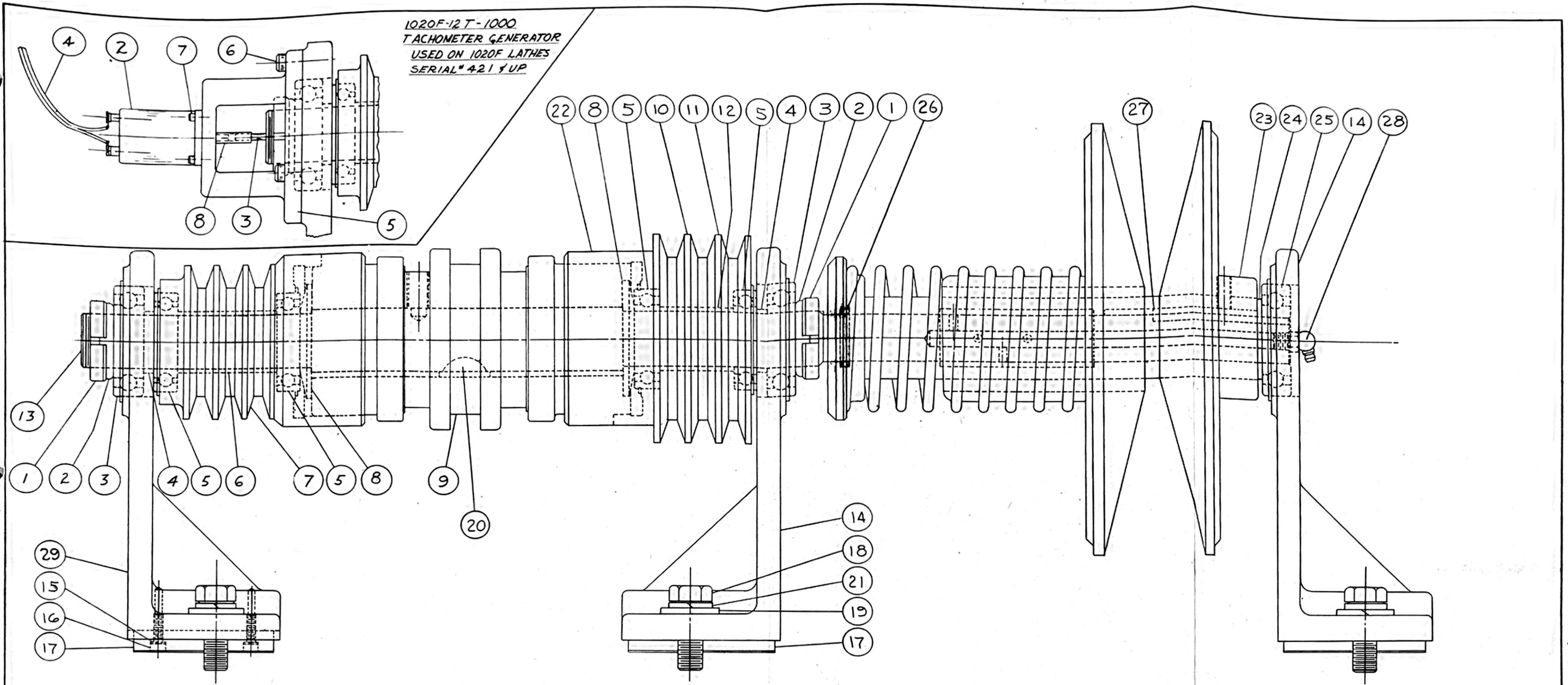
SECTION G-G

SHEET 3 OF 3

RIVETT LATHE & GRINDER, INC.

HEADSTOCK ASSEMBLY

1020F-12-1000
1001
1002



1. N-06 LOCKNUT
2. W-06 LOCKWASHER
3. N.D. #499506 BEARING
4. 1020S-16-473 SPACER
5. N.D #4993L06 BEARING
6. 1020S-16-475 SPACER
7. 1020S-16-389 SHEAVE
8. 1020S-16-476 SPACER
9. #23 MAXITORQ CLUTCH
10. 1020S-16 X SHEAVE ASSEM. (STD.)
11. 1020S-16Y SHEAVE ASSEM. (SPECIAL)
12. 1020S-16-474 SPACER
13. 1020S-16-439-A SHAFT
14. 1020S-16-145 BRACKET
15. #10 LOCKWASHER
16. #10-32 x ½ ALLEN CAP SCREW
17. 1020S-16-287 KEY
18. ½-13 x 1½ HEX HD. BOLT
19. ½ PLAIN WASHER
20. #H.P. 808 HI-PRO KEY
21. ½ LOCKWASHER
22. 1020S-16-543 CLUTCH CUP
23. D-2472 U.S. VARIDRIVE SHEAVE ASSEM.
24. 1020S-16-477 BEARING SPACER
25. N.D. #499605 BEARING
26. Ⓐ U.S. VARI SHEAVE "O" RING
27. Ⓐ U.S. VARI SHEAVE KEY
28. Ⓑ #1612 "ALEMITE" GREASE FITTING
29. Ⓒ 1020F-16-146

SYM	REVISION	DATE	BY
C	ECO #1364 WAS 1020S-16E		
B	ECO #329 ADDED		
A	ADDED #26 & #27		

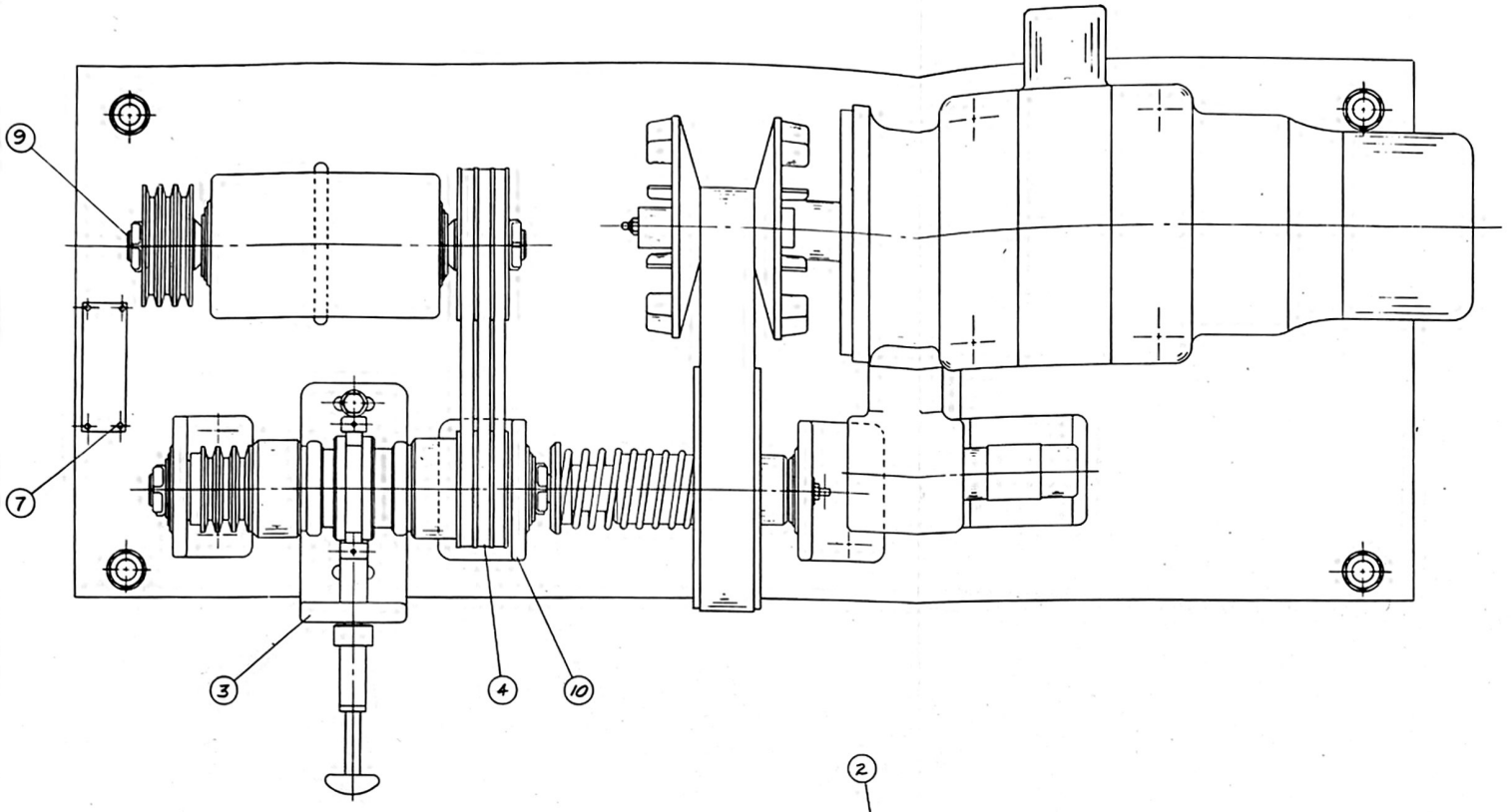
MATERIAL:
MATERIAL SIZE:
PATT. NO.:
DIE NO.:
WEIGHT ROUGH —
WEIGHT FINISHED —
ASSEMBLY NO.
NO. REQ. PER ASSEM.

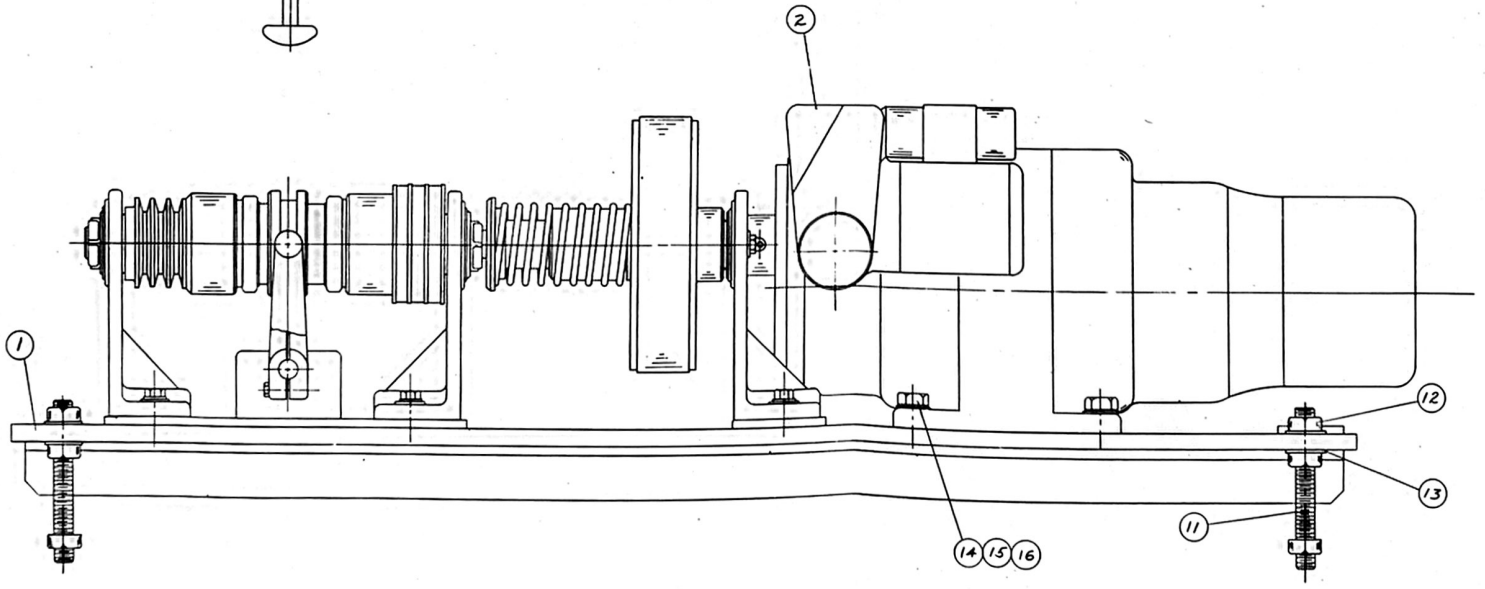
SURFACE TREATMENT:
HEAT TREATMENT:
TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

CLUTCH SHAFT ASSEMBLY

TOLERANCES UNLESS OTHERWISE SPECIFIED —
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY: RG 10/4/53 CHECKED BY:
TRACED BY: SCALE: FULL SCALE
© DWG. NO. 1020S-16E-1100



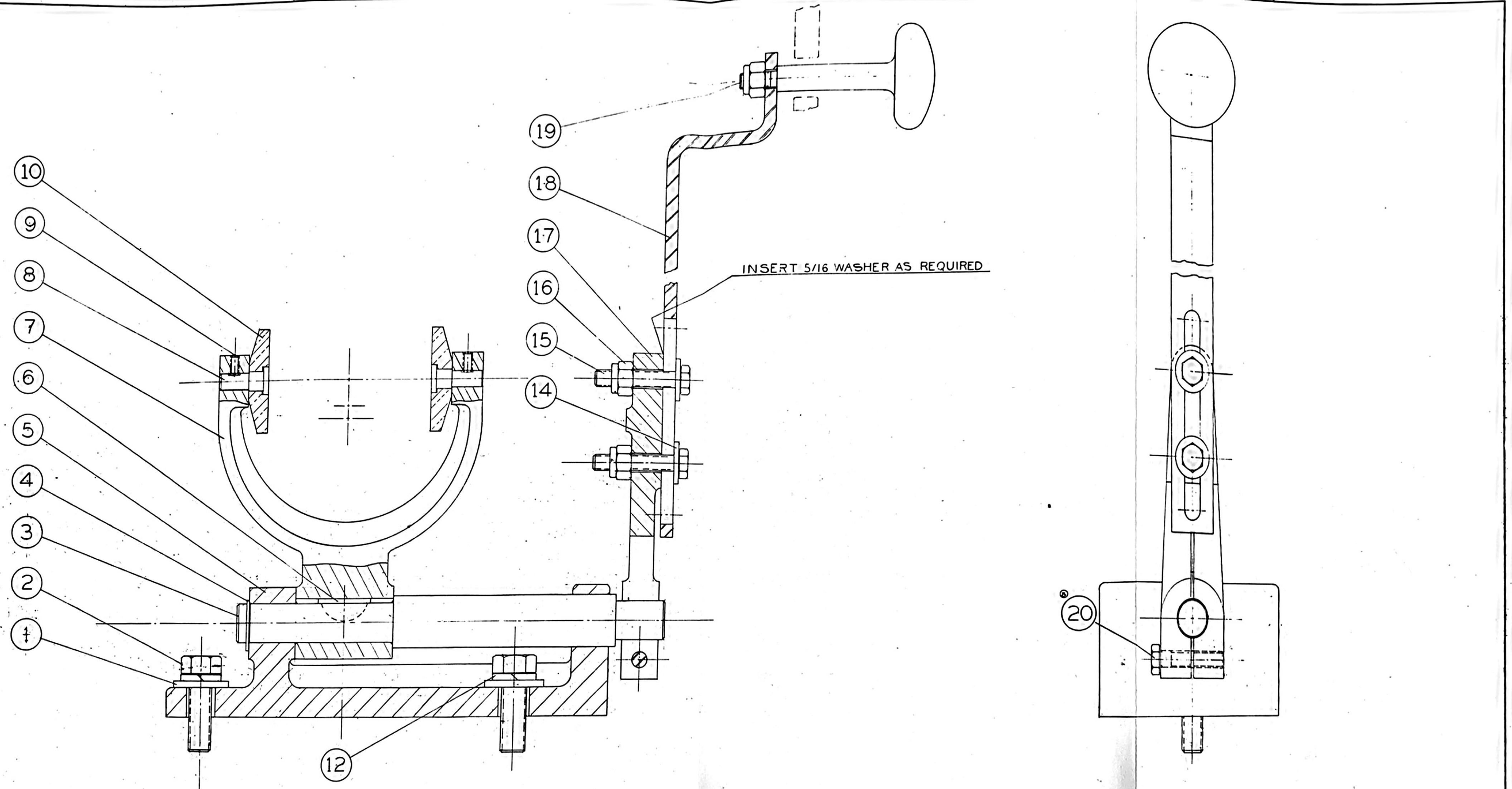


ITEM	PART NUMBER	DESCRIPTION
3	1020S-16B-1100	CLUTCH SHIFTER ASS'Y
9	1020S-16A-1100	COUNTERSHAFT ASS'Y
10	1020S-16E-1100	CLUTCH SHAFT ASS'Y

RIVETT LATHE & GRINDER, INC.

MAIN DRIVE ASS'Y

SIZE F | DWG NO 1020F-16-1000



1 1/2 WASHER
2 1/2 -13 X 1-1/2 LG HEX. BOLT
3 1020S-16-438 SHAFT
4 5100-75 SNAP RING
5 1020S-16-569 SUPPORT
6 HP-806 HI-PRO KEY
7 1020S-16-539 YOKE
8 1020S-16-674 STUD
9 *10-32X3/8LG SET SCREW
10 117-23 CARLYLE JOHNSON SHOE
11
12 LOCK WASHER FOR 1/2 SCREW
13
14 5/16 WASHER
15 5/16 -18 X 1-3/4 LG HEX. BOLT
16 29U-058 ESNA NUT
17 1020S-16-110 LEVER
18 1020S-16-214 ARM
19 1020S-16-292 KNOB
20 5/16 -18X 1-1/2 LG HEX. BOLT

SYM	REVISION	DATE	BY
D	ECO #1364, WAS #1020S-16B	3-24-[illegible]	[illegible]
C	ECO #369 ITEM 2 WAS 213	10-1-[illegible]	[illegible]
B	WAS 15	11-9-51	[illegible]
A	Revised Part 5	5-1-51	[illegible]

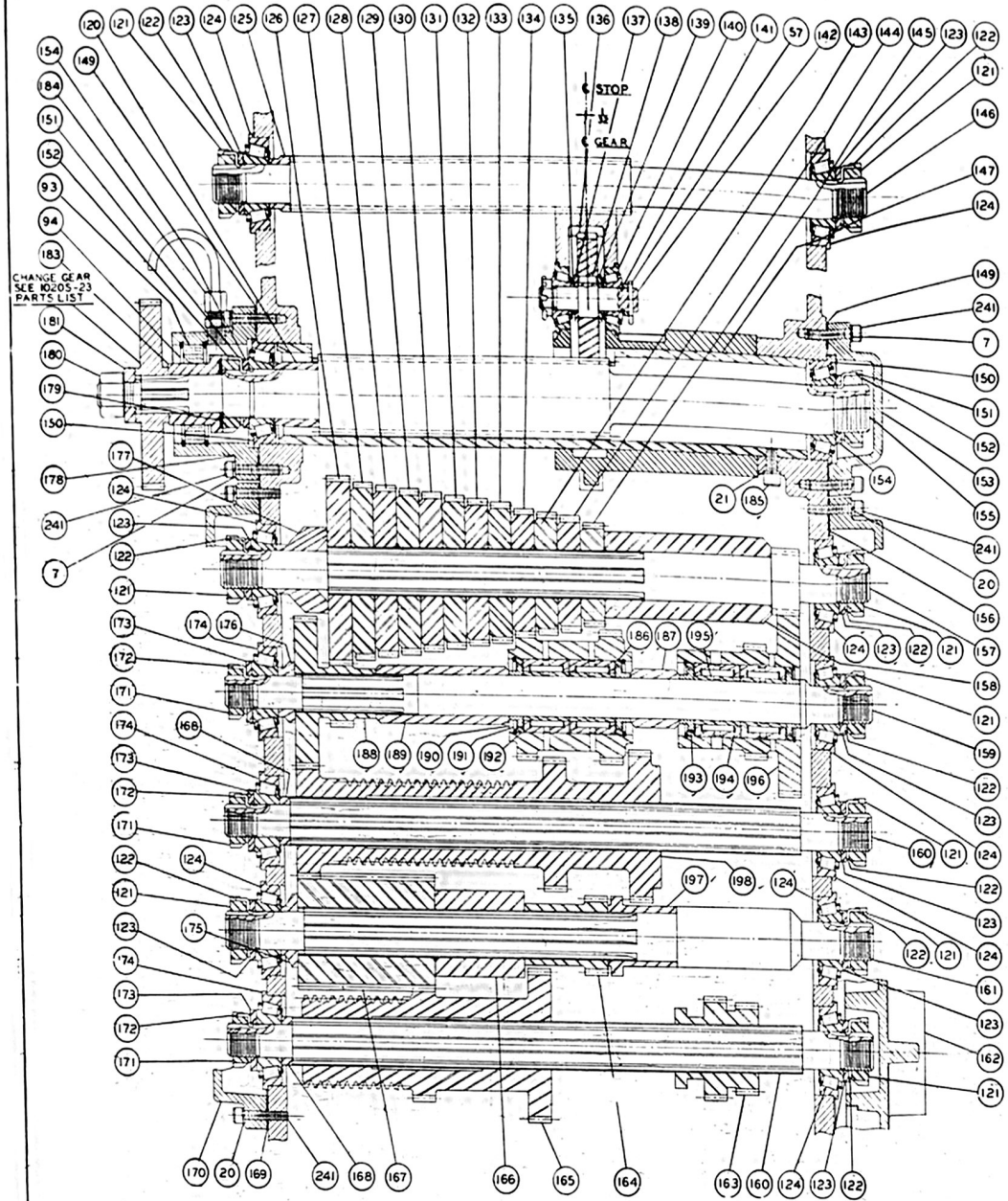
MATERIAL:
MATERIAL SIZE:
PATT. NO.:
DIE NO.:
WEIGHT ROUGH –
WEIGHT FINISHED –
ASSEMBLY NO 1020S-16B
NO REQ PER ASSEM 1

SURFACE TREATMENT:
HEAT TREATMENT:
TOOLS

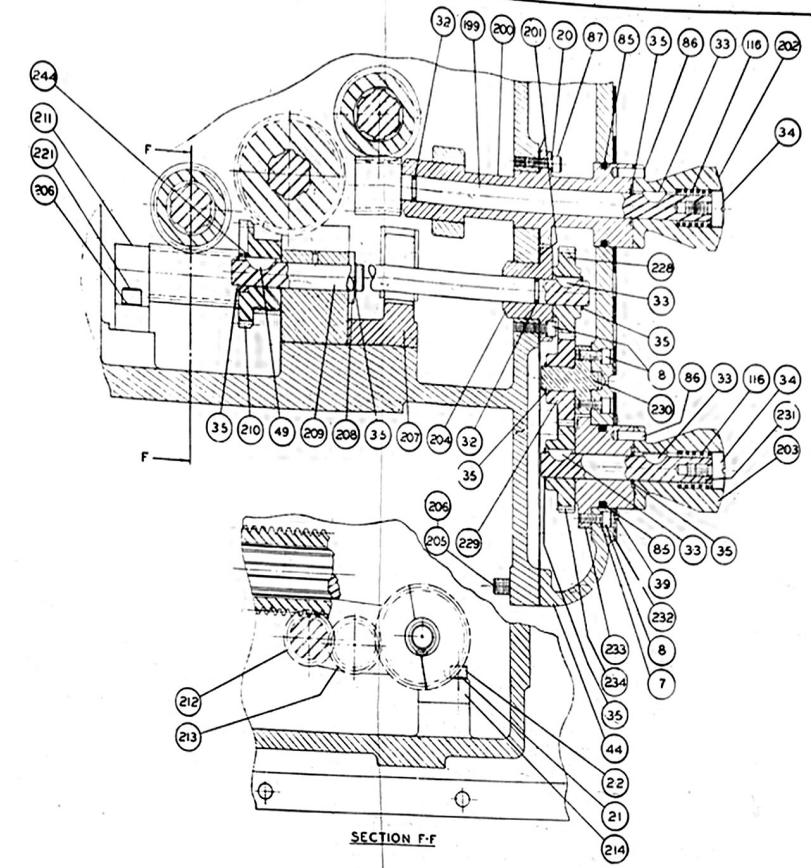
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

CLUTCH SHIFTER

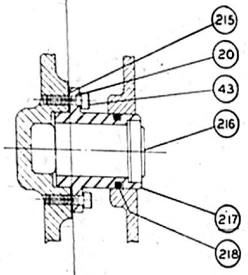
TOLERANCES UNLESS OTHERWISE SPECIFIED –
DECIMALS: FRACTIONS: ANGLES
CONCENTRICITY
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY AEK 3-24-49 CHECKED BY
TRACED BY: SCALE: FULL
DWG. NO.
1020S-16B-1100

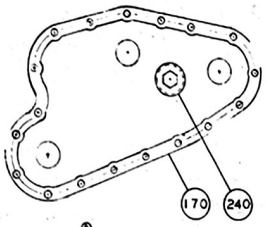


NOTE
REFER TO PARTS LISTS - 1020S-20 -73A



SECTION F-F





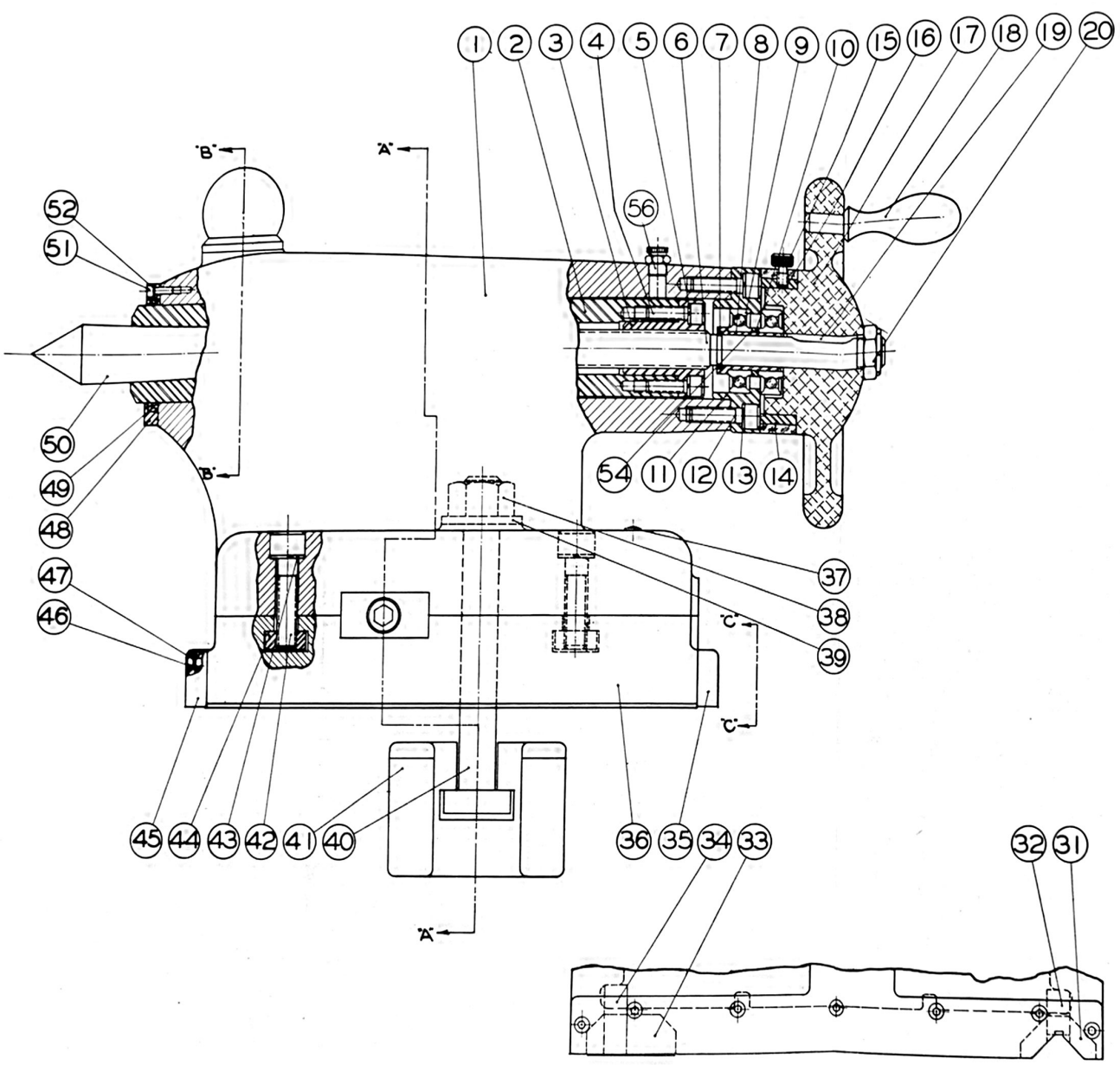
LOCATION OF OIL FILLER HOLE (L.H. END OF GEAR BOX)

SHEET 2 OF 2

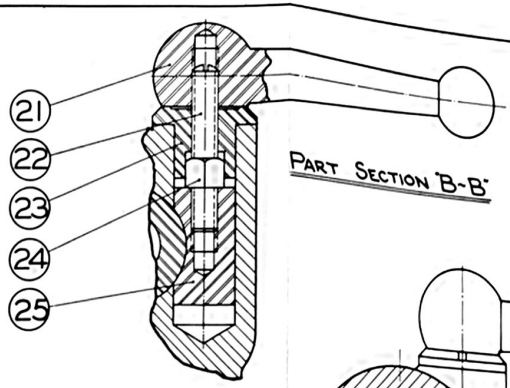
RIVETT LATHE & GRINDER, INC.

GEAR BOX

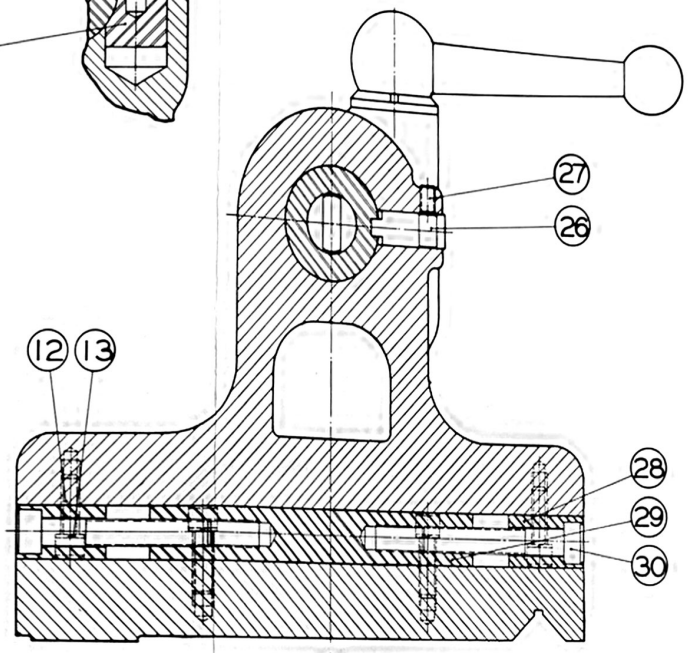
1020S-20

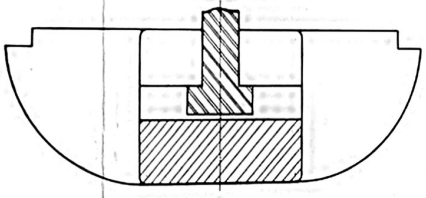


VIEW "C-C"



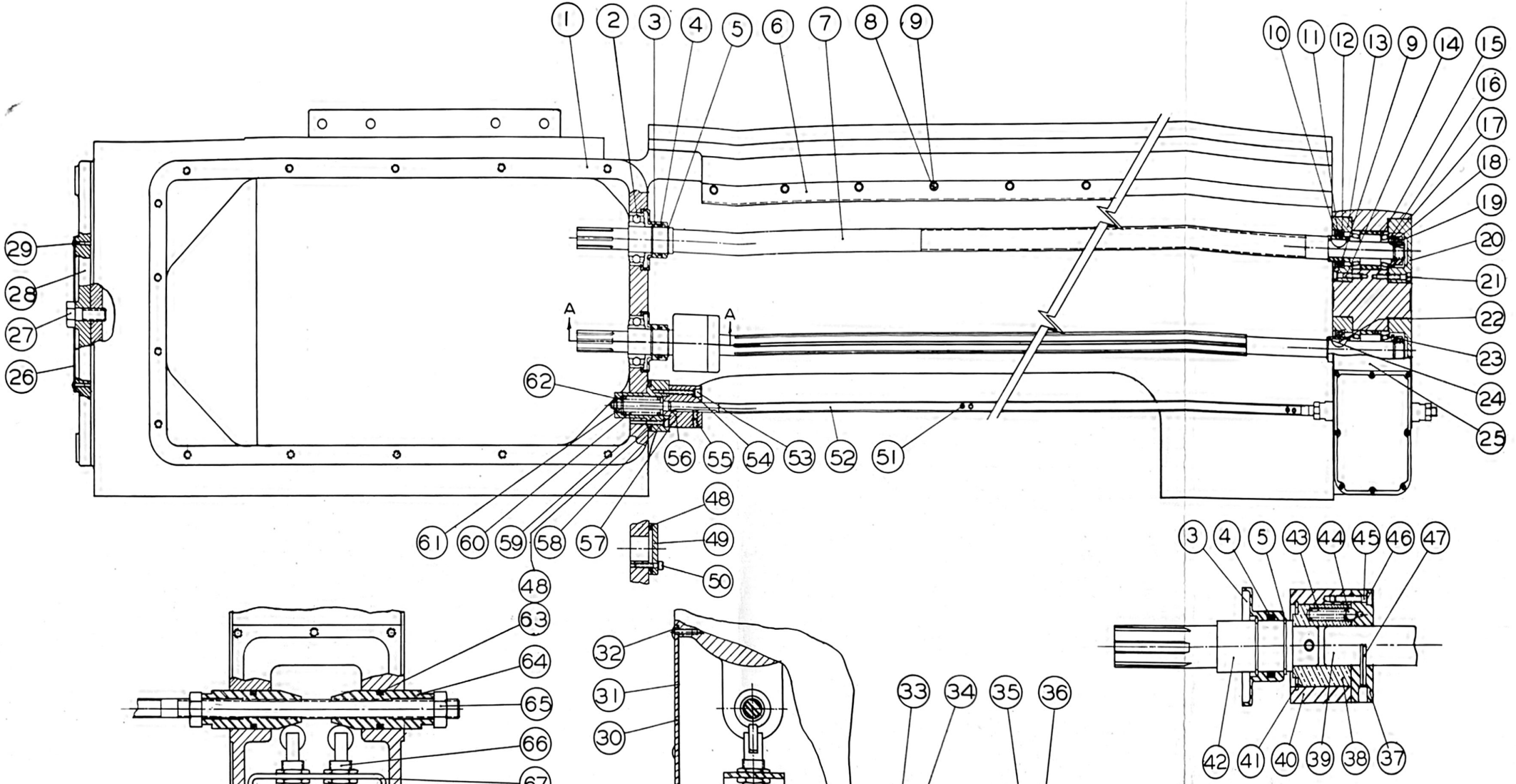
PART SECTION "B-B"





SECTION "A-A"

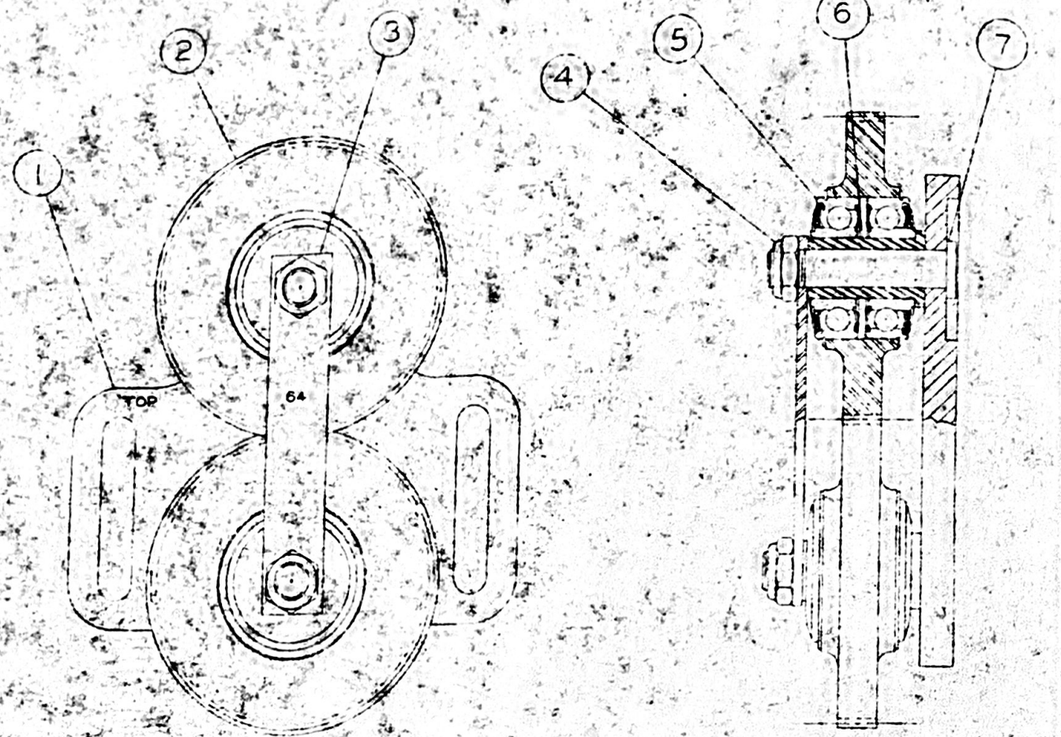
				SURFACE TREATMENT	RIVETT LATHE & GRINDER, INC. BRIGHTON BOSTON MASS U.S.A.
A	1679	ADDED ITEM 56	10-1-64	HEAT TREATMENT	TAILSTOCK ASSEM.
SYM	E.C.O.	REVISION	DATE BY		TOLERANCES UNLESS OTHERWISE SPECIFIED —
MATERIAL				TOOLS	DECIMALS FRACTIONS ANGLES
					CONCENTRICITY
					FACE RUNOUT
					MACH. SURFACES
					BREAK SHARP CORNERS REMOVE ALL BURRS
MATERIAL SIZE:					ENG APPVD MFG APPVD
PATT NO:					DRAWN BY R.G. 11-16-60 CHECKED BY
DIE NO:					TRACED BY SCALE FULL
WEIGHT ROUGH —					DWG NO 1020F-22-1000
WEIGHT FINISHED —					
ASSEMBLY NO					
NO REQ PER ASSEM					



SECTION A-A

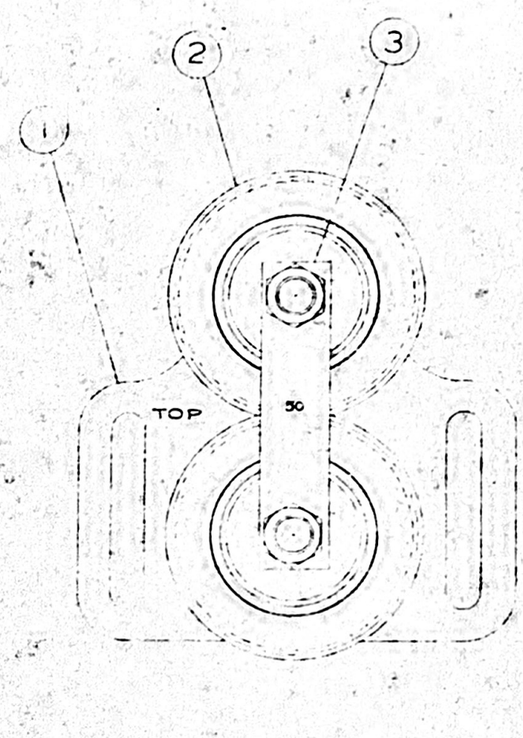
				SURFACE TREATMENT:	RIVETT LATHE & GRINDER, INC. BRIGHTON, BOSTON, MASS., U.S.A.
				HEAT TREATMENT:	BED
A	1939	ORIGINATED	R.G.R.		TOLERANCES UNLESS OTHERWISE SPECIFIED: —
SYM.	E.C.O.	REVISION	DATE BY		DECIMALS: FRACTIONS: ANGLES:
				TOOLS:	CONCENTRICITY:
					FACE RUNOUT:
					MACH. SURFACES:
					BREAK SHARP CORNERS: REMOVE ALL BURRS
					ENG. APPVD.: MFG. APPVD.:
					DRAWN BY: R.G. 8-16-61 CHECKED BY:
					TRACED BY: SCALE: FULL & HALF SIZE
					DWG. NO. 1020F-23-1001

MATERIAL:
MATERIAL SIZE:
PATT. NO.:
DIE NO.:
WEIGHT ROUGH: —
WEIGHT FINISHED: —
ASSEMBLY NO.
NO. REQ. PER ASSEM.



1020S-23A
64T IDLER GEAR ASSEMBLY

1	1020S-23-146	BRACKET
2	1020R-23-227	IDLER GEAR
3	1020R-23-485	STRAP
4	*29TE-080	ESNA NUT
5	*487504-V	N.D. BALL BRG.
6	1020R-23-151	BUSHING
7	1020R-23-826	BOLT



1020S-23B
50T IDLER GEAR ASSEMBLY

1	1020S-23-148	BRACKET
2	1020S-23-230	IDLER GEAR
3	1020S-23-488	STRAP
4	*29TE-080	ESNA NUT
5	*487504-V	N.D. BALL BRG.
6	1020R-23-151	BUSHING
7	1020R-23-826	BOLT

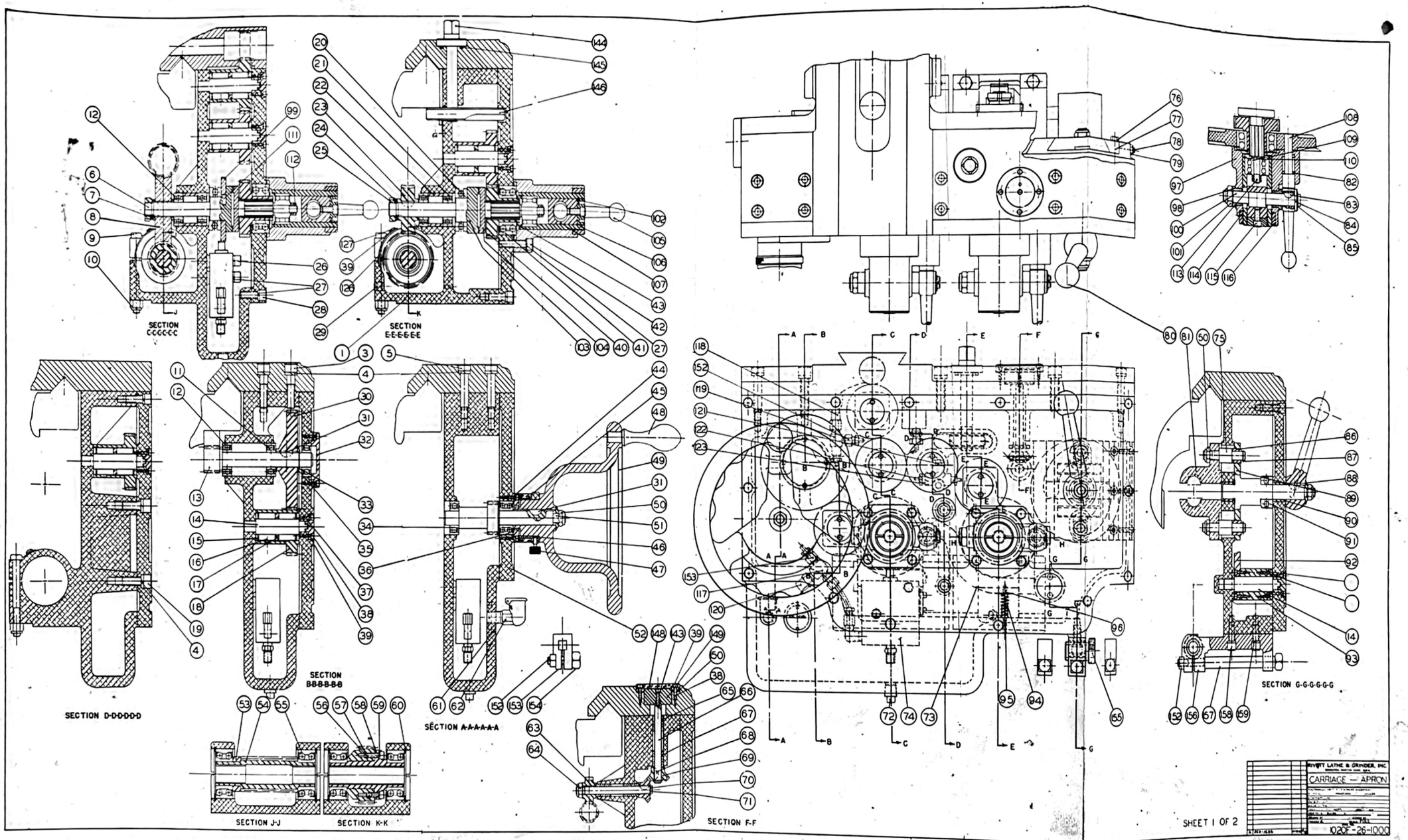
SURFACE TREATMENT
HEAT TREATMENT
TOOLS
MATERIAL
MATERIAL SIZE
PATT NO
DRG NO
WEIGHT ROUGH
WEIGHT FINISHED
ASSEMBLY NO
NO REQ PER ASSEM

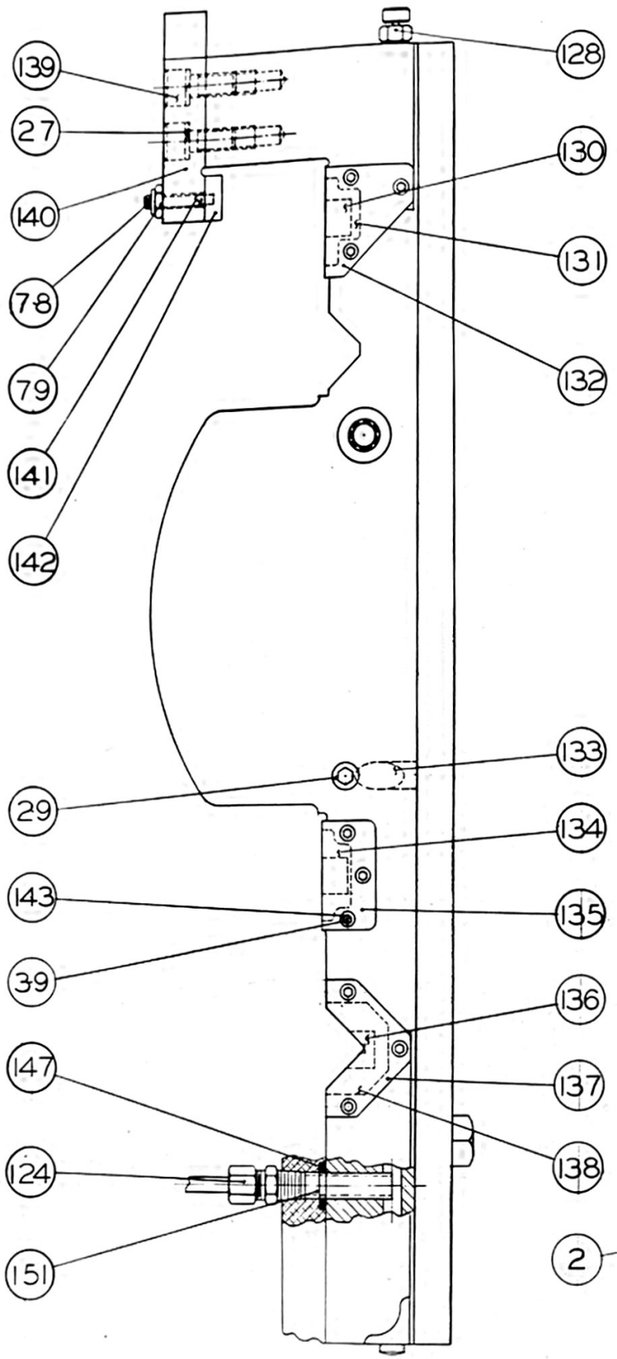
RIVETT LATHE & GRINDER, INC.
BRIGHTON BOSTON MASS U.S.A.

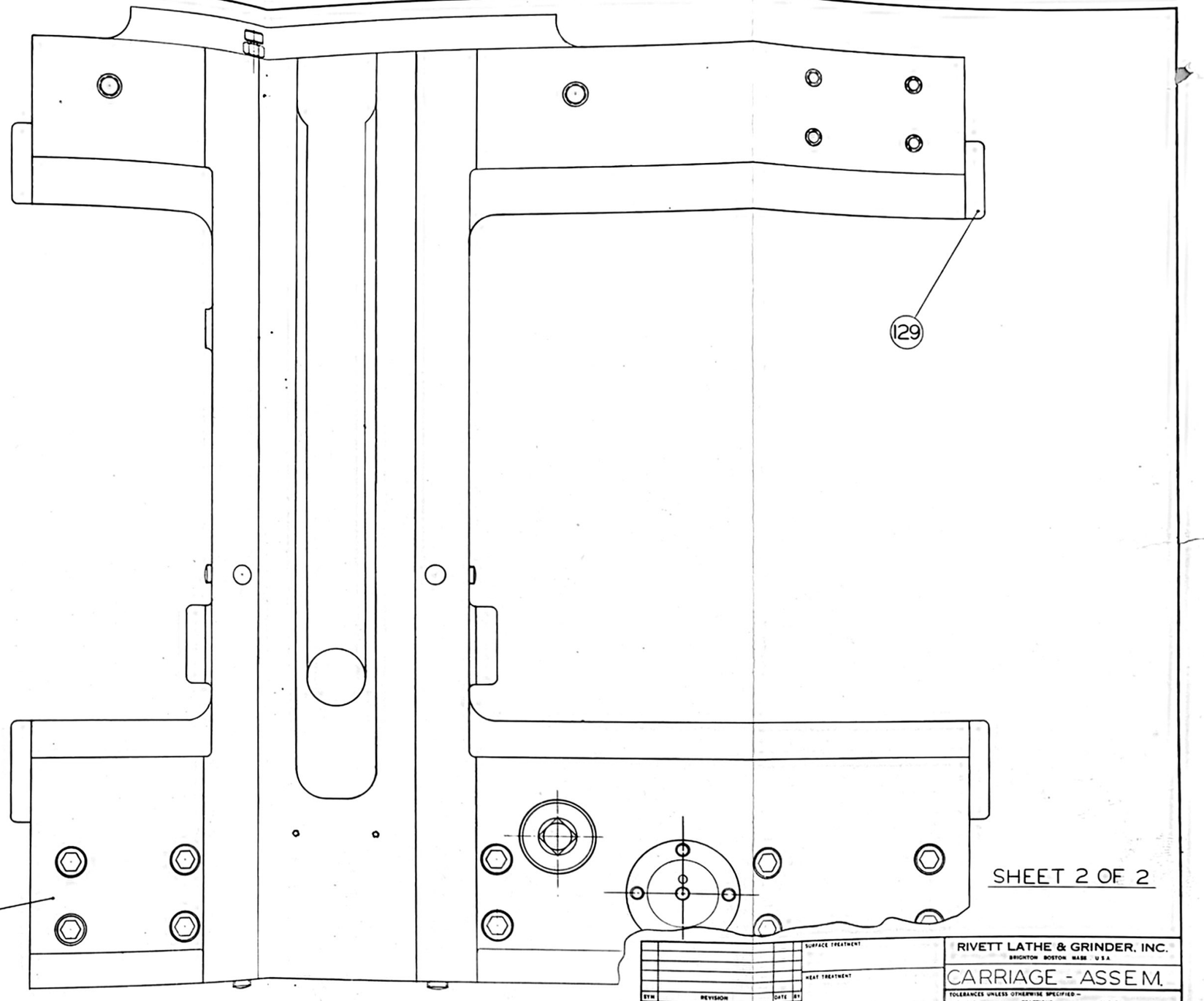
IDLER GEAR ASSEMBLIES

TOLERANCES UNLESS OTHERWISE SPECIFIED
DECIMALS FRACTIONS ANGLES
CONCENTRICITY
FACE RUNOUT
BACK SURFACES
BREAK SHARP CORNERS MAX RADIUS
REMOVE ALL BURRS
DRAWN BY CHECKED BY
TRACED BY SCALE
DRG NO

1020S-23A+B


SECTION C-C-C-C-C-C
SECTION E-E-E-E-E-E
SECTION D-D-D-D-D-D
SECTION B-B-B-B-B-B
SECTION A-A-A-A-A-A
SECTION J-J
SECTION K-K
SECTION F-F
SECTION G-G-G-G-G-G
RIVETT LATHE & GRINDER, INC.
CARRIAGE — APRON
SHEET 1 OF 2
1020F-26-1000

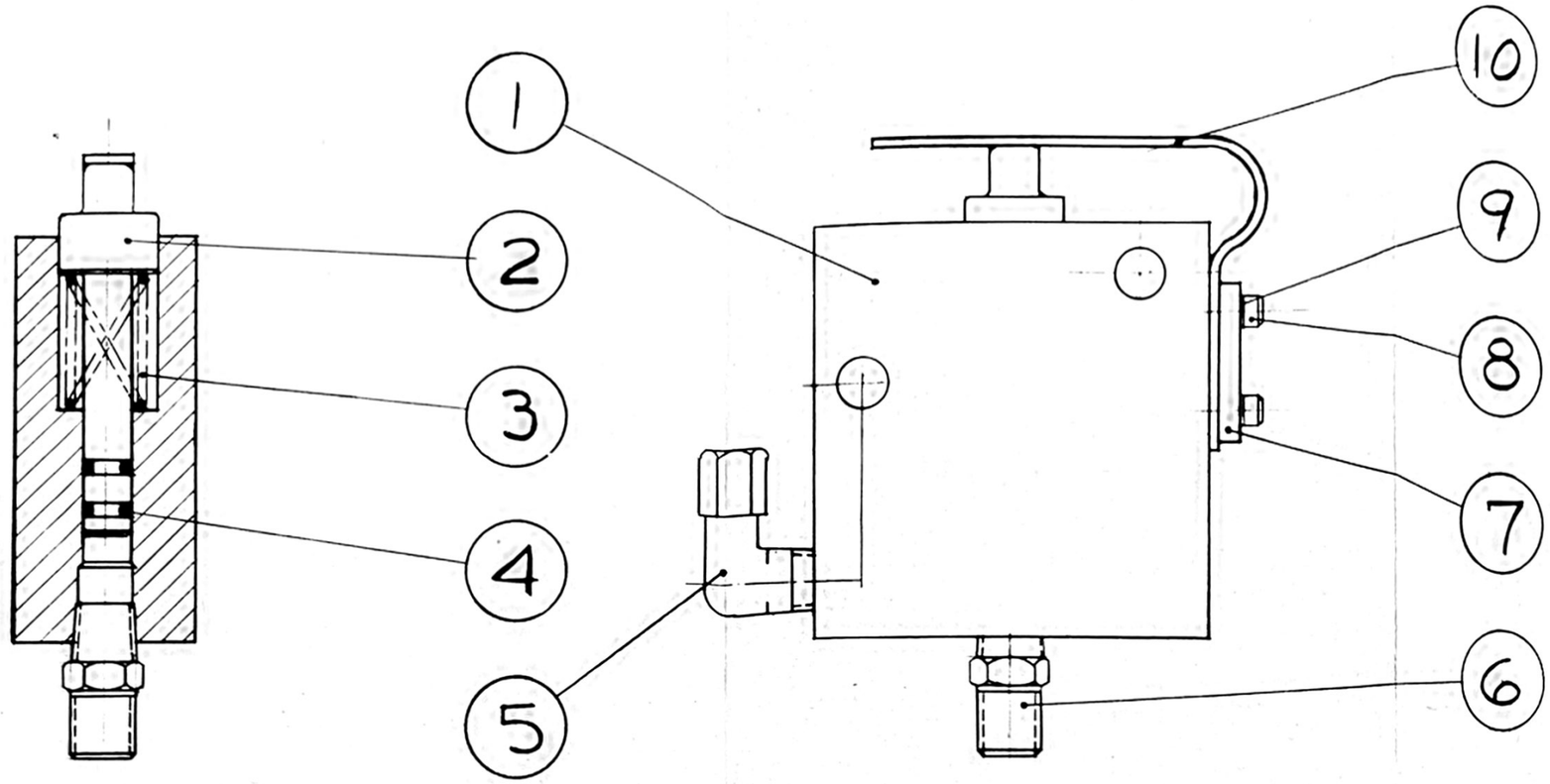




SHEET 2 OF 2

SURFACE TREATMENT		RIVETT LATHE & GRINDER, INC. BRIGHTON BOSTON MASS. U.S.A.	
HEAT TREATMENT		CARRIAGE - ASSEM.	
TOOLS		TOLERANCES UNLESS OTHERWISE SPECIFIED — DECIMALS FRACTIONS ANGLES	
		CONCENTRICITY	
		FACE RUNOUT	
		MACH. SURFACES	
		BREAK SHARP CORNERS	REMOVE ALL BURRS
		ENG. APPVD.	MFG. APPVD.
		DRAWN BY R.G. 1-25-61	CHECKED BY
		TRACED BY	SCALE FULL
			DWG. NO. 1020F-26-1000

SYM	REVISION	DATE	BY
MATERIAL:			
MATERIAL SIZE			
PATT. NO.			
DIE NO.			
WEIGHT ROUGH —			
WEIGHT FINISHED —			
ASSEMBLY NO.			
NO. REQ. PER ASSEM.			



SYM	REVISION	DATE	BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH:—
WEIGHT FINISHED:—

ASSEMBLY NO	1020F-26
NO. REQ. PER ASSEM	(1)

SURFACE TREATMENT:

HEAT TREATMENT:

TOOLS:

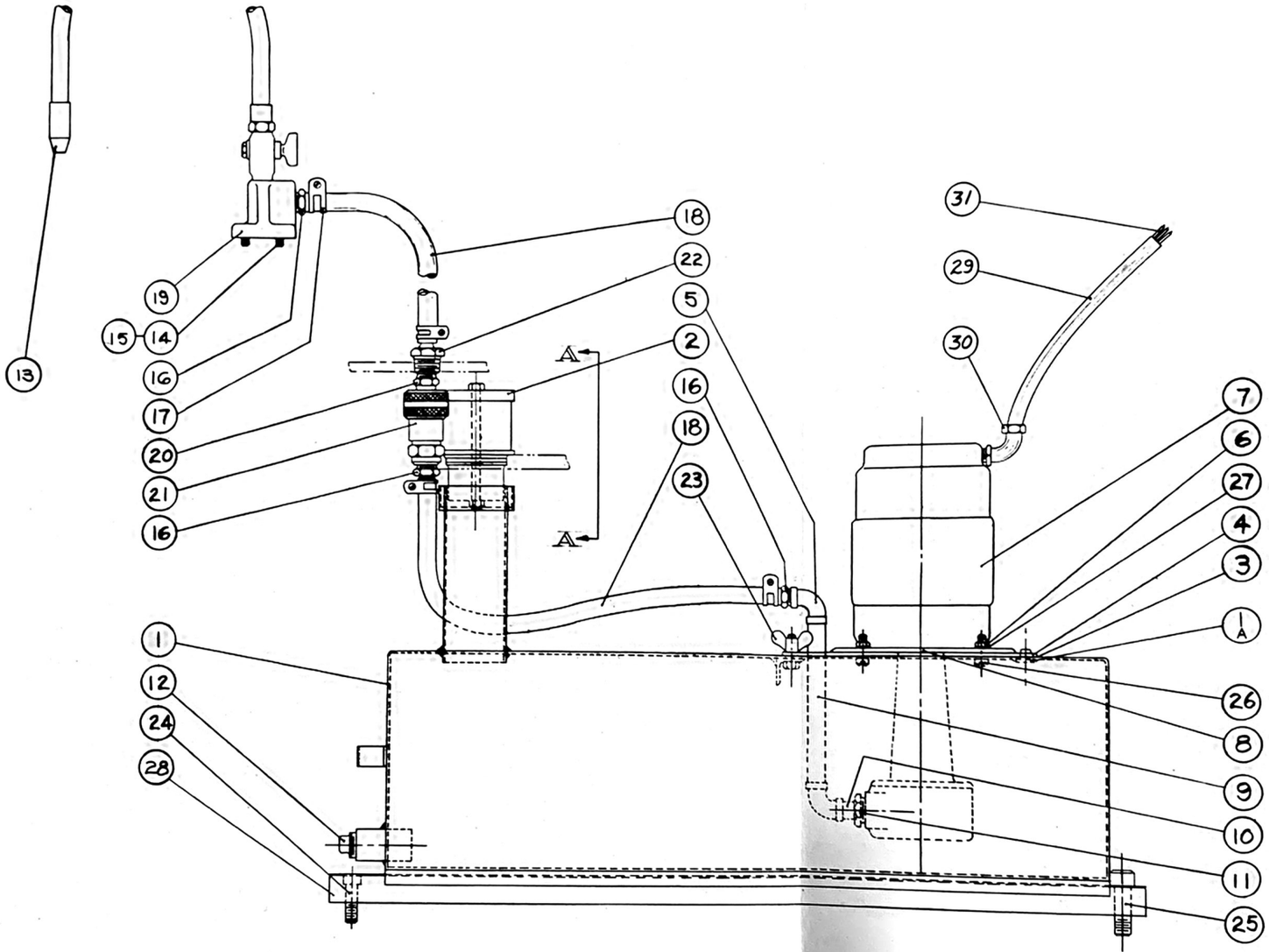
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

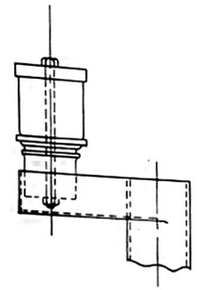
PUMP - CARRIAGE

TOLERANCES UNLESS OTHERWISE SPECIFIED —
DECIMALS: FRACTIONS: ANGLES
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS — REMOVE ALL BURRS
ENG. APPVD. — MFG. APPVD.
DRAWN BY: R. G. 1-27-61 — CHECKED BY:
TRACED BY: — SCALE: FULL

DWG NO
1020F-26P-1100

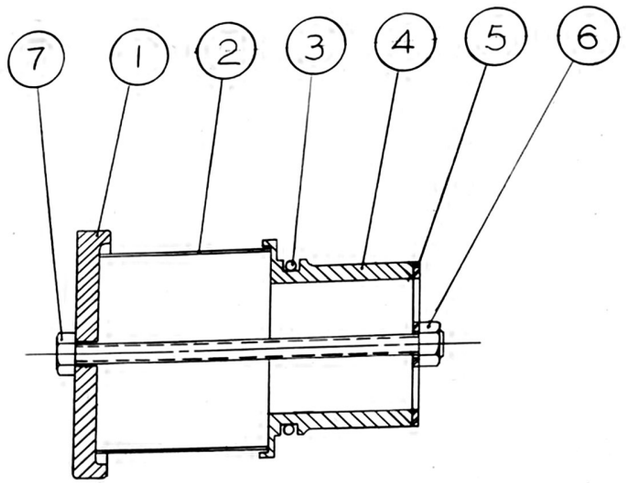
PRINTED BY SPAULDING-MOSS CO., BOSTON, MASS.





VIEW A A

				SURFACE TREATMENT	RIVETT LATHE & GRINDER, INC. BRIGHTON, BOSTON, MASS., U.S.A.
				HEAT TREATMENT	COOLANT SUPPLY ASSEM.
SYM.	E.C.O.	REVISION	DATE	BY	TOLERANCES UNLESS OTHERWISE SPECIFIED: — DECIMALS: FRACTIONS: ANGLES:
MATERIAL					CONCENTRICITY:
				TOOLS	FACE RUNOUT:
					MACH. SURFACES:
MATERIAL SIZE					BREAK SHARP CORNERS: REMOVE ALL BURRS
PATT. NO.					DWG. APVD. MFG. APPVD.
DIE NO.					DRAWN BY: K.A. A-1-62 CHECKED BY:
WEIGHT ROUGH: —					TRACED BY: SCALE: HALF
WEIGHT FINISHED: —					DWG. NO. REV.
ASSEMBLY NO.					SIZE E 1020F-47US-1000
NO. REQ. PER ASSEM.					



1	1020S-47-163	STRAINER CAP
2	1020S-47-824	STRAINER
3	AN6230-2	"O" RING
4	1020S-47-218	FLANGE
5	1020S-47-376	PLATE
6	1/4-20	REG. HEX. NUT
7	1/4-20 × 4 1/2 LG.	HEX. HD. BOLT

SYM	ECO	REVISION	DATE	BY

MATERIAL

MATERIAL SIZE
PATT. NO.
DIE NO.

WEIGHT ROUGH –
WEIGHT FINISHED –

ASSEMBLY NO.
NO. REQ. PER ASSEM.

SURFACE TREATMENT:

HEAT TREATMENT:

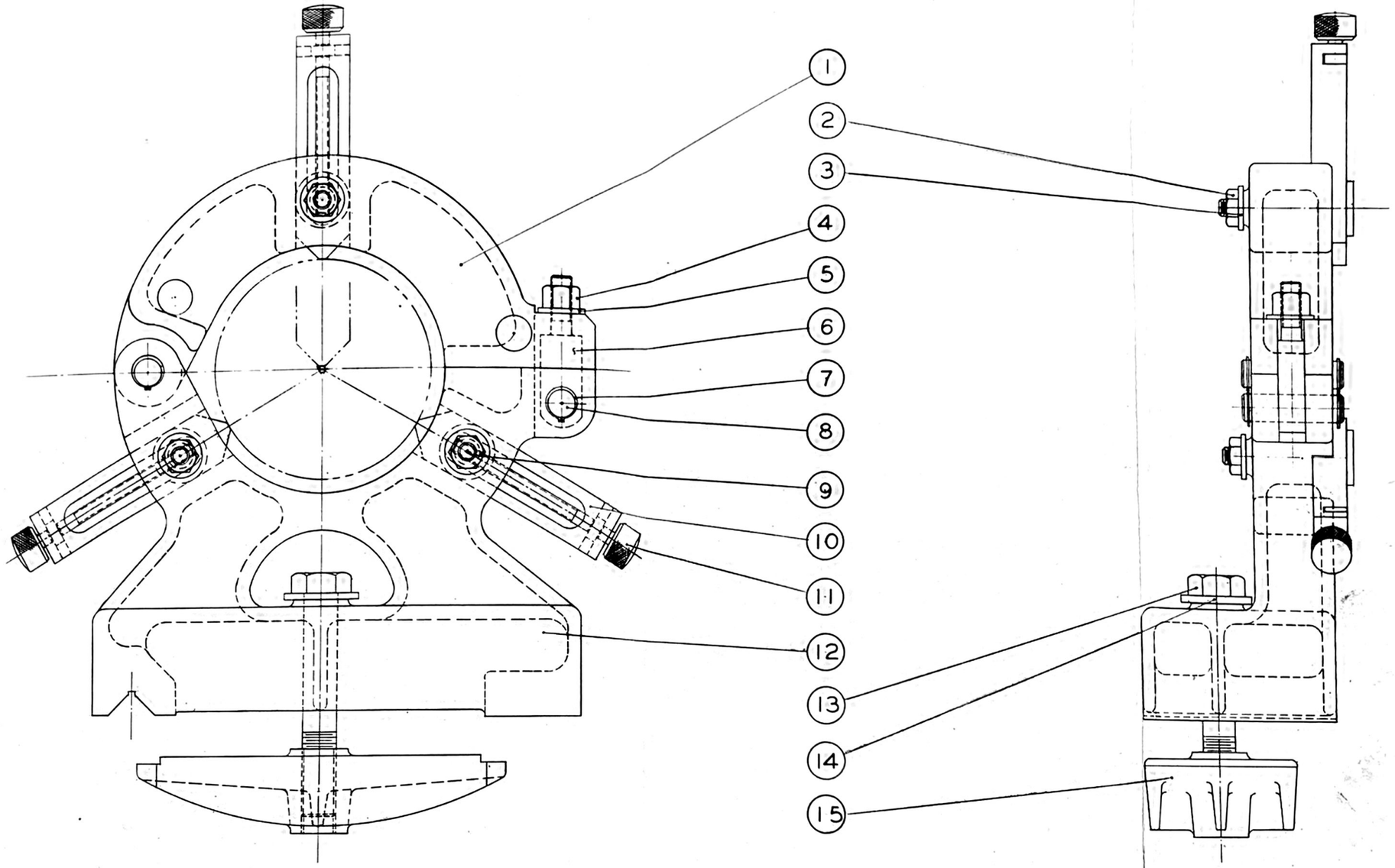
TOOLS

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

COOLANT DRAIN

TOLERANCES UNLESS OTHERWISE SPECIFIED –
DECIMALS FRACTIONS ANGLES
CONCENTRICITY
FACE RUNOUT
MACH. SURFACES REMOVE ALL BURRS
BREAK SHARP CORNERS MFG. APPVD
ENG. APPVD CHECKED BY
DRAWN BY K.B. 8-8-62 SCALE —
TRACED BY

DWG NO
1020F-47-1100



A	12-56	ORIGINATED				
BTH	ECO	REVISION		DATE	BY	

MATERIAL:

MATERIAL SIZE:
PATT NO.:
DIE NO.:
WEIGHT ROUGH –
WEIGHT FINISHED –

ASSEMBLY NO.
NO REQ PER ASSEM

SURFACE TREATMENT

HEAT TREATMENT

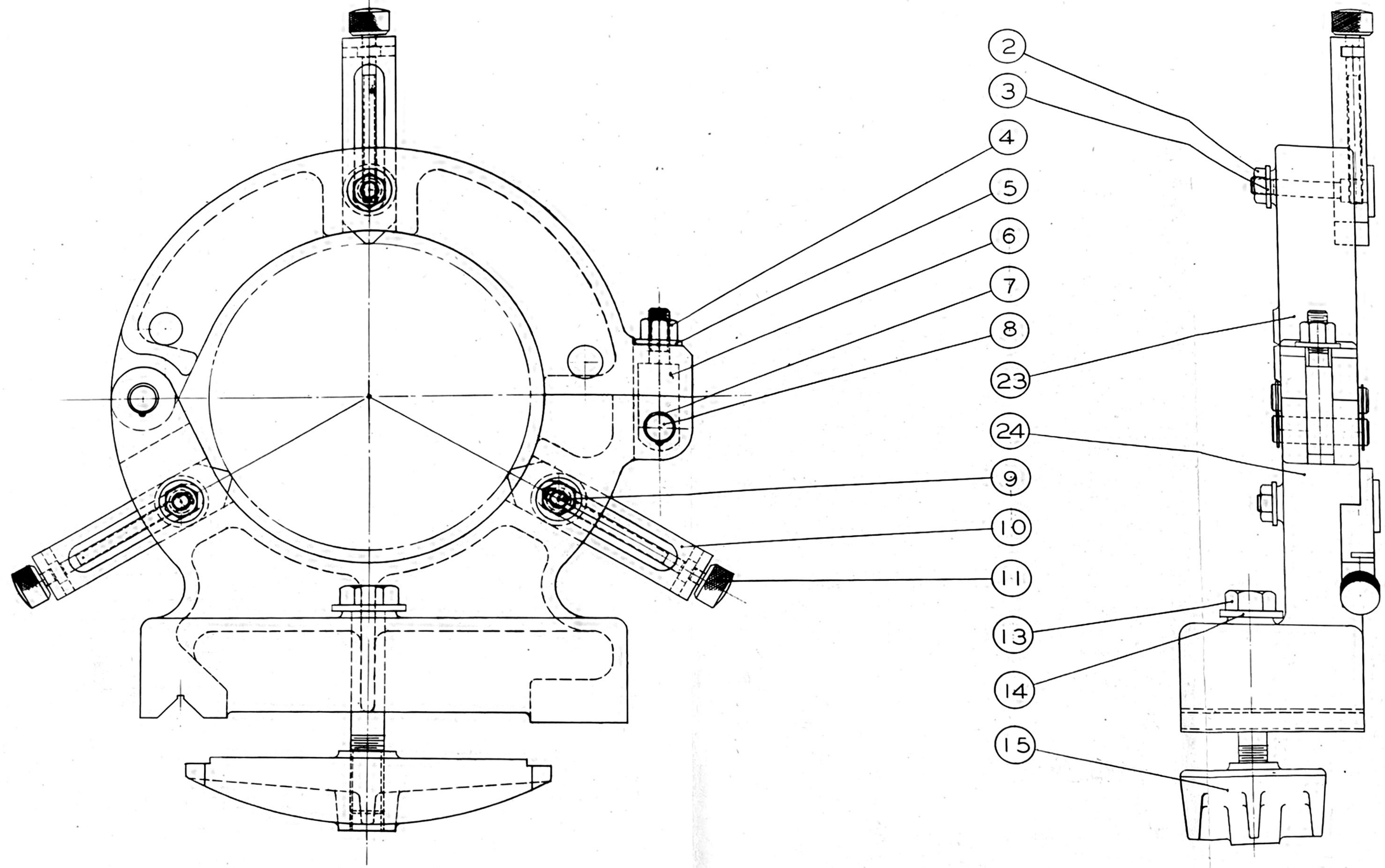
TOOLS

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

STEADY REST 4" CAPACITY

TOLERANCES UNLESS OTHERWISE SPECIFIED –
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY
FACE RUNOUT
MACH. SURFACES
BREAK SHARP CORNERS: REMOVE ALL BURRS
ENG. APPVD.: MFG. APPVD.
DRAWN BY R.G. 2-23-61: CHECKED BY
TRACED BY: SCALE Full

DWG. NO.
1020F - 53-1000



RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

STEADY REST
6" CAPACITY

SYM.	E.C.O.	REVISION	DATE	BY
A	1256	ORIGINATED		

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH: —
WEIGHT FINISHED: —

ASSEMBLY NO.
NO. REQ. PER ASSEM.

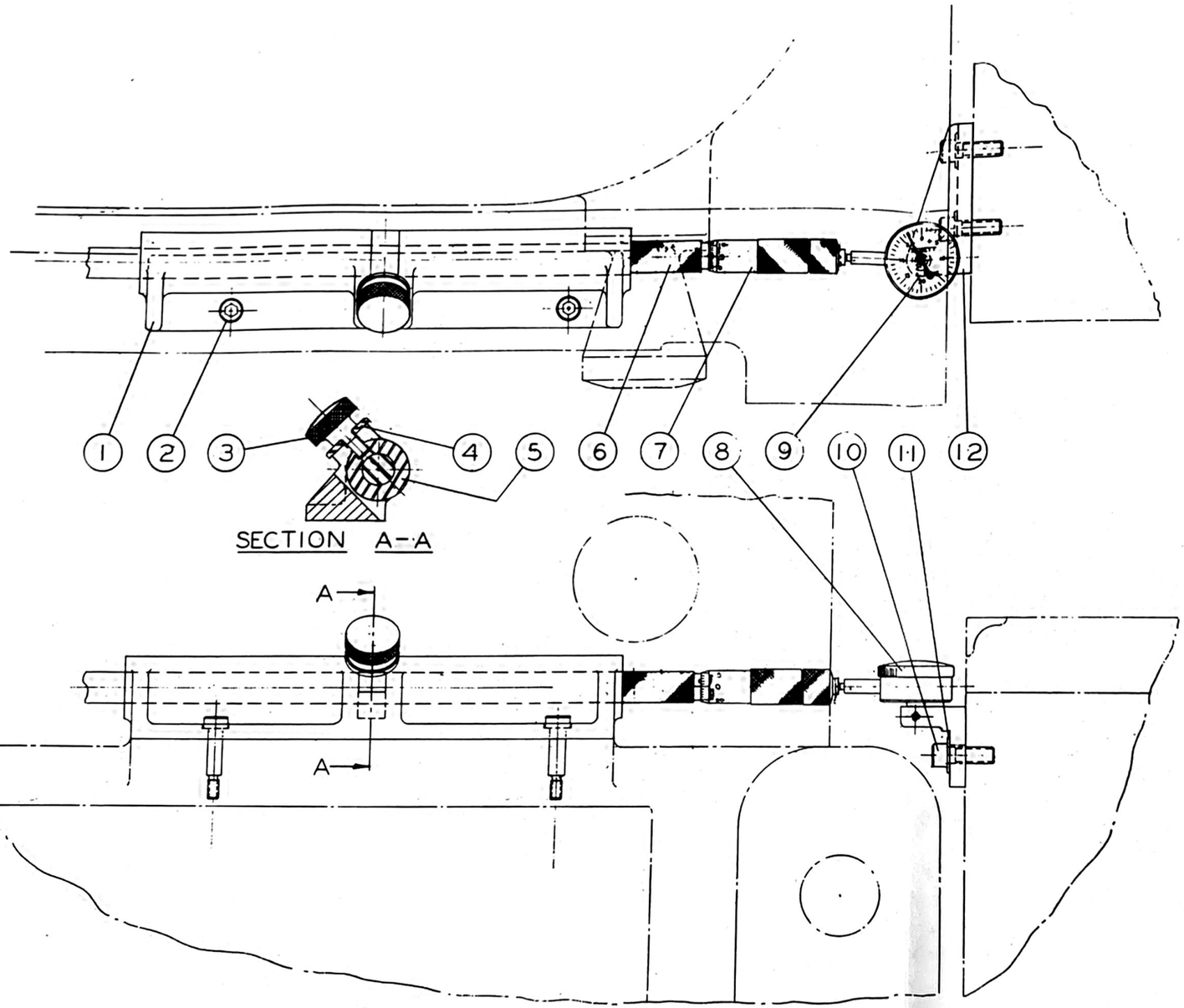
SURFACE TREATMENT:

HEAT TREATMENT:

TOOLS:

TOLERANCES UNLESS OTHERWISE SPECIFIED: —
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS — REMOVE ALL BURRS
ENG. APPVD. — MFG. APPVD.
DRAWN BY: R. G. 2-28-61 — CHECKED BY:
TRACED BY: — SCALE: FULL

DWG. NO.
1020F-53A-1000



SECTION A-A

1.	1020S-63-146	STOP ROD BRACKET
2	1020S-63-638	ALLEN SHOULDER SCREW
3.	GA1024-637	BINDER SCREW
4.	GA1024-521	BINDER WASHER
5.	1020S-63-188	ROD BINDING COLLAR
6.	1020S-63-424	STOP ROD
7.	*@11 (SPECIAL)	LUFKIN MICRO. HEAD
8.	MODEL *A6Q-2	FEDERAL DIAL INDICATOR (POST BACK)
9.	*4-40 x 1/8	ALLEN SET SCREW
10.	1/4-28 x 3/4	ALLEN CAP SCREW
11.	17/64 I.D. x 9/16 O.D.	.048 THICK WASHER
12.	1020S-63-145	INDICATOR BRACKET

BY/#	REVISION	DATE	BY
MATERIAL:			
MATERIAL SIZE:			
PATT. NO.:			
DIE NO.:			
WEIGHT ROUGH.—			
WEIGHT FINISHED.—			
ASSEMBLY NO.			
NO. REQ. PER ASSEM.			

SURFACE TREATMENT:

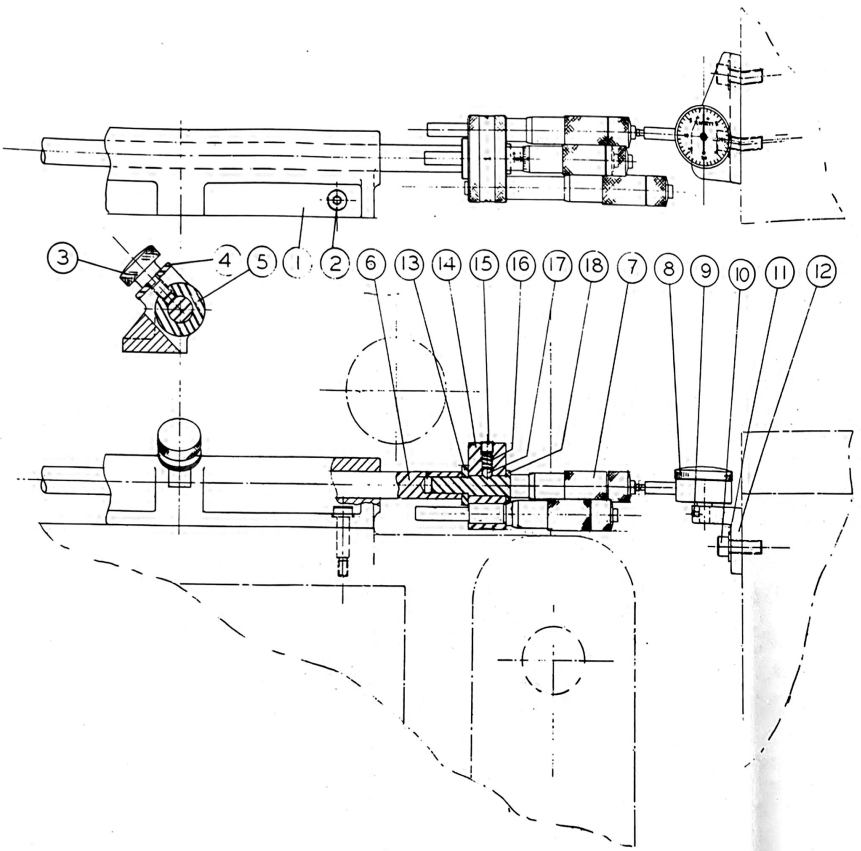
HEAT TREATMENT:

TOOLS:

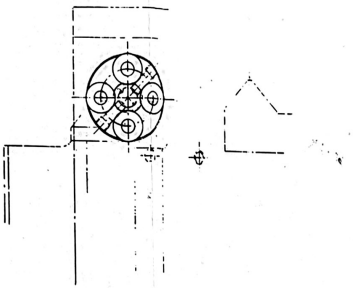
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

MICROMETER STOP

TOLERANCES UNLESS OTHERWISE SPECIFIED.—
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY: ETG 2-18-69 CHECKED BY:
TRACED BY: SCALE: FULL
DWG. NO.
1020S-63



1.	1020S-63-146	STOP ROD BRACKET
2.	1020S-63-638	ALLEN SHOULDER SCREW
3.	GA1024-637	BINDER SCREW
4.	GA1024-521	BINDER WASHER
5.	1020S-63-188	ROD BINDING COLLAR
6.	1020S-63A-425	STOP ROD
7.	#011 (SPECIAL)	LUFKIN MICRO. HEAD
8.	MODEL "A6Q-2	FEDERAL DIAL INDICATOR (POST BACK)
9.	#4-40 × 1/8	ALLEN SET SCREW
10.	1/4-28 × 3/4	ALLEN CAP SCREW
11.	17/64 I.D. × 9/16 O.D.	048 THICK WASHER
12.	1020S-63-145	INDICATOR BRACKET
13.	1020S-63A-473	SPACER
14.	1020S-63A-208	MICRO. DRUM
15.	1/4-28 × 3/16	ALLEN SET SCREW
16.	1020S-63A-666	DETENT SPRING
17.	3/16 DIA.	HARD STEEL BALL
18.	1020S-63A-498	DRUM STUD



SURFACE TREATMENT.

HEAT TREATMENT.

TOOLS

STK	REVISION	DATE	BY

MATERIAL:

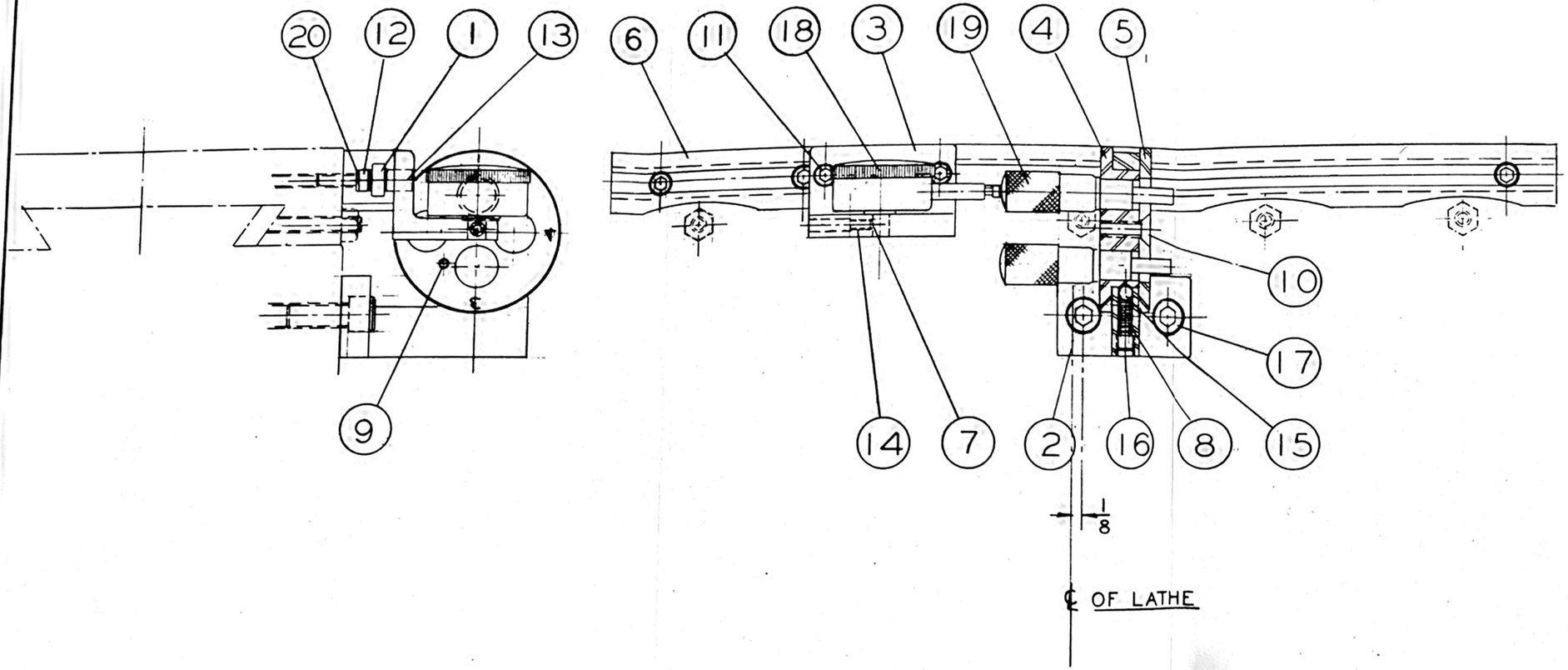
MATERIAL SIZE.
PATT. NO.:
DIE NO.:
WEIGHT ROUGH –
WEIGHT FINISHED –
ASSEMBLY NO.
NO. REQ. PER ASSY.

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

MULTIPLE MICRO. STOP

TOLERANCES UNLESS OTHERWISE SPECIFIED –
DECIMALS FRACTIONS ANGLES
CONCENTRICITY
FACE RUNOUT
BACK RUNOUT
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY CHECKED BY
TRACED BY SCALE
DWG. NO.

1020S-63A



SYM.	E.C.O.	REVISION	DATE	BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH.—
WEIGHT FINISHED.—

ASSEMBLY NO.
NO. REQ. PER ASSEM.

SURFACE TREATMENT:

HEAT TREATMENT:

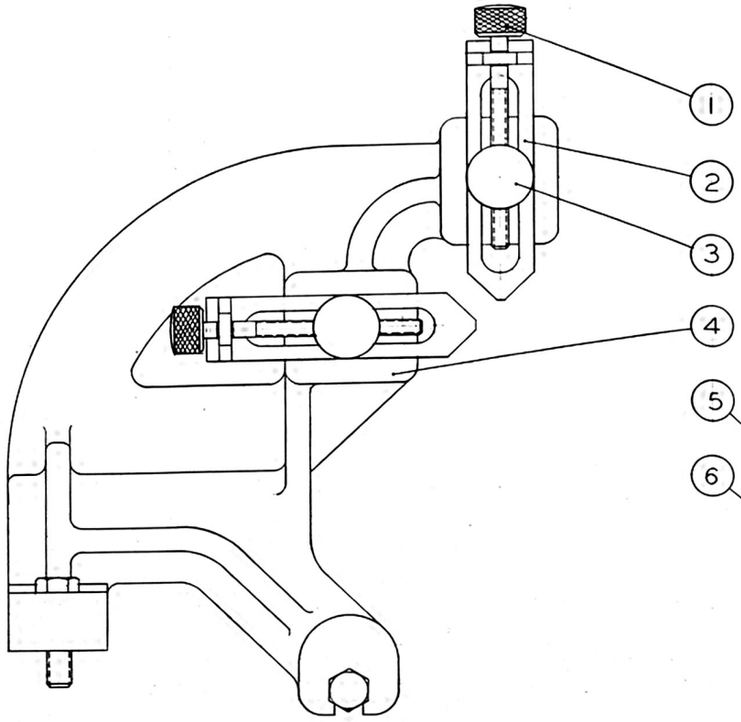
TOOLS:

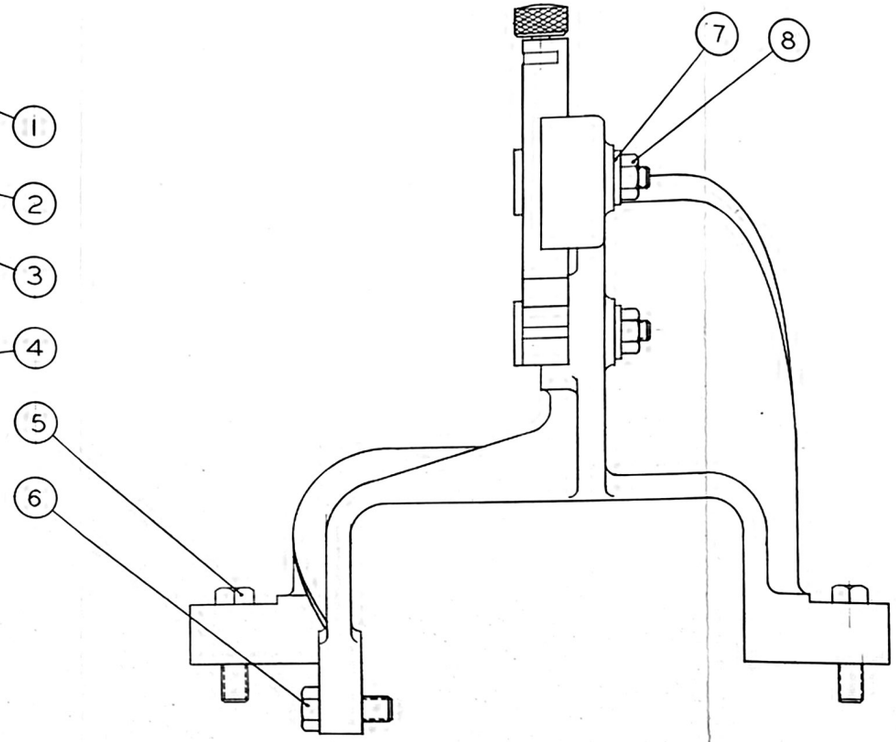
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

CROSS FEED
MULTIPLE STOP

TOLERANCES UNLESS OTHERWISE SPECIFIED.—	
DECIMALS: FRACTIONS: ANGLES:	
CONCENTRICITY:	
FACE RUNOUT:	
MACH. SURFACES:	
BREAK SHARP CORNERS	REMOVE ALL BURRS
ENG. APPVD.	MFG. APPVD.
DRAWN BY: ETG 3-5-59	CHECKED BY:
TRACED BY:	SCALE: FULL

DWG. NO.
1020S-63C





STN.	E.C.O.	REVISION	DATE	BY

MATERIAL

MATERIAL SIZE

PATT. NO.:

DIE NO.:

WEIGHT ROUGH —

WEIGHT FINISHED —

ASSEMBLY NO.

NO. REQ. PER ASSEM.

SURFACE TREATMENT

HEAT TREATMENT

TOOLS

RIVETT LATHE & GRINDER, INC.

BRIGHTON, BOSTON, MASS., U.S.A.

FOLLOWER REST 2¼" CAPACITY

TOLERANCES UNLESS OTHERWISE SPECIFIED —

DECIMALS: FRACTIONS: ANGLES:

CONCENTRICITY.

FACE RUNOUT.

MACH. SURFACES.

BREAK SHARP CORNERS — REMOVE ALL BURRS

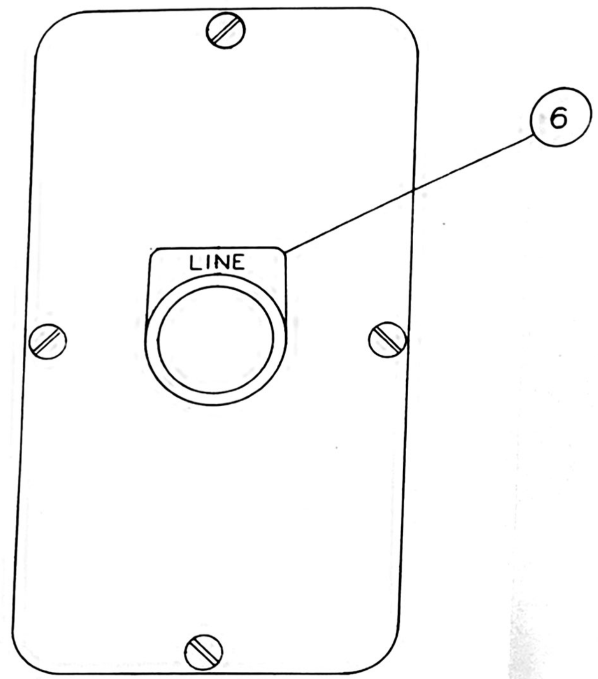
ENG. APPR'D. — MFG. APP'D.

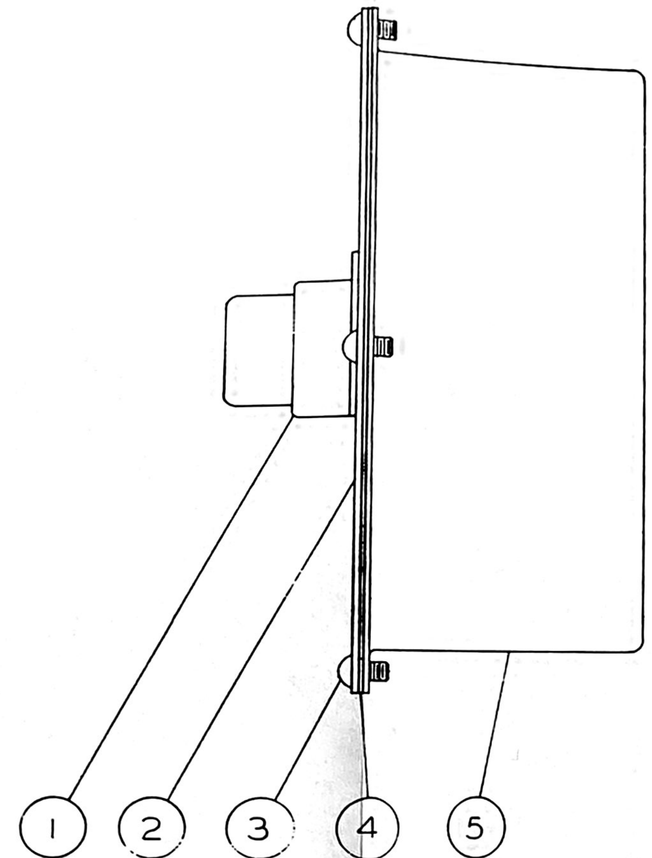
DRAWN BY: R.G. 8-29-63 — CHECKED BY:

TRACED BY: — SCALE: Full

DWG. NO.

1020F-69-1000





1 *9001 TYPE TP7C PILOT LIGHT
2 1020S-73-181 COVER
3 *10-32 × 3/8 RD HEAD MACH. SCREW
4 1020S-73-991 GASKET
5 1020S-73-140 BOX
6 *9001 TYPE TN1 LEDGEND PLATE

SYM	REVISION	DATE	BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH:—
WEIGHT FINISHED:—

ASSEMBLY NO.
NO. REQ. PER ASSEN.

SURFACE TREATMENT:

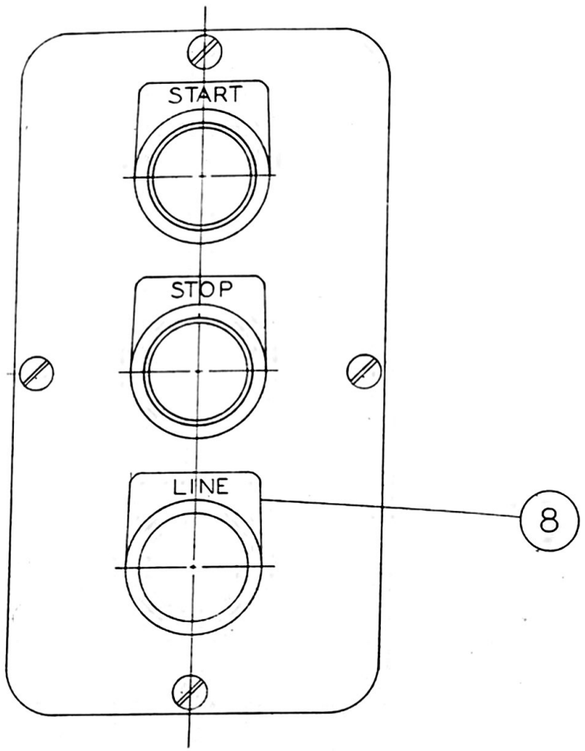
HEAT TREATMENT:

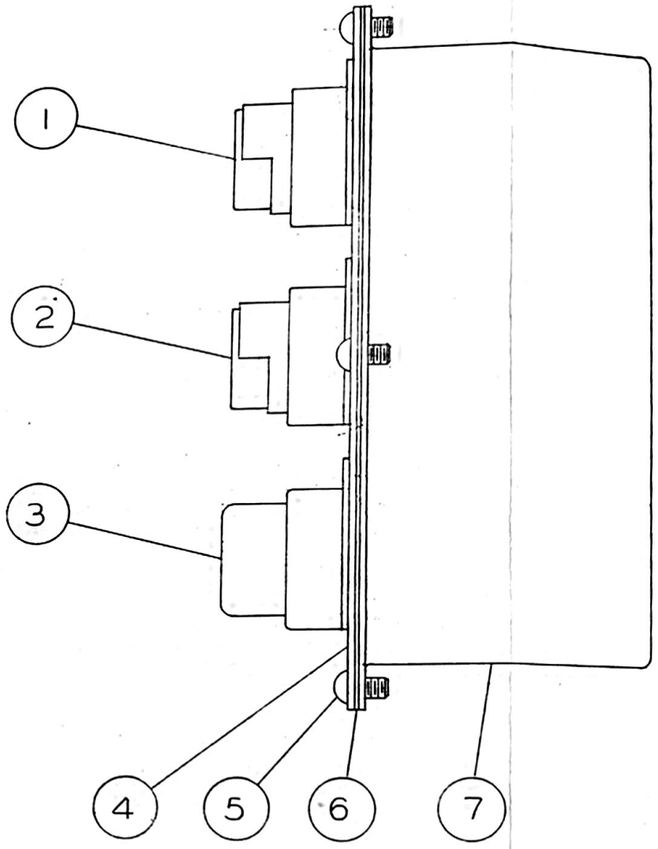
TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

LINE LIGHT BOX ASSEMBLY

TOLERANCES UNLESS OTHERWISE SPECIFIED:—
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY: R.W.G.-3·31·49 CHECKED BY:
TRACED BY: SCALE: FULL SIZE
DWG. NO.
1020S-73B





1	#9001 TYPE TR1A PUSH BUTTON
2	#9001 TYPE TR2A PUSH BUTTON
3	#9001 TYPE TP7C PILOT LIGHT
4	1020S-73-180 COVER
5	#10-32 × 3/8 RD HEAD MACH. SCREW
6	1020S-73-991 GASKET
7	1020S-73-140 BOX
8	#9001 TYPE TN1 LEDGEND PLATE

SYM	REVISION	DATE	BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH:—
WEIGHT FINISHED:—

ASSEMBLY NO.

NO. REQ. PER ASSEM.

SURFACE TREATMENT:

HEAT TREATMENT:

TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

PUSH BUTTON BOX ASSEM.

TOLERANCES UNLESS OTHERWISE SPECIFIED:—
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS: MAX. RADIUS
REMOVE ALL BURRS

DRAWN BY: R.W.G.-3-31-49 | CHECKED BY:
TRACED BY: | SCALE: FULL SIZE

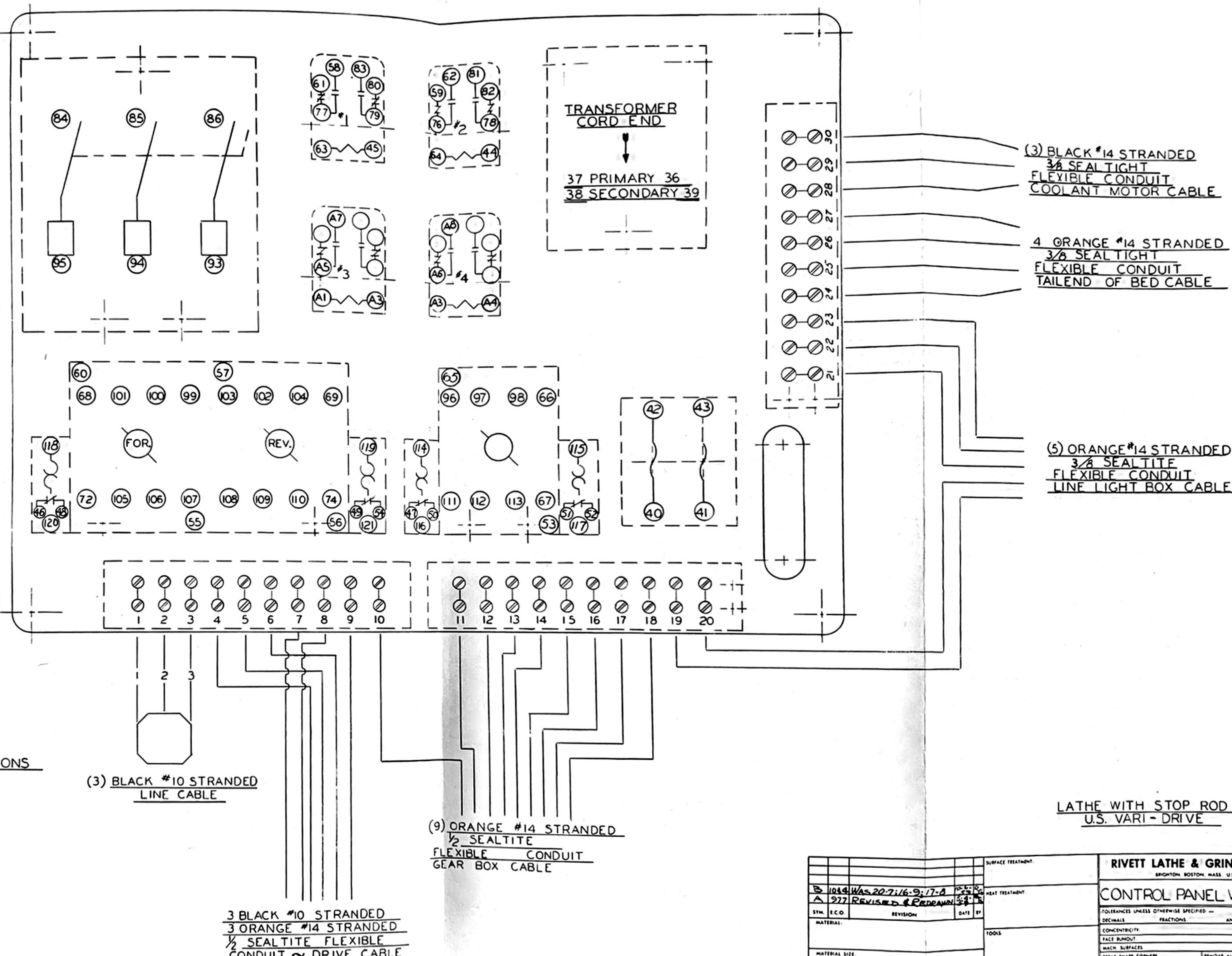
DWG. NO.
1020S-73C

PANEL WIRING

1-84, 2-85, 3-86	"BLACK" #10 STRANDED
93-99, 94-100, 95-101	"BLACK" #10 STRANDED
99-102, 100-104, 101-103	"BLACK" #10 STRANDED (FRONT)
36-104, 37-103	FRONT
103-96, 104-97, 102-98	"BLACK" #14 STRANDED (FRONT)
105-108, 106-109, 107-110	"BLACK" #10 STRANDED (FRONT)
105-118, 110-119	"BLACK" #10 STRANDED (FRONT)
106-4, 120-5, 121-6	"BLACK" #10 STRANDED (FRONT)
111-114, 113-115	"BLACK" #14 STRANDED (FRONT)
112-28	"BLACK" #14 STRANDED (FRONT)
116-29, 117-30	"BLACK" #14 STANDED
38-41, 39-40	FRONT

"ORANGE" #14 STRANDED:

42-21	
21-19	
19-10	
43-44	
44-45	FRONT
45-46	
46-47	FRONT
(B1) 47-20	FRONT
48-49	FRONT
50-51	FRONT
52-53	FRONT
54-56	FRONT
56-55	FRONT
57-58	
58-59	FRONT
60-62	
62-61	FRONT
63-64	FRONT
64-18	
65-66	FRONT
65-22	FRONT
67-23	FRONT
(B2)	
(B3) 68-12	
69-13	
76-26	
77-24	
78-27	
79-25	
80-81	FRONT
81-14	FRONT
82-83	FRONT
83-15	
72-74	
74-11	



#3 & #4 RELAY CONECTIONS

A1	TO	A3
A5	TO	A6
A3	TO	44
A5	TO	7
A7	TO	8
A8	TO	9
A2	TO	16
A4	TO	17

LATHE WITH STOP ROD
U.S. VARI-DRIVE

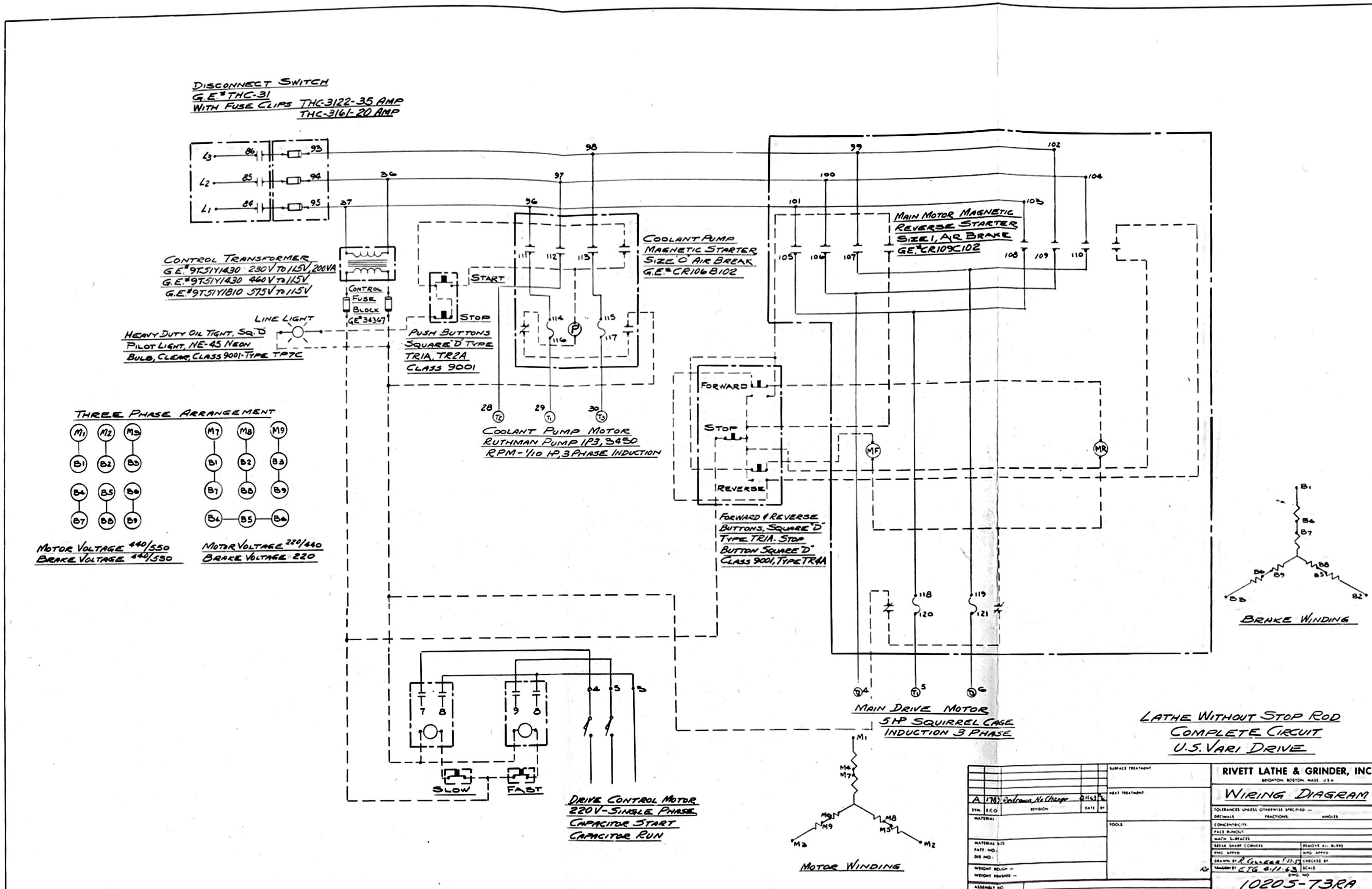
SYM.	E.C.O.	REVISION	DATE	BY
B	1084	WAS 20-7; 16-9; 17-8		
A	977	REVISED & REDRAWN		

MATERIAL:
SURFACE TREATMENT:
HEAT TREATMENT:
TOOLS:
MATERIAL SIZE:
PATT. NO.:
DIE NO.:
WEIGHT ROUGH.—
WEIGHT FINISHED.—
ASSEMBLY NO. / NO. REQ PER ASSEM.

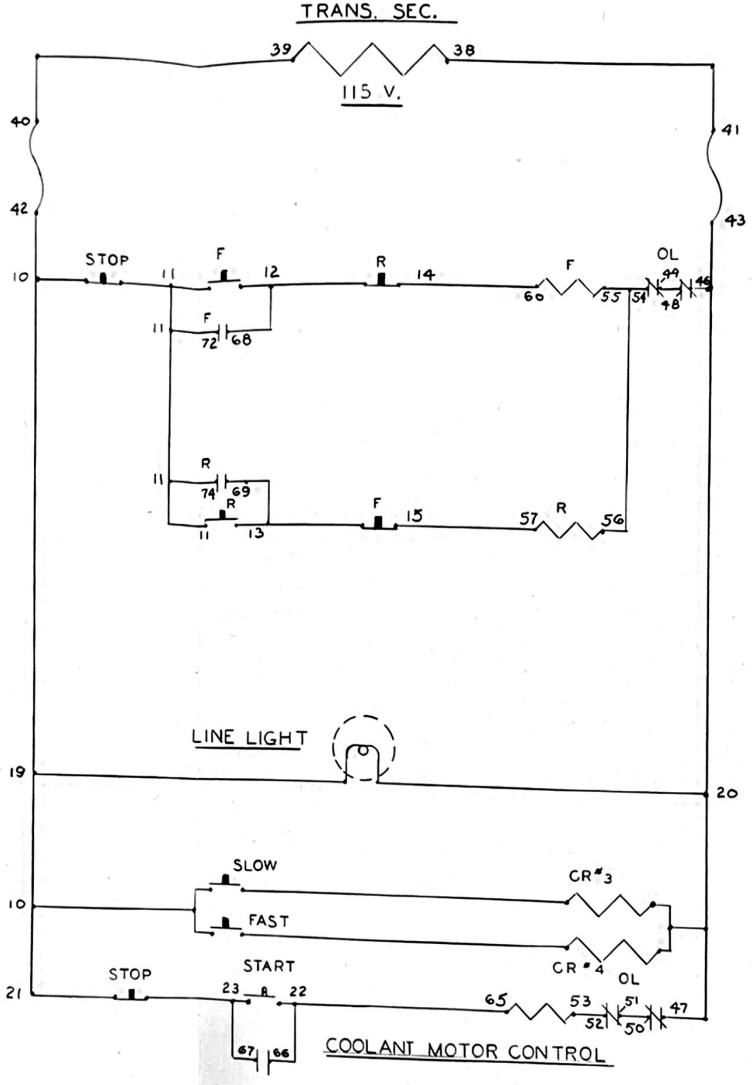
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS. U.S.A.

CONTROL PANEL WIRING

TOLERANCES UNLESS OTHERWISE SPECIFIED — DECIMALS / FRACTIONS / ANGLES
CONCENTRICITY
FACE RUNOUT
MACH. SURFACES
BREAK SHARP CORNERS / REMOVE ALL BURRS
ENG. APP'D / MFG. APP'D
DRAWN BY ETG 5-4-59 / CHECKED BY: ETG
TRACED BY CTG 12-27-63 / SCALE 3/4 SIZE
DWG. NO. 1020S-73TA



DISCONNECT SWITCH
G.E.# THC-31
WITH FUSE CLIPS THC-3122-35 AMP
THC-3161-20 AMP
CONTROL TRANSFORMER
G.E.# 9T51Y1430 230V TO 115V, 200VA
G.E.# 9T51Y1430 460V TO 115V
G.E.# 9T51Y1810 575V TO 115V
CONTROL FUSE BLOCK GE# 34367
LINE LIGHT
HEAVY DUTY OIL TIGHT, SQ. D
PILOT LIGHT, NE-45 NEON
BULB, CLEAR, CLASS 9001-TYPE TP7C
START
STOP
PUSH BUTTONS
SQUARE "D" TYPE
TR1A, TR2A
CLASS 9001
COOLANT PUMP
MAGNETIC STARTER
SIZE "0" AIR BREAK
G.E.# CR106B102
MAIN MOTOR MAGNETIC
REVERSE STARTER
SIZE 1, AIR BRAKE
GE# CR109C102
COOLANT PUMP MOTOR
RUTHMAN PUMP 1P3, 3450
RPM-1/10 HP, 3 PHASE INDUCTION
FORWARD
STOP
REVERSE
FORWARD & REVERSE
BUTTONS, SQUARE "D"
TYPE TR1A. STOP
BUTTON SQUARE "D"
CLASS 9001, TYPE TR4A
THREE PHASE ARRANGEMENT
MOTOR VOLTAGE 440/550
BRAKE VOLTAGE 440/550
MOTOR VOLTAGE 220/440
BRAKE VOLTAGE 220
BRAKE WINDING
SLOW
FAST
DRIVE CONTROL MOTOR
220V-SINGLE PHASE
CAPACITOR START
CAPACITOR RUN
MAIN DRIVE MOTOR
5 HP SQUIRREL CAGE
INDUCTION 3 PHASE
MOTOR WINDING
LATHE WITHOUT STOP ROD
COMPLETE CIRCUIT
U.S. VARI DRIVE
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS. U.S.A.
WIRING DIAGRAM
DRAWN BY R. Gellagar 5-27-57
CTG 4-11-63
10205-73RA



LATHE WITHOUT STOP ROD
CONTROL CIRCUIT

U.S. VARI. DRIVE

SYM	E.C.O.	REVISION	DATE	BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH --
WEIGHT FINISHED --

ASSEMBLY NO.
NO. REQ. PER ASSEM.

SURFACE TREATMENT:

HEAT TREATMENT:

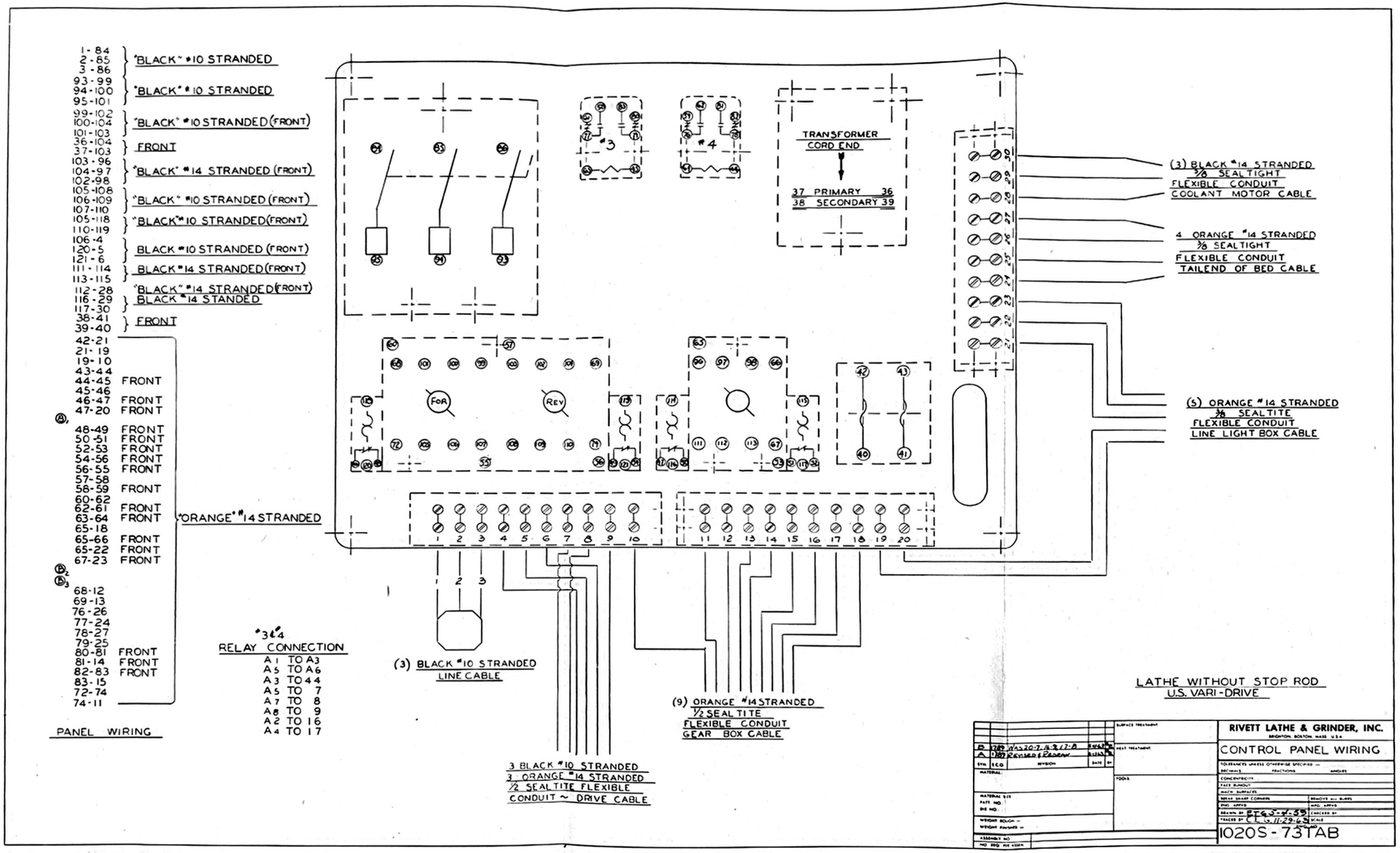
TOOLS:

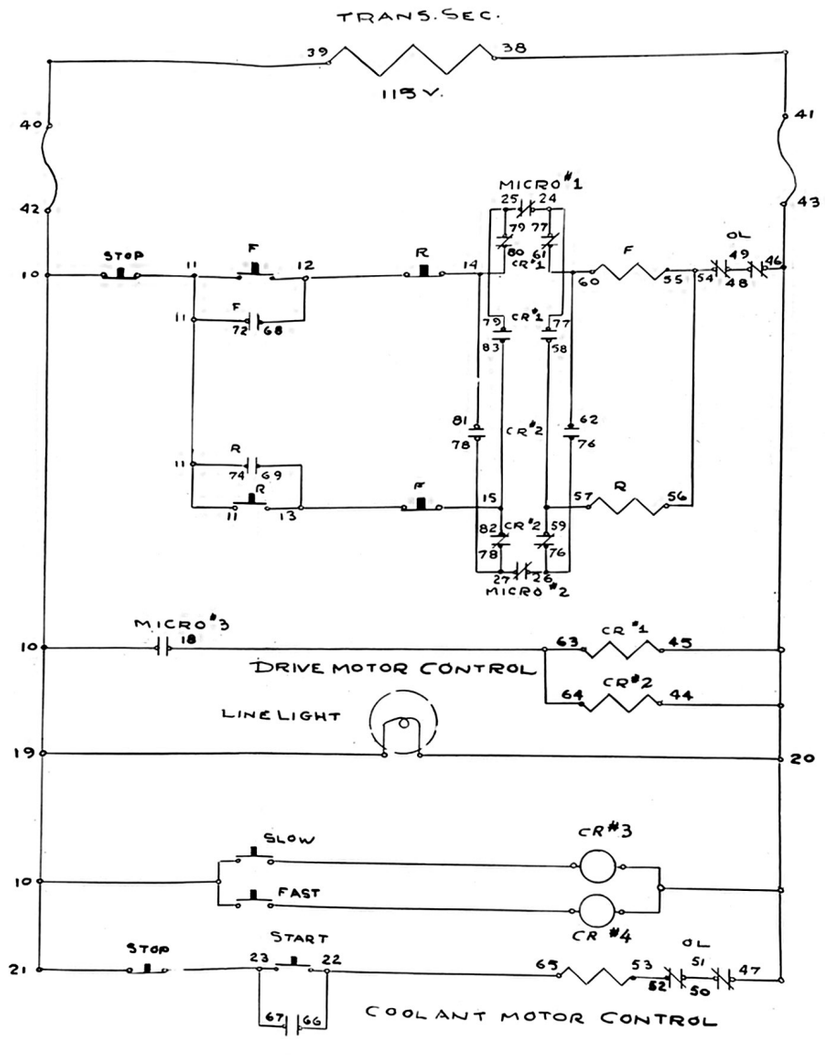
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

WIRING DIAGRAM

TOLERANCES UNLESS OTHERWISE SPECIFIED --
DECIMALS FRACTIONS ANGLES
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES
BREAK SHARP CORNERS — REMOVE ALL BURRS
ENG. APPVD — MFG. APPVD
DRAWN BY: R. Calkins 5-27-57 — CHECKED BY:
TRACED BY: CEG 11-4-63 — SCALE:

DWG. NO.
1020S-73SA


1-84, 2-85, 3-86 "BLACK" #10 STRANDED
93-99, 94-100, 95-101 "BLACK" #10 STRANDED
99-102, 100-104, 101-103, 36-104, 37-103 FRONT
103-96, 104-97, 102-98 "BLACK" #14 STRANDED (FRONT)
105-108, 106-109, 107-110 "BLACK" #10 STRANDED (FRONT)
105-118, 110-119 "BLACK" #10 STRANDED (FRONT)
106-4, 120-5, 121-6 BLACK #10 STRANDED (FRONT)
111-114, 113-115 BLACK #14 STRANDED (FRONT)
112-28, 116-29, 117-30 "BLACK" #14 STRANDED (FRONT)
BLACK #14 STANDED
38-41, 39-40 FRONT
42-21, 21-19, 19-10, 43-44, 44-45 FRONT, 45-46, 46-47 FRONT, 47-20 FRONT
48-49 FRONT, 50-51 FRONT, 52-53 FRONT, 54-56 FRONT, 56-55 FRONT, 57-58, 58-59 FRONT, 60-62, 62-61 FRONT, 63-64 FRONT, 65-18, 65-66 FRONT, 65-22 FRONT, 67-23 FRONT
"ORANGE" #14 STRANDED
68-12, 69-13, 76-26, 77-24, 78-27, 79-25, 80-81 FRONT, 81-14 FRONT, 82-83 FRONT, 83-15, 72-74, 74-11
PANEL WIRING
TRANSFORMER CORD END
37 PRIMARY 36
38 SECONDARY 39
#3
#4
FOR
REV
(3) BLACK #14 STRANDED 3/8 SEALTIGHT FLEXIBLE CONDUIT COOLANT MOTOR CABLE
4 ORANGE #14 STRANDED 3/8 SEALTIGHT FLEXIBLE CONDUIT TAILEND OF BED CABLE
(5) ORANGE #14 STRANDED 3/8 SEALTITE FLEXIBLE CONDUIT LINE LIGHT BOX CABLE
(3) BLACK #10 STRANDED LINE CABLE
(9) ORANGE #14 STRANDED 1/2 SEALTITE FLEXIBLE CONDUIT GEAR BOX CABLE
3 BLACK #10 STRANDED
3 ORANGE #14 STRANDED
1/2 SEALTITE FLEXIBLE CONDUIT ~ DRIVE CABLE
#3&4 RELAY CONNECTION
A1 TO A3
A5 TO A6
A3 TO 44
A5 TO 7
A7 TO 8
A8 TO 9
A2 TO 16
A4 TO 17
LATHE WITHOUT STOP ROD
U.S. VARI-DRIVE
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS. U.S.A.
CONTROL PANEL WIRING
1020S-73TAB



LATHE WITH STOP ROD CONTROL CIRCUIT

"U.S. VARI-DRIVE"

SYM	ECO	REVISION	DATE	BY

MATERIAL

MATERIAL SIZE
PATT NO
DIE NO

WEIGHT ROUGH
WEIGHT FINISHED

ASSEMBLY NO
NO REQ PER ASSEM

SURFACE TREATMENT

HEAT TREATMENT

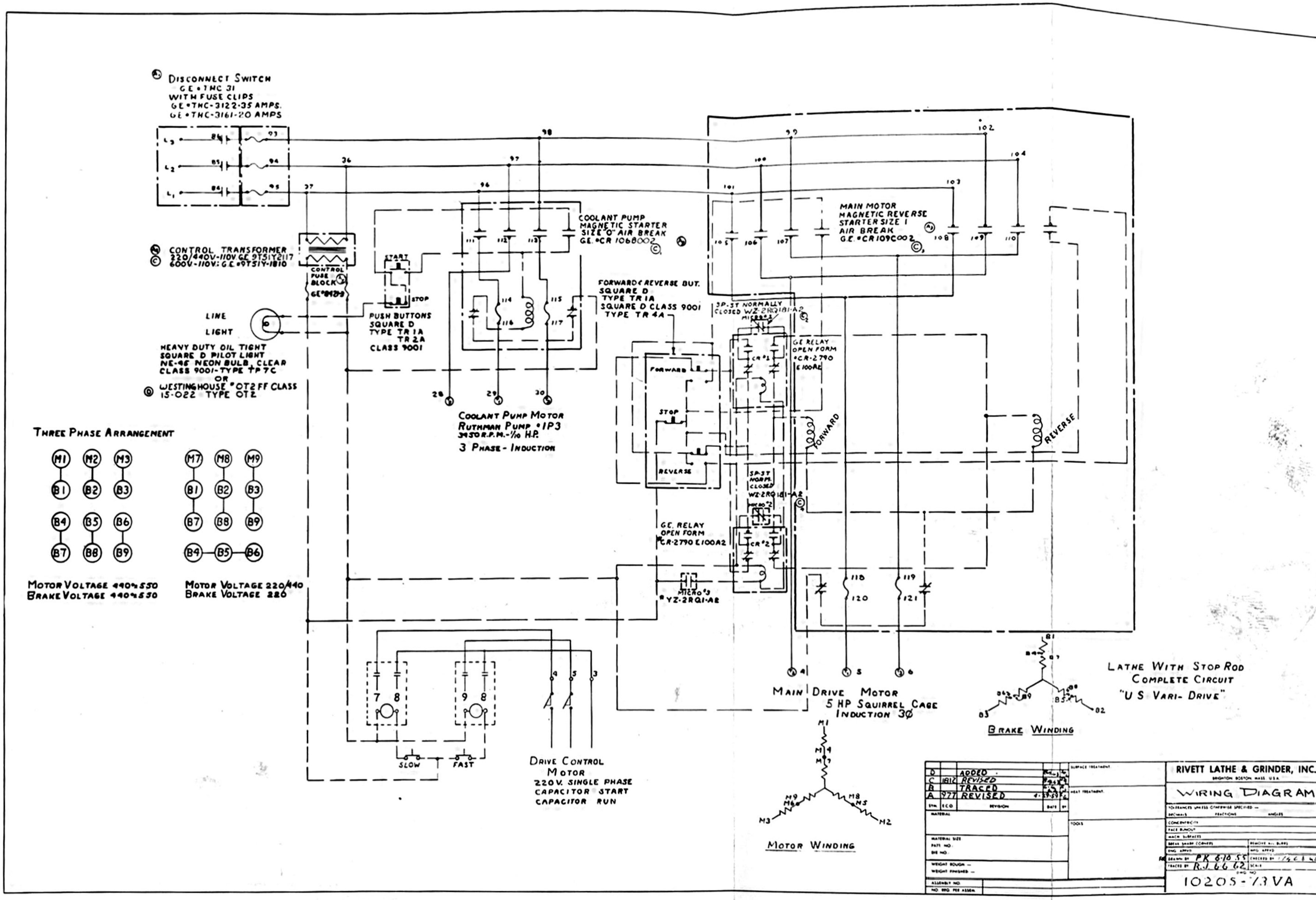
TOOLS

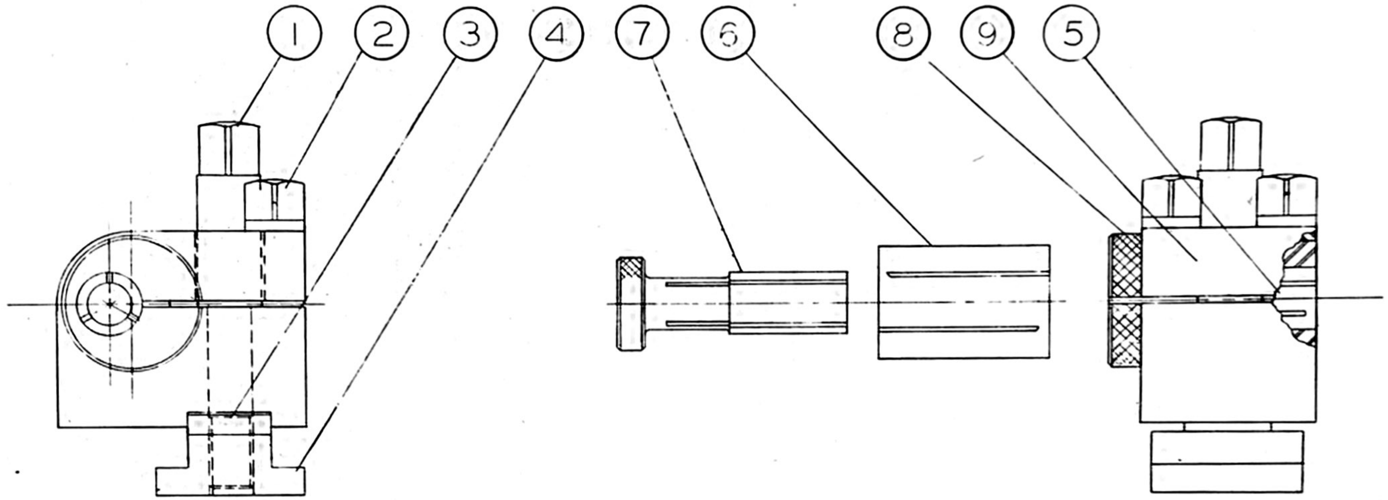
RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

WIRING DIAGRAM

TOLERANCES UNLESS OTHERWISE SPECIFIED —
DECIMALS FRACTIONS ANGLES
CONCENTRICITY
FACE RUNOUT
MACH SURFACES
BREAK SHARP CORNERS — REMOVE ALL BURRS
ENG APPVD — MFG APPVD
DRAWN BY P.K. 6-10-55 — CHECKED BY ETG 6-4-62
TRACED BY R.J. 6-4-62 — SCALE
DWG NO

10205-73UA


DISCONNECT SWITCH
GE • THC 31
WITH FUSE CLIPS
GE • THC-3122-35 AMPS.
GE • THC-3161-20 AMPS
CONTROL TRANSFORMER
220/440V-110V GE 9T51Y2117
600V-110V: GE 9T51Y-1810
CONTROL FUSE BLOCK
LINE
LIGHT
HEAVY DUTY OIL TIGHT
SQUARE D PILOT LIGHT
NE-45 NEON BULB, CLEAR
CLASS 9001-TYPE TP7C
OR
WESTINGHOUSE OT2 FF CLASS
15-022 TYPE OT2
START
STOP
PUSH BUTTONS
SQUARE D
TYPE TR 1A
TR 2A
CLASS 9001
COOLANT PUMP
MAGNETIC STARTER
SIZE "0" AIR BREAK
GE. CR 1068002
COOLANT PUMP MOTOR
RUTHMAN PUMP 1P3
3450 R.P.M.-1/10 H.P.
3 PHASE - INDUCTION
FORWARD & REVERSE BUT.
SQUARE D
TYPE TR 1A
SQUARE D CLASS 9001
TYPE TR 4A
FORWARD
STOP
REVERSE
MAIN MOTOR
MAGNETIC REVERSE
STARTER SIZE 1
AIR BREAK
G.E. CR109C002
SP-ST NORMALLY CLOSED WZ-2RQ181-A2
GE RELAY OPEN FORM CR-2790 E100A2
SP-ST NORM. CLOSED WZ-2RQ181-A2
GE. RELAY OPEN FORM CR-2790 E100A2
MICRO 3 YZ-2RQ1-A2
THREE PHASE ARRANGEMENT
MOTOR VOLTAGE 440 & 550
BRAKE VOLTAGE 440 & 550
MOTOR VOLTAGE 220/440
BRAKE VOLTAGE 220
SLOW
FAST
DRIVE CONTROL
MOTOR
220V. SINGLE PHASE
CAPACITOR START
CAPACITOR RUN
MAIN DRIVE MOTOR
5 HP SQUIRREL CAGE
INDUCTION 3Ø
MOTOR WINDING
BRAKE WINDING
LATHE WITH STOP ROD
COMPLETE CIRCUIT
"U S VARI- DRIVE"
D ADDED
C 1812 REVISED
B TRACED
A 977 REVISED
RIVETT LATHE & GRINDER, INC.
BRIGHTON BOSTON MASS. U.S.A.
WIRING DIAGRAM
10205-73VA



1	1020S-76B	BINDER BOLT
2	1020S-76A	CLAMP SCREW
3	1020S-76-514	TONGUE
4	1020R-76-451	BINDER SHOE
5	918-76-151	BUSHING
*6	918-76-152	BUSHING FOR 1" BAR
*7	918-76-457	SLEEVE FOR 5/16 SQ. BIT
8	918-76-456	ECCENTRIC SLEEVE
9	1020S-76-136	BINDER BODY

*WHEN SPECIFIED

SYM	REVISION	DATE	BY
C	ECO #495-WAS #7 & #8	7-6-57	
B	ADDED	9-11-8	
A	BROUGHT UP TO DATE	5-8-51	RS

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH.–
WEIGHT FINISHED.–

ASSEMBLY NO.
NO. REQ. PER ASSEM.

SURFACE TREATMENT:

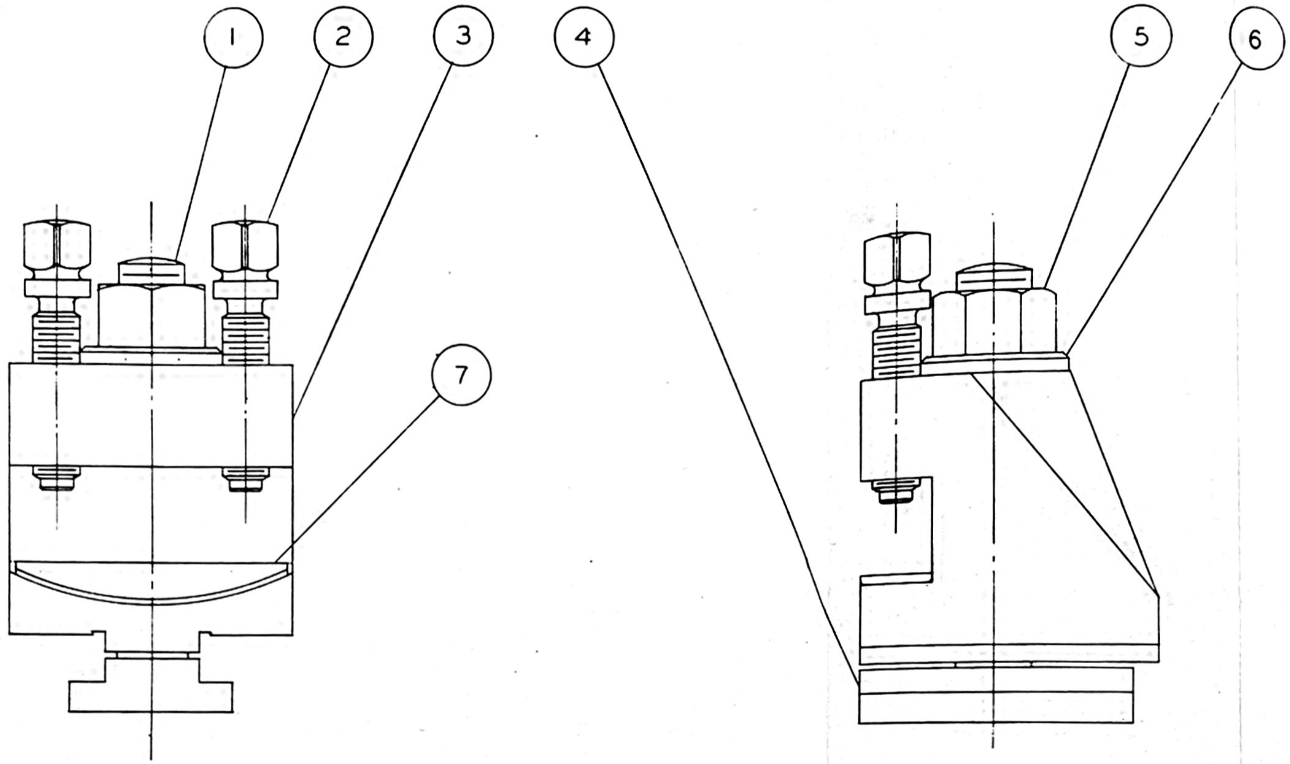
HEAT TREATMENT:

TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

ECCENTRIC TOOL HOLDER

TOLERANCES UNLESS OTHERWISE SPECIFIED:–
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY S.F. 6-30-47 CHECKED BY:
TRACED BY: SCALE FULL
DWG. NO. 1020S-76



1	1020R-77-497	TOOL POST STUD
2	1020R-9-639	TOOL POST SCREW
3	1020R-77-133	TOOL POST BLOCK
4	1020R-77-134	TOOL POST "T" BLOCK
5	3/4-10	REGULAR HEX NUT
6	1020R-77-521	TOOL POST WASHER
7	1020R-77-117	ROCKER BASE

SYM | REVISION | DATE | BY

MATERIAL:

MATERIAL SIZE:
PATT. NO.:
DIE NO.:

WEIGHT ROUGH:–
WEIGHT FINISHED:–

ASSEMBLY NO.
NO. REQ. PER ASSEM.

SURFACE TREATMENT:

HEAT TREATMENT:

TOOLS:

RIVETT LATHE & GRINDER, INC.
BRIGHTON, BOSTON, MASS., U.S.A.

SIDE MTG. TOOL POST ASSEM

TOLERANCES UNLESS OTHERWISE SPECIFIED:–
DECIMALS: FRACTIONS: ANGLES:
CONCENTRICITY:
FACE RUNOUT:
MACH. SURFACES:
BREAK SHARP CORNERS MAX. RADIUS
REMOVE ALL BURRS
DRAWN BY: R.W.G.- 5-10-49 | CHECKED BY:
TRACED BY: | SCALE: FULL SIZE
DWG. NO.
1020R-77

Parts List
Partial Motor
Uniclosed
TYPES HV, HVR, HVC
56 FRAME

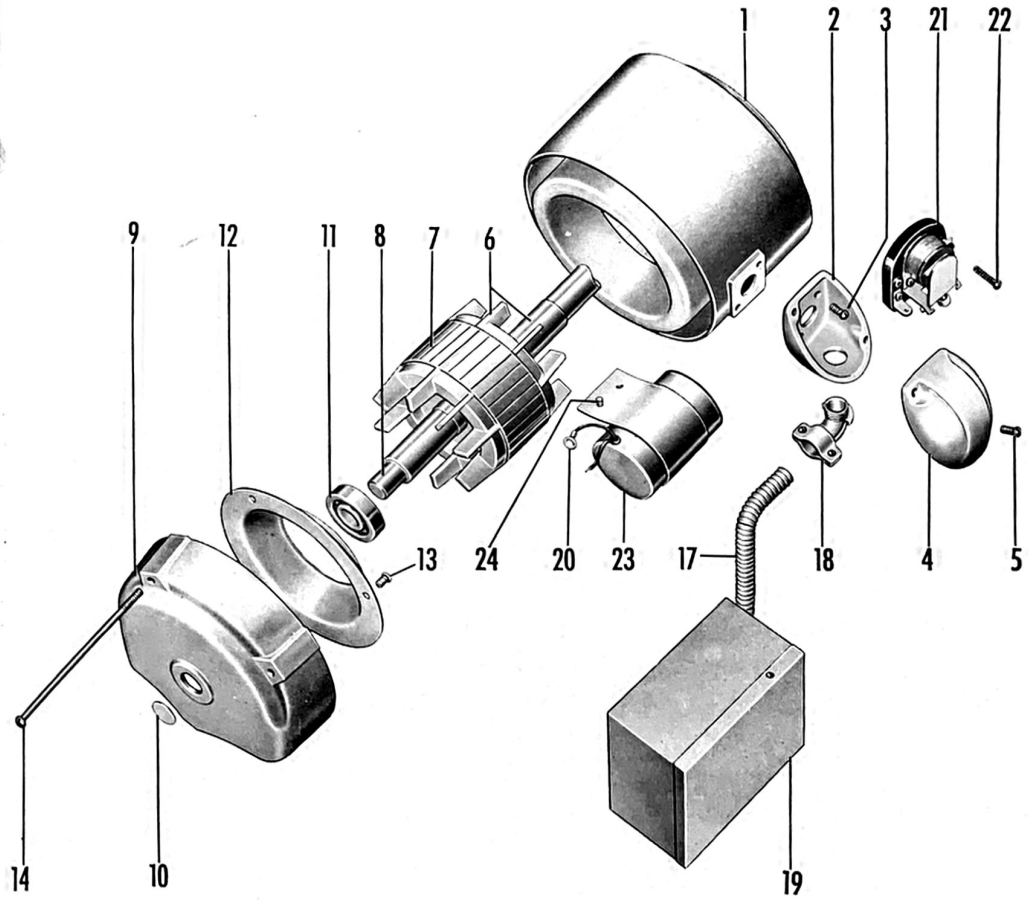
USED ON SYNCROGEAR MOTORS AND VARIDRIVE MOTORS
(FOR SYNCROGEARS SEE SECTION 760. FOR VARIDRIVES SEE SECTION 765.)

Effective
May 15, 1963

Supersedes Page 9
dtd. July 27, 1961

Motor Serial No._____ Frame No._____ Mech. Spec. No._____

ITEM NO.	QTY.	NAME OF PART	
1	1	Stator Assembly Includes:	
2	1	Outlet Box Base	
3	2	Round Head Screw (Base to Stator)	
4	1	Outlet Box Cover	
5	2	Round Head Screw (Cover to Base)	
6	1	Rotor Assembly Includes:	
7	1	Rotor Core	
8	1	Motor Shaft	
9	1	Bracket	
10	1	Bracket Plug	
11	1	Ball Bearing	
12	1	Air Deflector	
13	3	Round Head Screw (Air Deflector)	
14	4	Round Head Stove Bolt & Washer (Bracket to Stator)	
15	1	Bearing Cap (Used only on 5 Frame VARIDRIVE, Type VA) (Not Illustrated)	
16	2	Round Head Screw & Lockwasher (Used only on 5 Frame VARIDRIVE, Type VA) (Not Illustrated)	
17	1	Flexible Conduit (Used only on 5 Frame Single Phase VARIDRIVE, Type VA-C	
18	1	Angle Box Connector (Used only on 5 Frame Single Phase VARIDRIVE, Type VA-C	
19	1	Capacitor Box Assembly (Used only on 5 Frame Single Phase VARIDRIVE, Type VA-C)	
20	2	Plastigrip Lug (Used only on Single Phase Motor, Type HVR)	
21	1	Relay Assembly (Used only on Single Phase Motor, Type HVR)	
22	2	Round Head Screw (Used only on Single Phase Motor, Type HVR)	
23	1	Capacitor (Not used on 3 or 2 Phase Motor, Type HV)	
24	2	Round Head Screw & Lockwasher (Not used on 3 or 2 Phase Motor, Type HV)	



ORDERING

When ordering parts, specify motor serial number, complete frame number, name of part and complete part number. The complete part number consists of the Parts List Section and Page Number as well as the Item Number as follows:

EXAMPLE: Quantity 1, Capacitor, Part Number 756 - 5 - 23

Section Number — Page No. — Item Number

U.S. ELECTRICAL MOTORS
DIVISION OF EMERSON ELECTRIC MFG. CO.
LOS ANGELES, CALIF. MILFORD, CONN.

Printed In U.S.A.

Partial Motors

Totally Enclosed & Explosion Proof

TYPES JV,EV,JVN & EVN

FRAMES 182-445U

USED ON SYNCROGEAR MOTORS AND VARIDRIVE MOTORS
(FOR SYNCROGEARS SEE SECTION 760. FOR VARIDRIVES SEE SECTION 765.)

Motor Serial No._____ Frame No._____ Mech. Spec No._____

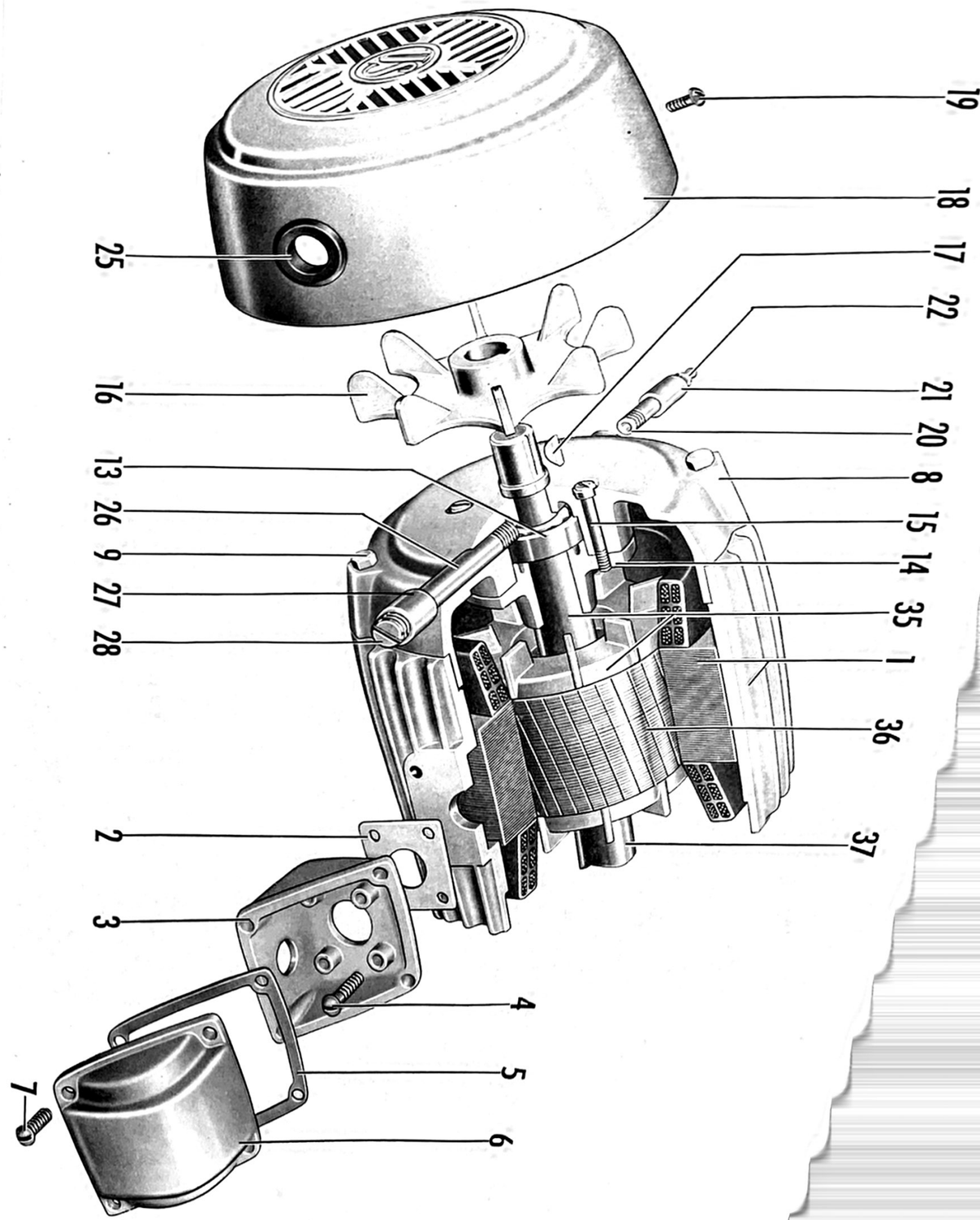
ITEM NO.	QTY.	NAME OF PART	
1	1	**Stator Assembly** (Includes Items 2 through 7 on Frames 182-365U)	
2	1	**Gasket (Outlet Box Base)** (Type JV only)	
3	1	**Outlet Box Base**	
4	4	**Rd. Head Screw (Base to Stator)**	
5	1	**Gasket (Outlet Box to Cover)** (Type JV only)	
6	1	**Outlet Box Cover**	
7	4	**Rd. Head Screw (Cover to Base)**	
8	1	**Bracket (S.E.)**	
9	4	**Hex. Head Cap Screw (Bracket to Stator)** (Qty. 8 on Frames 324U and larger)	
10	1	**Condensation Drain Plug** (Not Illustrated)	
11	1	**Condensation Drain Bushing** (Not Illustrated)	
12	2	**Roll Pin (Drain Plug)** (Not Illustrated)	
13	1	**Ball Bearing**	
14	1	**Bearing Cap**	
15	3	**Fill Head Screws (Bearing Cap)** (Qty. 2 on Type JV)	
16	1	**Ventilating Fan** (Not used on Type EVN or JVN)	
17	1	**Key (Ventilating Fan)** (Not used on Type EVN or JVN)	
18	1	**Fan Cover Guard** (Not used on Type EVN or JVN)	
19	4	**Rd. Head Screw and Washer (Fan Guard to Bracket)** (Not used on Type EVN orJVN) (Qty. 6 on Frames 324U & Larger)	
20	1	**Pipe Nipple (Fill)** (Not used on Type EVN or JVN)	
21	1	**Pipe Coupling (Fill)** (Not used on Type EVN or JVN)	
22	1	**Grease Fitting (Fill)** (Not used on Type EVN or JVN)	
23	1	**Air Deflector** (Used only on Frames 324U & Larger) (Not Illustrated)	
24	4	**Sem. (Deflector)** (Used only on frames 324U & Larger) (Not Illustrated)	
25	2	**Grommet** (Not used on Type EVN or JVN)	
26	1	**Pipe Nipple (Drain)** (Not used on Type EVN or JVN)	
27	1	**Pipe Coupling (Drain)** (Not used on Type EVN or JVN)	
28	1	**Drain Plunger Assembly** (Not used on Type EVN or JVN)	
29	1	**Locknut and Lockwasher** (Used only on Frames 284U-404U) (Not Illustrated)	
30	2	**Socket Set Screw (Water Deflector)** (Used only with 61 Frame, Type GD & GL SYNCROGEARS) (Not Illustrated)	
31	1	**Water Deflector** (Used only on Frames 364U & Larger) (Not Illustrated)	
32	1	**Plug** (Used only on Frames 364U-405U when used with 61 Frame, Type GD & GL SYNCROGEARS) (Not Illustrated)	
33	1	**Bracket Plug** (Type EVN & JVN only) (Not Illustrated)	
34	1	**Pipe Plug (Drain)** (Type EVN & JVN only) (Not Illustrated)	
35	1	**Rotor Assembly Includes:**	
36	1	**Rotor**	
37	1	**Shaft**	
38	1	**Square Key** (Frames 364U-365U only) (Not Illustrated)	
		When partial motor is used on Type GDV SYNCROGEARS and VEV-GDV VARIDRIVE-SYNCROGEARS, omit items 8, 10, 11 & 12 on Type EV only; omit items 9, 13, 14, 24 & 25 on Types EV & JV and add the following parts which are not illustrated:	
39	1	**Canopy Cap**	
40	2	**Eye Bolt (Canopy Cap)**	
41	1	**Fan Cover Guard**	
42	4	**Cap Nut (Fan Cover Guard)** (Qty. 8 on frames 324U & 326U)	
43	4	**Hex. Jam Nut (Fan Cover Guard)** (Qty. 8 on Frames 324U & 326U)	
44	4	**Stud** (Qty. 8 on Frames 324U & 326U)	
45	4	**Hex. Nut (Bracket to Stator)** (Qty. 8 on Frames 324U & 326U)	
46	1	**Bracket (S.E.)** (Type EV only)	

ORDERING

When ordering parts, specify motor serial number, complete frame number, name of part and complete part number. The complete part number consists of the Parts List Section and Page Number as well as the Item Number as follows:

EXAMPLE: Quantity 1, Outlet Box Base, Part Number 758 - 11 - 3
(Section Number / Page No. / Item Number)

Printed In U.S.A.



Parts List

U. S. Open Type Varidrive Motors

TYPE VO 13 & 23 FRAME

Effective
April 27, 1953

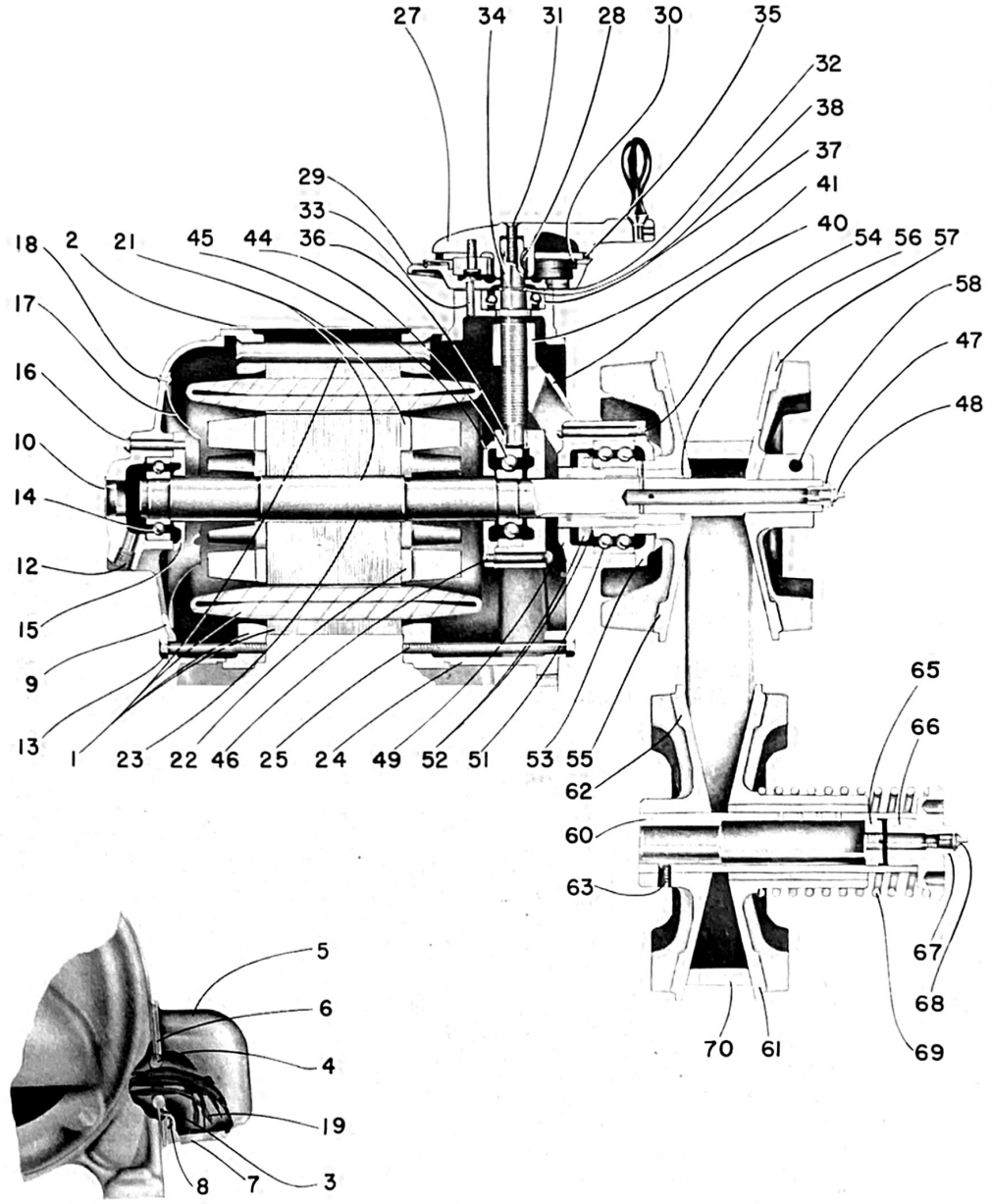
Supersedes
May 15, 1950

NOTE: When ordering replacement parts, specify Motor Serial Number, Frame Number, Name of Part and Item Number.

Motor Serial Number_____ Frame Number_____ Type_____

ITEM NO.	QTY.	NAME OF PART	
1	1	Stator Assembly	
2	1	Stator Cover	
3	8	Rd. Hd. Screws	
4	1	Rubber Bushing (Lead Insulation, Frames 66 through 225 only)	
5	1	Outlet Box	
6	1	Outlet Box Gasket	
7	1	Conduit Nut	
8	4	Rd. Hd. Screw (Outlet Box to Stator Cover)	
9	1	Motor Bracket	
10	1	Bracket Plug	
11	1	Grease Fitting (Fill)(Not Illustrated)	
12	1	Slotted Headless Pipe Plug (Grease Drain)	
13	4	Hex. Hd. Cap Screw (Bracket to Stator)	
14	1	Ball Bearing	
15	1	Bearing Cap	
16	3	Rd. Hd. Screw & Shakeproof Lockwasher	
17	1	Air Deflector	
18	4	Rivet (Air Deflector to Bracket – Qty. is 6 on 66 through 204 frames)	
19	1	Connection Lug Group (Includes connection Lugs, Screws and Nuts)	
20	1	Connection Plate Group (Includes Connection Plate and Drive Screws) (Not Illustrated)	
		MOTOR TO VARIDRIVE CONNECTION Includes:	
21	1	Rotor Assembly Includes:	
22	1	Rotor Core	
23	1	Motor Shaft	
24	1	Adaptor Bracket	
25	4	Hex. Hd. Cap Screw (Adaptor Bracket to Stator)	
26	1	Grease Fitting (Adaptor Bracket Grease Fill) (Not used on 13 Case) (Not Illustrated)	
27	1	Control Wheel Assembly Includes:	
	1	Control Wheel	
	1	Handle	
	1	Allen Set Screw	
	1	Pinion	
	1	Pinion Pin	
	1	Fibre Washer	
	1	Retaining Ring	
28	1	Woodruff Key	
29	1	Dial Plate Assembly Includes:	
	1	Dial Plate	
	1	Dial Number Plate	
	3	Drive Screw	
30	1	Pointer Ring Gear	

ITEM NO.	QTY.	NAME OF PART	
31	1	Flat Hd. Socket Cap Screw	
32	1	Enclosure Plate	
33	4	Rd. Hd. Screw & Shakeproof Lockwasher (Dial Plate to Adaptor Bracket)	
34	1	Control Shaft	
35	1	Felt Washer	
36	1	Needle Bearing (Position #12 Not used on 13 Case)	
37	1	Ball Bearing (Position #13)	
38	1	Lockring (Position #13 Bearing)	
39	2	Socket Hd. Cap Screw (Shifting Lever to Control Nut) (Not Illustrated)	
40	1	Shifting Lever	
41	1	Control Nut	
42	1	Allen Set Screw (Low Speed Stop) (Not Illustrated)	
43	1	Set Screw (High Speed Stop) (Not Illustrated)	
44	1	Ball Bearing (Position #10)	
45	1	Bearing Cap (Position #10, Not used on 13 Case)	
46	3	Rd. Hd. Screw & Shakeproof Lockwasher (Not used on 13 Case)	
47	1	Reducer Bushing	
48	1	Grease Fitting (Motor Shaft – Grease Fill)	
49	1	Shifting Bearing Housing	
50	2	Socket Hd. Cap Screw (Shifting Lever to Shifting Bearing Housing) (Not Illustrated)	
51	1	Ball Bearing (Position #9)	
52	1	Locknut & Lockwasher	
53	1	Bearing Cap (Position #9 Bearing)	
54	3	Rd. Hd. Screw & Shakeproof Lockwasher (Bearing Cap)	
55	1	Adjustable Motor Varidisc Assembly (Includes Varidisc and Bushing)	
56	2	Spline Seal	
57	1	Stationary Motor Varidisc	
58	2	Hex. Hd. Cap Screw (Sta. Varidisc)	
59	1	Varidisc & Hub Assembly Includes:	
60	1	Hub	
61	1	Adjustable Driven Varidisc & Bushing	
62	1	Stationary Driven Varidisc	
63	3	Allen Set Screw	
64	1	Sq. Key (Not Illustrated)	
65	1	Spring Remover Plug	
66	1	Spring Retainer	
67	1	Reducer Bushing	
68	1	Grease Fitting	
69	1	Spring	
70	1	Varibelt	
71	1	Nameplate Group (Includes all Plate and Screws) (Not Illustrated)	



U.S. ELECTRICAL MOTORS Inc.

PACIFIC PLANT
Los Angeles 54, Calif.

ATLANTIC PLANT
Milford, Conn.

Parts List

U. S. Varidrive Motors
Electric Remote Control

TYPES ERH & ERHB
HEAVY DUTY

Section 765
Page 113

Effective
January 15, 1964

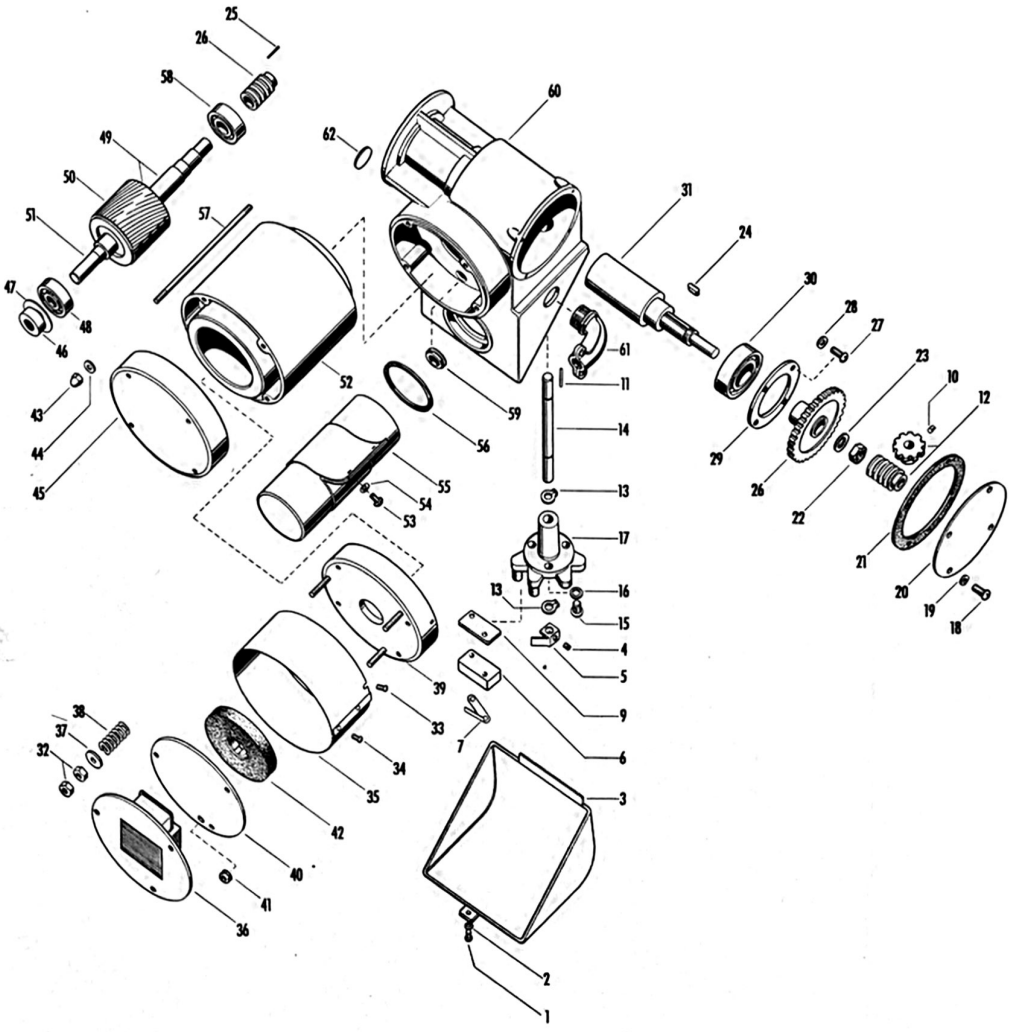
Supersedes
Page 120, dated
July 20, 1953

FOR 13 THROUGH 84 FRAME VARIDRIVES

Motor Serial No._____ Frame No._____ Type_____ Specification No._____

ITEM NO.	QTY.	NAME OF PART	
1	1	Screw	
2	1	Lockwasher	
3	1	Cover	
4	2	Set Screw (Speed Stop Cam)	
5	2	Speed Stop Cam	
6	2	Micro Switch (Includes 4 attaching Screws)	
7	2	Auxiliary Actuator	
8	As Required	Solderless Terminals (Not Illustrated)	
9	2	Insulating Plate	
10	1	Set Screw (Speed Stop Worm Gear)	
11	1	Groove Pin (Speed Stop Worm)	
12	1	Worm and Worm Gear Group (Speed Stop Train)	
13	2	Snap Ring (Truarc)	
14	1	Worm Gear Cam Shaft	
15	3	Screw (Cam Shaft Bearing Housing)	
16	3	Lockwasher	
17	1	Cam Shaft Bearing Housing Assembly	
18	4	Screw (Control Housing Cover)	
19	4	Lockwasher	
20	1	Control Housing Cover	
21	1	Gasket	
22	1	Half Nut	
23	1	Lockwasher	
24	1	Key (Primary Worm Gear)	
25	1	Taper Pin (Primary Worm)	
26	1	Primary Worm and Worm Gear Group	
27	4	Screw (Bearing Clamp)	
28	4	Lockwasher	
29	1	Bearing Clamp	
30	1	Ball Bearing	
31	1	Worm Gear Control Shaft	
		Items 32 thru 42 for Type ERHB Only	
32	6	Hex. Nut	

ITEM NO.	QTY.	NAME OF PART	
33	1	Screw (Cover)	
34	2	Self Tapping Screw and Lockwasher	
35	1	Cover	
36	1	Support Plate and Coil Assembly	
37	3	Washer	
38	3	Spring	
39	1	Brake Bracket Assembly	
40	1	Pressure Plate	
41	1	Grommet (Pressure Plate)	
42	1	Brake Disc Assembly	
43	4	Cap Nut	
44	4	Washer	
45	1	S. E. Bracket	
46	1	Seal (Type ERH Only)	
47	1	Belleville Washer	
48	1	Ball Bearing	
49	1	Rotor Assembly (Includes Items 50 and 51)	
50	1	Rotor Core	
51	1	Motor Shaft	
52	1	Wound Stator Assembly (Includes Items 53 thru 56)	
53	2	Screw (Capacitor)	
54	2	Washer (Capacitor)	
55	1	Capacitor	
56	1	Gasket (Capacitor)	
57	4	Stud	
58	1	Ball Bearing	
59	1	Grommet (Motor Leads)	
60	1	Gear Case	
61	2 (220 Volt) 1 (115 Volt)	90° Elbow Fitting	
62	1	Plug (115 Volt only)	



ORDERING

When ordering parts, specify motor serial number, complete frame number, name of part and complete part number. The complete part number consists of the Parts List Section and Page Number as well as the Item Number as follows:

EXAMPLE: Quantity 1, Screw, Part Number 765 - 113 - 1
(765 = Section Number; 113 = Page No.; 1 = Item Number)

U.S. ELECTRICAL MOTORS
DIVISION OF EMERSON ELECTRIC MFG. CO.
LOS ANGELES, CALIF. MILFORD, CONN.

Printed In U.S.A.

GENERAL INSTRUCTIONS

A U. S. VARIDRIVE Motor is a precision machine accurately adjusted and carefully tested by U. S. Test Engineers before shipment. No adjustments should be necessary if unit is properly lubricated and operated under normal conditions.

Do not try to force the control wheel beyond speeds shown on the VARIDRIVE Motor or VARIDRIVE-SYNCROGEAR Motor name plate or set speed stops for speeds other than shown on name plate. The mechanism and belt in the unit are designed for the speeds shown on the name plate and operation at other speeds will result in injury to the belt and mechanism.

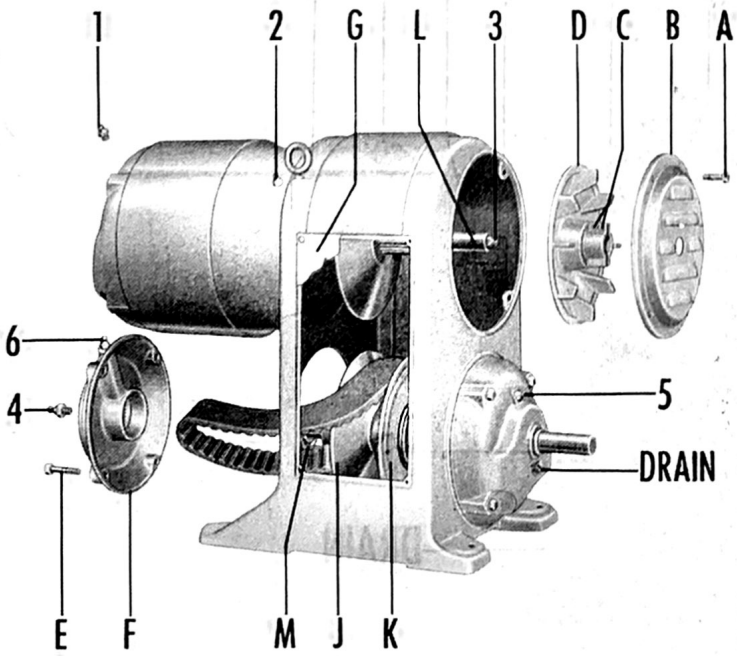
CAUTION: Do not turn control wheel unless VARIDRIVE Motor is running.

When ordering replacement VARIBELTS, specify the VARIBELT number which is found on the Instruction Plate and the motor serial number which is found on the motor name plate. Only in this way can you obtain the service of U. S. Engineers in checking specifications of this particular unit in the U. S. files to see that you obtain the latest and correct type of belt for your particular unit. It is important for satisfactory operation that a genuine U. S. VARIBELT be used as any other belt obviates the guaranteed performance. Our guarantee applies only when genuine U.S. VARIBELTS are used.

VARIBELTS

REMOVING VARIBELT

1. Remove 4 hex head cap screws "A" and front plate cover "B".
2. Remove side plate cover "G".
3. Measure and note exactly the distance "H" in inches.
4. Loosen 2 hex head cap screws "C" on VARIDISC hub "D". (4 screws on 54 frame.)
5. Remove VARIDISC "D" from motor shaft. When necessary, remove bushing and fitting from end of motor shaft before removing VARIDISC "D".
6. Remove 4 hex head cap screws "E" and support bracket "F".
7. Withdraw VARIBELT through opening around bearing end "M" of variable shaft.

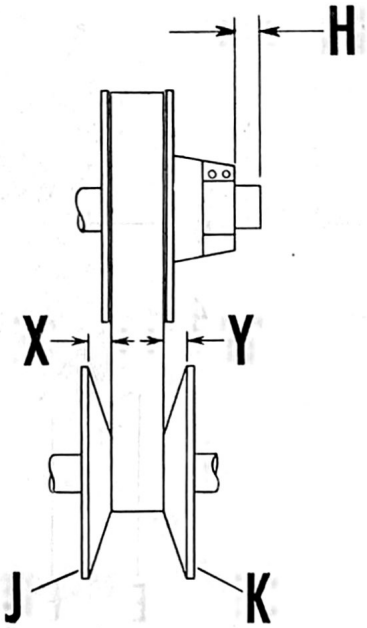


INSTALLING VARIBELT

1. Insert VARIBELT through variable end opening of frame case over bearing end "M" of variable shaft and between VARIDISCS "J" and "K".
2. Pass VARIBELT over end of motor shaft "L".
3. Replace VARIDISC "D" to exactly the same position, and to the same distance "H" as when removed. This is necessary to insure proper belt alignment. See Item 3 "Removing VARIBELT".
4. Tighten securely 2 hex head cap screws "C", clamping stationary VARIDISC "D" to motor shaft.
5. Rotate VARIDISC by hand and turn control wheel until belt slack is taken up.

VARIBELT ALIGNMENT

To obtain satisfactory belt life, at no time should the VARIBELT be run more than 1/16" out of line. VARIBELT alignment is attained by shifting VARIDISC "J" to the proper position on the variable shaft. A check on VARIBELT misalignment may be determined by measuring the distances "X" and "Y". See Item 3 "Removing VARIBELT" and Item 3 "Installing VARIBELT".



U. S. Varidrive Motors

INSTRUCTIONS

14, 23, 44 & 54 FRAMES
"Z" ASSEMBLY

LUBRICATION INSTRUCTIONS

1. Ball bearing location 1, bracket bearing location 6, and take-off bearing location 5 are equipped with LUBRIFLUSH and should be greased at least once every year. To re-lubricate, remove drain plugs located at each bearing. Apply grease gun to "Fill" fitting and inject new grease until all of old grease is discharged at drain. Allow motor to run a few minutes before replacing drain plugs.

2. Remove front plate cover "B" and grease motor shaft at location 3 every 30 days of operation. This will lubricate the sliding bushing and shifting bearing.

3. Grease the variable shaft at location 4 every 30 days. This will lubricate the sliding fit of VARIDISC "J" on the driven end. Be sure any excess grease is removed from shaft or it will be thrown off on to the VARIBELT.

4. Grease motor ball bearing location 2 on the 23, 44, and 54 frames at least once every year. Do not over-lubricate as the excess grease will be forced out of shaft openings.

Hydraulic grease fittings are available at locations 1, 2, 3, 4, 5 and 6. NOTE: The 23, 44 and 54 frame VARIDRIVE-SYNCROGEARS (with gear case) do not have a grease fitting at location 5. The 44 frame VARIDRIVE does not have grease fittings at locations 2 or 5.

IMPORTANT: Run the unit over its entire speed range at least once a week.

For a list of recommended oils and greases refer to "Operating Instructions" folder attached to unit when shipped.

Use recommended greases and DO NOT OVER-LUBRICATE.

NOTE: If the bearing housings are filled with too large an amount of lubricant, the bearings will run hot and the surplus grease will be forced out around the shaft. Care should be taken to avoid this condition and all surplus lubricant removed.

VARIBELT and inclined faces of VARIDISCS should be kept clean and free from any grease or lubricant.

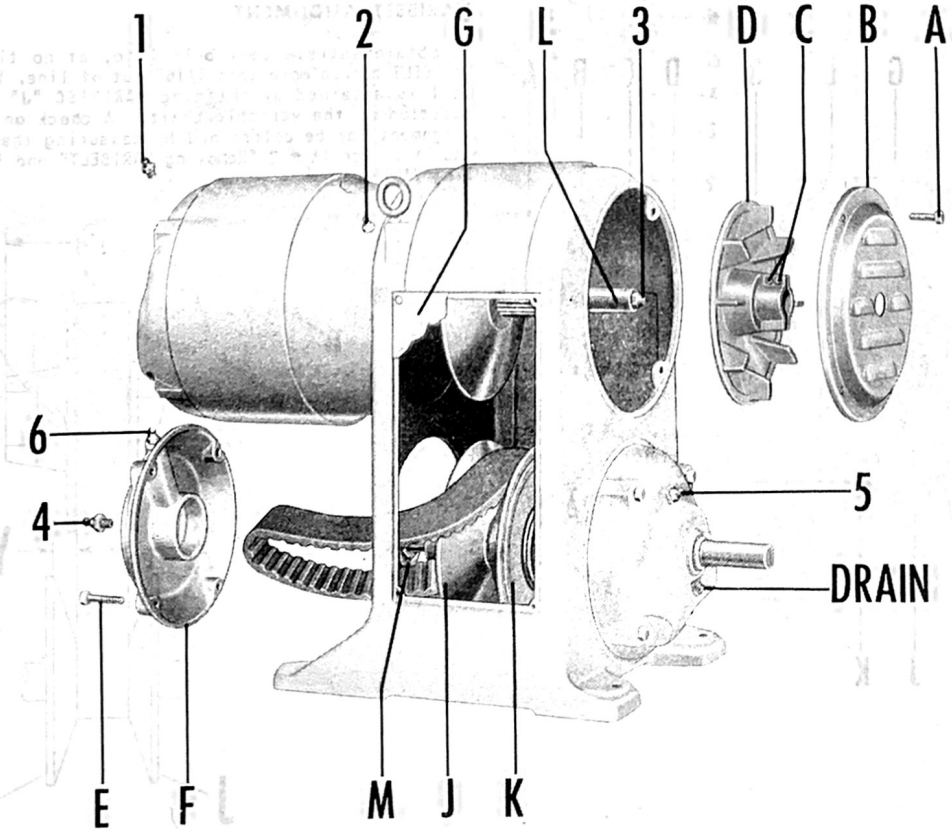
If excess grease is accidently thrown on to VARIBELT or VARIDISCS, use lacquer thinner or a clean cloth to remove. Do not use gasoline on the VARIBELT.

GEAR CASE LUBRICATION INSTRUCTIONS FOR VARIDRIVE-SYNCROGEAR MOTORS

Keep gear case filled to proper oil level.

Change oil after first week of service and twice yearly thereafter.

Refer to "Instruction Plate" on gear case for proper lubricant.



BULLETIN 7030
DATE AUGUST 1, 1961

MAINTENANCE and INSTALLATION INSTRUCTIONS for Stearns ELECTRIC DISC BRAKES

STEARNS ELECTRIC CORPORATION

Phone BRoadway 2-1100

120 NORTH BROADWAY MILWAUKEE 2, WISCONSIN

HOW TO USE THIS MANUAL

From Table No. 1 — Brake Instruction Index, find your brake model then choose appropriate maintenance instructions. Turn to section given and follow instructions.

TABLE NO. 1 — BRAKE INSTRUCTION INDEX

Brake Series	Instruction Section: Installation	Adjust For Wear	Coil Replacement	Renewal Of Friction Discs
H-40		A-6	B-3	
H-50	Use	A-6	B-3	Use
H-60		A-2 or A-5	B-1	
H-70	Section	A-2 or A-5	B-1	Section
H-80		A-2 or A-5	B-1	
H-1000	"D"	A-2 or A-5	B-1	"C"
H-1200		A-3 or A-4	B-2	
H-1300	For	A-3 or A-4	B-2	For
HT-50		A-6	B-3	
HT-70	All	A-1 or A-4	B-1	All
R-80		A-2 or A-5	——	
R-1000	Models	A-2 or A-5	B-1	Models
R-1300		A-3 or A-4	B-2	
87,000		Self-adjusting	B-1	

Brake Series	Instruction Section: Installation	Adjust For Wear	Coil Replacement	Renewal Of Friction Discs
HTA-70		A-1 or A-4	B-1	
HTS-70	Use	A-1 or A-4	B-1	Use
HTC-50		A-6	B-3	
HTCS-50	Section	A-6	B-3	Section
HTCR-50		A-6	B-3	
HS-50	"D"	A-6	B-3	"C"
HRA-50		A-6	B-3	
HCA-50	For	A-6	B-3	For
BA-50		A-6	B-3	
HK-1200	All	A-3 or A-4	B-1	All
AL-50		A-6	B-3	
AL-70	Models	A-2 or A-5	B-1	Models
AL-80		A-2 or A-5	B-1	
46,000		A-2 or A-5	B-1	

Brake Series	Instruction Section: Installation	Adjust For Wear	Coil Replacement	Renewal Of Friction Discs
ALT-7	Use Section "D"	A-1 or A-4	B-1	
ALTA-70		A-1 or A-4	B-1	Use
ALTB-70		A-1 or A-4	B-1	
42,000		A-1 or A-4	B-1	Section
UH-50	*	A-6	B-3	
UHF-50	*	A-6	B-3	"C"
UH-70	*	A-5	B-1	
UHF-70	*	A-5	B-1	For
UH-80	*	A-5	B-1	
UHF-80	*	A-5	B-1	All
EXG-70	*	A-5	B-1	
EXGF-70	*	A-5	B-1	Models

*Consult Milwaukee for installation instructions.

TABLE NO II — SOLENOID GAPS

BRAKE SERIES	Specific Brake Size	Approx. Solenoid Gap
H-40	All Models	7/16"
H-50, H-60*, HT-50, HTC-50,	52, 52A, 62	13/32"
HTCS-50, HTCR-50	54, 64	1/2"
HS-50, HRA-50, HCA-50, BA-50	56, 56A, 66	9/16"
AL-50, UH-50, UHF-50	58	9/16"
42,000	All Models	3/4"
46,000	All Models	1-1/16"

BRAKE SERIES	Specific Brake Size	Approx. Solenoid Gap
H-70, H-80*, HT-70, R-80*, HTA-70,	72,72A,72B,72C, 82, 82A, 82B	7/16"
HTS-70, AL-70, AL-80, ALT-70,	74, 74A, 84B	9/16"
ALTA-70, ALTB-70, UH-70, UHF-70, UH-80*, UHF-80*, EXG-70, EXGF-70	76, 76A, 86B	5/8"
H-1000, R-1000	All Models	9/16"
H-1200, H-1300, R-1300, HK-1200	All Models	1-3/16"

* For Direct Current Brakes, the Gap between the Armature and the Magnet Body should be approximately .042".

TROUBLE SHOOTING

FAILURE TO STOP

If brake does not stop properly:

1. Check to see if brake is in need of adjustment for lining wear.
2. Friction discs may be badly worn or broken and must be replaced.
3. Check to see if hub has shifted on shaft.

EXCESSIVE HUMMING

If excessive humming is heard from brake solenoid, the plunger isn't seating properly. This may cause Coil failure. To correct:

1. Clean solenoid of dirt or foreign matter between plunger and coil frame.
2. The coil frame may have shifted from use and isn't seating properly. Align coil frame so plunger seats properly.

FAILURE TO RELEASE

If brake does not release when solenoid is energized, check for the following:

1. Broken lead.
2. Low voltage. If voltage is too low for the solenoid, the plunger may make an effort to pull in, but may not pull in completely. This could cause coil failure.
3. Coil failure. A coil may be burned-out due to low voltage, poor voltage regulation, too rapid cycling, over voltage or improper seating of plunger (humming). Before installing new coil, check for above causes and correct.

SECTION "A" — ADJUSTMENT FOR FRICTION DISC WEAR

HOW TO DETERMINE IF BRAKE IS IN NEED OF ADJUSTMENT

With current off, indicator at "NORMAL" or "ON" position indicates brake is in proper adjustment. When indicator is at the "ADJUST" position, or if marked increase in stopping time is noted, adjustment for wear is necessary. For brakes MOUNTED VERTICALLY, remove plastic release cover (if present) and depress lever or turn knob in release direction until spring pressure is felt. If indicator is at the "ADJUST" position at this point, adjust for wear.

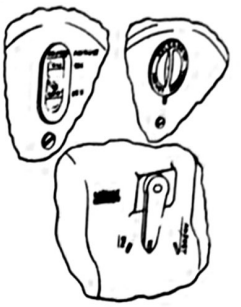


FIG. A

SECTION A-1

Steps: 1. Remove pipe plug in Housing.

2. Insert Screwdriver and turn Adjusting Stud in Clockwise direction until indicator returns to the "ON" or "NORMAL" position.

3. Replace pipe plug.

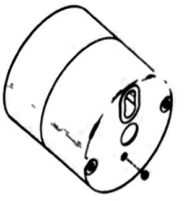


FIG. A-1

SECTION A-2

Steps: 1. Remove pipe plug in Housing.
2. Insert Screwdriver and turn Adjusting Stud in Counter-Clockwise direction until indicator returns to the "ON" or "NORMAL" position. (For 46,000 Series, turn both Adjusting Studs equal amount until "on" position is reached.)
3. Replace pipe plug.

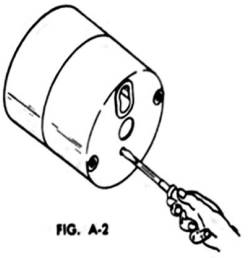


FIG. A-2

SECTION A-3

Steps. 1. Remove Manual Release Cover.

2. Loosen Locknut by turning in a Counter-Clockwise direction.

3. Insert Screwdriver into slot in Adjusting Stud and turn Clockwise until indicator is at approximately the "ON" position.

4. Tighten Locknut against Adjusting Stud and replace Manual Release Cover.

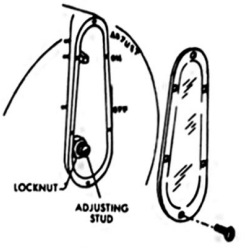


FIG. A-3

SECTION A-4

Steps: 1. Remove Housing.

2. Insert Screwdriver and turn Adjusting Stud in Clockwise direction until proper solenoid gap is attained. (See Table No. II, SOLENOID GAPS.)

3. Replace Housing.

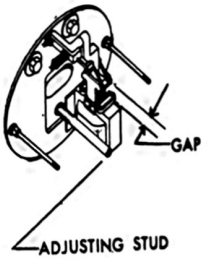


FIG. A-4

SECTION A-5

Steps: 1. Remove Housing.
2. Insert Screwdriver and turn Adjusting Stud in Counter-Clockwise direction until proper solenoid gap is attained. (See Table No. II, SOLENOID GAPS.) (For 46,000 Series, turn both Adjusting Studs equal amount to maintain equal Solenoid Gaps.)
3. Replace Housing.

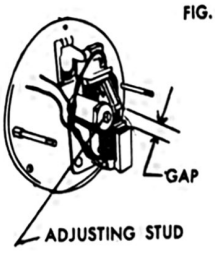


FIG. A-5

SECTION A-6

Steps: 1. Remove Housing.

2. Turn both Adjusting Screws equal amounts, approximately ⅛ turn Clockwise, until proper solenoid gap is attained. (See Table No. II, SOLENOID GAPS.)

3. Maximum torque may be obtained after operating brake several times, then turning Adjusting Screws very slightly either way and noting which position of fine adjustment provides satisfactory stopping without changing solenoid gap.

4. Replace Housing.

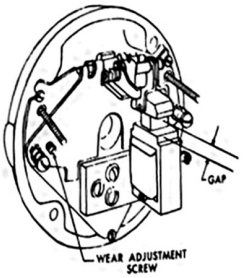


FIG. A-6

NOTES: 1. After brake has been adjusted, energize coil or depress plunger to close gap, then manually rotate shaft (DO NOT START MOTOR) and make certain that shaft rotates freely. This will insure sufficient turning clearance exists between frictional parts.

SECTION "B" — COIL REPLACEMENT

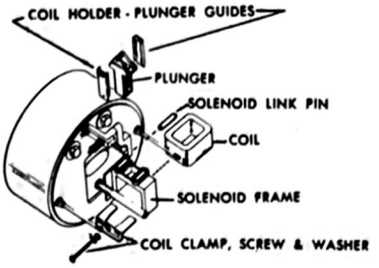


FIG. B-1

SECTION B-1

Steps:
1. Disconnect Solenoid from circuit.
2. Remove Solenoid Link Pin.
3. Lift Plunger from Solenoid Frame.
4. Remove Coil Clamp, Screw and Lockwasher.
5. Slide Coil sideways from frame. To reassemble, follow preceding steps in reverse order.

SECTION B-2

Steps:
1. Disconnect Solenoid from circuit.
2. Remove Solenoid Link Pin.
3. Lift Plunger from Solenoid Frame.
4. Remove cotter key from bottom of Solenoid Frame, remove Plunger Guides and Angle Guides.
5. Press Coil downward and remove top half of two piece coil by moving to side. Remove Retaining Springs and Insulating Pieces.
6. The new coil must be assembled in the same relative position as the old one. Top and bottom sections can be identified by numbers found on each section. To install new coil, simply reverse the process described above.

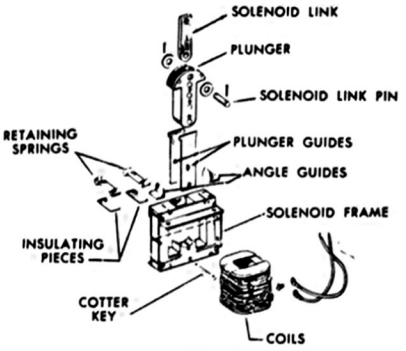


FIG. B-2

SECTION B-3

Steps:
1. Disconnect Solenoid from circuit.
2. Insert Screwdriver between Support Plate and Lever Arm, wedge apart and remove Bearing Pin, and Solenoid Lever with Solenoid Link and Plunger.
3. Remove Screw and Lockwasher, Coil Clamp and Coil Holder-Plunger Guide.
4. Slide Coil sideways from frame. To reassemble, follow preceding steps in reverse order.

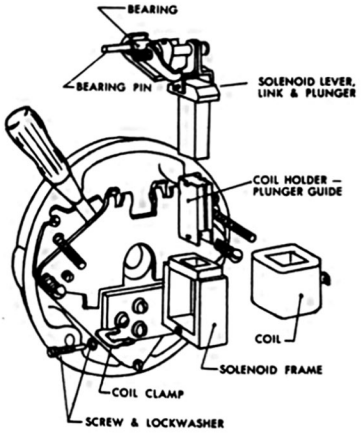
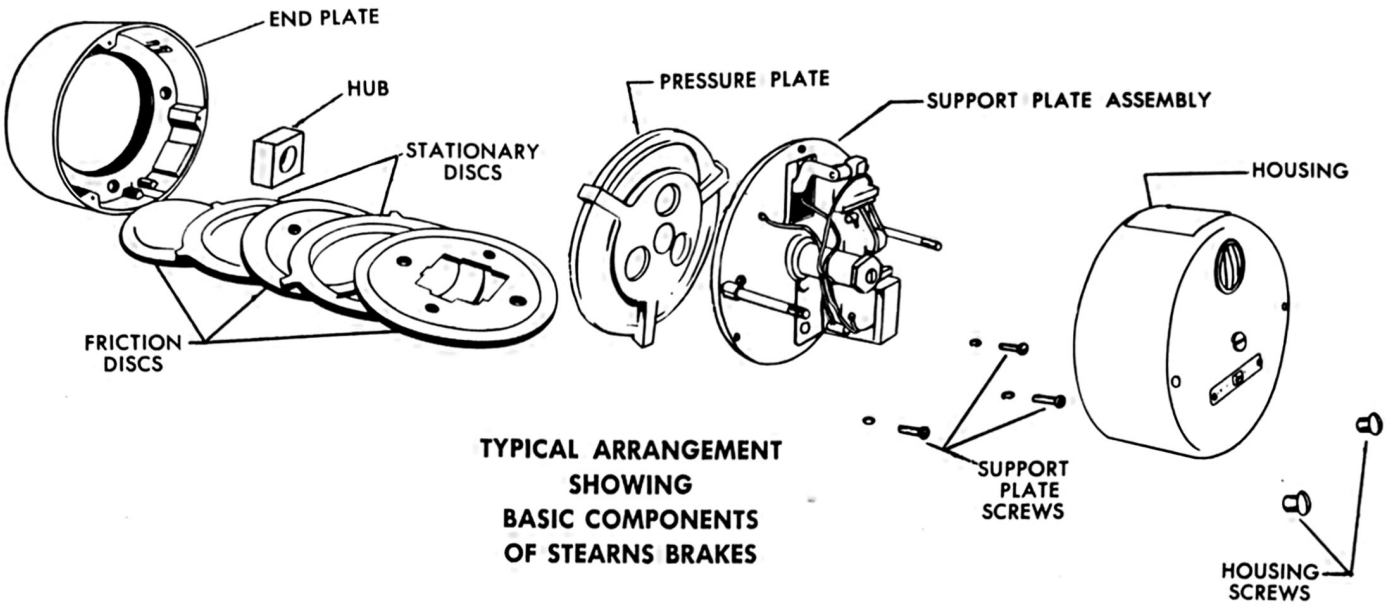


FIG. B-3

SECTION "C" — RENEWAL OF FRICTION DISCS

Steps:
1. Follow Step 1 of Installation Instructions. (Section "D")
2. Follow Step 4 of Installation Instructions. (Section "D"), replacing old Friction Disc(s). To insure proper brake operation, be sure that Friction Discs move freely but not loosely, on hub. If snug, file internal edges lightly until free movement is attained.
3. "Turn Out" (reverse direction than for adjusting) Adjusting Stud or Screws to compensate for adjustments that had been made to brake (for proper direction, see ADJUSTMENT for WEAR, Section "A") before assembling Support Plate Assembly to Endplate. If it becomes difficult to tighten Support Plate Screws, "turn out" Adjusting Stud or Screws further. For 87,000 Series Brakes, simply mount Support Plate Assembly to Endplate.
4. Adjust brake as described in Section "A" — Adjustment for Wear. (See Table No. 1 for proper instruction section.) For 87,000 Series Brakes, lift Plunger until Solenoid Lever hits Stop. This will reset self-adjusting mechanism.
5. Replace Housing and Housing Screws.

SECTION "D" — INSTALLATION PROCEDURES



TYPICAL ARRANGEMENT SHOWING BASIC COMPONENTS OF STEARNS BRAKES

Steps: 1. Dis-assemble: Remove Housing Screws, Housing, Support Plate Screws, Support Plate Assembly, Pressure Plate, Friction Discs(s) and Stationary Discs(s) (if any). If mounted vertically, special pins and springs are provided. Note sequence of springs (color coded) when removing Friction Disc(s) and Stationary Disc(s) (if any).

2. Attach Endplate to Motor Endbell. Mounting requires bolts to secure brake to Motor Flange. In the case of Floor Mounted Brakes, securre floor mounting bracket to foundation. Floor mounted brakes must be carefully installed with respect to brake and shaft alignment. The use of dowels to insure permanent positioning is suggested. For an integral motor-brake, where Endplate is Motor Endbell, consult motor manufacturer's installation instructions.

3. Position Hub on Motor Shaft, key and set screw securely.

   Most motor manufacturers cut shaft to required length for Hub to fit flush with motor shaft. Hub should extend 1/16" beyond face of Friction Disc for 40, 50, 60, 70 and 80 Series Brakes (Up to 105 lb. ft. torque) and 1/8" beyond face of Friction Disc for 1000, 1200, 1300 and 42,000 Series Brakes (Torque higher than 105 lb. ft.).

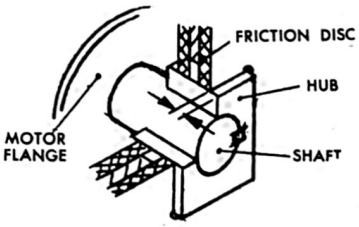


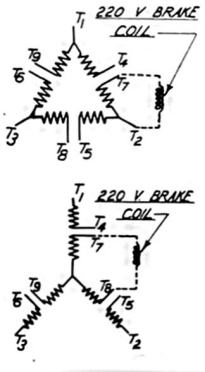
FIG. D-2

4. Reassemble Friction Disc(s), Stationary Disc(s) (if any) and Pressure Plate. If mounted vertically, replace springs in proper sequence.

5. Mount Support Plate Assembly to Endplate and complete electrical connection. For 87,000 Series, lift Plunger, until Solenoid Lever hits Stop.

6. Replace Housing and Housing Screws.

EXCEPTION: It is not necessary to disassemble 40 and 50 series open brakes which use one Friction Disc. These brakes may be mounted by (1) Install Hub on motor shaft approximately 1/4" from motor flange face, (2) remove Housing, (3) attach Endplate with assemblage to motor endbell and (4) replace Housing.

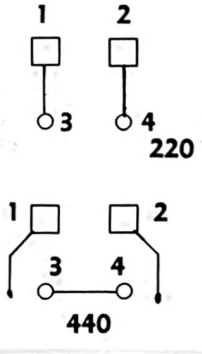


CONNECTING AC SOLENOID COILS ON DUAL VOLTAGE 220/440 POLYPHASE MOTORS

To use a 220 volt coil (or a 220/440 dual voltage coil connected for 220 volts) with a 220/440 dual voltage polyphase motor, the brake leads are connected across two motor terminals as shown or other equivalent combinations. (Left) Brake will operate on 220 volts whether motor is connected for 220 or 440 volts.

(Right) Method of connecting DUAL VOLTAGE 220/440 coil for use on 220 or 440 volts.

All Stearns coils are single phase — connect to any 2 wires of polyphase power source or, for operation with motor control, to any two motor leads.



STEARNS ELECTRIC CORP.
120 NO. BROADWAY
MILWAUKEE, WISCONSIN

AUGUST 1, 1961

AUTHORIZED BRAKE REPAIR PARTS DISTRIBUTORS

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Vinson-Carter Electric Co.
4444 East Washington Street
BR. 5-6224

CALIFORNIA, LOS ANGELES 13
**The Minarik Electric Company
224 East 3rd Street
MAdison 4-3161

CALIFORNIA, LOS ANGELES 15
Smallcomb Electric Co.
1120 South Main Street
Richmond 7-0221

CALIFORNIA, SAN FRANCISCO 3
*Buzzell Electric
130 Eighth Street
HEmlock 1-5526

CALIFORNIA, SAN LEANDRO
**The Republic Supply Co. of Calif.
1919 Williams Street
EL. 7-2211

COLORADO, DENVER 23
*Consolidated Parts
250 Yuma Street
Phone: SHerman 4-2336

GEORGIA, ATLANTA
*Simco Supply Co.
495 Piedmont Ave., N.E.
Box 6223, Station H
TR. 5-9371

ILLINOIS, CHICAGO 6
Complete Reading Electrical Co.
100 S. Jefferson Street
CE. 6-5390

ILLINOIS, PEORIA
Foremost Electric Transmission Co.
918 South West Adams St.
PH. 6-1371

ILLINOIS, ROCK ISLAND
Torrance Electric Co., Inc.
1228 3rd Avenue
6-7778

INDIANA, SOUTH BEND
Koontz-Wagner Electric Co.
516 North Michigan Street
CEntral 3-8251

LOUISIANA, NEW ORLEANS 9
Woodward Wight & Co., Ltd.
451 Howard Ave.
TUlane 2471

MARYLAND, BALTIMORE 2
Electric Motor Supply
356 North Gay
MUlberry 5-4523

MASSACHUSETTS, CAMBRIDGE
*Electrical Installation Co.
31 Main Street
TRowbridge 6-2750

MASSACHUSETTS, HOLYOKE
**Hooker Transmission Co.
1439 Dwight Street
JE 6-6661 or 4-0993

MASSACHUSETTS, SPRINGFIELD
Electric Motor Repair Co.
15 Park Street
REpublic 6-3684

MICHIGAN, DETROIT 8
Miller-Seldon Electric Co.
1930 McGraw Avenue
TYler 4-3800

MICHIGAN, FLINT
*Flack-Pennell of Flint, Inc.
4705 North Dort Highway
SUnset 5-0851

MICHIGAN, GRAND RAPIDS
CMA Electric Co.
309 Bridge St., N.W.
GLendale 6-1735

MICHIGAN, KALAMAZOO
Hatfield Electric Motor Service
2215 Superior Avenue

MICHIGAN, MUSKEGON HEIGHTS
Hall Electric Co.
2701 McIlwraith Street
Phone: PE. 3-1249

MICHIGAN, SAGINAW
*Flack-Pennell Company
320 South Baum
PLeasant 3-5415

MINNESOTA, MINNEAPOLIS
Boustead Electric & Mfg. Co.
109 Washington Avenue, North
FEderal 9-8831

MISSOURI, KANSAS CITY 8
Kornfeld-Thorp Electric Co.
2700 McGee Traffic Way
BAltimore 1-4000

MISSOURI, ST. LOUIS
State Electric Company
4001 Goodfellow
EVergreen 3-0250

NEBRASKA, OMAHA
Schneider Elec. & Equip. Co.
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WEbster 5500

NEW YORK, BUFFALO
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NEW YORK, NEW YORK (CORONA)
*Area Distributors, Inc.
110-64 Corona Avenue
TWining 8-5550

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Jones Motor Repair Company
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ED. 3-3726

NORTH CAROLINA, GREENSBORO
*O'Dell Mill Supply Co.
P.O. Box Drawer O
300 North Forbis Street
BR. 2-2113

OHIO, CINCINNATI
J. F. Riess & Associates
123 East 6th Street
MAin 1-2776

OHIO, TOLEDO
*Girkins Electric Co.
2056 Canton Avenue
CH. 3-9238

OHIO, YOUNGSTOWN
Economy Electric Co.
645 Market Street
RIverside 4-4461 or 4-4462

OKLAHOMA, TULSA
Nelson Electric Supply Co.
526 N. Main St.
LU. 5-1241

OREGON, PORTLAND 9
*C. E. Riggs, Inc.
422 N.W. 8th Street
CA. 6-3286

PENNSYLVANIA, HARRISBURG
Edwin L. Heim Company
671 South 19th Street
CEdar 2-8061

PENNSYLVANIA, PHILADELPHIA 30
*J. F. McCarthy, Inc.
719-25 North 24th Street
STevenson 7-3811

PENNSYLVANIA, PITTSBURGH
Frick & Lindsay Co.
Sandusky & Robinson St., N.S.
Fairfax 1-5700

PENNSYLVANIA, READING
Standard Electric Service
10th & Exter Streets
FRanklin 3-0250

RHODE ISLAND, PROVIDENCE
*J & H Electric Company
200 Richmond Street
GAspee 1-7840

SOUTH CAROLINA, GREENVILLE
J. W. Vaughan Co.
714 W. Washington Street
2-2421

TENNESSEE, CHATTANOOGA
Elec. Motor Sales and Supply Co.
1207 E. 23rd
MA. 9-7361

TEXAS, BEAUMONT
Electrical Machinery Repair Co.
801 South 4th Street
TE. 2-9112

TEXAS, DALLAS
*Allied Belt & Transmission Inc.
2616 Irving Boulevard
RIverside 7-1533

TEXAS, EL PASO
*Holmes Electric Motor Shop
7605 Hacienda Avenue
LY. 8-6171

TEXAS, HOUSTON
Electrical Controller Prod.
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CA. 2-9191

TEXAS, LUBBOCK
*Brandon & Clark Electric Co.
2314 4th Street
POrter 5-8818

WASHINGTON, SEATTLE
*C. E. Riggs, Inc.
408 Occidental Avenue
MAin 3-5707

CANADA, ONTARIO, TORONTO
*George Rumble Co.
Haas and Taber Roads
(Rexdale)
CH. 1-3885

HAWAII, HONOLULU 11 (OVERSEAS)
National Electric Supply Co., Ltd.
611 Keeaumoku Street, Box 3529

*Also authorized clutch distributors
**Clutch Distributor only

repair parts bulletin 623
Effective Oct. 15, 1961

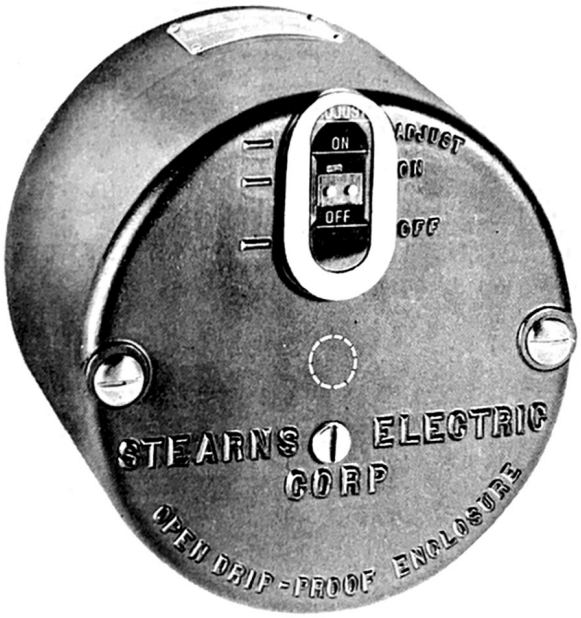
Stearns electric

style HT-70 series
magnetic disc brakes

REPAIR PARTS LIST

style HT-70 SERIES

STEARNS MAGNETIC DISC BRAKES



IMPORTANT

Use this multiplier to determine net price on brake parts.

Multiplier_____ Date_____

Company_____

If your multiplier is not shown in this space, please contact your local representative or the Milwaukee office for this information.

INFORMATION REQUIRED

When ordering repair parts, give the Stock Number of the part needed. This number will completely identify the part. The Item Number only may be used if the following Name Plate data is furnished:

Serial Number .....

Size .....Voltage.....

HOW TO USE THIS LIST

This repair parts list covers all sizes and models of Style HT-70 Series STEARNS magnetic Disc Brakes. After checking the exploded parts drawing, the proper Stock Number of the part needed may be found in the accompanying tables.

STEARNS ELECTRIC CORPORATION

Milwaukee 2, Wisconsin

STEARNS STYLE HT-70 SERIES ELECTRIC DISC BRAKES

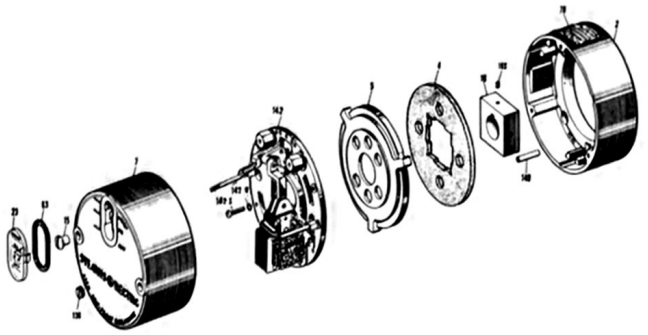
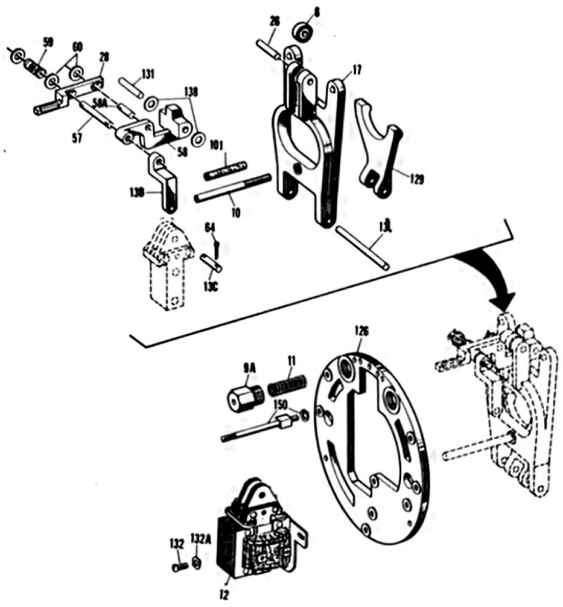
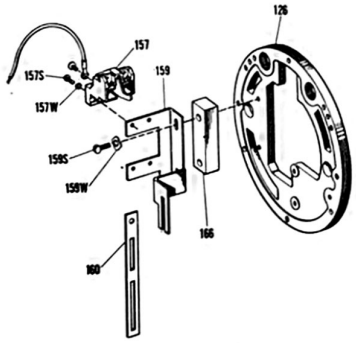


TABLE NO. 1

ITEM NO.	DESCRIPTION	(X-REF.)	STOCK NO.	LIST PRICE EACH	Qty.	WHERE USED: BRAKE SIZE 72	72A	72B	72C	74	74A	76	76A	Register 9	Register 11	Current AC	Current DC	ENCLOSED OPEN	ENCLOSED	Mounting Position HORIZ.	V.A.	V.B.	MISC. VARIABLES
2	ENDPLATE – #9 REGISTER – OPEN – HORIZ. MTG.	(270H)	8-002-701-1	$ 38.00	1	x	x	x						x		x	x	x		x		x	
	ENDPLATE – #9 REGISTER – OPEN – HORIZ. MTG.	(270HT)	8-002-720-1	38.00	1				x					x		x	x	x		x		x	SPECIFY
	ENDPLATE – #9 REGISTER – OPEN – HORIZ. MTG.	(271H)	8-002-702-1	55.25	1					x				x		x	x	x		x		x	LEADWIRE
	ENDPLATE – #9 REGISTER – OPEN – HORIZ. MTG.	(271HT)	8-002-721-1	42.25	1						x			x		x	x	x		x		x	CONNECTIONS
	ENDPLATE – #9 REGISTER – OPEN – HORIZ. MTG.	(274H)	8-002-703-1	65.25	1							x		x		x	x	x		x		x	& LOCATION
	ENDPLATE – #9 REGISTER – OPEN – HORIZ. MTG.	(274HT)	8-002-722-1	45.00	1								x	x		x	x	x		x		x	WHEN
	ENDPLATE – #11 REGISTER – OPEN – HORIZ. MTG.	(275H)	8-002-704-1	42.00	1	x	x	x	x						x	x	x	x		x		x	ORDERING
	ENDPLATE – #11 REGISTER – OPEN – HORIZ. MTG.	(272H)	8-002-705-1	69.25	1					x	x				x	x	x	x		x		x	ENDPLATES
	ENDPLATE – #11 REGISTER – OPEN – HORIZ. MTG.	(273H)	8-002-706-1	71.50	1							x	x		x	x	x	x		x		x	
	ENDPLATE – #9 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-701-3	42.00	1	x	x	x						x		x	x	x			x		
	ENDPLATE – #9 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-720-3	42.00	1				x					x		x	x	x			x		SPECIFY
	ENDPLATE – #9 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-702-3	63.25	1					x				x		x	x	x			x		LEADWIRE
	ENDPLATE – #9 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-721-3	58.85	1						x			x		x	x	x			x		CONNECTIONS
	ENDPLATE – #9 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-703-3	77.25	1							x		x		x	x	x			x		& LOCATION
	ENDPLATE – #9 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-722-3	62.00	1								x	x		x	x	x			x		WHEN
	ENDPLATE – #11 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-704-3	46.00	1	x	x	x	x						x	x	x	x			x		ORDERING
	ENDPLATE – #11 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-705-3	77.25	1					x	x				x	x	x	x			x		ENDPLATES
	ENDPLATE – #11 REGISTER – OPEN – VERT. ABOVE MTG.		8-002-706-3	83.50	1							x	x		x	x	x	x			x		
	ENDPLATE/SEAL ASS'Y. – #9 REG. – ENC. – HORIZ. MTG.	(2A70HT)	5-22-7001	50.75	1	x	x	x	x					x		x	x		x	x		x	SPECIFY
	ENDPLATE/SEAL ASS'Y. – #9 REG. – ENC. – HORIZ. MTG.	(2A71HT)	5-22-7003	54.95	1					x	x			x		x	x		x	x		x	LEADWIRE
	ENDPLATE/SEAL ASS'Y. – #9 REG. – ENC. – HORIZ. MTG.	(2A74HT)	5-22-7005	59.25	1							x	x	x		x	x		x	x		x	CONNECTIONS
	ENDPLATE – #11 REGISTER – ENC. – HORIZ. MTG.	(2A75HT)	8-002-723-1	63.75	1	x	x	x	x						x	x	x		x	x		x	& LOCATION
	ENDPLATE – #11 REGISTER – ENC. – HORIZ. MTG.	(2A72HT)	8-002-724-1	70.25	1					x	x				x	x	x		x	x		x	WHEN
	ENDPLATE – #11 REGISTER – ENC. – HORIZ. MTG.	(2A73HT)	8-002-725-1	73.30	1							x	x		x	x	x		x	x		x	ORDERING
	ENDPLATE – #9 REG. – ENC. – VERT. ABOVE MTG.		8-002-732-2	54.75	1	x	x	x	x					x		x	x		x		x		ENDPLATES
	ENDPLATE – #9 REG. – ENC. – VERT. ABOVE MTG.		8-002-733-2	62.95	1					x	x			x		x	x		x		x		SPECIFY
	ENDPLATE – #9 REG. – ENC. – VERT. ABOVE MTG.		8-002-734-2	71.25	1							x	x	x		x	x		x		x		LEADWIRE
	ENDPLATE – #11 REGISTER – ENC. – VERT. ABOVE MTG.		8-002-723-2	67.75	1	x	x	x	x						x	x	x		x		x		CONNECTIONS
	ENDPLATE – #11 REGISTER – ENC. – VERT. ABOVE MTG.		8-002-724-2	78.25	1					x	x				x	x	x		x		x		& LOCATION
	ENDPLATE – #11 REGISTER – ENC. – VERT. ABOVE MTG.		8-002-725-2	85.30	1							x	x		x	x	x		x		x		WHEN
3	STATIONARY DISC. – HORIZ. MTG.	(370H)	8-003-701-1	18.00		0	0	0	0	1	1	2	2	x	x	x	x	x	x	x			ORDERING
3V	STATIONARY DISC – VERTICAL MTG.	(3V70H)	8-003-701-2	18.25		0	0	0	0	1	1	2	2	x	x	x	x	x	x		x	x	ENDPLATES
4	FRICTION DISC	(480)	8-004-701	7.90		1	1	1	1	2	2	3	3	x	x	x	x	x	x	x	x	x	
5	PRESSURE PLATE – HORIZ. MTG. ONLY	(570HT)	8-005-702-1	14.25	1					x	x	x	x	x	x	x	x	x	x	x			
	PRESSURE PLATE – HORIZ. & VERT. BELOW MTG.	(570HT)	8-005-702-1	14.25	1	x	x	x	x					x	x	x	x	x	x			x	
	PRESSURE PLATE – VERT. BELOW ONLY	(5B70HT)	8-005-702-3	14.75	1					x	x	x	x	x	x	x	x	x	x			x	
	PRESSURE PLATE – VERT. ABOVE	(5T70HT)	8-005-702-2	14.75	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		
7	HOUSING – #9 REG. – OPEN	(7F70HT)	8-007-715-1	17.00	1	x	x	x		x		x		x		x	x	x		x	x	x	SPECIFY
	HOUSING – #9 REG. – OPEN	(7F74HT)	8-007-716-1	19.75	1				x		x		x	x		x	x	x		x	x	x	SHAFT
	HOUSING – #11 REG. – OPEN	(7F75HT)	8-007-717-1	20.50	1	x	x	x		x		x			x	x	x	x		x	x	x	DIAMETER
	HOUSING – #11 REG. – OPEN	(7F71HT)	8-007-718-1	21.25	1				x		x		x		x	x	x	x		x	x	x	WHEN
	HOUSING – #9 REG. – ENC.	(7G76HT)	8-007-719-1	24.00	1	x	x	x		x		x		x		x	x		x	x	x	x	ORDERING
	HOUSING – #9 REG. – ENC.	(7G77HT)	8-007-720-1	25.00	1				x		x		x	x		x	x		x	x	x	x	HOUSINGS
	HOUSING – #11 REG. – ENC.	(7G78HT)	8-007-721-1	26.00	1	x	x	x		x		x			x	x	x		x	x	x	x	FOR THRU-
	HOUSING – #11 REG. – ENC.	(7G79HT)	8-007-722-1	27.00	1				x		x		x		x	x	x		x	x	x	x	SHAFT
70	DRAIN PLUG – ENCLOSED ONLY		9-33-0105	.50	1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	BRAKES
15	HOUSING NUT	(1570H)	8-015-701	.75		x	x	x	x	x	x	x	x	2	3	x	x	x		x	x	x	
15B	HOUSING NUT GASKET	(15B70H)	8-167-701	.10		x	x	x	x	x	x	x	x	2	3	x	x		x	x	x	x	
16	HUB – OPEN	(1680)	8-016-701	12.00	1	x	x	x	x					x	x	x	x	x		x	x	x	
	HUB – OPEN	(1681)	8-016-702	14.75	1					x	x			x	x	x	x			x	x	x	
	HUB – OPEN	(1682)	8-016-703	18.25	1							x	x	x	x	x	x	x		x	x	x	SPECIFY
	HUB – ENCLOSED	(16A80)	8-016-704	16.75	1	x	x	x	x					x	x	x	x		x	x	x	x	SHAFT
	HUB – ENCLOSED	(16A81)	8-016-705	18.75	1					x	x			x	x	x	x		x	x	x	x	DIAMETER
	HUB – ENCLOSED	(16A82)	8-016-706	21.00	1							x	x	x	x	x	x		x	x	x	x	(BORE)
16S	(HUB) SET SCREW	(3370H)	9-20-3108	.20	2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	AND
20	SEAL (COMPONENTS OF ENDPLATE/SEAL ASS'Y. ITEM 2)	(2080)	9-02-0081	5.50	1	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x	KEYWAY
23	RELEASE COVER & CLIP – #9 REG. – OPEN	(2370HT)	8-023-703	2.15	1	x	x	x		x		x		x		x	x	x		x	x	x	WHEN
	RELEASE COVER & CLIP – #9 REG. – OPEN	(2380H)	8-023-704	1.85	1				x		x		x	x		x	x	x		x	x	x	ORDERING
	RELEASE COVER & CLIP – #11 REG. – OPEN	(2380H)	8-023-704	1.85	1	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x	HUBS
	RELEASE COVER – ENCLOSED	(23B70HT)	8-023-705	2.15	1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	
23S	(RELEASE COVER) SCREW – ENC.		9-10-2706	.05	2	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	
24	SHAFT BUSHING – ENC. THRU – SHAFT ONLY		8-024-701	33.00	1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	THRU
24S	(BUSHING) SET SCREWS – ENC. THRU – SHAFT ONLY		9-20-0704	.10	1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	SHAFT
24A	OIL SEAL – ENC. THRU – SHAFT ONLY		9-02-007	4.50	1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	ONLY
34	FLOOR MOUNTING BRACKET	(3470H)	8-034-701-1	29.00	1	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	FLOOR
34S	(FLOOR MOUNTING) CAP SCREW	(2570H)	9-17-1412	.80	4	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	MOUNTED
61A	VERTICAL MOUNTING PIN – ABOVE	(61A70H)	8-061-701	.50	3	x	x	x	x					x		x	x	x	x		x		ONLY
	VERTICAL MOUNTING PIN – ABOVE	(61A71H)	8-061-702	.50	3					x	x			x		x	x	x	x		x		
	VERTICAL MOUNTING PIN – ABOVE	(61A72H)	8-061-703	.50	3							x	x	x		x	x	x	x		x		
	VERTICAL MOUNTING PIN – ABOVE	(61A73H)	8-061-704	.50	3	x	x	x	x						x	x	x	x	x		x		
	VERTICAL MOUNTING PIN – ABOVE	(61A74H)	8-061-705	.50	3					x	x				x	x	x	x	x		x		
	VERTICAL MOUNTING PIN – ABOVE	(61A75H)	8-061-706	.50	3							x	x		x	x	x	x	x		x		
	VERTICAL MOUNTING PIN – BELOW	(6171H)	9-29-4719	.50	3					x	x			x	x	x	x	x	x			x	
	VERTICAL MOUNTING PIN – BELOW	(6172H)	9-29-4727	.50	3							x	x	x	x	x	x	x	x			x	
62A	VERTICAL MOUNTING SPRING – RED	(62A70H)	8-062-701	.50	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		
	VERTICAL MOUNTING SPRING – RED	(62A70H)	8-062-701	.50	3							x	x	x	x	x	x	x	x			x	
62B	VERTICAL MOUNTING SPRING – WHITE	(62B70H)	8-062-702	.50	3					x	x	x	x	x	x	x	x	x	x		x		
62C	VERTICAL MOUNTING SPRING – BLUE	(62C70H)	8-062-703	.50	3							x	x	x	x	x	x	x	x		x		
62D	VERTICAL MOUNTING SPRING – GREEN	(62D70H)	8-062-704	.50	3							x	x	x	x	x	x	x	x			x	
63	RELEASE COVER GASKET – 9 REG. – OPEN	(6370HT)	8-063-703	.50	1	x	x	x		x		x		x		x	x	x		x	x	x	
	RELEASE COVER GASKET – 9 REG. – OPEN	(6380)	8-063-704	.50	1				x		x		x	x		x	x	x		x	x	x	
	RELEASE COVER GASKET – 11 REG. – OPEN	(6380)	8-063-704	.50	1	x	x	x	x	x	x	x	x		x	x	x	x		x	x	x	
	RELEASE COVER GASKET – ENCLOSED	(63A70HT)	8-063-705	.50	1	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	
69	GASKET, HOUSING TO ENDPLATE – 9 REG. – ENC.	(6970HT)	8-069-703	2.00	1	x	x	x	x	x	x	x	x	x		x	x		x	x	x	x	
	GASKET, HOUSING TO ENDPLATE – 11 REG. – ENC.	(69A70HD)	8-069-704	2.30	1	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	
78	NAMEPLATE		8-078-022	.10	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
	(NAMEPLATE) DRIVE SCREW		9-25-1303	.05	4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
136	WEAR ADJUSTMENT PIPE PLUG	(3670H)	8-136-701	.65	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
139	LEADWIRE & TERMINAL ASSEMBLY (SET OF 2)		5-39-0124	1.65	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
140	LEADWIRE BUSHING – POSITION D – INT. CONN. ONLY	(14070HT)	8-140-017	.70																			INTERNAL
	LEADWIRE BUSHING – POSITION A – INT. CONN. ONLY	(14070HT)	8-140-005	.70	1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	CONNECTIONS
	LEADWIRE BUSHING – ALL OTHER POS. – INT. CONN. ONLY	(14070HT)	8-140-037	.70																			ONLY
142	SUPPORT PLATE ASSEMBLY – #5 SOL., AC (WITH STD. COIL)			129.25	1	x								x	x	x		x	x	x	x	x	SPECIFY
	SUPPORT PLATE ASSEMBLY – #5 SOL., DC (WITH STD. COIL)		SEE	185.25	1	x								x	x		x	x	x	x	x	x	COIL STOCK
	SUPPORT PLATE ASSEMBLY – #6 SOL., AC (WITH STD. COIL)		TABLE	146.50	1		x	x		x		x		x	x	x		x	x	x	x	x	NO. (FROM
	SUPPORT PLATE ASSEMBLY – #6 SOL., DC (WITH STD. COIL)		NO. 2	203.25	1		x	x		x				x	x		x	x	x	x	x	x	TABLE NO. 3)
	SUPPORT PLATE ASSEMBLY – #8 SOL., AC (WITH STD. COIL)			172.25	1				x		x		x	x	x	x		x	x	x	x	x	WHEN
	SUPPORT PLATE ASSEMBLY – #8 SOL., DC (WITH STD. COIL)			250.25	1				x		x		x	x	x		x	x	x	x	x	x	ORDERING
142S	(SUPPORT PLATE) SCREW	(7170H)	9-12-3014	.10	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	SUPPORT PLATE
142W	(SUPPORT PLATE) LOCKWASHER	(71A70H)	9-45-1310	.10	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	ASSEMBLY





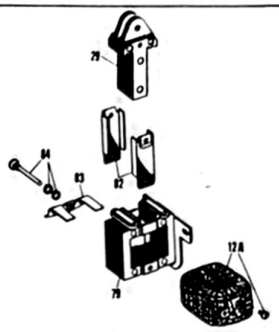


TABLE NO. 3 – SOLENOID ASSEMBLIES* FOR HT70 BRAKES

ITEM NO.	DESCRIPTION	#5 SOLENOID FOR HT72 STOCK NO.	#5 SOLENOID FOR HT72 PRICE EACH	#6 SOLENOID FOR HT72A, 72B 74 & 76 STOCK NO.	#6 SOLENOID FOR HT72A, 72B 74 & 76 PRICE EACH	#8 SOLENOID FOR HT72C, 74A & 76A STOCK NO.	#8 SOLENOID FOR HT72C, 74A & 76A PRICE EACH
	SOLENOID ASSEMBLY LESS COIL	5-12-0051	$ 45.75	5-12-0061	$ 59.75	5-12-0081	$73.50
	COMPONENTS FOR ABOVE ASSEMBLY						
29	PLUNGER	8-029-051	31.00	8-029-061	39.50	8-029-081	49.25
79	FRAME	8-079-051	31.00	8-079-061	39.50	8-079-081	49.25
82	COIL HOLDER – PLUNGER GUIDE	8-082-051	4.90	8-082-061	4.90	8-082-081	6.25
83	COIL CLAMP	8-083-051	4.40	8-083-061	4.40	8-083-081	5.75
84	COIL CLAMP SCREW & WASHER	8-084-051	.40	8-084-061	.40	8-084-081	.50
12A	COIL – AC – 110 VOLTS, 60 CYCLES	6-1-51106	13.50	6-1-61106	14.50	6-1-81106	23.50
	COIL – AC – 208 VOLTS, 60 CYCLES	6-1-52086	13.50	6-1-62086	14.50	6-1-82086	23.50
	COIL – AC – 220 VOLTS, 60 CYCLES	6-1-52206	13.50	6-1-62206	14.50	6-1-82206	23.50
	COIL – AC – 440 VOLTS, 60 CYCLES	6-1-54406	13.50	6-1-64406	14.50	6-1-84406	23.50
	COIL – AC – 550 VOLTS, 60 CYCLES	6-1-55506	13.50	6-1-65506	14.50	6-1-85506	23.50
	COIL – AC – 110 VOLTS, 50 CYCLES	6-1-51105	13.50	6-1-61105	14.50	6-1-81105	23.50
	COIL – AC – 208 VOLTS, 50 CYCLES	6-1-52085	13.50	6-1-62085	14.50	6-1-82085	23.50
	COIL – AC – 220 VOLTS, 50 CYCLES	6-1-52205	13.50	6-1-62205	14.50	6-1-82205	23.50
	COIL – AC – 380 VOLTS, 50 CYCLES	6-1-53805	13.50	6-1-63805	14.50	6-1-83805	23.50
	COIL – AC – 440 VOLTS, 50 CYCLES	6-1-54405	13.50	6-1-64405	14.50	6-1-84405	23.50
	COIL – AC – 550 VOLTS, 50 CYCLES	6-1-55505	13.50	6-1-65505	14.50	6-1-85505	23.50
	COIL – AC – 110 VOLTS, 25 CYCLES	6-1-51102	13.50	6-1-61102	14.50	6-1-81102	23.50
	COIL – AC – 220 VOLTS, 25 CYCLES	6-1-52202	13.50	6-1-62202	14.50	6-1-82202	23.50
	COIL – AC – 440 VOLTS, 25 CYCLES	6-1-54402	13.50	6-1-64402	14.50	6-1-84402	23.50
	COIL – AC – 550 VOLTS, 25 CYCLES	6-1-55502	13.50	6-1-65502	14.50	6-1-85502	23.50
	COIL – AC – 110/220 VOLTS, 60 CYCLES	6-2-51106	29.50	6-2-61106	30.80	6-2-81106	38.50
	COIL – AC – 220/440 VOLTS, 60 CYCLES	6-2-52206	29.50	6-2-62206	30.80	6-2-82206	38.50
	COIL – DC – 115 VOLTS	6-1-51150	46.00	6-1-61150	47.75	6-1-81150	56.00
	COIL – DC – 230 VOLTS	6-1-52300	46.00	6-1-62300	47.75	6-1-82300	56.00

* Solenoid Assemblies complete with coil require, for identification, both the "Solenoid Assembly Less Coil" Stock Number and the Coil Stock Number. List prices for solenoid assemblies complete with coil are the sum of the list price for the coil and for the assembly less coil.

TABLE NO. 2 – SUPPORT PLATE (BRAKE MECHANISM) ASSEMBLY

ITEM NO.	DESCRIPTION	(X-REF.)	STOCK NO.	LIST PRICE EACH	No. Req.	REGISTER	#9						#11					
						BRAKE SIZE	72		72A		72B 74 76		72C 74A 76A		72		72A	
						CURRENT	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC
						ASSEMBLY STOCK NO.	5-42-7021	5-42-7022	5-42-7023	5-42-7024	5-42-7025	5-42-7026	5-42-7027	5-42-7028	5-42-7031	5-42-7032	5-42-7033	5-42-7034
6	BALL BEARING	(680)	9-01-6801	$3.30	1		x	x	x	x	x	x	x	x	x	x	x	x
9A	SPRING TORQUE CUP	(9A70HT)	8-109-701	.80	2		x	x	x	x	x	x	x	x	x	x	x	x
	SPRING TORQUE CUP & LOCKNUT – ADJUSTABLE (OPTIONAL)		5-19-7001	3.25	2		x	x	x	x	x	x	x	x	x	x	x	x
10	WEAR ADJUSTMENT STUD – #5 & #6 SOL.	(1070HT)	8-010-703	1.10	1		x	x	x	x	x	x			x	x	x	x
	WEAR ADJUSTMENT STUD – #8 SOL.	(1071HT)	8-010-704	1.50	1								x	x				
11	PRESSURE SPRING – GREEN	(1173HT)	8-011-707	.75	2		x	x	x	x					x	x	x	x
	PRESSURE SPRING – YELLOW	(1172HT)	8-011-706	.75	2						x	x						
	PRESSURE SPRING – RED	(1174HT)	8-011-708	.75	2								x	x				
12	SOLENOID ASSEMBLY COMPLETE – #5		SEE		1		x	x							x	x		
	SOLENOID ASSEMBLY COMPLETE – #6		TABLE		1				x	x	x	x					x	x
	SOLENOID ASSEMBLY COMPLETE – #8		NO. 3		1								x	x				
13B	SOLENOID LINK – #5 & #6 SOL.	(13B70HT)	8-013-701-1	2.30	1		x	x	x	x	x	x			x	x	x	x
	SOLENOID LINK – #8 SOL.	(13B71HT)	8-013-702-1	3.00	1								x	x				
13C	SOLENOID LINK PIN – #5 SOL.	(13C80H)	8-012-701	.65	1		x	x							x	x		
	SOLENOID LINK PIN – #6 SOL.	(13C81H)	8-012-702	.65	1				x	x	x	x					x	x
	SOLENOID LINK PIN – #8 SOL.	(13C72HT)	8-012-704	1.00	1								x	x				
17	LEVER ARM & HELICOIL ASSEMBLY – #5 & #6 SOL.	(1770HT)	5-17-7001	4.25	1		x	x	x	x	x	x			x	x	x	x
	LEVER ARM & HELICOIL ASSEMBLY – #8 SOL.	(17A71HT)	5-17-7002	4.25	1								x	x				
26	BEARING PIN	(2610H)	9-29-5022	.75	1		x	x	x	x	x	x	x	x	x	x	x	x
28	WEAR INDICATOR – #5 & #6 SOL.		8-028-702	1.50	1		x	x	x	x	x	x			x	x	x	x
	WEAR INDICATOR – #8 SOL.		8-028-703	1.50	1								x	x				
57	RELEASE PIN – #5 & #6 SOL.	(5770HT)	8-057-701	.65	1		x	x	x	x	x	x			x	x	x	x
	RELEASE PIN – #8 SOL.		8-057-702	.80	1								x	x				
57P	(RELEASE PIN) COTTER PIN		9-31-0308	.05	2		x	x	x	x	x	x	x	x	x	x	x	x
58	SOLENOID LEVER – #5 & #6 SOL.	(5870H)	8-008-701-1	5.10	1		x	x	x	x	x	x			x	x	x	x
	SOLENOID LEVER – #8 SOL.	(5871H)	8-008-702-1	5.10	1								x	x				
58A	SOLENOID LEVER STUB PIN	(58A80H)	8-058-101	.65	1		x	x	x	x	x	x	x	x	x	x	x	x
58P	(STUB PIN) COTTER PIN		9-31-0308	.05	1		x	x	x	x	x	x	x	x	x	x	x	x
59	RELEASE SPRING	(5980)	8-059-702	.25	1		x	x	x	x	x	x	x	x	x	x	x	x
60	(STUB & RELEASE PIN) WASHER		9-45-0170	.05	3		x	x	x	x	x	x	x	x	x	x	x	x
64	(SOLENOID LINK) COTTER PIN – 1/2"		9-31-0308	.05	2		x	x	x	x	x	x	x	x	x	x	x	x
	(SOLENOID LINK) COTTER PIN – 3/4"		9-31-0312	.05	2								x	x				
101	WEAR ADJUSTMENT INSULLATING SLEEVE	(15770HT)	8-101-701	$ .50	1		x	x	x	x	x	x	x	x	x	x	x	x
126	SUPPORT PLATE – AC	(12670HT)	8-126-702-1	12.00	1		x		x		x		x		x		x	
	SUPPORT PLATE – DC		8-126-702-2	18.95	1			x		x		x		x		x		x
129	WEAR ADJUSTMENT FORK	(12970HT)	8-129-701-1	2.50	1		x	x	x	x	x	x	x	x	x	x	x	x
130	LEVER ARM PIVOT PIN	(13070HT)	9-29-5049	.35	1		x	x	x	x	x	x	x	x	x	x	x	x
131	SOLENOID LEVER PIVOT PIN	(13170H)	9-29-5041	.40	1		x	x	x	x	x	x	x	x	x	x	x	x
132	SOLENOID MOUNTING SCREW	(13280)	8-132-701	.10	3		x	x	x	x	x	x	x	x	x	x	x	x
132A	(SOLENOID MOUNTING) LOCKWASHER		9-45-0828	.10	3		x	x	x	x	x	x	x	x	x	x	x	x
132P	(SOLENOID MOUNTING) DRIVE PIN		9-32-3101	.10	1						x	x	x	x				
138	PIVOT BEARING – WASHER TYPE	(13880)	8-138-101	.10	4		x	x	x	x	x	x	x	x	x	x	x	x
150	HOUSING STUD – #5 & #6 SOL.	(15070H)	8-150-701	1.10			2	2	2	2	2	2			3	3	3	3
	HOUSING STUD – #8 SOL.	(150A70H)	8-150-702	1.20									2	2				
150N	(HOUSING STUD) STOPNUT		9-40-2610	.50	1		x	x	x	x	x	x	x	x	x	x	x	x
150W	(HOUSING STUD) LOCKWASHER		9-45-0311	.05			2	2	2	2	2	2	2	2	3	3	3	3
157	DC SWITCH		5-57-0009	21.45				1		1		1		2		1		1
157S	(SWITCH MOUNTING) SCREW		9-10-2705	.10				2		2		2		4		2		2
157W	(SWITCH MOUNTING) LOCKWASHER		9-45-0307	.05				2		2		2		4		2		2
159	SWITCH MOUNTING BRACKET		8-159-703	1.65	1			x		x		x		x		x		x
159S	SWITCH BRACKET MOUNTING SCREW – 1/2"		8-132-701	.10	2			x		x		x				x		x
	SWITCH BRACKET MOUNTING SCREW – 7/8"		8-132-702	.10	2									x				
159W	(SWITCH BRACKET) LOCKWASHER		9-45-0828	.05	2			x		x		x		x		x		x
160	SWITCH TRIPPER		8-160-702	.65	1			x		x		x		x		x		x
166	SWITCH BRACKET BLOCK		8-166-701	5.50	1									x				

VERTICAL MOUNTING (ABOVE MOTOR) COMPONENTS USED IN BRAKES MANUFACTURED AFTER JUNE, 1960 (STARTING WITH SERIAL NO. B-297697)

ITEM NO.	DESCRIPTION	STOCK NO.	LIST PRICE EACH	QTY.	WHERE USED: HT-70 BRAKE SIZE 72	72A	72B	72C	74	74A	76	76A	REGISTER 9	11	OPEN	ENCLOSED
2	ENDPLATE – 9 REG. – OPEN	8-002-701-4	$42.00	1	X	X	X						X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-720-4	42.00	1				X					X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-702-4	63.25	1					X				X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-721-4	58.85	1						X			X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-703-4	77.25	1							X		X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-722-4	62.00	1								X	X		X	
	ENDPLATE – 11 REG. – OPEN	8-002-704-4	46.00	1	X	X	X	X						X	X	
	ENDPLATE – 11 REG. – OPEN	8-002-705-4	77.25	1					X	X				X	X	
	ENDPLATE – 11 REG. – OPEN	8-002-706-4	83.50	1							X	X		X	X	
	ENDPLATE/SEAL ASS'Y. – 9 REG. – ENC.	5-22-7002	54.75	1	X	X	X	X					X			X
	ENDPLATE/SEAL ASS'Y. – 9 REG. – ENC.	5-22-7004	62.95	1					X	X			X			X
	ENDPLATE/SEAL ASS'Y. – 9 REG. – ENC.	5-22-7006	71.25	1							X	X	X			X
	ENDPLATE – 11 REG. – ENC.	8-002-723-4	67.75	1	X	X	X	X						X		X
	ENDPLATE – 11 REG. – ENC.	8-002-724-4	78.25	1					X	X				X		X
	ENDPLATE – 11 REG. – ENC.	8-002-725-4	85.30	1							X	X		X		X
3	STATIONARY DISC	8-003-701-4	18.25		0	0	0	0	1	1	2	2	X	X	X	X
5	PRESSURE PLATE	8-005-702-4	14.75	1	X	X	X	X	X	X	X	X	X	X	X	X
61	VERTICAL MOUNTING PIN	8-061-711	.75	3	X	X	X	X					X	X	X	X
	VERTICAL MOUNTING PIN	8-061-712	.75	3					X	X			X	X	X	X
	VERTICAL MOUNTING PIN	8-061-713	.75	3							X	X	X	X	X	X
62	VERTICAL MOUNTING SPRING – BLUE (62C80)	8-062-803	.50		3	3	3	3	6	6	9	9	X	X	X	X
62S	SPRING SPACER	8-141-702	.15		0	0	0	0	3	3	9	9	X	X	X	X

VERTICAL MOUNTING (BELOW MOTOR) COMPONENTS USED IN BRAKES MANUFACTURED DURING PERIOD FROM JUNE 1960 TO SEPT. 1961 (SERIAL NOS. B-297697 THRU B-327897).

ITEM NO.	DESCRIPTION	STOCK NO.	LIST PRICE EACH	QTY.	WHERE USED: BRAKE SIZE 74	74A	76	76A	REGISTER 9	11	OPEN	ENCLOSED
2	ENDPLATE – 9 REG. – OPEN	8-002-702-4	$63.25	1	X				X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-721-4	58.85	1		X			X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-703-4	77.25	1			X		X		X	
	ENDPLATE – 9 REG. – OPEN	8-002-722-4	62.00	1				X	X		X	
	ENDPLATE – 11 REG. OPEN –	8-002-705-4	77.25	1	X	X				X	X	
	ENDPLATE – 11 REG. – OPEN	8-002-706-4	83.50	1			X	X		X	X	
	ENDPLATE/SEAL ASS'Y. – 9 REG. – ENC.	5-22-7004	62.95	1	X	X			X			X
	ENDPLATE/SEAL ASS'Y. – 9 REG. – ENC.	5-22-7006	71.25	1			X	X	X			X
	ENDPLATE – 11 REG. – ENC.	8-002-724-4	78.25	1	X	X				X		X
	ENDPLATE – 11 REG. – ENC.	8-002-725-4	85.30	1			X	X		X		X
3	STATIONARY DISC	8-003-701-4	18.25		1	1	2	2	X	X	X	X
5	PRESSURE PLATE	8-005-702-4	14.75	1	X	X	X	X	X	X	X	X
61	VERTICAL MOUNTING PIN	8-061-712	.75	3	X	X			X	X	X	X
61	VERTICAL MOUNTING PIN	8-061-713	.75	3			X	X	X	X	X	X
62	VERTICAL MOUNTING SPRING – BLUE (62C80)	8-062-803	.50		6	6	9	9	X	X	X	X
62S	SPRING SPACER	8-141-702	.15		3	3	9	9	X	X	X	X

NOTE: NO MODIFICATION NECESSARY FOR 72, 72A, 72B, 72C BRAKES.

VERTICAL MOUNTING (BELOW MOTOR) COMPONENTS USED IN BRAKES MANUFACTURED AFTER SEPT. 1961 (STARTING WITH SERIAL NO. B-327898)

ITEM NO.	DESCRIPTION	STOCK NO.	LIST PRICE EACH	QTY.	WHERE USED: BRAKE SIZE 74	74A	76	76A	REGISTER 9	11	OPEN	ENCLOSED
3	STATIONARY DISC	8-003-701-4	$18.25		1	1	2	2	X	X	X	X
5	PRESSURE PLATE	8-005-702-5	14.75	1	X	X	X	X	X	X	X	X
61	VERTICAL MOUNTING PIN	8-061-715	.50	3	X	X			X	X	X	X
	VERTICAL MOUNTING PIN	8-061-716	.50	3			X	X	X	X	X	X
62	VERTICAL MOUNTING SPRING – BLUE (62C80)	8-062-803	.50		3	3	6	6	X	X	X	X
62S	SPRING SPACER	8-141-702	.15		0	0	3	3	X	X	X	X

NOTE: NO MODIFICATION NECESSARY FOR 72, 72A, 72B, 72C BRAKES.

STEARNS ELECTRIC CORPORATION

120 N. Broadway, Milwaukee 2, Wis.

Litho in U.S.A.