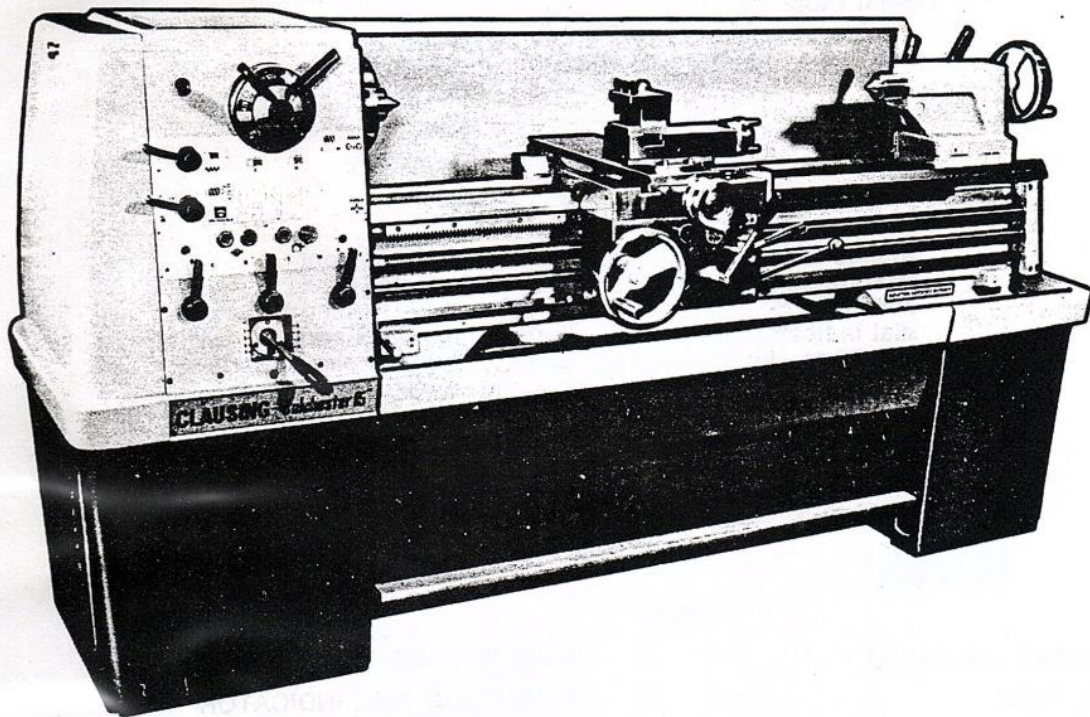


# INSTRUCTION AND REPAIR PARTS MANUAL

## CLAUSING-Colchester 15" lathes



\*

This manual applies only to the machine having the serial number shown; this is stamped on the front of the lathe bed at the tailstock end and MUST be quoted in all communications.

\*

Machine Serial Number *from 22096 to 31470*

\*

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## BRIEF SPECIFICATION

Height of centers	7½ in.
Distance between centers	30 in. or 50 in.
Swing: over bed	15½ in.
over cross-slide	9⅜ in.
in gap	
(gap-bed lathes)	22½ in.
Spindle nose	6 in. D1 Camlock
Spindle bore	
(max. bar diam.)	2⅜ in.
Taper of centers	No. 4 Morse
Drive: 7½ h.p. single speed motor (for further details refer to motor data plate)	
Weight (approx):	
Short Bed	2520 lb.
Long Bed	2600 lb.

Standard equipment, supplied with lathe: front toolholder, driving plate, spindle nose center bush and two No. 4 Morse taper centers, threading dial indicator, toolkit with full set of spanners and wrenches, tin of re-touch paint, lathe accuracy chart.

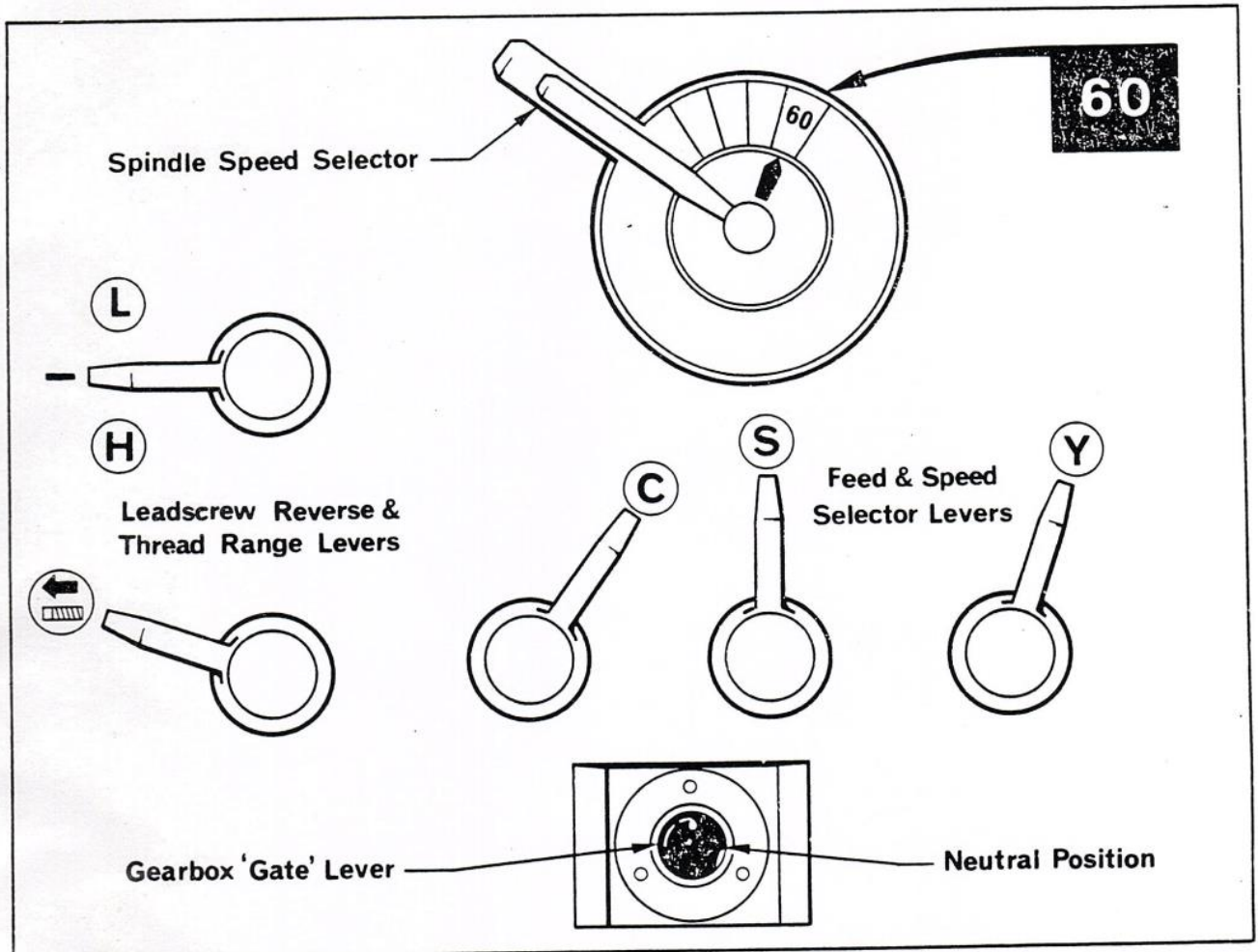
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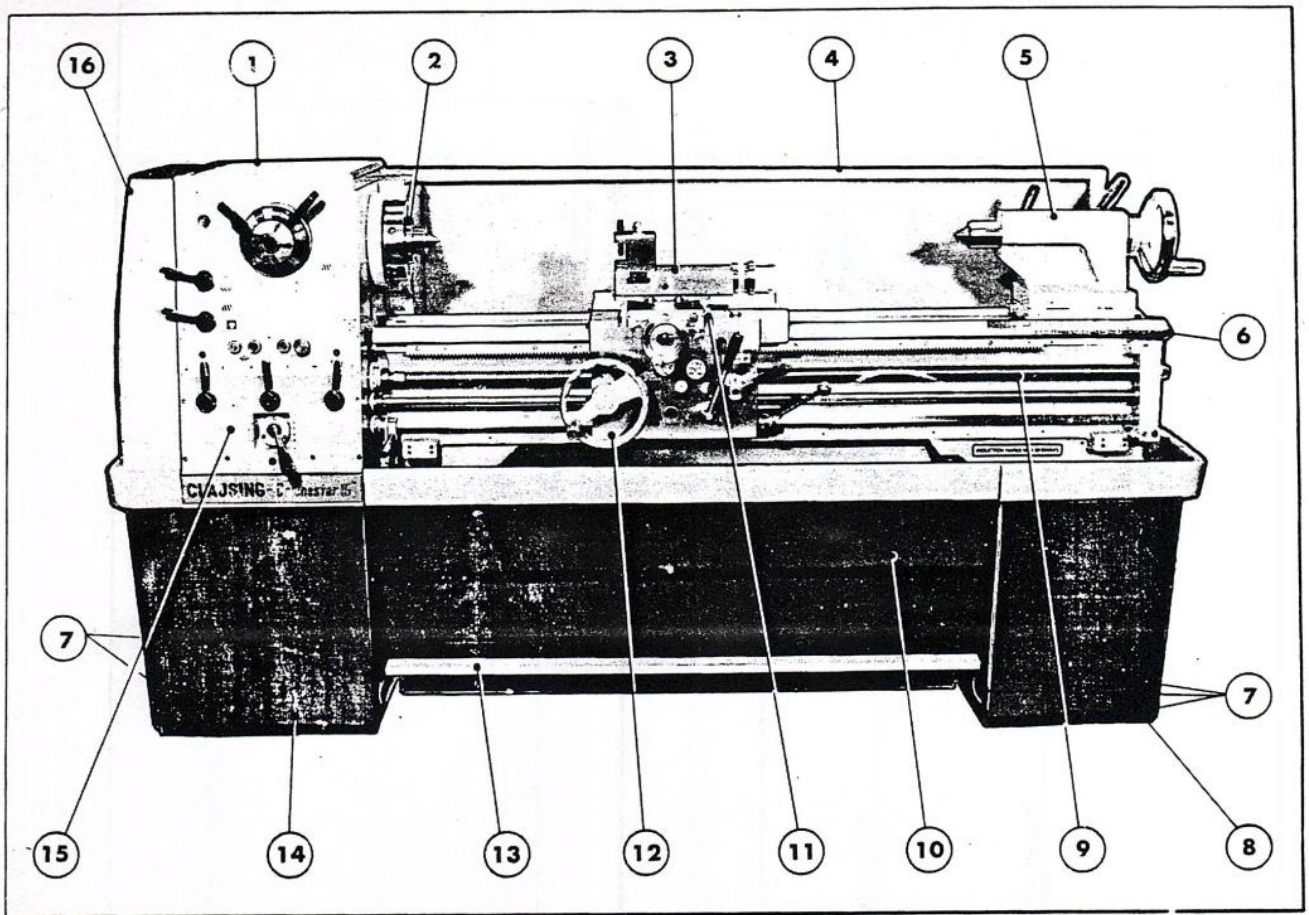
## Please read before starting machine

Before this machine leaves the factory the controls are pre-set, as detailed below, to avoid damage by accidental starting on high speeds and coarse feeds.

Before starting the machine check the settings and ensure that the controls are in the correct positions. Before operating the machine read carefully — OPERATION INSTRUCTIONS pages 8-13 in the Manual.

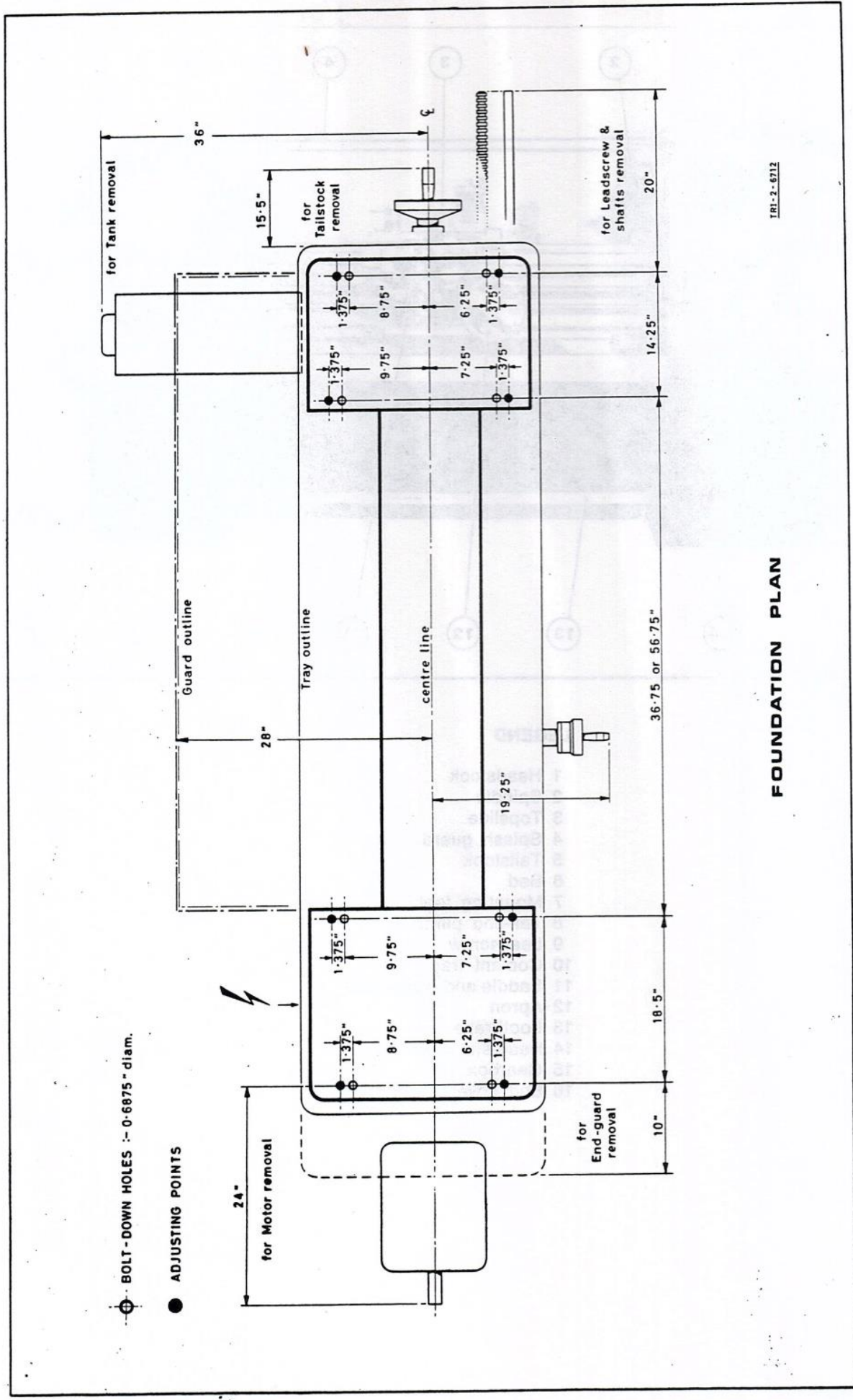


1. **SPINDLE ROTATION LEVER**  
The spindle rotation lever is set in the neutral position.
2. **SPINDLE SPEED SELECTOR**  
The spindle speed selector lever is set at 60 r.p.m.
3. **LEADSCREW REVERSE & THREAD RANGE LEVERS**  
The leadscrew reverse lever and the thread range lever are both set in the neutral position.
4. **FEED & SPEED SELECTOR LEVERS**  
The three Feed and Speed selector levers are set (from left to right) at positions (C) (S) and (Y) respectively.
5. **GEARBOX 'GATE' LEVER**  
The gearbox 'gate' lever is set in the neutral position.



#### LEGEND

- 1 Headstock
- 2 Spindle
- 3 Topslide
- 4 Splash guard
- 5 Tailstock
- 6 Bed
- 7 Mounting feet
- 8 Tail-end plinth
- 9 Leadscrew
- 10 Coolant tray
- 11 Saddle and cross-slide
- 12 Apron
- 13 Footbrake
- 14 Head-end plinth
- 15 Gearbox
- 16 End cover (gear train)



TRI-2-6712

**FOUNDATION PLAN**

**CLEANING**

Before operating any controls, remove the anti-corrosion coating from all slideways and the gear train, see Fig. 1, using white spirit or Kerosene.

**DO NOT USE CELLULOSE SOLVENTS FOR CLEANING AS THEY WILL DAMAGE THE PAINT FINISH.**

Oil all bright machined surfaces immediately after cleaning using machine oil or slideway lubricant; use heavy oil or grease on the end gears.

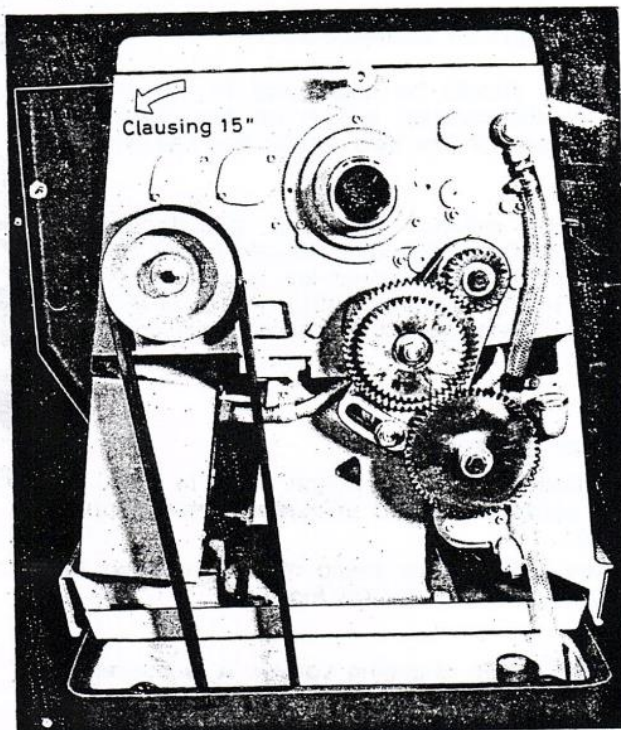


Fig. 1

**LIFTING**

Use the bed-clamping plate and eyebolt to sling the lathe as in Fig. 2. Position the saddle and tailstock along the bed to obtain balance.

**IMPORTANT: DO NOT USE SLINGS AROUND BED AS LEADSCREW AND FEEDSHAFT MAY BE BENT.**

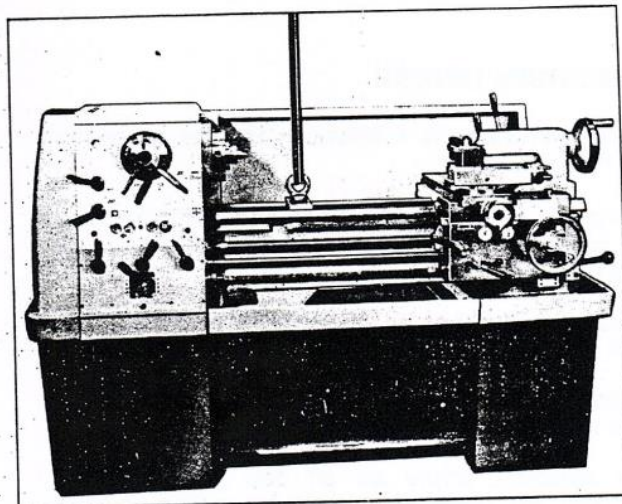


Fig. 2

**INSTALLING**

Locate the machine on a solid foundation, allowing sufficient area all round for easy working and maintenance (see Foundation Plan). The lathe may be used free-standing or bolted to the foundation.

**Free-standing:** Position lathe on foundation and adjust each of the eight mounting feet to take equal share of the load. Then using an engineers' precision level on the bedways (as in Fig. 3) adjust the feet to level up machine. Periodically check bed level to insure continued lathe accuracy.

**Fixed installation:** Position lathe over eight bolts ( $\frac{3}{8}$  in. diam.) set into the foundation to correspond with holes in the mounting feet; dimensions are shown on Foundation Plan. Accurately level the machine, as in Fig. 3, then tighten hold-down bolts. Re-check bed level.

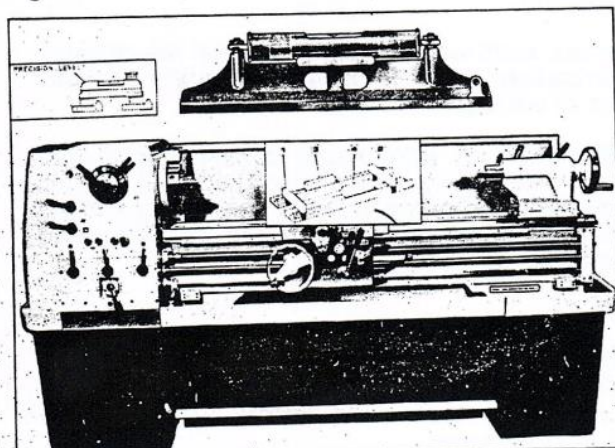


Fig. 3

## ELECTRIC SUPPLY CONNECTION

Input wires should be connected to mains terminals of the isolator switch on the electrical panel in back of the bed, below the headstock, see Fig. 4.

Main motor rotation must be anti-clockwise, viewed from the pulley end. Should motor run in wrong direction, interchange any two of the three phase lines. Appropriate wiring diagrams are included in Servicing and Maintenance Section of this manual.

## COOLANT SYSTEM

Comprises a tank/pump unit fitted in back of tail-end plinth, hose and universal-jointed supply pipework.

Control switches for pump motor are fitted in front panel of headstock, see Fig. 7.

**CAUTION** when changing voltage it is necessary to reconnect main motor, coolant pump motor and transformer after installing heater coils for new voltage.

## LUBRICATION CHECKS

Before operating the machine make the following important checks:

1. That the oil tank in the head-end plinth is filled to correct level indicated by dipstick with Shell Tellus Oil 27.
2. That the gearbox is filled to level marked on oil sight window with Shell Tellus Oil 27.
3. That the carriage apron is filled to level mark on oil sight window with Shell Tonna 33.
4. In addition, apply an oil can to the points shown on lubrication diagram which require daily oiling. Use light machine oil or way lubricant.
5. Before each working shift, operate the manual lubrication pump to insure adequate lubrication of carriage slideways.

**NOTE:** When the lathe motor is switched on, the oil sight window in front of the headstock should fill with oil—indicating that the pump is operative. If this does not occur stop the machine and investigate the cause.

**Note:** In interests of economy etc., headstock lubrication tank is reduced in content on delivery to minimum working quantity of 3 Imperial gallons (13½ litres).

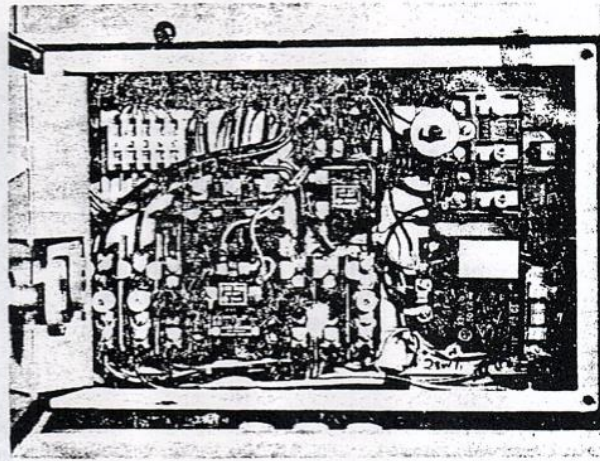
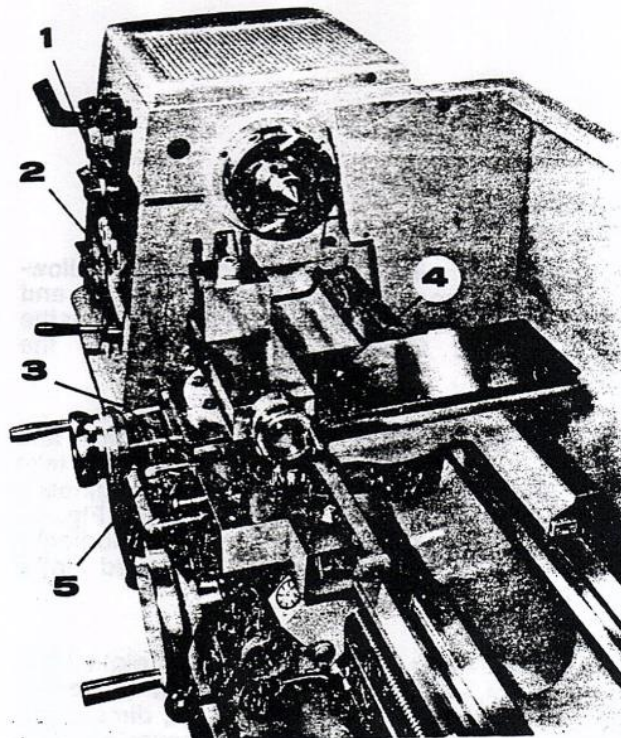


Fig. 4



## CHUCKS AND CHUCK MOUNTING

**WARNING: USE ONLY HIGH SPEED CHUCKS WITH THESE LATHES.**

When fitting chucks or faceplates, first insure that spindle and chuck tapers are scrupulously clean and that all cams lock in the correct position; see Fig. 5. It may be necessary when mounting a new chuck to re-set the camlock studs (A). To do this, remove the cap-head locking screws (B) and set each stud so that the scribed ring (C) is flush with the rear face of the chuck—with the slot lining up with the locking screw hole (see inset, Fig. 5).

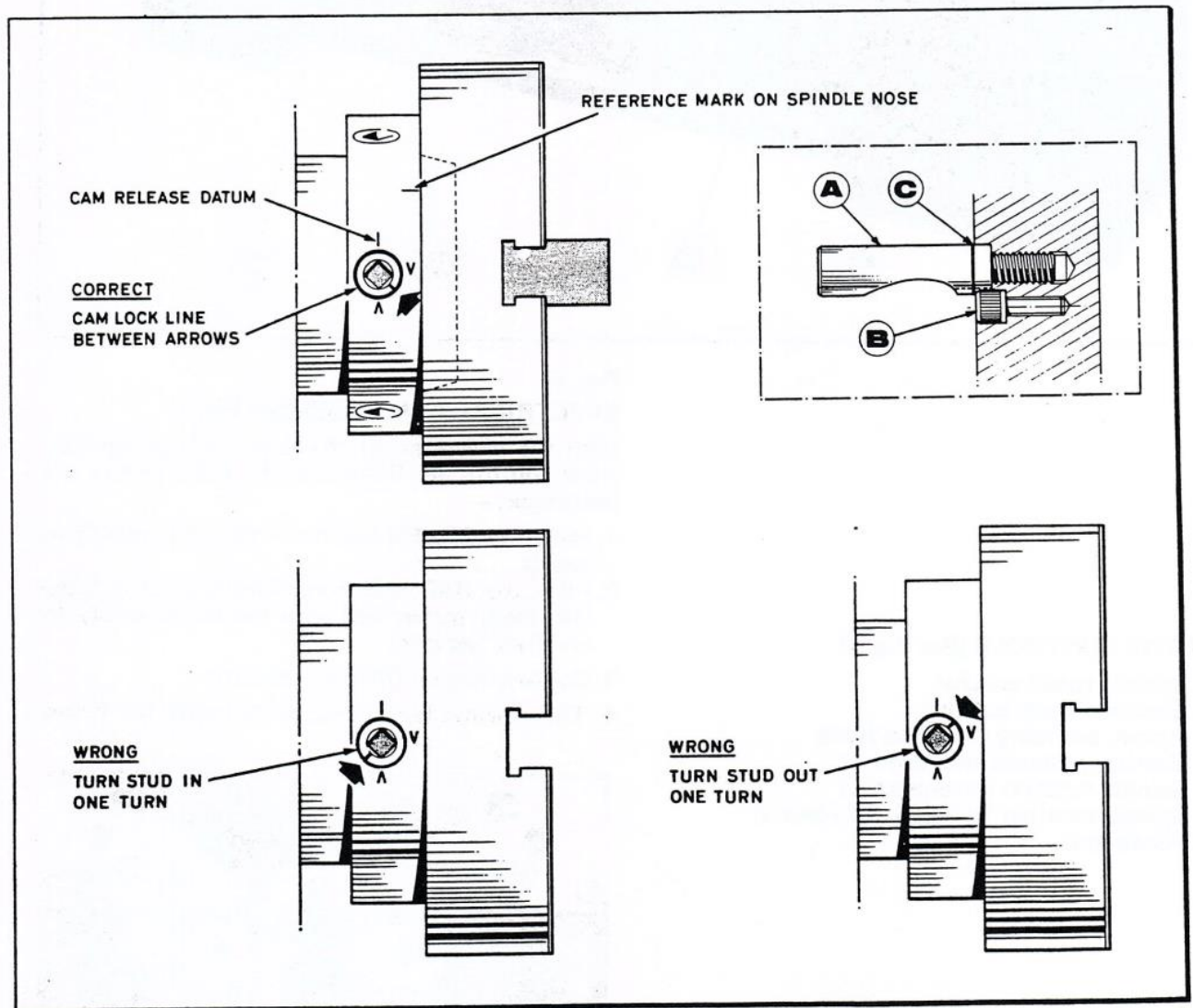
Now mount the chuck or faceplate on the spindle nose and tighten the six cams in turn. When fully tightened, the cam lock line on each cam should be between the two V marks on the spindle nose.

If any of the cams do not tighten fully within these limit marks, remove the chuck or faceplate and re-adjust the stud as indicated in the illustration. Fit and tighten the locking screw (B) at each stud before remounting the chuck for work. A reference mark should be made on each correctly fitted chuck or faceplate to coincide with the reference mark scribed on the spindle nose.

This will assist subsequent remounting. **DO NOT INTERCHANGE CHUCKS OR FACE PLATES BETWEEN LATHES WITHOUT CHECKING FOR CORRECT CAM LOCKING.**

**IMPORTANT:** Take careful note of speed limitations when using faceplates; 21 in. faceplates should not be run at speeds greater than 625 rev/min. and 14 in. faceplates at not more than 840 rev/min.

Fig. 5





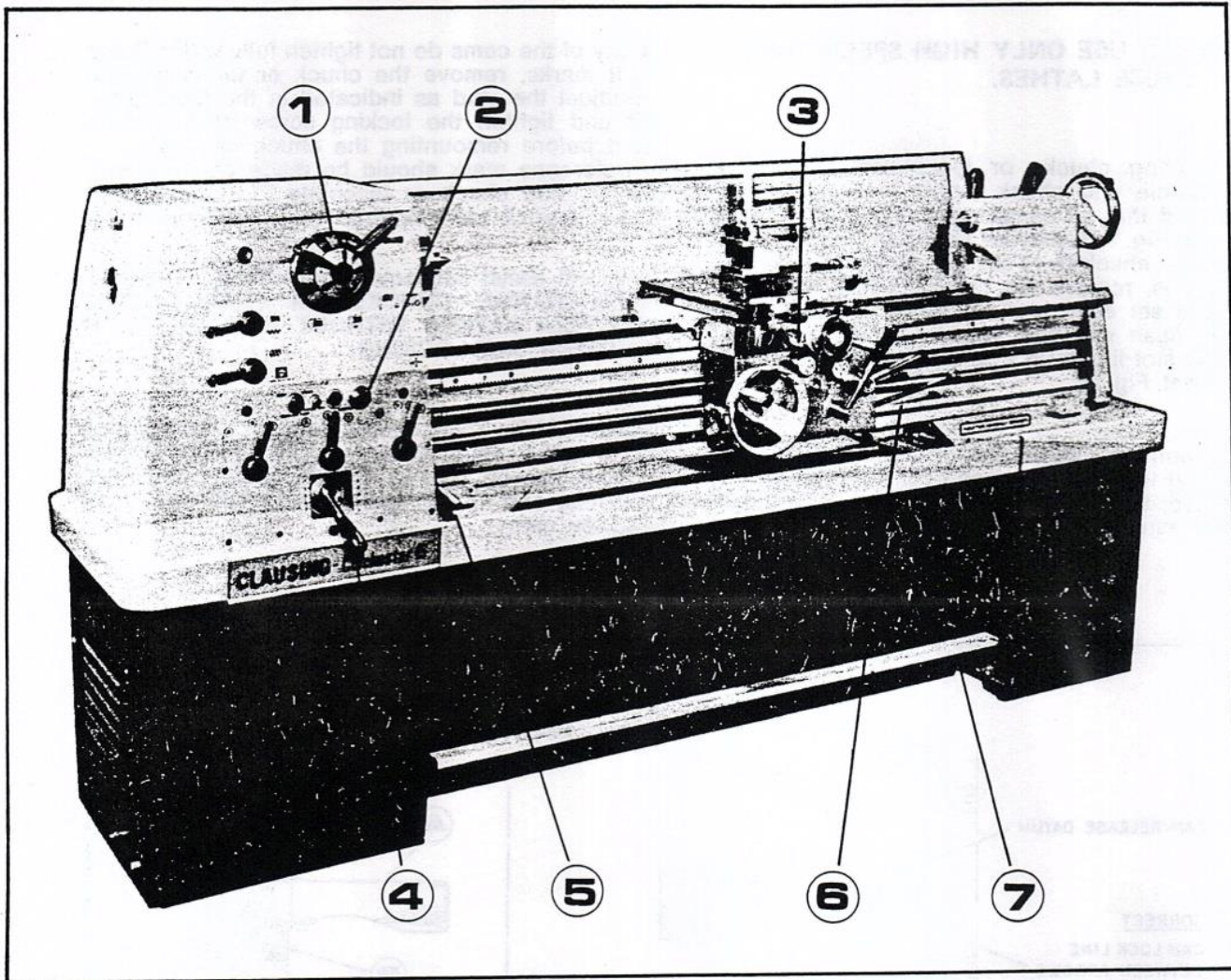


Fig. 6

**ELECTRICAL CONTROLS (See Fig. 7)**

With the exception of the lathe isolator, all electrical controls are fitted into the front face of the headstock:—

1. Press the **GREEN** button to start the main drive motor.
2. Press the **RED** mushroom-head button to stop the main motor and also electrical supply to ancillary services.
3. Coolant pump **ON/OFF** switch.
4. The indicator lamp glows whilst motor is running.

**LATHE CONTROLS (See Fig. 6)**

1. Spindle speed selector
2. Electrical push buttons
3. Apron, surfacing or sliding feeds
4. Gearbox, threads and feeds
5. Spindle rotation (reverse only)
6. Spindle rotation (forward and reverse)
7. Footbrake

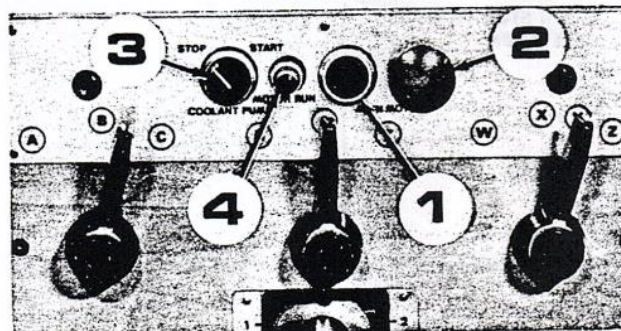


Fig. 7

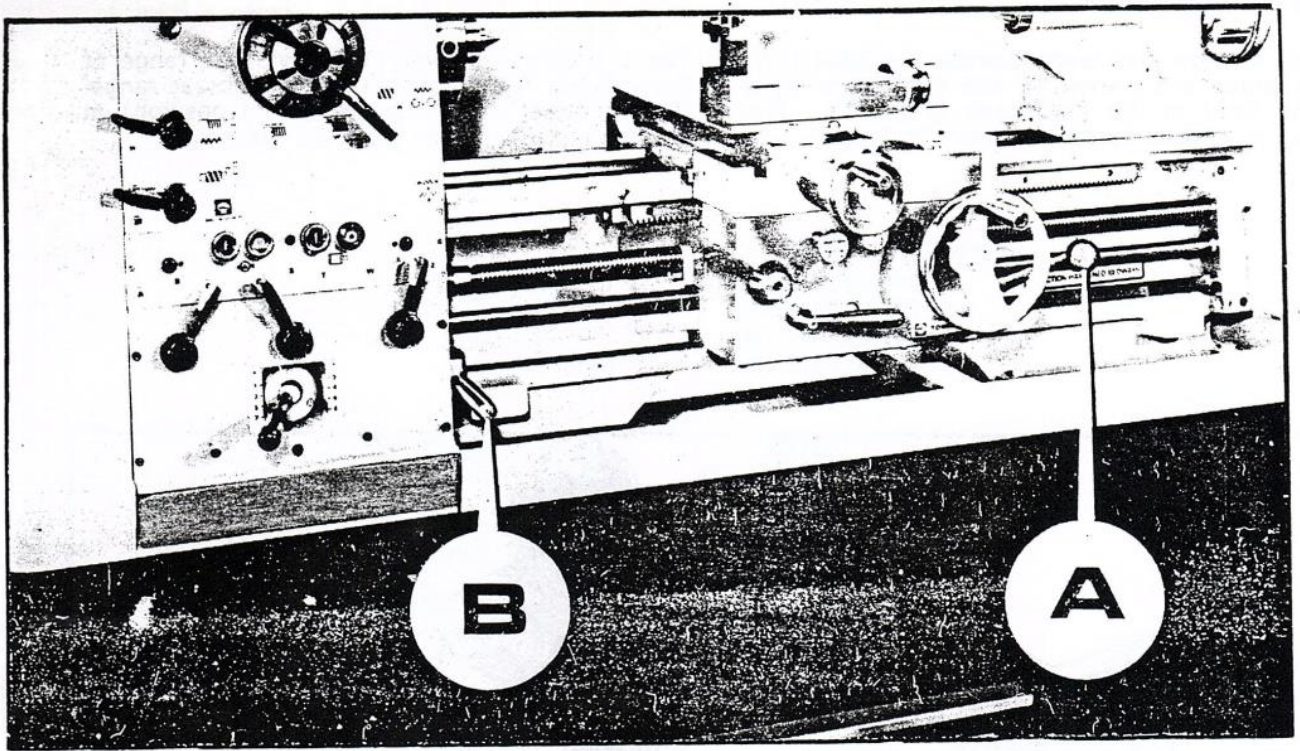


Fig. 8

### SPEED CONTROLS

**Spindle Rotation:** Selected by the lever controls A and B (see Fig. 8).

With the main motor running, move lever A up for forward rotation, out and down for reverse. Lever B can be moved only upward for forward rotation or returned to the central (disengaged) position.

Safety-gate location of the apron lever A prevents inadvertent reverse rotation.

**Footbrake:** A foot pedal between plinths operates the spindle brake and at the same time returns selector levers A and B to the central (disengaged) position.

Height of the foot pedal depends upon the position of a pin engaged in the bar (Fig. 9); a choice of three positions is provided.

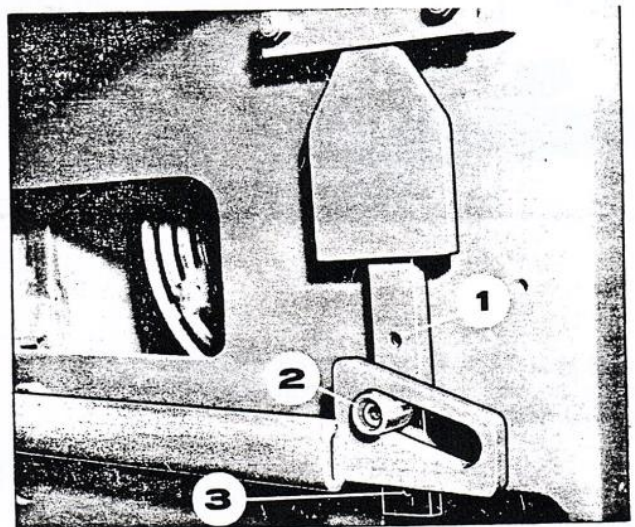


Fig. 9

**Spindle speeds:** Selected by the grouped dial controls on the headstock (Fig. 10).

The sixteen available speeds are shown directly on the lever-operated dial (A) in four groups—each of which is further divided into four displayed spindle speeds. Rotate this dial, using the large handle, to bring the required speed-group uppermost and opposite the fixed section (B). Now rotate the other handled dial (C) until the appropriately coloured arrow is aligned with the required speed on the uppermost dial group.

**DO NOT SELECT SPEEDS WHILST SPINDLE IS ROTATING OR CLUTCHES ENGAGED—APRON CONTROL MUST BE CENTRAL (DISENGAGED) TO AVOID GEAR DAMAGE**

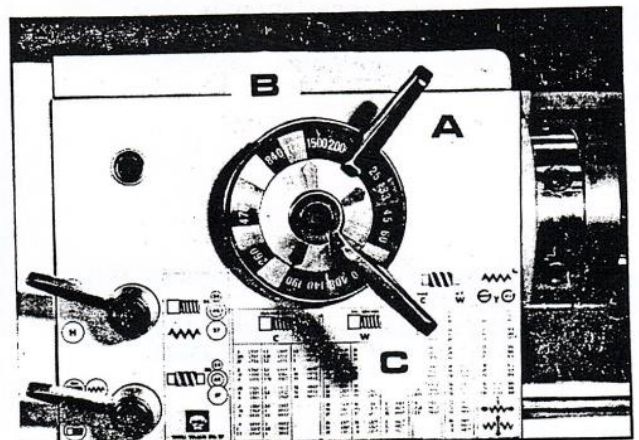


Fig. 10

## THREADS AND FEEDS

All the threads and feeds directly available from the gearbox are shown on the data plate fitted on the front of the headstock (Fig. 11). The setting of control levers is shown in Fig. 12.

The L position of lever (Y) provides a range of fine threads, the H position a coarse thread range. Do not select the coarse range (H position) at spindle speeds higher than 625 rev/min.

Threads available:

45 Whitworth threads	:	2 to 72 t.p.i.
39 Metric threads	:	0.2 to 14 mm pitch
18 Metric modules	:	0.3 to 3.5 mod.
21 Diametral pitches	:	8 to 44 D.P.

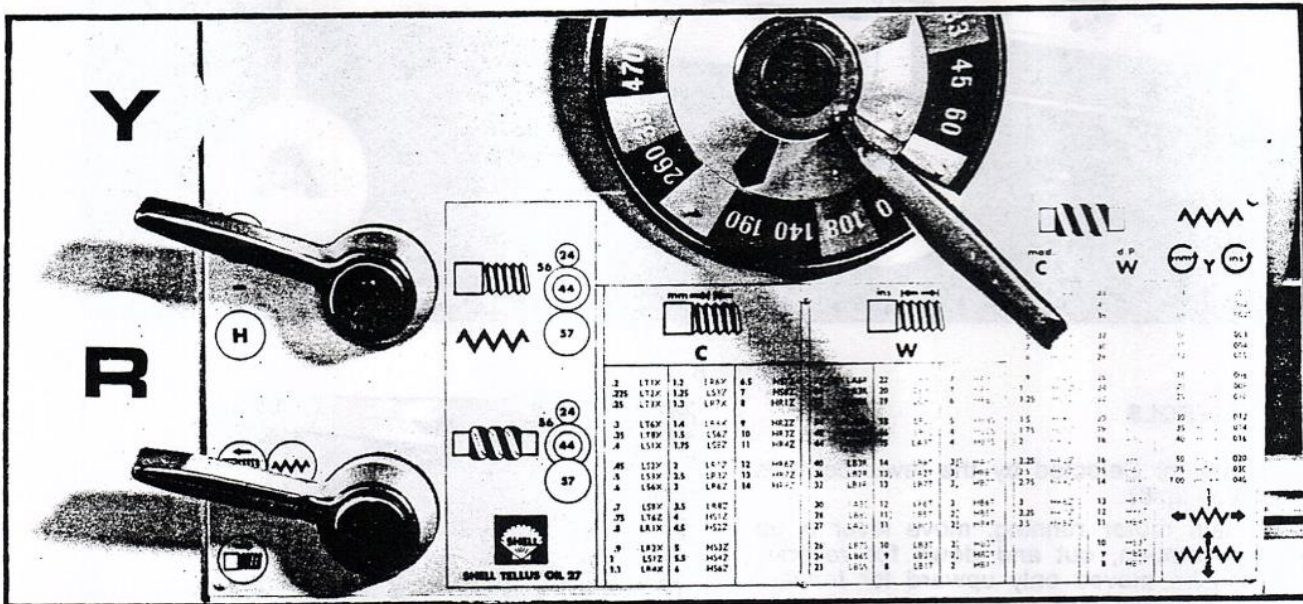


Fig. 11

The end-gear train should be arranged as in the diagrams shown on the data plate to suit threading requirements.

Lever R (Fig. 11) is for left-hand thread-cutting; it should be used for feed reversal.

**Change gears:** For any special threads not shown on the data plate, our Technical Department will specify the most convenient change-gearing required.

**Feeds:** Sliding feeds per spindle revolution range from .0015 to .040 in. Surfacing feeds per spindle revolution range from .00075 to .020 in. or half the sliding feed.

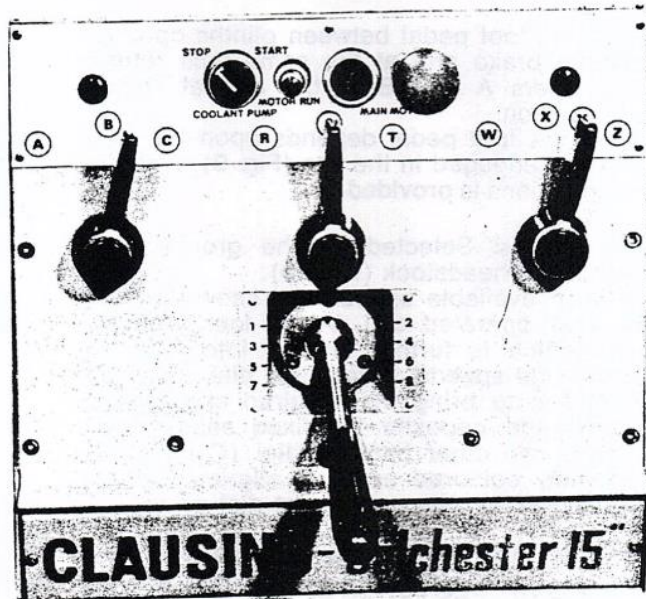


Fig. 12

## THREADING DIAL INDICATOR

Located on right-hand side of the apron except when a rapid-threader unit is fitted as optional extra. Engage the indicator pinion with the lead-screw and tighten the handnut to retain indicator in engagement. Release handnut, swing indicator out of engagement and secure with the handnut when not required.

To cut threads of an even number per inch, close the leadscrew nut as ANY line on the dial passes the datum mark. To cut threads of odd numbers per inch, close the leadscrew nut at any NUMBERED line.

Fractional threads of  $\frac{1}{2}$  or  $\frac{1}{4}$  t.p.i. may be cut by closing the nut at the SAME numbered line on each pass of the tool.

This dial cannot be used with an English lead-screw to cut metric threads, D.P., module pitches or fractional threads other than those shown. For these the leadscrew nut must be kept closed and the machine reverse by use of the apron control lever after each cutting pass and tool withdrawal.

## MULTI-START THREADS

Multi-start threads can be cut on a lathe in three ways:—

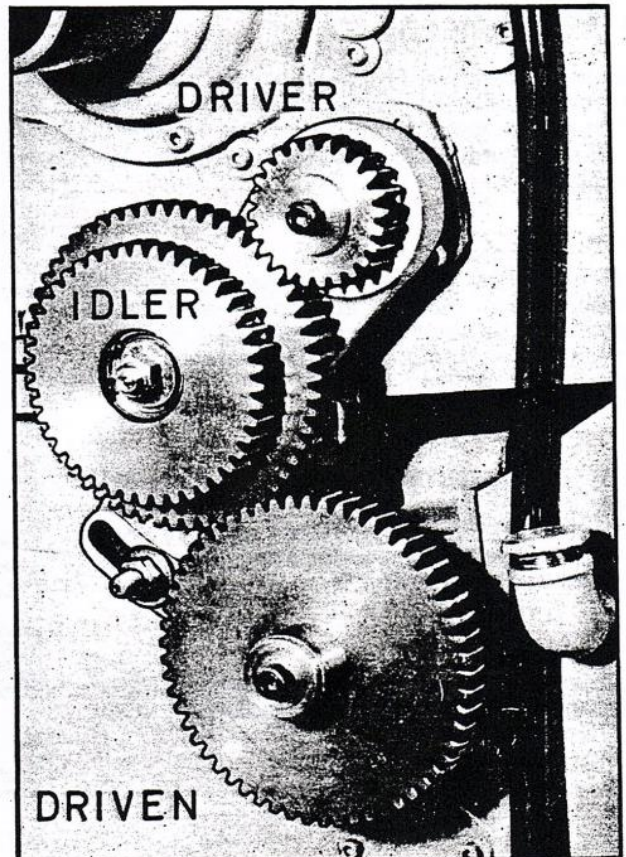
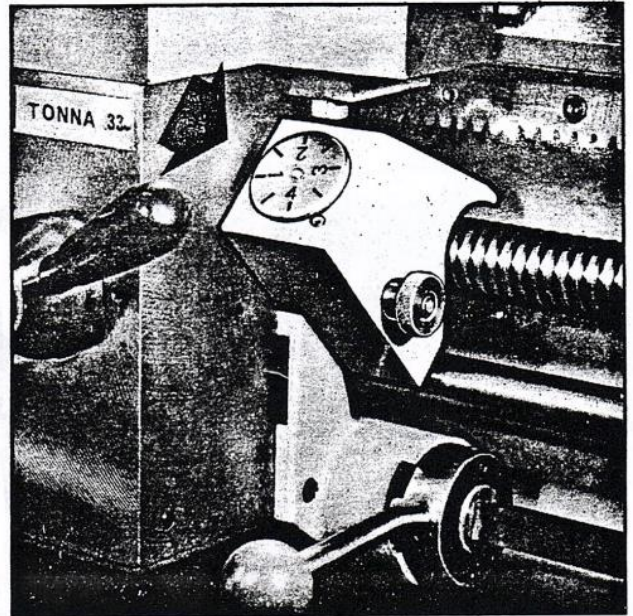
1. By repositioning the compound (top) slide one pitch forward for each start. Note that the slide is normally set at 90 deg. to the axis of the machine cross-slide. The accuracy of this method depends upon the skill of the operator.
2. By using an accurately-divided driver plate and turning the workpiece one division forward for each start.
3. By advancing the driver gear a calculated number of turns to advance the spindle by one pitch of the thread to be cut. The accuracy of this method is that of the machine.

With Colchester Triumph 2000 lathes, two ratios exist between the spindle and driver gear shaft; i.e. the LOW range where the ratio is 1:2, and the HIGH range where the ratio is 2:1.

In order to use this method, the number of teeth on the driver gear must be divisible by the number of starts being cut. The driver gear is then advanced by **half** this number of teeth when in LOW range and, conversely, by **twice** the number of teeth when in HIGH range.

The limitation of this method depends upon whether the number of starts required can be divided equally into the number of teeth on the driver gear without a remainder.

On the standard end gear train for this machine the driver gear has 24 teeth; so that two, three or four start threads can readily be cut. For other odd numbers of starts a choice must be made of methods 1 or 2.



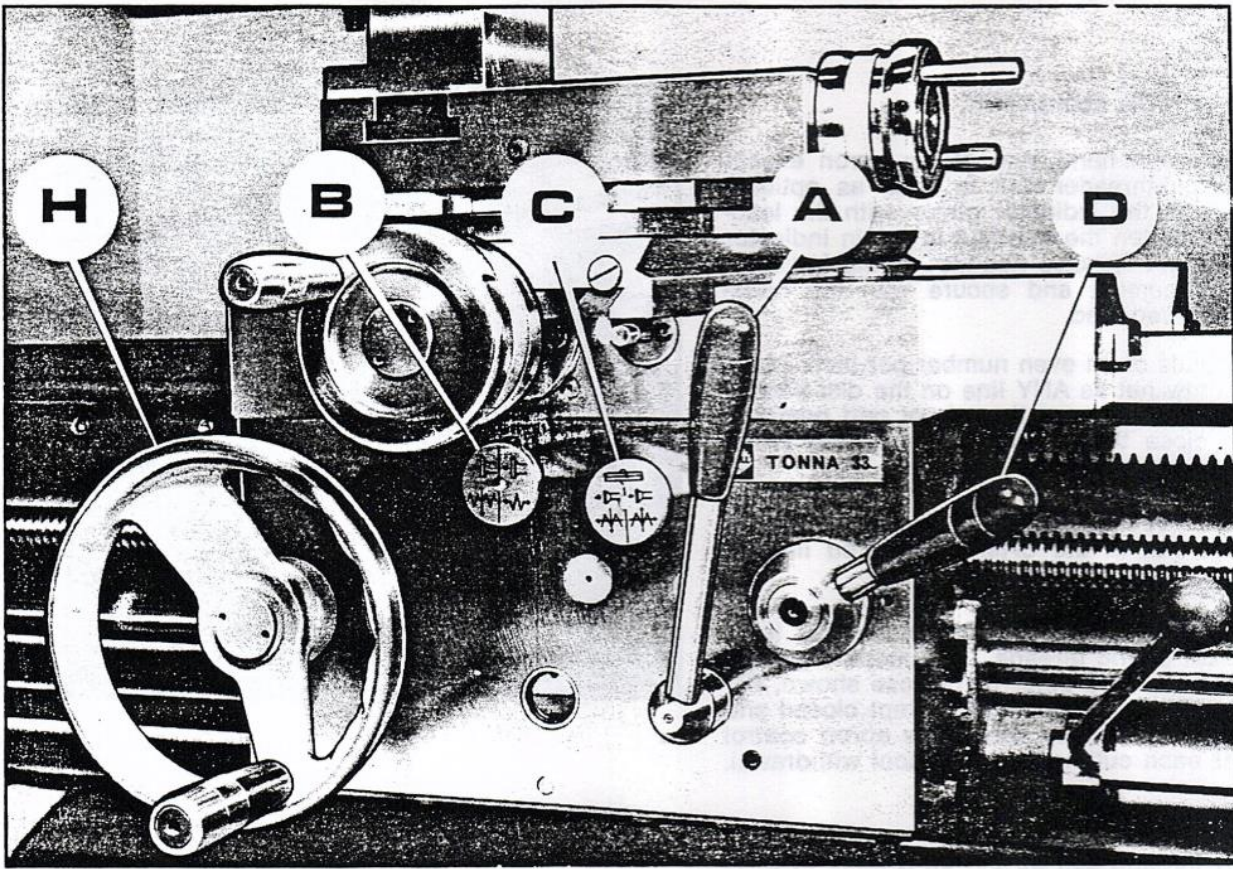


Fig. 13

#### APRON CONTROLS

In addition to handwheel traverse, the carriage can be power-operated through controls on the front of the apron, see Fig. 13. Lever (A) is moved up for power feed engagement and down for manual operation.

The push-pull knob (B) selects power surfacing (cross-feed) when pulled out, sliding feeds are selected when the knob is pushed right in. The adjacent push-pull handle (C) controls forward or reverse feed direction.

Lever (D) is pressed downward to engage the leadscrew nut for screwcutting. To avoid undue wear, release the nut except when screwcutting. An interlock within the apron prevents inadvertent engagement of levers A and D at the same time.

**NOTE:** Do not use headstock lever for reversing feeds except during left-hand screwcutting; use, instead, the apron handle (C).

**Feed-trip adjustment:** A trip mechanism is incorporated in the apron, enabling saddle and/or cross-slide to be fed up to fixed stops. Trip loads can be set high or low by adjustment of the knurled handwheel on the side of the apron. The apron handwheel may be disengaged from its gear train during power operation or when screwcutting, by pulling the handwheel outwards to another spring-ball detent.

**NOTE.** This does not apply if longitudinal dial accessory is fitted.

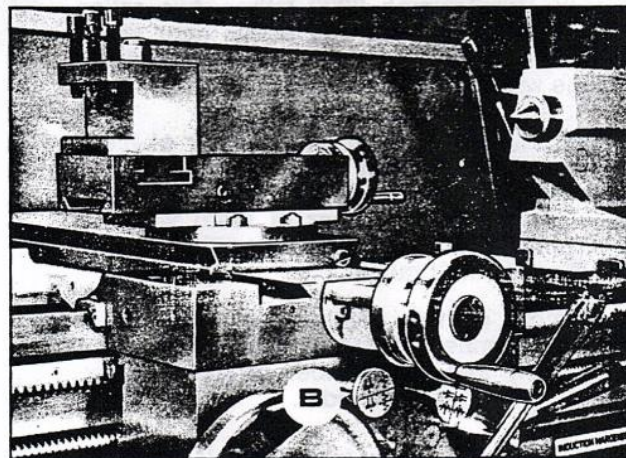


Fig. 14

### CROSS-SLIDE AND TOPSLIDE—see Fig. 14

Either a solid or slotted topslide can be fitted to the crossslide, carried on a rotatable base which is marked 0-90-0-90 deg. for accurate indexing.

The cross-slide can be power operated by pulling out the hand knob (B), at half sliding feed per spindle revolution; or it can be hand-operated using the large-diameter dial.

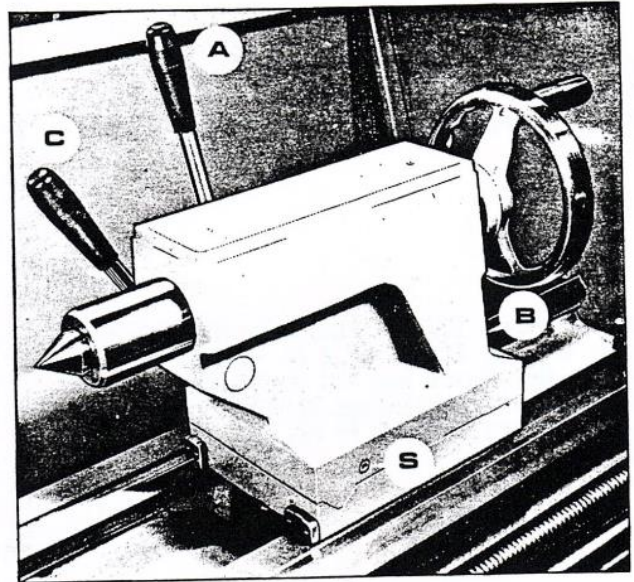


Fig. 15

### TAILSTOCK

Can be freed for movement along the bed by unlocking the clamp lever (A). Additional clamping may be obtained by tightening the large nut (B) located in a recess below the handwheel.

Release this clamping nut before attempting to move the tailstock and on completion of the need for extra clamping.

The tailstock barrel is locked by lever (C), see Fig. 15.

The tailstock can be set-over for production of shallow tapers or for re-alignment. Release the clamping lever and adjust screws (A) at each side of the base (Fig. 15) to move tailstock laterally across the base. An indication of the set-over is given by the datum mark (D) at the tailstock end face, as shown in Fig. 16. Apply clamp lever after adjustment of set-over.

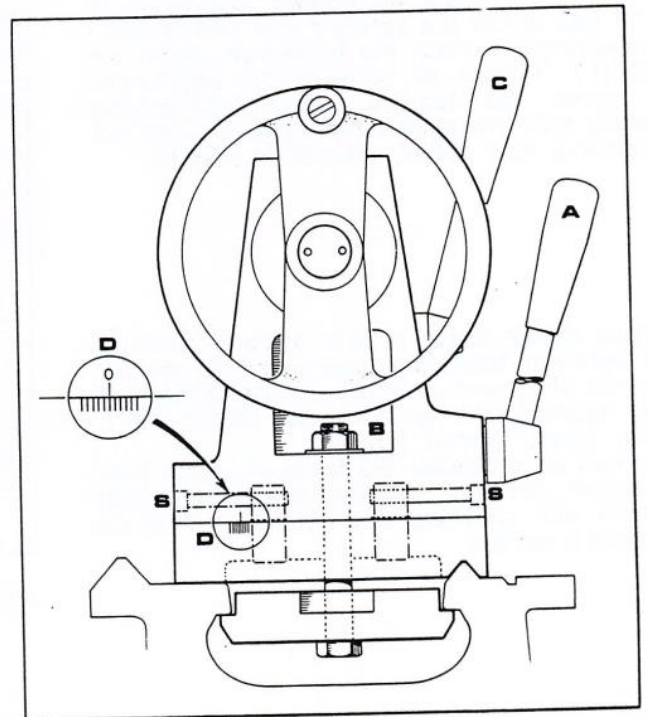


Fig. 16

**LATHE ALIGNMENT**

With the lathe installed and running, we recommend a check on machine alignment before commencing work. Check levelling and machine alignment at regular periods to insure continued lathe accuracy.

**Headstock check:** Take a light cut with a keen tool over a 6 in. length of 2 in. dia. steel bar gripped in the chuck but not supported at the free end. Micrometer readings at each end of the turned length (at A and B of Fig. 17) should be the same.

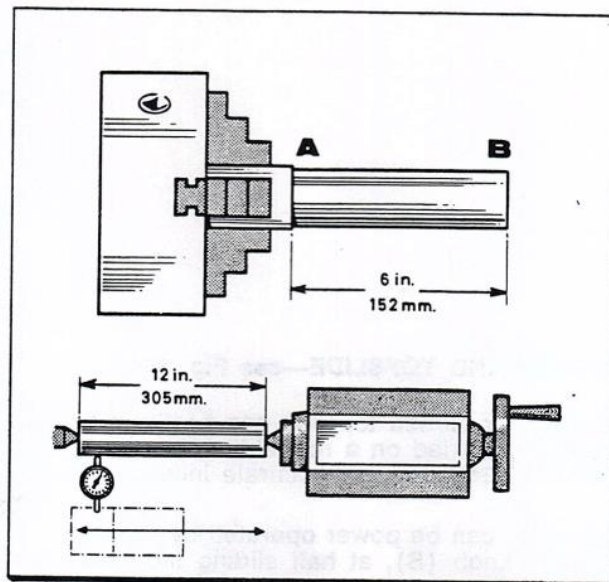


Fig. 17

To correct a difference in readings, slacken the four headstock hold-down screws (J) shown in Fig. 18 and adjust the set-over pad (K) beneath the headstock to pivot the headstock about the dowel (L). Tighten all screws after adjustment and repeat the test-cut / micrometer-reading sequence until micrometer readings are identical, i.e. machine now cutting absolutely parallel.

**Tailstock check:** Using a 12 in. ground steel bar fitted between headstock and tailstock centres, check the alignment by fitting a dial-test indicator to the topside and traversing the center line of the bar (lower sketch, Fig. 17). To correct error release the tailstock clamp lever and adjust the two set-over screws provided. Continue with checking and correction until the alignment is perfect.

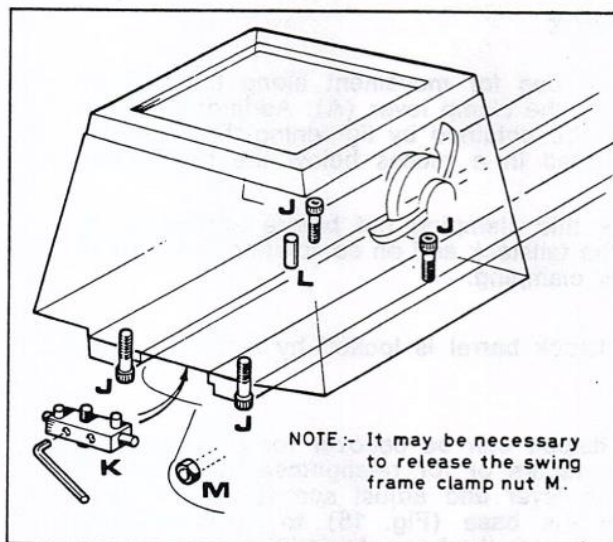


Fig. 18

**END GEAR TRAIN**

Drive from headstock to gearbox is transmitted through a gear train enclosed by the headstock end-guard. Intermediate gears are carried on an adjustable swing-frame (M) shown in Fig. 19. Gears must be thoroughly cleaned before fitting and backlash maintained at .005 in. for correct meshing. Lubricate gears regularly with thick oil or grease.

**DRIVING BELTS**

To alter belt tension, remove the cover plate in back of the headstock plinth and adjust the two screws (X Fig. 20) on the hinged motor platform. Insure that the motor is correctly aligned with the lathe axis.

Light finger pressure at a point midway between motor and headstock pulleys should produce about 3/4 in. movement of each belt when under correct tension, see Fig. 21.

**NOTE:** The oil pump driving belt is automatically tensioned by its own spring-loaded jockey pulley.

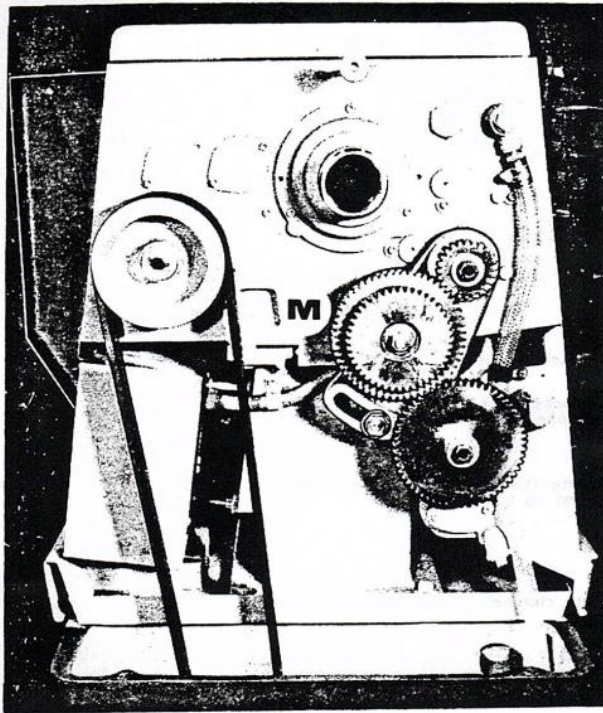


Fig. 19.

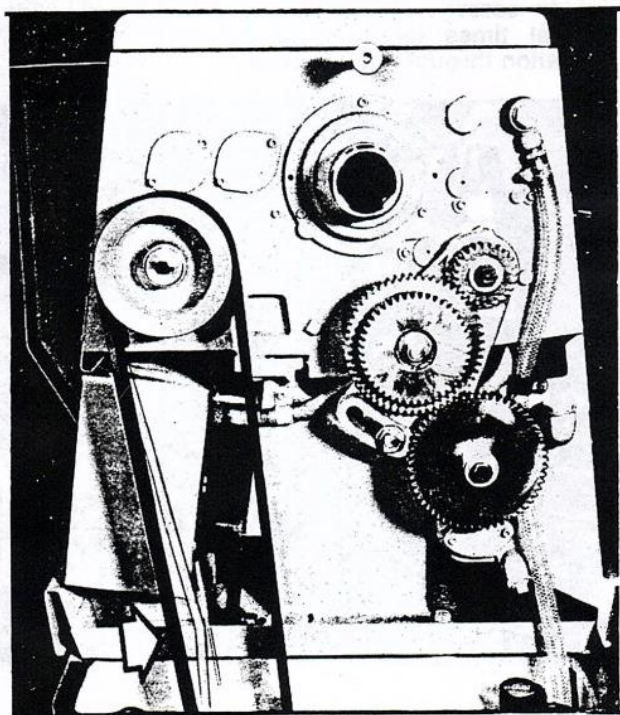


Fig. 21

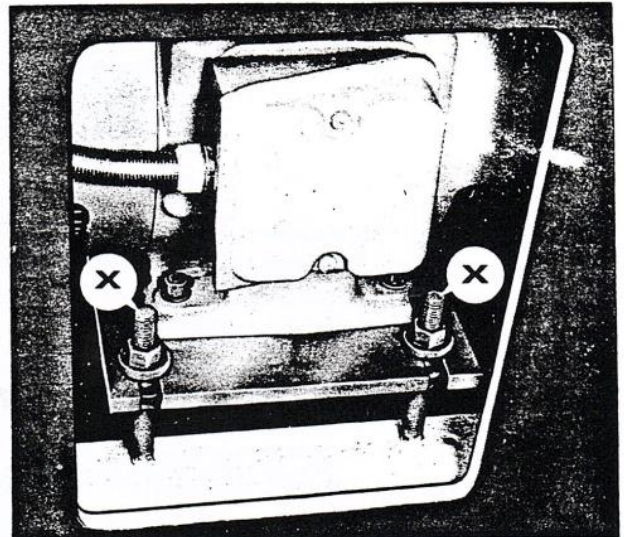


Fig. 20

### LEADSCREW SHEARPIN

The transmission is protected against severe overload by a shearpin fitted into the lead screw drive, just forward of the gearbox, see Fig. 22.

To replace a sheared pin, first disengage drive to the lead screw (F) by setting the right-hand lever of the gearbox to the position Y. Then rotate the flanged shaft (A) carrying the broken pin to the slot at the bottom of the gearbox housing (B). Press the spring-loaded collar (C) to the right and push the pin into the slot. Rotate the shroud washer (D) to expose the pin head for removal from the collar (C).

Align the holes in flanged-shaft (A), collar (C) and shroud washer (D) then insert a new pin (E) and rotate the shroud washer to cover and retain the new shearpin.

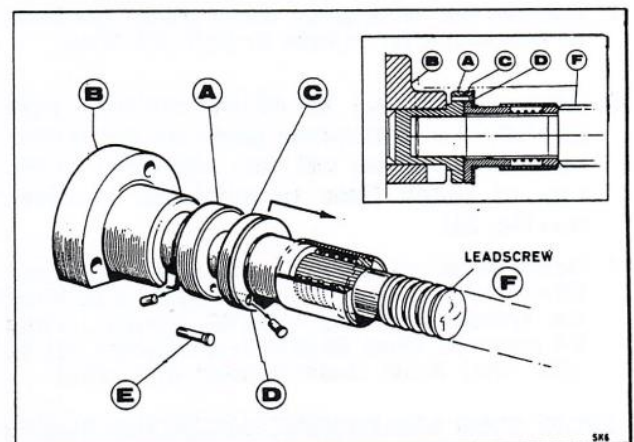
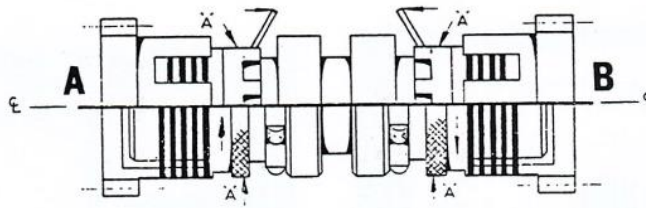


Fig. 22

**CAUTION: USE ONLY CORRECT REPLACEMENT SHEARPINS OF MATERIAL  $\frac{1}{8}$  in. DIAMETER STEEL, 30 TON TENSILE STRENGTH.**





#### TO ADJUST CLUTCHES

1. Disconnect Main Power Supply.
2. Disengage clutch to be adjusted by setting the red handled apron control lever to central position.
3. Remove access plate.
4. (Roller type clutch—Matrix)  
Slide back knurled lock-ring A. Rotate by one notch in direction of arrow.
- or 4. (Lever type clutch—Ortlinghaus)  
Rotate input pulley until the spring tab which locks adjustment nut is accessible, prise tab away just clear of slot, rotate nut by one notch in direction of arrow.
5. Reset locking.
6. Check performance.  
When correctly set the drive clutches accelerate the spindle from rest to 2000 r.p.m. in 3 to 4 seconds with a 10" 3-jaw chuck fitted and no workpiece.

#### WARNING

Adjust only one notch at a time.  
Over-adjustment will cause serious damage to clutches or operating mechanism with no gain in performance.

537-0847

Fig. 23

#### DRIVE CLUTCHES

Two multi-plate clutches (A and B of Fig. 23) provide drive for forward and reverse headstock spindle rotation.

Initial bedding-in of the friction surfaces will usually necessitate some adjustment. To adjust clutches:

1. Isolate the lathe from mains power supply at the switch on rear electrical panel then disengage the clutches by setting red-handled apron control to the central position.
2. Remove the rectangular cover plate from back of headstock for access to both clutches.
3. Before attempting to adjust clutches, read carefully the instructions given on the access cover plate. These will vary according to the type of clutch fitted to individual machines (see Fig. 23).
4. Refit cover plate and check performance. When correctly set, clutches should accelerate the spindle from rest to 2000 rev/min. within 3-4 seconds; when fitted with a standard 10½ in. (267 mm) 3-jaw chuck without work-piece.

**AVOID OVER ADJUSTMENT WHICH MAY CAUSE SERIOUS DAMAGE TO CLUTCHES OR OPERATING MECHANISM WITH NO GAIN IN PERFORMANCE**

#### CROSS-SLIDE NUT

This is adjustable for elimination of slackness which may develop in service. Reduce backlash by slackening rear cap-head screw in top of cross-slide (A in Fig. 24) then carefully screw in the center screw (B) to adjust a wedge within the split nut.

Make only small adjustment at a time and retighten screw A before operating the cross-slide several times by hand to be sure of smooth operation throughout full travel.

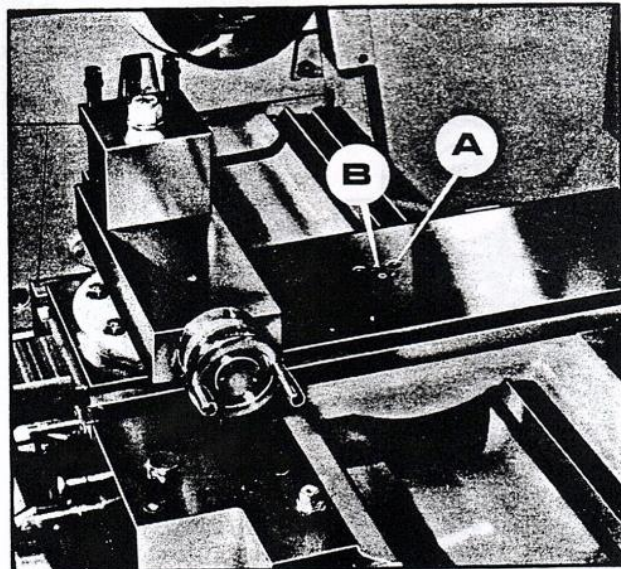


Fig. 24

## LUBRICATION SYSTEM

Headstock bearings and gears are supplied with oil delivered by an impeller-type pump attached to a tank in the head-end plinth. A distributor within the headstock supplies oil to the drive clutches, bearings and gears. The oil pump is driven by a vee-belt from the main motor, insuring continuous supply whilst the main motor is running; evidence of supply is shown through an oil sight window in the headstock front face. A self-adjusting jockey pulley ensures constant belt tension.

A large-bore pipe returns oil from the bottom of the headstock into the tank. Ensure that the oil level in the tank is kept topped up to the mark on the filler-cap dipstick, see Fig. 25. Check oil level weekly and change the oil every year using Shell Tellus Oil 27 or equivalent grade (see below). Tank capacity is 3½ gallons.

To empty the tank, set apron control lever to central position and stop the main motor. Detach the delivery pipe at the headstock, remove pipe cleats and with the pipe directed into a suitable container restart the main motor so causing the pump to empty the tank contents. The small quantity of oil left in the tank below the level of the pump intake can then be drained off through the drain plug projecting from the end of tank through the plinth wall.

The gearbox is splash-lubricated from an internal reservoir of oil (Shell Tellus 27). Check the oil level constantly to the mark on the oil sight window in the front end face of the gearbox; a weekly check is recommended, with the oil changed every year. Top up through a filler cap in the top of the gearbox, enclosed by the end-guard. Drain from a drain plug in the bottom of the gear-box, see Fig 25.

**NOTE:** Use of incorrect grades of oil can cause damage.

Where Shell Tellus Oil 27 is not obtainable, a grade with the following characteristics must be used:—

Specific gravity (20°C)	0.870
Flash point closed	210°C (410°F)
Pour point	-29°C (-20°F)
Viscosity, Redwood No. 1	70°F — 320 secs. 140°F — 68 secs. 200°F — 41 secs.
Viscosity, Engler degrees	10.5

### NEWMAN MOTORS — Bearing Lubrication

**LUBRICANT:**— Use Shell Alvania Grease RA or Shell Alvania Grease 2 obtainable from Shell companies throughout the world.

**LUBRICATION INTERVAL:**— Every 6 months for motors running 8 hours or more per day. Every 12 months for motors running less than 8 hours per day.

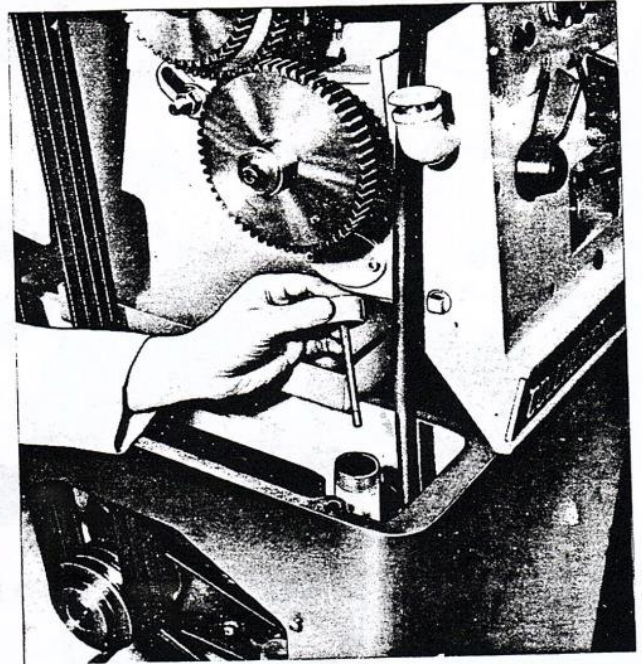
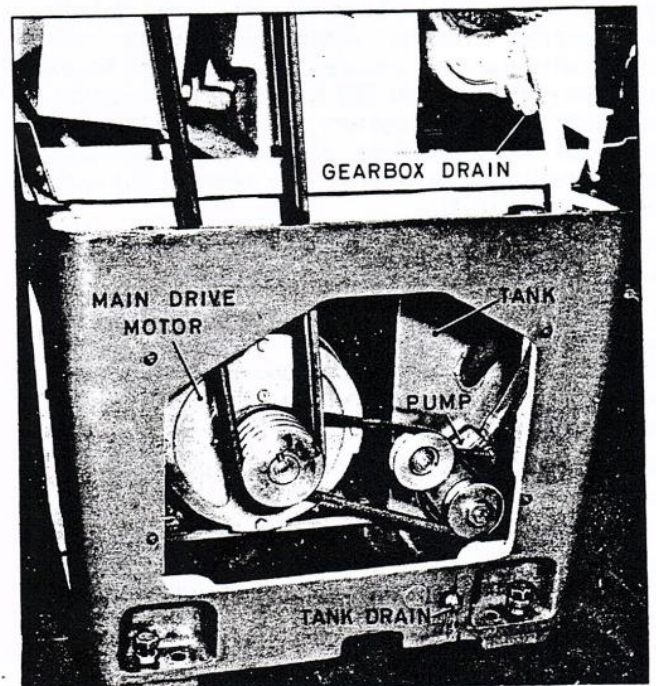
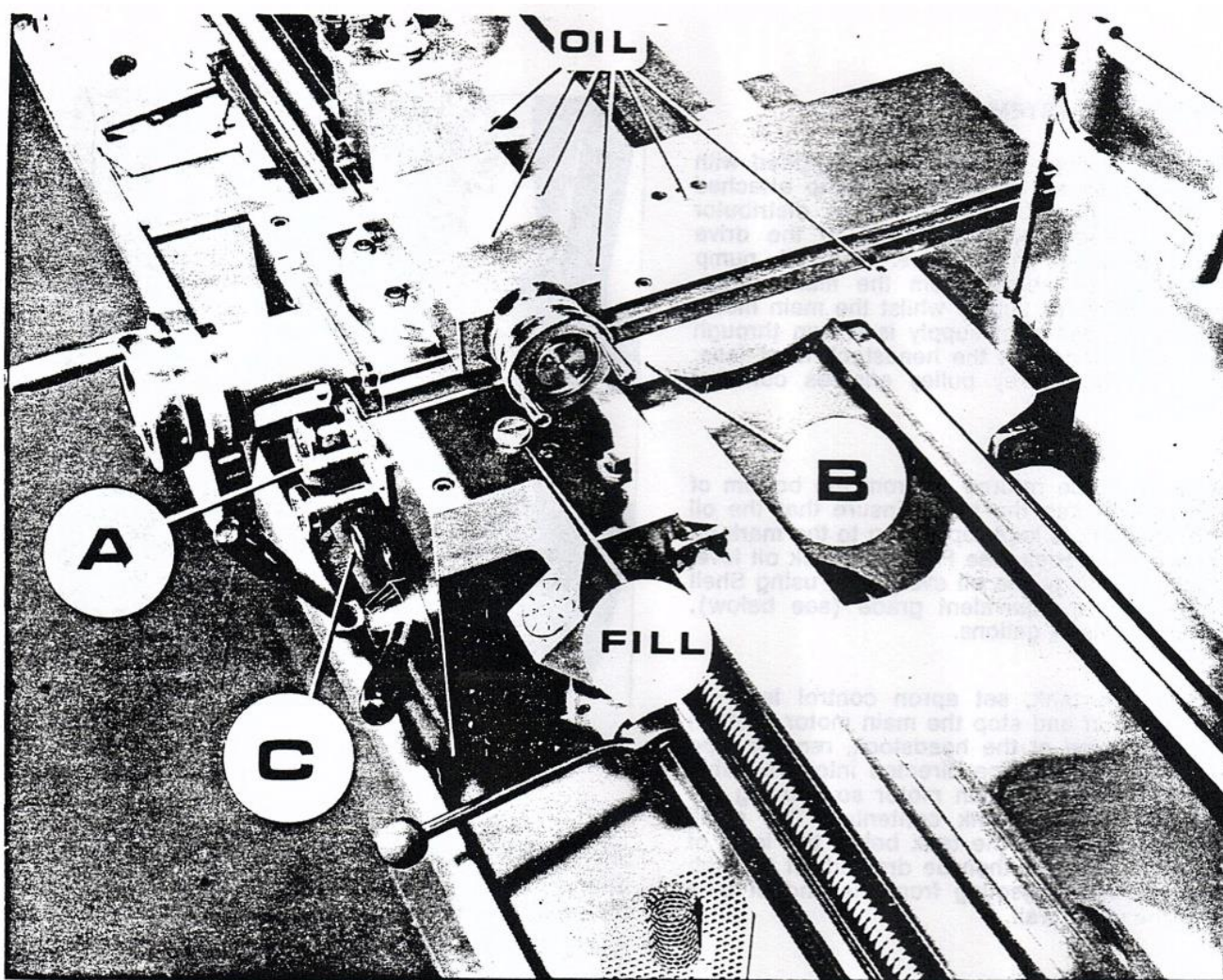


Fig. 25

Shell Tonna 33 is recommended for apron lubrication. Where this is not obtainable, use a grade with the following characteristics:—

Specific gravity at 20°C	0.881
Flash point closed	220°C
Pour point	-9.4°C
Viscosity Redwood No. 1	70°F — 750 secs. 100°F — 280 secs. 130°F — 105 secs.





## GENERAL LUBRICATION

**Apron and Slideways.** (Fig. 26) A manually operated lubricating pump (A) is incorporated into the apron. Drawing oil from the apron reservoir it enables the operator to ensure that the slideways are kept adequately lubricated. The pump should be operated; before commencing work and occasionally during the work period, until oil flows from the tell tale hole (B) in the carriage saddle, indicating that the system has received a full supply of oil. Should no oil appear at (B) refill the reservoir to the level of the oilsight (C) with Shell Tonna Oil 33.

The apron can be drained by unscrewing a hex-headed drain plug in the bottom plate.

In addition to pump-fed lubrication, oiler points are provided for the saddle, cross-slide, cross-slide nut and top-slide (compound slide) screw using a standard pump-type can with light machine oil or way lubricant, see Fig. 26.

On the tailstock, oiler points are provided for daily attention from a standard oil can.

It is recommended that all slideways, the lead-screw and feed shaft are cleaned off (a bristle paint brush is useful for this) and lightly oiled after each period of work.

## SLIDWAYS ATTENTION

Tapered gib strips are fitted to slideways of saddle cross-slide and top (compound) slides so that any slackness which may develop can be rectified.

Ensure that slideways are thoroughly cleaned and lubricated before attempting adjustment. Then reset the gibs by slackening the rear gib screw and tightening the front screw, a little at a time. Check constantly for smooth action throughout full slide travel; avoid over-adjustment which can result in increased wear-rate and stiff or jerky action.

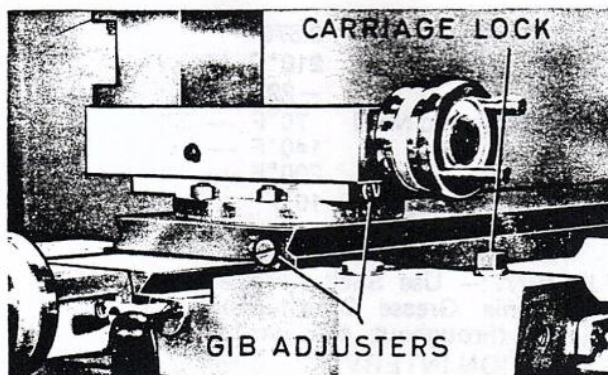
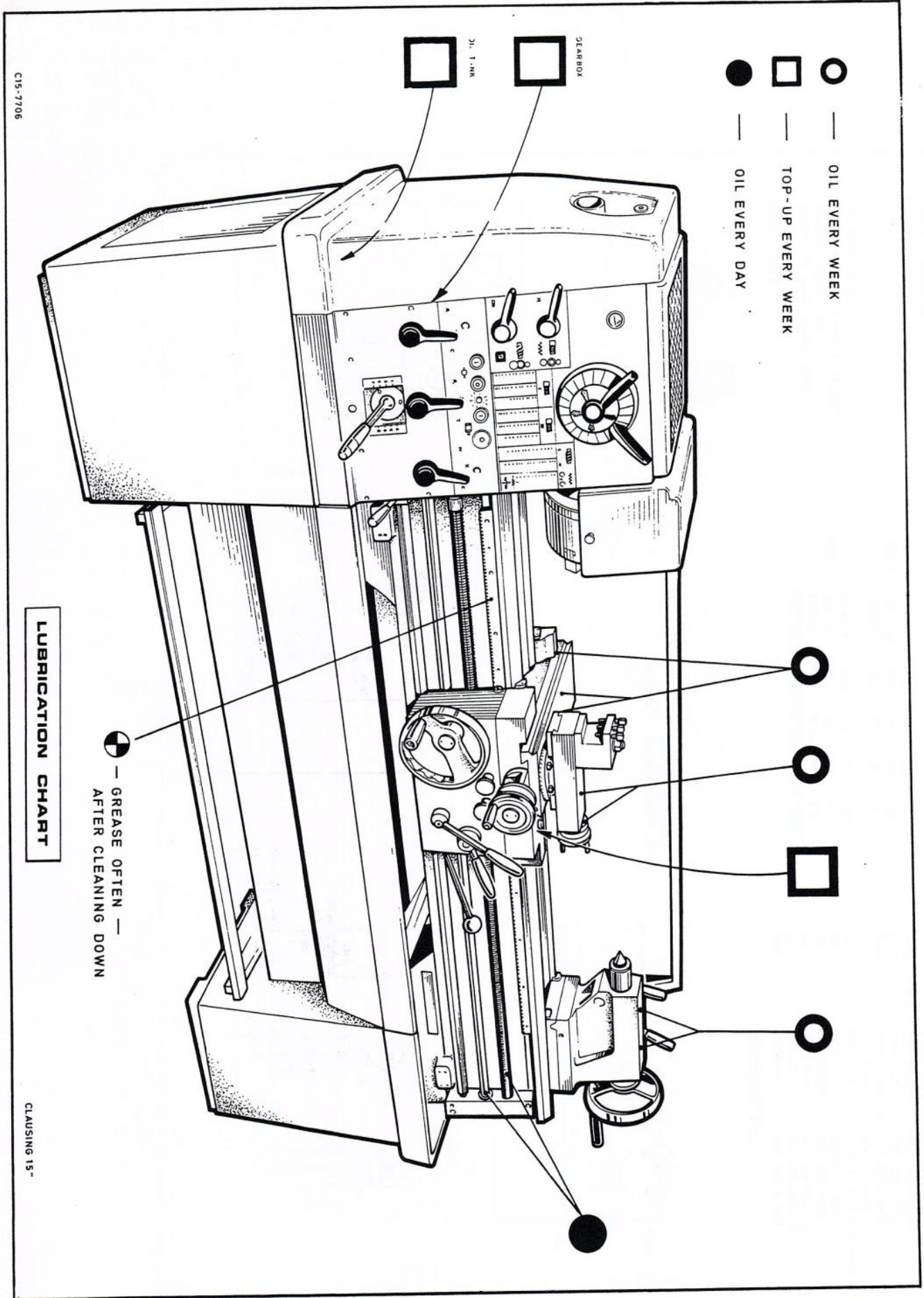


Fig. 27



- — OIL EVERY WEEK
- — TOP-UP EVERY WEEK
- — OIL EVERY DAY

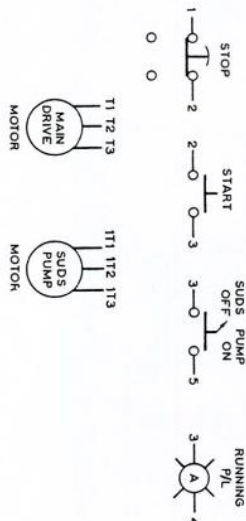
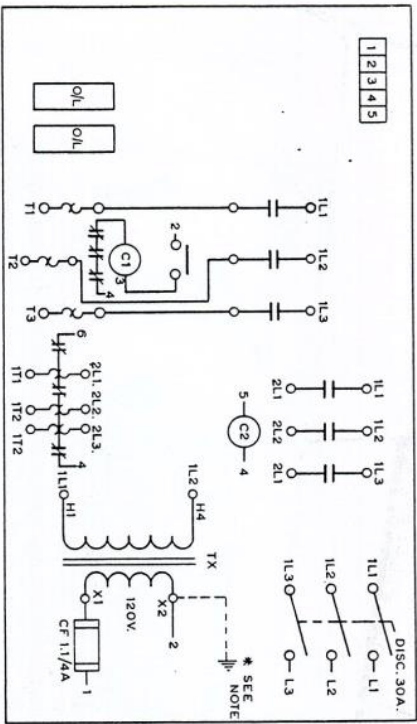
GEARBOX  
 21. 1-ANK

**LUBRICATION CHART**

— GREASE OFTEN —  
 AFTER CLEANING DOWN

CIS-7706

CLAUSING 15"



\* NOTE: To be grounded by user if conditions permit.

**WIRING NOTES**

Power - 10 AWG. Black  
 Power - TX PRIM. 16 AWG. Black.  
 Control - 16 AWG. Red.  
 Grounding wire (if reqd.) 16 AWG. Green.  
 All wires American UL Approved.

**MAIN MOTOR**  
 NEMA Specification  
 7 1/2 h.p. 3 Phase 60 cycles  
 208 v. 230 460 v. or 575 v.

**MAIN**

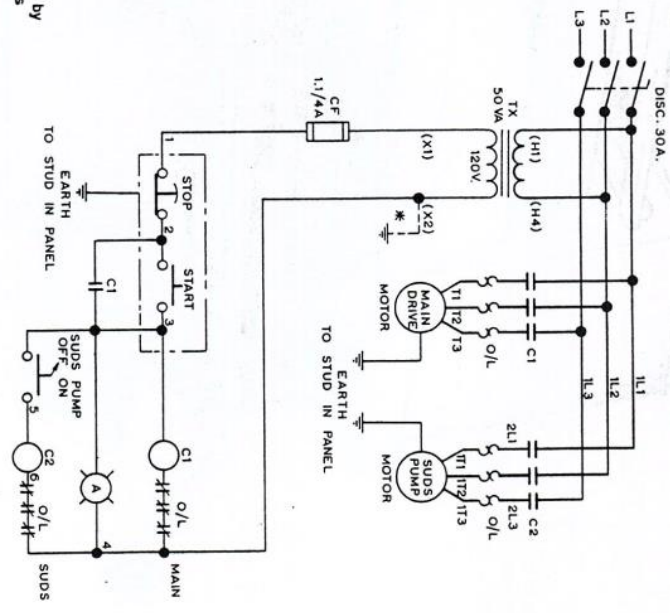
A/B U.K. Ltd.	BUL. 815	O/L Heater	Table
FLC(A)	21	10 5	23 5
VOLTAGE	230	460	208
HEATER	N39	N32	N40
		N29	

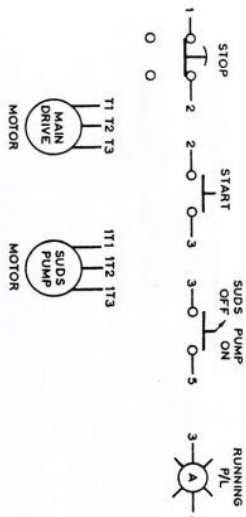
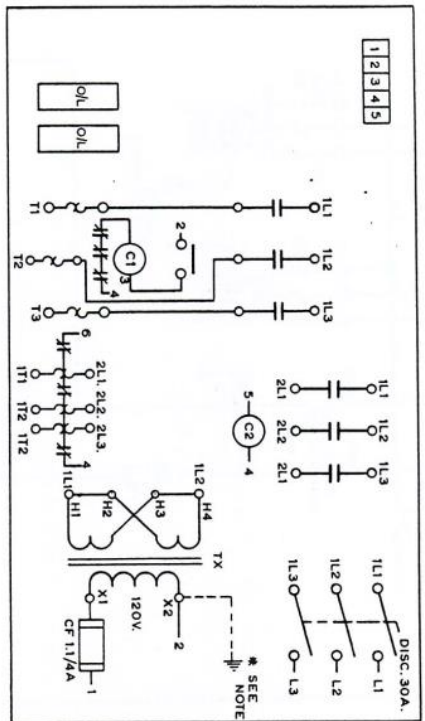
**SUDS**

FLC(A)	.22	.14	.22	.11
VOLTAGE	230	460	208	575
HEATER	NN3	NN4	NN3	NN4

**COMPONENTS LIST**

DISC	Disconnect	BUL. 1494 R - N30.
C1	Starter	BUL. 702-BDD-93.
C2	Contact	BUL. 702-TDD-92.
TX	Transformer	BUL. 1497-N28.
CF	Fuse	X277745 (CLIP)
CF	Fuse link	FNM 1.1/4 (Bussman)
STOP	O/L Reset	BUL. 1493-N1
START	Mushrm. Hd P/B.	BUL. 800T-D6D2
SUDS PUMP	Start P/B.	BUL. 800T-AID1
SUDS PUMP	Sel. Switch	BUL. 800T-H2D1
SUDS PUMP	Terminal	BUL. 1492-CA2
SUDS PUMP	O/L Relay L.H.	BUL. 815 NX1. TRIPLE.
MAIN MOTOR	O/L Relay R.H.	BUL. 815 NX2. TRIPLE.
	Pilot Lamp	BUL. 800T-PS16A





\* NOTE: To be grounded by user if conditions permit.

**WIRING NOTES**

Power - 10 AWG. Black  
 Power - TX PRIM. 16 AWG. Black.  
 Control - 16 AWG. Red.  
 Grounding wire (if reqd.) 16 AWG. Green.  
 All wires American UL Approved.

**MAIN MOTOR**

NEMA Specification  
 7 1/2 h.p. 3 Phase 60 cycles  
 208 v. 230 460 v. or 575 v.  
 1800 R.P.M.  
 Frame size C213T/DD1872 BBA.

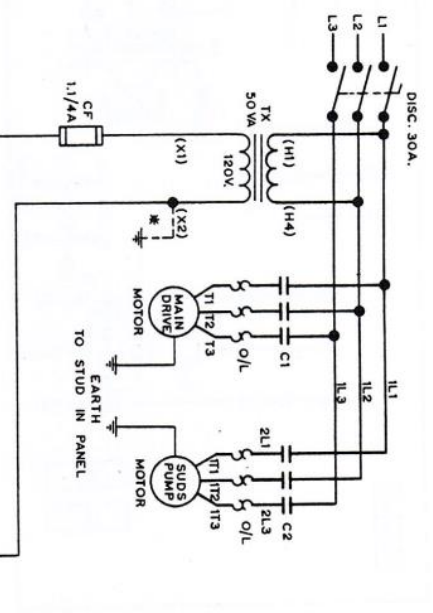
**A/B U.K. Ltd. BUL. 815 O/L Heater Table**

FLC(A)	21	10	5	23	5	8	5
VOLTAGE	230	460	208	208	575	575	575
HEATER	N39	N32	N40	N29			

FLC(A)	.22	.14	.22	.11
VOLTAGE	230	460	208	575
HEATER	NN3	NN4	NN3	NN4

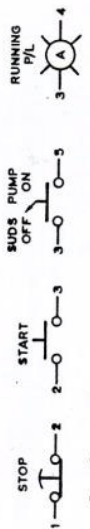
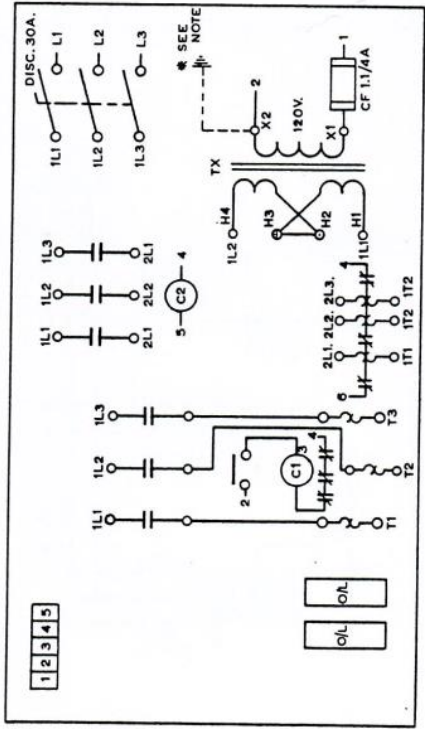
**WIRING DIAGRAM**



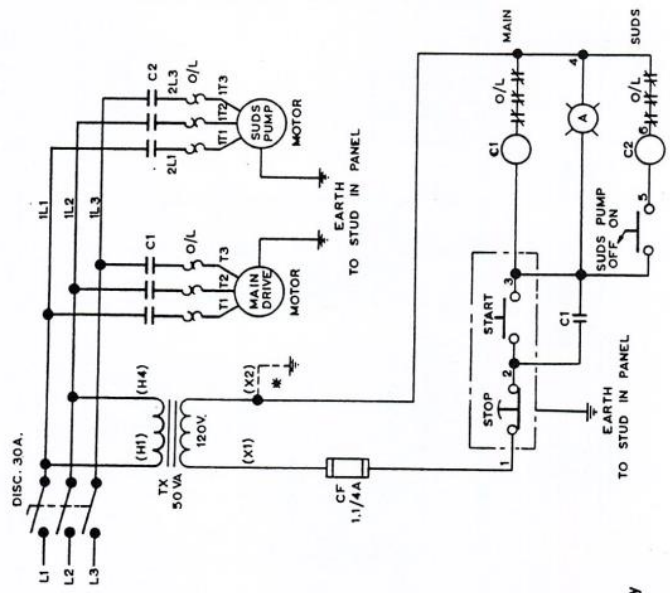
**COMPONENTS LIST**

DISC	DISCONNECT	BUL. 1494-R-N30.
C1	Starter	BUL. 702-BOD. 93.
C2	Contact	BUL. 702-TOD. 92.
TX	Transformer	BUL. 1497-N22.
CF	Fuse	X27745 (CLIP)
CF	Fuse link	FNM 1.1/4 (Bussman)
STOP	O/L Reset	BUL. 1493-N1
START	Mushrm. Hd P/B.	BUL. 8001-D6D2
SUDS PUMP	Start P/B.	BUL. 8001-AID1
SUDS PUMP	Sel. Switch	BUL. 8001-H2D1
SUDS PUMP	Terminal	BUL. 1497-CA2
MAIN MOTOR	O/L Relay L.H.	BUL. 815 NX1. TRIPLE.
MAIN MOTOR	O/L Relay R.H.	BUL. 815 NX2. TRIPLE.
A	Pilot lamp	BUL. 8001-PS18A

NOTE: 120 v. Coils used.  
 For BUL. 702-BOD. Coil 71 A01  
 For BUL. 702-TOD. Coil 69 A01



\* NOTE: To be grounded by user if conditions permk.



**WIRING NOTES**

- Power - 10 AWG. Black
- Power - TX PRIM. 16 AWG. Black.
- Control - 16 AWG. Red.
- Grounding wire (if reqd.) 16 AWG. Green.
- All wires American UL Approved.

**MAIN MOTOR**

- NEMA Specification
- 7 1/2 h.p. 3 Phase 60 cycles
- 208 v. 230 460 v. or 575 v.
- 1800 R.P.M.
- Frame size C218T/DD1872 BBA.

**COMPONENTS LIST**

DISC	BUL. 1494-R-N30.
C1	Starter BUL. 702-BOD. 93.
C2	Contacteur BUL. 702-TOD. 92.
TX	Transformer BUL. 1497-NZ7.
CF	Fuse X 277745 (Clip)
CF	Fuse FNM 1.1/4 (Bussman)
STOP	O/L Reset BUL. 1493-N1
START	Mushrm. Hd. P/B. BUL. 800T-D6D2
SUDS PUMP	Start P/B. BUL. 800T-A1D1
SUDS PUMP	Sel. Switch BUL. 800T-H2D1
SUDS PUMP	Terminal BUL. 1492-CA2
SUDS PUMP	O/L Relay L.H. BUL. 815 NX1. TRIPLE.
MAIN MOTOR	O/L Relay R.H. BUL. 815 NX2. TRIPLE.
A	Pilot lamp BUL. 800T-PS16A

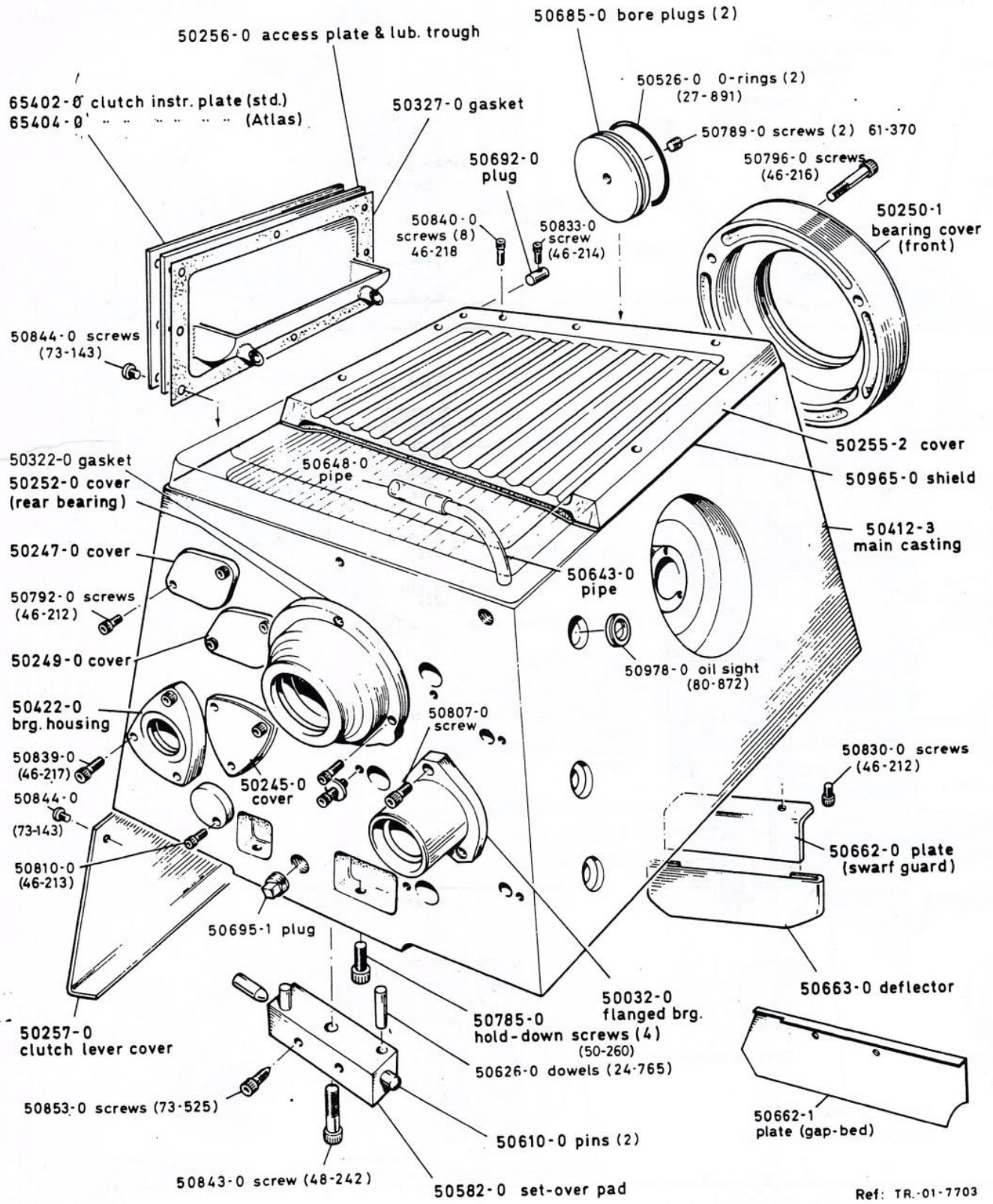
NOTE: 120 v. Coils used.  
For BUL. 702-BOD. Coil 71 A01  
For BUL. 702-TOD. Coil 69 A01

**WIRING DIAGRAM**

A/B U.K. Ltd.	BUL. 815	O/L Heater	Table
FLC(A)	21	10 5	23 5 8 5
VOLTAGE	230	460	208 575
HEATER	N39	N32	N40 N29
FLC(A)	-22	-14	-22 -11
VOLTAGE	230	460	208 575
HEATER	NN3	NN4	NN3 NN4

**HEADSTOCK ; CASTING**

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TO SER. No. ....

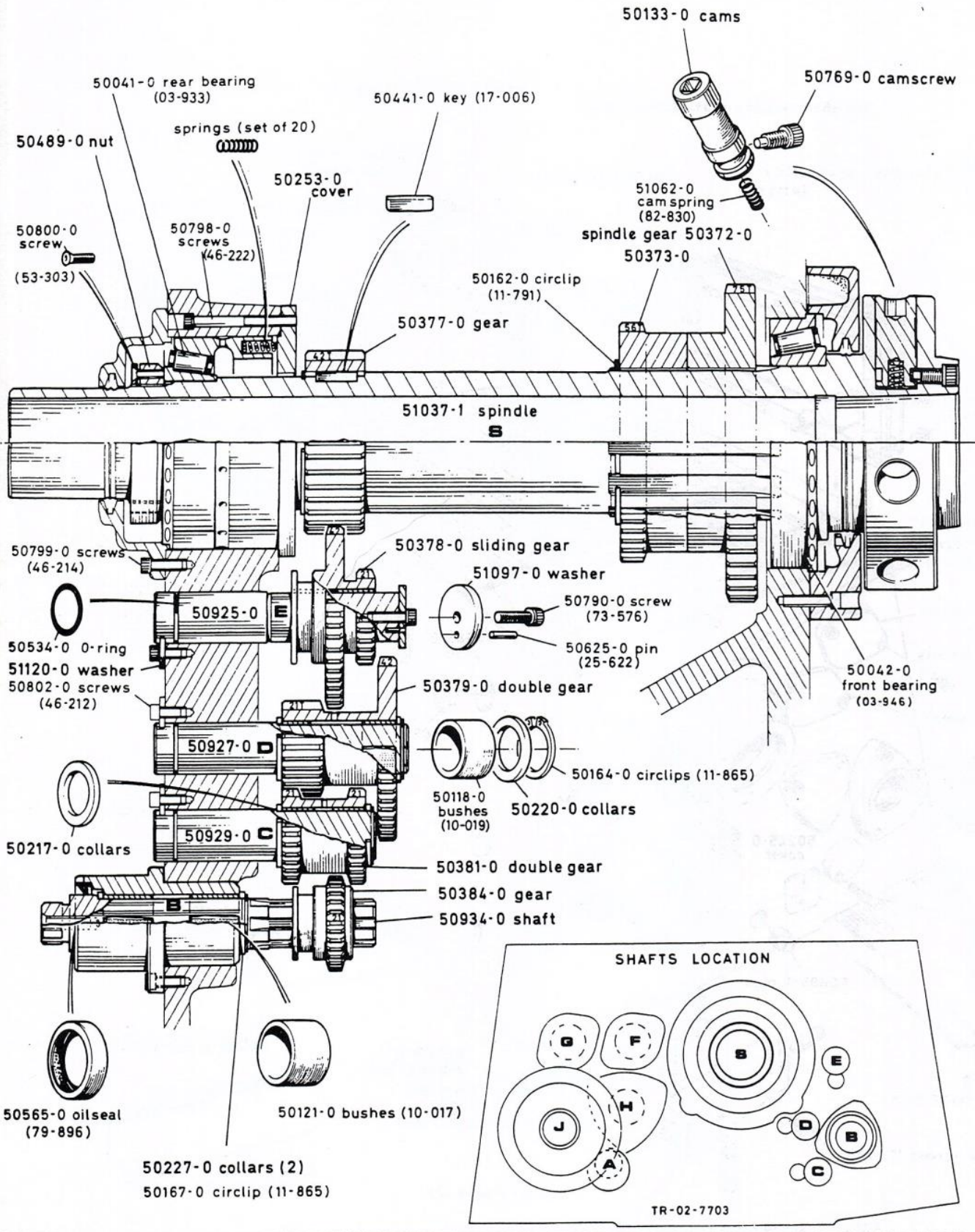


Ref: TR.01-7703



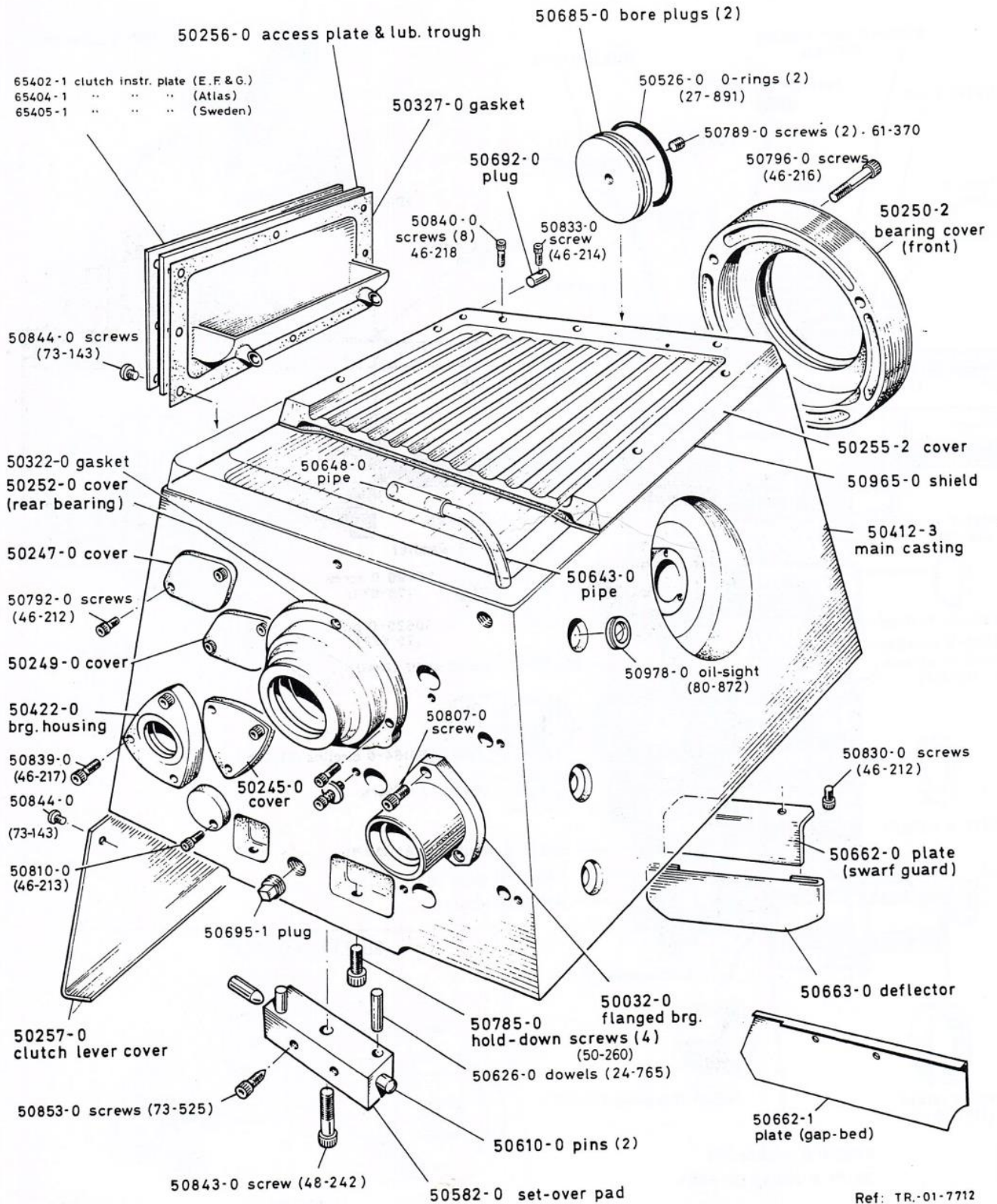
# HEADSTOCK, SPINDLE & GEARS

FROM SER. No. 22096  
TO SERIAL No. ....



**HEADSTOCK ; CASTING**

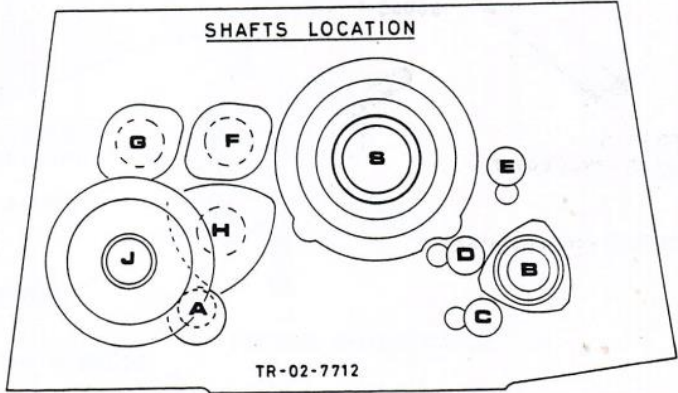
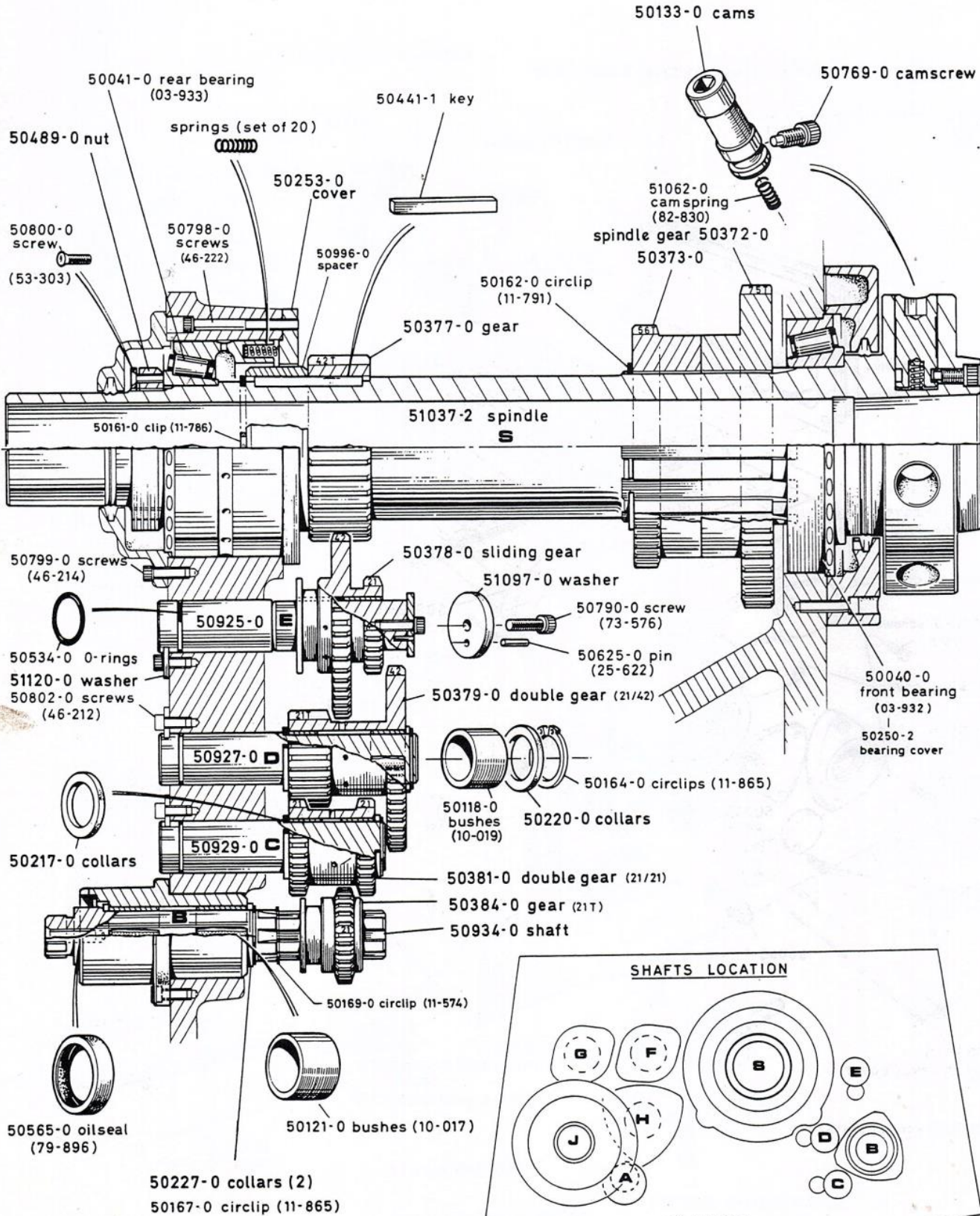
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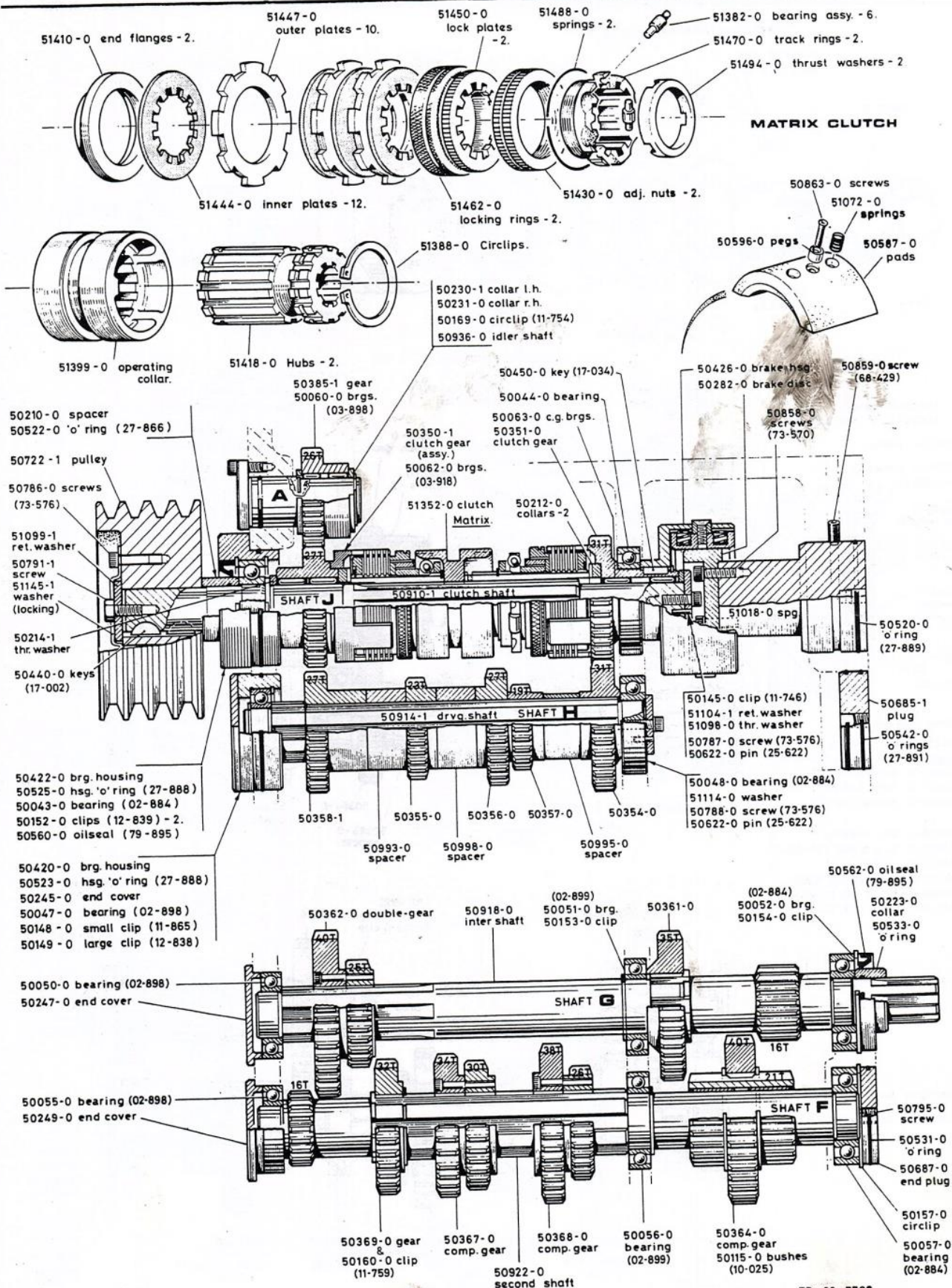
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**HEADSTOCK ; SPINDLE & GEARS**

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# HEADSTOCK; CLUTCH SHAFT & GEARS

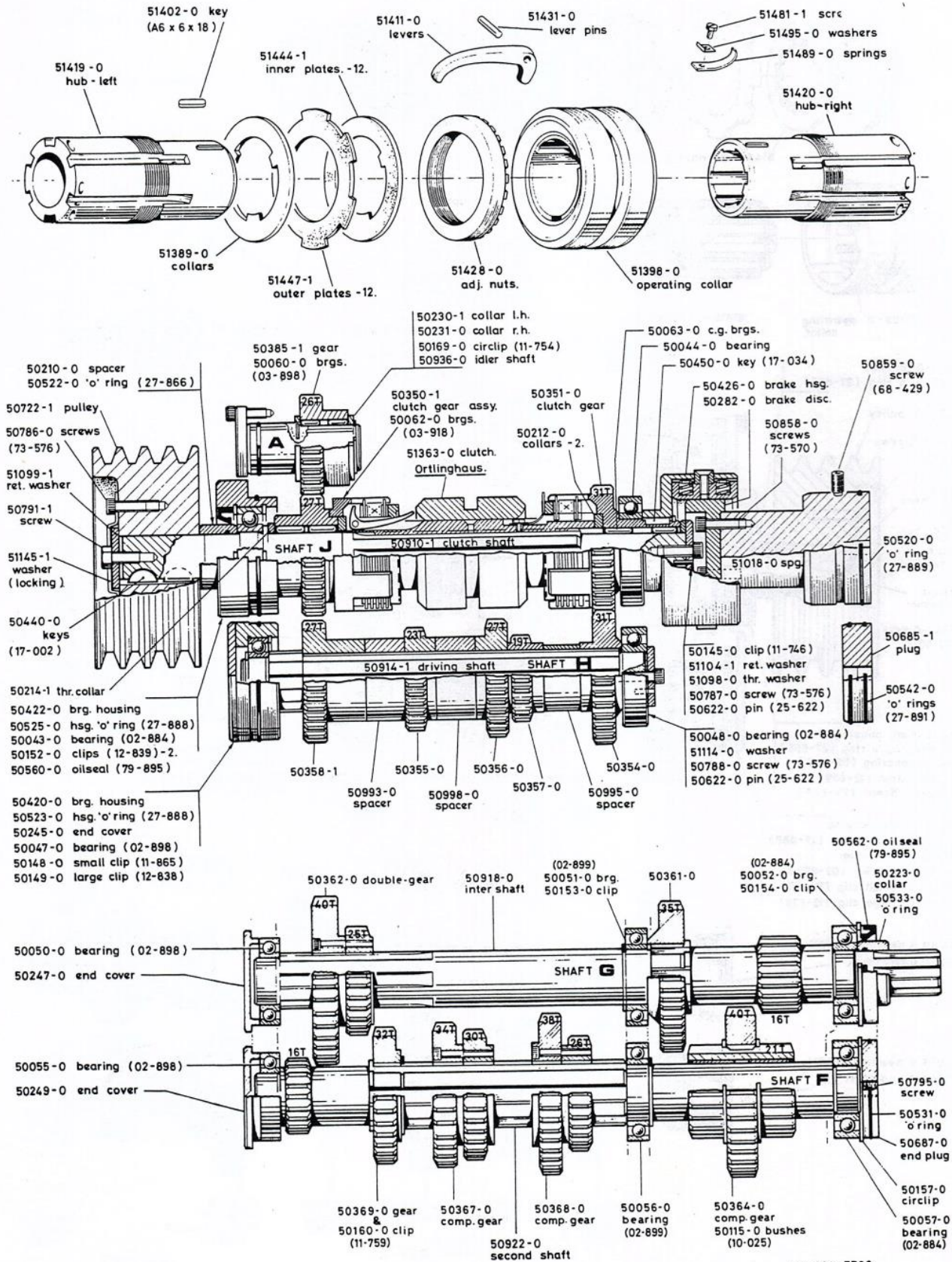


TR-03-7709

# HEADSTOCK ; CLUTCH SHAFT & GEARS

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TO SER. NO.

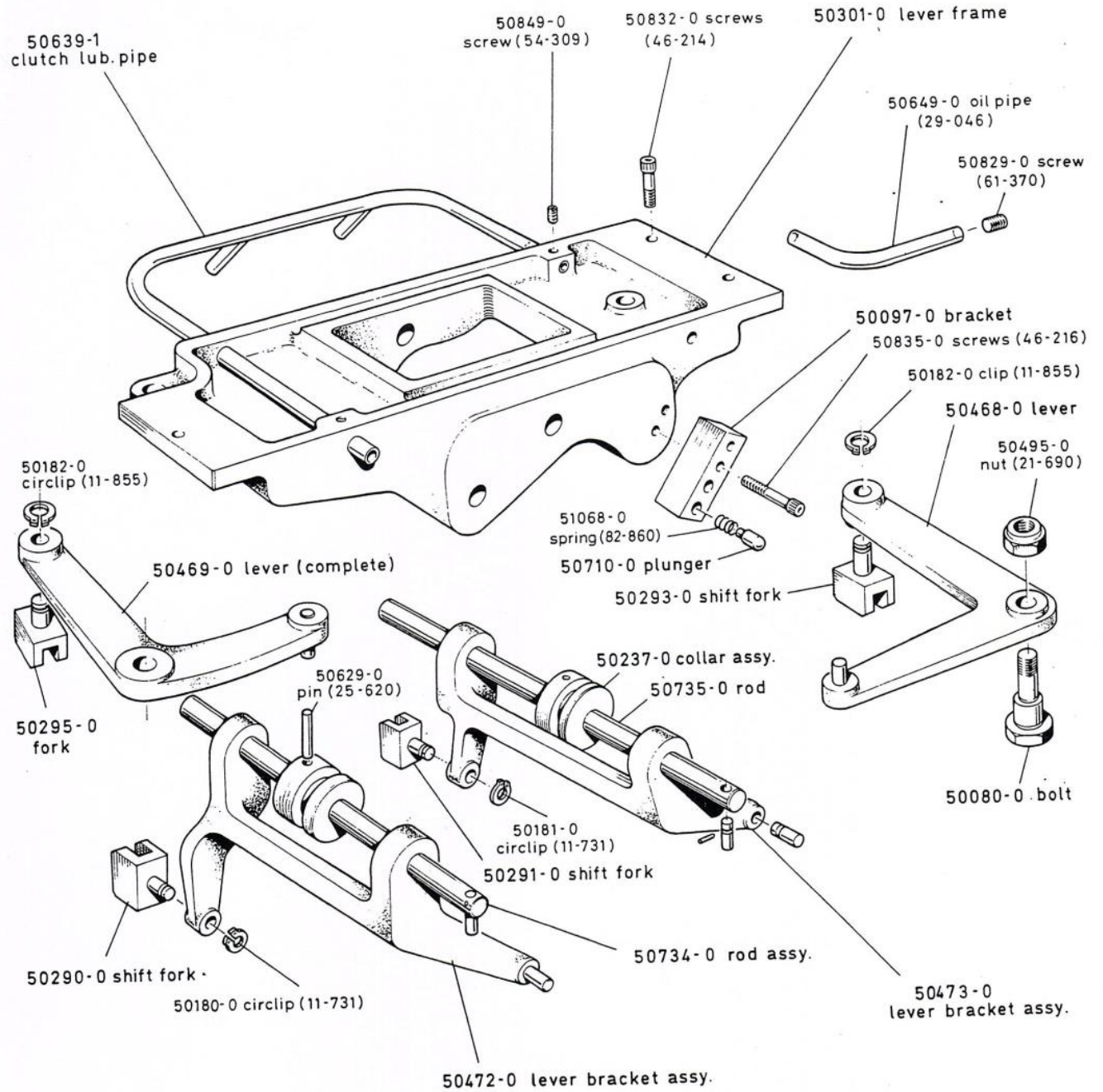
## ORTLINGHAUS CLUTCH



TR-03A-7709

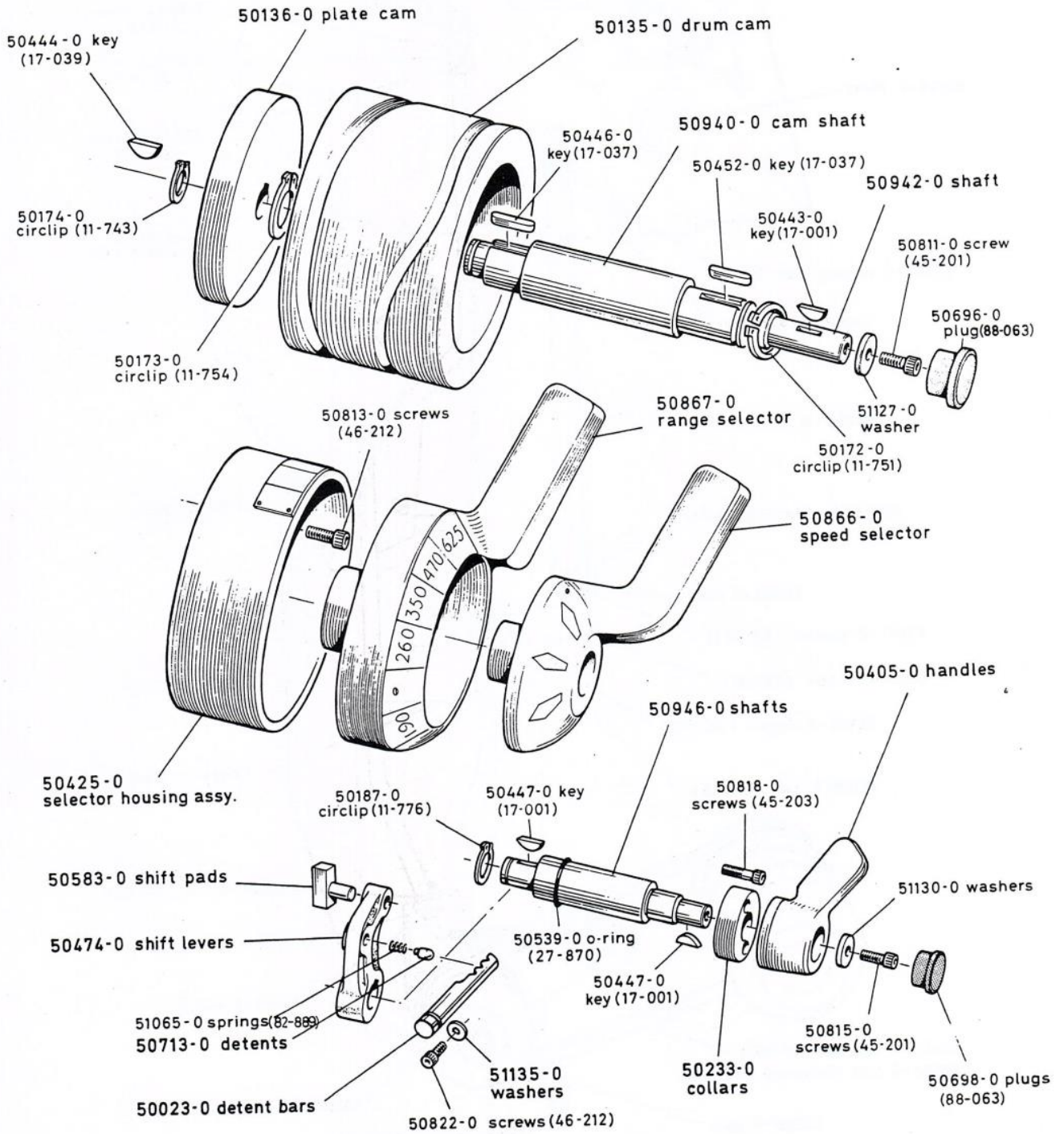
# HEADSTOCK ; CONTROL FRAME ASSEMBLY

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**HEADSTOCK; CONTROLS**

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TO SER. NO.

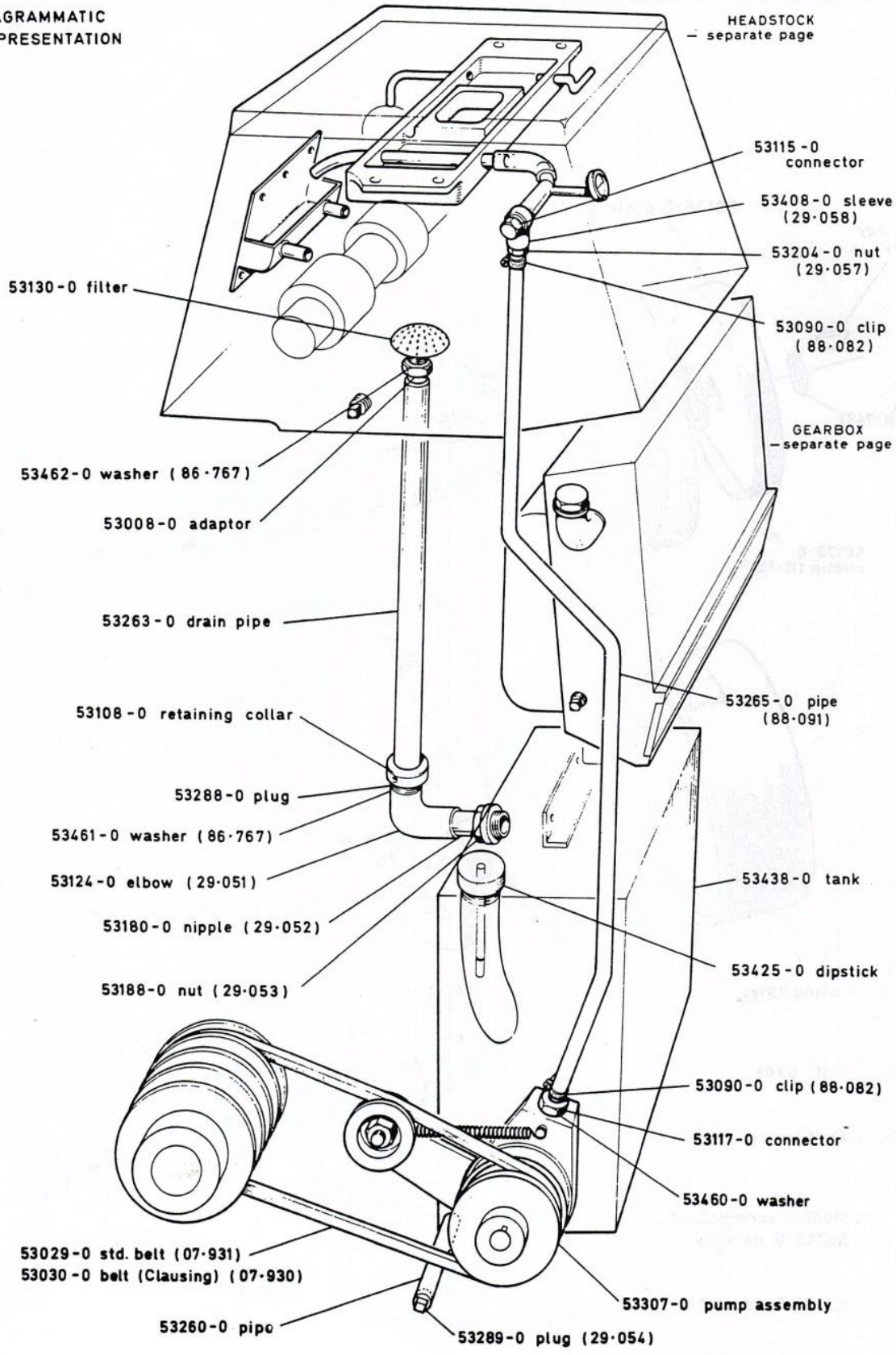


Ref: TR-05-6803/1

HEADSTOCK LUBRICATION

FROM SER. NO. 00001  
TO SER. 1

DIAGRAMMATIC  
REPRESENTATION

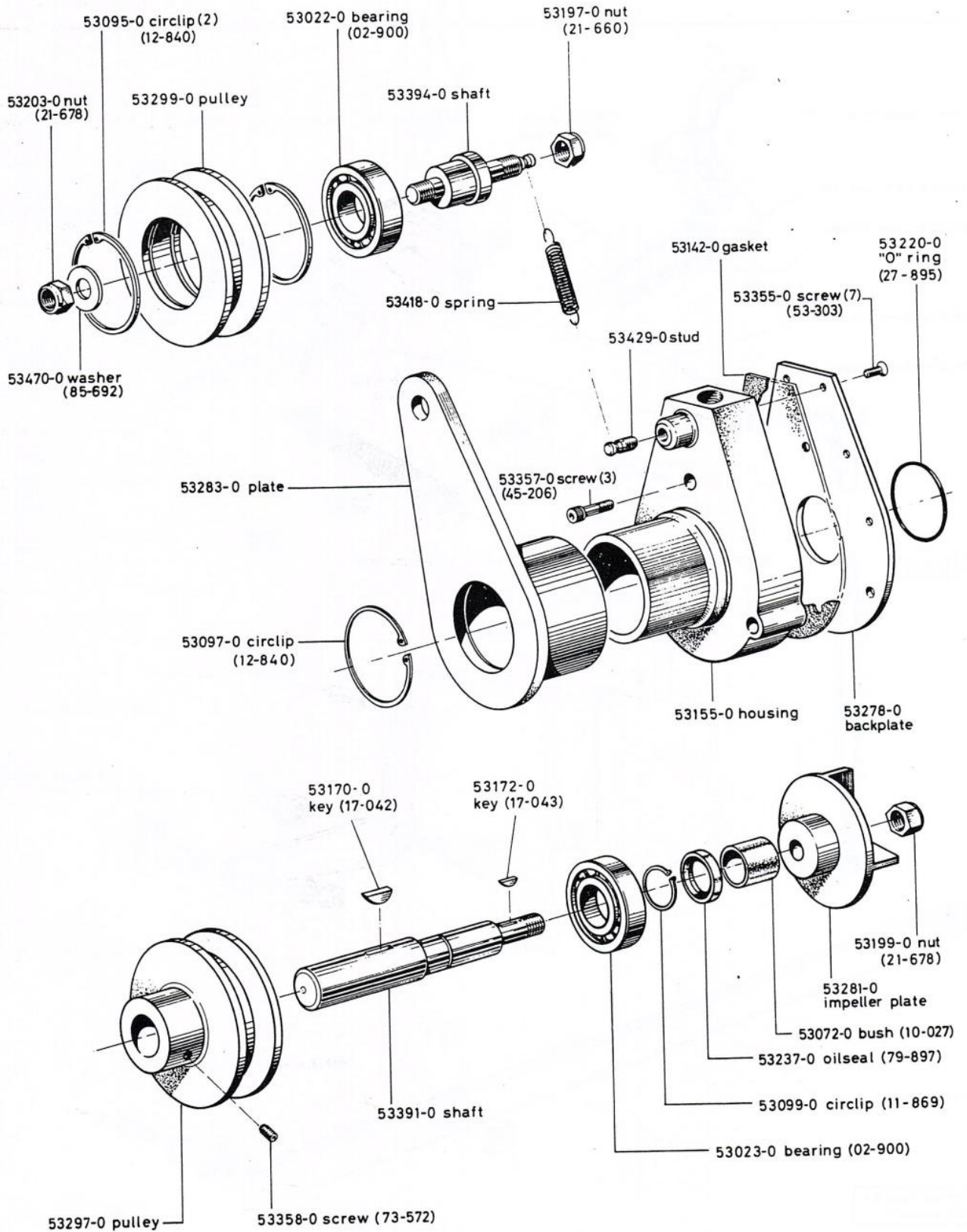


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# HEADSTOCK - PUMP ASSY.

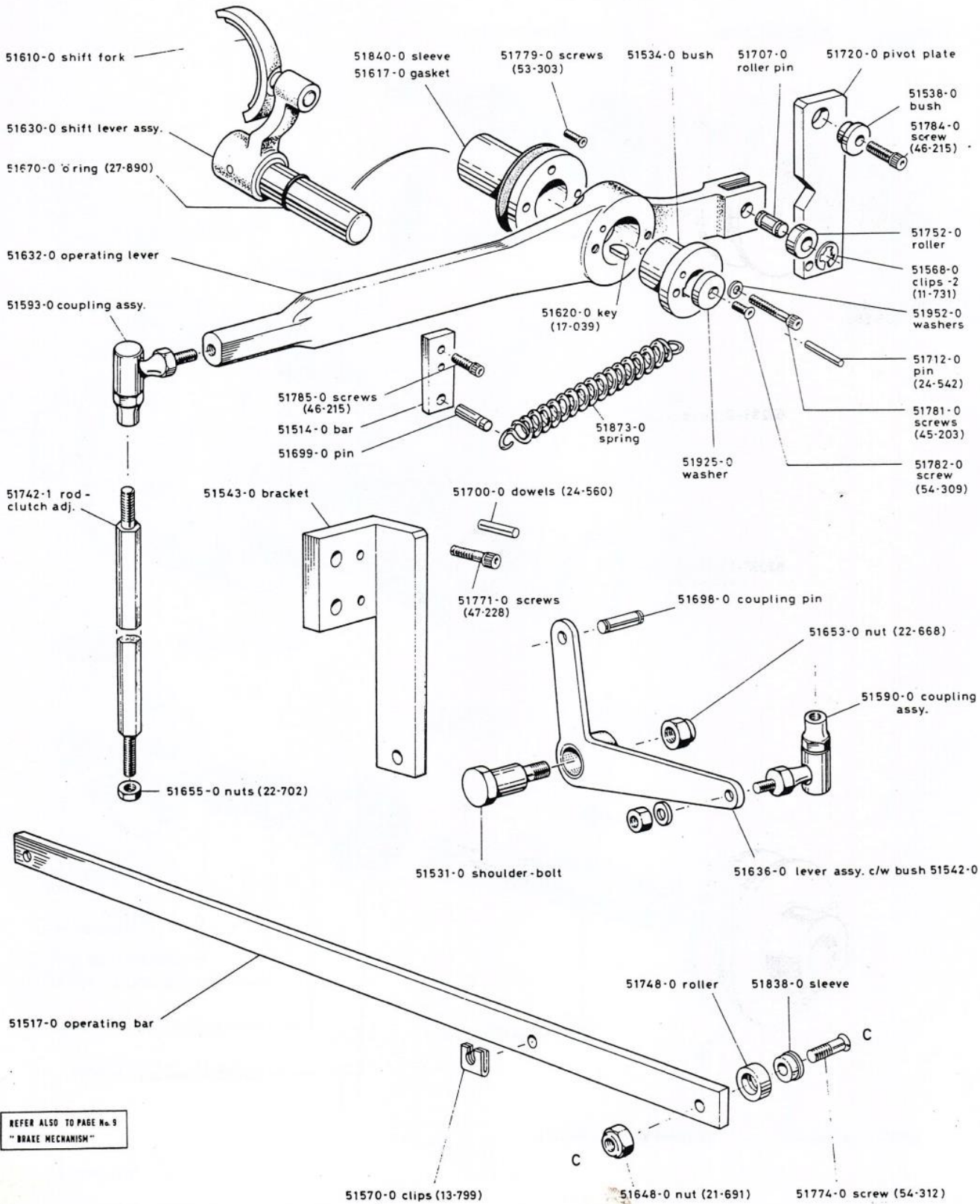
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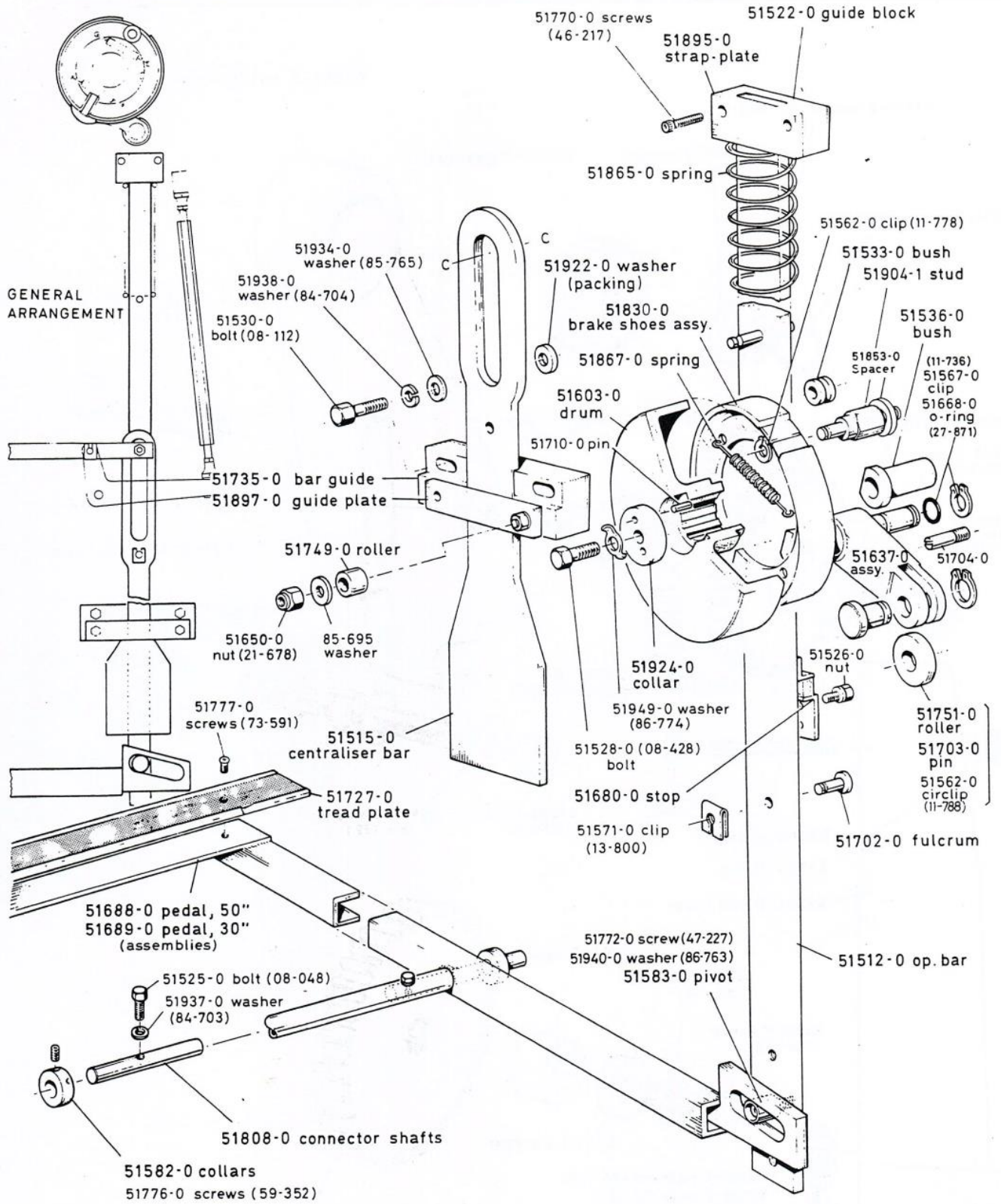
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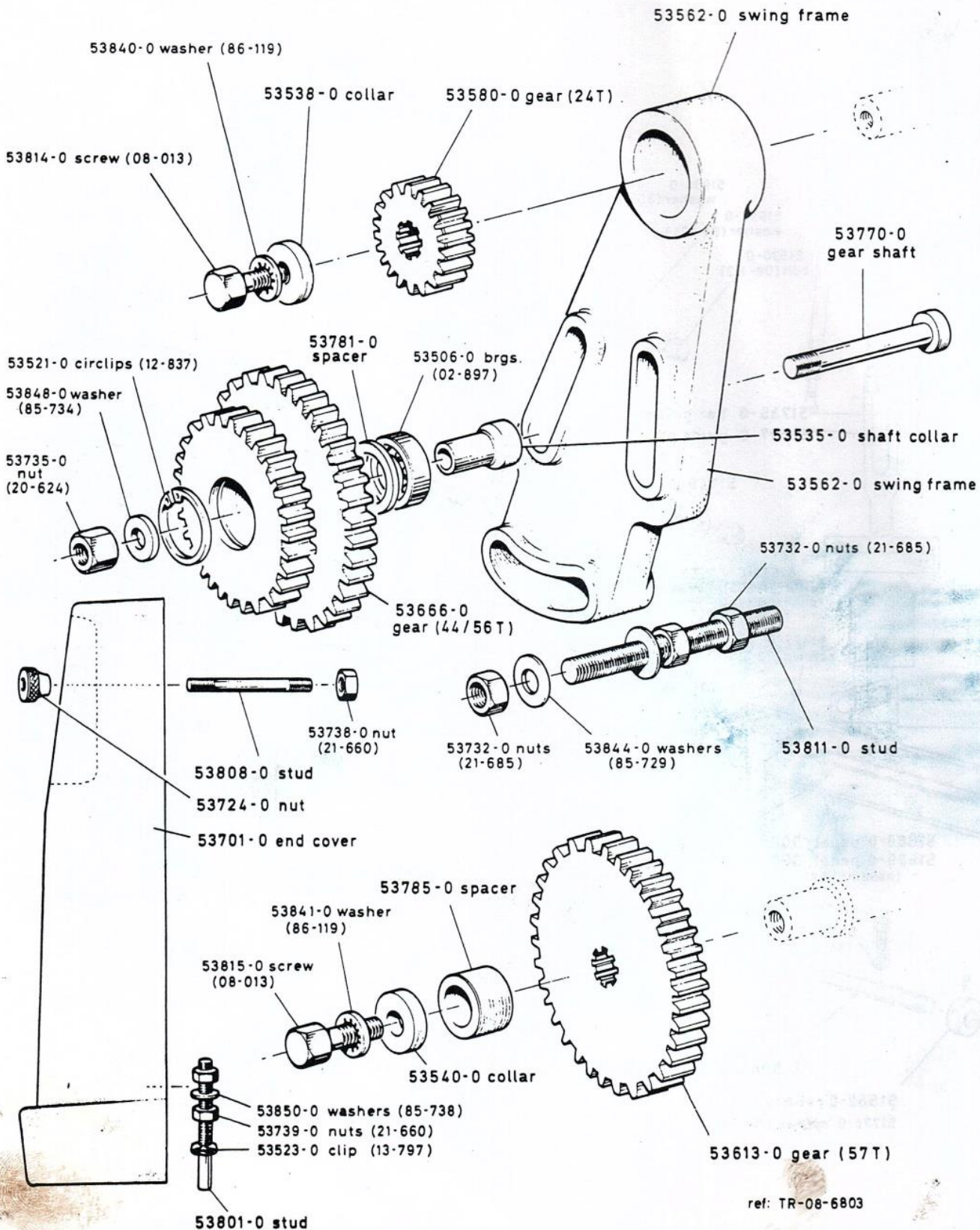
# CLUTCH LINKAGE

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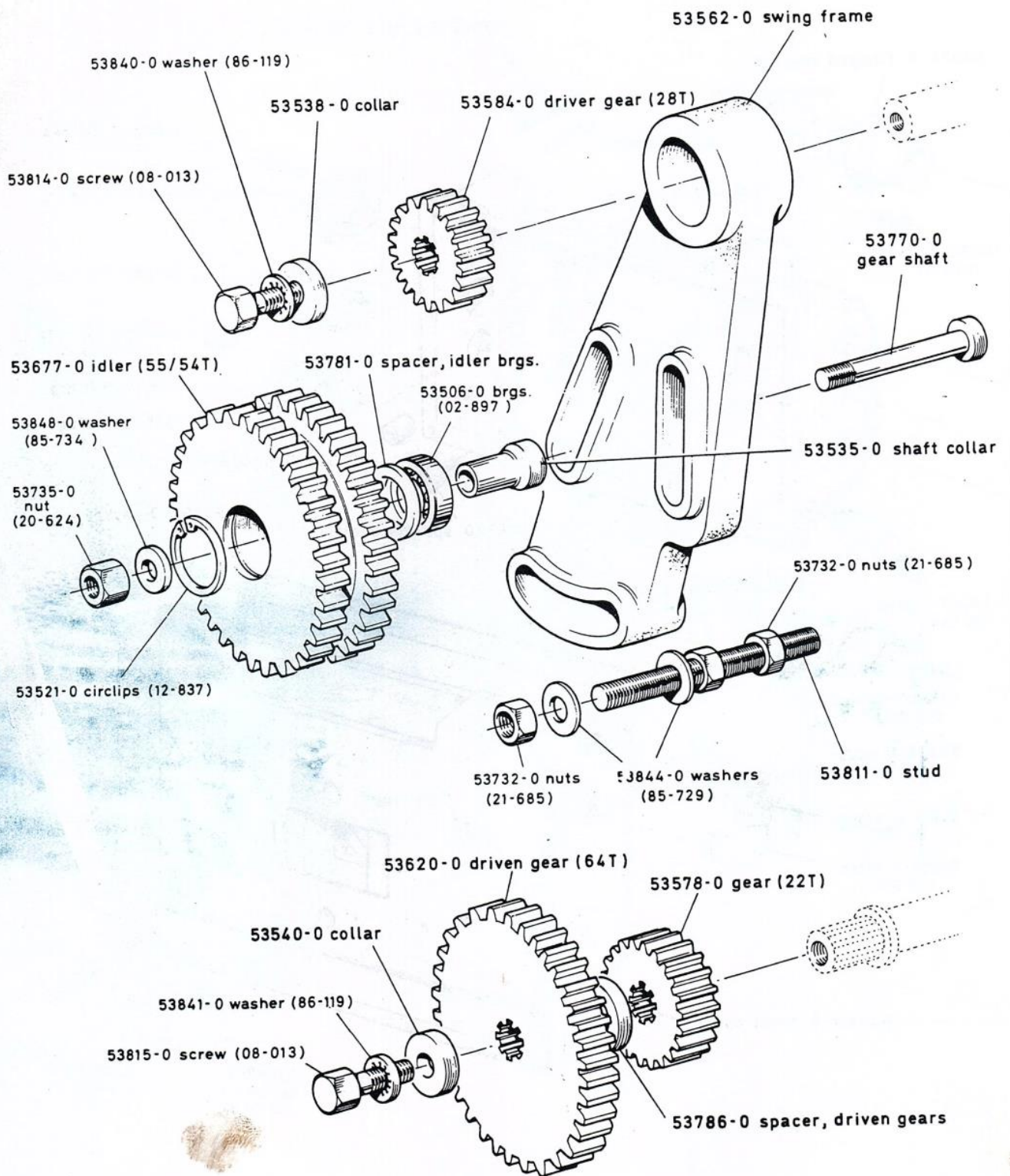
REFER ALSO TO PAGE No. 9  
"BRAKE MECHANISM"



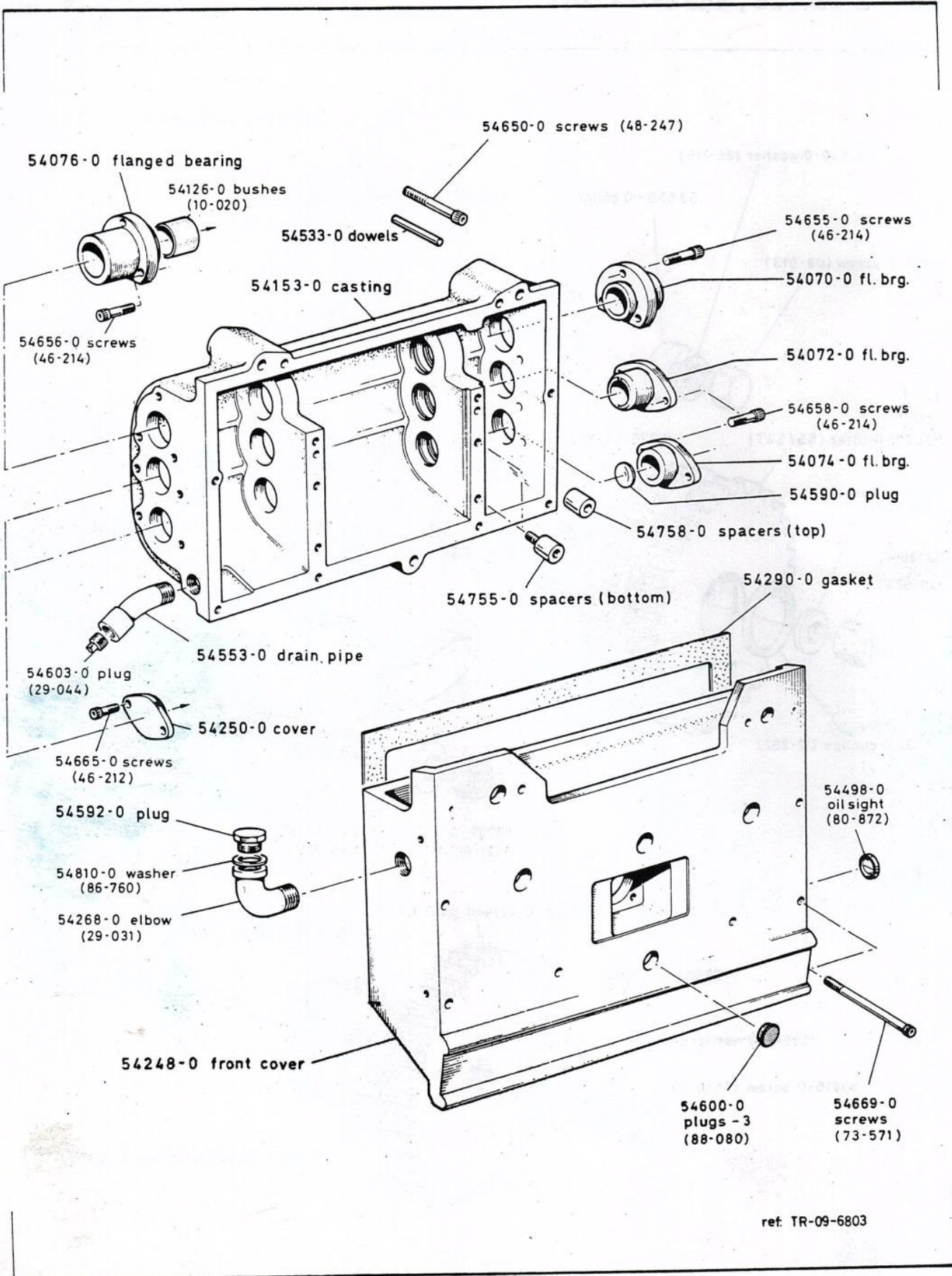


**SWING FRAME ; END GEARS - METRIC**

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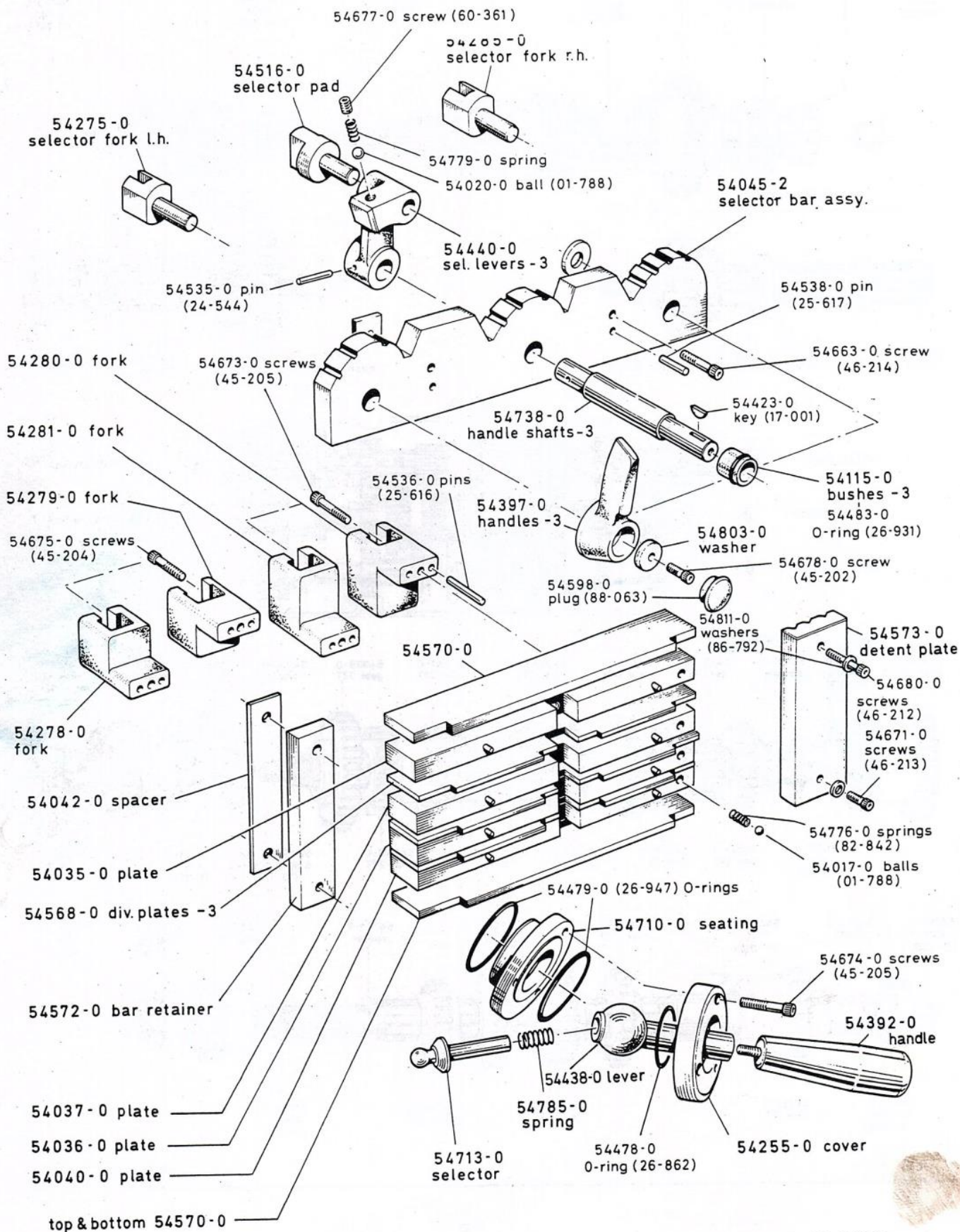
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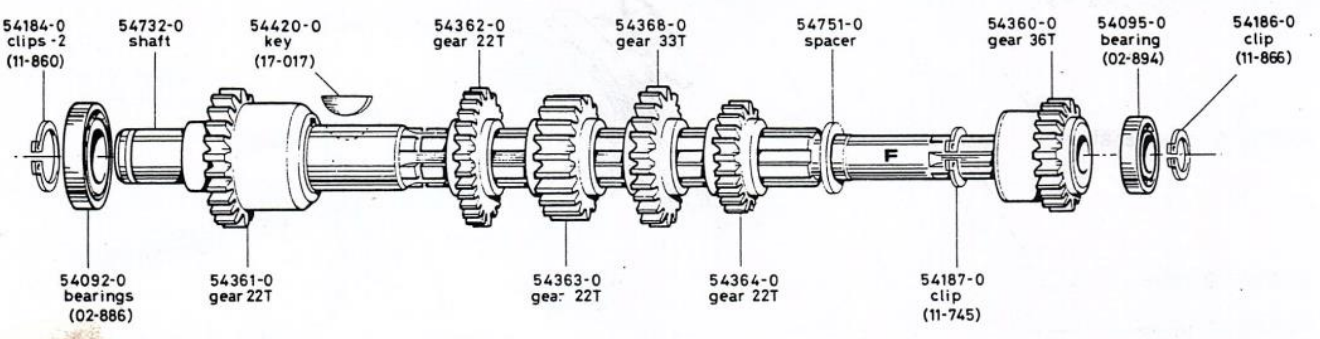
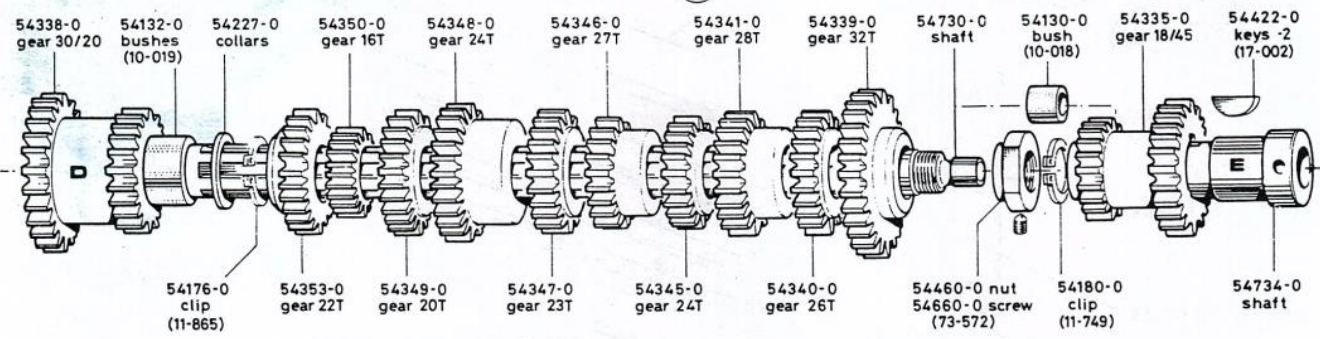
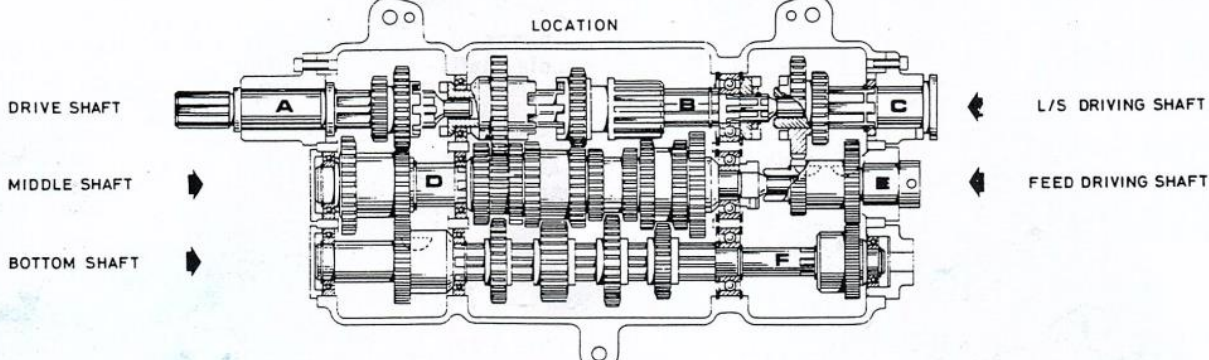
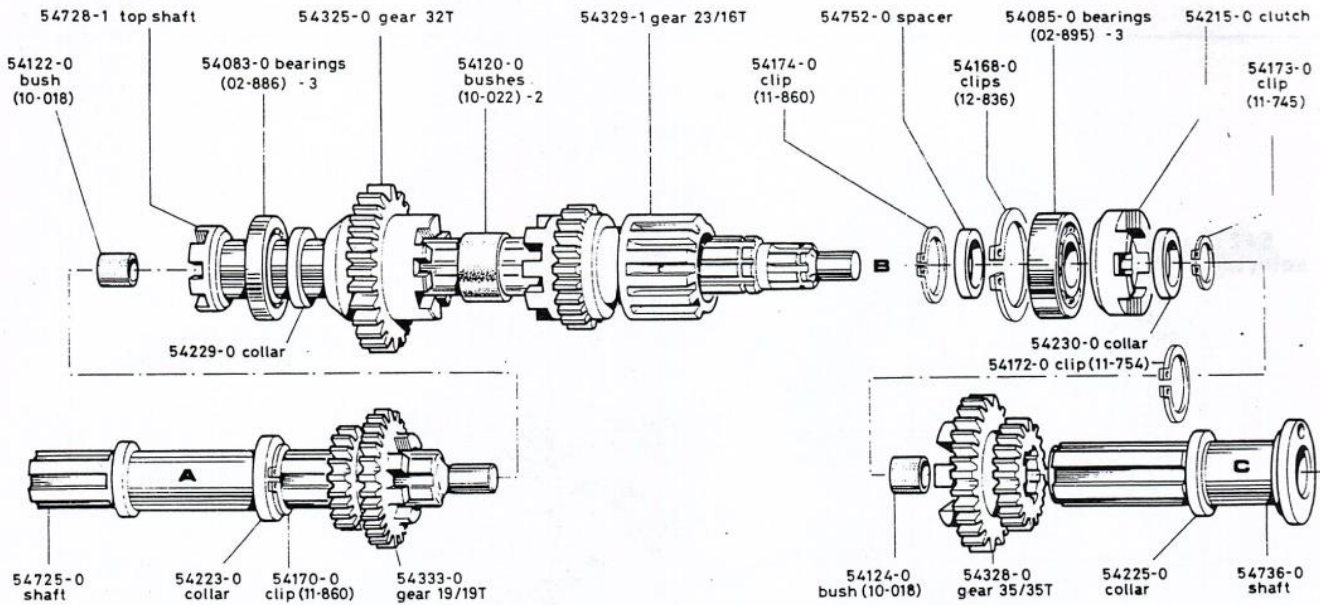
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**GEARBOX; CONTROLS**

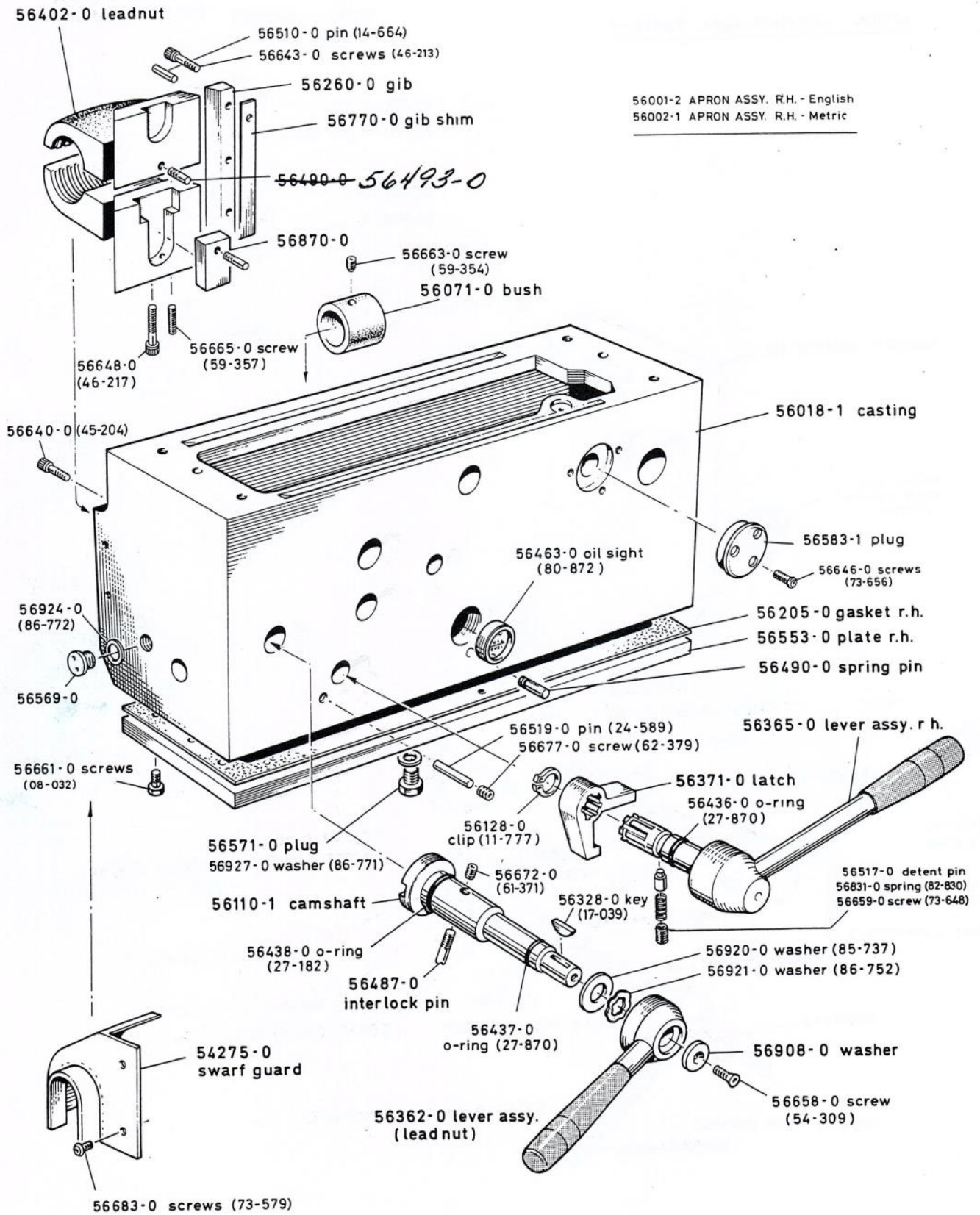
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TR-10-6803/3

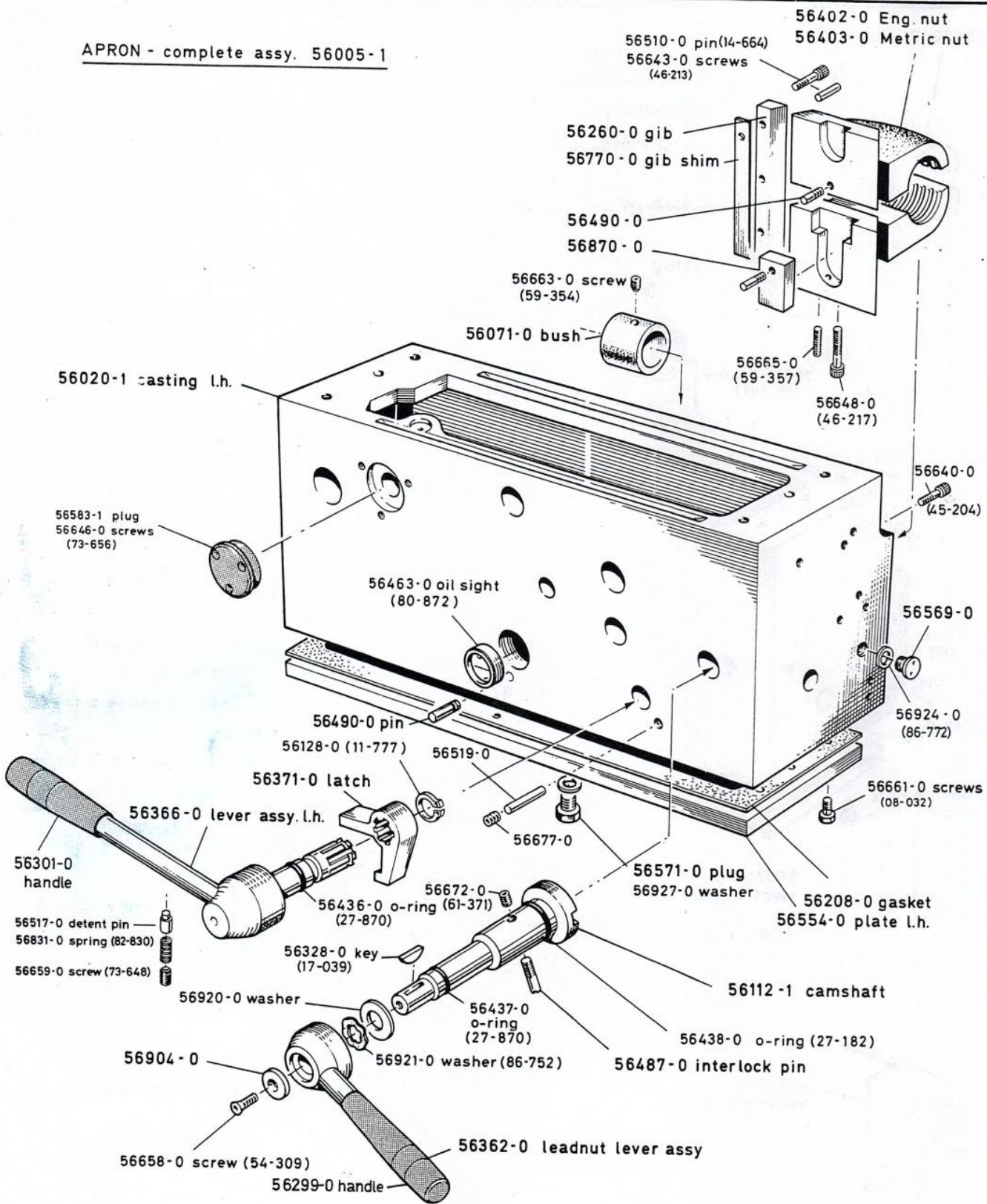






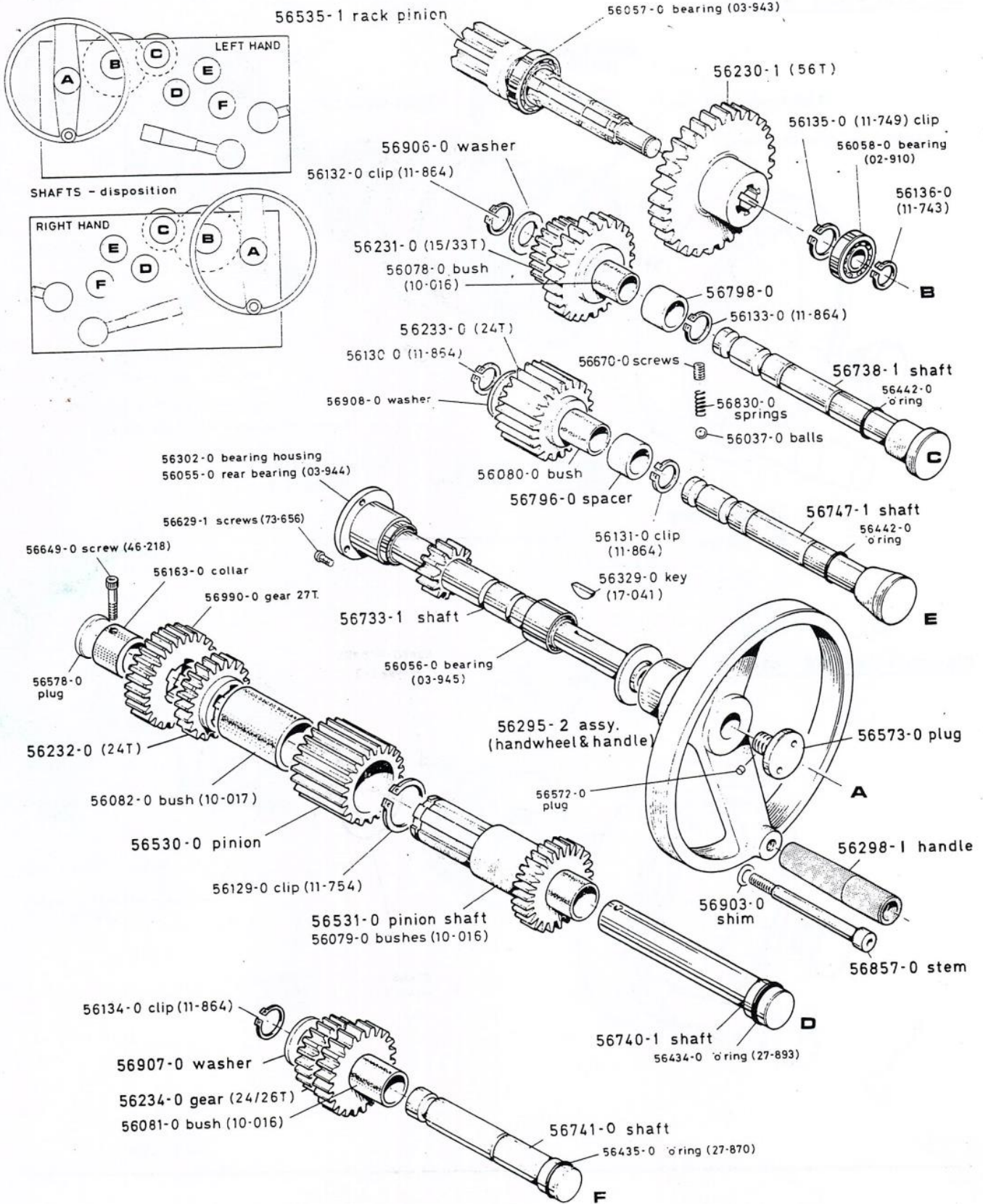
56001-2 APRON ASSY. R.H. - English  
56002-1 APRON ASSY. R.H. - Metric

APRON - complete assy. 56005-1

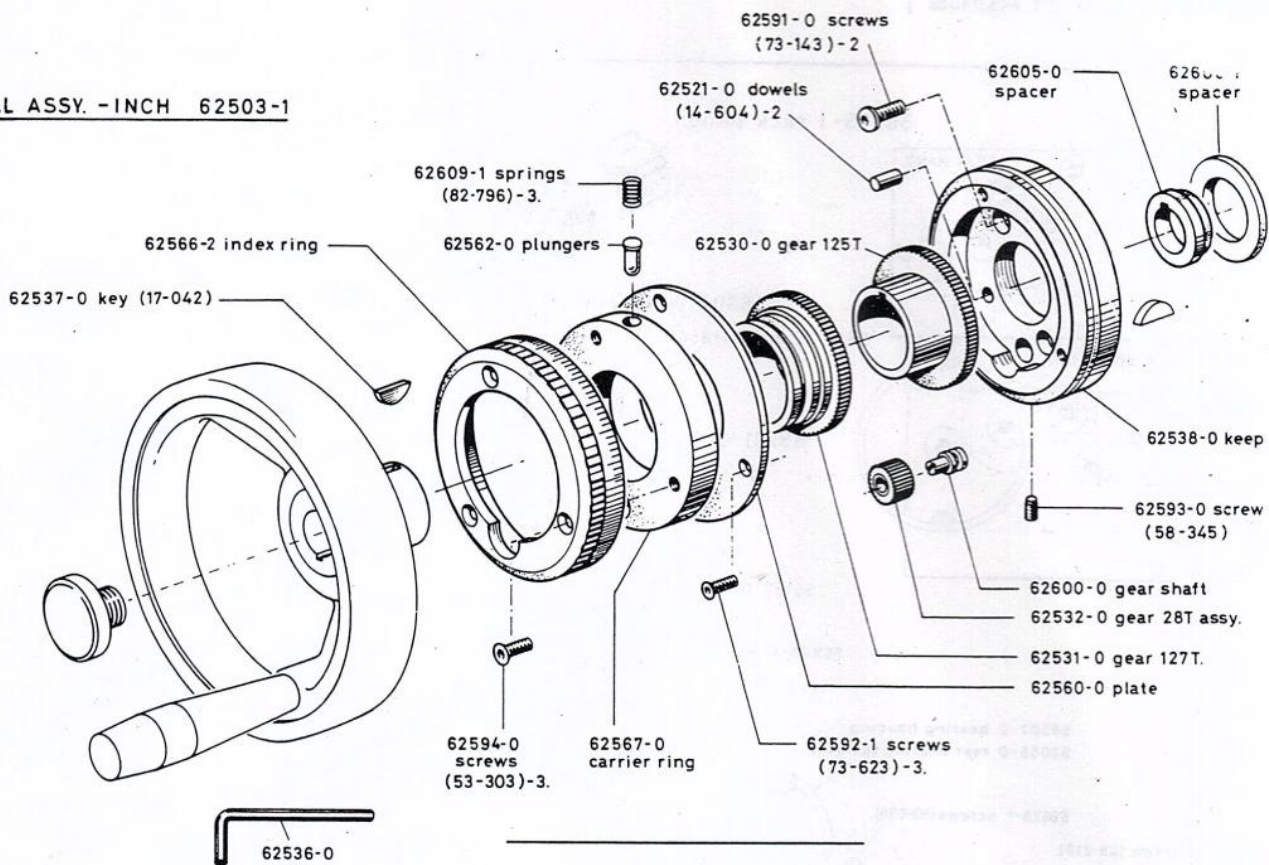


# APRON CONTROLS ;

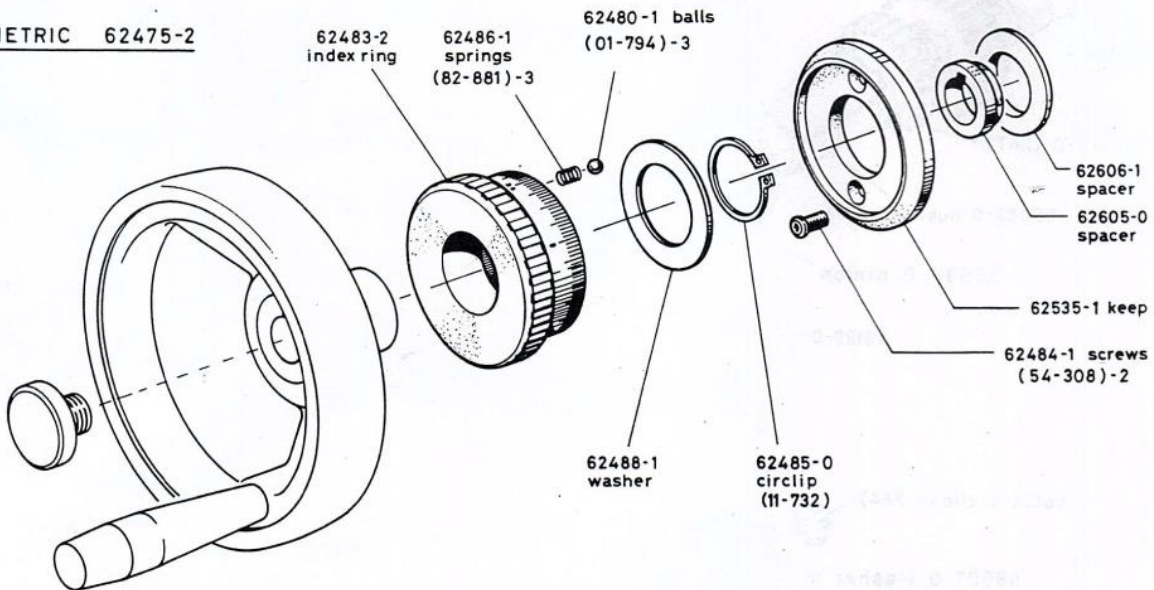
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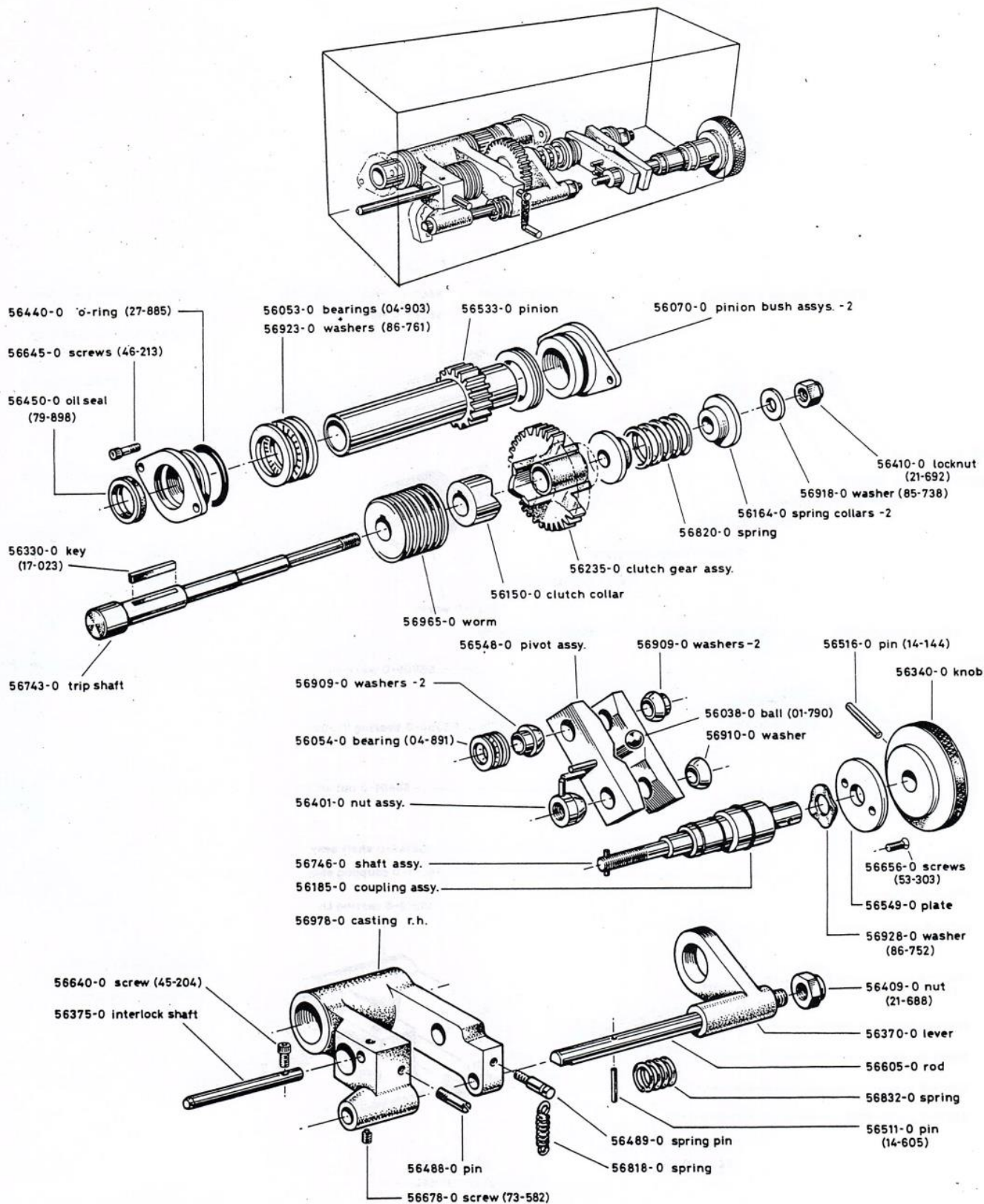
DIAL ASSY. - INCH 62503-1

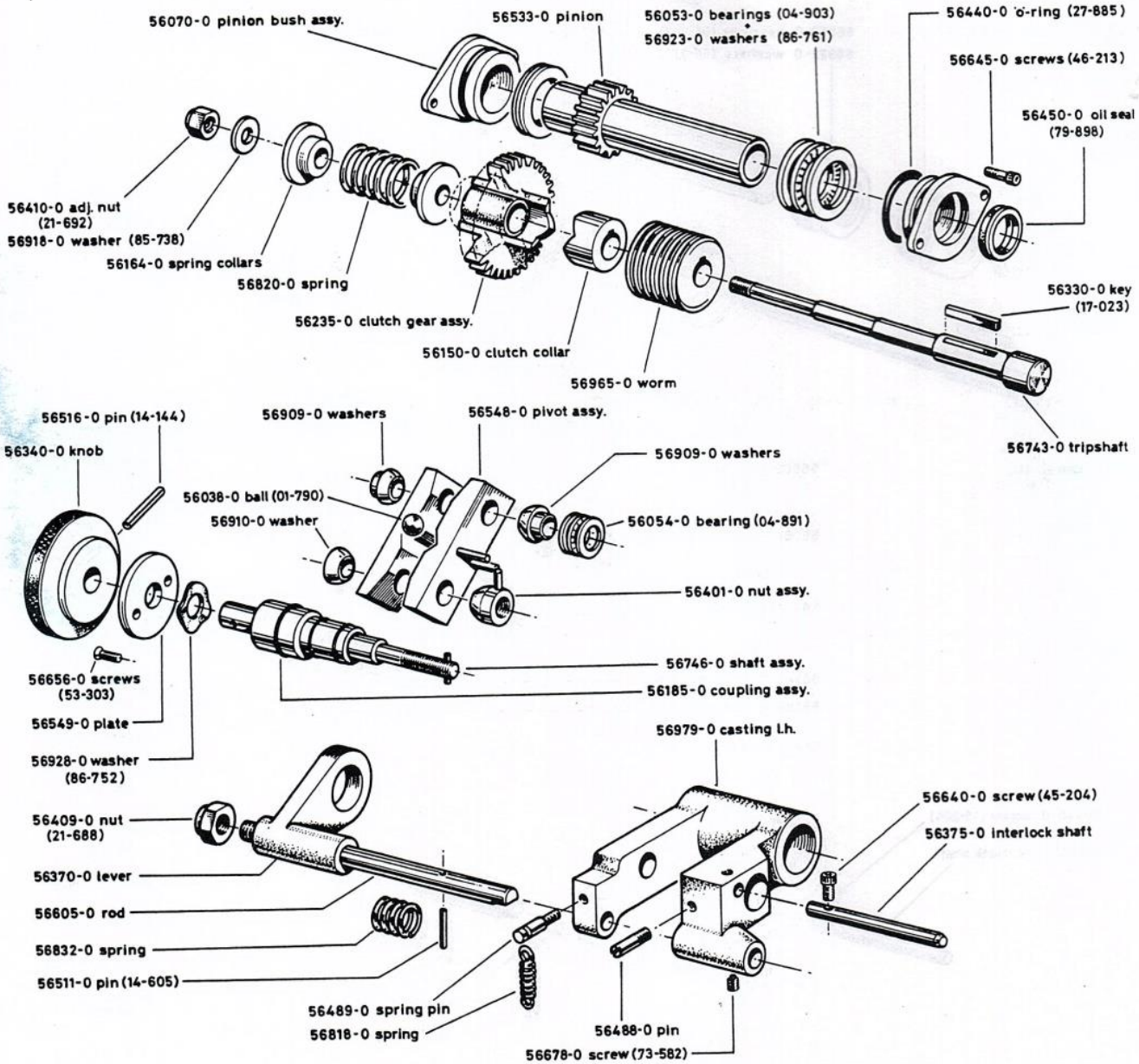
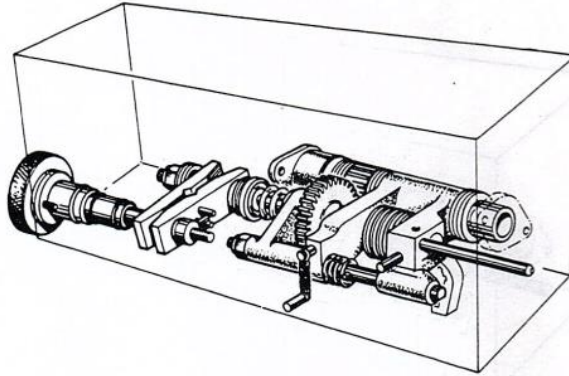


DIAL ASSY. - METRIC 62475-2



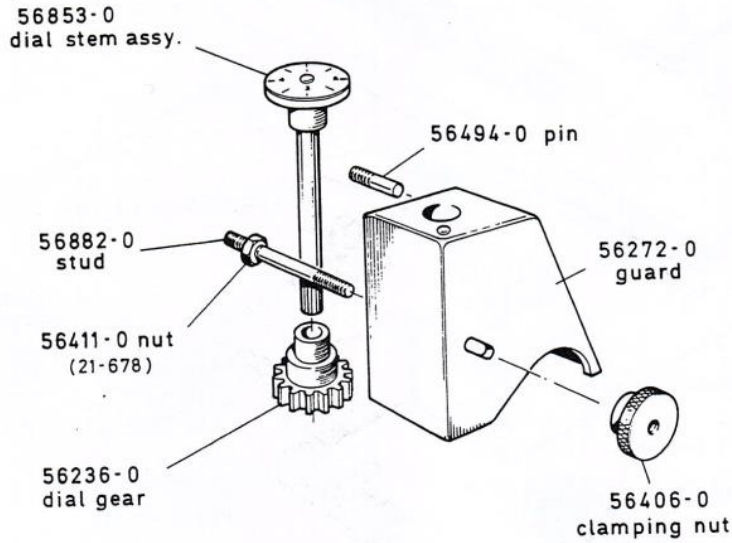
**APRON WORMBOX - R.H.**



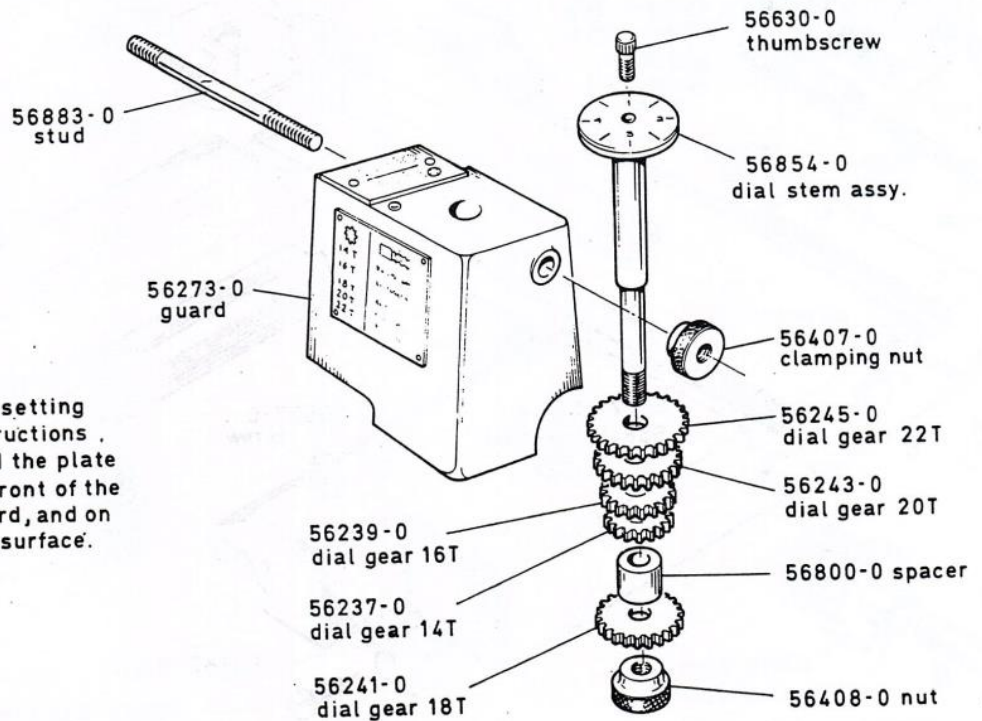


**APRON : THREADING DIALS**

FROM SER. NO. 00001  
TO SER. NO.



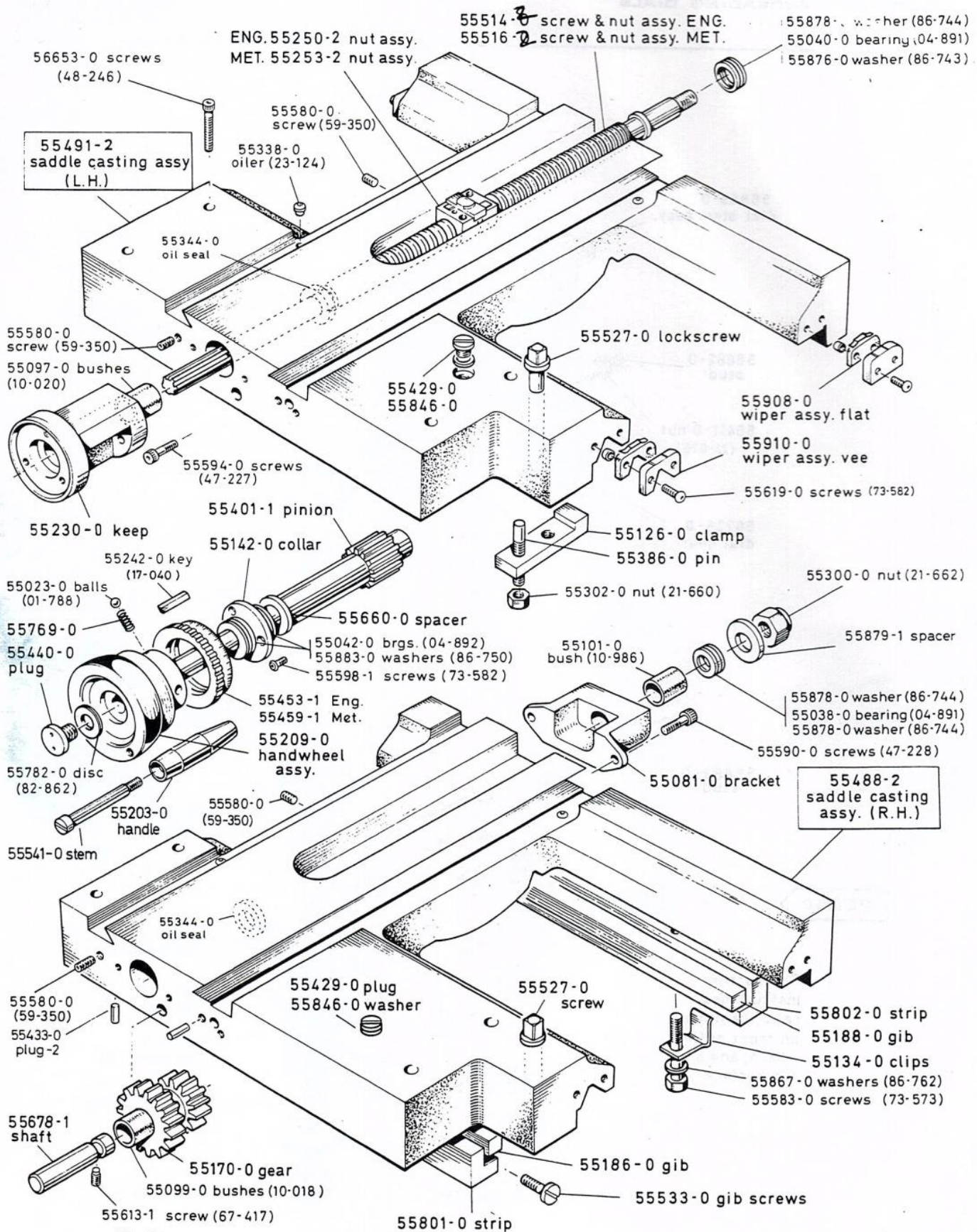
ENGLISH



METRIC

For setting instructions, read the plate on front of the guard, and on top surface.

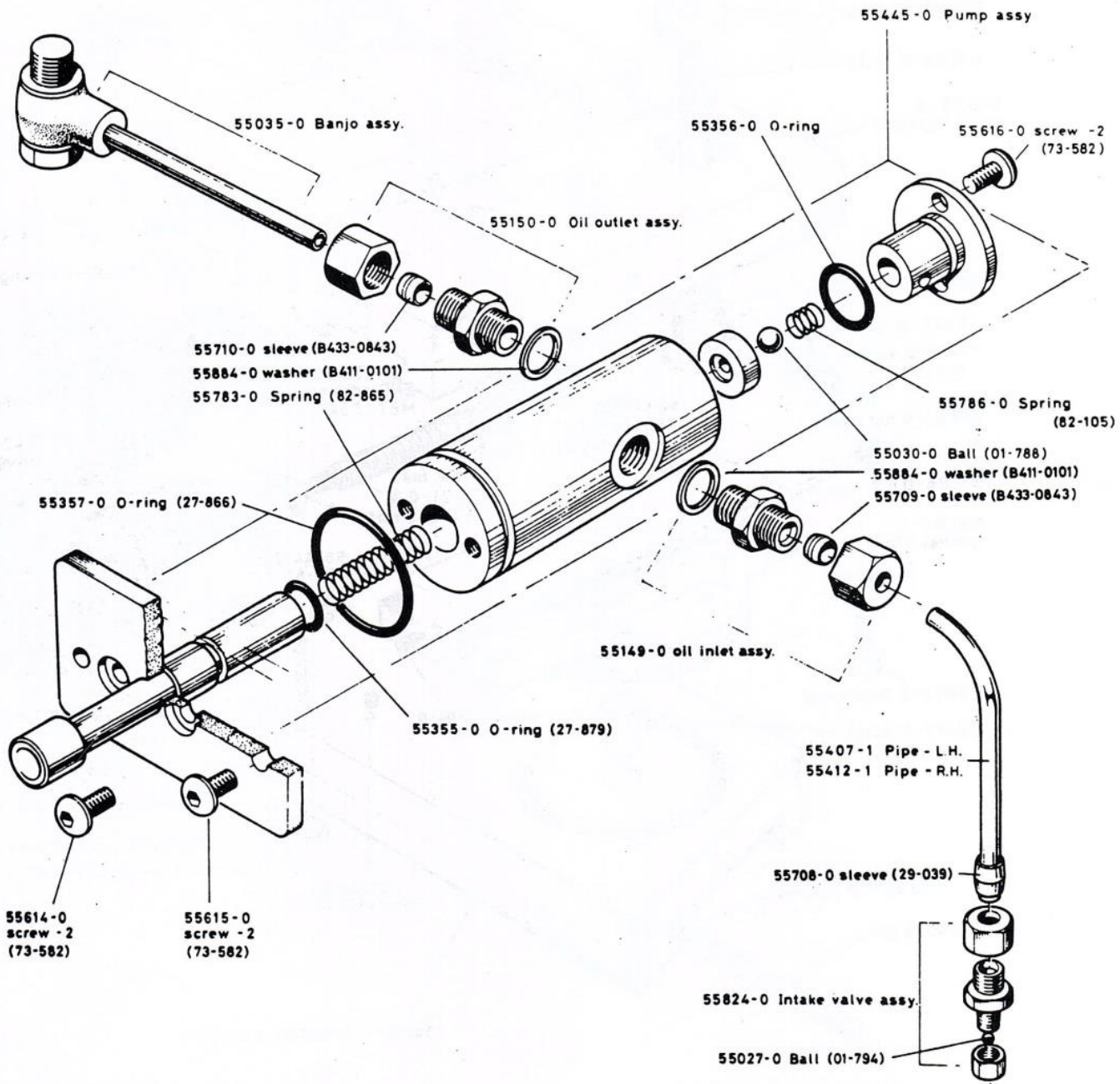
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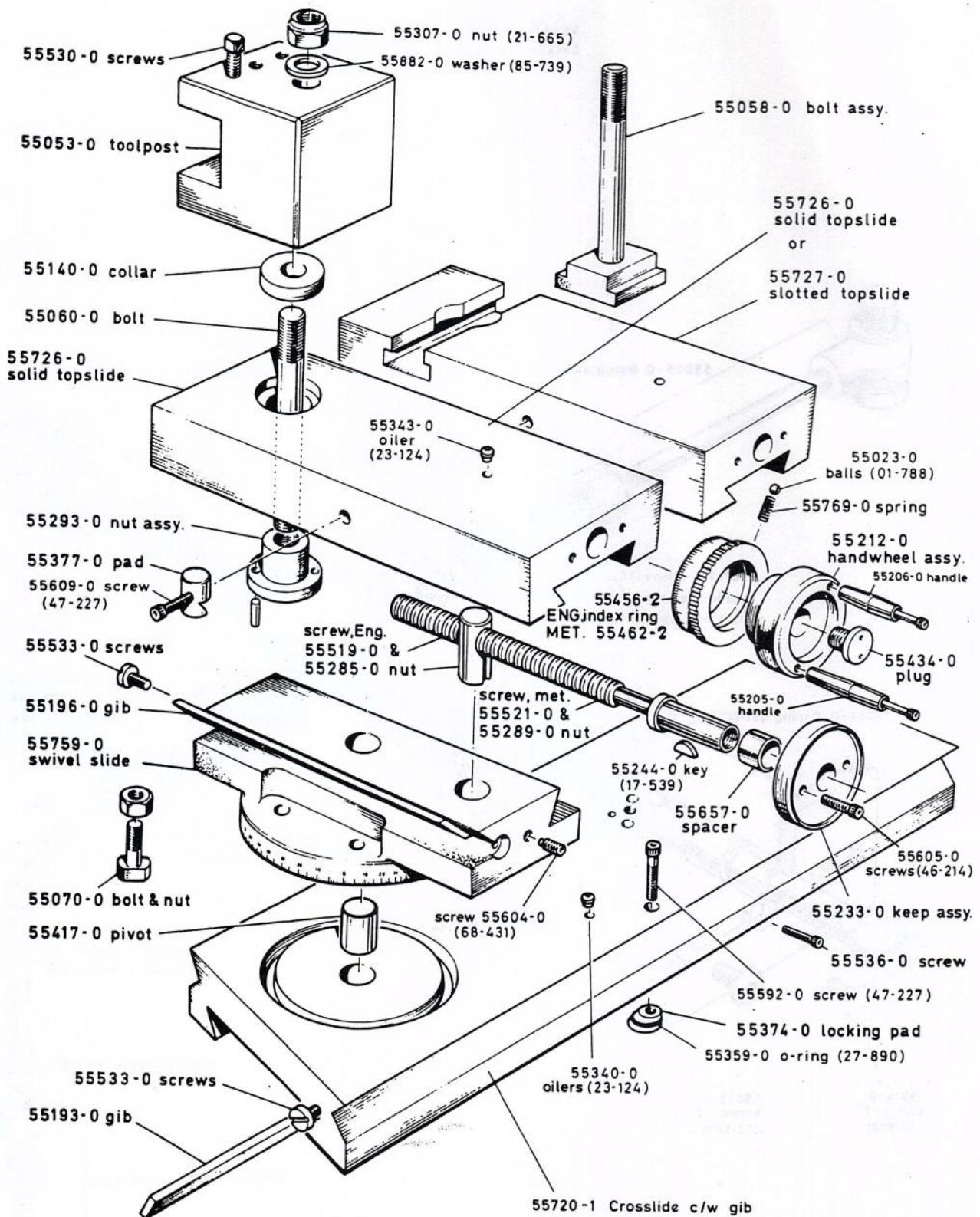
# SADDLE, LUBRICATION

55446-0 PUMP & PIPE ASSY. R/H  
55447-0 PUMP & PIPE ASSY. L/H



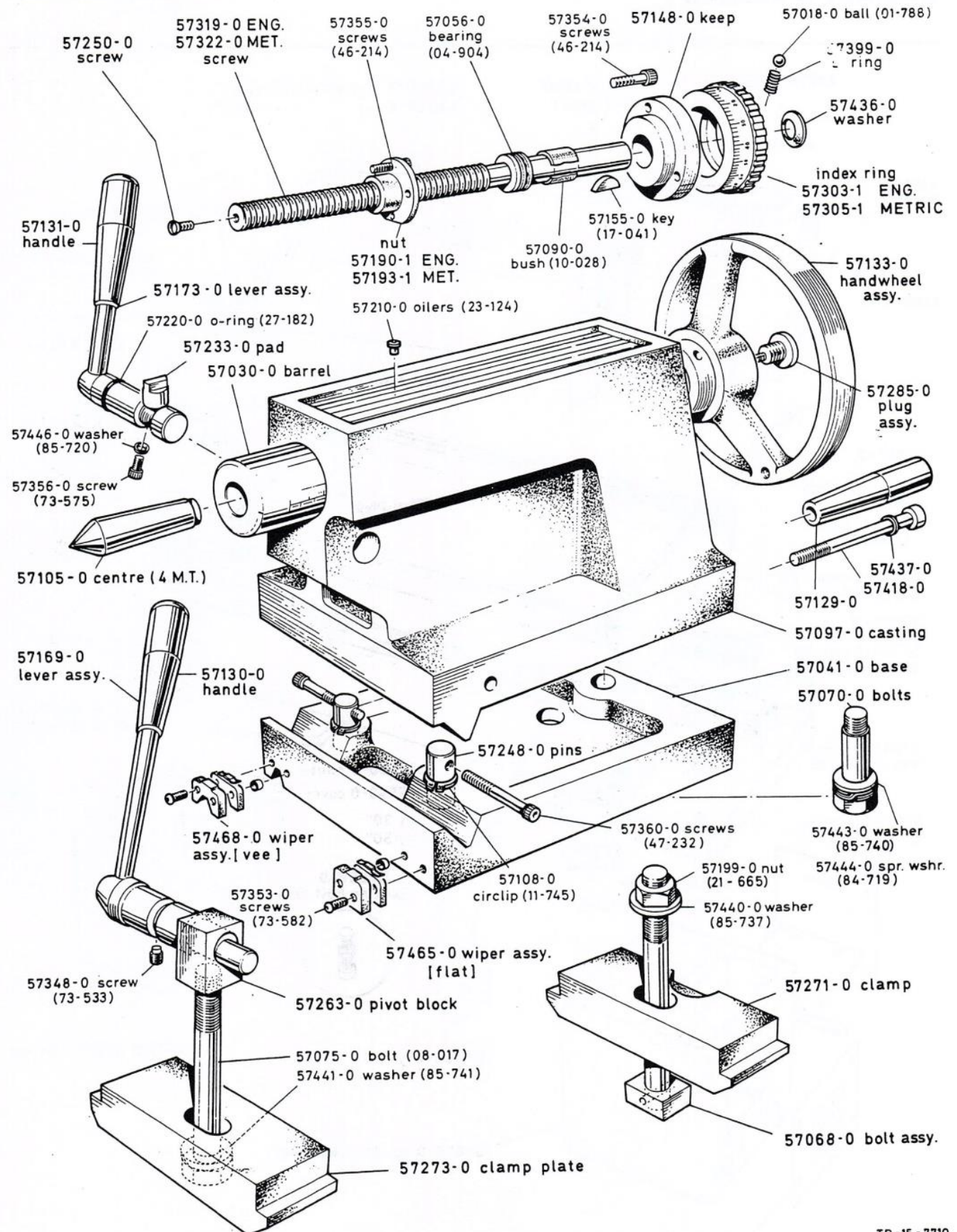
**SLIDES, ASSEMBLIES**

FROM SER No 25201  
TO SERIAL No. ....



# TAILSTOCK

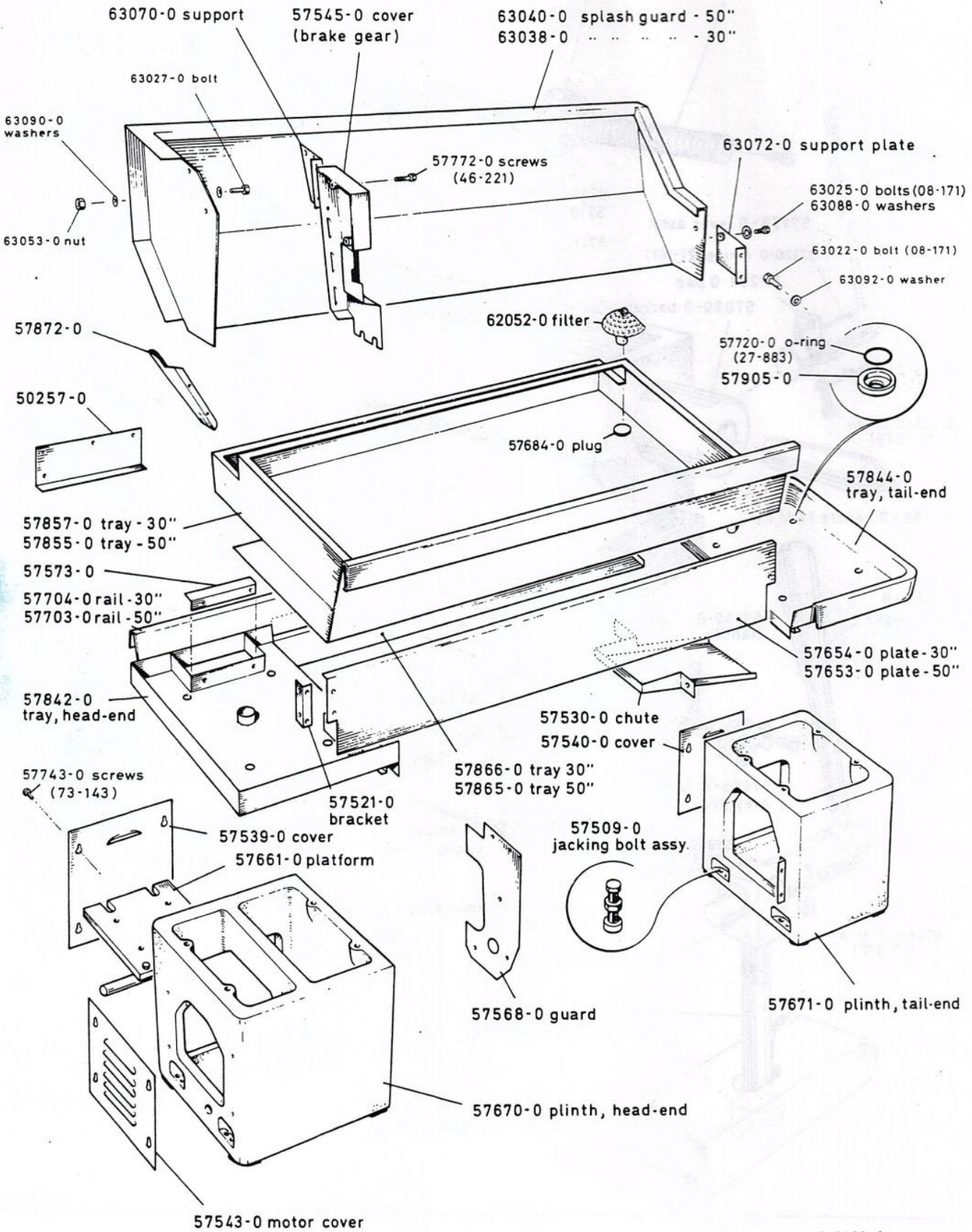
FIG. 1 SER. No 22096  
TO SER. No.....



TR-15-7710

CABINET & PANELS

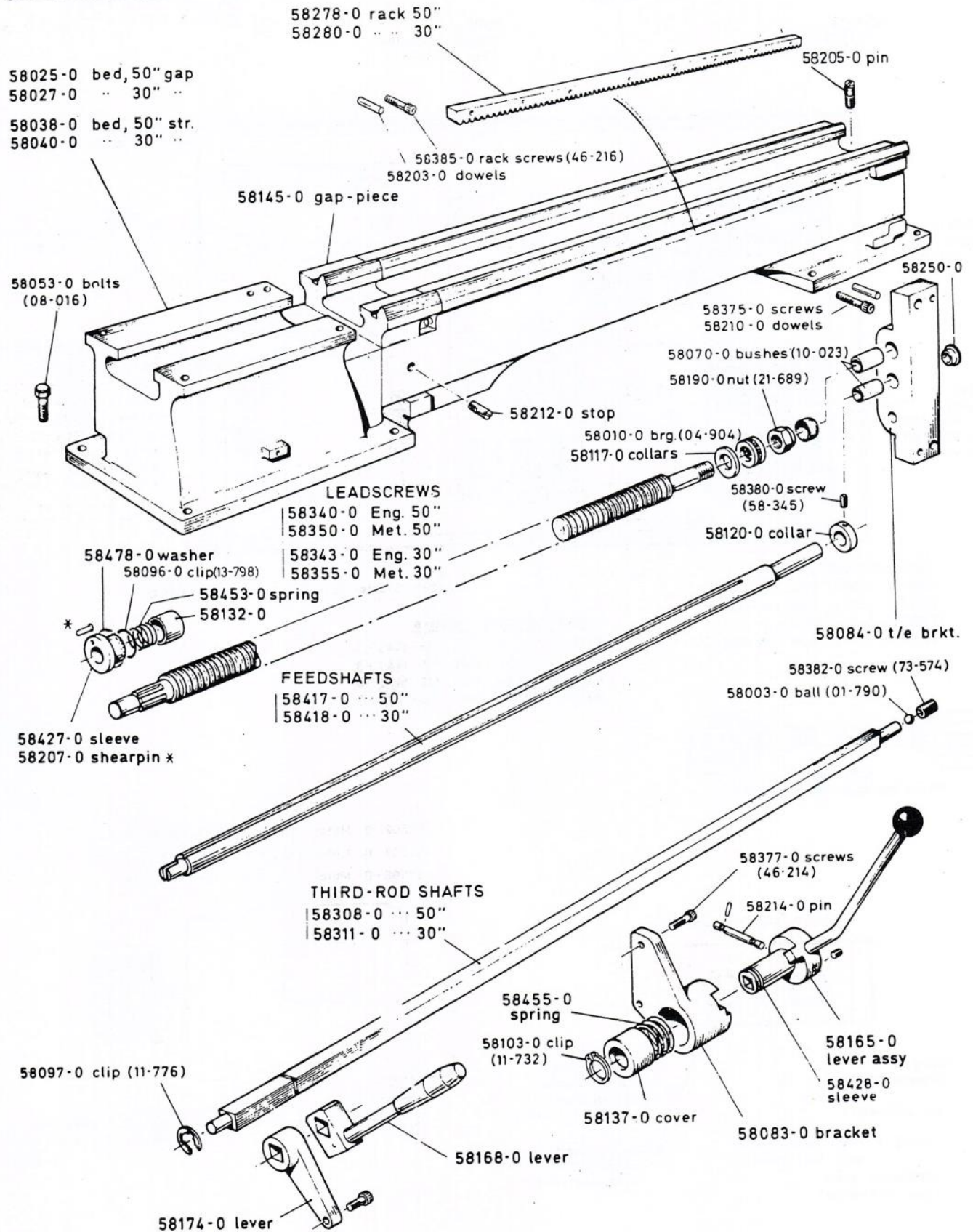
FROM SER No 00C01  
TO SER No.



TR-16-6803 A

# BED & SHAFTS

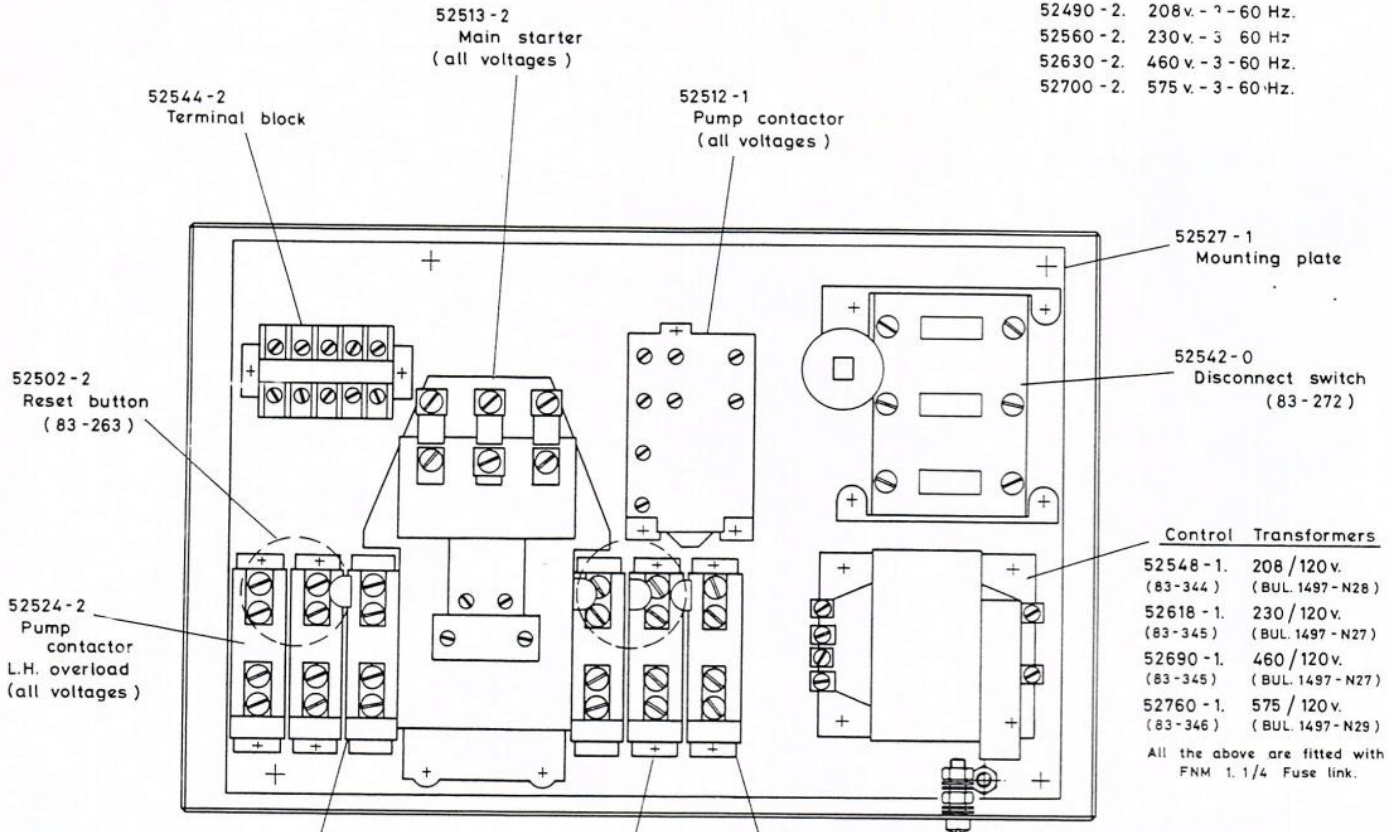
FROM SER No 000101  
TO SER. No



TR-17-7308

Control panels complete.

- 52490 - 2. 208 v. - 3 - 60 Hz.
- 52560 - 2. 230 v. - 3 60 Hz.
- 52630 - 2. 460 v. - 3 - 60 Hz.
- 52700 - 2. 575 v. - 3 - 60 Hz.



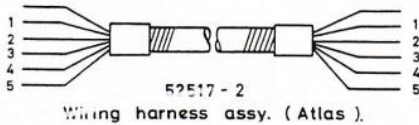
Start overload heaters

- 52518 - 1. 208 v. N40. - 3.
- 52586-1 230 v. N39. (15-143) - 3.
- 52656-0. 460 v. N32 - 3.
- 52726-0. 575 v. N29 (15-148) - 3.

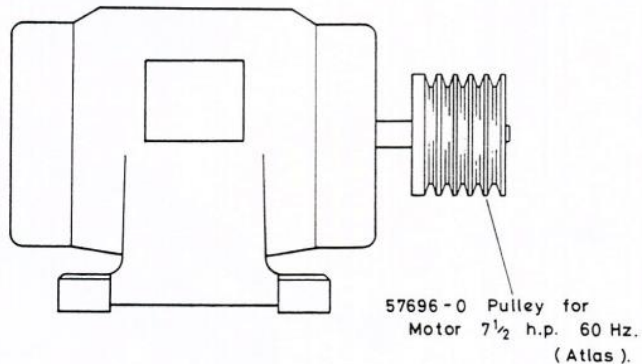
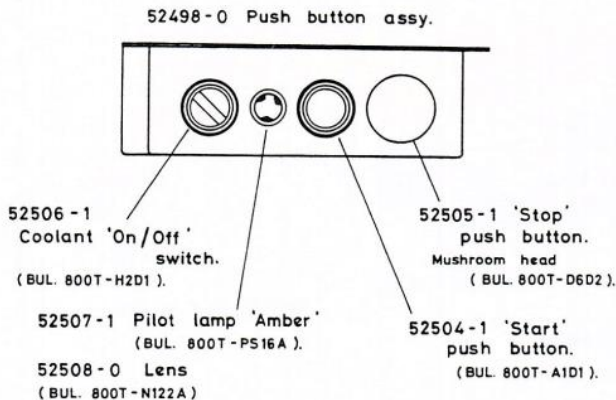
52523-1 Starter R.H. overload (all voltages)

Pump overload heaters

- 52516 - 2. 208 v. NN3. (15-144) - 3.
- 52586 - 2. 230 v. NN3. (15-144) - 3.
- 52656 - 2. 460 v. NN4. (15-147) - 3.
- 52726 - 2. 575 v. NN4 (15-147) - 3.

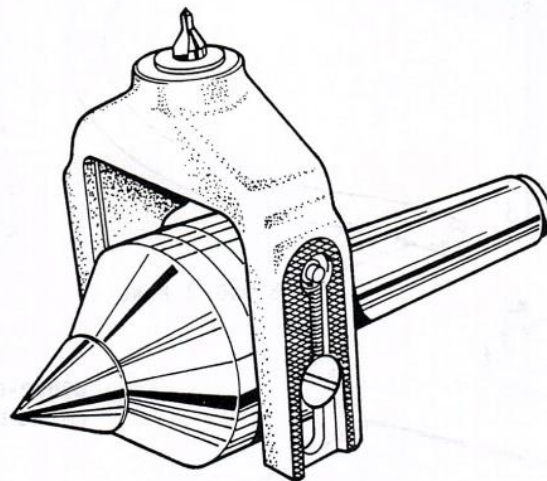


- 57602-0. Motor 7½ h.p. 208 v. - 3 - 60 Hz.
- 57603-0. Motor 7½ h.p. 230/460 v - 3 - 60 Hz.
- 57605-0. Motor 7½ h.p. 575 v. - 3 - 60 Hz.

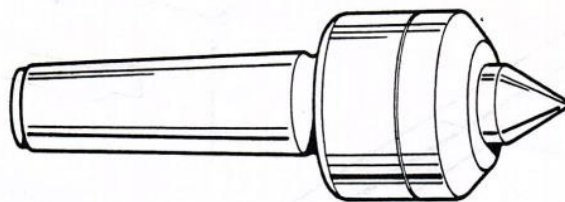


**CENTRE ; rotating**

FROM SER. No. 00001  
TO SER. No.



60505-0 CENTRING-CENTRE 4 M.T. - English  
60506-0 CENTRING-CENTRE 4 M.T. - Metric

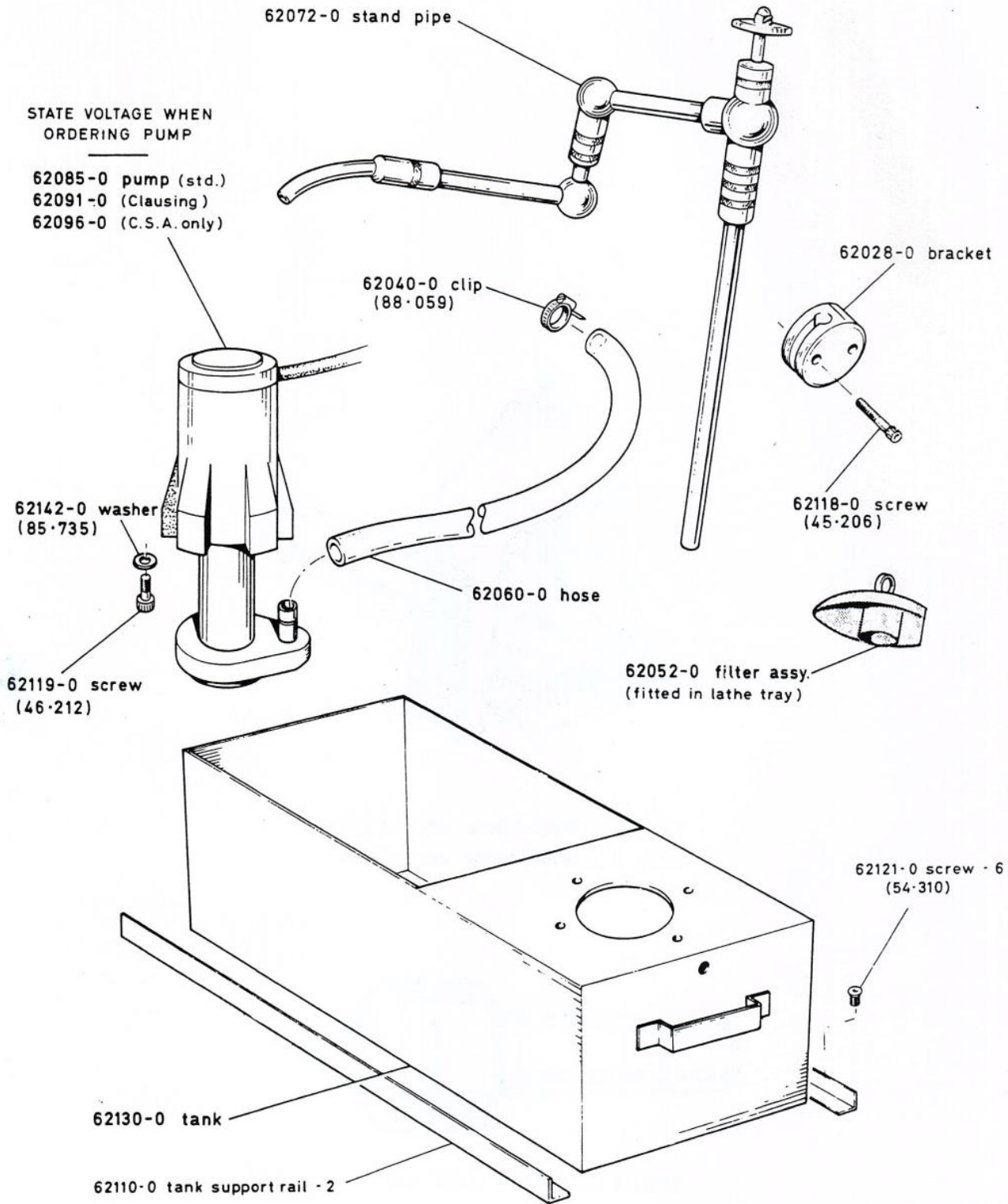


60510-0 STD. ROTATING CENTRE 4 M.T.

# COOLANT UNIT

FROM SER No 00001  
TO SER No

REFER TO WIRING DIAGRAM BEFORE INSTALLING OR REPAIRS



TR— ACC 6 - 6803A



# STANDARD EQUIPMENT

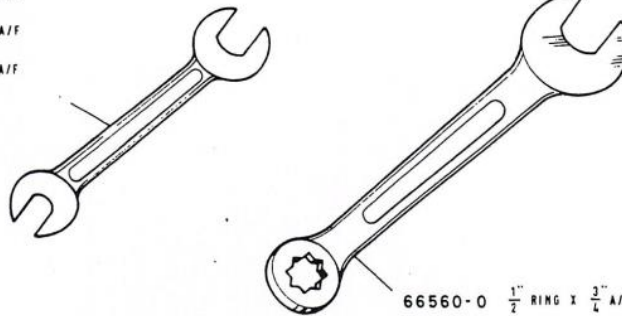
FROM SER. No 00001  
TO SER No

## 66514-0 SPANNER SET

66550-0  $1\frac{5}{16}$ " x  $1\frac{15}{16}$ " A/F

66552-0  $1\frac{15}{16}$ " x  $2\frac{3}{4}$ " A/F

66554-0  $2\frac{3}{16}$ " x  $2\frac{7}{16}$ " A/F



66560-0  $1\frac{1}{2}$ " RING x  $2\frac{3}{4}$ " A/F

## 66510-0 KEYS SET.

66525-0  $1\frac{1}{8}$ " A/F

66527-0  $5\frac{1}{32}$ " A/F

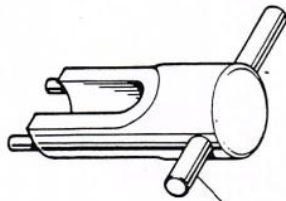
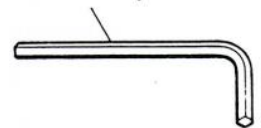
66529-0  $3\frac{1}{16}$ " A/F

66531-0  $2\frac{7}{32}$ " A/F

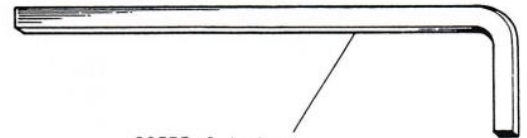
66533-0  $1\frac{1}{4}$ " A/F

66535-0  $5\frac{5}{16}$ " A/F

66537-0  $2\frac{3}{8}$ " A/F

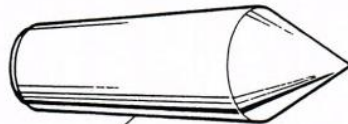


66583-0 peg spanner

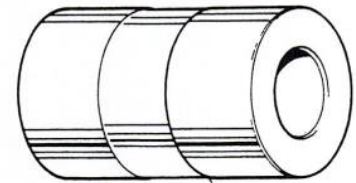


66575-0 L-key

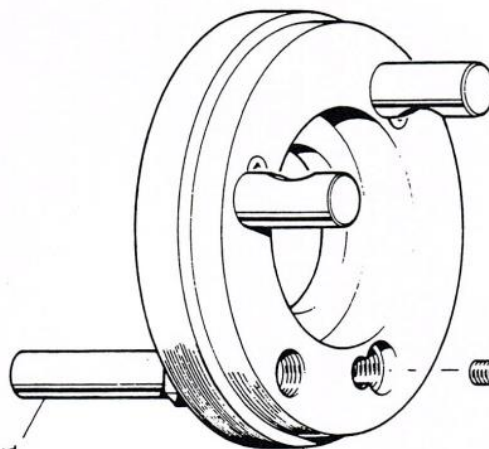
## 66502-0 TOOL KIT COMPLETE



50270-0 No. 4 M.T. centre



50110-0 centre bush No. 4 M.T.  
50111-0 centre bush No. 5 M.T.



65233-0 drive stud

65203-0 driving plate assy.

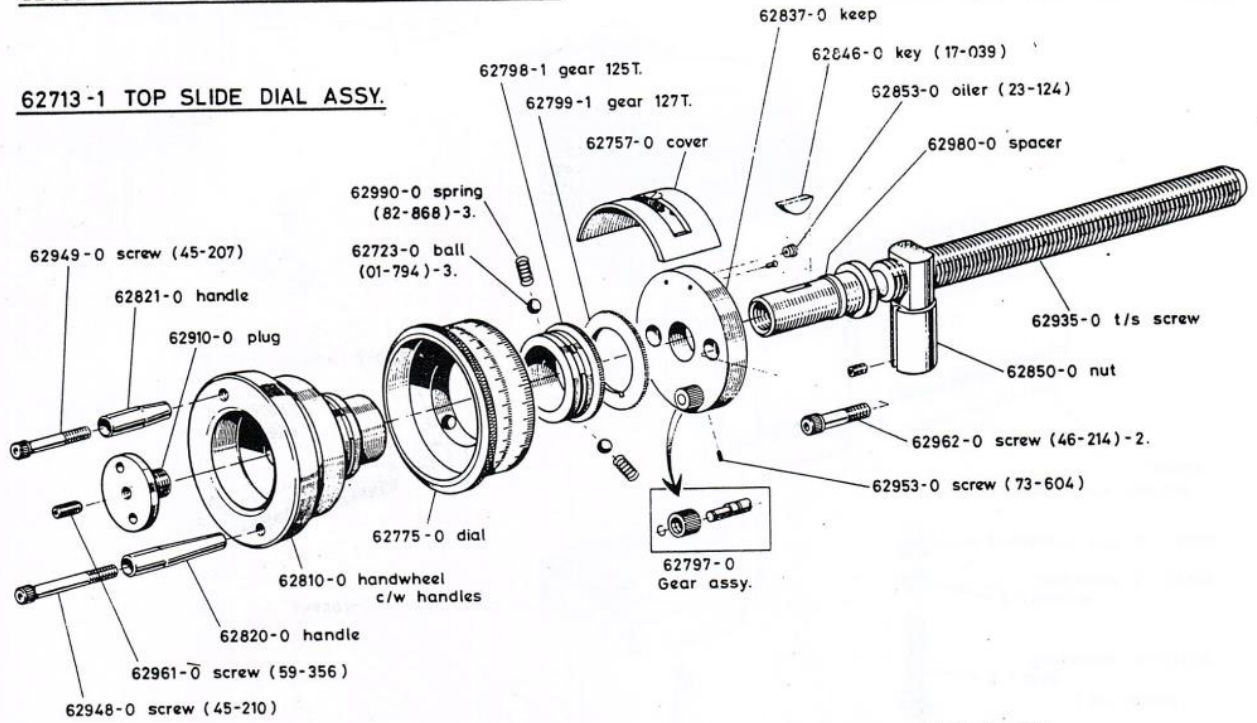
65324-0 screw 3 (47-223)

65330-0 Camlock stud 3

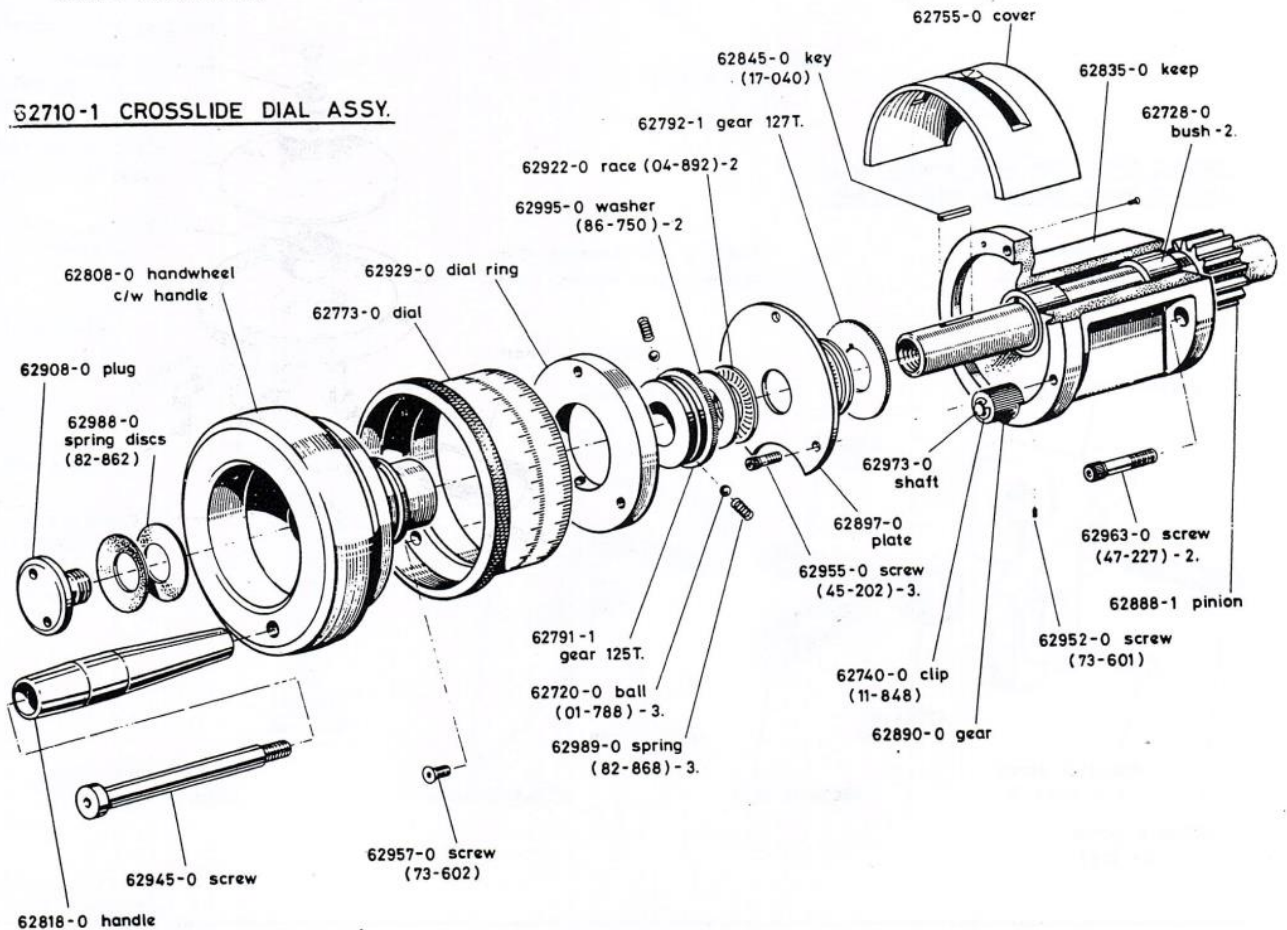
**DUAL DIALS**

**62702-1 TOP & CROSSLIDE DUAL DIALS ASSY.**

**62713-1 TOP SLIDE DIAL ASSY.**

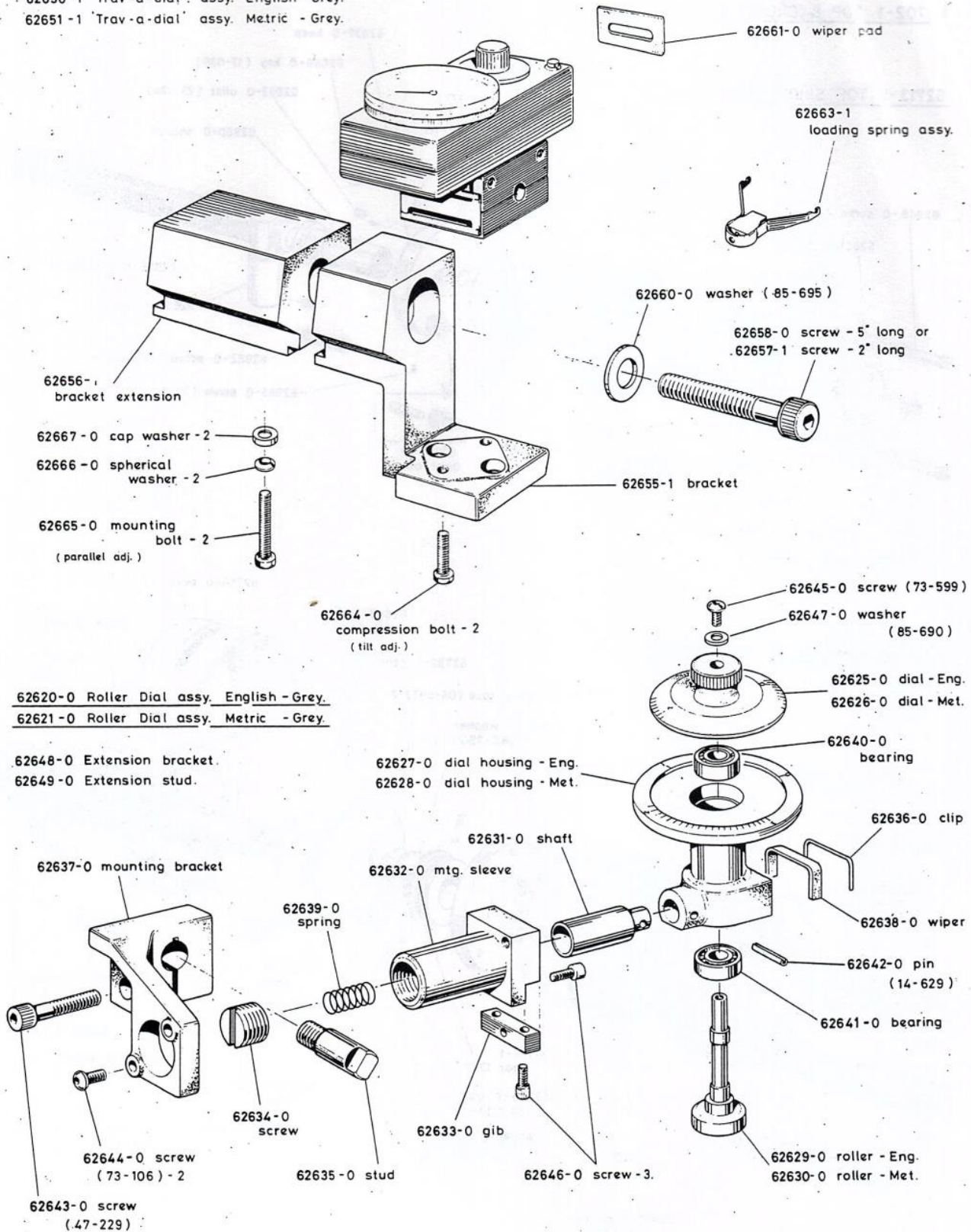


**62710-1 CROSSLIDE DIAL ASSY.**



**LONGITUDINAL POSITIONING DIALS**

62650-1 'Trav-a-dial' assy. English - Grey.  
62651-1 'Trav-a-dial' assy. Metric - Grey.

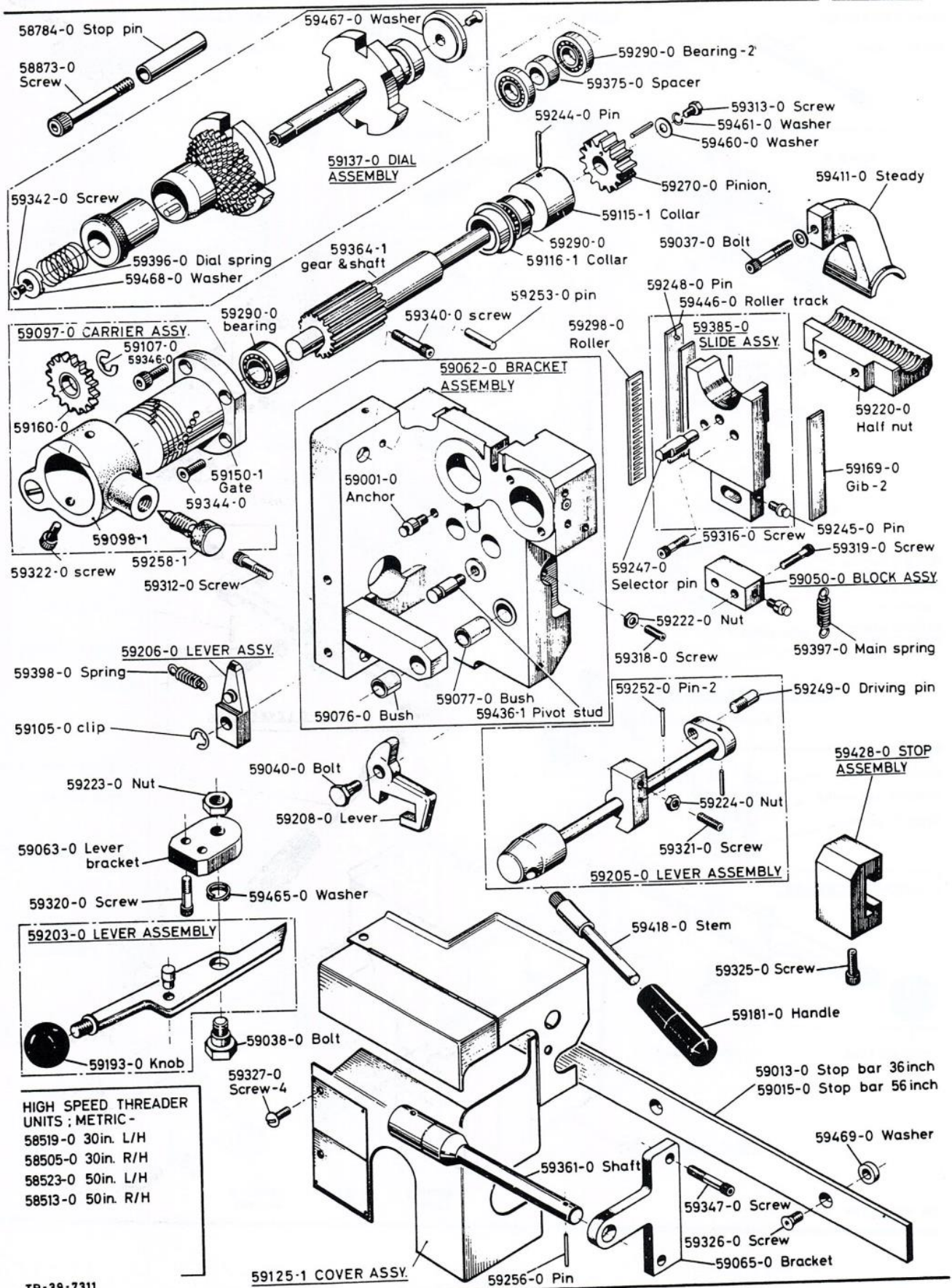


62620-0 Roller Dial assy. English - Grey.  
62621-0 Roller Dial assy. Metric - Grey.

62648-0 Extension bracket.  
62649-0 Extension stud.

# RAPID THREADER UNIT : METRIC

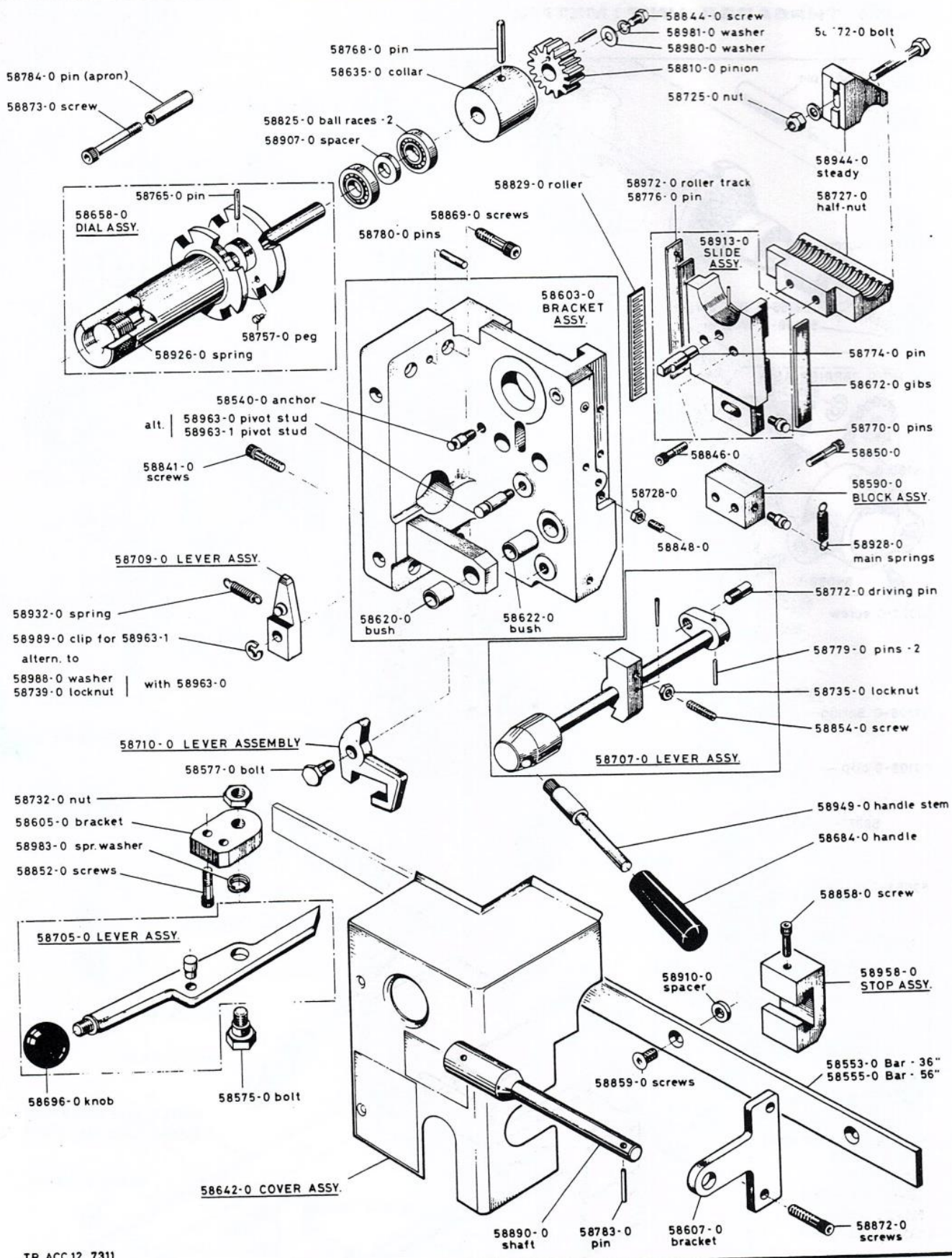
FROM SER No. 00001  
TO SER. No....



**HIGH SPEED THREADER UNITS ; METRIC -**  
**58519-0** 30in. L/H  
**58505-0** 30in. R/H  
**58523-0** 50in. L/H  
**58513-0** 50in. R/H

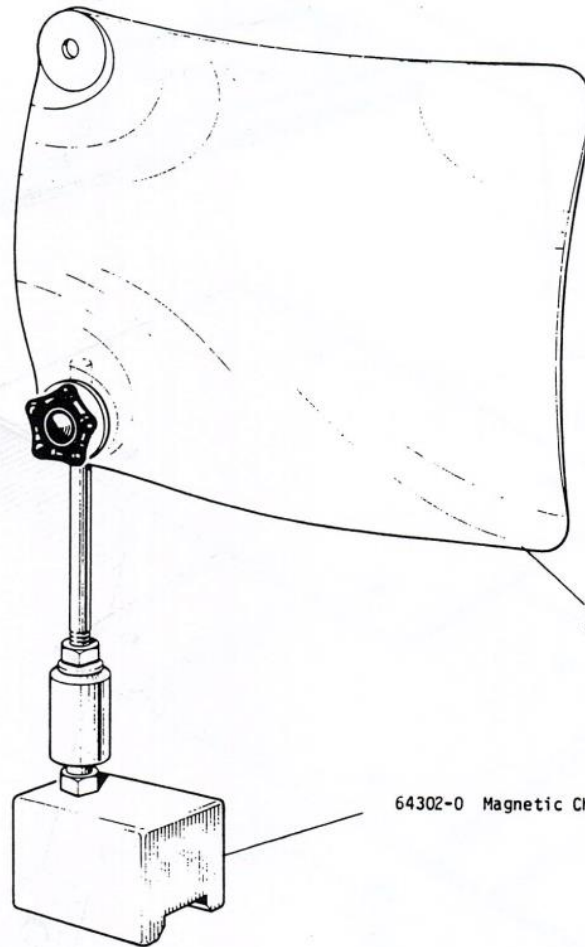
# RAPID THREADER UNIT; ENGLISH

FROM SER. No. 00001  
TO SER. No....



# MAGNETIC CHIP GUARD/DIAL INDICATOR

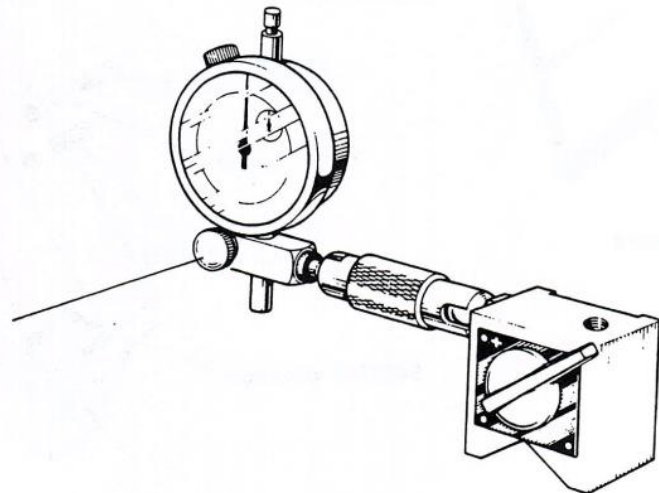
FROM SER. NO 00001  
TO SER NO.



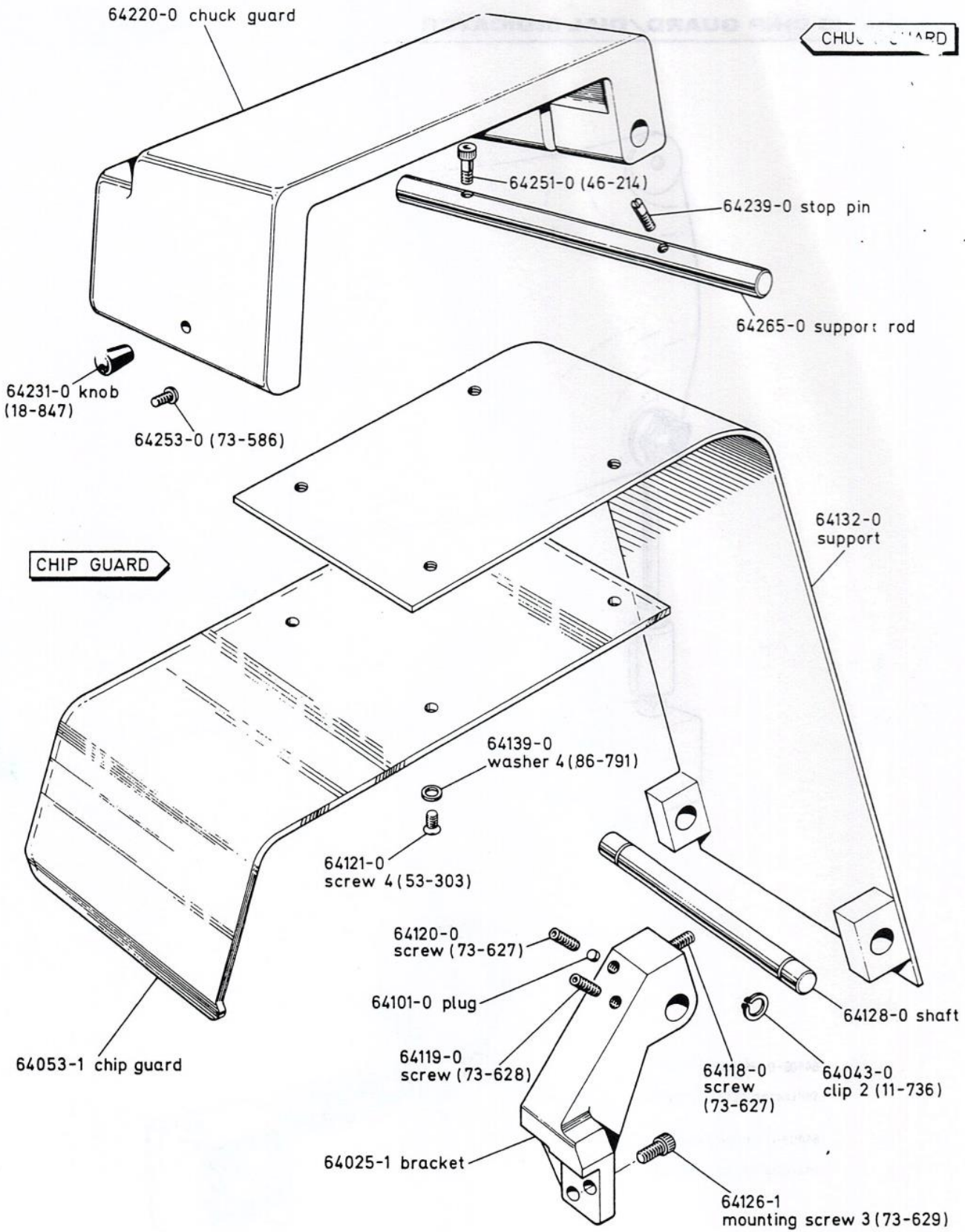
64303-0 Chip guard shield

64302-0 Magnetic Chip guard assy

- 64402-0 Magnetic dial indicator assy - ENGLISH
- 64403-0 Magnetic dial indicator assy - METRIC

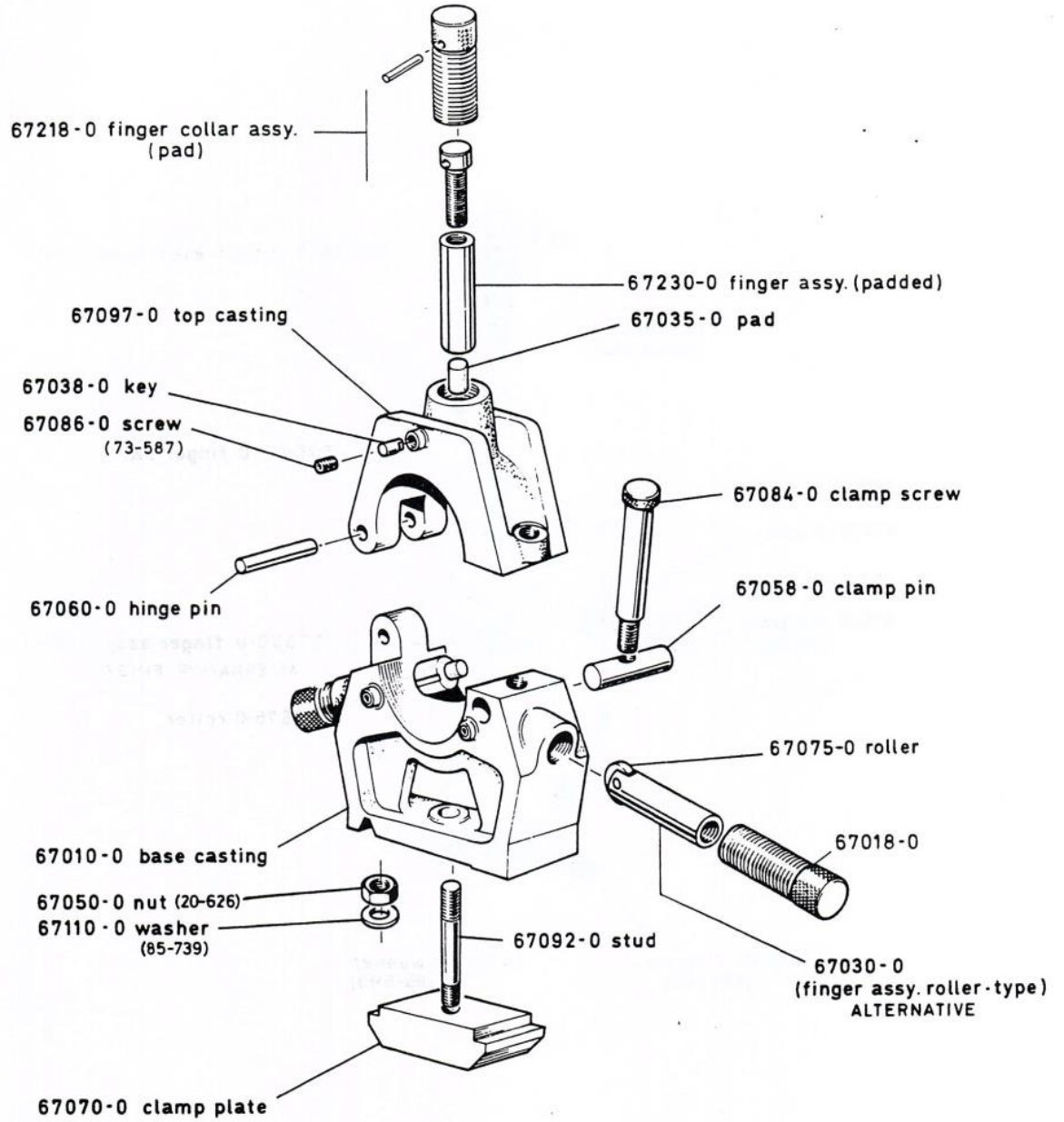


# CHUCK & CHIP GUARDS

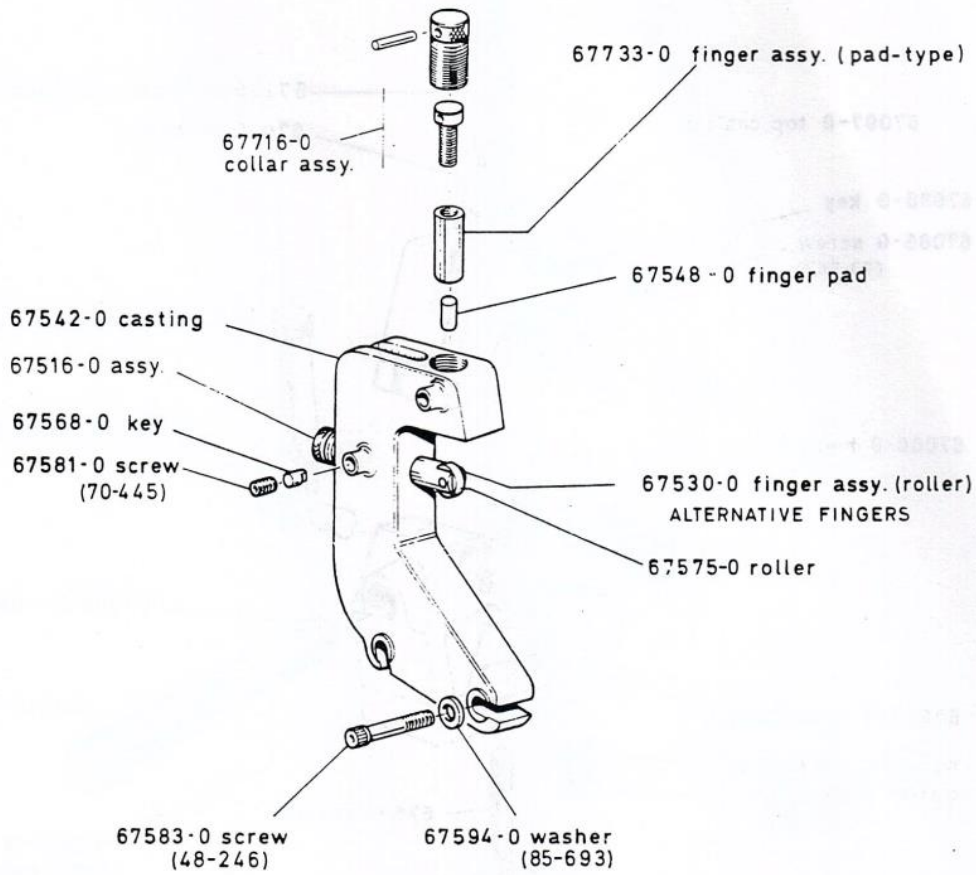


**STATIONARY STEADY**

FROM SER. No. 00001  
TO SER. No. ...



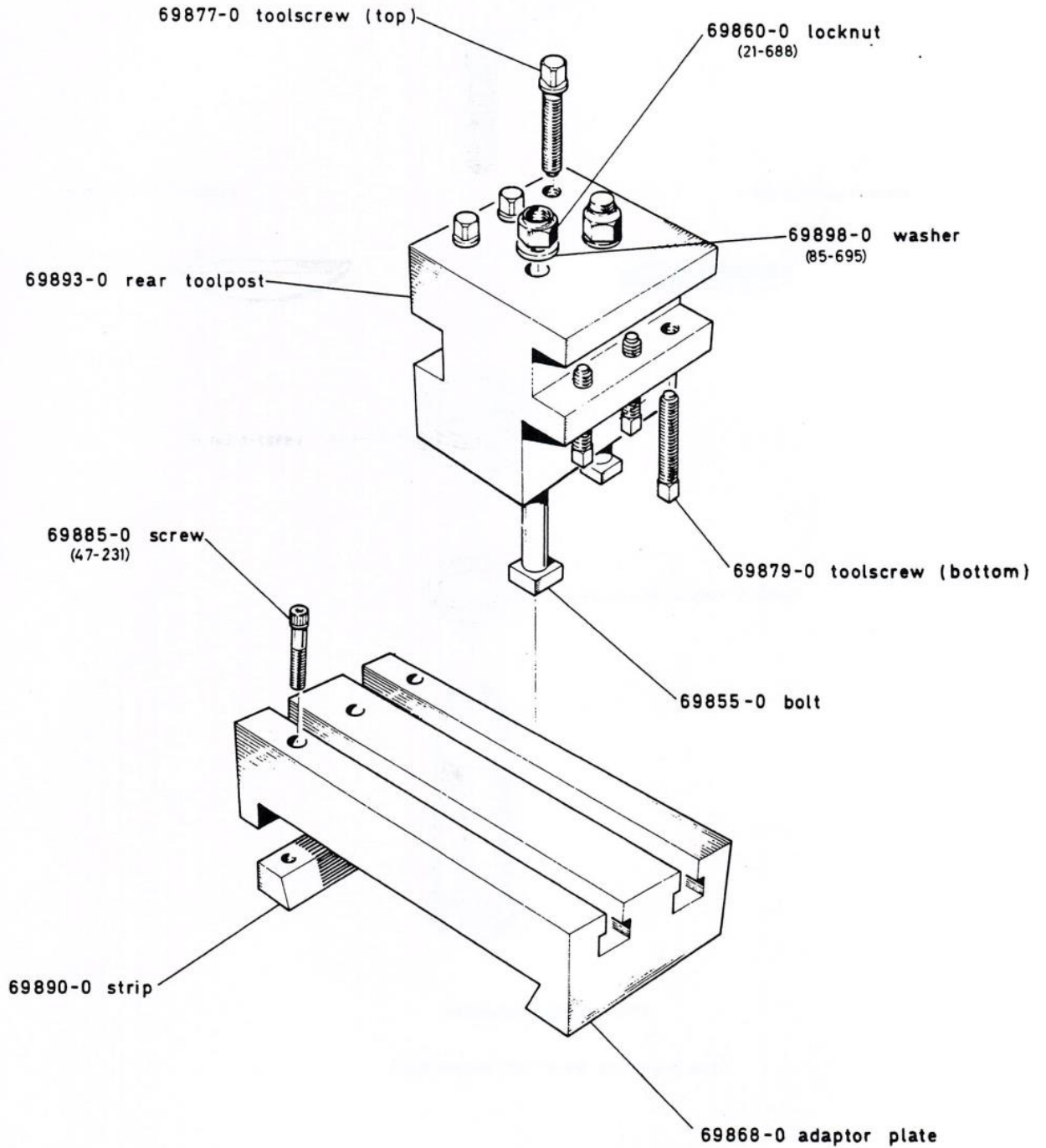




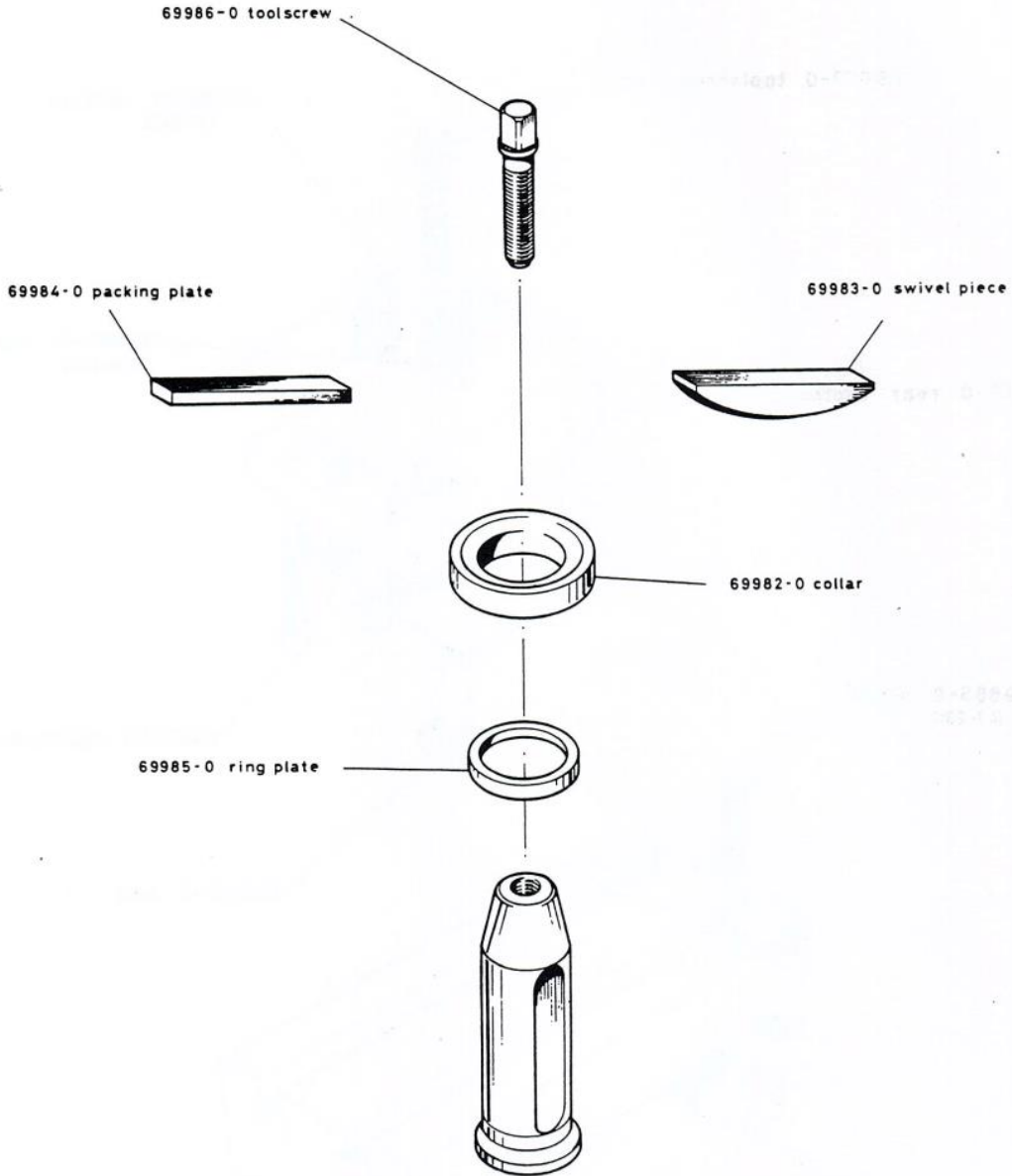
**REAR TOOLPOST ; STANDARD**

FROM SER. No. 00001  
TO SER. No....

**Rear Toolpost Assy. 69850-0**



69980-0 TOOLPOST COMPLETE

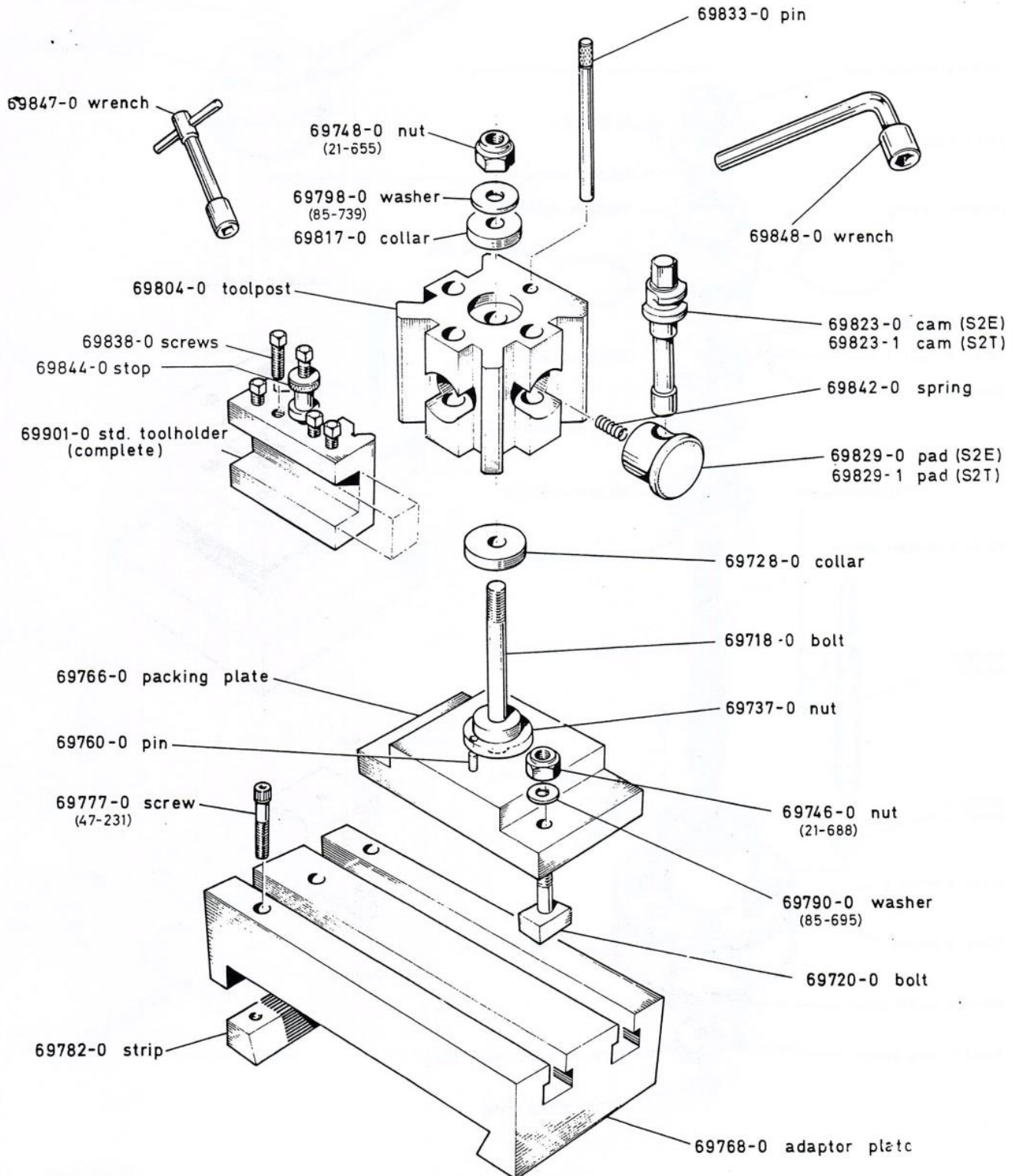


69987-0 pillar toolholder

(for Armstrong 25 & T25 toolholders)

# REAR TOOLPOST ; QUICK - CHANGE

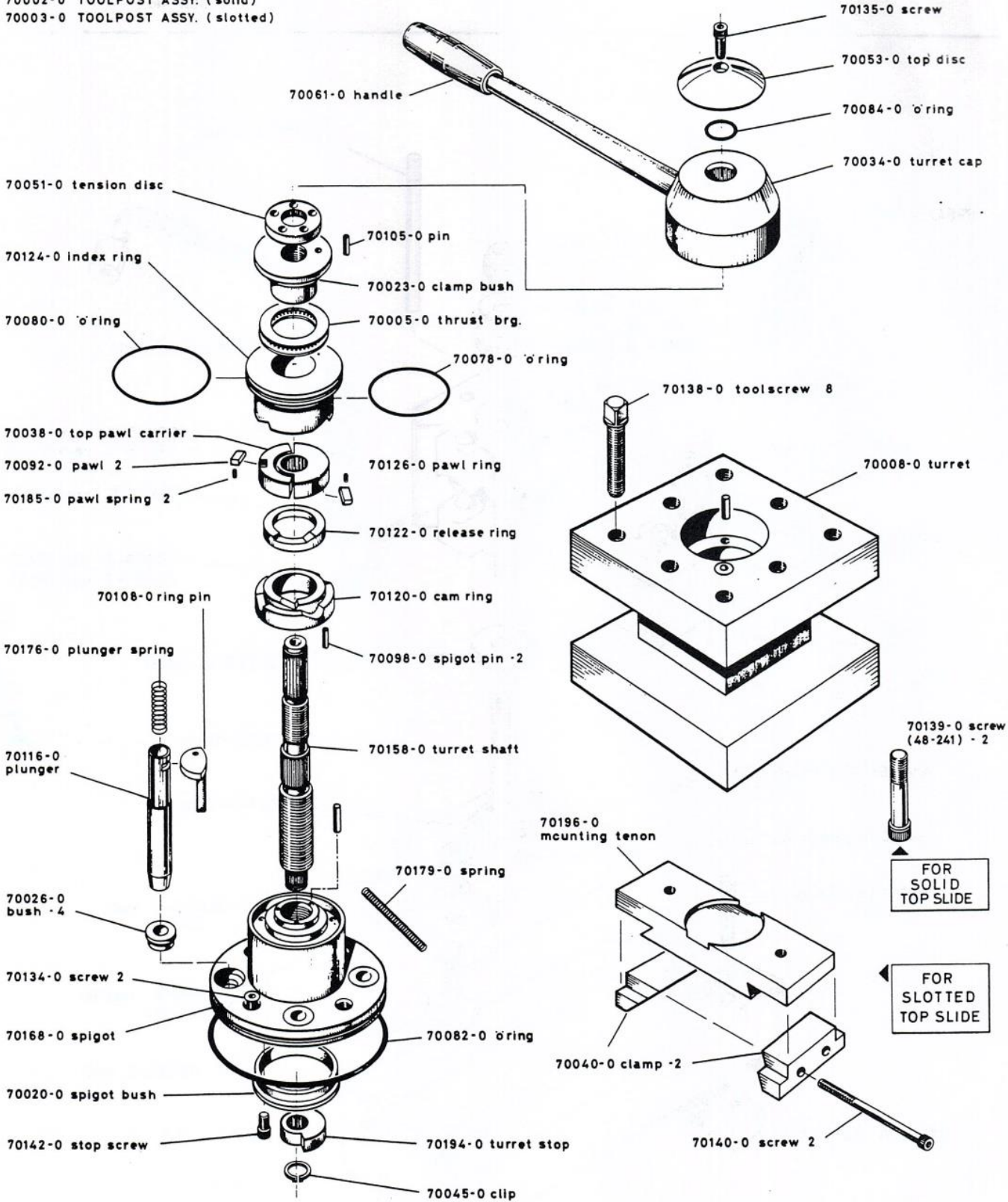
FROM SER. No 00001  
TO SER. No...



# TOOLPOST ; 4 WAY TURRET

FROM SER. No. 00001  
TO SER. No....

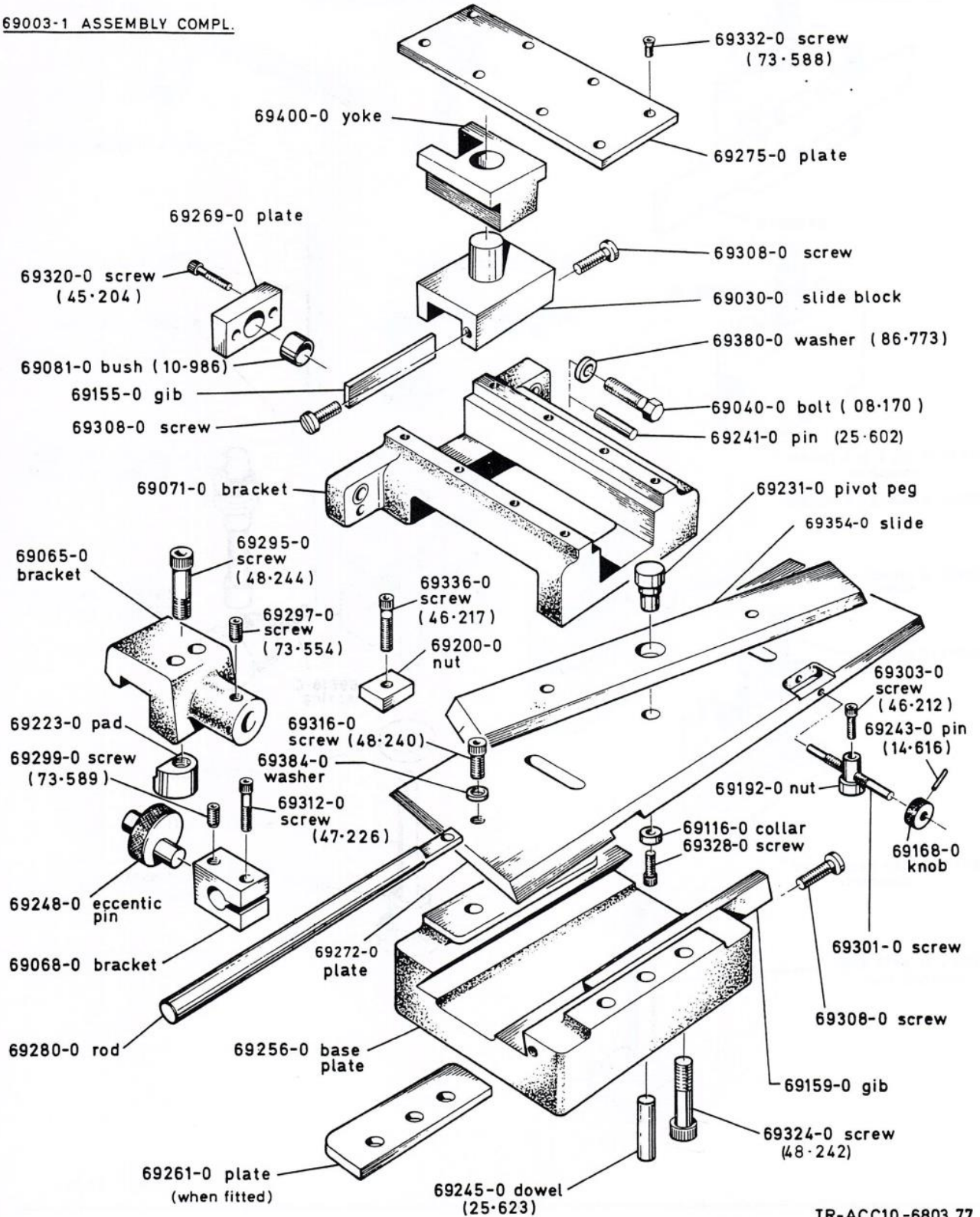
70002-0 TOOLPOST ASSY. (solid)  
70003-0 TOOLPOST ASSY. (slotted)



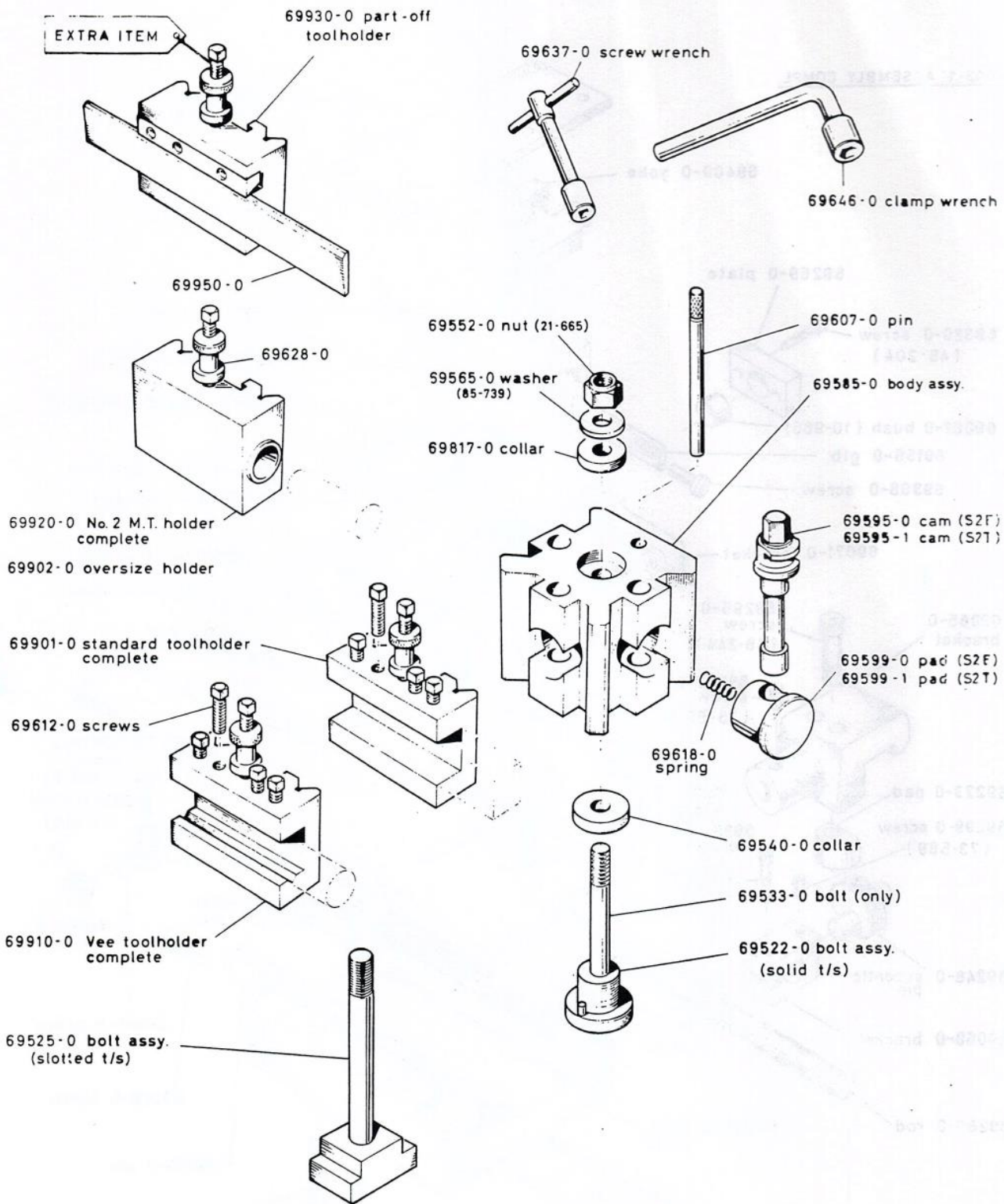
# TAPER TURNER

FROM SER. No. 00001  
TO SER. No....

## 69003-1 ASSEMBLY COMPL.



TR-ACC10-6803 77



# BED STOPS

FROM SER No 00001  
TO SEP No

## MICROMETER STOP

68403-0 ASSY. - ENGLISH  
68503-0 ASSY. - METRIC

68431-0 pin - eng.  
68520-0 pin - met.

68419-0 micro-dial - eng.  
68515-0 micro-dial - met.

68428-0 pin - eng.  
68520-0 pin - met.

68448-0 screw - eng.  
68530-0 screw - met.

68437-0 spindle rod - eng.  
68524-0 spindle rod - met.

68408-0 body - eng.  
68508-0 body - met.

68454-0 screw 2 - eng. (48-242)  
68533-0 screw 2 - met. (48-242)

68413-0 clamp 2 - eng.  
68512-0 clamp 2 - met.

## SINGLE - TYPE

68303-0 ASSY.

68324-0 pad 2

68308-0 body

68338-0 screw 2 (48-242)

68318-0 clamp 2

68003-0 ASSY.

## 5-POSITION STOP TURRET-TYPE

68021-0 nut 5 (21-680)

68033-0 plate

68029-0 pin (14-649)

68059-0 spindle

68039-0 stop screw 2-625 in.  
68041-0 - - 3-250 in.  
68043-0 - - 3-875 in.  
68045-0 - - 4-5 in.  
68047-0 - - 5-250 in.

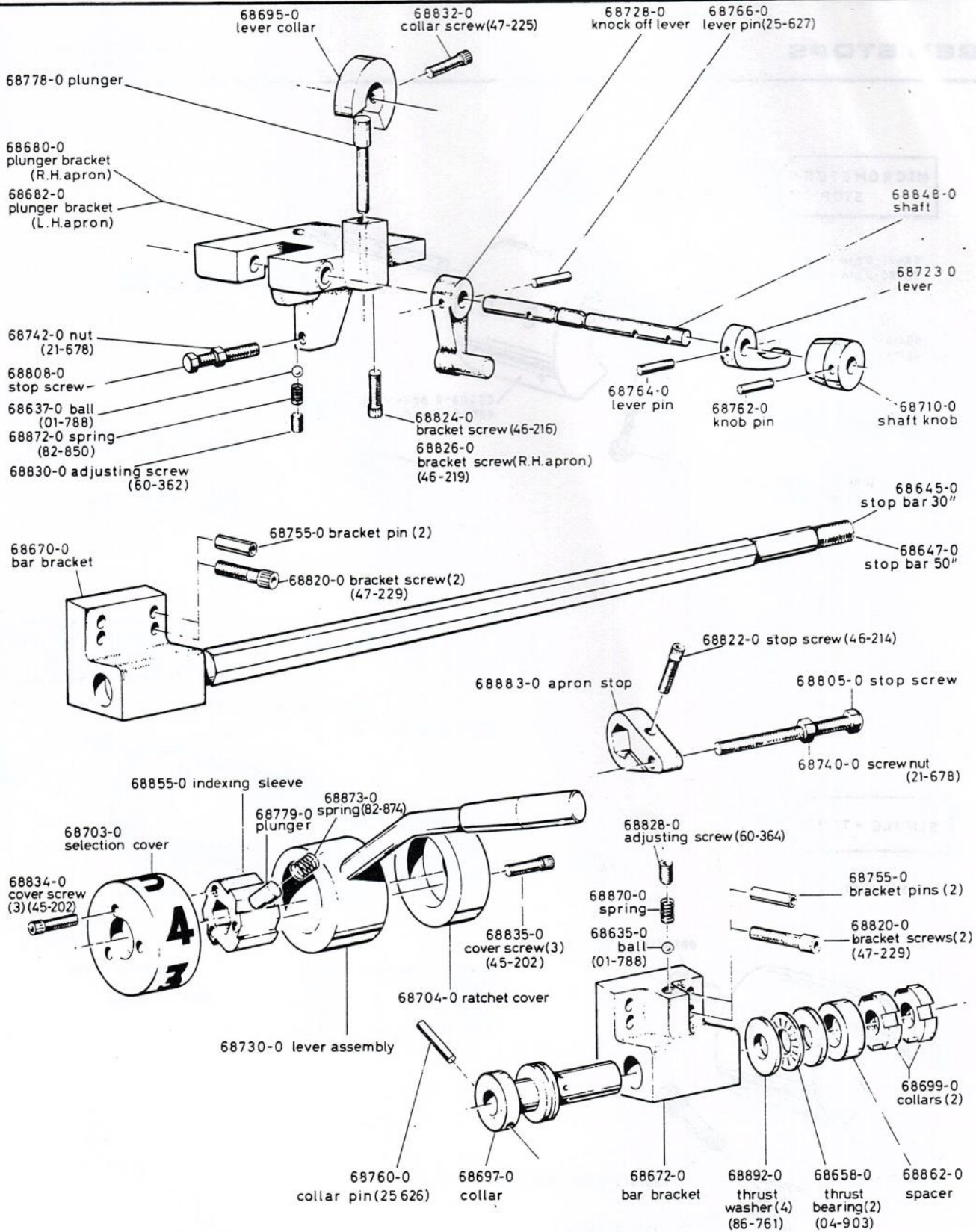
68007-0 ball (01-788)

68070-0 spring

68078-0 turret

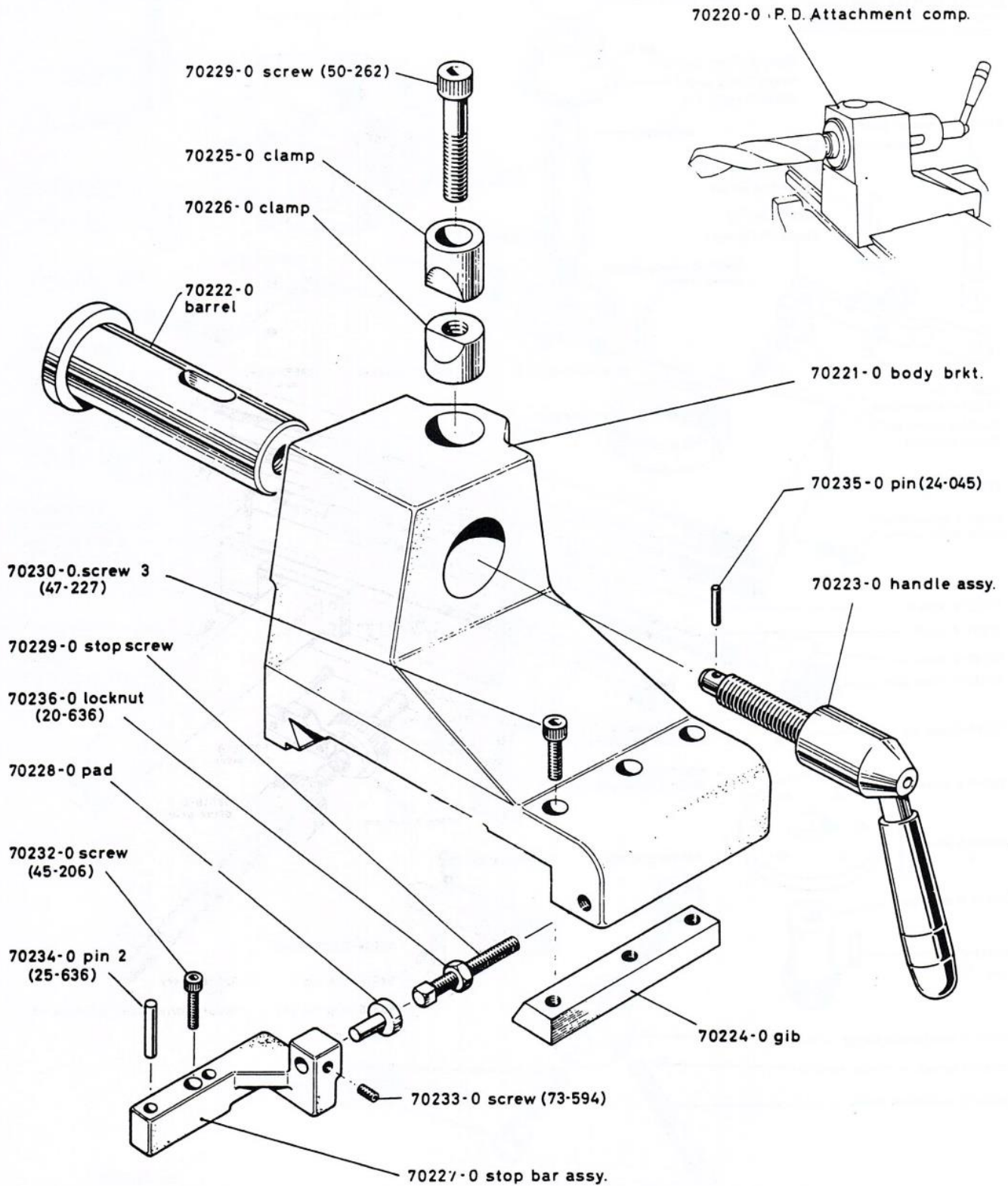


# BEDSTOP: 6 POSITION LONGITUDINAL



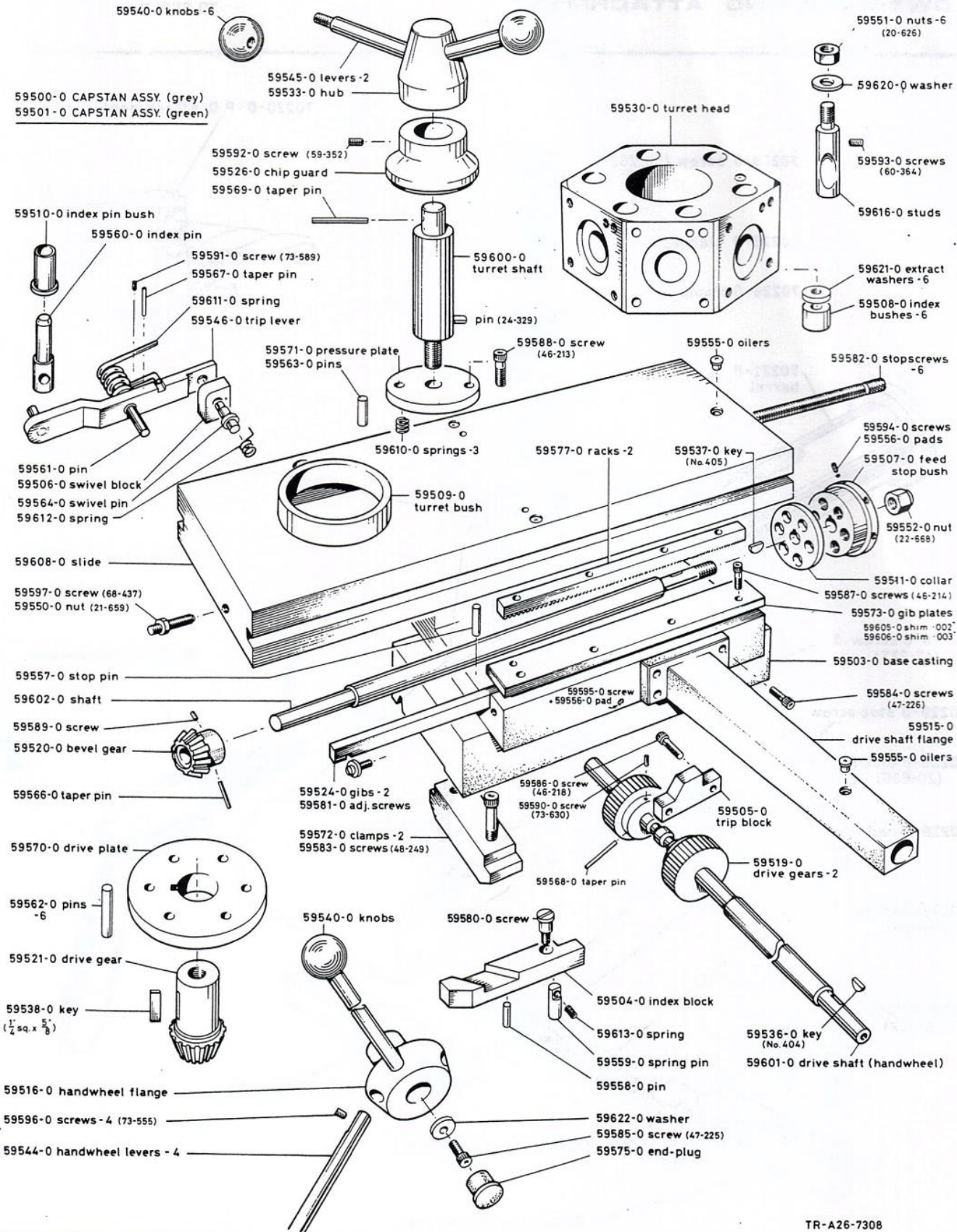
# POWER DRILLING ATTACHMENT

FROM SER No. 00001  
TO SER. No.



**CAPSTAN UNIT**

FROM SER. No 00001  
TO SER. No.



Reference Number

13-797 Circlip 3/8 in. Anderton 1900  
13-798 Circlip Anderton 900-106  
13-799 Circlip 5/16 in. SL Narromore & Tozier  
13-802 Circlip Anderton 1000 - 15

14-144 Spring dowel 3/16 dia. x 1.1/4 in.  
14-604 Spring dowel 3/16 dia. x 1/2 in.  
14-605 Spring dowel 3/16 dia. x 3/4 in.  
14-629 Spring dowel 1/8 dia. x 7/8 in.  
14-649 Spring dowel 3/16 dia. x 5/8 in.  
14-664 Spring dowel 1/4 dia. x 3/4 in.

17-001 Key Woodruff No. 3 BS 404  
17-002 Key Woodruff No. 9 BS 606  
17-006 Key 1/4 x 1/4 x 1 long. Feather  
17-017 Key Woodruff Letter 'A' BS 807  
17-023 Key 3/16 x 3/16 x 1.3/4 Plain  
17-034 Key 3/16 x 3/16 x 5/8 long BS 46  
17-037 Key 3/16 x 3/16 x 3/4 long BS 46  
17-039 Key Woodruff BS 505  
17-040 Key 1/8 x 1/8 x 3/4 long Round end. BS 46  
17-041 Key 3/4 O/D x 3/16 thk BS 46 No. 606  
17-042 Key Woodruff BS 46 404  
17-043 Key Woodruff BS 46 303

18-847 Knob Bluemel type D 119

20-624 Nut 1/2 UNC standard  
20-626 Nut 5/8 UNC standard  
20-635 Nut 1/4 unc thin  
20-636 Nut 5/16 unc thin

21-655 Locknut 3/4 UNF Nyloc  
21-659 Locknut 5/16 UNC standard  
21-660 Locknut 3/8 UNC Simmonds Aero  
21-662 Locknut 1/2 UNC Standard Nyloc NT/N1166  
21-665 Locknut 5/8 UNC standard NP/N206  
21-678 Locknut 5/8 UNC thin Armaloc A-5 CAPZ  
21-680 Locknut 3/8 UNC thin Philidas JUCJ  
21-685 Locknut 5/8 UNC thin 'T' NT/N206  
21-688 Locknut 1/2 unc Simmonds  
21-689 Locknut 5/8 UNC Philidas c/w Plastic cap Type QUCN  
21-690 Locknut 1/2 UNC Simmonds NT/N162  
21-691 Locknut 1/4 UNC Armaloc A-4 CAPZ  
21-692 Locknut 3/8 UNC Armaloc A-6 CAPZ

Reference Number

22-668 Nut 3/8 UNC Nyloc  
22-702 nut 7/16 BSF L/H

23-124 1/4 dia. Springwell oiler

24-045 Mills pin 1/8 dia. x 11/16 GP3  
24-329 Mills pin 1/4 dia. x 1 in. GP4  
24-542 Mills pin 3/16 dia. x 3/4 GP3  
24-544 Mills pin 3/16 dia. x 1 GP3  
24-560 Mills pin 1/4 dia. x 3/4 GP4  
24-589 Mills pin 3/8 dia. x 1.1/2 GP3  
24-765 Mills pin 11/32 dia. x 1.1/2 GP1

25-602 Dowel 3/8 x 1.1/8 in.  
25-616 Split pin 1/8 x 1/2 in.  
25-617 Split pin 3/16 x 1/2 in.  
25-620 Roll pin 5/32 x 1.1/2 in.  
25-622 Roll pin 1/8 x 1/2 in.  
25-623 Dowel 3/8 x 1.3/4 in. Grade 3  
25-626 Roll pin 1/4 x 1.3/4 in.  
25-627 Roll pin 3/16 x 1.1/4 in.  
25-636 Dowel 1/4 x 1/4 in. (precision)

26-862 Oil-ring Pioneer PO/13711213  
26-931 Oil-ring Dowty No. 20  
26-947 Oil-ring Dowty No 4

27-182 Oil-ring Dowty list 5 MK10pp49c  
27-866 Oil-ring Dowty list 5 MK12pp49c  
27-870 Oil-ring Dowty list 5 MK6pp49c  
27-871 Oil-ring Dowty list 1 MK7pp51c  
27-879 Oil-ring Dowty list 1 MK6pp51c  
27-883 Oil-ring Pioneer 6-017/MP 908  
27-885 Oil-ring Dowty list 4 MK15pp73c  
27-888 Oil-ring Dowty list 5 MK29pp49c  
27-889 Oil-ring Dowty list 5 MK28pp49c  
27-890 Oil-ring Dowty list 5 MK4pp49c  
27-891 Oil-ring Dowty list 4 MK24pp73c  
27-893 Oil-ring Dowty list 5 MK8pp49c  
27-895 Oil-ring Dowty list 3 MK2pp49c

29-031 Tecalemit 90° M & F elbow type 43336/3  
29-039 Tubing sleeve ENOTS Z2  
29-044 Plug 1/2 BSP Tecalemit 4377/4  
29-046 Oil pipe Gripflex, Surlon No. NF40  
29-051 Elbow 1 in. BS 1740

Spare Parts List - Appendix 1

SPECIFICATIONS OF STANDARD ITEMS - TRIUMPH 2000 and CLAUSING 15"

Reference Number

01-788	Ball steel 1/4 in. dia.
01-790	Ball steel 3/8 in. dia.
01-794	Ball steel 7/32- in. dia.
02-884	Bearing FAG 6206
02-886	Bearing FAG 160-05
02-894	Bearing FAG 160-03
02-895	Bearing FAG 6204
02-897	Bearing FAG 6004 2Z
02-898	Bearing FAG 6006
02-899	Bearing-FAG 6007
02-900	Bearing FAG 6301 2Z
02-910	Bearing FAG 6003
03-898	Bearing Needle INA SC 188
03-918	Bearing Needle HK 3020
03-933	Bearing Gamet 133075/133130 P
03-943	Bearing FAG 6005
03-944	Bearing INA BK 2538
03-945	Bearing INA HK 2518 RS
03-946	Bearing Gamet 160098X/160152XC
04-891	Bearing Thrust INA AXK 1528
04-892	Bearing Thrust INA AXK 2035
04-903	Bearing Thrust INA AXK 3047
04-904	Bearing Thrust FAG 51104
07-930	Belts Vee A31
07-931	Belts Vee A32
07-972	Belts Vee A72
07-973	Belts Vee a74
08-013	Bolt Hex head 1/2 UNC x 1.1/4 in.
08-016	Bolt Hex head 1/2 UNC x 2 in.
08-017	Bolt Hex head 5/8 UNC x 3.1/2 in.
08-032	Bolt Hex head 1/4 unc x 5/8 in.
08-048	Bolt Hex head 5/16 UNC x 3/4 in.

Reference Number

08-112 Bolt Hex head 5/8 UNC x 1.1/4 in.  
08-170 Bolt Hex head 7/16 UNC x 1.1/2 in.  
08-171 Bolt Hex head 5/16 UNC x 1/2 in.

10-016 Bush Glacier MB 1825 DU  
10-017 Bush Glacier MB 3030 DU  
10-018 Bush Glacier MB 1215 DU  
10-019 Bush Glacier MB 3020  
10-020 Bush Glacier MB 2525  
10-021 Bush Glacier MB 2215  
10-022 Bush Oilite BS2 x 1.1/2 in.  
10-023 Bush Glacier MB 2025  
10-025 Bush Glacier 22 DU 16  
10-027 Bush Oilite CT 474 x 1/2 in.  
10-028 Bush Glacier MB 2015 DU  
10-986 Bush Glacier MB 1515 DU

11-731 Circlip external 3/8 in. Anderton 1400  
11-732 Circlip external 1.1/4 in. Anderton 1400  
11-736 Circlip external 1/2 in. Anderton 1400  
11-739 Circlip external 1.3/8 in. Anderton 1400  
11-743 Circlip external 5/8 in. Anderton 1400  
11-745 Circlip external 3/4 in. Anderton 1400  
11-746 Circlip external 1.1/2 in. Anderton 1400  
11-749 Circlip external 7/8 in. Anderton 1400  
11-751 Circlip external 15/16 in. Anderton 1400  
11-754 Circlip external 1.1/8 in. Anderton 1400  
11-759 Circlip external 1.5/8 in. Anderton 1400  
11-776 Circlip external 5/8 in. Anderton 1500 E 485  
11-777 Circlip external 3/4 in. Anderton 1500 E 580  
11-778 Circlip external 5/16 in. Anderton 1500 E 250  
11-788 Circlip external 3.3/8 in. Anderton 1400  
11-791 Circlip external 3.9/16 in. Anderton 1400  
11-848 Circlip external 3/16 in. Anderton 1400  
11-855 Circlip external 7/16 in. Anderton 1500 E 343  
11-860 Circlip external 25 mm. Anderton 1400  
11-864 Circlip external 18 mm. Anderton 1400  
11-865 Circlip external 30 mm. Anderton 1400  
11-866 Circlip external 17 mm. Anderton 1400  
11-869 Circlip external 12 mm. Anderton 1400

12-836 Circlip internal 47 mm. Anderton 1300  
12-837 Circlip internal 42 mm. Anderton 1300  
12-838 Circlip internal 55 mm. Anderton 1300  
12-839 Circlip internal 62 mm. Anderton 1300  
12-840 Circlip internal 37 mm. Anderton 1300

Reference Number

29-052 Parallel nipple BS 1740 1 in. BSP x 2.1/2 in.  
29-053 Nut BS 1740 1 in. BSP  
29-054 Nut BS 1740 1/4 in. BSP  
29-057 Tubing nut ENOTS Z21  
29-058 Tubing sleeve ENOTS Z7

45-201 Cap screw 10-24 t.p.i. x 3/8 in.  
45-202 Cap screw 10-24 t.p.i. x 1/2 in.  
45-203 Cap screw 10-24 t.p.i. x 5/8 in.  
45-204 Cap screw 10-24 t.p.i. x 3/4 in.  
45-205 Cap screw 10-24 t.p.-i. x 7/8 in.  
45-206 Cap screw 10-24 t.p.i. x 1 in.  
45-210 Cap screw 10-24 t.p.i. x 2 in.

46-212 Cap screw 1/4 unc x 1/2 in.  
46-213 Cap screw 1/4 unc x 5/8 in.  
46-214 Cap screw 1/4 unc x 3/4 in.  
46-215 Cap screw 1/4 unc x 7/8 in.  
46-216 Cap screw 1/4 unc x 1 in.  
46-217 Cap screw 1/4 unc x 1.1/4 in.  
46-218 Cap screw 1/4 unc x 1.1/2- in.  
46-219 Cap screw 1/4 unc x 1.3/4 in.  
46-221 Cap screw 1/4 unc x 2.1/4 in.  
46-222 Cap screw 1/4 unc x 2.1/2 in.

47-223 Cap screw 5/16 unc x 1/2 in.  
47-225 Cap screw 5/16 unc x 3/4 in.  
47-226 Cap screw 5/16 unc x 7/8 in.  
47-227 Cap screw 5/16 unc x 1 in.  
47-228 Cap screw 5/16 unc x 1.1/4 in.  
47-229 Cap screw 5/16 unc x 1.1/2 in.  
47-231 Cap screw 5/16 unc x 2- in.  
47-232 Cap screw 5/16 unc x 2.1/4 in.

48-240 Cap screw 3/8 unc x 1 in.  
48-241 Cap screw 3/8 unc x 1.1/4 in.  
48-242 Cap screw 3/8 unc x 1.1/2 in.  
48-244 Cap screw 3/8 unc x 2 in.  
48-246 Cap screw 3/8 unc x 2.1/2 in.  
48-249 Cap screw 3/8 unc x 4 in.

50-260 Cap screw 1/2 unc x 1.1/2 in.  
50-262 Cap screw 1/2 unc x 2.1/2 in.  
53-303 Countersunk screw 10-24 t.p.i. x 1/2 in.  
54-308 Countersunk screw 1/4 unc x 1/2 in.  
54-309 Counter sunk screw 1/4 unc x 5/8 in.



Reference Number

54-310 Countersunk screw 1/4 unc x 3/4 in.  
54-312 Countersunk screw 1/4 unc x 1 in.

58-345 Cup-point screw 10-24 t.p..i. x 3/8 in.

59-350 Cup-point screw 1/4 unc x 1/4 in.  
59-352 Cup-point screw 1/4 unc x 3/8 in.  
59-354 Cup-point screw 1/4 unc x 1/2 in.  
59-356 Cup-point screw 1/4 unc x 3/4 in.  
59-357 Cup-point screw 1/4 unc x 1 in.

60-361 Cup-point screw 5/16 unc x 5/16 in.  
60-362 Cup-point screw 5/16 unc x 3/8 in.  
60-364 Cup-point screw 5/16 unc x 1/2 in.

61-370 Cup-point screw 3/8 unc x 3/8 in.  
61-371 Cup-point screw 3/8 unc x 1/2 in.

62-379 Cup-point screw 7/16 unc x 1/2 in.

67-417 Dog screw 1/4 unc x 1/4 in.

68-429 Dog screw 5/16 unc x 3/8 in.  
68-431 Dog screw 5/16 unc x 1/2 in.  
68-437 Dog screw 5/16 unc x 1.1/2 in.

70-445 Dog screw 1/2 unc x 1/2 in.

73-106 Domed head screw 10-24 unc x 3/4 in.  
73-143 Domed head screw 1/4 unc x 3/8 in.  
73-486 Cheese head screw 2 BA x 1/2 in.  
73-525 Cone point socket set screw Wedglok 1/2 unc x 1 in. x 90°  
73-533 Full dog socket set screw 3/8 unc x 1/2 in.  
73-554 Cup point socket set screw Wedglok 5/16 unc x 3/8 in.  
73-555 Cone point screw 1/4 unc x 5/16 in.  
73-570 Cap head screw Wedglok 5/16 unc x 1.1/4 in.  
73-571 Cap head screw 1/4 unc x 3.1/2 in.  
73-572 Hex socket cone point Wedglok 10-24 u.n.c x 5/16 in.  
73-573 Hex head screw 5/16 unc x 1.1/2 in.  
73-574 Socket set screw Wedglok 1/2 unc x 3/4 in.  
73-575 Cap hd. screw Wedglok 10-24 unc x 1/2 in.

Reference Number

73-576 Hex socket cap head Wedglok 1/4 unc x 3/4 in.  
73-579 Hex socket button head screw 1/4 unc x 1/2 in.  
73-582 Domed head cadium plated screw 10-24 unc x 1/2 in.  
73-587 Knurled cup point socket set screw 7/16 unc x 1/2 in.  
73-588 Hex head screw 5/16 unc x 3/4 in.  
73-589 Cup point set screw 1/4 unc x 1/4 in.  
73-591 Self tapping screw NPK type Z No. 6 1/4 in.  
73-594 Cone point screw 10-24 unc x 1/4 in.  
73-596 Slotted cheese head screw 4 mm. Dia x 8 mm  
73-599 Round head screw 10-24 unc x 3/8 in.  
73-600 Round head screw No. 8-32 unc x 1/2 in.  
73-601 Half dog socket set screw 4 BA x 3/16 in.  
73-602 Socket countersunk screw No. 6 unc x 1/2 in.  
73-604 Half dog screw 6 BA x 1/8 in.  
73-627 Cup-point screw 3/8 unc x 1 in.  
73-628 Oval point screw 3/8 unc x 1/4 in.  
73-629 Cap- head screw 1/4 unc x 1 in. (Wedglok)  
73-630 Cup point screw 10-24 unc x 1/4 in.  
73-656 Domed head screw 10-24 unc x 1/2 in.

79-895 Oil seal Burtonwood TR31/M40-62-10/PA  
79-896 Oil seal Burtonwood M35-50-10  
79-897 Oil seal Burtonwood M12-28-8  
79-898 Oil seal INA G30 x 4 x 4

80-872 Oilsight, Tecalemit IC 4611

81-151 Open end spanner 15/16 A/F X 3/4 A/F  
81-156 Allen Key 3/8 A/F  
81-157 Allen Key 5/16 A/F  
81-158 Allen Key 7/32 A/F  
81-159 Allen Key 3/16 A/F  
81-160 Allen Key 5/32 A/F  
81-161 Allen Key 1/8 A/F  
81-165 Ring spanner 1/2 x 3/4 A/F  
81-167 Allen Key 1/4 A/F  
81-168 Standard spanner 1.5/16 x 15/16 A/F  
81-169 Standard spanner 9/16 x 7/16 A/F

82-105 Spring Flexo 82504  
82-796 Spring Flexo 82804  
82-809 Spring Flexo 243608  
82-830 Spring Flexo 123306  
82-842 Spring Flexo 82905  
82-850 Spring Flexo 83104  
82-860 Spring Flexo 123204  
82-862 Schnorr disc spring type K 16-34 x 22.5 x 0.8 mm.

Reference Number

82-864 Spring Flexo AM 3220  
82-865 Spring Flexo 92814  
82-868 Spring Flexo 72804  
82-874 Spring Flexo 122908

84-703 Lock washer 5/16 dia. bore single coil  
84-704 Lock washer 3/8 dia. bore single coil  
84-719 Lock washer 3/4 dia. bore double coil

85-690 Washer 3/16 dia. bore  
85-692 Washer 5/16 dia. bore  
85-693 Washer 3/8 dia. bore  
85-695 Washer 1/2 I/D x 1 O/D x .092  
85-720 Washer 2 BA standard plain  
85-729 Washer 1/2 standard light gauge  
85-734 Washer 1/2 I/D x 1 O/D x 13 SWG  
85-735 Washer 1/4 dia. bore  
85-737 Washer 5/8 I/D x 1.1/4 O/D x 15 SWG  
85-738 Washer 3/8 I/D x 3/4 O/D x 15 SWG  
85-739 Washer 5/8 I/D x 1.1/4 O/D x 11 SWG  
85-740 Washer 3/4 ID x 1.1/2 O/D x 15 SWG  
85-741 Washer 5/8 I/D x 1.3/8 O/D x 11 SWG

86-119 Washer Fan disc 1/2 I/D  
86-743 Washer INA thrust AS 1528  
86-744 Washer INA thrust GS 1528  
86-750 Washer INA thrust AS 2035  
86-752 Washer crinkle T. Haddon type DP/10008A  
86-756 Washer fibre 5/8 O/D x 5/16 I/D x 1/16  
86-760 Washer fibre 1.1/16 I/D x 1.3/8 O/D x 1/16  
86-761 Washer thrust AS 3047  
86-762 Washer 5/16 I/D x 5/8 O/D x .040  
86-763 Washer Schnorr 8 mm.  
86-764 Washer 1/4 I/D X 9/16 O/D x .056  
86-765 Washer 3/8 I/D x 7/8 O/D x .048  
86-767 Washer Fibre ENOTS 1386 G  
86-771 Washer Fibre 1/2 I/D x 3/4 O/D x 1/16  
86-772 Washer Fibre 1 I/D x 1.3/8 O/D x 1/16  
86-773 Washer 7/16 I/D x 7/8 O/D x .092  
86-774 Tab washer for 5/16 UNC screw SP 107  
86-791 Washer Fibre 1/4 I/D x 1/2 O/D x 1/16  
86-792 Fan disc washer 1/4 I/D

87-827 Thread insert 1185-8 x ID  
87-831 Thread insert 1191-18 x 1D

Reference Number

88-059 Terry's hose clip 1234  
88-063 Sealing plug Robert Moss A46  
88-080 Sealing plug Robert Moss A48  
88-082 Hose clip Terry's No. 087-5  
88-091 Gripflex suroflex braided P.V.C. hose 1/2 I/D x .850 O/D

For electrical equipment refer to wiring diagram

ACCESSORIES

CLAUSING 8000 Series 15" lathes

	Quote Code No.
Live Centre, No. 4 MT	15-432
Turret Toolpost, 4-way	15-702
14" Face plate	15-703
21" Faceplate for gap bed lathes only	15-704
Chuck guard	15-706
Chip guard	15-707
Telescopic taper attachment	15-717
Multisize lever-type dead length collet chuck - 2" capacity	15-722
Multisize lever-type dead length collet chuck - 2½" capacity	15-724
Rear quick-change toolpost with holder for ¾" bits	15-725
Rear tool block, slotted for 2 tools	15-730
Five-position carriage stop. Furnished with 15-732	15-731
One-position carriage stop.	15-732
Micrometer carriage stop	15-733
High speed thread cutting attachment	15-734
Follower rest	15-754
Steady rest	15-755
Turret stop for tracer - six position	15-768
Template holder for facing with tracer	15-769
Quick-change toolpost for compound with six holders	15-775
Holder for ¾" bits. Use with quick-change toolpost	15-776
V Boring tool holder. Use with quick-change toolpost	15-777
2 MT Holder. Use with quick-change toolpost	15-778
Cut-off holder, with blade. Use with quick-change toolpost	15-779
Round toolpost for No. 2 tool holders	15-765
Hydraulic tracer attachment for 30" centres	15-7283
Hydraulic tracer attachment for 50" centres	15-7285
8" 3-jaw universal chuck with 2 sets of solid jaws	1272-52005
8" 3-jaw universal chuck with master jaws, reversible hard tops	1272-52015
10" 3-jaw universal chuck with 2 sets of solid jaws	1272-52505
10" 3-jaw universal chuck with master jaws, reversible hard tops	1272-52515
10" 4-jaw independent chuck - reversible jaws	1562-52601
12" 4-jaw independent chuck - reversible jaws	1562-53101
Multisize collets for 15-722 and KC20/D6 chucks. Specify size	ED4 - 17
Multisize collets for 15-724 and KC25/D6 chucks. Specify size	EE6 - 21
Key operated collet chuck 2" capacity	KC20/D6
Key operated collet chuck, 2½" capacity	KC25/D6