

Gearboxes supplied for subsequent fitting only Far M L7 lathes prior to K125240 and Super 7 lathes prior to SK124461 instead of screws 267 (paragraphs 9, 11S and 11M also parts list) use 1/2" B.S.F. x 3/4". If far your machine you need the 1/4" B.S.F. screws, return the metric screws to us for exchange.

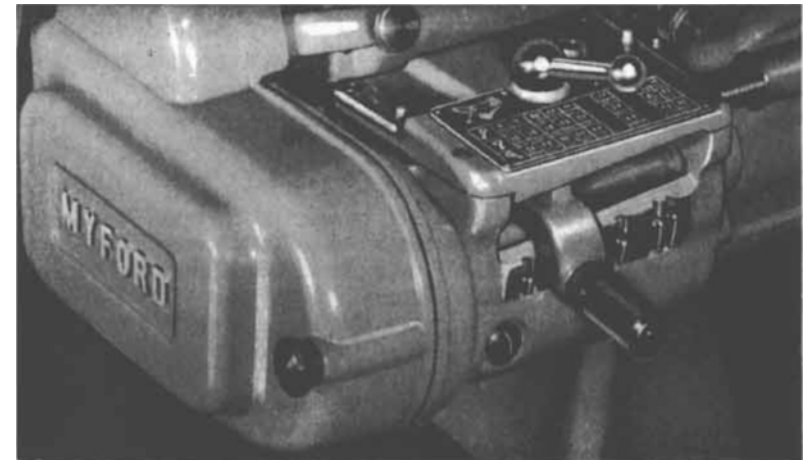


myford

QUICK CHANGE GEARBOX

Nos, 1480 (ML7) and 1680 (ML7-R) and Super 7)

INSTRUCTIONS FOR
INSTALLATION AND OPERATION
WITH
PICTORIAL PARTS LIST



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CAUTION

IT IS OF THE UTMOST IMPORTANCE THAT THE WHOLE GEARBOX AND TRANSMISSION MECHANISM SHALL ROTATE WITH COMPLETE FREEDOM.

MISALIGNMENT OF LEADSCREW OR TIGHTNESS IN ANY OF THE BEARINGS (GEAR TRAIN-GEARBOX-OR LEADSCREW) WILL IMPOSE HEAVY LOADS ON THE GEAR TRAIN AND MAY LEAD TO SERIOUS DAMAGE.

THE CUTTING OF UNUSUALLY COARSE PITCHES IN EXCESS OF .125"), EXERTS EXCESSIVE PRESSURE ON THE LEADSCREW AND GEAR MECHANISMS. GREAT CARE SHOULD BE TAKEN SO AS TO MINIMISE THE LOADS IMPOSED.

N.B. When changing to the slotted quadrant (page 6 fig. 5) or back to the standard quadrant (page 3 fig. 2) it may be necessary to reset the anchor pin No. 03 (see page 15 paragraph 22) in order to line up the driven gear on the first stud with the driver on the tumbler stud.

The chart for diametral pitches has been included for the benefit of users wishing to cut worms to mesh with wormwheels whose pitch is expressed as D.P. The table of module pitches has been included for the same reason.

Where as diametral pitch is the ratio of the number of teeth to the pitch diameter (in inches), module is the ratio of the pitch diameter (in millimetres) to the number of teeth.

LUBRICATION

Before operating the lathe, remove the level plug (at the right-hand end of the box), and fill to just short of plug level with 80025, Esso Febis K68 oil. Replenish the oil bath occasionally. At long intervals, flush with 800127, Esso Nuto

The tumbler reverse gear pins and quadrant gear pins should be lubricated frequently. Occasional application of the oil gun to the oil nipples on the gear box will be sufficient.

Illustrations not binding in detail.

OPERATION

The Myford Quick Change Gear Box permits instant selection of 48 English threads and feeds without the necessity for setting-up gear trains. A conversion set is available for cutting Metric, B.A., and thousands of other odd pitches, using ordinary changewheels in conjunction with the gear box.

| FOR FINE FEEDS REVERSE GEAR ON STUD 'A' | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|
| 8 | 9 | 9½ | 10 | 11 | 12 | 13 | 14 |
| .0139 | .0123 | .0117 | .0111 | .0101 | .0093 | .0085 | .0079 |
| 16 | 18 | 19 | 20 | 22 | 24 | 26 | 28 |
| .0069 | .0062 | .0058 | .0055 | .0050 | .0046 | .0043 | .0040 |
| 32 | 36 | 38 | 40 | 44 | 48 | 52 | 56 |
| .0035 | .0031 | .0029 | .0028 | .0025 | .0023 | .0021 | .0020 |

Fig. 1. Gear Box Chart showing English threads and feeds.

Reference to the gear box chart Fig. 1, will show that all the commonly used English pitches are covered. In view of this the gear pins on the normal quadrant (as supplied with the gear box), are placed at fixed centres. This permits the advantage of mounting the driving train of gears on pins which are considerably greater in diameter, and more robust than the movable type of changewheel stud.

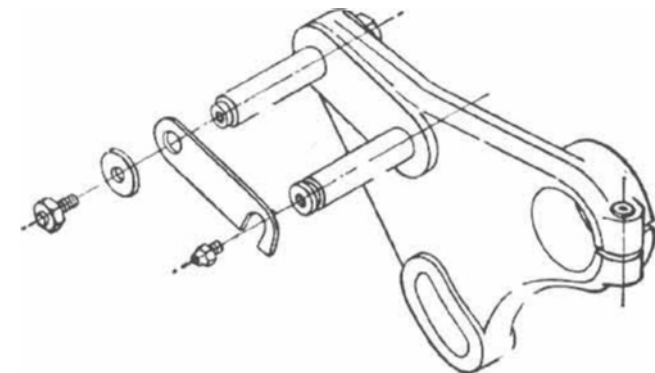


Fig. 2. Normal

MYFORD QUICK CHANGE GEARBOX
DIAMETRAL PITCHES

| D.P. | TUMBLER STUD | 1 ST STUD DRIVEN | 1 ST STUD DRIVER | 2 ND STUD DRIVEN | 2 ND STUD DRIVER | INPUT | SET UP | SELECTOR POSITION | LEVER |
|------|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------|--------|-------------------|-------|
| 16 | 55 | 60 | IDLE WHEEL | 40 | IDLE WHEEL | 35 | 1 | 1 | A |
| 18 | 55 | * | * | * | * | 35 | 1 | 2 | A |
| 19 | 55 | * | * | * | * | 35 | 1 | 3 | A |
| 20 | 55 | * | * | * | * | 35 | 1 | 4 | A |
| 22 | 55 | * | * | * | * | 35 | 1 | 5 | A |
| 24 | 55 | * | * | * | * | 35 | 1 | 6 | A |
| 26 | 55 | * | * | * | * | 35 | 1 | 7 | A |
| 28 | 55 | * | * | * | * | 35 | 1 | 8 | A |
| 32 | 55 | * | * | * | * | 35 | 1 | 1 | B |
| 36 | 55 | * | * | * | * | 35 | 1 | 2 | B |
| 38 | 55 | * | * | * | * | 35 | 1 | 3 | B |
| 40 | 55 | * | * | * | * | 35 | 1 | 4 | B |
| 44 | 55 | * | * | * | * | 35 | 1 | 5 | B |
| 48 | 55 | * | * | * | * | 35 | 1 | 6 | B |
| 52 | 55 | * | * | * | * | 35 | 1 | 7 | B |
| 56 | 55 | * | * | * | * | 35 | 1 | 8 | B |
| 64 | 55 | * | * | * | * | 35 | 1 | 1 | C |
| 72 | 55 | * | * | * | * | 35 | 1 | 2 | C |
| 76 | 55 | * | * | * | * | 35 | 1 | 3 | C |
| 80 | 55 | * | * | * | * | 35 | 1 | 4 | C |
| 88 | 55 | * | * | * | * | 35 | 1 | 5 | C |
| 96 | 55 | * | * | * | * | 35 | 1 | 6 | C |
| 104 | 55 | * | * | * | * | 35 | 1 | 7 | C |
| 112 | 55 | * | * | * | * | 35 | 1 | 8 | C |

| | | | | | | | | | |
|-----|----|----|------------|----|----|----|---|---|---|
| 17 | 55 | 50 | IDLE WHEEL | 35 | 60 | 51 | 2 | 4 | A |
| 21 | 55 | * | * | 35 | 60 | 63 | 2 | 4 | A |
| 23 | 55 | 65 | * | 35 | 40 | 46 | 2 | 4 | A |
| 25 | 55 | * | * | 35 | 40 | 50 | 2 | 4 | A |
| 27 | 55 | * | * | 35 | 40 | 45 | 2 | 6 | A |
| 30 | 55 | * | * | 35 | 40 | 60 | 2 | 4 | A |
| 34 | 55 | 50 | * | 35 | 60 | 51 | 2 | 4 | B |
| 42 | 55 | * | * | 35 | 60 | 63 | 2 | 4 | B |
| 46 | 55 | 65 | * | 35 | 40 | 46 | 2 | 4 | B |
| 50 | 55 | * | * | 35 | 40 | 50 | 2 | 4 | B |
| 54 | 55 | * | * | 35 | 40 | 45 | 2 | 6 | B |
| 60 | 55 | * | * | 35 | 40 | 60 | 2 | 4 | B |
| 68 | 55 | 50 | * | 35 | 60 | 51 | 2 | 4 | C |
| 84 | 55 | * | * | 35 | 60 | 63 | 2 | 4 | C |
| 92 | 55 | 65 | * | 35 | 40 | 46 | 2 | 4 | C |
| 100 | 55 | * | * | 35 | 40 | 50 | 2 | 4 | C |
| 108 | 55 | * | * | 35 | 40 | 45 | 2 | 6 | C |
| 120 | 55 | * | * | 35 | 40 | 60 | 2 | 4 | C |

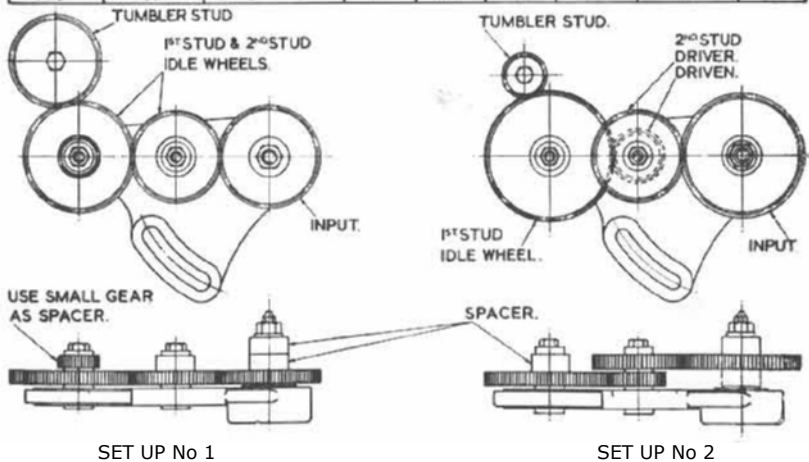


Fig. 3. Chart showing Changewheel Trains for Diametral Threads. (The four diagrams on pages 4 and 5 apply to Diametral, Module and B.A. Charts).

MYFORD QUICK CHANGE GEARBOX
MODULE PITCHES

| MODULE | TUMBLER STUD | 1 ST STUD DRIVEN | 1 ST STUD DRIVER | 2 ND STUD DRIVEN | 2 ND STUD DRIVER | INPUT | SET UP | SELECTOR POSITION | LEVER |
|--------|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------|--------|-------------------|-------|
| 20 | 20 | 55 | IDLE WHEEL | 40 | 47 | 50 | 2 | 3 | B |
| 25 | 25 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 30 | 30 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 35 | 35 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 40 | 47 | * | * | 45 | IDLE WHEEL | 50 | 1 | 3 | B |
| 45 | 45 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 50 | 47 | * | * | 50 | IDLE WHEEL | 40 | 1 | 3 | B |
| 55 | 55 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 60 | 60 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 65 | 65 | * | * | 40 | 47 | 50 | 2 | 3 | B |
| 70 | 35 | * | * | 40 | 47 | 50 | 2 | 3 | A |
| 75 | 45 | * | * | 40 | 47 | 60 | 2 | 3 | A |
| 80 | 47 | * | * | 45 | IDLE WHEEL | 50 | 1 | 3 | A |
| 85 | 51 | * | * | 48 | 47 | 50 | 2 | 3 | A |
| 90 | 45 | * | * | 40 | 47 | 50 | 2 | 3 | A |
| 95 | 47 | * | * | 45 | IDLE WHEEL | 50 | 1 | 1 | A |
| 100 | 47 | * | * | 50 | IDLE WHEEL | 40 | 1 | 3 | A |

The above Chart shows Gear Trains for ML7-R & Super 7 lathes, for ML7 Lathes replace the 55T Idle Wheel on the 1st Stud with a 65T Wheel.

B.A. PITCHES.

| PITCH | TUMBLER STUD | 1 ST STUD DRIVEN | 1 ST STUD DRIVER | 2 ND STUD DRIVEN | 2 ND STUD DRIVER | INPUT | SET UP | SELECTOR POSITION | LEVER |
|---------|--------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------|--------|-------------------|-------|
| 0 100 | 63 | 60 | 75 | 50 | 21 | 70 | 3 | 6 | A |
| 1 90 | 45 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | A |
| 2 81 | 63 | 40 | 45 | 50 | 27 | 75 | 3 | 1 | B |
| 3 73 | 63 | 60 | 73 | 50 | 21 | 70 | 3 | 1 | B |
| 4 66 | 33 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | A |
| 5 59 | 59 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 6 53 | 53 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 7 48 | 48 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 8 43 | 43 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 9 39 | 39 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 10 35 | 35 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 11 31 | 31 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |
| 12 28 | 28 | 60 | 63 | 50 | 21 | 70 | 3 | 1 | B |

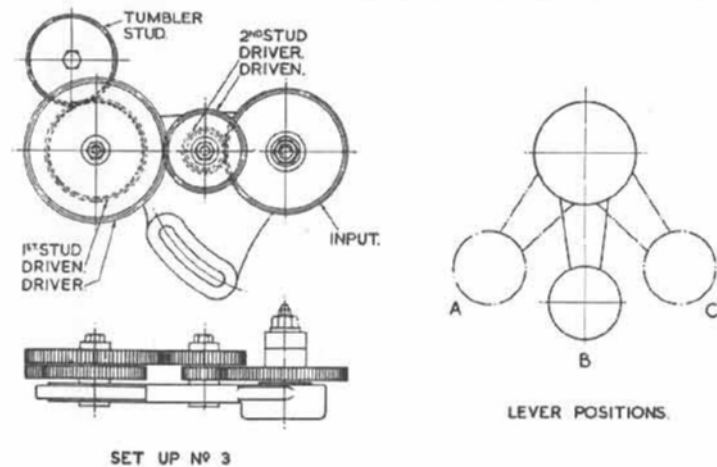


Fig. 4. Chart showing Changewheel Trains for Module and B.A. Threads. (The four diagrams on pages 4 and 5 apply to Diametral, Module and B.A. Charts).

MYFORD QUICK CHANGE GEARBOX

METRIC, B.A., AND ODD THREADS AND PITCHES Hundreds of odd threads, metric threads and feeds can be obtained by using a special slotted quadrant, with standard changewheels on movable studs, in place of the normal quadrant and gear train as supplied with the gear box. (See also pages 4 and 5).

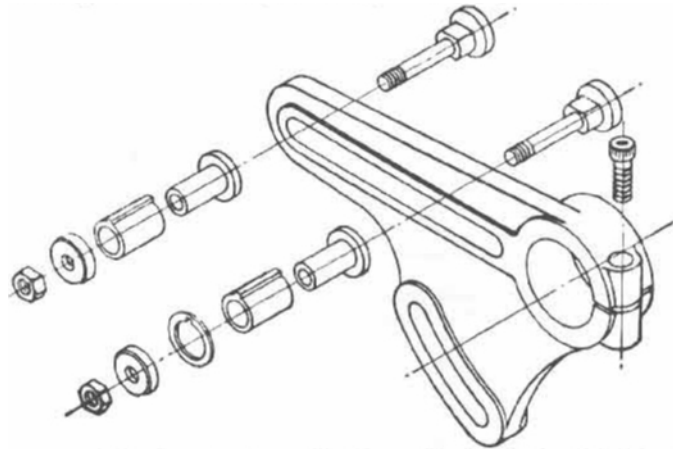


Fig. 5. Slatted Quadrant (with movable changewheel studs "exploded" to show construction).

THE METRIC CONVERSION SET (No. 14811, not 1481) comprises a slotted quadrant, 12 changewheels, 2 spacers, and 2 movable changewheel studs. This set covers all the pitches shown on the **METRIC CHART** which is located inside the hinged gear guard.

Alternatively, the slotted quadrant can be supplied separately, or with any changewheels, spacers and movable studs which are required for a particular gear train.

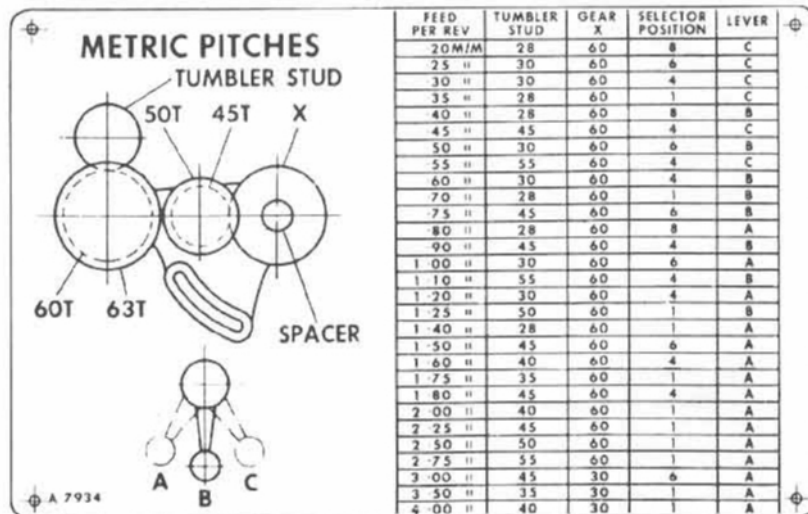


Fig. 6. Metric Chart (located inside the hinged gear guard).

CONTROLS

The Myford gear box is designed for smooth and easy operation. To obtain the various threads and feeds it is only necessary to arrange the levers of the gear box and the reversible cluster gear, as indicated on the Chart (6) Fig. 7.

IMPORTANT

The movement of the control levers whilst the lathe is in motion is only practicable when set for fine feeds. The lathe speed must be slow and the load light. Generally **it is preferable to stop the lathe** and turn the spindle by hand whilst engaging the gears.

DO NOT USE FORCE.

Care should be taken when No. 1031 MYFORD spindle nose collets are being used, or when any other work is being done close to the headstock spindle nose. Under these conditions the leadscrew guard and clasp nut lever are both very close to the gearbox, and serious damage would ensue if the leadscrew guard were allowed to run into the gearbox.

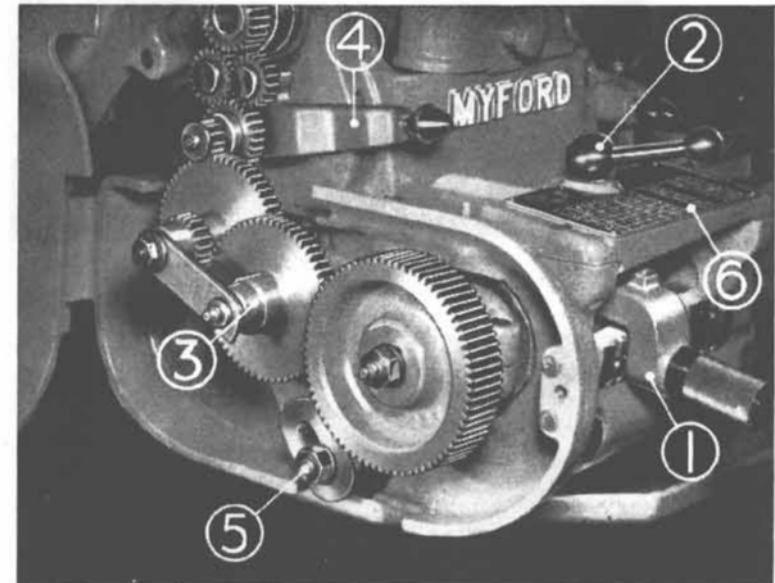


Fig. 7. Quick Change Gear Box Controls. 7

The SELECTOR (1) selects any one of the eight ratios available from the 'cone' of gears on the lower shaft. The indexing position of the lever is always directly below the column on the chart which contains the thread or feed desired. (See Fig. 7).

To move the Selector it is necessary to pull the knob forward and lift the lever until it bears against the slide provided underneath the cover plate, then slide sideways to the desired position.

The LEVER (2) provides three variations of the ratio selected by the selector (1). The position of the lever (2) is indicated on the chart to the left of the line which contains the thread or feed desired.

The REVERSIBLE CLUSTER GEAR (3) is changed (i.e. the Cluster Gear is mounted with the 57T or larger gear innermost) to select the range of fine pitches. (See Figs. 8, 9 and 1D).

Reversal of Cluster Gear (3) is permitted by the Swinging Latch which retains the Cluster Gear.
NOTE:

The TUMBLER REVERSE LEVER (4) must be set to the neutral position, to allow easy meshing of the Cluster Gear with the adjacent gears on the quadrant.

The QUADRANT CLAMP (5) permits adjustment of the alignment of the quadrant gears with the WHEEL ON THE TUMBLER CLUSTER.

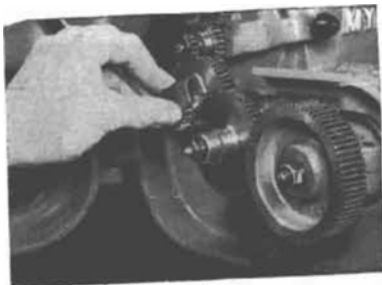


FIG. 8

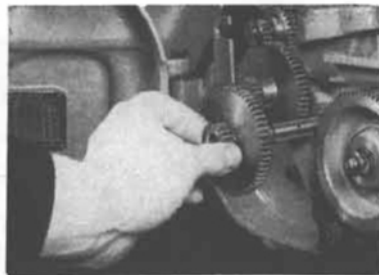


FIG. 9



FIG. t

INSTALLATION

The MYFORD Quick Change Gear Box can be easily fitted to the Lathe if the following instructions are carried out.

The Quick Change Lathe requires a shorter leadscrew than standard, and whilst this item is available, it is practicable to shorten the existing leadscrew. The leadscrew guard must also be shortened on ML.7 machines.

During the past years minor modifications have been carried out on ML.7 Lathes, for example, the latest changewheel guard backplate can be removed without disturbing the tumbler reverse assembly. All except the earliest machines (both ML.7 and Super 7) have been drilled and tapped ready to accept the gearbox.

The part numbers referred to in the FITTING INSTRUCTIONS are those used in the PICTORIAL PARTS LIST.

IMPORTANT. It is essential that the following instructions are carefully adhered to, and in particular that the GEARBOX AND TRANSMISSION MECHANISM SHALL ROTATE WITH COMPLETE FREEDOM.

MISALIGNMENT OF LEADSCREW OR TIGHTNESS IN ANY OF THE BEARINGS (GEAR TRAIN-GEARBOX-OR LEADSCREW) WILL IMPOSE HEAVY LOADS ON THE GEAR TRAIN AND MAY LEAD TO SERIOUS DAMAGE.

After assembly, and before operating under power, the required freedom should be ascertained in the following manner:-

- (1) Disengage tumbler reverse.
- (2) Set reversible cluster, 3 Fig. 7, in screwcutting position, i.e. with smaller gear (19 teeth) innermost.
- (3) Set lever, 2 Fig. 7, on top of box, in a position giving disengagement of gearing.
- (4) Set selector, 1 Fig. 7, in 8 T.P.I. position.
 - Disengage lead screw nut (clasp nut lever in upper position).
- (A) Gripping on the 8 T.P.I. threaded portion it should be possible to rotate the leadscrew.

Gripping the 72 tooth wide input gear it should be possible to rotate the input drive gearing and the gears in the box.

OPERATION OF LEADSCREW NUT, ETC.

ML.7, ML.7-R and SUPER 7 Lathes are fitted with a stop screw to the leadscrew nut to control the depth of engagement with the leadscrew, and if your Lathe is not arranged with this feature it is recommended that you carry out the modifications as shown at Fig. 11 below.

The screw should be so adjusted that there is minimal backlash between leadscrew and nut but without causing any binding.

Furthermore, we recommend that when the gear box has been Fitted and lined up, the right hand leadscrew bracket should be dowelled to the Lathe bed. Please see Fig. 12 below,

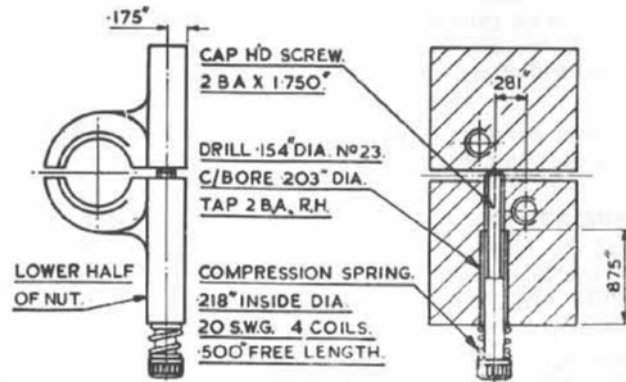


Fig. 11. Diagram showing stop screw and spring fitted to leadscrew nut.

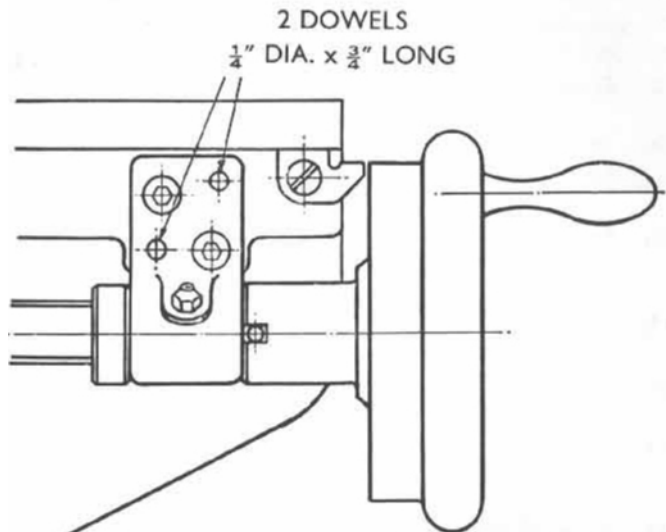


Fig. 12. Diagram showing dowelling of leadscrew bracket.

FITTING INSTRUCTIONS Where paragraph numbers are duplicated, The letter S denotes Super 7 and the letter M denotes ML.7 except as shown below.

For ML.7 Lathe serial number K1087186 and higher numbers ignore ML.7 instructions and treat as though Super 7, e.g. paragraphs 1, 2, 3, 4S, 5S etc. For ML7-R lathe, treat as though later ML7 lathe (K108718B) and higher numbers, i.e. paragraphs 1, 2, 3, 4S, 5S etc. For Super 7 Lathe SK108891B and higher numbers, packing strip reference 230 is no longer required and must not be used. For Super 7 Lathes fitted power cross traverse (SK115830 and higher numbers) treat as though ML-7. e.g. paragraphs 1, 2, 3, 4M, 5M etc.

Preparing the Lathe

See notes in heading

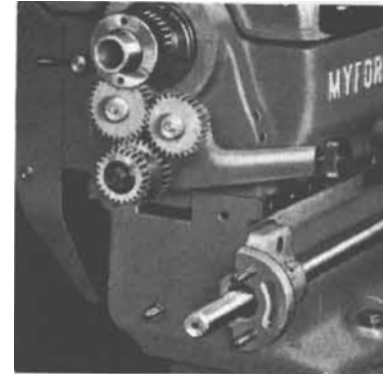


FIG. 13

45 With the carriage adjacent to the right-hand leadscrew bracket, engage the clasp nut to support the leadscrew, and tighten the clamp bolt at the rear of the saddle. Fig. 14.

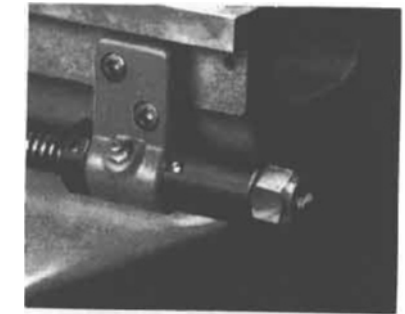


FIG. 15

- 1 Open changewheel guard. Remove the changewheel quadrant and change wheel guard backplate. Note On earlier ML.7 models it will be necessary to remove the tumbler reverse assembly to facilitate backplate removal.
- 2 Fit the 24T gear to the tumbler sleeve
- 3 Remove the tailstock from the machine

5S Remove the Simmonds nut, leadscrew handwheel and driving pin from the leadscrew. Release the caphead screws which secure the leadscrew bracket, and remove the bracket. Fig. 15.

6S Disengage the clasp nut and withdraw the leadscrew to the right.

7S Remove the left-hand leadscrew bracket.



FIG. 14

See notes in heading

4M With the carriage near the headstock end of the bed engage the clasp nut to support the leadscrew and tighten the clamp bolt at the rear of the saddle. Fig- 14, but saddle at other end of bed.

5M Remove left-hand leadscrew bracket.

6M Remove the leadscrew guard and shorten to the new dimensions given in Fig. 16.

MYFORD QUICK CHANGE GEARBOX

Preparing the Gearbox Attachment Holes. (ML.7 and Super 7).
 8 Where attachment holes for the gearbox are NOT already provided in the Lathe bed, withdraw both headstock thrust screws to permit the mounting of the drilling template No. 232, Fig. 17. (Available on request, if required.)

9 Mount the template using two 1/4"

Remove the template and replace the headstock thrust screws.

Note It is important that the drilling depth indicated should not be exceeded.

10 Remove from the gearbox, the top cover No. 260, 72T wide faced gear No. 186, and the gear quadrant No. 202 complete with gears. Fig. 20.

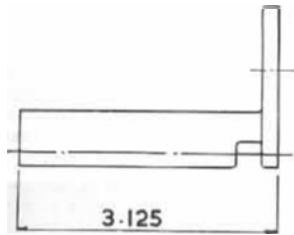


FIG- 16



FIG. 17

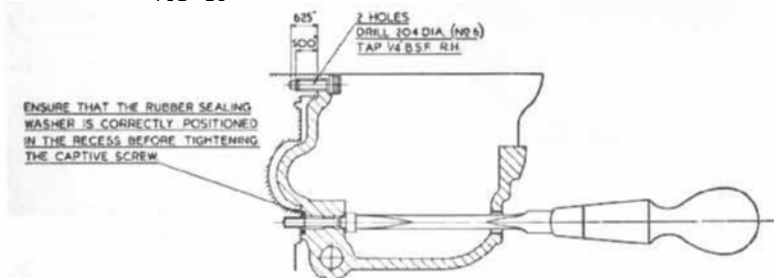


Fig. 18.

B.S.F. x 3/8" long caphead screws and drill the two mounting holes for gearbox. Fig. 19,
 Remove the template and open out the two drilling guide holes in it to 1/4" dia. Remount the template as a tap guide, and tap the two gearbox mounting holes 1/4" B.S.F., as shown in the diagram.

11S Mount the gearbox using the two caphead screws No. 267 provided, Ensure that the rubber sealing washer is correctly positioned in the recess before tightening the captive screw. See diagram Fig. 18. At this stage all three screws should only be lightly tightened. (Note For SUPER 7 Lathe, the packing



FIG. 19

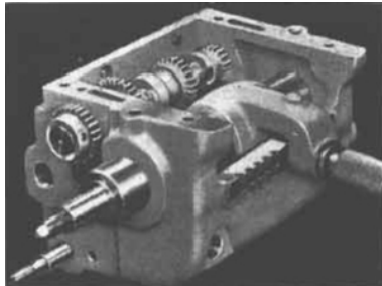


FIG- 20

MYFORD QUICK CHANGE GEARBOX



FIG. 21

strip No. 23D must be inserted before fitting the caphead screws No. 267, but not for SK108891 B and onwards). 12S With the carriage in a central position, enter the leadscrew through the clasp nut from the right-hand end, and engage the clasp nut. Traverse the carriage to the left until the leadscrew passes right through the Gearbox bearings Fig. 21.

13S Assemble the right-hand leadscrew bracket on the leadscrew, and lightly tighten the securing screws. Open the clasp nut, traverse the carriage to the right-hand end, engage the clasp nut to centralise the leadscrew, and secure the leadscrew bracket.

Replace the driving pin, handwheel, and Simmonds nut, to locate the leadscrew

14S Position the leadscrew gear No. 168 to give .015" clearance from the Gearbox face and note the amount of surplus to be removed from the leadscrew to provide .031" maximum projection through the leadscrew gear. See Fig. 22.

Remove the right-hand leadscrew bracket assembly, leadscrew gear and leadscrew, and cut off surplus and trim the leadscrew end.

15S With the carriage in the central position enter the leadscrew through the clasp nut from the right-hand side and engage the clasp nut.

16S Re-assemble the leadscrew and right-hand leadscrew bracket assembly. Centralise and finally secure the bracket. Check the leadscrew for free rotation. (Upper lever in neutral position).

See notes in heading, page f1

11114 Feed the gearbox on to the leadscrew and mount the box using the two caphead screws No. 267 provided. Ensure that the rubber sealing washer is correctly positioned in the recess before tightening the captive screw. See diagram Fig. 18. At this stage the 3 screws need only to be lightly tightened. 12M Position the leadscrew gear No. 168 to give .015" clearance from the gearbox face and note the amount of surplus to be removed from the leadscrew to provide .031" maximum projection through the leadscrew gear. See Fig. 22.

13M Remove the gear No. 168 and detach the gearbox.

14M Remove the Simmonds nut, distance collar (or leadscrew handwheel, if fitted) and driving pin from the leadscrew. Release the socket set screw which secures the collar on the leadscrew to the left of the bracket.

15M Disengage the clasp nut and withdraw the leadscrew to the left. Cut off surplus and trim the leadscrew end.

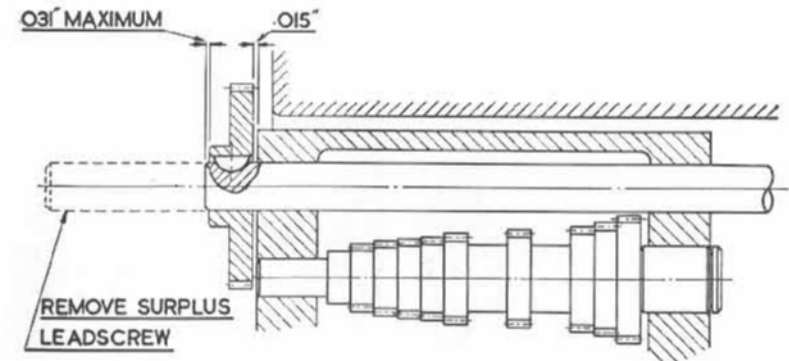


FIG. 22

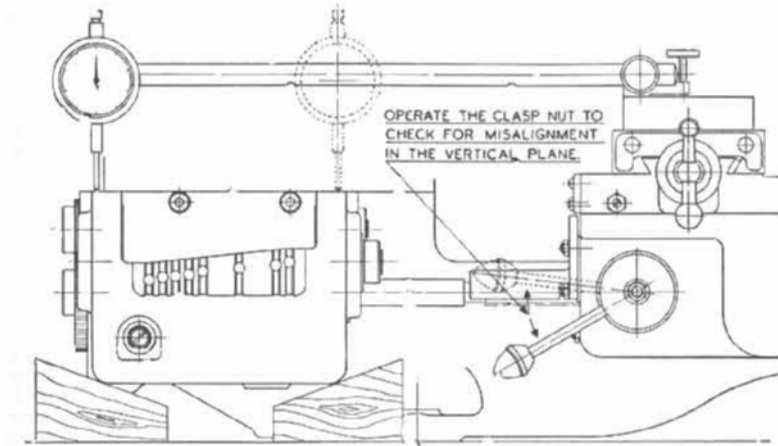


FIG. 23

16M Fit the leadscrew back into the machine, feeding it through the clasp nut and replacing the collar (to the left of the bracket) before passing through the right-hand bracket.

17M Mount the gearbox back into position ensuring that the rubber sealing washer is correctly positioned in the recess before tightening the captive screw. At this stage all 3 screws should only be lightly tightened. Replace the shortened leadscrew guard on the apron.

IBM Replace the driving pin, distance collar (or leadscrew handwheel, if fitted), and Simmonds nut. Tighten the Simmonds nut to position the collar to the left of the bracket and tighten the socket set screw to secure the collar. Release the Simmonds nut and adjust to allow the leadscrew to rotate without end play

Aligning the gearbox

19 The gearbox bearing should now be Centralised with the leadscrew, and at the same time levelled (i.e. set parallel with the top surface of the Lathe ways). Adjustment of the position of the box, before final tightening, is accomplished by inserting wooden wedges under each end of the box, alternatively jack screws can be used. Levelling can either be carried out with a dial gauge as shown in diagram Fig. 23 or with an accurate spirit level (check in relation to top surface of bed ways). Misalignment in the vertical plane will be shown by vertical deflection of the leadscrew, when the clasp nut is operated.

Finally tighten the three gearbox securing screws, check the leadscrew for free rotation and replace top cover No. 260. (SET THE UPPER LEVER No. 197 TO A NEUTRAL POSITION WHILST CHECK IS CARRIED OUT).

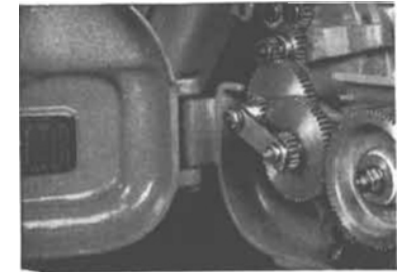
20 Assemble the leadscrew gear, with driving pins or Woodruff key, onto the leadscrew end, position to give .015" clearance from the gearbox face and secure with the grub screw. See Fig. 22.

Final Assembly

21 Drive the 1/4" B.S.F. Stud No. 220 into the lower of the three tapped holes at the end of the lathe bed, and screw an one each of the lock nuts and washers No- 222 and 221 (nut first). Attach the new change wheel guard assembly to the machined end face of the gearbox and cover No. 260 using in the upper hole, the 2 B.A. cap screw and washer Nos. 219 and 255; in the lower hole, the hexagon head screw and washer Nos. 217 and 221. Screw the remaining nut and washer Nos. 222 and 221 (washer first) on to the stud, No. 220, and adjust the locknuts to secure the guard backplate without distortion

22 Place one of the two 3/8" dia. washers on the anchor pin No. 203. Assemble the gear quadrant No. 202 on to the input shaft housing No. 179, and over the anchor pin. Lightly secure the gear quadrant to the anchor pin with the remaining 3/8" dia. washer and 3/8" B.S.F. nut- Fig. 24 Release the grub screw No. 195 which secures the anchor pin in the gearbox and position the gear quadrant to align the quadrant gears with the 24T. CHANGE WHEEL on the tumbler reverse stud. Secure the anchor pin in this position, and tighten the 3/8" B.S.F. nut.

23 Tighten the gear quadrant pinch screw No. 139 (the pinch screw must not be excessively tightened, as this can cause stiffness on the input shaft No. 183).



and mount the wide faced 72T. gear on the end of the input shaft, and secure with 3/8" B.S.F. nut and washer. Fig.

(Note: this gear is keyed with the No. 404 Woodruff key which is supplied).

24 Set the various controls as described on page 9 and check for freedom of leadscrew and gearing as at A and 3 at foot of same page.

25 Replace the reversible cluster gear in the position which gives the fine pitch range (i.e. with the 19T- gear outermost), and test for free rotation right through by manual rotation of the headstock spindle- Fig. 26.

26 Before operating the Lathe, remove the level plug (at the right-hand end of the box) and fill to over-flowing with S.A.E. No. 30 oil. The tumbler reverse gear pins and quadrant gear pins should be lubricated frequently. Occasional application of the oil gun to the oil nipples on the gear box will be sufficient.



FIG. 24

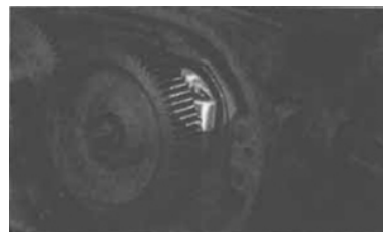


FIG. 25

PARTS LIST FOR QUICK CHANGE GEAR BOX (contd.)

| Drg. Ref. | Part No. | Description | No. Off/Mc | Drg. Ref. | Part No. | Description | No. Off/Mc |
|-----------|----------|---|------------|-----------|-----------|---------------------------------|------------|
| 202 | A2328/1 | Change Gear Quadrant | 1 | 229 | A3018 | Spring Clip | 1 |
| 203 | A3015 | Anchor Pin | 1 | 230 | A2652 | Packing Strip (Super 7 only) | 1 |
| 204 | | Washer (3/8") | 2 | 232 | A2754 | Drilling Template | 1 |
| 205 | | Hexagon Nut (3/8" B.S.F.) | 1 | 233 | | Knob (Evans reference No. 780) | 1 |
| 207 | A2326/1 | Hexagon Lock Nut (1/4" B.S.F.) | 2 | 251 | | Cap Screw (1/4" B.S.F. x 3/4") | 3 |
| 208 | A2325/1 | 19/57T. Reversible Cluster Gear | 1 | 252 | | Cap Screw (1/4" B.S.F. x 1/2") | 1 |
| 210 | | 19/57T. Fixed Cluster Gear | 1 | 254 | A2963 | Backplate | 1 |
| 212 | V1720 | Washer | 1 | 255 | | Washer (2 B.A.) | 1 |
| 213 | A1999 | Retaining Screw | 1 | 256 | | Hexagon Lock Nut (7/16" B.S.F.) | 1 |
| 214 | A3115 | 24T. Gear | 1 | 258 | 75/1115/1 | Collar | 1 |
| 216 | A2023 | Pad | 2 | 259 | A2977/2 | Oil Nipple (Lumatic HDFV4/45) | 1 |
| 217 | | Hexagon Head Set Screw (1/4" B.S.F. x 1") | 1 | 260 | | Top Cover | 1 |
| 219 | | Cap Screw (2 B.A. x 1") | 1 | 261 | A2297/1 | Rivet (No. 0 x 3/16") | 1 |
| 220 | A3017 | Stud | 1 | 262 | | Plunger Housing | 1 |
| 221 | | Washer (1/2") | 3 | 264 | A2519/1 | Knob | 1 |
| 222 | | Hexagon Lock Nut (1/2" B.S.F.) | 2 | 266 | A2965/2 | Gearbox | 1 |
| 223 | A2024 | Hinge Screw | 2 | 267 | | Cap Screw (M6 x 1 x 20 mm.) | 2 |
| 224 | A2012 | Tension Spring | 1 | 268 | A2330/3 | Gear Stud | 1 |
| 225 | | Round Head Screw (2 B.A. x 1 1/8") | 3 | 269 | A2329/3 | Gear Stud | 1 |
| 226 | A2527/1 | Changewheel Guard (ML7) | 1 | 270 | A2331/1 | Link | 1 |
| 227 | A2528/1 | Changewheel Guard (ML7-R & Super 7) | 1 | 271 | A2279/2 | Plunger | 1 |
| 228 | A7934 | Metric Screwcutting Chart | 1 | 272 | | Cir-Clip (Andererton 1400-6) | 1 |

METRIC CONVERSION SET

| Drg. Ref. | Part No. | Description | No. Off/Mc | Drg. Ref. | Part No. | Description | No. Off/Mc |
|-----------|----------|--------------------------------|------------|-----------|----------|------------------|------------|
| 139 | | Cap Screw (1/4" B.S.F. x 3/4") | 1 | 243 | A5396 | 63T. Change Gear | 1 |
| 134 | A2469 | Change Gear Quadrant | 1 | 244 | 72/1123 | 50T. Change Gear | 2 |
| 235 | A1496 | Changewheel Stud | 2 | 245 | 72/1122 | 45T. Change Gear | 2 |
| 236 | A1501 | Sleeve | 2 | 246 | A5395 | 28T. Change Gear | 1 |
| 237 | A1500 | Bush | 2 | 247 | 72/1118 | 30T. Change Gear | 1 |
| 238 | A1498 | Washer | 2 | 248 | 72/1119 | 35T. Change Gear | 1 |
| 239 | | Hexagon Nut (1/2" B.S.F.) | 2 | 249 | 72/1121 | 40T. Change Gear | 1 |
| 240 | A1499 | Changewheel Spacer | 2 | 250 | 72/1124 | 55T. Change Gear | 1 |
| 241 | A2604 | Distance Piece | 2 | | | | |
| 242 | 72/1125 | 60T. Change Gear | 2 | | | | |

* Only for Super 7 lathes prior to SK108891B.

MYFORD QUICK CHANGE GEARBOX

INSTRUCTIONS FOR ORDERING REPLACEMENT PARTS

The following information should be supplied with the order:-

1. Type and serial number of the lathe, also the serial number of the gearbox.
2. Part number and name of part as shown on the preceding list.
3. Quantity Required.

For location of numbers see Figs. 27 and 28.



FIG. 27



FIG. 28

As it is the Company's policy to improve its products whenever opportunity occurs, designs are liable to modification at any time. In some cases, due to the nature of the part will be necessary for us to supply additional related parts, particularly if the item required has been altered.