

**J.P. SUPER Mk. IV & Mk. 5
INSTRUCTIONS**

The Book of the



**SUPER Mk. IV
POWER MOWER**



SUPPLEMENTARY INSTRUCTIONS FOR J.P. SUPER Mk. 5

This Instruction Book covers the maintenance requirements of the New SUPER MK 5 and the SUPER MK. IV Models.

The chief features of difference between the SUPER MK. 5 and the SUPER MK. IV are :—

The MK. 5 Machine is fitted with the new 125 cc. Villiers 4 Stroke Engine which is interchangeable with the Power Unit of the MK. IV Machine.

The method of starting the new Engine is with the recoil starter. Fuel and oiling requirements are the same.

The Makers' Instruction Book for the new Engine on the SUPER MK. 5 model should be referred to by the User.

The front rollers on the SUPER MK. 5 Machine are Lignum Vitae and require occasional lubrication when in use.

Light Alloy Metal Rollers with self lubricating bearings can be supplied as optional to the Lignum Vitae.

Please note the illustrations in the book show the MK. IV type Engine, but the method of assembly to the chassis is very similar to the Super MK. 5.

In other respects the assembly incorporating adjustments, transmission, clutch drive and general features of design are the same as for the SUPER MK. IV.

FOREWORD

THE J.P. SUPER Mk. IV POWER MOWER

is made in three sizes 15", 17" and 20".

In the design of the machine, special attention has been given to the importance of easy service and maintenance and the construction is based on a sectional assembly system, substantially comprising the Engine Unit, the Cutter Unit, Rear Roller Unit and the Front Axle Unit, each of which can be readily removed individually from the main Frame Chassis Unit.

All three models are identical in construction and incorporate the same specification, except for variation in size, and such components as are affected are specially referred to in the parts list, see pages 26—32.

It is advisable to read the instructions carefully. Proper care and attention will enable the machine to give continuous satisfactory and reliable service.

The Serial Number of the Machine and the Cutter Unit will be found on a plate attached to the side frame in each instance, and these numbers should always be quoted in correspondence.

Instructions and illustrations have been made as simple as possible, but modification in design may affect the specification necessitating some alteration without incurring to us any liability for such alteration to be made on machines already delivered.

J. P. Lawnmowers are fully guaranteed for replacement only of any part against failure proved to be due to faulty material or workmanship.



THE J.P. ENGINEERING CO. LTD.

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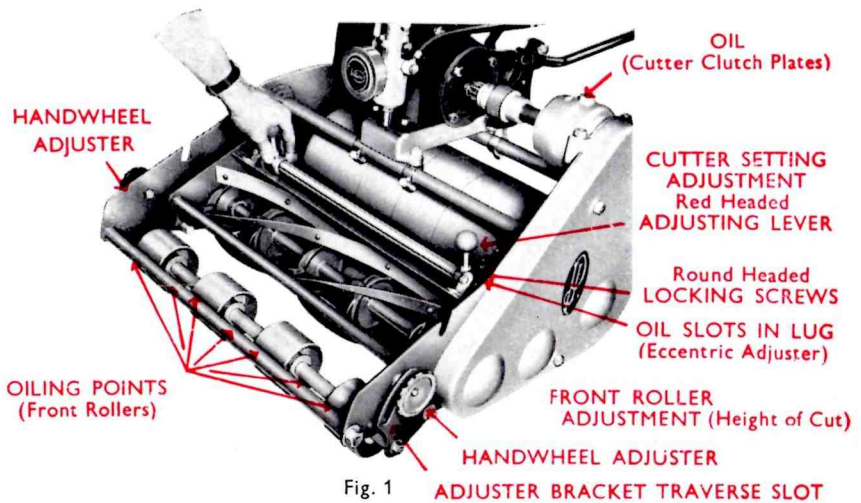
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SUPER MK. IV J.P. LAWN MOWER

SECTION A STARTING PREPARATIONS

1. CUTTER SETTING ADJUSTMENT

Adjust the shear blade to the rotary cutter by moving the red-headed adjusting levers on the cutting unit in the direction towards the rear roller. The adjustment should be made so that the rotary cutter will spin with a light audible contact with the bottom blade. If necessary, the adjustment can be locked in position by tightening the two round-headed screws which pass through the slotted lugs of the shear blade carrier, situated at the side of the adjusting levers (Ref. Fig. 1).



2. SETTING FOR HEIGHT OF CUT

Adjust the front rollers by positioning in the traverse slot of the adjusting brackets after unscrewing the two handwheels and tighten up securely on to the adjusting brackets after obtaining the setting required. (Do not set too low, particularly for the first cuts of the season or at such times when the lawn may be in a soft condition) (Ref. Fig. 2).

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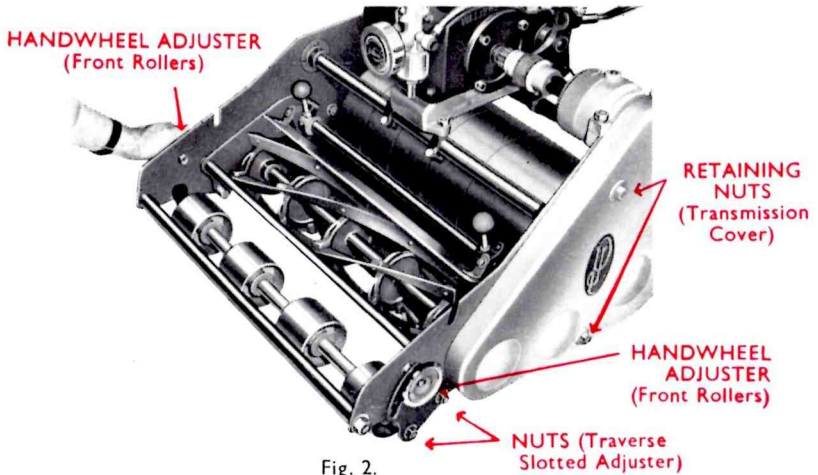


Fig. 2.

3. FIXING GRASS BOX

If using the grass box, first place the two projecting pins (seen one on each side of the box) into the slots on the leading edges of each chassis side frame. The rear part of the box is then lowered until the slot in the grass box plate engages and rests on the front main tie bar (Ref. Fig. 3).

When emptying and replacing the grass box, first disengage the rotary cutter drive for safety, by operating the cutter clutch control lever on the left handlebar.

Always keep fingers away from the rotary cutter at any time the engine is running

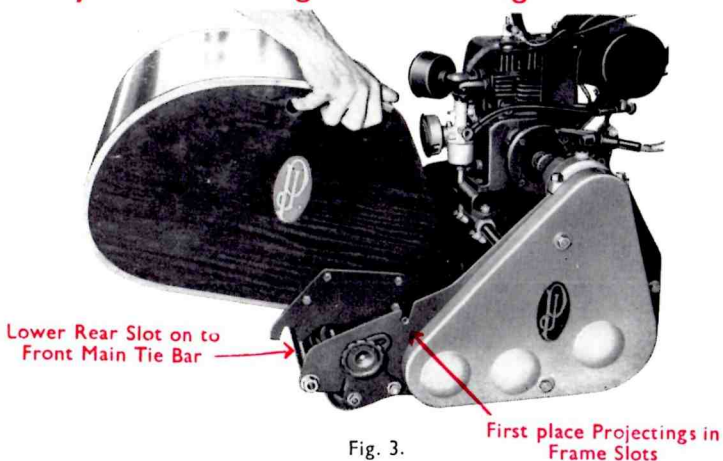
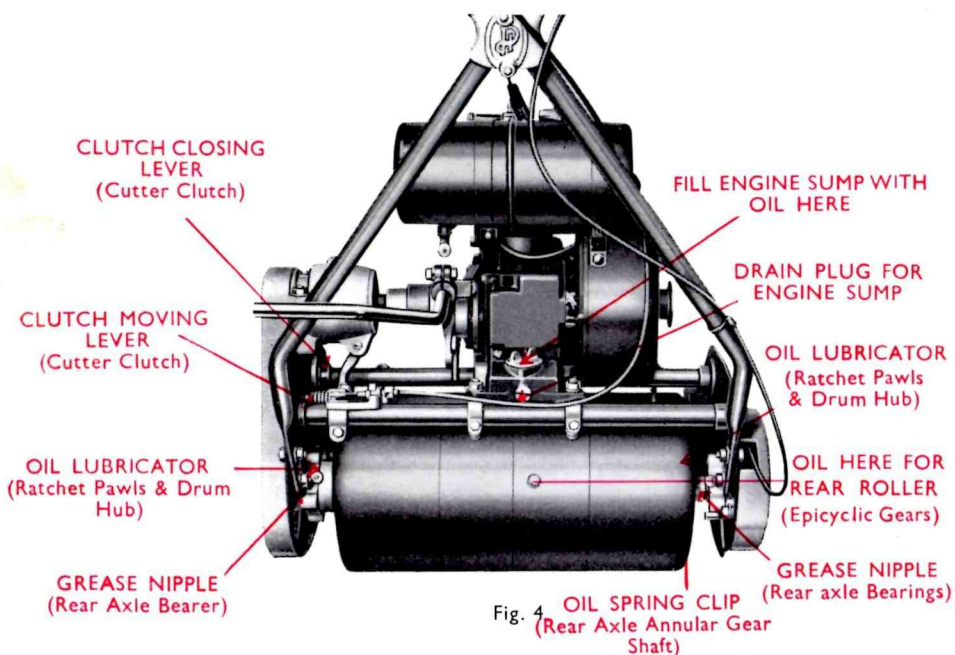


Fig. 3.

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4. ENGINE (Check for oil)

Be sure and check engine for oil in the sump (Ref. Fig. 4) and petrol in the tank. Please refer to Villiers Instruction Book for Mk. 10 and 12 Engines.



5. TO START ENGINE

To start the engine, open the carburettor throttle lever on the left handlebar about a quarter distance; when starting from cold, close the air choke on the carburettor (please refer to Villiers Instruction Book).

The kick start lever should be pressed sharply with the foot, and as the engine starts and warms up, open the carburettor air choke. Once the engine is warm it should not be necessary to close the air choke or to flood the carburettor when restarting.

6. TO COMMENCE CUTTING

With the starting preparation completed and the adjustments made, the machine can now be put into motion by first engaging the drive of the cutters by the operation of the cutter clutch lever on the left handlebar and then gently raising the driving clutch lever on the right handlebar and retaining the latter in the raised position. Simultaneously the engine carburettor control lever should be adjusted to give the suitable engine speed required.

SECTION B LUBRICATION

The following oiling points on the machine should receive careful attention when the machine is in constant use during the cutting season.

1. REAR ROLLER (Every two months)

The centre section gear case chamber of the rear roller is an assembly in two halves and contains the epicyclic speed up gears which run in an oil bath inside the gear case chamber.

The chamber should be topped up every two months by applying a charge of oil (about a small eggcupful) into the gear case. Access to the oiling point is made by first unscrewing the hexagon brass cover screw seen in the recess of the centre section rear roller (Ref. Fig. 4).

Care should be taken to clean away all dirt and grit before removing the hexagon screw. Replace the screw and tighten up securely.

The chamber should be drained annually and replenished with a full charge of fresh oil (quantity not more than half pint).

The type of oil to be used for the rear roller should be Castrol XL, SEA. 30 or oil of similar viscosity.

2. RATCHET PAWLS AND DRUM HUBS OF THE REAR ROLLER (Every two weeks)

Projecting from the side face towards the centre of each drum will be seen two oilers which provide access for lubrication to the rear roller driving pawls and the drum hub bearing sleeve.

A small charge of medium grade oil should be applied every two weeks (Ref. Fig. 4).

3. REAR AXLE (ANNULAR GEAR SHAFT) (Every week)

Oil should be applied to the oil hole which is situated under the spring oiling cover which fits over the rear axle sleeve on the right hand side of the machine, adjacent to the main rear axle bearing housing. The right-hand side being taken as when standing between the handlebars in the working position (Ref. Fig. 4). (Medium grade oil.)

4. REAR AXLE BEARINGS (Every two months)

Lubrication should be applied here with the grease gun through the two grease nipples which can be seen projecting from the two aluminium rear axle bearing housings situated one inside each of the main side frames (Ref. Fig. 4).

5. FREEWHEEL BEARING (Every month)

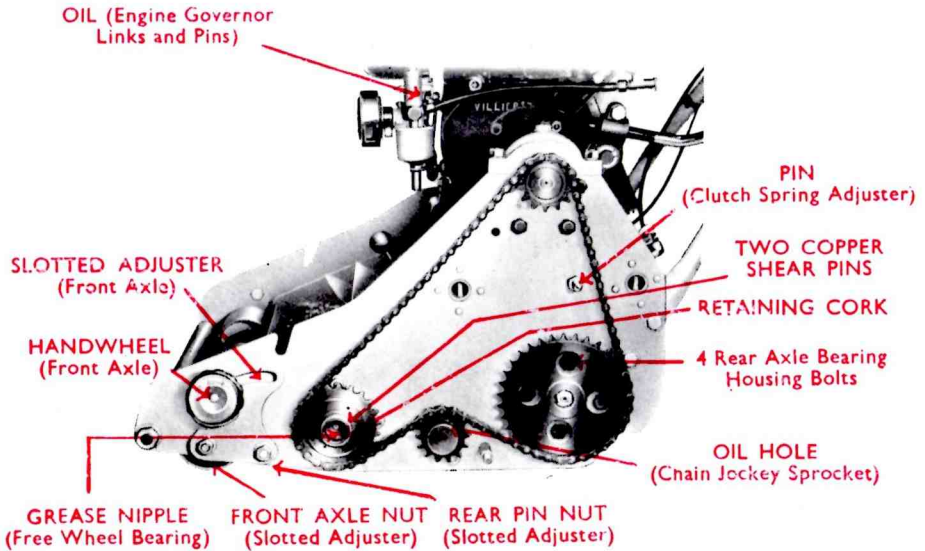
Lubrication should be applied with the grease gun through the grease nipple which is positioned at the bottom of the recess of the freewheel bearing shaft. It will first be necessary to remove the large transmission cover by unscrewing and taking off the two retaining nuts (Ref. Fig. 2). The shaft on which the freewheel is mounted will then be seen and the retaining cork in the recess should be removed and at the bottom of the recess the grease nipple will be found (Ref. Fig. 5). Replace the cork and transmission cover after greasing.

6. CHAIN JOCKEY SPROCKET (Every month)

The chain jockey sprocket is fitted with a self-lubricating bush, but it is advisable to supplement this by applying a charge of oil through the small countersunk hole which will be seen drilled through the flange of the sprocket. The chain jockey sprocket is made accessible after removing the large transmission cover (Ref. Fig. 5). (Medium grade oil.)

7. DRIVING CHAIN (Every two weeks)

The driving chain should be lubricated by applying oil on to and around the chain rollers. The chain is made accessible after removing the large transmission cover (Ref. Fig. 5). (Medium grade oil.)



8. CUTTER CLUTCH PLATES (Frequently, every day when in use)

A charge of oil should be applied to the cutter clutch drive plates after first removing by unscrewing the cover which will be seen on top of the bearing housing (Ref. Fig. 1).

Light thin machine oil only should be used for clutch plates. Do not use heavy grade oil as this will cause sluggish operation of the clutch. When applying lubrication, always see that the clutch is in the free position so as to allow the oil to penetrate between the plates.

9. CUTTER CLUTCH THRUST RACE AND BALL BEARING (Every two weeks)

The cutter clutch cover cap situated on top of the transmission side frame should be removed by unscrewing the two nuts and lifting the cap clear of the studs. The thrust race and ball bearing are mounted each side of the clutch housing. These should be well lubricated by applying grease to the bearing and thrust race. (Ref. Fig. 6). Replace cap and washers and screw nuts securely.

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10. FRONT ROLLERS (Every two weeks)

The front rollers are fitted with self-lubricating bearings, but it is advisable to supplement this by applying a small charge of oil at each side of each roller. There is sufficient endwise movement in the assembly of the rollers where the oil should be applied (Ref. Fig. 1). (Medium grade oil.)

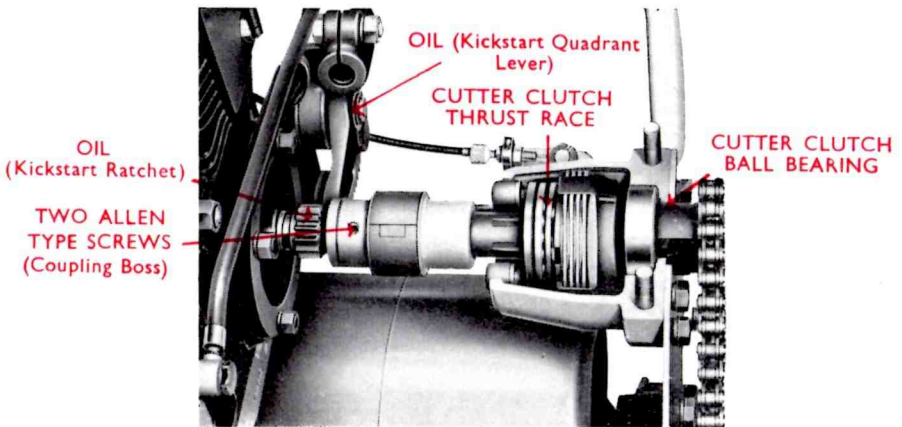


Fig. 6

11. ROTARY CUTTER BEARINGS (Every two weeks)

To apply lubrication to the rotary cutter bearings, it is necessary to remove the cutter unit from the chassis. First unscrew the hand-wheel of the retaining pin (Ref. Fig. 7) for about half-an-inch; the cutter unit can then be moved by sliding along the tie bars as far as it will go until the cutter nut and coupling (Ref. Fig. 8) is clear of the three pins in the driving coupling. The Unit can then be taken out of the chassis by lifting in a swinging motion from the back. Now place the Unit carefully on its side, when an oil cover will be seen stamped 'Oil', and below the stamp will be found the oil hole (Ref. Fig. 9). Then turn the opposite end upwards, when a cover will be seen, again stamped 'Oil', and the oil hole will be

accessible through one of the three large holes of the cutter nut and coupling (Ref. Fig. 8); a generous charge of oil should be applied on each side to each bearing. The Cutter Unit can then be replaced by placing the front slots of the cutter unit frames on the two front retaining pins projecting from each side frame. The Unit can then be carefully lowered in a downward swinging motion until the rear slots of the cutter unit frames rest on the cross tie bar. The Unit should then be moved in a lateral direction away from the retaining pin until the three holes of the cutter nut and coupling are in full engagement with the three pins of the driving coupling. Finally screw up the handwheel with the retaining pin engaging the hole in the side frame on the opposite side. (Medium grade oil.)

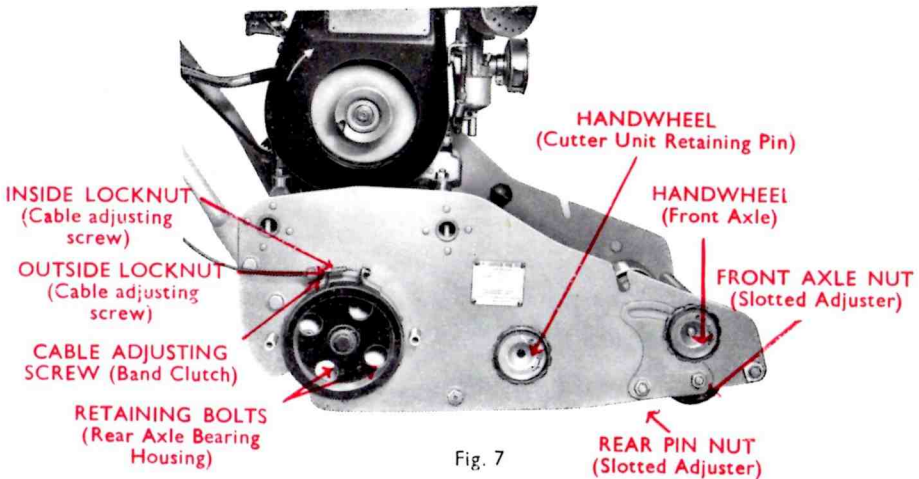


Fig. 7

12. ECCENTRIC ADJUSTER (Every month)

Apply a small charge of oil to the slots in the lugs which engage the eccentric adjuster. The lugs are each situated at the side of the red-headed adjusting levers (Ref. Fig. 1). When the oil is applied the adjuster should be worked in a rotary motion backwards and forwards to assist the oil flow. Lubrication at this point will always keep the adjustment free and prevent corrosion (medium grade oil).

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Always see that the two round-head screws which pass through the carrier lugs are screwed up sufficiently to give good firm tension movement of the adjuster which alternatively can be locked in position if required.

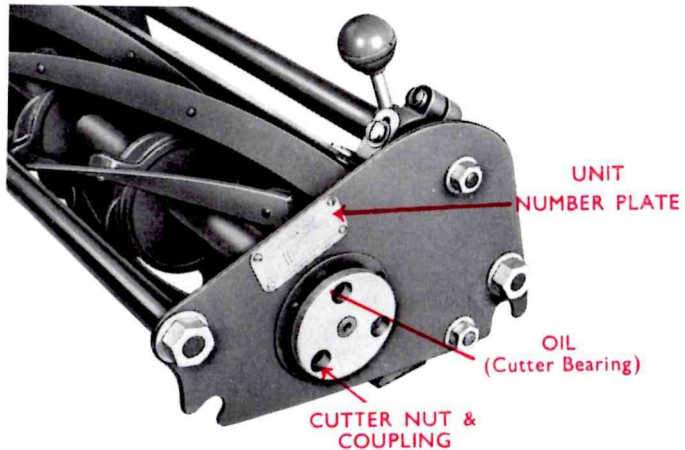


Fig. 8

13. ENGINE

The oil level of the engine sump should be frequently checked by unscrewing the flanged inspection cap situated on top of the sump at the rear of the engine (Ref. Fig. 4). Oil should be kept to the full level and if the machine is in constant use throughout the season, it is advisable to drain the oil off by removing the drain screw which is situated just below the sump oil inspection cap and replacing with fresh oil twice during the season. Castrol XL is specified—please refer to Villiers Instruction Book for Mk. 10 and 12 Engines.

ENGINE KICK START RATCHET (Every two weeks)

Apply a charge of oil to the kick start ratchet which is mounted on the engine shaft and engages the kick start quadrant (Ref. Fig. 6). (Medium grade oil.)

ENGINE KICK START QUADRANT LEVER (Every two weeks)

Apply oil to the oil hole which passes through the boss of the lever (Ref. Fig. 6). (Medium grade oil.)

ENGINE GOVERNOR LINK AND PINS (Every month)

Apply a small charge of oil to the Governor Link and Pins situated at the rear of the carburettor (Ref. Fig. 5). (Medium grade oil.)

SECTION C

REMOVAL OF SUB-ASSEMBLIES

Special attention has been given in the design of the machine to the importance of easy service and maintenance. With this in view, the construction has been based on a system of sectional assembly, comprising the Power Unit, Cutter Unit, Rear Roller Unit and the Front Axle Unit, each of which can be readily removed without dismantling the main frame chassis assembly (Ref. Fig. 10).

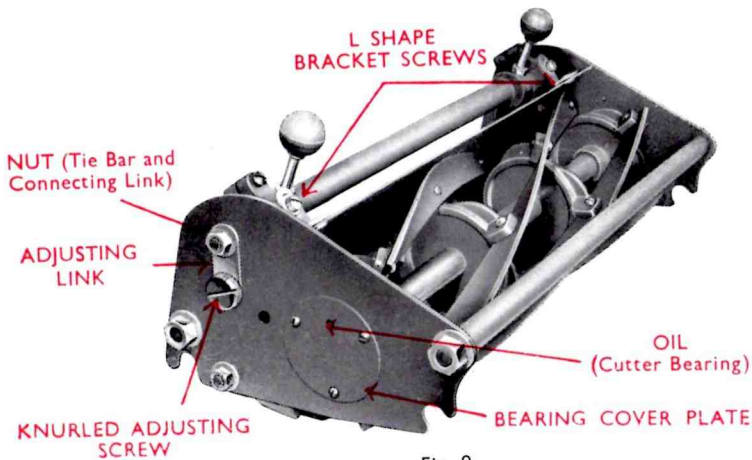


Fig. 9

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1. TO REMOVE THE POWER UNIT

First take off the large transmission cover by unscrewing the two stud nuts (Ref. Fig. 2); then remove the driving chain after first taking off the spring clip and the connecting link. Now unscrew and take off the two nuts of the aluminium clutch cap situated on top of the transmission side frame (Ref. Fig. 11). The clutch cap can then be lifted clear off the two studs. Unscrew and take off the four nuts of the eyebolt brackets which secure the engine on the tie bars (Ref. Fig. 11). The engine can now be lifted upwards complete with the engine shaft and clutch, clear of the chassis (Ref. Fig. 11). The engine shaft complete with clutch assembly and flexible coupling can now be disconnected from the engine, after first unscrewing the two hexagon Allen type screws which are fitted in the boss of the coupling nearest to the engine (Ref. Fig. 6).

To re-assemble, the reverse procedure should be adopted, taking care to see that all nuts are finally tight and secure.



Fig. 10

2. TO REMOVE CUTTER UNIT

First unscrew the handwheel of the retaining pin for about half-an-inch (Ref. Fig. 7) ; the Cutter Unit can then be moved by sliding along the tie bars as far as it will go until the cutter nut and coupling (Ref. Fig. 8) is clear of the three pins in the driving coupling. The Unit can then be taken out of the chassis by lifting in a swinging motion from the back. The Cutter Unit is replaced by placing the front slots of the Cutter Unit frames on the two front retaining pins seen projecting from inside of each frame. The

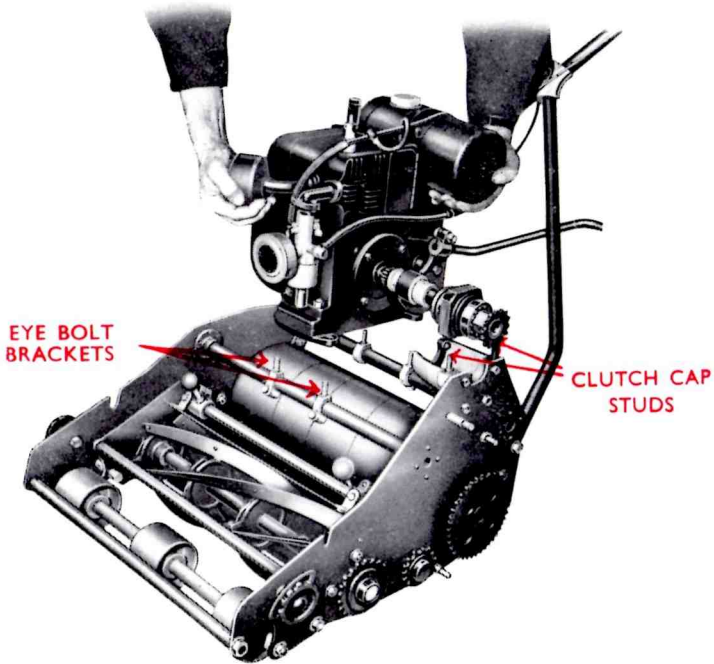


Fig. 11

Unit should then be carefully lowered in a downward swinging motion until the rear slots of the cutter unit frames rest on the cross tie bar and can then be moved in a lateral direction away from the retaining pin until the three holes of the cutter nut and

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coupling are in full engagement with the three pins of the driving coupling. Finally screw up the handwheel with the retaining pin, engaging the hole in the side frame on the opposite side.

3. TO REMOVE REAR ROLLER ASSEMBLY

First remove the large transmission cover by unscrewing and taking off the two retaining nuts (Ref. Fig. 2). Now take off the driving chain after removing the spring clip and taking out the chain connecting link. Unscrew the two retaining nuts and take off the band clutch cover on the opposite side of the machine. The cable adjusting screw of the band clutch should be removed to enable the clutch to be withdrawn from the clutch drum (Ref. Fig. 7).

The four retaining bolts which hold the rear axle bearing housings in each side frame should be unscrewed with the box spanner provided. The four holes in the band clutch drum, on one side (Ref. Fig. 7) and the four holes in the large chain sprocket on the other side make the bolt heads accessible for the box spanner to be used (Ref. Fig. 5).

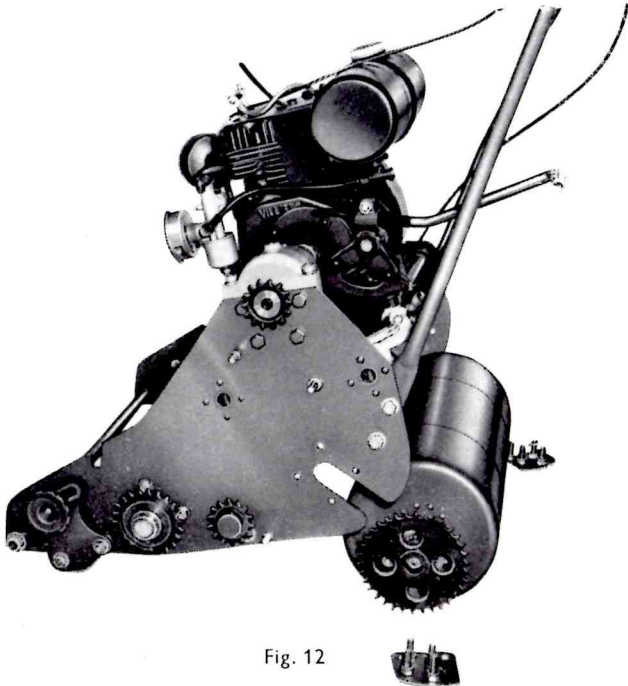


Fig. 12

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After removal of the bolts, the complete axle can be taken from the chassis by lowering the projecting ends of the shaft and passing down the slots in the side frames (Ref. Fig. 12). To re-assemble, the reverse procedure should be adopted, taking care to see that all nuts are finally tight and secure.

4. TO REMOVE FRONT ROLLER ASSEMBLY

Unscrew and take off the two front handwheels (Ref. Fig. 2). Then unscrew and take off the two nuts on the traverse slotted adjuster on the transmission side (Ref. Fig. 2). The slotted adjuster on the transmission side can then be withdrawn endwise from its engagement with the rear pin and front axle. Now unscrew the nut of the rear pin only off the slotted adjuster on the opposite side (Ref. Fig. 7). The axle complete with rollers and one slotted adjuster still attached can be taken endwise clear of the studs away from the chassis (Ref. Fig. 13).

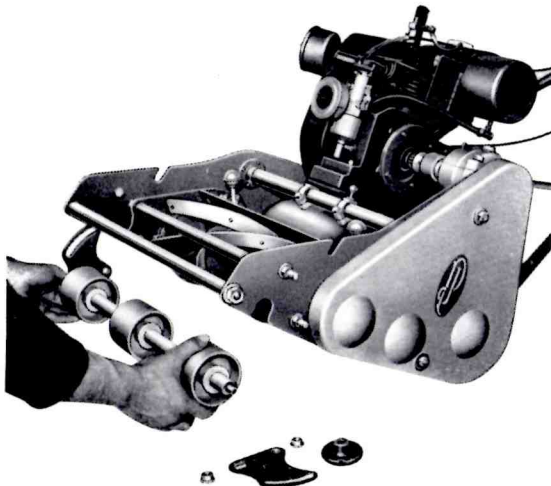


Fig. 13

SECTION D

ADJUSTMENTS

1. SETTING THE ROTARY CUTTER TO SHEAR BLADE

The rotary cutter works against a bottom shear blade which is attached to the blade carrier and the latter is adjusted and brought into contact with the rotary cutter by carefully moving the red-headed adjuster levers in the direction towards the rear roller until a light audible contact is heard when the cutter is rotated; **it is important when rotating the cutter to set the adjustment, to keep the hand at the top of the cutter away from the shear blade, otherwise fingers may be caught and badly cut.**

Do not set the cutters with too harsh a contact, as this will only increase wear on the blades and obtain no better cutting results. To minimize the possibility of disturbing the setting, the adjustment can be locked into position by tightening with a screwdriver the two round-head screws which pass through the slotted lugs of the shear blade carrier (Ref. Fig. 1).

Please note that the two locking screws must be released before attempting to move the red-headed adjuster levers. If the adjustment is not locked in position, the locking screws should be screwed up at least sufficient to ensure that the adjuster moves under reasonably tight tension. Otherwise, if they are loose and the adjuster movement is too easy, the cutter setting might alter, but this will not occur if the instructions are carefully carried out and the machine is used after setting as already stated with either the eccentric blade adjustment locked or the adjusting levers under good movable tension.

2. PARALLELISM OF CUTTERS

The Cutter Unit is set on assembly to cut equally along the whole length of the spiral blades when adjusted as per paragraph 1, section D, and should not need any further setting unless the unit has been dismantled or subjected to excessive shock, or through the rotary cutter fouling an obstruction.

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To correct any out of parallel relation of the rotary cutter with the shear blade, proceed as follows : first remove the cutter unit from the chassis. Stand the unit on the back flat edge of unit frames, then slightly move the red-headed adjuster levers in a rotary forward direction to move the shear blade away from the rotary cutter. Unscrew for a turn the nut of the tie bar and connecting link on the left-hand side of the unit (Ref. Fig 9). The slotted knurled adjusting screw at the bottom of the adjusting link should then be slightly rotated (Ref. Fig. 9). This rotating action will adjust the shear blade carrier in an upward and downward direction away from the edge of the rotary cutter spiral blade.

It will readily be seen that this adjustment enables a parallel relationship to be made between the edge of the shear blade and the periphery of the rotary cutter for the whole length along the blades.

After making the parallel adjustment, it should then be checked by adjusting the shear blade to the rotary cutter by moving the red-headed levers until a light audible contact is made.

Cutting parallelism should then be checked with a strip of ordinary brown paper, by cutting from end to end. **Great care should be exercised to keep the fingers clear of the blades when adjusting and testing for cutting.**

After the correct parallel cutting adjustment has been made, the hexagon nut of the tie bar and the adjusting link should be locked up tight and secure.

3. DRIVING CHAIN (JOCKEY SPROCKET)

The driving chain should be checked periodically to see that it is adjusted correctly, as after sustained use, it might be found on inspection that some slackness in the fit of the chain over the sprockets has been caused through wear or stretch.

Excessive slackness is not a good condition for the working of the chain, in addition to which this can cause noise through a slack whipping chain fouling the inside of the transmission cover. Correction can be made by the adjustment of the chain jockey sprocket as follows : first remove the large transmission cover, the jockey sprocket mounted on its spindle will then be seen situated between the cutter freewheel and the large rear axle sprocket (Ref.

Fig. 5). The spindle of the sprocket is engaged in a slot in the side frame and the nut of the spindle which can be seen on the inside of the side frame should be unscrewed for a turn, this will enable the sprocket to be moved in an upwards direction to take up any excess slackness of the chain. Do not set the adjustment to make the chain too tight, as this will cause unnecessary stretch and wear; there should be just a little slackness in a correctly adjusted chain. After making the adjustment, see that the jockey sprocket spindle nut is very tight and secure.

4. CLUTCH ADJUSTMENT (Rear Axle Driving Clutch)

The main driving clutch is mounted on the end of the rear axle spindle, opposite the transmission side. The clutch assembly comprises a cast iron drum inner member which works with, and is encircled by, a steel brake band lined with Ferodo, which operates dry (no lubrication of any kind is required).

Adjustment is provided for tightening the band on the inner member should this be necessary through wear. First remove the aluminium clutch cover by unscrewing and taking off the two hexagon-headed screws seen on the outside of the cover. It will then be seen that the Bowden cable connects the two ends of the protruding lugs of the steel band, passing through the knurled adjusting screw.

To take up any slackness which might be causing lack of drive, the lock nut on the adjuster screw situated between the two clutch band lugs should be unscrewed for three or four turns; the knurled adjuster screw should then be turned in an anti-clockwise direction at the same time retaining the nut situated between the knurled head of the screw with a spanner (Ref. Fig. 7). This will close the band and take up any wear or slackness.

Adjustment should be made so as to give ample freedom of clutch movement when the clutch operating lever on the handle-bar is in the free position. See that the lock nuts are tight and secure after making adjustment. Replace clutch cover and screws.

5. CLUTCH ADJUSTMENT (CUTTER CLUTCH)

The cutter clutch is situated on the engine shaft drive. The assembly comprises an inner and outer clutch member, engaging eight friction drive plates, 4 steel and 4 phosphor bronze. These

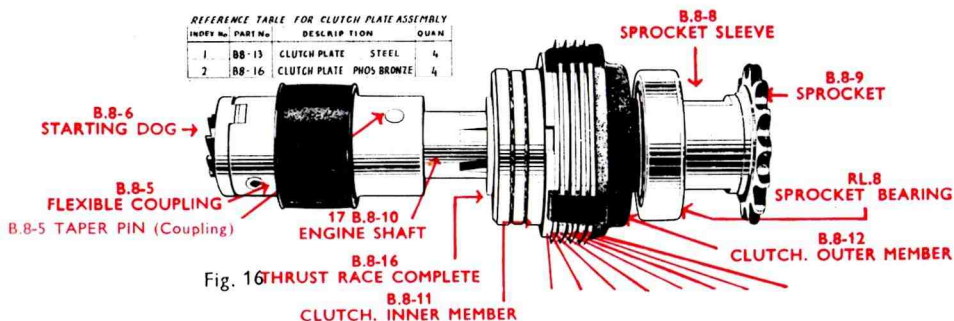
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are assembled in the order as shown on separate diagram (Ref. Fig. 16). (The order of assembly is very important). The clutch moving lever is mounted on a bracket situated on the rear tie bar and the Bowden cable wire passes through a knurled adjusting screw and engages the slotted end of the lever (Ref. Fig. 4).

In operation, the clutch moving lever contacts up to the end of the clutch closing lever, the latter is pivoted on the aluminium clutch housing (Ref. Fig. 4). Adjustment is made with the knurled adjusting screw through which the cable passes, after unlocking the lock nuts. In setting the adjustment, it is important always to see that there is approximately 1/32 to 1/16 in. free movement (when the clutch is in the drive position) between the point where the clutch moving lever operates on the face of the boss of the clutch closing lever (Ref. Fig. 4). If there is any sign of slipping of the cutter clutch drive which might be caused through wear of the clutch plates or bluntness of the rotary cutters, this could be corrected by adjusting the pin which engages the clutch closing spring. This pin will be seen on the inside of the frame after removing the transmission cover and is locked in position by a hexagon nut (Ref. Fig. 5). To make adjustment for clutch slip, first unscrew the lock nut a couple of turns and then screw the pin in a clockwise direction engaging the slotted end with a screwdriver for a full turn, afterwards locking up the lock nut securely.

The adjustment can be repeated if necessary, but eventual or excessive adjustment will close up the spring until there is no expansion movement.

Generally speaking, this latter adjustment should not be required if the clutch plates and cutter mechanisms are kept in good order, or the spring has become weak through use or wear, in which case the spring should be replaced and it may be necessary to replace worn clutch plates.



DISMANTLING SECTION TO REMOVE ROTARY CUTTER FROM CUTTER UNIT

First see that the bottom shear blade is adjusted quite clear of the rotary cutter. Now remove the grass box deflector shield by unscrewing and taking out the two round-headed screws which screw through the small L-shaped brackets into the knife frame carrier lugs (Ref. Fig. 9). The deflector can then be taken from the unit by withdrawing in a forward circular motion. Unscrew and take off the cutter coupling nut—this is the part which has three holes and screws on the end of the cutter shaft (Ref. Fig. 8). (Please note this is a left-hand thread). It is only necessary to remove one of the Unit side frames and this is the side to which the Unit Number Plate is attached (Ref. Fig. 8).

Unscrew and take off the four hexagon tie bar nuts which screw up to the side plate on the same side as the cutter coupling nut. The side frame can now be tapped off complete with the cutter ball race, clear of the ends of the tie bars and rotary cutter shaft. Unscrew the three round-headed screws and remove the bearing cover plate on the opposite side of the Unit (Ref. Fig. 9). The rotary cutter can now be taken out by withdrawing the end of the rotary cutter shaft from the bearing (Ref. Fig. 14). It may be necessary to tap the rotary cutter shaft out of the bearing, but this should be done by tapping a piece of hard wood on the end of the shaft.

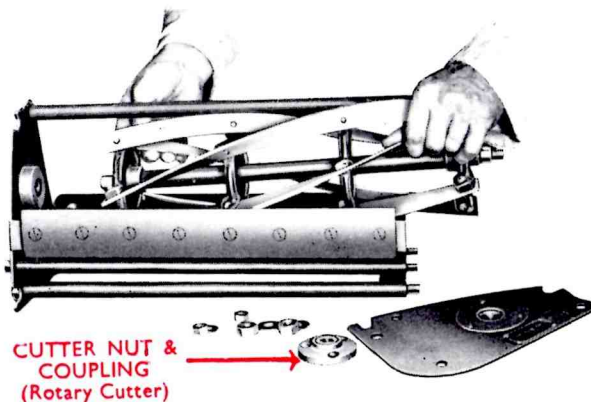


Fig. 14

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(Do not use a metal punch on the end of the shaft as if the machined centre of the shaft is damaged. This could cause trouble in the regrinding, as the cutter is mounted on the centres for the grinding operation and must run absolutely true.)

Great care should be exercised to keep the fingers away from the bottom shear blade when the cutter is being removed.

TO REPLACE ROTARY CUTTER IN THE CUTTER UNIT

First see that the bottom shear blade is adjusted quite clear for the rotary cutter. Then insert the plain end of the rotary cutter shaft into the cutter bearing and tap this lightly as far as it will go from the opposite threaded end of the cutter shaft, with a piece of hardwood.

Now place the unit side plate on to the ends of the four tie bars and also with the ball race engaging the screwed end of the cutter shaft. See that the plate is tapped on square and then assemble the washers and screw on the four hexagon headed nuts and finally screw up tight. Replace the rotary cutter deflector shield and enter the screws through the L slots into the carrier lugs and screw up tight. After replacing the cutter, the parallel relationship of the cutter with the shear blade should be checked. Please refer to Parallel Instructions, paragraph 2, section D. (Check Cutter Unit to sit square (no rock) on tie bars in chassis.)

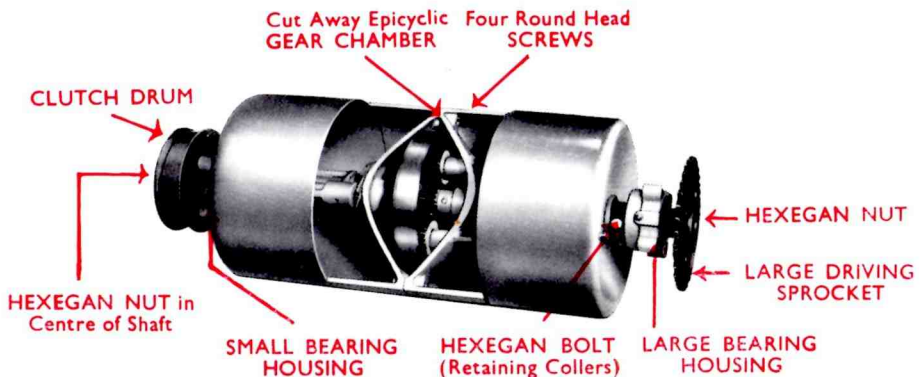


Fig 15

REVERSING SHEAR BLADE

The shear blade has two cutting edges and when the first edge is worn it can be reversed to the opposite edge and this should be carried out in the following manner : First remove the Cutter Unit from the chassis (see paragraph 2, section D) and stand the Unit on the flat edge of side frames.

With a wide screwdriver, unscrew and take out the countersunk screws. Then take the blade off the frame face and carefully clean and oil both faces, turn the blade round with the new edge to the rotary cutter. Insert the screws and half tighten, then finally screw up each one hard and tight. Check the bottom blade for being parallel with the rotary cutter and adjust if necessary. (See Instruction re Parallelism of Cutters, paragraph 2, section D.)

DISMANTLING THE REAR AXLE

The centre section of the rear roller assembly is in two halves and contains the epicyclic gearing and this chamber being flooded with oil should require no mechanical attention for a very long time. Any dismantling for inspection or overhaul should be carried out by a competent mechanic. To dismantle the rear roller assembly after removal from the chassis, proceed as follows : First unscrew and take out the hexagon nut which screws into the annular gear shaft and secures the clutch drum (Ref. Fig. 15). After removal of the screw, the drum can be withdrawn endwise off the splined end of the shaft. It may be necessary to help it off by tapping with a hard piece of wood. After removal of the clutch drum, the small bearing housing complete with bearing can be withdrawn endwise from off the bearing sleeve (Ref. Fig. 15).

On the opposite side is the large driving sprocket and this should be removed by first unscrewing the hexagon nut in the recess with the box spanner provided (Ref. Fig. 15). The sprocket can then be withdrawn endwise from the splined end of the pinion shaft—it may be necessary to help this by tapping with a piece of hard wood. The large bearing housing complete with bearings can then be withdrawn from off the bearing sleeve (Ref. Fig. 15).

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Now unscrew for a couple of turns the hexagon bolt which passes through the lug of each of the retaining collars which fit up to the side flange of each drum (Ref. Fig 15). Each collar can then be taken off the bearing sleeve and the side drum rollers can then be withdrawn. The two halves of the centre section can then be taken apart by unscrewing the four round-headed screws which will be seen at the bottom on the inside of the casting, thus making the gears accessible for inspection. On reassembling, care should be taken to see that the annular gear is positioned to engage the planet gears in the central position so that the two halves of the casting will assemble in line. In reassembling, see that retaining collars and all screws are tight and also that the epicyclic gear chamber is flooded with approximately half a pint of thin oil.

REPLACING THE SAFETY COPPER SHEAR PINS

There are two copper safety shear pins which engage the free-wheel sleeve and the cutter bearing sleeve (Ref. Fig. 5). The purpose of the shear pins is that in the event of an obstruction fouling the cutters during the working of the machine, the two pins which are fitted will be caused to shear and this action greatly assists in preventing damage to cutter blades and transmission by absorbing some of the shock of the obstruction by shearing.

When the pins have sheared there will be no drive to the rotary cutter until replacement shear pins are fitted. To replace the shear pins, first remove the large transmission cover, then take the cork from the centre recess of the freewheel sprocket sleeve (Ref. Fig. 5) and get the four holes of the two sleeves in line when the sheared portions can then be tapped through with a small punch from the inside of the recess. Take particular care to see that no portion of any pin is left inside. Two new pins can now be fitted and these should be inserted from the inside of the recess of the sleeve with the head of the pin in the recess. Replace the cork to prevent the pins dropping out.

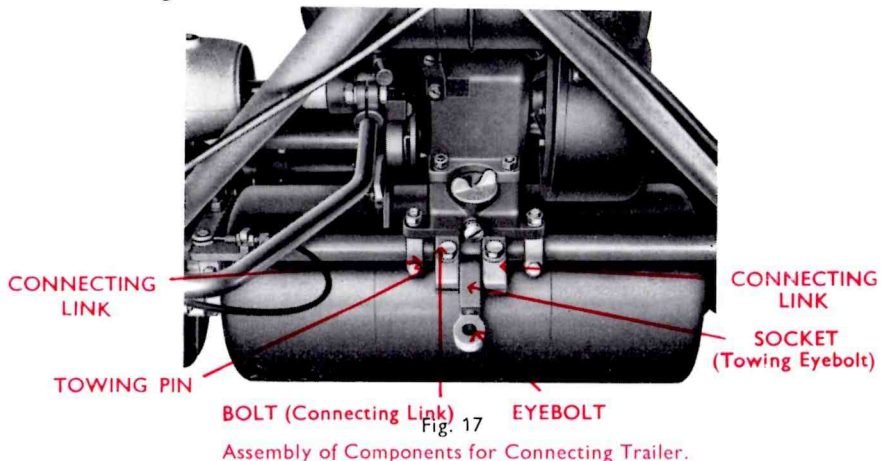
It will be noted that there are four sets of holes, but only two should be used at once. The purpose of four holes is to provide against possible elongation or possible wear through the action of shearing.

TRAILER SEAT

TRAILER SEAT CONNECTION

The assembly of the components for connecting a Trailer Seat for use with the 20in. machine is shown on Fig. 17.

The component parts comprise the two connecting links, the towing bar, the socket and the eyebolt. The connecting links are split and can be assembled on the rear tie bar without any dismantling.



HANDLE BAR CLUTCH CONTROLS

Fig. 18 shows the assembly position of the clutch controls which have been transferred on to the handlebar cross member, and it will be found that this arrangement is more convenient when controlling the machine from the Trailer Seat.



View showing assembly position of clutch controls. Transferred on to cross member. This control arrangement is more convenient when trailer is used.

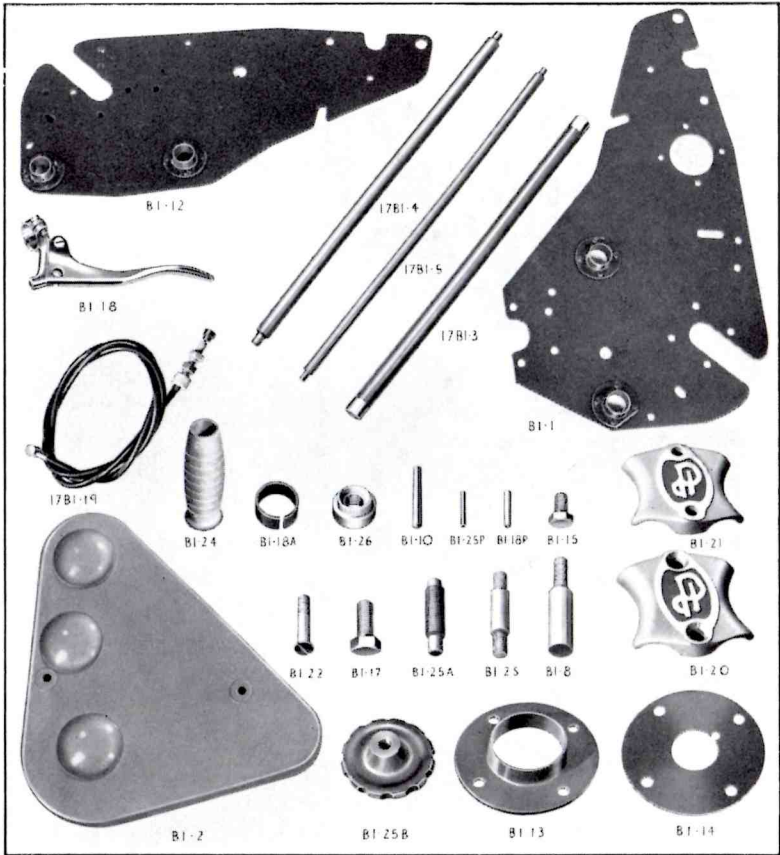
Fig 18

SUPER MK. IV J.P. LAWN MOWER

**AFTER SERVICE AND INSTRUCTIONS FOR
ORDERING SPARE PARTS**

1. We can offer full overhaul and repair service facilities, to be carried out at our Works. Always see that machines and cutter units returned for overhaul and regrinding are properly packed and labelled with the name and address of the sender securely attached. The overhaul and repairs should be received by us as soon as possible after the close of the cutting season. Consult your dealer early, or in case of difficulty write us direct.
2. The main parts are illustrated on pages 26—32 and the comprehensive list of components is quoted with the respective part numbers. Always give part number and description in full.
3. When ordering spare parts always quote the number of the machine or the cutter unit. The serial number of the machine and the cutter unit will be found stamped on a plate attached to the side-frame in each instance, and these numbers should be quoted in all correspondence.
4. All machines and component parts must be consigned to us carriage paid, addressed to the 'Service Department'; Old and worn-out parts sent as patterns, which we consider are obsolete and of no further use, are not returned unless we are specially requested to do so at the time they are sent to us.
5. If required, we are prepared to submit an estimate before proceeding with any repairs. If the estimate is not accepted, we may make a small charge to cover mechanic's time in dismantling and inspection for report.
6. Estimates must be treated as approximate only. We reserve the right to include additional parts should they be found necessary on further examination to make the repairs a satisfactory job.

PARTS LIST



<i>Part No.</i>	<i>Description</i>
B1-1	Sideframe—L.H.
B1-2	Transmission Cover
B1-28	Stud—Transmission Cover
15B1-3	Main Tie Bar
17B1-3	Main Tie Bar
20B1-3	Main Tie Bar
15B1-4	Front Tie Bar
17B1-4	Front Tie Bar
20B1-4	Front Tie Bar
15B1-5	Lower Tie Bar
17B1-5	Lower Tie Bar
20B1-5	Lower Tie Bar
B1-8	Unit Bearing Stud
B1-9	Locating Block
B1-10	Taper Pin—Main Frame
B1-12	Sideframe—R.H.
B1-13	Bearing Housing
B1-14	Cover Plate—Freewheel

<i>Part No.</i>	<i>Description</i>
B1-15	Bolt—Bearing Housing
B1-17	Bolt—Handlebar
B1-18	Control Lever—Brakeband
B1-18A	Sleeve—Control Lever
B1-18P	Pin—Control Lever Sleeve
15B1-19	Cable—Brakeband Control
17B1-19	Cable—Brakeband Control
20B1-19	Cable—Brakeband Control
B1-20	Handlebar Clip—Top
B1-21	Handlebar Clip—Bottom
B1-22	Bolt—Handlebar Clip
B1-24	Handlebar Grip
B1-25	Handwheel
B1-26	Anchor Bush
*20B1-27	Handle Bar Cross Tube
*20B1-28	Saddle Washer
*20B1-28S	Set screw
*Not illustrated	

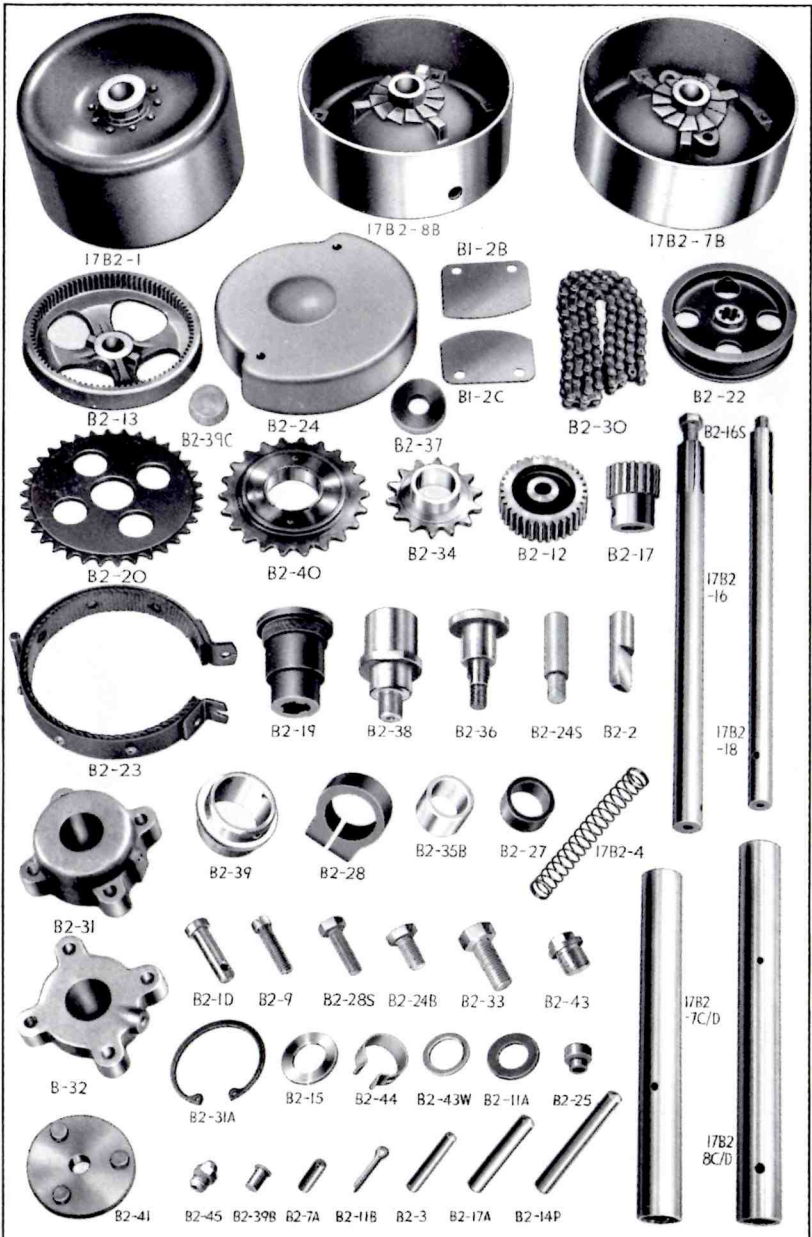
PARTS LIST



<i>Part No.</i>	<i>Description</i>
EE9	Rear Axle Bearing
LS9	Freewheel Bearing
RL6	Cutter Bearing
RL8	Sprocket Bearing
250 NF	$\frac{1}{2}$ B.S.F. Nut
250 SW	$\frac{1}{2}$ Spring Washer
250 W	$\frac{1}{2}$ Plain Washer
312 NF	$\frac{5}{16}$ B.S.F. Nut
312 SW	$\frac{5}{16}$ Spring Washer
312 W	$\frac{5}{16}$ Plain Washer
375 NF	$\frac{3}{8}$ B.S.F. Nut

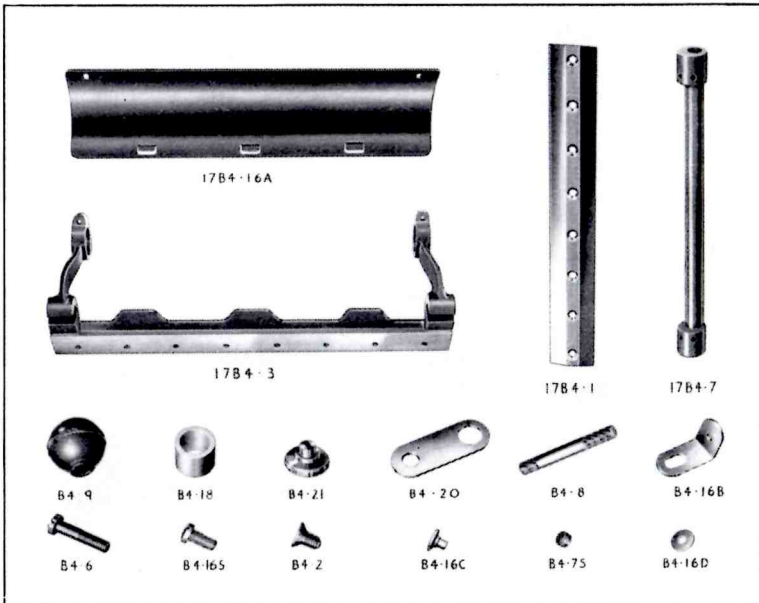
<i>Part No.</i>	<i>Description</i>
375 SW	$\frac{3}{8}$ Spring Washer
375 W	$\frac{3}{8}$ Plain Washer
500 NF	$\frac{1}{2}$ B.S.F. Nut
500 W	$\frac{1}{2}$ Plain Washer
15B6-0	Grassbox
17B6-0	Grassbox
20B6-0	Grassbox
15B1-16A/B	Handlebar—L.H. & R.H.
17B1-16A/B	Handlebar—L.H. & R.H.
20B1-16A/B	Handlebar—L.H. & R.H.

PARTS LIST

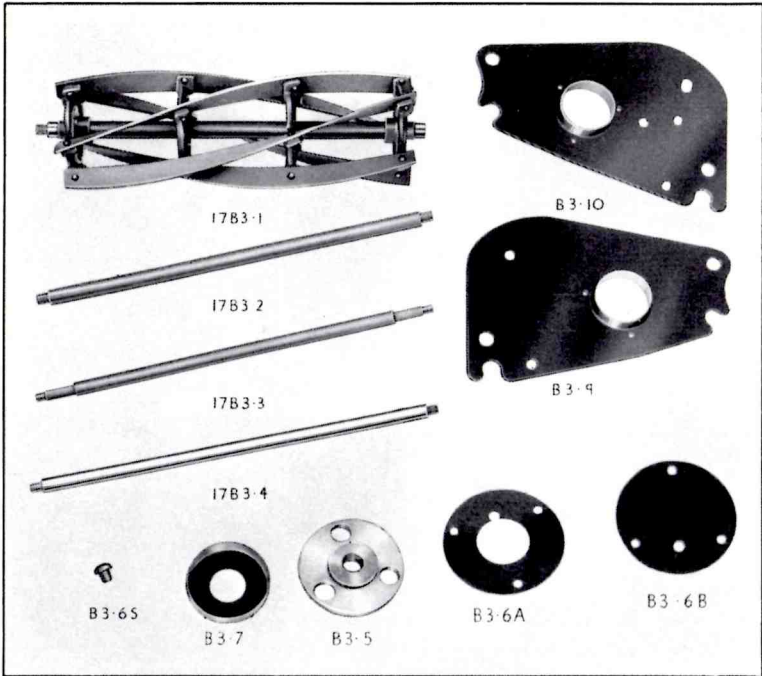


PARTS LIST

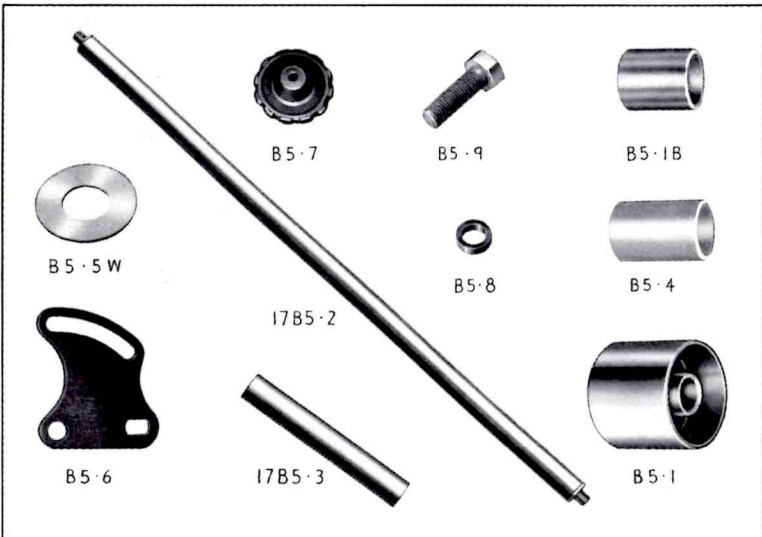
<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
20B2-4	Plunger Spring	17B2-18	Pinion Shaft
B2-7A	Dowel—Half Gear Case	20B2-18	Pinion Shaft
B2-7B	Planet—Half Gear Case	B2-19	Sleeve—Chainwheel
15B2-7C/D	Planet Gear Case Tube	B2-20	Chainwheel
17B2-7C/D	Planet Gear Case Tube	B2-22	Brake Drum
20B2-7C/D	Planet Gear Case Tube	B2-23	Brake Band
B2-8B	Annular Gear Case	B2-24	Brake Band Cover
15B2-8C/D	Annular Gear Case Tube	B2-24s	Stud—Brake Band Cover
17B2-8C/D	Annular Gear Case Tube	B2-24B	Belt—Brake Band Cover
20B2-8C/D	Annular Gear Case Tube	B2-25	Nipple Seating
B2-9	Screw—Gear Case	B2-27	Distance Piece—Rear Axle
B2-11A	Washer—Planet Axle	B2-28	Retaining Collar
B2-11B	Split Pin—Planet Axle	B2-28s	Locking Bolt
B2-12	Planet Gear	B2-30	Chain
B2-13	Annular Gear	B2-31	Bearing Housing—L.H.
B2-14P	Taper Pin—Annular Gear	B2-31A	Internal Circlip
B2-15	Thrust Washer	B2-32	Bearing Housing—R.H.
15B2-16	Shaft—Annular Gear	B2-33	Setscrew
17B2-16	Shaft—Annular Gear	B2-34	Jockey Sprocket
20B2-16	Shaft—Annular Gear	B2-35	Sleeve—Jockey Sprocket
B2-16s	Setscrew	B2-35B	Bush—Jockey Sprocket
B2-17	Pinion	B2-36	Pin—Jockey Sprocket
15B2-1	Outer Drum—Rear Axle	B2-37	Distance Piece—Jockey Sprocket
17B2-1	Outer Drum—Rear Axle	B2-38	Freewheel Shaft
20B2-1	Outer Drum—Rear Axle	B2-39	Freewheel Bush
B2-11D	Oiler	B2-39B	Copper Rivet
B2-1E	Flip-Flap Lubricator	B2-39C	Cork
B2-2	Plunger Pawl	B2-40	Freewheel
B2-3	Taper Pin	B2-41	Cutter Coupling—Chassis
15B2-4	Plunger Spring	B2-43	Plug—Oiler
17B2-4	Plunger Spring	B2-44	Oil Hole Cover
B2-17A	Taper Pin—Pinion	B2-45	Grease Nipple
15B2-18	Pinion Shaft		



<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
17B4-16	Deflector Plate	B4-2	Screw—Shear Blade
20B4-16	Deflector Plate	17B4-3	Shear Blade Carrier
B4-16S	Screw—Deflector Plate	B4-6	Locking Bolt
B4-18	Spacing Collar	15B4-7	Eccentric Adjuster Tube
B4-20	Link—Alignment Lever	17B4-7	Eccentric Adjuster Tube
B4-21	Eccentric—Alignment Lever	20B4-7	Eccentric Adjuster Tube
B4-22	Unit Locating Pin	B4-7S	Grubscrew
15B4-1	Shear Blade	B4-8	Adjusting Handle
17B4-1	Shear Blade	B4-9	Adjusting Knob
20B4-1	Shear Blade	15B4-16	Deflector Plate

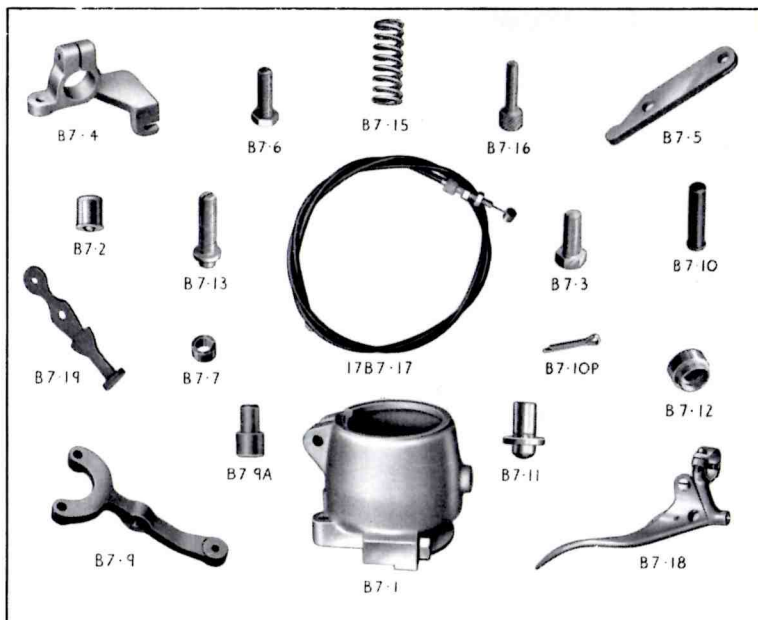


Part No.	Description	Part No.	Description
17B3-1	Rotary Cutter	17B3-4	Unit Tie Bar—Upper
20B3-1	Rotary Cutter	20B3-4	Unit Tie Bar—Upper
15B3-2	Unit Tie Bar—Main	B3-5	Cutter Coupling—Unit
17B3-2	Unit Tie Bar—Main	B3-6A	Bearing Cover Cap—Outer
20B3-2	Unit Tie Bar—Main	B3-6B	Bearing Cover Cap—Outer
15B3-3	Unit Tie Bar—Lower	B3-6S	Screws—Bearing Cover
17B3-3	Unit Tie Bar—Lower	B3-7	Bearing Cover—Inner
20B3-3	Unit Tie Bar—Lower	B3-9	Unit Side Frame—L.H.
15B3-4	Unit Tie Bar—Upper	B3-10	Unit Side Frame—R.H.
17B3-4	Unit Tie Bar—Upper	15B3-1	Rotary Cutter
20B3-4	Unit Tie Bar—Upper		



PARTS LIST

<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
B5-1	Front Roller	20B5-3	Spacing Tube—Centre
B5-1B	Bush—Front Roller	B5-4	Spacing Tube—End
15B5-2	Shaft—Front Axle	B5-5W	Washer
17B5-2	Shaft Front Axle	B5-6	Adjuster Arm
20B5-2	Shaft Front Axle	B5-7	Handwheel
15B5-3	Spacing Tube—Centre	B5-8	Pivot Bush
17B5-3	Spacing Tube—Centre	1B5-9	Bolt



<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
B7-1	Clutch Housing	B7-10P	Split Pin—Pivot Pin
B7-2	Oiler	B7-11	Thrust Pin—Clutch
B7-3	Bolt Bearing and Clutch Housing	B7-12	Anchor Bush
B7-4	Pivot Block—Clutch Operating Lever	B7-13	Adjusting Screw Clutch
B7-5	Clutch Operating Lever	B7-15	Clutch Spring
B7-6	Pivot Bolt	B7-16	Adjusting Screw—Cable
B7-7	Bush—Pivot Bolt	15B7-17	Cable—Cutter Clutch Control
B7-9	Clutch Fork	17B7-17	Cable—Cutter Clutch Control
B7-9A	Retaining Pin—Clutch Spring	20B7-17	Cable—Cutter Clutch Control
B7-10	Pivot Pin—Clutch	B7-18	Control Lever—Clutch
		B7-19	Cable Clips

PARTS LIST



<i>Part No.</i>	<i>Description</i>	<i>Part No.</i>	<i>Description</i>
15B8-1	Engine	15B8-10	Engine Shaft
17B8-1	Engine	17B8-10	Engine Shaft
20B8-1	Engine	20B8-10	Engine Shaft
B8-2	Eyebolt—Engine Mounting	B8-11	Clutch—Inner Member
B8-2S	Setscrew	B8-12	Clutch—Outer Member
B8-5	Coupling	B8-13	Clutch Plate—Steel
B8-5K	Key—Coupling	B8-15	Clutch Plate—Phos. Bronze
B8-5P	Taper Pin—Coupling	B8-16	Thrust Race Complete
B8-6	Starting Dog	B8-20	Quadrant—Kick Start
B8-8	Sprocket Sleeve	B8-20D	Locking Bolt—Kick Start
B8-9	Sprocket	B8-21	Lever—Kick Start

**Where the Part Number is prefaced by
 15, 17 or 20, this indicates the size of the
 machine i.e. 15", 17" or 20" cut. Otherwise all
 Part Numbers are common to each size.**

