







## FOREWORD

**T**HE J.P. SIMPLEX POWER-MOWER embraces the unique features of standard J.P. design, providing for simplicity of adjustment, smooth running and a delightful ease of manipulation; the application of power to this machine has been the subject of great care.

Only the best and most suitable materials are employed, and a precision interchangeable accuracy of workmanship in manufacture ensures the production of a machine capable of giving a high standard of efficiency and reliable service.

Use this machine as you would a high grade mechanism; furthermore, proper care and attention to these instructions will give you the desired results.



**THE J.P. ENGINEERING CO. LTD.**

*Manufacturers of J.P. Super Lawnmowers*

**MEYNELL ROAD, LEICESTER, Eng.**

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## **The J.P. Simplex Power-Mower Instructions**

### **STARTING PREPARATION.**

ADJUST the shear blade to the rotary cutter by the handwheel, so that the blades will spin with a light audible contact. (See Rotary Cutter Adjustment, para. 7.)

ADJUST the front rollers for height of cut, afterwards tighten handwheel securely. (See Front Roller Adjustment, Para 8.)

MIX in a clean petrol can One Gallon of good grade petrol and one half-pint of Castrol XL. Engine Oil. Shake **most thoroughly** and pour sufficient for immediate use only into petrol tank through the gauze filter.

REMOVE ignition plug and see that points are clean and free from oil and soot. Replace and screw firmly on the sealing washer.

ATTACH grassbox. (See para. 17, Fig. 6.)

TURN on Petrol Tap.

ADJUST Carburettor throttle lever on handlebar, to small arrow mark, press carburettor tickler until petrol just commences to flow. Close carburettor air strangler. Do not close strangler if engine is warm.

WIND the starting rope on to the engine pulley several coils and pull off sharply in a clockwise direction.

IMMEDIATELY engine fires and gets under way, open carburettor air strangler. (See Operating Instructions in the Villiers Engine Handbook, Pages 1 and 2.)



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## LUBRICATION

The following oiling points on the machine should receive attention:—

### **1.—BACK ROLLER (Every two months).**

The centre section of the back roller contains the epicyclic speed-up gears that run in an oil bath charged before delivery. The oil should be kept to its level by periodically filling the flip-flap lubricator, positioned in the rear boss of the small side frame. Close the flap afterwards to prevent the entrance of dirt. Oil the drum ratchets through the two holes in each end of roller, pushing in the brass sealer with the end of the oil can nozzle.

### **2.—CUTTER DRIVING CHAIN (Every two months).**

Unscrew with the slotted end of the box spanner, the large screwed cover, Part No. 1-4. Oil the chain with a light lubricating oil, at the same time, slowly turn the rotary cutter. Replace the cover and screw it up tight to prevent leakage.

### **3.—ENGINE SHAFT BEARING, THRUST RACE AND CHAIN (Every two months).**

Unscrew and take off the nuts of the large transmission cover, also the top cap of main frame. With the chain cover and cap removed, the ball bearing, the thrust race and the chain are accessible. Good quality thick grease should be applied to the bearing and the thrust race, and a light machine oil to the chain. Replace the bearing cap and chain cover, screw up nuts secure and tight.

### **4.—SMALL CUTTER BALL BEARING (Every three months).**

Unscrew with the slotted end of the box spanner, the screw cover in the small side frame. Good quality thick grease should be applied after first removing all traces of dirt and grit from frame. Replace the cover and screw up tight.

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## 5.—DRIVING CLUTCH (Daily).

The multiplate driving clutch should be lubricated daily with very **light thin machine oil** through the flip-flap lubricator on top of the engine shaft frame cap, also occasionally flush the plates by applying petrol through the lubricator. This will keep the plates free and will prevent them from becoming sluggish in action.

## 6.—FRONT AXLE (Frequently).

- (a) Apply oil on the shaft at the space between the wood rollers, to facilitate the oil feed tip machine on each side.
- (b) Where light alloy metal front rollers are fitted as special, these are provided with self-lubricating bearings and a supplementary reservoir, and need no attention.
- (c) For cleaning, in addition to lubrication, the axle may be removed by unscrewing from the aluminium side frames the two supporting studs, having first removed screwed handwheel and spring washer.

**Important:**—Use good quality oil. We supply a suitable J.P. brand specially refined oil.

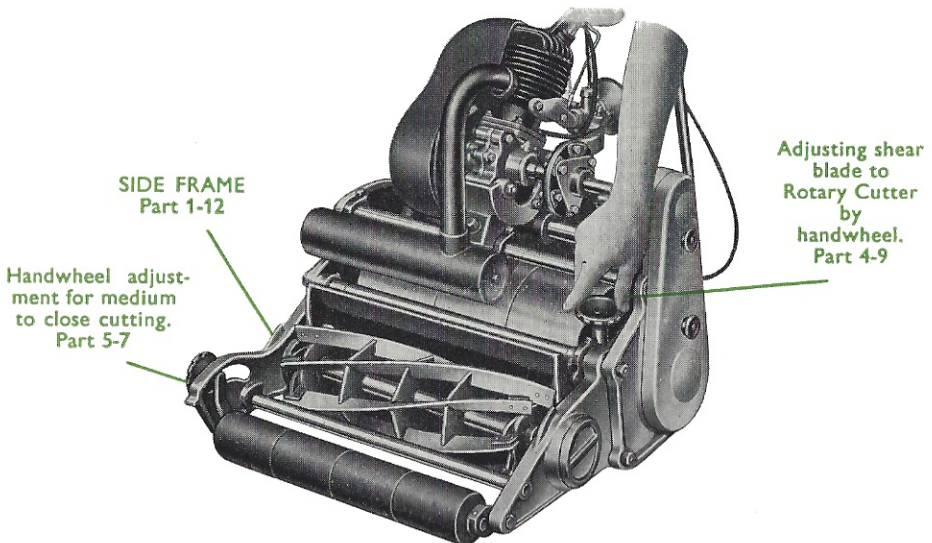


Fig. 1.

## ADJUSTMENT

### 7.—SETTING THE ROTARY CUTTER TO THE SHEAR BLADE.

The rotary cutter works against a bottom shear blade, and the latter is adjusted and brought into contact with the rotary cutter by turning the handwheel 4-9 (Fig. 1) in the direction of arrow.

Turn the handwheel just sufficient until a light audible contact is heard as the cutter is spun round; in spinning the cutter, keep the hand at the top of machine away from the shear blade, otherwise the fingers may be caught and badly cut.

**Do not turn handwheel too far** as this will only make a harsh contact, thereby unnecessarily increasing the wear on the blades.

### 8.—ADJUSTING FRONT ROLLERS FOR CLOSE TO MEDIUM CUTTING.

The adjustment for length the grass is to be cut is made by handwheel 5-7 (See Fig. 1). The illustration shows the machine set for cutting a heavy crop. This does not mean a hay field, extra long grass must be cut with a scythe before using the lawnmower. This handwheel 5-7 should not be set too far back when going over the lawns for the first time in the season: keep it well in front of the arrow mark, which is above the slot on the side frame 1-12. As the ground gets hard and firm, the lever can be set further back until the machine will be set so low that it will practically shave the lawn. This is ideal for bowling greens and tennis courts, but unless the ground is very level and hard, the lever should not be set below the arrow mark.

After moving the handwheel, be careful to re-tighten it firmly to prevent the adjustment shifting.



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## 9.—REMOVING THE ROTARY CUTTER FOR SHARPENING.

If proper care is taken to adjust, oil and clean the cutters as in the preceding paragraphs, the rotary cutter should work for two seasons before becoming dull. It is easily removed from the machine for re-sharpening. Illustrations 2 and 3 show how this is done. First **thoroughly** clean machine, removing **all** grit, dust and place on a large sheet of clean paper, unscrew the small screw cover 1-13, then remove the large screw cover 1-4.

In the recess of the chain wheel will be seen a cork which retains the safety shearing rivets in position, and this should first be removed. At the bottom of the recess will then be seen the small cutter nut 3-3 which should be unscrewed a couple of turns with the box spanner supplied with the kit (as illustrated in Fig. 2). Then tap the end of the spanner lightly with a block of wood to loosen the cutter shaft 3-2; remove the nut and with the spanner handle push the shaft inwards until the opposite end can be grasped with the left hand. Holding the cutter with the right hand, the shaft may now be drawn completely out of the machine, and the rotary cutter simply lifted from the frames as shown in Fig. 3.

Replace the shaft and nut and the caps in the machine to prevent dust getting in, and, if need be, oil the shaft to prevent it rusting.

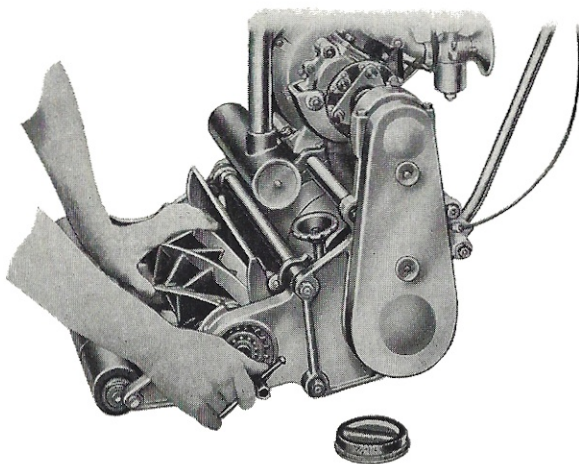


Fig. 2.

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## 10.—REPLACING THE ROTARY CUTTER.

Before putting the cutter back, examine the cone ends and carefully remove **all** trace of dirt and grit. It will be found that one end has three keyways formed in it. Place this end over the projecting cone of the sprocket wheel sleeve 3-4, which may be seen on the chain gear box side, and will be recognized by three keyways similar to those in the cutter. Insert the shaft 3-2 from the other side of the machine, turning it to bring its grooves opposite the keyways in the cutter and sprocket wheel sleeve (a mark is provided on the edge of the hub of the rotary cutter to correspond with similar marks on the projecting cone of the sprocket wheel sleeve to facilitate this), then push it firmly home, re-fit the shaft nut and screw up tight. Replace cork into the recess of the chain wheel, also the large and small covers and screw up tight.

**Note.**—The slightest trace of dirt or grit on shaft or the cones of cutter will throw it out of true.

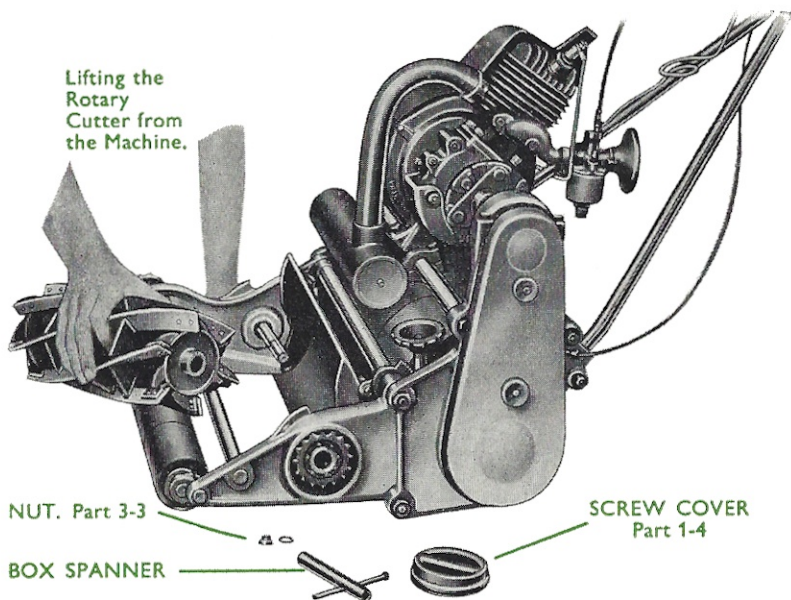


Fig. 3.

### 11.—REVERSING THE SHEAR BLADE.

When the front edge of shear blade is worn, it should be reversed to the opposite side. To do this, lay the machine on its side and, using a **wide** screwdriver, take out the shear blade screws. Then lift the blade off the frame face, **clean and oil both faces**, turn blade round with the new edge to the rotary cutter. Insert screws and half tighten, then finally screw up each one hard and tight. Adjust for alignment if necessary to instruction (Parallelism of Cutters, para. 12).

### 12.—PARALLELISM OF CUTTERS.

The mower is set and locked before despatch to cut equally along the whole length of the blades when adjusted as per paragraph 7, page 5. It should not need further setting unless it has been dismantled or subjected to excessive shocks, or through the rotary cutter fouling an obstruction. To correct any misalignment of the rotary cutter with the shear blade, proceed as follows:—

Turn the machine over or stand it on end, loosen for about two turns the cotter nut that is seen projecting from one end of the bearing of the knife frame; then tap the cotter inwards to free it. Now slightly rotate the phosphor bronze eccentric bearing in the frame by using a suitable punch in the small holes. Rotate in the direction required to bring the bottom blade parallel with the rotary cutter, testing the parallelism of the cutters by cutting with a strip of paper until the knives cut evenly at each end. Re-lock the frame cotter nut after setting.



### 13.—CLUTCH ADJUSTMENT.

The friction driving clutch is of the Multi Phosphor Bronze and Steel Plate Design and apart from lubrication should require very little attention.

The Clutch Assembly is comprised of 10 Plates of the following types:—

- 2 Thick Steel,
- 5 Phosphor Bronze,
- 3 Thin Steel,

and these are assembled in the order as indicated in the reference table, and illustrated in figure 4. There should be approximately  $3/32$ " lateral movement of the clutch on the engine shaft between the drive and the free position. Should the clutch movement in time become restricted through wear, causing the clutch to operate in a sluggish manner, this can be corrected by the following procedure:— Remove the large chain cover on the main side frame, when will be seen a small square headed adjusting screw; release the lock nut of the screw and carefully turn the screw body with the square head in a clockwise direction for about half or three-quarters of a turn and re-lock tightly the lock nut.

The cable adjustment can then be tested by first dropping the clutch lever on the handlebar so that the clutch is engaged, and in this position there should be a slight endwise movement at the end of the outer cable where it enters the adjusting sleeve, which is situated on the large side frame. The cable can then be adjusted by screwing the sleeve slightly inwards or outwards by first unscrewing the lock nut on the inside.

When the cable adjustment has been corrected so that a slight endwise movement is discernible and at the same time there is the approximate  $3/32$ " movement of the clutch, the lock nut of the sleeve should be tightly secured and the chain cover replaced. The order of the Clutch Plate assembly is shown in the general layout of the Engine Shaft components, as illustrated in Fig. 4.

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## 14.—TO REMOVE THE ENGINE UNIT.

The engine can be removed from the machine without any structural dismantling or the disturbance of adjustments.

First turn off the petrol tap and unscrew the petrol pipe union; then release the carburettor from the induction pipe by unscrewing the locking collar screw. The carburettor and petrol pipe can now be removed. Now unscrew the locking bolt of the exhaust bend collar, at the same time also slacken off a couple of turns the screws of the silencer clips on the front tie bar. This will allow the silencer to swing in a downwards direction, at the same time will enable the bend to be withdrawn clear of the cylinder spigot.

Unscrew the nuts and take out the bolts of the flexible coupling, incidentally, only three bolts need be removed provided they are alternate ones.

Release the cradle clip screws on the rear tie bar a couple of turns, these can then be tapped sideways clear from the cradle bearing. Unscrew and take off the nut and washer of the eyebolt on the front tie bar, the engine will now slide along the two tie bars and can be lifted clear of the machine. It is not necessary to take the engine out of its mounting cradle to remove the cylinder for decarbonizing purposes: all that is needed for this is to remove the air cowl by unscrewing the two screws on the side of the crank case and one on top of the cylinder head. (See decarbonizing instructions in Engine Handbook.)

INDEX NO.	PART NO.	DESCRIPTION	N <sup>o</sup> OFF
1	19-8-13	CLUTCH PLATES - THICK STEEL	2
2	19-8-14	CLUTCH PLATES - PHOS. BRONZE	5
3	19-8-15	CLUTCH PLATES - THIN STEEL	3
4	19-8-12	OUTER CLUTCH MEMBER	1

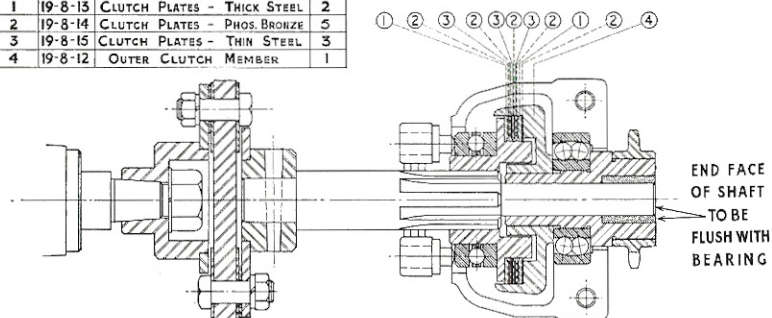


Fig. 4.

### 15.—REPLACING THE ENGINE UNIT.

Place the engine cradle bearing on the rear stretcher bar with the two attaching clips positioned one each side, then lower on to the front stretcher bar with the eyebolt engaged between the slot of the cradle. The engine will now slide along the stretcher bars up to the flexible coupling, when it can be coupled up; make sure that the coupling bolt nuts are tight and secure, after first trueing up the engine shaft.

At this stage, it is advisable to make sure that the engine is correctly positioned, and this can be checked by first removing the large chain cover. The small end of the engine shaft will then be seen inside the bronze bearing of the sprocket sleeve, and with the engine coupled to the flexible coupling, it should be so positioned on the stretcher bars for the end face of the engine shaft to be flush with the bronze bearing of the sprocket sleeve, as illustrated in Fig. 4.

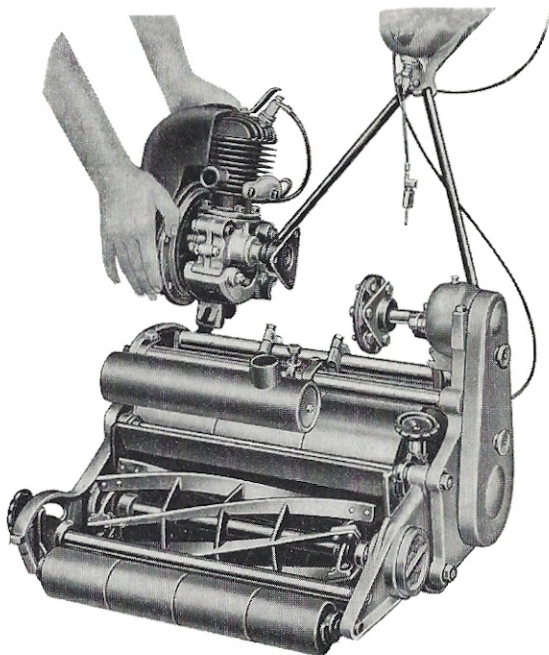


Fig. 5.



The two rear cradle clips can be positioned on to the cradle bearing and with the eyebolt nut and washer at the front can be tightened up. The silencer can now be lifted upwards into position, at the same time engaging the exhaust bend on to the cylinder spigot, and, when correctly positioned, the silencer front clip bolts can be tightened together with the clip collar on the exhaust bend.

## **16.—REPLACING THE SAFETY COPPER SHEARING PINS.**

There are two copper safety shearing pins which engage the cutter bearing sleeve and the sprocket sleeve, and these are accessible by unscrewing the large screw cover at the end of the cutter on the main chain case side frame. In the event of an obstruction fouling the cutters during the working of the machine, the two rivets which are fitted will be caused to shear, and this action greatly assists in preventing damage to cutter blades and transmission by absorbing the shock of the obstruction.

To replace the shear pins, first remove the cork in the recess of the sleeve and get the holes of the two sleeves in line, when the sheared portions can be knocked through with a small punch from the outside of the sleeve into the recess. Take particular care to see that no portion of any pin is left inside the chain case. Two new Shear Pins can now be fitted — these should be inserted from the inside with the head of the rivet in the recess. Replace the cork to prevent the pins dropping out and screw up the chain cover tight.

## **17.—ATTACHING GRASSBOX.**

The fitting on of the grassbox is shown in Fig. 6. The notches in the two metal wings, 6-6, 6-7, of the grassbox fit on the cross rod 1-7, that lies between the front rollers and the cutter, and the toes of the wings fit under the frame bosses. See that the box is well down on the rod or it may foul the cutter, which is a bad thing for both.

## ★ Supplementary Instructions ★

There are several points in the Simplex Power Lawnmower Instruction Book to which we require to make reference, which have arisen through design modifications.

### **1.—STARTING PREPARATION.**

In the third paragraph, under the title Starting Preparation, a mixture of oil and petrol is specified in the proportion of one  $\frac{1}{2}$  pint of Castrol XL to one gallon of petrol. It has been found after a period of careful research that the oil petrol ratio can be reduced and that a mixture of one pint of Castrol XL to 20 parts of petrol will ensure adequate lubrication. This is actually between  $\frac{1}{3}$  and  $\frac{1}{2}$  pint of oil to one gallon of petrol.

### **FOUR STROKE ENGINES.**

In the instance of machines fitted with four-stroke Engines, petrol mixture should not be used. Please refer to the Villiers Handbook for Mark 10 and 12 engines, for starting preparation and instructions concerning the requirements of oil and petrol. These are referred to on page 4 of the Villiers Instruction Book.

### **2.—DRIVING CLUTCH.**

On page 4 in paragraph No. 5, DRIVING CLUTCH, reference is made to the lubrication requirements, which instructions should still be adhered to.

We require to supplement the Instruction by stating that this driving clutch has now become the cutter driving clutch, as with a modification in design an independent clutch has been added — this is assembled and fitted direct on to the end of the rear roller and is controlled by the Bowden cable control on the right-hand handlebar.

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This is actually now the machine driving clutch and it is of the friction band and metal drum type and requires no lubrication whatever. Its operation is quite simple, after the cutters have been adjusted and the engine has been started and it is required to put the machine into motion, all that is necessary is for the clutch lever on the handlebar to be raised and retained in the raised position, and to stop the machine simply release the grip of the lever.

The adjustment is controlled by a screwed adjuster passing through the lugs of the brake band and to take up any wear of the clutch the procedure should be to first remove the aluminium cover, then unscrew for a couple of turns the nut on the adjuster which is situated in between the two clutch band lugs, the nut on the outside of the lug should now be screwed down to the face of the lug and the inside nut.

The adjustment should be made until the adjuster has taken up any excess endwise movement of the outer cable. The correct adjustment is that there should be a slight endwise movement of the cable when the clutch lever on the handlebar is in the disengaged position.

Tighten up the nuts securely after adjustment and replace the cover.

### **3.—LUBRICATION.**

On all machines which are fitted with the independent driving clutch, the point of lubrication for the epicyclic speed-up gears is not through the flip-flap lubricator which is referred to as being positioned on the rear boss of the small side frame. The epicyclic gears are now lubricated from the end of the driving clutch shaft and the following procedure should be carried out:—

First remove the clutch cover.

On the end of the annular gear shaft or clutch shaft will be seen a small hexagon head screw, which is stamped "oil". This should be removed by unscrewing, after first turning the machine on its side, an entry of a charge of oil can then be made down the hollow shaft. Replace oil sealing screw, tighten and replace cover.

## CLUTCH ADJUSTMENT (Amended Instructions).

Owing to modification in design, the instructions for the clutch adjustment in paragraph 13, on page 9 of the Instruction Book, are slightly altered.

We would explain the modification is only a minor one and does not in any way alter the principle of the type of clutch used. Actually, the difference is that the plate clutch assembly now comprises of 3 thick steel and 3 thick phosphor bronze plates, total 6, instead of 2 thick steel, 5 phosphor bronze thin and 3 thin steel, total 10 formerly fitted. We would also point out that there is no alteration to the clutch housing members, Parts 8-11 and 8-12. They are interchangeable to accommodate both the old and the new type clutch plate assembly.

Therefore, for the latest type machines, the following instructions should be referred to:—

The clutch assembly is comprised of 6 plates of the following types:—

3 thick steel plates,

3 thick phosphor bronze plates,

and they are assembled in the order as indicated in Fig. 4 (amended layout.)

There should be approximately  $\frac{3}{32}$ " lateral movement of the clutch on the engine shaft between the drive and the free position. Should the clutch movement in time become restricted through wear, causing the clutch to operate in a sluggish manner, this can be corrected by the following procedure:—

Remove the large chain cover on the side frame when will be seen a small screwed adjuster which locates the clutch spring; unscrew the lock-nut of the screw and carefully screw with a screw-driver in a clockwise direction for  $\frac{1}{2}$  or  $\frac{3}{4}$  of a turn and relock tightly the lock-nut.



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The cable adjustment can then be tested by first dropping or lowering the clutch lever on the handlebar so that the clutch is engaged, and, in this position, there should be a slight endwise movement at the end of the outer cable where it enters the adjusting sleeve which is located on the clutch lever bracket on the rear tie bar.

The cable can then be adjusted by first unlocking the two lock-nuts and screwing them inwards or outwards until there is just a slight endwise movement of the cable.

When the cable adjustment has been corrected so that a slight endwise movement is discernible and at the same time there is the approximate  $\frac{3}{32}$ " movement of the clutch, the lock-nuts of the sleeve should be tightly secured and the chain cover replaced. The order of the Clutch Plate assembly is shown in the general layout of the Engine Shaft components, as illustrated in Fig. 4 (amended layout).

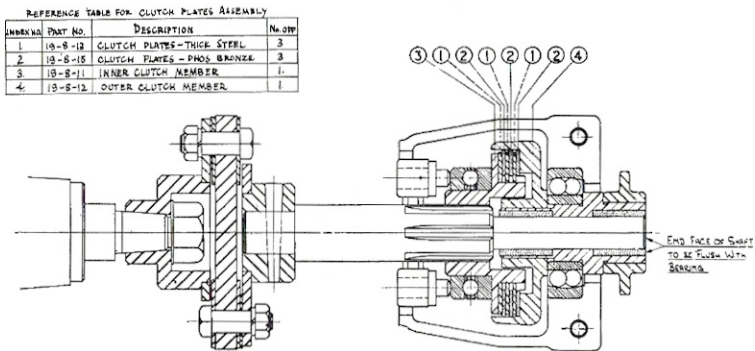


Fig. 4 (amended layout).

### 18.—STORING AND CARE OF MACHINE.

Upon completion of the mowing and before putting the machine away, see that the petrol pipe tap is turned off and the petrol tank should then be emptied of surplus petrol by taking out the drain screw underneath the petrol tank and running off into a container, preferably with a screw top, which can be screwed up tight and put away for future use.

Clean off all clinging grass or dirt. Wipe the rotary cutter and shear blade with an oily rag, this should always be done to prevent rusting and will help to keep the cutters sharp.

Store the machine in a **dry** tool shed.

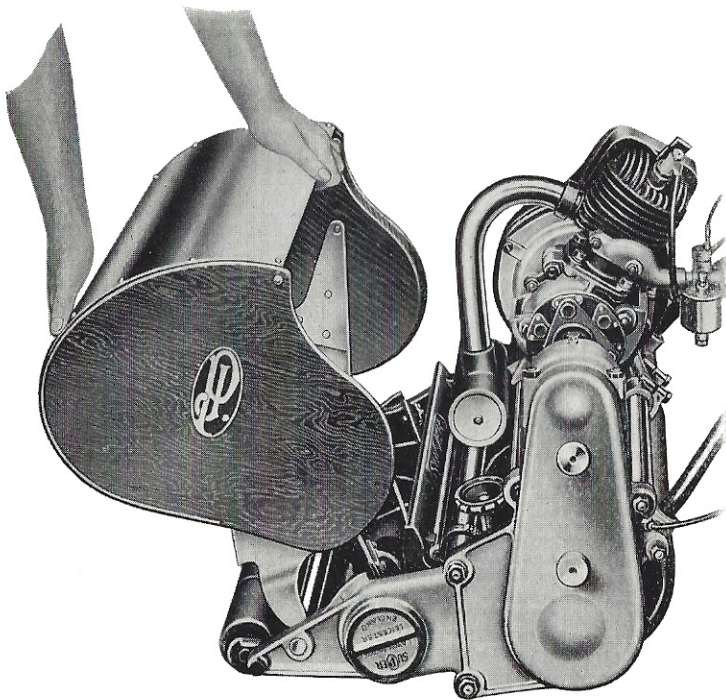


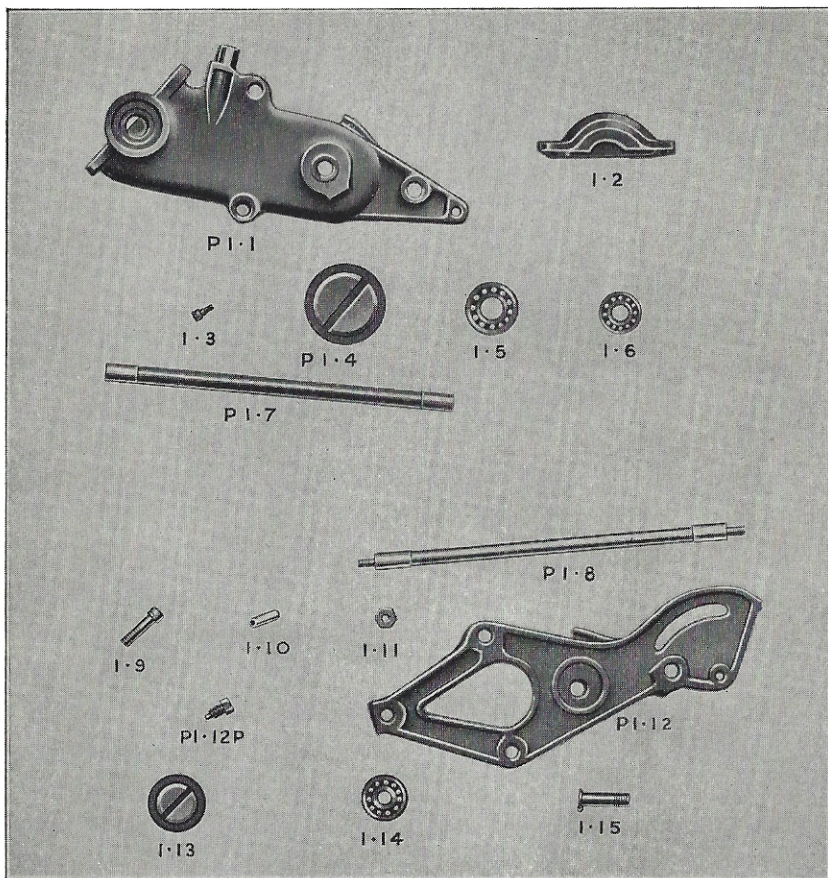
Fig. 6.

## AFTER SERVICE AND INSTRUCTIONS FOR ORDERING SPARE PARTS.

1. Consult your dealer with regard to the overhaul and repair facilities available at our works. Always see that machines and cutters returned for overhaul and re-grinding are properly packed and labelled **with the name and address of the sender securely attached.**
2. The main parts are illustrated in Plates 1-8 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, which you will find stamped on the front edge of the main chain case side frame; it is important that the prefix letters and the serial number reference are quoted in full to ensure that the correct parts are despatched. **Always quote the machine number in correspondence.**
4. All machines and component parts must be consigned to us, carriage paid, addressed to the "Service Department"; goods returned by rail are consigned Carriage Paid. 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 shall 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.
7. Special thin shear blades are required and fitted to Bowling Green and Golf Green Models only, and these should be referred to as "No. 3 Razor Type."



# PARTS LIST

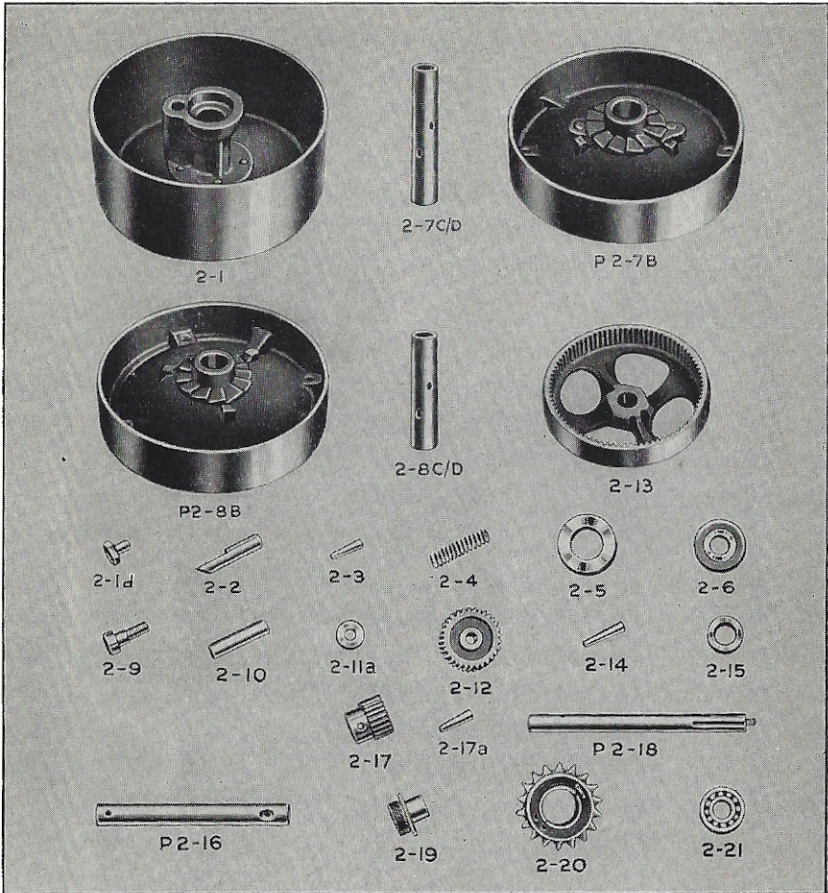


## GROUP 1-0

- |                            |                             |
|----------------------------|-----------------------------|
| P1-1—Chaincase Side Frame  | 1-9—Cotters                 |
| 1-2—Chaincase Cap          | 1-10—Cotter Sleeves         |
| 1-3—Chaincase Cap Screws   | 1-11—Cotter Nut             |
| P1-4—Chaincase Brg. Cap    | P1-12—Removable Side Frame  |
| 1-5—Ball Race              | P1-12P—Retaining Pin        |
| 1-6—Ball Race              | 1-13—Side Frame Bearing Cap |
| P1-7—Front Tie Bar         | 1-14—Ball Race              |
| P1-8—Main Tie Bars         | 1-15—Flip-Flap Lubricator   |
| P1-8N—Main Tie Bar Nuts    | 1-23—Handlebar Tie Bar      |
| P1-8w—Main Tie Bar Washers | 1-24/1—Handlegrips          |



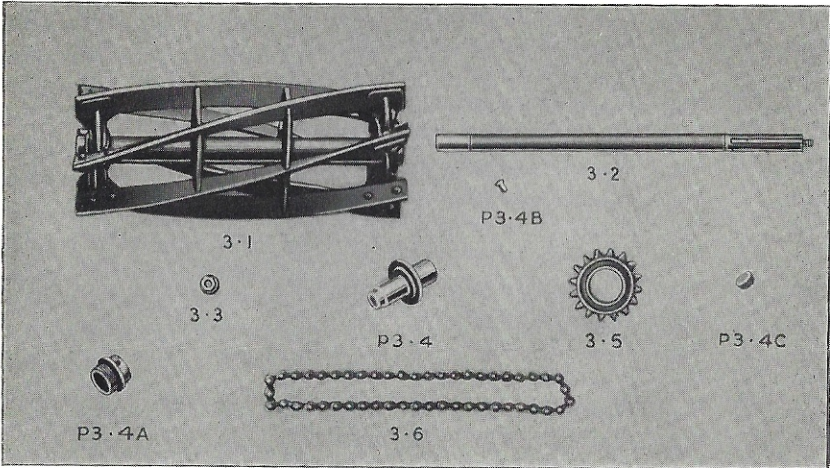
## PARTS LIST—continued



### GROUP 2-0

- |                               |                          |
|-------------------------------|--------------------------|
| 2-1—Outer Drum                | 2-11—Planet Axle Pins    |
| 2-1d—Oilers                   | 2-11A—Axle Washers       |
| 2-2—Plunger Pawl              | 2-11B—Axle Split Pins    |
| 2-3—Taper Pins                | 2-12—Planet Gears        |
| 2-4—Plunger Springs           | 2-13—Annular Gear        |
| 2-5—Large Thrust Washers      | 2-14—Taper Pin           |
| 2-6—Medium Thrust Washer      | 2-15—Annular Gear Washer |
| 2-6E—Dowel Pin                | P2-16—Annular Gear Shaft |
| 2-7A—Gear Case Dowels         | 2-17—Pinion              |
| P2-7B—Planet Gear Case        | 2-17A—Taper Pin          |
| 2-7C/D—Gear Case Tube         | P2-18—Pinion Shaft       |
| P2-8B—Annular Gear Case       | 2-19—Freewheel Sleeve    |
| 2-8C/D—Annular Gear Case Tube | 2-20—Freewheel           |
| 2-9—Gear Case Screws          | 2-21—Ball Race           |
| 2-10—Planet Gear Axles        |                          |

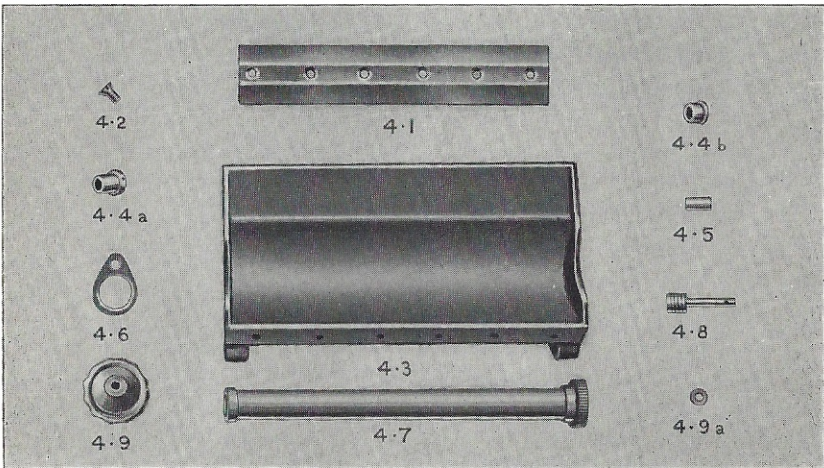
## PARTS LIST—continued



### GROUP 3-0

3-1—Rotary Cutter  
 3-2—Cutter Shaft  
 3-3—Cutter Nut  
 P3-4—Sprocket Sleeve  
 P3-4A—Sprocket Bush

P3-4B—Copper Rivets  
 P3-4C—Cork  
 3-5—Sprocket  
 3-6—Chain



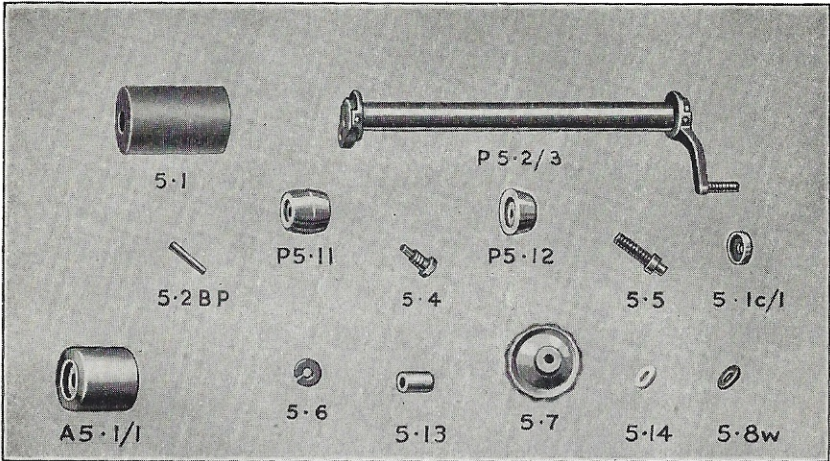
### GROUP 4-0

4-1—Ledger Blade  
 4-2—Ledger Blade Screws  
 4-3—Knife Frame  
 4-4A—Eccentric Pivot Bush  
 4-4B—Plain Pivot Bush  
 4-5—Pivot Pins

4-6—Eccentric Straps  
 4-7—Shear Blade Adjuster  
 4-8—Worm  
 4-9—Handwheel  
 4-9a—Spring Washer  
 4-10—Taper Pin



## PARTS LIST—continued



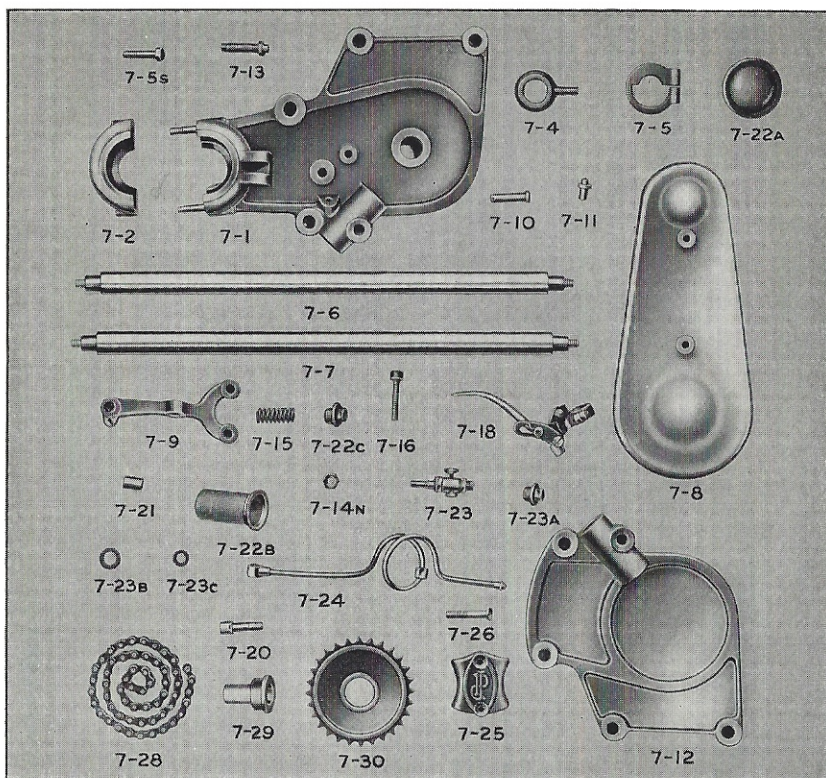
### GROUP 5-0

- |                                |                              |
|--------------------------------|------------------------------|
| A5-1/1—Front Rollers—Aluminium | 5-6—Locking Washer           |
| 5-1—Front Rollers—Wood         | 5-7—Handwheel                |
| 5-1c/1—Front Roller End Caps   | 5-8w—Front Axle Washers      |
| P5-2/3—Front Axle              | P5-11—Centre Spacing Sleeves |
| 5-2BP—Taper Pins               | P5-12—End Spacing Sleeves    |
| 5-4—Axle Pivot Studs           | 5-13—Oilite Bushes           |
| 5-5—Axle Arm Stud              | 5-14—Felt Seals              |

### GROUP 6-0

- |                             |                             |
|-----------------------------|-----------------------------|
| P6-0—Grassbox               | 6-7—Small Wing for Grassbox |
| 6-6—Large Wing for Grassbox |                             |

## PARTS LIST—continued

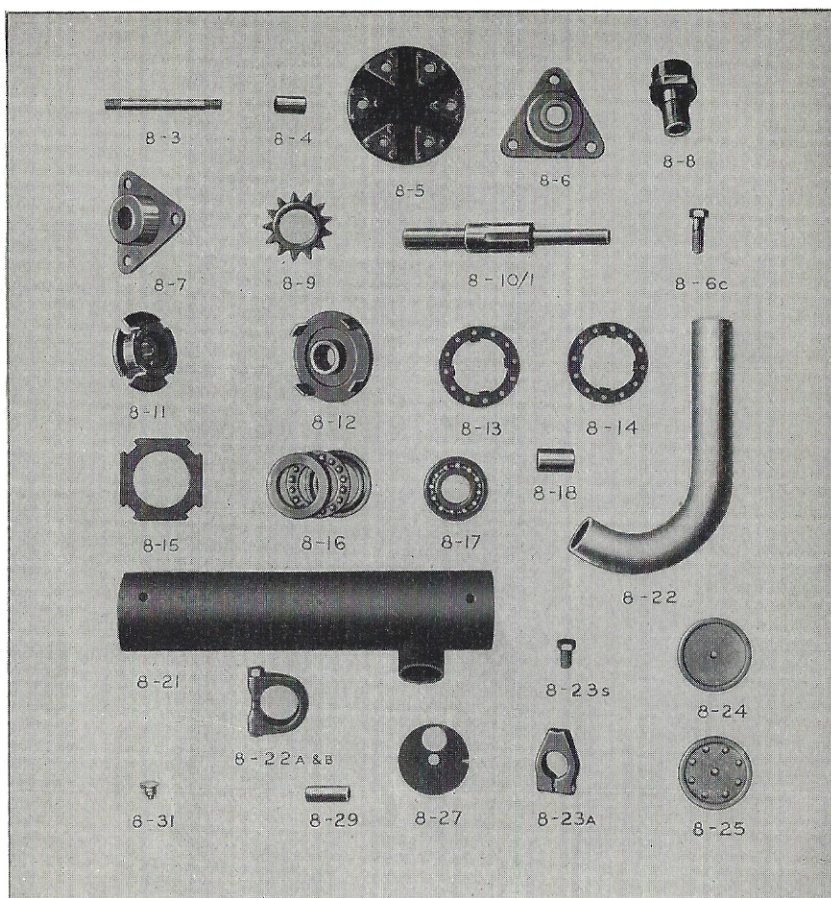


### GROUP 7-0

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|--|--|
| <p>7-1—Chain Drive Side Frame<br/>                     7-2—Bearing Cap<br/>                     7-4—Cradle Eyebolt<br/>                     7-5—Cradle Clips<br/>                     7-5s—Clip Bolts<br/>                     7-6—Cradle Tie Bar—Front<br/>                     7-7—Cradle Tie Bar—Rear<br/>                     7-8—Chain Case<br/>                     7-9—Clutch Fork<br/>                     7-9A—Clutch Spring Retaining Pin<br/>                     7-10—Clutch Pivot Pin<br/>                     7-11—Clutch Thrust Pins<br/>                     7-12—Side Frame—Small<br/>                     7-13—Clutch Adjusting Screw<br/>                     7-14N—Locknut<br/>                     7-15—Clutch Spring<br/>                     7-16—Cable Adjusting Screw<br/>                     7-17A—Clutch Outer Cable<br/>                     7-17B—Clutch Inner Cable<br/>                     7-17C—Cable Nipple (Barrel)<br/>                     7-17D—Cable Thimbles<br/>                     7-17E—Cable Nipple (Pear)</p> | <p>7-18—Clutch Control Lever<br/>                     7-19A—Handlebar—Rt. Hd.<br/>                     7-19B—Handlebar—Lt. Hd.<br/>                     7-20—Handlebar Cotter<br/>                     7-21—Cotter Sleeves<br/>                     7-22—Petrol Tank<br/>                     7-22A—Petrol Tank Cap<br/>                     7-22B—Petrol Strainer<br/>                     7-22C—Drain Plug<br/>                     7-23—Petrol Tap<br/>                     7-23A—Petrol Tap Adaptor<br/>                     7-23B—Fibre Washers for Adaptors<br/>                     7-23C—Fibre Washer for Petrol Tap<br/>                     7-24—Petrol Pipe Spiral<br/>                     7-24A—Petrol Pipe Nut<br/>                     7-24B—Petrol Pipe Nipple<br/>                     7-25—Bottom Handlebar Clip<br/>                     7-26—Handlebar Clip Bolt<br/>                     7-27s—Handlebar Clip Stud<br/>                     7-28—Chain<br/>                     7-29—Chainwheel Sleeve<br/>                     7-30—Chainwheel</p> |
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## PARTS LIST—continued



### GROUP 8-0

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|--------------------------------|--------------------------------|
| 8-1—Engine                     | 8-15—Clutch Plates—Phos-Bronze |
| 8-1A—Spark Plug                | 8-16—Thrust Race Complete      |
| 8-2—Engine Cradle              | 8-17—Engine Shaft Ball Race    |
| 8-3—Engine Bolts               | 8-18—Oilite Bush               |
| 8-3N—Engine Bolt Nut (Special) | 8-19—Carburettor Complete      |
| 8-4—Engine Cradle Bushes       | 8-20—Induction Casting         |
| 8-5—Flexible Coupling          | 8-21—Silencer                  |
| 8-6—Engine Coupling            | 8-22—Exhaust Pipe              |
| 8-6C—Coupling Bolts            | 8-22A—Exhaust Pipe Clip        |
| 8-6N—Coupling Nuts             | 8-22B—Exhaust Pipe Clip Bolt   |
| 8-7—Engine Shaft Coupling      | 8-23A—Silencer Clips           |
| 8-7P—Taper Pin                 | 8-23S—Silencer Clip Screws     |
| 8-8—Sprocket Sleeve            | 8-24—End Cap—Plain             |
| 8-9—Driving Sprocket           | 8-25—End Cap—Drilled           |
| 8-10/1—Engine Shaft            | 8-26/1—Centre Rod              |
| 8-11—Male Clutch               | 8-27—Baffle Plates             |
| 8-12—Female Clutch             | 8-29—Spacing Tubes             |
| 8-13—Clutch Plates—Steel, Thk. | 8-31—Lubricator                |
| 8-14—Clutch Plates—Steel, Thin |                                |





