

'Yeoman'

The purpose of this book is to provide, in the most simple possible manner, a complete guide to the operation of the 'Yeoman'.

Detailed instructions for major maintenance operations, especially those which may become necessary after long service, are not included because such work should be entrusted to the 'Yeoman' Service Dealer.

Instructions for the operation and maintenance of the Villiers Mk40 Engine are contained in the special Engine Handbook issued with each machine. Special instruction sheets are issued for 'Yeoman' attachments.

Brief Specification

ENGINE

See Engine Handbook.

CLUTCH

Single dry plate hand-operated engine clutch.

GEARBOX

Two-ratio gearbox giving the following speeds :

| | TRAVEL | High Ratio | ROTOR | P.T.O. |
|---------|-------------|---------------|------------|--------------|
| 1. | 1.05 m.p.h. | (1.68 k.p.h.) | 220 r.p.m. | 2,150 r.p.m. |
| 2. | 2.38 m.p.h. | (3.81 k.p.h.) | " " | " " |
| Reverse | 1.37 m.p.h. | (2.19 k.p.h.) | " " | " " |
| | | Low Ratio | | |
| 1. | .73 m.p.h. | (1.17 k.p.h.) | 150 r.p.m. | 1,490 r.p.m. |
| 2. | 1.65 m.p.h. | (2.64 k.p.h.) | " " | " " |
| Reverse | .94 m.p.h. | (1.50 k.p.h.) | " " | " " |

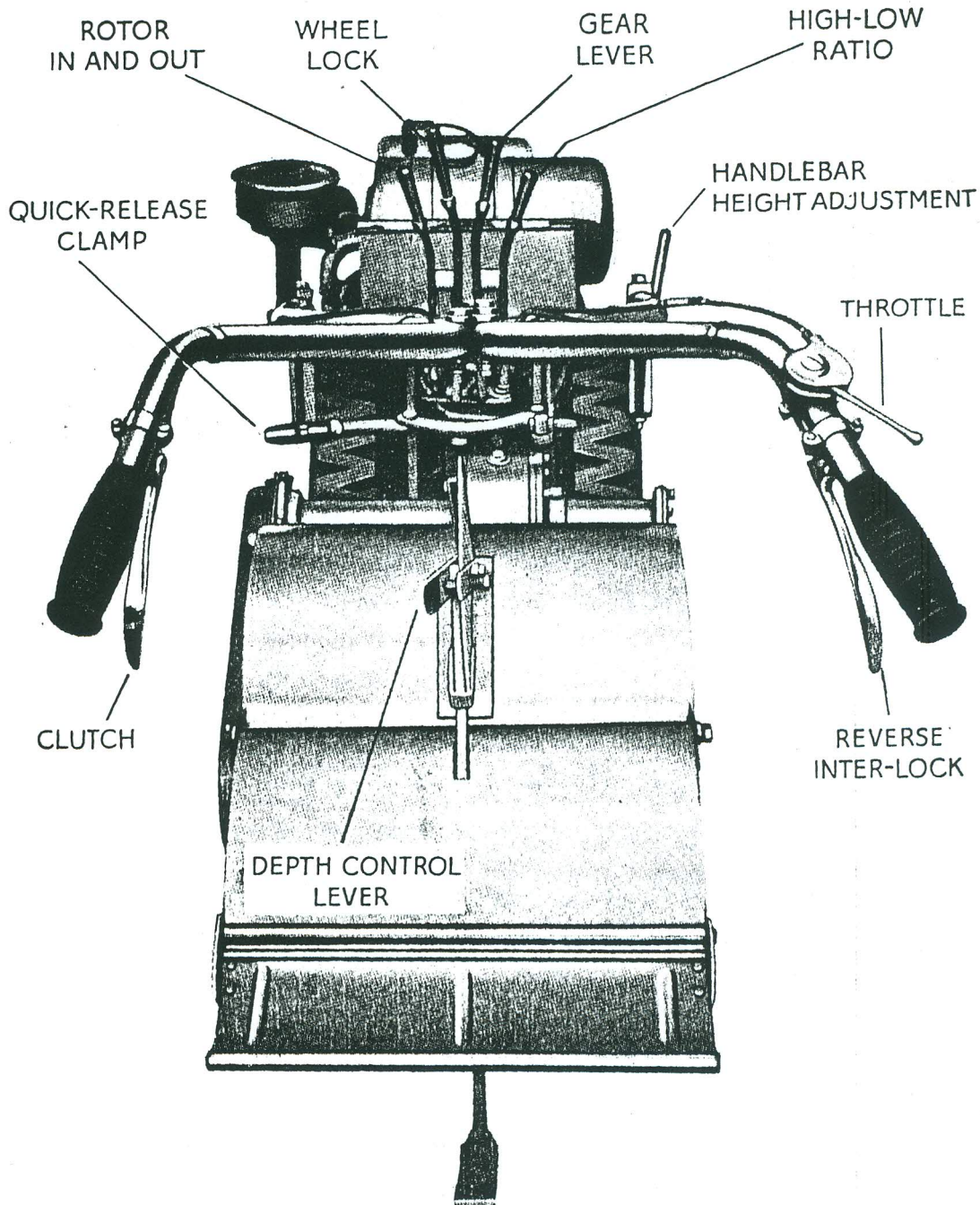


DIAGRAM 1 CONTROLS

MAINTENANCE AND LUBRICATION GUIDE

DAILY MAINTENANCE

(OR EVERY 8 WORKING HOURS)

- 1 CHECK OIL LEVEL IN ENGINE SUMP. TOP UP IF REQUIRED.
- 2 CHECK OIL LEVEL IN AIR CLEANER. TOP UP IF REQUIRED.
- 3 CHECK TIGHTNESS OF BLADE BOLTS.
- 4 CHECK FOR BENT BLADES AND STRAIGHTEN IF REQUIRED.
- 5 WATCH FOR SIGNS OF UNDUE ROTOR CLUTCH SLIP (INDICATED BY CLUTCH BECOMING VERY HOT, ROTOR STOPPING UNNECESSARILY.) ADJUST IF REQUIRED.
- 6 LOOK OUT FOR WIRE OR ANY OBSTRUCTION ROUND THE ENDS OF THE ROTOR.
- 7 CHECK ADJUSTMENT OF WEED CUTTERS. (CORRECT CLEARANCE BETWEEN BLADE AND ROTOR FLANGE IS $\frac{1}{16}$ ").

EVERY THREE DAYS

(OR 24 WORKING HOURS)

- 1 CHECK GEARBOX OIL LEVEL WITH DIPSTICK.
- 2 CHECK OIL LEVEL IN ROTOR DRIVE CHAINCASE.
- 3 CHECK OIL LEVEL IN ROTOR DRIVE BEVEL BOX.
- 4 LUBRICATE ROTOR STUB AXLE WITH ENGINE OIL.
- 5 OIL ALL CONTROLS, HANDLEBAR PIVOTS, DEPTH CONTROL LEVER, SHIELD HINGES AND SNAPLOK CLAMP.
- 6 WASH AIR FILTER IN PETROL AND REFILL WITH CLEAN OIL.
- 7 CHECK TIGHTNESS OF ALL NUTS AND BOLTS.

WEEKLY MAINTENANCE

(OR EVERY 48 WORKING HOURS)

- 1 CHECK ENGINE CLUTCH ADJUSTMENT (ABOUT $\frac{1}{4}$ " OF FREE LEVER).
- 2 DISMANTLE AND CLEAN FUEL FILTER (IF FITTED).

MONTHLY

DRAIN AND REFILL GEARBOX WITH CLEAN OIL

EVERY THREE DAYS

WASH AIR FILTER IN PETROL AND REFILL WITH CLEAN OIL (MORE FREQUENTLY IN DUSTY CONDITIONS)

MONTHLY

DRAIN AND REFILL GEARBOX WITH CLEAN OIL

EVERY THREE DAYS

CHECK OIL LEVEL WITH DIPSTICK

FORTNIGHTLY

CLEAN SPARKING PLUG AND RESET POINTS

DAILY

CHECK OIL LEVEL

WEEKLY

DISMANTLE AND CLEAN FUEL FILTER

DAILY

CHECK ENGINE OIL LEVEL

FORTNIGHTLY

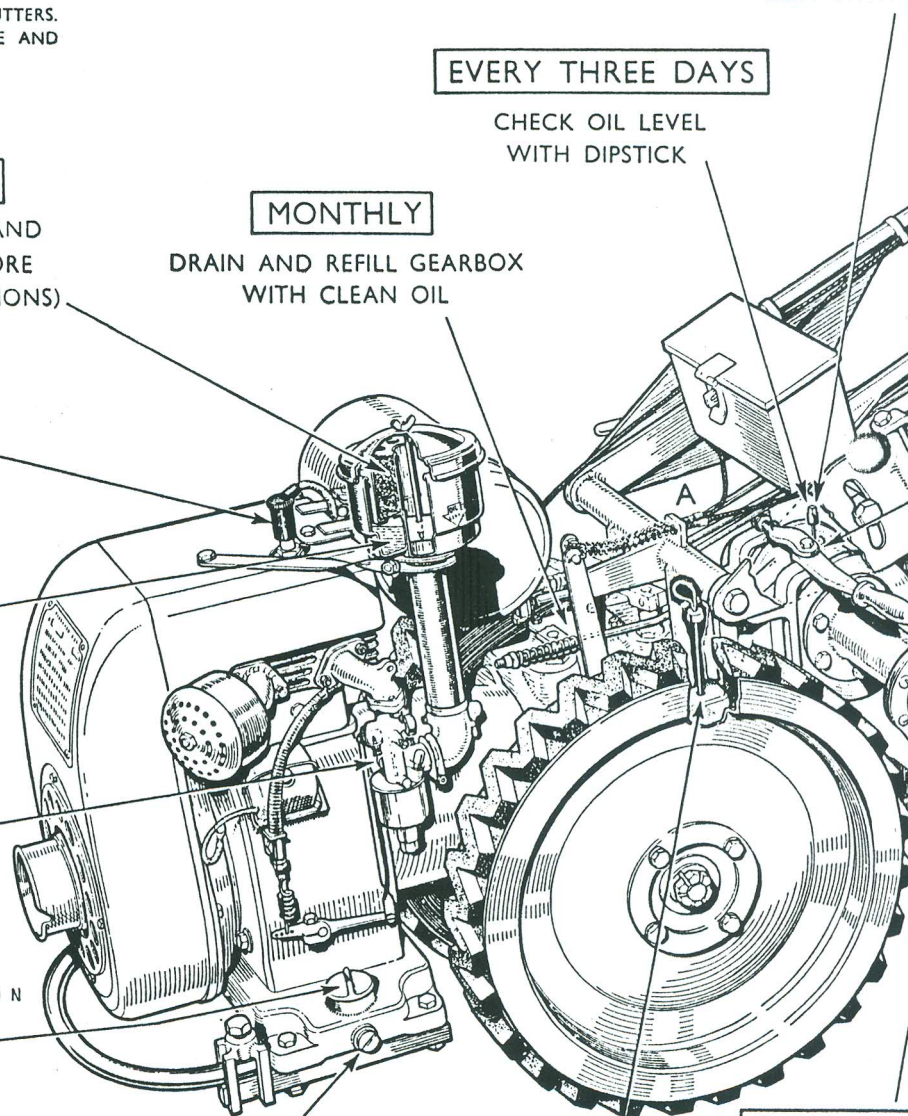
DRAIN ENGINE SUMP AND REFILL WITH CLEAN OIL

EVERY THREE DAYS

LUBRICATE ROTOR STUB AXLE WITH ENGINE OIL

EVERY THREE DAYS

CHECK GEARBOX OIL LEVEL WITH DIPSTICK



FOR COMPLETE ENGINE MAINTENANCE INSTRUCTIONS AND ADJUSTMENTS SEE ENGINE HANDBOOK

FOR THE HOWARD ROTAVATOR "YEOMAN"

MAINTENANCE

CLUTCH ADJUSTMENT (ALLOW
MOVEMENT AT HANDLEBAR

CLEAN FUEL FILTER (ALSO V.O.)

FORTNIGHTLY

(OR EVERY 100 WORKING HOURS)

- 1 DRAIN ENGINE SUMP, WHILE WARM, AND REFILL WITH CLEAN OIL.
- 2 CLEAN SPARKING PLUG AND RESET POINTS.
- 3 CHECK CHAIN ADJUSTMENT (UP AND DOWN MOVEMENT CAN BE CHECKED WITH A SCREWDRIVER THROUGH OIL FILLER HOLE, CORRECT ADJUSTMENT $\frac{1}{8}$ ").

MONTHLY

(OR EVERY 200 WORKING HOURS)

- 1 DRAIN AND REFILL GEARBOX WITH CLEAN OIL.
- 2 DRAIN AND REFILL ROTOR CHAINCASE WITH CLEAN OIL.
- 3 DRAIN AND REFILL ROTOR BEVEL BOX WITH CLEAN OIL.

MONTHLY

REFILL BEVEL
CLEAN OIL

WEEKLY

CHECK ENGINE CLUTCH
ADJUSTMENT (ADJUST AT "A")

EVERY THREE DAYS

LUBRICATE WITH OIL CAN

DAILY

CHECK ADJUSTMENT OF WEED
CUTTERS (CLEARANCE $\frac{1}{16}$ ")

DAILY

CHECK FOR BENT BLADES (STRAIGHTEN
WITH BLADE SETTING BAR IF NECESSARY)

DAILY

CHECK TIGHTNESS OF BLADE BOLTS

DAILY

WATCH FOR SIGNS OF UNDUE ROTOR CLUTCH
SLIP (TO ADJUST TIGHTEN ALL FOUR CLUTCH SPRING
NUTS, THEN SLACKEN HALF A TURN)

FORTNIGHTLY

CHECK CHAIN ADJUSTMENT
(ADJUSTER AT "B")

EVERY THREE DAYS

REFILL ROTOR STUB AXLE
ENGINE OIL

EVERY THREE DAYS

CHECK CHAINCASE OIL LEVEL

MONTHLY

DRAIN AND REFILL CHAINCASE
TO CORRECT LEVEL

RECOMMENDED LUBRICANTS

| | |
|-------------------------------|------------|
| ENGINE - SEE ENGINE HANDBOOK. | |
| GEARBOX | S.A.E. 90 |
| ROTOR BEVEL BOX | S.A.E. 90 |
| ROTOR CHAINCASE | S.A.E. 90 |
| AIR FILTER | ENGINE OIL |

WHEELS

Wheel Track. 11½ in. (30 cms.) or 14½ in. (37 cms.).
Width of 'Yeoman' over wheels: 15 in. (38 cms.) or 18 in. (46 cms.).

ROTOR AND BLADES

Width of Cultivation: 15 in. (38 cms.).
Depth of Cultivation: adjustable to 9 in. (22.9 cms.) maximum in most soils. Number of blades: 8.

DIMENSIONS

Overall length (over handlebars and bumper bar): 76 in. (198.1 cms.).
Overall Width:—Over handlebars: 24½ ins. (62.2 cms.).
Over shield: 19 ins. (48.3 cms.).

WEIGHT

489 lbs. (221.8 kgs.).

CONTROLS

(All directions left and right are given from the rear of the machine looking forward).

(THE ENGINE SHOULD BE STOPPED BEFORE ANY OF THE ADJUSTMENTS DESCRIBED ARE CARRIED OUT)

CLUTCH

The clutch is of a single fibre disc type, simple in operation and efficient in work. It should be adjusted with a little play on the lever (about ¼ in. at the end), so that the thrust is not always on the selector. Adjustment can be made by means of the adjuster in the cable.

SNAPLOCK QUICK-RELEASE CLAMP

This clamp provides a quick and simple means of changing attachments. By swinging the clamp to the right (across the machine), the gate can be opened and the fitted attachment released. The reverse procedure engages the next attachment required. The handlebars must be held firm when the clamp is being released.

ROTOR GEAR CONTROL LEVER

The lever engages with either of the two notches. Pushing forward engages the rotor; pulling it back disengages the rotor.

WHEEL LOCK

The wheel lock has three positions:

(i) fully back: both wheels are free for freewheeling the machine.

(ii) central: drive is applied to the left-hand wheel only, making for easy turning at row ends and on headlands.

(iii) fully forward: drive is applied to both wheels.*

*If it is found that the wheels do not engage immediately, the machine should be pivoted slightly until the desired engagement is obtained.

GEAR LEVER

The gear lever operates in a quadrant marked R,1,N,2, to indicate Reverse, forward travel and neutral positions.

HIGH - LOW RATIO

With the lever in the forward position, the machine operates in high ratio; with the lever in the rear position, in low ratio.

HANDLEBAR HEIGHT ADJUSTMENT

By slackening the adjusting lever, the handlebars are freed and may be moved to the desired position. The lever should be tightened again after adjusting.

THROTTLE

The throttle lever is fitted on the right handlebar and serves as a variable speed governor. Movement to the left opens the throttle and vice versa.

REVERSE INTERLOCK

To reverse the machine, pull up the clutch lever, move the gear lever to reverse, then release clutch lever. No movement will take place until the reverse interlock is pulled up. Removal of pressure on the reverse interlock automatically stops the machine. To disengage the reverse gear, pull up the clutch lever, move gear lever to neutral.

DEPTH CONTROL LEVER

This is situated above the rotor shield. To lower the rotor for deeper work, raise the lever. To decrease the depth of cultivation, push the lever down.

N.B.—The lever must be moved slightly to the side before movement up or down can take place.

N.B.—Engine controls are described in the Engine Handbook.

Making the most of Your 'Yeoman'

GENERAL

The 'Yeoman' will cultivate to a depth of 9 inches (22.9 cms.). On certain, especially the heavier, types of soil, this depth will not be obtained in a single pass. Where cultivation in depth is needed, a first pass should be made at 3-4 inches (7.6-10.1 cms.) and followed by a second at full depth.

If the surface of the ground is very hard or baked, the depth control should be adjusted so that the machine just bites the surface. Further passes should then be made until the required depth is reached.

On heavy land which is to be laid up for the winter, the surface should be left rough. The best results will come from using high ratio. The quality of the work in high gear and in low gear will tell the operator which is the better. By using the ridging or furrowing attachment during this final or late autumn cultivation the land can be left in ridges to promote better drainage and to expose a greater surface area to weather.

If heavy land is rotary cultivated too finely and left bare to the winter rains, the soil may run together, and spring cultivations will be difficult.

On light land two courses are open. It may either be left rough, or it may be cultivated to medium depth and sown to a green crop, e.g. rye. The green crop will prevent the leaching out of the soil nitrogen. In the early part of the year, the crop is rotary cultivated in (high ratio and low gear). After a week or ten days, the spring seed bed may be prepared; this rotary cultivation should be more shallow than that which worked in the green crop.

SEED BEDS

In ground which has been cultivated properly, seed beds should seldom exceed 2 in. (5.1 cms.) in depth, except for certain crops. Seeds require a well-aerated soil with a firm bottom. Some small seeds require a seed bed to be lightly consolidated. This is particularly important on light soil, where consolidation will bring moisture nearer to the seedling plant.

Weeds are at their most dangerous when the crop is in the seedling stage. To obtain weed-free seed beds, the ground should be prepared a few weeks in advance of the sowing dates. Rotary cultivation should be carried out at a depth of 4 inches (10.1 cms.) and this causes any weed seeds to germinate. These weeds may be turned in by a second rotary cultivation, which will prepare the seed bed at the same time. It is most important that this second rotary cultivation is more shallow. Remember that the ground is now more open and the machine will consequently tend to dig more deeply.

WEED CONTROL

Rotary cultivation produces a well aerated warm seed bed in which germination takes place readily. Inevitably, these conditions also favour weed seeds.

Weeds are eliminated by preventing them from reaching flower or from feeding the deep tap roots or rhizomes. Weeds are killed most easily and inexpensively by rotary cultivating them directly they show green. Annuals will be killed off outright and perennials will be reduced until they, too, die out. This is true even of such persistent weeds as couch and twitch.

ROW - CROP WORK

Weeds between rows may be controlled by rotary cultivation in high ratio, high gear, under almost all conditions while the weeds are small.

This will not prevent weeds growing in the rows themselves. Such weeds must be controlled by hand-hoeing when small. Should land become filthy because these weeds have been allowed to seed, the following crop should be a cleaning crop, e.g. roots or potatoes which will give a period of several weeks in the early part of the year when the weed seeds will shoot and can be killed by rotary cultivation.

The effective width of the 'Yeoman' for cultivation is 16½ inches (42 cms.); actual width of cultivation is 15 inches (38.1 cms.). In planning your crops so that the best use may be made of the 'Yeoman', two or three inches over the effective

GUY MACHINERY

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width should be allowed on either side of the machine. This means that the minimum planting or sowing distance is 20 inches (50.8 cms.). Such a sowing would allow only one cultivation for hoeing, and this cultivation should be done in high ratio, high gear.

GREEN MANURING

Land not immediately required may be sown down to such crops as mustard or rye grass during the spring and summer or rye during the winter. These crops should be allowed to mature, if they are to be used as green manures; they will then have the best effect on the soil. But a winter cover crop will preserve plant foods which would otherwise be leached away, and need not be allowed to mature.

To turn in the green manure crop: ratio and gears will be determined by the maturity of the crop. Low ratio, low gear should normally produce a satisfactory result.

LAND RECLAMATION

The 'Yeoman' may also be used for bringing derelict land back into cultivation. When virgin land is being cultivated, the first pass should be at shallow depth. Depth can be increased by subsequent passes made at intervals of about a week or ten days. Low ratio, high gear will probably give the best results in work of this kind, but if the going is very tough it may be necessary to drop down to low ratio, low gear.

Working Instructions

STARTING AND STOPPING

Instructions for starting and stopping the engine will be found in the Engine Handbook. Before starting the engine, make sure that the gear lever is in neutral and the rotor lever in the "out" position.

COMMENCING CULTIVATION

Adjust the depth control lever to give the required depth of work, select the appropriate ratio and gear (see below), put the rotor gear in mesh and commence work, keeping the engine running at a constant speed whatever type of work is being done. Do not race the engine if the work is light or labour the engine if the work is heavy. After a little practice, no difficulty will be found in maintaining the engine at the most suitable speed.

REAR SHIELD

To avoid an accumulation of soil choking the rotor and causing the use of unnecessary power, always keep the rear shield well raised so that the blades throw the soil clear.

USE OF RATIOS AND GEARS

In order to cover all possible cultivating requirements the 'Yeoman' is provided with a range of six different speeds.

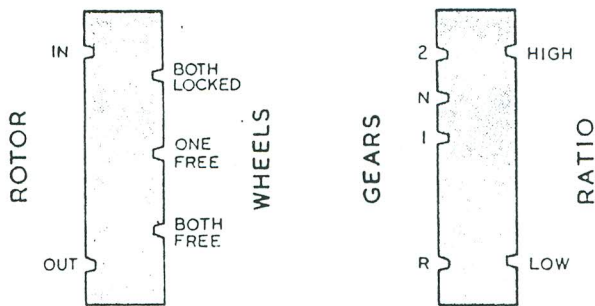


DIAGRAM 3.

These are selected by a gear lever giving two forward speeds and reverse. On the same quadrant is another lever which provides the alternative of a high or low ratio, thus a high first, second and reverse gear is available and a low first, second and reverse according to which ratio is employed. The high and low ratio lever also automatically gives two different rotor speeds. In this way a total of four forward travel speeds and two reverse speeds combined with two different rotor speeds are obtainable.

The various lever positions are shown in diagram 3. A table of the rotor speeds and approximate travel speeds of the 'Yeoman' in each gear combination is given on page 1.

Low ratio and low gear should be used for deep work and fine tilth. Low ratio and high gear for coarse deep tilth. High

ratio and low gear for fine shallow tilth and high ratio and high gear for surface weeding and other light cultivations.

Methods will naturally vary with various crops, climates and soil conditions and it is therefore impossible to lay down rigid rules. But further guidance is given in the section 'Making the most of your Yeoman'.

Notes for the Operator

1. Regular and correct lubrication is essential.
2. The throttle must always be shut to idling position when lifting the clutch lever for engaging or disengaging gears.
3. The engine must not be allowed to idle at slow speeds for long periods. If it is found necessary to leave it ticking over for a short time the machine should be put into gear with the wheel lock in the "both free" position.
4. Do not hold the handles firmly down if the machine jumps on striking a stump or other obstacle. Just lightly resist the movement and let the machine right itself. This particularly applies when working on hill-sides in badly cleared land.
5. When taking sharp corners, put the rotor out of gear and use the wheel lock to apply drive to one wheel only. If necessary, lift the machine at the handles to help in turning.
6. Never run the 'Yeoman' with the engine labouring. By selecting the right gear and correct depth of work, a reserve of engine power is always in hand.
7. Use the clutch as you would use a car clutch—for changing gear only. Do not 'slip the clutch' to obtain extra engine speed.
8. For the first 12 hours use after delivery, only light work should be done. This enables the working parts to bed down properly.
9. Instructions for maintaining the air cleaner are given in the Engine Handbook. It should be topped up every 24 hours. But in dusty conditions, the oil should be renewed daily—twice daily if it is extremely dusty.

Adjustments and Maintenance

IMPORTANT.— STOP THE ENGINE BEFORE MAKING ANY ADJUSTMENTS. ENGINE CLUTCH

The clutch is of a single fibre disc type, simple in operation and efficient in work. It should be adjusted with a little play in the lever (about $\frac{1}{4}$ in. or 6 mm.), so that the thrust is not always on the selector. Adjustment can be made by means of the adjuster in the cable. When adjustment is complete, check the correct operation of the reverse interlock cable. With the engine stopped and the machine in first gear, there should be no load on the cable fulcrum lever from the reverse interlock spring.

CHAIN CASE

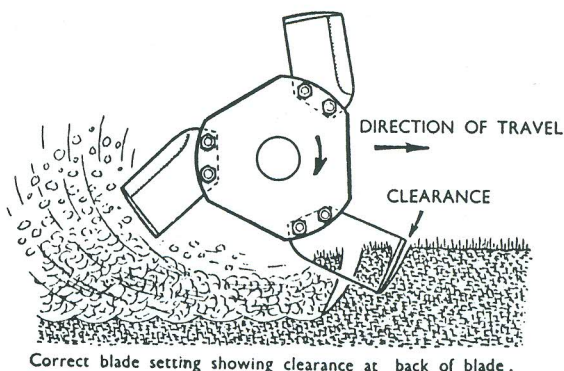
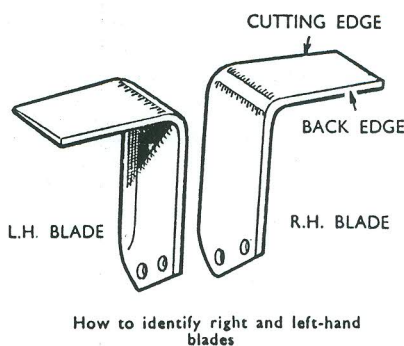
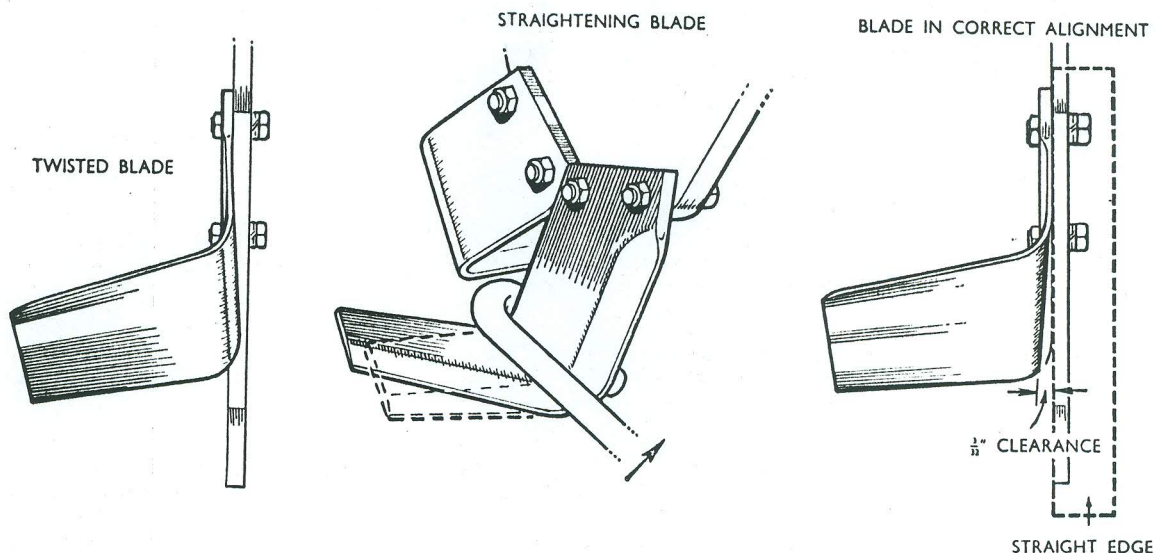
An adjuster is provided on the bottom front edge of the chain case. Removal of the filler plug on the uppermost edge makes the chain visible. Test the chain for free movement by inserting a screwdriver between the links and moving it up and down; and by screwing up the adjuster obtain the correct tension ($\frac{1}{8}$ in. or 9 mm.). After adjusting tighten the locknut and replace the filler cap.

ROTOR FRICTION DRIVE

The rotor to which the blades are bolted is driven direct from the main gearbox through a friction clutch. This clutch is not intended to operate, except when the rotor blades strike an obstacle. When the machine leaves the factory, the clutch is adjusted so that no slip takes place under ordinary working conditions. If it is suspected that the clutch slips too freely, the engine should be stopped and the clutch adjusted by means of the four nuts. Tighten the nuts fully then slacken each half a turn.

ROTOR FLANGE WEEDCUTTERS

Two weedcutter blades are provided to prevent long grass or weeds from binding round the end rotor flanges. To adjust, slacken the two setscrews securing the weedcutter blade (Ill. No. 225 & 273) and tap the blade until it is within $\frac{1}{2}$ in. or 1 mm. of the rotor flange. Then revolve the rotor by hand to make sure that the blade does not foul. Re-tighten the screws.



SNAPLOCK CLAMP

Sometimes the clamp may require adjustment to ensure complete clamping. Slacken the inside locknut and tighten the outside locknut until the correct clamping pressure is obtained.

REVERSE INTERLOCK

If the clutch slips when the reverse interlock is used, adjustment can be made by means of the adjuster in the cable.

BLADE FITTING

The "Yeoman" is normally delivered with the blades already fitted. If it is necessary to fit your own blades, this is the way it should be done.

1. Identify left-hand and right-hand blades.
2. The left-hand end flange carries two right-hand blades; the right-hand end flange carries two left-hand blades.
3. The centre flange carries two left-hand and two right-hand blades. Bolt the blades to the flange with the left-hand blades leading. All blades should be fitted to the left-hand side of the flange. In each case the heads of the bolts should be in contact with the blades and with the spring washer fitted under the nut.

BLADE MAINTENANCE

This is most important. Examine the blades daily to see that they are correct. Any bent blades should be straightened with the blade setting bar. (The illustration is of a larger machine but the principle applies).

When land that has become hard-panned through persistent ploughing to a constant depth, or land that is very stony, is being cultivated with the 'Yeoman' for the first time, the cutting edges of the blades may become slightly turned. These blades must be corrected in the following manner.

Put the end of the straightening bar behind the blade and beat the cutting edge back into its correct position with a hammer. The blades will then cut cleanly with the cutting edges only touching the ground and the backs having clearance.

IMPORTANT.—Before cleaning hoe blades or the underside of the shield, return the rotor gear lever to neutral and stop the engine.

WHEEL ENGAGEMENT

If, when the wheel lock is in the 'both free' position, the wheels are still engaged, adjust the nut at the rear of the trunnion until the wheels are free. If more tension is required to engage the wheel-lock, tighten the nut holding the spring on the rod (Ill. No. 367).

VARYING TRACK - WIDTH

By undoing the four setscrews (Ill. No. 109) either wheel can easily be freed and reversed to vary track-width to suit the work in hand. When both wheels are inward, the overall width of the 'Yeoman' is 15 in. (38.1 cms.). Reversing one wheel gives an overall width of 16½ in. (41.8 cms.). Reversing both wheels gives an overall width of 18½ in. (45.7 cms.).

Parts List

IMPORTANT. When ordering spare parts always give the serial number of your machine. This number is stamped on the frame main tube (Illus. No. 332). Then give the part number (not the illustration number) and description. We cannot guarantee that correct parts will be supplied unless these numbers are quoted.

In the following parts list all directions are given left or right looking forward from the back of the machine.

| Illus. No. | Part No. | Description | No. off | | | | |
|-------------------------------------|----------|---|---------|----|-------------------|---|---|
| BUMPER BAR ASSEMBLY | | | | | | | |
| 1 | 16832 | Bar (Villiers Engine) | 1 | 31 | 16889 | Push Rod | 1 |
| | 16907 | Bar (B.S.A. Engine) | 1 | 32 | 16637 | Oil Seal Holder | 1 |
| | 16882 | Bar (Wisconsin A.E.N. Engine) | 1 | 33 | | Oil Seal, $\frac{7}{8}$ " I.D. x $1\frac{1}{8}$ " O.D. x $\frac{3}{8}$ " Wide ... | 1 |
| 2 | 17302 | Clamp | 2 | 34 | BRL $\frac{1}{2}$ | Ball Bearing $\frac{1}{2}$ " Bore, $1\frac{1}{8}$ " O.D. $\frac{9}{16}$ " Wide | 1 |
| | | Setscrew, Hex. Hd. $\frac{1}{8}$ " B.S.F. x 1" Lg. ... | 2 | 35 | 16581 | Pinion (22T.) | 1 |
| 3 | 16829 | Bar (Villiers Engine) | 2 | 36 | 16601 | Spacer | 1 |
| | 16908 | Bar (B.S.A. Engine) | 2 | 37 | 16582 | Pinion (18T.) | 1 |
| | 16883 | Bar (Wisconsin A.E.N. Engine) | 2 | 38 | 16648 | Tab Washer | 1 |
| 4 | | Bolt, $\frac{3}{8}$ " B.S.F. x 2" Lg. Hex. Hd. (Villiers and B.S.A. Engines) | 4 | 39 | | Nut, $\frac{3}{8}$ " B.S.F. Locknut Hex. | 1 |
| | | Bolt, $\frac{3}{8}$ " B.S.F. x $3\frac{1}{2}$ " Lg. (Wisconsin Engine) | 4 | | 16888 | Bearing Cap (not illustrated) | 1 |
| 5 | | Washer, $\frac{3}{8}$ " Dia., Single Coil | 4 | | SFL $\frac{1}{4}$ | Ball Bearing, $\frac{1}{4}$ " Bore x $13/16$ " O.D. x $\frac{3}{8}$ " Wide | 1 |
| 6 | | Nut, $\frac{3}{8}$ " B.S.F. Hex. Pln. | 4 | 40 | 16890 | Circlip, $13/16$ " Dia. Internal | 1 |
| | | | | 41 | | Clutch Selector | 1 |
| | | | | 42 | 16844 | Setscrew, $\frac{1}{8}$ " B.S.F. x 1" Lg., Hex. Hd. | 1 |
| | | | | 43 | | Clutch Fulcrum Arm | 1 |
| | | | | | | Key, B.S.K. $\frac{1}{8}$ " S. x $\frac{1}{8}$ " Lg. | 1 |
| FRICITION CLUTCH AND HOUSING | | | | | | | |
| 7 | 16638 | Spacer (Villiers & Wisconsin) | 1 | 44 | 16511A | Gear Box | 1 |
| | 16905 | Spacer (B.S.A. Engine) | 1 | 45 | 16694 | Cover Plate | 1 |
| 8 | 16714 | Key (Villiers & Wisconsin) | 1 | | 16695 | Gasket | 1 |
| | | Key, B.S.K., $\frac{1}{8}$ " x $\frac{3}{2}$ " x $1\frac{1}{2}$ " Lg. Rnd. one end (B.S.A. Engine) | 1 | | | Setscrew, $\frac{1}{4}$ " B.S.F., $\frac{1}{2}$ " Lg. Rnd. Hd. ... | 4 |
| 9 | | Grub Screw, $\frac{1}{8}$ " B.S.W. x $\frac{3}{8}$ " Lg. (Villiers & Wisconsin) | 1 | 46 | 16627 | Washer, $\frac{1}{4}$ " Dia., Single Coil | 4 |
| | | Allen Grub Screw, $\frac{1}{8}$ " B.S.W. x $\frac{1}{2}$ " Lg. (B.S.A. Engine) | 1 | 47 | | Selector Arm | 1 |
| 10 | 16519 | Clutch Flywheel (Villiers & Wisconsin) ... | 1 | 48 | 16616 | Setscrew, $\frac{1}{8}$ " B.S.F., $\frac{3}{8}$ " Lg., Hex. Hd. ... | 1 |
| | 16904 | Clutch Flywheel (B.S.A. Engine) | 1 | 49 | | Selector Bush | 1 |
| 11 | 16644 | Bearing Shield (Villiers & Wisconsin) ... | 1 | 50 | 16702 | Key, B.S.K., $\frac{1}{8}$ " S. x $\frac{3}{8}$ " Lg. | 1 |
| | 16912 | Bearing Shield (B.S.A. Engine) | 1 | 51 | 16698 | Selector | 1 |
| 12 | | Ball Bearing, "Hoffman" S11 (Villiers & Wisconsin) | 1 | 52 | 16699 | Selector Block | 1 |
| | | Ball Bearing, "Hoffman" S10 (B.S.A. Engine) | 1 | 53 | 16590 | Pin | 1 |
| 13 | 16639 | Clutch Shaft Nut (Villiers & Wisconsin) ... | 1 | 54 | | Shim | 1 |
| | 16911 | Clutch Shaft Nut (B.S.A.) | 1 | 55 | BRL $\frac{1}{2}$ | Ball Bearing, $\frac{1}{2}$ " Bore, $1\frac{1}{8}$ " O.D., $\frac{9}{16}$ " Wide | 1 |
| | 16905 | Adaptor Plate | 1 | 56 | 16580 | Cluster Gear | 1 |
| | | Setscrew (adaptor plate to engine), $\frac{1}{8}$ " B.S.W. x $\frac{1}{2}$ " Lg. Hex. Hd. | 8 | 57 | 16583 | Cluster Gear | 1 |
| | | Spring Washer, $\frac{1}{8}$ " Dia. | 8 | 58 | 16703 | Selector Block | 1 |
| 14 | 16641 | Clutch Plate, Loose | 1 | 59 | 16699 | Pin | 1 |
| 15 | 16520 | Clutch Friction Disc | 1 | 60 | 16702 | Selector | 1 |
| 16 | 16640 | Clutch Plate, Fixed | 1 | 61 | 16616 | Key, B.S.K., $\frac{1}{8}$ " S. x $\frac{3}{8}$ " Lg. | 1 |
| 17 | G260 | Spring | 3 | 62 | 16848 | Selector Bush | 1 |
| 18 | 16643 | Clutch Distance Piece | 3 | 63 | | Selector Arm | 1 |
| 19 | 16642 | Thrust Plate | 1 | 64 | 16596 | Setscrew, $\frac{1}{8}$ " B.S.F., $\frac{3}{8}$ " Lg., Hex. Hd. ... | 1 |
| 20 | G250 | Bolt, Special | 3 | 65 | BRL $\frac{1}{2}$ | P.T.O. Shaft | 1 |
| 21 | | Locking Wire, $\frac{1}{8}$ " Dia. x $13\frac{1}{2}$ " Lg. | 1 | | 16591 | Ball Bearing, $\frac{1}{2}$ " Bore, $1\frac{1}{8}$ " O.D., $\frac{9}{16}$ " Wide | 1 |
| 22 | | Splitpin, $3/32$ " Dia. x $\frac{1}{2}$ " Lg. | 2 | | | Bearing Shield | 1 |
| 23 | 16891 | Push Rod Selector | 1 | 66 | 16598 | Sliding Dog | 1 |
| 24 | 16647 | Clutch Shaft | 1 | 67 | 16705 | Selector Block | 1 |
| 25 | 16636 | Clutch Housing (Villiers Engine) | 1 | 68 | 16706 | Pin | 1 |
| | 16873 | Clutch Housing (B.S.A. & Wisconsin Engine) | 1 | 69 | 16704 | Selector | 1 |
| 26 | | Setscrew, $\frac{3}{8}$ " B.S.F. x 1" Lg. (Villiers Engine) | 4 | 70 | | Key, B.S.K., $\frac{1}{8}$ " S. x $\frac{3}{8}$ " Lg. | 1 |
| | | Setscrew, $\frac{7}{8}$ " x $1\frac{1}{4}$ " Lg. (B.S.A. & Wisconsin Engine) | 4 | 71 | 16622 | Bush | 1 |
| 27 | | Spring Washer, $\frac{3}{8}$ " Dia. (Villiers Engine) ... | 4 | 72 | 16627 | Selector Arm | 1 |
| | | Spring Washer, $\frac{7}{8}$ " Dia. (B.S.A. & Wisconsin Engine) | 4 | 73 | | Setscrew, $\frac{1}{8}$ " B.S.F., $\frac{3}{8}$ " Lg., Hex. Hd. ... | 1 |
| 28 | | Setscrew, $\frac{1}{8}$ " B.S.F., $\frac{3}{4}$ " Lg. Hex. Hd. ... | 6 | 74 | 16674 | Gasket | 1 |
| 29 | | Washer, $\frac{1}{8}$ " Dia. Single Coil | 6 | 75 | 16543 | Clutch Housing | 1 |
| 30 | 16692 | Gasket | 1 | 76 | | Setscrew, $\frac{5}{16}$ " B.S.F. $\frac{3}{4}$ " Lg., Hex. Head | 5 |
| | | | | 77 | | Washer, $\frac{5}{8}$ " Dia., Single Coil | 8 |
| | | | | 78 | 16675 | Bolt, Special | 3 |
| | | | | 79 | 16801 | Dowel | 3 |
| GEAR BOX | | | | | | | |
| DOG CLUTCH | | | | | | | |
| SNAPLOCK CLAMP | | | | | | | |

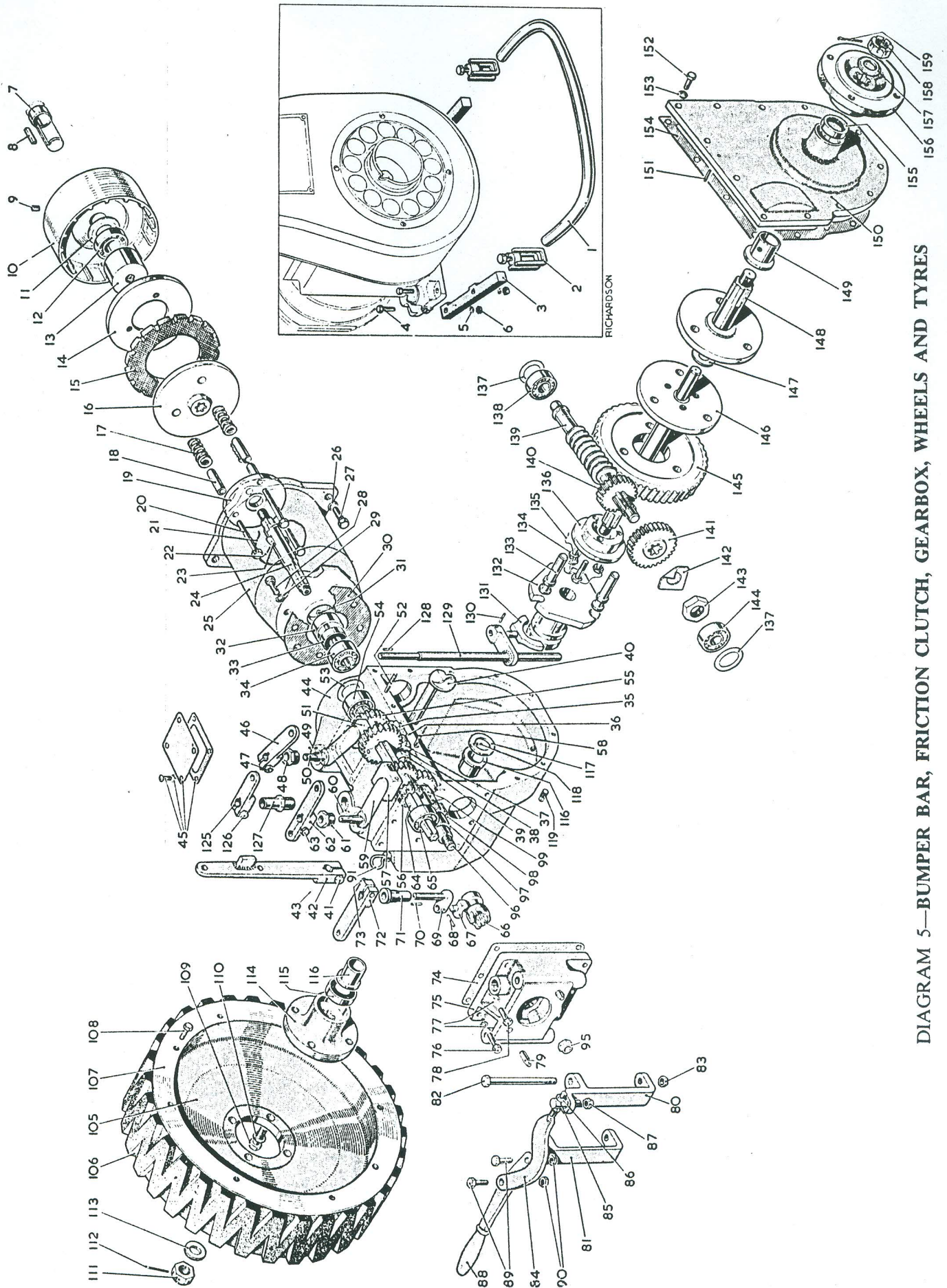


DIAGRAM 5—BUMPER BAR, FRICTION CLUTCH, GEARBOX, WHEELS AND TYRES

| | | | | | | | |
|-----|----------------------|---|----|-----|----------------------|--|-------------|
| 82 | | Bolt, $\frac{1}{2}$ " B.S.F., 4 $\frac{1}{2}$ " Lg., Hex. Hd. ... | 2 | 155 | | Oilseal, 1 $\frac{1}{2}$ " O.D. 1 $\frac{1}{2}$ " I.D., $\frac{1}{8}$ " Wide ... | 1 |
| 83 | | Nut, $\frac{1}{2}$ " B.S.F., Hex. Locknut ... | 2 | 156 | 16656 | Hub, R.H. ... | 1 |
| 84 | 16649 | Clamping Lever ... | 1 | 157 | | Washer, $\frac{3}{8}$ " Dia. Flat ... | 1 |
| 85 | 16672 | Trunnion ... | 1 | 158 | F2609 | Nut, Special ... | 1 |
| 86 | | Nut, $\frac{1}{2}$ " B.S.F. Hex. Locknut ... | 2 | 159 | | Splitpin 7/64" Dia. x 1 $\frac{1}{2}$ " Lg. ... | 1 |
| 87 | | Nut (Nyloc), $\frac{1}{8}$ " B.S.F., No. ND/F106 ... | 1 | | | | |
| 88 | 16651 | Clamping Handle ... | 1 | | | | |
| 89 | | Setscrew, $\frac{1}{8}$ " B.S.F., $\frac{1}{2}$ " Lg., Hex. Head ... | 2 | 165 | 16597 | Fixed Dog ... | 1 |
| 90 | | Nut, $\frac{1}{8}$ " B.S.F., Hex. Locknut ... | 2 | 166 | | Oilseal, 1 $\frac{1}{2}$ " I.D. x 1 $\frac{1}{2}$ " O.D. x $\frac{5}{16}$ " Wide | 1 |
| 91 | 16867 | Gearbox Dipstick ... | 1 | 167 | | Circlip 1 $\frac{1}{2}$ " Dia. Internal ... | 1 |
| | 16868 | Gearbox Dipstick Felt Washer ... | 1 | 168 | BRL $\frac{1}{2}$ AC | Ball Bearing, $\frac{1}{2}$ " Bore 1 $\frac{1}{2}$ " O.D. $\frac{5}{16}$ " Wide, Angular Contact ... | 1 |
| | | REVERSE GEAR ASSEMBLY | | 169 | 16530 | Pinion ... | 1 |
| 95 | | Nut (Nyloc) $\frac{1}{2}$ " B.S.F., No. NT/F166 ... | 1 | 170 | 16728 | Bush ... | 1 |
| 96 | 16609 | Reverse Shaft ... | 1 | 171 | 16534 | Bevel Box ... | 1 |
| 97 | 16587 | Spacer ... | 1 | 172 | 16869 | Bevel Box Dipstick ... | 1 |
| 98 | 16586 | Cluster Gear ... | 1 | 173 | | Plug, $\frac{1}{4}$ " B.S.P. Sq. Hd. ... | 1 |
| 99 | 16593 | Bush ... | 2 | 174 | 16756 | Gasket ... | 1 |
| | | WHEELS AND TYRES | | 175 | 16529 | Crown Wheel ... | 1 |
| 105 | 16849 | Wheel (for solid tyre) ... | 2 | 176 | BRL040 | Ball Bearing, 40 m/m Bore x 80 m/m O.D. x 18 m/m Wide | 1 |
| 106 | 16846 | Tyre ... | 2 | 177 | | Splitpin, $\frac{1}{8}$ " Dia., 1 $\frac{1}{2}$ " Lg. ... | 1 |
| 107 | 16862 | Plate ... | 2 | 178 | 16759 | Washer ... | 1 |
| 108 | | Setscrew, $\frac{1}{8}$ " B.S.F. x $\frac{3}{8}$ " Lg. Hex. Head | 16 | 179 | 25047 | Nut, Special ... | 1 |
| | | Wheel Assembly Complete, comprising above parts, Part No. 16863 | | 180 | 16577 | Staytube ... | 1 |
| | 16654 | Wheel (for pneumatic tyre) ... | 2 | 181 | | Setscrew, $\frac{1}{4}$ " B.S.F. $\frac{3}{4}$ " Lg. Hex. Hd. ... | 7 |
| | | Tyre, 3.00" x 12" ... | 2 | 182 | | Washer, $\frac{1}{4}$ " Dia., Single Coil ... | 7 |
| | | Tube, 3.00" x 12" ... | 2 | 183 | | Oilseal, $\frac{1}{4}$ " Bore, 1 $\frac{1}{2}$ " O.D. $\frac{5}{16}$ " Wide ... | 1 |
| 109 | | Setscrew, $\frac{1}{8}$ " B.S.F. x 1" Lg. Hex. Head ... | 8 | 184 | 16757 | Gasket ... | 1 |
| 110 | | Washer, $\frac{3}{8}$ " Dia., Single Coil ... | 8 | | | | |
| | | LEFT HAND WHEEL HUB | | 185 | | | |
| 111 | | Nut, $\frac{3}{8}$ " B.S.F., Hex. Slotted ... | 1 | 186 | | Setscrew, $\frac{5}{16}$ " B.S.F., $\frac{1}{2}$ " Lg. Hex. Hd. ... | 6 |
| 112 | | Split Pin, 7/64" Dia. x 1 $\frac{1}{2}$ " Lg. ... | 1 | 187 | 16575 | Washer, $\frac{1}{8}$ " Dia., Single Coil ... | 6 |
| 113 | | Washer, $\frac{3}{8}$ " Dia. Flat ... | 1 | 188 | | Jackshaft Housing ... | 1 |
| 114 | 16657 | Hub, L.H. ... | 1 | 189 | 16574 | Rivet, $\frac{1}{4}$ " Dia. $\frac{3}{8}$ " Lg. Rd. Hd. ... | 6 |
| 115 | | Oilseal, 1" I.D. x 1 $\frac{1}{2}$ " O.D. x $\frac{1}{4}$ " Wide ... | 1 | 190 | 16567/4 | Jackshaft ... | 1 |
| 116 | 16692 | Bush ... | 2 | 191 | 16774 | Back Plate with Dust Cover ... | 1 |
| 117 | 16659 | Thrust Washer ... | 1 | 192 | | Gasket ... | 1 |
| 118 | 16660 | Dowel ... | 1 | 193 | BRM1 | Ball Bearing 1" Bore, 2 $\frac{1}{2}$ " O.D., $\frac{1}{2}$ " Wide | 1 |
| 119 | | Plug $\frac{1}{4}$ " B.S.P., Sq. Hd. ... | 1 | 194 | G462 | Shim ... | as required |
| | | WHEEL LOCK ASSEMBLY | | 195 | 16874 | Sprocket, 10-Tooth (Standard) ... | 1 |
| 125 | 16624 | Arm ... | 1 | 196 | G460 | Sprocket, 9-Tooth (Alternative) ... | 1 |
| 126 | | Setscrew, $\frac{1}{8}$ " B.S.F. x $\frac{7}{8}$ " Lg. ... | 1 | 200 | G455 | Nut, Special ... | 1 |
| 127 | 16603 | Bush ... | 1 | 201 | 25917 | Splitpin, 7/64" Dia. x 1 $\frac{1}{2}$ " Lg. ... | 1 |
| 128 | | Key, B.S.K., $\frac{3}{16}$ " Sq. x $\frac{3}{8}$ " Lg. ... | 1 | 202 | 25920 | Chain Skid ... | 1 |
| 129 | 16661 | Selector Shaft ... | 1 | 203 | 25919 | Sliding Block ... | 1 |
| 130 | 16689 | Pin ... | 1 | 204 | 25914 | Connecting Link ... | 2 |
| 131 | 16625 | Wheel Lock Selector ... | 1 | 205 | | Connecting Pin ... | 2 |
| 132 | 16608 | Selector Plate ... | 1 | 206 | | Splitpin $\frac{1}{8}$ " Dia. x $\frac{3}{8}$ " Lg. ... | 1 |
| 133 | 16626 | Pin ... | 3 | 207 | | Bolt, $\frac{1}{8}$ " B.S.F. x 1 $\frac{1}{2}$ " Lg. ... | 1 |
| | | WORM DRIVE | | | | Washer, $\frac{1}{8}$ " Dia., Flat ... | 1 |
| 134 | 16605 | Bolt, Special ... | 3 | 208 | 16773 | Nut, $\frac{1}{8}$ " B.S.F., Hex. Lock ... | 1 |
| 135 | | Locking Wire, $\frac{1}{8}$ " Dia. x 9" Lg. ... | 1 | 209 | 25913 | Chaincase ... | 1 |
| 136 | 16595 | Worm Wheel Hub ... | 1 | 210 | | Adjusting Screw ... | 1 |
| 137 | 16590 | Shim ... | 2 | 211 | | Nut, $\frac{1}{8}$ " B.S.F., Hex. Pln. ... | 1 |
| 138 | BRL $\frac{1}{2}$ AC | Ball Bearing, $\frac{3}{4}$ " Bore, 1 $\frac{1}{2}$ " O.D. $\frac{5}{16}$ " Wide, Angular Contact ... | 1 | 212 | | Setscrew, $\frac{1}{8}$ " B.S.F., $\frac{1}{2}$ " Lg. Hex. Hd. ... | 1 |
| 139 | 16522 | Worm Shaft ... | 1 | 213 | | Washer, $\frac{1}{4}$ " Dia. Single Coil ... | 17 |
| 140 | 16584 | Pinion (24T.) ... | 1 | 214 | | Setscrew, $\frac{1}{4}$ " B.S.F., $\frac{3}{8}$ " Lg., Rnd. Hd. ... | 14 |
| 141 | 16585 | Pinion (31T.) ... | 1 | 215 | | Setscrew, $\frac{1}{4}$ " B.S.F., $\frac{1}{2}$ " Lg., Rnd. Hd. ... | 2 |
| 142 | 16691 | Tab Washer ... | 1 | 216 | | Setscrew, $\frac{1}{4}$ " B.S.F., $\frac{1}{2}$ " Lg., Rnd. Hd. ... | 1 |
| 143 | | Nut, 1" B.S.F., Locknut Hex. ... | 1 | 218 | | Nut, $\frac{1}{4}$ " B.S.F., Hex. Pln. ... | 14 |
| 144 | BRL $\frac{1}{2}$ AC | Ball Bearing, $\frac{3}{4}$ " Bore, 1 $\frac{1}{2}$ " O.D. $\frac{5}{16}$ " Wide, Angular Contact ... | 1 | 219 | | Plug, $\frac{1}{8}$ " B.S.P. Sq. Hd. ... | 1 |
| 145 | 16521 | Worm Wheel ... | 1 | 220 | 16570 | Plug, $\frac{1}{4}$ " B.S.P. Sq. Hd. ... | 1 |
| 146 | 16602 | Axle ... | 1 | 221 | | Wearing Shoe ... | 1 |
| 147 | 16600 | Spacer ... | 1 | 222 | 16763 | Shield Support L.H. ... | 1 |
| 148 | 16606 | Loose Hub ... | 1 | 223 | 16765 | Scraper Blade, L.H. ... | 1 |
| 149 | 16594 | Bush ... | 1 | 224 | G830 | Keeper Plate ... | 1 |
| | | GEAR BOX COVER PLATE | | 225 | | Washer, $\frac{1}{4}$ " Dia., Single Coil ... | 2 |
| 150 | 16513 | Cover Plate ... | 1 | 226 | 16783 | Setscrew, $\frac{1}{4}$ " B.S.F., $\frac{1}{2}$ " Lg. Hex. Hd. ... | 2 |
| 151 | 16686 | Dowel ... | 1 | 227 | | Chain Assy. Complete ... | 1 |
| 152 | | Setscrew, $\frac{1}{4}$ " B.S.F., $\frac{1}{2}$ " Lg. Hex. Hd. ... | 12 | 228 | | Connecting Link ... | 1 |
| 153 | | Washer, Single Coil, $\frac{1}{4}$ " Dia. ... | 12 | 229 | 16632 | | |
| 154 | 16685 | Gasket ... | 1 | 230 | 16572 | SAFETY CLUTCH | |
| | | | | 231 | | Rotor Drive Shaft ... | 1 |
| | | | | 232 | | Ball Bearing, 1" Bore, 2 $\frac{1}{2}$ " O.D., $\frac{1}{2}$ " Wide | 1 |
| | | | | | | Bearing Housing ... | 1 |
| | | | | | | Rivet, $\frac{1}{4}$ " Dia., $\frac{3}{8}$ " Lg. Rnd. Hd. ... | 6 |
| | | | | | | Oilseal, 1 $\frac{1}{2}$ " I.D. x 1 $\frac{1}{2}$ " O.D. x $\frac{1}{8}$ " Wide ... | 1 |

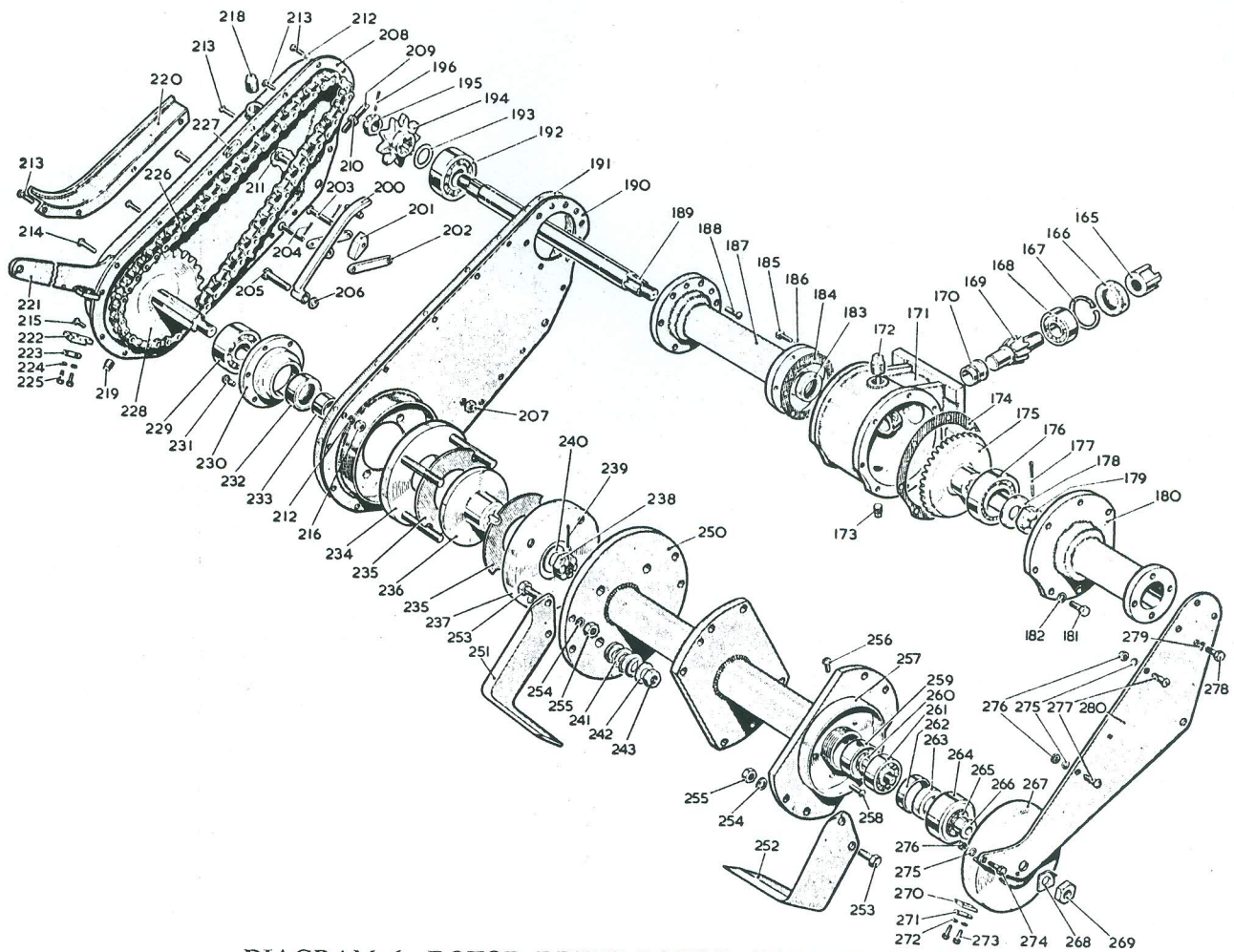


DIAGRAM 6—ROTOR DRIVE ROTOR AND HOE BLADES

| | | | | | | |
|-----|-------|------------------------------------|-----|-----|-----|---|
| 233 | 16563 | Spacing Sleeve | ... | ... | ... | 1 |
| 234 | 16554 | Drive Plate | ... | ... | ... | 1 |
| | 16552 | Stud | ... | ... | ... | 4 |
| 235 | 16135 | Friction Disc | ... | ... | ... | 2 |
| 236 | 16553 | Rotor Drive Disc | ... | ... | ... | 1 |
| 237 | 16551 | Wearing Plate | ... | ... | ... | 1 |
| 238 | | Nut, 3/8" B.S.F. Hex. Slotted | ... | ... | ... | 1 |
| 239 | | Splitpin, 1/8" Dia., 1 1/2" Lg. | ... | ... | ... | 1 |
| 240 | | Washer, 3/4" Dia., Std. Flat Brt. | ... | ... | ... | 1 |
| 241 | G602 | Spring | ... | ... | ... | 4 |
| 242 | | Washer, 7/16" Dia., Std. Flat Brt. | ... | ... | ... | 4 |
| 243 | | Nut, 7/16" Dia., B.S.F. Hex. Pln. | ... | ... | ... | 4 |

ROTOR AND BLADES

| | | | | | | |
|-----|-------|--|-----|-----|-----|----|
| 250 | 16784 | Rotor (Standard) | ... | ... | ... | 1 |
| 251 | 16792 | Hoe Blade, R.H. | ... | ... | ... | 4 |
| 252 | 16793 | Hoe Blade, L.H. | ... | ... | ... | 4 |
| 253 | G918 | Bolt | ... | ... | ... | 16 |
| 254 | | Washer, 7/16" Dia., Single Coil | ... | ... | ... | 16 |
| 255 | | Nut, 7/16" B.S.F., Hex. Pln. | ... | ... | ... | 16 |
| | 16896 | Picktine Rotor (Alternative not illustrated) | ... | ... | ... | 1 |
| | G991 | Lucerne Tine | ... | ... | ... | 10 |
| | G992 | Picktine | ... | ... | ... | 10 |
| | G921 | Bolt | ... | ... | ... | 20 |
| | | Nut, 7/16" B.S.F., Hex. Pln. | ... | ... | ... | 20 |
| | | Spring Washer, 7/16" Dia. | ... | ... | ... | 20 |
| 256 | | Setscrew, 1/4" B.S.F., 1/2" Lg., Rnd. Hd. | ... | ... | ... | 1 |
| 257 | G639 | Dust Cover | ... | ... | ... | 1 |
| 258 | | Rivet 3/16" Dia., 1/2" Lg. Rnd Hd. | ... | ... | ... | 3 |
| 259 | G635 | Back Plug | ... | ... | ... | 1 |

| | | | | | | |
|-----|---------|--|-----|-----|-----|---|
| 260 | 16558 | Stub Axle | ... | ... | ... | 1 |
| 261 | BRM 3/8 | Ball Bearing, 3/8" Bore, 1.13/16" O.D. 5/8" Wide | ... | ... | ... | 1 |
| 262 | G637 | Oilseal Holder | ... | ... | ... | 1 |
| 263 | | Oilseal, 7/8" I.D., 1 1/2" O.D., 13/32" Wide | ... | ... | ... | 1 |
| 264 | G632 | Bearing Cap | ... | ... | ... | 1 |
| 265 | G629 | Felt Dust Seal | ... | ... | ... | 1 |
| 266 | 16557 | Spacing Sleeve | ... | ... | ... | 1 |
| 267 | G640 | Dust Cover Assy. | ... | ... | ... | 1 |
| 268 | 16758 | Tab Washer | ... | ... | ... | 1 |
| 269 | | Nut, 5/8" B.S.F. Hex. Lock | ... | ... | ... | 1 |

STUB AXLE ASSEMBLY

SIDE PLATE

| | | | | | | |
|-----|-------|---|-----|-----|-----|---|
| 270 | 16764 | Scraper Blade, R.H. | ... | ... | ... | 1 |
| 271 | G830 | Keeper Plate | ... | ... | ... | 1 |
| 272 | | Washer, 1/4" Dia., Single Coil | ... | ... | ... | 2 |
| 273 | | Setscrew, 1/4" B.S.F., 1/2" Lg., Hex. Hd. | ... | ... | ... | 2 |
| 274 | | Setscrew, 1/4" B.S.F., 3/4" Lg., Hex. Hd. | ... | ... | ... | 1 |
| 275 | | Washer, 1/4" Dia., Single Coil | ... | ... | ... | 3 |
| 276 | | Nut, 1/4" B.S.F., Hex. Pln | ... | ... | ... | 3 |
| 277 | | Setscrew, 1/4" B.S.F., 5/8" Lg., Rnd. Hd. | ... | ... | ... | 2 |
| 278 | | Setscrew, 3/8" B.S.F., 3/4" Lg., Hex. Hd. | ... | ... | ... | 4 |
| 279 | | Washer, 7/16" Dia., Single Coil | ... | ... | ... | 4 |
| 280 | 16760 | R.H. Side Plate | ... | ... | ... | 1 |

SHIELDS AND TRAILING BOARD

| | | | | | | |
|-----|-------|--|-----|-----|-----|---|
| 285 | 16811 | Blade Setting Bar | ... | ... | ... | 1 |
| 286 | 16861 | Main Shield | ... | ... | ... | 1 |
| 287 | | Setscrew, 7/16" B.S.F., 3/4" Lg., Hex. Hd. | ... | ... | ... | 1 |
| 288 | | Washer, 7/16" Dia., Single Coil | ... | ... | ... | 1 |

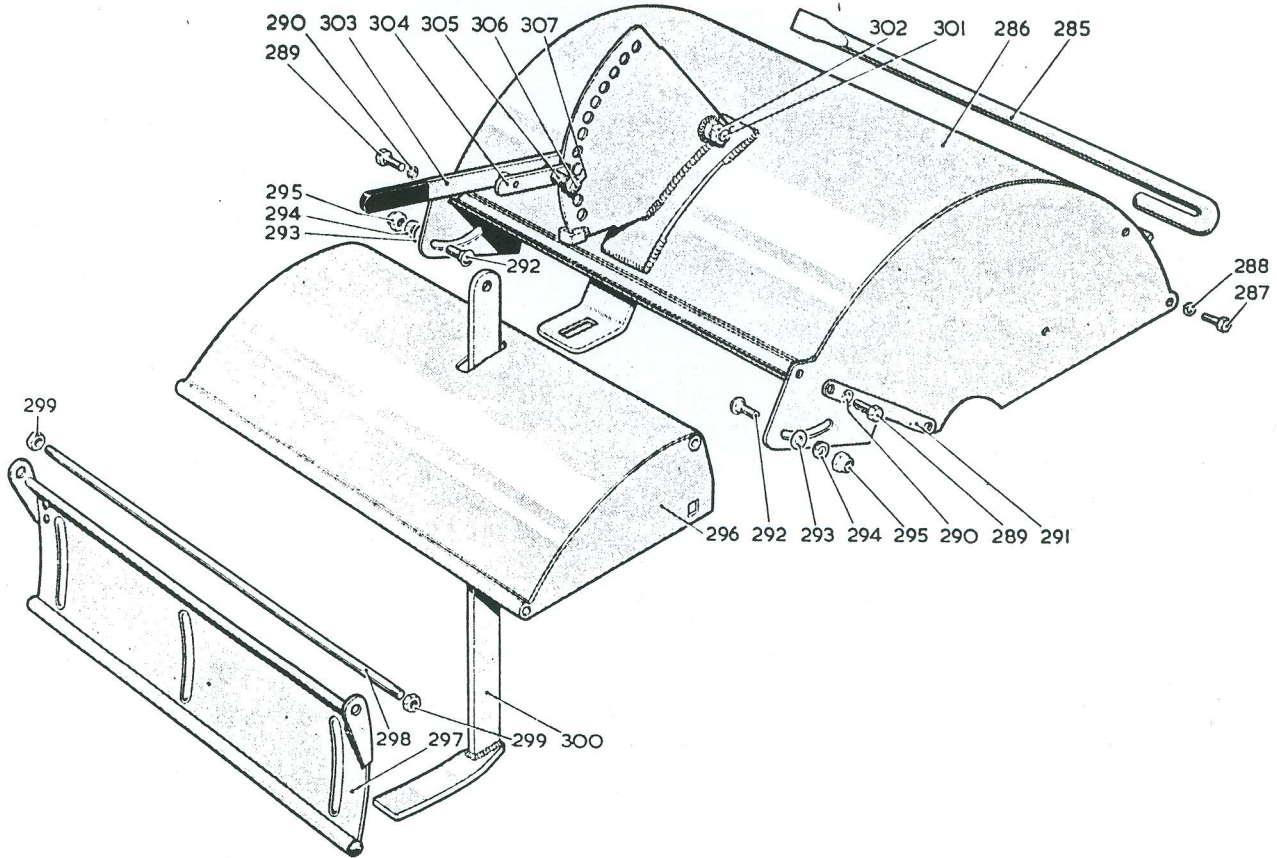


DIAGRAM 7—SHIELDS AND DEPTH CONTROL

| | | | | | | | |
|-----|-------|---|---|------|-------|---|---|
| 289 | | Setscrew, $\frac{3}{8}$ " B.S.F., $\frac{1}{4}$ " Lg., Hex. Hd. ... | 2 | 326 | 16744 | Handle Bar, L.H. ... | 1 |
| 290 | | Washer, $\frac{3}{8}$ " Dia., Single Coil ... | 2 | 327 | 16743 | Handle Bar, R.H. ... | 1 |
| 291 | 16754 | Shield Support, R.H. ... | 1 | 328 | 16799 | Toggle Spacer ... | 1 |
| 292 | G644 | Clamping Bolts ... | 2 | 329 | | Bolt, $\frac{3}{8}$ " B.S.F., $5\frac{1}{4}$ " Lg. ... | 2 |
| 293 | | Washer, $\frac{7}{8}$ " Dia., Flat Brt. ... | 2 | 330 | | Nut, $\frac{3}{8}$ " B.S.F., Hex. Locknut ... | 1 |
| 294 | | Washer, $\frac{3}{8}$ " Dia., Double Coil ... | 2 | 331 | 16707 | Hinge Plate ... | 2 |
| 295 | | Nut (Nyloc) $\frac{3}{8}$ " B.S.W., No. NP/V126 ... | 2 | | | | |
| 296 | 16770 | Rear Shield ... | 1 | | | | |
| 297 | 16539 | Trailing Board Assy. Comprising : | | 332 | 16662 | FRAME AND TOOLBOX | |
| | 16752 | Trailing Board ... | 1 | 333 | 16715 | Frame ... | 1 |
| | G649 | Bracket, L.H. ... | 1 | 334 | 16735 | Clamp Bolt ... | 1 |
| | G647 | Bracket, R.H. ... | 1 | 335 | | Locking Washer ... | 1 |
| | | Rivet, $\frac{1}{8}$ " Dia., $\frac{1}{2}$ " Lg. Rnd Hd. ... | 4 | 336 | 20517 | Washer, $\frac{1}{2}$ " Dia., Flat Brt. ... | 1 |
| 298 | 16771 | Rod ... | 1 | 337 | 16808 | Clamping Lever ... | 1 |
| 299 | | Nut, $\frac{1}{8}$ " B.S.F., Hex. Lock ... | 2 | 338 | | Toolbox Assy. ... | 1 |
| 300 | 16720 | Skid ... | 1 | 339 | | Bolt, $\frac{1}{4}$ " B.S.F., $\frac{3}{4}$ " Lg., Hex. Hd. ... | 4 |
| 301 | | Setscrew, $\frac{3}{8}$ " B.S.F., 1" Lg. Hex. Hd. ... | 1 | 340 | | Washer, $\frac{1}{4}$ " Dia., Single Coil ... | 4 |
| 302 | | Nut, $\frac{3}{8}$ " B.S.F., Hex. Lock ... | 1 | 341 | 16734 | Nut, $\frac{1}{4}$ " B.S.F., Hex. Pln. ... | 4 |
| 303 | 16717 | Depth Control Lever ... | 1 | 342 | | Bolt, Special ... | 2 |
| 304 | 16727 | Clip ... | 1 | 343 | | Setscrew, $\frac{3}{8}$ " B.S.F., 1" Lg., Hex. Hd. ... | 4 |
| 305 | 20470 | Spring ... | 1 | 344 | | Washer, $\frac{3}{8}$ " Dia., Single Coil ... | 4 |
| 306 | | Bolt, $\frac{1}{4}$ " B.S.F., $1\frac{1}{2}$ " Lg., Hex. Hd. ... | 1 | 344A | | Bolt, $\frac{1}{8}$ " B.S.F., 1" Lg., Hex. Hd. ... | 1 |
| 307 | | Nut, $\frac{1}{4}$ " B.S.F., Hex. Lock ... | 1 | 345 | | Washer, $\frac{5}{16}$ " Flat Brt. ... | 1 |
| | | | | 345 | | Nut, $\frac{5}{16}$ " B.S.F., Locknut Hex. ... | 1 |
| | | | | 346 | 16850 | Clutch Cable Spring ... | 2 |
| | | | | 347 | 16733 | Trunnion ... | 2 |
| | | | | 347A | | Splitpin, $\frac{3}{8}$ " Lg., 3/32" Dia. ... | 2 |
| | | | | 348 | 16894 | Eccentric ... | 1 |
| | | | | 348A | | Shakeproof Washer; $\frac{5}{8}$ " Dia., Internal ... | 1 |
| | | | | 348B | | Nut, $\frac{5}{8}$ " B.S.F. Simmond's "Nyloc" (NP/F 105) ... | 1 |
| | | | | 349 | 16845 | Reverse Fulcrum Arm ... | 1 |
| | | | | 350 | 16634 | CONTROL LEVERS AND QUADRANTS | |
| | | | | 351 | 16635 | Quadrant, R.H. ... | 1 |
| | | | | 352 | | Quadrant, L.H. ... | 1 |
| | | | | 353 | | Bolt, $\frac{1}{4}$ " B.S.F., $1\frac{1}{2}$ " Lg. Hex. Hd. ... | 2 |
| | | | | | | Washer, $\frac{1}{4}$ " Dia., Single Coil ... | 2 |

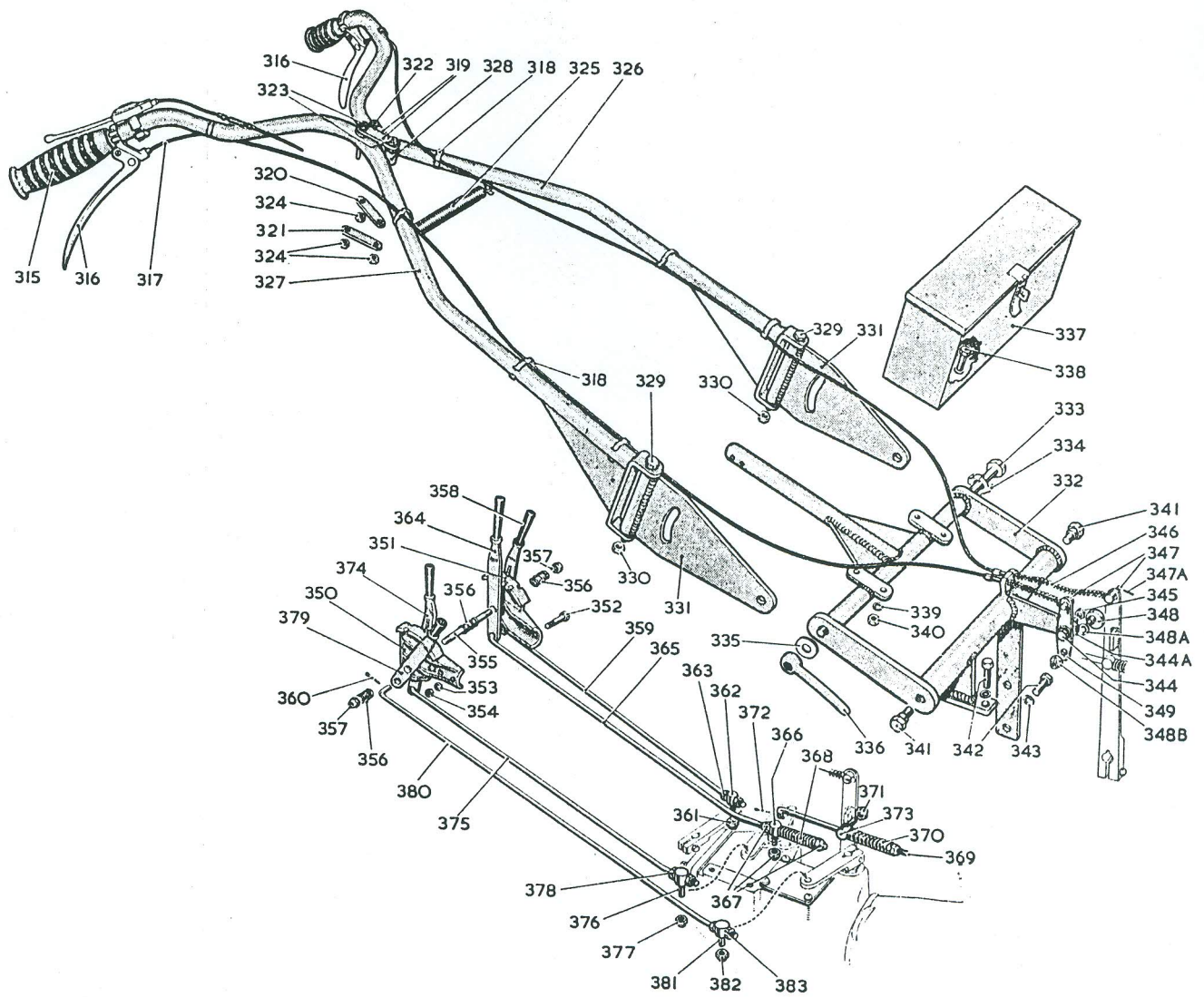


DIAGRAM 8—HANDLEBARS AND CONTROLS

| | | | | | | | |
|-----|-------|---|---|-----|-------|--|---|
| 354 | | Nut, $\frac{1}{4}$ " B.S.F., Hex. Pln. | 2 | 369 | 16841 | Reverse Lock Rod | 1 |
| 355 | 16731 | Stud | 1 | 370 | 16865 | Spring | 1 |
| 356 | G792 | Spring | 3 | 371 | | Nut (Nyloc) $\frac{5}{16}$ " B.S.W., No. NT/V106 | 2 |
| 357 | | Nut (Nyloc) $\frac{5}{16}$ " B.S.W., No. NT/V106 | 2 | 372 | | Splitpin, 3/32" Dia. $\frac{3}{8}$ " Lg. ... | 1 |
| 358 | 16729 | Hand Lever, Short | 1 | 373 | 16739 | Trunnion | 1 |
| 359 | 16629 | Rotor Control Rod | 1 | 374 | 16730 | Hand Lever, Long | 1 |
| 360 | | Splitpin, 3/32" Dia., $\frac{3}{8}$ " Lg. (1 per rod) | 4 | 375 | 16631 | Gear Control Rod | 1 |
| 361 | | Nut (Nyloc) $\frac{5}{16}$ " B.S.W., No. NT/V106 | 1 | 376 | 16739 | Trunnion | 1 |
| 362 | 16739 | Trunnion | 1 | 377 | | Nut (Nyloc) $\frac{5}{16}$ " B.S.W., No. NT/V106 | 1 |
| 363 | | Nut, $\frac{5}{16}$ " B.S.W., Locknut | 2 | 378 | | Locknut, $\frac{5}{16}$ " B.S.W., Hex. Lock ... | 2 |
| 364 | 16730 | Hand Lever, Long | 1 | 379 | 16729 | Hand Lever, Short | 1 |
| 365 | 16630 | Wheel Selector Rod | 1 | 380 | 16628 | Ratio Change Rod | 1 |
| 366 | 16739 | Trunnion | 1 | 381 | 16739 | Trunnion | 1 |
| 367 | | Nut (Nyloc) $\frac{5}{16}$ " B.S.W., No. NT/V106 | 3 | 382 | | Nut (Nyloc) $\frac{5}{16}$ " B.S.W., No. NT/V106 | 1 |
| 368 | 16851 | Spring | 1 | 383 | | Locknut, $\frac{5}{16}$ " B.S.W., Hex. Lock ... | 2 |