L24129

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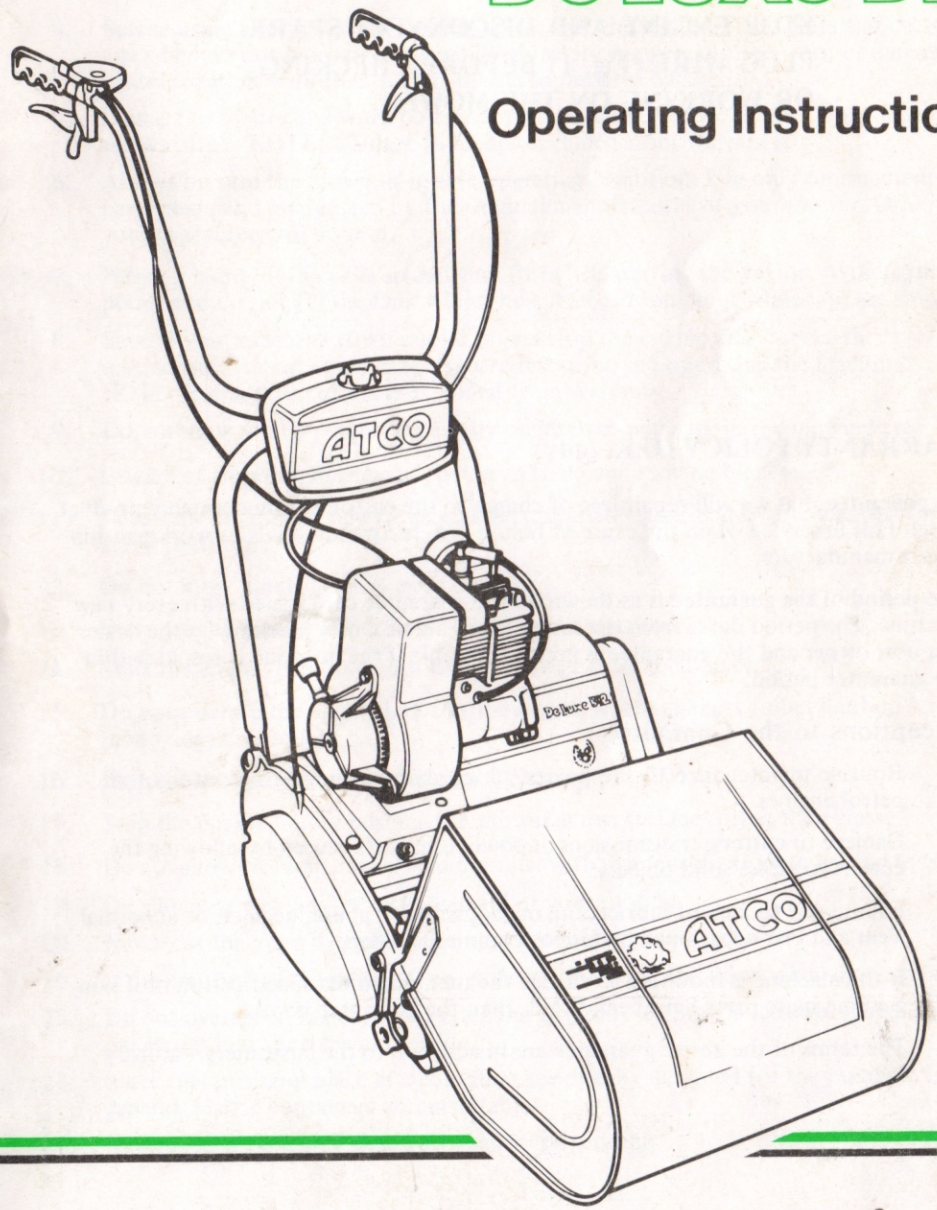
By Appointment to
Her Majesty the Queen
Manufacturers of
Motor Mowers
Charles H. Pugh Ltd.

ATCO

De Luxe B12

Operating Instructions



STOP ENGINE AND DISCONNECT SPARK PLUG WIRE (Fig. 1) BEFORE CHECKING OR WORKING ON THE MOWER.

WARRANTY POLICY (U.K. only)

We guarantee that we will repair free of charge to the customer any company product which fails in service when the cause of failure is defective materials or workmanship of our manufacture.

The period of the guarantee is as shown on the guarantee card issued with every new machine. The period dates from the time of the sale of a new machine by the dealer to a user owner and the guarantee is not transferable if the machine is resold within the guarantee period.

Exceptions to the Guarantee

a) Routine maintenance to the points, plugs, carburettor settings, etc., of all petrol engines.

b) Damage to cutters, transmissions or power unit parts caused by allowing the cutters to strike solid objects.

c) Failure due to lack of lubrication, maladjustment, abuse, neglect, or abnormal wear and tear occasioned by hire or commercial usage.

d) If the machine is modified to change the manufacturers specification or if non-genuine spare parts have been fitted, then the guarantee is void.

e) The terms of the above guarantee are in addition to the customers statutory rights.

SAFETY INSTRUCTIONS

1. Know your controls. Read the owner's manual carefully. Learn how to stop the engine quickly in an emergency.
2. Make sure the lawn is clear of sticks, stones, bones, wire and debris. They could be thrown by the blades, and cause damage or injury. NOTE: Damage to cutters is excluded from Warranty.
3. Stop the engine and disconnect spark plug wire before checking or working on the mower.
4. Before using always visually inspect to see that the blades, blade bolts and cutter assembly are not worn or damaged. With rotary mowers replace worn or damaged blades together with their fixings in sets to preserve balance.
5. Damage to blades and worn bolts are major hazards. Check all nuts, bolts and screws often: NOTE: Damage to blades excluded from Warranty.
6. Always be sure the mower is in safe operating condition. Use only replacement parts made and guaranteed by the original manufacturer of your mower. Otherwise your guarantee will be void.
7. Petrol is highly inflamable so add fuel BEFORE starting the engine. Avoid spilling petrol and do not fill the tank while the engine is running or while you are smoking.
8. Should your machine strike a solid object stop the engine and inspect the mechanism. Repair any damage before restarting and operating the machine. NOTE: Damage to cutters is excluded from Warranty.
9. Do not mow whilst people, especially children or pets, are in the mowing area.
10. Beware of trapping fingers etc., between fixed and moving blades.
11. Never use the mower unless the grassbox or guards provided by the manufacturer are in position.
12. Do not mow barefoot or in open sandals.
13. Disengage all blades and drive clutches before starting.
14. Start the engine carefully with feet well away from the blades.
15. Do not operate the engine in a confined space where exhaust fumes (carbon monoxide) can collect.
16. Stop the engine whenever you leave the mower.
17. Stop the engine before pushing the mower across surfaces other than grass.
18. Do not allow children or people unfamiliar with these instructions to use the mower.
19. On slopes or wet grass be extra careful of your footing.
20. Never cut the grass by pulling the mower towards you.
21. If the mower is of the ride-on type, extreme care should be taken when mowing on slopes.
22. Do not overspeed the engine or alter the governor settings. Excessive speed is dangerous and shortens mower life.
23. Store fuel in a cool place in a container specifically designed for the purpose. In general, plastic containers are unsuitable.
24. Never pick up or carry a mower when it is operating.

PREPARING THE MOWER FOR USE

Remove the machine from its slat and examine it thoroughly. If mower is damaged or faulty when received, inform your supplier at once.

Handle

The mower is packed with the upper section of handle folded down (Fig. 1). Lift the upper handle to the operating position, straighten tank into line and lightly tighten the nuts (A Fig. 2) at the two clamps until the operating height of the handles has been established.

To suit individual preference the height of the handle grips can be adjusted by altering the angle of the upper handle section (B Fig. 2). To achieve this, loosen the two nuts securing the upper and lower handle brackets at the same time holding the petrol tank (C Fig. 2) to prevent its position being disturbed. Move upper handle section forwards to raise height, or backwards to lower. Tighten nuts firmly.

Engine Oil

Before starting the engine, remove the filler plug (Fig. 3A) and put half a pint of oil (0.28 litres) in the crank case, using a good quality multi grade 20/50 oil. Remove plug lead and whilst filling, turn engine over slowly by hand to expel any air trapped in the sump. After filling sump replace plug.

Important

The correct oil level (Fig. 3B) is just below the point of overflow at the filler hole. Check that oil is at this level before each mowing session and replenish when necessary. When filling the sump ensure that the machine is standing on level ground. Do not undertake this operation while the engine is running.

NOTE: Always clean the vicinity of oil filler plug quite free of dirt and grass cuttings before removing the plug itself, to ensure that nothing but pure oil enters the sump.

Drain oil from sump after the first five hours' operation by removing the drain plug (Fig. 4). Tilt the machine over to allow all the old oil to drain away. This is best done when the engine is warm. Replace drain plug tightly and fill sump with ½pint (0.28 litres) of fresh engine oil. Thereafter drain sump and refill with fresh engine oil either after every 30 hours of operation, or at lease once a year.

Check sump oil level regularly and top up when necessary.

Petrol

Your motor mower is powered by a 4-stroke engine which operates on pure petrol.

Therefore DO NOT MIX OIL WITH PETROL. Unscrew the filler cap and remove anti-rust paper, (Fig. 5).

Fill the petrol tank with CLEAN PURE PETROL, preferably 3 star, (95 octane) (Fig. 6). It is advisable to use a fine gauze filter funnel for this purpose. The tank holds approximately 1½ pints (0.85 litres) which is enough for about 1½ hours work.

Always replace the cap on the petrol tank.

WARNING: It is dangerous to fill the petrol tank while the engine is running.

Starting engine from cold

1. Open petrol tap (Fig. 7).
2. Under extremely cold conditions close the choke lever to the horizontal position. Under normal conditions the choke lever should be half closed only, i.e: 45° (Fig. 8).
3. Open throttle lever (Fig. 9) from about one quater to one third of its travel.
4. Press the tickler (Fig. 10) on top of the carburettor float chamber two or three times, or until petrol just begins to overflow from the hole (A Fig. 10).
5. Starting by recoil starter is an easy and simple operation if undertaken correctly. Take hold of recoil starter grip (Fig. 11) and with a short smooth pull the engine should start. It is quite unnecessary and undesirable to 'snatch' or to withdraw the cord to full extension in order to start the engine. If engine does not start after the first two or three pulls, again press the tickler, and if necessary close the choke a little further. Finally, allow the starter cord to recoil, under control, until the grip reaches its normal position of rest.
6. After the engine has started, gradually open choke to vertical position as engine warms up. Leave it in this position for working and for starting when the engine is warm.

NOTE: It is better practice to underchoke and under-flood the carburettor than by going to the other extreme.

To stop engine move throttle lever to the 'STOP' position (Fig. 12), which will short circuit the ignition current.

NOTE: In the event that the engine does not stop after the throttle lever has been moved firmly into the 'STOP' position, some adjustment will be necessary. With the lever firmly in the 'STOP' position, loosen locknut (A Fig. 13) and rotate the ferrule (B Fig. 13) clockwise until the shorting arm (C Fig. 13) comes in contact with the earth wire terminal (D Fig. 13). Retighten locknuts.

To start engine from hot

The same procedure as starting from cold should be adopted except do not close choke, but flooding of the carburettor by pressing tickler (Fig. 10) may be necessary.

If engine will not start

If, after a reasonable number of attempts the engine will not start, carry out the following checks:-

1. Make sure that there is sufficient petrol in the tank, the tap is turned on and the throttle control lever is off the 'STOP' mark and past the 'MIN' mark.
2. If petrol is not flowing, remove fuel line (Fig. 14) from the tap and unscrew tap from tank, first making sure that a container is at hand into which to drain the petrol. Clean filter gauze and reassemble tap to tank.
3. If petrol is flowing release the two screws (A Fig. 15) from top of carburettor and remove float from chamber (Fig. 16A & B). Check float and clean out needle seat and float chamber. Reassemble carburettor, ensuring that float needle engages correctly into its seat and that the gasket is not damaged. Reconnect fuel line to carburettor and fuel tap.

4. Air filter blocked by dirt (see section on Air Filter).

5. Engine flooded, causing too rich a mixture and wet sparking plug. To cure, remove and dry plug, turn off petrol, open throttle, open choke (lever down) and turn engine over smartly a few times with the recoil starter. This will expel excessive petrol vapour. Replace plug.

6. Remove suppressor cap from spark plug and unscrew cap from H.T. lead. Check that H.T. lead and cap are not damaged. Hold end of H.T. lead close to cylinder head bolt. Rotate engine smartly with recoil, and check that spark is visible between lead and head bolt. If there is no spark, one of our Service Agents should be contacted.

   If a spark is clearly visible, refit suppressor cap to H.T. lead. Remove spark plug and wash thoroughly in petrol. If required, clean carbon off the electrodes with a wire brush and re-set gap to 0.635mm (.025 in.). (The use of abrasive grit cleaner is not recommended). Dry plug thoroughly. Fit spark plug to suppressor cap, lay close to a cylinder head bolt and test for spark. If no spark is visible, spark plug should be renewed.

   WARNING: Do not overtighten the spark plug when fitting as this will damage the thread in the cylinder head.

7. Follow the procedure given under a previous sub heading 'To start the engine from cold' but if the engine still will not start, more skilled attention will be necessary. It is recommended therefore that this is left to one of our Service Agents.

ROUTINE MAINTENANCE

a. Check the petrol and oil levels every time before starting the engine.

b. After the first five hours of use, change the engine oil and tighten all bolts and nuts.

c. After periods of 30 hours usage or, at the end of each year, whichever is the sooner, change the engine oil and wash Air Filter.

d. At regular intervals, check cylinder block and head cooling fins, removing any debris which can impede the air flow.

e. Examine the spark plug at reasonable intervals and clean or reset as necessary. Also check that the high tension lead is in good order.

Carburettor and adjustment

The carburettor is a Zenith type 13TCA.3 fitted with a fixed main jet. The only adjustments provided are by means of the throttle stop screw (A Fig. 17) and the air regulating screw (B Fig. 15). Both these screws are set before the engine leaves the factory, but differences can occur in usage requiring some slight adjustment. Tick-over speed can be adjusted by turning the throttle stop screw clockwise to increase and anti-clockwise to decrease.

Smooth idling can be obtained through regulating the air flow by means of the adjusting screw on top of the carburettor. Turning this screw clockwise enriches the mixture and anti-clockwise weakens it. The normal position for this screw is between ¾ and one full turn open, (anti-clockwise from the fully closed position). Turning the screw slightly one way or the other will affect smooth idling and its position should be checked carefully after each movement until the optimum is obtained.

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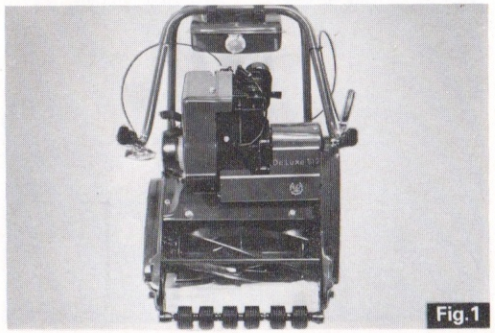


Fig.1

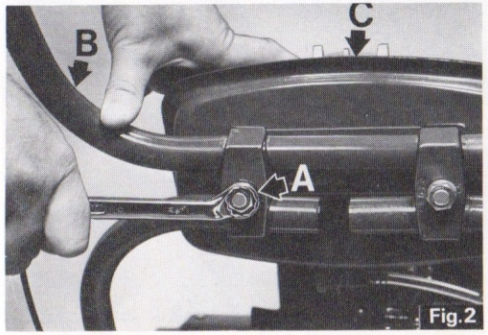


Fig.2


Fig.3A

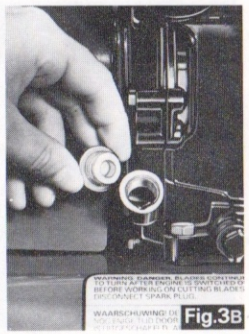


Fig.3B

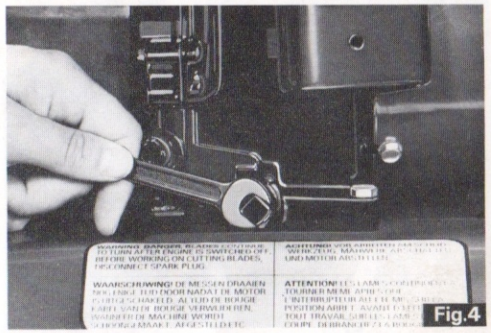


Fig.4

Fig.5

Fig.6

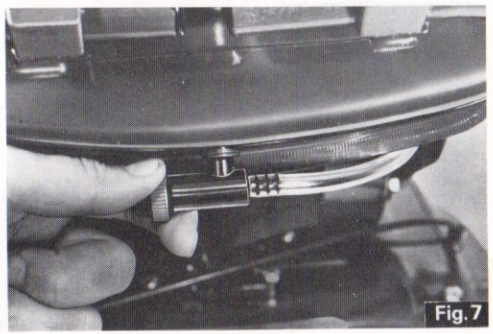


Fig.7

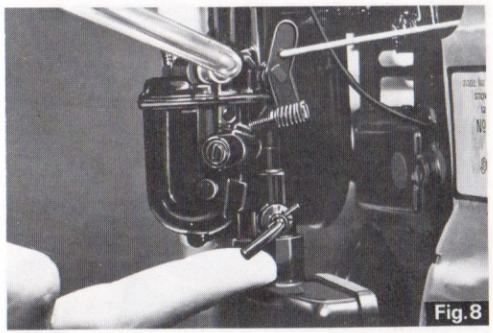


Fig.8

Fig.9

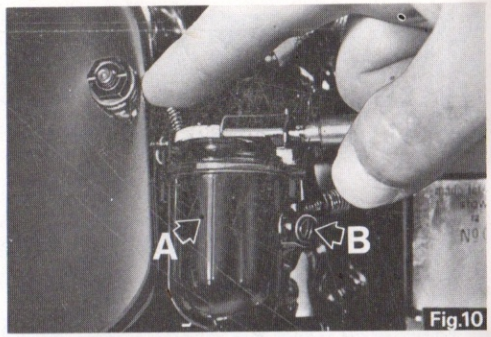


Fig.10

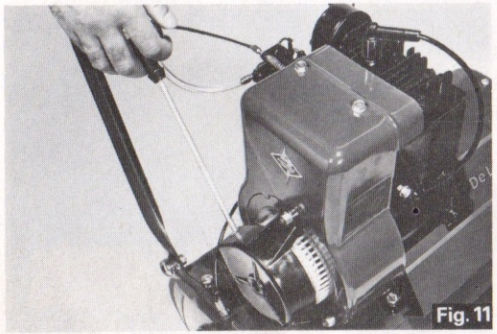


Fig.11

Fig.12

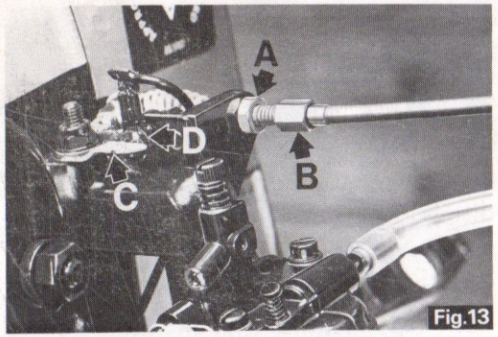


Fig.13

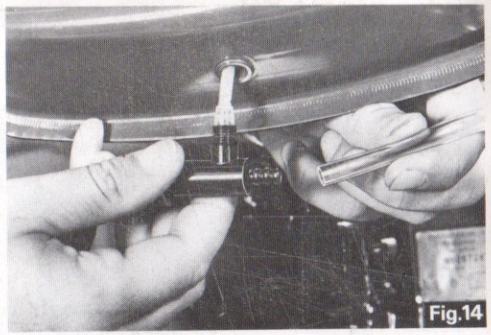


Fig.14

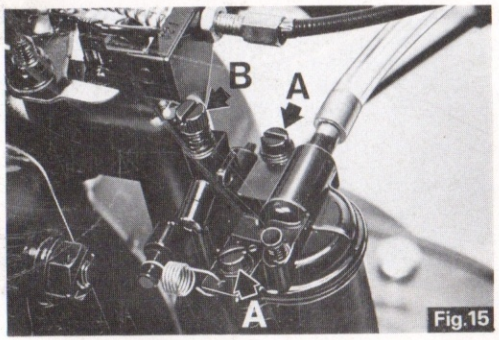


Fig.15

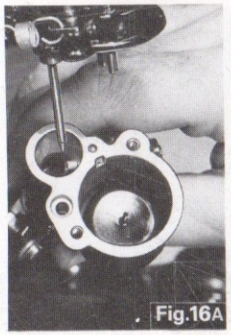
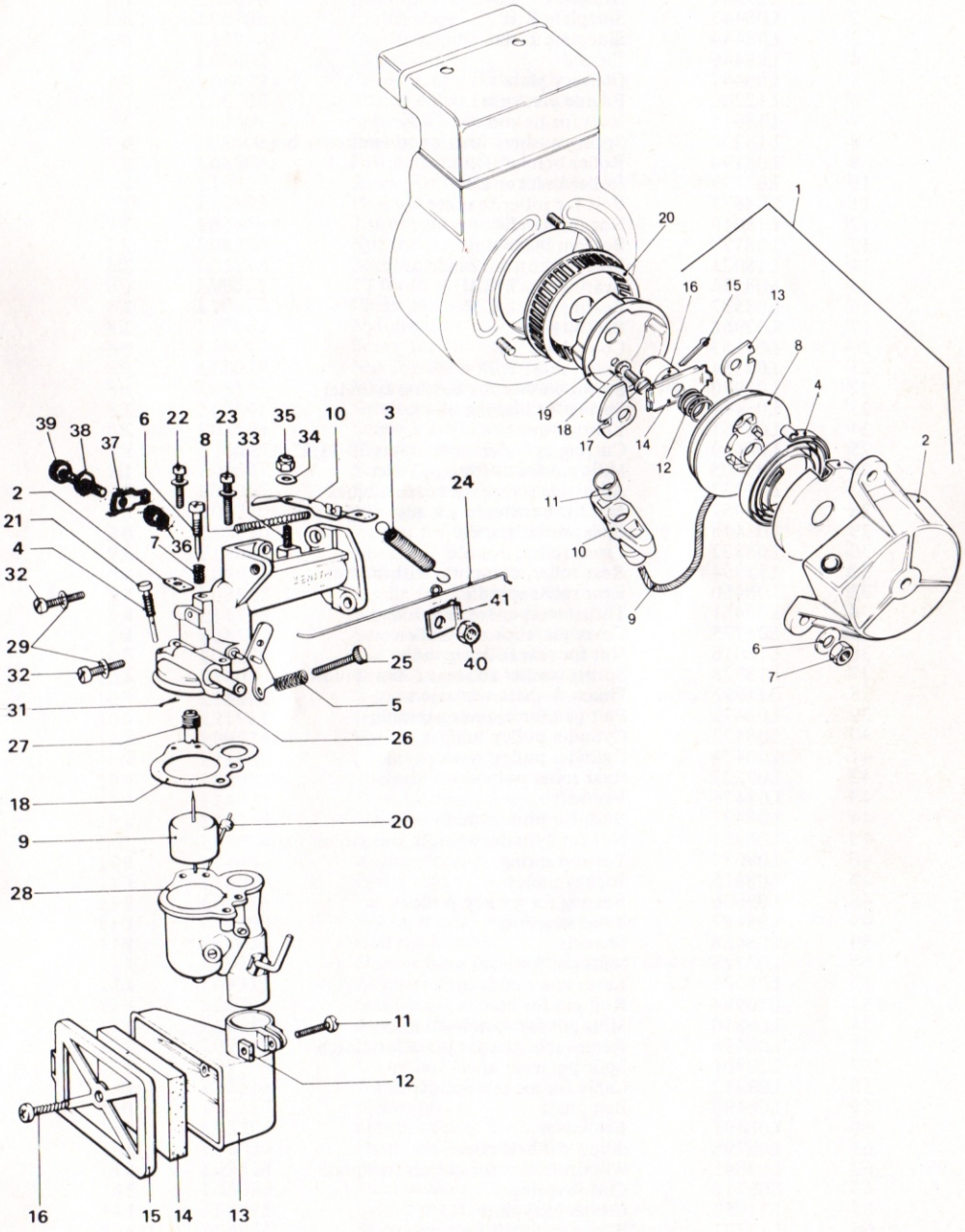


Fig.16A


Fig.16B

CARBURETTOR and RECOIL SUB ASSEMBLY



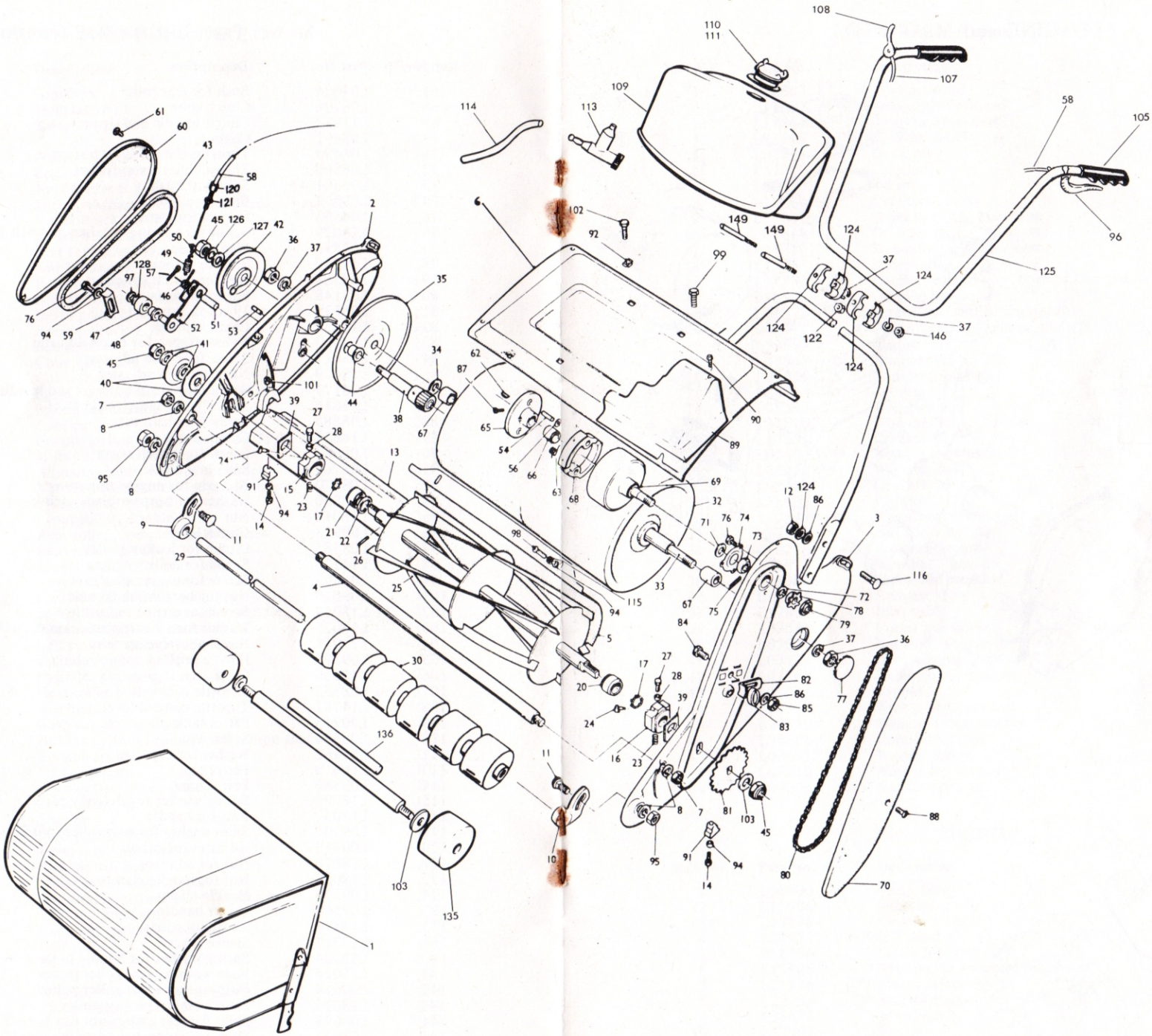
Parts Lists on page 14

Mower Parts List for B12

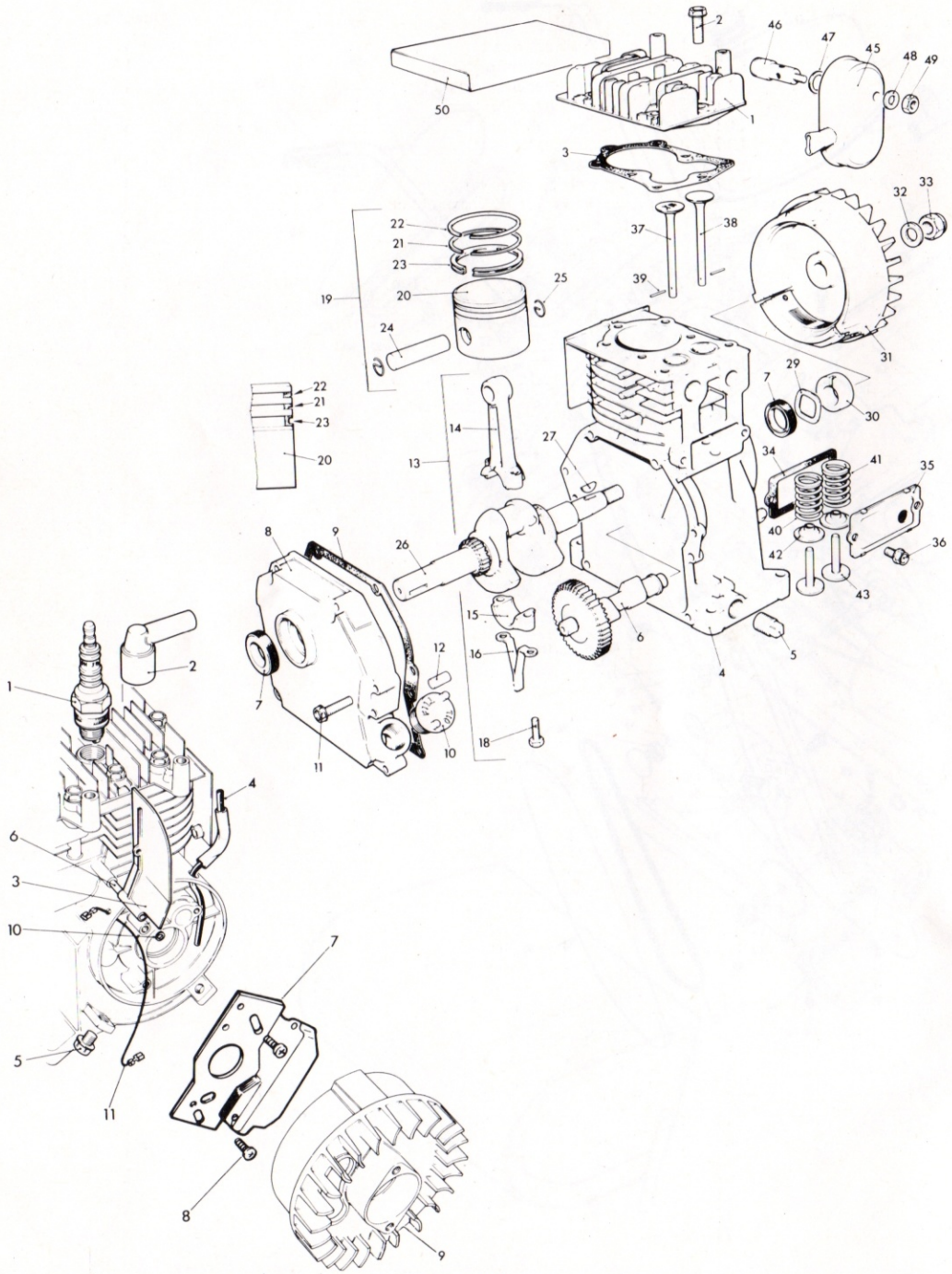
Ref. No.	Part No.	Description	Quantity
1	L21901	Grassbox	1
2	L08443	Sideplate R.H.	1
3	L08444	Sideplate L.H.	1
4	L08446	Tie rod	1
5	L08447	Delivery plate	1
6	L12206	Engine platform	1
7	L18015	Nuts for tie rod	2
8	L18204	Spring washers for tie rod and roller brackets	4
9	L05198	Roller bracket R.H.	1
10	L05199	Roller bracket L.H.	1
11	L08673	Bolt for roller bracket	2
12	L18016	Nut for handle	2
13	L08779	Bottom blade unit	1
14	L18021	Bolt for bottom blade unit	2
15	L08536	Bearing block R.H.	1
16	L08537	Bearing block L.H.	1
17	L02968	Ball retainer	2
20	L07153	Cone, long L.H.	1
21	L07154	Cone, short R.H.	1
22	L02970	Spring washer for cutting cylinder	1
23	L03494	Spring for bearing block	2
24	L06751	Lubricators	2
25	L08469	Cutting cylinder (incl. items 20,21,22 & 26)	1
26	L09305	Mills pin for cutting cylinder	1
27	L07222	Adjusting screw for bearing block	2
28	L06954	Nut for bearing block adjusting screw	2
29	L08448	Front roller spindle	1
30	L08833	Front roller, double	3
32	L11994	Rear roller, complete with bushes	1
33	L08450	Rear roller spindle	1
34	L08451	Thrust washer for rear roller	1
35	L08775	Cover plate for rear roller	1
36	L18018	Nut for rear roller spindle	2
37	L18028	Spring washer for rear roller spindle	2
38	L11993	Pinion & shaft sub assembly	1
39	L08472	Felt pad for cylinder spindle	2
40	L08473	Cylinder pulley half	2
41	L08474	Cylinder pulley spacer	2
42	L09227	Rear roller pulley	1
43	L08476	Vee belt	1
44	L08477	Bush for pinion shaft	2
45	L06957	Nut for cylinder spindle and pinion shaft	1
46	L09037	Torsion spring	1
47	L08815	Jockey pulley	1
48	L09056	Bearing for jockey pulley	1
49	L08487	Tension spring	1
50	L08488	Shackle	1
51	L03725	Mills pin for lever arm	1
52	L09039	Lever arm and spindle	1
53	L10984	Roll pin for belt	2
54	L08810	Mills pin for clutch shoe	2
56	L08416	Removable ratchet plate for clutch	1
57	L20901	Split pin lever arm	1
58	L09312	Cable for jockey pulley	1
59	L08490	Belt guide	1
60	L08491	Belt cover	2
61	L08798	Screw for belt cover	1
62	L03845	Woodruff key for clutch backplate	2
63	L08712	Clutch spring	1
65	L11950	Clutch backplate	1
66	L12222	Bush for clutch backplate	

Mower Parts List for B12 (continued)

Ref. No.	Part No.	Description	Quantity
67	L07034	Bush for rear roller	2
68	L08708	Clutch shoe	2
69	L11990	Clutch spindle and drum	1
70	L08492	Chain case	1
71	L08499	Thrust collar for clutch spindle	1
72	L08500	Thrust collar for sprocket	1
73	L08501	Spherical bush	1
74	L08502	Bearing retainer	1
75	L08503	Felt packing strip	1
76	L18029	Screw for bearing retainer and belt guide	4
77	L17893	Plug button	1
78	L07859	7 tooth sprocket	1
79	L08388	Nut for clutch spindle	1
80	L05148	Sprocket chain	1
81	L08538	19 tooth sprocket	1
82	L10832	Chain adjuster	1
83	L07063	Nylon slipper for chain adjuster	1
84	L18017	Screw for chain adjuster	1
85	L18079	Nut for chain adjuster	1
86	L18177	Washer for chain adjuster and handle	3
87	L03846	Setscrew for clutch backplate	1
88	L08583	Screw for chain case	1
89	L18677	Clutch cover	1
90	L08587	Screw for clutch cover	3
91	L08765	Soleplate block	2
92	L08770	Nut grip for engine mounting	4
94	L18030	Washer for bottom blade, delivery plate & belt guide	5
95	L18016	Nut	2
96	L09973	Clutch lever	1
97	L08585	Circlip for jockey pulley	1
98	L14723	Screw for delivery plate	2
99	L08592	Screw for engine platform	6
101	L09079	Nut for bottom blade unit	2
102	L18019	Screw for engine mounting	4
103	L18025	Washer for 19 tooth sprocket & auxiliary roller	3
104	L21911	Handle bottom section	2
105	L09574	Handle grip	2
106	L11580	Cable clip	2
107	L08933	Throttle cable	1
108	L14781	Throttle control lever	1
109	L20215	Petrol tank	1
110	L09584	Screw cap	1
111	L14462	Washer for cap	1
113	L16019	Petrol tap	1
114	L09586	Petrol tube	1
115	L18090	Spring washer for delivery plate	2
116	L18033	Bolt for handle	2
117	L09707	Shim washer for rear roller (not illustrated)	1
120	L09313	Adjuster for cable	1
121	L18020	Nut for adjuster	1
122	L18059	Nut for handle clamps	2
124	L09573	Handle clamp	4
125	L09566	Upper handle	1
135	L12316	Auxiliary roller	2
136	L12317	Sleeve spacer	1
140	L18204	Spring washer for handle bolts	2
141	L18024	Plain washer - rear roller pulley	3
142	L09614	Plain washer - rear roller pulley	1
143	L18023	Plain washer - jockey pulley	3
144	L00695	Shim for rear roller (not illustrated)	1
145	L04974	Shim for rear roller (not illustrated)	1



ENGINE and MAGNETO



Engine Main Assembly - A98

Ref. No.	Part No.	Description	Quantity
1	L17863	Cylinder head	1
2	L11367	Bolt - cylinder head	8
3	L17843	Cylinder head gasket	1
4	L21873	Cylinder block	1
5	L03822	Drain plug	1
6	L17860	Camshaft	1
7	L03813	Oil seal	2
8	L17864	Crankcase cover	1
9	L17842	Gasket - crankcase cover	1
10	L17844	Oil filler plug	1
11	L11370	Screw for crankcase cover	6
12	L17953	Dowel pin	2
13	L17852	Connecting rod assy. (compr. con rod. cap & screw)	1
16	L18590	Oil splasher	1
18	L11371	Screws for connecting rod cap	2
19	L20971	Piston assembly (compr. items 20, 21, 22, 23, 24 & 25)	1
20	L17862	Piston	1
21	L17847	Scraper ring	1
22	L17846	Compression ring	1
23	L08221	Oil ring	1
24	L08222	Gudgeon pin	1
25	L21516	Wire circlip	2
26	L17861	Crankshaft	1
27	L03597	Key for flywheel	1
29	L05052	Wave washer	1
30	L08146	Cam sleeve	1
31	L21875	Flywheel	1
32	L17849	Washer for crankshaft	1
33	L17845	Nut for crankshaft	1
34	L12273	Breather gasket	1
35	L21822	Breather assembly	1
36	L11366	Screw for breather	2
37	L17804	Exhaust valve	1
38	L17805	Inlet valve	1
39	L03531	Cotter pin valves	2
40	L03528	Exhaust valve spring	1
41	L03529	Inlet valve spring	1
42	L03968	Valve spring retainer	2
43	L03535	Tappet	2
44	L12330	Washer for exhaust	1
45	L20886	Silencer sub assembly	1
46	L08686	Connecting pipe	1
47	L08691	Washer gasket	1
48	L08912	Washer for silencer	1
49	L09079	Nut for silencer	1

Magneto

Ref. No.	Part No.	Description	Quantity
1	L08400	Spark plug	1
22	L11606	Suppressor cap	1
3	L17895	Governer blade	1
4	L21877	H.T. lead	1
5	L11366	Screw for cowl	1
6	L17906	Spindle for governor blade	1
7	L21876	Stator assembly	1
8	L22033	Screw for stator	2
9	L21875	Flywheel	1
10	L17907	Circlip	1
11	L21878	Cut out lead	1

Carburettor

Ref. No.	Part No.	Description	Quantity
1	L08589	Manifold gasket (not illustrated)	1
2	B18639	Spring anchor plate	1
3	L08203	Governor spring	1
4	015454	Spring for tickler	1
5	008539	Spring for throttle stop screw	1
6	015457	Air regulating screw	1
7	015458	Spring for air regulating screw	1
8	L06531	Throttle return spring	1
9	020507	Float & needle assembly	1
10	L14743	Throttle lever	1
11	L11337	Screw for air filter	1
12	L11221	Nut for air filter	1
13	L14744	Air filter body	1
14	L14736	Filter element (foam)	1
15	L14739	Air filter cover	1
16	L12892	Screw for cover	1
18	020583	Gasket (bowl to barrel)	1
20	020582	Slow running tube	1
21	020572	Tickler	1
22	020584	Screw & spring washer short	1
23	B19225	Screw & spring washer long	1
24	L14738	Throttle link	1
25	B16493	Throttle stop screw	1
26	B25344	Carburettor barrel assembly	1
27	B17767	Needle seating	1
28	B25467	Carburettor bowl	1
29	L18026	Shakeproof washer	2
31	005890	Split pin for tickler	1
32	L09087	Screw for carburettor fixing	2
33	L14779	Stud for throttle lever	1
34	L18303	Washer for throttle lever	1
35	L11220	Nut for throttle lever	1
36	B24712	Insulating bush	2
37	B24713	Cut out connection tab	1
38	020102	Washer	1
39	B25352	Screw	1
40	B25995	Nut	1

Recoil Sub-assembly

Ref. No.	Part No.	Description	Quantity
1	L20885	Recoil starter assy. (compr. items 2,4 & 8 to 16 incl.)	1
2	L10889	Sub assembly of recoil cover	1
4	L21131	Recoil spring and housing assembly	1
6	L18129	Washer for recoil fixing	3
7	L18118	Nut for recoil fixing	3
8	L09328	Pulley	1
9	L05517	Rope	1
10	L11932	Handle for rope	1
11	L09035	Ferrule for handle	1
12	L09331	Compression spring	1
13	L09330	Pawl	2
14	L21107	Activator	1
15	L20901	Split pin	1
16	L21108	Locating collar	1
17	L18176	Screw for driving hub	2
18	L18174	Washer for driving hub	2
19	L09332	Driving hub	1
20	L09255	Rotary screen	1
21	L11377	Screw-engine cowl	2
22	L17910	Engine cowl assembly	1

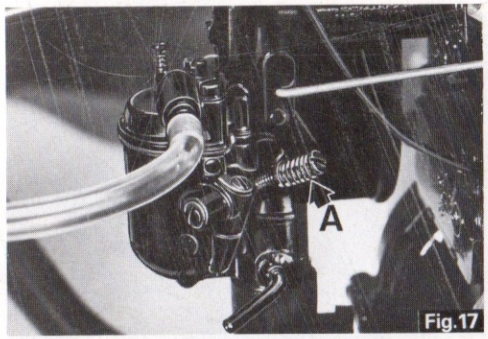


Fig.17

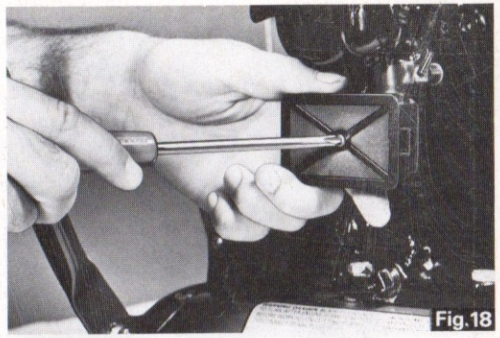


Fig.18

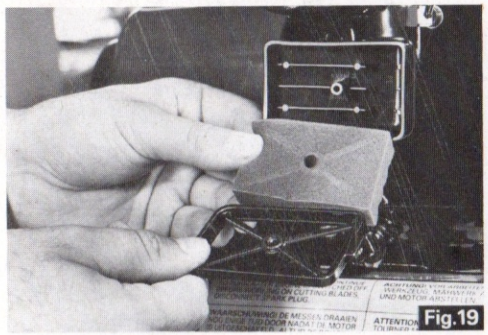


Fig.19

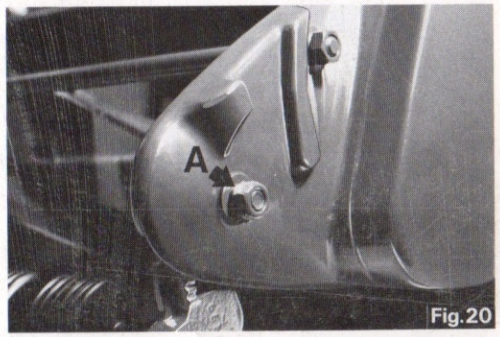


Fig.20

Fig.21

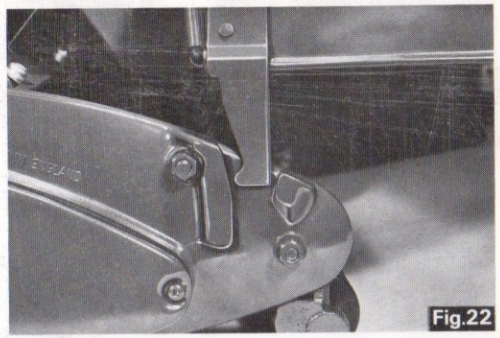


Fig.22

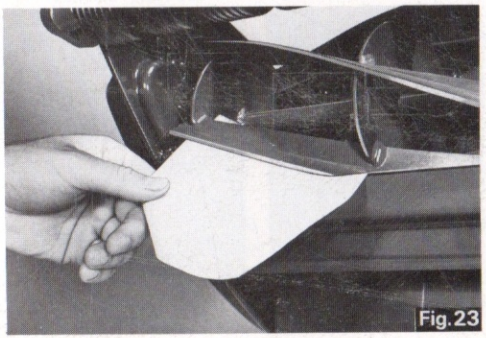


Fig.23


Fig.24

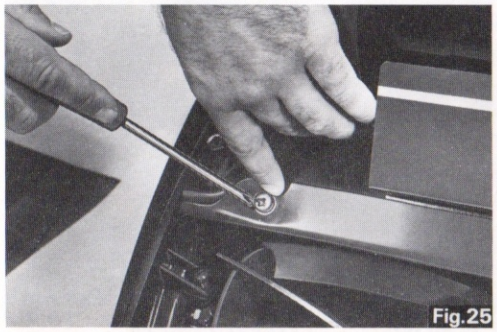


Fig.25

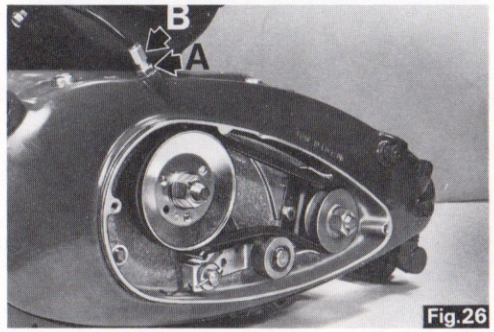


Fig.26

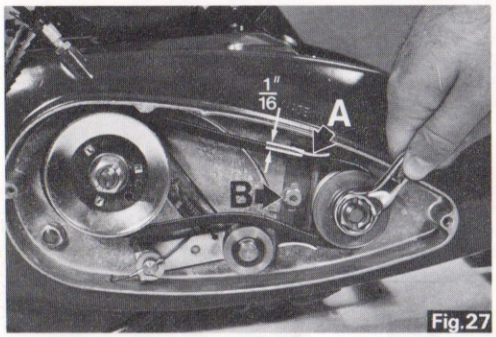


Fig.27

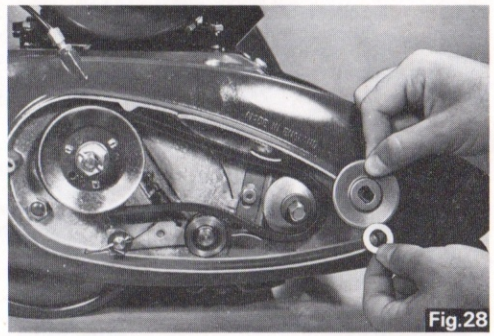


Fig.28

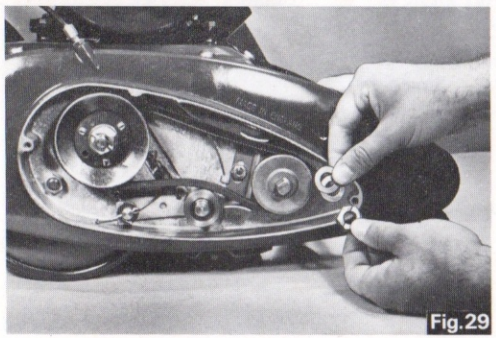


Fig.29

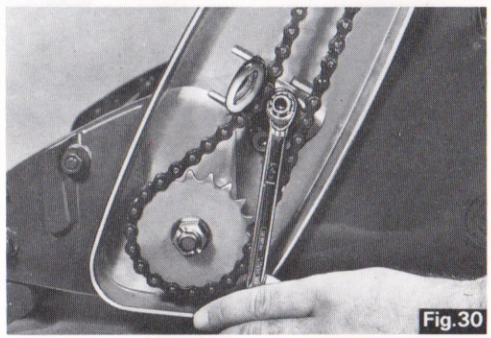


Fig.30

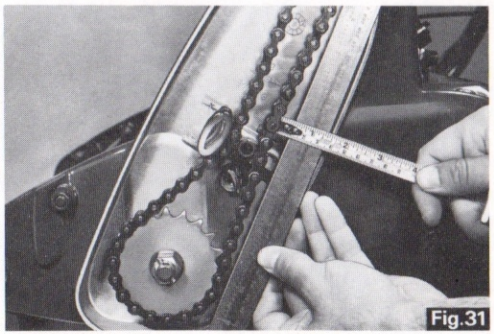


Fig.31

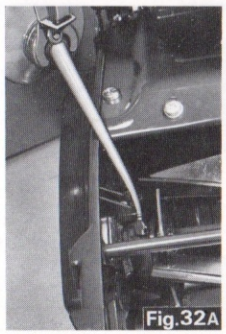


Fig.32A

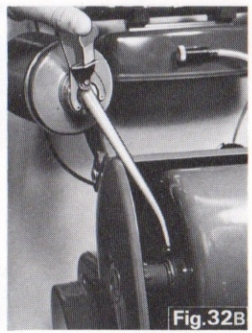


Fig.32B

Cont'd from page 4

The fixed jet (B Fig. 10) is located in the side of the float chamber and accesss is gained by removing the screw shown. This jet does not normally require any maintenance, but if, for any reason, blockage is suspected, removal of the jet for cleaning is possible with the aid of a strong thin screwdriver. Care must be taken not to damage the thread when removing or replacing the jet.

A faulty or sticking float can usually be diagnosed by petrol continually leaking out of the small hole in the float chamber. To rectify, remove the float chamber (Fig. 16A) and reposition or replace the float as necessary.

Air filter cleaning

This should be carried out after every 15 hours use or more frequently when working in dusty or excessively dry conditions.

Unscrew the small screw (Fig. 18) in the centre, holding the retaining cover and remove the element (Fig. 19). Wash foam element thoroughly in detergent or petrol, allow to dry thoroughly before replacing. To keep engine clean, replace foam element after every 100 hours of usage.

NOTE: Face the air filter to the crankcase wall before use.

Magneto

The engine on this machine is fitted with a breakerless ignition system which requires no adjustment whatsoever. In the unlikely event of ignition failure, one of our Service Agents should be contacted.

T.V. Suppressor

A suppressor against T.V. interference is fitted into the plug cover at the end of the high tension lead.

MOWER CONTROLS

Centrifugal clutch

The centrifugal clutch is fitted to the cutting cylinder drive which automatically engages when the engine speed is increased from idling. Therefore, in order to engage the clutch, move the throttle lever into the 'FAST' position, and conversely, to disengage the clutch, move the throttle lever into the 'MIN.' position.

Hand clutch

Once the centrifugal clutch is engaged, as described above, pull the hand clutch upwards towards the handle to obtain power propelled operation. To stop the travel, release the lever.

Throttle lever

This control, fitted to the left hand side of the handle provides an infinitely variable speed range between the speed at which the centrifugal clutch engages and maximum engine r.p.m. to both the cutting cylinder and the speed of propulsion. This enables a travel speed to be obtained to suit a comfortable walking speed of the operator.

Height of cut

To regulate the height of cut, loosen nuts (A Fig. 20) on either side of the machine and raise or lower rollers as required. Make sure the adjustment is even on each side before tightening the nuts. Care should be taken, especially when the turf is damp and soft - to avoid lowering the machine so that the bottom blades touches the ground, resulting in drag marks or even scalping.

Side front rollers

With the roller type of mowers, as the height of cut is controlled by the front rollers, it has been found on certain types of grass, the side roller attachment enclosed with the mowers gives more satisfactory results when used in place of the front plastic rollers fitted as standard equipment. This applies particularly to the coarse types of grass which are inclined to be longer and tougher and also the first seasonal mowing.

1. Loosen the nuts which hold the front roller brackets using a spanner if necessary, on the flats provided.
2. Remove one or both brackets, and take the plastic rollers off the spindle.
3. Replace the rollers with the two side rollers, spaced apart by the plastic sleeve, with washers between the wheels and the sleeve, at each end.
4. Replace the spindle and roller brackets on the mower, and tighten the nuts, making sure that the rollers are at the same level as each other, and that the height of cut is at the required setting.

USING THE MOWER

When the throttle is opened (Fig. 21) the engine will speed up and drive the cutting cylinder, but the mower will not move under power until the rear roller clutch is engaged.

For fully propelled operation, pull back the clutch lever and the mower will move forward under its own power. To stop the mower moving, release the clutch lever.

To stop the cutting cylinder rotating close the throttle setting.

With the hand clutch disengaged, it is easy to mow awkward corners, pushing the mower by hand.

The speed of the mower can be adjusted to a convenient walking pace by opening or closing the throttle control lever.

Any damage to the machine caused by hitting a solid object should be repaired before continuing mowing and do not mow when people or animals are in the vicinity.

Grassbox

The machine may be used with or without the grassbox. The grassbox is in itself easy to attach to,and detach from,the machine as shown in (Fig. 22).

ADJUSTMENTS

NOTE: Never make adjustments with the engine running. Remove the spark plug lead to ensure that the engine cannot be started inadvertantly.

Cutting cylinder

When correctly adjusted each cylinder blade should lightly brush the bottom blade and should cut thick paper (Fig. 23) evenly along its full length.

Adjusting screws are provided at each end to raise or lower the cylinder (Fig. 24). Turning the screws clockwise will bring the cylinder blades closer to the bottom blade and vice versa.

WARNING: Take care when rotating the cutting cylinder by hand, as the blades are very sharp.

Delivery plate

If grass cuttings are not being thrown properly into the grassbox, the angle of the delivery plate may be altered by loosening two of the screws (Fig. 25), sliding the delivery plate backward or forward a little as necessary, then tightening the screws again.

Centrifugal clutch

The centrifugal clutch is adjusted correctly in the factory and will not require attention between servicing periods.

Hand clutch

If the clutch slips, stop the engine and adjust the belt. To do this, release the locknut (A Fig. 26) and rotate the ferrule (B Fig. 26) anti-clockwise. It will be helpful to remove the transmission cover plate to judge the effect of any such adjustment.

When correctly adjusted the rear roller should be disengaged when the clutch lever is fully released, and engaged when the lever is raised to a comfortable position close to the handle. Tighten the locknut after adjusting the ferrule. While the clutch lever is fully raised, check also that there is a gap of approximately 1/16 " (2mm) between the top run of the belt guide (A Fig. 27). If not, adjust accordingly by loosening securing screw (B Fig. 27).

To obtain further adjustment when the above range of adjustment is exhausted, remove one or two shims (Fig. 28), as required, from the *centre* of the smaller pulley. It will be necessary to undo the large securing nut first (Fig. 27). Make sure that both this nut, if disturbed, and the adjustment locknut are securely tightened before replacing the side cover.

NOTE: When fitting a new belt which will obviously be shorter than the old stretched belt, it will be necessary to remove one or two shims, as required, from the *outside* of the smaller pulley (Fig. 29) and add it or them to the centre of the pulley as shown (Fig. 28).

Chain

To adjust chain, firstly remove the chaincase cover. Loosen adjuster screw (Fig. 30) and slide adjuster inwards or outwards according to the need. The adjustment should allow ½" (13mm) of free movement at the centre of the rear run of the chain (Fig. 31).

LUBRICATION

Oil

The following points should be oiled with light machine oil each time before use. The cutting cylinder bearings (Fig. 32A) through spring cap lubricators. The rear roller, through the small hole at the right hand side; the left hand end of the rear roller should be oiled with the machine tilted forward onto the front roller (Fig. 32B); the front rollers at each end and between each roller section.

WARNING: Do not oil the centrifugal clutch or the Vee Belt drive.

Grease

After every 15 hours' use, remove the chaincase and grease the chain.

Storage

The mower should be kept in a dry well ventilated place, preferably on a duck board to keep it off the floor. This should indeed be its permanent place of rest throughout each year.

Winter storage

To maintain the machine in good order during the winter months, the following procedure is recommended:-

Remove all dirt and dust and carry out a full lubrication as described in this Manual. Also smear oil over cutting faces of knives and bottom blade.

Store the machine in a dry place and start the engine and run it briefly at least twice during the winter to maintain an internal oil film and to avoid the possibility of valve-sticking the following spring.

It is also advisable to leave the engine on compression stroke. To do this, withdraw the recoil starter until resistance is encountered. Return recoil starter to position of rest.

NOTE: If it is not going to be possible to run the engine at intervals during the winter, it is advisable to squirt about one teaspoonful of engine oil into the sparking plug hole and to turn the engine over a few times before putting the machine away for the winter. The sparking plug should be replaced after this operation has been carried out.

N.B. It is unwise to use 'stale' petrol which has been in store in your shed through the winter months. The container may not have been airtight and the resultant steady evaporation of the volatile content of the petrol is a condition which is often a contributory factor in cases of bad starting at the beginning of the mowing season.

Important:

To the owner - it should be particularly noted that items such as the cleaning of sparking plugs and jets, the adjustment of chains, cutters, etc., do not come under the Guarantee.

Full particulars of all such adjustments and the necessary information in regard to plug cleaning, etc., are clearly set out in this instruction book, and are capable of being attended to from the information given, without special mechanical knowledge.

Instructions for ordering spare parts

IMPORTANT: It is essential to quote the following:-

a) The Model name of the machine
b) The engine serial number (see Engine Assembly Illustration)
c) The PART NUMBER of the part NOT the illustration reference number.

SPARES AND SERVICE

We have Service Branches covering the whole of the United Kingdom and in addition some 400 appointed agents covering the principal towns to give service to all of our machines.

Spare Parts Supply

Please note that we have recently changed our spare parts supply organisation. If you require any part for your Atco mower then you should contact:-

(a) Your nearest lawn mower service dealer.
(b) One of our Service Branches (see list below).
(c) Central Spares Organisation: P.O. Box 256, Atco Works, Tilton Road, Small Heath, Birmingham B9 4PR. Telephone: 021 - 772 2524.

ATCO SERVICE BRANCHES

SCOTLAND
Larkhall Industrial Estate,
Larkhall, Strathclyde ML9 2PF.
Telephone: 0698 - 882370

NORTH EAST ENGLAND
Four Riggs,
Darlington DL3 6PS.
Telephone: 0325 - 62671 or 66939

NORTH WEST ENGLAND
School Lane, Longton,
Nr. Preston PR4 4SA, Lancs.
Telephone: 0772 - 612451/2

NORTH & NORTH MIDLANDS
Rotherham Road,
Eckington, Sheffield S31 9FH.
Telephone: 0246 - 432373/4

WEST ENGLAND & WALES
Castleford, Tutshill,
Chepstow NP6 7YJ. Gwent,
Telephone: 02912 - 2732 or 2114

NORTH LONDON & ANGLIA
Gipping Works, Stowmarket,
Suffolk IP14 1EY.
Telephone: 04492 - 2183

MIDLANDS
P.O. Box 256,
Atco Works, Tilton Road,
Small Heath,
Birmingham B9 4PR.
Telephone: 021 - 773 - 1441/2/3

SOUTH EAST ENGLAND
61, Albert Road North,
Reigate, Surrey RH2 9EP.
Telephone: 07372 - 45731/2

SOUTH WEST ENGLAND
14 Marsh Green Road,
Marsh Barton, Exeter EX2 8PG.
Telephone: 0392 - 73882 or 54017

NORTHERN IRELAND
Rugby Engineering Works,
101 Rugby Avenue,
Belfast BT7 1RF.
Telephone: 0232 - 46488

REPUBLIC OF IRELAND
Qualcast/Suffolk/Atco
Service Centre,
Coolock Industrial Estate,
Dublin 5,
Telephone: 476039 & 476411