



By Appointment

ATCO

INSTRUCTION BOOK

**READ BEFORE USING & KEEP
HANDY FOR REFERENCE**

CHARLES H. PUGH LIMITED
WHITWORTH WORKS, BIRMINGHAM 9

Phone: Victoria 2524 (4 lines).

Telegrams: "Accuracy," B'ham.

Price - Sixpence

THE ATCO

14" 17" 20"

INSTRUCTIONS FOR WORKING AND MAINTENANCE

TO THE USER

In your own interest please read this book carefully before using your new Atco.

TOOL KIT

The Tool Roll supplied with this machine contains:

	14" Model	17" & 20" Models
Double ended spanner	$\frac{1}{2}$ " X $\frac{3}{16}$ "	$\frac{3}{8}$ " X $\frac{1}{2}$ "
"	$\frac{1}{2}$ " X $\frac{5}{16}$ "	$\frac{1}{2}$ " X $\frac{5}{16}$ "
"	$\frac{3}{8}$ " X $\frac{7}{16}$ "	$\frac{1}{2}$ " X $\frac{3}{16}$ "

Plug Spanner.
Magneto spanner.

Oil can.

Box spanner for fan. (17" & 20" Models only)

GUARANTEE

Please sign and mail the attached tear-off Guarantee Register P.C. In return we will send the guarantee covering your machine.

Note.—The machine is not covered by our guarantee until registration.

CHARLES H. PUGH LIMITED,
WHITWORTH WORKS,
BIRMINGHAM, 9.

SIMPLICITY of control and maintenance have been reduced to a fine art, and if it is used and looked after in the manner described here, the Atco will give you yeoman service.

Please keep this "manual" handy. **Read it before you use the machine the first time, and refer to it as occasion demands.** It gives you in concentrated form, the vast store of knowledge which we have accumulated, of how best to mow with the Atco and how to look after it.

Apart from the items mentioned here, the golden rule is "do as little 'fiddling about' with the Atco as possible."

STARTING.

1. See that the tank is full of Petroil. Petroil mixture for new machines consists of one pint of oil to two gallons of No. 1 Petrol.

WHEN THE ENGINE HAS BEEN RUN FOR FOUR HOURS THE PROPORTION OF OIL TO PETROL SHOULD BE REDUCED TO $\frac{3}{4}$ OF A PINT TO 2 GALLONS.

WARNING : Never use unsuitable or inferior oil and always use No. 1 Petrol.

A petrol tin has room in it for the necessary oil, which should be poured in from a measure. The tin should always be thoroughly "shaken" before use.

Keep a petrol tin clearly labelled "Atco Motor Mower Petrol" for this purpose.

Among suitable oils are the following:—

PRICE'S MOTORINE "B" DE LUXE which we ourselves use.

DUCKHAM'S ADCOIDISED N.P.3.
TRIPLE SHELL (HEAVY).
MOBIL OIL D.

2. **Turn on petrol tap and slightly flood carburettor. At the same time (but only when starting up from cold) close the air strangler or choke.**

3. **Open throttle lever slightly (about a quarter of its travel).**

4. **See that clutch is in free position.**

5. **Holding the tubular handles, engage kick starter gently and, having engaged it, depress sharply, and if necessary repeat until engine fires.**

6. Allow the engine to warm up and then gradually open the air-strangler until it is fully open, i.e. wide open, in which position it should be left for working; and for starting while the engine remains warm.

You are now on the lawn, with the engine rumping and ready to mow. The rest is easy. You will quickly find the most effective method of mowing your particular lawn, and the clutch control and the single lever throttle give you complete control over the machine.

The following points about mowing will help in making and keeping beautiful turf and ensure satisfaction with your machine in the form of low cost and a high standard of work.

1. Occasionally mow in an entirely different direction from your normal way.

2. Avoid making your "end turns" on the same spot. This is easily achieved by varying the depth of the "headland", or cross-strip which you cut at the end of the lawn to give you turning space.

3. Before the first cut of the season the lawn has a thick growth, which often conceals stones, etc., which have got thrown on to it in various ways. A search for these before mowing the first time will eliminate possible damage to the cutters. After the first cut, stones and other hard substances will be easily seen.

4. Although shakeproof washers are fitted wherever nuts are likely to work loose, it is prudent to go over nuts with a spanner before each mowing to see that they are secure. Nuts allowed to work off may fall either direct into the cutters or on to the grass and may get caught by the cutters later. In either event damage for which the makers cannot assume any liability is likely.

5. In dry weather set your "cut" a little higher, so as to leave the grass longer, thus enabling it to hold more moisture and provide more protection. In addition, in very severe drought it is advisable occasionally to mow without the grass box. The grass thus cut and left will hardly be seen, and will form an added protection against the hot sun, and will eventually help the texture of the fibrous topsoil.

You should continue mowing through drought periods. It does no harm and is the only way to prevent the establishment of bents—long coarse grass seedpods.

6. Do not rush the mowing—the best result will be obtained at a comfortable walking pace.

7. Study the direction in which you carry out your regular "cut" so that the "mowing lines" give the most pleasing effect to the eye from various points of vantage in the house and garden.

8. To the beginner, we would say "don't fight or wrestle with the machine." It is designed for you to guide only, and if you start with that principle in mind, you will feel confidence in this docile labour-saver from the moment you find yourself at the handles.
9. When you have finished mowing, clean machine with a clean rag, and wipe blades and bright parts with an oily rag.
10. JUST BEFORE YOU FINISH AND BEFORE THE ENGINE IS STOPPED TURN OFF THE PETROL TAP AND RUN TILL THE ENGINE STOPS. THEN WHEN YOU START UP NEXT TIME, YOU WILL INTRODUCE A FRESH EASY-STARTING MIXTURE, SIMPLY BY TURNING ON THE PETROL TAP AND SLIGHTLY FLOODING.

LUBRICATION

ENGINE.

Petrol does this entirely automatically provided the proper petrol and oil are mixed in the right proportion and well shaken in the labelled petrol tin before pouring into the tank.

At least twice a season, it is advisable to drain the crankcase by taking out the drain plug, and allowing the petrol to drain off. (Do this off the lawn for preference, because if it falls on the lawn it will temporarily disfigure a small patch.)

Then replace the drain plug.

Do not attempt to flush the crankcase with paraffin or petrol. This is unnecessary and extremely undesirable.

The Atco-Villiers carburettor, though of extremely simple and efficient design, should not if possible be tampered with. It is designed to render jet stoppage almost impossible. Occasionally, however, it is advisable to undo the union nut at the carb. end of the petrol pipe and take out the small gauze filter cup. This can be easily lifted out with a pin or piece of wire, but care should be taken not to damage it. It should then be cleaned and replaced.

SHOULD STARTING DIFFICULTY BE EXPERIENCED IT IS MOST LIKELY DUE TO ONE CAUSE FOR WHICH THE REMEDY BY THE OPERATOR IS SWIFT AND SURE.

THE ENGINE MAY HAVE BEEN TURNED OVER A NUMBER OF TIMES WITHOUT STARTING, OR IN OTHER WAYS PETROIL MAY HAVE ACCUMULATED IN THE CRANKCASE. IF THIS HAS HAPPENED THE SPARKING PLUG MAY HAVE BECOME "DRENCHED" OR "SOOTED UP" AND BE UNABLE TO SPARK.

REMEDY.

Drain crankcase by removing the crankcase drain plug and allowing petrol to run out. Also remove sparking plug and after petrol has drained from crankcase, turn the engine over sharply several times. This will blow out all excess petrol.

Replace crankcase drain plug.

Then thoroughly clean sparking plug, which is a specially selected type most suited to the work of motor mowing, as follows:—

Place it in the PERMANENT SPANNER CUT IN THE CLUTCH LEVER MOUNTING PLATE ON THE TUBULAR HANDLES.

Then, with the loose spanner provided, unscrew the electrode, or inner portion, from the outer portion, taking care not to loose the small copper washer which ensures the plug being gas tight when assembled. (If the washer is left out on re-assembly, the spark gap will be reduced and permanent damage may be done to the fine platinum point of the central electrode.) Clean the electrode thoroughly. Assemble the two portions of the sparking plug firmly, and replace in the cylinder, when the engine should start.

From time to time check that the gap between the plug points over which the spark jumps is .02 in., which is approximately the thickness of a visiting card.

GENERAL MAINTENANCE

LUBRICATION of the machine (other than engine).

This is so simple that it requires no diagram. The same oil as used to make the petrol mixture may be used. The only points requiring the regular use of the oil can be the chains, the clutch, ball bearings and front rollers as follows:—

	Where.	How often.	How much.
1. All chains.	On each chain.	Fortnightly.	A few drops.
2. Ball Bearings.			
Ends of Roller Shaft In oil cups.	Fortnightly.	A few drops in each.
Ends of Counter-shaft "	"	"
Ends of Cutter Shaft "	"	"
Ends of Clutch Shaft "	"	"
3. Clutch.			
(a) In hole drilled in inner member boss	Weekly.	A few drops.
(b) In hole drilled in boss of outer member just below chain wheel	"	"
(c) Between retaining collar and kick starter chain wheel. No oil hole is necessary at this point	"	"
Clutch operating forks, between hardened pads of operating forks and withdrawal collar	"	"

4. **Front Roller Shaft**
The front rollers work under adverse conditions. They are close to the ground and revolve at high speed, often in conditions of wet and grit. It is, therefore, in the user's interest to provide for their working under as favourable conditions as regards lubrication and cleanliness as possible. To ensure this, they should be dismantled (by undoing the end nuts, when they will slip out of the slots in their brackets). Take the rollers off, thoroughly clean the bearing inside each roller and the shaft itself. Smear thoroughly with oil and re-assemble, taking care to replace the distance washers between rollers and to smear these washers thoroughly with oil.

This is specially designed to be a quick maintenance operation and should be done regularly. If the above instructions are regularly carried out, the maximum wear will be obtained and all undesirable noise from the F.R.'s avoided.

A few drops may with advantage be occasionally put between each roller, but this does not obviate the necessity to clean and lubricate as above: in fact if the above instructions are regularly and thoroughly carried out, oiling between each roller is unnecessary.

ADJUSTMENTS.

1. Cutters.

Bottom blade to cutting cylinder.
NOTE: IT IS UNNECESSARY AND ALSO UNDESIRABLE TO SLACK OFF THE MAIN NUTS WHICH FORM THE PIVOT OF THE BOTTOM BLADE BEARER.

As wear takes place, the bottom blade has to be brought up to the cutters. Two arms from the bottom blade bearer terminate in screw adjusting brackets fixed on the inside of each side frame at the back of the grass delivery plate.

To bring bottom blade into closer contact with the cutter, which is necessary as wear takes place, very slightly slacken the two back screws and tighten up the two front screws.

This should be done carefully and a little at a time, until each blade of the cutter when revolved by hand just brushes the bottom blade over its whole length.

Do not adjust cutters too hard against the bottom blade, or undue wear will be caused, and remember to tighten, firmly but gently, the adjusting screws against the arms of the bottom blade bearer when adjustment is complete.

For height of cut.

Slack off nuts on either side, and bring rollers forward slightly for a shorter cut, backward slightly for a longer cut. Lock up nuts. Front roller brackets have graduated marks to ensure uniform adjustment either side.

As the clutch lining slowly beds down, the clearance between the withdrawal collar and the clutch operating fork is reduced. **TO MAINTAIN THIS CLEARANCE, WHICH IS VERY IMPORTANT, IS A SIMPLE OPERATION.**

Remove the split pin from the pin which connects the operating lever with the control rod. Unscrew locknut and turn joint half a turn at a time until the clutch operating fork is 1/8th in. clear of the withdrawal collar when clutch is engaged. Tighten locknut and re-assemble.

2. Front Rollers.

3. Clutch.

4. Conveyor Plate.

For controlling the "throw of grass," Undo nuts and adjust delivery plate forward or backward in accordance with the state of the grass, or the wear of the cutting cylinder.

5. Engine Chain.

Slacken nuts on one side of the rods supporting engine. Adjust chain tension by moving the engine slightly forward. THEN VERY FIRMLY TIGHTEN UP TIE ROD NUTS. The chain should have a slight amount of slack.

On 17" and 20" models simple chain tensioners are fitted. By unscrewing the holding nuts these can be set gently down on the chain to take up any slack, whereupon the holding nuts are tightened up. On no account should this adjustment be made too tight.

GENERAL

The flywheel magneto cover is detachable for inspection, or to clean or adjust the magneto points.

While it is rarely necessary to adjust, we give the following timing and points gap data.

The timing is correct when the points break 5/32 in. before the piston is at the top of its stroke.

The points should be open to the maximum extent of .015 in., which can be judged by the feeler attached to the magneto spanner.

CONCLUSION

A minimum of service will be required with your Atco. In the unlikely event of difficulties arising, which are not capable of simple remedy by referring to this manual, get in touch with your dealer, or, in case of difficulty, with the Atco Service Depot, of which addresses are given opposite.

By following this course, you will find prompt, courteous, and efficient service available always at reasonable charges.

Finally, we wish to assure you that your satisfaction with your Atco is our permanent interest, forming part, as it does, of a world-wide Atco goodwill.

CHARLES H. PUGH LIMITED

Sole Manufacturers

Whitworth Works, Birmingham, 9.

England.

Phone: Victoria 2524. Telegrams: "Accuracy," B'ham.

SALES-SERVICE AREA DEPOTS.

LONDON "Atco" Depot, Progress Way, Croydon.
Tel.: Croydon 3471.

CAMBRIDGE "Atco" Depot, Hills Road, Cambridge.
Tel.: Cambridge 87462.

BIRMINGHAM "Atco" Depot, at Whitworth Works.
Tel.: Victoria 2524.

NEWPORT "Atco" Depot, 410, Chepstow Road, Newport, Mon.
Tel.: Newport 3470.

ORMSKIRK "Atco" Depot, County Road, Ormskirk, Lancs.
Tel.: Ormskirk 239.

ECKINGTON "Atco" Depot, Rotherham Road, Eckington.
Sheffield. Tel.: Eckington 73.

DARLINGTON "Atco" Depot, 396, North Road, Darlington.
Tel.: Darlington 2671.

EXETER "Atco" Depot, Alphington, Exeter.
Tel.: Exeter 3882.

READING "Atco" Depot, 106, Bath Road, Calcot, Reading.
Tel.: Reading 3443.

GLASGOW "Atco" Depot, Kilmarnock Road, Newton Mearns,
by Glasgow. Tel.: Newton Mearns 2502.

Also at BELFAST & DUBLIN.