



ROTARY MOWER

ATV FA 1200

USER MANUAL



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TRANSLATION OF THE ORIGINAL MANUAL



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1. HSE INFORMATION

This information sheet gives advice on the safe use of ATVs. It covers the two main types used in off-road working in agriculture and forestry, which are: sit-astride ATVs: any motorised vehicle designed to travel on four low pressure tyres on unpaved surfaces, with a seat designed to be straddled by the operator and handlebars for steering control. They are intended to be used by a single operator with no passenger. However, this type also includes ATVs intended for use by a single operator, but with a special seat for a passenger behind the operator. These vehicles are generally called ATVs in agriculture, quad bikes in leisure use and all-terrain cycles (ATCs) in forestry; sit-in machines: side-by-side mini-utility vehicles, usually with a steering wheel, where the driver sits in a conventional seat and there is generally seating for one or more passengers. These are often called ATVs in both agriculture and forestry.

The ATVs covered here are those designed for off-road use only. However, agricultural, horticultural and forestry users can register an ATV as a light agricultural vehicle for limited on-road use in connection with their business.

Accidents

Both types of machine are designed to cope with a wide variety of terrain types, including steep slopes, but if used outside their safe operating parameters they can very rapidly become unstable. This is why most ATV accidents involve overturning.

On average, two people die each year in ATV accidents. Non-fatal accidents are estimated to amount to over 1000 serious injuries per year. The underlying causes of accidents were usually one or more of the following:

- lack of structured training and/or experience;
- incorrect/lack of protective clothing;
- excessive speed;
- carrying a passenger or an unbalanced load;
- tipping on a bank, ditch, rut or bump;
- a steep slope combined with other factors, e.g ground or load conditions;
- towing excessive loads with unbraked equipment.

Route planning and stability

Most accidents with these machines have occurred where they have either been driven on new routes over steep ground for the first time, or have been carrying or dragging destabilising loads. When travelling over rough terrain, get to know your own ground and stick to planned routes where possible. Walk new routes if necessary to check for hidden obstructions. Allow for changes in ground conditions and for the destabilising effect of loads or attachments.



Sit-astride ATVs (quad bikes/ATCs)



NOTE

Get properly trained and always wear head protection.

The user is responsible for ensuring that all relevant papers and permissions are in place.

2. IN THE INTEREST OF SAFETY

2.1 Do not

1. **DO NOT** operate the mower without all the correct guards fitted.
2. **DO NOT** alter engine settings unless stated by Engine manufacturer.
3. **DO NOT** touch any moving or rotating parts, during working conditions
4. **DO NOT** stop the engine immediately after heavy use (See section 5.6).
5. **DO NOT** operate the mower without suitable ear and eye protection.
6. **DO NOT** allow passengers.
7. **DO NOT** leave machine unattended while operating.
8. **DO NOT** run the engine in an enclosed area. Exhaust gases contain Carbon Monoxide and are fatal if inhaled.
9. **DO NOT** operate the mower on excessively steep slopes.
10. **DO NOT** operate the mower unless all safety features are fitted to the mower and are used correctly.
11. **DO NOT** operate the mower until you have read and understood the entire operators manual.
12. **DO NOT** wear loose fitting clothing, to avoid catching on parts of the machine.
13. **DO NOT** try to remove blockages while the engine is running. Ensure engine is stopped and the rotor has finished rotating, before any servicing takes place to your mower.
14. **DO NOT** operate the mower in Dark conditions unless suitable artificial light is used.
15. **DO NOT** operate if excessive vibration occurs. Stop the machine immediately and view maintenance chart.
16. **DO NOT** climb on the mower.

2.2 Do

1. **DO** follow Engine manufactures guideline.
2. **DO** ensure all spectators are a safe distance away when operating.
3. **DO** carry out regular servicing and checks before use.
4. **DO** clear cutting area from potential damaging components.
5. **DO** reduce speeds when working on hillsides or rough terrain.
6. **DO** be aware components can be hot after operation.
7. **DO** follow any towing guidelines stated by ATV manufacturer.
8. **DO** show some caution when filling the tank with petrol, especially if engine components are hot.
9. **DO** ensure all safety decals are in good condition, replace any that are damaged.
10. **DO** keep hands and feet away from rotating blades.
11. **DO** ensure mower is in transport position before transporting from workplace.

3. INSTRUCTIONS / WARNING DECALS



NOTE

Keep wheel nuts tight. Check daily.

Refer to the operators manual for correct tyre inflation pressure.

Observe towing vehicle max towing limits or trailer max weights.



NOTE

Your responsibilities before operating this machine are:

- Read, understand and follow the safety procedures manual.
 - Train operators before using & review safety procedures regularly.
 - Ensure that all guards are in place before operating.
 - Keep Hand, Feet, Hair and Clothing away from all moving parts.
 - Avoid wearing loose clothing whenever possible.
 - Maintain as per schedule in the safety procedures. Especially Blades and Securing Hardware, due to the hazard they present should any part break loose during operation.
 - During maintenance, use suitable support stands.
 - DO NOT allow any persons to ride on the equipment.
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Carefully read operators manual before handling this machine. Observe instructions and safety rules when operating.



Caution - Rotating blades. Maintain sensible working distance from machine and keep hands and feet clear of blades.



Caution - Entanglement Hazard. Keep hands away from rotating components.



Caution - risk of flying objects. Keep a safe distance from machine at all times



WARNING

The above decals should be located on your mower. If any of the above decals are not located on your mower or are damaged in any way, contact for some replacement decals before use.

4. OPERATING INSTRUCTIONS AND ADJUSTMENTS

Noise Levels

The sound of this machine, as measured at the typical operator location under normal operating conditions, is 91db. If being towed by an open-cab vehicle, it is essential that ear defenders or a suitable helmet is worn at all times. If being towed behind an closed-cab UTV, 4x4 or similar, then the cab should remain closed to reduce noise.



WARNING

Ear defenders or other suitable protection should be worn at all times when operating.

4.1 Initial check

Before attachment, ALWAYS ensure the following:

- All safety guards & decals are in good working order and correctly fitted.
- All blades are correctly fitted, undamaged, and not worn to excess.
- Lubrication points have been lubricated as per scheduled maintenance period.
- The engine oil level is correct and has been maintained as per the handbook.
- Drive belt(s) are in good working order.
- The tyres are free of damage and inflated to the correct pressure.

4.2 Attaching the machine



NOTE

This machine is designed to attach to the towing vehicle through a 50mm diameter ball hitch or pin hitch.

1. Reverse the towing vehicle up to the machine.
2. Attach the machine onto the towing vehicle's coupling using either the auto-lock coupling or suitable pin hitch. Ensure the hitch is securely attached to the towing vehicle
3. Attach the emergency stop control box to the towing vehicle, in a secure location within easy reach by the operator.



WARNING

Emergency stop / machine controls must be within reach of the operator during normal operation.

**WARNING**

Ensure control equipment is securely attached to the towing vehicle before use.

**WARNING**

Check operation of emergency stop control before commencing work.

4. With the engine OFF, adjust the working height to a suitable level by turning the height adjuster at the front left of the machine.
5. Level the machine to suit the drawbar and cutting height. This is achieved by twisting the link connector fitted to the drawbar. When on level ground, the top face of the mower deck (where the engine is mounted) should be approximately parallel to the ground.

4.3 Operation

**NOTE**

Ensure that the operator is suitably qualified to use a machine of this nature and that he has fully read and understood this manual. He should be aware of all safety aspects relating to the safe use of the machine.

Prior to starting work the area to be cut should be checked for dangerous objects such as large stones, wood, wire, glass etc. Hazardous objects should be removed from the area prior to operation with the machine. The location of unmovable or natural hazards such as drain covers should be noted, or if necessary 'marked', to indicate to the operator that the area should either be avoided or additional caution adopted whilst working around the hazard.

Operating Limits

**WARNING**

Do not operate beyond operating limits, damage to machinery or injury to operator may occur.

Minimum / Maximum Ambient Temperature	-15°C / 40°C
Minimum / Maximum Altitude	0 metres / 1500 metres*
Maximum Inclination	20° in any direction

*Adjustment to carburettor jet size above 1500m will allow operation above this level, please call for advice.

Daily Checks

Before use each day, and with the engine switched off and keys removed, the following checks should be undertaken:

Blades	With the engine switched off and keys removed, the condition of the blades should be checked. Any damaged or missing blades should be replaced immediately.
Engine	Fluid levels should be checked daily before use and topped-up as necessary. Ensure the air intake and screen grid are clear of debris. Ensure engine is in good order and maintained as per engine manufacturer schedule.
Bearing	Ensure bearings are in good order and greased as per the maintenance schedule.
Belt	Ensure belts are in good order, free of debris, dirt and grease and do not have signs of damage e.g. cracking, frayed edges, uneven wear.
Fuel	Ensure fuel is clean and free of dirt / debris. If necessary check condition of fuel filter.
Hitch	Check condition of swivel hitch, and ensure this is attached securely to towing vehicle.
Tyres	Ensure tyres are free from damage and inflated to the correct working pressure for the conditions at hand.

4.4 Drawbar adjustment

If required, the drawbar on the FA Series can be offset to up and down. The machine is offset by unscrewing the pin as shown. The drawbar can then be moved to the desired location, and the pin replaced in a suitable hole. The pin must be tightened firmly to prevent movement of the drawbar, and should be checked periodically for tightness.

It is advisable to use the machine with the pin offset as above.



WARNING

Changing the drawbar angle must be undertaken with the engine switched off and the ignition keys removed. Failure to do so could result in injury or damage to the machine.

4.5 Starting the engine

After ensuring all daily checks have been undertaken (see above), and with the engine throttle on idle setting start the engine by turning the ignition key. Depending on the ambient temperature and engine temperature, choke may be required. Once the engine is running and choke off, engage drive by increasing the engine throttle to maximum.



WARNING

Changing the drawbar angle must be undertaken with the engine switched off and the ignition keys removed. Failure to do so could result in injury or damage to the machine.

4.6 Starting work

After ensuring all daily checks have been undertaken (see above), and with the engine throttle on idle setting start the engine by turning the ignition key. Depending on the ambient temperature and engine temperature, choke may be required. Once the engine is running and choke off, engage drive by increasing the engine throttle to maximum.



WARNING

As the FA Series use a centrifugal clutch drive system, the engine must be run at maximum speed AT ALL TIMES when cutting.

The forward working speed will depend greatly on the working conditions and nature of the material being cut. Optimal speed will be in the region of 3-8 km/h (2-5 mph).

4.7 Drive belts en power transmission

Belts

The FA Series are fitted with a single, serpentine drive belt driving all three rotors.



NOTE

Drive belts are a wearing part, and must be replaced if showing signs of wear.

When set correctly, drive belts will automatically tension and adjust for wear due to the spring system. As part of the yearly maintenance schedule, this tensioning system should be checked and a small amount of grease applied to the springs and belt tensioner mounting bolts to prevent corrosion.

Belt fitment / Replacement

1. Switch machine off and remove ignition keys. For recoil start models, remove ignition lead(s).
2. Remove both belt guard covers.
3. Remove old belt, taking note of routing if different from above.
4. Feed new belt around pulleys as per above diagrams, but do not feed around tensioning pulley.
5. Using a pry bar or large screw driver, pull tensioning assembly tight to allow fitment of belt.
6. Check belt can rotate freely, and refit guards.
7. Run-in belt under a no-load situation for 1-2 minutes before use.
8. All machines in the FA range are fitted with centrifugal clutches, an important safety feature to act as overload suppression, to allow easy starting and stopping of the machine. The centrifugal clutch is a sealed unit and will not require any maintenance.

5. MAINTENANCE

Throttle Adjustment

Should you have trouble starting or stopping your mower, if, for example, the throttle cable has become bent or damaged, you may need to adjust the throttle as follows:

Required: 1 philips head screwdriver.

Locate the throttle cable retaining bracket at the front of the engine, loosen as shown using a philips head screwdriver.



Set the throttle to FULL CHOKE, as shown.



With the throttle at full choke, pull the plastic part of the cable upwards, and tighten the retaining bracket when the choke lever just touches the plastic topped adjuster screw. Test for correct start / stop operation.



All maintenance, cleaning and repair operations must be performed with the machine suitably supported, the engine switched off (and cool), and the ignition keys removed.



NOTE

For commercial use, log hours of operation in a maintenance booklet to ensure proper maintenance intervals and continued service.

5.1 Maintenance schedule

After first 1 hours of work

- Check all nuts and bolt for tightness – retighten if required.
- Check belt tension and taper lock tightness – adjust / tighten if required (refer to belt section for details of adjustment).

Every 8 hours or daily

- Check all nuts and bolt for tightness – retighten if required.
- Check belt condition and replace if necessary.
- Check wear and condition of blades – replacing missing, or damaged blades immediately.
- Check condition of safety guards – repair or replace if not performing their function.
- Check operation of emergency stop control.

LUBRICATE

Lubricate rotor bearings. Apply grease to the three main rotor bearings. See below for locations of the grease points.

After every 100 hours (or annually, whichever occurs first), in addition to the above

- Check belt condition - replace if required.
- Check axle bearing condition - replace or lubricate as required.
- Check main rotor bearings condition - replace as required.
- Check condition of battery and connections.
- Check condition of fuel lines and replace if damaged or perished.
- Check condition of battery cables - replace if worn.
- Check clutch operation (disengage at idle, engage at approx 30% throttle).

5.2 Blades

Over time, the blades on your machine will wear, and performance will deteriorate. It is important that the blades are kept in good condition to ensure a long service life and to prevent premature wear.

Blades should be replaced when either:

- 2mm has worn off the end of the blade;
- the blade has become blunt or damaged;
- blades are missing.

When replacing blades, visually inspect the mounting bolts and bushes, if applicable. These are all wearing part and will require replacement if they become worn to excess. Also perform a visual check of the blade carrier, and if damaged or twisted, replace.

6. TROUBLESHOOTING

Problem	Possible causes	Remedies
Irregular cut	Worn, bent or broken blades	Inspect/replace damaged blades
	RPM too low	Increase engine revs
	Machine not level to the ground	Check/adjust tire pressure
	Clogged material caused by excessive forward speed	Reduce forward speed
Excessive machine noise	Unbalanced rotor(s)	Inspect/replace damaged blades. If vibration persists, see 'vibration' problem below.
	Loose bolts	Tighten as necessary
	Damaged components	Repair/replace
Excessive engine noise	Worn muffler	Repair/replace
	Engine problems	Consult authorised dealer
Excessive belt noise	Belts slipping	Adjust belt tensioner
	Belts worn	Replace belts
Vibration	Worn, bent or broken blades	Replace as necessary
	Rotor out of balance	Balance/replace rotor
	Worn rotor bearings	Replace rotor bearings
Excessive movement of drawbar	Worn drawbar pins	Replace drawbar pins
	Loose drawbar hand screws	Tighten hand screws
Bearings tight or overheating	Bearings dirty or ungreased	Clean/grease bearings
	Bearings worn to excess	Replace bearings
Belts overheating	Belts slipping on pulleys	Tension belts
	Flails contacting the ground	Raise cutting height
	Working speed too high	Reduce forward speed

Machine Disposal

Disposal of this machine and any of its component parts must be performed in a responsible and inoffensive manner respecting all current laws relating to this subject. Materials forming this machine that must undergo differentiated division and disposal are:

- Steel
- Mineral Oil
- Rubber
- Plastic