

LOGIC

MSP120

SWEEPER / COLLECTOR



USER MANUAL

WM2-MSP120

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With the purchase of your **MSP120** sweeper collector you have made an excellent choice.

This machine should give first class service for many years, if used correctly, and maintained as described in this manual.

The **MSP120** is constructed from quality materials and components to ensure first class service for a long time when used correctly.

This manual also has important H.S.E information and Guidelines.

If after reading this manual you have any queries, please get in touch as we will be pleased to help.

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Safe use of all-terrain vehicles (ATVs) in agriculture and forestry

HSE information sheet

Agriculture Information Sheet No 33 (Revision 1)

Introduction

This information sheet gives advice on the safe use of ATVs. It covers the two main types used in off-road working in agriculture, forestry and the land-based industries, namely:

- **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 with handlebars for steering control (see Figure 1). These vehicles are intended to be used by a single operator without a passenger. They may also be referred to as quad bikes.
- **Side-by-side ATVs:** Small utility vehicles in which the driver and passenger sit alongside each other in conventional (ie sit-in) seats (see Figure 2). Most side-by-side vehicles are capable of carrying two occupants in this way; however, some vehicles are equipped with a second row of seating (and can therefore carry four occupants), while others have bench-style seats allowing up to three people to be seated in a row. The majority of side-by-side vehicles have four wheels, although six-wheel and full and partially tracked versions are also available. There is usually a cargo bed behind the seating area. Side-by-side ATVs are sometimes referred to as utility vehicles (UTVs) or rough terrain utility vehicles (RTVs).

ATVs are usually fitted with a tow hitch and are capable of towing a load such as a trailer, a trailed appliance or other equipment.

Hazards

Both types of ATV 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. The main causes of serious or fatal injury associated with ATVs are from:

- being thrown off during vehicle overturns or after loss of control;

- collisions with structures, trees, other vehicles etc;
- being trapped/asphyxiated under an overturned machine;
- pedestrians being struck or run over by ATVs.

Contributory factors/underlying causes of accidents and injury with ATVs can include:

- lack of formal operator training and/or experience;
- incorrect/lack of appropriate head protection;
- excessive speed;
- age of the operator;
- carrying a passenger on a sit-astride ATV;
- unbalanced loads or overloading;
- tipping on a bank, ditch, rut or bump;
- loss of control on a steep slope combined with other factors, eg ground or load conditions;
- towing excessive loads with unbraked equipment;
- poor maintenance, eg faulty brakes, incorrect tyre pressures etc.

Control measures for sit-astride ATVs

Training

It is a legal requirement for employers to provide adequate training for employees who use work equipment such as ATVs, and to make sure that only employees who have received appropriate training in their safe use, including the use of any towed equipment or attachments, are permitted to ride them. The same requirements apply to the self-employed.

You can get details of suitable training courses from franchised ATV dealers, manufacturers' websites, EASI (European ATV Safety Institute), the British Off Road Driving Association (BORDA) and through colleges and training providers.

When purchasing a new or used machine from a franchised dealer an industry-led scheme offers customers free training – see 'Useful contacts'.

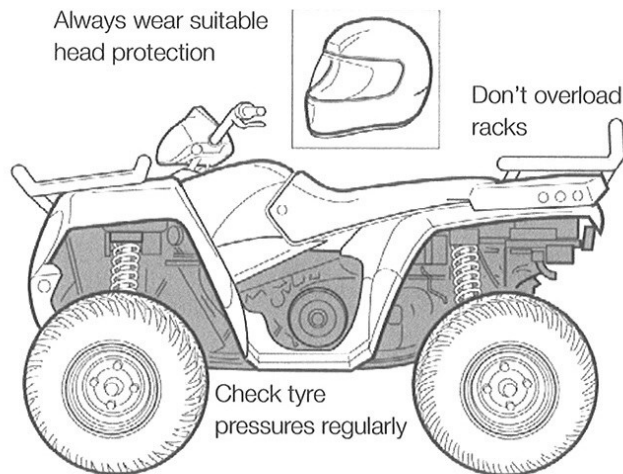


Figure 1 Example of a sit-astride ATV

Personal protective equipment – the importance of head protection

Sit-astride ATVs are not fitted with either a cab or roll bar, so your only protection is what you wear. Head protection is vital. Many ATV fatalities in the UK have been caused by head injuries. Helmets would certainly have prevented most of, if not all, these deaths. You should always wear a helmet when riding an ATV.

Helmet types suitable for ATV operations, depending on the circumstances, are motorcycle helmets, equestrian helmets, specialist ATV helmets, cycle helmets and mountaineering helmets. All helmets should be manufactured and tested in accordance with the current relevant EN/BS standard, have a chinstrap and be capable of being used with suitable eye protection. The type of helmet chosen should be based on an assessment of the circumstances in which the ATV will be used, eg the types of surface travelled over and anticipated speeds. The harder the surface and higher the speed the greater the degree of protection needed. NB: Forestry helmets and industrial hard hats are not acceptable for any ATV operations.

Wear clothing that is strong and covers your arms and legs. Gloves are useful for protection and handlebar muffs can help to keep hands warm in cold weather for good control of the ATV. Wear sturdy, ankle-covering footwear, eg boots or wellingtons that are strong, supportive and have good wet grip.

Protect your eyes from insects and branches with either a visor or goggles.

Passengers

The long seat on a conventional sit-astride ATV is to allow operators to shift their body weight backwards and forwards for different slope conditions,

a technique known as 'active' riding. It is **not** for carrying passengers. Manufacturers often display a sign on machines prohibiting passengers and this message is also repeated in operator manuals.

Do not carry a passenger in a trailer behind an ATV as any movement can make the machine unstable, particularly with independent rear suspension and trailers with axles wider than the ATV.

Some machines have received European Community Whole Vehicle Type Approval, allowing them to be ridden on the public highway. Some of these machines are designed to carry passengers. Such machines may not be suitable for carrying a passenger when used in off-road situations, eg on sloping ground, as the operator may not be able to use active riding techniques to maintain machine stability. Such machines may not have a locking differential and may not provide an acceptable level of traction to ensure safety in certain off-road conditions.

Before using an ATV you should assess the suitability of the machine for the intended tasks and working environment.

Route planning and stability

Accidents can occur where ATVs are driven on new routes over steep ground for the first time, or are 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, hollows or other hazards. Allow for changes in ground conditions and for the destabilising effect of loads or attachments.

Safety checks and maintenance

Off-road use is especially harsh on equipment so it is essential to carry out safety checks and maintenance in accordance with the manufacturer's recommendations. In particular, pre-ride safety checks should always include:

- tyre pressures. These are low, eg typically around 2–7 psi, so even a 1 psi (0.07 kg/cm²) difference in pressure can cause vehicle control problems. Use a gauge that is designed for measuring and displaying low pressures – usually supplied with the ATV;
- brakes and throttle. Check that the brakes give a safe straight stop and that the throttle operates smoothly in all steering positions. Brakes can have a relatively short life in farming or forestry environments and need frequent cleaning, regular adjustment and proper maintenance.

Safe riding methods

On sit-astride ATVs rider positioning is vital to operate them correctly. The position of the rider on the machine needs to be changed depending on the terrain and motion. Riders must have the ability to move and balance the momentum of the ATV with their own body weight. Plan routes (and review the plan if a route is used regularly) to assess risks.

The following advice is no substitute for formal training.

- Most ATVs have no differential and so do not handle in the same way as other machines. This means that when you turn, the ATV tries to keep going in a straight line.
- When cornering on an ATV with no differential, or with the differential lock engaged, where your body weight needs to be positioned depends on how sharp the corner is and on how fast you are going. Correct body position allows you to transfer weight to the outside of the turn through the footrests while maintaining balance with the torso. This lets the inside wheels skid slightly allowing the ATV to make the turn properly.
- You must understand how the transmission system of your machine will affect engine braking for both riding on slopes and recovery of stalled ATVs.
- When riding across a slope, keep your weight on the uphill side of the ATV.
- When going downhill, slide your weight backwards, select a low gear and use engine braking, reducing the need to use the brakes.
- When going uphill, it is important to review the route before starting the climb. Move your weight forwards and maintain a steady speed. It is important to shift your body weight forwards as much as possible. If necessary, stand up and lean forward, keeping both feet on the footrests at all times and always maintain momentum.
- Avoid sudden increases in speed. This is a common cause of rearward overturning accidents, even from a standing start on flat ground where there is good grip.
- Never put your foot onto the ground to stabilise an ATV when riding, but shift your weight across the ATV away from the imbalance.
- Always read the owner's manual.

Trailed equipment and loads

Ensure all riders know the manufacturer's recommended towing capacity and drawbar loading limit. Always operate within these requirements. Remember that your ability to control the ATV by your body movements will be considerably reduced when carrying a load or towing a trailer.

- When selecting trailed equipment look for:
 - over-run brakes;
 - a swivel hitch drawbar;
 - bead lock rims on wheels;
 - a low centre of gravity and a wide wheel track;
 - a long drawbar;
 - attachment points for securing a load.
- Check the weight ratio between your ATV and its trailed load. This needs to be assessed for each operation. As a general guide, on level ground braked trailed equipment can be a maximum of four times the unladen weight of the ATV. For unbraked trailed equipment the maximum should be twice the unladen weight. These loads should be reduced when working on slopes, uneven ground or poor surface conditions. Follow the manufacturer's advice for your particular machine.
- Weight transfer is also important. Stability and resistance to jackknifing is improved if some load is transferred onto the ATV's drawbar. Approximately 10% of the gross weight of the loaded trailer is recommended, but this should not exceed the manufacturer's drawbar loading limit. Remember that weight transfer can change dramatically when you start going up or down hill.
- When selecting mounted equipment, make sure it is within the manufacturer's approved weight limit, with a low centre of gravity and controls which are easy to operate but do not create a hazard. Where equipment is added to one end of the machine, add ballast at the other end to maintain stability.
- Loads carried on racks must be well secured, eg with ratchet straps, and be evenly balanced between the front and rear, except where they are deliberately altered to aid stability when going up or down a slope. Maximum weights that can be carried should be specified in the operator's manual and may be marked on the machine. These should not be exceeded.
- Only tow a load from the hitch point. Loads towed from other points, such as the rear rack, have caused sudden rear overturning even on slight slopes or with slight acceleration. Do not use ropes or chains to drag a load; they can become caught on a wheel. This may lead to entanglement with the brake cable, causing unexpected braking.

Using sprayers

- Sprayers should be fitted with an induction hopper unless the filling point is less than 1.5 m from the ground and within 0.3 m from the edge of the sprayer. A separate clean water tank for washing must be provided containing at least 15 litres of clean water and a tap that allows the water to run without being continuously pressed.
- When buying a sprayer look for a low centre of gravity and internal baffles to reduce liquid surge and improve stability when turning on slopes.

- ATVs should only be used with rear-mounted spray booms or other equipment that reduces the risk of pesticide exposure to the operator.
- Do not hold a spraying lance while riding your ATV as you need two hands for safe control.

Accessories

Beware of the potential dangers of accessories which are not approved by manufacturers, eg home-made gun racks and boxes. Either use accessories supplied/ approved by manufacturers or seek their advice as to the suitability of those sourced elsewhere.

Any weight added above the centre of gravity will decrease the ATV's stability, eg feed hoppers/ dispensers fixed above the rear rack.

Children

- Never carry a child as a passenger. It is illegal and will reduce your ability to control the ATV.
- Children under 13 years old are prohibited from using an ATV for work. Over-13s should only ride ATVs of an appropriate size and power after formal training on a low-power ATV.
- Children under 16 years old are prohibited from using most adult-sized machines. Check and adhere to the manufacturer's minimum age recommendations for your ATV; this information may be displayed on the machine and in operator manuals. Similar restrictions apply to side-by-side machines.
- The ratio of a child's weight to that of the ATV is significant, as weight transfer is the key to safe handling.
- In the event of an overturn, a child may be crushed by the weight of an adult-sized ATV. They may be unable to lift it off unaided.

Roll-over protective structures (ROPS)

- HSE's current advice is that roll-over protective structures (ROPS or crush protection devices) are not recommended for sit- astride ATVs. Research has shown that they may lead to an increased risk of injury in the event of an overturn by either preventing the operator from separating from the machine or striking the operator as the machine overturns.
- Lap straps/seat restraints should not be fitted. They prevent active riding and would be potentially lethal without a full cab or roll cage.
- Weather cabs on sit- astride ATVs restrict a rider's ability to jump clear in an overturn. The rider is likely to be crushed within the cab unless it is strong enough to withstand the forces involved. Carefully assess the risks for your particular

conditions of use before fitting any such structure and consult the manufacturer for information.

Side-by-side ATVs

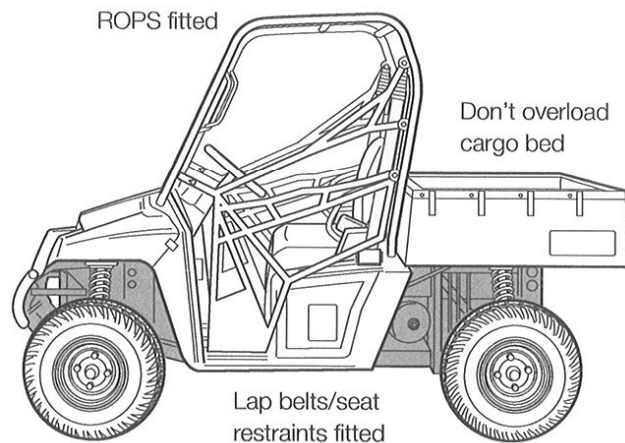


Figure 2 Example of a side-by-side ATV

Utility side-by-side ATVs are used for many of the same purposes as tractors and designed for similar work activities, ie off-road use on difficult terrain. They have conventional sit-in seats, and the main controls comprise a steering wheel and pedals. The driver does not need to use weight transfer to steer or to control stability. Nevertheless, the correct distribution of weight on-board the vehicle is important, particularly when carrying a load or on uneven surfaces. Loads carried on the cargo bed should not exceed the recommended weight and should be secured against movement.

Training

The legal requirements for training are the same as for the sit- astride ATVs.

ROPS and seat belts

The requirements for these machines are quite different to those of sit- astride ATVs:

- To reduce the risk of injury in the event of a roll-over or other incident, side-by-side vehicles require lap belts/seat restraints as well as ROPS that essentially form a protective structure around the seating area. The compartment is usually open, although some vehicles are fitted with a windscreen and/or side doors. The driver and all passengers should be protected by ROPS and wear lap belts.
- Where a machine is amphibious and used on deep water as opposed to marshland, then the seat restraints (and possibly ROPS) could increase the

overall risk rather than reduce it. In this case, do not use seat restraints while on the water. Assess the risk from the roll frame according to its design and the likelihood of trapping the occupants if the machine should sink.

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Parking

If you have to park on a slope, always park across it unless it is too steep. Accidents have occurred when machines have run down slopes because of poor brake maintenance or application, particularly while they are being loaded and movement or the increase in weight has set the machine in motion.

Useful contacts

EASI®, the European All-Terrain Vehicle Safety Institute, is a not-for-profit organisation which provides safety training courses for ATV riders.

EASI's UK operation is sponsored by a number of ATV manufacturers and delivers a programme of specialist ATV training courses which are designed to improve rider skills, safety levels and awareness of the capabilities of ATV machines.

Buyers who purchase a new or used ATV from one of these manufacturers via an authorised UK dealer are eligible for **free** or highly subsidised training, subject to qualifying terms, conditions and availability. See www.quadsafety.org/ for details.

Training is also available from other organisations, such as the British Off Road Driving Association (BORDA). See www.borda.org.uk for details.

Further information

For information about health and safety, or to report inconsistencies or inaccuracies in this guidance, visit www.hse.gov.uk/. You can view HSE guidance online and order priced publications from the website. HSE priced publications are also available from bookshops.

This guidance is issued by the Health and Safety Executive. Following the guidance is not compulsory, unless specifically stated, and you are free to take other action. But if you do follow the guidance you will normally be doing enough to comply with the law. Health and safety inspectors seek to secure compliance with the law and may refer to this guidance.

This leaflet is available at:
www.hse.gov.uk/pubns/ais33.htm.



This symbol means **WARNING** or **CAUTION**. Personal safety or damage will be at risk if these instructions are ignored. Most accidents are caused by neglect or carelessness. Avoid needless accidents by following the safety precautions listed below.

2

IN THE INTEREST OF SAFETY: DO NOT

DO NOT – Operate the MSP120 unless you have read this entire manual.

DO NOT – Operate the MSP120 if any part of the sweeper is defective, replace any parts before use.

DO NOT – Touch moving parts.

DO NOT – Never carry passengers.

DO NOT – Exceed sensible towing speeds. (Max 15mph)

3

IN THE INTEREST OF SAFETY: DO

DO – Follow all manufacturer's guidelines.

DO – Attach the MSP120 to a suitable towing vehicle.

DO – Follow all manufacturer's service instructions.

DO – Be aware of travelling conditions – Do not exceed sensible speeds.

DO – Follow all safety instructions in this manual.

DO – Make sure all persons are a safe distance when operating the MSP120, especially when operating in areas used by the public.

DO – Make sure all nuts bolts and fittings are secure before using and check at regular intervals during operation.

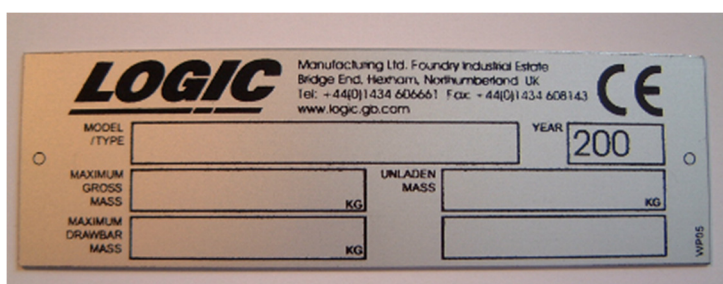
DO – Avoid excessively steep slopes or adverse ground conditions.

DO – Have a clean working area before starting the machine.

DO – Stop the engine and wait for all movement to stop before inspecting the machine.

DO – After hitting an obstacle, stop the machine and check for damage.

DO – Use suitable ear protection.



The above decals should be located on your MSP120. If any of the above decals are not located on your MSP120 or are damaged in any way contact Logic for some Replacements decals before use.

5**TRANSPORT LIFTING AND STORAGE**

Ensure the vehicle used to lift and transport the sweeper has the necessary lifting and loading capacity. Follow all vehicle manufacturer's guidelines for lifting.

When lifting the MSP120 for transporting / delivery purposes always ensure to locate the lifting straps on each of the four corners ensuring the straps/chains are all the same length before lifting, or if using forklift tines ensure the sweeper is secure on the tines before lifting.

6**OPERATING INSTRUCTIONS AND ADJUSTMENTS**

The **LOGIC SWEEPER/COLLECTOR** is designed to give safe and dependable service if operated according to instructions and intended use.

Read and understand this manual before operating the unit, as failure to do so could result in personal injury or equipment damage.

When used with an ATV or compact tractor, ear defenders should be worn. Under normal working conditions a noise level of 78 decibels would be usual, in this case protection is advised.

INITIAL CHECK

- a. Make sure that all nuts, bolts and fittings are securely fixed, and that all packaging materials e.g. wire bands, tape etc have been removed.
- b. Check that there is oil in the engine and petrol in the tank.

6.1 ATTACHING TO THE ATV (OR SIMILAR SUITABLE VEHICLE)

The MSP120 Sweeper is simply attached by the 50mm ball coupling

The remote throttle control should be fitted to the ATV rear carrier frame using the plastic clips to clip onto a suitable point of the carrier frame, taking note to position the throttle quadrant in an easily accessible position for the operator's hand.

On vehicles where there is no such carrier frame, a simple bracket may need to be fabricated to mount the throttle holder.

Care should be taken to ensure the throttle cable is not kinked or close to any hot surfaces, use the cable holder clip in a similar way to the throttle quadrant to hold the cable in a secure manner.

MSP120R MODELS

The MSP120R models come with a rope (tipping rope) attached to the hopper for tipping. Position the tipping rope handle at a suitable point and secure with the plastic clip provided.

MSP120W AND WT MODELS

When the sweeper is removed from the towing vehicle the remote throttle should be attached to the throttle park mounted on the winch bracket.

6.2 BRUSH HEIGHT ADJUSTMENT

The height of the brush and subsequent contact on the ground is controlled by the height adjustment jack. See figure 1.

As a general rule the brush should be just touching the ground. Each situation will be different depending on what the surface is like and the type of material to be collected.

Too much contact with the ground will either damage the surface or increase the wearing on the brush bristles leading to poor sweeping performance and early replacement.

ADJUSTING OF BRUSH HEIGHT

1. Unclip the height adjuster locking clip.
2. Turn the jack handle, anti-clock wise to increase the height of the brush, or clockwise to reduce the height.
3. Try a test run to see if the brush is correctly positioned to perform effectively,
4. Clip the locking clip back over the adjuster handle to secure the jack in the desired position. (this stops the handle turning)



Figure 1

RE –ADJUSTING OF BRUSHING HEIGHT

If the wrong height setting has been selected before starting, or different ground conditions require another setting, it is easy to re-adjust.

- a. Stop the engine and wait for the brush rotor to come to a standstill.
- b. Follow the same procedure as described in the adjustment section above 1-4.

6.3 TINE BAR HEIGHT ADJUSTMENT (MSP120WT ONLY)

The tine bar is engaged and disengaged with the main height adjuster for the brush.

To maximise the effectiveness of the tines they should be set so that the tips of the tines are just off the ground. This will ensure that any dried droppings will be disturbed by the tines and give the brush a better chance of picking them up.

If the tines have too much contact with the ground this will either damage the surface or increase the wearing on the tines leading to early replacement.

ADJUSTING OF TINE HEIGHT

1. Slacken the hand wheel on each end of the tine bar. See figure 2.
2. Push the hand wheel back to enter the vertical slot.
3. Select one of the three height setting required by lifting or lowering the tine bar using the handles provided. then pull the hand wheel forward again.
4. Tighten the two hand wheels to secure the tine bar in the desired position.



Figure 2

RE – ADJUSTING OF TINE BAR HEIGHT

As the brush of the sweeper wears, the tine bar may need adjusting to ensure it is being effective. Follow steps 1 to 4 above.

6.4 EMPTYING THE HOPPER

The operator can clearly see when the hopper is full through the hopper mesh.

It is advised that the hopper is emptied at the end of each sweeping session. This will stop the contents drying out in the hopper which could be difficult to tip out.

HOPPER EMPTYING

1. Drive to the area where you would like to empty the contents of the hopper.
2. Wind the winch to tip the hopper forward till it hits the stops. See figure 3
3. Slowly drive forward to clear the ejected heap.
4. Wind the winch back to lower the hopper back down ready to sweep again.



Figure 3



If emptying is desired away from the field being swept the sweeper should be lifted on the main height adjuster to ensure the brushes and tines are not damaged during transport over rough terrain such as gateways.

6.5 STARTING THE SWEEPER / COLLECTOR

- a. Observe all safety precautions, keep hands and feet away from rotor and other moving parts.
- b. Keep spectators at a safe distance.
- c. Make sure there is a gap between the brush and the ground.
- d. Select an area clear of loose debris that could be picked up.
- e. Set the engine choke, and suitable idling speed with the throttle
- f. Pull the starter cord firmly, allowing the cord to return to the housing slowly (one or two strong pulls should start the engine).
- g. After a few seconds warming up at idling speed, move the throttle to the slowest setting possible, to achieve a satisfactory performance.

Remember, slow brush speeds will increase the life of the bristles and reduce the amount of dust created.



If the throttle is altered to increase the engine R.P.M beyond the factory pre-set maximum level, the guarantee may become invalid. In addition to this, brushing efficiency will be reduced, fuel consumption will increase, and excessive vibration could be caused resulting in a potential danger to personnel and damage to components

FORWARD SPEED

The amount of debris to be brushed dictates the gear selection and forward speed, slow forward speeds give better results in most cases.

Start off in the slowest speed possible, then increase gradually to find the optimum working speed.

The machine should never be driven at excessive speeds which could cause bouncing, resulting in poor brushing finish and danger to the operator and any personnel nearby.

MOVING FROM ONE SITE TO ANOTHER

When moving from one area to another close by, reduce the engine speed to idling using the remote throttle control so that the brush comes to a standstill.

When approaching the next area to be swept, increase the throttle setting to the pre determined position which will increase the engine speed and automatically engage the brush drive.



Excessive transit speed could cause castor wheel vibration and vehicle instability.

SERVICE SCHEDULE

	DAILY	WEEKLY	MONTHLY
Check tyre pressures	●	●	●
Check condition of tyres	●	●	●
Visual check to ensure nothing is loose	●	●	●
Check all nuts and bolts	●	●	●
Oil the coupling mechanism and check for wear			●
Check for debris wrapping on the brush shaft	●	●	●
Grease brush bearings and height adjuster		●	●
Grease rear caster bushings		●	
Check brush and spring tine* wear			●
Check and lubricate the drive chain		●	●
Check oil levels in the engine and other periodical checks according to the engine handbook	●	●	●
* When tines are fitted (MSP120WT only)			



The engine should be stopped and all brush rotor movement stopped before any maintenance checks are carried out.

TYRE / PRESSURE

Tyre pressure for: KINGSTYRE Front 16 x 6.5 - 8 (Max 28 Psi)
Rear 13 x 6.5 - 6 (Max 23 Psi)



DO NOT exceed recommended tyre pressures.

Remember that temperature affects pressures: in cold weather, the pressure needs to be higher than in higher temperatures.

Never adjust the pressure immediately after driving, because driving heats up the tyres. There are many individual causes of tyre troubles. However, the three abuses which will cause most problems, and the greatest costs, are under-inflation, overloading and speeding. When you check the tyre pressures also look for bumps, bulges in the side of the tyre or tread. Check the tyres for cuts, slits or cracks, nails or foreign objects embedded in the side of the tyre or tread. Check the tread for excess wear. Replace or repair any defect or fault with tyres before use.

SWIVEL HITCH HOUSING

Check coupling for signs of damage or wear, swivel the coupling 360 degrees and check that the bushes are not too worn. Replace any worn or damaged parts.

Oil the 50mm coupling; follow the diagrams on the hitch to ensure oil is applied correctly.

7.1 BRUSH MAINTENANCE AND REPLACEMENT

The brush sections are designed to give a long period of use, when adjusted correctly.

The rate of wear will vary depending on the surfaces being brushed. Under normal circumstances, the complete set of brush sections would be changed at the same time, to ensure an even sweeping performance.

If a brush section has been damaged through striking an object, it should be changed immediately.

Correct installation of brush sections on the main spindle, See figure 3.

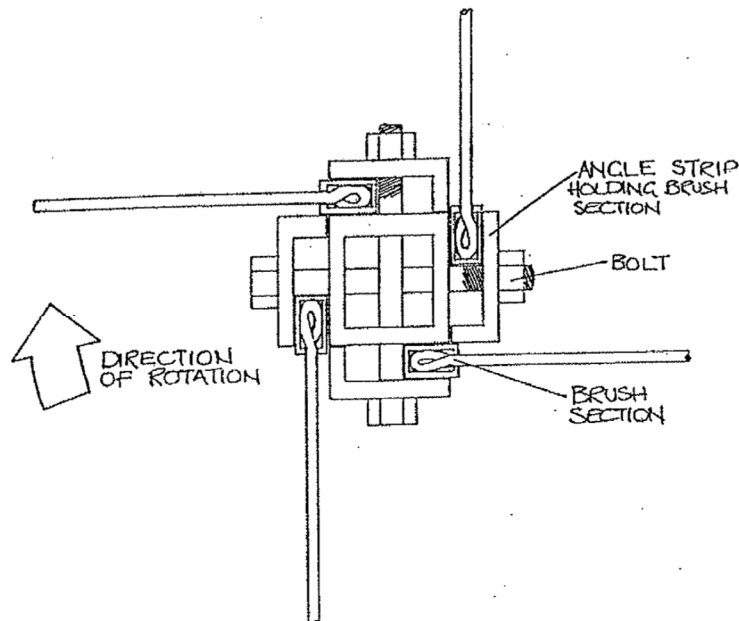


Figure 3

DRIVE CHAIN MAINTENANCE AND ADJUSTMENT

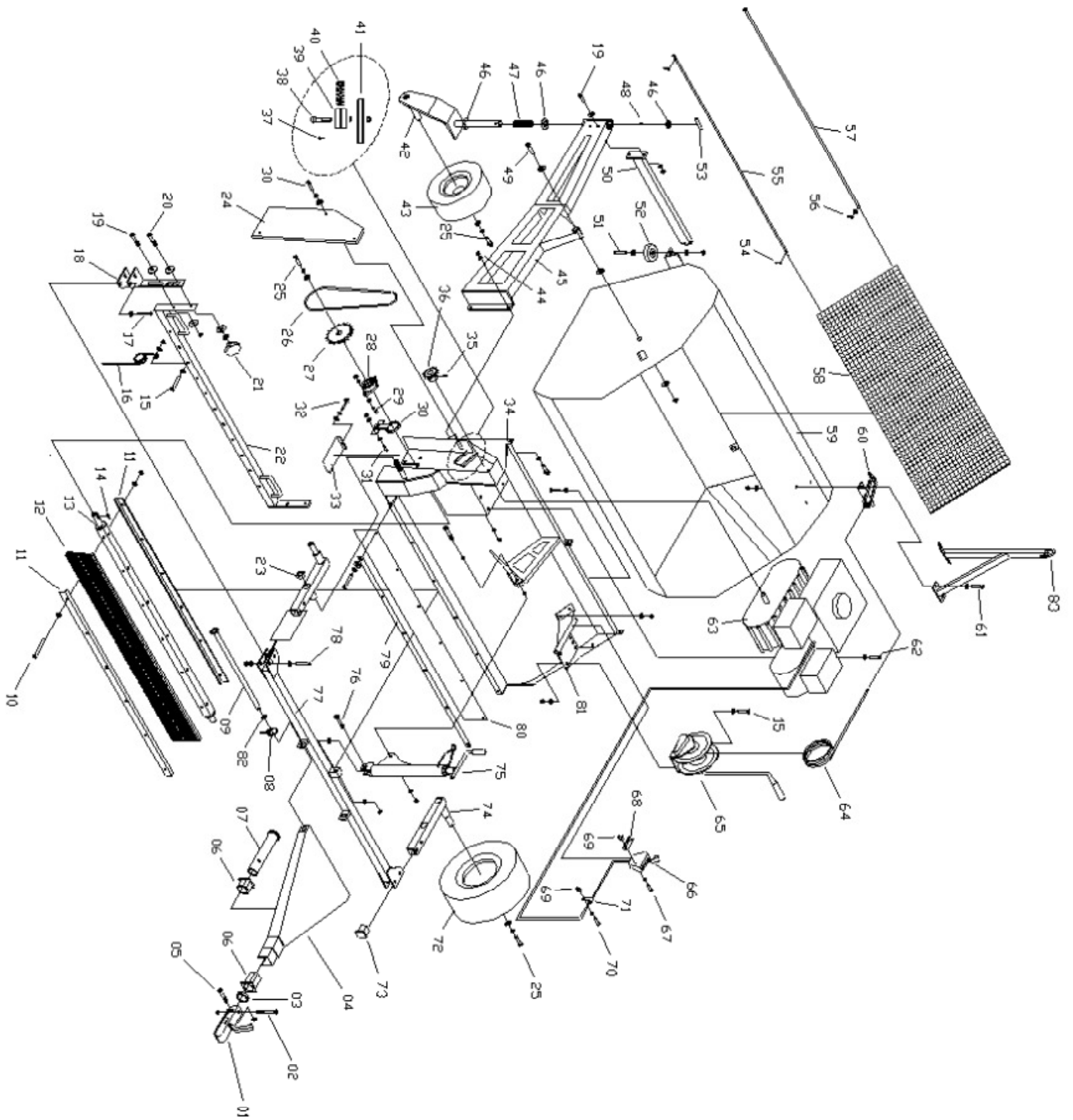
Always switch off the engine and wait for all brush movement to stop before carrying out any inspection or adjustment.

The chain drive guard should be removed before any inspection or adjustment.

Correct chain tension is automatically regulated by a spring loaded tensioner which should only need turning or replacing after many hours use.

! Regular lubrication of the chain is very important. The nature of work increases the need for frequent use of the chain lubricant provided. The lubricant is applied through the hole on top of the chain sprocket housing, covered with a rubber grommet. The engine should be at idling speed when the lubricant is applied. Once every eight hours use, should be sufficient.

	MSP120R	MSP120W	MSP120WT
Max machine width	1880mm		
Max machine Height	1630mm	1100mm	
Max machine length (Not including drawbar)	1800mm		
Max working width	1.2m (48")		
Weight	235kg	245kg	255kg
Hitch:			
Type	50mm swivel ball hitch		
Height range	150mm to 600mm off ground level		
Raise / Lower	Manual lift		
Wheel / Tyres	KINGSTYRE Front 16 x 6.5 –8 Rear 13 x 6.5 – 6		
Max speed	15mph		
Spring tines:			
Diameter of tine			8 mm
Tine spacing			100 mm
Number of tines			11



Item	Part Number	Description
001	C900	Coupling 50mm H/D Winterhoff
002	FBH12065,FNN12	Bolt M12 X 65 Mm,Nut Nyloc M12
003	CM100-01A	Swivel Hitch Thrust Washer
004	MSP120-06A	Drawbar Panel
005	FBH12070,FNN12	Bolt M12 X 70,Nyloc Nut M12
006	CM100-03A	Swivel Hitch Nylon Bush
007	CM100-04	Swivel Hitch Draw Tube
008	FPL06	Pin Linch 6mm
009	MSP120-31A	Drawbar Pin
010	FBH08090,FWF08,FNN08	Bolt M8 X 90,Washer M8,Nyloc Nut M8
011	MSC120-43	Brush Clamping Strip
012	MSC120-44	Brush
013	MSP120-62A	Brush Spindle
014	SSQ006K	Square Key Steel 1/4" X 1/4"
015	FSH10030,FWF10,FNN10	S/Screw M10 X 30,Washers M10,Nyloc Nut M10
016	MSP121-06	Spring Tine
017	FBH10080,FWF10,FNN10	Bolt M10 X 80,Washer M10,Nyloc Nut M10
018	MSP121-01A	Tine Bar Bracket
019	FSH10030,FWR10030,FNN10	S/Screw M10 X 30,Washer Repair M10 X 30,Nyloc Nut M10
020	FSH10030,FWR10030,FWS10	S/Screw M10 X 30,Washer Repair M10 X 30,Spring M10
021	FHW1055	Hand wheel M10 X 55 Od Female
022	MSP121-03A	Tine Bar Angle
023	FNN20	Nyloc Nut M20
024	MSP120-73A	Chain Guard Cover
025	FBH10025,FWS10,FWR10030	Bolt M10 X 25,Spring Washer M10,Repair Washer M10
026	MSP120-08	Drive Chain 1/2" X 47 Links
027	MSC120-48	Spindle Drive Sprocket
028	MSU-B100	Bearing T 1025 25tr Cast
029	FSH10035,FWF10,FNN10	S/Screw M10 X 35,Washer M10,Nyloc Nut M10
030	MSP120-21A	Rotor Bearing Shield
031	FSH08025,FWF08,FNN08	S/Screw M8 X 25,Washer, Flat, Nyloc Nut M8
032	FBH08020,FWS08,FWF08	Bolt M8 X 20,Spring Washer M8,Flat Washer M8
033	MSP120-05A	Chain Guard Base
034	MSP120-14A	Sweeper Hood
035	FSG06015	Grubscrew Skt M6 X 15
036	MSC120-47	Engine Sprocket
037	FSP06012	S/Screw Tri-Lobe Pozi Hd M6 X 12
038	FBC10050,FWF10,FNN10	Bolt/Nut Cup Sq M10 X 50,Washer M10,Nyloc Nut M10
039	MSP120-16	Chain Tensioner Block
040	MSP120-57	Spring Chain Tensioner
041	MSC120-51	Chain Tensioner
042	MSP120-32LA	Castor Mounting Bracket L/H
043	WT112	WI/Ty 13 X 650-6 Kingstyre
044	FBH10025,FWF10,FNN10	Bolt M10 X 25,Washer M10,Nyloc Nut M10
045	MSP120-03LA	Hopper Frame Side Member L/H
046	FWF26	Washer M26 X 47 X 2 Thick
047	MSC120-72	Spring

Item	Part Number	Description
048	TA102-03	Grease Nipple
049	FSH12085,FWF12,FNN12	S/Screw M12 X 85,3 Washers, Nyloc Nut M12
050	MSP120-38A	Hopper Rear X Member
051	FSH12025,FWF12,FNN12	S/Screw M12 X 25,Washer M12,Nyloc Nut M12
052	MSU-R005	Rubber Buffer 60 X 19 X M12
053	FPS10060	Pin Spirol M10 X 60
054	FCG01025	Clip R 1.6 X 25
055	MSP120-58	Hopper Mesh Bottom Bar
056	FCG01025,FWF08	Clip R 1.6 X 25,Washer M8
057	MSP120-59A	Hopper Mesh Top Bar
058	MSP120-64M	Hopper Net
059	MSP120-01A	Hopper
060	MSP120-70A	Hopper Tip Anchor
061	FSH08025,FWR08025,FWF08,FNN08	S/Screw M8 X 25,Washer Repair+ Flat, Nyloc Nut M8
062	FBH08040,FWF08,FNN08	Bolt M8 X 40 ,Washers M8,Nyloc Nut M8
063	EHH052	Engine H0nda 5.5 Hp 2/1 Red
064	MSP120-69	Winch Rope
065	MSP120-67	Winch 454kg Ratio 3.5:1
066	MFG109	Throttle Control Kit 2 Meter
067	FSH06035,FWFO6	S/Screw M6 X 35,Washer M6
068	MFG109-04	Clip Base Plate
069	S216-047	Stadium Clip 21 MM OD
070	FSH06020,FWF06	S/Screw M6 X 20,Washer M6
071	S216-048	Durite Heavy Duty Terminal
072	WT142	WI/Ty 16 X 650-8 Kingstyre
073	FIP040040	Insert Plastic 40 X 40 X 26-4 MM
074	MSP120-23A	Front Wheel Mounting
075	MFP302	Height Adjuster
076	FBH12065,FWF12,FNN12	Bolt M12 X 65,Washer M12,Nyloc Nut M12
077	MSP120-43A	Height Adjuster Cross Bar
078	FBH10070,FWF10,FNN10	Bolt M10 X 70,Washer M10,Nyloc Nut M10
079	MSP120-35	Plygene Clamping Bar
080	MSP120-63	Skirt Plygene
081	MSP120-07A	Winch Mount
082	FWF20037	Washer Flat M20 X 37 X 2 MM Thick
083	MSP123-01A	Tipping Rope Anchor

This Logic Manufacturing product is guaranteed against faulty workmanship and materials for a period of 6 months from the date of purchase.

On Engine-Powered equipment, the engine manufactures guarantee will apply, any claims being subject to their terms and conditions.

All claims must be made in writing within 28 days of the alleged failure.

All claims must be made through the dealer who originally supplied the machine.

Any defective parts must be kept for inspection and if requested, sent to the factory or dealer.

The customer must bring equipment for repair to the dealer.

This guarantee becomes void if unauthorised modifications have been made, or if parts not manufactured, supplied or approved by Logic Manufacturing have been fitted to the machine.

We accept no liability for normal wear and tear, misuse or abuse, or where recommended maintenance has not been carried out.

All guarantee work must be authorised by Logic manufacturing prior to any work being done. Work carried out without our consent may not be reimbursed.



DECLARATION OF CONFORMITY
93 / 44 EEC



LOGIC MANUFACTURING LTD

Foundry Industrial Estate
Bridge End
HEXHAM
Northumberland

Product Type: **MSP120R/ W/ WT**

Covered By Technical File Number: **CE – MSP120**

Serial Number:

Standards and Regulations Used:

The Supply of Machinery (Safety) Regulations 1992
HSE Guide Lines on ATV Equipment (Agric Sheet No. 11)

Place of Issue: **United Kingdom**

Name of Authorised Representative: **S A WEIR**

Position of Authorised Representative: **PRODUCT DEVELOPMENT MANAGER**

Declaration,

I declare that as the authorised representative, the above information in relation to the supply / manufacture of this product, is in conformity with the stated standards and other related documents following the provisions of 93/68EEC directives

Signature of Authorised Representative

Date: **19/05/2010**