

Petrol Powered Lawn Mowers

User Manual

[Revision 2.0 March 2017]

READ THIS MANUAL CAREFULLY BEFORE USE – FAILURE TO DO SO MAY RESULT IN INJURY, PROPERTY DAMAGE AND MAY VOID WARRANTY. • KEEP THIS MANUAL FOR FUTURE REFERENCE. • Products covered by this manual may vary in appearance, assembly, inclusions, specifications, description and packaging.

The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. Failure to add engine oil will void the product warranty.

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Safety

Safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment or property damage if not understood or followed. Safety messages have the following symbols:



You WILL be KILLED or SERIOUSLY INJURED if you do not follow instructions.

It is important that you read and understand the instruction manual before use and keep the manual in a safe place for future reference. Safety information presented here is generic in nature – some advice may not be applicable to every piece of equipment. The term "equipment" refers to your product, be it electrical mains, battery or petrol engine powered.

Read all safety warnings and all instructions. When using the equipment, basic safety precautions detailed here must always be followed to reduce the risk of fire, electric shock, personal injury and material damage.

IMPORTANT – Handle the equipment safely and carefully.

BEFORE USE - If you are not familiar with the safe operation/handling of the equipment, or are in any way unsure of any aspect of suitability or correct use it for your application, you should complete training conducted by a person or organization qualified in safe use and operation of this equipment, including fuel/electrical handling and safety.

WARNINGS

- Read all safety warnings and all instructions. When using the equipment, basic safety precautions detailed here must always be followed to reduce the risk of fire, electric shock, personal injury and material damage.
- Do not operate the equipment in flammable or explosive environments, such as in the presence of flammable liquids, gases or dust. The equipment may create sparks or heat that may ignite vapours, dust etc
- · Keep clear of moving parts.
- Equipment may be a potential source of electric shock or injury if misused.
- Do not operate the equipment if it is damaged, malfunctioning or is in an excessively worn state.
- Do not allow others to use the equipment unless they have read this manual and are adequately trained.

General Work Area Safety

Work areas should be clean and well it. Do not operate the equipment if bystanders, animals etc are within operating range of the equipment or the general work area.



You CAN be KILLED or SERIOUSLY INJURED if you do not follow instructions.

General Personal Safety

Keep packaging away from children - risk of suffocation! Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property.

Prevent unintentional starting of the equipment - ensure equipment and power source switches are in the OFF position before connecting or moving the equipment. Do not carry equipment with hands/fingers touching any controls. Remove any tools or other items that are not a part of the equipment from it before starting or switching on.

Stay alert and use common sense when operating equipment. Do not overreach. Keep proper footing and balance at all times. Do not use equipment when tired or under the influence of drugs, alcohol or medication. This equipment is not intended for use by persons with reduced physical, sensory or mental capabilities.

You must wear appropriate protective equipment when operating, servicing, or when in the operating area of the equipment to help protect from serious injury, including eye injury, inhalation of toxic fumes, burns, and hearing loss. Always wear eye protection. Protective equipment such as respirators, non-skid safety shoes, hard hat, hearing protection etc should be used for appropriate conditions. Other people nearby should also wear appropriate personal protective equipment. Do not wear loose clothing or jewellery, which can be caught in moving parts. Keep hair and clothing away from the equipment.

If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of dust collection can reduce dust-related hazards.

General Equipment Use and Care

Do not force the equipment. Use the correct equipment for your application. The correct equipment will perform better and be safer within its design parameters.

Do not use the equipment if the ON/OFF switch malfunctions – any equipment that cannot be controlled with the ON/OFF switch is dangerous and must be repaired.

Use the equipment and accessories etc. in accordance with these instructions, taking into account working conditions and the work to be performed. Using the equipment for operations different from those intended could result in hazardous situations.



You CAN be INJURED if you do not follow instructions or equipment damage may occur.

Before use, inspect the equipment for misalignment or binding of moving parts, loose components, damage or any other condition that may affect its operation. If damaged, have the equipment repaired by an authorized service center or technician before use.

Always keep the equipment and accessories (cutting tools, nozzles, bits etc) properly maintained. Keep the equipment, controls and handles dry and free from dirt, oil and grease.

Store the equipment out of reach of children or untrained persons. To avoid burns or fire hazards, let the equipment cool completely before transporting or storing. Never place the equipment in places where there are flammable materials, combustible gases or combustible liquids etc.

The equipment is not weatherproof, and should not be stored in direct sunlight, at high ambient temperatures or locations that are damp or very humid.

Lawn Mower Use and Care

- The equipment is designed for domestic use only.
- Always wear substantial footwear, such as boots, and long trousers when operating the product. Do NOT wear open shoes and shorts.
- Check the work area before mowing and remove any objects (stones etc) that may be thrown by the mower or may otherwise damage it.
- Avoid cutting wet or very tall grass. If grass is tall, mow in several passes, each time reducing the cut height.
- Do not use the equipment for purposes it is not designed for, such as shredding leaves or wood chipping.
- Avoid overly steep slopes when mowing and, when mowing on an incline, mow across the face of the incline, not up and down it.
- Do not start self-propelled models (where applicable) with the drive mechanism engaged.
- Use caution when reversing or pulling the equipment towards you, and changing direction.
- After stopping the engine, always allow all moving components (blades etc) to stop moving before moving, lifting etc.
- Stop the engine if the equipment requires tilting or moving over non-grass surfaces.



General Fuel Safety



Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources.

- Do not spill fuel. If you spill fuel, wipe it from equipment immediately – if fuel gets on your clothing, change them immediately
- Do not smoke near fuel.
- Always shut off the engine before refuelling.
- Do not refuel a hot engine.
- Open the fuel cap carefully to allow any pressure build-up in the tank to release slowly.
- · Always refuel in well ventilated areas.
- Always check for fuel leakage. If fuel leakage is found, do not start or run the engine until all leaks are fixed.

General Electrical Safety

- Inspect electrical equipment, extension cords, power bars, and electrical fittings for damage or wear before each use. Repair or replace damaged equipment immediately.
- Ensure all power sources conform to equipment voltage requirements and are disconnected before connecting or disconnecting equipment.
- When wiring electrically powered equipment, follow all electrical and safety codes.
- Wherever possible, use a residual current device (RCD).
- Electrically grounded equipment must have an approved cord and plug and be connected to a grounded outlet.
- Do not bypass the on/off switch and operate equipment by connecting and disconnecting the power cord.
- Do not use equipment that has exposed wiring, damaged switches, covers or guards.
- Do not use electrical equipment in wet conditions or damp locations.
- Do not use electrical cords to lift, move or carry equipment.
- Do not tie electrical cords in tight knots and ensure electrical cords do not present trip hazards.

General Service Information

- Have the equipment serviced or repaired at authorized service centers by qualified personnel only.
- Replacement parts must be original equipment manufacturer (OEM) to help ensure that equipment safety is maintained.
- Do not attempt any maintenance or repair work not described in this instruction manual.
- After use, the equipment and components may still be hot – allow the equipment to cool and disconnect spark plugs and/or electrical power sources and/or batteries from it before making adjustments, changing accessories or performing repair or maintenance.
- Do not make adjustments while the equipment is running.
- Perform all service related activities under suitable conditions, such as a workshop etc.
- Replace worn, damaged or missing warning/safety labels immediately.
- Do not clean equipment with solvents, flammable liquids or harsh abrasives.



Running combustion engines in confined areas CAN KILL IN MINUTES. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see.



NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run petrol engines OUTDOORS and away from doors, windows and vents. Do not operate the equipment in hazardous locations, such as where there may be a risk of fire or explosions from flammable liquids, gases or dust.

Do not operate the equipment in confined areas where exhaust gases, smoke or fumes could reach dangerous concentrations.

Do not refuel a combustion engine while it is running, on or hot.

Never smoke while refuelling combustion engines or handling flammable substances.

For generators, the electrical output is potentially lethal and must only be connected to a fixed electrical installation by an appropriately licensed person.

Be aware that the equipment may include hazardous components, such as blades, hot surfaces and moving parts.

Handle any flammable substance with extreme caution.

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Applicable Models

This manual applies to the following Bäumr-AG lawn mowers:

660EX / MOWPSH6NDBMRADJF 16" 139cc 4-Stroke



690SX Series II / MOWPSHBMRA6DW 16" 139cc 4-Stroke Self-Propelled



750SX / MOWPSHBMRA8CD 18" 165cc 4-Stroke Self-Propelled



670EX / MOWPSH6KSBMRADJF 16" 139cc 4-Stroke Electric Start



700SX Series II / MOWPSHBMRA6CH 16" 139cc 4-Stroke Self-Propelled



760SX Series II / MOWPSHBMRA9CH 19" 165cc 4-Stroke Self-Propelled



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770SX Series II / MOWPSHBMRA9BS 19" 140cc 4-Stroke Self-Propelled



MOWPSHBMRB1CG 21" 218cc 4-Stroke Self-Propelled

880SX Series II / MOWPSHBMRA1CH /

890SX Series II / MOWPSHBMRA1BS 21" 163cc 4-Stroke Self-Propelled

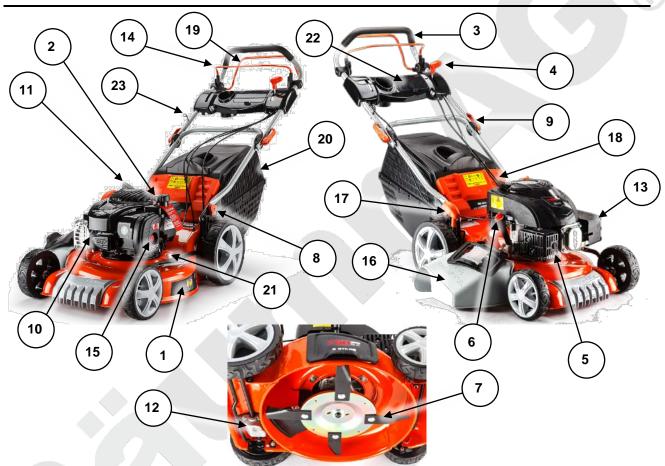


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Parts Identification

Lawn mowers come with all parts required for normal domestic use. A basic toolkit may also be included. It is strongly recommended that you familiarise yourself with all major components of the machine before using it or performing any maintenance tasks.

Products detailed in this manual may vary in appearance, inclusions, description and packaging from those shown or described. For example, the drive activation mechanism for self-propelled mowers is not applicable to non-self-propelled types, or a side discharge chute may apply to some models. This section shows typical major components common to most 4-stroke petrol powered lawn mowers; the position of some components may also vary between models.



No.	Name	No.	Name
1	Deck	13	Air Filter Cover (filter inside)
2	Fuel Filler and Tank	14	Engine Safety Bar (where applicable)
3	Handle	15	Fuel Primer (where applicable)
4	4 Choke or Throttle or Engine On/Off Control 16 Side Discharge Chute (wh		Side Discharge Chute (where applicable)
5	5 Exhaust 17 Cut Height Adjuster		Cut Height Adjuster
6	Oil Filler/Dipstick	18	Rear Guard
7	Cutting Blade	19	Drive Activation Bar/Bail (self-propelled models)
8	Handle Attachment Nut	20	Grass Catcher
9	Handle Adjustment Lever 21 Deck Wash Hose Connector (where appli		Deck Wash Hose Connector (where applicable)
10	Spark Plug 22 Console (where applicable)		Console (where applicable)
11	Starting Cord	23	Starting Cord Hook
12	Drive Mechanism (self-propelled models)		

Before Use Checklist

Ensure that you carry out all procedures below before starting the engine or operating the equipment. All procedures described are generic in nature and slight variations between different models may exist. Failure to follow the checklist and carry out the procedures correctly may result in making the product warranty void. The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. Failure to add engine oil will void the product warranty.

Assembly

Typically, the lawn mower requires minimal assembly. Prior to assembly, unpack all components and check that all items have been received.

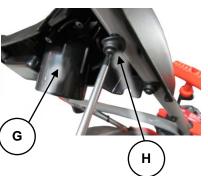
Handle

The handle comes assembled, however, must be attached to the lawn mower handle mounting brackets. Note that the following procedure is typical and that there may be slight differences between models; for example, on some machine the handle is attached using 2 screws and nuts per side.

- 1. Remove the handle attachment nuts and screws from the handle mounting brackets (C).
- 2. Pull the handle adjustment levers (**D**) out to unlock them and unfold the handle, then push the levers back into the locked position. On some models that do not have adjustment, the top handle sections are attached directly to the lower sections using screws and nuts, similarly to the procedure below.
- 3. Ensure that any cables/wires are running along the top of the handle, then place the ends of the handle in position with the mounting brackets (E) for some models, the bottom hole in each leg of the handle goes over a spigot (F); for other models the handle is secured using 2 screws on each leg, with the handle mounted to the outer face of the brackets. Note that some models may have additional holes that can be used for changing the angle of the handle.
- 4. Insert the handle attachment screws (**B**) through the second hole in each handle leg from the inside, then secure the handle with the handle attachment nuts (**A**). Firmly tighten (rotate right) the nuts.



- 5. Once the handle is secure, check that all cable/wires are properly routed, without kinks etc, and are secured to the handle with any supplied clips.
- 6. If the machine is equipped with a "console" (**G**) that houses the throttle control, drink holder etc, place it in position over the handle rails, and attach it using the supplied screws and curved washers (**H**).



Blades

Some machines feature "cross-cut" blades (four-blade design). If this is the case, pull them outward so they are straight – use caution as the cutting edge of the blade is sharp.



4-Stroke Engine Oil

The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. Failure to add engine oil will void the product warranty.

Four-stroke engines require engine oil in the crankcase for lubrication of internal components. Severe or irreparable damage may occur if the engine is allowed to run without engine oil. The engine oil level requires regular maintenance. Check the engine oil level and ensure that the oil level is at or just under the maximum level indicator.

Always check the engine oil level before starting the engine. See Checking and Changing Engine Oil.

Air Filter

The air filter is used to prevent dirt and other particles from possibly entering the engine and causing internal damage to it. The air filter requires regular maintenance.

Always check the air filter before starting the engine. See Checking, Cleaning and Replacing the Air Filter.

Fuel



Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • The engine must be cool before refuelling.

Adequately fill the fuel tank with the correct fuel type.

• Use non-ethanol unleaded petrol (higher RON values will provide best engine performance). Do not use old or contaminated fuel.

To fill or top up fuel:

- 1. Place the machine in an upright position on a flat and level surface.
- 2. Clean the machine around the fuel filler so that no dirt or other material enters the engine when the cap is removed.
- 3. Remove (rotate left) the fuel filler cap.
- 4. Using a funnel, carefully fill the tank with fuel. Do not fill above the top of the strainer (if equipped) or otherwise overfill the tank.
- 5. When finished, re-install (rotate right) the fuel filler cap until firm. Wipe away any residual fuel from the machine. If fuel has been spilt, move the machine away from the spillage before starting the engine.

Priming the Fuel System

For engines equipped with a fuel primer, it may be necessary to "prime" the fuel system before attempting to start the engine. This means removing any air from the fuel line and filling the carburettor with fuel. To prime:

- 1. Fill the fuel tank with fuel.
- 2. Locate the fuel primer (A).
- 3. Press the fuel primer repeatedly until you feel that fuel is in the primer.
- 4. Start the engine.

Spark Plug

The spark plug may come disconnected from the spark plug lead. If this is the case, place the electrical lead over the spark plug terminal and push it down so that it connects firmly with the terminal. See <u>Spark Plug</u> <u>Removal/Installation</u>.

Engine Starting and Stopping

Before starting the engine, ensure that you have followed all procedures described in the <u>Before Use Checklist</u>. The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. Failure to add engine oil will void the product warranty.

Different models may feature variations in design; for example, some have different engine types etc. There are currently two major variations in how the engine speed is controlled:

• **Manual** – This is the more traditional style, using a throttle lever, where the position of the lever determines the engine speed [just like the accelerator on your car]. Manual throttle engines generally have a choke setting on the throttle that is used for starting the engine when it is cold.



 Automatic – These engines have a system that adjusts the throttle automatically based on the current engine load. For example, when the grass being cut is thick etc, the throttle opens up to maintain engine speed. Engines with an automatic throttle generally do not have a choke setting on the throttle, but rather just a "run" or "on" position. Manual Throttle

Engine ON/OFF Switch

Automatic Throttle

Major engine controls are identified on the machine by stickers or other markings. The following procedures and images are typical – the position or appearance of controls etc may vary. To start the engine:

- 1. **PRIME** If necessary, "prime" the fuel system.
- 2. **CHOKE** If the machine is equipped with a "choke" or "cold" or "cold start" throttle setting, and the engine is cold, place the throttle in that position. If the engine is warm or the ambient temperature is high, place the throttle somewhere in the "run" region [generally, just off the "stop" position is good].

If the machine has no choke, place the throttle in the "start" or "run" position.

- 3. **IGNITION** If the machine has an engine ON/OFF switch or key switch, place it in the "on" ("I") position. Note that some models may be wired so that "**O**" is the "on" position. For key switches, the "off" position allows the key to be removed from the switch. The "on" position is reached when the key is rotated from the "off" position.
- START Slowly pull out the starter cord (A) until you feel it engage with the engine, then pull it out rapidly. The engine should start. Allow the starter cord to rewind slowly – do not let it "snap" back.

If the machine is equipped with electric start, press the "start" or "power" button or turn the key switch to the "start" position to use the electric start. Typically, electric start engines can also be pull started.



Note: If the machine features an "<u>engine safety bar</u>", it must be engaged in order to start the engine and for it to remain running. • Many models feature an extended length starter cord that hooks to the mower handle and allows the engine to be started from a normal standing position behind the mower.

5. **WARM-UP and THROTTLE** – It is good practice to allow the engine to warm-up and run smoothly before using the machine. For manual throttles, set the desired engine speed once the engine is warm.

If the engine does not start, repeat step 4. If the engine fails to start after several attempts, refer to <u>Troubleshooting</u>.

To stop the engine:

- Place the throttle control in the "stop" or "off" position, or, if equipped, release the engine safety bar.
- If equipped, place the engine ON/OFF switch or key switch in the "off" position.

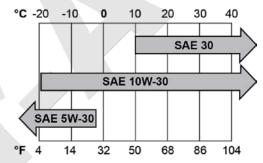
Environmental Considerations

Altitude

If the engine is being used in altitudes at or above 1500m (approximately 5000'), adjustments to the carburettor may be required. This is because there is less oxygen in the air as altitude increases, which effectively "enriches" the ratio of fuel to air going into the engine and the higher the altitude, the richer the fuel mixture becomes. If the engine is being permanently operated at high altitude, it is recommended to have an authorized service center make the necessary carburettor adjustments. If the engine is used occasionally at altitude (not extreme altitudes), no adjustments should be required, however, a slight decrease in engine performance can be expected.

Temperature

If the engine is being used in extremely cold or hot environments; for example, desert or snow conditions, the type of engine oil may need to be changed to suit environmental temperatures. Oil thickens as the temperature decreases and thins as temperature increases, which means that if the engine oil is not suited to the temperature its ability to properly lubricate the engine may be affected. Use the following chart to determine the correct engine oil:



Lawn Mower Operation

The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. Failure to add engine oil will void the product warranty. • Always wear suitable protective clothing and equipment when using the machine. • Inspect the machine before each use and check for wear or damage. If the machine is damaged, have it inspected and repaired at an authorized service centre before using it again. • If you experience excessive vibration from the mower during operation, this is an indication of wear or damage. It is recommended to have it inspected and repaired at an authorized service centre before using it again. • Be aware that once the engine is running, the cutting blades will be rotating and parts of the machine may be extremely hot. • Ensure that the area to be mowed is free of objects that may get caught in the mower or be thrown by it (stones, branches etc).

When the engine is idling (slowest continuous running speed), the cutting action is minimal. As engine speed increases, the cutting action becomes more efficient. Note the following recommendations:

- Operate the engine at a sufficient speed to provide the desired cutting action. This may vary on the type of grass, grass height and density etc.
- After use, it is recommended to clean the mower of excessive grass cuttings, dirt etc. Some models feature a "deck wash", which can be used to simplify cleaning the underside of the mower deck.

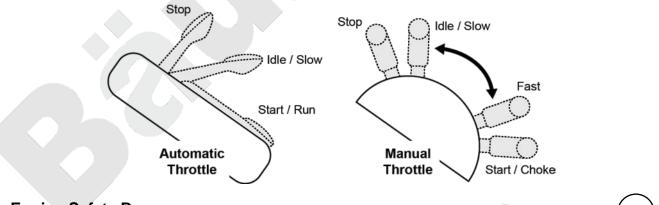
The lawn mower may have additional features to "just" cutting grass. For example, mulching, side discharge chute etc.

Using the Throttle

Once the engine is started, the machine can be used. For manual throttle machines, you adjust engine speed manually; for example, when cutting thicker or longer grass, increase engine speed. Push or pull the throttle within the range between the "start" and "stop" positions to reach the required engine speed.

For machines that have automatic throttle control, just leave the throttle in the "start" position.

When you are pushing the mower from one area to another, but not cutting, you can "idle" the engine [run it slow, but not stop]. For manual throttle machines, place the throttle close to the "stop" position. For automatic throttle machines, pull the throttle toward you approximately mid-way.



Engine Safety Bar

Some models may have an "engine safety bar" (**A**) [also known as a "brake bar" or "bail"] that must be engaged in order for the engine to start and run. When the bar is released, the engine automatically stops. This is a safety feature to help ensure that the mower operator is behind the mower while the engine is running.

To start and run the engine, hold the engine safety bar against the handle (\mathbf{B}) .



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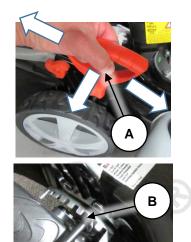
Adjusting Cutting Height

Most mowers feature adjustable cutting heights. The mechanism raises/lowers the lawn mower deck and has several steps. When setting cutting height, note that weeds can spread more easily in very short grass. If the grass is long it may be necessary to cut it in several passes, each time lowering the cutting height. To set the cutting height:

1. Pull the height adjustment lever (A) outward so that is disengages with the

teeth (B).

2. Rotate the lever forward to raise, or backward to lower, then release it at the desired height.

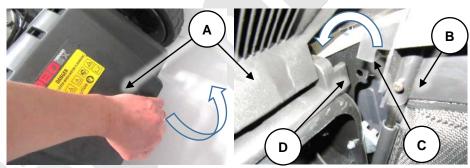


Using the Grass Catcher

Note: Ensure that the mulching attachment (if equipped) is not installed when using the catcher.

When you want to catch the grass cuttings for disposal, use the grass catcher. The grass catcher hooks to the rear of the mower, under the rear guard. To attach and detach it:

- 1. Lift the bottom edge of the rear guard (A) sufficiently to allow the catcher to pass underneath it and hold it in this position.
- 2. Insert the catcher (**B**), with open end toward the mower, and hook the catcher fingers (**C**) onto the mounting points (**D**), then lower the rear guard so it rests on the top of the grass catcher.

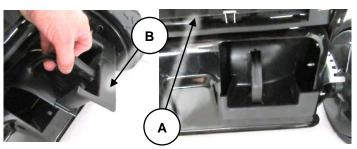


To remove the grass catcher, lift the bottom edge of the rear guard, then lift the grass catcher to unhook it from the mower. Once unhooked, pull the grass catcher out and lower the rear guard.

Using the Mulching Attachment

Some models may feature a "mulching" attachment. Mulching is to re-circulate the cut the grass through the blades so that is very finely "chopped" and can be left on the cut grass as a "grass feed". When mulching, the grass catcher is not required. To install the mulching attachment:

- 1. Remove the grass catcher, if installed. Lift up and hold the rear guard (A).
- 2. Insert the mulching attachment (**B**), with the top angled forward slightly so that the protrusions on the bottom of the attachment enter the slots in the mower deck. Pull the top of the attachment back slightly so it is correctly fitted, then lower the rear guard.



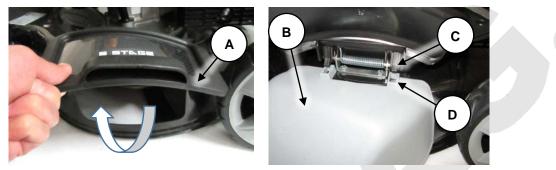
To remove the mulching attachment, lift the rear guard, unhook the mulching attachment from the deck and pull it out, then lower the rear guard.



Using the Side Discharge Attachment

Some models may feature a "side discharge chute" attachment. The side discharge chute ejects the grass cutting to the side of the mower. When using the side discharge chute, the grass catcher is not required. To install the side discharge chute attachment:

- 1. Remove the grass catcher, if installed. Lift up and hold the flap (A) on the side of the mower deck.
- 2. Insert the side discharge chute attachment (**B**) under the flap. Ensure that the protrusions (**C**) on the underside of the flap enter the slots (**D**) on the top of the side discharge chute, then lower the flap.



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To remove the side discharge chute attachment, lift the flap until the chute unhooks from it, then remove the chute and lower the flap.

Using the Self-Propel Function

Some models may have a self-propelling function (forward direction only) to make mowing easier. The function is switched on and off using "drive activation bar" (**A**). When the bar is released, the drive stops. The speed of the drive is not directly controllable, however, may vary somewhat with engine speed.

Note: When the engine is not running, if the drive activation bar is pulled in, the drive gears will engage which can make it difficult to move the mower. It is recommended to release the drive activation bar when changing direction, reversing etc.

To activate the self-propel function, hold the drive activation bar against the handle (B). To deactivate the function, release the bar.

Using the Deck Wash Function

Some models may have a "deck wash" function to help make cleaning the blades and cutting area (under the deck) easier. Note that the function is not intended to completely clean the mower – it will remove some built-up cuttings and dirt from the deck, but more importantly, will soften it up to make removal by hand easier. Keeping the underside of the deck clean will prolong the life of the machine and blades. To use the deck wash function:

- 1. Install the mulching and side discharge chute attachments and lower the deck to the lowest cutting height.
- 2. Attach a garden hose the deck wash port (A) and turn the water on.
- 3. Start the engine and allow it to run at high speed for approximately 30 to 60 seconds be aware that water and grass cuttings/dirt will be ejected through the side discharge chute.
- 4. Stop the engine and turn off the water, then scrape away cuttings/dirt from the deck by hand (wear gloves) or using a suitable tool. This procedure may have to be repeated several times.



Mowing Guidelines

If the machine strikes against an object during mowing or an object gets caught in the mower, stop the machine immediately. Allow the machine to stop running completely and to cool down before inspecting the machine and/or removing any objects that may be caught in it. If the machine is damaged, have it inspected and repaired at an authorized service centre before using it again. • If you experience excessive vibration from the mower during operation, this is an indication of wear or damage. It is recommended to have it inspected and repaired at an authorized service centre before using it again.

The following information are general guidelines to mowing:

- The equipment is designed for domestic use only.
- Always wear substantial footwear, such as boots, and long trousers when operating the product. Do NOT wear open shoes and shorts.
- Check the work area before mowing and remove any objects (stones etc) that may be thrown by the mower or may otherwise damage it.
- Avoid cutting wet grass. Wet grass clipping do not collect well and have a tendency to stick to the underside of the mower deck.
- Avoid cutting very tall grass. If the grass is tall, mow in several passes, each time reducing the cut height.
- Do not use the equipment for purposes it is not designed for, such as shredding leaves or wood chipping.
- Avoid overly steep slopes when mowing and, when mowing on an incline, mow across the face of the incline, not up and down it.
- Do not start self-propelled models (where applicable) with the drive mechanism engaged.
- Use caution when reversing or pulling the equipment towards you, and changing direction.
- After stopping the engine, always allow all moving components (blades etc) to stop moving before moving, lifting etc.
- Stop the engine if the equipment requires tilting or moving over non-grass surfaces.
- Be aware that cutting more than one third of the total height of the grass may affect the health of the grass, and that weeds are able to spread more easily in extremely short grass. A healthier lawn is achieved by regular mowing and not cutting the grass back excessively.
- When mowing, move the mower through the grass at a sensible rate so as to not strain the machine or otherwise reduce its effectiveness, and to achieve the best cutting results.
- Mow in slightly overlapping rows. An effective pattern is to mow in straight lines, starting along the longest edge of the work area, then turning at the end and mowing the next row and so on. Using a regular pattern helps keep the end result neat and reduces the chance of uncut areas.
- For lawns with trees or flowerbeds, for best results it is recommended to cut 1 or 2 rows around the circumference of trees/flowerbeds.
- Regularly empty the grass catcher. Some models may feature an indicator to show when the grass catcher requires emptying. This is usually a small flap on the top of the catcher that lifts when the catcher becomes full.



Maintenance

Running combustion engines in confined areas **CAN KILL IN MINUTES**. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see. NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run combustion engines OUTDOORS and away from doors, windows and vents. • Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources. • The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. **Failure to add engine oil will void the product warranty**. • Do not have the engine running during inspection and maintenance unless specifically required. • The engine should be cool enough to touch before performing maintenance activities. • Some maintenance activities described may be beyond the scope of some users. For procedures that you are not comfortable with or have the tools or experience for, have the unit serviced by a service centre or qualified technician.

To keep the equipment performing at optimal efficiency, regular checks and maintenance is required. Proper care and maintenance ensures best performance and longest service life.

The maintenance schedule below specifies preventative maintenance checks and necessary maintenance tasks and how often they should be performed.

Harsh operating environments such as extreme temperatures, dust etc may necessitate more frequent maintenance. • Maintenance frequencies are based on general factors including a maximum use of approximately 300 hours per year. Apply common-sense when following the maintenance schedule based on your actual use of the product. • Keep reasonable records of maintenance activities for reference. Failure to follow the maintenance schedule, using incorrect or non-compatible accessories or replacements parts, or general negligence may result in making the product warranty void.

Maintenance Schedule

		Frequency – Whichever Comes First			
Component/Task	Every Use	First Month or 20 Hours Use	Every 3 Months or 50 Hours Use	Every 6 Months or 100 Hours Use	Every Year or 300 Hours Use
Engine Oil	Check	*Replace		*Replace	
Oil Leaks	Check/repair as necessary				
Air Cleaner	Check		Clean and repla	ace as necessary	
Spark Plug			Check	Replace	
Valve Clearance					Adjust as necessary
Combustion Chamber					De-coke as necessary
Idle Speed				Check/adjust as necessary	
Fasteners	Check/tighten as necessary				
Fuel Tank					Flush and clean
Fuel Line		Replace as necessary			
Fuel Filter		Clean and replace as necessary			
Fuel Strainer	Check				

* Briggs & Stratton "EXi" type engines do not require regular oil changes.

Checking and Changing Engine Oil

The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use. Failure to add engine oil will void the product warranty. • Always check engine oil level when the machine is in an upright position on a flat and level surface. • Do not use used or contaminated engine oils. • Use only engine oils of the correct type (see <u>Specifications</u>). • Perform the first oil change within the first 20 hours of use. Subsequently, change the oil every 20 hours of use. • It is recommended that the engine be warm, but not hot, when performing oil changes. When the oil is warm it drains faster. • Using dirty or incorrect engine oil may cause engine damage and void any warranty • Always use suitable tools. • Always dispose of used oil in an environmentally responsible manner and according to regulations.

Four-stroke engines require engine oil in the crankcase for lubrication of internal components. Severe or irreparable damage may occur if the engine is allowed to run without engine oil. The engine oil level requires regular maintenance as per the maintenance schedule.

To check engine oil level:

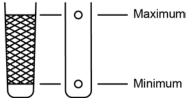
- 1. Place the machine in an upright position on a flat and level surface.
- 2. Clean the machine around the oil filler cap/dipstick (A) so that no dirt or other material enters the engine when the cap is removed.
- 3. Remove the oil filler cap/dipstick (rotate left) until fully unscrewed, or, for bayonet style caps, unlocked, then:
 - a. Wipe the dipstick clean with a piece of cloth or paper.
 - b. Insert the dipstick back into the oil filler but do not screw/lock it in.
 - c. Remove and inspect the dipstick the oil level is determined by where oil can be seen on it. Depending on model, the dipstick has two "dots" or is "hatched" or "ribbed" to indicate the permissible minimum and maximum levels.
- Ensure that the oil level is at or just under the permissible maximum.
 If the oil level is low, add additional oil until the correct level is reached. If the oil level is too high, drain some oil until the correct level is reached.
- 5. When finished, re-install (rotate right) the oil filler cap until firm. Wipe off any residual oil from the machine.

To change the engine oil:

Note: Briggs & Stratton "EXi" type engines do not require regular oil changes.

- 1. Place the machine on a suitable work surface that is flat and level and have a container ready to catch drained oil.
- 2. Clean the machine around the oil filler (A) so that no dirt or other material enters the engine when the plug or cap is removed.
- 3. Remove the oil filler cap/dipstick (rotate left) until fully unscrewed, or, for bayonet style caps, unlocked.
- 4. Tilt the machine and drain all oil from the engine. Once drained, allow the machine to sit level again.
- 5. Using a funnel, carefully add oil to the engine until the permissible maximum is reached. Double-check the oil level (described above).
- 6. When finished, re-install (rotate right) the oil filler cap until firm. Wipe off any residual oil from the machine.





Checking, Cleaning or Replacing the Air Filter

Operating the machine without a functional air filter may cause severe engine damage and will void any warranty. • A dirty or oil saturated air filter will restrict air flow, which can be mistaken as fuel system problems. Check the condition of the air filter before adjusting engine idle speed, where applicable. • If the air filter is damaged (torn, broken, disintegrating), replace it.

The air filter is used to prevent dirt and other particles from possibly entering the engine and causing internal damage to it. The air filter requires regular maintenance as per the maintenance schedule.

Air Filter Inspection and Cleaning

Inspect the air filter for dirtiness and debris, damage etc. Clean or replace the filter element as necessary. To clean air filters:

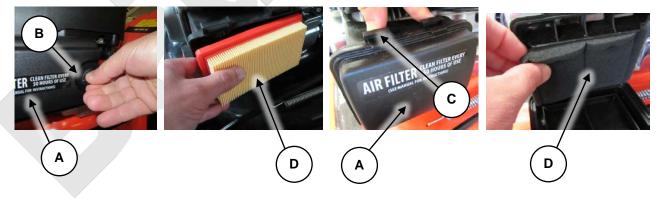
- For foam filters, wash the filter in warm water and mild detergent, then rinse and allow to dry.
- For paper filters, use compressed air to blow particles from it, if possible. The air should be blown from the engine side of the filter. Tapping the filter element against a hard surface and brushing the pleats using a soft brush may also help remove debris from the filter.
- For foam filters, place a few drops of clean engine oil on the filter then squeeze it a few times to spread the oil through the filter material and remove any excess oil.
- It is recommended to clean the air filter cover and air intake assembly of any dirt, cuttings etc.

To remove the air filter:

- Depending on model, the air filter cover (A) may be secured using a screw (B), or clips (C) into position. If the cover has a screw, loosen it (rotate left) and remove the cover from the air intake assembly. If the air filter cover is secured with clips, carefully release them – usually, you will need to press the tab of the clip to release it. Carefully remove the air filter cover – some covers may hinge or have protrusions that help locate it against the engine.
- 2. Remove the filter element (D).

To install the air filter:

- 1. Insert the air filter element, and ensure it is correctly positioned in relation to the air intake assembly as it will seat and seal properly in one position only.
- 2. Re-install the filter cover, ensuring it is fitted properly against the engine and secure it with the screw (rotate right and tighten by hand. Do not over-tighten), or clips.



Spark Plug



If the spark plug is damaged (cracked insulator, broken or eroded electrodes etc), replace it. • Always use spark plugs of the correct "heat range" - see <u>Specifications</u>.

The spark plug is used to ignite the air/fuel mixture inside the engine. The spark plug has electrodes on one end and an electrical terminal on the other. The spark plug requires regular maintenance.

Spark Plug Cleaning and Gap Checking

The spark plug should be checked and cleaned as per the maintenance schedule.

- 1. Remove any carbon deposits on the spark plug (A) electrodes (B) with a wire brush.
- 2. Clean the spark plug threads and the electrical terminal (**C**) on the top.

To check and adjust the spark plug "gap":

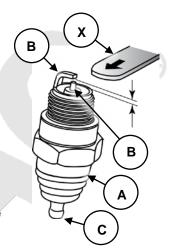
- Use "feeler" or "thickness" gauges (X) to measure the existing gap. The gauge must drag a little when being slid between the electrodes (B) – this means the measurement is fairly accurate.
- Adjust the gap to within specification (see <u>Specifications</u>). If the gap needs to be reduced, gently tap the electrode as required. If the gap needs to be increased, use pliers to gently pull the electrode as required.
- 3. Measure the gap again and ensure it is within the specified range before re-installing the spark plug.

Spark Plug Removal/Installation

- 1. Pull the electrical lead (A) from the terminal on top of the spark plug (B).
- 2. Clean the area around the spark plug so that no dirt or other material can enter the engine when the spark plug is removed.
- 3. Use the spark plug tool (**C**) to remove the spark plug (rotate left).

To re-install the spark plug:

- 1. Place the spark plug in its hole and screw it in (rotate right) until "finger tight".
- 2. Use the spark plug tool to tighten the spark plug approximately one quarter turn (do not over-tighten).
- 3. Place the electrical lead over the spark plug terminal and push it down so that it connects firmly terminal.







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Cleaning Guidelines

Do not use solvents, chemicals or abrasives when cleaning the machine, as some surfaces may be damaged. • Wear gloves or use suitable tools to assist in cleaning – do not use bare hands. • Clean the machine after every use to ensure best performance and longest service life. • It is recommended to jack the machine up when inspecting or working on the underside of the deck. Avoid tilting the machine to avoid potential fuel or oil spills or leaks.

Use a slightly damp cloth, water and mild detergent for cleaning.

Use a brush for parts that are difficult to reach.

Ensure air vents and surfaces designed for heat dissipation are clean and free of obstructions or debris.

Remove clippings, dirt etc from the underside of the deck and cutting blades (the <u>deck wash</u> function on some models assists this procedure).

It is recommended to lightly oil the cutting blades after each use to help prevent corrosion.

Ensure all chutes and flaps are clean and not obstructed.

Ensure that spring-loaded parts, such as the rear guard, return to the normal position when released.

Clean and check the grass catcher for any damage – replace damaged parts. Allow the grass catcher to dry thoroughly before storing to prevent mildew or deterioration of the catcher netting (where applicable).

Ensure that all control cables, levers, switches etc are clean and operate normally and smoothly.

Transportation and Storage



Always ensure that the machine is cool enough to touch before transporting or storing. • Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or

Preparing for Transport and Storage

- Clean the equipment before transport or storage.
- Disconnect the spark plug lead.
- Store the equipment in a dry, well-ventilated area and out of the reach of children.

Long Term Storage

Follow the normal procedures for storage, then:

- Drain the fuel system. It is advised to have the fuel tank as empty as possible before draining.
 - a. Unscrew (rotate left) the carburettor drain plug. Use a suitable container to catch the draining fuel, and allow the fuel to drain. Store the drained fuel in a properly sealed container.
 - b. Re-install (rotate right) the carburettor drain plug and tighten.
- Remove the spark plug and put 30ml of clean engine oil into the cylinder. Pull the starter rope slowly to distribute the oil. Re-install the spark plug.
- Cover the equipment to protect it from dirt and dust.

Troubleshooting

Running combustion engines in confined areas **CAN KILL IN MINUTES**. Engine exhaust fumes contain carbon-monoxide – a deadly gas that you cannot smell or see. NEVER run a combustion engine in confined areas EVEN IF windows and doors are open. ONLY run combustion engines OUTDOORS and away from doors, windows and vents. • Petrol/fuel/gasoline is extremely flammable – keep clear of naked flames or other ignition sources. The product is NOT supplied with engine oil, although traces of oil from the manufacturing process may be present. It is essential to add adequate engine oil of the correct type to the engine before use – see <u>Checking and Changing Engine Oil</u>. **Failure to add engine oil will void the product warranty**. • Do not have the engine running during inspection and maintenance unless specifically required. • The engine should be cool enough to touch before performing maintenance activities. • Some maintenance activities described may be beyond the scope of some users. For procedures that you are not comfortable with or have the tools or experience for, have the unit serviced by a service centre or qualified technician.

The following information may assist in identifying a problem and rectifying it.

Cannot attach grass catcher.

Possible Fault	Action
Handle installed incorrectly	For models that do not have spigots on the handle mounting brackets, ensure the handle is installed against the outer face of the mounting brackets.

Possible Fault	Action
Lack of fuel	Check that there is fuel in the tank and the fuel system is primed (if applicable). • To further check if fuel is reaching the carburettor, remove the carburettor drain plug and check if fuel drains.
Engine "OFF"	Ensure engine ON/OFF switch is in the "ON" position (if applicable).
+	
Carbon build-up on spark plug	Remove the spark plug and clean any carbon from the electrodes before re-installing it.
+	
Spark plug faulty	Remove the spark plug, then reconnect the plug lead to it. Place the engine ON/OFF switch in "ON" position (if applicable). Touch the spark plug electrode to a part of the engine crankcase, away from the spark plug hole, and attempt to start the engine – a spark should be visible across the electrodes as the engine is rotated. If no spark is visible, replace the spark plug.
•	
Engine "flooded" with fuel	Place the choke in "HOT" or "RUN" position. Leave the ON/OFF switch in the "OFF" position (if applicable). Pull the starter cord several times to assist clearing excess fuel from engine before attempting to start engine.
•	
Not enough or too much engine oil	Check oil level and ensure that the level is at or just below the recommended maximum level.

Difficulty starting the engine.

Engine starts but does not idle.

Possible Fault	Action
Blocked air filter	Check and clean the air filter.
•	
Idle speed requires adjustment	Adjust idle speed until engine runs smoothly and at a reasonable speed when idling.

Difficulty restarting the engine after use or engine stops suddenly during use.

Possible Fault	Action	
No fuel or engine oil	Check fuel level and ensure adequate fuel is available. For some 4-stroke engines, an engine oil sensor will automatically switch off the engine or prevent starting if a low engine or level is detected.	
•		
Cutting blades jammed	Remove jammed material from the machine. In the case of obstacles in the work area (rocks, roots etc), avoid them or raise cutting height.	
+		
Overheating	Allow engine to cool before restarting. Ensure all air vents and heat dissipation surface are clean and free of debris. If possible, improve engine cooling, such as operating in lower temperatures.	
	temperatures.	
+	temperatures.	
Carbon build-up on spark plug	Remove the spark plug and clean any carbon from the electrodes before re-installing it.	
Carbon build-up on spark plug		

Reduced engine speed/power during use.

Possible Fault	Action
Blocked air filter	Check and clean air filter.
+	
Carbon build-up in engine and/or entry to exhaust silencer	Remove the engine cylinder head and clean any carbon from the combustion chamber. For the exhaust silencer, remove it and clean any carbon deposits from the exhaust entry port.
Carbon build-up on spark plug	Remove the spark plug and clean any carbon from the electrodes before re-installing it.
+	
Carburettor blocked	Clean the carburettor.

Grass cutting is poor.

Possible Fault	Action
Blades dull or damaged	Sharpen or replace cutting blades.
Cutting too much in one pass	Adjust the cutting height and rate of mowing to reduce load on the engine. For tall or very
Outling too much in one pass	thick grass, cut in several passes. Do not attempt to cut beyond the capacity of the machine.
Cutting height not suitable	Adjust cutting height as required.

Excessive vibration.

Possible Fault	Action
Blades dull or damaged	Sharpen or replace cutting blades.
•	
Fasteners loose	Check all accessible fasteners for tightness.
+	
Engine output shaft worn or bent	Replace worn or damaged parts as required.

Specifications

139cc Engines

Туре	4-stroke, single cylinder	
Fuel	Non-ethanol unleaded petrol (higher RON values provide best performa	nce)
Spark Plug	F7TC, F7RTC	
Spark Plug Gap	0.7 to 0.8mm (0.028 to 0.032")	
Valve Clearance	Inlet: 0.15mm ± 0.02mm (0.006" ± 0.001") Exhaust: 0.2mm ± 0.02mm (0.008" ± 0.001")	
Oil Туре	SAE 10W-30 automotive engine oil recommended for general use	
Oil Capacity	Approximately 0.4I (always check level)	

140cc Briggs & Stratton Engines

Туре	4-stroke, single cylinder
Fuel	Non-ethanol unleaded petrol (higher RON values provide best performance)
Oil Type	SAE 10W-30 automotive engine oil recommended for general use
Oil Capacity	Approximately 0.47I (always check level)

163cc Briggs & Stratton Engines

Туре	4-stroke, single cylinder
Fuel	Non-ethanol unleaded petrol (higher RON values provide best performance)
Oil Type	SAE 10W-30 automotive engine oil recommended for general use
Oil Capacity	Approximately 0.47I (always check level)

165cc Engines

Туре	4-stroke, single cylinder						
Fuel	Non-ethanol unleaded petrol (higher RON values provide best performance)						
Spark Plug	F7TC, F7RTC						
Spark Plug Gap	0.7 to 0.8mm (0.028 to 0.032")						
Valve Clearance	Inlet: 0.15mm ± 0.02mm (0.006" ± 0.001") Exhaust: 0.2mm ± 0.02mm (0.008" ± 0.001")						
Oil Type	SAE 10W-30 automotive engine oil recommended for general use						
Oil Capacity	Approximately 0.6I (always check level)						

218cc Engines

Туре	4-stroke, single cylinder
Fuel	Non-ethanol unleaded petrol (higher RON values provide best performance)
Spark Plug	F7TC, F7RTC
Spark Plug Gap	0.7 to 0.8mm (0.028 to 0.032")
Valve Clearance	Inlet: 0.15mm ± 0.02mm (0.006" ± 0.001") Exhaust: 0.2mm ± 0.02mm (0.008" ± 0.001")
Oil Type	SAE 10W-30 automotive engine oil recommended for general use
Oil Capacity	Approximately 0.6I (always check level)

Service and Maintenance Record

Use the following tables as a record of machine servicing and maintenance. Keeping accurate records will help ensure better machine service life and may simplify fault diagnosis and any possible warranty claims. Place a tick in the required box for either clean or replace with the date, as required.

Note: For Briggs & Stratton engines, refer any engine warranty claims, servicing or repairs to an official Briggs & Stratton dealer.

	~	Date	~	Date	✓	Date	✓	Date	1	Date
Replace Engine Oil										e e
Replace Spark Plug										
Replace Air Filter										
Replace Fuel Filter										
Replace Fuel Lines										
Clean Fuel Tank										
Check/Adjust Valve Clearance								·		
De-coke Combustion Chamber										

	~	Date	✓	Date	~	Date	✓	Date	✓	Date
Replace Engine Oil										
Replace Spark Plug										
Replace Air Filter										
Replace Fuel Filter										
Replace Fuel Lines		10	7							
Clean Fuel Tank										
Check/Adjust Valve Clearance										
De-coke Combustion Chamber										



Some experts believe the incorrect or prolonged use of almost any product could cause serious injury or death. For information that may reduce your risk of serious injury or death, consult the points below and additionally, the information available at www.datastreamserver.com/safety

- Consult all documentation, packaging and product labelling before use. Note that some products feature online documentation which should be printed and kept with the product.
- Check product for loose / broken / damaged / missing parts, wear or leaks (if applicable) before each use.
 Never use a product with loose / broken / damaged / missing parts, wear or leaks (if applicable).
- Products must be inspected and serviced (if applicable) by a qualified specialist every 6 months assuming average residential use by a person of average weight and strength, above average technical aptitude, on a property matching average metropolitan specification. Intended use outside these guidelines could indicate the product is not suitable for intended use or may require more regular inspection or servicing.
- Ensure all possible users of the product have completed an industry recognized training course before being given access to the product.

- The product has been supplied by a general merchandise retailer that may not be familiar with your specific application or your description of the application. Be sure to attain third-party approval for your application from a qualified specialist before use regardless of prior assurances by the retailer or its representatives.
- This product is not intended for use where fail-safe operation is required. As with any product (take an automobile, aircraft, computer or ball point pen for example), there is always a small chance of technical issues that needs to be repaired or may require replacement of the product or a part. If the possibility of such failure and the associated time it takes to rectify could in any situation inconvenience the user, business or employee then the product is not suitable for your requirements. This product is not for use where incorrect operation or a failure of any kind, including but not limited to a condition requiring product return, replacement, service by a technician or replacement of parts could cause a financial loss, loss of employee time or an inconvenience requiring compensation.
- If this item has been purchased in error after considering the points above, simply contact the retailer directly for details of their returns policy, if required.



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