RedGum GX390 Chipper

RedGum GX390 Chipper
Owner's Manual

This manual accompanies the RedGum GX390 Chipper,
powered by the Honda GX390 engine

WARNING

Read this manual, before operating or servicing the GX390 Chipper.

IMPORTANT: READ BEFORE USE

PLEASE KEEP THIS MANUAL FOR FUTURE REFERENCE

Read this operation manual carefully before attempting to assemble, adjust or operate the machine. Please read the included engine manual for more information on your specific engine.

Hazards and safe operation symbols

Attention and warning

Danger - Rotating blades. Keep hands and feet out of openings while machines are running.

Check if any fuel spills or leaks. Stop the engine before refueling.

Exhaust gas contains poisonous carbon monoxide Never operate this product in an enclosed area. Be sure the work area has adequate ventilation. Also avoid working downwind from exhaust.

Recommeded Oil type: SAE 10W30

Moving the level will adjust the revolution speed of engine. Move lever towards the rabbit icon for speeding up and towards the tortoise direction for slowing down.

The fuel supply to the engine can be switched off.

This label is for the engine switch. If you want to start the engine, put the switch to 'ON' position. Turn the switch to 'STOP' position to stop the engine.

Muffler heat warning. Do not touch the HOT muffler during and after use of the chipper.

Ensure that ear muffs, goggles and gloves are worn when using the chipper, and read the manual before using the chipper

Safety

These safety messages are designed to alert you to possible dangers or hazards that could cause death, injury or equipment/property damage if not understood or followed. Safety messages and warnings are identified throughout this manual with this symbol.

It is important that you read and understand the instruction manual before use and keep the manual in a safe place for future reference.

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

IMPORTANT: Handle the equipment safely and carefully.

BEFORE USE: If after reading this manual you are still unsure of the safe operation/handling of the chipper, or are in any way unsure of any aspect of correct use, you should complete a training course conducted by a person or organization qualified in safe use and operation of this equipment.

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

General work area safety
Work areas should be clean, free of obstacles and well lit.
Do not operate the equipment if bystanders, animals etc are within 15 metres of the equipment or the general work area.

General Personal Safety
Operators must use the equipment correctly. When using the equipment, consider conditions and pay due care to persons and property. The chipper should be operated by responsible adults only, 18 years of age and over.

Prevent unintentional starting of the equipment - ensure equipment and power source switches are in the OFF position before storing or moving the equipment. Do not move 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 non-skid safety shoes, hearing protection, gloves, goggles etc should be used. 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.

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

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.
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 centre or technician before use.

Always keep the equipment 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.

Chipper use and care:
- The chipper must be used on firm, flat and level surfaces only.
- Maintain a safe working distance of at least 15m (36') between the output chute and any persons, animals or structures.
- Before each use, check the cutting blade clearance is between 0.6-0.8mm and ensure that blade fasteners are tight.
- Do not use the equipment for purposes it is not designed for.
- Do not attempt to chip or shred branches bigger then 90mm diameter.
- Branches greater than 30mm diameter that are growing out of a branch being chipped should be cut off and chipped separately.
- Do not attempt to chip or shred any material other than suitable wood types.
- Do not attempt to remove materials from the machine or attempt to un-jam it while the machine is running.
- Do not use the machine in confined areas where ventilation or space around the machine is limited.
- After stopping the engine, always allow all moving components (blades etc) to stop moving before moving, lifting etc.

General fuel safety
- 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 Safety

- 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 the spark plug 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.

DANGER

Running petrol 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 petrol engine in confined areas EVEN IF windows and doors are open.
Do not operate the equipment in hazardous locations, such as where there may be a risk of fire.
Do not refuel petrol engines while they are running.
Never smoke while refuelling petrol engines.
This chipper has hazardous components, such as blades, hot surfaces and moving parts.

Operating Warnings

GENERAL OPERATION WARNINGS:

- Always wear suitable protective clothing when using the machine, avoid loose fitting clothing.
- 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 or noise or noticeably reduced performance from the machine during operation, this is an indication of possible 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, such as the engine muffler may be extremely hot.
- Ensure that the machine stands firmly on the ground and is not tilted in any way or unstable.
- In order to avoid serious injury or damage by chips thrown from the output chute, onlookers, animals and structures should be at least 15m (36 ft) away from the output chute.

Chipper Warranty

For all chipper warranty information in regards to both for the 3 year engine and 1 year body warranty please visit the Red Gum Products website at (http://www.redgumproducts.com.au/) for more information.

Table of Contents

Before use checklist

Ensure that you carry out all procedures below before starting the engine or operating the equipment. Failure to follow the checklist and carry out the procedures correctly may void your warranty. Refer to engine owners manual.

Check Cutting Blades

The cutting system features a rotating drum that has 2 blades. For safe and correct operation, the clearance between the fixed Anvil (Blade) and rotor blades must be between 0.5mm - 0.8mm and all blade fasteners must be tight.
After the first hour of use, re-check the blades.

Engine Oil

The Honda GX390 engine on this chipper requires 10W-30 engine oil. Severe or irrepairable damage may occur if the engine is allowed to run without engine oil. The engine oil level should be checked before each use. Ensure that the oil level is at or just under the maximum level indicator. Refer to engine owners manual.

Fuel

The chipper uses regular unleaded fuel.

To fill or top up the fuel:

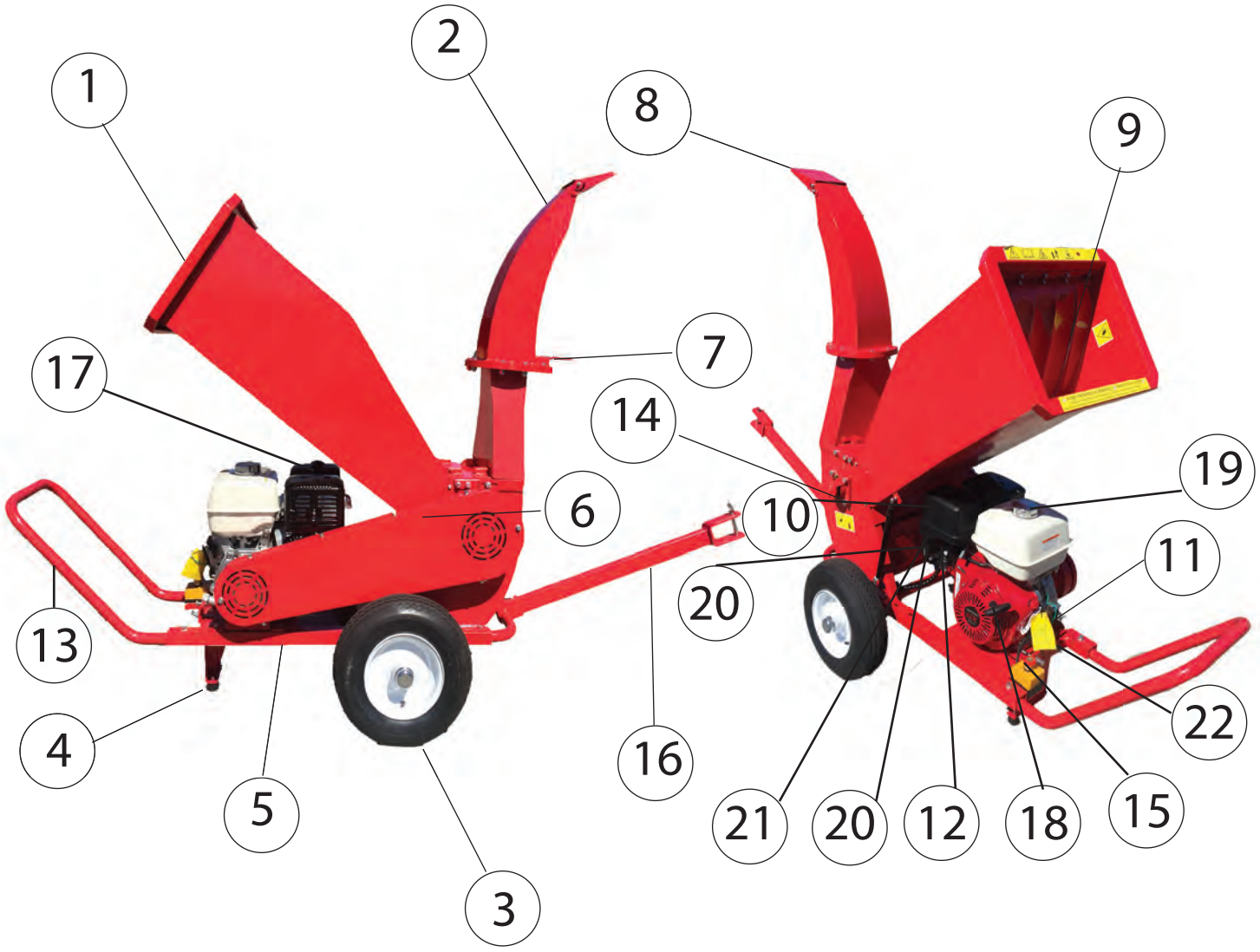
1. Ensure that it is not running /hot, please refer to the general fuel safety
2.Place the machine in an upright position on a flat and level surface.
3.Clean the machine around the fuel filler so that no dirt or other material enters the engine when the cap is removed.
4.Using a funnel, carefully fill the tank with fuel. Do not fill above the top of the fuel strainer.
5.Wipe away any residual fuel from the machine. If fuel has been spilt, move the machine away from the spillage before starting the engine.

Engine starting and stopping

Before starting the engine, ensure that you have followed all procedures described above
Major engine controls are identified on the machine by stickers or other markings. To start the engine:
1.**FUEL:** Place the fuel tap in the “ON” position. If necessary, “prime” the fuel system by gently pulling the starter cord 4 to 8 times. Priming is required when starting the engine for the first time or after the machine has used all fuel and the carburettor is now “dry”.
2.**CHOKE and THROTTLE:** If the engine is cold, place the choke in the “COLD” or “START” position. If the engine is warm or the ambient temperature is high, place the choke in the “HOT” or “RUN” position. Place the throttle control in the “Hare” or fast position.
3.**IGNITION:** Place the engine ON/OFF switch in the “ON” position. Ensure that the emergency stop button is not engaged.
4.**START:** Slowly pull out the starter cord 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.
5. **WARM-UP:** It is good practice to allow the engine to warm-up and run smoothly before chipping

If the engine does not start, repeat step 4. If the engine fails to start after several attempts, refer to Troubleshooting. To top the engine place the engine ON/OFF switch in the “OFF” position or press the emergency engine stop button. If the engine is stopped using the emergency stop button, reset the button by rotating it in an anti clockwise direction right until it “pops” up. The button must be reset in order to start the engine again.

Chipper Component Identification



No.	Name	No.	Name
1	Infeed Hopper	12	Throttle control
2	Discharge chute	13	Handle
3	Wheel	14	Blade shaft access
4	Support leg	15	Emergency stop
5	Frame	16	Towbar
6	Drive belt cover	17	Spark Plug
7	Direction adjuster	18	Starting Cord
8	Discharge flap	19	Fuel Tank Cap
9	Hopper flaps	20	Fuel Tap
10	Air Filter Cover	21	Choke
11	On/Off Engine Switch	22	Drive Belt Tensioner

What Does My Chipper Process

This chipper is designed for the following materials under 90mm in diameter:

- Branches & Pruning's
- Palm Fronds
- Grass / Hay
- Bark
- Vegetable matter
- Paper / Cardboard

Use caution when feeding the below through the chipper, as they may shorten blade life span:

- Hard & Dry Timbers
- Dead wood
- Short / stubby items (feed with longer matter)
- Unclean material

Never feed the following into the chipper:

- Any materials exceeding 90mm in diameter
- Concrete
- Stones
- Metal
- Soil / Sand
- Bones
- Other similar hard abrasive objects

Chipping Warnings

- **DO NOT** overload the machine by feeding overly large material into it, or feeding at a rate that creates unnecessary loads. For some wood types that are particularly hard, you may have to reduce the size of the material being chipped.

- **DO NOT** hold on to material as it is being drawn into the machine – always release the material.

- **DO NOT** attempt to chip or shred tough fibrous plant material such as flax or vines.

- **DO NOT** force material into the chipper.

- **DO NOT** attempt to chip branches bigger than 90mm diameter.

- **DO NOT** attempt to chip or shred any material other than suitable wood types.

- **DO NOT** attempt to un-jam or remove materials from the machine while running.

- **DO NOT** attempt repairs to the machine unless you are capable to do so. We recommend that you contact your place of purchase to perform such repairs.

- When chipping large material, process one branch at a time.

- Branches greater than 30mm diameter that are growing out of a branch being chipped should be cut off and chipped separately.

- When chipping roots, always remove any attached dirt, stones etc before chipping.

Operating Instructions

Make sure you fully understand the Red Gum Chipper owner's manual and engine owner's manual before attempting to operate this machine. Ensure the Chipper has been serviced in accordance with this manual and the engine manual supplied with this chipper.

Preparation

1.Put the machine securely on a level surface.
2.Keep the operator area clear of other objects and obstacles.
3.Ensure no children, animals or bystanders are within a 15m (36ft) radius of the machine.
4.Before operating the machine, please check the direction of the wind to avoid working downwind of the exhaust and the discharge chute.
5.Examine the machine to make sure it is in good condition. Check that all the screws, nuts and other fasteners are properly secured.
6.Ensure the knife and anvil are secure and the correct gap between the knife and anvil is set as per this manual.
7.Ensure that the Infeed hopper (1) is clear from any debris which might jam the knife drum on startup.
8.Check that the air filter is clean (ref. engine manual for servicing information)
9.Check that the fuel tank is full and the engine oil is at the correct level.
10.Pay attention while handling fuels. They are flammable and the vapours are explosive. The points below should be followed at all times.

-Always ensure the fuel cap is in place & securely tightened before starting the engine.
-Any spilt fuel must be cleaned off the machine before starting the engine.
-If the fuel tank needs to be drained, it should be done outdoors.

11.Keep all guards and deflectors in place and check to see if they are properly secured and in. good working condition before starting the machine.

Ensure the following practices are adhered to before and while operating the chipper:

1.Do not use hands or metal tools to push material into the Chipper hopper (1).
2.Keep your face and body away from the Chipper hopper (1) opening.
3.Do not allow body parts or clothing inside the Chipper hopper (1) or near discharge chute (2) and other rotating parts.
4.Do not touch the muffler while the chipper is in operation as it will be hot and will cause burns. Caution: The engine muffler will remain hot for a long period of time after the engine has stopped.
5.Keep proper balance and footing at all times. Do not overreach and never stand at a higher level than the base of the machine when feeding material into it.
6.Check if there are any abnormal noises, smoke or shaking of the machine. If so, please turn off the engine immediately and solve the problem. Inspect for damage; check for and tighten any loose parts and ensure damaged parts are replaced or repaired before continuing to operate the chipper. Do not attempt to service or repair the machine or engine if you are not competent to do so.
7.Do not leave the machine running unattended.
8.Keep the engine area clear of any debris that might cause over heating or could be deemed a fire hazard.
9.Do not move or tilt the machine while the engine is running.
10.Turn off the engine and turn off the fuel tap before transporting the machine.
11.To move the chipper, firmly hold the handle (2) with both hands. Carefully lift the handle & manoeuvre the chipper backwards or forwards. Pay attention to keeping control of the machine & walk slowly into position.

Chipping Branches

This chipper is designed to chip branches up to 90mm in diameter.

1.Start the engine (as per engine manual instructions) and allow the engine to gain optimum RPM by sliding the throttle lever to ‘rabbit’.

2.The blade drum will start rotating as soon as the engine starts.

3.Feed long stems and long branches (ie. shrub and tree branches) into the Chipper Hopper (1) for chipping by the rotating blades.

4.When feeding branches listen to the engine RPM and watch chips exit from the discharge chute. Do not let the engine RPM drop too low or the blade drum may become clogged.

5.The chipper will chip branches up to 90mm in diameter. Branches with large diameters (closer to and up to 90mm) will need to be fed comparatively slower than branches with a small diameter. If large branches are feed into the chipper too fast the blade drum may stall and clog up.

6. Do not stand higher than the machine base

7. We recommend starting with smaller branches, and gradually increasing the size while you become more familiar with the chipper and its capabilities

8. Pre-cut large side branches so that the branch will self feed more efficiently

9. Short pieces of timber tend to bounce around in the Chipper hopper (1). Feeding short pieces together with longer branches reduces this.

10. Once you have become more accustom to the way your GX390 chipper operates, try to prune your branches to suit the chipper.

11. If you are feeding soft materials into the chipper it is advisable to follow them with a more solid branch. Mixing up the materials you want to chip will improve your chipping efficiency and reduce potential blockages.

12. For bushy branches, feed the non-bushy end into the chipper first

13. Immediately stop the engine if you notice any unusual noises or vibrations coming from the machine.

14. Keep a wooden branch available (at least 650mm long) to assist in pushing materials through the infeed chute.

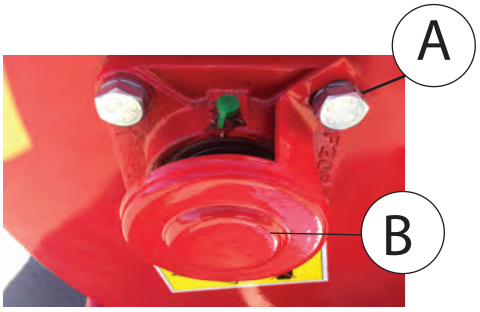
15. Push the last branch you are chipping for the day all the way inside the Chipper hopper (1) with a wooden tool (eg. wooden stick), and ensure it has been completely chipped before turning off the machine. Leaving unchipped branches in the Chipper hopper (1) can cause problems when you next start the machine.

How to Use the Chipper

CLEARING JAMMED BLADES:

If the machine becomes clogged or jammed:
follow these instructions:

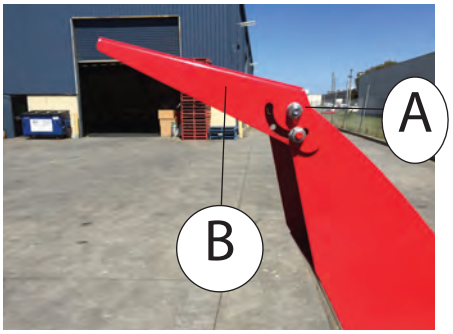
•First turn off the engine and remove the spark plug cap,
•Ensure the engine and blade drum have come to a complete stop.
•Remove the Chipper hopper (1) by removing the retaining bolts on the underside of the hopper.
•Slide the Chipper hopper (1) side ways to clear the locating pins. WARNING: the Chipper hopper (1) is heavy and requires two (2) people to remove it.
•You may also need to remove the Discharge chute (2) by removing the retaining bolts at the front of the chipper.
•You must continue to wear all eye and hand protection while unblocking the chipper.
•Caution: The chipper blades are extremely sharp and there is danger of entrapment and injury.
•Caution: Be careful when removing debris from around the knife drum as the drum may rotate unexpectantly resulting in injury.
•Using a suitable spanner on the end of the blade drum shaft, rotate the shaft as required.
•Never rotate the blade drum with your hands always use a spanner.



•Never start the engine with the Chipper hopper (1) or the discharge chute (2) removed.
•Once you have cleared all debris slowly rotate the blade drum shaft with a spanner to ensure it is clear and undamaged.
•Replace discharge chute (2) and Chipper hopper (1).
• Do not attempt to service or repair the machine or engine if you are not competent to do so. We recommend that you contact your place of purchase to perform such repairs.

WARNING: Use extreme caution when clearing jammed materials from the chipper. The blade drum can rotate unexpectedly and cause severe injury to hands and fingers, if caution is not exercised when clearing out debris from the blade drum

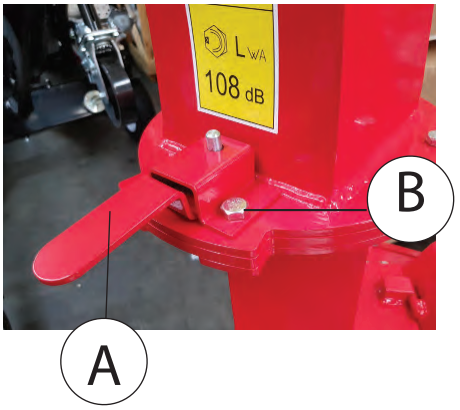
Adjusting the output flap



The output chute has an adjustable flap that can be used to help direct where chippings will fall. To adjust:

1. Loosen (rotate anti clockwise) the thumb-screw (A).
2. Rotate the flap (B) as required – the higher it is, the further away the chippings will fall.
3. Firmly tighten the thumb-screw by hand.

Adjusting the directional chute adjuster



The output chute has directional chute adjuster which allows the operator to adjust the chute into 11 different positions.
To adjust:
1) Push down on the directional chute adjustment lever until the locking pin is released. (A)
2) Manually adjust the direction of the chute until the locking pin (not sighted) is locked into one of the 11 adjustment positions.(B)
3) Always check the wind direction and do not work down wind of the discharge chute.
4) Never direct the discharge chute towards anyone operating the chipper or any bystanders.

Safety Cut Off Button

This chipper is equipped with a quick cut-off safety button. When this button is pressed the engine is cut off, and the chipper will stop quickly.
The engine remains cut out until the button is reset.
To reset the button, turn it in a clockwise direction. The button will pop back out and the engine can then be started again as per usual.
Check for blockages and ensure the chipper drum can turn freely

Maintenance

MAINTENANCE WARNINGS:

- Running petrol 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 petrol engine in confined areas EVEN IF windows and doors are open.
- Petrol is extremely flammable – keep clear of naked flames or other ignition sources.
- Do not have the engine running during inspection and maintenance unless specifically required.
- The engine should be cool enough 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 do not have the tools or experience for, have the unit serviced by a service centre or qualified technician.
- Always wear hand and eye protection when performing any maintenance.

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.

Check	Before Each Use	After 2 Hours	Every 20 Hours
Check engine oil	X		
Clean/non-stale fuel	X		
Air Cleaner	X		
Ensure input/output chutes are clear of obstructions	X		
Ensure all guards/deflectors are in good working condition	X		
Loose nuts & bolts	X	X	X
Belt tension		X	X
Grease bearings		X	X
Check blade sharpness	X		
General Engine Maintenance	Refer to engine owner's manual		

NOTE: For information on engine maintenance (checking or changing engine oil, air filter, sparkplug etc), please refer to the Honda engine owners manual that comes with your chipper.

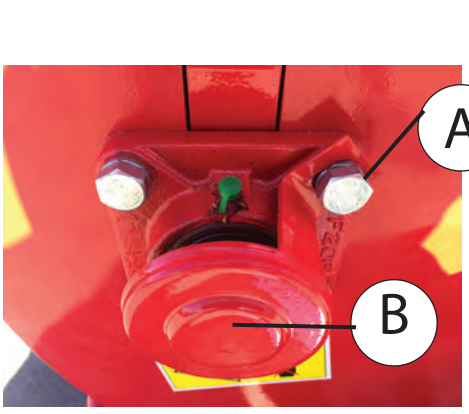
Blades

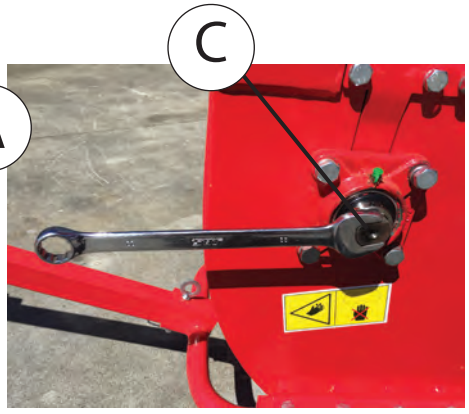
BLADE WARNINGS:

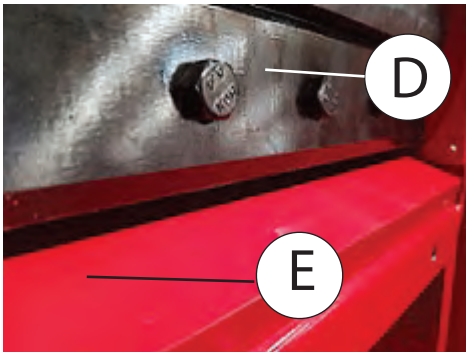
- If a blade is damaged (cracked etc), replace both blades.
- Keep blades in sets that are the same width. This will ensure proper drum balance
- Ensure that blades are kept in good condition and correct clearance (0.6-0.8mm) is maintained.
- Ensure that all bolts securing the blades are firmly tightened – check them regularly.
- Always handle blades with protective gloves on.
- Maximum allowable grinding of each side of the blade is 2.5mm.
- Do not use blades that are under 50mm in width.

When working on the blades, the job may be made easier by accessing the blade drum shaft in order to rotate the blade drum as required. Do this as follows:

1. Remove the 2 bolts (A) securing the blade shaft access cover (B) and remove the cover – this allows access to the blade shaft so you can rotate the blades
2. Using a suitable spanner (C) on the end of the blade shaft, rotate the shaft as required. The machine uses 2 blades (D) and 1 anvil plate (E) that is bolted to the machine body.







Blade Removal Installation

The cutting blade will become dull after being used for some time. The blades can be removed from the machine in order to be sharpened or replaced. Note that the
blades have 2 cutting edges that allows you to switch the blade around to use the other cutting edge. You must continue to wear all eye and hand protection while servicing or repairing the machine.

To replace the blades:

1. Turn off the engine & remove spark plug cover.
2. Remove main Chipper hopper (1) by removing 2 retaining bolts on the underside of the hopper. Slide the Chipper hopper (1) side ways to clear the locating pins.

WARNING: the Chipper hopper (1) is heavy and requires two people to remove it.

Caution: The chipper blades are extremely sharp and there is danger of entrapment and injury. Always wear safety gloves.

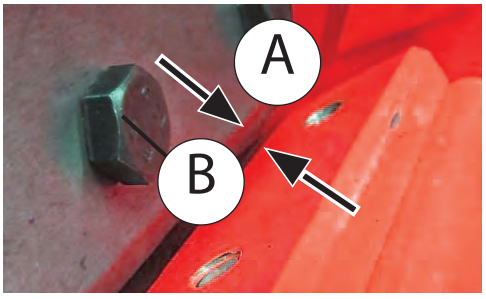
3. Remove the Discharge chute (2) by removing the retaining bolts at the front of the chipper.

4. Using a spanner on the drum shaft, turn the blade drum slowly inside the chipper body so that the blades align into the proper position (So they are visible and easily accessed). Caution: Be careful when removing the blades as the drum may rotate expectantly resulting in injury.
We recommend that you lodge a piece of timber between the blade drum and chipper housing to stop the drum from rotating while servicing the chipper.
5. Remove the bolts (rotate right) that attach the blades to the blade drum.
6. Remove the blades and clean the surface under the blades so it is free of any debris.
7. Clean the surface of the drum before reinstalling the blade.
8. Simply turn the knife over if the other side of the knife has not been used yet. Alternatively replace it with a new blade.
9. Install the blade holding bolts (do not tighten fully yet) and adjust the blade so that there is a gap of 0.6mm-0.8mm between the knife and the anvil plate. For additional information about blade clearance refer to the heading 'Checking Blade Clearance'.
10. Tighten the blade bolts fully making sure they are tightened evenly and to the correct torque setting of 44.1NM or 32.5ft/lbs.
11. Repeat this procedure for the other blade. Always replace both knives as a set and check that they are the same width.
12. Carefully rotate the blade drum to make sure it is free of the housing and the blades do not touch the anvil plate.
13. Refit the discharge chute (2).
14. Refit the main Chipper hopper (1) by sliding the top locating pins into place and replacing the bottom holding bolts. WARNING: the Chipper hopper (1) is heavy and requires two (2) people to replace it.

WARNING:

•Never start the engine with the Chipper hopper (1) or the discharge chute (2) removed.
• Do not attempt to service or repair the machine or engine if you are not competent to do so. We recommend that you contact your place of purchase to perform such repairs.

Checking blade clearance



The blade clearance should be regularly checked. Incorrect blade clearance will affect machine performance.

To check blade clearance:

1. Remove the input chute from the machine.
2. Clean away any chippings, dirt etc from the blades.
3. Use "feeler" or "thickness" gauges to measure the existing gap (A). The gauge must drag a little when being slid between the blades – this means the measurement is fairly accurate.
4. If the blade requires adjusting, loosen (rotate anti clockwise) the blade bolts (B) just enough to allow the blade to be moved – do not remove the bolts.
5. Adjust the clearance to within specification (0.6-0.8mm). If the clearance needs to be reduced, gently move the blade towards the fixed blade as required. If the clearance needs to be increased, gently move the blade away from the fixed blade as required.
6. Measure the clearance again and ensure it is within the specified range before tightening the blade bolts
7. Repeat the above procedure for the other blade.

Anvil adjustment/removal and Installation

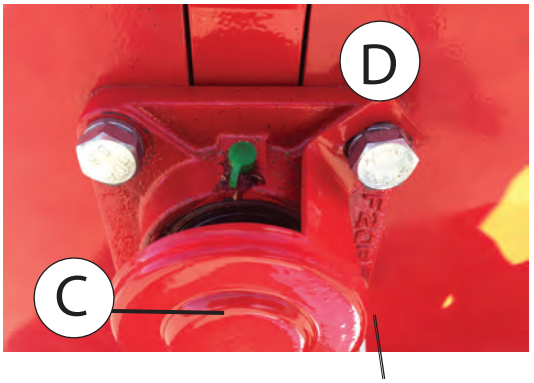
Over time the Anvil blade may wear.

1. To remove the Anvil loosen, but do not remove the bolts connecting the anvil to the machine.
2. Gently slide the anvil out.
3. Clean all surfaces and then slide new or sharpened anvil back in.
4. When reinstalling the anvil, the gap (A) between the anvil and the blades at the closest point should be between 0.6-0.8 mm
5. Tighten anvil bolts once the gap has been set.
Gently turn the blade drum with a spanner to ensure the blades do not touch the anvil as they pass it.
6. The anvil can be sharpened or replaced when worn.

WARNING: Ensure all bolts are re-tightened properly

•Note: The anvil sharpness & positioning are critical to the performance of the chipper.
•Do not attempt to service or repair the machine or engine if you are not competent to do

Blade Shaft Lubrication



The shaft bearing housing (C) on either side of the machine features a grease nipple (D). A grease gun and grease are required to lubricate the shaft bearings. Normal automotive wheel bearing grease is suitable.

To lubricate the shaft bearings:

1. Attach the grease gun hose to the grease nipple
2. Inject one squeeze of grease.
3. Always lubricate both shaft bearings.

Sharpening the blades

1. Maintain the sharp edge by taking the "burrs" off the edge with a file. This is done with the blade still on the drum and should be done after every session of chipping.
2. The blades should be sharpened on a surface grinder. Use plenty of coolant while grinding to avoid softening the material. Do not change the angle of the cutting blade, changeing the angle will result in poor chipper performance. The optimal angle for the blade to be sharpened is 27.5° (degrees). Maintain the sharp edge of the blade by taking the imperfections off the edge with a file, This is done with the blades still on the drum. This should be done with every session of chipping.

Warning: Ensure all bolts are re-tightened properly.

Note: The cutting angle is critical to the performance of the chipper. We recommend that you contact your place of purchase to arrange a professional re-sharpening of the blade.

WARNING:

Use extreme caution when clearing jammed materials from the chipper. The blade drum can rotate unexpectedly and cause severe injury to hands and fingers, if caution is not exercised when clearing our debris from the blade drum

Drive Belts

DRIVE BELT WARNINGS:

If a drive belt is damaged (cracked, breaking, torn etc), have it replaced.
Ensure that drive belt tension is maintained.

The machine uses 2 “V” profile belts to rotate the blade shaft. The belts use friction against the belt pulleys to provide drive. If the belts are adjusted incorrectly, or are worn, slippage may occur. Slippage is usually noticeable by a “squealing” noise and/or slowing or stopping of the drum when the machine is under load. The belts require maintenance/replacement when necessary.

Belt Tension Adjustment

To adjust belt tension:

1. Remove (rotate anti clockwise) the 8 bolts (A) securing the drive belt cover (B), and remove the cover.

2. Loosen (rotate anti clockwise) the 4 engine mounting bolts (C) at the front and rear of the engine. Do not remove the bolts.
3. Loosen (rotate anti clockwise) the 4 engine locating bolts (D) at the front and rear of the engine. Do no remove the bolts. Depending on the direction that you want to move the engine (towards the machine handle to increase belt tension), back off the bolts and lock nuts sufficiently so the engine can be moved.

4. Slide the engine either forward or backward. Adjust the engine position so that when you press hard on a belt it should deflect approximately one thickness of belt.
5. When the belt tension is correct, firmly tighten (rotate clockwise) the engine mounting bolts.
6. Screw in (rotate clockwise) the engine locating bolts until they make contact with the engine (do not actually move the engine), then firmly tighten the lock nuts.
7. Check the belt tension again to confirm correct tension, and re-adjust if required.
8. Re-install the belt cover and firmly tighten (rotate clockwise) all belt cover mounting bolts.

Belt Removal/Installation

The drive belts can be replaced. When replacing belts, always use the correct belt type and replace both belts at the same time.

1. Remove the drive belt cover, as per process described earlier under “Belt tension adjustment”.
2. Loosen the engine mounting and locating bolts. Back off the rear engine locating bolts sufficiently so that the engine can be moved enough to remove/install the belts.
3. Remove the belt from the drive pulleys.
4. Ensure the drive pulleys are clean and smooth.
5. Place the new belt over the pulleys then adjust as described above.

Cleaning Guidelines

CLEANING WARNINGS:

- Do not use solvents, chemicals or abrasives when cleaning the machine, as this may damage some surfaces of the chipper
- Do not use high-pressure sprayers near the blade shaft bearings as bearing damage may result.
- 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.
- Avoid tilting the machine to avoid potential fuel or oil spills or leaks.

How to clean your chipper:

- 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 free of obstructions or debris.
- 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 all control cables, levers, switches etc are clean and operate normally and smoothly.

Transportation and Storage

Always ensure that the machine is cool enough before transporting or storing. Petrol extremely flammable – always keep clear of naked flames or other ignition sources.
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.
    1. 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.
    2. 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.
- Lubricate the blade shaft bearings.
- Cover the equipment to protect it from dirt and dust.

Troubleshooting

NOTE: Some procedures listed here may need to be performed by a service centre or qualified technician. Do not attempt any chipper maintenance or servicing if you are not competent to do so, or if you do not have the correct tools available.

Difficulty starting the engine

Possible Fault	Action
Lack of Fuel	Check that there is fuel in the tank and the fuel system is primed. 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. Ensure that the emergency engine stop button is not engaged.
Not enough or too much engine oil	Check oil level, to ensure that the level is at or just below the recommend maximum level.
Blades jammed	Remove jammed material from the machine
Carbon build up on spark plug	Remove the spark plug and clean any carbon from the electrodes before re-installing it.
Faulty spark plug	Remove the spark plug, then reconnect the plug lead to it. Place the engine ON/OFF switch in “ON” position. 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	Place the choke in “HOT” or “RUN” position. Leave the ON/OFF switch in the “OFF” position. Pull the starter cord several times to assist clearing excess fuel from engine before attempting to start engine.

Engine starts but does not idle

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

Excessive vibration

Possible Fault	Action
Material too large or incorrect type	Remove overly large branches from chipper. Reduce size of material being chipped. Reduce feed rate of material. Ensure all chutes are free of obstacles and non-chippable materials (stones/metal etc)
Blades dull or damaged	Sharpen or replace cutting blades
Blade clearance incorrect	Check that cutting blade clearance is between 0.6-0.8mm
Fasteners loose	Check all accessible fasteners for tightness.

Difficulty re-starting the engine after use, or engine stops during use

Possible Fault	Action
No fuel or engine oil	Check fuel level and ensure adequate fuel is available. An engine oil sensor will automatically switch off the engine or prevent starting if a low engine oil level is detected.
Blades jammed	Remove jammed material from the machine
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.
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

Reduced engine speed/power during use

Possible Fault	Action
Blocked air filter	Check and clear air filter.
Carbon build up in engine or exhaust	Remove the engine cylinder head or exhaust silencer, and clean away any carbon deposits
Carbon build up on spark plug	Remove the spark plug and clean any carbon from the electrodes before reinstalling it.
Carburettor blocked	Clean the carburettor

Chipping action is poor

Possible Fault	Action
Obstruction	Remove any large branches and ensure all chutes are free of debris
Blade clearance incorrect	Check that cutting blade clearance is between 0.6-0.8mm
Drive belt slipping	Adjust drive belt tension
Blades dull or damaged	Sharpen or replace cutting blades

Machine jamming

Possible Fault	Action
Material too large or incorrect type	Remove overly large branches from chipper. Reduce size of material being chipped. Reduce feed rate of material. Ensure all chutes are free of obstacles and non-chippable materials (stones/metal etc)
Blades dull or damaged	Sharpen or replace cutting blades
Blade clearance incorrect	Check that cutting blade clearance is between 0.6-0.8mm
Drive belt slipping	Adjust drive belt tension

SPECIFICATIONS

Engine type	Honda GX390 (389cc 4 stroke engine)
Max. engine speed	3600 RPM
Fuel type	Regular unleaded fuel
Oil type	10W-30 automotive engine oil
Maximum branch size	90mm
Blade type	2 sided, 29.6cm long
Blade clearance	0.6-0.8mm
Drive belt	2 x A1786 (1753)
Wheel rim size	9 inches x 3.5 inches
Weight	144kg

PRODUCT DISCLAIMER

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, refer to the points below:

- Consult all documentation and product labelling before use.
- Check product for loose / broken / damaged / missing parts, wear and tear before each use. Never use a product with loose / broken / damaged / missing parts, wear and tear.
- Products must be inspected and serviced by a qualified specialist every 12 months assuming average residential use, and use within product specifications. Intended use outside these specifications or more frequent use could indicate the product is not suitable for intended use or may require more regular inspection and 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, 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.

For the latest information on The RedGum GX390 Chipper please visit our website www.RedGumProducts.com.au