



# 45CC GAS CHAINSAW

45CC 14" & 20" CHAINSAW



45CC 18" CHAINSAW



*\*Actual product may vary slightly*

Please carefully read and save these instructions before attempting to assemble, maintain, install, or operate this product. Observe all safety information to protect yourself and others. Failure to observe the instructions may result in property damage and/or personal injury. Please keep instructions for future reference.

For warranty purchases, please keep your dated proof of purchase. File or attach to the manual for safe keeping.

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## IMPORTANT OPERATING INSTRUCTIONS



**45CC 18 INCH CHAINSAW**

**MODEL: 6595**

**45CC 14 & 20 INCH CHAINSAW**

**MODEL: 8901/8902**



### CALIFORNIA PROPOSITION 65

**WARNING:** You can create dust when you cut, sand, drill or grind materials such as wood, paint, metal, concrete, cement, or other masonry. This dust often contains chemicals known to cause cancer, birth defects, or other reproductive harm. Wear protective gear.

**WARNING:** This product or its power cord may contain chemicals, including lead, known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

### Important!

When using equipment, a few safety precautions must be observed to avoid injuries and damage. Please read the complete operating manual with due care. Keep this manual in a safe place, so that the information is available at all times. If you give the equipment to any other person, give them these operating instructions as well. We accept no liability for damage or accidents which arise due to non-observance of these instructions and the safety information herein.

### SPECIFICATIONS

**Engine Displacement:** 45.1 cc

**Bar Length:** 14in. 18in. 20in.

\*Varies by different model

**Idling Speed:** 3000 RPM

**Max. Speed with Cutting Equipment:** 10,000 RPM

**Anti-Vibration Function**

**Chain Brake**

**Auto Chain Lubrication**

### CAUTION:

**FOR YOUR OWN SAFETY READ INSTRUCTION MANUAL COMPLETELY AND CAREFULLY BEFORE OPERATING THIS CHAINSAW.**

**Any failures made in following the safety regulations and instructions may result in an electric shock, fire and/or serious injury.**

**NOTE: For 8902, remove the 14" Bar and Bar Cover from the bottom of the BMC case by unscrewing the anchor.**



### SAFETY INSTRUCTIONS

1. Only allow users who have read and understand this manual operate this chainsaw.
2. Wear protective gear, such as steel-toed footwear, snugly fitting clothing, heavy duty gloves, eye protection (goggles or face screen), hard hat and ear protection (ear plugs or muffers). Do not wear jewelry and pull long hair back.
3. Keep all body parts clear of the chain while the engine is running.
4. Allow the rope to return slowly and in a controlled manner each time it is pulled! Do not pull out the recoil starter beyond the red colour band at the end of the recoil starter. Do not start the engine while handling the product with one hand!
5. Do not allow other people or animals near the saw when it is running, starting, or being operated.
6. You must be mentally alert and in good physical condition when operating a chainsaw because the work is strenuous.
7. Carefully plan your sawing project before starting. Do not begin until you are sure the work area is clean.

## KICKBACK

**WARNING:** Kickback is the backward, upward or sudden movement of the guide bar that occurs when the guide bar contacts an object or when the wood closes in and pinches the saw in the cut. The saw contacting a foreign object in the wood can also result in a loss of control.

**Rotational kickback** occurs when the moving chain contacts an object with the upper tip of the guide bar. This can cause the chain to dig into the object, which then stops the chain for a moment. The result is a reverse reaction, which kicks the guide bar up and back towards the operator.

**Pinch kickback** occurs when the woods closes in on the moving chain along the top of the guide bar. The sudden stop of the chain results in the saw to move in the opposite direction of the rotation and the saw is driven straight back towards the operator.

**Pull in** occurs when the moving chain comes in contact with a foreign object in the wood along the bottom of the guide bar. This sudden stop pulls the saw forward and away from the operator and could possibly cause the operator to lose control of the saw.

## Avoiding Kickback

Be aware of situations or objects that can cause the material to pinch the top of or stop the chain.

Do not cut more than one log at a time.

Do not twist the saw when the bar is withdrawn from an undercut.

Always begin cutting with the engine at full speed and with the saw housing resting against the wood.

Use wedges made of plastic or wood to hold the cut open. Never use metal.

Stay alert. Realize kickback can occur and keep the cutting area free from foreign objects.

Keep your chain properly tensioned and sharp, along with properly maintaining the chainsaw. Failure to do so can increase the chance of kickback occurring.

Begin and continue the cut with the engine running at full speed. Use caution while re-entering a previous cut. Do not attempt a plunge cut (starting a cut with the tip of the blade).

## Maintaining Control of the Chainsaw

Stand to the left of the saw. Keep your elbow locked and a firm grip on the saw.

Keep the thumb on the underside of the handle bar. Never reverse hand positions (left hand on handlebar and right hand on the rear handle).

Stand slightly to the left side of the saw to keep your body from being in a straight line with the saw. Stand with your weight evenly balanced between both feet.

Do not overreach because you could be thrown off balance and lose control of the saw. Do not cut above shoulder height because it is difficult to maintain proper control of the saw at that height.

## Chain Brake

The chain brake is designed to stop the chain from rotating in the event of a kickback.

**WARNING: DO NOT RELY UPON THE CHAIN BRAKE (OR OTHER SAFETY FEATURES) TO PROTECT YOU IN THE EVENT OF A KICKBACK.** Use your chainsaw properly and under the correct circumstances to avoid kickback.

## ASSEMBLY

Wear protective gloves at all times during assembly due to the handling of sharp objects.

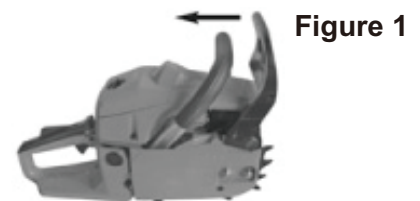
### Attaching the Bumper Spike

The bumper spike may be used as a pivot when making a cut.

- 1) Loosen and remove the bar knob completely by loosening the two nuts.
- 2) Remove the clutch cover.
- 3) Attach the bumper spike with the two screws with the spikes pointing downward.

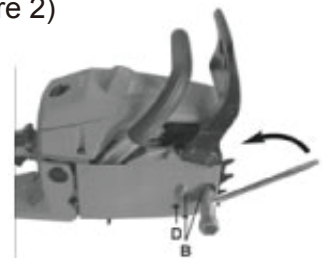
### Attaching the Bar and Chain

- 1) Make sure the saw bottom is resting on a flat surface. Be sure the chain brake is pulled back. (Figure 1)



Loosen and remove the bar knob completely by removing the two nuts. (Figure 2)

Figure 2



2) Remove the clutch cover.  
(Figure 3)



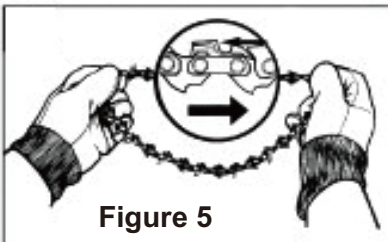
**Figure 3**

3) Slide the guide bar on the bar bolts until the guide bar rests against the clutch drum sprocket. (Figure 4)



**Figure 4**

4) Hold the chain with the drive links as shown. The drive links should be facing inward with the cutters facing to the right, or direction of rotation. (Figure 5)



**Figure 5**

5) Fit the drive links in the clutch drum sprocket. (Figure 6)



**Figure 6**

6) Place the chain drive links into the bar groove.

7) Pull the guide bar forward to make sure all of the drive links are in the bar groove.

8) Reinstall the clutch cover. (Figure 3) Make sure the adjusting pin is aligned with the hole in the guide bar.

**CAUTION:** Make sure the adjustment pin aligns with the hole. Failure to align the pin and install the cover properly may result in damage, possibly permanent, to your saw.

### ADJUSTING CHAIN TENSION

Before adjusting, make sure the bar knobs are loosened 1 ½ - 2 turns. Adjusting the chain tension with the knobs tight can cause damage.

#### Checking the Chain Tension

Check the chain tension by using a screwdriver to move the chain along the bar. If it does not rotate, it is too tight. If it sags below the bar, it is too loose.

#### Adjusting the Chain Tension

The chain stretches slightly during each use, especially the first few times the saw is used. Always check the chain tension each time the saw is used and refueled.

1) Make sure the bar knobs are loosened 1-1/2 – 2 turns.

2) Using a screwdriver, adjust the tension of the chain. The adjusting pin is located right below the two bar knobs.

**Figure 7**



3) Turn the screw to the right to increase the tension and turn it to the left to release tension.

4) Using a screwdriver, move the chain around on the guide bar to make sure all of the links are in the bar groove. If the chain does not rotate, it is too tight and the adjuster needs to be loosened.

5) Tighten the bar knob securely after the tension is adjusted.

### FUELING AND LUBRICATION

Use regular grade unleaded gasoline mixed with 40:1 2-cycle engine oil. Do not use a fuel mixture that has been stored for more than 90 days.

The bar and chain require constant lubrication in order to function properly. Lubrication is provided by the oiler system. Lack of oil will cause damage to the bar and chain. Smoke coming from the chain and discoloration on the bar are signs the oil is low.

#### Fueling Safety Instructions

1) Do not smoke while fueling or operating the saw.

2) Do not allow sparks or flame in the area where the fuel is poured or mixed. Always allow the engine to cool before refueling.

3) When refueling, turn the engine off and let it fuel in a non-combustible area. Slowly remove the fuel cap and refuel the saw.

4) Mix and pour the fuel in a well-ventilated outdoor area. Store the fuel in a cool, dry place. Wipe up fuel spills before attempting to start the saw.

5) Start the engine at least 10 feet from the fueling site

6) Store the saw and fuel in an area where sparks or open flame will not reach it.

## OPERATING INSTRUCTIONS

Warning: The chain must not move when the engine is running at an idle speed. If the chain moves, the carburetor must be adjusted. Avoid contact with the muffler because a hot muffler can cause serious burns or injury.

### Operation Safety Instructions

- 1) Do not operate a chainsaw with one hand.
- 2) Only operate the chainsaw in a well-ventilated, outdoor area.
- 3) Make sure that the chainsaw will not come into contact with any object while starting the engine. Do not start the saw when the guide bar is in the middle of a cut.
- 4) Do not apply pressure to the saw at the end of a cut. It can cause you to lose control of the saw when the cut is complete.
- 5) Make sure the engine is stopped before setting down the saw.
- 6) Make sure your chainsaw is in good condition before operating. Do not operate a saw that is damaged, improperly adjusted, or not completely and securely assembled.
- 7) Do not carry the saw with the engine running. Carry the saw with the engine stopped and the muffler pointing away from you, with the guide bar and chain facing behind you. The chain should be covered with a bar cover to ensure the blade will not cause harm.
- 8) Do not run while operating the chainsaw.

### Starting A Cold Engine

Hold the saw firmly against the ground and make sure the chain is

free to move without contacting any object.

- 1) Move the ON/OFF switch to the ON position.
- 2) Pull the choke lever out to its full extent.
- 3) Squeeze throttle and depress throttle lock button to hold the throttle.
- 4) Pull the starter rope quickly with your right hand a maximum of 5 times. If the engine sounds as though it is trying to start before the 5<sup>th</sup> pull, do not pull any more and immediately go to the next step.
- 5) Push the choke lever fully in.
- 6) Pull the starter rope quickly with your right hand until the engine starts.
- 7) Allow the engine to run for approximately 30 seconds before squeezing and releasing the throttle trigger, which will allow the engine to return to idle speed.

### Starting a Warm Engine

- 1) Place the ON/OFF switch into the ON position.
- 2) Push the choke lever full in.
- 3) Pull on the starter rope quickly with your right hand until the engine starts.
- 4) After the engine starts, squeeze and release the throttle trigger, this will allow the engine to return to idle speed.

### Flooded Engine

If your engine does not start after 10 pulls, it may be flooded. It can be cleared of the excess fuel by following the warm engine starting process. Make sure the

ON/OFF switch is in the ON position. The amount of flooding in the engine will determine how many pulls are necessary for it to start.

### Checking the Chain Brake

The chain brake should be checked several times during use. The engine needs to be running while this is done and it is the only time the saw should be set on the ground with the engine running.

- 1) Place the saw on the ground.
- 2) Grasp the rear handle with your right hand and the front with your left.
- 3) Apply the full throttle with your right hand.
- 4) Activate the chain brake by turning your left wrist against the hand guard without letting go of the front handle.

The chain should stop immediately. If the chain brake fails to activate, take the saw to an authorized dealer to have the chain brake replaced or repaired.

## CUTTING METHOD INSTRUCTIONS

### Safety Instructions

Check the chain tension before using the saw for the first time and after 1 minute of operation

Do not cut any material other than wood. Do not cut metal, plastic, masonry, non-wood building materials, etc.

If the chain strikes a foreign object, stop the saw and inspect the chain for damage. If damage is present, repair or replace the necessary parts.

Keep the saw clear of dirt or sand because even a small amount could dull the blade and possibly cause kickback.

Before starting a major project, practice cutting a few logs.

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## Important Operation Reminders

Allow the engine to reach full speed before cutting.

Begin cutting with the saw frame resting against the log.

Keep the engine at full speed the entire time you are cutting.

Allow the chain to do the work for you. Do not apply excess pressure. Forcing the cut may cause damage to the engine, bar and/or chain.

When the cut is complete, release the trigger and allow the engine to return to idle. Running the saw at full throttle without cutting can cause wear to the chainsaw.

Do not put pressure on the saw at the end of a cut in order to maintain control of the saw.

Stop the engine before setting down the saw.

## Tree Felling

**WARNING:** Do not cut near buildings or electrical wires if the direction of the fall is uncertain. Check for broken or dead branches, which could fall while cutting. Do not cut at night or during bad weather. If the tree falls onto a utility line, notify the utility company immediately.

Plan your sawing operation in advance. Clear the work area in order to have a secure footing. Evaluate the natural conditions that could affect the direction of the fall such as wind, lean of the tree, weight and branches on one side, surrounding trees, decay and rot.

Make sure the tree has enough room to fall. Keep a distance of at least 2 ½ tree lengths from the nearest person or object because engine noises or the tree falling can drown out warning calls.

Remove all foreign objects from the tree where the cuts are going to be made. Plan a clear retreat path that is diagonally back from the line

of the fall.

## Felling Large Trees (6 in. or larger in diameter)

A notch is cut into the side of the tree in the desired falling direction. After a felling cut is made, the tree will tend to fall into the notch.

**Note:** If the tree has large buttress roots, remove them before making the notch into the tree. If you use a chainsaw to remove the roots, keep the chain from contacting the ground to prevent the chain from dulling.

1) Make the notch by cutting the top of the notch first. Cut through 1/3 of the diameter of the tree. Complete the notch by cutting the bottom of the notch. Remove the notch of wood from the tree once the notch is cut.

2) After removing the wood, make the felling cut on the opposite side of the notch. Make a cut about two inches higher than the center of the notch. This will leave a hinge between the felling cut and the notch. The hinge will help prevent the tree from falling in the wrong direction. It also helps hold the tree on the stump and control the fall.

Before the felling cut is complete, use wedges, if necessary, to open the cut and control the direction of the fall. Use wood or plastic wedges to avoid kickback and chain damage. Never use steel or iron wedges.

Be alert to signs that the tree is about to fall, such as cracking sounds, widening of the felling cut, or movement in the branches.

As the tree begins to fall, stop and put down the saw and quickly get away on your planned retreat path.

Do not cut down a partially fallen tree. Be cautious when working around partially fallen trees because they may be poorly supported. If a tree does not fall completely, put the saw aside and pull down the tree with a cable winch, block and tackle or a tractor.

## Cutting A Fallen Tree (Bucking)

**WARNING:** DO NOT stand on the log that is being cut. If the log rolls, it can cause loss of footing and control. Do not stand downhill of the log being cut.

Only cut one log at a time.

Cut shattered wood carefully. Sharp pieces of wood could possibly be thrown back towards the operator.

Never allow another person to hold a small log for cutting, or use your leg or foot to hold it. Use a sawhorse to cut small logs.

Do not cut in an area where logs, roots and limbs are tangled. Drag the logs into a clear area before cutting.

## Types of Cutting for Bucking

**WARNING:** If a saw becomes pinched in a log, do not try to force it out. It is possible to lose control of the saw which can result in injury and/or damage to yourself or the saw. Stop the saw and drive a plastic or wood wedge into the cut until the saw can be removed. Restart the saw and re-enter the cut. Using a metal wedge can cause kickback and chain damage. Do not attempt to restart your saw when it is pinched in a log.

**Overcutting** is when the bottom of the saw is against the top of the log. Use a light, downward pressure when overcutting.

**Undercutting** is when the log is cut from the underside with the top of the saw against the log. Use a light upward pressure. Hold the saw firmly and maintain control of the saw because it will tend to push backwards.

DO NOT turn the saw upside down to undercut. Control of the saw cannot be maintained in this position.

Always make your first cut on the compression side of the log (where the pressure of the log's weight is concentrated).

### **Bucking Without A Support**

Using an overcut, cut through 1/3 the diameter of the log.

Roll the log over and finish with a second overcut.

Watch out for logs with a compression side to prevent the saw from being pinched.

### **Bucking Using A Log or Support Stand**

Make your first cut on the compression side of the log and extend it 1/3 into the diameter of the log. Finish with a second cut.

### **Limbing and Pruning**

**WARNING:** Be on alert for kickback. Keep the moving chain away from any other branches or objects when limbing or pruning. Never climb into a tree to limb or prune. Do not stand on ladders, platforms, other logs or in a position with unsteady footing.

### **Important Safety Reminders**

Work slowly with both hands gripping the saw. Maintain balance and a secure footing.

Use caution when cutting smaller limbs. Small limbs may catch in the chain and be flung towards you or throw you off balance.

Watch out for branches that are under pressure or bent. When the wood is cut, the tension may cause the wood to be flung.

Keep your work area clear. Clear away branches from the work area in order to avoid tripping over them.

### **Limbing**

Limbing should only be done when a tree is already cut down.

Leave any large limbs under the tree for support as you work.

Start at the base of the tree and work towards the top. Small limbs can be removed in one cut.

Keep the tree between you and the chain. Cut opposite from the branch being cut.

Remove any larger, supportive branches with the technique described in Bucking Without A Support.

Always use an overcut to cut small and free hanging limbs. Do not use an undercut because it may cause limbs to fall and pinch the saw.

### **Pruning**

**WARNING:** Do not prune limbs that are above shoulder height. If the branches are higher than your shoulder, have a professional perform the job.

Make your first cut 1/3 of the way through the limb.

Make the second cut all the way through the limb. The cut a third overcut through the branch, leaving a 1 – 2 inch collar from the trunk of the tree.

### **MAINTENANCE**

#### **Maintenance Schedule**

##### **Check before each use:**

Fuel mixture level

Bar lubrication

Chain tension

Chain sharpness

For damaged parts

For loose caps, fasteners and parts

##### **Inspect and Clean**

**Bar:** Before each use

**Saw:** After each use

**Air filter:** Every 5 hours of use

**Chain brake:** Every 5 hours of use

**Spark arresting screen and muffler:** Every 25 hours of use

**Replace spark plug:** Yearly

**Replace fuel filter:** Yearly

##### **Maintenance Safety Instructions**

- 1) Be sure to have your chainsaw regularly serviced by a qualified dealer.
- 2) Never modify the chainsaw in any way.
- 3) Keep the handles clean and dry, and free from oil or fuel.
- 4) Make sure the fuel and oil caps, fasteners and screws are tightened and secure after performing maintenance.
- 5) Always wear protective gloves when performing maintenance.
- 6) Do not perform maintenance while the engine is hot.

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## Air Filter Cleaning

DO NOT clean the air filter in gasoline or other flammable solutions. Doing so can create a fire hazard or harmful emissions.

DO NOT operate the saw without an air filter. Dust and dirt will be drawn directly into the engine and damage it. Keep the air filter clean.

- 1) Remove the top cover by unscrewing the fastening screw.
- 2) Lift out the air filter.
- 3) Clean the air filter in warm, soapy water and rinse in clean water.
- 4) Allow the filter to air dry completely.
- 5) Insert the air filter back into the chainsaw. Replace the cover on the chainsaw. Make sure the cover is fitted securely and properly before tightening the screw.

## Fuel Filter Cleaning

NEVER use the saw without a fuel filter. After 100 hours of use, the filter should be cleaned or replaced, if damaged.

Make sure the fuel tank is empty before changing the filter.

- 1) Remove the fuel tank cap.
- 2) Bend a piece of soft wire.
- 3) Reach into the tank opening and hook the fuel line. Carefully pull the line towards the opening until you can reach it with your fingers. DO NOT pull the hose completely out of the tank.
- 4) Lift the filter out of the tank.
- 5) Pull off the filter. If it is damaged, discard and replace with a new one.
- 6) Insert a new filter. Place the filter into the opening and push it into the tank. Make sure it is situated in the lower corner of the tank. If need be, use a long screwdriver to

move the filter into the correct position. Be careful not to damage the filter.

- 7) Fill the tank with new fuel mixture.

## Spark Plug

The spark plug must be cleaned or replaced after every 20 hours of service.

- 1) Make sure the ON/OFF switch is turned off.
- 2) Remove the top cover by unscrewing the fastener.
- 3) Remove the air filter.
- 4) Disconnect the ignition cable from the spark plug by pulling and twisting simultaneously.
- 5) Remove the spark plug by using a spark plug wrench.
- 6) Clean the spark plug with a copper wire brush. The electrode gap should be 0.6mm.
- 7) Reconnect the ignition cable.
- 8) Replace the air filter.
- 9) Replace the top cover, make sure the cover is securely fitted, and then screw down the fastener.

## Carburetor

The carburetor has already been properly adjusted at the factory. If it requires additional adjustment, take the saw to an authorized service dealer.

## Chain Bar Maintenance

The chain bar needs to be regularly lubricated and maintained in order for it to work.

## Tools for lubrication

A lube gun is recommended, but not required, for applying grease to the guide bar sprocket tip. The gun is equipped with a needle nose tip, which allows the grease to be efficiently applied.

## Lubricating the sprocket tip

The sprocket tip on your new saw has been pre-lubricated in the factory. It needs to be lubricated properly otherwise it will perform poorly, and possibly seize. Lubrication is recommended once a week or after 10 hours of use. Clean the bar tip before lubrication.

The chain does not have to be removed to lubricate the bar tip. Lubrication is possible while working, however the engine must be turned off.

**Warning:** Wear work gloves when handling the chain and bar.

- 1) Make sure the engine is off, with the ON/OFF switch in the Off position.
- 2) Clean the guide bar tip.
- 3) Using the lubrication gun, insert the nose into the lubrication hole and fill it with grease until it appears at the edges of the tip.
- 4) Rotate the saw by hand. Add additional lubrication until the entire tip has been greased.

Many guide bar problems can be avoided by properly maintaining the bar and chain saw. Insufficient lubrication or using a saw with a chain that is too tight will cause the bar to wear rapidly.

## Maintaining the chain bar

The bar should be reversed after 8 hours of work to keep uniform wear. Check the bar frequently for wear, and if need be, remove burs and square up the rails by using the flat file.

- 1) Be sure the ON/OFF switch is Off.
- 2) Loosen the bar knob and remove the cover.
- 3) Remove the chain and bar from the saw.



4) Clean the oil holes and bar groove.

5) If the bar is burred, remove the burs with a flat file.

6) If the rail top is uneven, use a flat file to make the sides and edges square again.

Replace the guide bar when the groove is worn, the bar is bent or cracked, or when excessive heating or burring occurs. If the bar needs replacing, only use the guide bar specified in the parts list or on the chain saw.

### Oil passages

The oil passages should be cleaned to allow proper lubrication of the bar and chain.

The condition of the passages can be checked. If they are clear, the chain will automatically send off a spray of oil within seconds of starting the saw because it is equipped with an automatic oiler system.

### Automatic chain lubrication

The chain is equipped with an automatic oil system with a toothed wheel drive. It will automatically supply the bar and chain with the right amount of oil. When the engine is accelerated, the oil will flow through the bar more quickly.

The lubrication system has been set at the factory. The screw for adjusting the lubrication is located on the underside of the chainsaw. By turning the screw counterclockwise, it will increase the lubrication and turning it clockwise will decrease the lubrication.

To check the lubrication, hold the chain saw over a piece of paper and run it at full speed for a few seconds. The amount of oil on the paper will determine if the lubrication needs to be increased or not.

## Chain Maintenance

### Sharpening

Chain sharpening requires special tools to ensure that the cutters are sharpened to the proper angle and depth. File at an angle perpendicular to the bar, and at an angle of 30° to the direction of travel. We recommend you allow a professional chain sharpener to sharpen your chain.

### Breaking in a new chain

A new chain and bar will need adjusting after as few as 5 cuts. This is normal during the break-in period and the interval between future adjustments will begin to lengthen.

### Chain lubrication

Make sure the oil tank is filled with the appropriate oil to lubricate the chain. Running the saw with low or no oil will cause damage to the chain and the saw, causing overheating and excessive wear.

### STORAGE

If a chainsaw is going to be in storage for longer than 30 days, follow these instructions.

### Storing a chainsaw

- 1) Remove the fuel tank slowly in order to release any pressure in the tank. Carefully drain the fuel from the tank.
- 2) To remove all of the fuel from the carburetor, start the engine and let it run until the saw stops.
- 3) Allow the engine to cool completely.
- 4) Remove the spark plug.
- 5) Pour 1 teaspoon of 2-cycle oil into the combustion chamber. Slowly pull the starter rope a few times in order

to coat the internal parts. Replace spark plug.

**Note:** Store the unit away from water, sources of flame and sparks and in a cool, dry location.

### Preparation to use saw again

- 1) Remove the spark plug.
- 2) Pull the starter rope briefly to clear excess oil from the combustion chamber.
- 3) Clean the spark plug and check the electrode gap.
- 4) Replace the spark plug.
- 5) Fill the fuel tank with the proper fuel mixture.
- 6) Check oil levels.

### LONGER TIME UNUSED MACHINE RESTARTING

Unused machine be in storage for longer than 90 days, the ignition coil be not damaged, it's only carburetor issue.

Please follow these Instructions to restart the machine.

1. Check either the fuel pipe aging or cracking, if any, easy to buy new one for replacement at local store.
2. Check either the fuel pipe joint of carburetor loosening or aging, if any, cut the pipe joint a little bit to rejoin as well.
3. Please pull the starting rope 5-8 times before fuel refilling to the carburetor is in an operating state.
4. Refilling the fuel and then restart the machine according to the cold start mode.

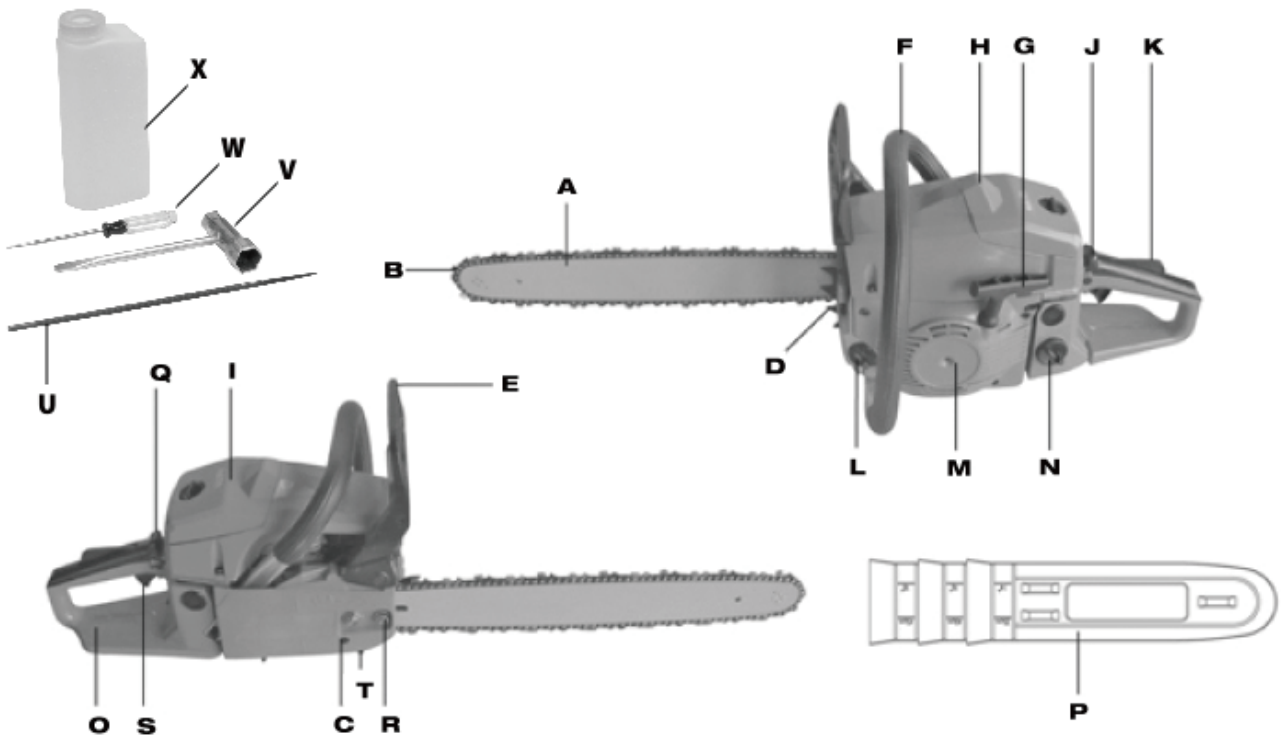
## Troubleshooting Guide

Symptom	Possible Cause(s)	Corrective Action
Engine will not start or will not stay running	Ignition switch is not ON	Turn ignition switch ON
	Engine is flooded	Reference digital starting section of this manual
	Fuel tank is empty	Fill tank with proper fuel mixture
	Spark plug is not working properly	Install new spark plug
	Fuel is not reaching carburetor	Check for dirty fuel filter (replace if necessary). Check for faulty fuel line (repair or replace if necessary).
Engine will not idle properly	Carburetor requires adjustment	Contact an authorized service dealer
	Crankshaft seal is worn	Contact an authorized service dealer
Engine will not accelerate, lacks power or dies under a load	Air filter is dirty	Clean or replace filter
	Spark Plug is faulty	Clean or replace plug or correct gap
	Chain brake is engaged	Disengage chain brake
	Carburetor needs adjustment	Contact an authorized service dealer
Engine smokes excessively	Too much oil mixed with gasoline	Empty fuel tank and refill with proper fuel mixture
Chain moves while idling	Idle speed requires adjustment	Contact an authorized service dealer
	Clutch requires repair	Contact an authorized service dealer

## Troubleshooting Guide

Symptom	Possible Cause(s)	Corrective Action
Engine is flooded		Set chainsaw on the ground and make sure chain brake is set to the disengaged position (pulled towards the rear handle).
		Pull the choke lever into the fully open position (all the way out).
		Squeeze throttle and set throttle lock button.
		Place right foot on rear handle securing the saw to the ground.
		In quick short pulls try starting the saw until you hear the saw "pop".
		Push choke lever in until set at half choke.
		Secure saw to the ground again with right foot and continue pulling starter rope until unit starts.
		As saw warms up push choke lever in slowly.
Carburetor adjustment		Factory setting for the High (H) is two turns out and the Low (L) is 1 1/2 turns out.
		Proper tool for adjusting the carburetor is a pacman carburetor adjustment tool.
		Depending on the area in which the saw is intended to be used or the length of time the unit has been used will affect where the carburetor needs to be set.
Saw does not want to start		Possible spark plug failure (See no spark).
		Turn the (L) adjuster clockwise until you feel it stop. Do not over tighten as damage can occur.
		Turn the (L) counter clockwise a quarter of a turn and see if saw will start.
		NOTE: If saw does not start repeat step one quarter of a turn each time.
		If fine tuning is required due to a rough idle use 1/16th turns to the (L) adjuster to achieve a smooth idle without the chain moving.
Saw bogs down during acceleration or cutting		Possible faulty spark plug (see no spark).
		Using the pacman tool turn the (H) set screw clockwise until you feel it stop. Do not over tighten as damage can occur.
		Turn the (H) counter clockwise one quarter of a turn.
		Start unit and test acceleration and or making a cut.
		NOTE: If saw dies out during testing repeat previous step until proper acceleration and or cutting is efficient.
	If fine tuning is required use 1/16th turns.	
No spark	Bad spark plug	Replace spark plug Proper spark plug gap is 0.030
	Bad on/off switch	Test with the following steps: 1. Remove air filter cover and air filter 2. Disconnect black wire from the on/off switch 3. Try starting the unit (refer to starting instructions) 4. If unit starts replace the on/off switch
	Bad ignition coil	Test with the following steps: 1. Verify the on/off switch is good (see bad on/off switch) 2. With the black wire still disconnected from the on/off switch. Remove the spark plug wire carefully as to not separate the contactor inside from the wire. 3. Remove the spark plug and place it back into the spark plug wire. 4. Place the spark plug onto a metal surface of the unit. 5. Using the pull rope pull slowly while checking to see if the spark plug arcs across the center and ground electrodes. NOTE: Do not test for spark in direct sunlight or other bright lights. The light may affect the visibility of the arc. 6. If spark plug does not arc replace ignition coil. 7. Proper ignition coil gap is 0.4mm (0.0157 inch).

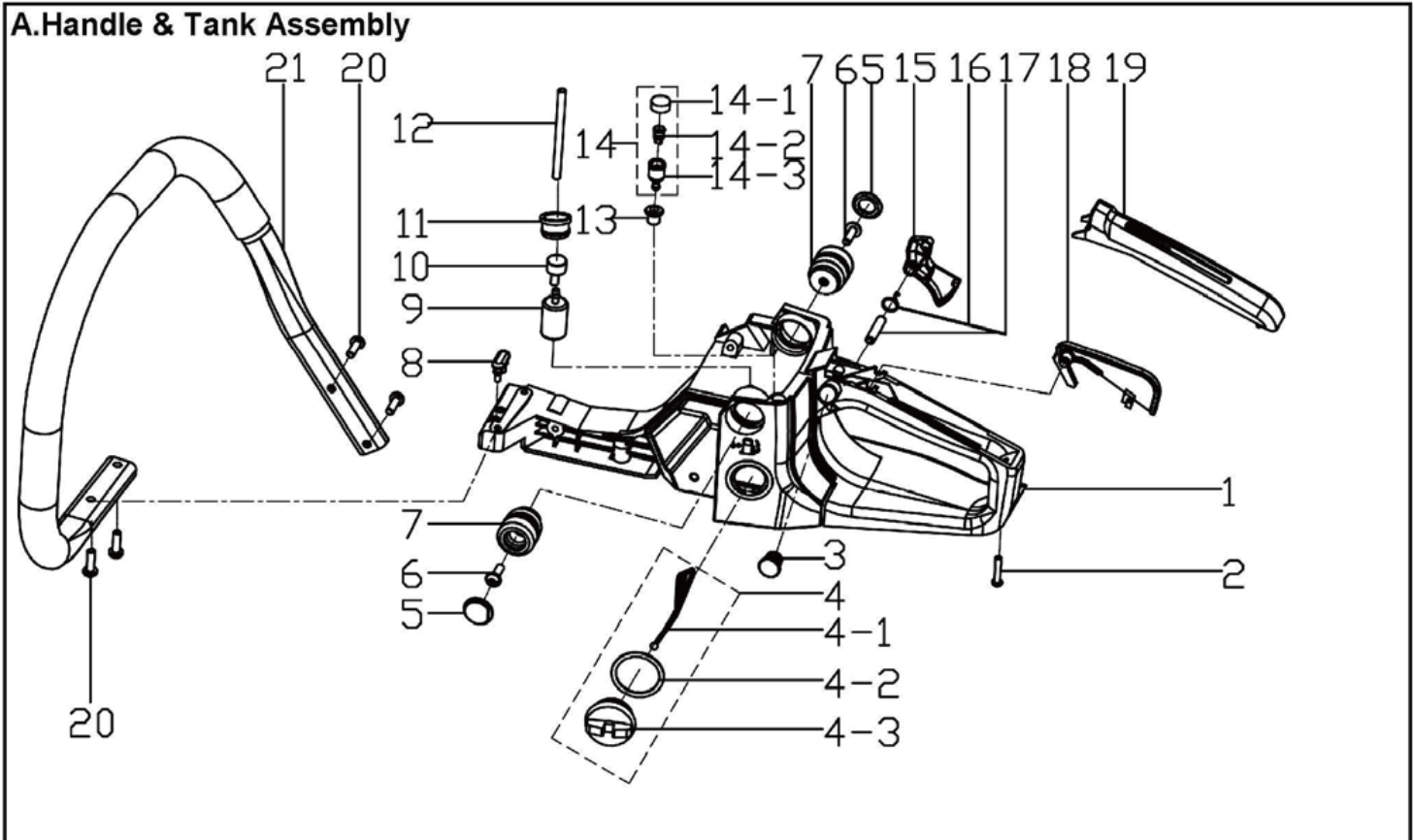
# Parts List



#	Part Description
A	Chain Bar (varies by model No)
B	Saw Chain (varies by model No)
C	Chain Tensioning Screw
D	Stop Claw
E	Chain Brake Lever/Front Hand Guard
F	Front Handle
G	Starter Handle
H	Spark Plug (under air filter cover)
I	Air Filter Cover
J	Switch
K	Trigger Control Arm
L	Oil Tank Cap

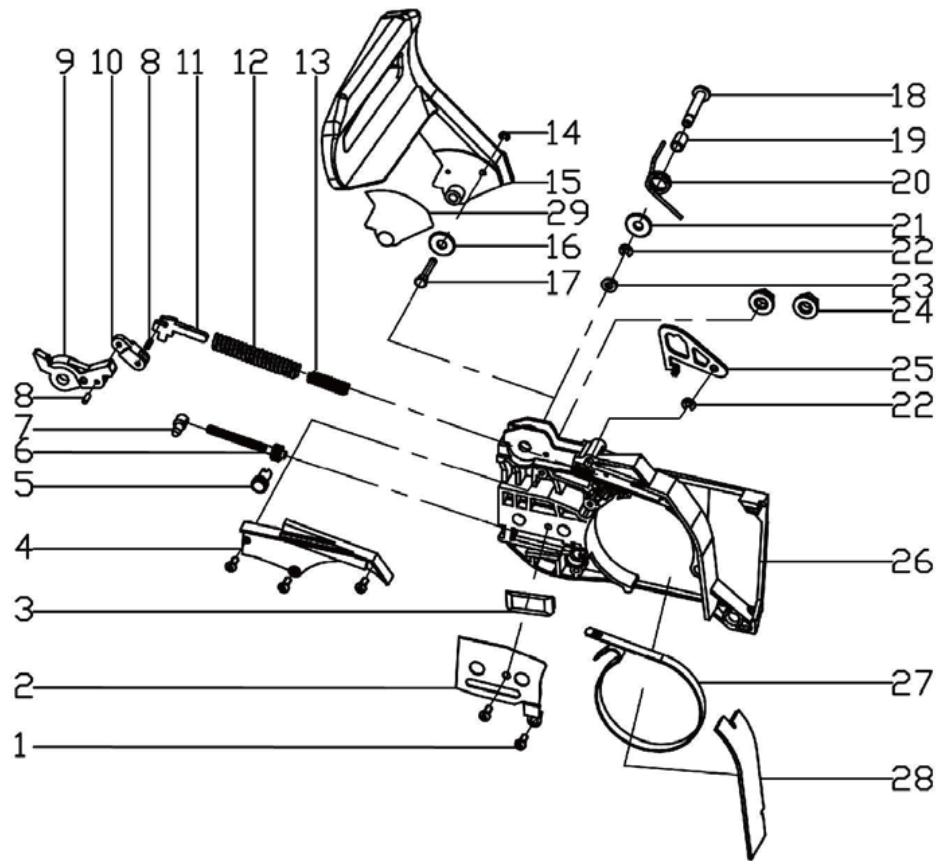
#	Part Description
M	Starter Assembly
N	Fuel Tank Cap
O	Rear Handle/Bootstrap
P	Bar Cover
Q	Choke
R	Brake Assembly Fixing Nut
S	Trigger
T	Chain Catch
U	Chain File
V	Plug Wrench
W	Screwdriver
X	Oil Mixing Bottle

# Parts List



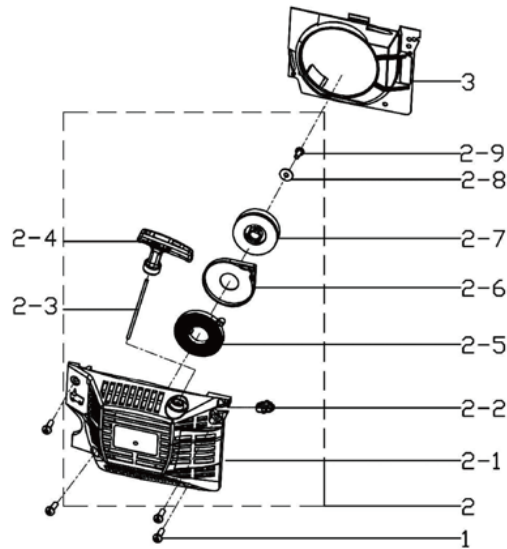
No	Description	Qty.	No	Description	Qty.
A1	Fuel Tank	1	A12	Fuel Pipe	1
A2	Screw GB/T 2670.1 ST4.2x19	1	A13	Balancer Plate	1
A3	Button Block	1	A14	Balancer Assembly	1
A4	Fuel Tank Ccap Assembly	1	A15	Trigger	1
A5	Dust-proof Cap	2	A16	Trigger Spring	1
A6	Screw GB/T 2672 M5x16	2	A17	Bolt GB/T 119.1 6x24	1
A7	Long Vibration Absorber	2	A18	Trigger Control Arm	1
A8	Tank Absorber	1	A19	Handle Cover	1
A9	Fuel Filter	1	A20	Screw GB/T 2670.1 ST4.8x16	4
A10	Plate	1	A21	Handle	1
A11	Fuel Pipe Plate	1			

## B.Brake Assembly



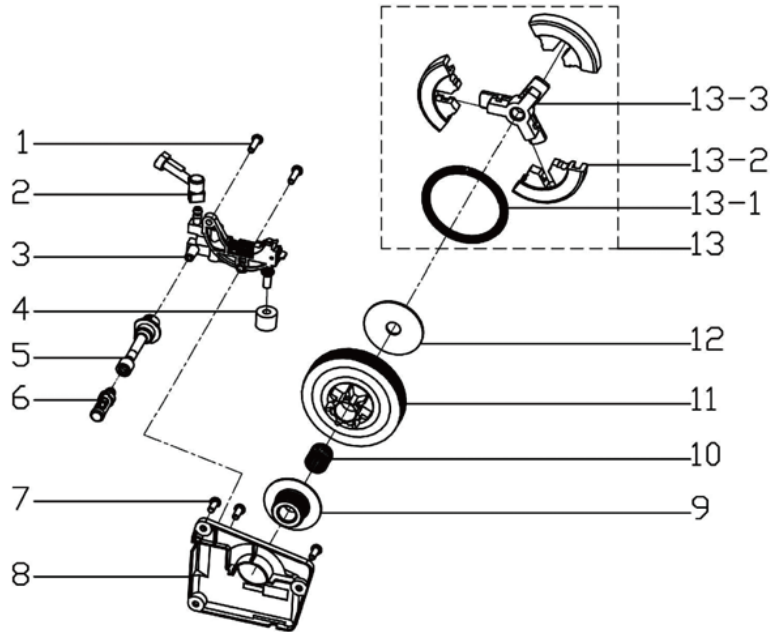
No	Description	Qty.	No	Description	Qty.
B1	Screw GB/T 2670.1 ST4.2x9.5	5	B16	Flat Washer GB/T 96.1 6 (6*18*1)	1
B2	Tensioner Cover	1	B17	Spacer Pin	1
B3	Chain Guide	1	B18	Guard Pin	1
B4	Brake Spring Cover	1	B19	Guard Pin Cover	1
B5	Tensioner Wheel	1	B20	Guard Spring	1
B6	Tensioner Screw m5*50	1	B21	Flat Washer GB/T 96.1 6 (6*18*1.5)	1
B7	Tensioner	1	B22	Split Washer GB/T 896 4	2
B8	Bolt GB/T 119.1 3x9	2	B23	Shock-absorb Rubber Ring	1
B9	Main Arm	1	B24	Nut GB/T 6177.1 M8	2
B10	Standby Arm	1	B25	Brake Spacer Board	1
B11	Brake Arm	1	B26	Right Side-board	1
B12	Brake Spring	1	B27	Brake Belt	1
B13	Brake Standy Spring	1	B28	Dust-proof Plate	1
B14	Split Washer GB/T 896 3	1	B29	Aluminum Coil on Guard	1
B15	Front Hand Guard	1			

### C. Starter Assembly



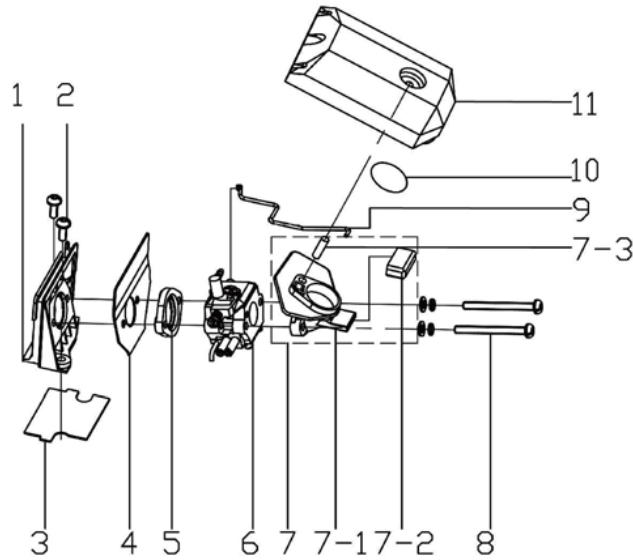
No	Description	Qty.	No	Description	Qty.
C1	Screw GB/T 2672 M5x16	4	C2-5	Starter Coil Spring	1
C2	Starter Assembly	1	C2-6	Coil Spring Press Plate	1
C2-1	Starter Cover	1	C2-7	Starter Wheel	1
C2-2	L H cover	1	C2-8	Flat Washer GB/T 96.1 5 (5.4*16*1)	1
C2-3	Starter Rope	1	C2-9	Screw GB/T 2670.1 ST4.8x13	1
C2-4	Starter Handle	1	C3	Fan Cover	1

### D. Oil Pump, Clutch Assembly



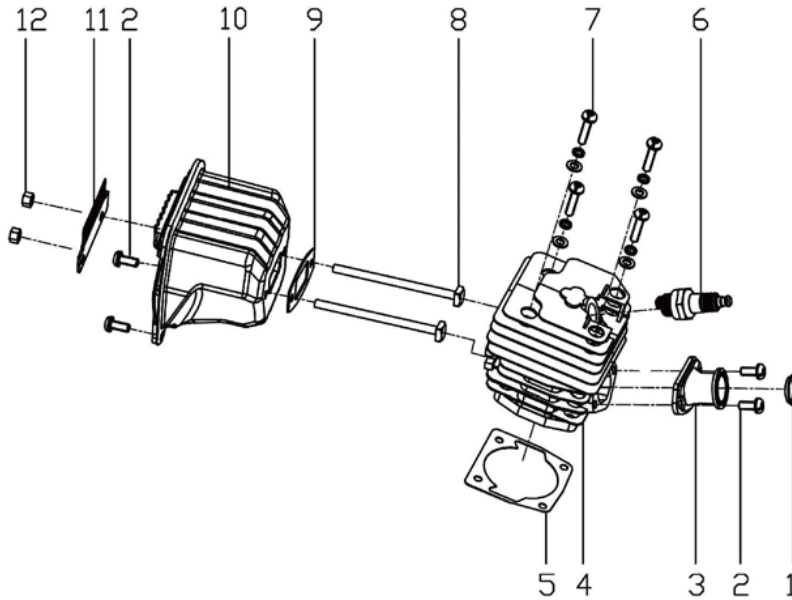
No	Description	Qty.	No	Description	Qty.
D1	Screw GB/T 2672 M4x14	2	D9	Worm	1
D2	Oil Pipe Out	1	D10	Needle Bearing 12x15x14.5	1
D3	Oil Pump	1	D11	Clutch Drum	1
D4	Sponge Filter Ring	1	D12	Clutch Washer	1
D5	Oil Pipe	1	D13	Clutch Assembly	1
D6	Oil Filter	1	D13-1	Clutch Spring	1
D7	Screw GB/T 2672 M4x10	3	D13-2	Clutch Holder	1
D8	Oil Pump Cover	1	D13-3	Clutch Block	3

### E. Carburetor , Air Filter Assembly



No	Description	Qty.	No	Description	Qty.
E1	Air In-take Bracket	1	E7-1	Air-in Plate	1
E2	Screw GB/T 2672 M5x12	2	E7-2	Cushion for Air-in Plate	1
E3	Cushion Plate	1	E7-3	Bolt GB/T 899 GM5-M5x39	1
E4	Air In-take Bracket Gasket	1	E8	Screw GB/T 2672 M5x52	2
E5	Air In-take Flange	1	E9	Throttle Rod	1
E6	Carburetor	1	E10	O-ring for Air-filter	1
E7	Air-in Plate Assembly	1	E11	Air-Filter	1

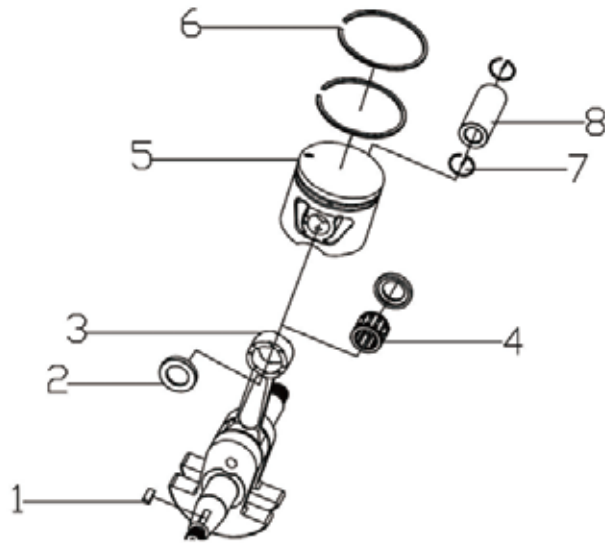
### F. Cylinder Muffler Assembly



No	Description	Qty.	No	Description	Qty.
F1	Maintainance Ring	1	F7	Screw GB/T 70.1 M5x20	4
F2	Screw GB/T 2672 M5x12	4	F8	Muffler Bolt (M5x84)	2
F3	Air-in Pipe	1	F9	Muffler Gasket	1
F4	Cylinder	1	F10	Muffler	1
F5	Cylinder Gasket	1	F11	Muffler Plate (with spark catch net)	1
F6	Spark Plug	1	F12	Nut GB/T 6177.1 M5	2

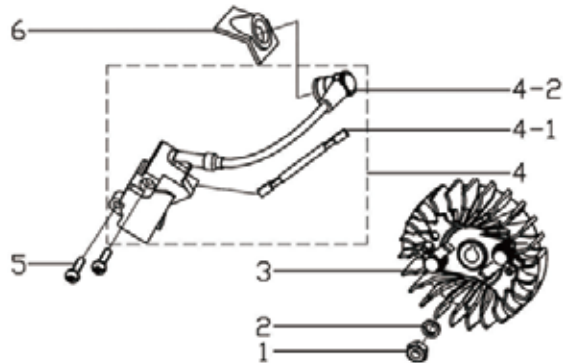


### G.Crankshaft Piston Assembly



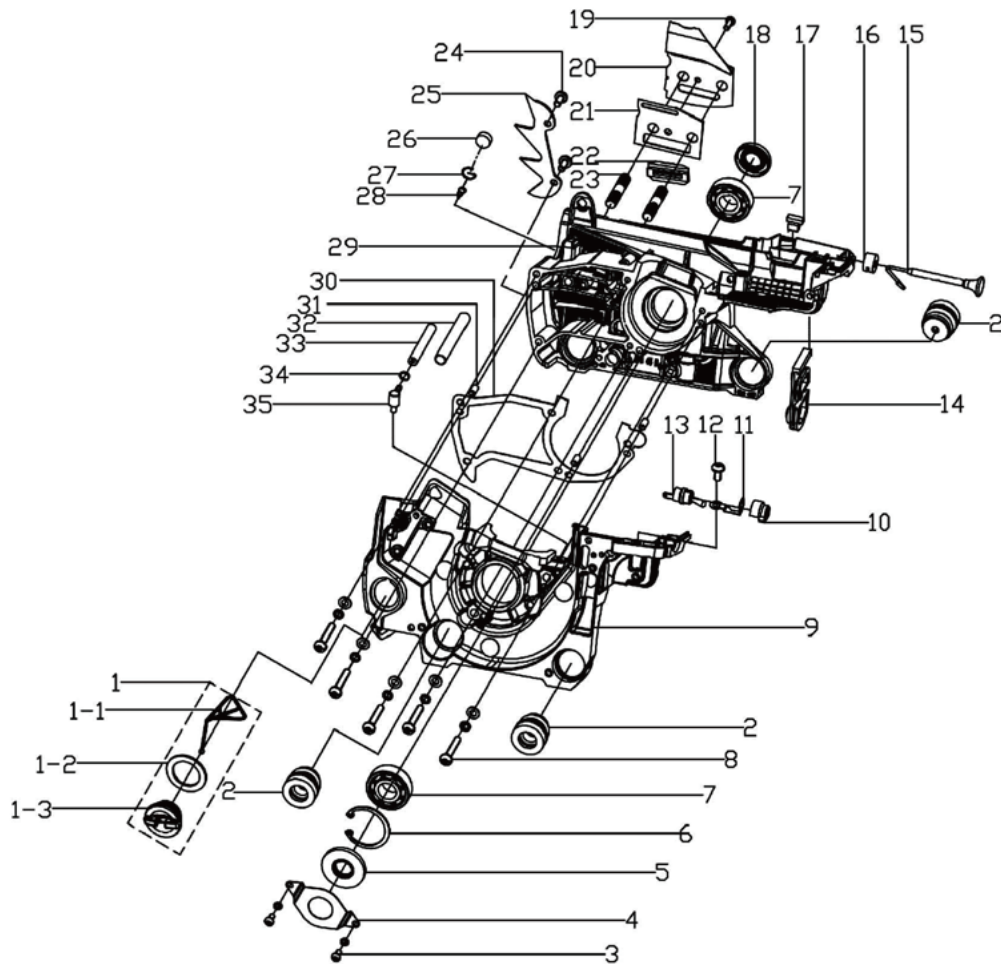
No	Description	Qty.	No	Description	Qty.
G1	Woodruff Key 3X10	1	G5	Piston	1
G2	Needle Bearing Clip	2	G6	Piston Ring	2
G3	Crankshaft Assembly	1	G7	Piston Pin Clip	2
G4	Needle Bearing NA11x15x12.5	1	G8	Piston Pin	1

### H.Flywheel, Ignition Coil Assembly



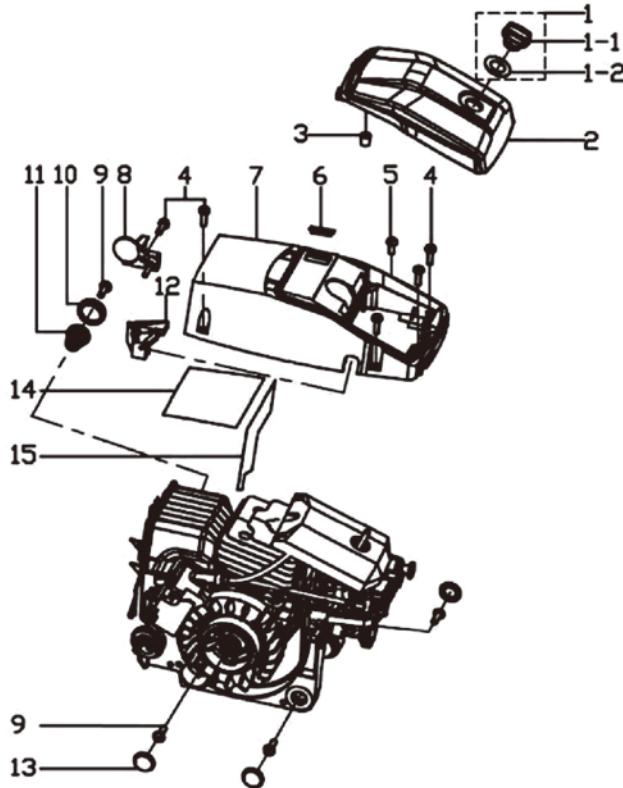
No	Description	Qty.	No	Description	Qty.
H1	Nut GB/T 6184 M8	1	H4-1	Flameout Line	1
H2	Spring Washer GB/T 93 8	1	H4-2	Coil	1
H3	Flywheel Assembly	1	H5	Screw GB/T 70.1 M5x20	2
H4	Ignition Coil	1	H6	Coil Cover	1

## J.Engine Assembly



No	Description	Qty.	No	Description	Qty.
J1	Oil Tank Cap Assembly	1	J18	Oil Seal 15x28x5	1
J1-1	Falling-proof Plate	1	J19	Screw GB/T 2672 M4x10	1
J1-2	O-Ring	1	J20	Back Plate	1
J1-3	Oil Tank Cap	1	J21	Plate Washer	1
J2	Short Vibration Absorber	3	J22	Chain Guide	1
J3	Screw GB/T 2672 M4x8	2	J23	Bolt GB/T 899 GM8-M8x28-8.8	2
J4	Oil Seal Plate	1	J24	Screw GB/T 70.1 M5x12	2
J5	Oil Seal 15x35x5	1	J25	Spike Bumper	1
J6	Spring Washer GB/T 893.1 35	1	J26	Sponge Filter	1
J7	Groove Ball Bearing GB/T 627 6202	2	J27	Air Nozzle Spring	1
J8	Screw GB/T 2672 M5x30	5	J28	Air Nozzle	1
J9	Left Crankcase	1	J29	Right Crankcase	1
J10	Flameout Switch Base	1	J30	Crankcase Gasket	1
J11	Groud Strip	1	J31	Bolt GB/T 119.1 5x10	3
J12	Screw GB/T 2672 M5x10	1	J32	Insulate Pipe	1
J13	Flameoout Switch	1	J33	Vacuum Pipe	1
J14	Dust-proof Plate	1	J34	Vacuum Pipe Clip	1
J15	Throttle Rod	1	J35	Vacuum Pipe Throat	1
J16	Throttle Rod Plate	1			
J17	Vibration Absorber	1			

## K.Top Cover, Air-filter Cover



No	Description	Qty.	No	Description	Qty.
K1	Air-filter Nut Assembly	1	K9	Screw GB/T 2670.1 ST4.8x16	4
K1-1	Air-filter Nut	1	K10	Cone Spring Base	1
K1-2	Nut Washer	1	K11	Cone Spring	1
K2	Air-filter Cover	1	K12	Idle Speed Adjuster	1
K3	Shock-Absorbing Rubber Washer	1	K13	Dust-Proof Cover	3
K4	Screw GB/T 2672 M5x16	5	K14	Top Cover Aluminium Coil (Big)	1
K5	Screw GB/T 2672 M5x14	1	K15	Top Cover Aluminium Coil (Small)	1
K6	Season Switch	1			
K7	Top Cover	1			
K8	Chain Catch	1			

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## **I. EMISSION CONTROL WARRANTY STATEMENT**

### **YOUR WARRANTY RIGHTS AND OBLIGATIONS**

*The United States Environmental Protection Agency (EPA), together with North American Tool Industries are pleased to explain the Emission Control System Warranty on your new small off-road engine. New small off-road engines must be designed, built, and equipped to meet stringent anti-smog standards for the state of the federal government. NATI will warrant the emission control system on your engine for the periods of time listed below provided there has been no abuse, neglect, unapproved modification, or improper maintenance to your engine.*

*Your emission control system may include parts such as the carburetor, ignition, intake, and exhaust systems. NATI will repair your engine at no cost to you for diagnosis, replacement parts, and labor, should a warrantable condition occur.*

#### **MANUFACTURER'S EMISSION CONTROL SYSTEM WARRANTY COVERAGE:**

*Emission control systems on 2016 and later model year engines are warranted for two years as hereinafter noted. If, during such warranty period, any emission-related component or system on your engine is found to be defective in materials or workmanship, a NATI Authorized Warranty Service Facility will perform repairs or replacement.*

#### **PURCHASER'S/OWNER'S WARRANTY RESPONSIBILITIES:**

*As the small off-road engine purchaser/owner, you are responsible for the completion of all required maintenance as listed in your factory supplied OWNER'S MANUAL. For warranty purposes, NATI recommends that you retain all receipts covering maintenance on your engine. However, NATI cannot deny warranty solely because of the lack of receipts or for your failure to ensure the completion of scheduled maintenance.*

*As the small off-road engine purchaser/owner, you should, however, be aware that NATI may deny any and/or all warranty coverage, or responsibility if your engine, or a part/component thereof, has failed due to abuse, neglect, improper maintenance, unapproved modifications, or the use of counterfeit and/or "gray market" parts not made, supplied, or approved by NATI.*

*You are responsible for presenting your engine to a NATI Authorized Warranty Service Facility as soon as a problem occurs. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.*

*Warranty service can be arranged by contacting either your selling dealer or a NATI Authorized Warranty Service Facility. To locate the NATI Authorized Service Facility nearest you, call our toll-free number:*

**1-800-348-5004**

**IMPORTANT NOTE:** *This warranty statement explains your rights and obligations under the Emission Control System Warranty (ECS Warranty), which is provided to you by NATI pursuant to California and federal law. The ECS Warranty applies only to the emission control system of your new engine. If there is any conflict in terms between the ECS Warranty and the NATI Warranty, the ECS Warranty shall apply except in circumstances where the NATI Warranty may provide a longer warranty period. Both the ECS Warranty and the NATI Warranty describe important rights and obligations with respect to your new engine.*

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*Only a NATI Authorized Warranty Service Facility can perform warranty service. When requesting warranty service, evidence must be presented showing the date of the sale to the original purchaser/owner. The purchaser/owner shall be responsible for any expenses or other charges incurred for service calls and/or transportation of the product to/from the inspection or repair facilities. The purchaser/owner shall also be responsible for any and/or all damages or losses incurred while the engine is being transported/shipped for inspection or warranty repairs.*

## **II. EMISSION CONTROL SYSTEM WARRANTY**

*Emission Control System Warranty (ECS Warranty) for 2012 and later model engines:*

- (a) Applicability: This warranty shall apply to 2012 and later model year engines. The ECS Warranty Period shall begin on the date the new engine or equipment is purchased by/delivered to its original, end-use purchaser/owner and shall continue for 24 consecutive months thereafter.*
- (b) General Emissions Warranty Coverage: NATI warrants to the original, end-use purchaser/owner of the new engine or equipment and to each subsequent purchaser/owner that each of its engines is
  - a. Designed, built, and equipped so as to conform with all applicable regulations adopted by the EPA pursuant to their respective authority, and*
  - b. Free from defects in materials and workmanship which, at any time during the ECS Warranty Period, may cause a warranted emissions-related part to fail to be identical in all material respects to the part as described in the engine manufacturer's application for certification.**

*The ECS Warranty only pertains to emission-related parts on your engine, as follows:*

- 1. Any warranted, emissions-related parts that are not scheduled for replacement as required maintenance in the Owner's Manual shall be warranted for the ECS Warranty Period. If any such part fails during the ECS Warranty Period, it shall be repaired or replaced by NATI according to subsection 4 below. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.*
- 2. Any warranted, emissions-related part that is scheduled only for regular inspection as specified in the Owner's Manual should be warranted for the ECS Warranty Period. A statement in such written instructions to the effect of "repair or replace as necessary" shall not reduce the ECS Warranty Period. Any such part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period.*

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3. *Any warranted, emissions-related part that is scheduled for replacement as required maintenance in the Owner's Manual shall be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part shall be repaired or replaced by NATI according to subsection 4 below. Any such emissions-related part repaired or replaced under the ECS Warranty shall be warranted for the remainder of the ECS Warranty Period prior to the first scheduled replacement point for such emissions-related part.*
  4. *Repair or replacement of any warranted, emissions-related part under this ECS Warranty shall be performed at no charge to the owner at a NATI Authorized Warranty Service Facility.*
  5. *When the engine is inspected by a NATI Authorized Warranty Service Facility, the owner shall not be held responsible for diagnostic costs if the repair is deemed warrantable.*
  6. *NATI shall be liable for damages to other original engine components or approved modifications proximately caused by a failure under warranty of any emission-related part covered by the ECS warranty.*
  7. *Throughout the ECS Warranty Period, NATI shall maintain a supply of warranted emission-related parts sufficient to meet the expected demand for such emissions-related parts.*
  8. *Any NATI authorized and approved emissions-related replacement parts may be used in the performance of any ECS Warranty maintenance or repairs and will be provided without charge to the purchaser/owner. Such use shall not reduce NATI's ECS Warranty obligations.*
  9. *Unapproved, add-on, modified, counterfeit, and/or "gray market" parts may not be used to modify or repair a NATI engine. Such use voids this ECS Warranty and shall be sufficient grounds for disallowing an ECS Warranty claim. NATI shall not be held liable hereunder for failures of any warranted parts of a NATI engine caused by the use of such an unapproved, add-on, modified, counterfeit, and/or "gray market" part.*

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**EMISSIONS-RELATED PARTS INCLUDE THE FOLLOWING:**

*For engine families CZHWS.0454SN*

1. *Fuel Metering System:*
  - a. *Gasoline carburetor assembly and its internal components (if so equipped).*
  - b. *Fuel Filter (if so equipped).*
  - c. *Carburetor Gaskets*
  - d. *Fuel Pump (if so equipped).*
  - e. *Fuel Hose*
  - f. *Clamps*
2. *Air Induction System including:*
  - a. *Intake Pipe/Manifold*
  - b. *Air Cleaner*
3. *Ignition System including:*
  - a. *Spark Plug*
  - b. *Ignition Module/Coil*
4. *Catalytic Muffler Assembly (if so equipped)*
  - a. *Muffler Gasket*
  - b. *Exhaust Manifold*
5. *Crankcase Breather Assembly including:*
  - a. *Breather Connection Tube*
6. *Fuel tank evaporative emissions control system include:*
  - a. *Fuel Tank*
  - b. *Fuel Cap*
  - c. *Fuel Hose*
  - d. *Clamps*
7. *Miscellaneous items used in above systems including:*
  - a. *Switches*
  - b. *Hoses, Belts, Connectors, and Assemblies*

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## Limited Manufacturer Warranty

*North American Tool Industries makes every effort to ensure that this product meets high quality and durability standards. NATI warrants to the original retail consumer a 1-year limited warranty from the date the product was purchased at retail and each product is free from defects in materials. Warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, repairs or alterations, or a lack of maintenance. NATI shall in no event be liable for death, injuries to persons or property, or for incidental, special or consequential damages arising from the use of our products. To receive service under warranty, the original manufacturer part must be returned for examination by an authorized service center. Shipping and handling charges may apply. If a defect is found, NATI will either repair or replace the product at its discretion.*

## DO NOT RETURN TO STORE

For Customer Service:

Email: [feedback@natitools.com](mailto:feedback@natitools.com) or Call 1-800-348-5004