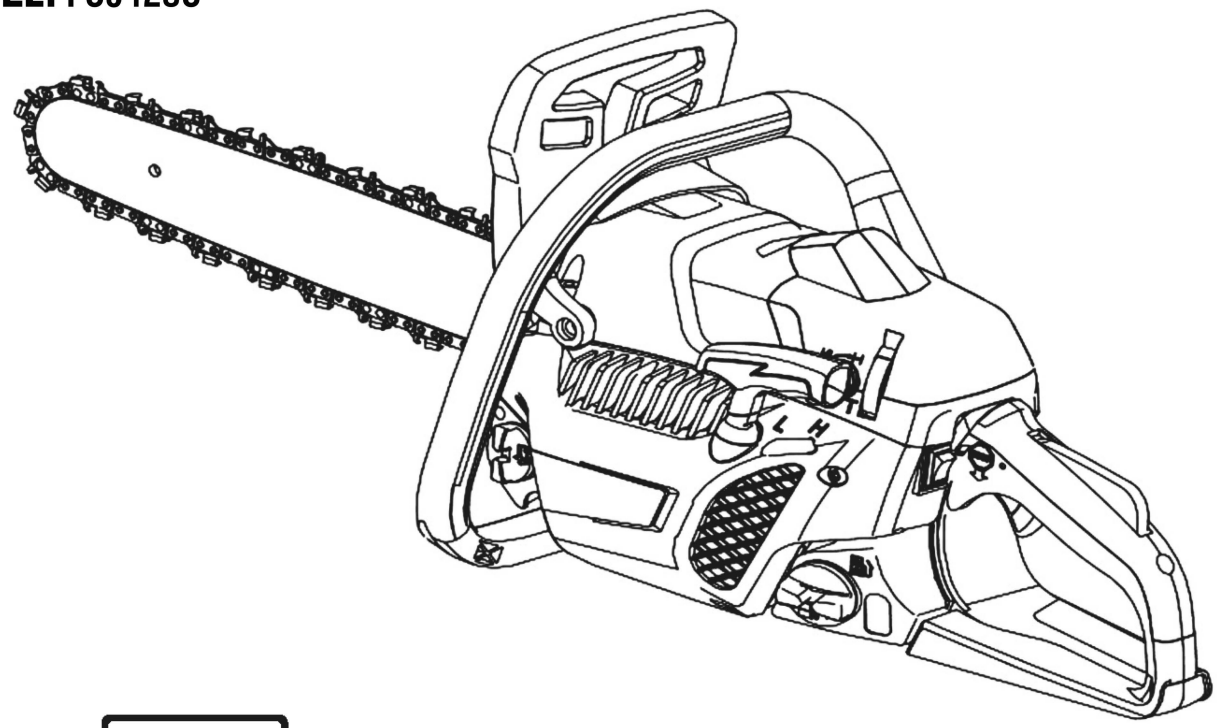
PRORUN®

GAS

Operator's Manual

CHAINSAW

MODEL: PCS420C



Everything PRORUN

Before operating, read the instructions.

⚠ **IMPORTANT - READ CAREFULLY BEFORE USE**

⚠ **IMPORTANT SAFETY INSTRUCTIONS – SAVE THESE INSTRUCTIONS**

WARNING: To reduce the risk of injury, the user must read and understand the Operator's Manual before using this product. Save these instructions for future reference.

Please let us know what you think.
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proruntech.com ★★★★★

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EN

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SAFETY FIRST

Instructions contained in warnings within this manual marked with a symbol concern critical points which must be taken into consideration to prevent possible serious bodily injury, and for this reason you are requested to read all such instructions carefully and follow them without fail.

■ WARNINGS IN THE MANUAL

WARNING

This mark indicates instructions which must be followed in order to prevent accidents which could lead to serious bodily injury or death.

IMPORTANT

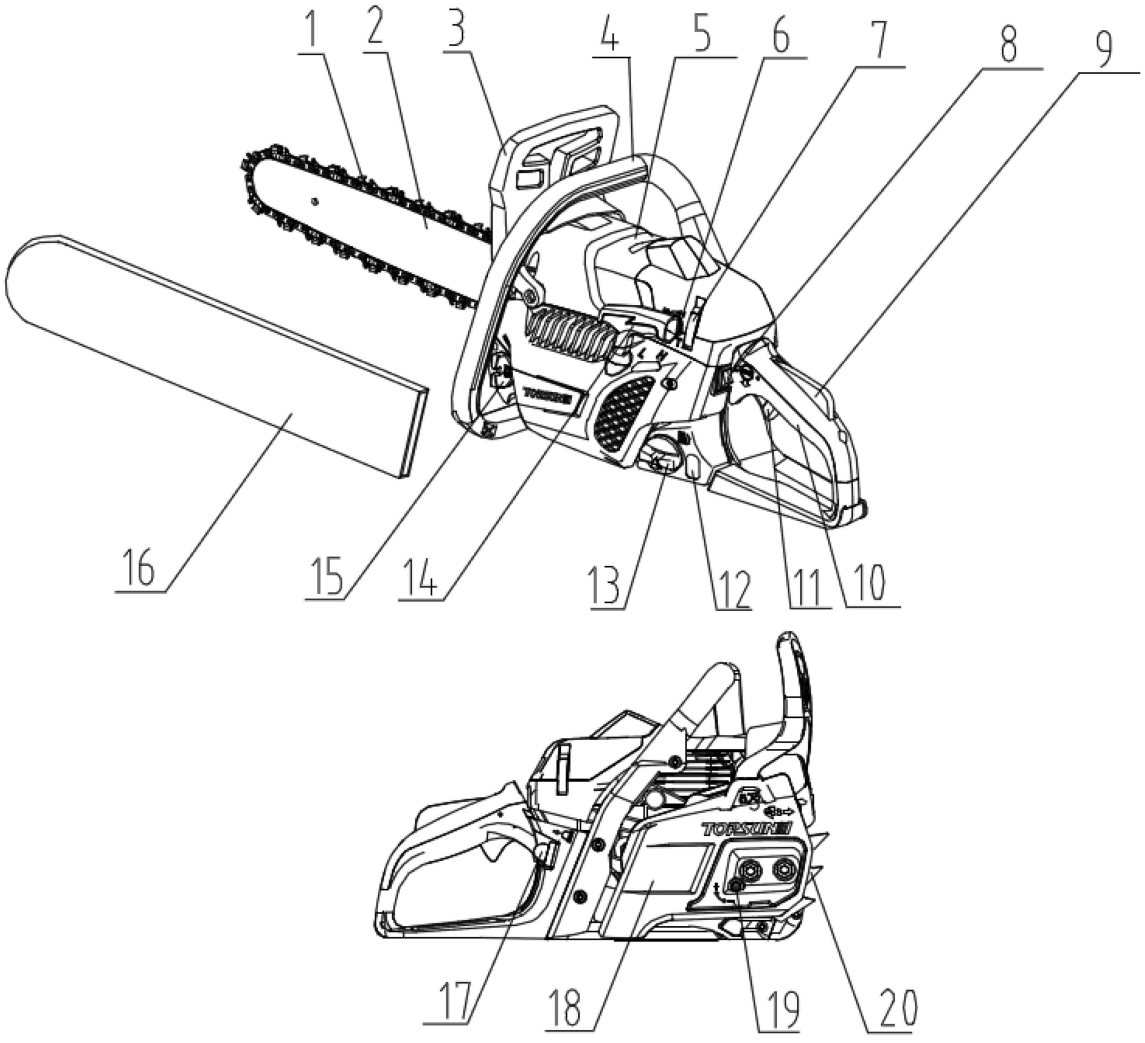
This mark indicates instructions which must be followed, or it leads to mechanical failure, breakdown, or damage.

NOTE

This mark indicates hints or directions useful in the use of the product.

1. Parts location

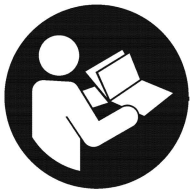
1. Saw chain
2. Guide bar
3. Front hand guard
4. Front handle
5. Cylinder shield
6. Choke knob
7. Lock lever
8. Engine switch
9. Throttle trigger lock-out
10. Rear handle
11. Throttle trigger
12. Observation window
13. Fuel tank cap
14. Starter handle
15. Oil tank cap
16. Guide bar scabbard
17. Primer bulb
18. Clutch cover
19. Chain tensioner
20. Spiked bumper



EN

2. Symbols on the machine

(1) WARNING! Read, understand, and follow all warnings.



(2) Read operator’s manual carefully before operating saw.

(3) Contact of the guide bar tip with any object should be avoided.
Tip contact may cause the guide bar to move suddenly upward and backward, which may cause serious injury.

(4) Do not operate a chain saw with one hand!
A chain saw is intended for two-handed use.

(5) Appropriate eye, hearing, and head protection devices must be worn

(7) Always wear safety and anti-vibration (AV) gloves when operating the device.

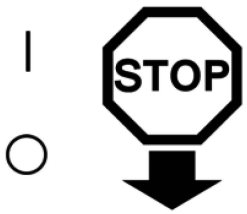
(8) Always wear safety and slip-resistant boots when operating the device.

2. Symbols on the machine

For safe operation and maintenance, symbols are carved in relief on the machine. According to these indications, please be careful not to make any mistake.

(a). The port to refuel the "MIX GASOLINE"
Position: near the fuel cap

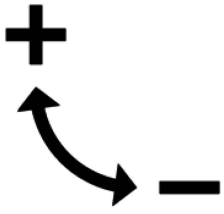
(b). The port to refuel the chain oil
Position: near the oil cap



(c). Operate the engine switch
Flipping the switch to the "O" position, immediately stops the engine.
Position: “stop” at the left side of the rear handle, “I” and “O” on the surface of switch.

(d). Operate the choke knob
Turn the choke knob clockwise, close the choke; Turn the choke knob counter-clockwise, open the choke.
Position: near the Choke knob.

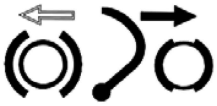
(e). Adjust the oil pump
If you turn the rod by screwdriver counterclockwise, the chain oil flows more, and if you turn it clockwise, the chain oil flows less.
Position: Bottom of the rear handle



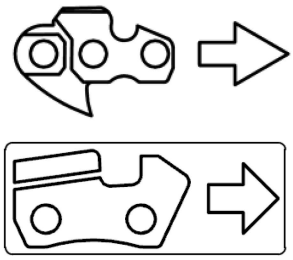
(f) Saw chain tensioner
Turn the tensioner gear clockwise to tension the saw chain, loose the saw chain in the reverse direction.
Position: Clutch cover near to the chain tensioner

2. Symbols on the machine

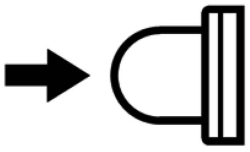
(g). The screw under the "H" stamp is The High-speed mixture adjustment screw.
The screw under the "L" stamp is The Low-speed mixture adjustment screw.
The screw up the "T" stamp is the idle speed adjustment screw.
Position: upper-left of the rear handle



(h). Shows the directions that the chain brake is released (white arrow) and activated (black arrow).
Position: Front of Clutch cover.



(i). Shows the direction of the saw chain installation.
Position: Front of Clutch cover and left of machine near the saw chain.



(j).Shows the direction of push Primer bulb.
Position: near the Primer bulb.

(K). Engine manual start.

3. For safe operation

1. Before using our products, please read this manual carefully to understand the proper use of your unit. Chainsaws shall be used in accordance with the operating instructions and safety precautions listed in the operator's manual(s). It shall be the responsibility of the owner to see that such instructions and precautions are given to every operator who uses the saw.

2. Never operate a chainsaw when you are fatigued, ill, or upset, or under the influence of medication that may make you drowsy, or if you are under the influence of alcohol or drugs.

3. Operate the chainsaw only in well-ventilated areas. Never start or run the engine inside a closed room or building. Exhaust fumes contain dangerous carbon monoxide. Lubrication oil mist and saw dust are poisonous to the operator.

4. Never cut in high wind, bad weather, when visibility is poor, or in very high or low temperatures. Always check the tree for dead branches which could fall during the felling operation.

5. Use safety and slip-resistant footwear, snug-fitting clothing, protective gloves, safety goggles, hearing protection devices, and work helmets.
It is believed that a condition called Raynaud's phenomenon, which affects the fingers of certain individuals may be brought about by exposure to vibration and cold. Loss of color and numbness in the fingers. The following precautions are strongly recommended because the minimum exposure which might trigger the ailment is unknown.
Keep your body warm, especially the head, neck, feet, ankles, hands, and wrists.
Maintain good blood circulation by performing vigorous arm exercises during frequent work breaks and also by not smoking. Keep the saw chain sharp and the saw, including the AV system, well maintained. A dull chain will increase cutting time, and pressing a dull chain through wood will increase the vibrations transmitted to your hands. A saw with loose components or with damaged or worn AV buffers will also tend to have higher vibration levels. Limit the hours of operation.
All the above mentioned precautions do not guarantee that you will not sustain white finger disease or carpal tunnel syndrome. Therefore, continual and regular users should monitor closely the condition of their hands and fingers.

3. For safe operation

If any of the above symptoms appear, seek medical advice immediately.

6. Always use caution when handling fuel. Wipe up all spills and then move the chainsaw at least ten (10) feet (three (3) m) from the fueling point before starting the engine. Allow your chainsaw to cool down before refueling.

7. Eliminate all sources of sparks or flame (e.g., smoking, open flames, or work that can cause sparks) in the areas where fuel is mixed, poured, or stored.
Do not smoke while handling fuel or while operating the chainsaw.

8. Do not allow other persons to be near the chainsaw when starting the engine or cutting wood. Keep bystanders and animals out of the work area. Children, pets, and bystanders should be a minimum of 30 feet (10 m) away when you start or operate the chainsaw. When felling, keep at least two tree lengths away from your fellow workers.

9. Never start cutting until you have a clear work area, secure footing, and planned retreat path from the falling tree. Always keep proper footing and operate the chainsaw only when standing on a fixed, secure, and level surface.

10. A chainsaw is intended for two-handed use. Do not operate a chainsaw with one hand! Serious injury to the operator, helpers, bystanders, or any combination of these persons may result from one-handed operation. Always hold the chainsaw firmly with both hands when the engine is running. Use a firm grip with thumb and fingers encircling the chainsaw handles.

11. Keep all parts of your body away from the saw chain when the engine is running. Before you start the engine, make sure the saw chain is not contacting anything.

12. Always carry the chainsaw with the engine stopped, the guide bar and saw chain to the rear, and the muffler away from your body.

13. Always inspect the chainsaw before each use for worn, loose, or changed parts. Never operate a chainsaw that is damaged, improperly adjusted, or is not completely and

securely assembled. Be sure that the saw chain stops moving when the throttle control trigger is released.

14. Only use this tool for its intended purpose: to cut wood. Do not use the unit for cutting plastic, masonry, or other non-wood building materials. Only use the unit as described in this manual.

15. Always shut off the engine before setting it down. Before fueling, servicing, or transporting your chainsaw, switch off the engine.

16. Use extreme caution when cutting small size brush and saplings because slender material may catch the saw chain and be whipped toward you or pull you off balance.

17. When cutting a limb that is under tension, be alert for spring back so that you will not be struck when the tension in the wood fibers is released.

18. Keep the handles dry, clean, and free of oil or fuel mixture.

19. Guard against kickback. Kickback is the upward motion of the guide bar which occurs when the saw chain at the nose of the guide bar contacts an object. Kickback can lead to dangerous loss of control of the chainsaw.

20. When transporting and storing your chainsaw, make sure the appropriate guide bar scabbard is in place. Securely place the machine during transport to prevent loss of fuel, damage, or injury.

21. Apply only light pressure and run the engine at full throttle while using chainsaw in order to avoid blockage of saw occurring in wood.

22. Do not operate a chainsaw in a standing tree e.g., pruning or limbing, unless you have been specifically trained to do so.

23. When a chainsaw is being used, a fire extinguisher should be available.

3. For safe operation

24. Hold the chainsaw by the insulated gripping surface only, because the chainsaw may contact hidden electrical wiring.

25. Contact PRORUN Customer Service for any questions or issues concerning this machine or its operation. All chainsaw services, other than the items listed in the Operator's Manual, should be performed by a PRORUN approved maintenance service center.

KICKBACK SAFETY PRECAUTIONS FOR CHAINSAW USERS

⚠WARNING Kickback may occur when the nose or tip of the guide bar touches an object, or when the wood closes in and pinches the saw chain in the cut. Tip contact in some cases may cause a lightning fast reverse reaction, kicking the guide bar up and back towards the operator. Pinching the saw chain along the top of the guide bar may push the guide bar rapidly back towards the operator. Either of these reactions may cause you to lose control of the saw which could result in serious personal injury.

● Do not rely exclusively on the safety devices built into your saw. As a chainsaw user you should take several steps to keep cutting jobs free from accident or injury.

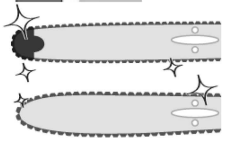
(1) With a basic understanding of kickback, you can reduce or eliminate the element of surprise. Sudden surprise contributes to accidents.

(2) Keep a good firm grip on the saw with both hands, the right hand on the rear handle, and the left hand on the front handle, when the engine is running. Use a firm grip with thumbs and fingers encircling the chainsaw handles. A firm grip will help you reduce kickback and maintain control of the saw. Don't let go.

(3) Make certain that the area in which you're cutting is free from obstructions. Do not let the nose of the guide bar contact a log, branch, or any other obstruction which could be hit while you are operating the saw.

(4) Cut at high engine speeds.

(5) Do not overreach or cut above shoulder height.



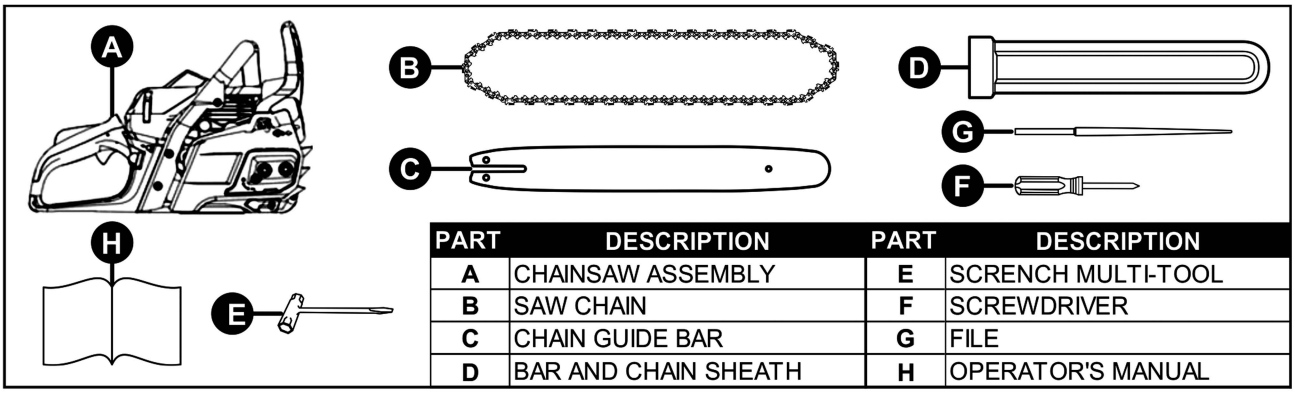
(6) Follow manufacturers sharpening and maintenance instructions for saw chain.

(7) Only use replacement bars and chains specified by the manufacturer or the equivalent.

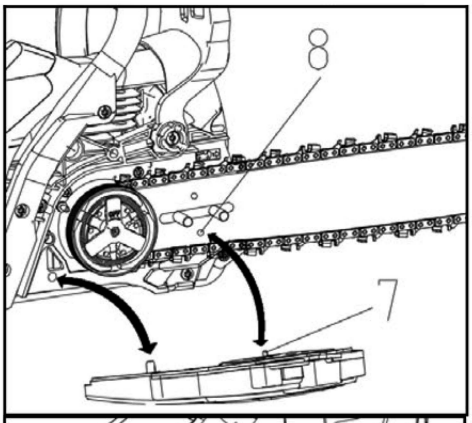
4. Installing guide bar and saw chain

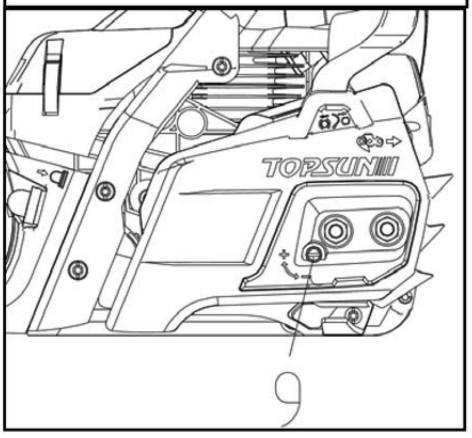
WARNING

The saw chain has very sharp edges. Use protective gloves for safety. Make sure the engine is stopped before guide bar and saw chain adjustments.



PART	DESCRIPTION	PART	DESCRIPTION
A	CHAINSAW ASSEMBLY	E	SCRENCH MULTI-TOOL
B	SAW CHAIN	F	SCREWDRIVER
C	CHAIN GUIDE BAR	G	FILE
D	BAR AND CHAIN SHEATH	H	OPERATOR'S MANUAL





Open the box and install the guide bar and the saw chain on the power unit as follows.

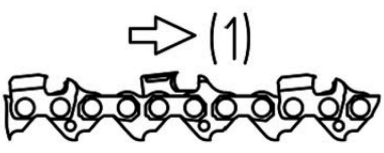
1. Pull the front handle guard towards the front handle to check that the chain brake is not on.

2. Loosen two nuts and remove the clutch cover.

3. Mount the guide bar to the power unit, while inserting the chain tensioner nut into the lower hole of the guide bar. Gear the chain to the sprocket and, while fitting the saw chain around the guide bar, install the clutch cover and fasten two nuts to finger tightness.

(7) Chain tensioner nut (8) Hole

(9) Chain tensioner screw

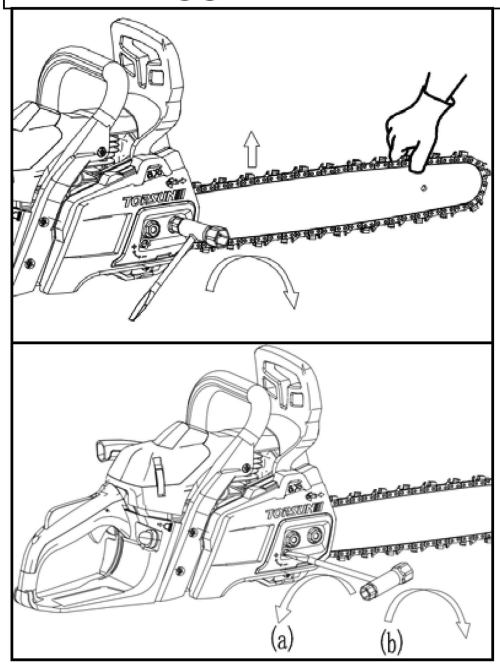


NOTE

Pay attention to the correct direction of the saw chain.

(1) Moving direction

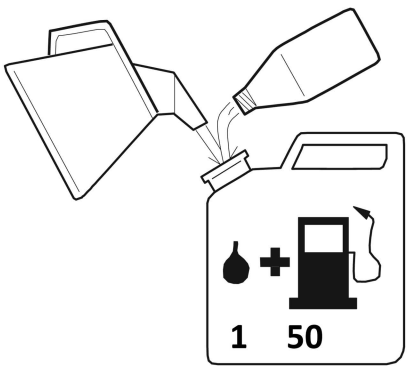
4. Installing guide bar and saw chain



6. While holding up the tip of the bar, adjust the chain tension by turning the tensioner screw until the tie straps just touch the bottom side of the bar rail.
7. Tighten the nuts securely with the bar tip held up (12 ~ 15 Nm). Then check the chain for smooth rotation and proper tension while moving it by hand. If necessary, readjust with the chain cover loose.
8. Adjust the chain tensioner screw.
(a) Turn counterclockwise: Loosen the chain
(b) Turn clockwise: Tighten the chain

IMPORTANT

It is very important to maintain the proper chain tension. Rapid wear of the guide bar or the chain coming off easily can be caused by improper tension. Especially when using a new chain, inspect regularly since it should expand when first used.
The Spiked bumper belongs to the chainsaw. It must be screwed onto the chainsaw before the initial use. Please fix the spiked bumper with two screws onto the forefront of the chainsaw.



■ Fuel

The engines are lubricated by oil specially formulated for air-cooled 2-cycle gasoline engine use. If oil is not available, use an antioxidant added quality oil expressly labeled for air-cooled 2-cycle engine use.

5. Fuel and chain oil

RECOMMENDED MIXING RATIO

GASOLINE 50 : OIL 1

These engines are certified to operate on unleaded gasoline.

■HOW TO MIX FUEL

⚠WARNING **To prevent serious injury from fire: Fill the fuel tank in a well-ventilated area away from ignition sources.** If the engine is hot from use, shut the engine off and wait for it to cool before adding fuel. Do not smoke.

1.Clean the Fuel Tank Cap and the area around it.

2. Unscrew and remove the Fuel Tank Cap.

Note: Do not use gasoline containing more than 10% ethanol (E10). Do not use E85 ethanol. Add fuel stabilizer to the gasoline or the Warranty is VOID.

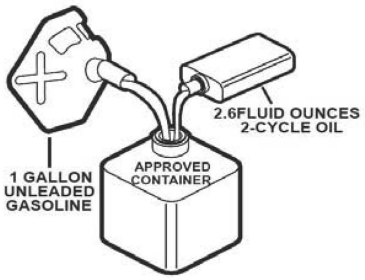
Note: Do not use gasoline that has been stored in a metal fuel container or a dirty fuel container. It can cause particles to enter the carburetor, affecting engine performance and/or causing damage.

IMPORTANT: Your Warranty is VOID if the Engine's Fuel Tank is not filled with the proper mixture (50:1) of unleaded gasoline and 2-cycle oil before each use.

2-Stroke oil must meet either JASO M345 FD or ISO-L-EGD requirements for air-cooled engines, synthetic.

Before each use, check the fuel level. Do not run the Engine with an improper unleaded gasoline/2‑cycle oil mixture. Running the Engine with an improper mixture WILL permanently damage the Engine.

3.To obtain the proper gasoline and 2-cycle oil mixture, mix 2.6 fluid ounces of 2-cycle oil with 1 gallon of unleaded gasoline into an approved container. Then gently agitate the container to thoroughly mix the gasoline/2-cycle oil.



4.If needed, fill the Fuel Tank to about 1 inch under the fill neck of the Fuel Tank with the pre‑mixed unleaded gasoline/2-cycle oil mixture.

5.Then replace the Fuel Tank Cap.

6.Wipe up any spilled fuel and allow excess to evaporate before starting engine. To prevent FIRE, do not start the engine while the smell of fuel hangs in the air.

7. Use caution when handling fuel. Move the chainsaw at least 10 feet (3 m) from the fueling point before starting the engine.

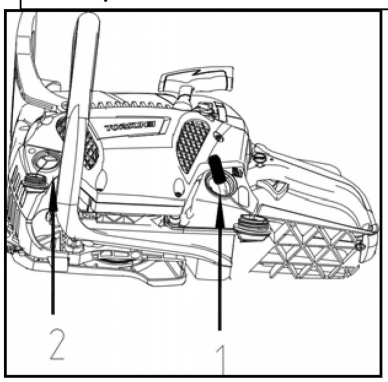
■ CHAIN OIL

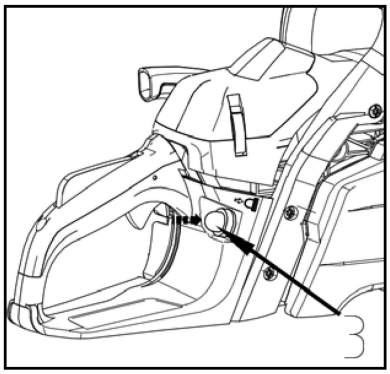
Use special chain saw oil all year round.

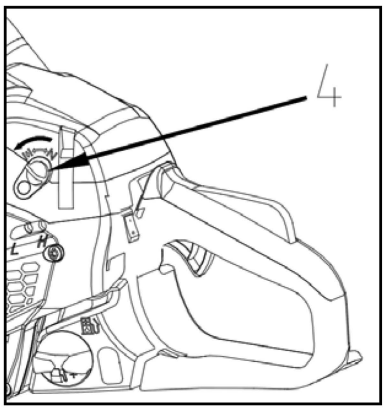
NOTE

Do not use waste or regenerated oil that can cause damage to the oil pump.

6. Operation







■ STARTING ENGINE

Cold starting: A “cold” start of the engine means starting it after at least 10 minutes from when it was switched off or after refueling.

1. Untwist the fuel cap and oil cap thoroughly, but don’t remove them from machine, just hang up them.
2. Put fuel and oil into the fuel tank and the oil tank to 80% of the full capacity.
3. Fasten two caps securely and wipe up any fuel spillage around the unit.
4. Continuously push the priming bulb until fuel comes in the bulb.

(1) Fuel tank opening (2) Oil tank opening
(3) Primer bulb (4) Choke knob

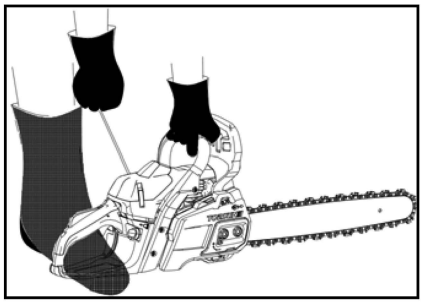
5. Turn the choke knob clockwise. The choke will close and the throttle trigger will then be set in the starting position.

NOTE

When restarting immediately after stopping the engine set choke in the open position.

6. Push the front handle guard down toward the front to activate the chain brake.
7. While holding the chainsaw securely on the ground, Grip the starter handle, slowly pull out the cord with your right hand until you feel some resistance (the starter pawls grip), and now quickly and powerfully pull the cord. **Never twist the starter cord around**

6. Operation



your hand.

8. When first firing occurs, turn the choke knob counterclockwise to open the choke.

Note: setting the choke manually can temporarily set the throttle in a partially open position to aid starting.

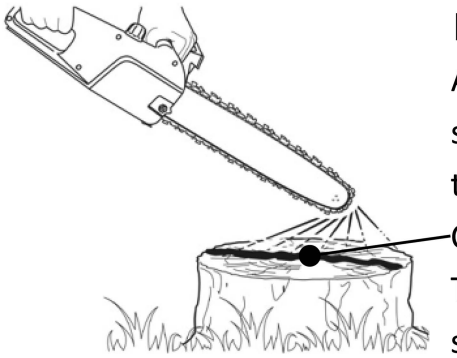
9. Hold the chainsaw securely on the ground, and repeat pulling the cord until the engine starts.

10. Pull up the front handle guard toward the front handle to release the brake. Then, allow the engine to warm up with the trigger pulled slightly.

⚠WARNING Before you start the engine, make sure the saw chain is not contacting anything. Make sure the chain brake is always activated before each starting.

Hot starting:

To hot start the engine immediately after it has stopped, follow steps 1 – 2 – 3 – 4 – 6– 9 – 10 of the above procedure, making sure the primer bulb is activated 2-3 times only.

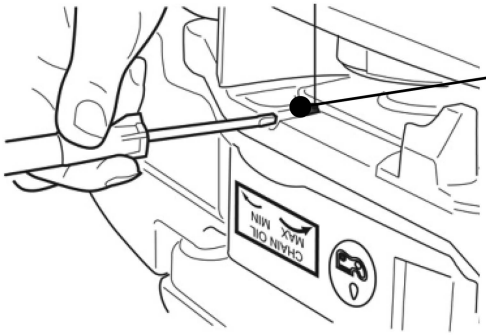


■CHECKING OIL SUPPLY

After starting the engine, run the chain at medium speed and see if chain oil is scattered off as shown in the figure.

Chain oil

The chain oil flow can be changed by inserting a screwdriver in the hole on bottom of the clutch side. Adjust according to your work conditions.



Chain oil flow adjusting shaft

Turn the shaft clockwise – Flow rich

Turn the shaft counterclockwise – Flow lean

❗IMPORTANT

The oil tank should become nearly empty by the time fuel is used up. Be sure to refill the oil tank every time when refueling the saw.

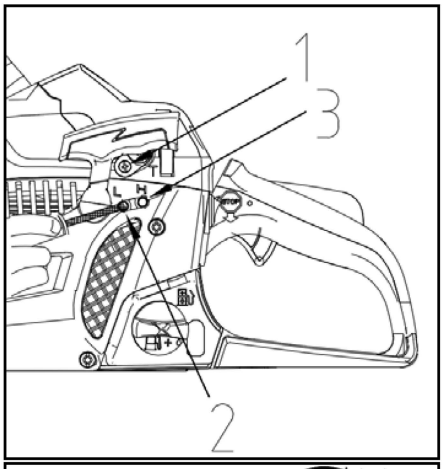
6. Operation

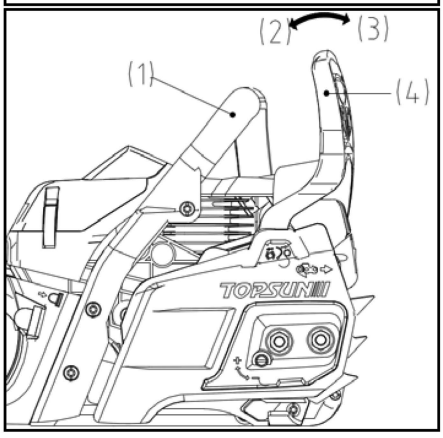
■CHECKING FUNCTIONALITY OF THE CLUTCH

Before each use, you should confirm that there is no chain movement when the chain saw is running at idling speed.

■ ADJUSTING CARBURETOR

The carburetor on your unit has been factory adjusted but may require fine tuning due to change in operating conditions. If the carburetor needs to be adjusted, contact PRORUN Customer Service for assistance. Don't adjust it by yourself without proper instructions. Before adjusting the carburetor, make sure that air/fuel filters are clean and fresh, and fuel is properly mixed.





When adjusting, take the following steps:

IMPORTANT

Be sure to adjust the carburetor with the bar chain attached.

1. H and L needles are restricted within the number of turn as shown below.

H needle –1/4 L needle –1/4

2. Start engine and allow it to warm up at a low speed for a few minutes.
3. Turn idle adjusting screw (T) counterclockwise so that saw chain does not turn. If idling speed is too slow, turn the screw clockwise.
4. Make a test cut and adjust the H needle for best cutting power, not for maximum speed.

(1) Idle adjusting screw (2) L needle
(3) H needle

■CHAIN BRAKE

The chain brake is a device which stops the chain instantaneously if the chainsaw recoils due to kickback.

(1) Front handle (2) Release (3) Brake (4) Front handle guard

Normally, the brake is activated automatically by inertial force. It can also be activated manually by pushing the brake lever (Front handle guard) down toward the front. When the brake operates, a white cone is visible at the base of the brake lever.

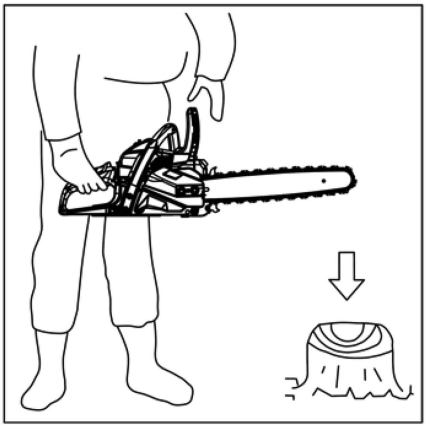
6. Operation

To release brake, pull up the front handle guard toward the front handle till “click” sound is heard.

⚠WARNING

When the brake operates, release the throttle trigger to slow down the engine speed. Continuous operation with the brake engaged will generate heat from the clutch and may cause trouble.

Be sure to confirm brake operation on the daily inspection.



How to confirm:

1) Turn off the engine.

2) Holding the chainsaw horizontally, release your hand from the front handle, hit the tip of the guide bar to a stump or a piece of wood, and confirm brake operation. Operating level varies by bar size.

In case the brake is not effective, contact PRORUN Customer Service.

■• CARBURETOR ANTI-FREEZE MECHANISM

Operating chain saws in temperatures of 32° - 41° F (0° - 5° C) during times of high humidity may result in ice forming within the carburetor, and this may cause the output power of the engine to be reduced or for the engine to fail to operate smoothly.

This product has accordingly been designed with a ventilation hatch on the right side of the surface of the cylinder cover to allow warm air to be supplied to the engine and to thereby prevent icing from occurring.

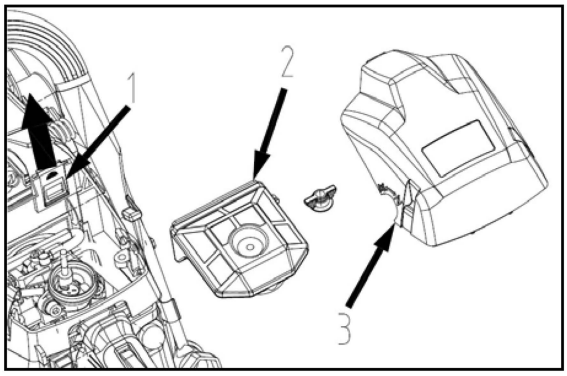
Under normal circumstances the product should be used in the normal operating mode, i.e., in the mode which it is set at the time of shipment.

However, when the possibility exists that icing may occur, the unit should be set to operate in the anti-freeze mode before use.

Continuous use of the product in the anti-freeze mode even when temperatures have risen and returned to normal may result in the engine failing to start properly or in the engine failing to operate at its normal speed. For this reason, you should always be sure to return the unit to the normal operating mode if there is no danger of icing occurring.

6. Operation

HOW TO SWITCH BETWEEN OPERATING MODES



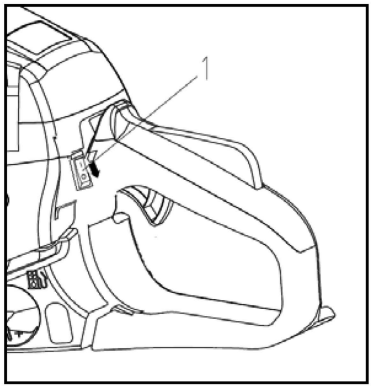
(1) Icing cap
(2) Air filter
(3) Air filter cover

1. Flip the engine switch to turn off the engine.
2. Remove the cover to the air filter and remove the air filter.
3. Press with your finger down on the icing cap located on the right-hand side of the cylinder cover to remove the icing cap.
4. Adjust the icing cap so that the “snow” mark faces upwards and then return it to its original position in the cylinder cover.
5. Fix all other parts back into their proper positions.

■ Stopping engine

1. Release the throttle trigger to allow the engine idling for a few minutes.
2. Press down the “0” side of switch.

(1) Engine switch

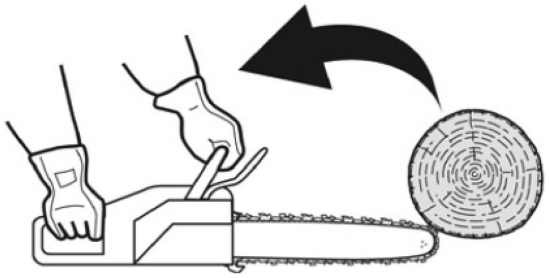


7. Sawing

⚠WARNING

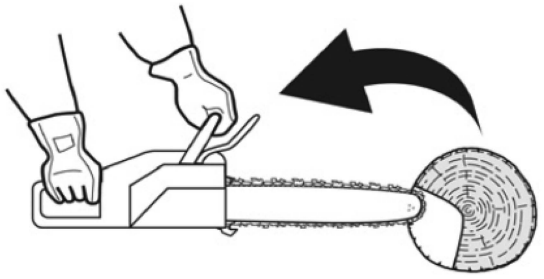
Before proceeding to your job, read the "For Safe Operation" section. It is recommended to first practice sawing easy logs. This also helps you get accustomed to your unit.

Always follow all the safety regulations for the use of the machine. The chainsaw must only be used for cutting wood. It is forbidden to cut other types of material. Vibrations and kickback vary with different materials and the requirements of the safety regulations would not be respected. Do not use the chain saw as a lever for lifting, moving, or splitting objects. Do not lock it over fixed stands. It is forbidden to hitch tools or applications to the P.T.O. that are not specified by the manufacturer.

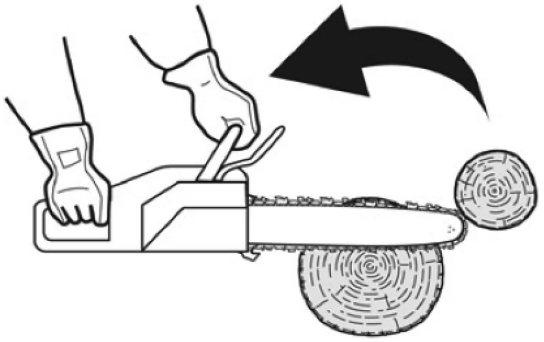


It is not necessary to force the saw into the cut. Apply only light pressure while running the engine at full throttle.

It is recommended to conduct daily inspections before use and after dropping or other impacts to identify significant damage or defects.



Racing the engine with the chain seized in a cutaway can damage the clutch system. When the saw chain is caught in the cut, do not attempt to pull it out by force, but use a wedge or a lever to open the cut.



■ **Guard against kickback**

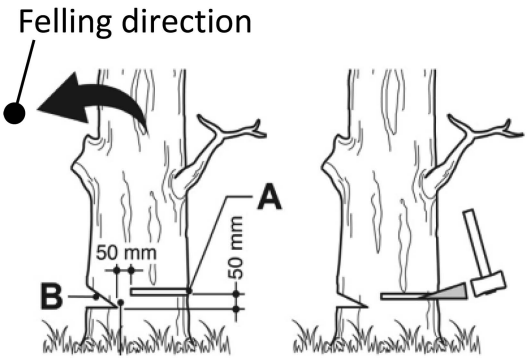
This saw is also equipped with a chain brake that will stop the chain in the event of kickback if operating properly. You must check the chain brake operation before each usage by running the saw at full throttle will stop the chain in the event of kickback if operating properly. You must check the chain

brake operation before each usage by running the saw at full throttle
for 1 or 2 seconds and pushing the front hand guard forward. The chain should stop immediately with the engine at full speed. If the chain is slow to stop or does not stop, contact PRORUN Customer Service before use.

It is extremely important that the chain brake be checked for proper operation before each use and that the chain be sharp in order to maintain the kickback safety level of this saw. Removal of the safety devices, inadequate maintenance, or incorrect replacement of the bar or chain may increase the risk of serious personal injury due to kickback.

■ **Felling a tree**

1. Decide the felling direction considering the wind, lean of the tree, location of heavy branches, ease of job after felling, and other factors .
2. While clearing the area around the tree, arrange a good foothold and retreat path.
3. Make a notch cut one-third of the way into the tree on the felling side.
4. Make a felling cut from the opposite side of the notch and at a level slightly higher than the bottom of the notch.



⚠WARNING

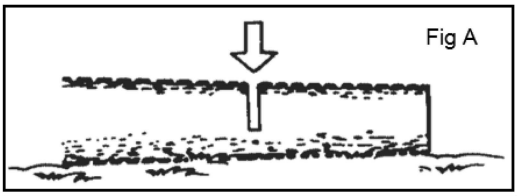
When you fell a tree, be sure to warn your neighboring workers of the danger.
(A) Felling cut
(B) Notch cuts

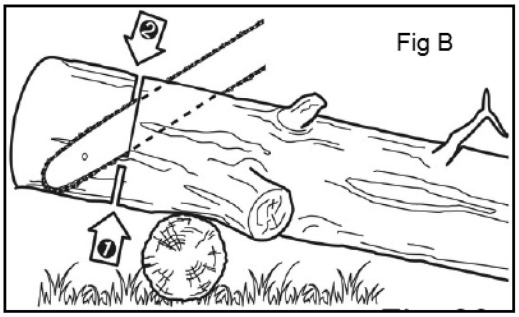
7. Sawing

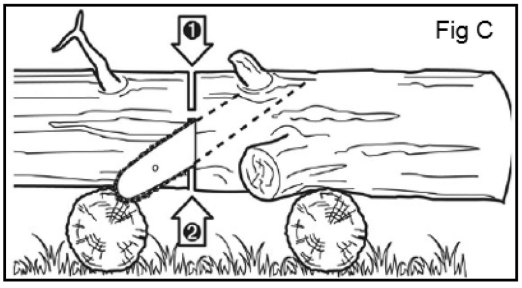
■LOGGING AND LIMBING

⚠WARNING

1. Always ensure your foothold as well as the stability of the tree.
2. Be alert to the rolling over of a cut log.
3. Read the instructions in “For Safe Operation” to avoid kickback of the saw.







Before starting work, check the direction of bending force inside the log to be cut.

Always finish cutting from the opposite side of bending direction to prevent the guide bar from being caught in the cutaway.

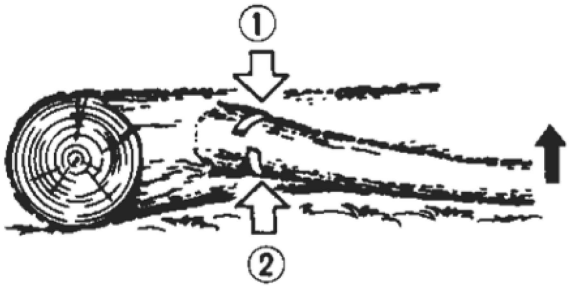
Cutting an unsupported log (Fig A)

Saw down halfway, then roll the log over and cut from the opposite side.

Cutting a supported log

When log is supported as in Fig B, saw up from the bottom one-third and finish by sawing down from the top.

When log is supported as in Fig C, saw down from the top one-third and finish by sawing up from the bottom.



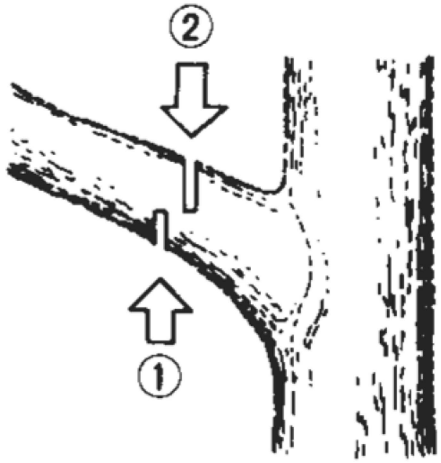
Limbing a felled tree

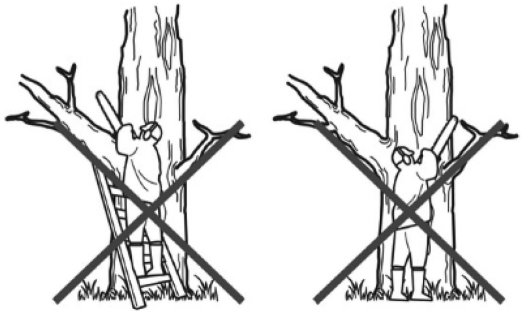
First check which way the limb is bent. Then make a shallow cut into the compressed side to prevent the limb from being torn. Cut through from the tensed side.

⚠WARNING

Be alert to the spring back of a cut limb.

7. Sawing





Pruning

Cut up from the bottom, finish down from the top.

⚠WARNING

1. Do not use an unstable foothold or a stepladder.
2. Do not overreach.
3. Do not cut above shoulder height.
4. Always use both hands to grip the saw.

⚠WARNING

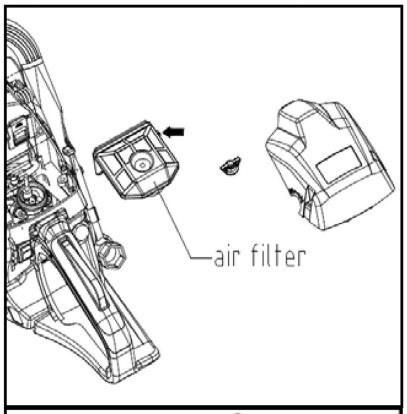
The Spiked bumper must always be installed when using the chainsaw on tree trunk. Push the spiked bumper into the tree trunk by using the rear handle. Push the front handle in the direction of cutting line. The spiked bumper should remain set for future saw guiding if necessary. Use of a spiked bumper when cutting trees and thick branches can ensure your safety, decrease the working effort, and reduce vibration level.

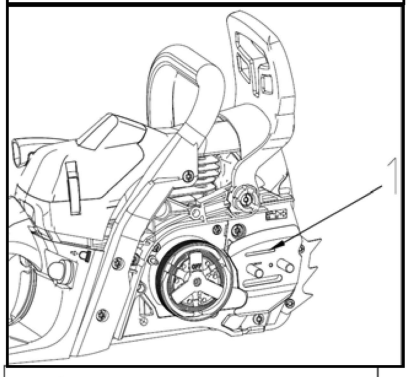
If there is a barrier between the cutting material and chainsaw, turn off the machine. Wait until it stops completely. Wear safety gloves and remove the barrier. If the chain must be removed, please follow the instructions within manual. A trial run must be conducted after cleaning and new installation. If vibration or mechanical noise is discovered, please stop the machine and contact PRORUN Customer Service.

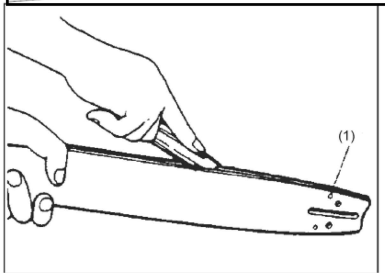
8. Maintenance

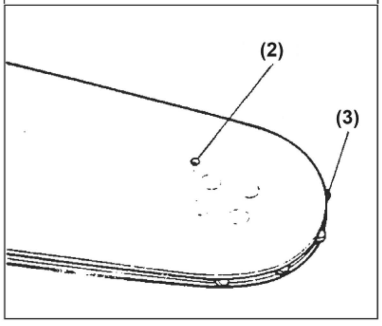
⚠WARNING

Before cleaning, inspecting, or repairing your unit, make sure that the engine has stopped and is cool. Disconnect the spark plug to prevent accidental starting.
Follow the instructions to carry out regular maintenance, pre-operating procedures, and daily maintenance routines. Improper maintenance may result in serious damage to the machine.
Keep your chainsaw in good working condition always.









■ Maintenance after each use

1. Air filter

Dust on the air filter surface can be removed by tapping a corner of the filter against a hard surface.
To clean dirt in the meshes, split the filter into halves and brush in gasoline. When using compressed air, blow from the inside.
To assemble the filter halves, press the rim until it clicks.

2. Oiling port

Dismount the guide bar and check the oiling port for clogging.

(1) Oiling port

3. Guide bar

When the guide bar is dismounted, remove sawdust in the bar groove and the oiling port.
Grease the nose sprocket from the feeding port on the tip of the bar.
(1) Oiling port
(2) Grease port
(3) Sprocket

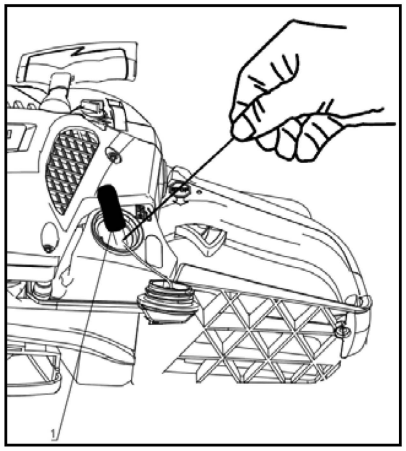
4. Others

Check for fuel leakage and loose fastenings and damage to major parts, especially handle joints and guide bar mounting. If any defects are found, make sure to have them repaired before operating again.

■Periodical service points

1. Cylinder fins

Dust clogging between the cylinder fins will cause overheating of the engine. Periodically check and clean the cylinder fins after removing the air cleaner and the cylinder cover.



When installing the cylinder cover, make sure that switch wires and grommets are positioned correctly in place.

2. Fuel filter

(a) Using a wire hook, take out the filter from the filler port.

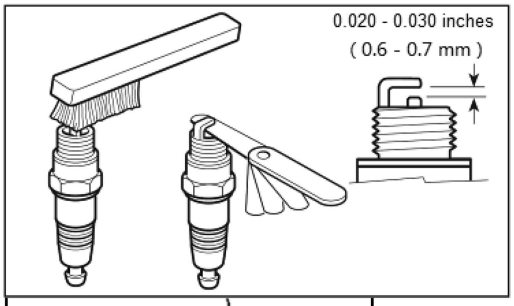
(1) Fuel filter

(b) Disassemble the filter and wash with gasoline or replace with a new one if needed.

IMPORTANT

• After removing the filter, use a pinch to hold the end of the suction pipe.

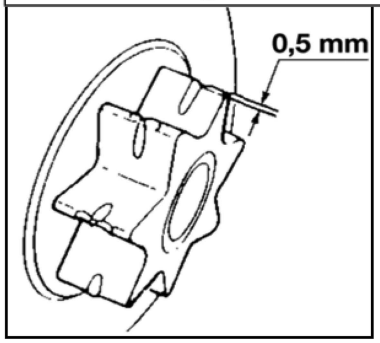
• When assembling the filter, take care not to allow filter fibers or dust inside the suction pipe.



3. Spark plug

Clean the electrodes with a wire brush and reset the gap to 0.20 – 0.30 inches (0.6-0.7 mm) as necessary.

Spark plug type： see chapter Specifications.



4. Sprocket

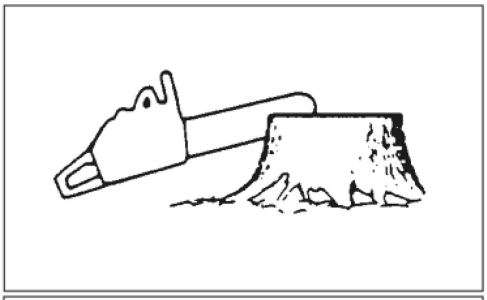
Check for cracks and for excessive wear interfering with the chain drive. If the wear is considerable, replace it with new one. Never fit a new chain on a worn sprocket, or a worn chain on a new sprocket.

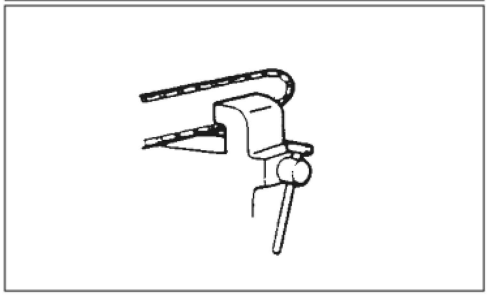
8. Maintenance

5. Front and Rear absorber spring

Replace if spring is deformed.

Use only the spare parts which are listed in this manual. Use of unauthorized spare parts can cause serious injury.





■ **Saw chain**

⚠WARNING

It is very important for smooth and safe operation to always keep the cutters sharp.

Your cutters need to be sharpened when:

- Sawdust becomes powder-like.
- You need extra force to saw in.
- The cut way does not go straight.
- Vibration increases.
- Fuel consumption increases.

Cutter setting standards:

⚠WARNING

Be sure to wear safety gloves.

Before filing:

- Make sure the saw chain is held securely.
- Make sure the engine is stopped.
- Use a round file of proper size for your chain.

Chain type: 91P

File size: 5/32 inch (4.0mm).

Place your file on the cutter and push straight forward.

Keep the file position as illustrated.

After every cutter has been set, check the depth gauge and file it to the proper level as illustrated.

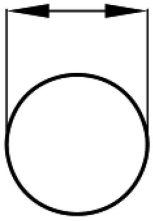
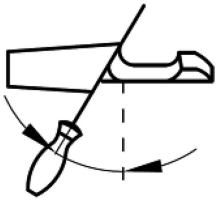
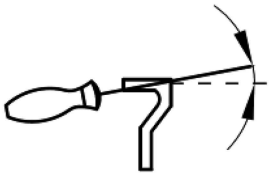
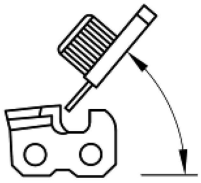
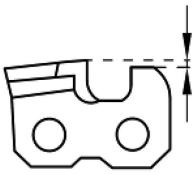
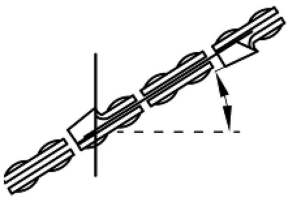
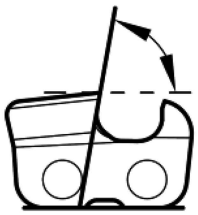
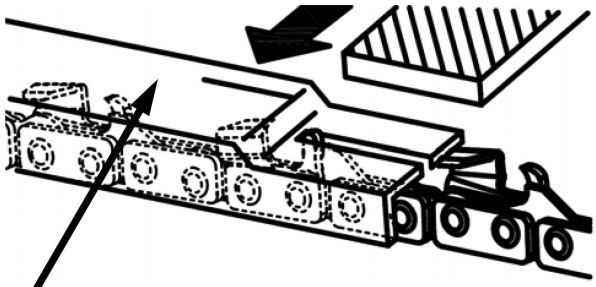
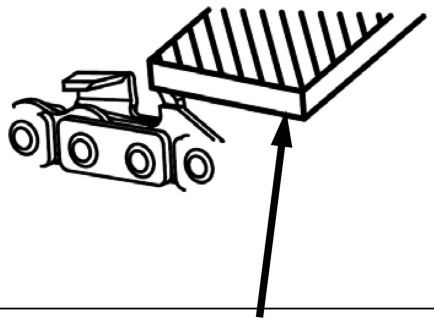
Be sure to round off the front edge to reduce the chance of kickback or tie-strap breakage.

EN

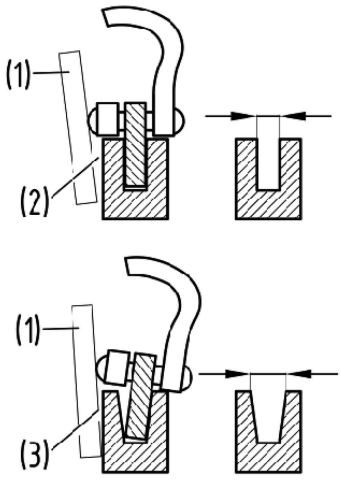
9. Maintenance of Saw Chain and Guide Bar

Make sure every cutter has the same length and edge angles as illustrated.

Do not to use a replacement saw chain unless it has been designated as meeting the kickback performance requirements in ANSI/OPEI B175.1-2012 or has been designated as low kickback replacement saw chain in accordance with ANSI/OPEI B175.1-2012.

<table>
<tr><td rowspan="4">Type of chain</td><td>File diameter</td><td>Top plate angle</td><td>Down angle</td><td>Head tilt angle (55°)</td><td>Depth gauge standard</td></tr>
<tr><td rowspan="2">  </td><td>  </td><td>  </td><td>  </td><td rowspan="3">  </td></tr>
<tr><td>Vise rotate angle</td><td>Vise tilt angle</td><td>Side angle</td></tr>
<tr><td>  </td><td>  </td><td>  </td></tr>
<tr><td>91S</td><td>5/32 inch</td><td>30°</td><td>0°</td><td>80°</td><td>0.050 inch</td></tr>
<tr><td colspan="4">  </td><td colspan="2">  </td></tr>
<tr><td colspan="4">Depth gauge</td><td colspan="2">File</td></tr>
</table>

9. Maintenance of Saw Chain and Guide Bar



Guide bar

• Reverse the bar occasionally to prevent partial wear.

• The bar rail should always be a square. Check for wear of the bar rail. Apply a ruler to the bar and the outside of a cutter. If a gap is observed between them, the rail is normal. Otherwise, the bar rail is worn. Such a bar needs to be corrected or replaced.

(1) Ruler (2) Gap (3) No gap (4) Chain tilts

⚠WARNING

The table contains a list of all possible combinations between bar and chain, indicating those which may be used on each machine, marked with the symbol "∗".

Pitch	Guide bar				Chain		Chain saw model
Zoll	Length Inches	Groove width Inches/mm	Code	Number of nose teeth	Code	Number of drive links	PCS420C
3/8"	16 inches (40cm)	0.050 inch (1.3mm)	160SDEA041	6	91P057X	57	∗
	18 inches (45 cm)		180SDEA041	6	91P063X	63	∗

For replacement, use only the above specified bars and chains. The use of non-approved combinations may cause serious personal injury and damage to the machine

Contact PRORUN Customer Service for any questions or issues concerning this machine or its operation. All chainsaw services, other than the items listed in the Operator's Manual, should be performed by a PRORUN approved maintenance service center.

10. Storage and transporting

1. Empty the fuel tank and run the engine out of fuel.
2. Empty the oil tank.
3. Clean and maintain the entire unit.
4. Store the unit in a dry place out of the reach of children.
5. When storing or transporting your chain saw, use the appropriate guide-bar cover.

11. Waste disposal and environmental protection

Never pour remainders of chain lubricant or 2-stroke fuel mixture in the drain or sewerage system or soil. Dispose of it in a proper, environmentally friendly way, e.g., at a special collecting point or dump.

If your device should become useless somewhere in the future or you do not need it any longer, do not dispose of the device together with your domestic refuse, but dispose of it in an environmentally friendly manner. Thoroughly empty the oil/lubricant and fuel tanks and dispose of the remainders at a special collecting point or dump. Please dispose of the device at an official collecting/recycling point. Information concerning the disposal of materials and devices are available from your local administration.

12. Troubleshooting guide

PROBLEM	CAUSE	REMEDY
1) Starting failure	– Check fuel for water or substandard mixture.	– Replace with proper fuel.
	– Check for engine flooding.	– Remove and dry the spark plug. – Then pull the starter again, with no choke.
	– Check spark ignition.	– Replace with a new plug.
2) Lack of power/Poor acceleration/ Rough idling	– Check fuel for water or substandard mixture.	– Replace with proper fuel.
	– Check air filter and fuel filter for clogging.	– Clean.
	– Check carburetor for inadequate adjustment.	– Readjust speed needles.
3) Oil does not come out	– Check oil for substandard quality.	– Replace.
	– Check oil passage and ports for clogging.	– Clean.

If the unit requires further service, please contact PRORUN Customer Service.

13. Specifications

Power unit:	PCS420C
Displacement:	41.9 cc
Maximum engine power:	3.0 HP / 1.7 kW
Fuel:	Mixture (Unleaded Gasoline 50: two-cycle oil 1)
Fuel tank capacity:	9.5 oz. (280cm^3)
Chain oil:	Engine oil SAE#10W-30
Oil tank capacity:	7.8 oz. (230cm^3)
Carburetor:	Diaphragm type
Idling speed range:	3000±400 min^{-1}
Maximum speed with cutting attachment:	12000 min^{-1}
Ignition system:	C.D.I. with timing advance function
Spark plug:	CHAMPION RCJ7Y, TORCH L7RTC, BOSCH L8RTF, DENSO W22MPR, NGK BPMR7A
Sprocket Teeth x Pitch:	6T X 3/8 inch (9.525 mm)
Dimensions (L x W x H):	16.14 X 9.84 X 10.62 inches (410 X 250 X 275 mm)
Dry weight (without guide bar and chain, empty tanks):	10.5 lbs. (4.75 kg)
Sound pressure level at operation position (EN ISO 22868) L_{pA}:	100.6 dB(A)
Vibration Value (EN ISO 22867):	
Front handle:	6.34 m/s^2
Rear handle:	7.85 m/s^2
Uncertainty of stated value (2006/42EC):	1.5 m/s^2
Cutting head:	
Guide bar	
Type:	Sprocket nose
Size:	18 inches
Cutting length:	
Type:	91P

Pitch:	0.375 inch (9.525 mm)
Gauge:	0.050 inch (1.27 mm)

Combinations of guide bar/ saw chain:

1) Oregon 160SDEA041 / Oregon 91P057X
2) Oregon 180SDEA041 / Oregon 91P063X

Specifications are subject to change without notice.

Parts List and Diagram

Part List

No.	Description	Qty
A	Brake Assembly	1
A1	Self-Tapping Screw ST4×10	5
A2	Brake Spring Cover Plate	1
A3	Screw M4×8	1
A4	Tensioner Cover Plate	1
A5	Brake Spring	1
A6	Brake Strap	1
A7	Pin 3×9	3
A8	Self-Tapping Screw ST4×10	3
A9	Brake Control Rod	1
A10	Pin 3.05×9	3
A11	Secondary Pull-Rod	1
A12	Main Level	1
A13	Right Cover Assembly	1
A14	Driven Gear	1
A15	Driving Gear	1
A16	Nut M8	2
A17	Nut Plate	1
A18	Tightener Screw	1
A19	Tension Block	1
A20	Flat Washer	2

No.	Description	Qty
B	Tank, Fuel, Bale Handle Assembly	1
B1	Oil Cover	1
B2	Packing Washing	1
B3	Anti-Drop Plate	1
B4	Shock-Reducing Rubber	2
B5	Self-Tapping Screw STSt5×14	3
B6	Self-Tapping Screw ST4×10	1
B7	Plate	1
B8	Fuel Tank Assembly	1
B9	Self-Tapping Screw St4.8×16	1
B10	Damping Spring Socket	3

No.	Description	Qty
B11	Damping Spring	3
B12	Self-Tapping Screw ST4.8×16	2
B13	Gasoline Filter	1
B14	Circlip	1
B15	Tubing Bridge	1
B16	Oil Tube2.5×5×100	1
B17	Oil Tube2.5×5×200	1
B18	Balancer Body	1
B19	Balancer Seat	1
B20	Oil Vacuole	1
B21	Oil Tube2.5×5×60	
B22	Pin Φ3×25	1
B23	Limited Block	1
B24	Trigger Torsion Rod Spring	1
B25	Trigger	1
B26	Trigger Control Rack	1
B27	Limited Block	1
B28	Cable Accelerator	1
B29	Handle Cover	1
B30	Self-Tapping Screw ST4.8×12	1
B31	Bale Handle	1
B32	Self-Tapping Screw ST4.8×16	3

No.	Description	Qty
C	Starter Assembly	1
C1	Label	1
C2	Screw M5×20	1
C3	Start Cover	1
C4	Pull Cord Sheath	1
C5	Starter Pull Cord	1
C6	Starter Handle	1
C7	Bossing	1
C8	Start Coil Spring	1
C9	Coil Spring Cover	1

Parts List and Diagram

Part List

No.	Description	Qty
C10	Start Plate	1
C11	Easy Start-Coil Spring	1
C12	Easy Start-Coil Spring Cover	1
C13	Flat Washer Φ5	1
C14	Self-Tapping Screw ST4.8×13	1
C15	Self-Tapping Screw ST4.8×16	3

No.	Description	Qty
D	Air Intake System	1
D1	Self-Tapping Screw ST4.8×12	1
D2	Rubber Seal	1
D3	Air Filter Assembly	1
D4	Rotary Knob	1
D5	Screw M5×50	2
D6	Air Intake Socket	1
D7	Carburetor	1
D8	Throttle Rod	1
D9	Fixed Seat For Carburetor	1
D10	Suction Tube Circlip 3×6.5×110	1
D11	Circlip	1
D12	Self-Tapping Screw ST4.8×12	2
D13	Screw M5×20	2
D14	Hold Coil	1
D15	Dummy Plate	1
D16	Air Intake Tube	1
D17	Hold Coil	1
D18	Drive Pipe Φ7×90	1

No.	Description	Qty
E	Cutting System	1
E1	Guide Bar 18 Inch	1
E2	Saw Chain 18 Inch	1
E3	Guide Sleeve 18 Inch	1

No.	Description	Qty
1	Screw M4×20	2
2	Extinction Conductor	1
3	Igniter	1
4	Nut M8×1	1
5	Flywheel	1
6	Semicircular Key	1
7	Rubber Sleeve	1
8	Tapping Screw ST4×12	2
9	Screw M5×25	4
10	Oil Seal 12×22×7	1
11	Circuit Board	1
12	Left Case Body	1
13	Bearing 6201 Grade D	2
14	Crankshaft	1
15	Piston Pin Clip	2
16	Piston Pin	1
17	Needle Bearing 10×14×12	1
18	Needle Bearing Ring	2
19	Piston	1
20	Piston Ring	2
21	Cylinder Gasket	1
22	Cylinder	1
23	Screw M5×20	4
24	Screw M5×10	1
25	Cover Plate	1
26	Screw M5×20	2
27	Screw M5×20	1
28	Muffler Assembly	1
29	Support Column	1
30	Muffler Sealing Plate	1
31	Spark Plug	1
32	Dead Plate	2
33	Snap Joint	2

Parts List and Diagram

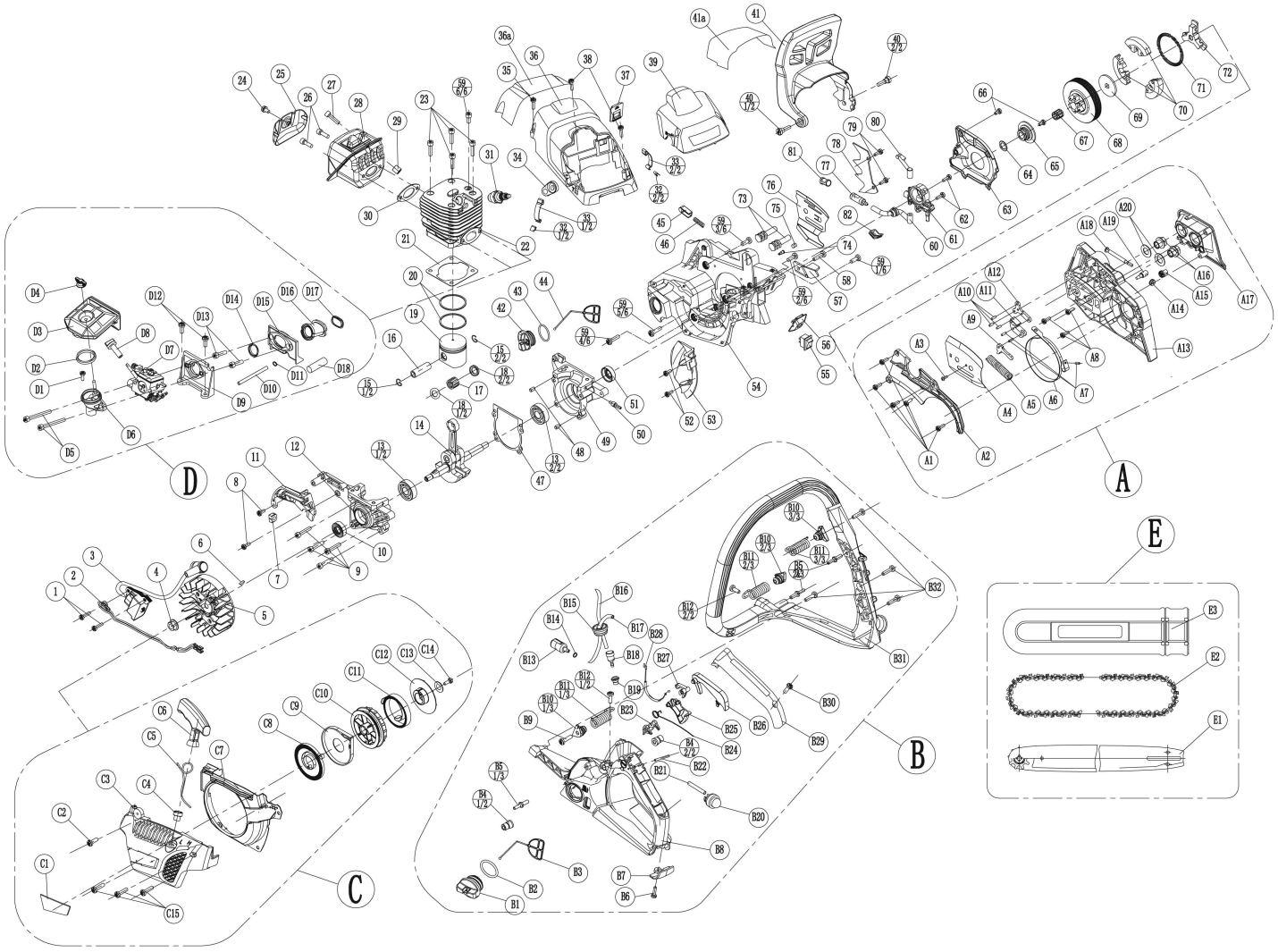
Part List

No.	Description	Qty
34	Idle Adjusting Guide Set	1
35	Self-Tapping Screw ST4×16	1
36	Top Housing	1
36A	Label	1
37	Hot Blast Valve	1
38	Self-Tapping Screw ST4×22	2
39	Air Filter Cover	1
40	Screw	2
41	Handle Guard	1
41A	Label	1
42	Fuel Cover	1
43	Rubber Seal	1
44	Anti-Drop Plate	1
45	Reset Device	1
46	Reset Spring	1
47	Case Body Sealing Plate	1
48	Pin Φ5×10	2
49	Right Case Body	1
50	Suction Jet	1
51	Oil Seal 12×22×7	1
52	Self-Tapping Screw ST4×12	2
53	Sir Deflector	1
54	Engine Base	1
55	Extinction Switch	1
56	Shoe Block	1
57	Chain Catcher	1

No.	Description	Qty
58	Self-Tapping Screw ST4.8×16	1
59	Screw M5×14	6
60	Oil Tube	1
61	Oil Pump	1
62	Screw M4×12	2
63	Cover Plate	1
64	Turbine Gasket 10×18×1	1
65	Turbine Worm Gear	1
66	Self-Tapping Screw St4×12	2
67	Needle Bearing10×13×13	1
68	Clutch Shell	1
69	Clutch Adjusting Washer	1
70	Shoe Block	3
71	Clutch Extension Spring	1
72	Retainer	1
73	Bolt M8×42	2
74	Aeration Jet	1
75	Sponge Transition Block	1
76	Damper	1
77	Oil Filter	1
78	Bumper Spikes	1
79	Self-Tapping Screw ST4.8×16	2
80	Nozzle	1
81	Oil Filter Screen	1
82	Rubber Sleeve	1

Parts List and Diagram

Part List



PRORUN regularly improves our products, and you may find slight differences between your machine and descriptions contained within this operator's manual. Modifications can be made to the machine without notice and without the obligation to update the manual, providing that the essential safety and functional characteristics remain unaltered. Contact PRORUN Customer Service with any questions and for current specifications.

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