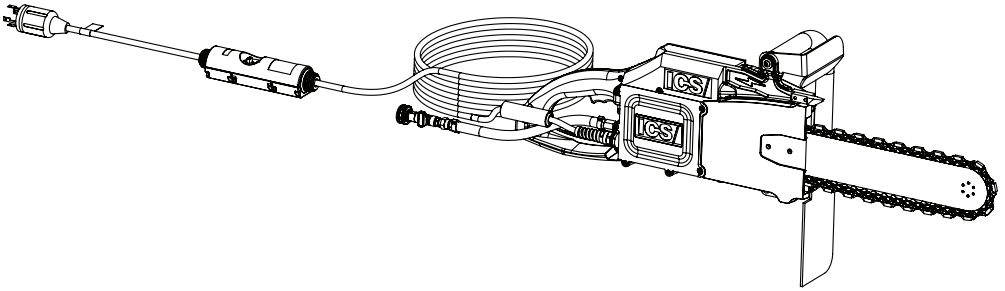




**Diamond Tools and Equipment
for Construction and Infrastructure**



536-E

OPERATOR MANUAL

**WARNING: READ AND UNDERSTAND ALL SAFETY WARNINGS
AND ALL INSTRUCTIONS BEFORE YOU USE THIS EQUIPMENT.**

Failure to follow the warnings and instructions may result in fire, serious injury, or death.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

INTRODUCTION

The 536-E power cutter is designed to cut concrete, stone, and masonry when used with the appropriate genuine ICS Diamond Chain. Ductile iron pipe may also be cut but ONLY if using PowerGrit® Pipe Cutting Chain. This is a professional tool and is solely intended for use by trained and experienced operators. A first time operator should obtain practical instruction before using the power cutter, as well as reading and understanding this Operator's Manual.

Local legislation and/or workplace standards may regulate the use of this power cutter. Determine what regulations are applicable in the place you work before using the power cutter.

This instruction manual contains translations of a manual drafted in English and are provided to assist those who do not speak English as their first language. Being a technical writing, some terms may not have a like or equivalent meaning as translated. Therefore, you should not rely on this translation, and should cross-reference the English version, where relying on the translated instructions could result in harm to your person or property.

Specifications subject to change without notice. For most up-to-date version of this manual, please visit:

<https://icsdiamondtools.com/customer-service-support/>

TABLE OF CONTENTS

SYMBOLS AND LABELS	4
SAFETY	7
GENERAL POWER TOOL SAFETY WARNINGS	8
SAFETY	14
PRODUCT IDENTIFICATION	19
ICS 536-E NAMES AND TERMS	26
UNPACKING AND ASSEMBLY	34
OPERATION	37
MAINTENANCE	39
TROUBLESHOOTING	
TECHNICAL SPECIFICATIONS	

This page intentionally left blank



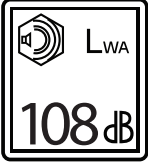



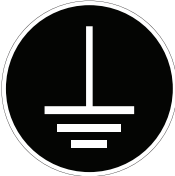
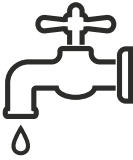
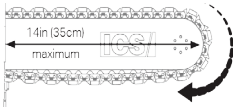
SYMBOLS AND LABELS

THE FOLLOWING SYMBOLS MAY BE FOUND THROUGHOUT THIS MANUAL AND/OR ON THE POWER CUTTER AND ARE DESIGNED TO MAKE YOU AWARE OF POTENTIAL HAZARDS OR UNSAFE PRACTICES.

 <p>SAFETY ALERT Indicates that the text that follows explains a danger, warning or caution</p>	 <p>READ INSTRUCTIONS The original instruction manual contains important safety and operating information. Read and follow the instructions carefully</p>	 <p>WEAR PROTECTION Wear eye , hearing and respiratory protection and a protective helmet when operating the power cutter.</p>
 <p>BEWARE OF KICKBACK Kickback can cause severe injuries.</p>	 <p>TWO-HANDED HOLD Always operate the power cutter with two hands, securely gripping both handles</p>	 <p>ONE-HANDED HOLD Never operate the power cutter with only one hand.</p>
 <p>WEAR FOOT PROTECTION Wear appropriate closed-toe boots when operating the power cutter</p>	 <p>WEAR HAND PROTECTION Wear hand protection when operating the power cutter, and handling the chain and guidebar.</p>	 <p>WEAR LONG PANTS Wear long pants when operating the power cutter.</p>

SYMBOLS AND LABELS

THE FOLLOWING SYMBOLS MAY BE FOUND THROUGHOUT THIS MANUAL AND/OR ON THE POWER CUTTER AND ARE DESIGNED TO MAKE YOU AWARE OF POTENTIAL HAZARDS OR UNSAFE PRACTICES.

 <p>DO NOT USE A LADDER Never stand on a ladder when using the power cutter.</p>	 <p>KERF WIDTH Do not insert tool into slot narrower than chain.</p>	 <p>SOUND POWER Sound power level is 108 dB(A).</p>
 <p>SLIPPERY SURFACE Unsure footing can lead to accidents.</p>	 <p>AVOID CONTACT WITH MOVING PARTS Contact with moving parts can cause injury.</p>	 <p>DO NOT USE IF POWER CORD IS CRACKED OR FRAYED Damaged cords can cause electrocution.</p>
 <p>CONNECT GROUNDED OUTLETS ONLY Provides protection against risk of fire, electrical shock, and explosion.</p>	 <p>MAINTAIN ADEQUATE WATER SUPPLY Ensure water delivery of 20psi (1.4 bar) at a minimum flow rate of 2gpm (8lpm) to cool, lubricate and keep chain clean.</p>	 <p>CHAIN DIRECTION OF TRAVEL Bar and chain are non-directional. Bar p/n 513122 Chain p/n 584292 Additional compatible bar & chain part numbers listed on page 37.</p>

- V = Volts
- A = Amps
- ~ = Alternating Current
- Hz = Hertz (frequency)
- /min (rpm) = Revolutions Per Minute
- gpm = Gallons Per Minute
- psi = Pounds per Square Inch of Pressure
- bar = Metric unit of pressure approximating one atmosphere
- IP66 = Ingress Protection classification per Standard EN 60529

LABELS ON YOUR POWER CUTTER
SAFETY LABELS



grounding label



warning label

NAMEPLATE LABEL



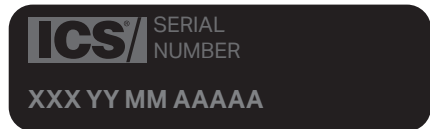
SERIAL NUMBER LABEL

XXX= Power Cutter Model

YY = Year of Manufacture (ie. 18)

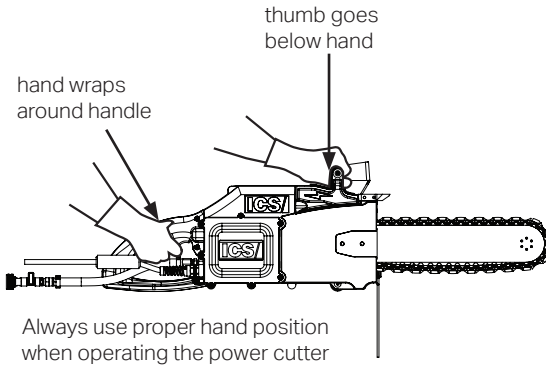
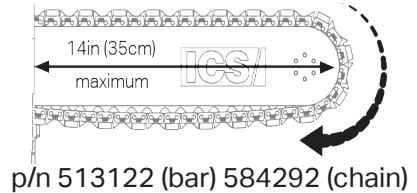
MM = Month of Manufacture (ie. 07)

AAAAA = Number within production batch in sequential order beginning with 00001



**SAFETY RULES**

To get the maximum benefit from your power cutter, and assure maximum safety, be sure to read this manual thoroughly and follow the safety instructions provided.

PROPER HAND POSITION**BAR & CHAIN**

Max bar length 14 in. Chain direction of rotation and compatible bars and chains. See table CONSUMABLES on page 37 for a full list of compatible bars and chains.

EXPLANATION OF WARNING LEVELS
DANGER

Indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

WARNING

Indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

IMPORTANT

Indicates a potential situation exists which, if not avoided, may result in damage to your power cutter or property.

 **WARNING**

Read all safety warnings, instructions, illustrations and specifications provided with this power tool. Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term "power tool" in the warnings refers to your mains-operated (corded) power tool or battery operated (cordless) power tool.

1. Work area safety**a. Keep work area clean and well lit.**

Cluttered or dark areas invite accidents.

b. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.

Power tools create sparks which may ignite the dust or fumes.

c. Keep children and bystanders away while operating a power tool.

Distractions can cause you to lose control.

d. Set up a well-marked safety zone with a roped boundary and clear signs.

Keep bystanders at a safe distance.

e. Drugs or alcohol can impair vision, dexterity, and judgment.

Do not operate the power cutter when tired or under the influence of any substance.

f. Remove or control slurry produced by the power cutter to prevent slippery conditions while cutting.

This reduces the risk of slipping and falling which may result in personal injury.

2. Electrical safety

- a. **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.**
Unmodified plugs and matching outlets will reduce risk of electric shock.
- b. **Avoid body contact with earthed or grounded surfaces, such as pipes, radiators, ranges and refrigerators.**
There is an increased risk of electric shock if your body is earthed or grounded.
- c. **Do not expose power tools to rain or wet conditions.**
Water entering a power tool will increase the risk of electric shock.
- d. **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.**
Damaged or entangled cords increase the risk of electric shock.
- e. **When operating a power tool outdoors, use an extension cord suitable for outdoor use.**
Use of a cord suitable for outdoor use reduces the risk of electric shock.
- f. **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) or Residual Current Device (RCD) protected supply.**
Use of a GFCI or RCD reduces the risk of electric shock.
- g. **Test GFCI/RCD before each use. See label on GFCI/RCD for test procedure**

*** Item above: "Do not expose power tools to rain or wet conditions." is applicable to power tools in general; however,** the ICS 536-E power cutter has been specifically designed for operation during exposure to rain or wet conditions.

**** Item above: "If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) or Residual Current Device (RCD) protected supply"; is applicable however,** the ICS 536-E power cutter has been designed with an integrated GFCI/RCD, which must not be removed or disabled. Keep the GFCI/RCD out of water.

*****Only use extension cords that are protected by a GFCI/RCD.** The GFCI/RCD on the machine power cord will not prevent electrical shock from the extension cords.

3. Personal safety

- a. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.**

A moment of inattention while operating power tools may result in serious personal injury.

- b. Use personal protective equipment. Always wear eye protection.**

Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

- c. Prevent unintentional starting. Ensure the switch is in the off-position before connecting to power source and/or battery pack, picking up or carrying the tool.**

Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.

- d. Remove any adjusting key or wrench before turning the power tool on.**

A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

- e. Do not overreach. Keep proper footing and balance at all times.**

This enables better control of the power tool in unexpected situations.

- f. Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.**

Loose clothes, jewelry or long hair can be caught in moving parts.

- g. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.**

Use of dust collection can reduce dust-related hazards.

- h. Do not let familiarity gained from frequent use of tools allow you to become complacent and ignore tool safety principles.**

A careless action can cause severe injury within a fraction of a second.

- i. Long-term exposure to noise can result in permanent hearing impairment.**

Always wear approved hearing protection.

- j. Over-exposure to vibration can lead to circulatory and/or nerve damage to the extremities, especially in cold temperatures (Reynaud's Disease).**

If you experience tingling, numbness, pain or changes in skin color, particularly in your fingers, hands or wrists, stop using the power cutter immediately. If the problem persists, seek medical attention.

- k. This power cutter can generate hazardous dust.**

Determine the nature of the material you are going to cut before proceeding with the job. Be especially aware of cutting materials containing silica and asbestos, as inhaling dust can result in respiratory disease. Be sure to use appropriate respiratory protection designed to filter out microscopic particles. Be sure to use recommended water pressure (20psi/1.5 bar) to minimize dust generation.

- l. Cut concrete can be abrasive and sharp**

Wear protective gloves.

- m. Concrete can be caustic**

Wear gloves and other appropriate personal protection equipment.

4. Power tool use and care

- a. Do not force the power tool. Use the correct power tool for your application.**

The correct power tool will do the job better and safer at the rate for which it was designed.

- b. Do not use the power tool if the switch does not turn it on and off.**

Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

- c. Disconnect the plug from the power source and/or remove the battery pack, if detachable, from the power tool before making any adjustments, changing accessories, or storing power tools.**

Such preventive safety measures reduce the risk of starting the power tool accidentally.

- d. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.**

Power tools are dangerous in the hands of untrained users.

- e. Maintain power tools and accessories. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation.**

If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.

- f. Keep cutting tools sharp and clean.**

Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

- g. Use the power tool, accessories and tool bits etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.**

Use of the power tool for operations different from those intended could result in a hazardous situation.

- h. Keep handles and grasping surfaces dry, clean and free from oil and grease.**

Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

- i. Use only manufacturer approved guidebar and diamond chain.**

5. Service

- a. **Have your power tool serviced by a qualified repair person using only identical replacement parts.**

This will ensure that the safety of the power tool is maintained.

- b. **This power cutters electronics are not user serviceable.**

Do not remove covers or disable the tool except as directed by this manual. Lethal voltages may be present.

6. Concrete Power Cutter Safety Warnings

- a. **Keep all parts of the body away from the power cutter chain when the power cutter is operating. Before you start the power cutter, make sure the cutter chain is not contacting anything.**

A moment of inattention while operating power cutters may cause entanglement of your clothing or body with the concrete power cutter chain.

- b. **When cutting through the workpiece, ensure to protect persons and the work area on the other side.**

The concrete cutter chain may protrude through the workpiece.

- c. **Always hold the power cutter with your right hand on the rear handle and your left hand on the front handle.**

Holding the power cutter with a reversed hand configuration increases the risk of personal injury and should never be done.

- d. **Hold the power tool by insulated gripping surfaces only, because the power cutter chain may contact hidden wiring or its own cord.**

Power cutter chains contacting a "live" wire may make exposed metal parts of the power tool "live" and could give the operator an electric shock.

- e. **When carrying the power cutter, hold by front handle with the power cutter switched off and away from your body.**

Proper handling of the power cutter will reduce the likelihood of accidental contact with the moving components.

- f. **Follow instructions for supplying water to the tool, chain tensioning and drive sprocket maintenance.**

Failure to follow instructions may result in chain breakage, worn drive sprocket, inadequate water pressure and or premature wear to the guidebar.

- g. **Cut concrete, stone and masonry only (see below for information on usage of PowerGrit chain). Do not use power cutter for purposes other than intended. For example: do not use power cutter for cutting wood.**

Use of the power cutter for operations different than intended could result in a hazardous situation.

- i. Never attempt to cut ductile iron or similiar pipe materials with the power cutter unless using PowerGrit Pipe Cutting chain.*

Using concrete diamond chain in these applications can cause the chain to snag abruptly which may result in chain breakage pushback and or kickback.

- h. **Note: Chain breakage can result in high-speed ejection of parts, which can result in death or serious personal injury to operators or bystanders.**

The items listed immediately below are critical to minimizing the risk of chain breakage and injury. DO NOT operate the power cutter with damaged, modified or missing components shown below.

- i. Side cover/chain catcher*

- ii. Mud flap*

- iii. Rear hand guard*

- iv. Front hand guard*

- v. Trigger interlock*

- i. Wear safety glasses or face shield, and hearing protection. Further protective equipment for head, hands, legs and feet is recommended.**
Adequate protective clothing will reduce personal injury by flying debris or accidental contact with the concrete cutter chain.
- j. Always keep proper footing and operate the chain concrete power cutter only when standing on fixed, secure and level surface.**
Slippery or unstable surfaces such as ladders may cause a loss of balance or control of the chain concrete power cutter.
- k. Carry the chain concrete power cutter by the front handle with the chain concrete cutter switched off and away from your body.**
Proper handling of the chain concrete power cutter will reduce the likelihood of accidental contact with the moving concrete power cutter chain.
- l. Follow instructions for water supply, chain tensioning and changing accessories.**
Improperly tensioned or dry power cutter chain may break or increase the chance for kickback or create overheating.
- m. NEVER run the ICS power cutter upside-down.**
Concrete debris can fly back into the operator's face.
- n. NEVER operate the ICS power cutter with a saw chain or guidebar designed to cut wood.**
Using wood cutting saw chain on the ICS power cutter could result in severe injuries to operator and bystanders! Use ONLY the cutting attachments specified in this manual on this power cutter.

7. Causes and prevention of kickback

- a. Though not as prevalent as in wood cutting chain saws, kickback may occur when the chain is pinched or snagged in the kerf of the cut.**
In some cases this may cause a sudden reverse reaction, kicking the guidebar up and back towards the operator. This reaction may cause you to lose control of the power cutter which could result in serious personal injury.
- b. Maintain a firm grip, with thumbs and fingers encircling the power cutter handles, with both hands on the power cutter and position your body and arms to allow you to resist kickback forces.**
Kickback forces can be controlled by the operator, if proper precautions are taken. Do not let go of the power cutter.
- c. Do not overreach and do not cut above shoulder height.**
This helps enable better control of the power cutter in unexpected situations.
- d. Only use replacement bars and chains specified by the manufacturer.**
Incorrect replacement bars and chains may cause chain breakage and/or kickback.
- e. Do not insert the diamond power cutter into a slot narrower than the chain segments. Rapid pushback or kickback might occur.**
NOTE: Most ICS diamond chain segments are .225 inches (5.72 mm) wide.

TRANSPORTING & STORING

- If storing in temperatures below freezing, be sure to blow out all water, from the tool using compressed air.
- When not in use, for best results store between 32° - 125° F (0° - 52° C)
- It is recommended to secure the tool before transportation.



USING THE ICS POWER CUTTER SAFELY

Following are the basic instructions for safe use of the power cutter. Also read and understand additional safety precautions specific to the operation and maintenance of the power cutter throughout this manual.



DO NOT operate the ICS power cutter with a saw chain or saw bar designed to cut wood.

Using wood cutting saw chain on the ICS power cutter could result in severe injuries to the operator or a bystander! Use **ONLY** the cutting attachments specified in this manual on this power cutter.



DO NOT operate the power cutter with damaged, modified, broken, or missing components.

- The tool contains safety features, designed to protect against electric shock, contact with moving parts, ejected debris, broken chain, thrown water, and concrete slurry.
- Parts with damage or excessive wear should not be used or repaired, they should be replaced.

Use only Genuine ICS replacement parts. Use of aftermarket parts may result in injury or damage to the power cutter.

DO NOT insert the guidebar into a slot narrower than the width of the chain.

Rapid pushback, kickback and/or chain breakage could result.

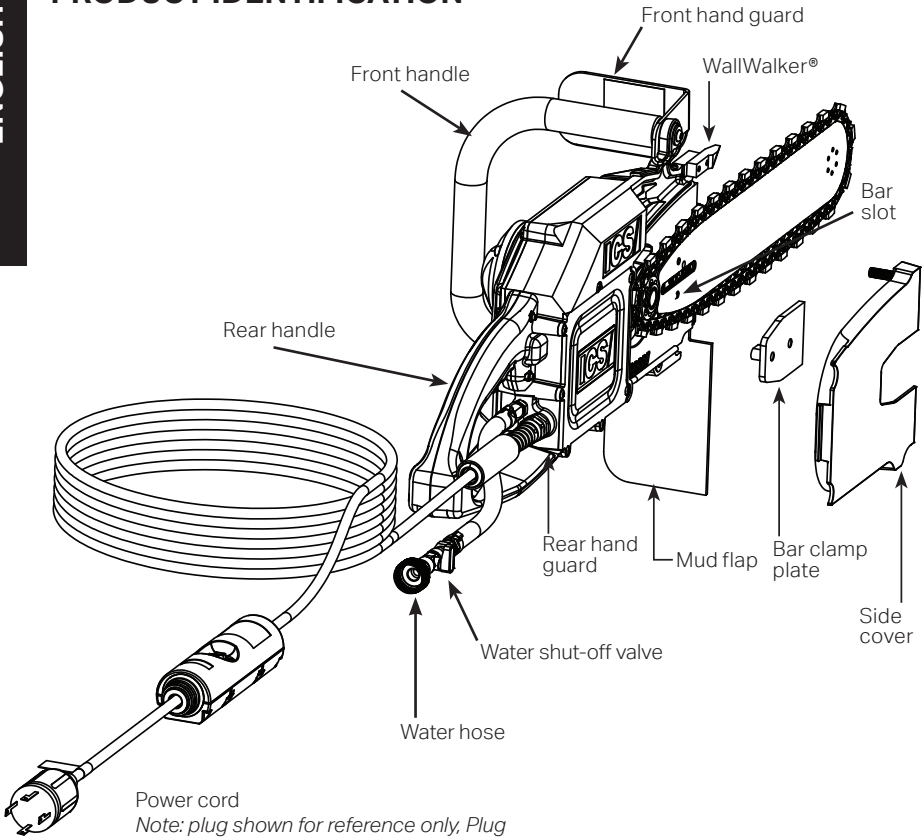
DO NOT operate the power cutter without an adequate water supply.

The integral water supply channels in the guidebar act to cool and lubricate the cutting system as well as to suppress dust and debris generated during cutting. Assure that the water supply is capable of delivering 20 psi (1.4 bar) pressure to the power cutter at a minimum flow rate of 2 gpm (8 lpm).

Never attempt to cut ductile iron pipe or similar pipe materials with the power cutter unless using PowerGrit® Utility Chain.

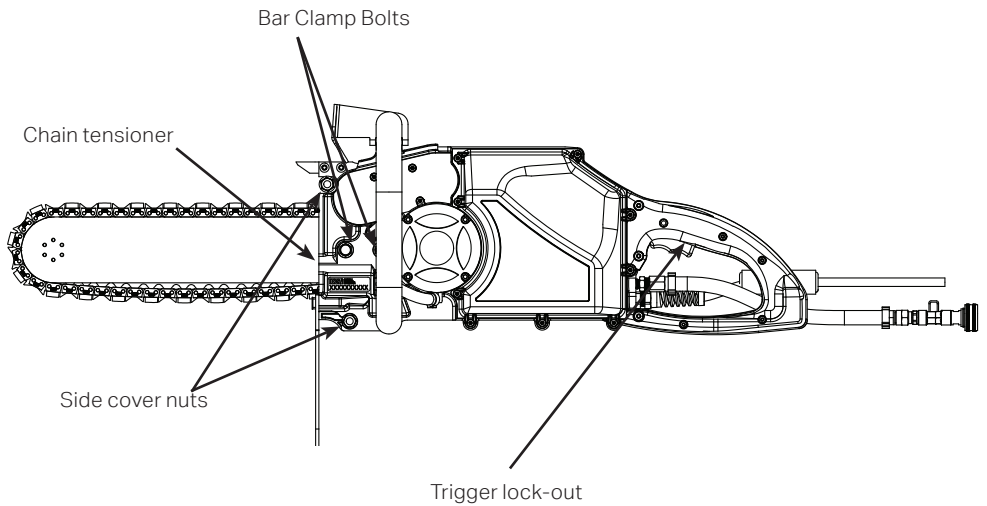
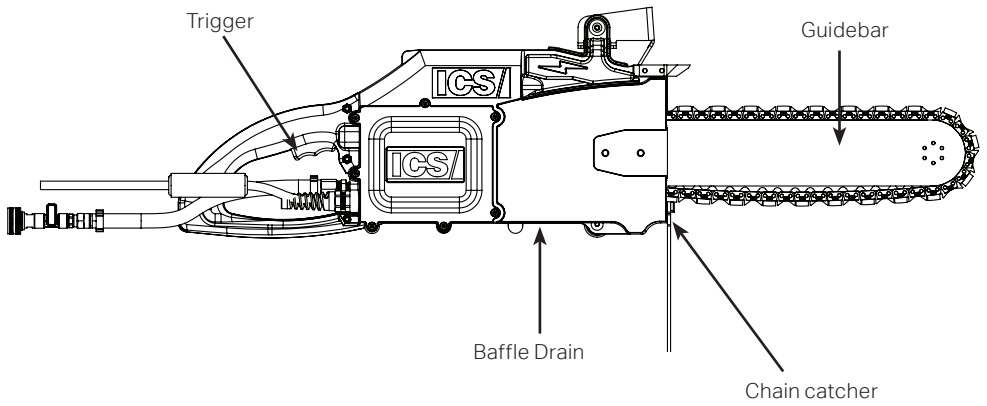
Using concrete cutting chain in these applications can cause the chain to snag abruptly in the cut which may result in chain breakage, pushback and/or kickback.

PRODUCT IDENTIFICATION



Power cord
 Note: plug shown for reference only, Plug will vary by country to run on appropriate power source.

PRODUCT IDENTIFICATION



ICS 536-E NAMES AND TERMS

Bar clamp plate

The plate between the guidebar and side cover that clamps the guidebar to prevent movement during operation.

Bar slot

The slot feature on the guidebar that fits over the bar clamp plate.

Bystander safety zone

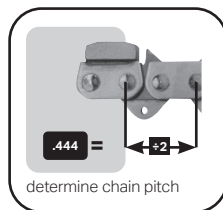
At minimum, a 20 ft (6 m) circle around the operator that must remain free from bystanders, children and pets.

Chain pitch

The distance between any three consecutive rivets on the chain divided by two.

Chain tensioning screw

An adjustment screw used to set proper tension on the chain and compensate for chain stretch from normal use.



Front handle

The support handle located at or toward the front of the power cutter intended to be gripped by the left hand.

Guidebar

A railed structure that supports and guides the chain.

Kickback

The rapid backward and/or upward motion of the guidebar, occurring when the chain near the top area of the nose of the guidebar contacts a foreign object or snags in the workpiece.

Mud flap

A barrier to deflect slurry, cutting debris and other projectiles from operator.

Powerhead

A power cutter without the chain or guidebar.

Pushback

The rapid backward motion of the guidebar, occurring when the chain on the top straight portion of the guidebar contacts a foreign object or snags in the workpiece.

Rear handle

The support handle located at or toward the rear of the power cutter intended to be gripped by the right hand.

Rear hand guard

A structural barrier at the bottom of the rear handle to protect the operator in case the chain breaks or derails.

Side cover

The component on the powerhead that covers the drive sprocket and directs debris away from the operator during use.

Side cover nuts

The components on the side cover that secure the side cover to the powerhead

Trigger lock-out

A device that prevents the unintentional operation of the trigger until manually released.

Trigger

A mechanism that controls motor operation.

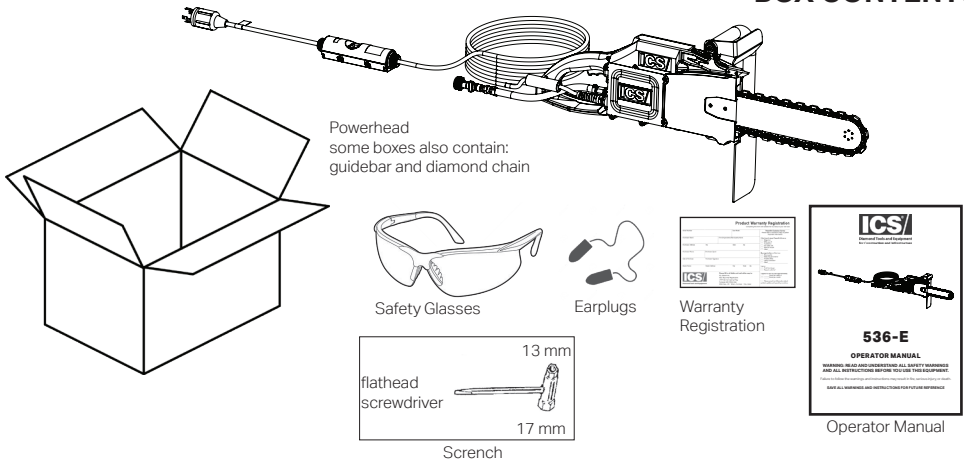
WallWalker®

A device used as a fulcrum to provide mechanical advantage during cutting.

Water shut-off valve

A mechanism that controls water delivery and flow to the guidebar and chain.

BOX CONTENTS



GUIDEBAR AND DIAMOND CHAIN INSTALLATION & TENSIONING



Following are the basic instructions for guidebar and diamond chain installation and tensioning.

WARNING

Never perform any maintenance or adjustments on the power cutter while connected to a power source.

Improper chain tension can lead to failure of the chain or derailing of the chain off of the guidebar.

Check tension frequently and adjust if drive links of chain hang $\frac{3}{4}$ in (18 mm) or more below the guidebar groove.

CAUTION

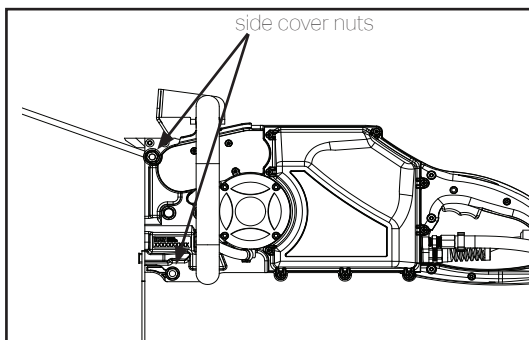
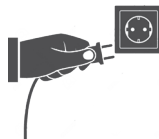
Always wear gloves when handling the bar and chain.

These components can develop sharp edges and cause cuts.

GUIDEBAR AND DIAMOND CHAIN INSTALLATION & TENSIONING

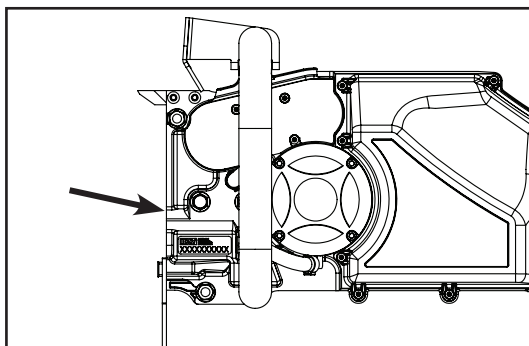
WARNING

STEP 1- Disconnect power supply.



STEP 2

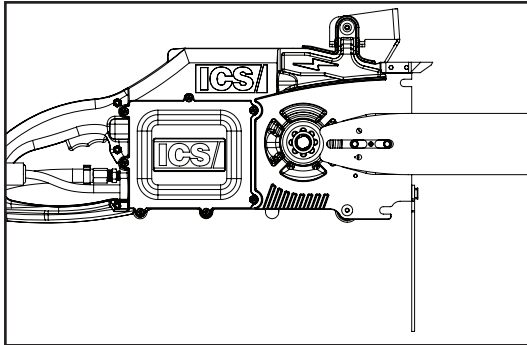
Loosen the side cover nuts and remove the side cover. Remove bar clamp bolts and bar clamp plate.



STEP 3

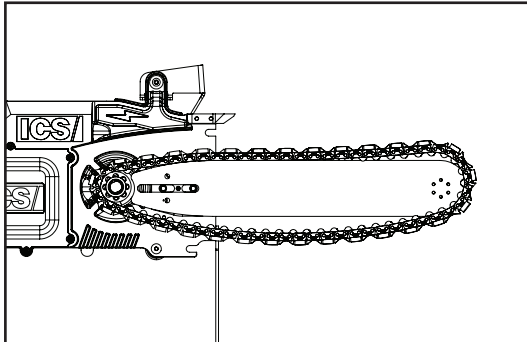
Turn the chain tensioning screw counterclockwise until the pin is back towards the drive sprocket and comes to a stop. Stop when the pin touches the end of the chain tensioning slot.

GUIDEBAR AND DIAMOND CHAIN INSTALLATION & TENSIONING



STEP 4

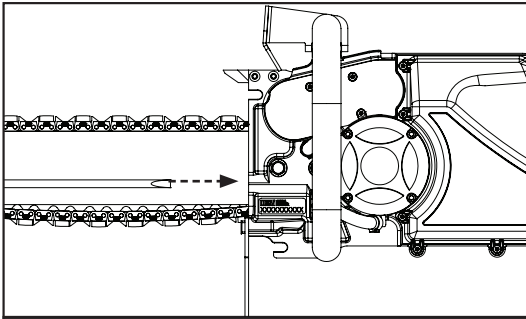
Install bar over chain tensioning pin. Place bar clamp plate through bar slot into bar pad. Verify bar and tensioning pin are adjusted fully back toward drive sprocket. Be sure to wear gloves as rails of guidebar can be extremely sharp. Install bar clamp bolts so bar clamp plate is loosely held in place.



STEP 5

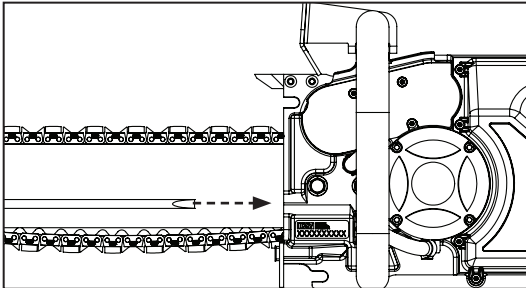
Install the chain around the drive sprocket, insert into top bar groove and then around the nose sprocket.

**GUIDEBAR AND DIAMOND CHAIN
INSTALLATION & TENSIONING**



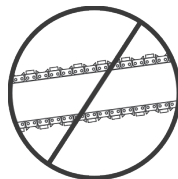
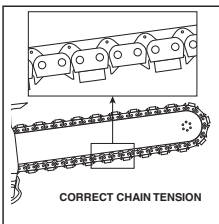
STEP 6

Make sure all of the drive links are inside the top and bottom bar grooves, then pre-tension the chain.

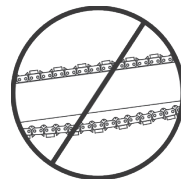


STEP 7

Lift up on the nose of the bar and tension the chain. Do not over tension the diamond chain. Loss of power will result.

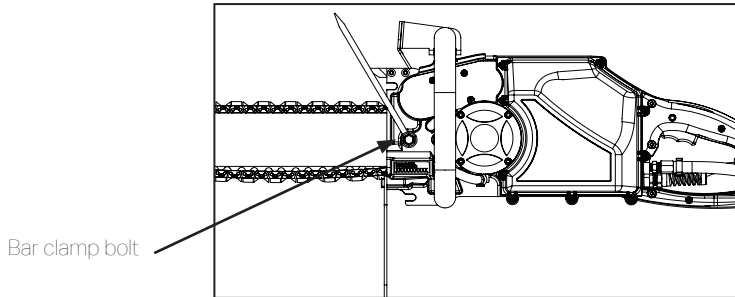


CHAIN TOO TIGHT



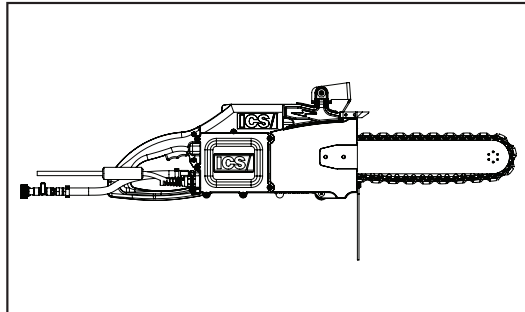
CHAIN TOO LOOSE

GUIDEBAR AND DIAMOND CHAIN INSTALLATION & TENSIONING



STEP 8

Lift up on the nose of the bar and firmly tighten the bar clamp bolts. To prevent chain tensioner breakage, be sure the bar clamp bolts are tightened to approximately 20 - 25 ft-lbs (27 -33 Nm).



STEP 9

Install side cover, firmly tighten side cover nuts using the 13 mm end of srench.

CHECKING & ADJUSTING CHAIN TENSION



All chains have a tendency to stretch when used. Diamond chains stretch more than wood cutting chains because of the abrasive materials they are cutting. Chain tension requirements for concrete cutting power cutters is different than wood cutting chain saws because water is used instead of oil as a lubricant. Refer to chain tensioning instructions.

A tight chain will reduce cutting power and increase chain friction, resulting in premature wear of the cutting system. If the tension is set too loose, the chain could be thrown off of the bar or allow the sprocket to turn without turning the chain which will damage the drive links.



WARNING

Improper chain tension can lead to breakage of the chain or derailing of the chain off of the guidebar.

Check chain tension frequently.

IMPORTANT

When a chain stretches to a point where the drive links are hanging approximately 1/2 in (12 mm) to 3/4 in (18 mm) below the guidebar groove, it is time to tension the chain.

CONNECT TO WATER SUPPLY

Following are the basic instructions for correct water supply to the power cutter.

CAUTION

Insufficient water supply will result in excessive chain stretch and may cause chain breakage, damage to the guidebar, nose sprocket and drive sprocket.

Never operate the power cutter with insufficient water supply. In all cases, assure that the water supply is delivering 20 psi (1.4 bar) pressure to the power cutter at a minimum flow rate of 2 gpm (8 lpm).

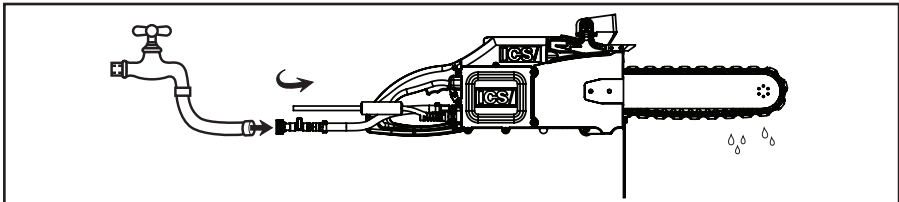
The water supply also cools the motor and internal electronics.

Insufficient water supply will cause the power cutter to shut down and not restart until the tool has cooled.

Inadequate water can result in increased potential for harmful airborne particulates.

ICS® power cutters require a continuous water supply to the guidebar and chain for the key purposes of cooling, lubrication and dust suppression. The potential for airborne particulates depends on many factors including, but not limited to, the material being cut, application and cutting environment.

NOTE: Local and/or regional regulation can vary widely. It is the responsibility of the operator to wear appropriate dust protection applicable in their area and suitable to the application.



Attach to water supply capable of delivering 20 psi (1.4 bar) pressure to the power cutter at a minimum flow rate of 2 gpm (8 lpm). The single most important factor an operator can control to increase chain life is to use adequate water pressure.

Do not exceed water temperature of 104° F (40° C)

Water exposed to direct sunlight and/or hot environments can reach temperatures that can result in serious burns or scalding.

Use caution in freezing temperatures

Flush all water passages with compressed air promptly after use to avoid damage from freezing.

OPERATION

Following are the basic instructions for safe operation of the power cutter.



Never start the power cutter without the bar, chain and side cover properly assembled.

Unintentional contact with moving chain or components may occur.

DO NOT operate the power cutter with loose, missing, damaged or improperly installed or repaired parts.

Check that the components shown below are intact, undamaged, and installed correctly:

- Bar clamp bolts torqued down properly (20-25 ft/lb (27-33 Nm)). Loose or improperly torqued bar clamp bolts can lead to bar slip or chain tensioner breakage.
- Side cover not damaged and baffle drain not plugged
- Handles not loose, gripping areas are clean and undamaged
- Mud flap is not ripped, torn or missing and is fully attached to the power cutter
- Guidebar not bent or otherwise damaged such as rails dished and uneven
- Nose sprocket not excessively worn or broken, and turns freely
- Diamond chain does not have loose rivets, chassis or drive link damage or missing diamond segments
- Chain tensioner mechanism functions properly and pin is not bent or broken
- Drive sprocket not excessively worn
- Check alignment of drive sprocket and guidebar
- Assure proper chain tension: The chain should be easily pulled around the guidebar by hand
- Assure all safety devices are properly mounted and functional and that all controls are in proper working order
- Adequate water supply and pressure
Minimum flow: 2 gpm (8 lpm)
Minimum water pressure: 20 psi (1.4 bar)

PRE-OPERATION SAFETY CHECKS

- Test GFCI/RCD before each use. See label on GFCI/RCD for test procedure.
- If GFCI/RCD trip occurs, stop using tool immediately, disconnect from power source, evaluate and remedy power source. If integrity of power source is verified and GFCI/RCD trips persist, contact an authorized ICS Service Center.
- Assure proper chain tension: The chain should be easily pulled around the guidebar by hand.
- Assure all safety devices are properly mounted and functional and that all controls are in proper working order.
- Be sure there are no obstructions (plumbing, electrical conduit, air ducts, etc.) and no unnecessary people present
- Always wear protective clothing, including hard hat, eye protection, hearing protection, non-slip safety boots, gloves. Avoid wearing loose fitting clothing. Use proper respiratory protection for your application.
- Adequate water supply and pressure
Minimum flow: 2 gpm (8 lpm) | Minimum water pressure: 20 psi (1.4 bar)

PRECUT CHECKLIST

**! WARNING****Be sure that no part of the cutting system is contacting a solid object when starting the power cutter.**

The power cutter may react unexpectedly if the chain contacts a solid object.

Sudden contact of the guidebar nose with a foreign object may generate kickback.

Remove and/or avoid any obstructions (plumbing, water supply hoses, electrical conduit, air ducts, etc.) that may interfere with the cut.

Cutting into live electrical wires can cause electrocution

Check for live electrical wires that may be hidden within or behind walls and/or laying around the workspace. Assure that any ancillary electrical equipment (fans, pumps, vacuums, generators, etc.) are properly grounded and certified for use in the intended environment.

Improper or inadequate ground can expose the operator to dangerous voltages.

Ensure your power source is properly grounded. If using a portable generator, ensure it is grounded with a direct connection to the earth, such as a grounding rod. For specific information on your generator, refer to the manufacturer's operator manual.

Always operate the power cutter with solid footing and both hands on the power cutter.

Keep your left hand on the front handle and your right hand on the rear handle. Wrap your thumbs around the handles to assure you maintain a secure grip on both handles.

Always wear protective clothing.

At a minimum always wear eye protection and/or face shield, hearing protection, long sleeve shirt, long pants, closed toe shoes with non-slip soles, and gloves. In many work situations, a hard hat, steel toed shoes and a respirator may also be required. Avoid loose fitting clothing. Follow all local regulations regarding PPE.

Cutting with the power cutter may generate sparks, especially when cutting through metal (such as rebar), and may start a fire in combustible materials such as dry grass, wood and fuel.

Be sure to use adequate water pressure and have fire fighting equipment readily available.



CUTTING WITH THE POWER CUTTER

WARNING

DO NOT insert the guidebar into a slot narrower than the width of the chain.

Rapid pushback, kickback and/or chain breakage could result.

Be sure cut concrete cannot fall and injure the operator or bystanders.

Assure cut piece is controlled and does not fall unexpectedly.

NOTE: Concrete is very heavy;

30 cm x 30 cm x 30 cm = 68 kg (12 in x 12 in x 12 in = 150 lbs).

CAUTION

Slippery or unstable surfaces such as ladders may cause a loss of balance or control of the power cutter.

Always keep proper footing and operate the power cutter only when standing on fixed, secure and level surface.

Unexpected loss of control of the power cutter and loss of balance can result in injury.

Do not overreach and do not cut above shoulder height.

Do not allow workpiece to pinch the guidebar and chain, kickback or rapid pushback could result.

Always cut bottom of opening first and assure workpiece is secure and does not shift during cutting operations. Support the workpiece such that the cut remains open throughout the cutting operation, including when the cut is finished.

Do not operate power cutter upside down.

Cutting debris can be directed back towards the operator.

Take special precautions when cutting in horizontal orientation.

Be aware that debris may be ejected differently than when cutting in a vertical position.

CUTTING WITH THE POWER CUTTER



IMPORTANT

The single most important factor an operator can control to increase chain life is to use adequate water pressure. Insufficient water supply may result in excessive wear to the chain, which can lead to loss of strength and chain breakage, and/or damage to the guidebar nose sprocket.

To check for adequate water pressure: With the water turned on, pull the chain off the top of the guidebar rails. Water should shoot 12 - 18" above the guidebar. Adjust the water as needed to achieve the correct pressure.

To assure the best performance from your ICS power cutter, follow all safety precautions and recommended techniques. Additional helpful information can be obtained at icsdiamondtools.com.

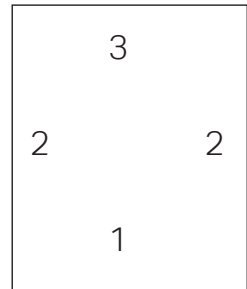
CONCRETE/MASONRY CUTTING

Planning the Cut

1. Select the proper chain type for the material being cut.
2. Outline the cut with a permanent marker for a visual cutting guide.



3. Assure that appropriate bracing is in place to control the cut section of the workpiece. Plan for safe removal of cut piece.
4. Score the entire cut, following the outline.
5. Avoid pinching the guidebar and chain by using shims or other anchoring devices to stabilize the workpiece. Always plan to cut the bottom of an opening first, then top or sides. Save the easiest cut for last - see image at right.

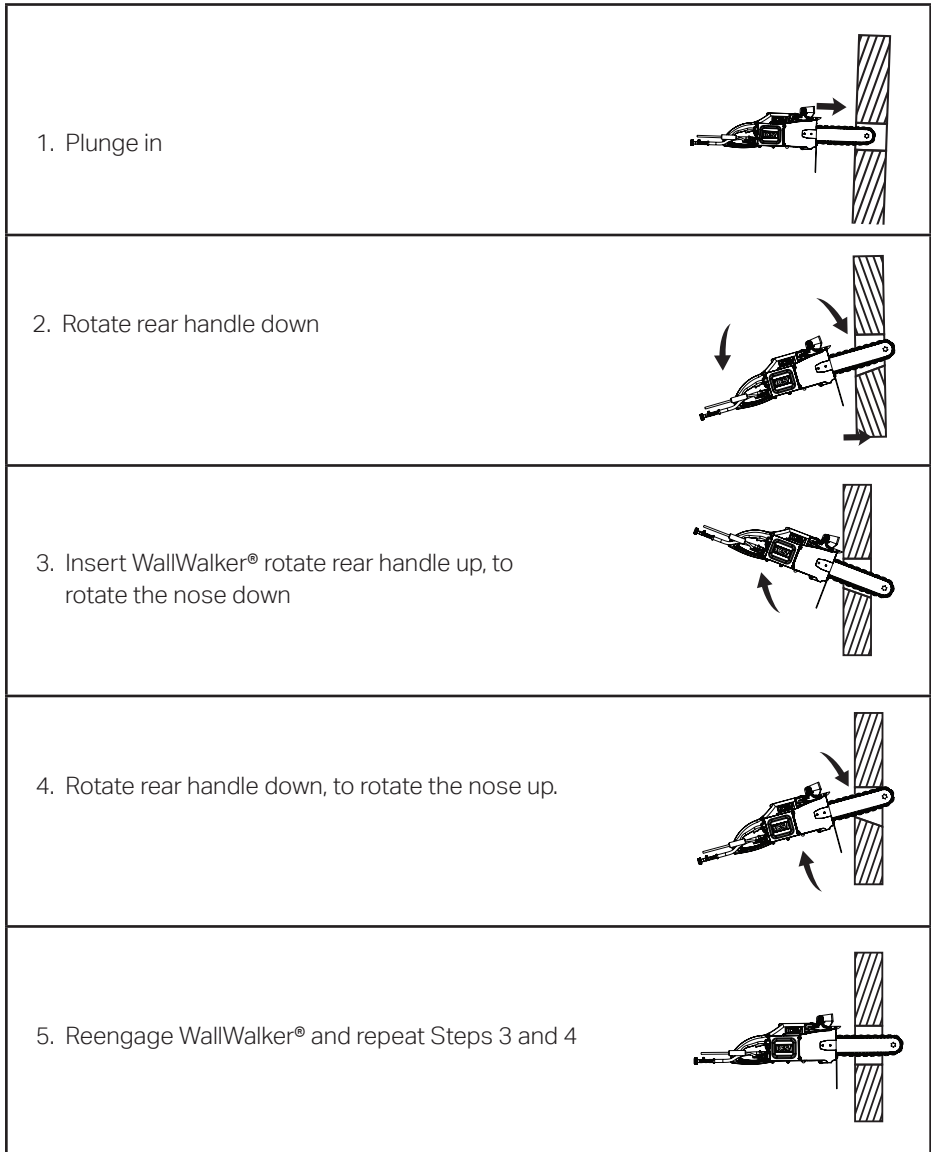


6. Be sure cut concrete cannot fall and injure the operator or bystanders. Concrete is very heavy, (12 in x 12 in x 12 in = 150 lbs) (30 cm x 30 cm x 30 cm = 68 kg)
7. Plan your cuts so that the cut sections are of manageable size and weight.

NOTE: When cutting with the 536-E and another narrower kerf tool, always cut with the 536-E power cutter first to avoid pinching. Never place the guidebar and chain in a narrower cut, rapid pushback or kickback may occur.

CONCRETE/MASONRY CUTTING

Recommended Concrete Cutting Techniques



CUTTING TIPS

- For the straightest cuts use the “Step Cut” method:
 - First score the entire cut line approximately a half-inch (1.25 cm) deep using the nose of the guidebar.
 - Next, deepen the cut by about two inches (5 cm)
 - Then plunge all the way through and complete the cut using the WallWalker® as a pivot point and pull on the rear handle to rotate the bar into the cut.
- Always operate the concrete under optimum feed force to cut most effectively. This power cutter will maintain full speed until optimum force is applied. Once optimum feed force is applied, the motor will slow with additional force. This power cutter cuts most effectively when enough feed force is applied to begin slowing the motor. If too much force is applied, the power cutter will lug or stall. The chain will not have enough speed to cut effectively. If too little feed force is applied, the diamonds will skid and glaze over
- Plunge cut instead of starting at the top surface of the wall. This will reduce chatter, extend diamond life, create a straighter cut and more quickly enable the use of the WallWalker.
- When cutting heavy rebar, slowly “rock” the power cutter so that you’re always cutting concrete as well as steel. This will help keep the diamonds exposed. Also, expect less chain life when cutting heavy rebar.
- Expect more chain stretch when making nose-buried cuts for extended periods of time, as the chain does not have a chance to “throw” the slurry away from the nose of the guidebar (use step cut method).
- If the power cutter begins to cut consistently crooked, stop the power cutter, disconnect from power source, remove the bar and chain and turn the bar over and use the other side. Dress worn rails with a belt sander, flat file or bar rail dresser.
Note: The normal life of a guidebar is two to three diamond chains (with rotation after every chain). Heavy rebar can shorten guidebar life.
- The guidebar is solely a guide track for the chain. Never use the guidebar to lift, twist or pry concrete material.
- When using a new chain, you can increase the initial cutting speed by “opening up the diamonds”. This can be accomplished by first making a few cuts in an abrasive material such as a cinder block or brick.

PIPE CUTTING USING POWERGRIT® PIPE CUTTING CHAIN



To assure the best performance from your ICS® power cutter when cutting ductile iron pipe or similar pipe materials, follow all safety precautions and recommended cutting techniques.

WARNING

Never attempt to cut ductile iron pipe or similar pipe materials with the power cutter unless using PowerGrit® Pipe Cutting Chain.

Using concrete diamond chain in these applications can cause the chain to snag abruptly in the cut which may result in chain breakage, pushback and/or kickback.

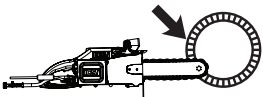
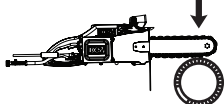
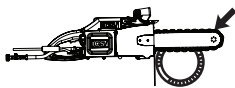
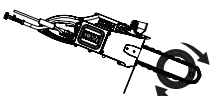
Always assure that pipe is properly evacuated before cutting.

Pipes may contain sewage, gas or other hazardous materials.

Always support the pipe on both sides of the cut to assure the cut remains open throughout the cutting operation, including when the cut is finished.

An improperly supported pipe can cause the cut to close, pinching the chain and guidebar which may result in chain breakage, pushback and/or kickback.

Recommended Pipe Cutting Techniques

<p>1. Make a small plunge cut into the lower quadrant of the pipe to relieve internal pressure and allow contents to drain from pipe in a controlled manner.</p>	
<p>2. With pipe drained, cut from the top of pipe and continue through bottom of the pipe.</p>	
<p>3. To assure straightness of cut, guidebar should extend completely through the pipe during the cut.</p>	
<p>4. To assist with cutting, engage the WallWalker® in the cut when possible to provide additional leverage. Alternate cutting between the near and far side walls of the pipe.</p>	

IMPORTANT

SYSTEM CLEAN-UP

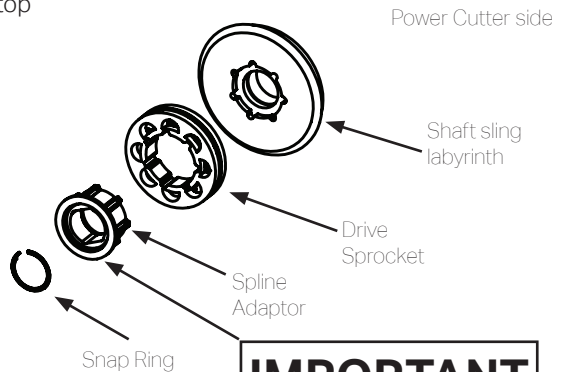
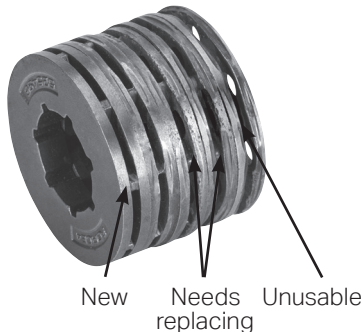
- After cutting, run the power cutter for at least 15 seconds with the water on to flush slurry and debris from diamond chain, guidebar and drive sprocket
- Wash concrete slurry and debris from power cutter assembly.
- Remove guidebar and chain. Flush out the chain tensioner and side cover with water. Lubricate tensioner with waterproof grease
- After cleaning the power cutter, spray the entire power cutter body, chain, guidebar, and drive sprocket with lightweight oil. Using lightweight oil on the power cutter will minimize rust and help reduce slurry build up

AFTER EACH USE

- Inspect drive sprocket for wear
Replace when the drive teeth are worn more than half way through the tops of the sprocket teeth
- Inspect and tighten all fasteners as necessary
- Flush and rinse the power cutter, guidebar and chain with water
- Check mud flap for tears or damage
- Check guidebar and chain for damage or excessive wear.
- Parts with damage or excessive wear should not be used or repaired, they should be replaced.
- With power cutter disconnected from power source, examine power cord for wear or damage.
- If storing in temperatures below freezing, be sure use compressed air to blow out all water from the tool.

DRIVE SPROCKET

- The drive sprocket is a wear item and should be replaced every two to three chains, or when the teeth become pointed or if a groove cuts through top of tooth.
- Inspect the sprocket for wear.
- Inspect drive shaft for wear.

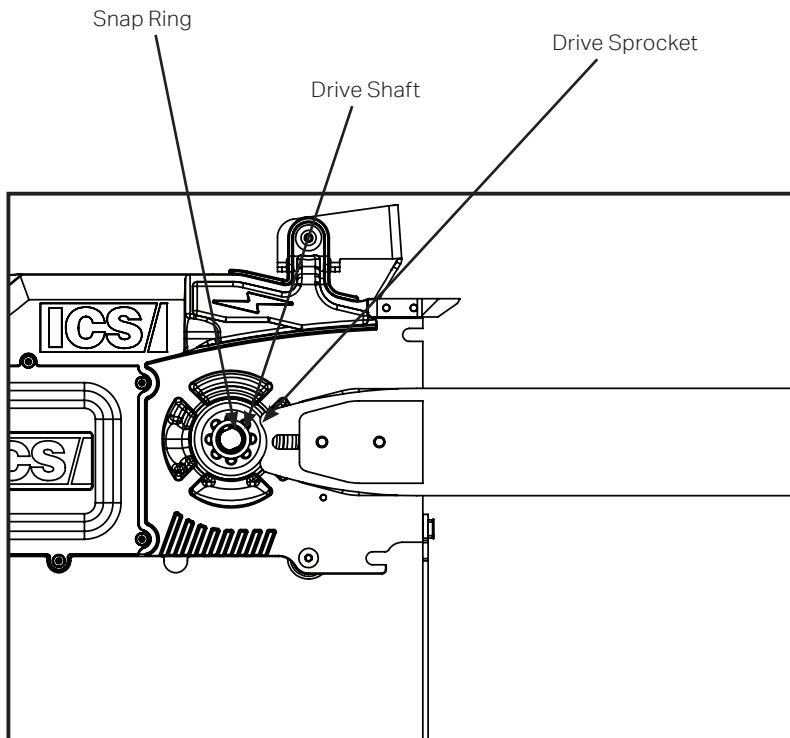


IMPORTANT

Flanged side facing out

DRIVE SPROCKET ASSEMBLY REMOVAL/INSTALLATION

- Disconnect power cutter from the power source.
- Remove the side cover, bar clamp plate, guidebar and diamond chain.
- Remove spline adapter snap ring from shaft.
- Remove sprocket snap ring from spline adapter.
- Remove spline adapter & drive sprocket from shaft.
- Slide new sprocket onto spline adapter.
- Replace sprocket snap ring onto spline adapter.
- Slide spline adapter and drive sprocket onto shaft (assure flanged side of adapter is facing out)
- Replace spline adapter snap ring onto shaft and assure complete engagement in shaft groove
- Installation of new drive sprocket is complete.
- Reinstall guidebar, diamond chain, bar clamp plate and side cover.
- Assure diamond chain and guidebar are in good, useable condition. Worn or damaged guidebar and chain can damage the new drive sprocket.



CHAINS & GUIDE BARS



IMPORTANT

Inspect chain segments and drive links for damage or excessive wear. Components with damage or excessive wear should not be used or repaired, they should be replaced.

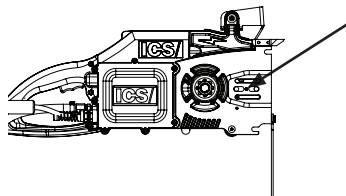
NOTE: Guidebars are designed to be used on both sides. If the cut is consistently leading to one side, turn the guidebar over. It is recommended to turn the guidebar over with every new chain.

- A table mounted belt, disc sander, flat file or bar rail dresser can be used to square the rails of a worn guidebar. A badly worn guidebar can quickly damage the chain. If the chain is touching the bottom of the guidebar groove, replace the guidebar.
- Check the guidebar for straightness.
- Proper chain tension will extend guidebar life.
- Under some circumstances, especially low water pressure, the sprocket nose can wear out before the guidebar body. Sprocket nose assemblies may be replaced by an Authorized Service Center.
- Periodically clean the water ports inside the groove of the guidebar using a small diameter piece of wire or pipe cleaner.
- The guidebar is solely a guide track for the chain. Never use the guidebar to lift, twist or pry concrete material.
- Prior to storage, spray the chain and guidebar with lightweight oil.

CHAIN TENSIONER

The chain tensioner can become clogged with concrete slurry during cutting.

- After each use thoroughly flush the chain tensioner with water and apply a liberal amount of waterproof grease covering the chain tensioner screw.



Chain Tensioner

536-E CONSUMABLES	
P/N	Description
FORCE3 (3/8 pitch) SERIES DIAMOND CHAINS, GUIDE BARS & DRIVE SPROCKET	
584288	ICS FORCE3 Chain, 10 in/25 cm, 50 Drive Links
584290	ICS FORCE3 chain 12 in/30 cm, 58 Drive Links
584292	ICS FORCE3 chain 14 in/35 cm, 64 Drive Links
584289	ICS FORCE3 Brick Chain, 10 in/25 cm, 50 Drive Links
584297	ICS FORCE3 Brick chain 12 in/30 cm, 58 Drive Links
584299	ICS FORCE3 Brick chain 14 in/35 cm, 64 Drive Links
584295	ICS FORCE3 Premium Chain, 10 in/25 cm, 50 Drive Links
584298	ICS FORCE3 Premium chain 12 in/30 cm, 58 Drive Links
584302	ICS FORCE3 Premium chain 14 in/35 cm, 64 Drive Links
621540	ICS Guidebar, 10 in/25 cm
71395	ICS Guidebar 12 in/30 cm
513122	ICS Guidebar 14 in/35 cm
70949	ICS Drive Sprocket - GC Series
FORCE4 (.444 pitch) SERIES DIAMOND CHAINS, GUIDE BARS & DRIVE SPROCKET	
531743	ICS FORCE4-25 chain 12 in/30 cm
531745	ICS FORCE4-25 Premium L chain 12 in/30 cm
531739	ICS FORCE4-25 Premium S chain 12 in/30 cm
531747	ICS FORCE4-25 Abrasive chain 12 in/30 cm
599881	ICS FORCE4-50 Cross-LINK chain 12 in/30 cm
605443	ICS FORCE4-25 Sandwich Segment chain 12 in/30 cm
598280	ICS FORCE4-25 Texas Edition chain 12 in/30 cm
680233	ICS PowerGrit XL chain 12in/30cm (50 drive links)
547641	ICS PowerGrit chain 12 in/30 cm (50 drive links)
523383	ICS Guidebar 12 in/30 cm
525496	ICS Drive Sprocket - F4 Series

PROBLEM	Possible Cause	Solution
SLOW CHAIN SPEED	Chain tension is too tight.	Tension chain to factory recommendation. See chain tensioning instructions section.
POOR CUTTING SPEED	Chain tension is too tight.	Check chain tension, see above.
	Diamonds may be glazed over.	Make a few cuts in abrasive material to expose diamonds.
	Chain or diamonds may be worn out.	Replace chain.
	Worn drive sprocket.	Replace drive sprocket.
PREMATURE CHAIN STRETCH	Initial chain tension too tight.	Tension chain to factory recommendation.
	Bar nose buried in cut.	Avoid nose buried cuts by using the step cut method.
	Not enough water pressure.	The minimum water pressure required is 1.4 bar (20 psi).
	Chain comes in contact with ground, dirt, gravel and/or sand.	Avoid dirt, sand and gravel by excavating and clearing the surrounding area.
CHAIN TENSIONER BREAKAGE	Bar clamp bolts are not tight enough.	Torque to 27-33 Nm (20 -25 ft-lbs).
	Tensioning with bar clamp bolts already tight.	Loosen bar clamp bolts prior to tensioning adjustment
	Tensioner pin not aligned and bar clamp bolts tightened.	Ensure tensioner pin is through the bar pin hole
WATER NOT FLOWING	Water hose is kinked or water supply not on.	Ensure water line is not twisted and valve is turned on
	Water delivery system plugged or not functioning properly.	Ensure proper flow of <u>clean</u> water to the power cutter.
	Guidebar water ports are plugged with debris or ice.	Using a pipe cleaner or small wire, push debris back into the water channel and blow compressed air into guidebar exit port(s).
	Damaged or worn water valve on water supply line.	Replace water valve.
MOTOR DOES NOT TURN	Power cord is not plugged in.	Ensure plugged into the proper outlet (220 - 240V, 60Hz supply).
	GFCI/PRCD is not reset.	Reset GFCI/PRCD. With the power cutter unplugged, inspect the power cable for damage or wear.
	Power source voltage is too high or too low.	Check supply voltage and adjust if capable. Measure voltage with multimeter on ACV mode.
	Internal damage to motor or electronics.	Return to service center for repair.
CHAIN BREAKAGE	Improper chain tension.	Tension new chain to factory recommendation. See chain tensioning instructions section.
	Excessive drive sprocket wear.	Replace drive sprocket.
	Insufficient water pressure.	Check water valve and water delivery system for proper water flow (20 psi/1.4 bar).
	Inserting into slot narrower than diamond chain segments.	Do not cut in a slot narrower than the chain including pre-existing cracks.
	Using chain that is already stretched beyond ability to tension.	Replace chain.
	Contact with exposed rebar or steel.	Replace chain.

TECHNICAL SPECIFICATIONS

Input Voltage	220 - 240 VAC, 60 Hz
Rated Current	16 A
No load speed	8500 RPM
Weight w/o bar and chain	23.5 lb/10.6 kg
Length	24" (61 cm)
Height	10.5" (26.5 cm)
Width	9" (23 cm)
Vibration* $A_{h,eq}$ Concrete Cutting	Front Handle: 1.45 m/s ² Rear Handle: 2.98 m/s ² K = 1.5 m/s ²
Guaranteed Sound Pressure Level L_{wa}	96.9 dB(A) (K=3dB (A))
Guaranteed Sound Power Level L_{wa}	107.9 dB(A) (K=3dB (A))
Recommended Min Generator	5 kVA
Max Water Temp	104°F/40°C
Max Water Pressure	80 psi / 5.5 bar
Min Water Pressure	20 psi / 1.4 bar
Min Water Flow Rate	2 gpm / 8 lpm
Max Power Output	3.6 kW / 4.8 Hp

Recommended Extension Cord Size	
0 - 50 ft / 0 - 15m	12 AWG / 4 mm ²
50 - 100 ft / 15 - 30m	10 AWG / 4 mm ²
100 - 200 ft / 30 - 60m	8 AWG / 4 mm ²

**If service of your power cutter is required,
contact ICS for instruction: 800.321.1240.**

**Declared vibration total value has been measured in accordance with a standard test method and may be used for comparing one tool with another. Declared vibration total value may also be used in a preliminary assessment of exposure.*

WARNING: vibration emission during actual use can differ from declared value depending on the ways in which the tool is used. Identify safety measures to protect the operator that are based on an estimation of exposure in the actual conditions of use (taking account of all parts of the operating cycle such as the times when the tool is switched off and when it is running idle in addition to the trigger time).

**ICS, Oregon Tool, Inc.
4909 SE International Way
Portland, OR 97222, USA
Tel 800.321.1240**

icsdiamondtools.com