



**CORE CUT
OPERATOR'S MANUAL**

**CSE12
ELECTRIC CHAINSAW**

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Introduction

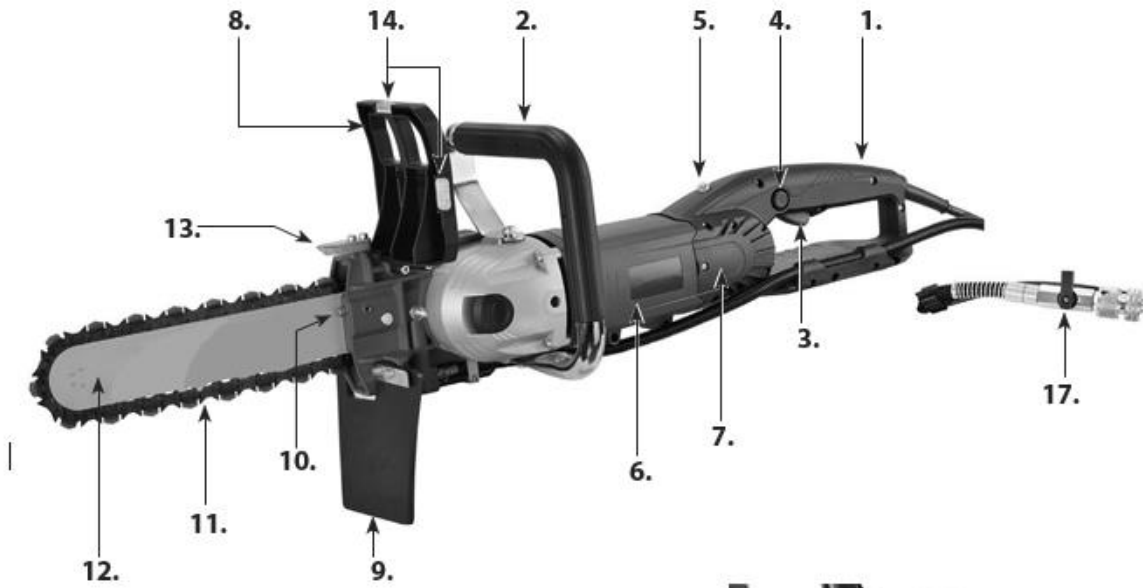
Welcome to the Diamond Products family and thank you for choosing Diamond Products equipment. At Diamond Products we are driven to ensure you are completely satisfied with your product and continually strive to improve our product line so that we can offer you the best possible equipment in the industry.

This operator's manual is a critical document that provides pertinent information regarding the safety, operation, maintenance, and care of your new equipment. Keep this manual available at all times. Operate the equipment and all of its components according to this manual. Failure to comply with and understand the following safety, operation and maintenance instructions can result in serious injuries and/or death. All operators must be properly trained or supervised by experienced personnel prior to using this equipment and should understand the risks and hazards involved. Diamond Products discourages improper or unintended equipment usage and cannot be held liable for any resulting damages.

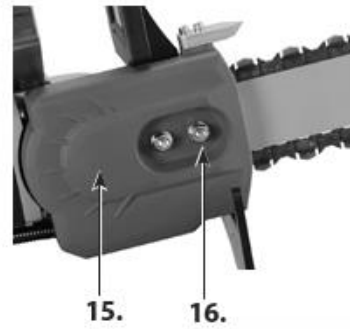
Equipment modifications should be made by Diamond Products to ensure safety and design. Any modifications made by the owner(s) are not the responsibility of Diamond Products and void all equipment warranties if a problem arises as a result of the modification.

Refer to the Diamond Products Parts List for additional information and part diagrams. Refer to the engine/motor manual and manufacturer as the primary source for all safety, operations, and maintenance instructions regarding the engine/motor. Prior to operating, record the equipment's serial number, and the engine's/motor's model and serial numbers in Appendix A.

Overview



- | | |
|-----------------------|----------------------|
| 1. Main Handle | 10. Tension Adjustor |
| 2. Side Handle | 11. Diamond Chain |
| 3. Trigger Switch | 12. Guide Bar |
| 4. Trigger Release | 13. Bumper Spike |
| 5. LED Load Indicator | 14. Levels |
| 6. Motor | 15. Side Cover |
| 7. Brush Cover | 16. Side Cover Nuts |
| 8. Hand Guard | 17. Water Feed Valve |
| 9. Splash Flap | |



Equipment Specifications

Power Input	220 V: 3200 W
	110 V: 3000 W
Voltage	220-240V~ 50/60Hz or 110-120V~ 50/60Hz (see machine nameplate)
No Load Speed min ⁻¹	10000
Max. Linear speed	20.65 m/s
Diamond Chain	25 links
Sprocket Pitch	3/8"
Guide Bar Nominal Size	330 mm (13")
Guide Bar Overall Length	382 mm (15")
Max. Depth of Cut	300 mm (11.8")
Protection Class	Class I
Dimensions (L x W x H)	630mm (930mm with guide bar) x 215mm x 280mm
Weight	8.0 kg (17.6 Lbs.), (8.94 kg (19.7 Lbs.) with guide bar & chain)

Safety Precautions

Operate the equipment and all of its components according to this manual. Failure to comply with and understand the following safety, operation and maintenance instructions can result in serious injuries and/or death. All operators must be properly trained or supervised by experienced personnel prior to using this saw and should understand the risks and hazards involved. Diamond Products discourages improper or unintended equipment usage and cannot be held liable for any resulting damages.

Equipment modifications should be made by Diamond Products to ensure safety and design. Any modifications made by the owner(s) are not the responsibility of Diamond Products and void all equipment warranties if a problem arises as a result of the modification.

Refer to the Diamond Products Parts List for additional information and part diagrams. Refer to the engine manual and manufacturer as the primary source for all safety, operations, and maintenance instructions regarding the engine. Prior to operating, record the saw's serial number, and the engine's model and serial numbers.

Notice: The information in this manual may be updated at any time!

Safety Alerts



DANGER

Serious injuries and/or death will occur if these instructions are not followed.



WARNING

Serious injuries and/or death could occur if these instructions are not followed.



CAUTION

Mild and/or moderate injuries could occur if these instructions are not followed.

Proposition 65



WARNING

Engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and/or other reproductive harm.



Spark Arrester Requirement



WARNING

In the State of California it is a violation of section 4442 or 4443 to use or operate the engine on any forest-covered, brush-covered, or grass-covered land unless the engine is equipped with a spark arrester, as defined in section 4442, maintained in effective, working order or the engine is constructed, equipped, and maintained for the prevention of fire pursuant to section 4443.

Respiratory Hazards



WARNING

Concrete cutting produces dust and fumes known to cause illness, death, cancer, respiratory disease, birth defects, and/or other reproductive harm. Safety protection techniques include, but are not limited to:

- Wearing gloves.
- Wearing safety goggles or a face shield.
- Using approved respirators.
- Washing work clothes daily.
- Using water when wet cutting to minimize dust.
- Washing the hands and face prior to eating/drinking.

For additional safety and self-protection information contact your employer, the Occupational Safety and Health Administration (OSHA), and/or The National Institute for Occupational Safety and Health (NIOSH).

General Safety



- Read and understand all safety, operations, and maintenance instructions provided in this manual prior to operating or servicing the saw.
- Keep equipment components clean and free of slurry, concrete dust, and debris.
- Inspect water hoses prior to operating the equipment. Clean, repair, or replace damaged components.
- Raise the equipment to a proper height for access when working underneath the equipment. Use chocks to block the wheels, and fit blocks or jacks under the frame edges.
- When using a jack to raise the equipment, place the jack against a solid, flat area under the frame base to properly support the equipment.
- Repair the equipment immediately when a problem arises.
- Replace equipment decals if unreadable.
- Dispose of all hazardous waste materials according to city, state, and federal regulations.
- Always have a phone nearby, and locate the nearest fire extinguisher and first aid kit prior to operating the equipment.
- Operate the equipment wearing flame resistant clothing.
- Always wear safety glasses when removing retaining rings.
- Persons under the statutory age limit should not operate the equipment.
- Keep all body parts away from rotating machinery.
- Replace all guards and access panels (unless stated otherwise) prior to operating the equipment.
- Chock the wheels to help prevent unnecessary movement.

DO NOT:

- Drop equipment, supplies, tools, etc., when handling to help prevent injuries.
- Lift and carry equipment, supplies, tools, etc., that are too heavy and/or cannot be lifted easily.
- Operate the equipment without using the appropriate safety equipment required for the work task.

- Operate or service the equipment with any clothing, hair, or accessories that can snag in the machinery, which could lead to serious injuries or death!
- Operate the equipment using attachments not associated with or recommended for the equipment.
- Operate the equipment around combustible materials or fumes to prevent fires/explosions.
- Operate the equipment with anyone near the work area or within the direct line of the blade.
- Operate the equipment until all unnecessary materials have been removed from the work area.
- Operate the equipment with loose nuts, screws, and bolts.
- Operate the equipment when ill or fatigued.
- Operate the equipment under the influence of drugs and/or alcohol.
- Operate the equipment on steep slopes.
- Cut concrete with guards and access panels removed.
- Grease the equipment with the engine running.
- Touch hot components when operating the equipment.
- Leave the equipment unattended until the engine is off and the blade has stopped spinning.
- Place the equipment into storage until it has cooled down.
- Service the equipment until it has cooled down.
- Service the equipment with the engine running.

Chain Saw Safety

- Operate the equipment without using the appropriate safety equipment required for the work task.
- Always hold the chain saw with your right hand on the rear handle and your left hand on the front handle. Holding the chain saw with a reversed hand configuration increases the risk of personal injury and should never be done.
- Hold the chain saw by insulated gripping surfaces only, because the saw chain may contact hidden wiring or its own cord. Saw chains contacting a "live" wire may make exposed metal parts of the chain saw "live" and could give the operator an electric shock.
- Wear eye protection. Further protective equipment for hearing, head, hands, legs and feet is recommended. Adequate protective equipment will reduce personal injury from flying debris or accidental contact with the saw chain.
- Do not operate a chain saw in a tree, on a ladder, from a rooftop, or any unstable support. Operation of a chain saw in this manner could result in serious personal injury.
- Always keep proper footing and operate the chain saw only when standing on fixed, secure and level surface. Slippery or unstable surfaces may cause a loss of balance or control of the chain saw.
- Carry the chain saw by the front handle with the chain saw switched off and away from your body. When transporting or storing the chain saw, always fit the guide bar cover. Proper handling of the chain saw will reduce the likelihood of accidental contact with the moving saw chain.
- Follow instructions for lubricating, chain tensioning and changing the bar and chain.
- Improperly tensioned or lubricated chain may either break or increase the chance for kickback.

- Cut concrete, masonry, and similar materials only. Do not use chain saw for purposes not intended. For example: do not use chain saw for cutting wood, metal, or plastic materials. Use of the chain saw for operations different than intended could result in a hazardous situation.

Transporting Safety

- Remove the blade prior to transporting the equipment.
- Make sure the truck/trailer is in good, working condition and sufficient to transport
- Raise the equipment to avoid damaging components while moving up and down ramps.

-
- Use extreme caution when guiding the equipment up and down ramps. Slowly drive the equipment forward down the ramp. Slowly back the equipment in reverse up the ramp. Avoid standing directly downhill from the equipment to prevent machine rollover.
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- Place the equipment in neutral and turn off the engine once the equipment is loaded in the truck/trailer.
 - Chock the wheels and secure the saw in the truck/trailer prior to transporting.
 - Refer to the Department of Transportation (DOT) for additional transportation recommendations.
 - DO NOT tow the equipment behind a vehicle.
 - Close the fuel shutoff valve (applicable models) when transporting.
 - Drain the fuel tank when transporting long distances.
 - Use heavy-duty ramps that will support the weight of the equipment and yourself when loading or unloading.



Lifting Safety

-
- Move yourself and all others away from the lifting area when hoisting the saw to prevent being crushed.
-
- Secure the appropriate hoisting cables, straps, and/or chains to the saw's designated lift points prior to hoisting.
 - Never use the tie-down brackets (applicable models) to lift the saw.
 - DO NOT attempt to lift the saw irresponsibly.

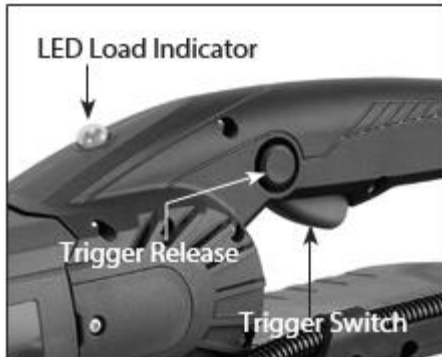


Operation

Starting and Stopping Saw

Starting

- This machine has a lock-off type switch. First press the trigger release, then squeeze the trigger switch to switch on. For safety reasons, the switch is not possible to lock on.



Stopping

- Release the trigger switch to stop the machine. After the machine has been switched off, the chain will still rotate for a few seconds, take care that parts of your body do not come into contact with the chain while it is still rotating!

WARNING: Do not set the machine down until the chain has stopped turning.

Overload and Overheat Protection

- When the tool is operating within its normal load range, the LED load indicator will glow green.
- When full load is reached, the load indicator will flash red. If full load is exceeded and sustained for too long, the motor will shut down and the load indicator will glow solid red. In this case, the motor must be first shut off and then restarted.
- If the temperature of the motor gets too high, the thermal protection will shut the motor down. The switch must be first shut off and then restarted. When this happens, do not immediately start cutting after restarting the motor. Always run the machine at no load for a few minutes to return to a normal operating temperature before continuing.

Making a Cut

Checklist

- Proper chain tension and ensure guide bar nuts are tight
- Good condition of the chain, guide bar, and drive sprocket
- Connect the water supply, check for leaks and for proper water flow to the chain
- Ensure all safety equipment is in place and functioning normally
- Mark the line of cut before beginning.

WARNING: A new operator should perform some practice cuts under controlled conditions to become familiarized with concrete chain saw techniques. Experience with a wood cutting chain saw does NOT qualify an operator to use a concrete chain saw.

WARNING: Position the power supply cord so that it will not become caught on worksite obstacles.

CAUTION: Do not attempt to enter a kerf which is narrower than the chain. This will damage the diamond segments.

CAUTION: Avoid the chain being pinched in the kerf. Plan the cut, and support the workpiece if necessary, to avoid the kept closing down on the chain as cutting progresses.

NOTE: When cutting concrete with embedded rebar, always cut in such a way that the chain is cutting both concrete and rebar at the same time. The concrete will help to keep the diamond segments sharp.

Beginning the Cut

- With the chain running at full speed, slowly approach the workpiece with the nose of the guide bar and plunge in. Hold the saw as straight as possible.
- Start by making a shallow, 10 to 20mm outline cut along the entire cutting line with the nose of the guide bar. Then plunge in deeper and complete the cut.
- While cutting, keep steady feed pressure on the tool to prevent the chain from chattering and bouncing. Use enough pressure so that the

motor audibly slows by about 20-30%. This will keep the diamonds sharp. Use the bumper spike for leverage to assist in keeping pressure on the cutting face.

Square Cut-outs

- When the tool is operating within its normal load range, the LED load indicator will glow green.
- When performing large square cut-outs, after the initial shallow outline cut, carefully hold the saw as squarely as possible and plunge cut each of the corners all of the way through.
- Make the bottom horizontal cut first, then drive some wedges into kerf of the bottom if the cut section is large and heavy. Next, perform the 2 side vertical cuts. Make the top horizontal cut last.
- This cutting sequence will avoid the chain being pinched by the workpiece.

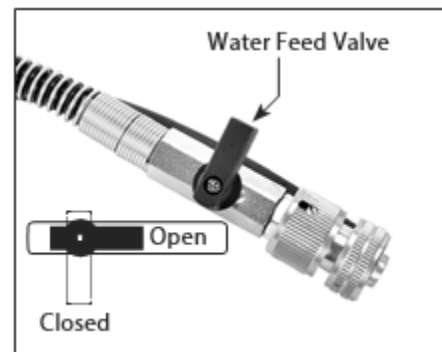
WARNING: Ensure that appropriate bracing is in place to control falling of the concrete as the final cut is completed. Concrete is extremely heavy and could lead to severe injury if it falls in an uncontrolled manner.

Pipe Cutting

- When cutting a concrete pipe, support the pipe so that it will not pinch the chain. Plunge straight through the pipe, leaving a tab of uncut material at the very top, which will keep the pipe stable while cutting. Cut this tab last to complete the cut.

Water Supply

- This tool must always be used with a supply of clean water at a minimum pressure of at least 1.5bar (20 psi). The water serves as a coolant to avoid the working surface of the diamond segments from overheating and since it is not possible to use oil, the water also serves as the only lubricant available for the chain and guide bar. Sufficient water pressure will maximize chain life.
- To connect the water supply, attach the quick-release water coupling to a water hose and regulate the water flow by adjusting the water feed valve.



CAUTION: Never use this tool without water, the diamonds will overheat and the O-rings in the chain will fail from the excessive heat.

WARNING: Check all connections of the water feed system to

ensure there are no leaks. Inspect hoses and other critical parts which could deteriorate.

WARNING: The maximum water pressure should not exceed 70 psi (4 bar).

WARNING: Never allow water to enter the motor.

NOTE: Contaminants in the water supply can easily plug up the water nozzles in the water feed system. Ensure that the supply water is clean. If you find that there is no water flow to the chain, then clean out the water feed system on the machine.

NOTE: Use a wet vacuum to collect cooling water if nearby objects could be damaged by water.

Maintenance

General Maintenance

- This machine operates in a harsh environment with water and slurry. At the end of each work day, thoroughly clean the machine with water, then oil the bar and chain with a water displacing spray such as WD-40 to prevent rust. Ensure that the water feed ports are clear. Chain tension should be checked frequently and readjusted immediately when necessary. Inspect all parts of the saw for proper function before each use. Pay special attention to the condition of the chain, inspecting each diamond segment for wear or damage.

Sharpening a New or Glazed Chain

- If the chain is new, or if the chain's diamond segments become glazed, sharpen by making a few cuts into an appropriate alumina oxide or silicon carbide dressing stone. Simply make shallow plunge cuts into the stone as many times as necessary to restore its cutting performance. If a dressing stone is not available, cutting into a highly abrasive work material, such as cinder block will also work.

Choosing a Chain

This chain saw uses a 25-link diamond chain and a 13" guide bar. Chains with different types of diamond segments are available for different applications.

- Choose a chain with soft bond segments for hard materials, such as reinforced concrete. Trying to use a chain with hard bond segments to cut hard materials will lead to unsatisfactorily slow cutting and the chain will need to be sharpened many times.
- Choose a chain with a hard bond segments for softer, more abrasive materials. Using a chain with soft bond segments to cut soft materials will lead to unnecessarily shorter segment life. By choosing the correct chain for the application, cutting will

be more effective and economical.

Installing Guide Bar and Chain

1. With the 2 side cover nuts removed and the side cover removed, slacken the tension adjustor by turning anticlockwise.
2. Slip the guide bar into position over the studs with the hole engaged with the adjustor pin. (the bar is symmetrical and may be installed with either side up)



3. Place the chain around the drive sprocket first, ensuring that the drive links engage the sprocket teeth.
4. Starting from the drive sprocket end, loop the chain around the guide bar nose sprocket, ensuring that the drive links engage with the guide bar groove and remain engaged with the sprockets.
5. Place the side cover in position and thread on the 2 side cover nuts, leaving them finger tight only (to allow the tension adjustor to be adjusted). They will be tightened fully after tensioning according to the instructions below.

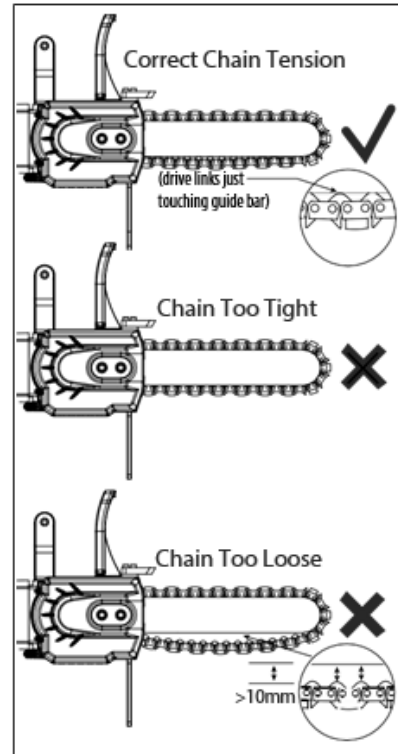
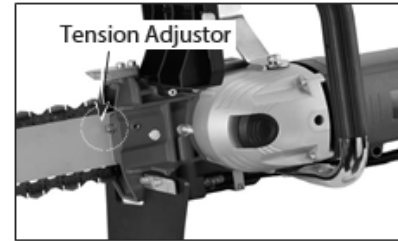
Tensioning the Chain

Note: Proper chain tension with a concrete chain saw is much looser than with a wood chain saw. It must be loose enough to run freely with only water as its lubrication.

- An over tensioned chain will give unnecessary load to the motor and will lead to premature chain stretch, sprocket damage, and spindle bearing damage.
 - An overly slack chain could fly off the guide bar and could also jump teeth on the drive sprocket, leading to premature wear of the sprocket and the chain's drive links.
 - In use, the chain must be readjusted if it hangs below the guide bar 10mm or more
 - To tension the chain, first loosen the 2 side cover nuts and leave them finger tight.
- CAUTION: attempting to turn the adjustor

without loosening the side cover nuts could result in damage to the adjuster mechanism.

- While holding the guide bar upward from the nose end, turn the tension adjuster clockwise to tighten.
- Rotate the chain by hand, grabbing the chain by its diamond segments, to ensure the chain rotates freely.
- **WARNING:** Wear gloves when handling the chain and bar. Keep fingers away from the edges of the guide bar rails. When worn, they will have a very sharp edge.
- When the associated parts have some wear, there will be some positions where the chain is looser and other positions where it is tighter. Find the tightest point, and make the final adjustment at that position.
- Tension is correct when the chain is free to run around the guide bar, and the chain will hang with the drive links just barely engaging the guide bar groove at the bottom center position.
- Once adjustment is satisfactory, the 2 side cover nuts may be tightened. While still holding guide bar upward, tighten the 2 side cover nuts firmly.
- **CAUTION:** Running the saw with the side cover nuts loose will cause a hazardous situation and could lead to damage to the tension adjuster mechanism.



Wearing Parts

1. Diamond Chain

The diamond segments will wear away with normal use. In addition, the chain itself will stretch due to accumulated wear of each joint of the chain. Inspect each segment of the chain before each use, noting any segment damage or undue wear.

2. Guide Bar

The guide bar rails will wear from abrasion with the chain. If the saw tends to cut to one side, the rails have worn unevenly. The guide bar rails can be re-squared by carefully sanding on a bench mounted belt sander. If the chain's drive links are touching the bottom of the guide bar grooves, the guide bar must be replaced. Running a good chain on worn out guide bar will prematurely wear out its drive links and the motor will overload easily from the excessive friction.

Extra life can be had from the guide bar by flipping it over to the other side, since the bottom wears faster than the top. It is a good practice to flip the guide bar each time you replace a chain. Generally, the guide bar will need to be replaced after about 3 chains.

3. Drive Sprocket

Running a good chain on a worn-out sprocket will prematurely wear out its drive links. After about 3 chains, the drive sprocket will wear away and need replacement.

Replacing the Drive Sprocket

To change the drive sprocket, first remove the side cover, chain, and guide bar. Using circlip pliers, remove the circlip, then the washer which retain the drive sprocket, then lift the sprocket off the splines. Replacement is the reverse of removal.

Replacing Carbon Brushes

The carbon brushes are a normal wearing part and must be replaced when they reach their wear limit. This machine is equipped with auto-stop carbon brush holders. If the machine comes to a stop unexpectedly, the brushes should be checked. The auto-stop brush design protects the motor by stopping the machine before the carbon brushes are completely worn out.

Caution: Always replace the brushes as a pair.

1. Remove the screw and remove the brush cover.
2. Using pliers rotate the brush spring out of the way and slide the old carbon brush out of the brush holder.
3. Unscrew the screw to remove the brush lead. The old carbon brush may now be lifted away.
4. Install a new brush. Installation is the reverse of removal.
5. Replace the brush cover.



Reference

Appendix A

Serial Number

Record the CSE12's serial number below for future reference and customer service purposes.

Serial Number	
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EQUIPMENT AND PARTS WARRANTY

Diamond Products warrants all equipment manufactured by it against defects in workmanship or materials for a period of one (1) year from the date of shipment to Customer.

The responsibility of Diamond Products under this Warranty is limited to replacement or repair of defective parts at Diamond Products' Elyria, Ohio factory, or at a point designated by it, of such parts as shall appear to us upon inspection at such parts, to have been defective in material or workmanship, with expense for transportation and labor borne by Customer.

In no event shall Diamond Products be liable for consequential or incidental damages arising out of the failure of any Product to operate properly.

Integral units such as engines, electric motors, batteries, transmissions, etc., are excluded from this Warranty and are subject to the prime manufacturer's warranty.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, AND ALL SUCH OTHER WARRANTIES ARE HEREBY DISCLAIMED.



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