



BARRANCA DIAMOND

## HP18-24 SLAB SAW

### OWNER'S MANUAL



P/N 8302024

Revision 201	01.2022
Manual Part No. 164269	

**Caution:** Read all safety and operating instructions before using this equipment. This manual **MUST** accompany the equipment at all times.

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## INTRODUCTION

Thank you for selecting the Barranca Diamond HP18-24 Slab Saw. We are certain that you will be pleased with your purchase. Barranca Diamond takes pride in producing top quality products for hobbyists and commercial lapidary users throughout the world. This product is manufactured in the United States.

This owner's manual contains information necessary to operate and maintain your HP18-24 Slab Saw safely and correctly. Operated correctly, your HP18-24 Slab Saw should provide you with years of service. Please take the time to familiarize yourself with the Slab Saw by reading and reviewing this manual.

If you should have questions concerning your Slab Saw, please call Barranca Diamond at (310) 523-5867 or Toll Free (800) 630-7682.

**NOTE THIS INFORMATION FOR FUTURE USE:**

MODEL NUMBER:	
SERIAL NUMBER:	
PURCHASE PLACE:	
PURCHASE DATE:	

**WARRANTY:** For your (1) one year warranty to be effective, complete the online Product Registration as soon as possible. Visit [www.mkdiamond.com/registration/](http://www.mkdiamond.com/registration/)

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**SAFETY PRECAUTIONS**

Read and follow all safety, operating and maintenance instructions. Failure to read and follow these instructions could result in injury or death to you or others. Failure to read and follow these instructions could also result in damage and/or reduced equipment life. In order to prevent injury, the following safety precautions should be followed at all times!

**READ OWNER'S MANUAL BEFORE USE**

Before using this equipment, ensure that the person operating this machine has read and understands all of the instructions in the manual. Precaution is the best insurance against accidents. Read and understand all safety precautions, messages, warnings and hazard symbols. You are responsible for your own safety.

**ALWAYS USE SAFETY GLASSES**

Safety glasses should always be worn when working around power tools. In addition, a face, dust mask or respirator should be worn if a cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses and may not prevent eye injury - they are NOT safety glasses.

**USE PROPER APPAREL**

Do not wear loose clothing, gloves, neckties, rings, bracelets or other jewelry that may be caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair. Hand protection (plastic gloves) and a shop bib are recommended during sawing to prevent stains to clothing. Avoid prolonged exposure of skin to the sawing lubricant and wash skin immediately after contact. Do not touch the work material until the motor is off and the machine has come to a complete stop.

**ALWAYS USE HEARING PROTECTION**

To reduce the possibility of hearing loss, always use hearing protection when operating power equipment.

**KEEP GUARDS IN PLACE**

In order to prevent injury, never operate the saw without the guards in place!

**REMOVE ADJUSTING KEYS AND WRENCHES**

Form a habit of checking to see that keys and adjusting wrenches are removed from the power tool before it is turned on.

**ELECTRICAL SHOCK**

Never touch electrical wires or motor components while the motor is running. Exposed, frayed or worn electrical wiring and plugs can be sources of electrical shock that could cause severe injury or burns.

**DISCONNECT TOOLS**

Power tools should always be disconnected before servicing or when changing accessories, such as blades, bits, cutters and the like.

**REDUCE THE RISK OF UNINTENTIONAL STARTS**

Make sure the **ON/OFF** switch is in the **OFF** position before plugging in a power tool.

**ROTATING OR MOVING PARTS**

Keep hands, feet, hair, and clothing away from all moving parts to prevent injury. Never operate the engine with covers, shrouds or guards removed.

**MAINTAIN TOOLS WITH CARE**

Keep tools clean for the best and safest performance. Always follow maintenance instructions for lubricating and when changing accessories.

**KEEP WORK AREA CLEAN**

Cluttered work areas and benches invite accidents.

**DO NOT USE IN DANGEROUS OR HAZARDOUS ENVIRONMENTS**

Do not operate equipment in dangerous or hazardous environments. Do not use power tools in damp or wet locations nor expose them to rain. Always keep the work area well lighted. Always work in a well ventilated area.

**KEEP CHILDREN AWAY**

All visitors and children should be kept a safe distance from the work area. Keep power cords disconnected when tool is not in use.

**MAKE THE WORKSHOP KID-PROOF**

Make the workshops kid-proof by using padlocks, master switches and by disconnecting all power cords.

**USE THE RIGHT TOOL**

Do not force a tool or an attachment to do a job that it was not designed to do.

**SECURE WORK**

Clamps or a vise should be used to hold work whenever practical. Keeping your hands free to operate a power tool is safer.

**DO NOT FORCE THE TOOL**

A power tool will do a better job and operate more safely at the feed rate for which it was designed.

**USE THE RIGHT TOOL TO SERVICE THE SAW**

Do not force a tool or an attachment when servicing or operating the Slab Saw. Use the correct tools for service or adjustments.

**DO NOT OVERREACH**

Keep proper footing and balance at all times by not overreaching.

**DO NOT OPERATE A TOOL WHEN TIRED**

When tired, take a break and relax.

**DIRECTION OF FEED**

Always feed work into a blade or cutter in the direction shown in this manual. All blades, grinding wheels or polishing belts should always be installed such that rotation is in the direction of the arrow imprinted on the blade, wheel or belt.

**ONLY OPERATE AT THE PROPER SPEED**

Severe personal injury and damage to the motor or equipment can result if operated at speeds above maximum.

**NEVER LEAVE A TOOL RUNNING UNATTENDED – TURN POWER OFF**

Do not leave a tool until it comes to a complete stop. Always turn the tool off, and disconnect the power cord to its source, when leaving the work area or when work is finished. Do not leave extension cords attached to the power cord or power receptacle (wall outlet) when leaving the work area.

**CHECK FOR DAMAGED OR WORN PARTS**

Before using a power tool, check for damaged parts. A guard or any other part that is damaged should be carefully checked to determine if it would operate properly and perform its intended function. Always check moving parts for proper alignment or binding. Check for broken parts and mountings and all other conditions that may affect the operation of the power tool. A guard, or any damaged part, should be properly repaired or replaced.

**USE RECOMMENDED ACCESSORIES AND PARTS**

Consult the owner's manual for recommended accessories and parts. Using improper parts and accessories may increase the risk of personal and/or bystander injury.

**USE THE PROPER EXTENSION CORD**

If using an extension cord, make sure it is in good condition first. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage that will result in a loss of power and overheating. The table on page 8 shows the correct AWG (American Wire Gauge) size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

**USE THE PROPER POWER SOURCE**

This tool is only to be used with a 120 volt 60 HZ power source. Ensure power source is at least 15 amps and 110 to 120 volts. Low voltage current can adversely effect electric motor performance and overall life.

**USE THE RECOMMENDED COOLING AND LUBRICATING FLUIDS**

Never operate a tool dry that requires coolant or lubricant. This can lead to shortened tool life, tool damage and personal injury.

**MAINTAIN TOOLS WITH CARE**

Keep the diamond blade sharp, the sawing lubricant clean and reservoir filled to the correct level for the best and safest performance. Always follow the maintenance instructions for sharpening the blade, lubricating and servicing the Slab Saw.

**SILICA DUST WARNING**

Grinding/cutting/drilling of masonry, concrete, metal and other materials with silica in their composition may give off dust or mists containing crystalline silica. Silica is a basic component of sand, quartz, brick clay, granite and numerous other minerals and rocks. Repeated and/or substantial inhalation of airborne crystalline silica can cause serious or fatal respiratory diseases, including silicosis. In addition, California and some other authorities have listed respirable crystalline silica as a substance known to cause cancer. When cutting such materials, always follow respiratory precautions.

Use appropriate NIOSH-approved respiratory protection where dust hazard may occur. Paper masks or surgical masks without a NIOSH approval number are not recommended because they do little to protect the worker. For more information about respirator programs, including what respirators have received NIOSH approval as safe and effective, please visit the NIOSH website at:

*<http://www.cdc.gov/niosh/topics/respirators>*

Observe OSHA regulations for respirator use (29 C.F.R. §1910.134 and §1503.1).

Visit *<http://www.osha.gov>* for more information.

**CALIFORNIA PROPOSITION 65 MESSAGE**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead, from lead-based paints
- Crystalline silica, from bricks and cement and other masonry products
- Arsenic and chromium, from chemically treated lumber

For further information, consult the following sources:

*<http://www.osha.gov/dsg/topics/silicacrystalline/index.html>*

*<http://www.cdc.gov/niosh/docs/96-112/>*

*<http://oehha.ca.gov/prop65/law/P65law72003.html>*

*<http://www.dir.ca.gov/Title8/sub4.html>*

*<http://www.P65warnings.ca.gov>*

Your risk from these exposures varies depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles. Where use of a dust extraction device is possible, it should be used. To achieve a high level of dust collection, use an industrial HEPA vacuum cleaner. Observe OSHA 29 CFR part 1926.57 and 1926.103.

## ELECTRICAL REQUIREMENTS AND GROUNDING INSTRUCTIONS

In order to prevent electrical shock and injury, the following electrical safety precautions and symbols should be followed at all times!

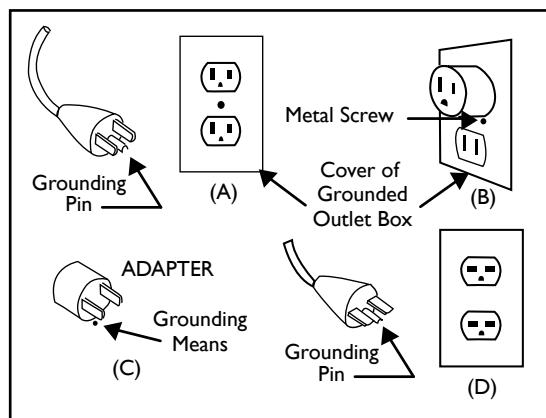


### WARNING

In case of a malfunction or breakdown, grounding provides a path of least resistance for electrical current to reduce the risk of electric shock. This tool is equipped with an electric cord which has an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

- **DO NOT** modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.
- Improper connections of the equipment-grounding conductor can result in a risk of electric shock. The equipment-grounding conductor is the insulated conductor that has an outer surface that is green, with or without yellow stripes. If repair or replacement of the electric cord or plug is necessary, **DO NOT** connect the equipment-grounding conductor to a live terminal.
- Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.
- Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.
- Repair or replace a damaged or worn cord immediately.

This tool is intended for use on a circuit that has an outlet that looks like the one shown in Sketch A. The tool has a grounding plug that looks like the plug illustrated in Sketch A. A temporary adapter, which looks like the adapter illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in Sketch B, if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, plug, and the like, extending from the adapter, must be connected to a permanent ground, such as a properly grounded outlet box.



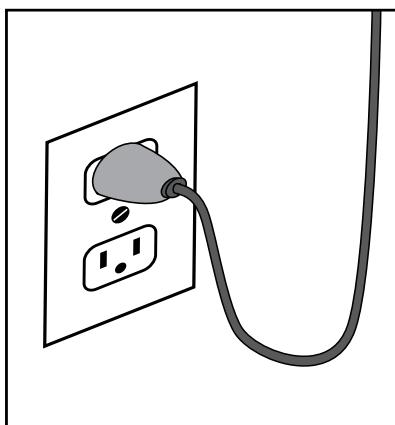
Circuit and Adapter Information

**NOTE:** Use of a temporary adapter is not permitted in Canada.

**NOTE:** If permanently connected this tool should be connected to a grounded metal permanent wiring system; or to a system having an equipment - grounding conductor.

**ELECTRICAL REQUIREMENTS AND GROUNDING INSTRUCTIONS**

To avoid the possibility of the appliance plug or receptacle getting wet, position the saw to one side of a wallmounted receptacle. This will prevent water from dripping onto the receptacle or plug. A "drip loop," shown in picture below, should be arranged by the user to properly position the power cord relative to the power source.



The "drip loop" is that part of the cord below the level of the receptacle, or the connector, if an extension cord is used. This method of positioning the cord prevents the travel of water along the power cord and coming in contact with the receptacle. If the plug or receptacle gets wet, DO NOT unplug the cord. Disconnect the fuse or circuit breaker that supplies power to the tool. Then unplug and examine for presence of water in the receptacle.

Use only extension cords that are intended for outdoor use. These extension cords are identified by a marking "Acceptable for use with outdoor appliances; store indoors while not in use." Use only extension cords having an electrical rating not less than the rating of the product.

Do not use damaged extension cords. Examine extension cords before using and replace if damaged. Do not abuse extension cords and do not yank on any cord to disconnect. Keep cords away from heat and sharp edges. Always disconnect the extension cord from the receptacle before disconnecting the product from the extension cord.

To reduce the risk of electrocution, keep all connections dry and off the ground. Do not touch the plug with wet hands.

Use of undersized extension cords result in low voltage to the motor that can result in motor burnout and premature failure. Barranca Diamond warns that equipment returned to us showing signs of being run in a low voltage condition, through the use of undersized extension cords, will be repaired or replaced totally at the customer's expense. There will be no warranty claim.

To choose the proper extension cord:

- Locate the length of extension cord needed in the table below.
- Once the proper length is found, move down the column to obtain the correct AWG size required for that length of extension cord.

MOTOR SPECS			EXTENSION CORD LENGTH			
Motor	Voltage	Amps	25'	50'	100'	200'
161099	115V 1 Ph	14.4	12 ga	10 ga	8 ga	4 ga

**SAFETY LABEL LOCATIONS**

Safety labels contain important safety information. Please read the information contained on each safety label. These labels are considered a permanent part of your saw. If a label comes off or becomes hard to read, contact Barranca Diamond or your dealer for a replacement.



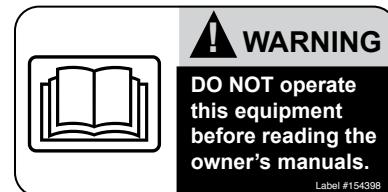
Part # 164202

**A**

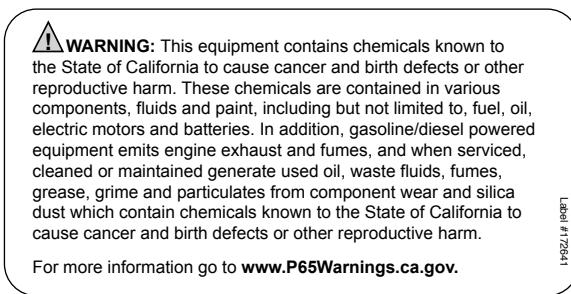
Part # 155587

**B**

Part # 171239

**C**

Part # 154398

**D**For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Part # 172641

**E**

Part # 154822

**F**

Part # 155678

**G**

Decal	Location	Description
A	Hood	Warning - Dust Control
B	Belt Guard	Caution - Guards in place
C	Hood	QR Code for Manuals & Safety Information
D	Hood	Warning - Read and Follow Operating Instructions
E	Hood	Warning - Silica Prop 65
F	Hood	Caution - Receptacle
G	Hood	Caution - Use with GFCI only

<b>Model#</b>	<b>HP18-24</b>		
Motor	Electric		
Horsepower	1.5 Hp		
Voltage	120V / 60 Hz		
Amperage	14.4		
Motor RPM	1725		
Blade RPM	500		
Arbor Size	1"		
Blade Capacity	18"	20"	24"
Depth of Cut <sup>†</sup>	6.5"	7.5"	9.5"
Oil Capacity	15 gal.*	15 gal.*	15 gal.
Vise Opening	18"		
Saw L x W x H	65" x 37" x 48"		
Dry Weight	720 lbs.		
Part Number	8302024		

\*Oil capacity when using pump

<sup>†</sup>Depth of cut will vary depending on size and shape of specimen

## MOTOR

Single Phase, Continuous Duty commercial grade motor with automatic thermal overload protection. Manual reset button on HP18-24 motor. Export motor 230 volts 50Hz can be ordered with either saw.

## FEED MECHANISM

Stainless steel screw rod with silicon bronze threaded clutch block engagement system. 24VDC brushless motor drive adjusts from 0-1/2" per minute.

## LUBRICATING SYSTEM

15 gallon of petroleum or mineral based lubricant provides splash lubrication when using a 24" blade. Smaller blades use provided pump to lubricate blade. Splash lubrication of smaller blades can be achieved by adding more lubricant or raising lubricant level by placing bricks in the tank so less oil is required to raise level. Bottom 3/8" to 1/2" of blade must be submerged in lubricant to provide proper splash lubrication.

## CARRIAGE & VISE MATERIAL

Cast Iron.

## CARRIAGE RAILS

1-1/4" chrome plated C1045 steel rod.

## SHAFT BEARINGS

Sealed flange mount ball bearings with zerk fittings for grease lubrication.

**CARRIAGE FEED ENGAGE/DISENGAGEMENT**

Lever operated clutch system using silicon bronze shoe with block (adjustable set screws).

**INDEXING OR ROCK CUT WIDTH CONTROL**

Crank handle operated stainless steel screw system.

**TANK & HOOD COVER CONSTRUCTION**

14 gauge steel box-construction 14 gauge hood with acrylic plastic viewing window.

**TANK LEGS**

Steel construction with locking casters on slab saws.

**OIL SLUDGE DRAIN**

2" drain cap on HP18-24 saw. Drain placement is on bottom of saw tank.

**ON/OFF AUTOMATIC POWER CONTROL**

HP18-24 saw has adjustable chain for automatic shut-off control of power on/off switch.

**DEPTH OF CUT**

18" blade: 6.5 inches, 20" blade: 7.5 inches & 24" blade: 9.5 inches

**MATERIAL TYPES**

Barranca Diamond HP18-24 Slab Saw can cut a variety of material types including lapidary rock, natural and artificial glass, and gemstone minerals.

**NOTE:** HP18-24 Slab Saw is not designed to cut wood, ice, synthetics, graphite carbon, plastics, or ferrous metal materials.

**UNPACKING & ASSEMBLY**

Your HP18-24 Slab Saw has been shipped from the factory thoroughly inspected and tested. Do not over-tighten the arbor nut prior to use.

Remove the saw from the pallet by unbolting legs from crate pallet and place it on a flat surface using a forklift. Install casters on legs – one at a time - on slab saws prior to operation.

## CONTENTS

In the wood crate, you will find one (1) Barranca Diamond HP18-24 Slab Saw, one (1) owner's manual, one (1) warranty card, and 4 leg casters.

## TRANSPORT

**⚠️ WARNING** HP18-24 Slab Saw weighs 720 pounds dry. Do not attempt to move a saw that is not mounted on casters without a forklift or floor jack. Place the hood in the DOWN position and latched when transporting. Be sure power cord is disconnected.

## **RECOMMEND CUTTING OILS FOR HP18-24 BARRANCA SLAB SAW**

Never run a diamond blade dry as this can immediately damage your blade. Use one of the oils/coolants recommended below. Coolant should be kept clean and below 100° F. Sludge should be removed periodically and replaced with fresh coolant so that your cuts will be clean and your blades will not be damaged.

### **SHELL DIALA AX**

Electrical transformer cooling oil. A highly refined petroleum product available at oil distributors that carry Shell products. Purchased mostly by the electrical utility companies for transformers and usually available in 5 gallon drums (one gallon jugs are not available). Has a slight odor but is excellent for slab sawing. Excellent lubricating properties for blades and saw parts. Flushes sludge from rock easily, degreases easily, and sludge settles in saw tank well.

### **CHEVRON TEXACO BRIGHT-CUT**

A chlorine-free cutting oil with reduced sulfur and fat content. Light in color and low in odor.

### **HYVOLT II**

Electrical transformer cooling oil. A highly refined petroleum product, available from some non-Shell oil distributors, typically only in 55 gallon drums. Same properties and performance as Shell Diala AX.

### **CHEVRON SUPERLA #5**

Food grade mineral oil. Non-hazardous lubricating oil for bakeries, breweries and food processing machinery. Good lubricating properties, degreases and settles sludge well. Can go rancid over time (1 year or less).

### **AVATEC 80**

Food grade mineral oil, excellent for slab sawing in all our slab saws.

### **TEXACO ALMAG**

Pure petroleum based machining cutting oil. Good for slab sawing but very strong odor. Often the cheapest priced oil available but odor is tough to eliminate.

**ROC CUT**

Roc Cut from Diamond Pacific is a new synthetic water soluble cutting additive with rust inhibitors. Mix 30 to 1 (water to Roc Cut).

**ROC-OIL**

Roc-Oil from Diamond Pacific is a oil coolant for heavy duty cutting. Provides excellent blade protection and will not cause rust to your blade or saw.

**STELLAR LUBRICANT**

Orange scented mineral oil for use in Lapidary Saws and equipment. This oil is non-toxic, environmentally conscious and has excellent heat dispersion properties. Flash Point 305°F.

**SMOKEY'S EZ CUT**

Synthetic water based cutting agent (mix ratio: 3 ounces per gallon)

**WATER**

Water is not recommended as a cutting fluid as it is a coolant only and does not promote good cutting performance. Water can shorten blade life and often frequent blade sharpening may be required. However, it can be used if a water soluble synthetic agent/additive such as Smokey's EZ Cut or Diamond Pacific Roc Cut is used to extend blade life and promote improved sawing. Even with additives, frequent blade sharpening may be required. These additives have rust inhibiting properties but oxidation can still result over time as mist and heat can cover the blade arbor threaded shaft and jam nut with water during and after sawing. For this reason, if water with or without an additive is used as a cutting fluid, the user is advised to use water displacing WD-40 sprayed on the blade core and shaft/nut after every cutting session to inhibit rust formation.

***Under NO circumstances should any of the following fluids be used in any Lapidary Saw:***

**AUTOMOTIVE ANTIFREEZE COOLANT**

Ethylene glycol based automotive antifreeze and its vapors are hazardous and toxic. Propylene glycol based antifreeze is non-toxic but has practically no lubricating properties; it functions as a coolant only and its use will lead to rapid blade wear and dulling.

**AUTOMATIC TRANSMISSION FLUID**

Does not have adequate lubricating properties for lapidary saws; vapors are considered hazardous and toxic.

**CNC MACHINING FLUIDS**

Water soluble synthetic coolants (i.e. Valenite or Cimtool) are often mixed in a 20:1 blend with water. Fluid vapors are considered hazardous. These fluids do not have adequate lubricating or rust inhibiting properties for the cast iron and steel parts in lapidary slab and trim saws.

**DIESEL, HEATING OIL AND KEROSENE**

Very flammable with a low flash points. At least 3 of our commercial cutting customers in Arizona and Pacific Northwest have burned down their shops using these fluids. Can be very tough to degrease the residue and aroma out of the cut slabs. These fluids are cheap, but very hazardous to use. Diesel is a benzene compound which is carcinogenic. All these fluids can cause severe skin rashes and other ailments.

## PRE-START INSPECTION

The pre-start inspection should be performed before beginning any job.

### 1. Check Oil Level

Oil should always cover at least 3/8" to 1/2" of the bottom of the blade (Kerf should be completely covered). Do not overfill the reservoir tank!

### 2. Check Blade

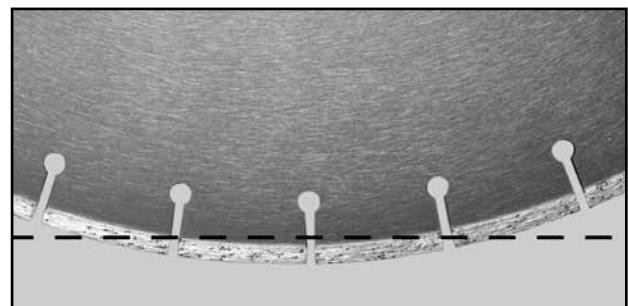


**CAUTION** Check blade signs for core or segment cracks, uneven segment wear, pounding out of round arbor hole, undercutting, segment loss, dishing or loss of tension. If the diamond blade shows signs of any of these problems the blade must be replaced before starting work. A damaged blade will not cut correctly and could cause physical injury.

## STARTUP

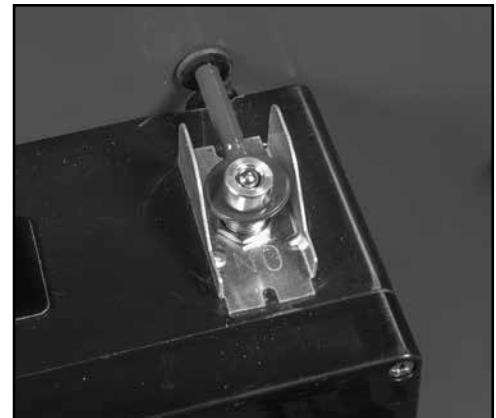
### SAW LUBRICANT

The saw tank reservoir should be filled with oil to a point 1/4" to 3/8" of the bottom of the blade. This ensures adequate lubrication for the blade's diamond notched segments and allows for splashing of the oil onto the rock carriage, vise, rails and screw thread for lubrication and rock mud flushing into the tank. Never place more than 3/4 inch of oil over the bottom of the blade as this overfilling will result in more friction and work for the blade and motor to overcome the excess oil causing motor and belt overheating. Periodically check the oil tank level after each day of use to ensure an adequate level of lubricating oil in the tank. Expect loss of cutting oil over time due to misting, absorption into the rock material and heat evaporation.



### Power Switch

The motor requires no special preparation or adjustment prior to use of the slab saw. The on/off power control toggle switch is located on the front of the saw. Pull the toggle switch away from the saw to start the electric motor. Push the toggle switch toward the saw to stop the electric motor.



Power Switch

### Automatic Shutoff

Once a rock specimen has been securely vised inside of the saw, the operator can adjust the automatic shut-off control switch by moving the link chain to the desired position where the rock and vise are anticipated to complete the desired cut. By moving the vise forward with the rock in place, the operator can see where the chain slack needs to be adjusted to stop the unit automatically. Movement of the vice will tension the chain to a point where it will pull the **ON/OFF** switch to the **OFF** position and shut-off the power feed and blade shaft motor automatically.



Slab saw automatic shut-off chain & adjustment to carriage hook

### Variable Speed Vice Drive

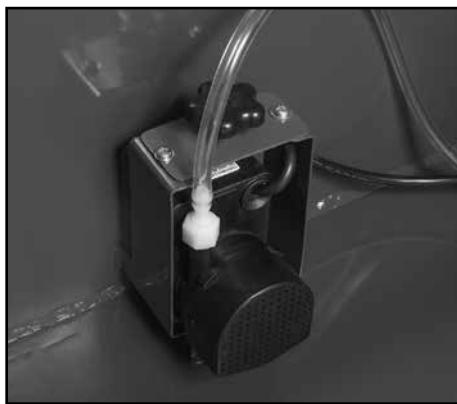
24VDC brushless motor drive adjusts vice travel from 0-1/2" per minute, using the dial on the drive enclosure.



Variable Speed Vice Drive

### Pump

Submersive Pump required when using 18" and 20" blades. Plug-in Pump located under tank.



Pump



Pump Plug

### NEW BLADE BREAK-IN PROCEDURE

Be sure to wipe off any and all carbide or abrasive grit particles from the cross and main feed screw rod and rails. It is recommended, upon initial use of the slab saws, to cut material that is abrasive yet soft such as carbide brick or cinder block to remove the factory paint and open the blade's diamond segment for optimal cutting performance. Use of a sharpening stone such as aluminum oxide or carborundum is acceptable only if the sharpening brick is placed securely in the vise.

**! CAUTION**

Diamond Blades improperly used are dangerous. Comply with American National Standards Institute Safety Code, B7.1 and, Occupational Safety and Health Act covering Speed, Safety Guards, Flanges, Mounting Procedures, General Operating Rules, Handling, Storage and General Machine Conditions.

**! CAUTION**

Never operate the saw with the hood up, or hold a sharpening stone to the blade by hand. Use of the vise is mandatory under all operation conditions.

**Diamond Blade**

Never over-sharpen the blade too much as it will cut down the blade life. Periodically, the diamond blades should be "dressed open" or sharpened by making several passes through a green carbide brick, aluminum oxide (60-100 grit), or abrasive stone such as cinder block or red brick.

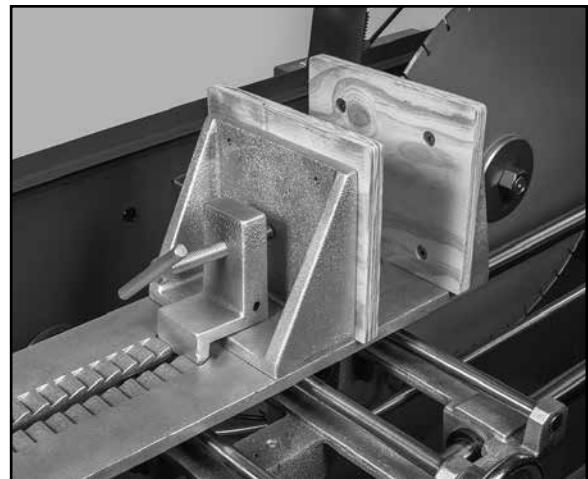
Should the saw experience difficulty in cutting, inspect the diamond blade for loss of tension, temper, wobble, pounding, dishing, or glazing of the diamond cutting edge (kerf). Resharpening of the blade may be required periodically when cutting dense and hard material. Segmented rim and continuous rim 303 Pro blades are NOT repairable. Be sure blade flanges are at least 1/6 the blade diameter (i.e. a 24" blade requires a set of flanges at least 4" in diameter). Undersized flanges will result in blade tension loss.

**! CAUTION**

**DO NOT FORCE** the blade to cut, it will do the job better and safer at a rate for which it was designed.

**Rock Vise/Carriage Operation**

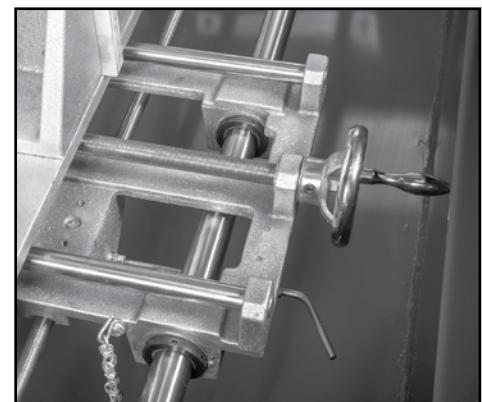
The carriage and rock vise work together to securely hold the rock specimens during movement of the material in the carriage toward and into the notched rim diamond blade. The rock specimen should not exceed the maximum material size for the saw you are using (as shown in the table on the saw specifications page). It is very important that the rock specimen be tightened by use of the hand screw threaded bolt at the back of the rear vise plate once the specimen has been pushed forward and in firm contact with the front plate. Both front and rear vise plates are constructed of 1/2" plywood to give firm and tight grip to the rock specimen. Should replacement be needed due to wear or breakage, the parts can be ordered from Barranca Diamond Products. Wedges of wood can be used in the voids between the rock specimen and vise plates to enhance the surface contact and pressure hold prior to tightening the vise screw bolt. Be sure to recheck the tightening screw prior to operation.



Carriage and rock vise

**Handle Crank Cross Feed Adjustable Rock Cut Index Control**

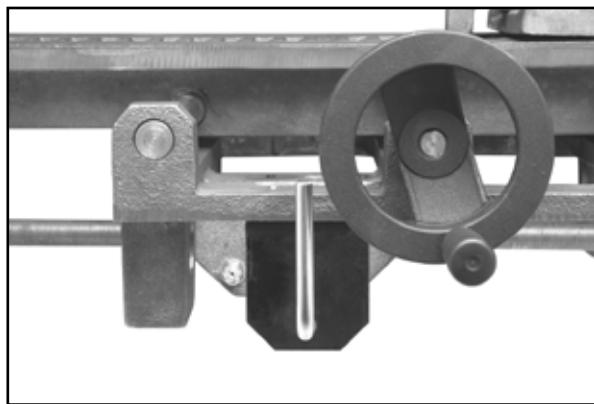
To use the crank cross feed index wheel, simply clamp and secure the cutting material into the vise by using the clamp screw to tighten the vise and turn the wheel crank until the desired slab thickness is achieved. You can measure the slab thickness with a ruler prior to cutting, but remember, depending on blade thickness, the amount of waste material from the rock specimen will vary. Always allow the rock cut to go to completion before opening the hood of the saw. Do not over crank the vise to the far left or right position on the carriage.



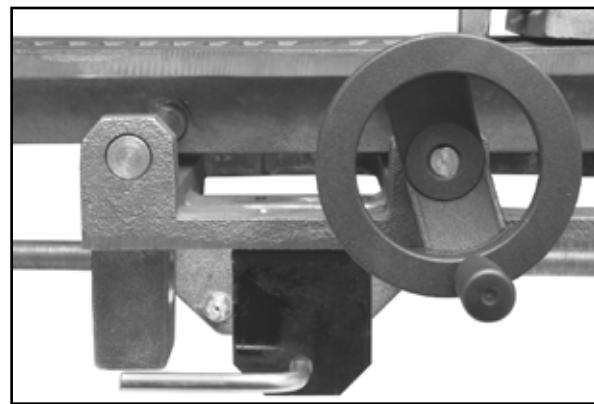
**Cross feed index, crank handle and clutch lever assembly**

**Automatic Feed Engagement/Disengagement System**

Slab saws are designed for operation with an adjustable clamping vise and self-feeding carriage mount. The clutch engagement/disengagement lever should be positioned in the straight upward (12 o'clock) position to disengage the clutch and allow the carriage to move freely along the rails. To engage the clutch, simply turn the lever in the downward (3 or 9 o'clock) position to securely engage the bronze shoe and block with the stainless steel thread. Should the carriage not move freely on the rails, clean the rails with a clean rag and place a liberal amount of wheel bearing grease on all surfaces of the steel rails to assist in the free movement of the carriage.



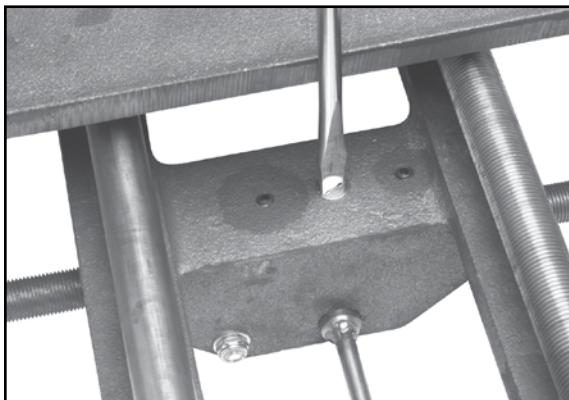
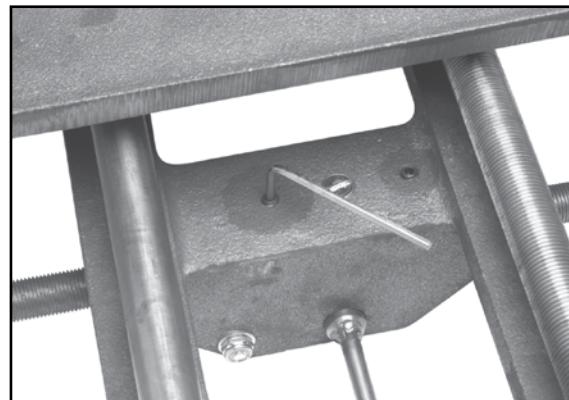
**Clutch lever in disengaged position**



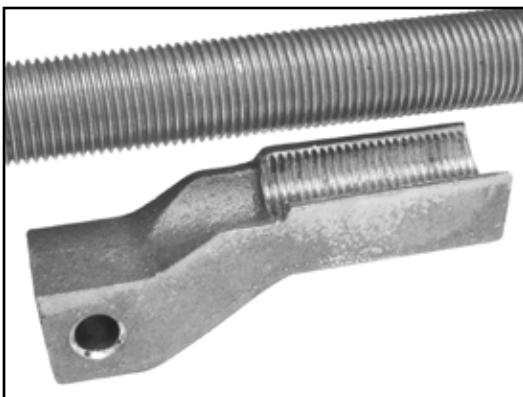
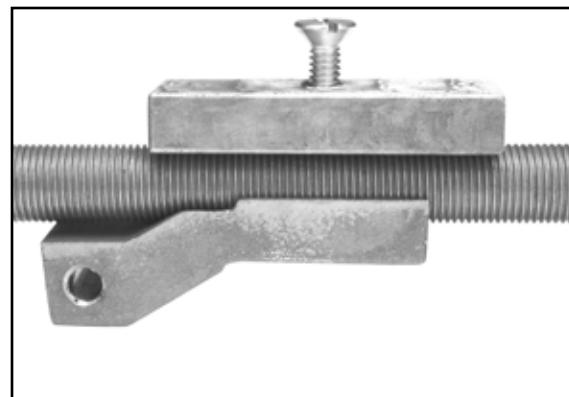
**Clutch lever in engaged position**

**Clutch Adjustment**

The clutch system is comprised of a lever to cam assembly that raises and lowers a bronze clutch shoe. Should the clutch not fully engage and move the carriage, loosen the countersink screw below the vise table inside of the carriage and tighten the two allen head screws to depress the bronze pressure block. Adjust set screws in one-half turn increments. Be sure to retighten countersink screw after each adjustment. Re-engage the clutch and restart saw to check if feed is working properly. If not, readjust set screws another 1/2 turn, retighten countersink screw and restart saw to check feed.

**Adjusting countersink screw****Adjusting allen head screw**

This adjustment will help the clutch block shoe to snugly engage the stainless steel feed screw by applying pressure to the brass pressure block below the carriage casting. Should you have trouble with this adjustment, call Barranca Diamond at (800) 630-7682 for factory assistance in clutch adjustment.

**Feed screw & clutch block shoe****Brass pressure block, feed screw & clutch block shoe**

Periodically, it will be necessary to replace the silicon bronze clutch block shoe once the 5/8"-18 threads are flattened or stripped. You may purchase the clutch block and pressure block direct from the factory. Order correct parts by part number and description of part(s).

**MAINTENANCE FOLLOWING USE**

The following maintenance should be performed following each use.

**WARNING**

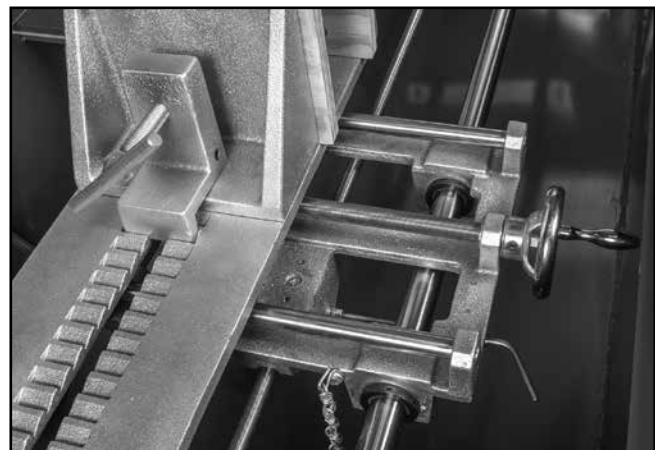
Place the **ON/OFF** switch in the **OFF** position and unplug cord prior to servicing and when changing accessories, such as blades, belts, and the like.

**Blade-Shaft Bearings**

Remove sheet metal cover over blade shaft and grease zerk fittings on base mount bearings. Use premium wheel bearing grease to lubricate all blade-shaft bearings.

**Shaft bearings****Cross-Adjustment Rail System**

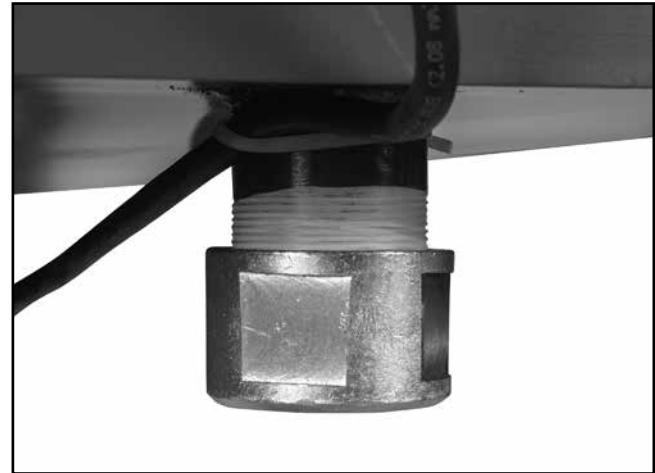
No grease or applied lubrication is required for the stainless steel screw feed and cross-adjustment rail system. The slab saw cutting oil splash will adequately lubricate the vice screw-feed, rails and clutch parts. If the carriage becomes hard to slide over the rails, clean the rails with a rag and apply a liberal amount of wheel bearing grease to the surface of the steel rails to facilitate travel of the carriage over the rails.

**Cross-adjustment rail system**

## GENERAL MAINTENANCE

### Oil Sludge Removal from Reservoir

Use plumber's pipe wrench to remove drain cap. Allow free liquid to drain to a pan. Use a spatula to remove sludge from tank bottom toward drain hole. Use of plumbers tape on the drain pipe threads will adequately seal the cap to thread contact to prevent leaks.



Drain Cap

## MONTHLY MAINTENANCE

The following should be performed monthly. Items should be lubricated as directed.

### Shaft Bearings

Grease zerk fittings on sealed ball bearing every 20 to 30 hours of use. Rotate shaft periodically while greasing zerk fittings.

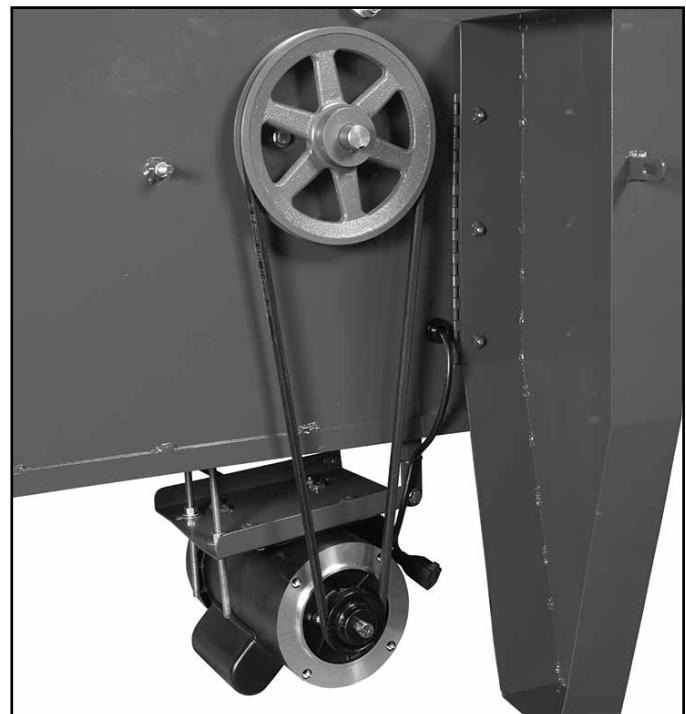
### Drive Belt

The belt tension from the motor to blade shaft is factory preset for immediate operation. However, the belt tension can be adjusted by adjusting the motor mount plate under the oil reservoir box with an open end wrench.

Periodically, the belt tension should be checked by opening the belt guard metal cover and ensure at least 1/2 to 3/4 inch of belt deflection is observable. Never over tighten the drive belt as premature motor, bearing and pulley wear may occur.



Belt tensioning assembly



Blade shaft to motor pulleys and belts

**Diamond Blade Change-Out**

Hold blade in one hand and use a wrench to turn shaft nut counterclockwise and remove nut and flange from shaft. After reinstalling blade, replace flange and nut and retighten. Do not over tighten shaft nut.

**V-Belt Inspection, Adjustment and Replacement**

Look for frayed or split belts. Tighten belts for 1/2" to 3/4" of deflection from center of belt. Do not over tighten.

**TROUBLESHOOTING****Saw Will Not Start**

Check power cord and receptacle.

**Motor Overheating**

If motor overheats allow to cool for 2 to 3 hours, push reset button with power disconnected, hookup power cord and resume cutting by pulling the power switch to the ON position. All motors have automatic thermal protection and will shut off if overheated. Do not use long (25"+) drop cords.



**Motor reset button**

**Vise carriage can not be moved by hand when clutch is disengaged**

Adjust clutch by loosening the slotted locking screw, turn 2 allen set screws 1/2 turn clockwise, retighten slotted locking screw. Check to see if carriage is disengaged from screw feed by placing clutch lever in 12 o'clock position and moving carriage by hand over rails.

**Vise carriage does not move automatically when clutch is engaged**

Clutch block thread may be stripped or worn. Remove and replace bronze clutch block.

**Blade will not cut properly**

Check for damage or glazed diamond cutting kerf (segments). Replace damaged blades or resharpen dull segmented blades.

**BARRANCA DIAMOND LIMITED WARRANTY**

Please complete the warranty registration card and return. Any problems encountered should be directed to Barranca Diamond Customer Service department at (800) 630-7682 M-F 8am - 5pm PST.

Barranca Diamond warrants to the original retail purchaser for a period of 90 days except as noted, from the date of purchase all products covered by this Warranty to be free of defects in materials and workmanship.

This Warranty shall not apply to any parts that have been subjected to misuse or improper service, that had been damaged in transit or handling, or that have been altered or repaired by unauthorized representatives. This Warranty does not cover defects caused by or resulting from misuse, abuse, neglect or damage caused by accident or the failure to provide reasonable maintenance. This Warranty is void if the product or any of its individual components is altered or modified by the purchaser or if the product is used in a manner or with a blade not recommended by the manufacturer.

Any claim arising under this Warranty must be submitted by the original purchaser within the warranty period specified above, and shall include proof of purchase. During said warranty period Barranca Diamond shall, at its option, either replace or repair, at no charge to the original purchaser, any parts or components that are found to be defective by Barranca Diamond. Barranca Diamond shall not be responsible for or obligated to pay for freight or other transportation related costs or expenses in connection with any defective products or components that are either returned to Barranca Diamond's facility or any authorized repair station and/or any replacement products or components that are shipped from Barranca Diamond pursuant to this Warranty.

Parts and labor needed to maintain products and the replacement of components due to normal wear and tear are the purchaser's responsibility and are not covered by this Warranty. All products or components replaced under warranty become the property of the manufacturer. All replacement parts will be considered to be part of the original product and any warranty on such parts will expire coincidentally with the original Warranty. Barranca Diamond will pay for parts and labor in connection with warranty repairs conducted by Barranca Diamond or its authorized repair centers. Replacement part(s) installed by anyone else will be provided without a charge for such replacement part(s), but this Warranty will not apply to labor charges in connection therewith.

**IN NO EVENT SHALL ANY LIABILITY UNDER THIS WARRANTY EXCEED THE REPLACEMENT COST OF ANY DEFECTIVE PRODUCT OR COMPONENT THEREOF, AND BARRANCA DIAMOND SHALL NOT BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR ANY OTHER DAMAGE OR LOSS NOT EXPRESSLY ASSUMED AS SET FORTH HEREIN.**

The foregoing constitutes an expressed warranty on the terms set forth above and is the only warranty or warranties applicable to the products it covers. All other warranties, including, without limitation, the implied warranty of merchantability and/or fitness for a particular purpose or use being denied. This limited warranty is expressly in lieu of all other warranties, whether expressed or implied.

**WARRANTY:** For your (1) one year warranty to be effective, complete the online Product Registration as soon as possible. Visit [www.mkdiamond.com/registration/](http://www.mkdiamond.com/registration/)

**SPECIFICS APPLICABLE TO LIMITED WARRANTY OF DIAMOND BLADES AND CORE BITS****Laser Welded Blade and Bit Warranty**

If the laser weld between the segment and the steel core or barrel fails during normal use, the blade or bit will be replaced free of charge. Blades and bits damaged due to careless or improper use are not covered under this warranty.

**Brazed Blade, Bit, and Cup Wheel Warranty**

If the brazed bond between the segment and the core, barrel, or cup fails within the first .050 of segment wear, the blade, bit, or cup will be replaced free of charge. Blades, bits, and cup wheels damaged due to careless or improper use are not covered under this warranty.

**Continuous Rim Blade Warranty**

If the bond between the rim and the core fails during normal use, the blade will be replaced free of charge. Blades and bits damaged due to careless or improper use are not covered under this warranty.

**Exclusions**

Barranca Diamond does not warrant the following components, which carry their own manufacturer's warranty for the indicated periods:

***Electric Motors Manufacturer's Warranty***

ABB Baldor: 1 year

Ryobi: 1 Year

Soga: 1 Year

***Gas Engines Manufacturer's Warranty***

Honda: 2 years

**Engine Power Information**

Engine power ratings are calculated by the individual engine manufacturer and the rating method may vary among engine manufacturers. Barranca Diamond Products makes no claim, representation or Warranty as to the power rating of the engine on this equipment and disclaims any responsibility or liability of any kind whatsoever with respect to the accuracy or the engine power rating. Users are advised to consult the engine manufacturer's owner's manual and website for specific information regarding the engine power rating.

## REPLACEMENT PARTS

Replacement parts for this tool may be ordered from your Barranca Diamond distributor or directly from Barranca Diamond. Please have the following information ready before calling:

- Model and serial number of the machine
- Date of purchase
- Description of parts being ordered

## RETURN MATERIALS PROCEDURE

To expedite the service relative to the return of a product purchased through Barranca Diamond, please have the following information available:

- Model and serial number of the machine
- Date of purchase
- Distributor's name

Then please call Barranca Diamond at (310) 523-5867 or toll free at 800-630-7682 to obtain a Return Goods Authorization number (RGA) authorizing the return.

Please Note:

- Ensure your item(s) are prepaid to the destination
- Return items must have been purchased within the previous twelve (12) months
- Follow the packaging instructions in the following section
- Be sure to include the RGA number, return address and your phone number on or within the return shipping box.

## PACKAGING INSTRUCTIONS

Ship the saw using its plywood shipping crate. Use wood screws to fasten the baseboard to the 1/2" plywood crate bottom so as to secure it inside the shipping crate.

## NOTES

**HP18-24**  
**OWNER'S MANUAL**  
**& PART LIST**



**BARRANCA DIAMOND**

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