

K3600

Operator's manual



Read these instructions carefully and make sure you understand them before using the machine.

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SYMBOLS ON THE RING SAW:



WARNING! The ring saw can be dangerous! Careless and incorrect use can result in serious or fatal injury to the operator or others.



Please read the instructions carefully and make sure you understand them before using the ring saw.



Always wear:

- Approved protective helmet
- Approved hearing protection
- Protective glasses or visor



This product is in accordance with applicable CE directives.

1. INTRODUCTION

FOREWORD

A ring saw is designed to cut masonry material. Careless or improper use can be dangerous and cause serious or even fatal injury to the operator or others. It is important that you fully understand the contents of this manual and that you allow only competent adults who understand the information in this manual to operate your ring saw. It is your responsibility to make sure that any persons who use your ring saw have read and understood this manual.



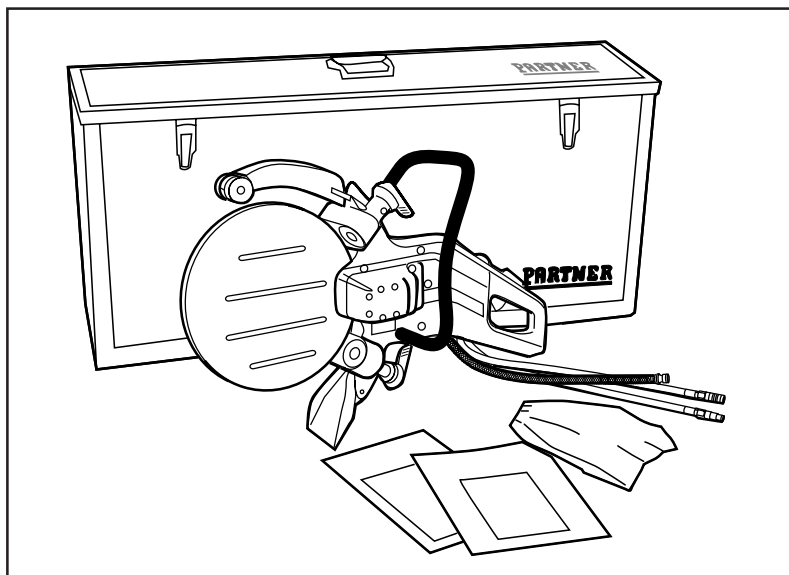
WARNING! Under no circumstances may the design of the machine be modified without the permission of the manufacturer. Always use genuine spare parts/accessories. Non-authorized modifications and/or accessories can result in serious personal injury or the death to the operator or others.

This Operator's Manual covers set up, general maintenance and operating instructions for the Partner K3600 hydraulically driven ring saw.

Partner Industrial Products continuously strives to improve power cutter design. Partner therefore reserves the right to introduce design modifications without notice and without incurring obligation.

All information and data in this manual were in effect at the time this manual was approved for printing.

THE PARTNER K3600 INCLUDES:



- 1 K3600 hydraulic ring saw
- 1 Wooden carrying case
- 1 Tool kit
- 1 Operator's manual
- 1 Illustrated parts list

2. SAFETY



WARNING! Alerts you to procedures that must be followed to avoid possible serious injury or death.



WARNING! Read and understand this manual supplied with the ring saw, and decals on the equipment before using the ring saw.



WARNING! Always wear protective clothing and other personal protective equipment.



WARNING! Never operate this ring saw without guards in place.



WARNING! Never use a damaged cutter blade.



WARNING! Never start the ring saw until you are certain that all personnel and foreign objects are cleared from cutting area.



WARNING! Never totally retip a used K3600 ring blade. A used blade may not have the proper strength. A retipped blade may crack or break and cause severe personal injury to the operator or others.



WARNING! Never connect to hydraulic pressure higher than 150 bar (3000 psi).

CAUTION! Do not attempt to operate the ring saw until you are familiar with all functions and controls.

CAUTION! Do not operate the ring saw when taking any kind of drugs or sedative medication, when overly fatigued or when under the influence of alcohol.

CAUTION! Make sure hydraulic hoses are not damaged.

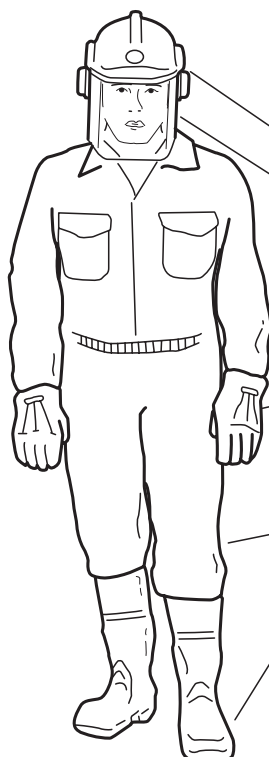
CAUTION! This ring saw must not be used without cooling water.

CAUTION! Keep handles clean and dry.

CAUTION! Water makes surfaces slippery. Maintain solid footing.

CAUTION! Make sure all maintenance and adjustments are performed before starting to cut.

Personal Protective Equipment



HELMET WITH HEARING PROTECTION

GOGGLES OR FULL FACE SHIELD

HEAVY DUTY, NON-SLIP GLOVES

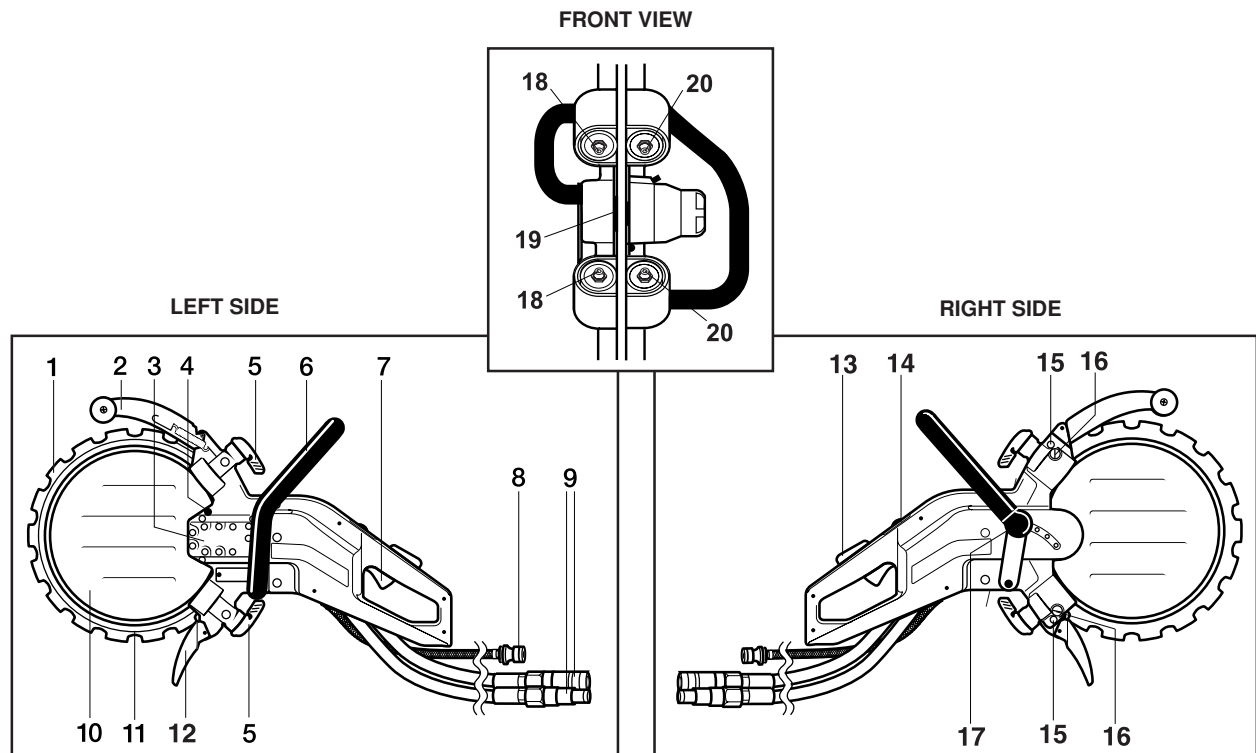
RUGGED, SNUG CLOTHING THAT ALLOWS FULL FREEDOM OF MOVEMENT

STURDY BOOTS WITH NON-SKID SOLES

IMPORTANT!

The personal protective equipment cannot prevent an accident but use of good personal protective equipment may minimize an injury in the event of an accident.

3. DESCRIPTION



1. Ring Blade

A selection of blades are available, depending on the type of material to be cut. This is a wet cutting blade which needs ample water supply.

2. Blade Guard

3. Hydraulic Motor

4. Lock button for drive disc

5. Engagement Roller Handles

Engages engagement rollers for blade contact to drive disc.

6. Front Handle (adjustable)

7. Throttle Trigger

8. Water Connection

Water inlet to supply cooling water to the blade.

9. Hydraulic Hose Couplers

10. Water Disc

For blade stability in the cut, to help provide water to the edge of the blade.

11. Engagement Roller Blade Groove

This groove is aligned with the shoulder on the engagement roller to keep a tight contact between the inner edge of the blade and the drive disc.

12. Splash Guard

13. Throttle Trigger lockout and water on/off valve

14. Water Flow Adjustment Valve

Valve for water flow to the ring blade.

15. Support Cover Screws

These screws are loosened/removed when installing the blade, and performing general maintenance.

16. Roller Adjustment Screws

Two adjustment screws are responsible for setting proper roller adjustment.

17. Lock Knob for front handle

18. Support Rollers

These rollers are responsible for supporting the blade against the engagement rollers.

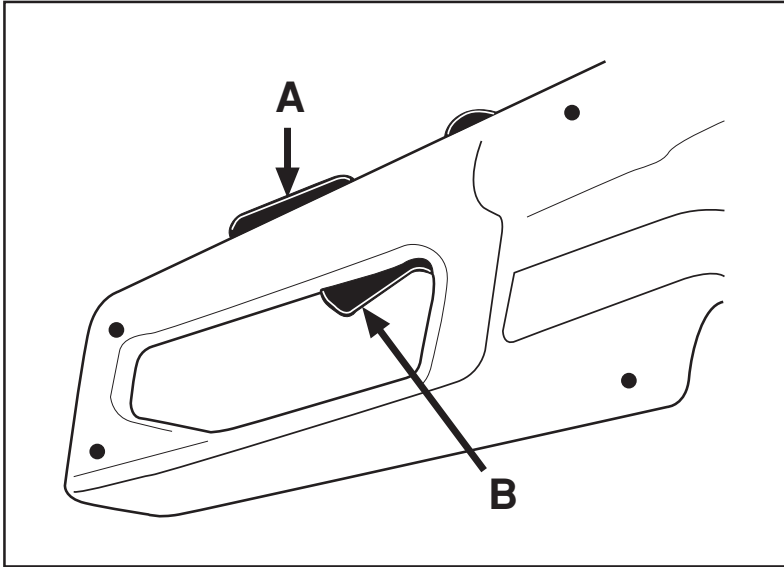
19. Drive disc

This is the only component that drives the blade. The inner edge of the blade rides in a "V" groove in the drive disc.

20. Engagement Rollers

These rollers maintain pressure between the blade and the drive disc.

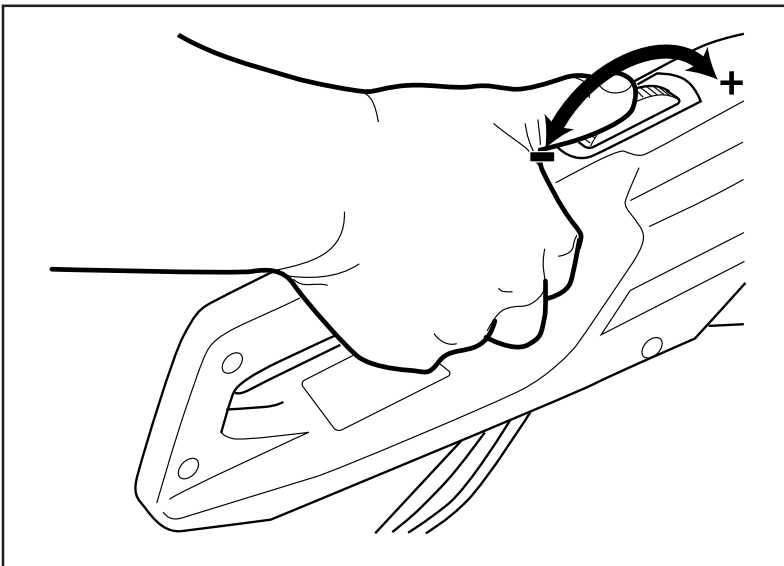
...DESCRIPTION



Water on/off valve (A)

Depressing the throttle trigger lockout (A) opens the water valve.

The water valve remains open and the throttle trigger lockout (A) depressed as long as the throttle trigger (B) is pushed in.

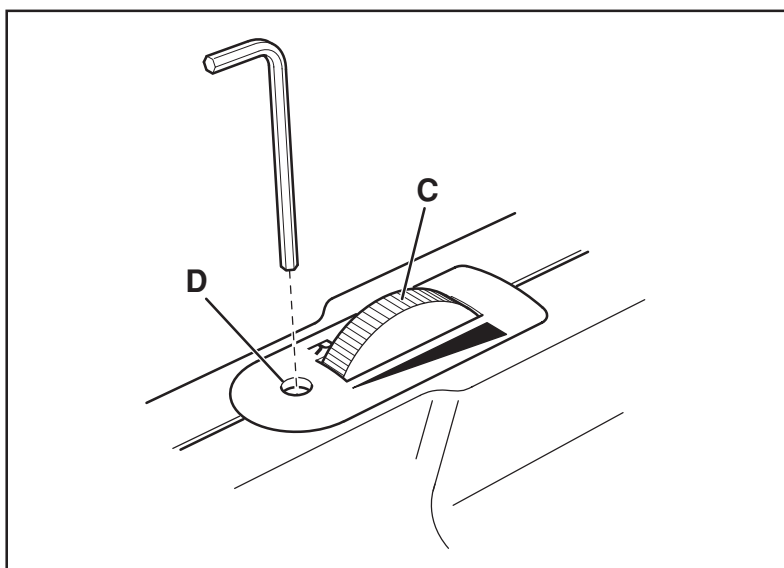


Water Adjustment

The water flow can be adjusted during operation with the thumb.

A heavy water supply must be provided to maximize blade life.

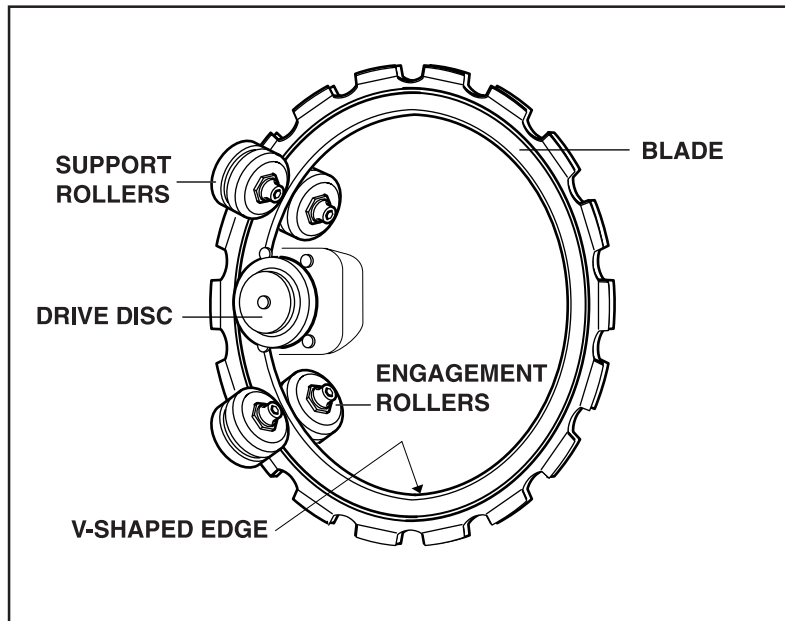
CAUTION: Water pressure and water flow are vital for blade cooling and blade life. Improper cooling of the ring blade will drastically reduce drive disc life and blade life.



The water valve is adjustable in order to get correct water-flow.

- Connect water hose and turn on water.
- Turn water adjustment (C) to minimum position.
- Push throttle trigger lockout (A).
- Adjust with 2 mm Allen wrench in hole (D) until water comes in all the outlets on the water disc.

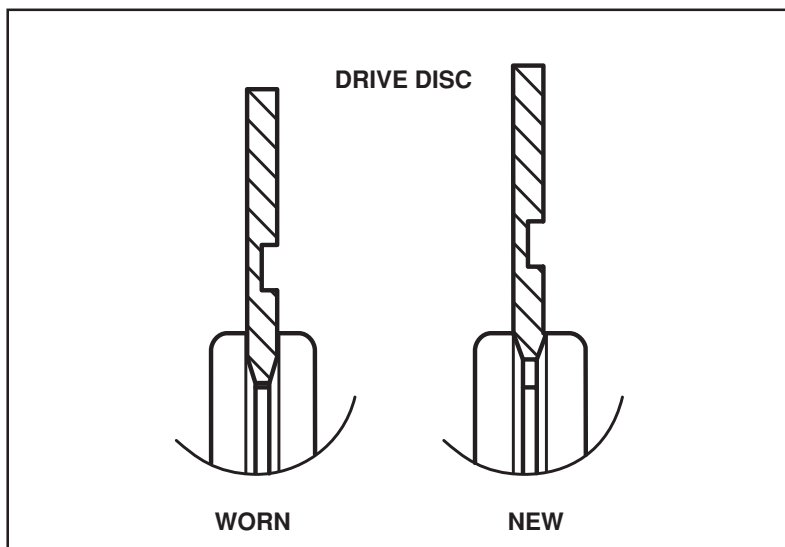
4. THEORY OF OPERATION



Drive Principle

The machine's unique design allows the blade to be driven by a hydraulic motor mounted off the center of the blade. This feature provides a total cutting depth of 260 mm (10 inches) with a 350 mm (14 inch) wet cutting diamond blade. The machine is a small, well-balanced and light weight package.

The shoulders on the two engagement rollers run in the groove of the blade. The engagement roller springs forces the roller out, pushing the V-shaped edge of the blade's inner diameter against the V-shaped groove of the drive disc. The drive disc is mounted directly to the hydraulic motor.

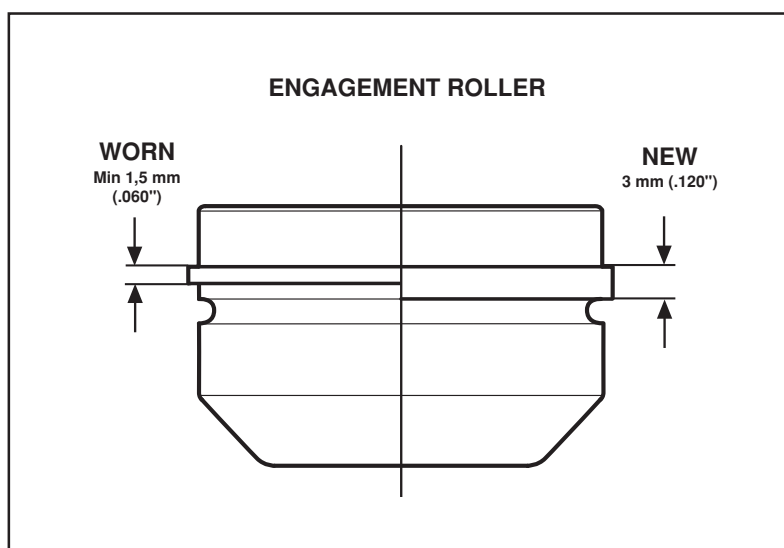


Essential Service

As the blade is used, the inner diameter of the blade, as well as the groove in the drive disc, will wear.

The saw will continue to operate well when:

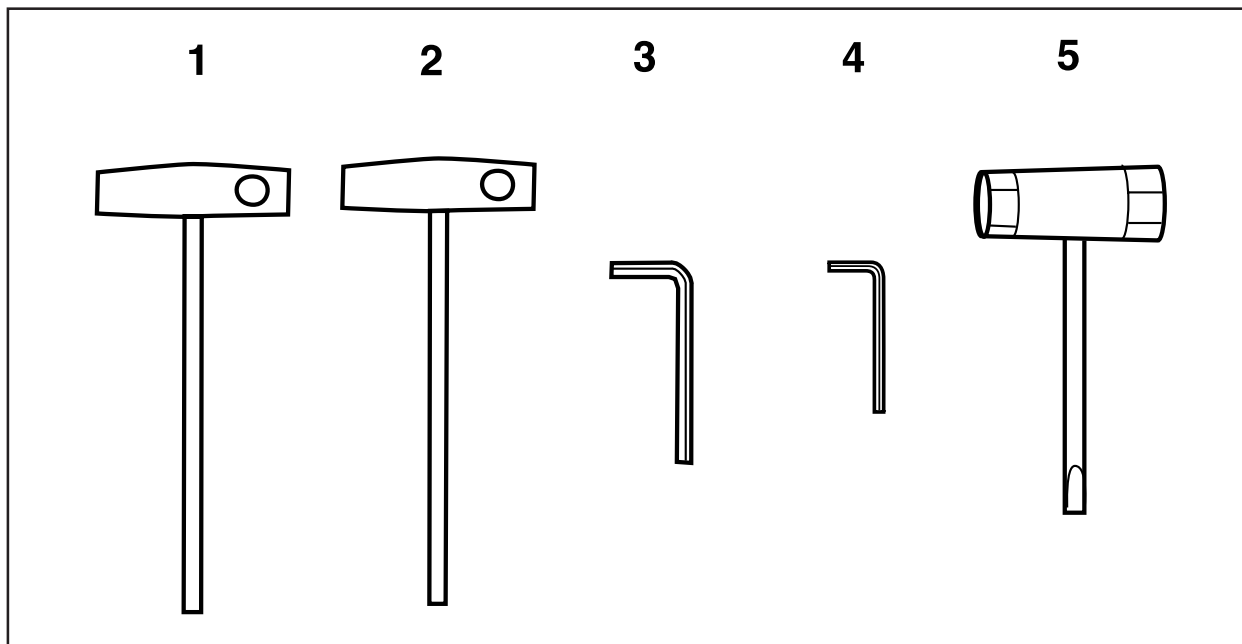
- the drive disc is not overly worn; and



- the engagement rollers are not overly worn; and
- the adjustment between the rollers and the blade is correct.

During the life of a blade, roller adjustment needs to be checked twice, once after installation of a new blade and once when the blade is worn 50%.

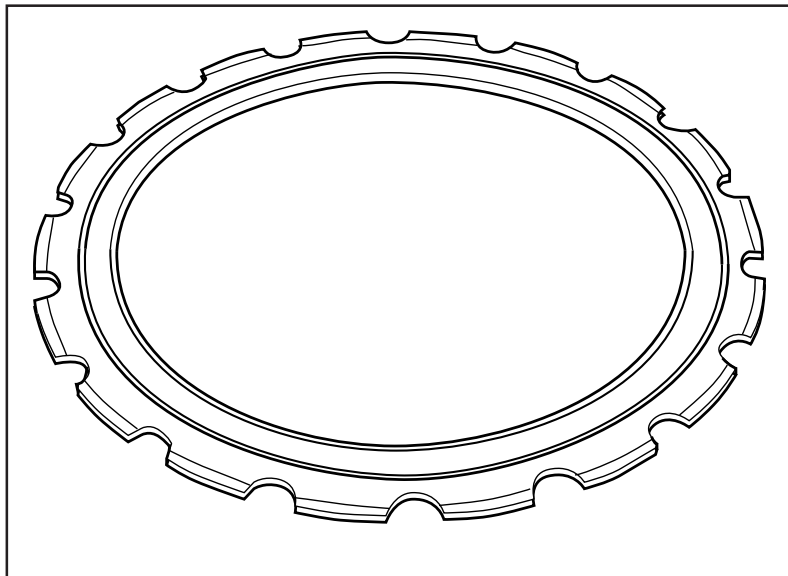
5. TOOLS



NOTE: The following tools are included with the toolkit.

- 1: 5 mm T-allen wrench (plastic)
- 2: 6 mm T-allen wrench (plastic)
- 3: 4 mm allen wrench
- 4: 2 mm allen wrench
- 5: 13-19 mm combination spanner

6. SET UP AND ADJUSTMENTS

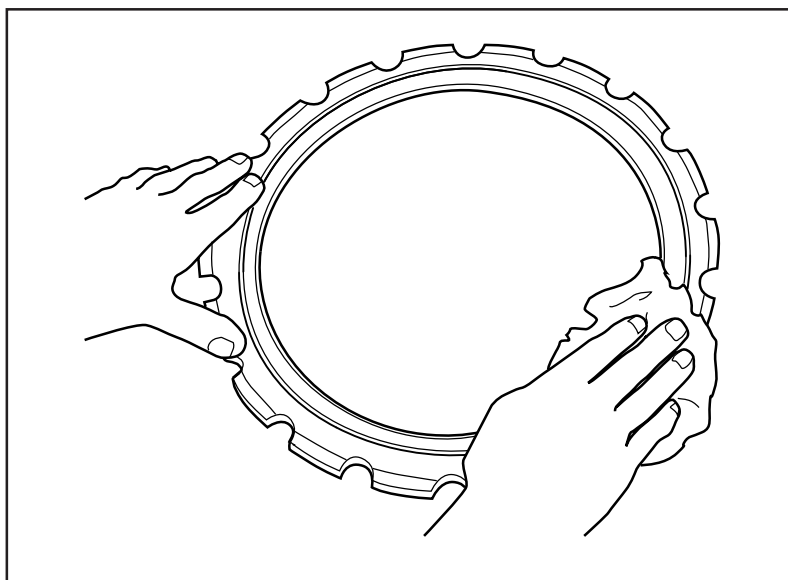


NOTE: Partner offers a selection of wet cutting ring blades for different materials. Check with a Partner dealer for the blade that is best suited for your application.



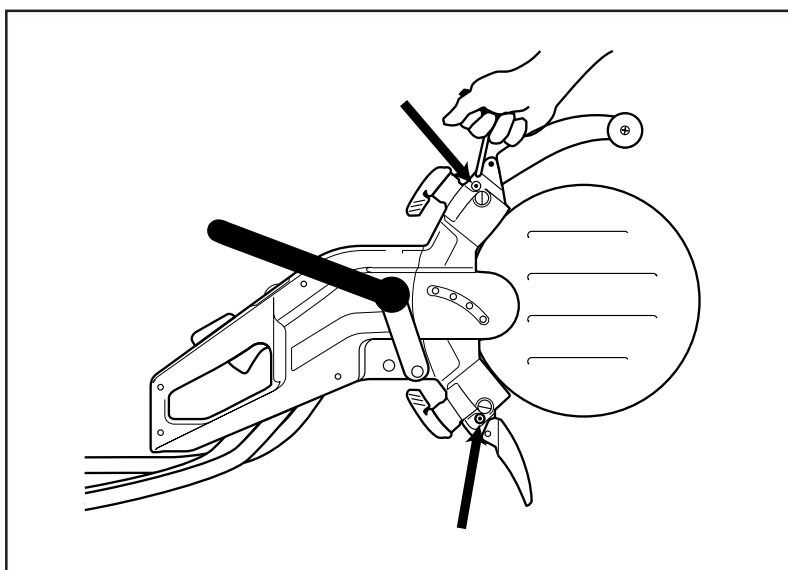
WARNING!

Never retip a used ring blade. A used blade may not have the proper strength. A retipped blade may crack or break and cause severe personal injury to the operator or others.



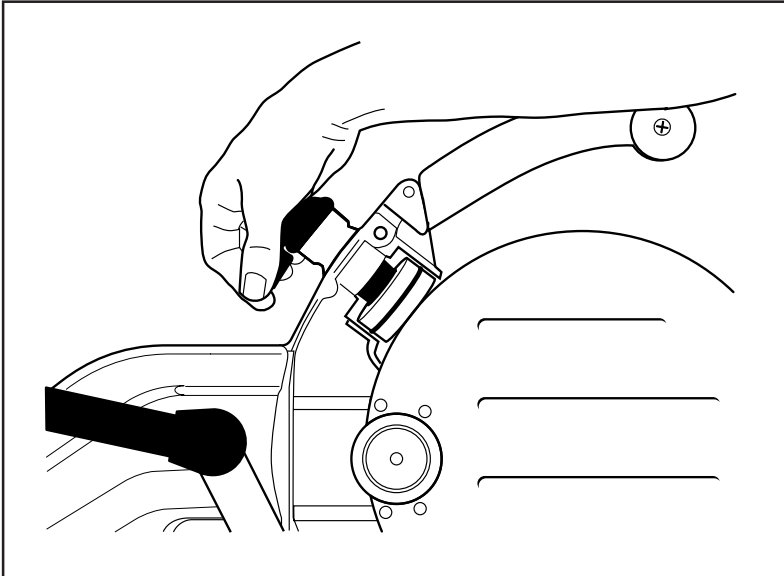
Blade Installation

- Wipe blade to remove any debris from the blade surface.

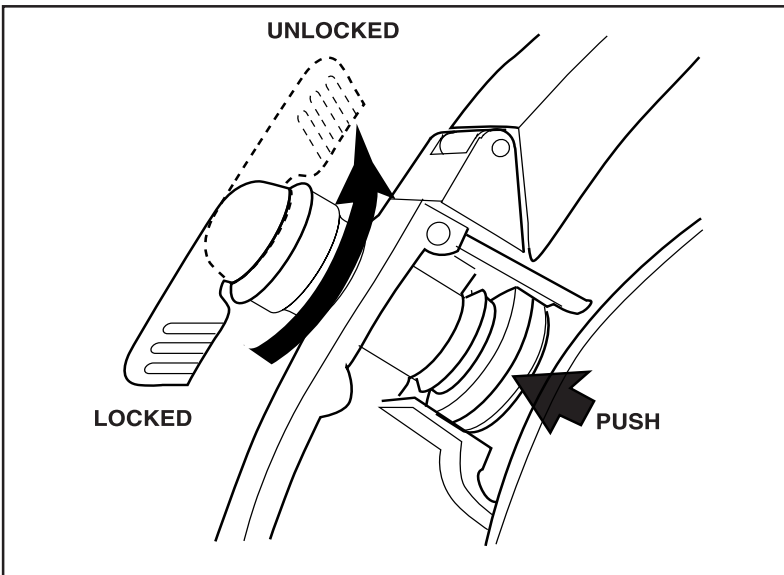


- Lay the ring saw on its side as shown.
- To gain access to engagement rollers, remove the two screws that fasten the support roller cover with the 6 mm T-alen wrench and remove the cover.

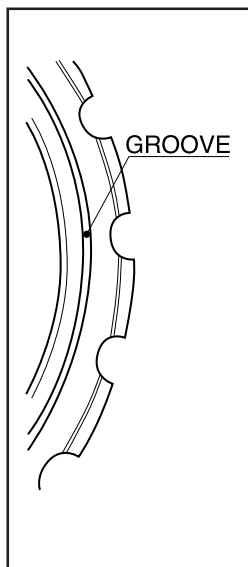
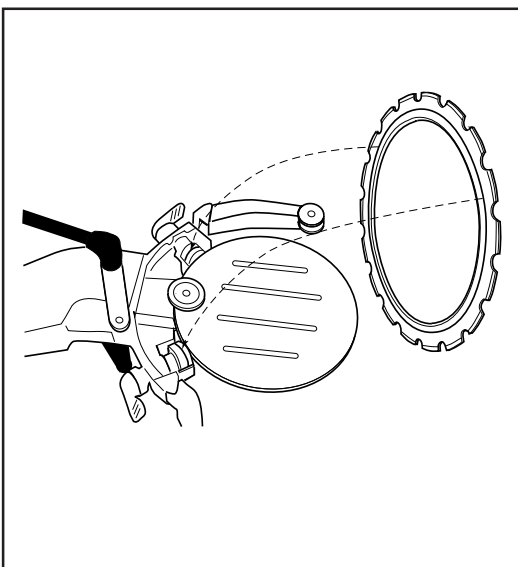
...SET UP AND ADJUSTMENTS...



- Rotate the engagement roller handles counterclockwise (180°) to unlocked position.



- Push back engagement roller as illustrated. Install blade with handles in unlocked position.



NOTE: The blade has a machined groove on one side which is the tracking groove for the engagement rollers.

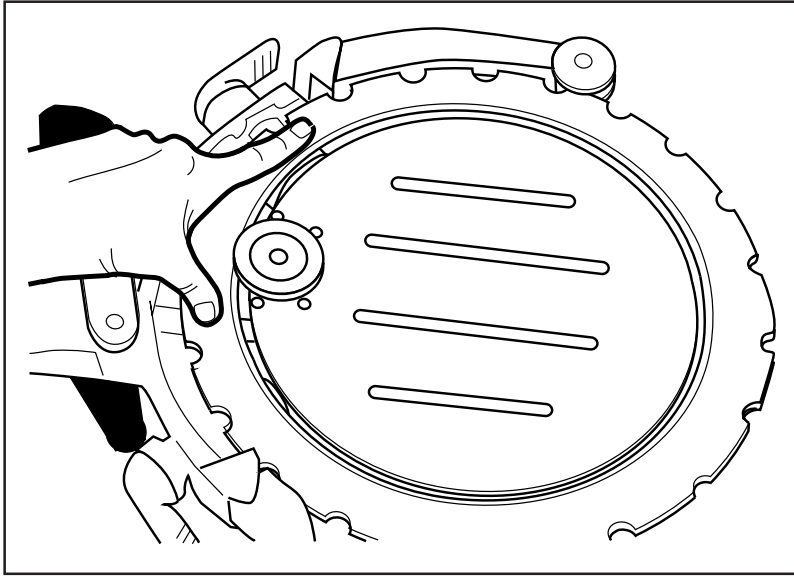


WARNING!

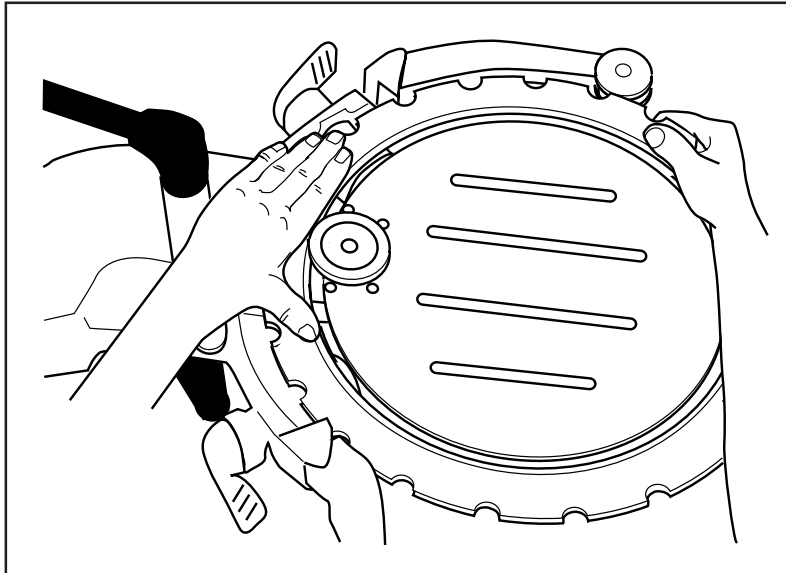
Always disconnect the K3600 from the hydraulic power source when servicing. Unexpected blade rotation could cause severe injury.

Inspect the blade for damage before installing on the unit. Damaged blades can break and cause severe injury.

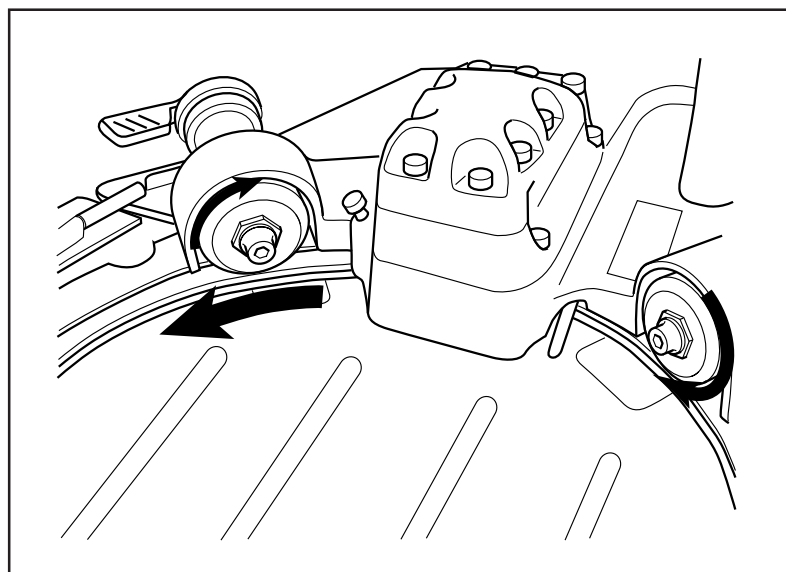
...SET UP AND ADJUSTMENTS...



- Start blade installation by placing the blade down with the groove laying on the top engagement roller.

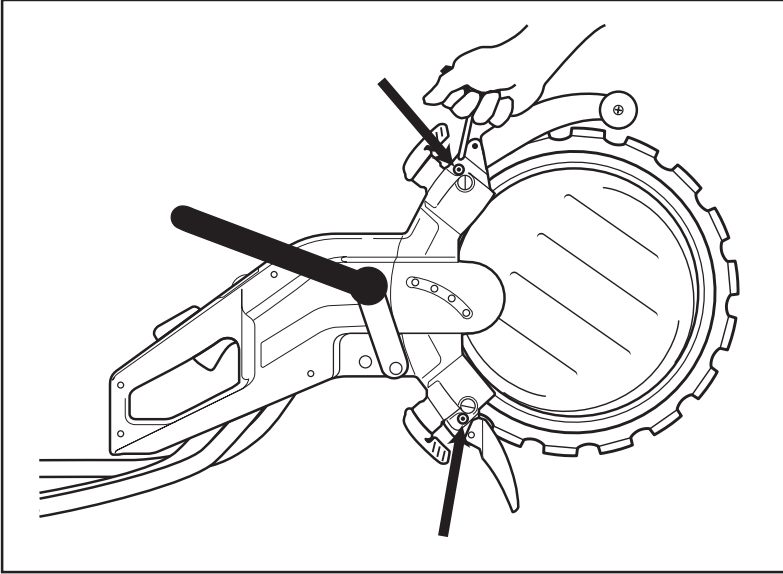


- Next, insert the blade into the drive disc. Rotate the blade while installing it onto the lower engagement roller.

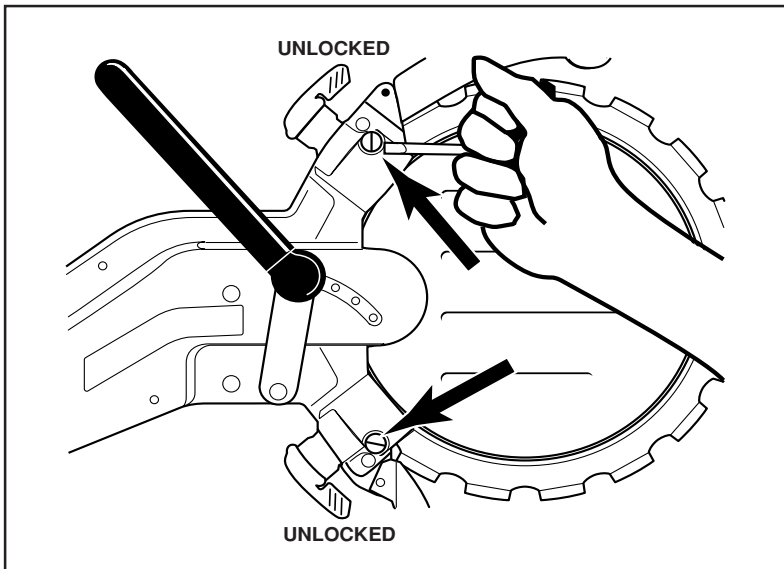


- Make sure that blade groove is aligned with both engagement rollers.

...SET UP AND ADJUSTMENTS...

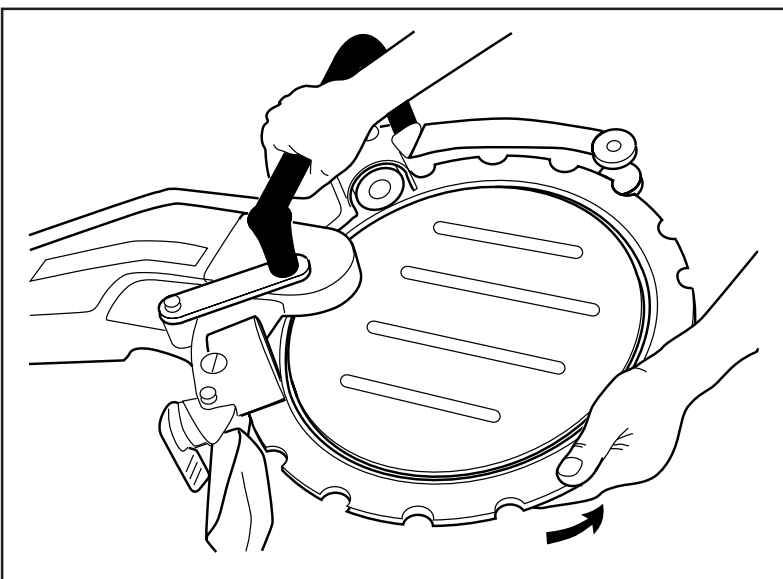


- Reinstall the support roller cover and tighten bolts with the 6 mm T-wrench.



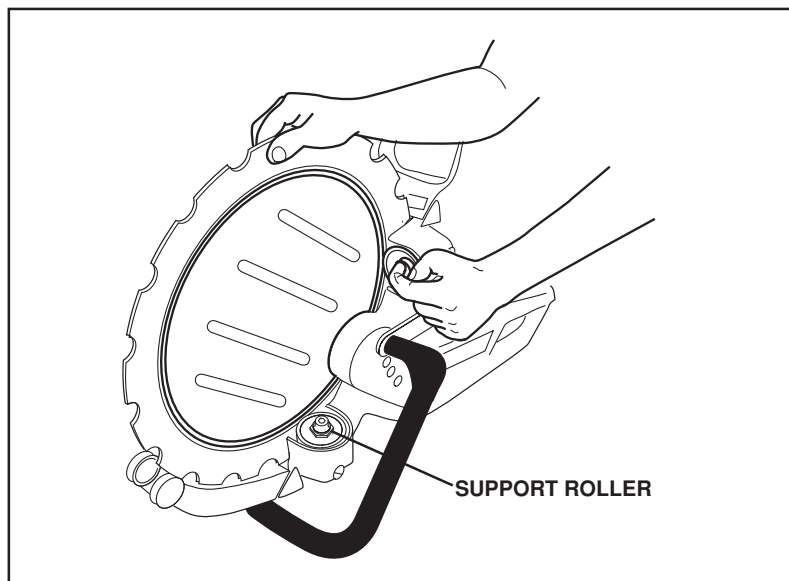
Roller Adjustment

- Turn the adjustment screw clockwise while rotating the support roller until it touches the blade. Then add an additional 1/4 turn.



- Rotate the blade by hand, making sure the blade rotates and all four rollers turn.

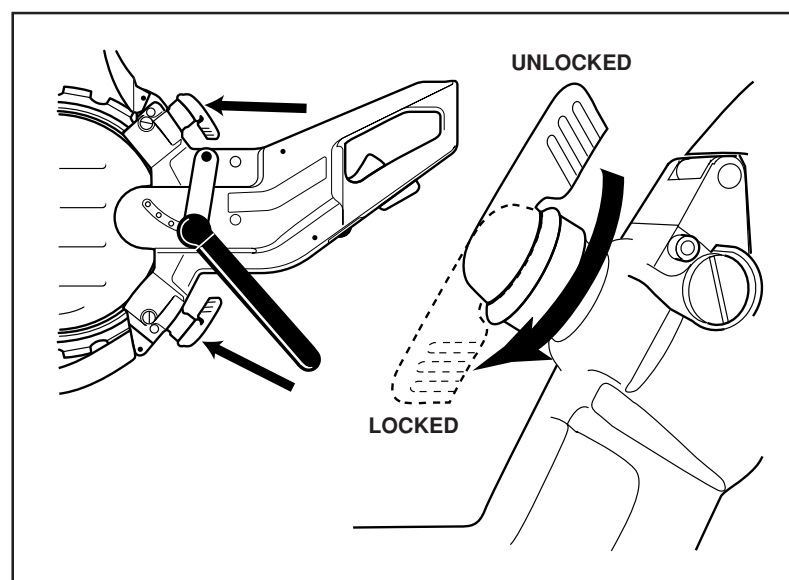
...SET UP AND ADJUSTMENTS...



Checking Roller Adjustment

- Place machine on its back.
- The engagement roller handles must be in an "unlocked" position.
- Grab the support rollers one at a time with your fingers and rotate the blade with your hand. You should be able to block the support rollers from turning, with finger pressure while rotating the blade.

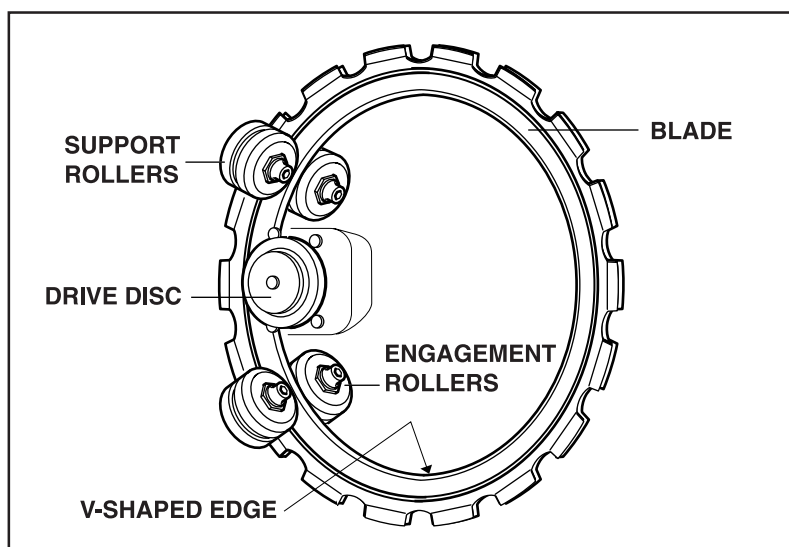
If necessary turn the adjustment screw in or out in 1/4 turn increments to get correct setting.



After the rollers have been properly adjusted the engagement roller handles shall be turned to the locked position.

CAUTION: Make sure the adjustment between the rollers and the blade is correct. Too tight setting will quickly damage the blade.

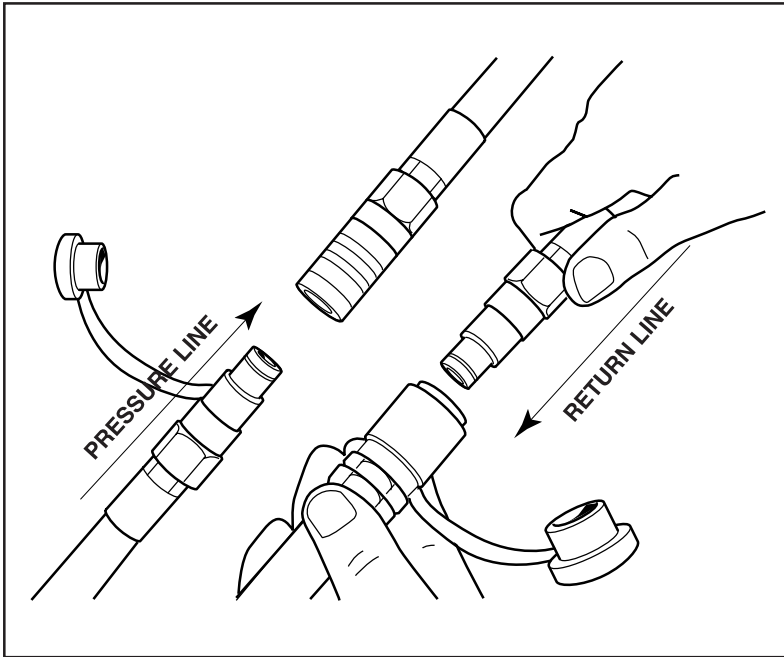
CAUTION: Make sure adjustment is not too loose or the blade may jump off engagement rollers.



IMPORTANT NOTES:

- The support rollers do not drive the blade.
- Improper adjustment can lead to blade damage.
- If the blade turns slowly or stops, see trouble shooting.

...SET UP AND ADJUSTMENTS

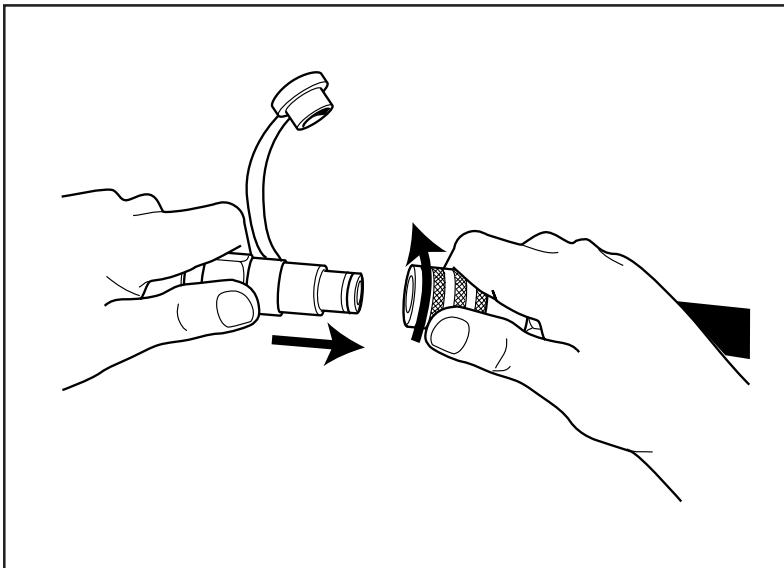


Hydraulic Hoses



WARNING! Connection to hydraulic pressure more than 150 bar (3000 psi) can cause serious injury.

- Before hooking up the hoses, make sure that the couplers are clean, both on the machine and on the hose set.
- Connect the pressure hose coming from the power pack to the hose with the female coupler on the left side of the ring saw.
- Connect the second hydraulic hose to the male coupler on the right side of the ring saw. This hose is the oil return line to the reservoir.



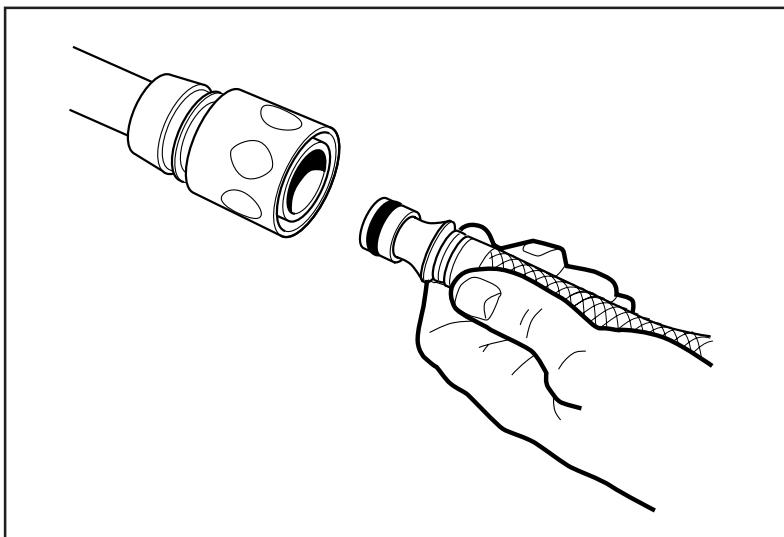
NOTE: Two sets of hoses may be connected if longer hoses are needed 18m (60 ft.). Do not connect more than two sets as the couplers can create too much power loss. See specifications.

CAUTION! Twist the safety locks into position on the couplers before operating the ring saw to prevent accidental disconnection.



WARNING!

When the ring saw is in operation, hoses are under extreme pressure. Do not attempt to connect or disconnect hoses with hydraulic power source operating. To do so may cause serious injury.



Water Hose

Connect water hose to water supply. Water flow is activated by the throttle trigger lockout. Minimum water requirement: 4 lit/min (1 gallon/min).

7. OPERATION

Safety



WARNING! Failure to follow safety considerations below and elsewhere in this manual or to follow other commonly used safety practices on a construction site may result in serious injury or death to you or others.



WARNING! The blade can only cut straight. Do not try to jam, twist, bend, or force the blade. This will destroy the blade. A loose segment or a broken blade may cause serious personal injury to the operator or a close bystander.



WARNING! In most cases, the work piece is heavy. Make sure it does not cause damage, or fall on the operator or on a bystander, during the cutting operation.



WARNING! Always hold the saw firmly with both hands on the handles at all times when the saw is running. Do not hold the saw at any point other than the handles provided by the manufacturer. Doing so may lessen your control of the saw and may be a safety hazard.



WARNING! Keep work area free from debris that can cause the operator to lose control.



WARNING! If a scaffold or support must be erected to reach the work area, those devices must be assembled according to approved practices and be sturdy enough to give the necessary support.

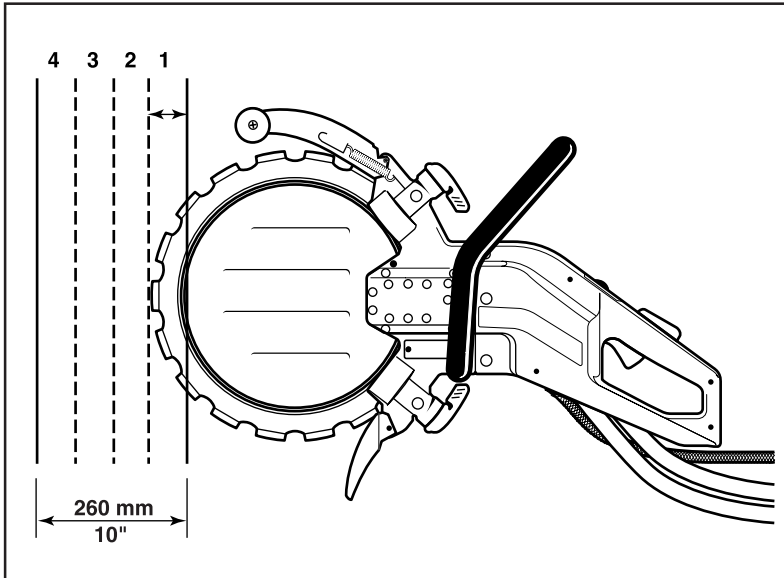


WARNING! Working on ladders is not recommended. They are not sufficiently stable, and may cause the operator to fall and injury himself or others.

CAUTION! Since the blade is cooled with water, water will cover floors and walls. Together with the cut material, this can create a slippery surface. Maintain a solid and firm footing at all times.

CAUTION! For safer operation and less operator fatigue, hold the saw at waist level when making horizontal cuts.

...OPERATION



Working technique

Depth of Cut

The K3600 can make 260 mm (10 inch) deep cuts. Best control of the ring saw is achieved when an initial scoring cut of 50-70 mm (2-3 inches) is made. This allows the stabilizer blade to enter the workpiece which aids in guiding the ring saw in the cut. Trying to cut the entire depth on one pass results in slower cutting. Making several passes, 3 to 4 if the cut is 260 mm (10 inches) deep, increases cutting speed.

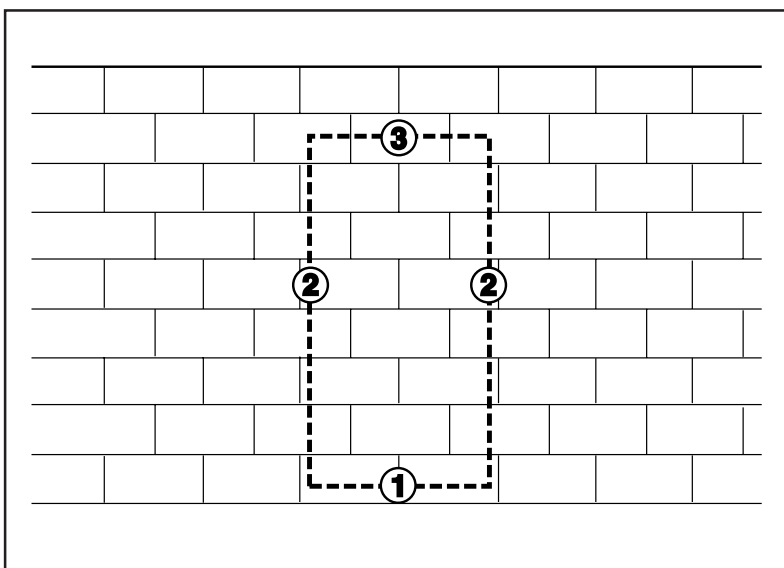


Larger Jobs

More than 1 m (3 ft.) of cutting - Fasten a board along the line to be cut. The board serves as a guide. Use this guide to make a full length scoring cut, 50-70 mm (2-3 inches) deep. Remove guide boards after making the scoring cuts.

Smaller Jobs

Make the first cut a shallow, scoring cut, no more than 50-70 mm (2-3 inches) deep. Then do the final cuts.



Cutting Sequence

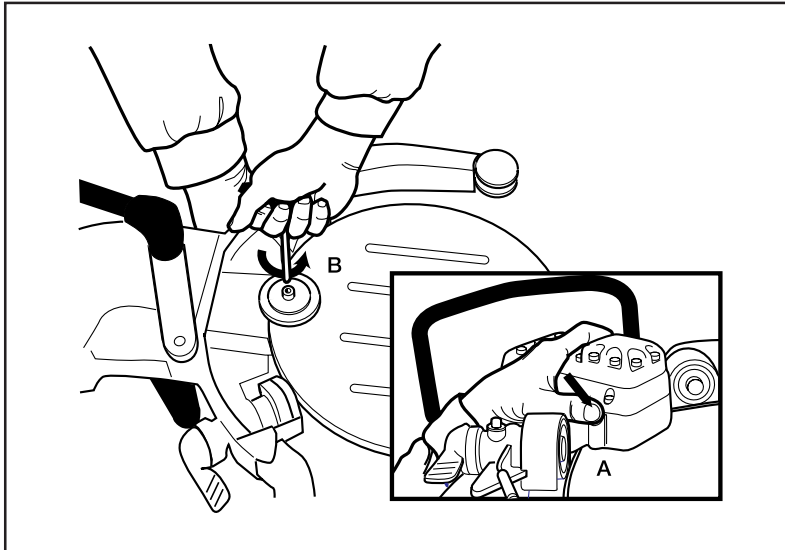
First make the lower horizontal cut. Then make the two vertical cuts. Finally, make the upper horizontal cut.

CAUTION: If the upper horizontal cut is made before the lower horizontal cut, the work piece will fall onto saw blade and pinch it.

8. MAINTENANCE



WARNING! Always disconnect the K3600 from the hydraulic power source when servicing. Unexpected blade rotation could cause severe injury.



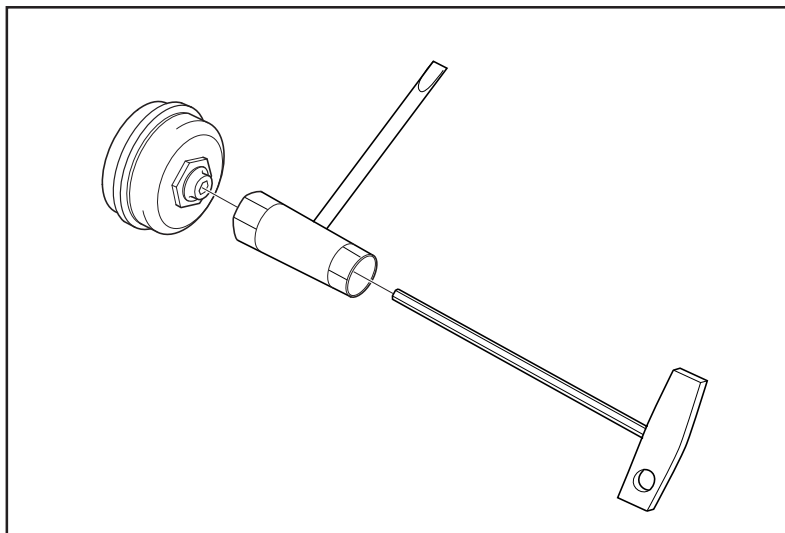
1. Drive Disc

- A. Lock the shaft with the lock button.
 - B. Unscrew the center screw and remove the washer.
- The drive disc can now be lifted off.

NOTE: Replace the disc when a new blade is installed.

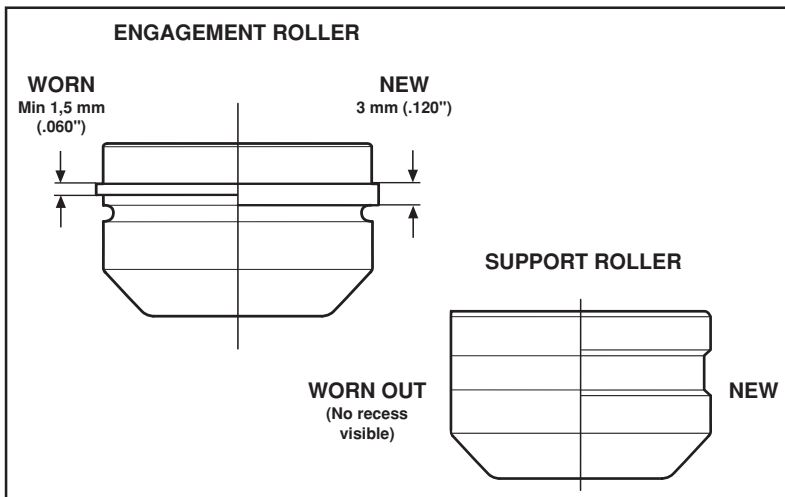
A worn disc will cause the blade to slip and damage the blade.

Lack of water flow will also drastically reduce the life of the drive disc.



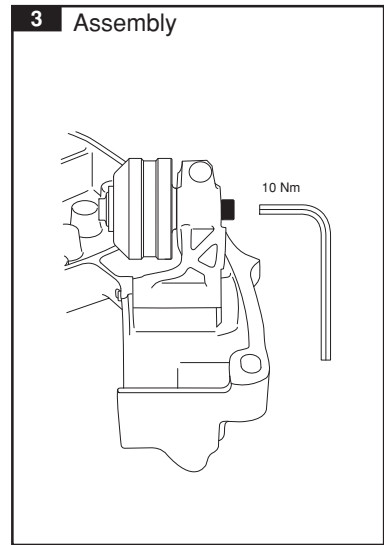
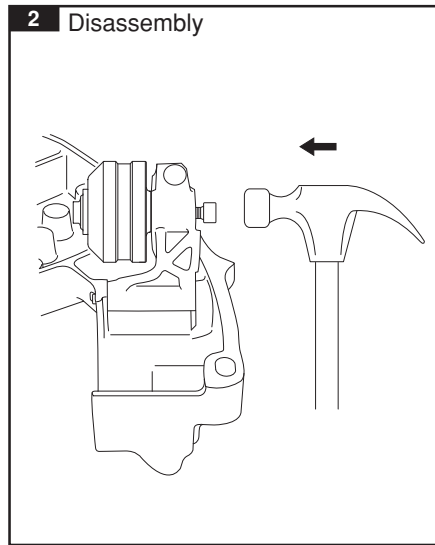
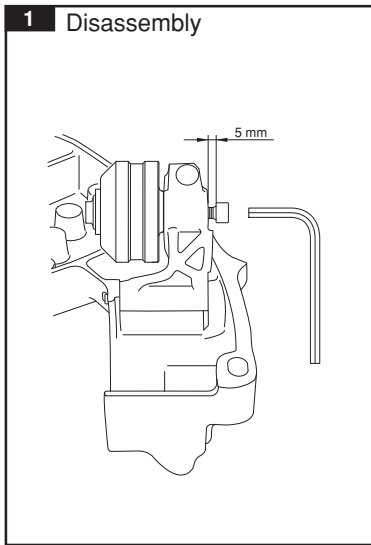
2. Support Rollers/ Engagement Rollers

- Remove the support roller cover.
- To change the rollers use the combination spanner and 5 mm T-Allen wrench.

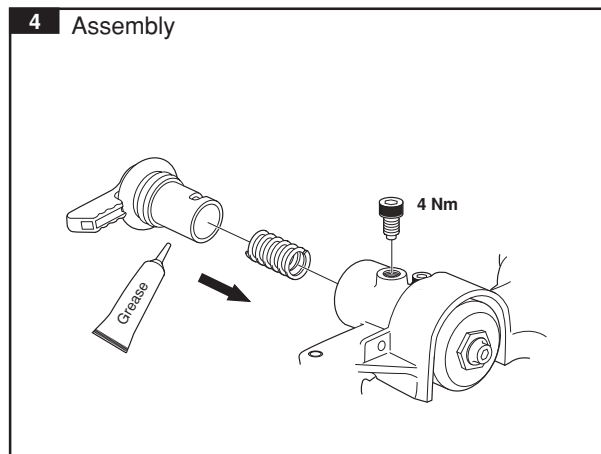
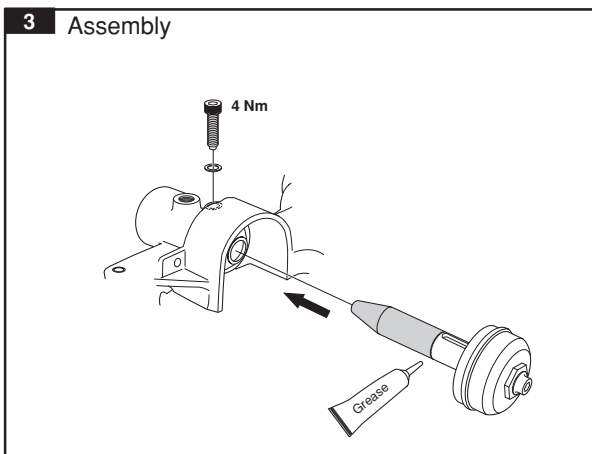
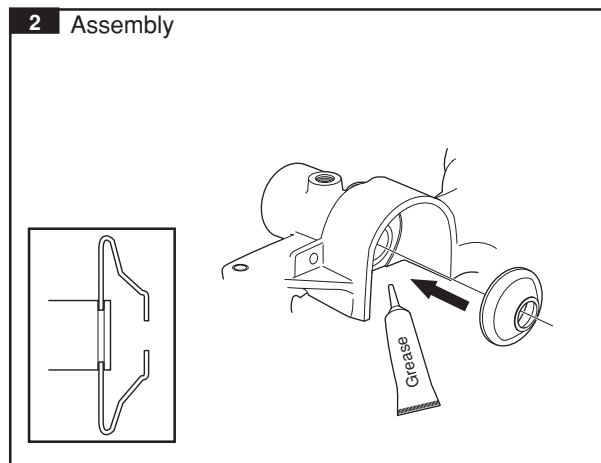
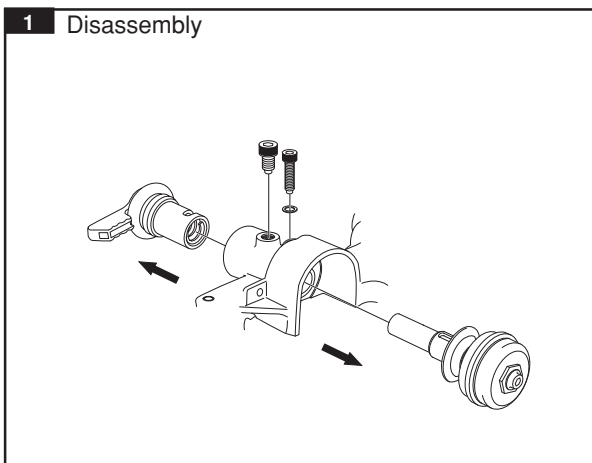


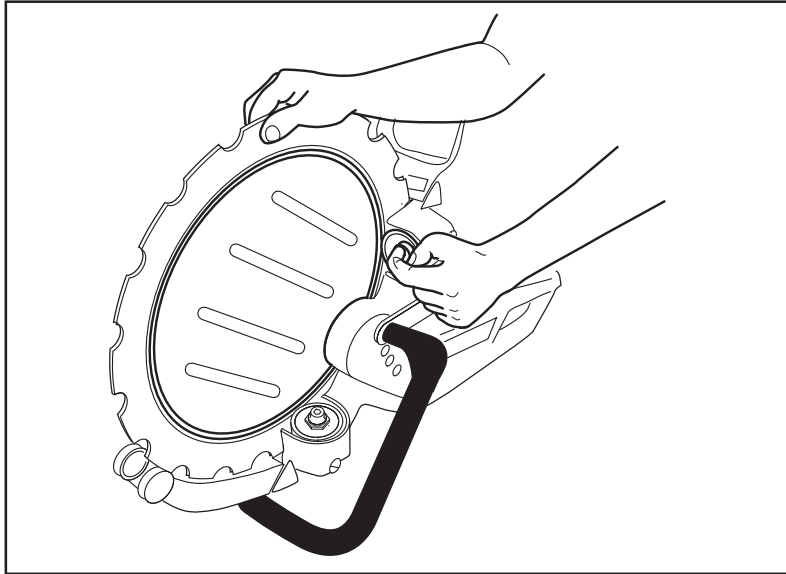
- Replace the engagement rollers when the shoulder or ridge on the roller is worn to 50 percent of its original width.
- Replace support rollers when roller surface is flat, (or) when the groove in roller surface has disappeared.

Support roller complete



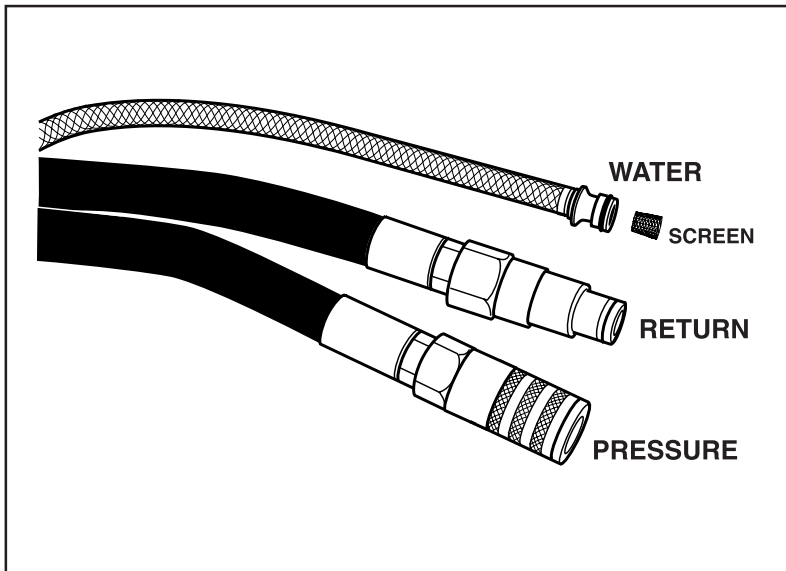
Engagement roller complete





3. Roller Adjustment

See Setup and Adjustments.

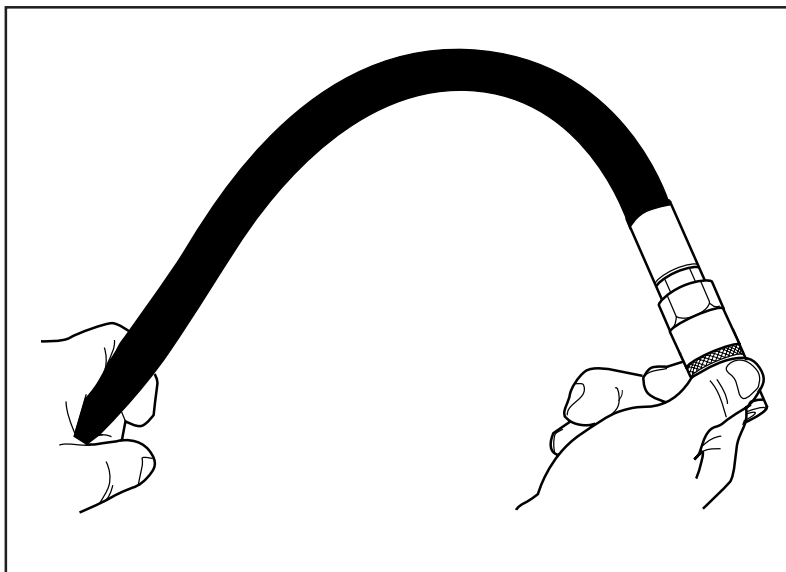


4. Couplers

IMPORTANT: A dirty coupler may allow dirt to enter into the oil and cause premature wear to the hydraulic motor, hydraulic pump, valving, etc. Also, it may prevent the couplers from making a solid connection.

Always clean couplers before hooking them up to power pack and ring saw.

Clean water screen when needed.



5. Hydraulic Hoses

Inspect daily, before using the machine. Cracked, creased or weak hoses must be replaced.

...MAINTENANCE

Maintenance Schedule

Note: Schedule is based on daily use of equipment.

	Daily	Twice a Week
Support and Engagement Rollers Check support roller for wear Check engagement roller for wear	X	X
Hydraulic System Inspect hydraulic hoses Inspect and clean water nozzles	X X	
Drive system Check condition of drive disc		X
Water System Inspect and clean water nozzles on water disc Water control valve Check screen in water fitting		X X X
Controls Check function	X	
Blade Inspect blade guard area Check blade stabilizer alignment	X	X

Blades conforming to EN13236

Partner K3600 only complies with 98/37/ECC and EN13236 together with the blades listed below:

Type	Diameter mm
Partner-Dimas	
PXR XX	350
ELR XX	350
SLR XX	350

Note: Blades of different hardness are available for different materials and are denoted by the two numbers, XX.

Blade Retipping



WARNING! Do not retip K3600 blades. A broken blade may cause serious personal injury to the operator or others. For this reason, Partner will not authorize a K3600 blade to be totally retipped. A single segment may sometimes be retipped. Please contact your Partner dealer for instructions.

9. TROUBLESHOOTING

Mechanical

SYMPTOM	PROBABLE CAUSES
A. Blade will not rotate.	<ol style="list-style-type: none"> 1. Roller handles not locked into position. 2. Blade not installed correctly on the engagement rollers. 3. Faulty bearing on rollers. 4. Rollers adjusted too tightly. 5. Possible incorrect hose connection to power pack or other hydraulic problem.
B. Blade turning too slowly.	<ol style="list-style-type: none"> 1. Roller handles not locked into position. 2. Drive disc worn. 3. Inner edge of blade worn. 4. Springs on engagement rollers weakened. 5. Dirty pressure relief valve in power pack. 6. Valve lever on hydraulic motor not traveling proper distance. 7. Faulty bearing on rollers. 8. Insufficient oil flow, check hydraulic oil flow.
C. Blade jumps off.	<ol style="list-style-type: none"> 1. Roller adjustment too loose. 2. Worn engagement rollers. 3. Blade not installed on engagement rollers correctly. 4. Damaged blade.
D. Blade warped.	<ol style="list-style-type: none"> 1. Rollers adjusted too tight. 2. Blade overheating.
E. Segment loss.	<ol style="list-style-type: none"> 1. Blade bent, twisted, or abused. 2. Improper weld. Continue to use blade if only one segment is lost or return to have it retipped if blade is not worn more than 50 percent.
F. Motor seal blown.	<ol style="list-style-type: none"> 1. Saw running backward. Check hydraulic hose connections on non-Partner power pack. 2. Check position of control valve on non-Partner power pack. 3. Excessive flow or pressure. 4. Faulty seal.
G. Blade cutting too slowly.	<ol style="list-style-type: none"> 1. Wrong blade for material. 2. Make certain proper amount of water is supplied to blade.
H. Blade slips.	<ol style="list-style-type: none"> 1. Engagement roller not moving freely in and out. A stuck roller cannot push the blade hard enough against the drive disc. 2. Drive disc worn. Abrasive material and poor flushing will wear the disc faster. 3. Engagement roller shoulder worn. If the width of the shoulder is more than 50% worn, the blade will slip. 4. Blade tracking groove and inner edge worn. Caused by poor flushing of abrasive material and/or a worn drive disc which causes the blade to slip.

10. SPECIFICATIONS

Blade Diameter	350 mm (14")
Cutting Depth	260 mm (10")
Blade Speed, maximum	55 m/s (180 ft./s) - 3000 rpm
Motor Speed, maximum	17 000 rpm
Hydraulic Motor	Gear Motor (open-center valve)
Hydraulic Pressure, maximum	150 bar (2200 psi)
Oil Flow, minimum–maximum	35-42 L/min (9-11 US gpm)
Weight, Excluding Blade	8,3 kg (18,3 lbs)
Weight, Cutting Blade	0,8 kg (1,8 lbs)
Dimensions:	
Height	410 mm (16")
Length	715 mm (28")
Width	260 mm (10")
*Hydraulic Oil Specification	150 VG 32 (10W)
Oil Temperature (Operating)	Approx. 60°C (140F)
Water Requirement	4 lit/min (1 gallon/min)
Hydraulic couplers	1/2" FF (thread 3/8")

* If oil pollution is stringently restricted we recommend environmentally approved hydraulic fluid.

Noise emissions

(see note 1)

Sound power level, measured dB(A)	110
Sound power level, guaranteed L_{WA} dB(A)	111

Sound level

Equivalent sound pressure level at the user's ear, dB(A) measured according to CEN/TC255 N150 and ISO/DIS 11201:

99

Vibration level

Handle vibrations measured acc. to ISO/DIS 8662-4, m/s^2

Front handle:	4,3
Rear handle:	6,0

Note 1: Noise emissions in the environment measured as sound power (L_{WA}) in conformity with EC directive 2000/14/EC.

Hydraulic hoses extensions

When extending the hydraulic hoses the inner diameter needs to be increased to prevent power loss according to table.

Hose inner diameter 1/2"	up to 30 m (100 feet)
Hose inner diameter 5/8"	30 to 45 m (150 feet)
Hose inner diameter 3/4"	45 to 100 m (300 feet)

Torque Specifications	Nm	In. pound
Saw Housing Bolts	4	34
Motor Cover Bolts	10	85
Drive Disc	10	85
Roller Cover Bolts	10	85
Motor Mounting (Allen) Screws	10	85



EU declaration of conformity (Only applies to Europe)

We, **Partner Industrial Products**, SE-433 81 Partille, Sweden, tel: +46-31949000, declare under sole responsibility that the power cutter **Partner K3600** from 2002's serial numbers and onwards (the year is clearly stated in plain text on the type plate with subsequent serial number), are in conformity with the following standards or other normative documents following the provisions in the COUNCIL'S DIRECTIVES:

- of June 22 1998 "relating to machinery" **98/37/EC**, annex IIA.
- of May 8, 2000 "relating to the emission of noise to surroundings" **2000/14/EC**.

For information relating to noise emissions, see the chapter Technical data.

The following standards have been applied: **CEN/TC255 N150 and ISO/DIS 11201**.

SMP Svensk Maskinprovning AB, Fyrisborgsgatan 3, SE-754 50 Uppsala, Sweden, has performed voluntary type examination on behalf of Husqvarna AB. The certificate is numbered: **01/169/010** – Partner K3600.

Partille 3 January 2002



Ove Donnerdal, Development Manager.



WARNING!

Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains 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

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 those dust masks that are specially designed to filter out microscopic particles.

PARTNER[®]

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