

DR® CHIPPER SHREDDER

SAFETY & OPERATING INSTRUCTIONS



Models:
PREMIER 320
PRO 420 M/S
PRO 420 E/S

Serial No. _____

Order No. _____

DR Power Equipment
Toll-free phone: 1-800-DR-OWNER (376-9637)
Website: www.DRpower.com

WARNING

Read and understand this manual and all instructions before operating the DR CHIPPER SHREDDER.

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Table of Contents

Chapter 1: General Safety Rules..... 4
Chapter 2: Setting Up the DR CHIPPER SHREDDER 8
Chapter 3: Operating the DR CHIPPER SHREDDER 12
Chapter 4: Maintaining the DR CHIPPER SHREDDER..... 15
Chapter 5: Troubleshooting 22
Chapter 6: Parts Lists and Schematic Diagrams 24

Conventions used in this manual

DANGER

This indicates a hazardous situation, which, if not followed, **will** result in death or serious injury.

WARNING

This indicates a hazardous situation, which, if not avoided, **could** result in death or serious injury.

CAUTION

This indicates a hazardous situation, which, if not avoided, **could** result in minor or moderate injury.

NOTICE

This information is important in the proper use of your machine. Failure to follow this instruction could result in damage to your machine or property.

Serial Number and Order Number

A Serial Number is used to identify your machine and is located on the Serial Number Label on your machine (**Figure 1**). An Order Number is used to check and maintain your order history and is located on the upper left portion of your packing slip. For your convenience and ready reference, enter the Serial Number and Order Number in the space provided on the front cover of this manual.

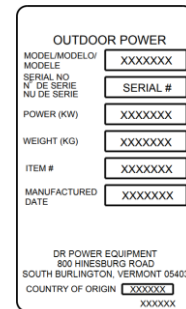


Figure 1

Additional Information and Potential Changes

DR Power Equipment reserves the right to discontinue, change, and improve its products at any time without notice or obligation to the purchaser. The descriptions and specifications contained in this manual were in effect at printing. Equipment described within this manual may be optional. Some illustrations may not be applicable to your machine.

California Proposition 65

 **WARNING**
CANCER AND REPRODUCTIVE HARM - www.P65Warnings.ca.gov.

Chapter 1: General Safety Rules

! WARNING

Read this Safety & Operating Instructions Manual before you use the DR CHIPPER SHREDDER. Become familiar with the operation, service, loading/unloading, and storage recommendations to ensure the best performance from your machine. If you have any questions or need assistance, please contact us at www.DRpower.com or call Toll-Free 1-800-DR-OWNER (376-9637) and one of our Technical Support Representatives will be happy to help you.

Labels

Your DR CHIPPER SHREDDER carries prominent labels as reminders for its proper and safe use. Shown below are copies of all the Safety and Information labels that appear on the equipment. Take a moment to study them and make a note of their location on your CHIPPER SHREDDER as you set up and before you operate the unit. Replace damaged or missing Safety and Information labels immediately.



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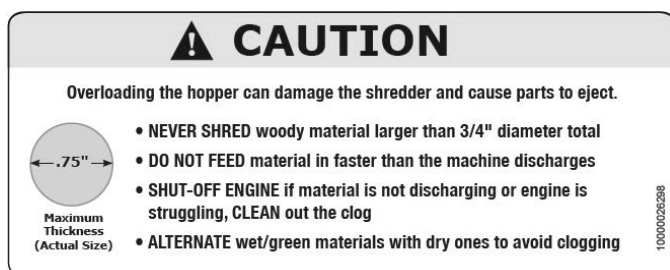
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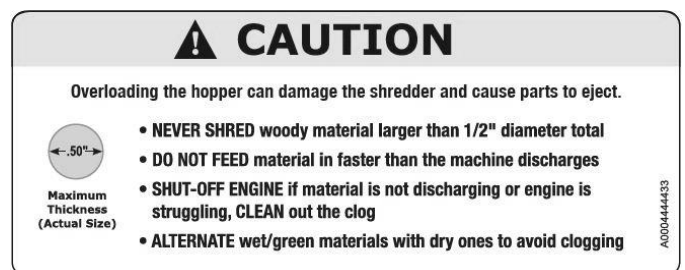
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PRO 420



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PREMIER 320

Protecting Yourself and Those around You

WARNING

This is a high-powered machine, with moving parts operating with high energy. You must operate the machine safely. Unsafe operation can create a number of hazards for you, as well as anyone else in the nearby area. This machine can crush, grind, cut, and sever parts of your body if they enter the inlet or discharge area of your CHIPPER SHREDDER. Always take the following precautions when using this machine:

- Keep in mind that the operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.
 - Always wear protective goggles or safety glasses with side shields while using the CHIPPER SHREDDER to protect your eyes from possible thrown debris.
 - Avoid wearing loose clothing or jewelry, which can catch on moving parts, or the material fed into the CHIPPER SHREDDER.
 - We recommend wearing gloves while using the CHIPPER SHREDDER. Be sure your gloves fit properly and do not have loose cuffs or drawstrings.
 - Wear shoes with non-slip treads when using your CHIPPER SHREDDER. If you have safety shoes, we recommend wearing them. Do not use the machine while barefoot or wearing open sandals.
 - Wear long pants while operating the CHIPPER SHREDDER.
 - Use ear protectors or earplugs rated for at least 20 dba to protect your hearing.
 - Keep bystanders at least 100 feet away from your work area. Stop the engine when another person or pet approaches.
-

Safety for Children and Pets

WARNING

Tragic accidents can occur if the operator is not alert to the presence of children and pets. Children are often attracted to the machine and the chipping/shredding activity. *Never* assume that children will remain where you last saw them. Always follow these precautions:

- Keep children and pets at least 100 feet from the working area and ensure they are under the watchful care of a responsible adult.
 - Be alert and turn the machine off if children or pets enter the work area.
 - Never allow children to operate the CHIPPER SHREDDER.
-

Safety with Gasoline - Powered Machines

WARNING

Gasoline is a highly flammable liquid. Gasoline also gives off flammable vapor that can be easily ignited and cause a fire or explosion. Never overlook the hazards of gasoline. Always follow these precautions:

- Never run the Engine in an enclosed area or without proper ventilation as the exhaust from the Engine contains carbon monoxide, which is an odorless, tasteless, and deadly poisonous gas.
 - Store all fuel and oil in containers specifically designed and approved for this purpose. Keep away from heat, open flames, and out of the reach of children.
 - Replace rubber Fuel Lines and Grommets when worn or damaged and after 5 years of use.
 - Fill the Gasoline Tank outdoors with the Engine off and allow the Engine to cool completely first. Don't handle gasoline if you or anyone nearby is smoking or if you're near anything that could cause it to ignite or explode. Reinstall the Fuel Tank Cap and Fuel Container Cap securely.
 - If you spill gasoline, do not attempt to start the Engine. Move the machine away from the area of the spill and avoid creating any source of ignition until the gas vapors have dissipated. Wipe up any spilled fuel to prevent a fire hazard and properly dispose of the waste.
-

Safety with Gasoline - Powered Machines (Continued)

WARNING

- To safely store, allow the Engine to cool completely before moving into any enclosure. Never store a machine that has gas in the tank, or a Fuel Container, near an open flame or spark such as a water heater, space heater, clothes dryer, or furnace.
 - Never make adjustments or repairs with the Engine running. Shut down the Engine and wait 5 minutes for parts to cool. Disconnect the Spark Plug wire, keeping it away from the Spark Plug, to prevent accidental starting before making adjustments or repairs.
 - Never tamper with the Engine's Governor setting. The Governor controls the maximum safe operation speed and protects the Engine. Over-speeding the Engine is dangerous and will cause damage to the Engine and to the other moving parts of the machine. If required, see your authorized dealer for Engine governor adjustments.
 - Keep combustible substances away from the Engine when it is hot.
 - Never cover the machine while the Muffler is still hot.
 - Do not operate the Engine with the Air Cleaner or the Carburetor Air Intake Cover removed. Removal of such parts could create a fire hazard. Do not use flammable solutions to clean the Air Filter.
 - The Muffler and Engine become very hot and can cause a severe burn; do not touch.
-

General Safety

WARNING

Operating this CHIPPER SHREDDER safely is necessary to prevent or minimize the risk of death or serious injury. Unsafe operation can create a number of hazards for you. Always take the following precautions when operating this machine:

- Your CHIPPER SHREDDER is a powerful tool, not a plaything. Exercise extreme caution at all times. The machine is designed to chip wood and shred most organic materials. Do not use it for any other purpose.
 - Thoroughly inspect the area in which you will be working and remove all foreign objects. Look for rope, wire, etc., and remove these objects before chipping/shredding. Inserting these objects into the CHIPPER SHREDDER Hopper could damage the machine and/or cause injury.
 - Know how to stop the CHIPPER SHREDDER quickly; see "Stopping the Engine" in Chapter 3.
 - Never operate your unit on a slippery, wet, muddy, or icy surface. Exercise caution to avoid slipping or falling.
 - See manufacturer's instructions for proper operation and installation of accessories. Only use accessories approved by DR Power Equipment.
 - Never use the machine without ensuring that all guards and shields are in place.
 - Never, under any conditions, remove, bend, cut, fit, weld, or otherwise alter standard parts on the CHIPPER SHREDDER. This includes all shields and guards. Modifications to your machine could cause personal injuries, property damage, and will void your warranty.
 - Never use the machine with the Chipper Chute, Shredder Hopper, Blowback Guards, or Discharge Deflector removed.
 - Never place any part of your body in the Chipper Chute, Shredder Hopper, discharge opening, or near any moving part while the machine is running. Keep the area of discharge clear of anything that will obstruct a clear discharge. Wind can also change discharge direction, so be aware. If it becomes necessary to push material into the Chipper Chute or Shredder Hopper, use a small diameter stick, NOT YOUR HANDS.
 - Keep your face and body back from the Chipper Chute and Shredder Hopper to avoid accidental bounce back of any material.
 - Do not allow an accumulation of processed material to build up in the discharge area as this will prevent proper discharge and could result in kickback.
 - Allow only one person to operate the CHIPPER SHREDDER at any time.
 - Always operate the machine from the Operator Zone (see **Figure 8** on page 11). Never pass or stand on the discharge side of the machine when the Engine is running, or the Flywheel is turning.
-

General Safety (continued)

WARNING

- Never try to pick up, move, or transport the machine while the Engine is running, or the Flywheel is turning.
 - For safe loading up ramps carefully PULL the machine with the Shredder Hopper handle. For safe unloading down ramps, guide the machine from behind with the handle so it goes down the ramps and you follow.
 - Before performing any maintenance or inspection procedure on the CHIPPER SHREDDER, shut down the Engine, wait 5 minutes for machine to cool, remove the Spark Plug Wire keeping it away from the Spark Plug.
 - Never allow people who do not understand and/or have not read this Safety and Operating Instructions Manual to use the CHIPPER SHREDDER. Allow only responsible individuals who are familiar with these rules of safe operation to use your machine.
 - Never overload or attempt to Chip or Shred material beyond the manufacturer's recommendation. Personal injury or damage to the machine could result.
 - While using the CHIPPER SHREDDER, don't hurry or take things for granted. When in doubt about the equipment or your surroundings, stop the machine and take the time to look things over.
 - Never operate the machine when under the influence of alcohol, drugs, or medication.
 - Use the machine only in daylight.
 - Stay alert for hidden hazards or traffic.
 - Keep all nuts and bolts tight and keep the equipment in good operating condition.
 - If the machine starts making an unusual noise or vibration, shut down the Engine and wait 5 minutes for parts to cool, disconnect the Spark Plug wire, keeping it away from the Spark Plug to prevent accidental starting before making adjustments or repairs. Vibration is generally a warning of trouble. Check for damaged parts and clean, repair, and/or replace as necessary.
 - Never tamper with safety devices. Check their proper operation regularly.
-

A Note to All Users

Under California law, and the laws of some other states, you are not permitted to operate an internal combustion engine using hydrocarbon fuels without an Engine Spark Arrester. This also applies to operation on US Forest Lands. All DR Chipper Shredders shipped to California, New Mexico, and Washington State are provided with Spark Arresters. Failure of the owner or operator to maintain this equipment in compliance with state regulations is a misdemeanor under California law and may be in violation of other state and/or federal regulations. Contact your State Park Association or the appropriate state organization for specific information in your area.

No list of warnings and cautions can be all-inclusive. If situations occur that are not covered by this manual, the operator must apply common sense and operate this DR CHIPPER SHREDDER in a safe manner. Contact us at www.DRpower.com or call Toll Free: 1-800-DR-OWNER (376-9637) for assistance.

Chapter 2: Setting Up the DR CHIPPER SHREDDER

It may be helpful to familiarize yourself with the controls and features of your DR CHIPPER SHREDDER as shown in **Figure 2** before beginning these procedures. If you have any questions at all, please feel free to contact us at www.DRpower.com.

DR CHIPPER SHREDDER Controls and Features

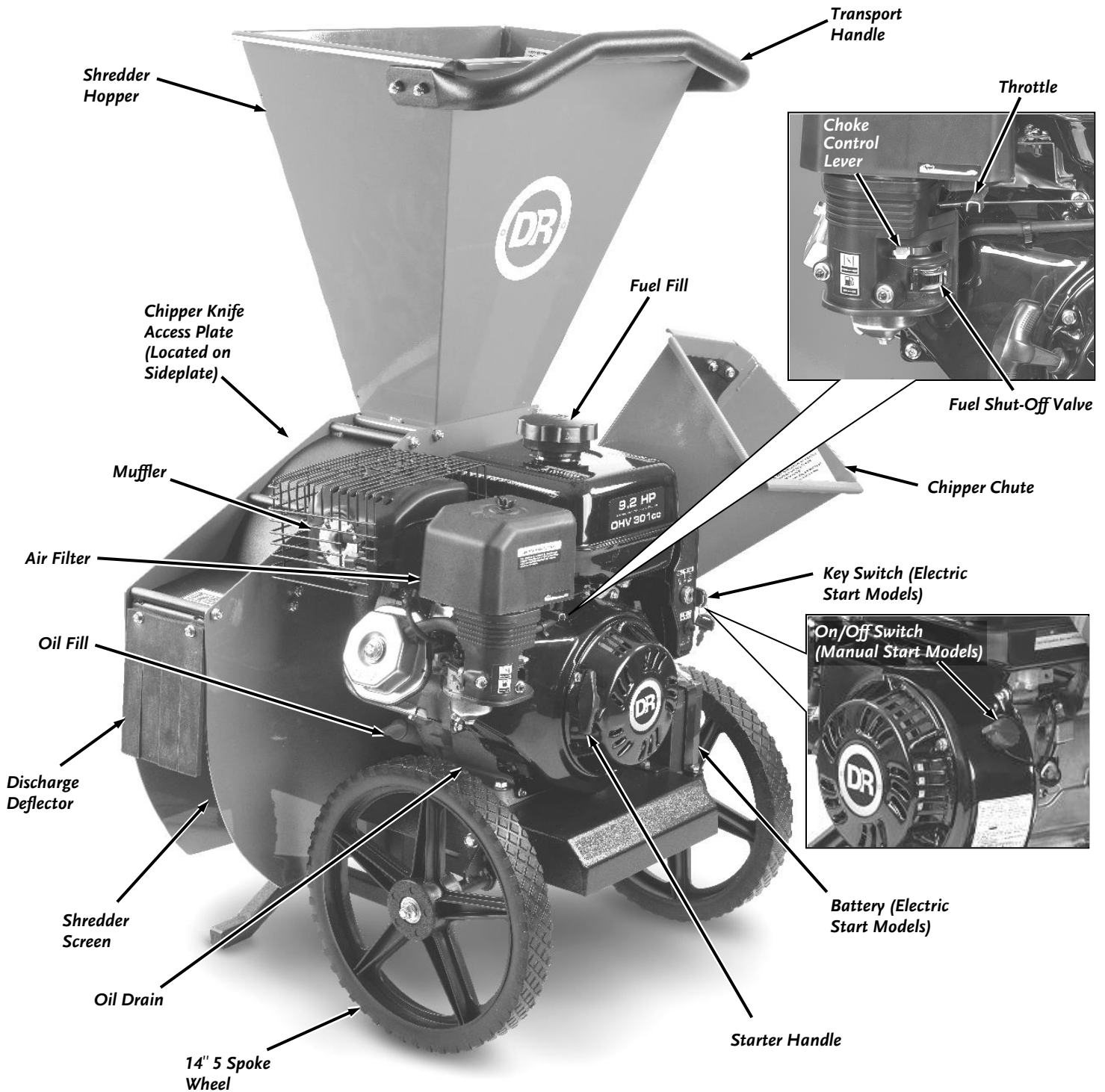


Figure 2

Specifications

Model	PREMIER 320 Chipper Shredder	PRO 420 M/S Chipper Shredder	PRO 420 E/S Chipper Shredder
Engine	DR 6.6 HP (see engine manual for more details)	DR 9.2 HP (see engine manual for more details)	DR 9.2 HP (see engine manual for more details)
Gross Torque	11.1 Ft-Lbs	15.3 Ft-Lbs	15.3 Ft-Lbs
Starting	Manual Recoil	Manual Recoil	Electric w/ Recoil Backup
RPM	3600	3600	3600
Fuel Capacity	3.4L	5.4L	5.4L
Oil Capacity	.55L	1.1L	1.1L
Chipping Capacity	3" Max Diameter Branches	4" Max Diameter Branches	4" Max Diameter Branches
Shredding Capacity	1/2" Max Diameter Woody Material	3/4" Max Diameter Woody Material	3/4" Max Diameter Woody Material
Chipper Knife	Hardened Tool Steel, 4.125" x 1.25" x .25"	Hardened Tool Steel, 4.75" x 1.25" x .25"	Hardened Tool Steel, 4.75" x 1.25" x .25"
Shredding Hammers	8 Hardened Steel (4 Flat and 4 J)	12 Hardened Steel (8 Flat and 4 J)	12 Hardened Steel (8 Flat and 4 J)
Frame Gauge	11	11	11
Hopper Gauge	16	16	16
Discharge Screen	1" Diameter Holes	1" Diameter Holes	1" Diameter Holes
Wheels	14" x 2" Composite Never-Flat	14" x 2" Composite Never-Flat	14" x 2" Composite Never-Flat
Battery	N/A	N/A	DR 9 Ah 12V Sealed Maintenance Free
Unit Weight	129 Lbs	188 Lbs	206 Lbs
Dimensions	24" L x 29.75" W x 43.5" H	35.625" L x 23.75" W x 45.875" H	35.625" L x 23.75" W x 45.875" H

Assembly

Parts Supplied in Shipping Box:

- CHIPPER SHREDDER Power Unit
- Shredder Hopper
- Hopper Guard Assembly
- Chipper Chute
- Handle
- Product Pack:
 - Safety and Operating Instructions Manual
 - Engine Manual
 - Hardware (listed below)

Hardware in Product Package:

PREMIER 320:

Part#	Description	Qty
385971	.....Bolt, HCS, 5/16-18 X 5.5", GR5, ZP	2
333321	.....Nut, Nylon Lock, Flanged, 5/16-18	8
333311	.....Nut, Nylon Lock, Flanged, 1/4-20	3
10000043872	....Screw, Button HD, 5/16-18 X 5/8" GR5	4

PRO 420:

Part#	Description	Qty
386401	.....Bolt, HCS, 5/16-18 X 6", GR5, ZP	2
333321	.....Nut, Nylon Lock, Flanged, 5/16-18	8
333311	.....Nut, Nylon Lock, Flanged, 1/4-20	3
10000043872	...Screw, Button HD, 5/16-18 X 5/8" GR5	4

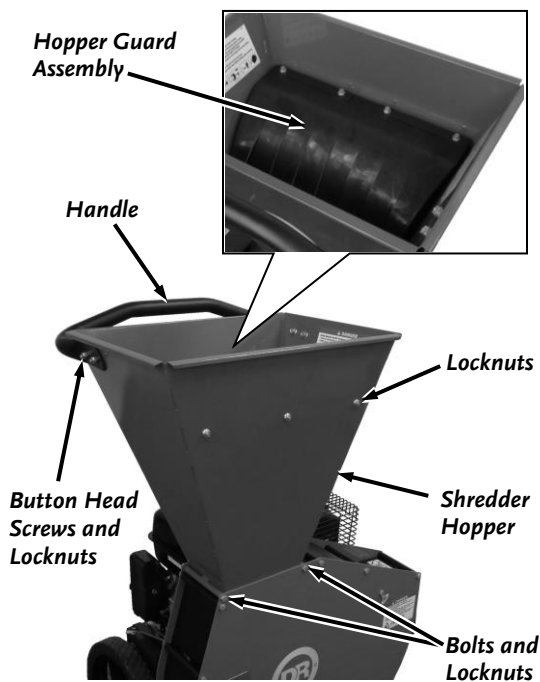


Figure 3

Tools needed:

- 1/2" Wrench
- 7/16" Wrench
- 3/16" Allen Wrench

Attaching the Shredder Hopper, Guard, and Handle

1. Position the Shredder Hopper onto the Power Unit with the handle mounting holes facing the engine side (**Figure 3**).
2. Secure the Shredder Hopper with the two 5/16-18 X 5.5" Bolts (PREMIER 320) or 5/16-18 X 6" Bolts (PRO 420) and Locknuts from the Product Package using two 1/2" Wrenches.
3. Insert the Hopper Guard Studs through the front of the Hopper and secure with three 1/4-20 Locknuts using a 7/16" Wrench.
4. Install the Handle onto the Hopper with four Button Head Screws (inside) and four Locknuts (outside) using a 1/2" Wrench and 3/16" Allen Wrench.

Attaching the Chipper Chute (PREMIER 320)

Note: Leave the Bolt in place when the Locknuts are removed in step 1.

1. Remove the Pre-assembled Locknut from the Bolt using two 1/2" Wrenches (**Figure 4a**). Leave the Bolt in place.
2. Position the Chipper Chute onto the Side Plate Studs and Bolt.
3. Secure the Chipper Chute with two Locknuts from the Product Package, and the two you removed, using two 1/2" Wrenches.

Attaching the Chipper Chute (PRO 420)

Note: Leave the two Bolts in place when the Locknuts are removed in step 1.

1. Remove the Pre-assembled Locknuts from the Bolts using two 1/2" Wrenches (**Figure 4b**). Leave the Bolts in place.
2. Position the Chipper Chute onto the Side Plate Studs and Bolts.
3. Secure the Chipper Chute with two Locknuts from the Product Package, and the one you removed, using two 1/2" Wrenches.

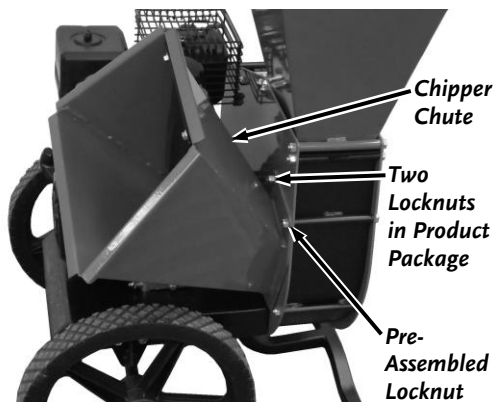


Figure 4a

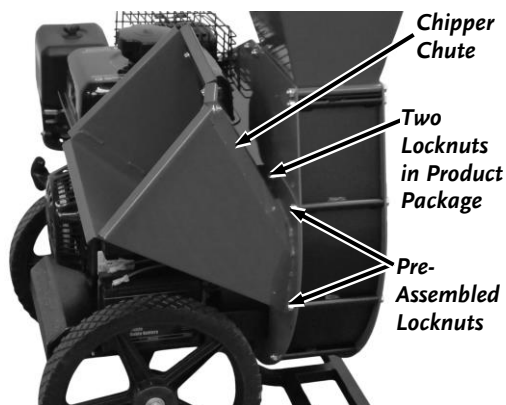


Figure 4b

Adding Oil and Gasoline

Engine Oil	SAE 30: above 50 degrees F; 10w-30: 10-90 degrees F; 5w-30: 30 degrees F or below
Fuel	Unleaded gasoline (See Engine Manual) Note: With no more than 10% Ethanol

Note: Use only the recommended high detergent Engine oil. Other types of oil could cause problems operating your machine. Please refer to your Engine Owner's Manual for more detailed oil information.

NOTICE

- You **MUST** add oil before starting the Engine. This machine is shipped without oil. Traces of oil may be in the reservoir from factory testing, but you **MUST** add oil before starting the Engine. Fill the reservoir slowly, checking the level frequently to avoid overfilling.
- To get an accurate reading when checking the oil level:
 - The Engine **MUST** be level.
 - The dipstick **Should Not** be screwed down for DR Engines to ensure an accurate oil level reading.

Tools and Supplies Needed:

- Small Funnel
- Rags
- Engine Oil (see your Engine Manual for Oil specifications)

- Position the machine so the Engine is level. Remove the Oil Fill/Dipstick (**Figure 5**).
- Initially add half of the oil recommended by the Engine Manufacturer in the engine manual. Wait one minute for the oil to settle.
- Insert the Dipstick, but do not screw it down to check the oil level (**Figure 6**). Continue adding a few ounces of oil at a time, rechecking the Dipstick until the oil reaches the Oil upper level. Be careful not to overfill.
- Replace the Oil Fill/Dipstick when full.
- Remove the Fuel Fill Cap (**Figure 5**) and fill the Fuel Tank with fresh, unleaded gas (with a minimum of 85 Octane) to approximately 1" to 1-1/2" below the top of the Fill Neck to allow for Fuel expansion. Be careful not to overfill.
- Reinstall the Fuel Fill Cap when finished. See your Engine Owner's Manual for more detailed engine information.

Note: Before refilling the Fuel Tank, always turn the Engine OFF and let it cool at least five minutes before removing the Fuel Fill Cap.

Connecting the Battery Wire (Electric Start Models)

We ship all Electric Start DR CHIPPER SHREDDERS with the green negative terminal Battery Wire disconnected. This prevents the Battery from discharging during shipment. Before using your DR CHIPPER SHREDDER, you must connect the Battery Wire.

- Remove the Protective Cap from the Negative Battery Terminal if one is installed (**Figure 7**).
- Insert the Negative Wire Connector onto the Negative Terminal of the Battery.

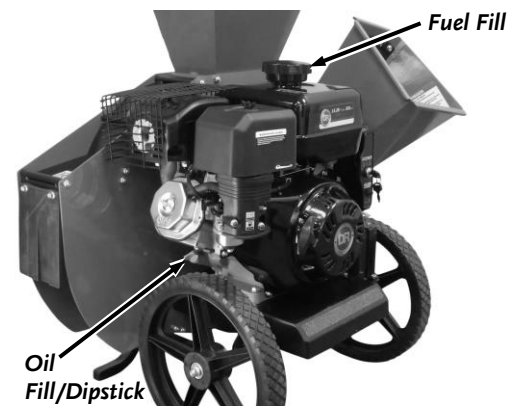


Figure 5

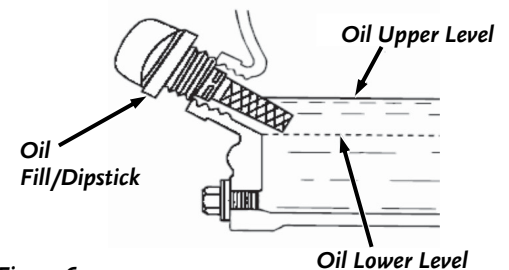


Figure 6

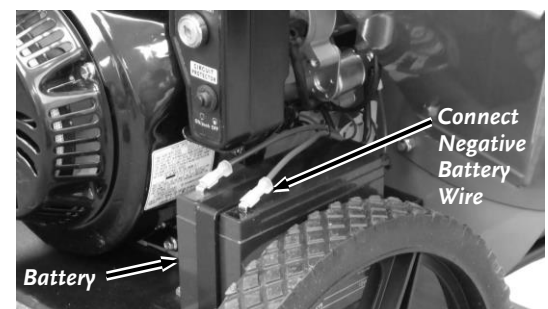


Figure 7

Chapter 3: Operating the DR CHIPPER SHREDDER

This chapter covers the procedures for starting and stopping your new DR CHIPPER SHREDDER and discusses basic operation features. It may be helpful to better familiarize yourself with the features of your CHIPPER SHREDDER by reviewing **Figure 2** in Chapter 2 before beginning the steps outlined in this chapter.

WARNING

Read and understand the warnings listed in “Chapter 1 General Safety Rules” before operating this CHIPPER SHREDDER.

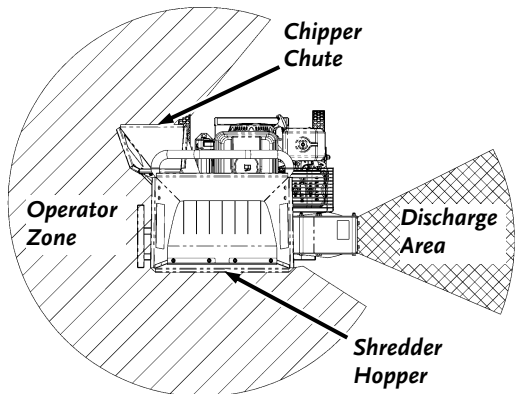


Figure 8

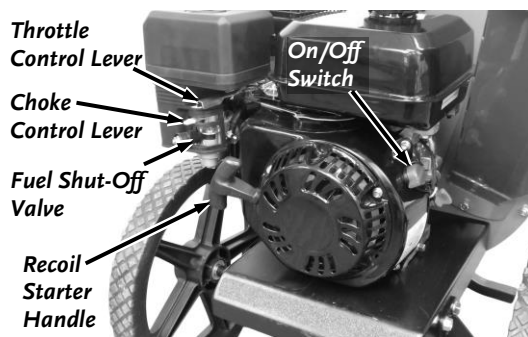


Figure 9a Manual Start

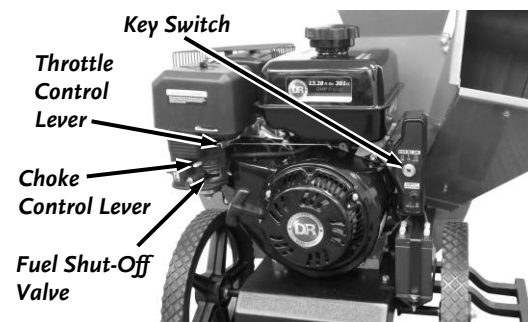


Figure 9b Electric Start

Before You Begin

- Visually check the Chipper Knife and Shredder Hammers for damage each time you use the machine.
- ALWAYS operate the DR CHIPPER SHREDDER from the Operator Zones (**Figure 8**).
- When viewed from the Chipper Chute side the Flywheel turns in a clockwise direction.
- ALWAYS stop the Engine when leaving the Operating Zone or when moving the machine.

Starting and Stopping the Engine

1. Check the Oil and Fuel level every time you use the DR CHIPPER SHREDDER.
2. Check the Shredder Hopper, Chipper Chute, and Discharge Chute debris and remove any buildup from the machine as described in Chapter 4.
3. Move the Fuel Shut-Off Valve fully to the right to its OPEN position (**Figure 9a and 9b**).
4. Move the Choke Control Lever to the left to the Choke position (leave in the Run position to the right if the Engine is already warm).
5. Move the Throttle Control Lever to about halfway between Slow (turtle) and Fast (rabbit) Position.
6. **Manual Start** –Turn the On/Off Switch to the “On” position (**Figure 9a**). Grasp the Recoil Starter Handle and slowly pull until you feel resistance, then pull the cord with a smooth accelerating motion to start the engine. One or two pulls usually starts the DR Chipper Shredder.
7. **Electric Start** - Turn the Key to START until the Engine starts and then release (**Figure 9b**). The Key will snap back when released and the Engine will continue to run.
8. After the Engine starts when the Choke is on, the Engine will soon begin to run rough. Adjust the Choke Lever until the engine runs smoother. Continue this process until the engine runs well with the Choke fully in the RUN position.
9. When the Engine is warmed up and running smoothly, ensure that the Choke is fully to the right and the Throttle Control Lever is fully to the left at the Fast (rabbit) Position for Chipping and Shredding.

Note: The Throttle should always be fully to the left when Chipping/Shredding.

10. - **To stop the Manual Start Engine**, move the Throttle to the Slow (Turtle) position to allow the Engine to idle and turn the On/Off Switch to the "OFF" position (**Figure 9a**).
- **To stop the Electric Start Engine**, move the Throttle to the Slow (Turtle) position allowing the Engine to idle and turn the Key to the "OFF" position (**Figure 9b**).

Important Processing Information

Follow all Danger, Warning, Caution and Notice labels when using your machine. For best performance and safety, pay close attention to the Caution Label on the inside of the Shredder Hopper.

Using the Chipper Chute

The Chipper can chip twigs and branches ranging in size from 1/2" to 3" (PREMIER 320) or 3/4" to 4" (PRO 420) in diameter. Cut your materials into manageable lengths before feeding them into the Chipper Chute. The revolving Chipper Knife mounted on a Flywheel turns branches fed into the Chute into "chips". **NOTE:** Use the Shredder Hopper as described in the next section for hard wood branches less than 3/4" in diameter and softer organic material up to 4-1/2" in diameter.

- Hold onto and slowly feed material into the Chipper Chute. Do not force material or allow material to be pulled too quickly into the Chipper.
- Larger diameter hardwood or extremely hard knots may not process as well as other materials. Discard larger diameter or harder branch stubs before they become too short to control their feed rate.
- Keep a moderate feed rate to prevent overloading the machine. Overloading the Chipper Chute will cause the Engine speed to decrease and may stress and damage the machine.
- Your Chipper can process dry or green material. Green material will process quicker and easier than dry material. Soft wood processes easier than hard wood.
- If the machine does not chip well, the Chipper Knife may need to be sharpened or replaced.
- It is best to trim off any side twigs from the main branch that you are chipping.
- When chipping branches, sometimes a tail will remain at the end of a branch. To avoid this, rotate the branch while feeding it into the Chipper Chute. Rotating the branch as you feed it into the machine will improve chipping performance.
- Use caution with small diameter green saplings and branches less than 1" in diameter. Chip these grouped or bundled together to provide support for each other. If the material is 1" or larger, feed only one at a time into the Chipper Chute.
- Shred green or very leafy material smaller than 3/4" diameter (like pine boughs) through the Shredder Hopper instead of the Chipper Chute.

Using the Shredder Hopper

The Shredder Hopper can process hard wood branches up to 1/2" (PREMIER 320) or 3/4" (PRO 420) in diameter and softer organic material up to 4-1/2" in diameter. You can shred most organic materials. A Guard (flap) is attached to the Hopper. Material must go past this flap in order to enter the main Shredding Chamber where revolving steel Hammers do the shredding. Use a Stick to push the material past the flap if needed.

! WARNING

The Hammers within the Shredding Chamber can tug suddenly at material fed into the Shredder Hopper. Wear Gloves and do not hold on tightly to branches and vines and do not feed material straight down into the Hopper with your arm pointing downward toward the opening. Instead, keep your arms parallel to the ground and several inches above the top edge of the Hopper as you drop the material into the opening.

- Due to the wide variety of materials that you can shred (see next page) and their different physical characteristics, only feed limited quantities of any material into the Shredder Hopper at first. Increase the amount and length of material if you find that the material is processing without any difficulty. Your judgment and operator experience is very important.
- ALWAYS pay attention to the discharge to confirm that material is exiting the machine at the same rate it is entering. If material builds up inside the cutting chamber instead of discharging - stop feeding more material and wait for the material to discharge. If the material does not discharge, see the "Removing a Clog" section on the next page.
- Be sure not to overload the machine by feeding too much material into the Hopper at one time. If you hear the speed of the Engine decreasing, stop feeding material into the machine at once. Do not resume feeding the machine until the Engine has returned to full speed.

- You can feed several small branches into the Shredder Hopper at once providing their combined diameter is less than 3/4". Cut branches so they are shorter than 3 feet long to make them more manageable.
- Allow green materials to dry before processing or alternate processing and discharging green/wet materials with dry materials to avoid clogging. If wet materials begin to clog, shred a stick to clear the material through. If the clog still is not cleared, see the "Removing a Clog" section on the next page.

MATERIALS BEST SUITED FOR SHREDDING			
Leaves	Flowers	Corn Stalks	Roots
Soil	Palm frond tops	Grass clippings	Garden debris
Potato vines	Straw and Hay	Hedge clippings	Tomato vines
Manure	Kitchen Waste	Branches smaller than 3/4"	

General Warnings

CAUTION

- NEVER allow processed material to build up within 3" of the Discharge opening. Move the DR CHIPPER SHREDDER or the pile as needed. Failure to do so could result in unnecessary jamming of the machine.
- To move a pile of processed material, first shut off the Engine, and use a spade, rake, or long handle tool; NEVER use your hands or feet!
- Make sure the DR CHIPPER SHREDDER finishes processing and discharging material before shutting the Engine off.



Figure 10

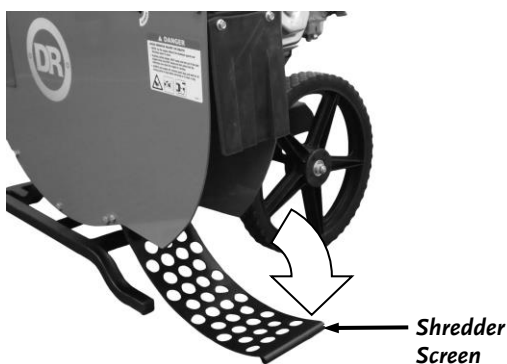


Figure 11

WARNING

Before performing any maintenance procedure or inspection, stop the Engine, wait five minutes to allow all parts to cool. Disconnect the Spark Plug Wire, keeping it away from the Spark Plug.

Removing a Clog

1. Remove any material left in the Chipper Chute and Shredder Hopper with a wooden stick.
2. Remove the Upper Screen Bolt and Locknut using two 1/2" Wrenches (**Figure 10**).
3. Rotate the Screen down to gain access to the cutting chamber (**Figure 11**).
Note: If the Screen will not rotate down freely, the nearby bolts can be loosened slightly.
4. Clear all clogged material from the machine.
5. Rotate the Screen back into the operating position and reinstall the hardware. **Note:** Make sure the bolt goes through the screen rather than just behind it.
6. Start the machine and allow any remaining material to discharge.
7. If you have been shredding wet/green materials the clog may be near the shredder housing inlet. Shred a wood stick of up to 1" diameter to clear the clogged wet material.
8. If the clog does not clear repeat the above process.
9. Be certain the cutting chamber is clear before trying to process more material.

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Chapter 4: Maintaining the DR CHIPPER SHREDDER

Regular maintenance is the way to ensure the best performance and long life of your machine. Please refer to this manual and the Engine Manufacturer's Owner's Manual for maintenance procedures. Service intervals listed in the checklist below supersede those listed in the Engine Manufacturer's Owner's Manual.

WARNING

Before performing any maintenance procedure or inspection, stop the Engine, wait five minutes to allow all parts to cool. Disconnect the Spark Plug Wire, keeping it away from the Spark Plug.

Regular Maintenance Checklist

PROCEDURE	BEFORE EACH USE	EVERY 25 HOURS
Check Engine Oil Level	▲	
Check General Equipment Condition	▲	
Clean Engine Exterior & Cooling Fins	▲	
Inspect Knife for damage and sharpness	▲	
Check Air Filter, Clean or Replace as Needed	▲	
Change Engine Oil	1 st time 5 hrs	▲
Check Knife Attachment Screws		▲
Check Hammers/Spacers for Wear, Reverse or Replace as Needed		▲
Inspect Spark Plug, Replace as Needed		▲



Figure 12

Removing and Replacing the Engine Oil

Tools and Supplies Needed:

- 10mm Wrench
- Rags and approved Container (for waste oil)
- Engine Oil (see your Engine Manual for Oil specifications)

Note: Drain the oil when the Engine is warm; warm oil drains quickly and completely.

1. Set the machine on a level surface, place an approved Waste Oil Container under the Oil Drain Plug on the left side of the Engine (**Figure 12**).
2. Remove the Oil Drain Plug at the front of the Engine using a 10mm Wrench allowing the used oil to drain completely through the drain hole and down into the Container.
3. Replace the Oil Drain Plug and refill with new oil through the Oil Fill/Dipstick. See "**Adding Oil and Gasoline**" on page 11.

Note: Be sure to use environmentally safe disposal procedures in the disposing of the used oil.

Replacing the Chipper Knife

The DR CHIPPER SHREDDER is shipped with a sharp Chipper Knife. Depending upon material being chipped we've found it can remain acceptably sharp for over 40 hours. When you notice diminished feeding, it is time to replace the knife. You may also choose to have the knife sharpened instead as described on the next page.

Tools and Supplies needed:

- Two 1/2" Wrenches
- 3/16" Allen Wrench
- Awl
- Gloves

1. Loosen the Locknuts on the Access Plate using a 1/2" Wrench, slide the Plate to the side to align the holes with the Locknuts, and remove the Access Plate (**Figure 13**).
2. Remove the three PREMIER 320 (**Figure 14a**), or four PRO 420 (**Figure 14b**), Locknuts using one or two 1/2" Wrenches as needed to remove the Chipper Chute.
3. Rotate the Flywheel with a stick until the Knife is centered in the opening (**Figure 16**).
4. Clean out the heads of the Allen Screws with an awl or sharp tool.
5. Insert a 3/16" Allen wrench into the head of the screws and a 1/2" Wrench onto the Locknuts to remove the two (PREMIER 320) or three (PRO 420) Locknuts and Screws.
6. Carefully remove the dull or damaged Knife and visually inspect the Knife mounting area and be sure they are clean. Metal burrs may need filing so that the replacement Knife will be able to mount flush against the Flywheel.
7. Install a new or sharpened Knife and finger tighten the Allen Screws and Locknuts.

Note: New Allen Screws and Locknuts are provided with each new Chipper Knife.

8. Using a 3/16" Allen Wrench on the Screw and a 1/2" Wrench on the Locknut, tighten the hardware to secure the Chipper Knife.
9. Double-check all Screws again for tightness.
10. Reinstall the Chipper Chute and Access Plate.

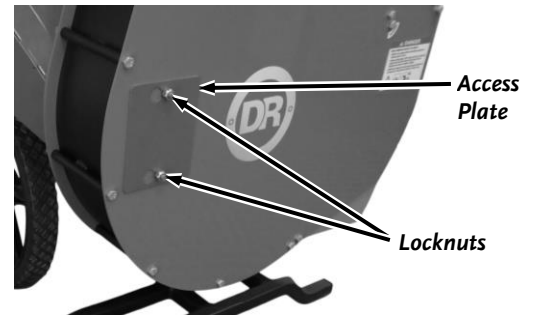


Figure 13

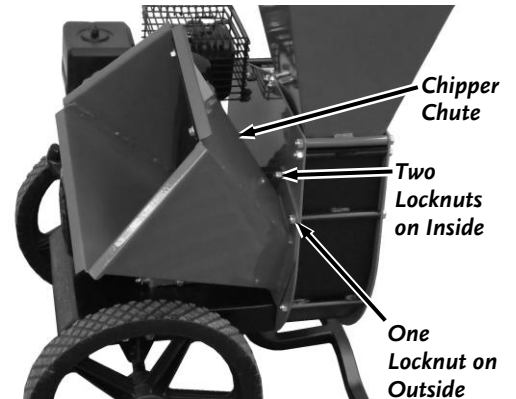


Figure 14a

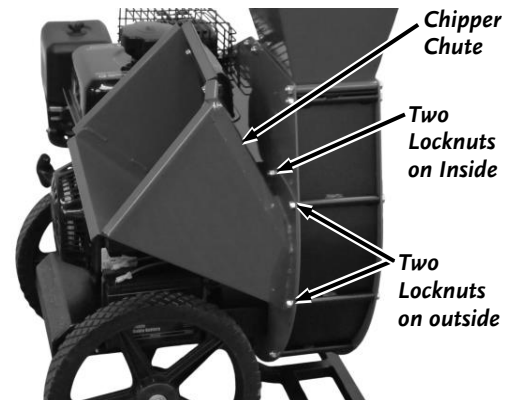


Figure 14b

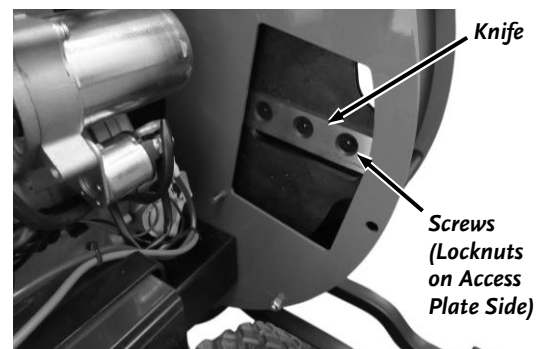


Figure 15

Knife Sharpening

- You should never attempt to sharpen the Chipper Knife freehand; take the Knife to a machine shop for proper sharpening.
- It is extremely important to consistently maintain the 45-degree angle for proper performance.
- Excessive heat generated during the sharpening process will damage Knives and weaken the metal.
- How many times a Knife can be sharpened is determined by how much material needs to be taken off to sharpen or to compensate for dents or gouges.
- A new Chipper Knife has a $5/16$ " measurement between the short side bevel edge and the Knife mounting holes (**Figure 16**).

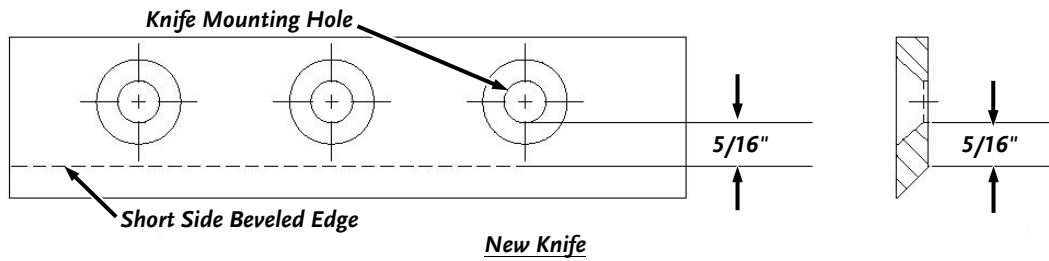


Figure 16

- The knife should never be sharpened to the extent that more than $3/32$ " is taken off this measurement.
- Once this measurement is below $7/32$ " (**Figure 17**), or if you are unable to remove dents or gouges with these guidelines, replace the Knife.

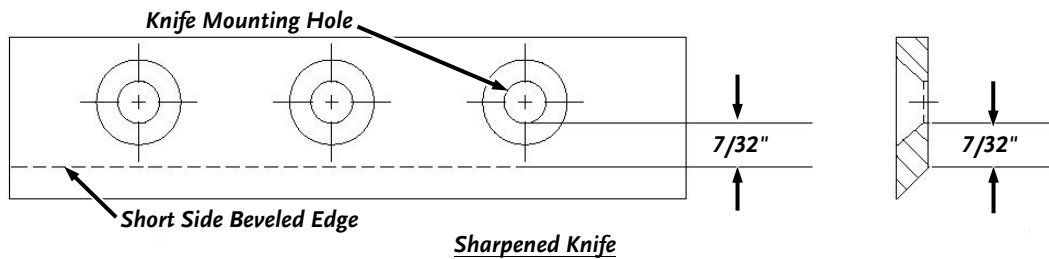


Figure 17

Maintaining the Shredder Hammers

When the hardened steel Hammers become dull or round on the cutting edge, they should be reversed or replaced. Please purchase 4 new Center Locknuts A0004377071 from DR Power Equipment (1-800-DR-OWNER (376-9637)) before reversing or replacing the Hammers.

Note: The Flat Hammers have four cutting edges, and the J Hammers have two cutting edges that may be used before replacement is necessary. To reverse the Hammers, proceed as follows:

WARNING

- Before performing any maintenance procedure or inspection, stop the Engine, wait five minutes to allow all parts to cool. Disconnect the Spark Plug Wire, keeping it away from the Spark Plug.
- The Locknuts used to secure the Hammers are a one-time use Locknut. Each time you do any maintenance on the hammers you must use new Locknuts to reinstall the Hammers after removal.

Tools and Part Required

- (2) 1/2" Wrenches
- 3/4" Wrench
- 3/4" Socket
- Feeler Gauge
- (4) A0004377071 Nut, Center Lock

1. Remove the two Bolts and Locknuts Securing the Shredder Hopper using two 1/2" Wrenches (**Figure 23**) and remove the Shredder Hopper from the machine.
2. Remove the four Locknuts securing the Chipper Chute using two 1/2" Wrenches (**Figure 24**). Remove the Chipper Chute.
3. Loosen the Locknuts on the Access Plate using a 1/2" Wrench, slide the Plate to the side to align the holes with the Locknuts, and remove the Access Plate (**Figure 25**).

Note: There is 1 J Hammer and 1 Flat Hammer (PREMIER 320) or 2 Flat Hammers (PRO 420) on each Hammer Shaft. J Hammers are oriented in the opposite direction of those on adjacent Hammer Shafts (**Figure 26**).

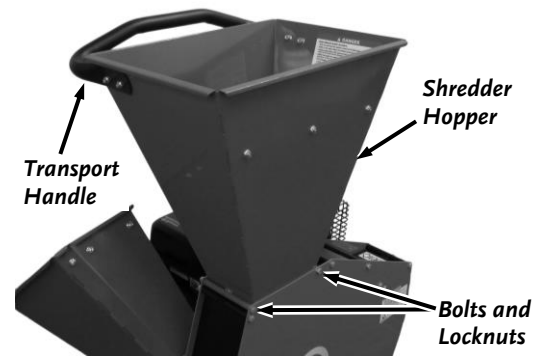


Figure 23

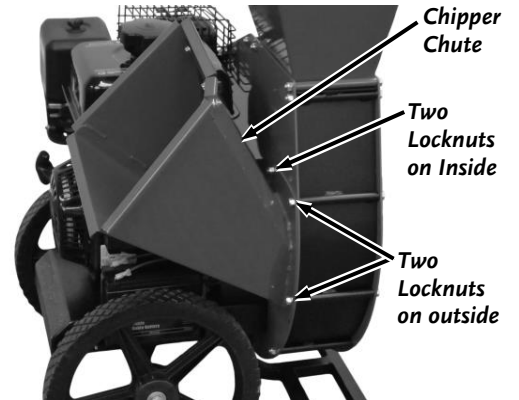


Figure 24

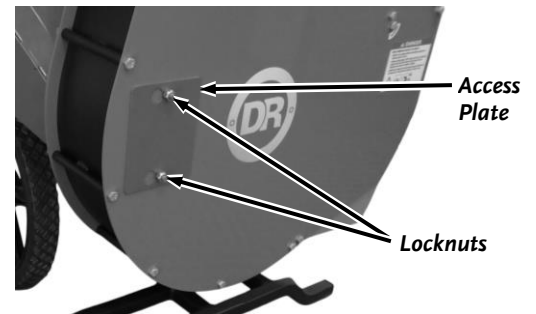


Figure 25

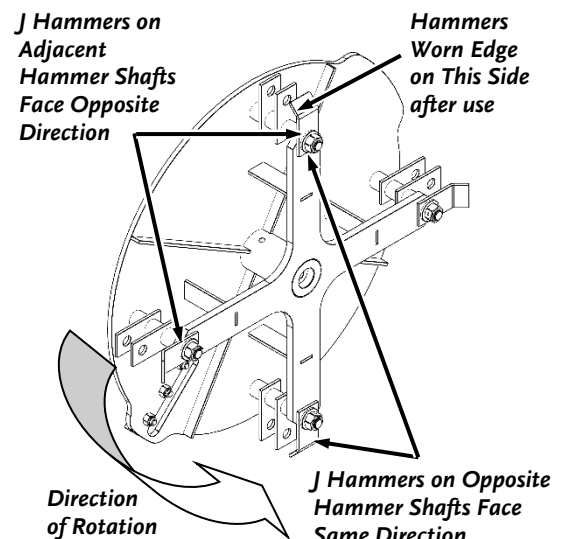


Figure 26

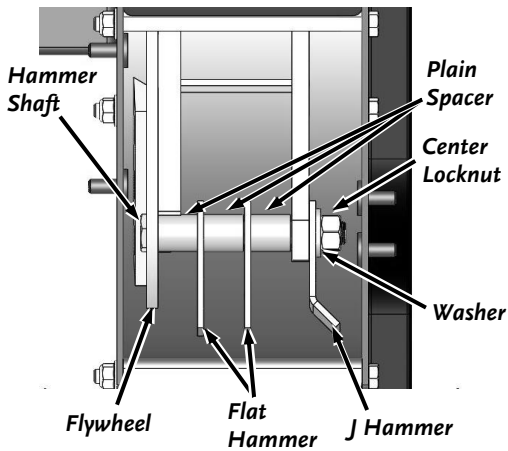


Figure 27a (PRO 420)

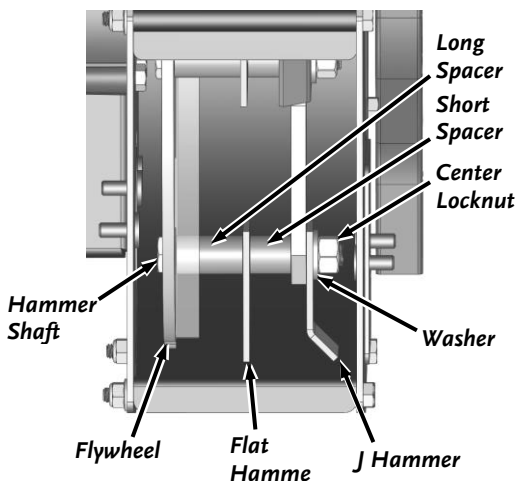


Figure 27b (PREMIER 320)

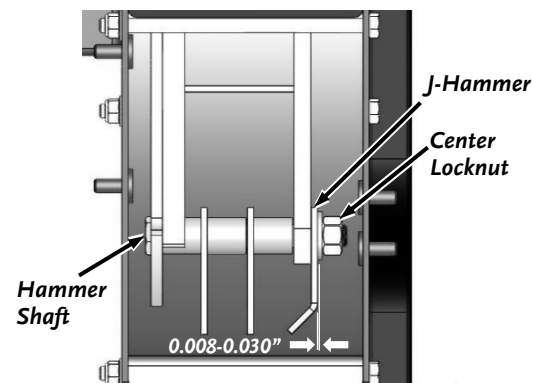


Figure 28a (PRO 420)

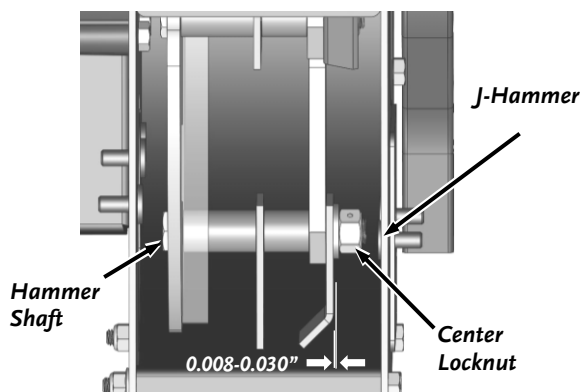


Figure 28b (PREMIER 320)

4. Align one of the Hammer Shafts with the Chipper Chute Access Hole (**Figure 27a or 27b**). Carefully note the orientation of each Hammer on the Hammer Shaft you are working on.
5. Use a 3/4" Wrench and a 3/4" socket to remove the Center Locknut from the Hammer Shaft. Discard the Center Locknut, it is not reusable.
6. Remove the Hammer Shaft, Washer, Spacers, and Hammers.
7. Reinstall the parts, but with the orientation of the Hammers flipped to a clean cutting edge. If your Hammer Shaft assembly looked like **Figure 27** before then it should look like **Figure 28** after, or vice versa. Make sure to use a new Center Locknut.

NOTE: On the PREMIER 320 you will have one long Spacer and one short; the longer Spacer sits against the Flywheel.

8. Use a 3/4" Wrench to hold the Hammer Shaft Head against the Flywheel and incrementally tighten the Center Locknut using a 3/4" Socket Wrench until a small gap remains between the Center Locknut and the Washer. Use Feeler Gauges to set an 0.008"-0.030" clearance between the J Hammer and Washer.

NOTE: When done all Hammers should spin freely, and the Hammer Shaft should have minimal back and forth play.

9. Repeat steps 4 through 9 for the remaining three Hammer Shafts.

NOTE: When done confirm that the J-Hammer orientation is alternating as shown in **Figure 26**.

10. Reinstall the Access plate.
11. Reinstall the Chipper Chute.
12. Reinstall the Shredder Hopper.

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Chapter 5: Troubleshooting

Most problems are easy to fix. Consult the Troubleshooting Table below for common problems and their solutions. If you continue to experience problems, contact us at www.DRpower.com or call toll-free 1-800-DR-OWNER (376-9637) for support.

WARNING

Shut down the Engine and wait 5 minutes for all parts to cool. Remove the Spark Plug Wire, keeping it away from the Spark Plug to prevent accidental starting before performing any maintenance procedure or inspection on the CHIPPER SHREDDER.

Troubleshooting Table

SYMPTOM	POSSIBLE CAUSE
<p><i>Engine Recoil will not pull out or is difficult to pull.</i></p>	<ul style="list-style-type: none"> ⇒ Remove un-processed material from the Chipper Chute and Shredder Hopper and remove any built-up debris in the Discharge opening. ⇒ There may be an oil compression lock in the cylinder. Take out the Spark Plug; hold a rag over the Spark Plug hole and pull the Recoil Cord several times to blow out any oil in the Cylinder. Wipe off the Spark Plug and reinstall it. ⇒ Check the Engine oil level; the Engine may be seized. ⇒ The Recoil may be broken or jammed. Visit our website at www.DRpower.com.
<p><i>The Engine will not start.</i></p> <p><i>(Please refer to the Engine Owner's Manual for Engine-specific procedures.)</i></p>	<ul style="list-style-type: none"> ⇒ Check the oil and gas level. ⇒ Make sure that the Fuel Shut-Off is in the ON position. ⇒ Check that the Spark Plug Wire is attached. ⇒ The Air Filter may be dirty; change it following the procedure in the Engine Owner's Manual. ⇒ The gas may be old; change it if necessary. Use a fuel stabilizer if you keep gas longer than one month. ⇒ Check the Throttle and Choke settings, adjustment and travel. ⇒ The Spark Plug may be dirty or cracked; change it if necessary. If it's oily, leave it out, hold a rag over the Plug Hole and pull the Recoil Cord several times to blow out any oil in the Cylinder, then wipe off the Plug and reinsert it. Never use a cracked Spark Plug as serious damage could result. ⇒ If your Engine still won't start, visit our website at www.DRpower.com.
<p><i>The Engine lacks power or is not running smoothly.</i></p> <p><i>(Please refer to the Engine Owner's Manual for engine-specific procedures.)</i></p>	<ul style="list-style-type: none"> ⇒ Make sure the Choke Lever is all the way to the RUN position (right). ⇒ Make sure that the Throttle Lever is all the way to the Left (Rabbit) position. ⇒ The Air Filter may be dirty; change it following the procedure in the Engine Owner's Manual. ⇒ The Spark Plug may be dirty or cracked; change it if necessary. If it's oily, leave it out, hold a rag over the Plug Hole and pull the Recoil Cord several times to blow out any oil in the Cylinder, then wipe off the Plug and reinsert it. Never use a cracked Spark Plug as serious damage could result. ⇒ The gas may be old; change it if necessary. Use a fuel stabilizer if you keep gas longer than one month. ⇒ The Engine oil may be dirty. Change it if necessary. ⇒ Check that the Cooling Fins are clean and free of debris. Clean as needed. ⇒ If your Engine still lacks power, visit our website at www.DRpower.com.

Troubleshooting Table (Continued)

WARNING

Shut down the Engine and wait 5 minutes for all parts to cool. Remove the Spark Plug Wire, keeping it away from the Spark Plug to prevent accidental starting before performing any maintenance procedure or inspection on the CHIPPER SHREDDER.

SYMPTOM	POSSIBLE CAUSE
<p><i>Engine smokes.</i></p> <p><i>(Please refer to the Engine Owner's Manual for engine-specific procedures.)</i></p>	<p>⇒ Check the oil level and adjust as needed.</p> <p>⇒ You may be operating the machine on too great an incline. The machine should be level.</p> <p>⇒ The Air Filter may be dirty; change it following the procedure in the Engine Owner's Manual.</p> <p>⇒ You may be using the wrong oil - too light for the temperature. Refer to your Engine Owner's Manual for detailed information.</p> <p>⇒ Check that the Cooling Fins are clean and free of debris. Clean as needed.</p> <p>⇒ If your Engine still smokes, visit our website at www.DRpower.com.</p>
<p><i>Shredding and chipping action seems too slow.</i></p>	<p>⇒ Check for a dull or damaged Knife; sharpen or replace the Knife.</p> <p>⇒ Check for a dull or damaged Hammers; rotate or replace as needed.</p> <p>⇒ Make sure that the Throttle Lever is all the way to the left (Rabbit) position.</p>
<p><i>The machine has excessive vibration.</i></p>	<p>⇒ Check for a dull or damaged Knife; sharpen or replace the Knife.</p> <p>⇒ The Hammermill is out of balance. Check for any missing or broken Hammers or Spacers; replace if necessary.</p> <p>⇒ The Knife may not be seated properly. Loosen the Knife mounting screws, reset the Knife, and tighten the screws.</p> <p>⇒ If your machine still exhibits excessive vibration, visit our website at www.DRpower.com.</p>
<p><i>When chipping, the branch seems to vibrate excessively and "hammers" my hands.</i></p>	<p>⇒ The Knife is dull; sharpen or replace it.</p>
<p><i>Debris builds up in the cutting chamber</i></p>	<p>⇒ Alternate shredding dry material with wet/green material.</p> <p>⇒ Shred a wood stick of up to 1" diameter to clean out the build-up.</p>

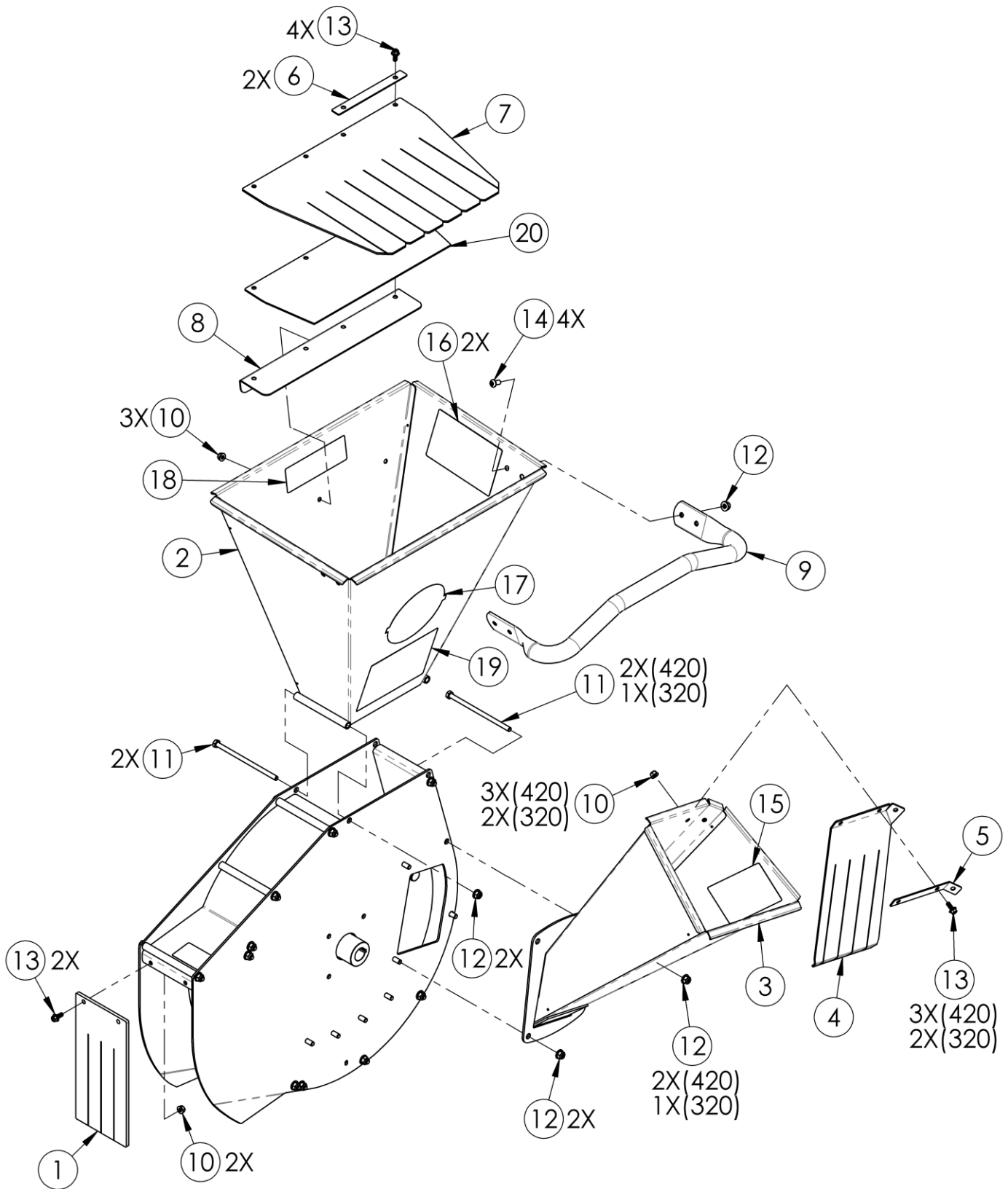
Chapter 6: Parts Lists and Schematic Diagrams

Parts List – Hopper, Chute and Discharge

Note: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description	Ref#	Part#	Description
1	A0001994505	Deflector, Discharge (PRO 420)	10	333311	Nut, Nylon Lock, Flanged, 1/4-20
	A0001364158	Deflector, Discharge (PREMIER 320)	11	386401	Bolt, HCS, 5/16-18 X 6", GR5, ZP (PRO 420)
2	A0002277800	Hopper w/Labels, 4in (PRO 420)		385971	Bolt, Housing, 5/16-18 X 5.5" (PREMIER 320)
	A0002277796	Hopper w/Labels, 3in (PREMIER 320)	12	333321	Nut, Nylon Lock, Flanged, 5/16-18
3	A0002277801	Chute w/Labels, 4in (PRO 420)	13	365211	Bolt, Hex, Flange, 1/4-20 X 5/8", ZP
	A0002277797	Chute w/Labels, 3in (PREMIER 320)	14	10000043872	Screw, Button Hex Hd, 5/16-18 X 5/8", GR5, ZP
4	A0001363954	Guard, Chipper Chute, (PRO 420)	15	392831	Label, Danger, Discharge
	365141	Guard, Chipper Chute (PREMIER 320)	16	392821	Label, Danger, Safety
5	A0001294572	Bracket, Chute Guard (PRO 420)	17	A0000181455	Label, DR Logo, 5.5" Die Cut
	365151	Plate, Guard (PREMIER 320)	18	10000026298	Label, Operating (PRO 420)
6	365151	Plate, Guard		A0004444433	Label, Operating (PREMIER 320)
7	365251	Guard, Shredder Hopper	19	A0002192920	Label, CS4 PRO 420
8	365261	Support, Hopper Guard		A0002192919	Label, CS4 PREMIER 320
9	A0001244988	Handle	20	365441	SUPPORT, GUARD HOPPER

Schematic – Hopper, Chute and Discharge

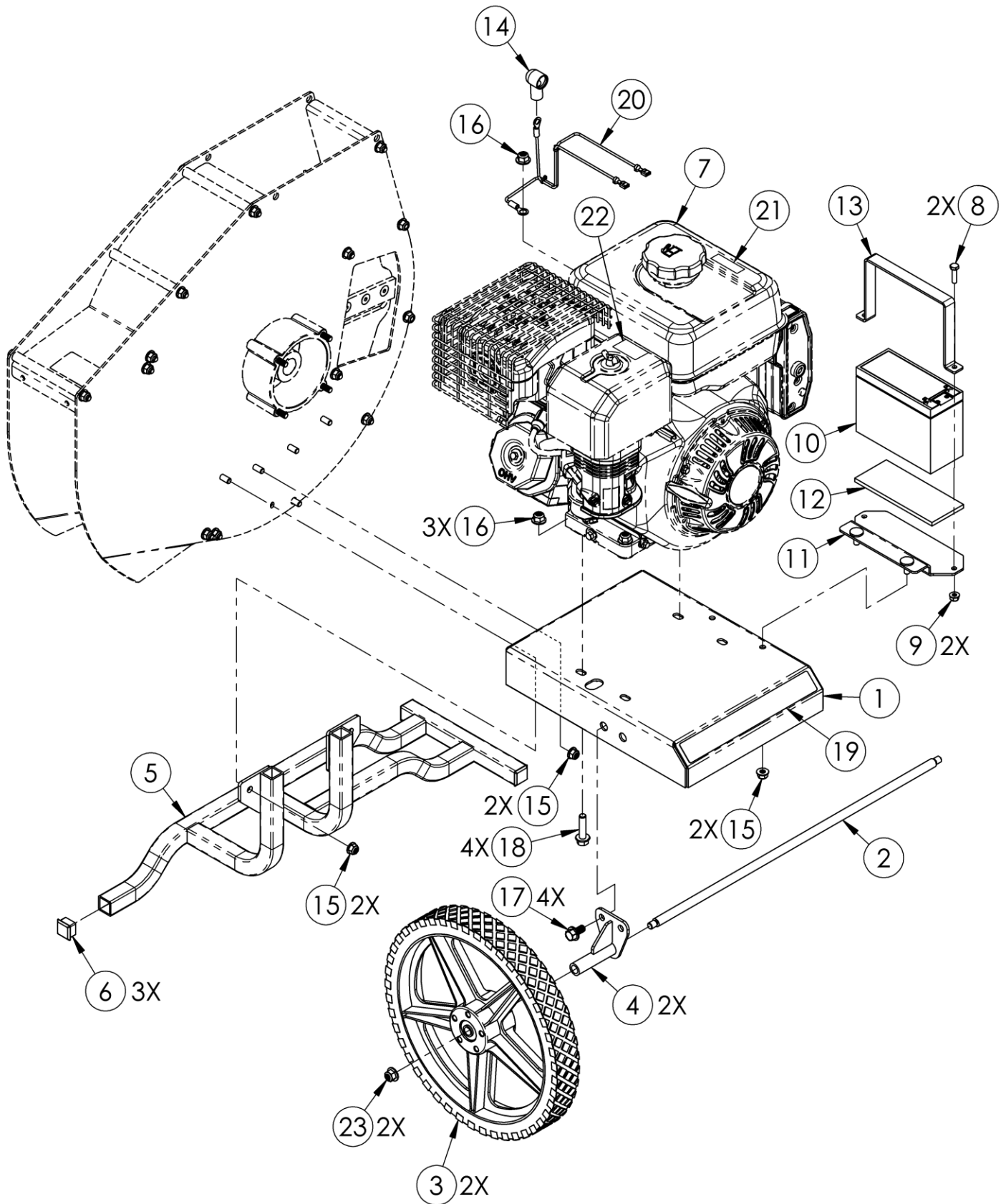


Parts List – Drive Assembly

Note: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description	Ref#	Part#	Description
1	A0001244985	Base (PRO 420)	11	A0001294574	Bracket, Battery (420 E/S)
	A0001244996	Base (PREMIER 320)	12	286971	Pad, Battery, 2.5" X 6.125" (420 E/S)
2	A0001515282	Axle	13	242301	Strap, Battery, 9ah (420 E/S)
3	311081	Wheel, 14", 5 Spoke	14	294871	Boot, Rubber, Red
4	A0001515278	Bracket, Axle	15	333321	Nut, Nylon Lock, Flanged, 5/16-18
5	A0001994506	Leg, Support (PRO 420)	16	333331	Nut, Nylon Lock, Flanged, 3/8-16 (PRO 420)
	A0001515280	Leg, Support (PREMIER 320)		333321	Nut, Nylon Lock, Flanged, 5/16-18 (PREMIER 320)
6	A0002074313	Plug, 1" X 1", 11ga Tube	17	345121	Bolt, Hex, Flange, 3/8-16 X 0.75", GR5
7	A0002277804	Engine w/Labels, DR 9.2hp 301cc, E/S R300 (420 E/S)	18	344071	Bolt, Hex, Flange, 3/8-16 X 1.5", GR5, ZP (PRO 420)
	A0002277803	Engine w/Labels, DR 9.2hp 301cc, M/S R300 (420 M/S)		333521	Bolt, Flange, 5/16 X1.5" (PREMIER 320)
	A0002277799	Engine w/Labels, DR 9.59tq/6.6hp, M/S R225 (320 M/S)	19	A0001994508	Anti-slip Tape, Base
8	111491	Bolt, HCS, 1/4-20 X 1", GR5, ZP (420 E/S)	20	A0001994507	Wire Harness (420 E/S)
9	333311	Nut, Nylon Lock, Flanged, 1/4-20 (420 E/S)	21	137581	Label, Check Oil
10	134471	Battery, 9 Ah 12v (420 E/S)	22	188871	Label, HOT Surface
			23	333331	Nut, Nylon Lock, Flanged, 3/8-16

Schematic – Drive Assembly

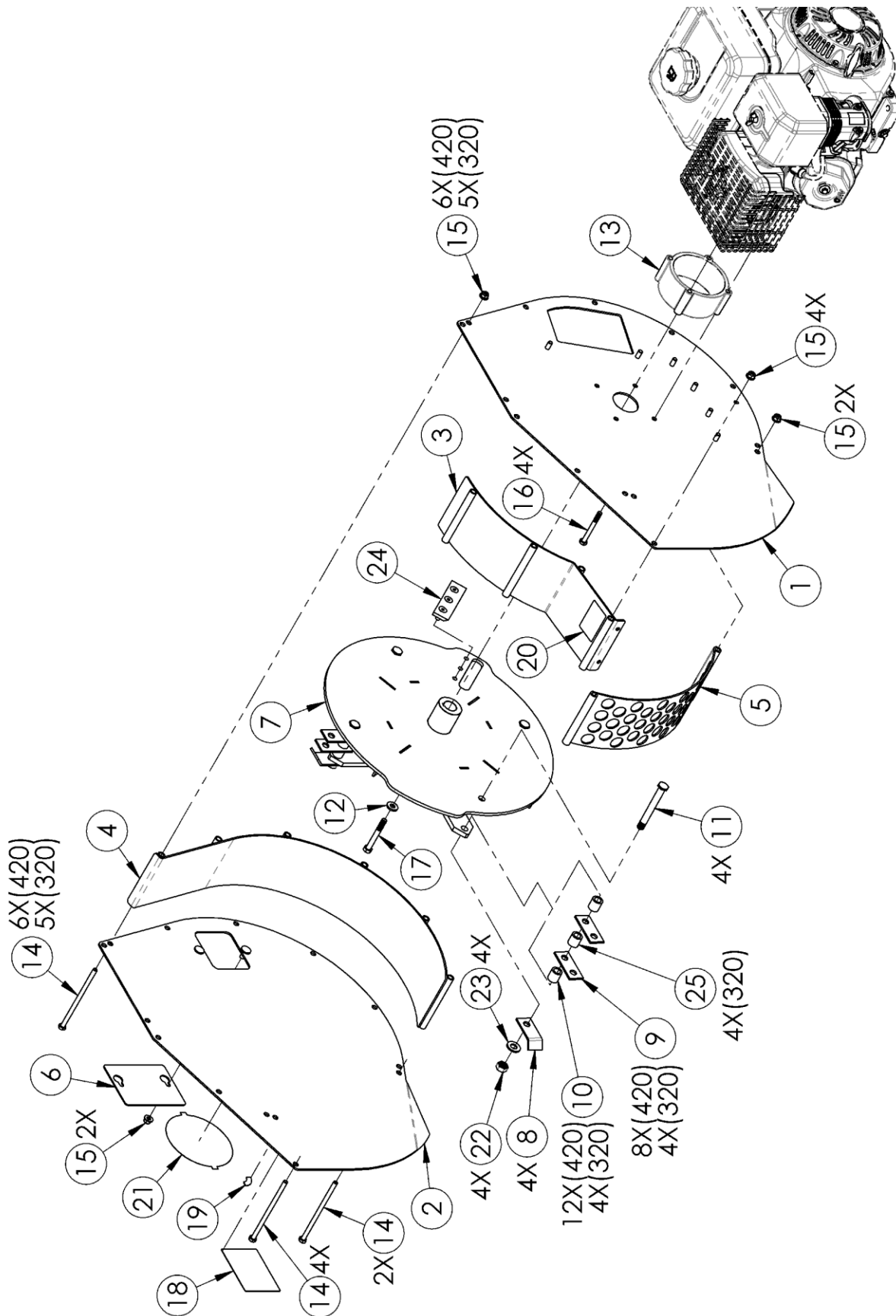


Parts List – Cutting Chamber

Note: Part numbers listed are available through DR Power Equipment.

Ref#	Part#	Description	Ref#	Part#	Description
1	A0001244978	Sideplate, Engine Side (PRO 420)	13	A0001539474	Spacer, Engine Mount (PRO 420)
	A0001244989	Sideplate, Engine Side (PREMIER 320)		A0001539473	Spacer, Engine Mount (PREMIER 320)
2	A0002277802	Sideplate w/Labels, Back Side (PRO 420)	14	386401	Bolt, HCS, 5/16-18 X 6" GR5, ZP
	A0002277798	Sideplate w/Labels, Back Side (PREMIER 320)	15	333321	Nut, Nylon Lock, Flanged, 5/16-18
3	A0001244981	Top Plate (PRO 420)	16	350311	Bolt, HCS, 5/16-24 X 3" GR8 YZP (PRO 420)
	A0001244992	Top Plate (PREMIER 320)		396821	Bolt, HCS, 5/16-24 X 3.5", GR5 (PREMIER 320)
4	A0001244980	Scroll (PRO 420)	17	A0001585223	Bolt, Hex, 3/8-24 X 3", GR8, ZP (PRO 420)
	A0001244991	Scroll (PREMIER 320)		223241	Bolt, 7/16-20 X 2 3/4" (PREMIER 320)
5	A0001244982	Screen (PRO 420)	18	392831	Label, Danger, Discharge
	A0001244993	Screen (PREMIER 320)	19	386691	Label, Screen Bolt
6	A0001294570	Plate, Access	20	188871	Label, Hot Surface
7	A0000930079	Flywheel W/Knife, Balanced, 4"	21	A0000181455	Label, DR Logo, 5.5", Die Cut
	A0001244976	Flywheel- W/Knife, Balanced 3"	22	A0004377071	Nut, Center Lock, 1/2-20 GR8
8	373071	Hammer, J	23	A0004377574	Washer, .531 X 1.062 X .108,
9	373061	Hammer, Flat	24	405241	Knife Kit (PRO 420)
10	386381	Spacer, Hammer, .865" Long		365371	Knife Kit (PREMIER 320)
11	A0004359062	Shaft, Hammer, HCS, 1/2-20, GR8 (PRO 420)	25	A0001540938	Spacer, Hammer (PREMIER 320)
	A0005090212	Shaft, Hammer, HCS, 1/2-20, GR8, (PREMIER 320)			
12	A0003899629	Spacer, CS4 Pro Flywheel (PRO 420)			
	A0003899630	Spacer, CS4 Premier Flywheel (PREMIER 320)			

Schematic – Cutting Chamber



Notes:

DR[®] CHIPPER SHREDDER



2-Year Limited Warranty

Terms and Conditions

The DR[®] CHIPPER SHREDDER is warranted for two (2) years against defects in materials or workmanship when put to ordinary and normal consumer use; ninety (90) days for any other use.

For the purposes of all the above warranties, "ordinary and normal consumer use" refers to non-commercial residential use and does not include misuse, accidents or damage due to inadequate maintenance.

DR Power Equipment certifies that the DR[®] CHIPPER SHREDDER is fit for ordinary purposes for which a product of this type is used. DR Power Equipment however, limits the implied warranties of merchantability and fitness in duration to a period of two (2) years in consumer use, ninety (90) days for any other use.

The 2-Year Limited Warranty on the DR[®] CHIPPER SHREDDER starts on the date the machine ships from our factory. The 2-Year Limited Warranty is applicable only to the original owner.

The warranty holder is responsible for the performance of the required maintenance as defined by the manufacturer's owner's manuals. The warranty holder is responsible for replacement of normally wearing parts such as the Belt, knife, hammers, and hammer shafts. Attachments and accessories to the machine are not covered by this warranty.

During the warranty period, the warranty holder is responsible for the machine transportation charges, if required. During the warranty period, warranty parts will be shipped by standard method at no charge to the warranty holder. Expedited shipping of warranty parts is the responsibility of the warranty holder.

SOME STATES DO NOT ALLOW LIMITATIONS ON THE LENGTH OF IMPLIED WARRANTIES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

DR Power Equipment shall not be liable under any circumstances for any **incidental or consequential damages or expenses** of any kind, including, but not limited to, cost of equipment rentals, loss of profit, or cost of hiring services to perform tasks normally performed by the DR[®] CHIPPER SHREDDER.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU ALSO HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

Daily Checklist for the DR CHIPPER SHREDDER

To help maintain your DR CHIPPER SHREDDER for optimum performance, we recommend you follow this checklist each time you use your CHIPPER SHREDDER.

WARNING

Before performing any maintenance procedure or inspection, stop the Engine, wait five minutes to allow all parts to cool. Disconnect the Spark Plug Wire, keeping it away from the Spark Plug.

- [] Check the Engine oil and Fuel Tank level.
- [] Check that Engine is clean of debris.
- [] Remove any unprocessed material from the Chipper Chute and Shredder Hopper.
- [] Check the general condition of the CHIPPER SHREDDER, e.g.; nuts, bolts, welds, etc.
- [] Check the Chipper Knife for tightness, nicks and wear.
- [] Check the Blowback Guards and Discharge Guard for wear and damage.

End of Season and Storage

WARNING

Before performing any maintenance procedure or inspection, stop the Engine, wait five minutes to allow all parts to cool. Disconnect the Spark Plug Wire, keeping it away from the Spark Plug.

- Change the Engine oil.
- Clean or replace the Air Filter.
- Check the Chipper Knife and Hammers for nicks and wear.
- Remove any debris wrapped around the Hammers/Spacers.
- If your DR CHIPPER SHREDDER will be idle for more than 30 days, we recommend using a gas stabilizer. This will prevent sediment from gumming up the Carburetor. If there is dirt or moisture in the gas or tank, remove it by draining the tank. Completely fill the tank with fresh, unleaded gas and add the appropriate amount of stabilizer or gasoline additive. Run the Engine for a short time to allow the additive to circulate. Close the Fuel Shut-Off Valve to prevent carburetor overflow and leakage.
- Clean the exterior of the unit to remove all dirt, grease, and any other foreign material. To prevent rust, touch up painted surfaces that have been scratched or chipped.
- Be sure all nuts, bolts, and screws are securely fastened.
- Remove the Spark Plug and pour about 1 ounce of motor oil into the Cylinder hole. Replace the Plug and crank the Engine over a couple of times using the Pull Cord. This will coat the piston and seat the valves to prevent moisture buildup.
- If possible, store the CHIPPER SHREDDER in a dry, protected place. If it is necessary to store the machine outside, after the DR CHIPPER SHREDDER has cooled, cover the machine with a suitable protective cover that does not retain moisture. Do not use plastic as this material cannot breathe; it also allows condensation to form, which will cause your machine to rust.



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