16.50 PRO **DR®** RAPID-FEED™ CHIPPER

SAFETY & OPERATING INSTRUCTIONS

Chipper shown with
Optional Accessories

Serial No. _____

Order No. _____

⚠ DANGER!

READ AND UNDERSTAND THIS MANUAL AND ALL INSTRUCTIONS BEFORE OPERATING OR SERVICING THIS 16.50 PRO DR RAPID-FEED CHIPPER.

Congratulations on your purchase of a new 16.50 PRO DR RAPID-FEED CHIPPER!

We have done our utmost to ensure that your 16.50 PRO DR RAPID-FEED CHIPPER will be one of the most trouble-free and satisfying pieces of equipment you have ever owned. Please let us know of any questions you may have. We want to answer them as quickly as possible. When you do call, please have your order number handy. **For technical 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**. We also hope to hear from you on how much you like your new helper.

In addition, please tell your friends about your new 16.50 PRO DR RAPID-FEED CHIPPER! Having DR Owners spread the word about our products and our way of doing business is the best advertising we can have, and the best way to help us provide even better service in the years to come.

Thanks once again!

for all of us at
DR Power Equipment

Sales Manager

DR® Power Equipment
A division of Country Home Products®
127 Meigs Road
Vergennes, VT 05491

Toll-free phone: 1-800-DR-OWNER (376-9637)
Fax: 1-802-877-1213
Web site: www.dr-owner.com

Table of Contents

CHAPTER 1

INTRODUCING THE 16.50 PRO DR RAPID-FEED CHIPPER

This manual will help you set up and safely operate your new 16.50 PRO DR RAPID-FEED CHIPPER. Careful adherence to the safety and operating instructions in this manual will ensure many years of productive use.

Please let us know of any questions you may have. We want to answer them as quickly as possible. When you do call, please have your order number handy. **For technical 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.**

Conventions used in this manual

Tip: This is a helpful hint to guide you in getting the most out of your 16.50 PRO DR RAPID-FEED CHIPPER.

⚠ 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.

Tools Needed: This indicates you will need a special tool to perform a maintenance function on your Chipper.

NOTE: *This information may be helpful to you.*

If you are ever unsure about an action you are about to take, don't do it. Contact us at www.DRpower.com or call DR Power Equipments' toll-free support at 1-800-DR-OWNER (376-9637) for help or information.

Specifications

MECHANICAL SPECIFICATIONS

Engine	Briggs & Stratton
Series	1650
Oil Capacity	28 oz.
Fuel Tank Capacity	4 Quarts
Chipping Capacity	4.5" Diameter
Wheel Size	5.30/4.50-6 Pneu. (standard non-highway): 4.80/4.00-8 Pneu. (optional Road-Towing Package only)
Axle	3/4" Round Axle (standard non-highway): 1" Spindles Welded to 2" X 2" X 1/4" Angle (optional Road-Towing Package only)
Number of Chipper Knives	1
Chipper Knife Size	6-1/4" X 2" X 3/8"
Chipper Knife Material	Heat Treated Tool Steel
Adjustable Knife Wear Plate	Yes
Chipper Flywheel	16-1/2" Dia. X 3/4" Thick
Flywheel Weight	55 Lbs
Chipper Knife Tip Speed	118 mph
Hopper Material	7 GA Neck, 14 GA Hopper
Frame Material	10 GA Steel
Hopper Opening at Top	22-1/2" x 29"
Machine Weight	372 Lbs (manual-start), 392 Lbs (electric-start)

SHIPPING SPECIFICATIONS

Shipping Dimensions	48" W x 67" L x 38" H
Shipping Weight	505 Lbs. (electric start w/ Tow Hitch)

Serial Number

A Serial Number is used to identify your machine. The number is located on the Serial Number Label on your machine. For your convenience and ready reference, enter the Serial Number in the space provided on the front cover of this manual.

Order Number

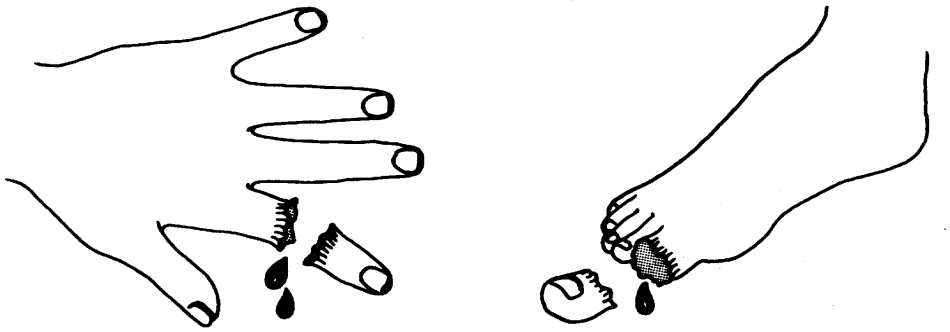
An Order Number is used to check and maintain your order history. The number is located on the upper left portion of your packing slip. For your convenience and ready reference, enter the Order Number in the space provided on the front cover of this manual.

CHAPTER 2

GENERAL SAFETY RULES

⚠ WARNING!

- **READ THIS SAFETY & OPERATING MANUAL BEFORE YOU USE THE 16.50 PRO DR RAPID-FEED CHIPPER. BECOME FAMILIAR WITH THE OPERATION AND SERVICE RECOMMENDATIONS TO ENSURE THE BEST PERFORMANCE FROM YOUR MACHINE.**
- **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. INSERTING THESE OBJECTS INTO THE CHIPPER HOPPER COULD DAMAGE THE MACHINE AND/OR CAUSE INJURY.**
- **THIS IS A HIGH-POWERED MACHINE, WITH MOVING PARTS OPERATING WITH HIGH ENERGY AT HIGH SPEEDS. YOU MUST USE PROPER CLOTHING AND SAFETY GEAR WHEN OPERATING THIS MACHINE TO PREVENT OR MINIMIZE THE RISK OF SEVERE INJURY. THIS MACHINE CAN CRUSH, GRIND, CUT, AND SEVER PARTS OF YOUR BODY IF THEY ENTER THE INLET OR DISCHARGE AREA OF YOUR CHIPPER.**



Labels

Your 16.50 PRO DR RAPID-FEED CHIPPER carries prominent labels as reminders for its proper and safe use. Shown below are copies of all the safety and operation labels that appear on the equipment. Take a moment to study them and make a note of their location on your 16.50 PRO DR RAPID-FEED CHIPPER as you assemble and *before* you operate the unit. Replace damaged or missing safety and operation labels immediately.

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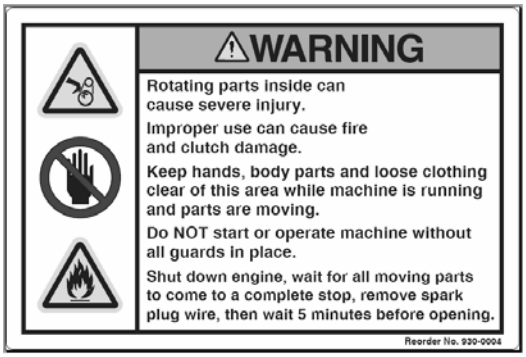
#242321

#241851

#241811

#241991



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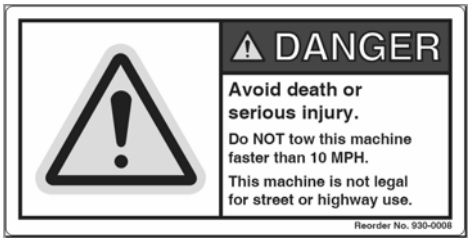

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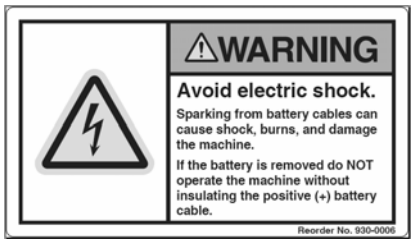


#242331 (electric start model only)

#242611 (Road-Towing Package only)


DANGER
Avoid death or serious injury.
Rotating cutting blades.
Do NOT insert hands, body parts, or metal objects in the hopper or discharge chute while the machine is running and parts are moving.
Shut down engine, wait for all moving parts to come to a complete stop, remove spark plug wire, then wait 5 minutes before clearing obstruction.
Keep hands, all body parts, and loose clothing away from moving parts.
Always wear approved safety glasses, hearing protection and gloves when using this machine.
Keep stones, nails, and other objects except branches out of the hopper.
Keep bystanders, children and pets 100 ft. from machine while in use.
Do NOT operate machine without the hopper, blow back shield, discharge chute and all guards securely in place.
Read and understand the operator's manual before servicing or operating this machine.
Reorder No. 930-0015

#241841

Protecting Yourself and Those Around You

⚠ WARNING!

THIS IS A HIGH-POWERED MACHINE, WITH MOVING PARTS OPERATING WITH HIGH ENERGY AT HIGH SPEEDS. 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. ALWAYS TAKE THE FOLLOWING PRECAUTIONS WHEN USING THIS MACHINE:

- **ALWAYS WEAR PROTECTIVE GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS WHILE CHIPPING 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 HOPPER.**
- **WE RECOMMEND WEARING GLOVES WHILE CHIPPING. BE SURE YOUR GLOVES FIT PROPERLY AND DO NOT HAVE LOOSE CUFFS OR DRAWSTRINGS.**
- **WEAR SHOES WITH NON-SLIP TREADS WHEN USING YOUR CHIPPER. 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 16.50 PRO DR RAPID-FEED CHIPPER.**
- **USE EAR PROTECTORS OR EAR PLUGS RATED FOR AT LEAST 20 DBA TO PROTECT YOUR HEARING.**
- **NEVER ALLOW PEOPLE WHO ARE UNFAMILIAR WITH THESE INSTRUCTIONS TO USE THE CHIPPER. ALLOW ONLY RESPONSIBLE INDIVIDUALS WHO ARE FAMILIAR WITH THESE RULES OF SAFE OPERATION TO USE YOUR MACHINE.**
- **NEVER PLACE YOUR HANDS, FEET, OR ANY PART OF YOUR BODY IN THE CHIPPER HOPPER, DISCHARGE OPENING, OR NEAR OR UNDER ANY MOVING PART WHILE THE MACHINE IS RUNNING. KEEP AREA OF DISCHARGE CLEAR OF PEOPLE, ANIMALS, BUILDINGS, GLASS, OR ANYTHING ELSE THAT WILL OBSTRUCT CLEAR DISCHARGE, CAUSE INJURY, OR DAMAGE. WIND CAN ALSO CHANGE DISCHARGE DIRECTION, SO BE AWARE. IF IT BECOMES NECESSARY TO PUSH MATERIAL INTO THE CHIPPER HOPPER, USE A SMALL DIAMETER STICK, NOT WITH YOUR HANDS.**
- **KEEP BYSTANDERS 100 FEET AWAY FROM YOUR WORK AREA AT ALL TIMES. WOOD CHIPS EXIT THE CHIPPER AT GREAT SPEEDS. TO BE SAFE, DO NOT OPERATE THE MACHINE NEAR SMALL CHILDREN OR PETS, AND NEVER ALLOW CHILDREN TO OPERATE THE CHIPPER. STOP THE ENGINE WHEN ANOTHER PERSON OR PET APPROACHES.**
- **NEVER USE THE MACHINE WITHOUT ENSURING THAT ALL GUARDS AND SHIELDS ARE IN PLACE, INCLUDING THE CHIPPER HOPPER, DISCHARGE CHUTE AND BLOWBACK SHIELD.**
- **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.**
- **ALWAYS OPERATE THE MACHINE FROM THE OPERATOR ZONE (SEE *CHAPTER 4*). NEVER PASS OR STAND ON THE DISCHARGE SIDE OF THE MACHINE WHEN THE ENGINE IS RUNNING OR THE FLYWHEEL IS TURNING.**

⚠ WARNING!

- **NEVER TRY TO PICK UP, MOVE, OR TRANSPORT THE MACHINE WHILE THE ENGINE IS RUNNING OR THE FLYWHEEL IS TURNING.**
- **THE MUFFLER AND ENGINE BECOME VERY HOT AND CAN CAUSE A SEVERE BURN; DO NOT TOUCH.**
- **CLEAR THE AREA OF OBJECTS SUCH AS WIRE AND ROPE, ETC. INSERTING THESE OBJECTS INTO THE CHIPPER HOPPER COULD DAMAGE THE FLYWHEEL AND/OR CAUSE INJURY.**
- **NEVER, UNDER ANY CONDITIONS, REMOVE, BEND, CUT, FIT, WELD, OR OTHERWISE ALTER STANDARD PARTS ON THE 16.50 PRO DR RAPID-FEED CHIPPER. THIS INCLUDES ALL SHIELDS AND GUARDS. MODIFICATIONS TO YOUR MACHINE COULD CAUSE PERSONAL INJURIES AND PROPERTY DAMAGE AND WILL VOID YOUR WARRANTY.**

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 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 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 16.50 PRO DR RAPID-FEED CHIPPER.**

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 AND KEEP AWAY FROM HEAT AND OPEN FLAME, AND OUT OF THE REACH OF CHILDREN.**
- **REPLACE RUBBER FUEL LINES AND GROMMETS WHEN WORN OR DAMAGED AND AFTER 5 YEARS OF USE.**

⚠ WARNING!

- **FILL THE GASOLINE TANK OUTDOORS WITH THE ENGINE OFF AND ALLOW THE ENGINE TO COOL COMPLETELY. 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 AND FUEL CONTAINER CAPS 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.**
- **ALLOW THE ENGINE TO COOL COMPLETELY BEFORE STORING IN ANY ENCLOSURE. NEVER STORE THE MACHINE WITH 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 OR FLYWHEEL TURNING. SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP (THE FLYWHEEL WILL CONTINUE ROTATING FOR A WHILE AFTER THE ENGINE IS SHUT DOWN), DISCONNECT SPARK PLUG WIRE, KEEPING IT AWAY FROM THE SPARK PLUG TO PREVENT ACCIDENTAL STARTING, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES 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.**

Towing Safety (applies only if Road-Towing Package is installed)

⚠ CAUTION!

- **BEFORE TOWING, BE CERTAIN THE 16.50 PRO DR RAPID-FEED CHIPPER IS CORRECTLY AND SECURELY ATTACHED TO THE TOWING VEHICLE AND THE SAFETY CHAINS ARE IN PLACE. LEAVE SLACK IN THE CHAINS TO ALLOW FOR TURNING.**
- **NEVER ALLOW ANYONE TO RIDE ON THE 16.50 PRO DR RAPID-FEED CHIPPER.**
- **NEVER TRANSPORT ANYTHING ON THE MACHINE.**
- **OBEY LOCAL, STATE, AND FEDERAL REGULATIONS WHEN YOU TOW THE CHIPPER ON PUBLIC ROADS AND HIGHWAYS.**

  NOTE: *Some states may require the machine to be registered with the State Department of Motor Vehicles.*

- **ALLOW FOR ADDED LENGTH IN DRIVING SITUATIONS, E.G., WHEN TURNING, PARKING, AND CROSSING INTERSECTIONS.**
- **ADJUST YOUR TOWING SPEED FOR TERRAIN AND CONDITIONS. DO NOT EXCEED 45 MPH WHILE TOWING THE CHIPPER.**

⚠ CAUTION!

- **TOWING THE MACHINE CAN AFFECT HANDLING OF THE TOW VEHICLE:**
  - **THE CHIPPER MIGHT TRACK AT AN ANGLE TO THE TOW VEHICLE.**
  - **THE MACHINE CAN TURN TIGHTER THAN THE TOW VEHICLE.**
  - **NEVER BACK UP THE TOW VEHICLE WITH THE CHIPPER ATTACHED. THE MACHINE CAN JACKKNIFE, CAUSING DAMAGE TO ITSELF AND/OR THE TOW VEHICLE.**
- **LONG DISTANCE TOWING IS NOT RECOMMENDED. THE 16.50 PRO DR RAPID-FEED CHIPPER DOES NOT HAVE SPRINGS TO ABSORB ROAD SHOCK AND WILL TEND TO BOUNCE ON ROUGH ROADS. EXTENDED TOWING CAN CAUSE UNNECESSARY WEAR.**

General Safety

⚠ DANGER!

OPERATING THIS CHIPPER 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 CHIPPER:

- **KEEP IN MIND THAT THE OPERATOR OR USER IS RESPONSIBLE FOR ACCIDENTS OR HAZARDS OCCURRING TO OTHER PEOPLE, THEIR PROPERTY, AND THEMSELVES.**
- **YOUR 16.50 PRO DR RAPID-FEED CHIPPER IS A POWERFUL TOOL, NOT A PLAYTHING. EXERCISE EXTREME CAUTION AT ALL TIMES. THE DESIGN OF THIS MACHINE IS TO CHIP WOOD. DO NOT USE IT FOR ANY OTHER PURPOSE.**
- **KNOW HOW TO STOP THE CHIPPER QUICKLY; SEE CHAPTER 4.**
- **OPERATE THIS MACHINE ON A LEVEL SURFACE ONLY. NEVER OPERATE YOUR UNIT ON A SLIPPERY, WET, MUDDY, OR ICY SURFACE. EXERCISE CAUTION TO AVOID SLIPPING OR FALLING.**
- **KEEP YOUR FACE AND BODY BACK FROM THE CHIPPER HOPPER TO AVOID ACCIDENTAL BOUNCE BACK OF ANY MATERIAL.**
- **WHEN FEEDING MATERIAL INTO THE CHIPPER HOPPER, BE EXTREMELY CAREFUL THAT PIECES OF METAL, ROCKS, OR OTHER FOREIGN OBJECTS ARE NOT INCLUDED. PERSONAL INJURY OR DAMAGE TO THE MACHINE COULD RESULT.**
- **NEVER ALLOW AN ACCUMULATION OF PROCESSED MATERIAL TO BUILD UP IN THE DISCHARGE AREA AS THIS WILL PREVENT PROPER DISCHARGE AND CAN RESULT IN KICKBACK FROM THE CHIPPER HOPPER.**

⚠ DANGER!

- **WHENEVER YOU LEAVE THE OPERATING POSITION OR IF YOU HAVE TO REMOVE PROCESSED MATERIAL, LEAVES, OR DEBRIS FROM THE MACHINE, ALWAYS SHUT DOWN THE ENGINE. SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP (THE FLYWHEEL WILL CONTINUE ROTATING FOR A WHILE AFTER THE ENGINE IS SHUT DOWN), DISCONNECT SPARK PLUG WIRE, KEEPING IT AWAY FROM THE SPARK PLUG TO PREVENT ACCIDENTAL STARTING, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE REMOVING PROCESSED MATERIAL, LEAVES, OR DEBRIS FROM THE MACHINE.**
- **ALWAYS STOP THE ENGINE WHEN MOVING THE 16.50 PRO DR RAPID-FEED CHIPPER.**
- **KEEP COMBUSTIBLE SUBSTANCES AWAY FROM THE ENGINE WHEN IT IS HOT.**
- **NEVER COVER THE MACHINE WHILE THE MUFFLER IS STILL HOT.**
- **SEE MANUFACTURER'S INSTRUCTIONS FOR PROPER OPERATION AND INSTALLATION OF ACCESSORIES. ONLY USE ACCESSORIES APPROVED BY DR POWER EQUIPMENT.**
- **IF THE CUTTING MECHANISM STRIKES A FOREIGN OBJECT OR IF YOUR MACHINE SHOULD START MAKING AN UNUSUAL NOISE OR VIBRATION, SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP (THE FLYWHEEL WILL CONTINUE ROTATING FOR A WHILE AFTER THE ENGINE IS SHUT DOWN), DISCONNECT SPARK PLUG WIRE, KEEPING IT AWAY FROM THE SPARK PLUG TO PREVENT ACCIDENTAL STARTING, THEN WAIT 5 MINUTES BEFORE INSPECTING FOR CLOGGING OR DAMAGE. VIBRATION IS GENERALLY A WARNING OF TROUBLE. CLEAN AND REPAIR AND/OR REPLACE DAMAGED PARTS.**
- **NEVER TAMPER WITH SAFETY DEVICES. CHECK THEIR PROPER OPERATION REGULARLY.**
- **STAY ALERT FOR HIDDEN HAZARDS OR TRAFFIC. NEVER CARRY PASSENGERS ON YOUR MACHINE.**
- **NEVER OVERLOAD OR ATTEMPT TO CHIP MATERIAL BEYOND THE MANUFACTURER'S RECOMMENDATION; SEE CHAPTER 4. PERSONAL INJURY OR DAMAGE TO THE MACHINE COULD RESULT.**
- **WHILE USING THE 16.50 PRO DR RAPID-FEED CHIPPER, 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.**
- **KEEP ALL NUTS AND BOLTS TIGHT AND KEEP THE EQUIPMENT IN GOOD OPERATING CONDITION.**
- **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 CHIPPER IN A SAFE MANNER. CONTACT US AT WWW.DRPOWER.COM OR CALL 1 (800) DR-OWNER (376-9637) FOR ASSISTANCE.**

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 16.50 PRO DR RAPID-FEED CHIPPERS 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 local fire marshal or forest service for specific information in your area.

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.

CHAPTER 3

SETTING UP YOUR 16.50 PRO DR RAPID-FEED CHIPPER

This chapter outlines unpacking and a few simple steps you will need to follow to set up your new machine before you use it. It may be helpful to familiarize yourself with the controls and features of your 16.50 PRO DR RAPID-FEED CHIPPER as shown in ***Figure 1*** before beginning these procedures. **If you have any questions at all, please feel free to contact us at www.DRpower.com or call our Customer Service Representatives at our toll free number: 1-800-DR-OWNER (376-9637).**

16.50 PRO DR RAPID-FEED CHIPPER Controls and Features

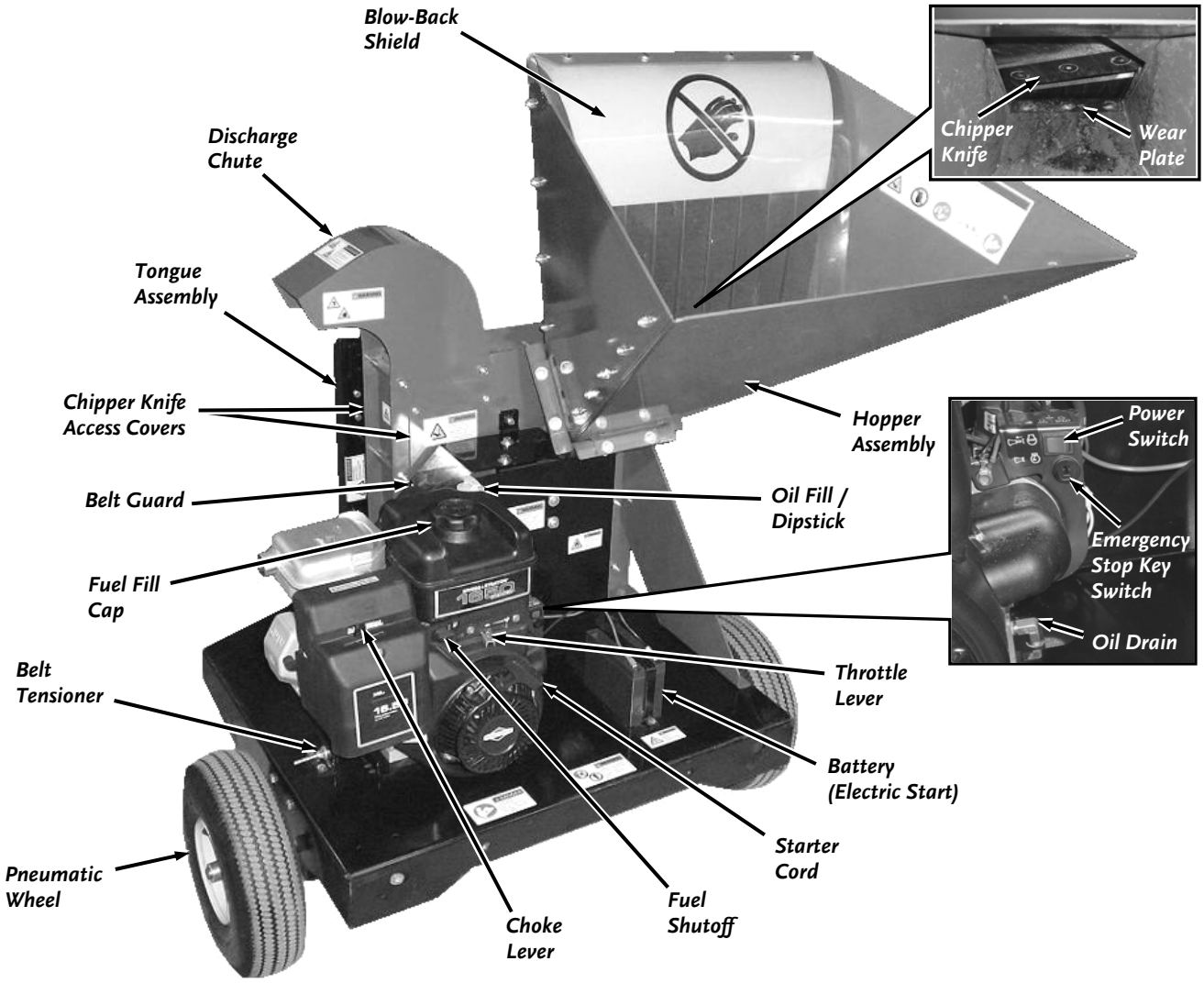


Figure 1

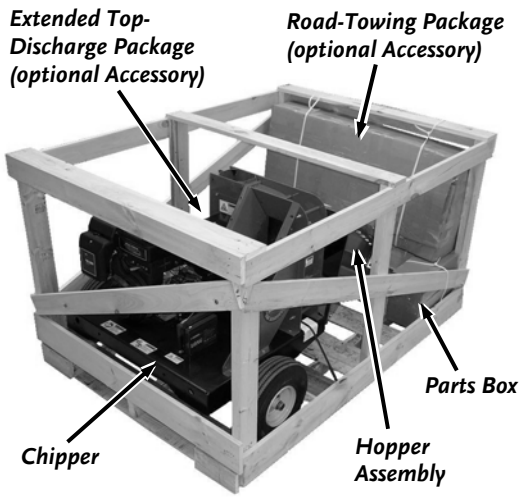


Figure 2

Figure 3

Unpacking the 16.50 PRO DR RAPID-FEED CHIPPER

NOTE: *Unpacking the 16.50 PRO DR RAPID-FEED CHIPPER is a two-person job. We recommend you have an extra set of hands available before you begin because the 16.50 PRO DR RAPID-FEED CHIPPER weighs 372 lbs. (Manual Start) and 392 (Electric Start).*

Tools and Supplies Needed:

- Gloves
- Metal Shears (Side Cutters)
- Pry Bar
- Hammer

Parts supplied on Skid (Figure 2):

- 16.50 PRO DR RAPID-FEED CHIPPER
- Hopper Assembly
- Extended Top-Discharge Chute (if ordered, see Chapter 7 "Chipper Accessories")
- Road-Tow Package (if ordered, see Chapter 7 "Chipper Accessories")
- Parts Box containing (Items below and ***Figure 3***):
  - Discharge Chute
  - Safety Glasses
  - *Safety* & *Operation Instructions* Manual
  - Engine Owner's Manual
  - Hardware Package (***Figure 4 and Table below***)

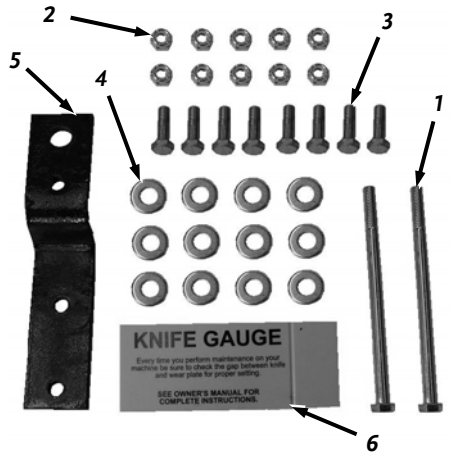


Figure 4

HARDWARE PACKAGE CONTENTS (FIGURE 4)		
ITEM #	DESCRIPTION	QTY
1	Bolt, 5/16-18 X 5-1/4"	2
2	Nylon Locknut, 5/16-18	10
3	5/16-18 x 1" Bolts	8
4	5/16" Flat Washer	12
5	Hitch Plate	1
6	Knife Gap Gauge	1
7	Engine Key (not shown)	2

⚠ WARNING!

- **WEAR EYE PROTECTION WHEN CUTTING THE BANDING. THE BANDING MAY HAVE A LOT OF TENSION ON IT AND MAY SNAP AND CUT YOU. ALWAYS STAND TO ONE SIDE WHEN CUTTING THE BAND.**
- **STABILIZE THE SHIPPING CONTAINER ON CLEAN FLAT TERRAIN BEFORE ATTEMPTING TO UNPACK AND ASSEMBLE THE CHIPPER.**
- **FOR YOUR SAFETY WE RECOMMEND YOU HAVE TWO PEOPLE FOR THE FOLLOWING PROCEDURES.**

1. Cut the Plastic Banding that is securing the Parts Box and any Accessory Box that may be strapped to the Crate Top (***Figure 5***).
2. Pry off the bottom four boards that connect the Crate top to the Pallet.
3. With help from another person, lift the Crate Top from the Pallet.
4. Remove the Parts Box and the Road-Tow Package (if ordered).

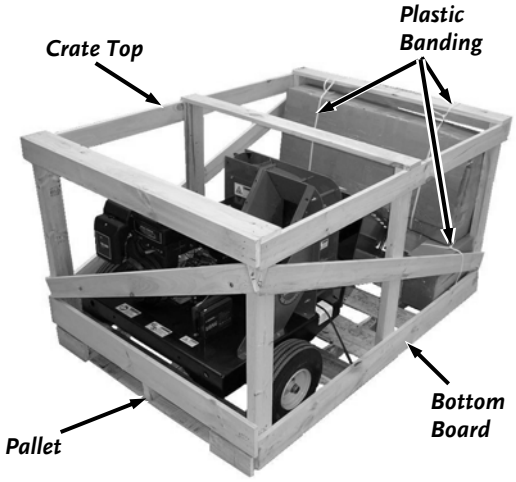


Figure 5

5. Carefully cut the Steel banding holding the machine and Hopper Assembly to the pallet (***Figure 6***).
6. Cut the Plastic Banding that is holding the Extended Top-Discharge Chute (if ordered) to the Pallet and remove the Extended Top-Discharge Chute.
7. With the help of another person, carefully remove the Hopper Assembly and roll the 16.50 PRO DR RAPID-FEED CHIPPER from the shipping pallet, resting it on the Tongue Assembly.
8. Compare the contents of the shipping carton and the Part Box with the Parts Supplied list on the previous page**. If there are any questions contact us at www.DRpower.com or call 1-800-DR-OWNER (376-9637).** Do not discard the shipping materials until you are fully satisfied with your new 16.50 PREMIER DR RAPID-FEED CHIPPER.

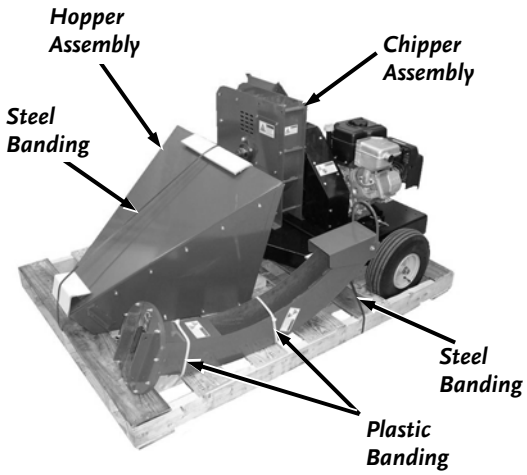


Figure 6

Attaching the Hopper Assembly

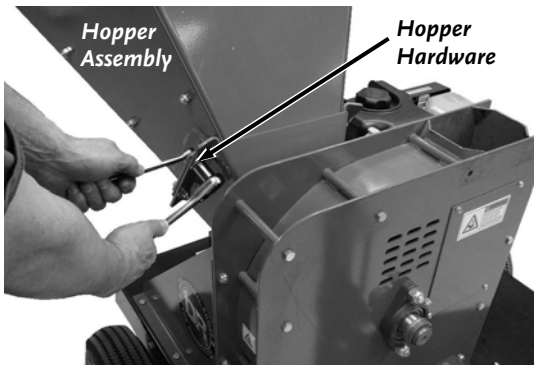


Figure 7

NOTE: *We recommend that you have someone help you lift the Hopper in place and support it until it is secured to the Chipper.*

Tools Needed:

- Two 1/2" Wrenches

1. Attach the Hopper Assembly to the Chipper with six 5/16"-18 x 1" Bolts, twelve Flat Washers (one Washer on Bolt side and one on Lock Nut side) and six Nylon Lock Nuts (***Figure 7***).

NOTE: *Install hardware with Bolt Head on the top side.*

Attaching the Discharge Chute

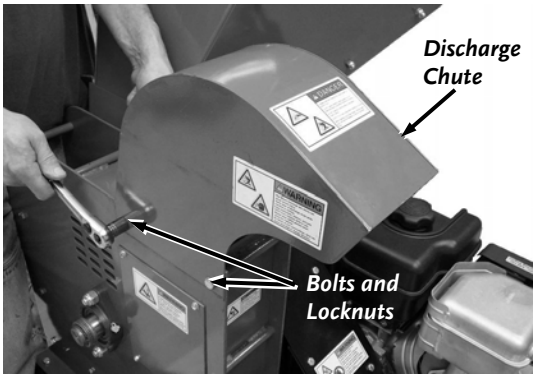


Figure 8

Tools Needed:

- Two 1/2" Wrenches

1. Position the Discharge Chute as shown and secure with two 5/16-18 x 5-1/4" Bolts and Nylon Locknuts (***Figure 8***).

Attaching the Hitch Plate

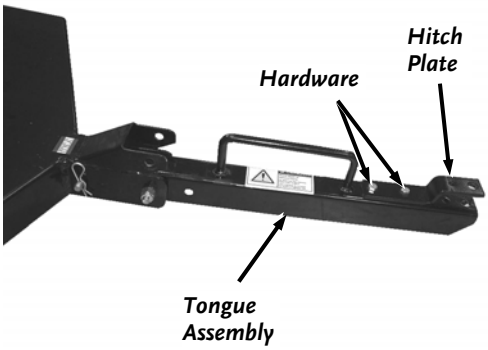


Figure 9

Tools Needed:

- Two 1/2" Wrenches

1. Position the Hitch Plate onto the Tongue Assembly as shown and secure with two 5/16-18 x 1" Bolts and Nylon Locknuts (***Figure 9***).

Connecting the Battery Cable (Electric Start)

We ship the electric-start 16.50 PRO DR RAPID-FEED CHIPPER with the negative terminal battery cable disconnected. This prevents the battery from discharging during shipment. Before using your electric start 16.50 PRO DR RAPID-FEED CHIPPER, you must connect the battery cable.

1. Slide the Terminal of the Negative Battery Cable onto the Negative Terminal Lug of the Battery (***Figure 10***).

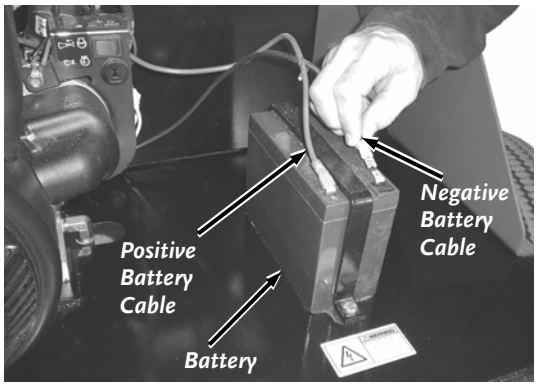


Figure 10

Adding Engine Oil and Gasoline

Capacities	
Engine	SAE 30 Oil - 28 oz. (0.83 L)
Fuel Tank	Unleaded gasoline, 4 US quarts (3.79 L)

⚠ 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 DIPSTICK FREQUENTLY TO AVOID OVERFILLING.**
- **TO GET AN ACCURATE READING WHEN CHECKING THE OIL LEVEL:**
  - **THE MACHINE SHOULD BE ON A LEVEL SURFACE.**
  - **THE DIPSTICK SHOULD BE PUSHED ALL THE WAY DOWN AND TURNED A QUARTER TURN CLOCKWISE TO ENSURE AN ACCURATE OIL LEVEL READING.**

Tip: To avoid confusion, we recommend leaving the caps on the gas and oil fills until you are ready to pour either gasoline or oil into the correct fill.

NOTE: *Use SAE 30 high detergent oil classified "For Service SF, SG, SH, SJ" or higher. Do not use special additives. Other types of oil could cause problems operating your machine. Please refer to your Engine Owner's Manual for detailed oil information.*

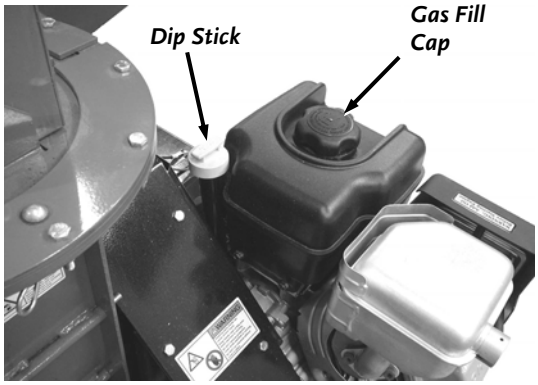


Figure 11

Adding Oil

1. Place the machine on a level surface and remove the Dipstick (clean the end of the Dipstick with a rag) (***Figure 11***).
2. Machines are shipped with no oil. Add 1/2 of the SAE 30 high detergent oil recommended by the engine manufacturer and wait one minute for the oil to settle.
3. Replace the Dipstick all the way in and turn a quarter turn clockwise to ensure an accurate reading and then remove it to check the oil level.

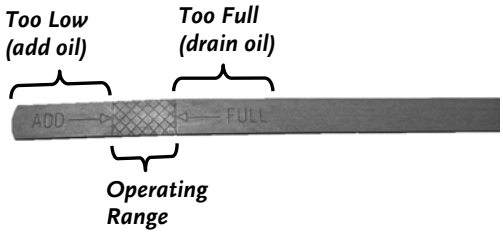


Figure 12

4. If the oil level is low continue adding a few ounces of oil at a time, rechecking the Dipstick until the oil reaches the fill mark (***Figure 12***). Be careful not to overfill.

Adding Gas

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

FILL THE GAS TANK OUTDOORS OR IN A WELL-VENTILATED AREA, AWAY FROM SPARKS, OPEN FLAMES, PILOT LIGHTS, HEAT, AND OTHER IGNITION SOURCES.

1. Remove the Gas Fill Cap and fill the Gas 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 (***Figure 11***). Be careful not to overfill and reinstall the Gas Fill Cap before starting the engine. See your Engine Owner's Manual for more detailed information.

NOTE: *To refill the gas tank, turn the engine OFF and let the engine cool at least five minutes before removing the gas fill cap.*

Check the Tire Pressure

Tools Needed:

- Tire Pressure Gauge
- Air Compressor

NOTE: *There should be 38 psi. max. in each tire.*

1. Remove the Valve Stem Protective Cap (***Figure 13***) and check the tire pressure with a tire pressure gauge.
2. If the pressure is too low, add air with an air hose through the Valve Stem.
3. Replace the Valve Stem Protective Cap.

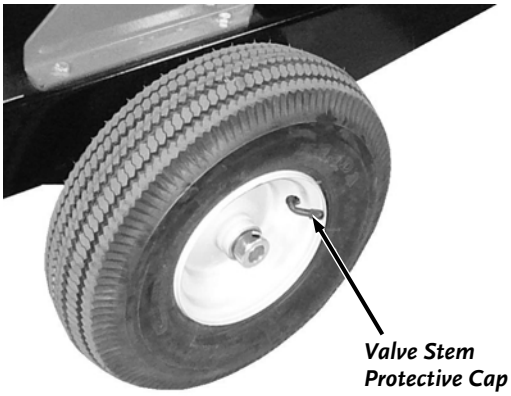


Figure 13

CHAPTER 4

OPERATING YOUR 16.50 PRO DR RAPID-FEED CHIPPER

This chapter covers the procedures for starting and stopping your new 16.50 PRO DR RAPID-FEED CHIPPER and discusses basic operation features.

⚠ DANGER!

- **THE DESIGN OF THIS MACHINE IS FOR CHIPPING WOOD. NEVER USE THIS MACHINE FOR ANY OTHER PURPOSE AS IT COULD CAUSE SERIOUS INJURY.**
- **CONTACT WITH INTERNAL ROTATING PARTS WILL CAUSE SERIOUS PERSONAL INJURY. NEVER PUT HANDS, FACE, FEET, OR CLOTHING INTO CHIPPER HOPPER OR DISCHARGE OPENING OR NEAR THE DISCHARGE AREA AT ANY TIME.**
- **BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION, SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP (THE FLYWHEEL WILL CONTINUE ROTATING FOR A WHILE AFTER THE ENGINE IS SHUT DOWN), DISCONNECT SPARK PLUG WIRE, KEEPING IT AWAY FROM THE SPARK PLUG TO PREVENT ACCIDENTAL STARTING, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PROCEEDING. USE ONLY A WOODEN STICK TO CLEAR JAMMED MATERIAL.**

Before Starting the Engine

1. Check the oil level every time you use the 16.50 PRO DR RAPID-FEED CHIPPER. Add oil if needed (see Chapter 3 section "Adding Engine Oil and Gasoline".
2. Check the fuel level. Add fuel as needed (see Chapter 3 section "Adding Engine Oil and Gasoline".
3. Ensure that the Fuel Shut-Off Valve is in the "ON" position (***Figure 14***).
4. Remove any debris buildup from the machine before every use of the Chipper.

NOTE: *Check and re-tighten the Drive Belt, if necessary, after an initial break-in period of one (1) hour (see Chapter 5 "Maintaining the 16.50 Pro DR Rapid-Feed Chipper").*

Figure 14

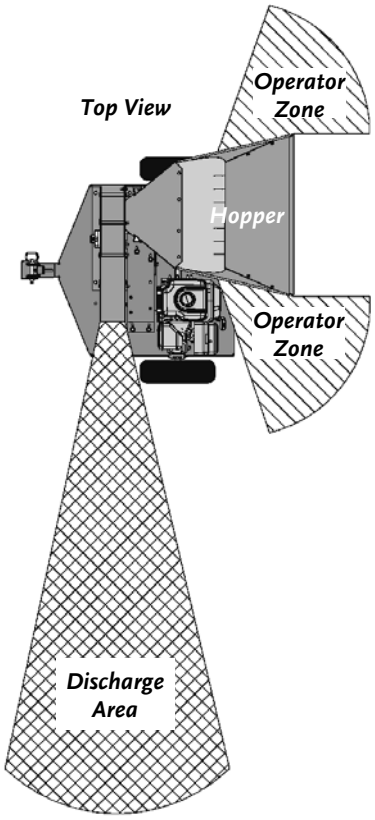


Figure 15

Operation Notes

- Visually check the Chipper Knife for damage before each use of the machine. See "**VISUAL INSPECTION OF THE CHIPPER KNIFE (before each use)**" in Chapter 5 for info on accessing the Chipper Knife.
- At engine start-up, the engine of your DR CHIPPER operates under no load until approximately 1800 RPM, at which speed the Centrifugal Clutch engages and begins driving the Rotor Assembly. Always operate the Engine at full speed when chipping (3400 +/- 200 RPM).
- Only operate the DR RAPID-FEED CHIPPER from the Operator Zones shown in ***Figure 15***.
- Keep proper balance and footing while operating the DR RAPID-FEED CHIPPER.
- ALWAYS stop the engine when leaving the Operating Zones or when moving the machine.
- Never move the Chipper while the engine is running or the Flywheel is turning.

Processing Material

⚠ WARNING!

- **ALWAYS WEAR PROTECTIVE GOGGLES OR SAFETY GLASSES WITH SIDE SHIELDS WHILE CHIPPING TO PROTECT YOUR EYES FROM POSSIBLE THROWN DEBRIS.**
- **AVOID WEARING LOOSE CLOTHING OR JEWELRY, WHICH MIGHT CATCH ON MOVING PARTS OR THE MATERIAL FED INTO THE CHIPPER HOPPER.**
- **WE RECOMMEND WEARING GLOVES WHILE CHIPPING. BE SURE YOUR GLOVES FIT PROPERLY AND DO NOT HAVE LOOSE CUFFS OR DRAWSTRINGS.**
- **WEAR SHOES WITH NON-SLIP TREADS WHEN USING YOUR CHIPPER. 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 DR RAPID-FEED CHIPPER.**
- **USE EAR PROTECTORS OR EAR PLUGS RATED FOR AT LEAST 20 DBA TO PROTECT YOUR HEARING.**

The Chipper is designed to accept wood only. The Chipper Knife mounted on a revolving flywheel turns branches fed into the Chipper Hopper into "chips". The Chipper can chip branches and ranging in size up to 4-1/2" in diameter. Cut your materials into manageable lengths before feeding them into the Chipper Hopper.

⚠ WARNING!

THE CHIPPER HOPPER MUST BE SECURELY BOLTED TO YOUR DR RAPID-FEED CHIPPER AND THE BLOWBACK SHIELD IN PLACE BEFORE USING THE MACHINE!

⚠ NOTICE!

USE COMMON SENSE WHEN USING THE MACHINE. LEARN TO RECOGNIZE THE CHANGE IN SOUNDS WHEN OVERLOADED. TURN OFF THE ENGINE IMMEDIATELY IF THE MACHINE BECOMES JAMMED TO PREVENT DAMAGE TO THE DRIVE SYSTEM.

- Your DR RAPID-FEED CHIPPER can process dry or green wood up to 4.5" in diameter.
- The Chipper will self-feed the wood once it contacts the knife edge so forcing the branches into the Hopper is not necessary if the knife is sharp.
- Green wood will process quicker and easier than dry wood.
- Softwood processes easier than hardwood.
- Your operator experience will teach you how different types of wood will chip and how fast you can process them.
- When chipping branches, sometimes a tail will develop at the end of a branch. To avoid this, rotate the branch while feeding it into the Chipper Hopper.
- 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 2" in diameter. Chip these grouped or bundled together to provide support for each other. If the material is 2" or larger, feed only one at a time into the Chipper Hopper.
- Make sure the DR RAPID-FEED CHIPPER finishes processing material in the Hopper before shutting the engine off.
- Do not force material into the Chipper. If the machine does not chip well, the Chipper Knife may need sharpening or replacement, or the gap between the Knife and the Wear Plate needs adjusting. See “Removing, Replacing and Adjusting the Chipper Knife and Wear Plate” in Chapter 5.

⚠ NOTICE!

NEVER THROW REMAINING STUBS OR KNOTS INTO THE CHIPPER HOPPER; DAMAGE WILL RESULT.

- Extremely hard knots will not process very well. Push any short stubs that have not self-fed through the Chipper, with the next branch to be chipped.
- Cut the material to be chipped into manageable lengths of no more than five or six feet long before chipping them.
- Overloading the Chipper Hopper will cause the rotor speed to decrease. If you hear the engine RPM decreasing, stop feeding material into the Chipper Hopper until the engine has returned to full speed.

Starting the Engine (Manual –Starting Chipper)

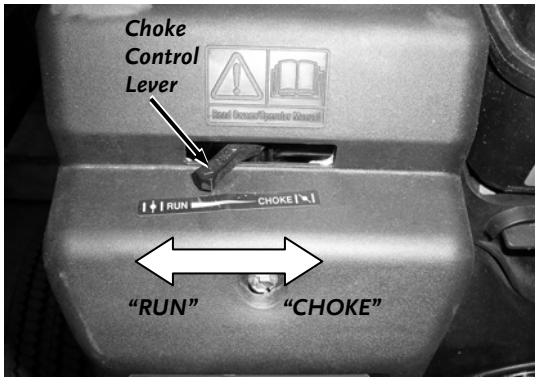


Figure 16

1. Ensure that the Fuel Shut-Off Valve is in the "ON" position (***Figure 14***).
2. Move the Choke Control Lever to the "CHOKE" position (***Figure 16***) (leave in the RUN position if the engine is already warm).

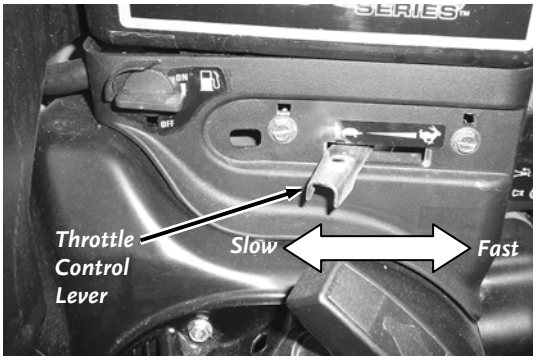


Figure 17

3. Move the Throttle Control Lever to about half way between Slow and Fast position (***Figure 17***).

Figure 18

4. Insert the Key into the key switch and slowly pull the Starter Cord until you feel resistance, then pull quickly (***Figure 18***). The Cord will recoil back into position.
5. As the engine warms up, slowly adjust the Choke to the "Run" position (***Figure 16***). Wait until the engine runs smoothly before each Choke adjustment.
6. When the Engine is warmed up and running smoothly with the Choke in the "RUN" position, move the Throttle Control Lever to the fast position (rabbit icon) for chipping.

Starting the Engine (Electric–Starting Chipper)

1. Ensure that the Fuel Shut-Off Valve is in the "ON" position (***Figure 14***).
2. Move the Choke Control Lever to the "CHOKE" position (***Figure 19***) (leave in the RUN position if the engine is already warm).

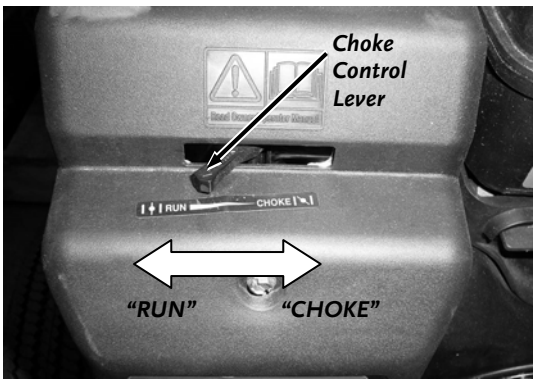


Figure 19

3. Ensure that the Throttle Control Lever is in the slow position (turtle icon) (***Figure 20***).

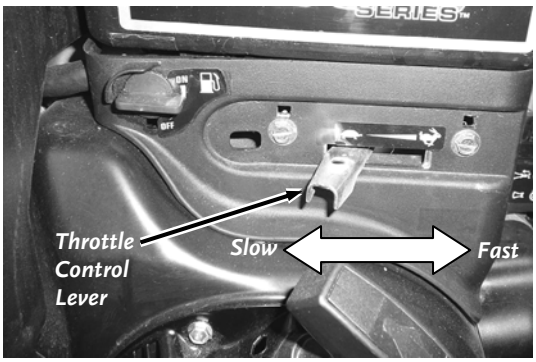


Figure 20

4. Insert the Key and press and hold the Starter Switch to the "START" position until the engine starts, then release it (***Figure 21***). The Starter Switch will snap back to the "ON" position and the engine will continue to run.
5. As the engine warms up, slowly adjust the Choke to the "Run" position. Wait until the engine runs smoothly before each Choke adjustment. For chipping, operate the engine with the Throttle in the fast position (rabbit icon) with the Choke pushed in to the "RUN" position.

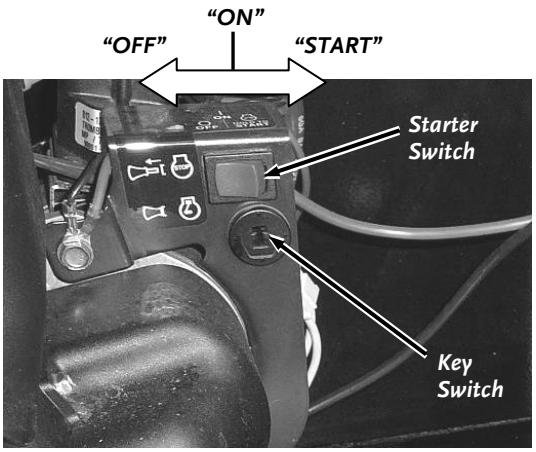


Figure 21

Stopping the Engine (Manual –Starting Chipper)

⚠ WARNING!

THE FLYWHEEL WILL STILL ROTATE FOR A WHILE AFTER THE ENGINE IS SHUT OFF. SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, THEN WAIT 5 MINUTES BEFORE MOVING OR WORKING ON THE CHIPPER.

⚠ NOTICE!

NEVER STOP THE ENGINE BY MOVING THE CHOKE LEVER TO THE CHOKE POSITION. THIS COULD CAUSE AN ENGINE BACKFIRE RESULTING IN ENGINE DAMAGE.

1. Slowly move the Throttle Control Lever all the way to the slow position (turtle icon).
2. Remove the Key to shut off the engine. The Key has a pressure lock that prevents it from vibrating loose during operation. To remove the Key, push it in and then quickly and firmly pull it out. If the Key becomes difficult to remove, spray FLUID FILM® or a similar non-conductive lubricant into the keyhole.

NOTE: *Close the Fuel Shut-Off Valve when transporting or storing the DR RAPID-FEED CHIPPER.*

Stopping the Engine (Electric –Starting Chipper)

⚠ WARNING!

THE FLYWHEEL WILL STILL ROTATE FOR A WHILE AFTER THE ENGINE IS SHUT OFF. SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE MOVING OR WORKING ON THE CHIPPER.

⚠ NOTICE!

NEVER STOP THE ENGINE BY MOVING THE CHOKE LEVER TO THE CHOKE POSITION. THIS COULD CAUSE AN ENGINE BACKFIRE RESULTING IN ENGINE DAMAGE.

1. Slowly move the Throttle Control Lever all the way to the slow position (turtle icon) and turn the Starter Switch to the "OFF" position.
2. Remove the Key for safety. The Key has a pressure lock that prevents it from vibrating loose during operation. To remove the Key, push it in and then quickly and firmly pull it out. If the Key becomes difficult to remove, spray FLUID FILM® or a similar non-conductive lubricant into the keyhole.

NOTE: *Close the Fuel Shut-Off Valve when transporting or storing the DR RAPID-FEED CHIPPER.*

Adjusting the Angle of the Tongue Weldment

The Tongue Weldment can be adjusted to the horizontal position to enable the Chipper to be towed with a tractor or it can be adjusted to the vertical position as a Support Leg to level and stabilize the Chipper when not hitched to a tractor.

1. Support the front of the Base Frame with a Jack Stand or Blocks (make sure you are off to the side of the Tongue Weldment so it can rotate freely).
2. Pull the Hitch Clip from the Pin and remove the Pin (***Figure 22***).
3. Rotate the Tongue Weldment to the vertical (support leg) position and reinsert the Pin into the Pin Holes for the Support Leg position.
4. Secure the Pin by inserting the Hitch Clip.
5. Reverse these procedures to Adjust to the Towing position (non-highway) and your Chipper is now ready to hitch to your tractor.

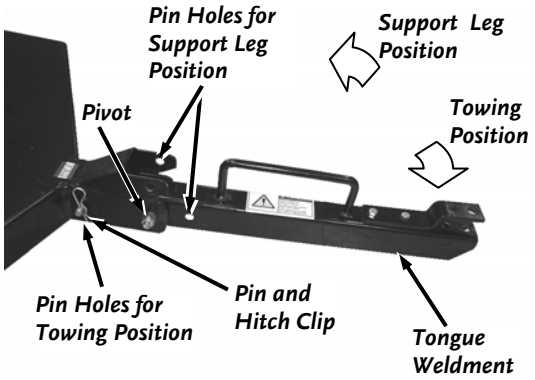


Figure 22

⚠ DANGER!

AVOID DEATH OR SERIOUS INJURY. DO NOT TOW THIS MACHINE FASTER THAN 10 MPH. THIS MACHINE IS NOT LEGAL FOR STREET OR HIGHWAY USE UNLESS YOU INSTALL THE ROAD-TOWING PACKAGE (SEE "CHIPPER ACCESSORIES" IN CHAPTER 7).

To Free a Jammed Flywheel

WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE MOVING OR WORKING ON THE CHIPPER.

Tools Needed:

- Two 1/2" Wrenches

Disassemble:

1. Disconnect the battery at the negative terminal.
2. Remove any material left in the Chipper Hopper.

NOTICE!

NEVER PRY AGAINST THE SCROLL WELDMENT WHEN REMOVING THE DEFLECTOR OR DISCHARGE CHUTE, OR AT ANY OTHER TIME. THIS WILL CAUSE DAMAGE TO THE MACHINE.

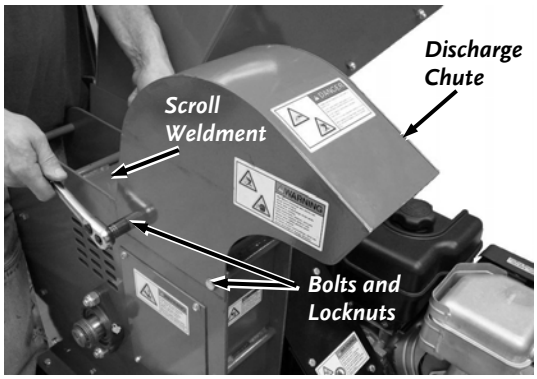


Figure 23

3. Remove the two Bolts and Locknuts that secure the Discharge Chute to the Chipper Basic Assembly with two 1/2" wrenches and then remove the Discharge Chute (***Figure 23***).
4. Check to see if the Discharge Chute or Discharge opening is clogged. If it is, clear it with a branch.
5. With a wooden stick, loosen and remove any material left in the Chipping Chamber and make sure the Flywheel turns freely with the stick.

Reassemble:

1. Position the Discharge Chute onto the Chipper Basic Assembly and secure with two Bolts and Locknuts using two 1/2" wrenches.
2. Reconnect the battery negative terminal cable, the spark plug wire and start the Chipper engine; allowing the remaining material in the Chipping Chamber to discharge.
3. If the Chipping Chamber doesn't clear and the flywheel is still jammed, repeat above process.

NOTE: *Be certain the Chipping Chamber is clear before trying to process more material into the Chipper Hopper.*

CHAPTER 5

MAINTAINING THE 16.50 PRO DR RAPID-FEED CHIPPER

This chapter covers regular maintenance procedures that will ensure the best performance and long life of your DR RAPID-FEED CHIPPER. For engine maintenance, please refer to the Engine Owner's Manual that came with your machine. Service intervals listed in the checklist below supercede those listed in the Engine Owner's Manual.

Maintenance Kits and Accessories are available through our website at www.DRpower.com.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING MAINTENANCE ON THE CHIPPER.

Regular Maintenance Check List

NOTE: *Consider that the service intervals shown are the maximum under normal operating conditions. Increase frequencies under extremely dirty or dusty conditions.*

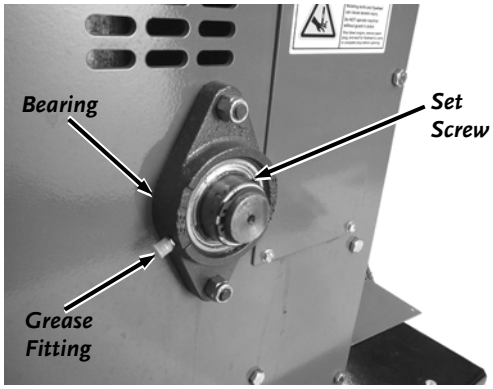
Procedure	Before Each Use	Every 8-10 Hours	Every 40 Hours
Check Engine Oil Level	▲		
Check General Equipment Condition	▲		
Check that the Flywheel turns freely (with a long stick only)	▲		
Visually inspect Knife for damage	▲		
Check Knife and Wear Plate for Sharpness		▲	
Check Knife and Wear Plate Attachment Screws		▲	
Check Flywheel Bearing Collar Set Screws		▲	
Check Knife to Wear Plate Gap		▲	
Lubricate Flywheel Bearings		▲	
Check Belt Tension and Condition	1st time 1 hour	▲	
Clean Engine Exterior and Cooling Fins		▲	
Check the Battery Voltage (electric start only)		▲	
Check the Tire Pressure			▲
Change Engine Oil	1st time 5 hours		▲
Inspect or replace Drive Belt			▲
Inspect or replace Spark Plug			▲
Inspect or replace Air Filter and Precleaner			▲

Grease Fittings

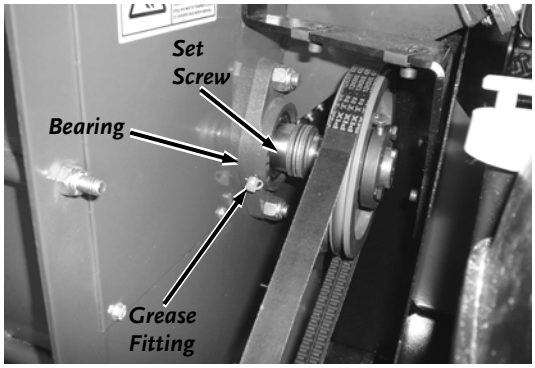
Your RAPID-FEED CHIPPER was greased at the Factory. The operator needs to periodically lubricate the two Bearings of the Chipper Assembly.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.



Front Chipper Bearing



Rear Chipper Bearing (under Belt Cover)

Figure 24

Tools and Supplies needed:

- Flexible hose grease gun
- Lithium grease
- Clean cloth
- 5/32" Allen Wrench
- Loctite® 243

1. Remove the Belt Cover (see "Removing, Replacing and Adjusting the Drive Belt" in this Chapter).
2. Wipe all dirt, etc., from the grease fittings with a clean cloth (***Figure 24***).

⚠ NOTICE!

OVER LUBRICATION CAN DAMAGE THE BEARINGS.

3. Apply no more than three pumps of quality general-purpose lithium grease with a hand-pumped grease gun to each Bearing Grease Fitting, one on either side of the Chipper Assembly.
4. Check the Set Screws for tightness. If they are not tight they should be removed, apply Loctite® to the threads, then reinstall and tighten the Set Screws.
5. Replace the Belt Guard.

Removing and Replacing the Engine Oil

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

Tools and Supplies Needed

- SAE 30 HD Oil
- Oil Filter Wrench
- 5/8" Wrench
- Suitable container for used oil
- Rags

NOTE: *Drain the oil when the engine is warm. Warm oil drains quicker and more completely.*

1. Position a suitable oil receptacle under the engine oil Drain Plug and remove the engine oil Fill Cap.
2. Remove the Oil Drain Plug from the Oil Drain Elbow with a 5/8" wrench (***Figure 25***). Allow the used oil to drain completely, and then replace the Oil Drain Plug.
3. Replace the engine oil using SAE 30 HD oil (see "Adding Engine Oil and Gasoline" in Chapter 3 for instructions on adding oil).
4. Reattach the spark plug wire.

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

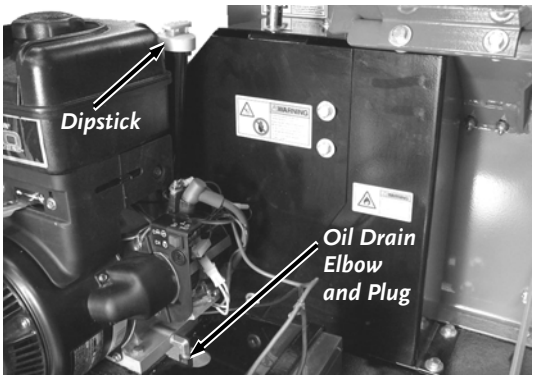


Figure 25

Removing, Replacing and Adjusting the Drive Belt

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

⚠ NOTICE!

USE ONLY DR BELTS ON YOUR MACHINE. THE BELTS HAVE BEEN THOROUGHLY TESTED AND PROVEN FOR MANY HOURS OF USE.

Tools Needed:

- Tape Measure
- Two 1/2" Wrenches
- 7/16" Wrench
- Straightedge

Removing the Belt

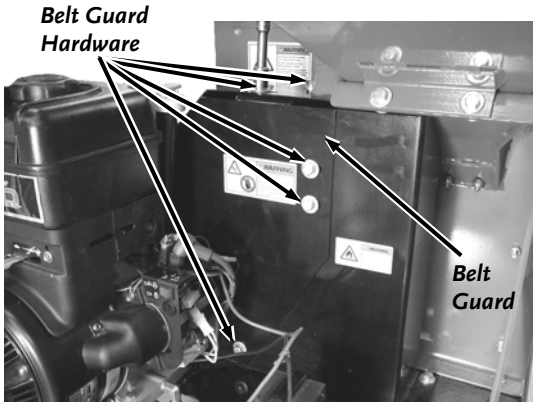


Figure 26

1. Remove the eight Bolts, Lock Washers and Flat Washers from the Belt Guard using a 1/2" Wrench (***Figures 26 and 27***).
2. Remove the Belt Guard.

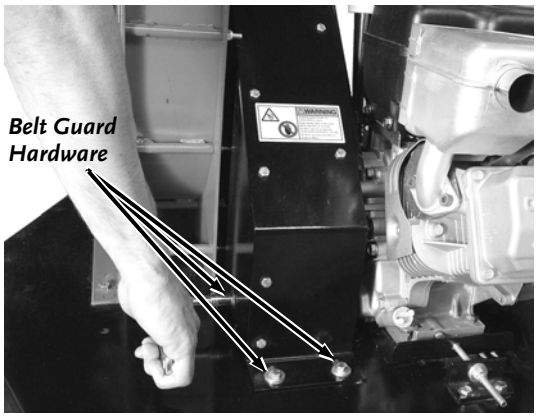


Figure 27

3. Remove the Locknut and Belt Guard Bracket (***Figure 28***).

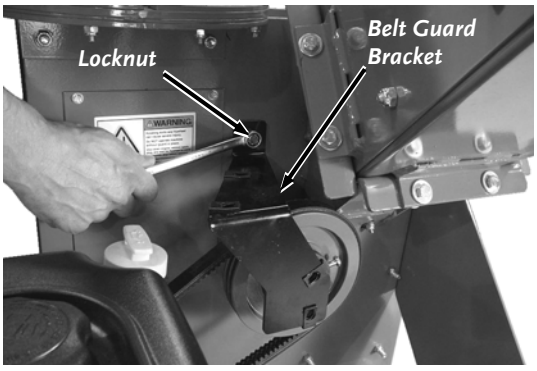


Figure 28

4. Loosen the four Engine Bolts (two on the left side and two on the right side) using two 1/2" Wrenches, one on the Bolt and one on the Locknut underneath the Base (***Figure 29***).
5. Loosen the Adjusting nut on the Belt Tensioner using a 1/2" Wrench and slide the Engine away from you until the belt is loose enough to remove.
6. Remove the Belt from the Clutch and Sheave (***Figure 30***).

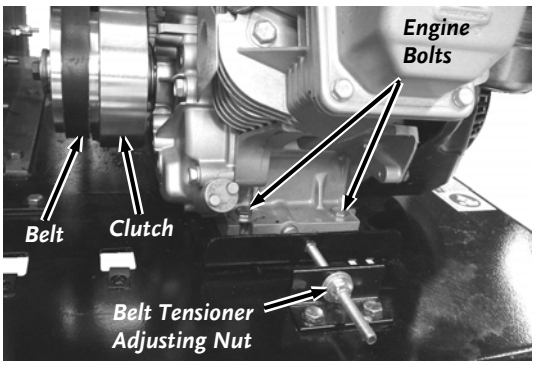


Figure 29

Installing and Adjusting the Belt

NOTE: *The Belt Tensioning Adjusting Nut may need to be loosened up more per the previous instructions "Removing the Belt" to enable you to install a new Belt.*

1. Install the Belt onto the Sheave and Clutch.
2. Tighten the Adjusting Nut on the Belt Tensioner using a 1/2" Wrench to take up the slack in the Belt, but not too tight at this point.
3. Check the alignment of the Clutch with the Sheave by placing a Straightedge across the Sheave side face (closest to the Chipper Assembly) and resting the other end on top of the Clutch Pulley (***Figure 30*****).**

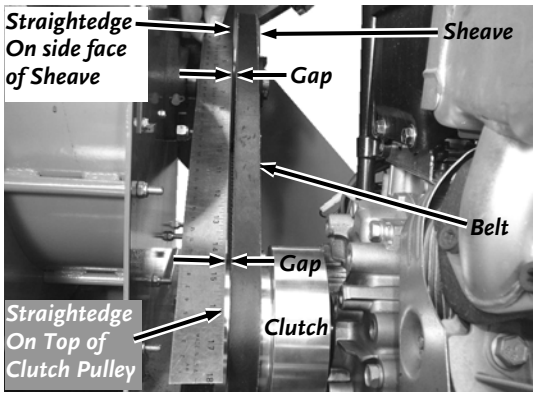


Figure 30

4. Check the gap from the Straightedge to the Belt near the Sheave and near the Clutch. If the gap is the same then no adjustment is needed. If the gap is not the same then adjustment is necessary, correct the alignment as follows:
   a) Loosen the Sheave Bushing Bolt with a 7/16" Wrench (***Figure 31***).
   b) Remove the three Bushing Retaining Bolts using a 7/16" Wrench.
   c) Reinstall the three Bolts in the unused Threaded Holes adjacent to the three Bushing Retaining Bolt holes.

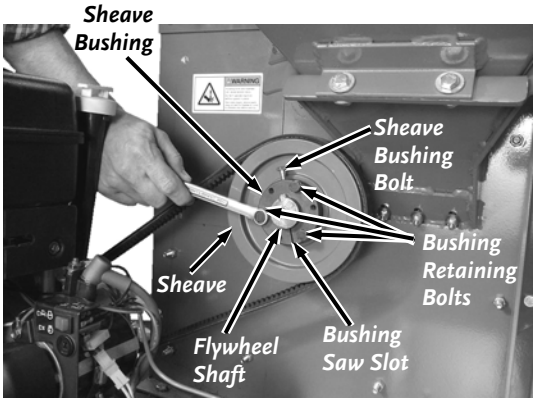


Figure 31

   d) Slowly tighten the Bolts evenly and alternately (1/4 to 1/2 turn) starting with the Bolt farthest from the Bushing Saw Slot (this acts as a Hub puller) until the Bushing releases from the Flywheel Shaft.
   e) When the Sheave is loose, remove the three Bolts and reinsert them into the original Retaining Bolt holes.
   f) Using a Straightedge, align the Clutch and Sheave by moving the Sheave in or out on the Flywheel Shaft. **Do not make the adjustment by attempting to move the Clutch on the Engine Shaft.**

NOTE: *Prior to retightening the Bushing Retaining Bolts, move the Sheave out approximately 1/8" from the straightedge to allow for compression of the Bushing during the tightening process.*

g) Slowly tighten the Bushing Retaining Bolts evenly and alternately (1/4 to 1/2 turn) starting with the Bolt farthest from the Bushing Saw Slot.

h) Recheck the alignment after tightening the Bolts, and then retighten the Sheave Bushing Bolt.

NOTE: *Make sure that the Belt or Sheave is not hitting the Hopper.*

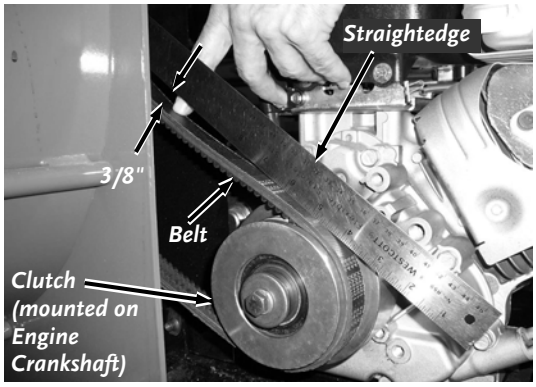


Figure 32

5. Tighten the Engine Bolts (***Figure 29***)
6. Place a Straightedge on the Belt (over the Clutch and Sheave) and push down firmly on the Belt to measure the deflection from the Straightedge to the Belt with a tape measure (***Figure 32***).
7. The measurement should be approximately 3/8".
8. If the measurement is not correct, loosen the Engine Bolts and tighten or loosen the Adjusting Nut as needed (***Figure 29***).
9. Repeat steps 5 through 8 until the proper Belt tension is achieved.
10. When the Belt is properly tensioned, double check that the four Engine Bolts are completely tightened.
11. Reinstall the Belt Guard Bracket and the Belt Guard.
12. Reinstall the eight Bolts, Lock Washers and Flat Washers using a 1/2" Wrench (***Figures 26 and 27***).

NOTE: *Check and re-tighten the Drive Belt, if necessary, after an initial break-in period of one (1) hour.*

Removing, Replacing and Adjusting the Chipper Knife and Wear Plate

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

⚠ NOTICE!

ROUTINELY CHECK THE CHIPPER KNIFE FOR SHARPNESS. USING A DULL KNIFE WILL DECREASE PERFORMANCE AND CAUSE EXCESSIVE VIBRATION THAT WILL CAUSE DAMAGE TO THE DR RAPID-FEED CHIPPER.

ROUTINELY CHECK THE WEAR PLATE FOR A SHARP SQUARE EDGE. USING A ROUNDED OR CHIPPED WEAR PLATE WILL DECREASE PERFORMANCE AND CAUSE EXCESSIVE VIBRATION THAT WILL CAUSE DAMAGE TO THE DR RAPID-FEED CHIPPER.

Inspecting the Chipper Knife and Wear Plate

Routine inspection of the Chipper Knife and Wear Plate will ensure that your DR 16.50 FTP PRO Rapid Feed Chipper is operating at full efficiency (see "Regular Maintenance Checklist" at the beginning of this Chapter). Operating with a worn or damaged Chipper Knife or Wear Plate will cause extreme stress and vibration to the machine and make chipping difficult for the operator.

⚠ CAUTION!

THE HOPPER SHOULD BE SUPPORTED WHEN THE MOUNTING HARDWARE IS REMOVED. REMOVAL OF THE HOPPER IS DIFFICULT FOR ONE PERSON. TWO PEOPLE ARE NEEDED FOR THE HOPPER REMOVAL PROCESS.

VISUAL INSPECTION OF THE CHIPPER KNIFE (before each use)

Tools Needed:

- 5/16" Wrench

1. Remove the four Screws that secure the Front Access Cover with a 5/16" wrench and remove the Access Cover (***Figure 33***).
2. Rotate the Flywheel with a long stick until the Knife is visible.
3. If the Knife has visible nicks or damage it must be sharpened or replaced (see "Removing and Replacing the Chipper Knife" in this chapter).
4. If the Knife does not appear to have any damage, replace the Access Cover and secure with four Screws using a 5/16" wrench.

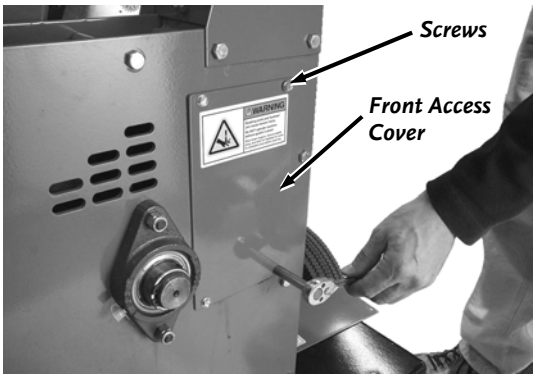


Figure 33

VISUAL INSPECTION OF THE CHIPPER KNIFE AND WEAR PLATE (every 8-10 hours)

Tools Needed:

- Two 1/2" Wrenches

1. Have someone support the Hopper as you use two 1/2" wrenches to remove the six Bolts, Washers and Locknuts that support the Hopper to the Chipper Assembly (***Figure 34***).
2. Remove the Hopper from the Chipper Assembly.
3. Use a stick to rotate the Flywheel until the Knife is next to the Wear Plate.

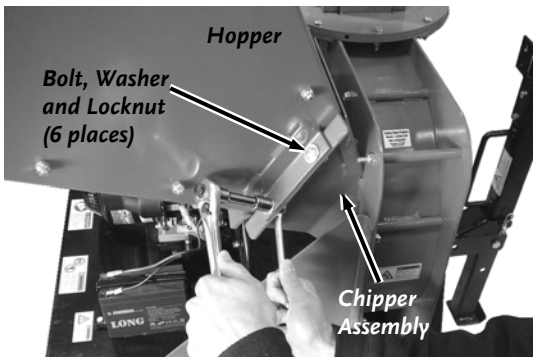


Figure 34

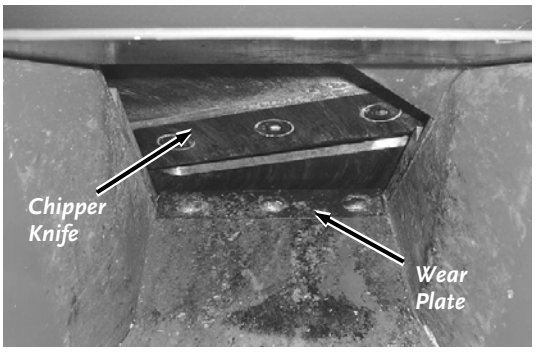


Figure 35

4. Closely inspect the Chipper Knife and Wear Plate for nicks or dull (rounded) edges (***Figure 35***).
5. If necessary, repair or replace the Chipper Knife and/or Wear Plate per the following procedures. If the Knife and Wear plate do not need maintenance or adjustment, replace the Hopper.

Removing and Replacing the Chipper Knife

⚠ WARNING!

BE CAREFUL AND WEAR GLOVES WHEN WORKING NEAR THE CHIPPER KNIFE. THE KNIFE EDGE CAN CUT YOU IF YOU COME IN CONTACT WITH IT.

Tools Needed:

- 5/16" Wrench
- 9/16" Socket
- 7/32" Allen wrench
- Awl or Sharp Tool
- Gloves

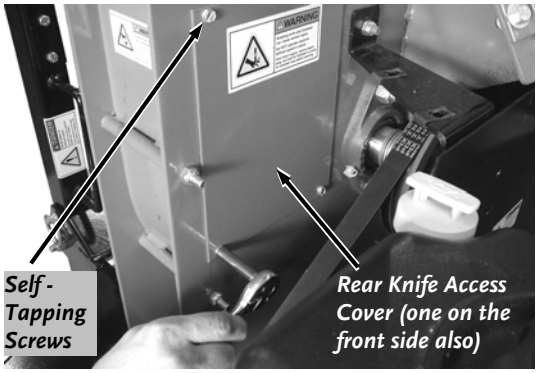


Figure 36

1. Remove the Belt Guard (see "Removing and Replacing the Drive Belt" in this Chapter to remove the Belt Guard).
2. Using a 5/16" Wrench, remove the Self -Tapping Screws and remove both Knife Access Covers from the front and back of the Chipper Assembly (***Figure 36***).
3. Rotate the Flywheel using a stick until the three countersunk Allen Screws and Lock Nuts attaching the Knife to the Flywheel are visible through the Access Openings.
4. Clean out the heads of the Allen Screws with an Awl or Sharp Tool.
5. Insert a 7/32" Allen Wrench into the head of a screw (***Figure 37***).
6. While holding the Allen Wrench, remove the Lock Nut using a 9/16" socket.
7. Repeat Steps 5 and 6 for the remaining two Allen Screws.

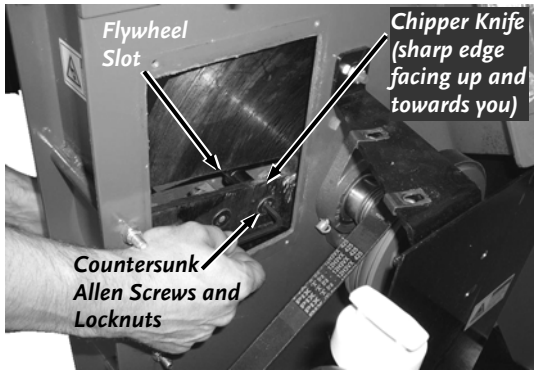


Figure 37

8. Remove the dull or damaged Knife and visually inspect the Flywheel Slot and Knife mounting area and be sure they are clean and that the replacement Knife will be able to mount flush against the Flywheel.

⚠ CAUTION!

IF THE FLYWHEEL SURFACE IS NOT CLEANED PROPERLY AND THE CHIPPER KNIFE IS NOT MOUNTED FLUSH ON THE FLYWHEEL, THE KNIFE COULD CRACK WHEN THE HARDWARE IS TIGHTENED.

9. Install a new or sharpened Knife as shown with the Knife edge facing up and towards you and finger tighten the Allen screws and Lock Nuts (use the new hardware supplied with a new Knife kit) to hold the Knife to the Flywheel.
10. Using a 7/32" Allen wrench and a 9/16" socket, tighten the center Screw and Locknut, then tighten the outer Screw and Locknut, and finally tighten the inner Screw and Locknut.
11. Double-check that all three Locknuts on the Allen Screws are tight.
12. Reinstall the two Access Covers.
13. Replace the Belt Guard.
14. Check and if needed adjust the gap between the Knife and Wear Plate (See "Checking and Adjusting the Knife to Wear Plate Gap" in this Chapter).

Removing and Replacing the Wear Plate

Tools Needed:

- 7/16" Wrench

1. Remove the Hopper (See "Inspecting the Chipper Knife and Wear Plate" in this Chapter)
2. Remove the three Locknuts and Carriage Bolts that attach the Wear Plate to the Chipper Assembly with a 7/16" wrench and then remove the Wear Plate (***Figure 38***).
3. Install the new Wear Plate and secure with the three Carriage Bolts and Locknuts.

NOTE: The Gap between the Knife and Wear Plate must be adjusted whenever the Wear Plate is removed. See the following instructions.

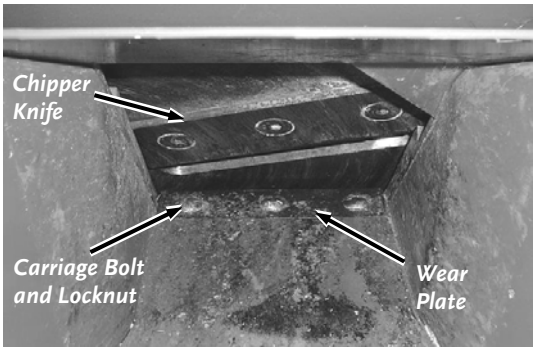


Figure 38

Checking and Adjusting the Knife to Wear Plate Gap

When you replace the Knife you must check and set the clearance between the Knife and Wear Plate. Set this clearance or gap to 1/16" by using the Gap Tool that is supplied with the Chipper and with a new Knife kit. If the gap between the Wear Plate and the Knife is not set correctly, you will have excessive vibration when chipping and the Knife will seem to be dull. The Wear Plate should have a square edge and be free of dents or gouges. The Wear Plate can be hand sharpened (see steps below). Be careful not to overheat it during the sharpening process. This will change the characteristics of the steel and you will then have to replace the Wear Plate.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

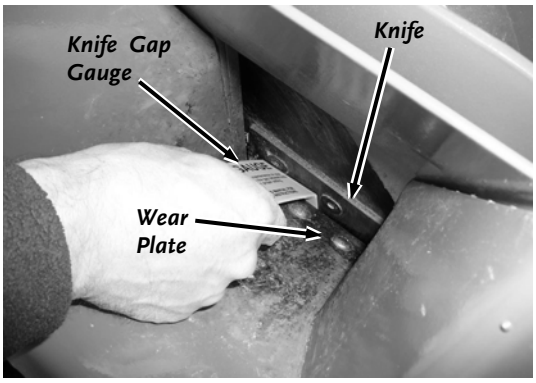


Figure 39

Tools Needed:

- Gap Gauge (provided with Chipper)

Checking the Knife to Wear Plate Gap

1. Remove the Hopper (See "Inspecting the Chipper Knife and Wear Plate" in this Chapter).
2. Use a stick to rotate the Flywheel until the Knife can be positioned next to the Wear Plate.
3. Slide the Knife Gauge in between the Knife and Wear Plate to check the clearance (***Figure 39***).
   - If the Knife Gauge slides freely, with no resistance and extra space, the Wear plate must be adjusted.
   - If the Knife Gauge will not slide down between the Knife and Wear Plate, the Wear Plate must be adjusted.
   - If the Knife Gauge slides in between the Knife and Wear Plate with some resistance felt against them both then the Wear plate is properly adjusted.
4. Install the Hopper when finished.

Adjusting the Knife to Wear Plate Gap

Tools Needed:

- 7/16" wrench
- Gap Gauge (provided with Chipper)

1. To adjust the Wear Plate Gap, loosen the three Nuts on the Carriage Bolts with a 7/16" wrench just enough so the Wear Plate will move but still have a slight resistance. Now you can slide the Wear Plate up or down (in or out) to achieve the correct gap setting (***Figure 40***).

NOTE: *See **Figure 41** for a more detailed look at the relationship of the Knife to Wear Plate.*

2. Take the Gap Gauge and slide it between the Knife and Wear Plate. Adjust the Wear Plate against the Knife Gauge and tighten the Locknuts.
3. Check the adjustment as described in the "Checking the Gap" in the previous section.
4. Position the Chipper Hopper into the Hopper Bracket and secure with the six Bolts, Washers and Locknuts.
5. Re-connect the negative battery terminal wire (electric start only) and the spark plug wire.

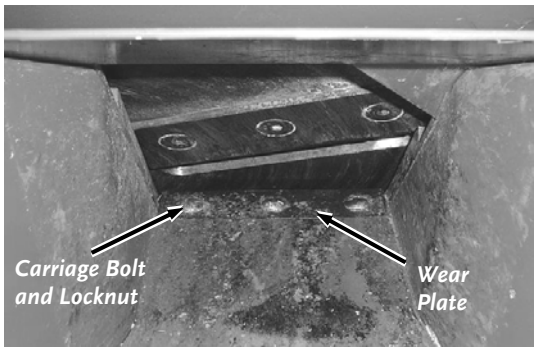


Figure 40

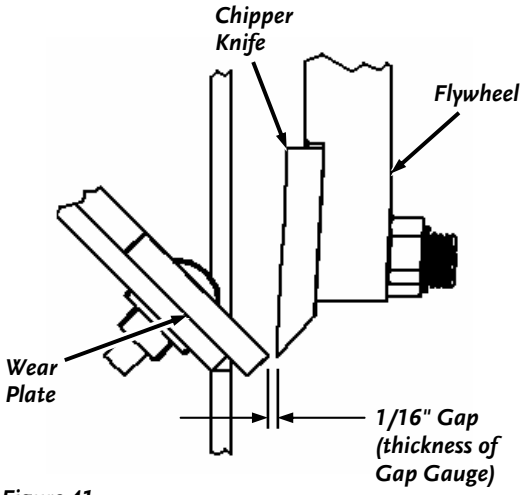


Figure 41

NOTICE!

AFTER ANY KNIFE OR WEAR PLATE MAINTENANCE OR ADJUSTMENT, ROTATE THE CHIPPER FLYWHEEL BY USING A WOODEN STICK AND WATCH AND LISTEN CAREFULLY FOR ANY UNUSUAL NOISES, CLICKING OR VIBRATION. IF YOU DETECT ANY OF THESE, INSPECT THE MACHINE FOR DAMAGE, OR ANY LOOSE PARTS. REPAIR OR REPLACE ANY DAMAGED PARTS AND TIGHTEN ANY LOOSE PARTS BEFORE STARTING THE DR RAPID-FEED CHIPPER.

Chipper Knife Sharpening

- You should never attempt to sharpen the Chipper Knife freehand.
- It is extremely important to consistently maintain the 40-degree angle for proper performance (***Figure 42***).
- Excessive heat generated during the sharpening process will damage Knives and weaken the metal. Be sure not to overheat the Knife during sharpening because it will shorten the life of the Knife.

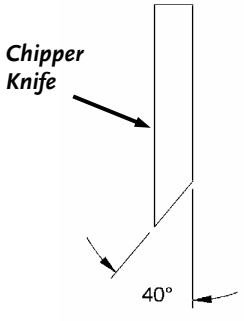


Figure 42

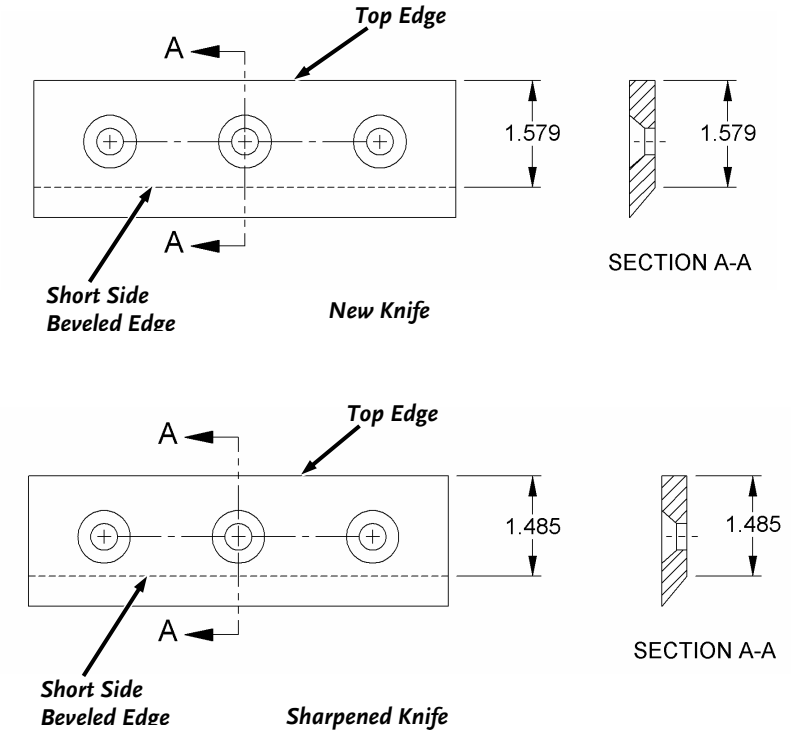


Figure 43

- Take the Chipper Knife to a machine shop for proper sharpening.
- 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 1.579" measurement between the short side bevel edge and the Knife Top Edge (***Figure 43 "New Knife"***).
- The knife should never be sharpened to the extent that more than 3/32" is taken off this measurement.
- Once this measurement is below 1.485" (see ***Figure 43 "Sharpened Knife"***), or if you are unable to remove dents or gouges with these guidelines, replace the Knife.

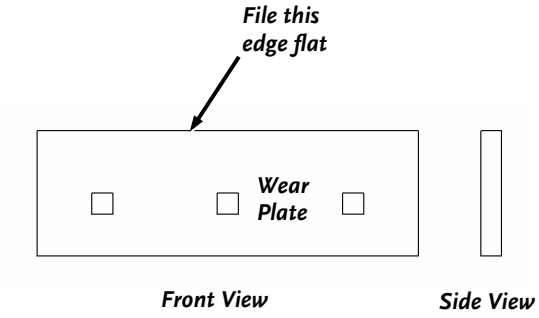


Figure 44

Wear Plate Sharpening

The Wear Plate edges become rounded and chipped during use and must be squared off to ensure efficient operation.

Tools Needed:

- Flat File

1. Secure the Wear Plate in a vise.
2. File the edge of the Wear Plate to take out any nicks and to square rounded edges (***Figure 44***).

NOTE: *If the Wear Plate is filed enough times that the proper gap between the Knife and Wear Plate can not be set with the Gap Gauge, You will need to replace the Wear Plate.*

Removing and Replacing the Wheels

The Wheels on the DR 16.50 FTP PRO Rapid Feed Chipper are pneumatic and have pressed in Bearings for easy transport. With use, tires or Bearings may need replacing. The following procedures will explain the replacement procedures.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

Tools Needed:

- 5/32" allen wrench
- Fine Tooth File
- Jack

1. Jack up the side of the Chipper just until the Pneumatic Wheel is off the ground.
2. Loosen the Set Screw with a 5/32" allen wrench and remove the Locking Collar (***Figure 45***).
3. Remove the Pneumatic Wheel from the Axle.

NOTE: *There is a spacer behind the wheel that must remain on the Axle when the Pneumatic Wheel is replaced.*

NOTE: *File off the Set Screw marks in the Axle if Wheel will not slide on.*

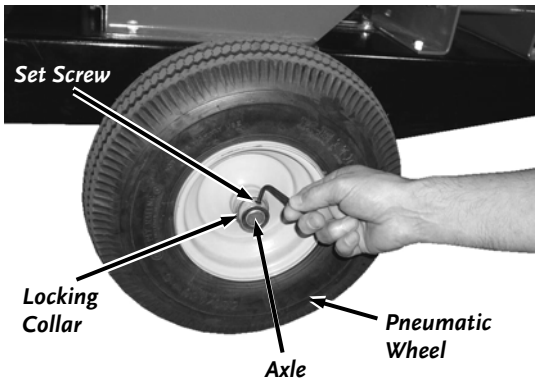


Figure 45

4. Install the Pneumatic Wheel onto the Axle and against the Spacer with the Valve side out.
5. Install the Locking Collar onto the Axle against the Wheel and tighten the Set Screw with a 5/32" Allen Wrench.
6. Check the Pneumatic Wheels for proper air pressure of 38 psi maximum in each tire (see Chapter 3).

Removing and Replacing the Clutch

The design of the Clutch on your machine is for rugged, dependable service; however, it is important to understand the limitations of a Clutch. The Clutch design is to provide load free starting of the Engine, and slippage under excessive overloading of the driven application. These features help protect the Engine from damages such as broken crankshafts and starters. The Shoes and Springs on the Clutch are normal wear items. If you notice decreased performance of the Clutch, check and replace it if necessary.

The Clutch obtains its power from the Engine RPM. The lower the engagement speed, and the higher the maintained Engine speed, the more torque the Clutch can transfer to the driven unit. **NEVER operate the DR RAPID-FEED CHIPPER Engine at less than full RPM when chipping.**

NOTE: *At engine start-up, the engine of your chipper operates under no load until approximately 1800 RPM, at which speed the centrifugal clutch engages and begins driving the rotor. Proper engine speed for chipping is 3400-RPM +/- 200 RPM.*

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

⚠ NOTICE!

- **DO NOT 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. SEE YOUR AUTHORIZED DEALER FOR ANY ENGINE GOVERNOR ADJUSTMENTS.**
- **BECOME FAMILIAR WITH SUCCESSFUL OPERATING CONDITIONS AND AVOID THOSE THAT CAN OVERLOAD AND DAMAGE THE MACHINE.**
- **DO NOT OVERLOAD OR ATTEMPT TO CHIP MATERIAL BEYOND MANUFACTURERS RECOMMENDATION. PERSONAL INJURY OR DAMAGE TO THE MACHINE COULD RESULT. LEARN TO RECOGNIZE THE SOUND OF THE MACHINE DURING AN OVERLOAD CONDITION. ONLY YOUR OPERATOR EXPERIENCE WILL TELL YOU HOW FAST YOU CAN SUCCESSFULLY FEED MATERIAL INTO THE MACHINE.**
- **IF OVERLOADING OR ANY OTHER CAUSE JAMS THE MACHINE, STOP THE MACHINE IMMEDIATELY. IF YOU JAM THE MACHINE AND DO NOT STOP THE ENGINE, IT CAN BURN THE DRIVE BELT AND/OR RUIN THE CLUTCH. CLUTCH DAMAGE CAN BE COSTLY AND IT MAY NOT BE COVERED UNDER WARRANTY. FOR THIS REASON, IT IS IMPORTANT THAT YOU IMMEDIATELY SHUT OFF THE MACHINE IF IT BECOMES JAMMED.**
- **THE CENTRIFUGAL CLUTCH ON THIS MACHINE IS PERMANENTLY LUBRICATED AND DOES NOT REQUIRE OIL OR GREASE. IF, AFTER LONG PERIODS OF USE, THE DRUM WOBBLES EXCESSIVELY, REPLACE THE CLUTCH ASSEMBLY. ALWAYS REPLACE SHOES AND SPRINGS IN SETS. WHENEVER SHOES ARE CHANGED, REPLACE ALL SPRINGS.**

Installing a new Clutch Assembly

NOTE: *If a Clutch part malfunctions, it could jeopardize the integrity of other Clutch components. If you have problems with the Clutch, a Clutch Kit is available, but we recommend replacing your Clutch as a complete assembly.*

Tools and Supplies Needed:

- 9/16" Wrench
- Anti-seize compound

1. Remove the Belt Guard and Belt (see "Removing and Replacing the Drive Belt" in this Chapter).
2. With a 9/16" wrench, remove the Clutch Bolt, Lock Washer and Washer and then slide the Clutch from the Crankshaft (***figure 46***).
3. Remove the Key from the keyway in the Engine Crankshaft and set it aside.
4. Clean the engine crankshaft and remove any burrs, then apply Anti-seize compound to the Crankshaft.
5. Install the Key in the keyway of the new Clutch hub, align the Key with the slot in the Engine Crankshaft, and then slide the new Clutch Assembly onto the crankshaft followed by the Washer, Lock Washer and Clutch Bolt. Tighten the Bolt securely with a 9/16" wrench.

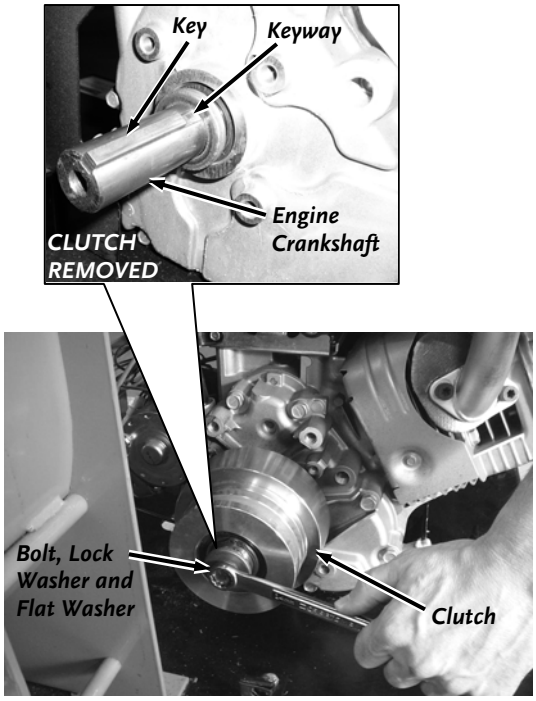


Figure 46

6. Reinstall the Drive Belt and set the Drive Belt tension and alignment (see "Removing and Replacing the Drive Belt" in this Chapter).
7. Reinstall the Belt Guard (see "Removing and Replacing the Drive Belt" in this Chapter).

Battery Care (electric start only)

Proper care can extend the life of a battery. Follow these recommendations to ensure your battery's best performance and long life:

- Do not allow the battery charge to get too low. If the machine is not used, charge the battery every 4 – 6 weeks. Operate the engine for at least 45 minutes to maintain proper battery charge.
- Store an unused battery in a dry area that does not freeze.
- Do not charge an already charged battery. In theory, you cannot overcharge our battery with a trickle charger; however, when a battery is fully charged and the charger is still on, it generates heat that could be harmful to the battery. A fully charged battery will read 12V-13.2V with a voltmeter.
- Do not continue to crank your engine when the battery charge is low.

Charging the Battery

Operate the engine for at least 45 minutes to maintain proper battery charge. If the battery loses its charge, you will need to use a trickle charger (like the DR Battery Charger) to recharge it. The charger should have an output of 12 volts DC at no more than 2 amps.

- At 1 amp, the battery may need to be charged for as long as 48 hours.
- At 2 amps, the battery may need to be charged for as long as 24 hours.

To connect a battery charger to your DR RAPID-FEED CHIPPER, follow the steps listed below.

1. Attach the black (-) battery charger wire to the battery negative (-) terminal, and attach the red (+) battery charger wire to the battery positive (+) terminal.
2. Plug the battery charger into an outlet.

⚠ NOTICE!

WHEN YOU ARE FINISHED CHARGING THE BATTERY, DISCONNECT THE CHARGER FROM THE OUTLET FIRST, THEN DISCONNECT THE BATTERY CHARGER WIRES FROM THE BATTERY. IF YOU LEAVE THE BATTERY CHARGER WIRES CONNECTED TO THE BATTERY, THE BATTERY WILL DISCHARGE ITSELF BACK INTO THE CHARGER.

Recycling a Used Battery

⚠ NOTICE!

PLEASE DISPOSE OF USED BATTERIES RESPONSIBLY, ACCORDING TO YOUR LOCAL HAZARDOUS MATERIALS REGULATIONS. NEVER THROW AWAY USED BATTERIES IN YOUR HOUSEHOLD TRASH.

Please dispose of your used batteries responsibly by recycling them. Call your local Solid Waste Management District or your local waste handler to locate the collection site nearest you. Some collection sites recycle batteries year-round; others collect them periodically.

You can also visit the Website of Earth 911 for more information (www.earth911.org). Once there, click the Municipal HHW link under Hazardous Household Waste, and enter your zip code. The site lists recycling centers located near you.

For a fee, you can recycle your batteries with the International Metals Reclamation Company. Visit them at www.inmetco.com and click Services, then click Battery Recycling; or contact them at:

INMETCO
PO Box 720
245 Portersville Road
Ellwood City, PA 16117
(724) 758-2800; fax (724) 758-2845
To learn more about hazardous waste recycling, visit the Website for Battery Council International (www.batterycouncil.org) or for the Environmental Protection Agency (www.epa.gov).

End of Season and Storage

⚠ WARNING!

- **SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.**
- **NEVER STORE THE DR RAPID-FEED CHIPPER WITH FUEL IN THE FUEL TANK INSIDE A BUILDING WHERE IGNITION SOURCES ARE PRESENT, SUCH AS HOT WATER AND SPACE HEATERS, CLOTHES DRYERS AND THE LIKE. IF YOU ARE GOING TO DRAIN THE FUEL TANK, DO THIS OUTDOORS. ALLOW THE ENGINE TO COOL BEFORE STORING IN ANY ENCLOSURE.**
- **WHEN NOT IN USE, YOUR DR RAPID-FEED CHIPPER SHOULD BE STORED OUT OF THE REACH OF CHILDREN.**

NOTE: *Please refer to the Engine Owner's Manual for engine-specific procedures.*

- Change the oil (and oil filter, if applicable).
- If your DR RAPID-FEED CHIPPER 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.
- Remove the spark plug and pour about 1 ounce of motor oil into the cylinder hole. Reinstall the plug and engage the electric starter for a few seconds (for manual start pull on the starter cord a few times). This will coat the pistons and seat the valves to prevent moisture buildup.
- Clean or replace the air filter(s).
- Lubricate all grease fittings.
- Clean any dirt and debris from the cylinder head cooling fins, blower housing, debris screen and muffler area of the engine.
- If your engine has a fuel filter, replace it.
- Check the Drive Belt for wear.
- Check the Chipper Knife and Wear Plate for nicks and wear.
- For electric start models remove the battery or store your DR RAPID-FEED CHIPPER in a dry environment where the temperature is between –10° F (–23° C) and +85° F (+23° C). Make sure the storage temperatures will never be outside these limits.
- Clean any debris from the Hopper and Discharge Chute.

CHAPTER 6

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 DR Power Equipment for support.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER..

Troubleshooting Table

SYMPTOM	POSSIBLE CAUSE
The engine won't start using electric-start. *(Please refer to the Engine Owner's manual for engine-specific procedures.)*	⇒ Is the Fuel Shut-Off Valve in the ON position? ⇒ Is the spark plug wire attached? ⇒ Have you checked all the items under the section called Electric Starting in Chapter 4? ⇒ Check the wire connections, especially the large black ground wire where it connects to the battery and where it connects to the engine. ⇒ Check the wire connections to the solenoid. Disconnect the black battery ground wire first to avoid sparks. Check to be sure that all of the connections are clean and tight. Reconnect the battery ground wire. ⇒ Check the ground connection on the solenoid where it's bolted to the frame. Using a wrench or socket, tighten the bolts to ensure a good connection to the frame. ⇒ Is your battery charged? Check the voltage yourself or at a service station. If it's low, charge it with a 12-volt, 1 to 2 Amp trickle charger. If you don't use your Chipper for at least 45 minutes at a time, the battery may need to be periodically charged. See the Battery Care section in Chapter 5. ⇒ If your battery is charged and your DR RAPID-FEED CHIPPER still won't start, contact us at **www.DRpower.com** or call **1(800) DR-OWNER (376-9637)** for assistance.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER..

Troubleshooting Table (continued)

SYMPTOM	POSSIBLE CAUSE
The engine lacks power or is not running smoothly. *(Please refer to the Engine Owner's Manual for engine-specific procedures.)*	⇒ Check the Throttle Lever travel and adjustment. Is the Throttle Lever in the Run position? ⇒ Is the Choke lever pushed all the way over to the RUN position? See Chapter 4. ⇒ Is the air filter clean? If it's dirty, change it following the procedure in the Engine Owner's Manual. ⇒ Is the spark plug clean? If it is fouled or cracked, change it. If it is oily, leave it out, hold a rag over the spark plug hole and engage the electric starter for a few seconds to blow out any oil in the cylinder, then wipe off the spark plug and reinsert it. ⇒ Are you using fresh, clean unleaded gas? If it's old, change it. Use a fuel stabilizer if you keep gas longer than two weeks or so. ⇒ Does your engine have the right amount of clean oil? If it's dirty, change it following the procedure in Chapter 5. ⇒ If your engine still lacks power, contact us at **www.DRpower.com** or call **1(800) DR-OWNER (376-9637)** for assistance.
Engine smokes.	⇒ Check the oil level and adjust as needed. ⇒ You may be operating the machine on too great an incline. The machine should be level. ⇒ Check the air filter and clean or replace if needed. ⇒ You may be using the wrong oil - too light for the temperature. Refer to your Engine Owner's Manual for detailed information. ⇒ Clean the engine cooling fins and the carburetor housing if they're dirty. ⇒ If the engine still smokes, contact us at **www.DRpower.com** or call **1(800) DR-OWNER (376-9637)** for assistance.
Chipping action seems too slow or flywheel stalls.	⇒ The engine speed is too slow causing the belt to slip. Run the engine at full throttle. ⇒ Check for loose or damaged Drive Belt; tighten or replace. See Chapter 5. ⇒ Check for a dull or damaged Knife; sharpen or replace the Knife. See Chapter 5.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER..

Troubleshooting Table (continued)

SYMPTOM	POSSIBLE CAUSE
The belt frays or rolls over the pulley.	⇒ The rotor Drive Pulley groove may be nicked. Check the Drive Belt for wear and hard spots. File off any nicks on the pulley. ⇒ The Drive Belt may be stretched; replace it. See Chapter 5. ⇒ The Pulleys may be misaligned. See Chapter 5.
- Clutch overheats. *- Belt burns.* *- Flywheel won't turn.*	⇒ Immediately stop the engine and disconnect the spark plug wire. ⇒ Turn the Flywheel with a wooden stick to be sure it turns freely. ⇒ Check for a loose Drive Belt. See Chapter 5. ⇒ Remove any built-up debris from the Chipper Hopper Inlet and Discharge Chute.
The machine has excessive vibration.	⇒ Check for a dull or damaged Knife; sharpen or replace the Knife. See Chapter 5. ⇒ The Knife is not properly seated on the flywheel. Loosen the Knife mounting screws, reset the Knife and tighten the screws. Also, check the Knife to Wear Plate Gap. See Chapter 5. ⇒ If the machine still exhibits excessive vibration, contact us at **www.DRpower.com** or call **1(800) DR-OWNER (376-9637)** for assistance.
When chipping, the log seems to vibrate excessively and "hammers" my hands.	⇒ The Knife is dull; sharpen or replace it. See Chapter 5. ⇒ The gap between the Knife and Wear Plate is too great; adjust the Gap. See Chapter 5. ⇒ Check Engine rpms; run Engine at full throttle when chipping.
Chipper Knife is hitting the Wear Plate.	⇒ The gap between the Knife and the Wear Plate is set incorrectly; adjust the Knife to Wear Plate Gap. See Chapter 5.
Engine runs but the flywheel doesn't rotate.	⇒ The inner Shoes of the Clutch are worn. Replace worn or broken Clutch parts. See Chapter 5. ⇒ Loose Drive Belt; adjust the Drive Belt tension. See Chapter 5. ⇒ Remove any built-up debris from the Chipper Hopper Inlet and Discharge Chute.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER..

Troubleshooting Table (continued)

SYMPTOM	POSSIBLE CAUSE
The machine's wheels track left or right while being towed.	⇒ Check the tire pressure. There should be 38 psi in each tire. There should be 60 psi in each tire if you have the road towing option.

CHAPTER 7

CHIPPER ACCESSORIES

WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE, ADDING OPTIONAL ACCESSORIES OR INSPECTION ON THE CHIPPER.

Extended Top-Discharge Chute

The Extended Top-Discharge Chute enables you to better control the direction of the discharged chips and allows you to direct them into a trailer or truck bed for transport.

Tools Needed:

- Two 1/2" Wrenches

INSTALLATION

1. Remove the two Bolts and Locknuts from the Low Discharge Assembly with two 1/2" wrenches (***Figure 47***).
2. Remove the Low Discharge Assembly from the Chipper.

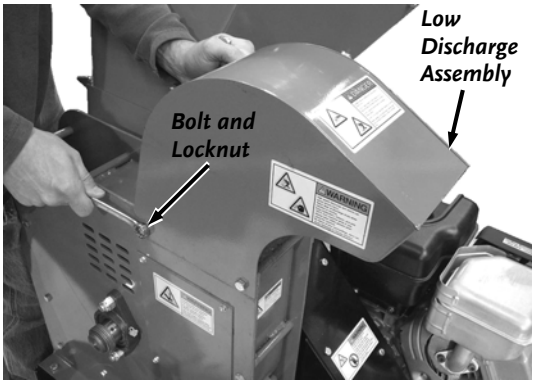


Figure 47

3. Position the Extended Top-Discharge Chute onto the Chipper with the Locking pin on the outside (side furthest away from the hopper) (***Figure 48***).
4. Install the two Bolts and Locknuts and tighten with two 1/2" wrenches.

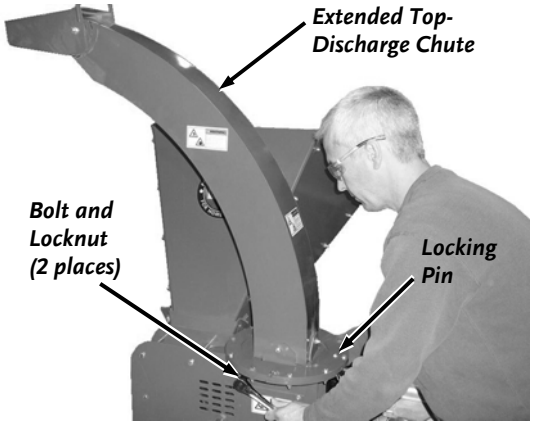


Figure 48

OPERATION

Adjusting the Extended Top-Discharge Chute Discharge Direction:

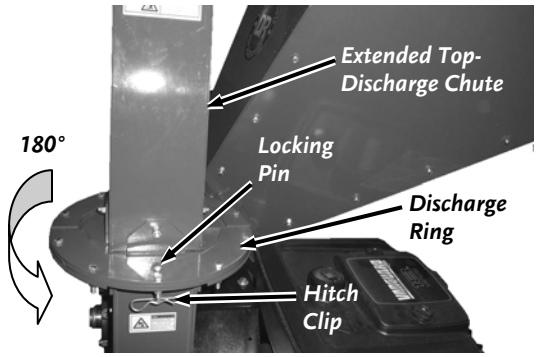


Figure 49

1. Pull the Hitch Clip and remove the Locking Pin (***Figure 49***).
2. Rotate the Extended Top-Discharge Chute to the direction desired.

NOTE: *The Extended Top-Discharge Chute has a range of motion of 180˚ that spans the front and both sides of the Chipper. There are 11 different hole settings at 18˚ increments that you can use.*

3. Line up the Locking Pin hole to the closest hole setting in the Discharge Ring.
4. Install the Locking Pin and secure it with the Hitch Clip.

Adjusting the Deflector Direction:

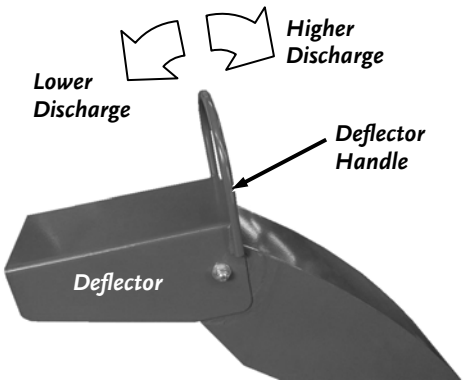


Figure 50

1. Grab the Deflector Handle and rotate the Deflector to the desired discharge position (***Figure 50***).

MAINTENANCE

Tools and Supplies Needed:

- All Purpose Grease

Lubricating the Extended Top-Discharge Chute:

1. Pull the Hitch Clip and remove the Locking Pin from the Discharge Ring (***Figure 49***).
2. Apply some all-purpose grease in each hole of the Discharge Ring and Center Ring as you rotate the Chute.
3. Rotate the Extended Top-Discharge Chute for the full 180˚ of rotation for a few times to spread the grease inside the Discharge Ring.
4. Reposition the Extended Top-Discharge Chute to the desired angle and insert the Locking Pin and Hitch Clip.

Road-Towing Package

The Road-Towing Package enables the Chipper to be towed behind a vehicle that is equipped with a 2" ball hitch and transported on public roads to another site.

Unpacking the Road-Towing Package

Tools and Supplies Needed:

- Knife

Parts Supplied in Shipping Box (Figure 51):

- Highway Tongue Assembly
- Two Wheel Assemblies
- Two Fenders
- Axle Assembly
- Parts Box containing (Items below and ***Figure 52***):
  - Two Tail Lights with Brackets
  - Wire Harness
  - Wire Ties
  - Hardware Package (Table below and ***Figure 53***)

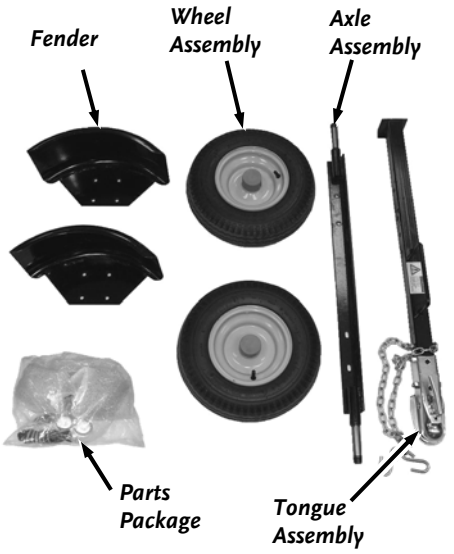


Figure 51

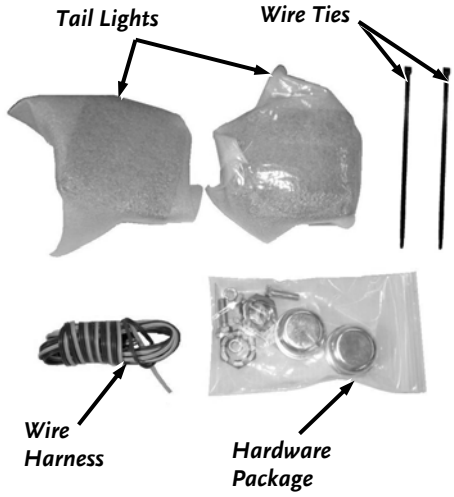


Figure 52

ITEM #	DESCRIPTION	QTY
1	Dust Cap	2
2	Castle Nut	2
3	3/8-16 X 1-1/4" Bolts	4
4	3/8-16 Nylon Lock Nuts	4
5	3/8" Flat Washer	2
6	Cotter Pin	2
7	5/16-18 X 1" Bolt	4
8	5/16-18 Nylon Lock Nut	4

1. Cut the Box open and with a knife and place the contents on a clean level surface.
2. Open the parts Package and lay out the Parts.
3. Open the Hardware Package and lay out the Hardware.
4. Compare the contents of the Shipping Box, Parts Box and Hardware Package with the Parts Supplied list above**. If there are any questions contact us at www.DRpower.com or call 1-800-DR-OWNER (376-9637).** Do not discard the shipping materials until you are fully satisfied with your new Road-Towing Package.

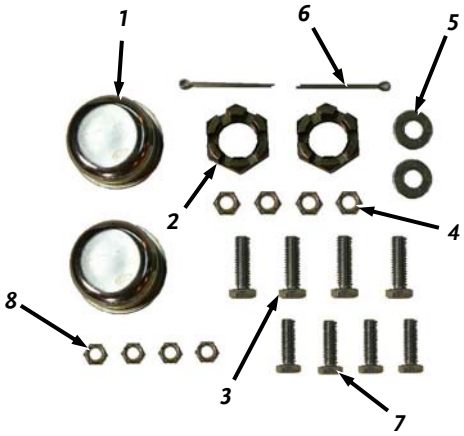


Figure 53

INSTALLATION

Tools and Supplies Needed:

- Wire Cutter/Stripper
- Cable Ties (provided)
- Two 3/4" Wrenches
- Two 9/16" Wrenches
- Two 1/2" Wrenches
- 10" Adjustable Wrench
- Electrical Tape
- Jack Stands or Blocks
- Jack
- 5/32" Allen Wrench
- Needle Nose Pliers
- Hammer

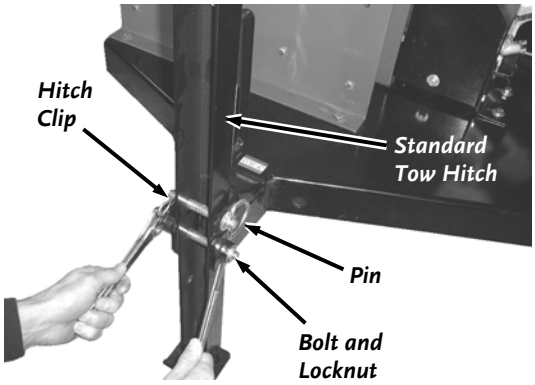


Figure 54

Installing the Tow Hitch:

1. Insert a jack-stand or blocks at the front of the Chipper to lift the Standard Tow Hitch off the ground.
2. Remove the Bolt and Locknut from the Frame and Standard Tow Hitch with two 3/4" wrenches (***Figure 54***).
3. Remove the Hitch Clip and Pin and remove the Standard Tow Hitch.
4. Position the Road-Towing Tow Hitch and secure with the Pin and Hitch Clip (***Figure 55***).
5. Install the Bolt and Locknut into the Frame and Tow Hitch with two 3/4" wrenches.

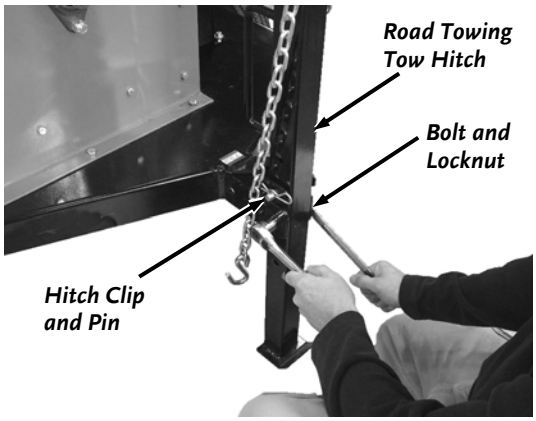


Figure 55

Installing the Fenders and Axle Assembly:

NOTE: *It is recommended that the Ball Hitch on the Road-Towing Tow Hitch be hooked up to the Ball on your tow vehicle to stabilize the Chipper for the next procedure. The Tow Bar must be in the Horizontal position to hitch to the vehicle (see "Towing" procedures in the following section for Tow Bar adjustments).*

1. Insert jack Stands or Blocks under the front corners of the Frame or hook the Ball Hitch onto the Ball of the tow vehicle.
2. Jack up the rear of the Chipper and insert Jack Stands under the rear corners of the Frame to raise the Chipper wheels off the ground (***Figure 56***). The lowermost part of frame must be at least 10" from the ground for the Wheel Assembly to fit under.

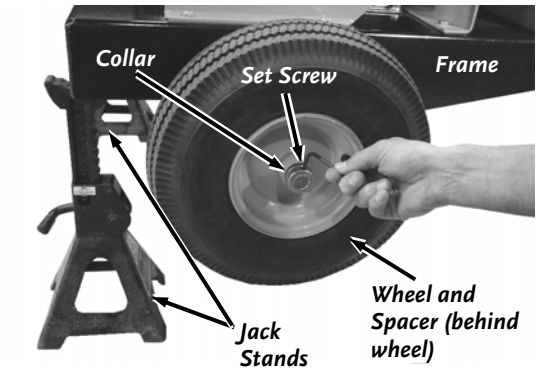


Figure 56

3. Remove the Collar from the axle by loosening the Set Screw with a 5/32" allen wrench and pulling the Collar off.
4. Remove the Wheel and Spacer that is behind the Collar from the Axle.
5. Pull the opposite wheel along with the Axle from the Chipper.
6. Slide the Spacer, Wheel and Collar back onto the Axle and store in a safe place.
7. Remove the four Bolts, Lock Washers and Nuts (two large washers on top two holes only) from the side of the chipper Frame with two 9/16" wrenches (***Figure 57***).
8. Position the Fender and reinstall the four Bolts, Lock Washers and Nuts (two large washers on top two holes only) to the side of the chipper Frame (***Figure 58***).
9. Repeat the Fender installation for the opposite side.

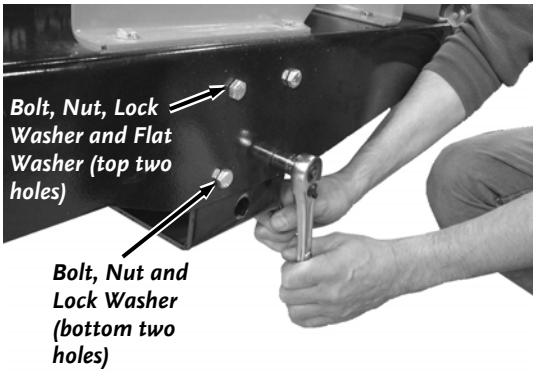


Figure 57

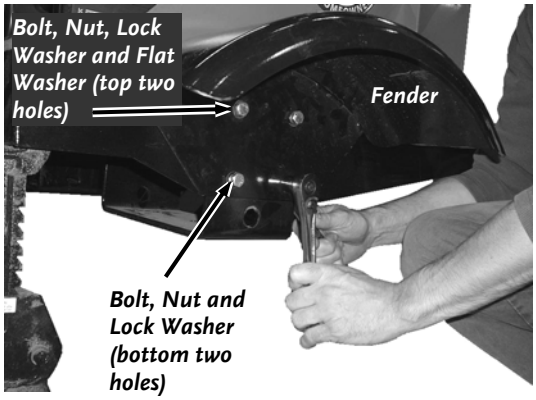


Figure 58

10. Position the new Axle Assembly under the Chipper and secure it to the Axle Brackets with two Bolts, Locknuts and Washers (on the side with slots) and two Bolts and Locknuts (on side with holes) using two 9/16" wrenches (***Figure 59***).

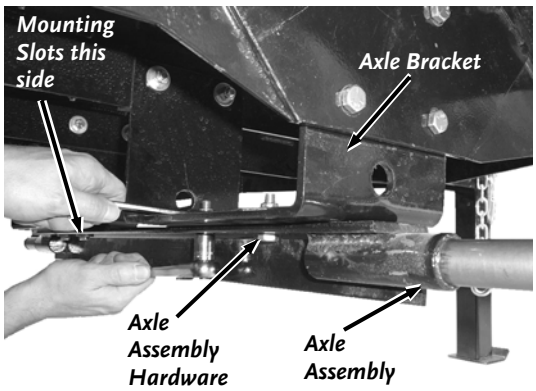


Figure 59

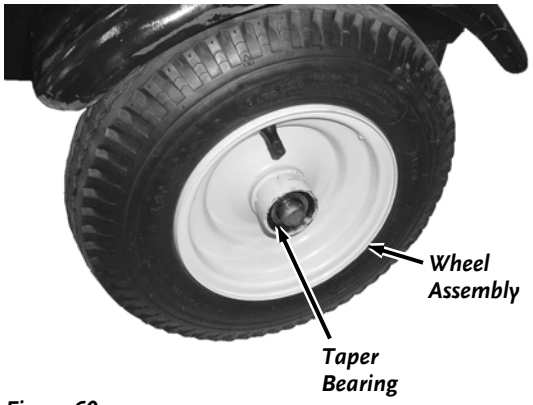


Figure 60

11. Slide a Wheel Assembly onto the Axle Shaft. Make sure the open side of the Wheel Hub with the loose Taper Bearing is facing towards you (***Figure 60***).

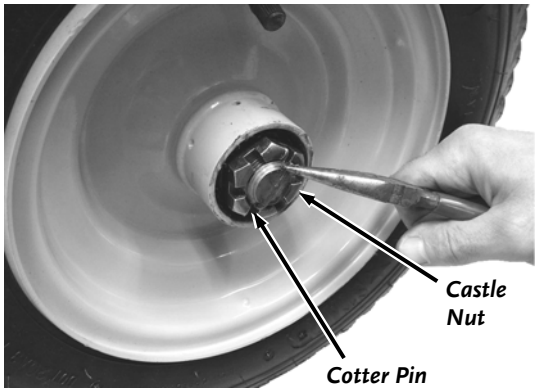


Figure 61

12. Screw the Castle Nut onto the Axle and tighten it with an adjustable wrench to seat the Bearings (***Figure 61***).
13. Back the Castle Nut off and then snug it up to the Bearing lightly.
14. Insert a Cotter Pin through the slots of the Castle Nut and into the hole in the Axle.
15. Bend the ends of the Cotter Pin with Needle nose Pliers to secure it.

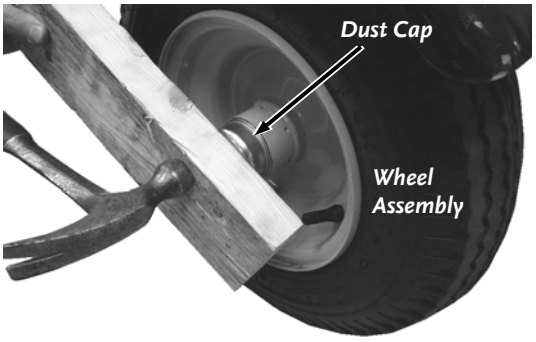


Figure 62

16. Place the Dust Cap onto the Wheel Assembly and secure it by placing a piece of wood over it and pounding lightly with a hammer until it is against the lip (***Figure 62***).
17. Jack the back of the Chipper up and remove the jack Stands.
18. Lower the Chipper to the ground.
19. Check the Tire for proper air pressure of 60 psi maximum in each Tire.

Installing the Tail Lights:

1. Push the Yellow/Brown and Green/Brown Wires of the Wire Harness through the hole in the front left side of the Frame (***Figure 63***).

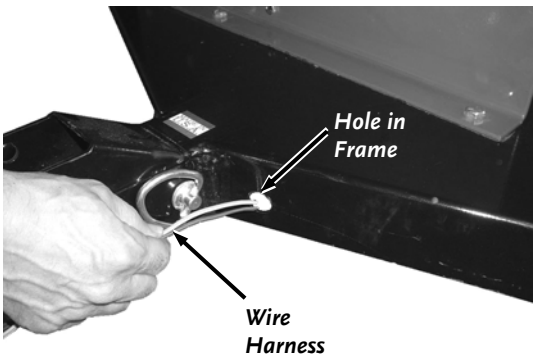


Figure 63

2. Pull the Wires to the back of the Chipper Frame. Pull the Yellow/Brown Wires up through the Wire Hole on the left rear of the Frame (***Figure 64***). Do not pull the Wires through the Bracket Holes.
3. Pull the Green/Brown Wire up through the Wire Hole in the right rear of the Frame.
4. Strip 1/2" of insulation from the ends of the Yellow/Brown wires and Green/Brown wires and twist the individual wire ends to aid in installation.

NOTE: *Ensure that you have the correct Light for each side. The Side Light of each Light Assembly must face to the outside of the Chipper.*

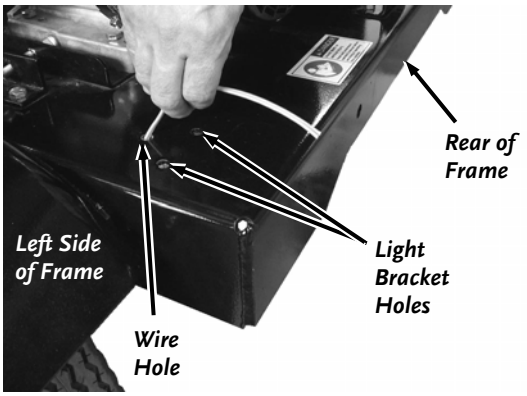


Figure 64

5. Push the Yellow Wire into the top left hole in the back of the light socket and push the Brown Wire into the top right hole (***Figure 65***).

NOTE: *The wires will be connected and retained in the light socket holes by spring-loaded connections.*

6. Push the Green Wire into the top right hole in the back of the light socket and push the Brown Wire into the top left hole.

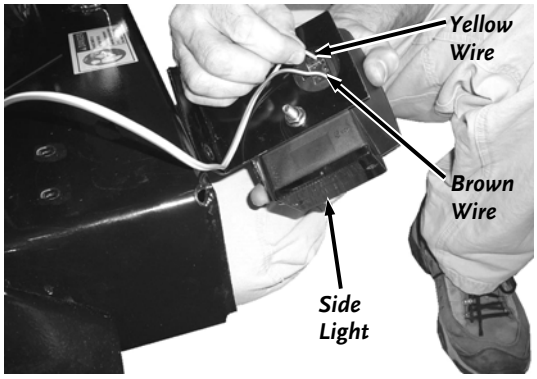


Figure 65

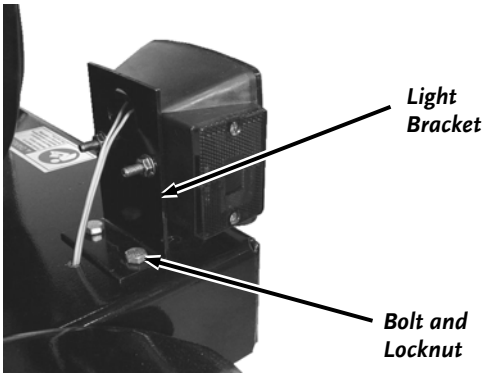


Figure 66

7. Attach both Light Brackets to the Frame with Bolts and Locknuts with two 1/2" wrenches (***Figure 66***).

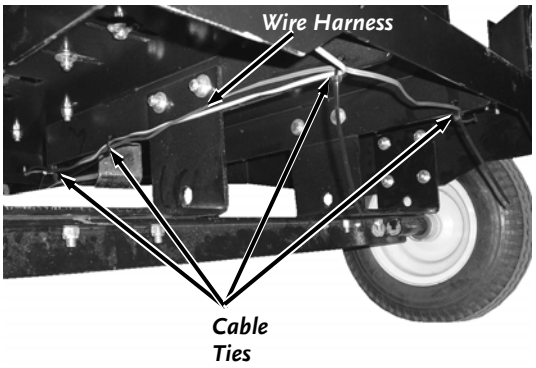


Figure 67

8. Secure the Wires under the Frame with Cable Ties at the four places shown (***Figure 67***).

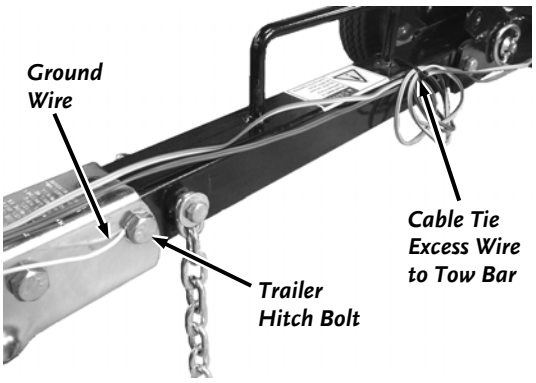


Figure 68

9. Pull the excess wire to the front of the Chipper.
10. Strip 1" of insulation from the end of the White (Ground) Wire.
11. Loosen a Trailer Hitch Bolt, wrap the White (Ground) Wire around the Bolt, and then re-tighten with two 3/4" wrenches (***Figure 68***).
12. Roll up the extra wire and wire tie it to the Tow Bar.

NOTE: *We recommend that you wrap the Harness Wires together with electrical tape about every twelve inches starting at the Wire Harness Connector end and going back to where the wires go to either side of the Frame.*

Towing

NOTE: *The Tow Bar must be in the horizontal (towing) position for the following procedures.*

⚠ WARNING!

MAKING SURE THE CHIPPER IS SECURELY ATTACHED TO THE VEHICLE IS THE RESPONSIBILITY OF THE OWNER/OPERATOR. FAILURE TO SECURELY ATTACH THE CHIPPER CAN CAUSE LOSS OF CONTROL OF THE VEHICLE OR THE CHIPPER BEING SEPARATED FROM THE TOWING VEHICLE, RESULTING IN SERIOUS INJURY OR DEATH.

1. Pull the latch assembly on the Tow Hitch Assembly up and into the open position. Position the hitch coupler of the Chipper over and onto the tow vehicle's tow ball (must be a 2" tow ball) (***Figure 69***).
2. Close the Latch Assembly on the Tow Hitch Assembly to lock it onto the Tow Ball ***(Figure 70)***. Attach the towing Safety Chains to the tow vehicle ensuring there is enough slack for turning.
3. Slide the Locking Pin into the hole in the Latch Assembly.

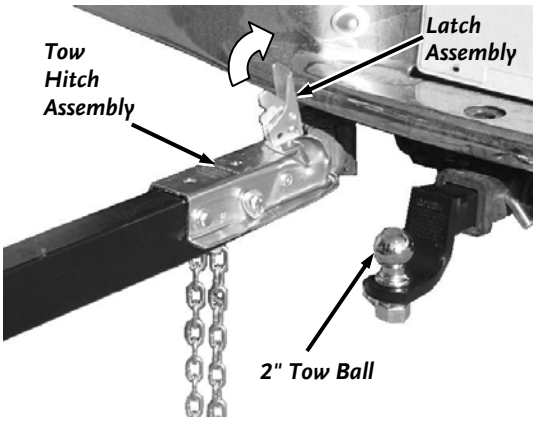


Figure 69

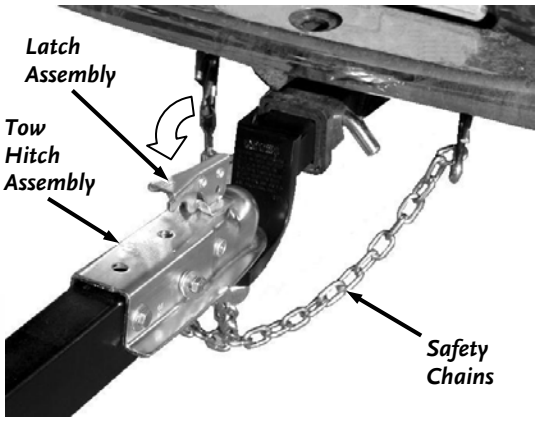


Figure 70

⚠ DANGER!

AVOID DEATH OR SERIOUS INJURY. DO NOT EXCEED 45 MPH WHEN TOWING THIS MACHINE.

4. For extra safety and security, you may want to purchase a Lock or Lock Pin to install into the Latch Assembly of the Tow-Hitch Package ***(Figure 71)***.
5. Connect the Wire Harness Connector to your Tow Vehicle and ensure that your lights on the Chipper are working properly.

If there are any questions, contact us at **www.DRpower.com or call 1-800-DR-OWNER (376-9637)**.

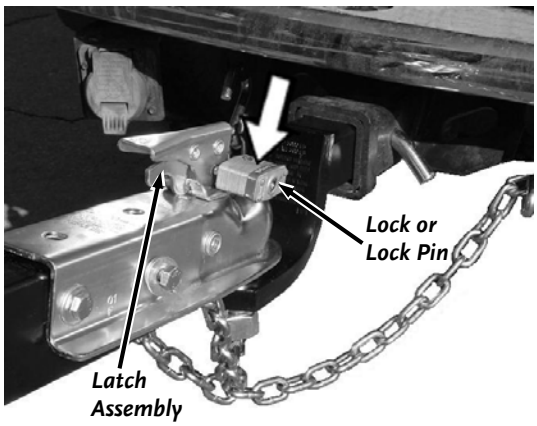


Figure 71

Hitch Coupler Adjustment Check

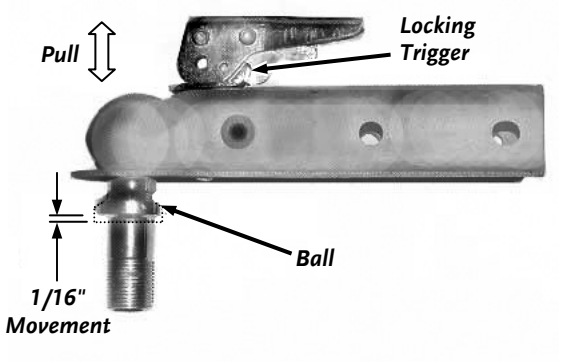


Figure 72

1. Place the proper size ball in the socket of the coupler and close the latch assembly ***(Figure 72)***. Verify that the locking trigger is properly engaged in its detent.
2. Pull on the ball and/or coupler, trying to remove the ball from the socket. If the ball moves more than 1/16" in the coupler's socket, the clamp requires adjustment. Follow the proper adjustment procedure in the following steps.

Hitch Coupler Adjustment

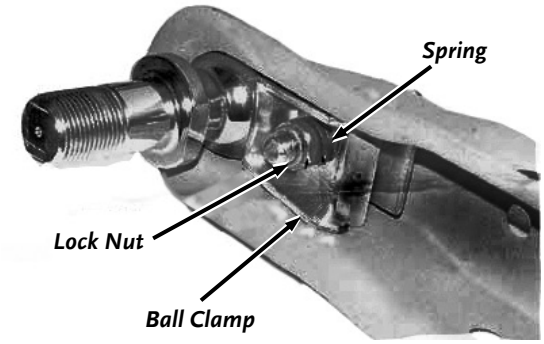


Figure 73

1. With the proper size ball in the socket of the hitch coupler, close the latch of the coupler completely ***(Figure 73)***. Verify that the locking trigger is properly engaged in its detent.
2. Tighten the lock nut on the underside of the coupler until the spring between the nut and the clamp is fully compressed. Then back off the lock nut 1/2 turn or just enough that the latch is able to clamp and unclamp from the ball.

CHAPTER 8

PARTS LIST AND SCHEMATIC DIAGRAMS

Parts List - 16.50 PRO DR RAPID-FEED CHIPPER

NOTE: *Part numbers listed are available through DR Power Equipment.*

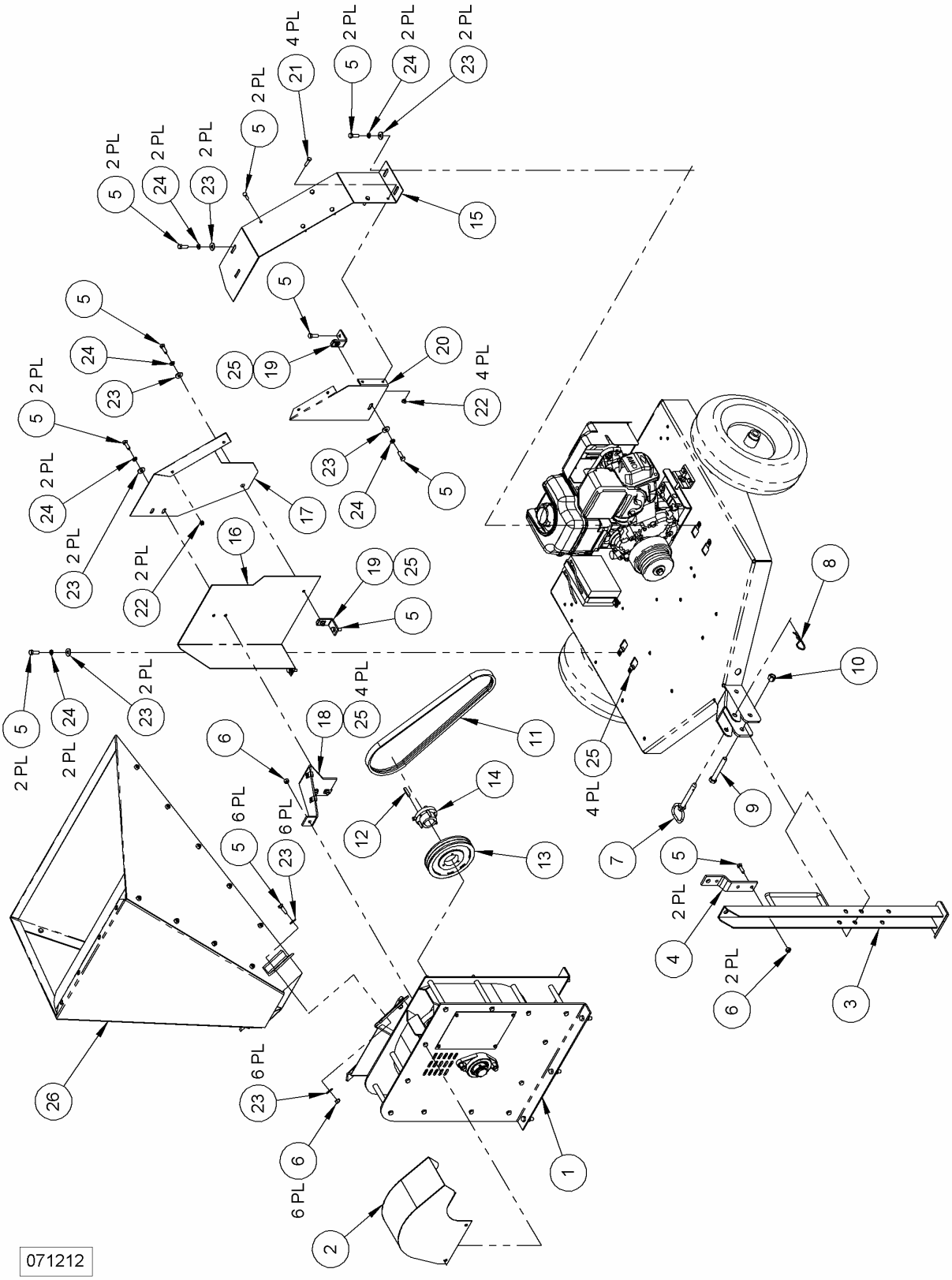
Ref#	Part#	Description
01	242051	Chipper Basic Assembly
02	242061	Discharge Weldment
03	242071	Tongue Weldment, Non Highway
04	142921	Plate, Hitch
05	146051	Bolt, 5/16-18 X 1", GR 5
06	143130	Nut, Nylon Lock, 5/16-18
07	242081	Pin, Tongue, 1/2"
08	182581	Clip, Hitch
09	153890	Bolt, 1/2-13 X 3-1/2", GR 5
10	242091	Nut, Nylon Lock, 1/2-13
11	244261	Belt, Banded, 2 Groove
12	142291	Key, Shaft, 1/4" SQ X 1-1/4"
13	242101	Sheave, 2 Groove
14	242111	Bushing, 1-1/4"
15	242121	Guard, Belt
16	242131	Guard, Belt
17	242141	Cover, Side, Engine
18	242151	Bracket, Guard, Belt
19	241771	Bracket 3/16"
20	242161	Cover

Ref#	Part#	Description
21	241611	Bolt, 1/4-20 X 1", GR 5
22	143400	Nut, Nylon Lock, 1/4-20
23	145150	Washer, Flat, 5/16"
24	155110	Washer, Lock, Split, 5/16"
25	185891	Nut "J" Plain, 5/16-18
26	242171	Hopper Assembly

Safety & Information Labels

241811	Label, Danger, Rotating Knife and Flywheel
241821	Label, Warning, Rotating Parts
127811	Label, Warning, Add Oil
241831	Label, Warning, High Speed Discharge
242041	Label, Danger, 10 mph

Schematic - 16.50 PRO DR RAPID-FEED CHIPPER



Parts List - 16.50 PRO DR RAPID-FEED CHIPPER

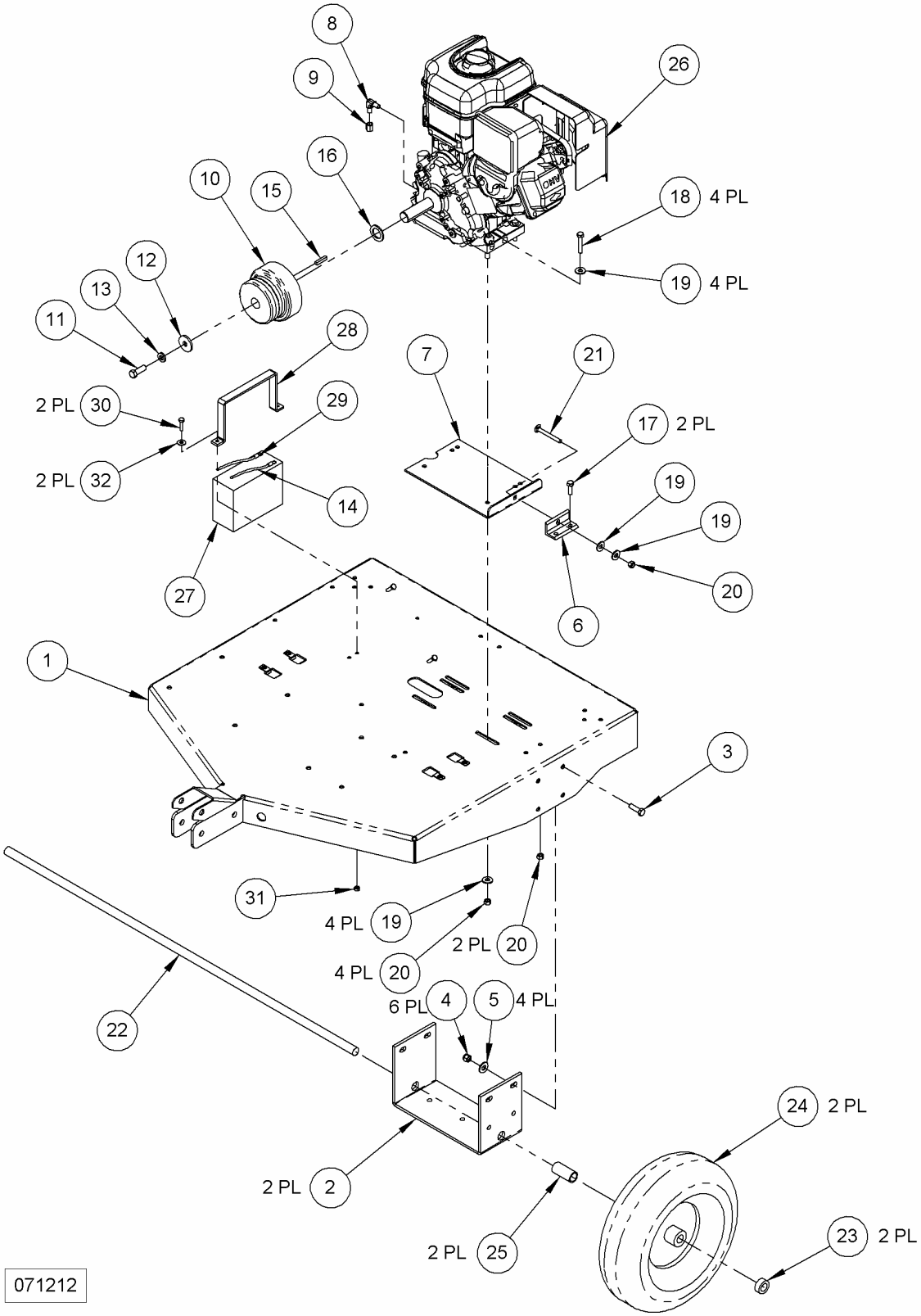
NOTE: *Part numbers listed are available through DR Power Equipment.*

Ref#	Part#	Description
01	242181	Base Weldment
02	242191	Bracket, Axle
03	154490	Bolt, 3/8-16 X 1-1/4", GR 5
04	154480	Nut, Nylon Lock, 3/8-16
05	145160	Washer
06	241651	Bracket, Tension, Belt
07	242201	Plate, Engine
08	241681	Elbow, 90 DEG, 1/4" NPT
09	241691	Cap, Pipe, Hex Head, 1/4" NPT
10	242211	Clutch, 3V, 2 Groove
11	216541	Bolt, 7/16-20 X1-1/4", GR 8
12	242221	Washer, 1.5 OD x .453 ID x .156 Thick
13	242231	Washer, Lock, Split, 7/16"
14	242241	Cable, Battery, Positive
15	142291	Key, Shaft, 1/4" SQ X 1-1/4"
16	183221	Spacer, Clutch
17	146051	Bolt, 5/16-18 X 1", GR 5
18	159790	Bolt, 5/16-18 X 1-3/4", GR 5
19	145150	Washer, Flat, 5/16"
20	143130	Nut, Nylon Lock, 5/16-18
21	241701	Bolt, Carriage, 5/16-18 X 3"
22	242251	Axle, 3/4" OD
23	242261	Collar, Locking, 3/4" ID
24	242271	Wheel, Pneumatic, 5.3/4.5-6
25	242281	Spacer, Wheel, 1" OD
26	242291	Engine, Briggs and Stratton, 1650 Series, Manual Start
	249311	Engine, Briggs and Stratton, 1650 Series, Electric Start
27	134471	Battery, Gel-Filled
28	242301	Hold Down, Battery
29	242311	Cable, Battery, Negative
30	241611	Bolt, 1/4"-20 X 1", GR 5
31	143400	Nut, Nylon Lock, 1/4-20
32	143390	Washer, Flat, 1/4"

Safety & Information Labels

241851	Label, Warning, Do Not Climb
127811	Label, Warning, Add Oil
241801	Label, Danger, Read Operators Manual
242321	Label, Warning, Burn Hazard
242331	Label, Warning, Avoid Electric Shock (electric start only)
227171	Label, USA

Schematic - 16.50 PRO DR RAPID-FEED CHIPPER



Parts List – Chipper Basic

NOTE: *Part numbers listed are available through DR Power Equipment.*

Ref#	Part#	Description
01	155301	Screw, 3/8-16 X 1-3/4", FHSCS, GR 8
02	154480	Nut, Nylon Lock, 3/8-16
03	242341	Knife, Pro
04	242351	Flywheel
05	242361	Sideplate, Vent
06	242371	Sideplate Weldment, Chute
07	242381	Scroll Weldment
08	242391	Plate, Wear
09	242401	Brace, Basic
10	242411	Tube, Scroll, 1/4"
11	242421	Bearing, 2 Bolt, 1-1/4"
12	242431	Shim, Shaft, 1-1/4", .025" Thick (as needed)
13	242441	Shim, Shaft, 1-1/4", .050" Thick (as needed)
14	242451	Shim, Shaft, 1-1/4", .075" Thick (as needed)
15	242461	Shim, Shaft, 1-1/4", .125" Thick (as needed)
16	242471	Ring, Retaining, 1-1/4"
17	242481	Bolt, 1/2-13 X 1-1/2", GR 5
18	242091	Nut, Nylon Lock, 1/2-13
19	242491	Bolt, 5/16-18 X 5-1/4", GR 5
20	146051	Bolt, 5/16-18 X 1", GR 5
21	143130	Nut, Nylon Lock, 5/16-18
22	195661	Bolt, Carriage, 1/4-20 X 1"
23	143390	Washer, Flat, 1/4"
24	143400	Nut, Nylon Lock, 1/4-20
25	154490	Bolt, 3/8-16 X 1-1/4", GR 5
26	154480	Nut, Nylon Lock, 3/8-16
27	242501	Cover, Access
28	155121	Screw, Self Tapping, 10-32 X 3/8"

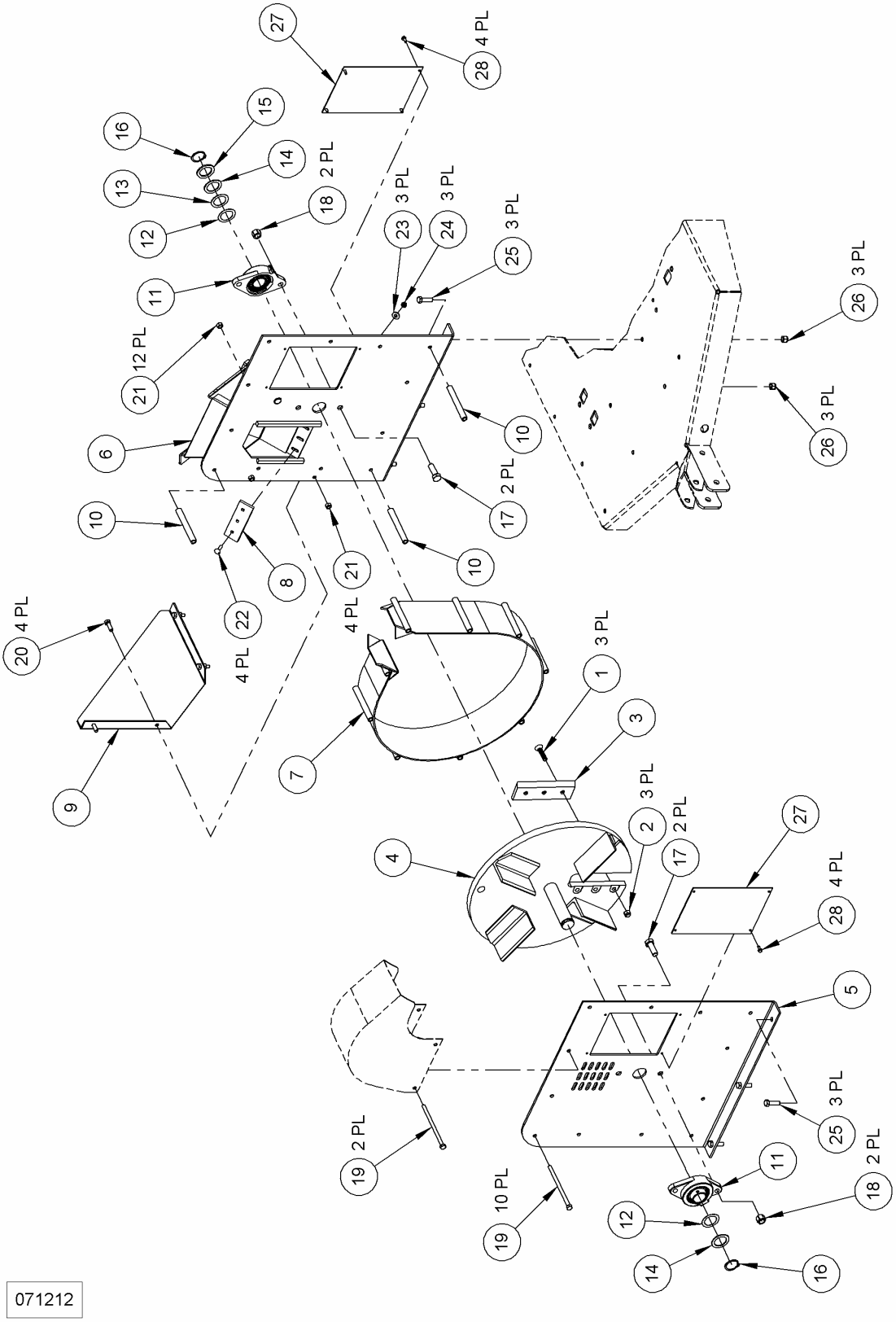
Not Illustrated

244121	Knife Kit, Pro
197091	Gauge, Knife Gap

Safety & Information Labels

241991	Label, Warning, Rotating Parts Inside
242001	Label, Warning, Rotating Knife and Flywheel
234941	Label, DR logo

Schematic - Chipper Basic



Parts List – Hopper Assembly

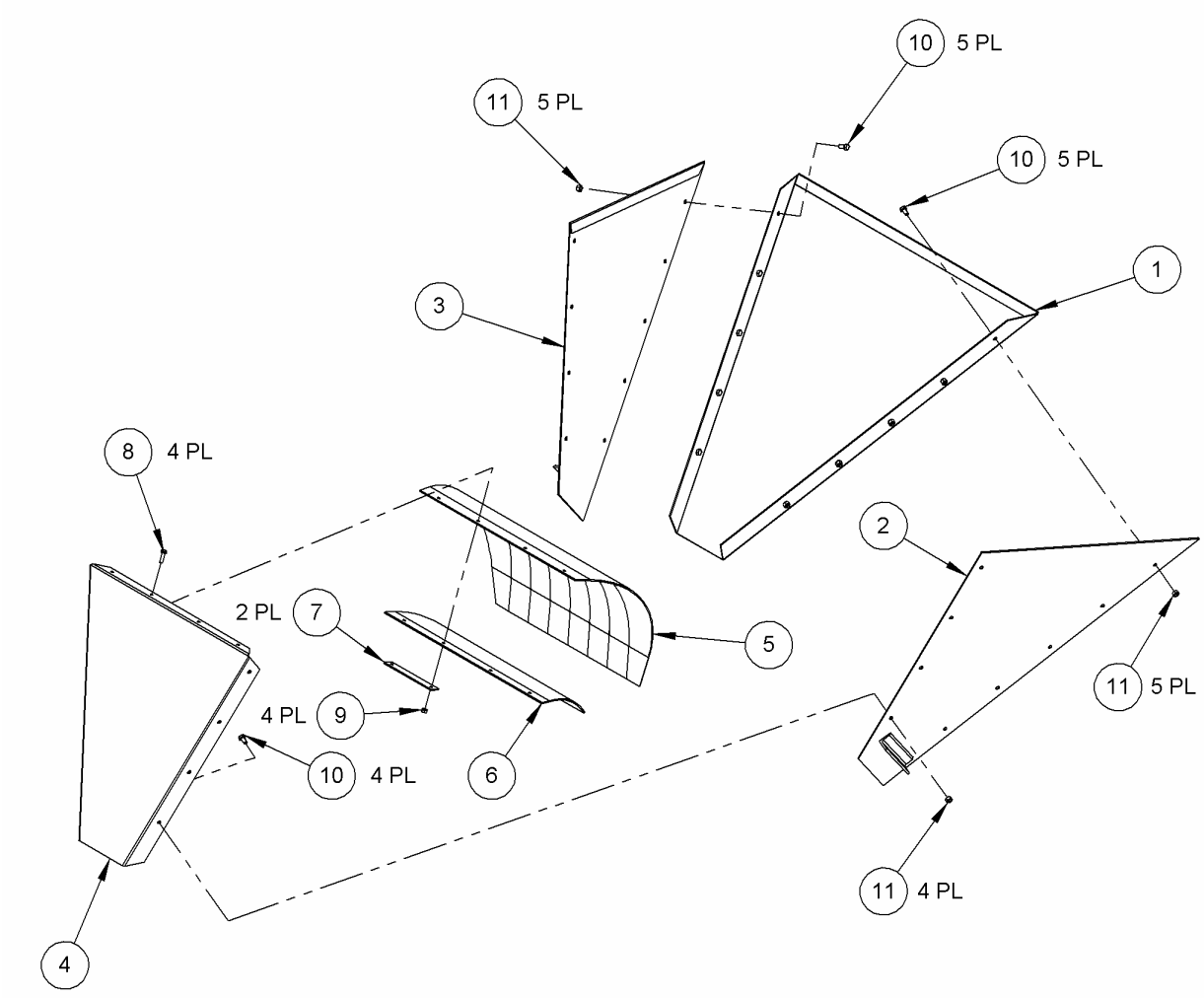
NOTE: *Part numbers listed are available through DR Power Equipment.*

Ref#	Part#	Description
01	242511	Hopper Weldment, Bottom
02	242521	Hopper Weldment, Left
03	242531	Hopper Weldment, Right
04	242541	Hopper, Top
05	242551	Shield, Blow-Back
06	242561	Support, Blow-Back
07	241581	Bracket, Guard
08	241611	Bolt, 1/4-20 X 1", GR 5
09	143400	Nut, Nylon Lock, 1/4-20
10	241621	Bolt, Philips Head, 5/16-18 X 1/2", GR 5
11	241631	Nut, Nylon Lock, Thin, 5/16-18

Safety & Information Labels

241841	Label, Danger, Avoid Death

Schematic – Hopper Assembly



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Parts List – Accessories

NOTE: *Part numbers listed are available through DR Power Equipment.*

ROAD-TOWING PACKAGE

Ref#	Part#	Description
01	242571	Tongue Weldment, Highway
02	161011	Hitch, Trailer
03	148911	Chain, Safety, Class 1
04	153890	Bolt, 1/2-13 X 3-1/2", GR 5
05	242091	Nut, Nylon Lock, 1/2-13
06	153890	Bolt, 3/8-16 X 3-1/2", GR 5
07	154480	Nut, Nylon Lock, 3/8-16
08	145160	Washer, Flat, 3/8"
09	242581	Axle Weldment, Highway
10	242591	Fender Weldment
11	242601	Wheel & Tire Assembly, w/hub
12	178141	Light, Stop, Curb Side
13	155991	Light, Stop, Road Side
14	149051	Wire Harness, 10ft
15	154490	Bolt, 3/8-16 X 1-1/4", GR 5
16	146051	Bolt, 5/16-18 X 1"
17	143130	Nut, Nylon Lock, 5/16-18

Safety & Information Labels

242611	Label, Danger, 45 mph
241851	Label, Warning, Do Not Climb

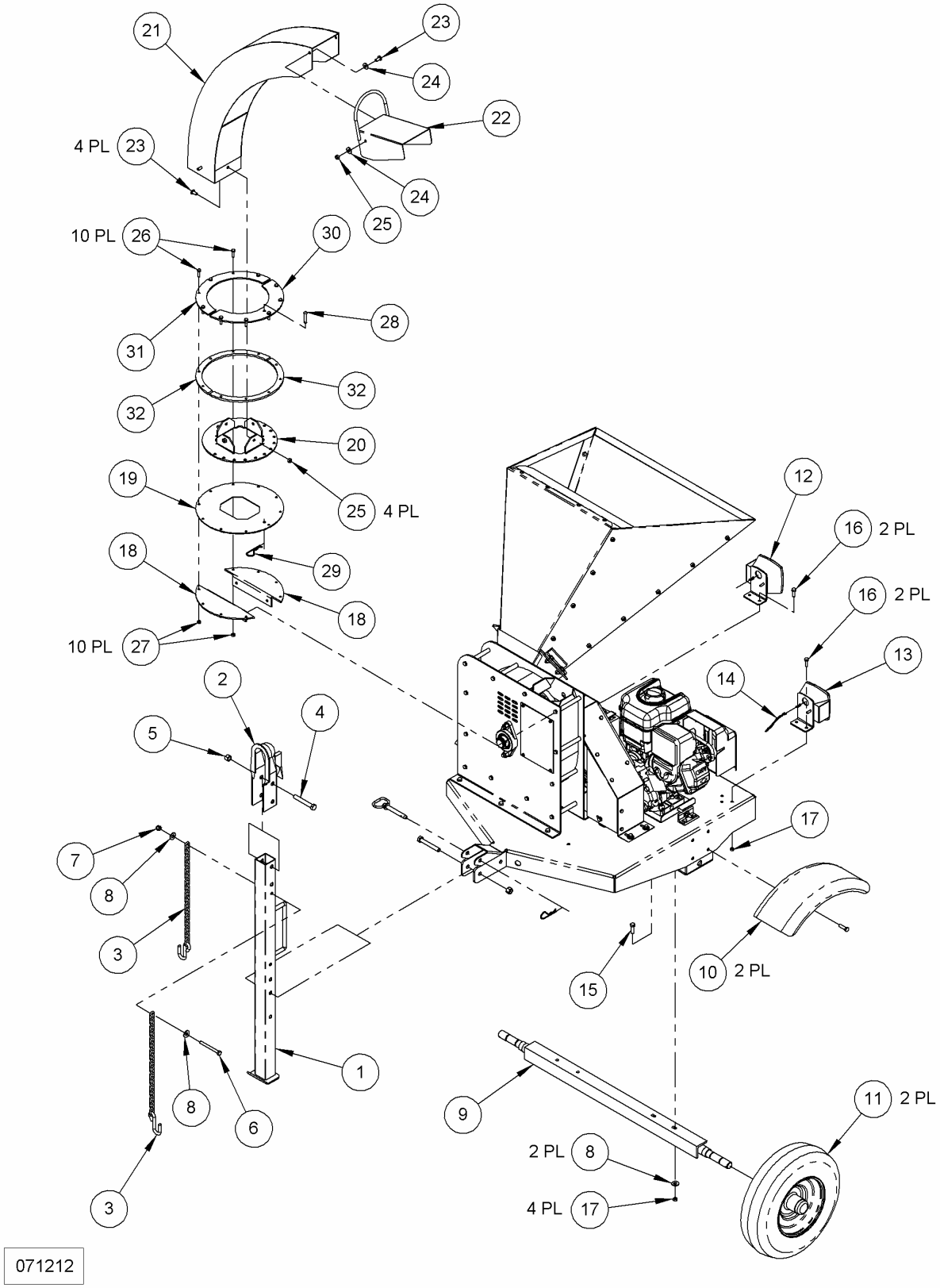
EXTENDED TOP-DISCHARGE CHUTE

Ref#	Part#	Description
18	242621	Flange, Side
19	242631	Plate, Bottom
20	242641	Swivel Weldment
21	242651	Top Discharge Weldment
22	242661	Deflector Weldment
23	146051	Bolt, Carriage, 5/16-18 X 1", GR 5
24	145150	Washer, Flat, 5/16"
25	143130	Nut, Nylon Lock, 5/16-18
26	241611	Bolt, 1/4-20 X 1", GR 5
27	143400	Nut, Nylon Lock, 1/4-20
28	242671	Pin, Locking
29	182581	Hitch Clip
30	242681	Swivel Top, Pin Side
31	242691	Swivel Top
32	242701	Spacer, Swivel

Safety & Information Labels

241831	Label, Warning, High Speed Discharge
241811	Label, Danger, Rotating Knife and Flywheel

Schematic – Accessories



Notes:

Notes:

16.50 PRO
DR® RAPID-FEED™ CHIPPER

2-Year Limited Warranty

Terms and Conditions

The 16.50 PRO **DR®** RAPID-FEED™ CHIPPER is warranted for one (2) year 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 16.50 PRO **DR®** RAPID-FEED™ CHIPPER 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 one (2) years in consumer use, ninety (90) days for any other use.

The 2-Year Limited Warranty on the 16.50 PRO **DR®** RAPID-FEED™ CHIPPER 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 Drive Belt, Battery, Knife, Wear Plate, Tires, Clutch, Air Filter and Spark Plug. 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 16.50 PRO **DR®** RAPID-FEED™ CHIPPER.

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

Customer Service Hotline

DR Power Equipment's objective is to have 100% satisfied customers. For that reason, we operate a 6-day-a-week Technical Service Department for our Owners. You can access a Representative by dialing our TOLL-FREE Hotline at **1-800-DR-OWNER (376-9637).** The sole job of our well-trained and friendly folks is to ensure that you get any help you need in a timely fashion. They are there to answer all your questions including: (1) inquiries on any of the above warranties, (2) inquiries about replacement parts, or (3) your questions regarding service, maintenance and operation.

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

Daily Checklist for the 16.50 PRO DR RAPID-FEED CHIPPER

To help maintain your 16.50 PRO DR RAPID-FEED CHIPPER for optimum performance, we recommend you follow this checklist each time you use your Chipper.

⚠ WARNING!

SHUT DOWN THE ENGINE, WAIT FOR ALL MOVING PARTS TO COME TO A COMPLETE STOP, REMOVE SPARK PLUG WIRE, DISCONNECT THE NEGATIVE BATTERY CABLE, THEN WAIT 5 MINUTES BEFORE PERFORMING ANY MAINTENANCE PROCEDURE OR INSPECTION ON THE CHIPPER.

[ ] **OIL:** With the machine on a level surface, check the Engine oil level with the Dipstick and add more if necessary (only add oil to the level indicated on the Dipstick - DO NOT OVERFILL). Use SAE 30 high detergent motor oil.

[ ] **GAS:** Fill the Fuel Tank with clean, fresh, unleaded gasoline.

[ ] **ENGINE AIR COOLING SYSTEM:** It is very important to keep the Engine clean of debris. Remove leaves and other built-up materials from the Air Intake Screen before, during, and after using the Chipper. Regularly remove debris from the Cooling Fins. A dirty Engine retains heat and can cause damage to the internal Engine parts.

[ ] **BELT:** Check the Belt for wear, proper alignment and tension.

[ ] **KNIFE and WEAR PLATE:** Check the Knife and Wear Plate for tightness, nicks and wear.

[ ] **GENERAL CONDITION:** Check the general condition of the machine, e.g.; nuts, bolts, welds, etc.

[ ] **HOPPER:** Check that there is no material left in the hopper before starting the Chipper.

[ ] **TIRES:** Check that there the proper amount of air in the Tires.

DR® Power Equipment

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