DOSKO

M2964050K

MODEL NUMBER: 2964050
SERIAL NUMBER: _____

Owner's Manual

Operation, Maintenance and Safety Instructions
Gravity Feed 4" Wood Chipper
2964050 (Model: 13-21T-13H)

Important: Read carefully before use. Keep for future reference.

Make sure you completely read and understand this manual before using the chipper for the first time. If you have any questions, contact your retail or rental dealer or DOSKO Customer Service at 1-800-822-0295 or 1-763-428-2237.

⚠ WARNING

READ and UNDERSTAND this manual completely before using the chipper! Failure to properly operate, and maintain this chipper could result in ***serious injury or death*** to the operator or bystanders. All machines have hazards associated with their operation. This chipper has certain special hazards that you must be aware of. As an operator or owner you have a duty to be aware of these hazards and know preventive measures to avoid them. In particular, be aware of the following:

- Keep hands and feet away from inlet and discharge openings.
- Do not allow children under the age of 18 or untrained adults to operate.
- Wear eye protection and other personal protection against flying debris.
- Check that the split housing is fastened shut.
- Do not attempt to perform adjustments, declog or clean unit while engine is running.
- Make sure no children or bystanders are within 100' (31 m) of chipping operation.
- Protect cars, windows and other objects within 100' (31 m) from flying debris.
- Be aware of potential for carbon monoxide (CO) poisoning.
- Prevent fires/explosions from fueling by using precautions described.
- Avoid burns from engine by not touching hot exhaust.
- Avoid using in slippery, muddy, wet or icy conditions where falls may occur.
- Only operate this machine in open space (e.g. not close to a wall or other fixed object) and on a firm, level surface.

These and other hazards in the manual are summarized at the end under "Important Safety Information."

STOP!

ASSEMBLY REQUIRED: This product requires assembly before use. See "Assembly" section for instructions.

ADD ENGINE OIL & FUEL: Engine is shipped without oil. DO NOT start chipper without first adding oil.

INSPECT COMPONENTS: Closely inspect to make sure no components are missing or damaged. See the "Receiving Your Unit" section for instructions on whom to contact to report missing or damaged parts.

Any Questions, Comments, Problems, or Parts Orders

Call your dealer or DOSKO Customer Service 1-800-822-0295 or 1-763-428-2237

Hazard Signal Word Definitions

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.
⚠DANGER	DANGER (red) indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.
⚠WARNING	WARNING (orange) indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠CAUTION	CAUTION (yellow) indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
CAUTION	CAUTION (yellow) used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage. fig01453

Table of Contents

About Your Chipper

Owner/Operator/Renter Training

Read and follow all instructions and safety precautions presented throughout this manual. A summary of important safety information can be found at the end of the manual. Keep this manual for reference and review. If the owner of this unit is different than the operator, give a copy of this manual to any operator.

Rental Companies

Check the storage tube on the base (next to the engine) of the unit to make sure the chipper and engine manuals are inside. All persons to whom you rent/loan this chipper must have access to these manuals. Advise all persons who will operate the machine to read them. You should also provide personal instruction on how to safely operate the chipper and remain available to answer any questions a renter/borrower might have. If videos are available, have renter watch training video.

Engine Instructions

For detailed engine operation and maintenance information, always refer to the specific engine Owner's Manual furnished with the chipper.

Product Suitability

Your DOSKO chipper is designed to only chip wood. A chipper knife is mounted on a revolving flywheel and converts branches fed into the chipper hopper into "chips". Make sure you completely read and understand this manual before using the chipper for the first time.

Before using, the user shall determine the suitability of this product for the job it will be used for. The user assumes liability for any non-intended or misuse of the product.

As is common with all manufacturers, DOSKO is constantly improving its products. The specifications outlined herein, while believed to be accurate at publication, are subject to change without prior notice or obligation. Do not modify or alter this chipper. The purchaser and/or user shall assume the potential liability for any modification and/or alterations of this equipment from its original design and manufacture. Any alterations shall void warranty and CE certification.

Contact your rental or retail dealer or DOSKO Customer Service at 1-800-822-0295 or 1-763-428-2237 for any questions about the appropriate use of this chipper or about optional accessories.

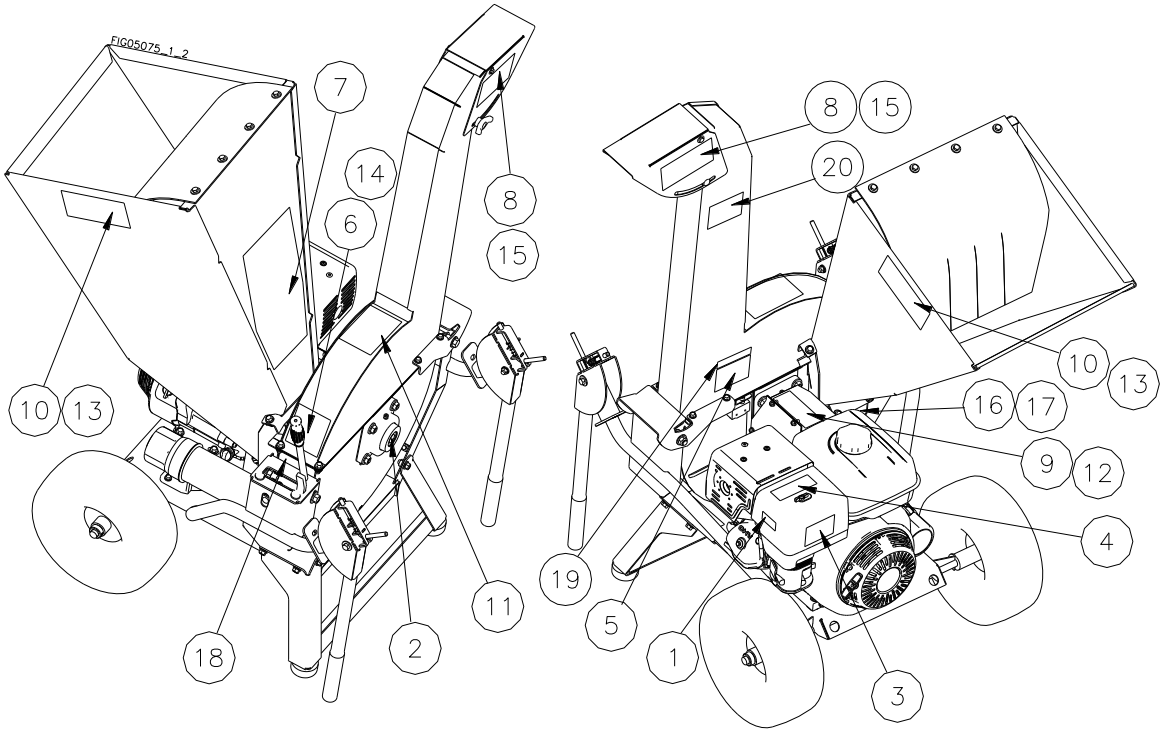
Warranty Registration

Please fill out and submit the warranty registration card so that we may contact you with updated information regarding product literature, replacement parts, or safety information.

Safety Label Locations

The following safety labels appear on your chipper. These are warnings and instructions particularly important to proper safety and functionality. Other warnings and instructions also appear throughout this manual. Reading and understanding these labels below will expedite your safe use of the product. The labels on the machine will then serve to further remind you of important safety and operation procedures.

⚠WARNING: Replace Missing Labels



Ref #	Part #	Description	Qty
1	786635	Burn hazard	1
2	786689	Spiral	1
3	39259	CO warning	1
4	777890	Fire Hazard	1
5	785254	Engine instruction	1
6	791350 Decal Set	Clutch operation	1
7		Main warning and instruction	1
8		Flying debris	2
9		Belt hazard	1
10		Feed hopper hazard	2
11		Amputation hazard	1

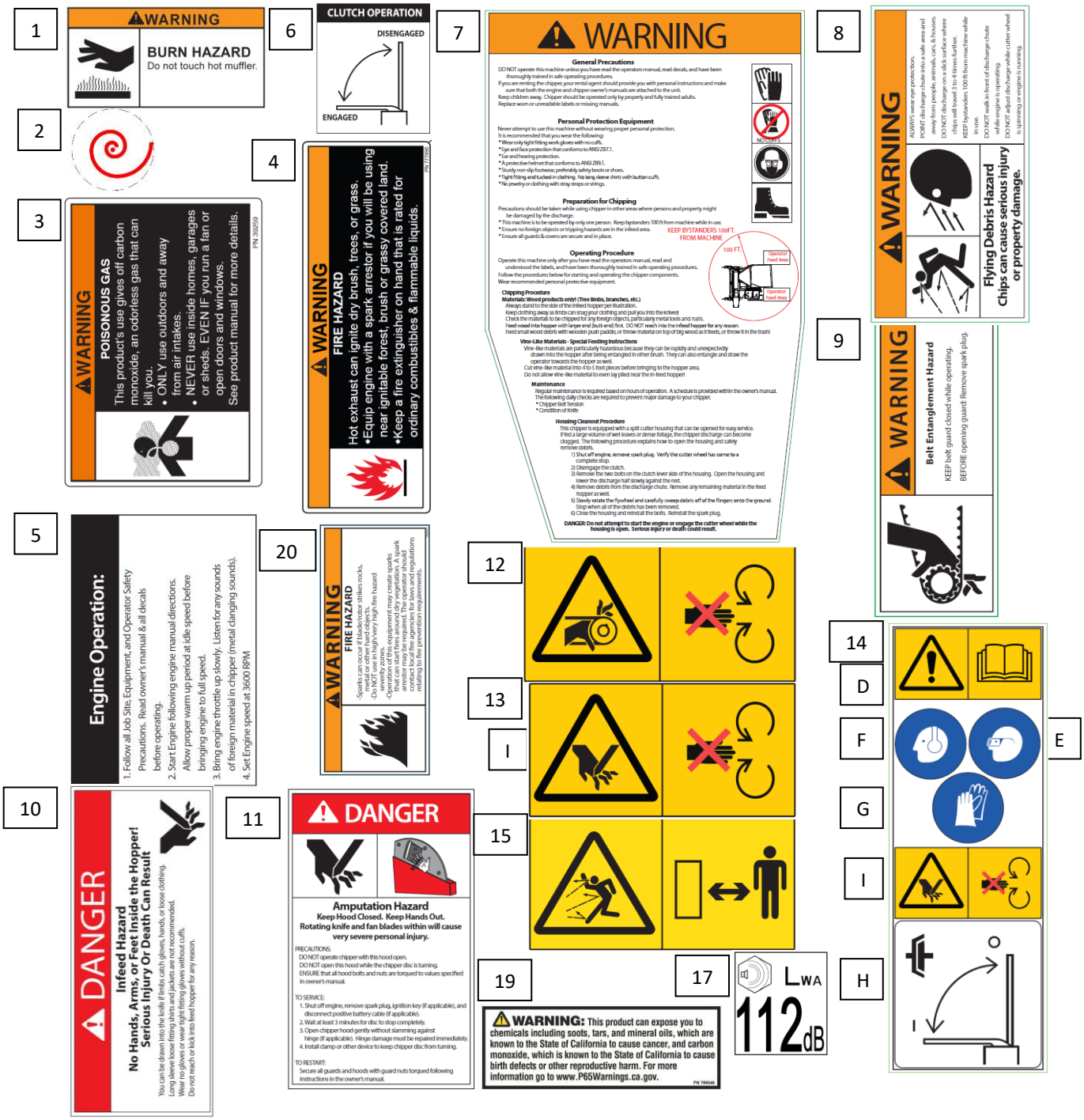
Ref #	Part #	Description	Qty
12	*791293	Belt hazard	1
13	*791294	Feed hopper hazard	2
14	*791296	Combination	1
15	*789538	Flying debris hazard	2
16	NA	Nameplate/CE mark	1
17	791544	Guaranteed sound power	1
18	-	-	-
19	799546	Proposition 65	1
20	799952	Spark-Strike Warning	1

*Note: Used on units sold into non-English speaking countries instead of the decal identified in the same location.

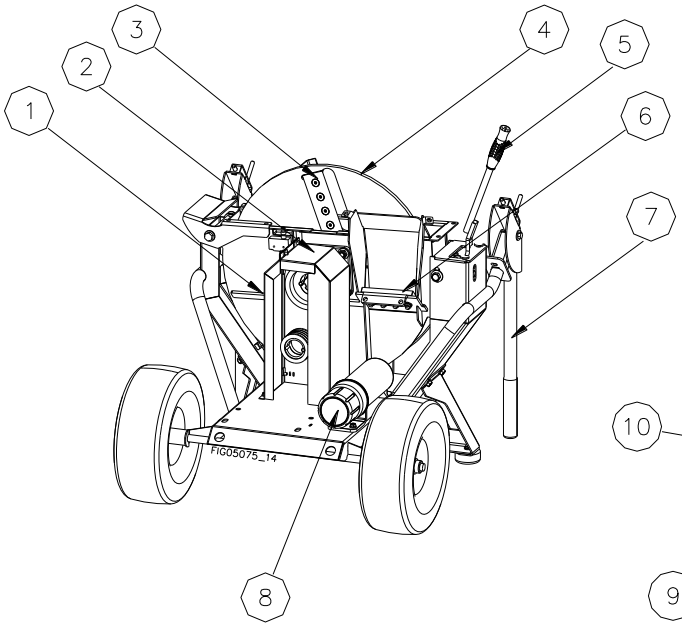
To order Replacement Safety Labels, call DOSKO Customer Service at 1-800-822-0295 or 1-763-428-2237

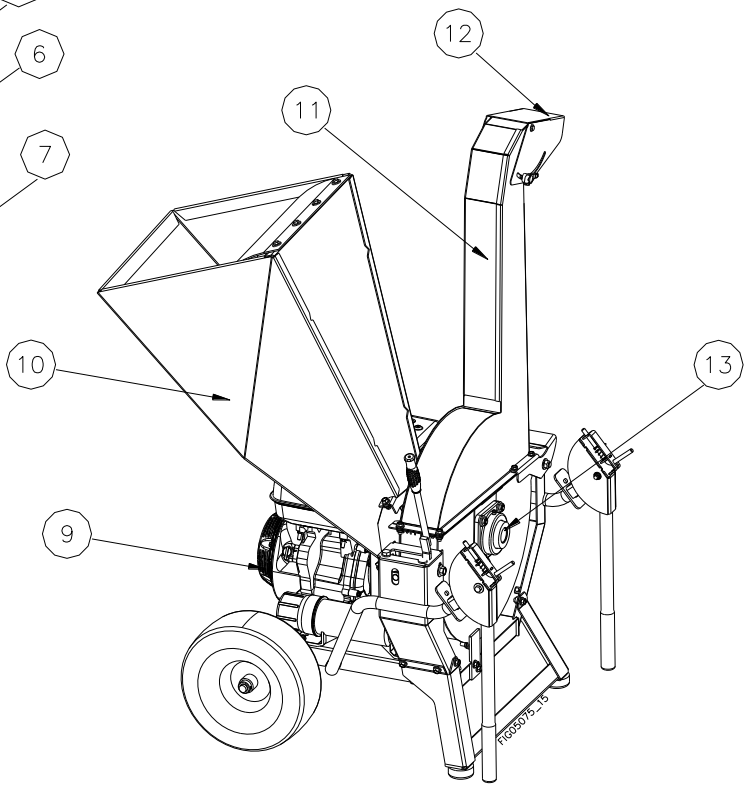
Safety Label Locations

Ref.	Description	Ref.	Description
12	Belt pinch hazard to hands. Keep hands away when machine is running.	E	Wear eye protection while operating.
I	Cutting hazard to hands. Keep hands away when machine is running.	F	Wear ear protection while operating.
15	Thrown object hazard. Keep distance.	G	Wear gloves while operating.
D	Hazards exist. Read manual before operating.	H	Clutch operating instructions. When lever is up, clutch is disengaged. When lever is down, clutch is engaged.



Machine Component Identification





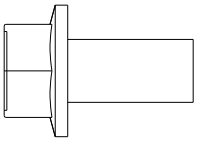
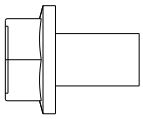
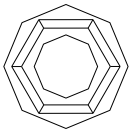
Ref	Component	Description
1	Removable Belt Guard	For access to the belts and sheaves
2	Belt Guard	To protect the user from moving drive components
3	Knife	Reversible, through-hardened tool steel
4	Flywheel	Knife and fan blades are mounted to a rotating flywheel
5	Clutch Lever	To connect or disconnect the flywheel from the engine
6	Bed Knife	Four useable sides, adjustable
7	Folding Handles	For compact storage
8	Manual Tube	Provides and on product location to store the owner's manual
9	Engine	Air cooled, gas engine operates at 3600 RPM
10	Hopper	Brush enters machine here, maximum size is 4" diameter
11	Discharge Chute	Designed to broadcast chips to the desired location or container, up to 52" high
12	Discharge Deflector	Used to aim the chips
13	Main Shaft Bearing	Bearings for the rotating flywheel

Receiving & Transporting

Initial Inspection

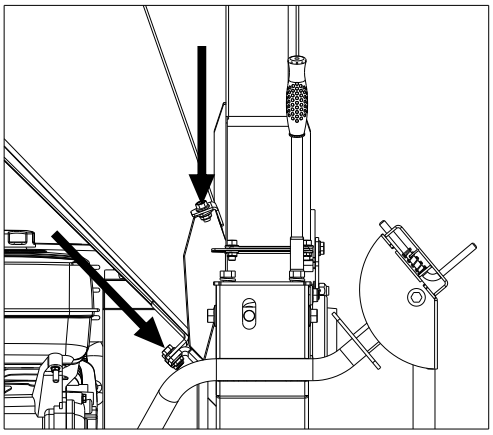
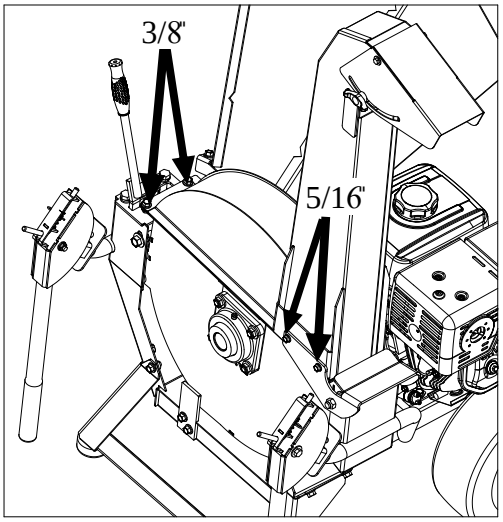
You should inspect the chipper immediately after taking possession and before use.
See the "Machine Component Identification" section of this manual for a diagram of the chipper and all its components.

If you have missing components, contact your retail or rental company or DOSKO Customer Service at 1-800-822-0295 or 1-763-428-2237.

Fastener Bag Contents	Fig05127-2  Bolt, 3/8-16 x ¾ HHSF Part # 82022 Qty 6  Bolt, 5/16-18 x ½ HHSF Part # 82014 Qty 4  Nut, 3/8-16 HHSF Part # 82026 Qty 6

Receiving & Transporting

Assembly Instructions

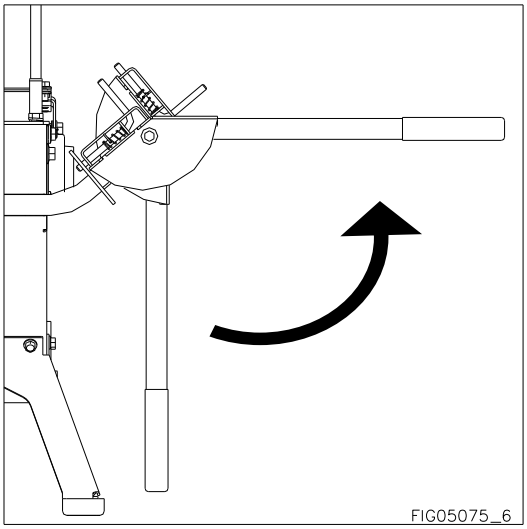
1. Remove Box From Pallet	1. Open the box and remove lag screw holding discharge chute to packaging corner column. 2. Remove the discharge chute from the package. 3. Remove staples from the bottom outside of the box. 4. Pick up box and remove from pallet.	
2. Attach Hopper to Chipper	1. Cut zip ties that hold the hopper to pallet. 2. Pick up hopper and place on housing. 3. Fasten housing in place using (4) 3/8” x 3/4” serrated flange bolts and (4) 3/8” serrated flange nuts. 4. Torque to 34 ft-lbs (46 Nm).	
3. Attach Discharge to Chipper	1. Ensure hinge on chipper is in up position. 2. Place discharge chute on chipper. 3. Flip hinge down. Line up holes in hinge with weld nuts on discharge chute. Install (4) 5/16” x ½” serrated flange bolts. 4. Torque to 19 ft-lbs (25 Nm). 5. Open housing. Remove knife edge guard. 6. Close housing. Secure with (2) 3/8” x 3/4” serrated flange bolts and (2) 3/8” x 3/4” serrated flange nuts. 7. Torque to 34 ft-lbs (46 Nm).	
4. Remove Chipper from Pallet	1. Bring handles up until they latch. Carefully maneuver chipper off of the pallet.	

Receiving & Transporting

Moving Instructions

⚠ WARNING
The chipper is heavy. It can crush and cause serious injury if it rolls out of control or tips over. Follow the instructions below for safely moving the chipper.

Moving the chipper:

1. Engine off	**IMPORTANT: Ensure chipper engine is off.** Never move the chipper with its engine running
2. Fuel valve off	**Turn fuel valve off** to prevent carburetor flooding and reduce the chance of fuel leakage.
3. Swing handles up	**Ensure handles are latched in the "UP" position before you move the chipper anywhere.** 
4. Move chipper to work site, storage site, or load on trailer	**Move chipper by hand similar to a wheel barrow.** (See "Before Each Use" section on selecting a work site) <u>Important Safety Instructions:</u> • **No riding**. Never allow anyone to sit or ride on the chipper. • **No cargo**. Never transport cargo on the chipper.

Operation

1. Pre-start Check List & Procedures

⚠ WARNING: High Energy Machine

This is a high-powered machine. It has moving parts operating with high energy and at high speeds. Safe procedures must be used to avert serious injury or death. Unsafe operation will create serious hazards for you, as well as anyone else in the nearby area.

⚠ CAUTION: Add Oil to New Engine

A new engine is shipped without oil. **Add engine crankcase oil to a new engine.** You must add the correct amount of oil to engine crankcase or engine will be damaged beyond repair.

Each time you get ready for a chipping session and before starting the engine you should follow these items:

- Check/Add Engine Oil
- Fill engine Gasoline Tank
- Inspect Fuel System for Leaks
- Wear Personal Protection
- Establish Safe Working Area
- Remove Hazardous Chipping Materials
- Only Work During Daylight

Each of these procedures is discussed below.

Check/add oil	Check the oil level using the dipstick and add oil as needed daily. Using a funnel, add oil up to the FULL mark as measured on a fully inserted dipstick. (See engine Owner's Manual for oil type and capacity, and more detailed oil check/fill instructions.) **⚠ WARNING: Burn hazard** **Never open oil fill port while engine is running. Hot oil can spray over face and body.**
Fill chipper fuel tank(s)	Check the fuel level in the chipper's fuel tank. If needed, fill tank with fresh fuel from a portable container, after first reading the following warnings and instructions. Do NOT fill the fuel tank to the top. Fuel may spill when operating on a slope. Do NOT overfill the fuel tank. Allow at least 1" of empty space below the fill neck to allow for fuel expansion.

Operation cont'd

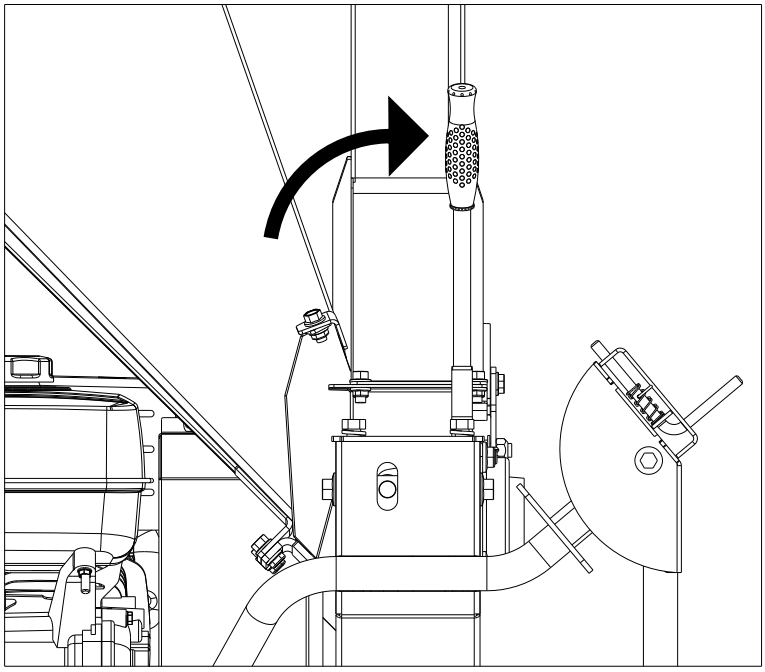
	⚠ WARNING: Gasoline fire/explosion hazard Gasoline is highly flammable and explosive. Heat, sparks, and flames can ignite gasoline vapors, which can become widespread during fueling. A flash fire ignition and/or explosion could result and cause serious injury or death. The following conditions could result in gasoline ignition/explosion: • gasoline vapor collection inside enclosures • static electric sparks • sparks from electric wiring, batteries, or running engines • sources of heat (such as a hot engine or exhaust) • open flames, including pilot lights
Inspect Fuel System for Leaks	Inspect fuel system & check for leaks BEFORE starting chipper. **⚠ WARNING: Fuel leak hazard** A leaking fuel line no matter how small can be the source of a fire or explosion when starting or operating the engine. Look for: Signs of leaks or deterioration, a chafed or spongy fuel hose, loose connections, loose or missing fuel hose clamps, a damaged gasoline tank, or a defective gasoline shut-off valve. If chipper is in an enclosed area and you smell gas, DO NOT start engine! DO NOT light a match. DO NOT flip on an electrical switch. Exit area immediately leaving doors open and call fire department for assistance.
Wear Personal Protection	Use approved protective clothing and approved protective equipment when using the machine. • Wear ANSI-approved and OSHA-compliant safety glasses or EN166 1F safety glasses with side shields and a hard hat. • Use of earplugs or another hearing protection device if working within 20 ft (6 m) of the running chipper for longer than a few minutes. Hearing can be damaged from prolonged close-range exposure to the type of noise produced by this chipper. • Wear long pants to protect legs from flying debris and hot engine. • Wear gloves with no cuffs. • Never wear jewelry or loose-fitting clothing when starting or operating the chipper or any mechanical device. Loose or dangling apparel, jewelry or hair can become entangled in moving parts.

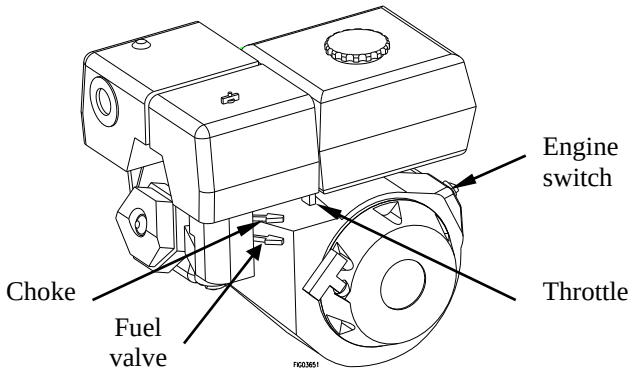
Operation cont'd

Establish Safe Working Area	Layout a safe working area that best fits your project and/or situation by: • Using safety tools such as barricade signs, safety cones and caution tape. • Determining placement of equipment and brush pile (i.e. on or off the street) that will minimize interference with auto traffic. • Keeping children, pets and onlookers at a safe distance. • Only operate this machine in open space (e.g. not close to a wall or other fixed object) and on a firm, level surface. Do not tilt the machine while the engine is running.
Remove Hazardous Chipping Materials	Thoroughly inspect the area where 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 could damage the machine and/or cause injury)
Work During Daylight Hours	Use the machine only in daylight or in well-lit conditions. Never operate the chipper after dark.

2. Starting the Chipper

For detailed engine operation and maintenance information, always refer to the specific engine's Owner's Manual furnished with the chipper and stored on the chipper in the storage tube.

Starting	• Before starting the machine, look into the feed hopper to make certain that it is empty. • Disengage the clutch by pulling the clutch lever up. 

	• Turn fuel valve to the on position. • Move the choke control out to the CHOKE position. Leave in the RUN position if the engine is already warm. • Push the throttle all the way to the right (slowest setting). • Rotate the engine switch to ON position, then grasp the recoil and pull until the engine starts, then release. • As the engine warms up, slowly adjust the choke towards the RUN position. • Wait until the engine runs smoothly before each choke adjustment. 
Warm-Up Checks	• Bring the engine throttle up to half throttle. • Slowly engage clutch by pushing the clutch lever down. Belt may squeal. Adjust the rate you engage the clutch to minimize belt squeal. This will prolong belt and sheave life. • Listen for any unusual metal to metal sounds as chipper wheel is rotating. • After clutch is engaged, increase engine throttle to the FAST or RUN position. • Listen for any belt squealing indicating belt needs to be tightened or replaced. • (Unusual sounds may mean a need for repair or cleaning out foreign material stuck in chipper. STOP engine and refer to "Maintenance and Repairs" section of this manual)
Normal Operation	Operate the engine with the throttle in the FAST or RUN position and with the choke pushed fully to the RUN position. Proper chipping requires this fast revolution.

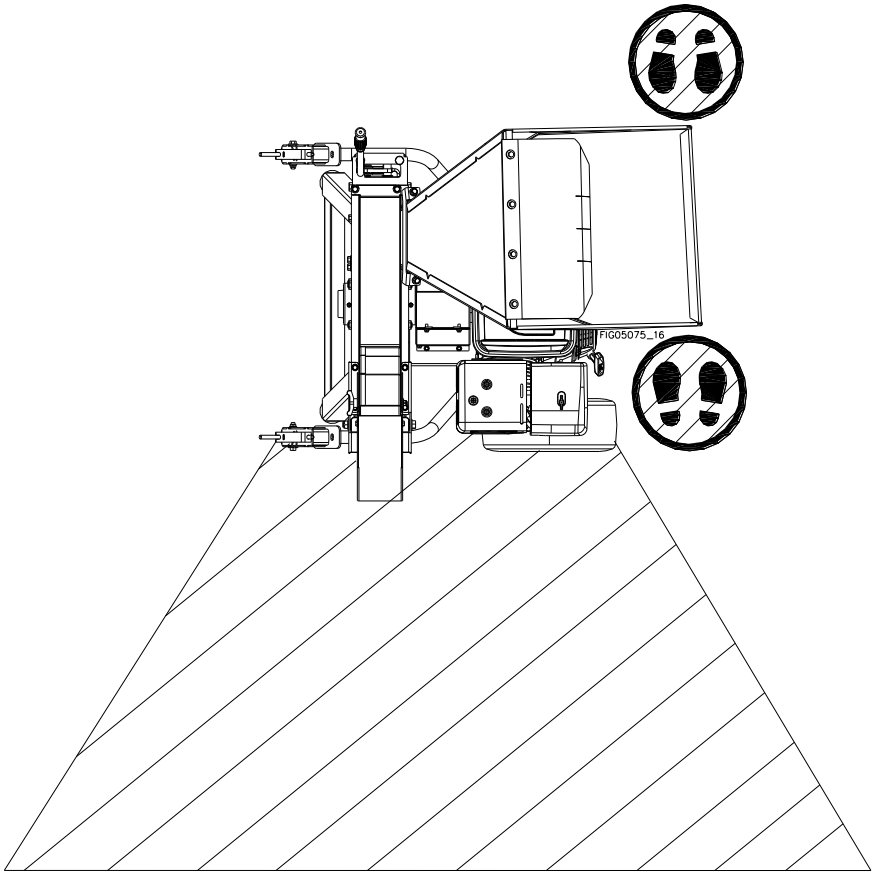
3. Stopping the Engine

- Move throttle slowly to decrease engine speed until RPM is at its minimum.
- Rotate engine switch to the OFF position.
- Chipper knife will continue to rotate for a short time. It is recommended that the clutch remain engaged to reduce this time.
- Turn off fuel valve
- Allow the engine to cool for at least 5 minutes before moving to storage or transporting. A hot engine can be a fire hazard.

4. Feeding Material/ Clearing Jam

Safe Operating Positions

Flying debris hazard



Feeding Material

⚠ DANGER: Amputation Hazard

Never place your hands, feet or any part of your body in the chipper hopper, discharge opening, or near any moving part while the machine is running. If a feeding problem should occur, shut the machine down and see "Maintenance and Repair" section to address the problem.

⚠ WARNING: Feed brush from the side of the chute

Never stand directly in front of hopper opening. This will reduce the risk of you being caught and dragged into the machine. Keep proper balance and footing at all times. Do not overreach. Never stand at a higher level than the base of the machine when feeding material into it.

⚠ WARNING: Flying Debris Hazard

Stones, chips, and debris can cause serious injury or property damage. Always stand clear of the discharge zone. Debris can fly 100 ft (31 m) in any direction out of the discharge chute and bounce off objects and hit the operator, bystanders or breakable objects. Keep your face and body away from the hopper opening as well in case of kickback.

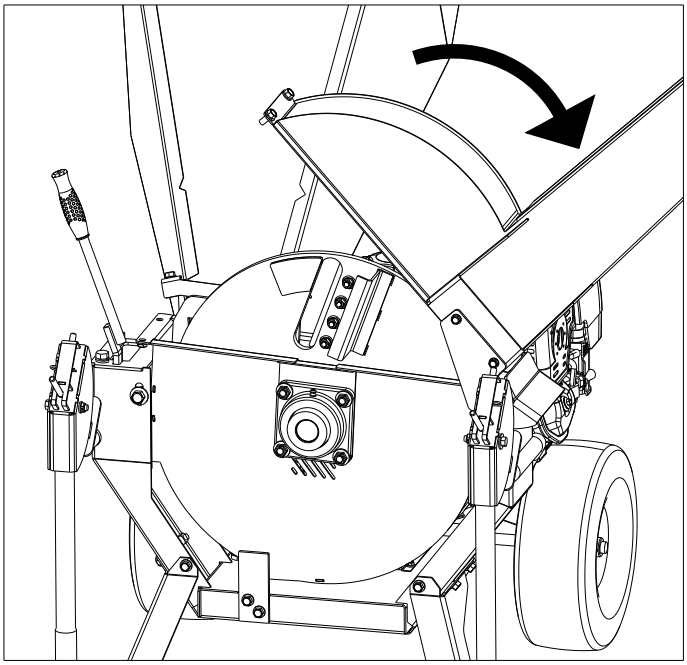
- The chipper is designed to accept wood only.
- Feed branches in butt end first to keep the chipper from getting jammed and to reduce the kickback of material.
- Let go of the material as soon as the knives engage the material.
- Use a push stick to help feed small pieces and brush through the chipper to keep you at a distance from the machine's moving parts. Do not push material into the chute with your hands or feet, pitch fork, etc. Lay shorter pieces on top of longer branches and feed them through the machine.
- When feeding material into the machine be extremely careful that pieces of metal, rocks, bottles, cans, or other foreign objects are not included with the wood. If the cutting mechanism strikes any foreign objects or if the machine should start making any unusual noise or vibration, shut off the engine and allow the machine to stop. Disconnect the spark plug wire from the spark plug and take the following steps: Inspect for damage; Check for and tighten any loose parts; have any damaged parts replaced or repaired with parts having equivalent specifications.
- Do not force material into the chipper. If the machine does not chip well, the chipper knife may need to be sharpened or replaced, or the belts may need to be replaced or tightened.
- Overloading the chipper hopper will cause the rotor speed to decrease. If you hear the engine RPM decreasing, stop feeding material into the hopper until the material already in the machine is chipped and the engine has returned to full speed.
- If the machine stops discharging while still feeding material, shut it off immediately. Perform the clearing jam or clog procedure from the following section.
- Shut off the engine and disconnect the spark plug lead whenever you leave the work area.

Operation cont'd

Clearing Jam

⚠ WARNING: Shut Off Engine to Clear Jam

Before attempting to unclog debris or clear a jam: shut off the engine, disconnect spark plug wire, and wait for all moving parts to come to a complete stop. Keep the engine clear of debris and other accumulations to prevent damage to the engine or possible fire. Remember that operating the starting mechanism on the engine will still cause the cutting means to move.



1. Remove fasteners on the clutch lever side of the housing.
2. Slowly swing discharge chute down, opening the housing. Do not drop. If hinge becomes bent, replace it before chipping again.
3. Wearing gloves and using a piece of wood, push/pull clogged material up and out of the flywheel housing.
4. Close housing and reinstall fasteners before operating.

Operation cont'd

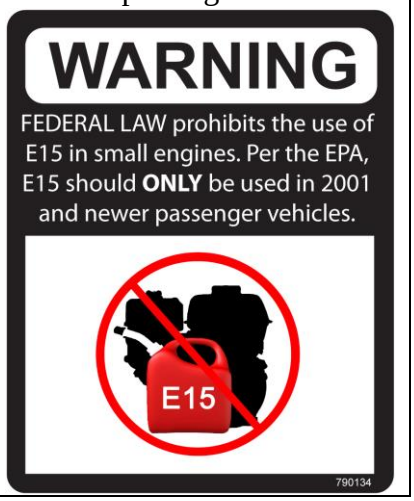
5. Refueling On Site

⚠ WARNING: Static Electric Spark Hazard

A static electric spark can explosively ignite gasoline vapor, resulting in a flash fire that could cause serious injury or death. See attached description of Static Electric Spark Hazards.

⚠ WARNING: Hot Engines Can Ignite Fuel

- Turn engine off and allow to cool for at least five minutes before removing fuel cap.
- Remove engine fuel cap.
- Add gasoline through the fill opening:
  Use only an UL-approved portable gasoline container to transfer gasoline.
  Follow the safety warning and instructions below for avoiding static electric sparking.
- Clean up gasoline spills /splashes immediately.
  If possible, move the chipper away from spilled gasoline on the ground.
  Wipe up spilled gasoline. Wait 5 minutes for gasoline to evaporate before starting engine.
  Gasoline soaked rags are flammable and should be disposed of properly.
  If gasoline is spilled on your skin or clothes, change clothes and wash skin immediately.
- Replace gasoline cap securely before starting engine.
- Store extra gasoline in a cool, dry place in an UL-approved, tightly sealed container.



6. Refueling at Service Stations

To avoid static electric sparking while filling the gasoline tank at service stations:

- Never fill the chipper's gas tank directly from the fuel pump without grounding it. The chipper's tank is not grounded and high velocity flow from the pump can cause static electricity build-up and eventual ignition of gas vapors. Unless the chipper's gas tank has been grounded, use an approved portable container to transfer gas to the chipper's tank.
- Never fill a portable gas container while it is sitting inside a vehicle, trailer, trunk, or pick-up truck bed. ALWAYS place container on the ground to be filled.
- Keep gasoline nozzle in contact with container while filling. Do not use a nozzle lock-open device.
- Use a portable container made of metal or conductive plastic. This is preferred because it dissipates electrical charges to ground more readily.

7. Storing the Chipper

Short Term

- **Cool engine before storage.**
- **Clean the chipper.**
- **Inspect for worn or damaged parts.**
- **Choose a covered storage location.**
- **Prevent accidental starting.**

Additional Long Term Procedures

- **Perform pre-storage maintenance (see below)**
- **Plan on exercising the engine regularly unless the chipper is prepared for long-term storage.**

Short Term Storage Procedures

Cool engine	**Let engine cool for at least five minutes before storing. A hot engine can be a fire hazard.**
Clean chipper	Clean any dirt, debris and other foreign matter from the machine.
Inspect chipper	Inspect the machine for worn or damaged parts and tighten any nuts or screws that may have become loose.
Choose a storage location	Store the chipper in a location that is: • Clean and dry. • Away from sources of heat, open flames, sparks, or pilot lights, even if the chipper's gas tank is empty. Residual gasoline could ignite. • Away from extreme high or low temperatures. • Cover for extra protection
Remove spark plug wire (Long-Term Storage)	Remove spark plug wire in order to ensure the chipper cannot be started in a storage location or by untrained persons or children.

Additional Long Term Storage Procedures

If you have been using your chipper regularly, this is a good time to perform your regular maintenance before storing your unit.

Perform pre-storage maintenance	• Change the oil. • Change the fuel filter. • Clean or replace the air filter. (see engine manual) • Lubricate all grease fittings (see "Maintenance & Repair: Lubrication"). • Check drive belt for wear and chipper knife, and bed knife for nicks and wear (see "Maintenance & Repair").

Operation cont'd

Start chipper every 4 weeks	The chipper should be started regularly. At least every four weeks, start the engine and let it run for 10 to 15 minutes. Monthly exercising of the chipper will dry out any moisture that has accumulated, lubricate cylinders, and clean out old gas in the carburetor. Moisture, old gas, and dry mechanical parts cause deterioration and hard starting of stored engines. 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 potential leakage.
Prepare engine for long term (seasonal) storage if needed	If you will not be able to start the chipper regularly, you must prepare the engine for long term storage to prevent gum deposits from forming and causing malfunction of the engine. Prepare engine for long term storage by: Removing all gasoline from the tank and carburetor OR Adding fuel stabilizer to the gasoline (following manufacturer's instructions) Fuel stabilizer steps: • Ensure gas tank is full. • Add fuel stabilizer to fuel tank. • Run engine at least 10 minutes after adding stabilizer to allow it to enter the fuel system. • Shut off engine • Disconnect spark plug wires and remove spark plugs. • Add one teaspoon oil through spark plug holes. • Place rag over spark plug holes and turn starter a few times to lubricate the combustion chamber. • Replace spark plug, but do not reconnect the spark plug wire.

⚠ WARNING: Gasoline fire/explosion hazard

Gasoline is highly flammable and explosive. Drain the fuel into an approved container OUTDOORS and far away from open flame. NEVER store an engine with fuel in the tank indoors or in poorly ventilated spaces where fuel vapor can come in contact with:

- static electric sparks
- sparks from electric wiring, batteries, or running engines
- sources of heat (such as a hot engine or exhaust)
- open flames, including pilot light

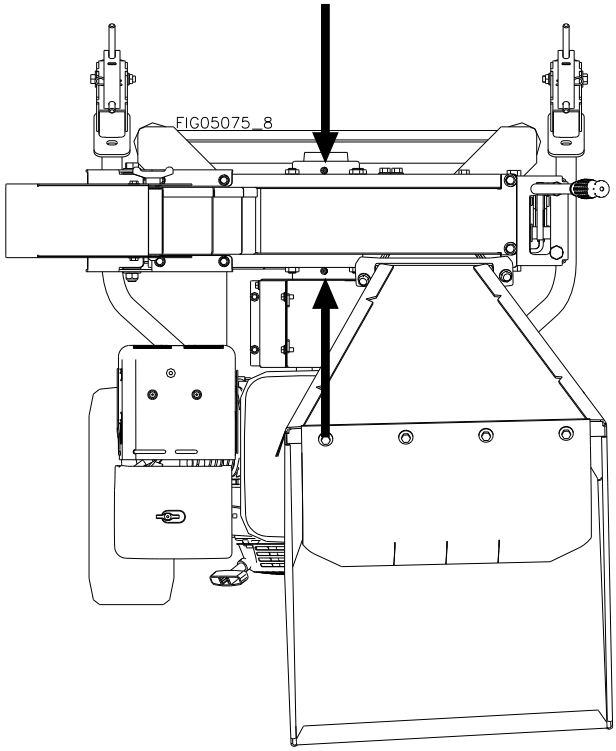
Maintenance and Repair

⚠ WARNING

ALWAYS shut off the engine, make sure the engine is cool, and disconnect the spark plug before cleaning, adjusting, or servicing the chipper. Make sure all guards and shields are replaced before using.

Maintenance safety rules	Read and follow these safety rules whenever you will be servicing the chipper: • **Turn off chipper.** Always turn off chipper and remove spark plug before working on the engine or chipper. • **Replace guards/shields.** Make sure all guards and shields are replaced after servicing the chipper. • **Burns.** Muffler may be hot even if unit is stopped. Allow unit to cool before servicing. • **Repair.** Major service, including the installation or replacement of parts, should be performed only by a qualified service technician. Obtain factory approved parts from DOSKO at 1-800-822-0295 or 1-763-428-2237. • **Replacement parts.** If a part needs replacement, only use factory approved repair parts. Replacement parts that do not meet specifications may result in a safety hazard or poor operation of the chipper and will void the warranty as well as the CE certification. • **After servicing.** Make sure all tools and wrenches have been removed. Start engine, engage clutch, and run chipper at low RPM. Listen for any metal against metal noise or squealing noises from belts. If you should hear any foreign noise stop engine and solve problems. Re-start and slowly bring engine to full RPM and run for 10 minutes to assure that repair was successful.
Engine maintenance	Perform engine maintenance as specified in the engine owner's manual. Engine maintenance items include: • Lubrication • Oil and oil filter changing • Air filter check/replacement • Spark plug cleaning and replacement • Fuel filter check/replacement • Fuel tank cleaning.
Fuel system leak checks	Inspect the fuel system and check for leaks on a regular basis. Look for: signs of leaks or deterioration, chafed or spongy fuel hose, loose connections, loose or missing fuel hose clamps, damaged gasoline tank

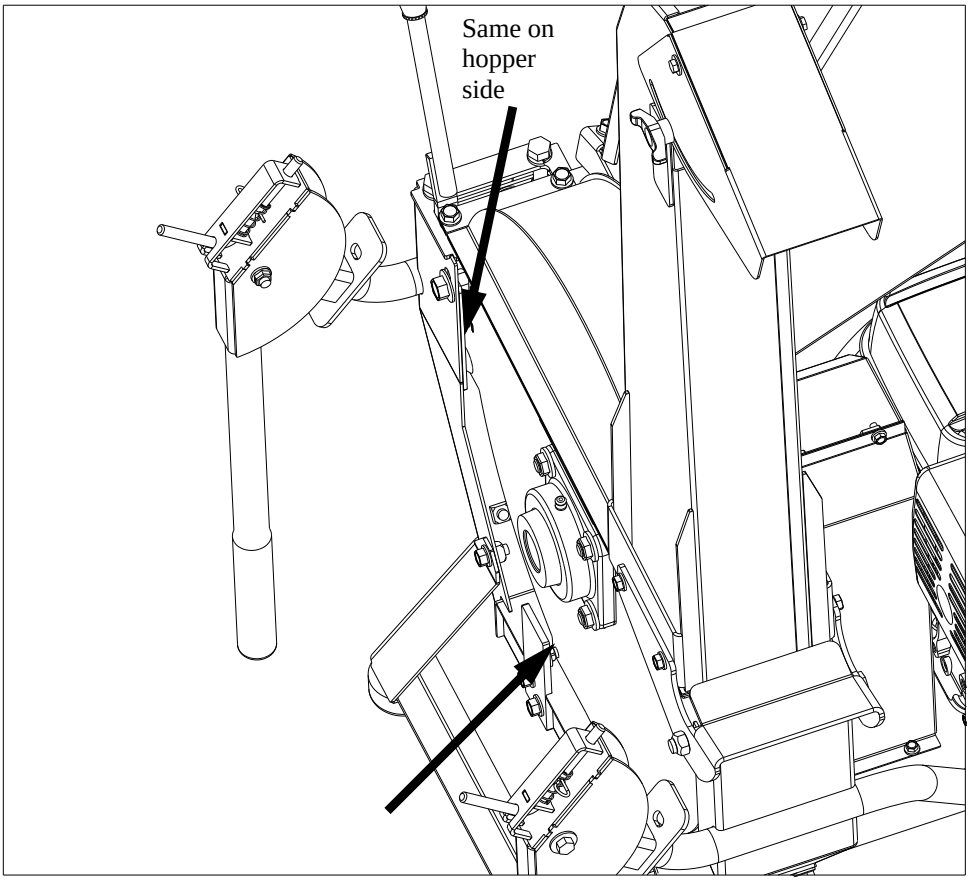
Maintenance and Repair (cont'd)

Checking and adjusting belt tension	Drive Belts: Check and adjust according to **pg. 28.**
Lubrication	Your chipper was greased at the factory. The operator needs to lubricate the chipper main bearings periodically. Bearings should be greased weekly or every 10 hours of use. There are two chipper main bearings (in the front and rear). Note: Do not over grease. Too much grease will damage bearing seals. Use EP-2 lithium base grease for bearings. 

Maintenance and Repair (cont'd)

Lubrication (continued)

If the clutch lever does not move freely from engaged to disengaged, the clutch mechanism may require lubrication. A spray lubricant, oil, or grease will serve well to ensure the clutch mechanism continues to work smoothly. Apply the lubricant to the following locations:



Maintenance and Repair (cont'd)

1. Chipping Knife

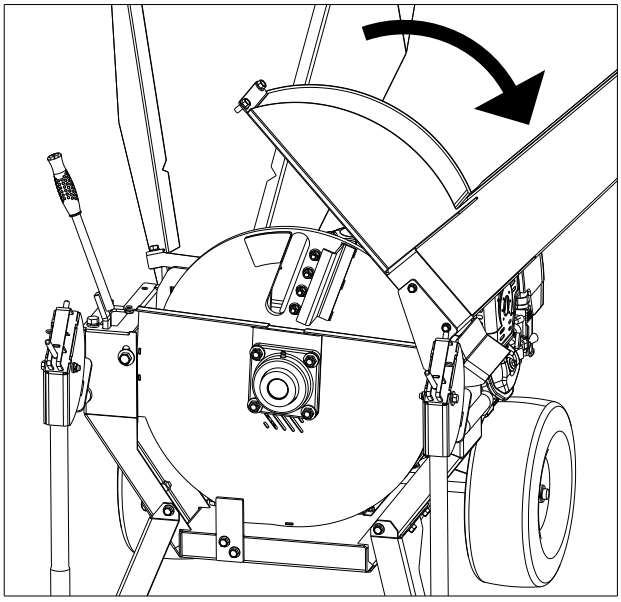
There is a blade (or knife) called the chipper wheel blade. These are mounted on the large spinning wheel which drives the blade (knife) past the incoming material at a high rate of speed and causes the "chipping" action. Routine inspection of the chipper blade for sharpness will ensure the chipper is operating at full efficiency. Operating with a worn or damaged knife or blade will cause extreme stress and vibration to the machine and make chipping difficult for the operator.

While the chipper knife is made from the highest grade of chipper steel, which is heat treated and ground to a very sharp edge, their life is relative to what they chip. They may dull the first day or last for months. The life span depends on the amount of dirt and rocks that enter the chipper. Sometimes trees will have nails or wire embedded into the surface.
The knife should be checked for damage before each use. They should be turned or changed as necessary. A dull knife:

- Causes excessive fuel consumption.
- Causes unnecessary stress and strain on the machine.
- Produces poor quality chips.
- Reduces production rate slowing the feed rate.
- Actually wears further and faster.

To check, turn or change the chipper wheel knife you will have to open the housing.

Opening Housing

Open Housing	• Remove (2) 3/8" serrated flange nuts and (2) 3/8" x 3/4" serrated flange bolts located on the clutch lever side of the housing. • Swing discharge chute down slowly against the rest. If discharge chute is slammed against this rest it may bend the hinge. Note: The hinge must be replaced if it is damaged because the housing will not close properly if it is bent. 

Maintenance and Repair (cont'd)

Changing or Turning the Chipper Knife

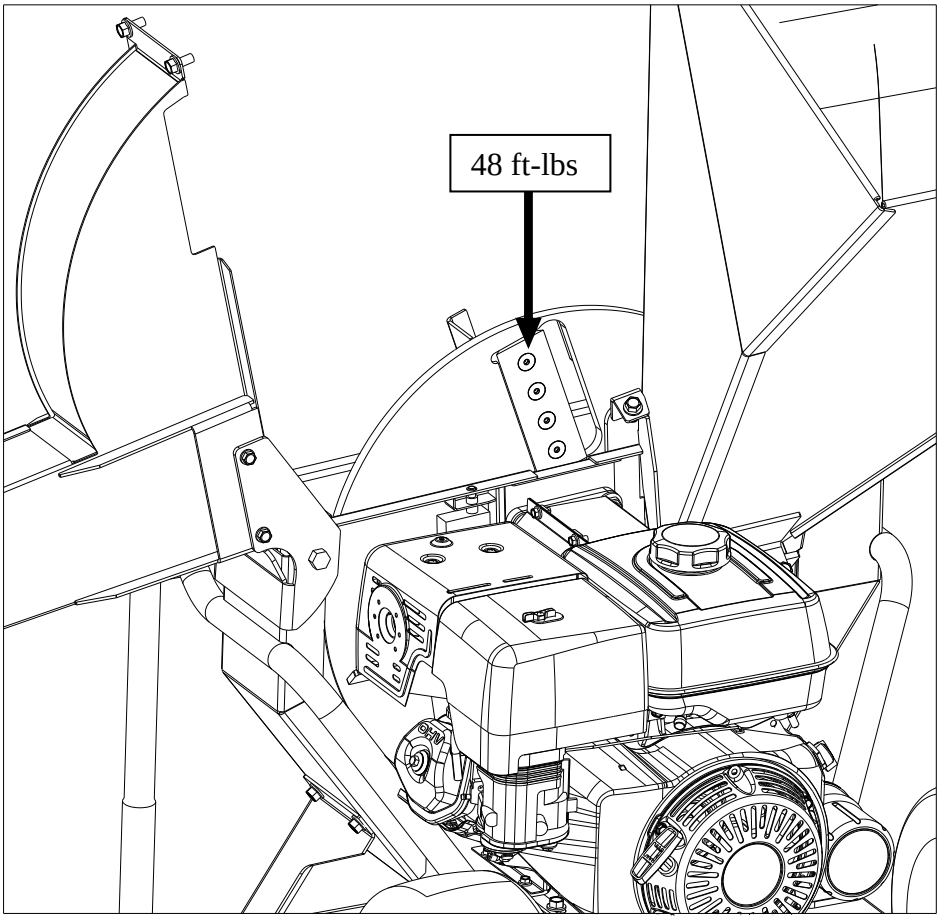
Changing the Knife

To turn or change the knife:

⚠ CAUTION:

Wear gloves while changing the knife.

- Remove knife. Hold bolt heads stationary with 7/32" hex wrench and loosen nuts with an open end wrench.
- Clean knife and knife mounts on flywheel.
- Turn the knife; or if it has nicks or damage, replace the knife.
- Install all (4) knife bolts before tightening. Hold bolt heads stationary with 7/32" hex wrench and tighten nuts to 48 ft-lbs (65 Nm).



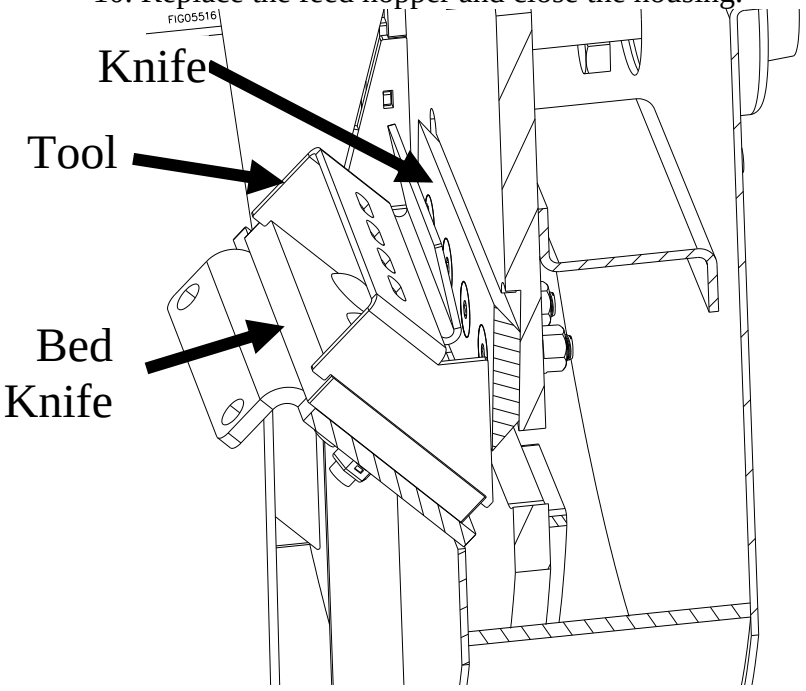
Maintenance and Repair (cont'd)

Adjust Bed Knife

After changing or turning knives, the bed knife will need to be re-adjusted. If the gap is not set correctly, you will have excessive vibration when chipping and the knife will seem to be dull. It also could reduce knife life or cause the chipper to clog more easily. The bed knife needs to be set at a distance of 0.10" from the knife.

To adjust the bed knife:

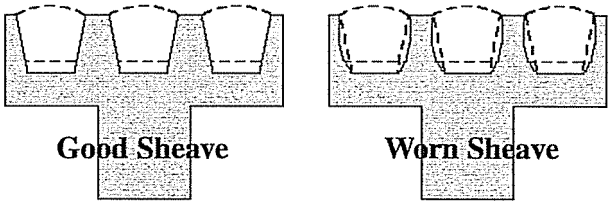
1. If the housing is not open, open it now as described in the previous section, Open Housing.
2. Remove the feed hopper.
3. With the engagement lever in the disengaged position, adjust the flywheel to a position where the knife is not near the bed knife.
4. Loosen the bed knife so it can move freely.
   NOTE: The bed knife has four useable sides and may be rotated and/or flipped if one of the sides gets damaged. Remove the (4) bed knife bolts, change orientation of bed knife, and replace the (4) bed knife bolts while still allowing the bed knife to move freely (do not tighten completely). Then proceed with the following steps to set the bed knife correctly.
5. Position the bed knife adjustment tool (part# 792650) as shown below. Turn the flywheel around so the knife comes up from the bottom of the housing (counter clockwise) until both flanges of the adjustment tool are across from the knife.
6. Press the tool down, making sure that all contacts remain touching the bed knife, until the tool rests against the knife.
7. Tighten the (4) 3/8"-16 x 1-1/4" bed knife bolts, to 23 ft-lbs (31 Nm) of torque.
8. Turn the flywheel to move the knife away from the bed knife.
9. Remove the adjustment tool.
10. Replace the feed hopper and close the housing.



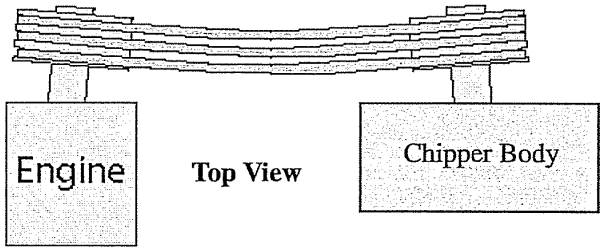
2. Belt and Sheave Care

Proper belt tension and sheave alignment is vital to chipper performance. Here are a few problems that can occur when belts and sheaves are not properly maintained or cared for.

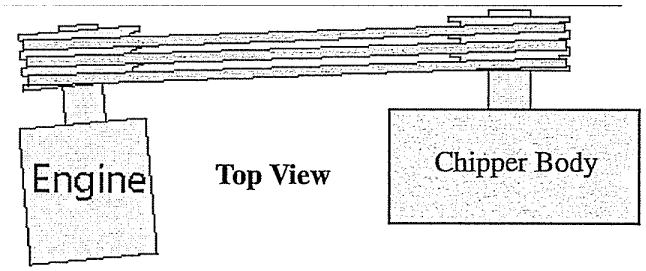
Loose Belt: A loose belt will slip and then glaze over. Once this happens the belt will not transmit power to the flywheel which can cause the chipper to clog and also cause excess sheave wear.



Over-tightened Belt**:** You can break the crankshaft of the engine from too much side load. Too much belt tension can cause premature bearing wear. When the belts are worn out from over-tightening they will only cause the sheaves to wear.



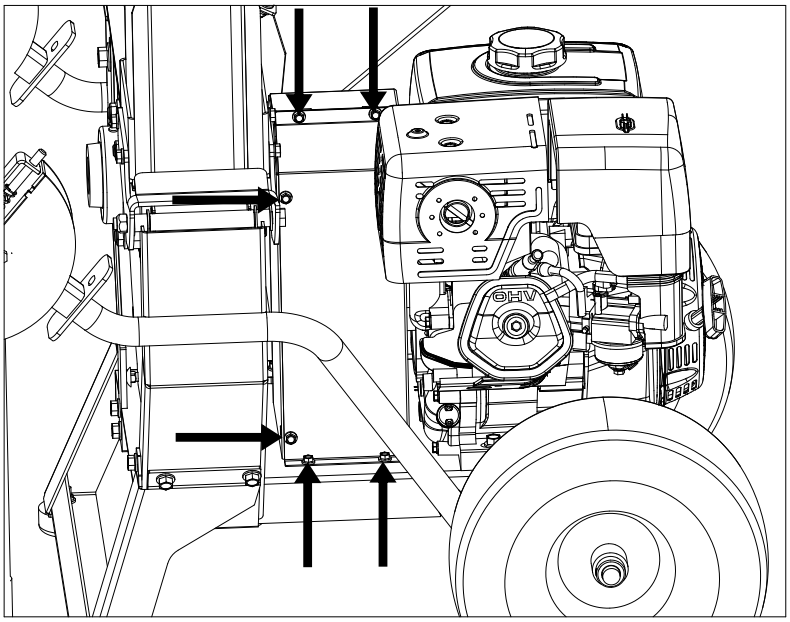
Misaligned Sheaves: When sheaves are not aligned properly the belts will glaze very quickly and slipping will occur. This will also cause the belt to bounce or vibrate causing metal stress on the machine.



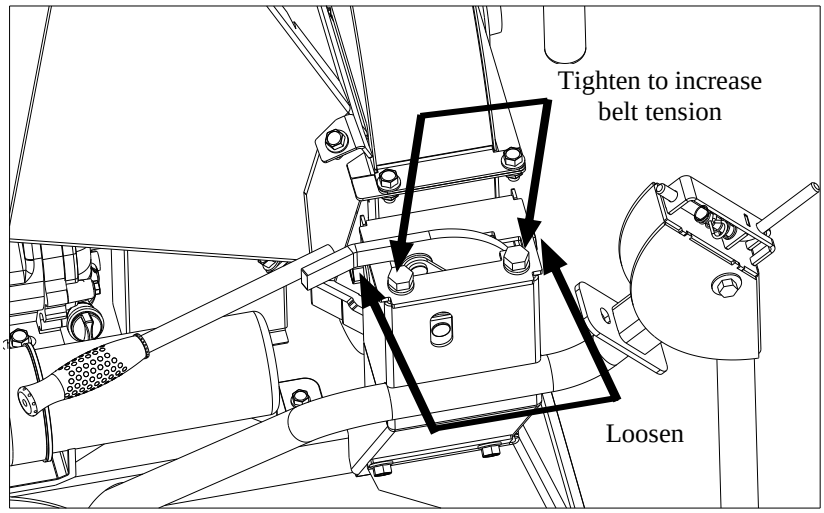
Maintenance and Repair (cont'd)

Chipper Belt Tension Adjustment

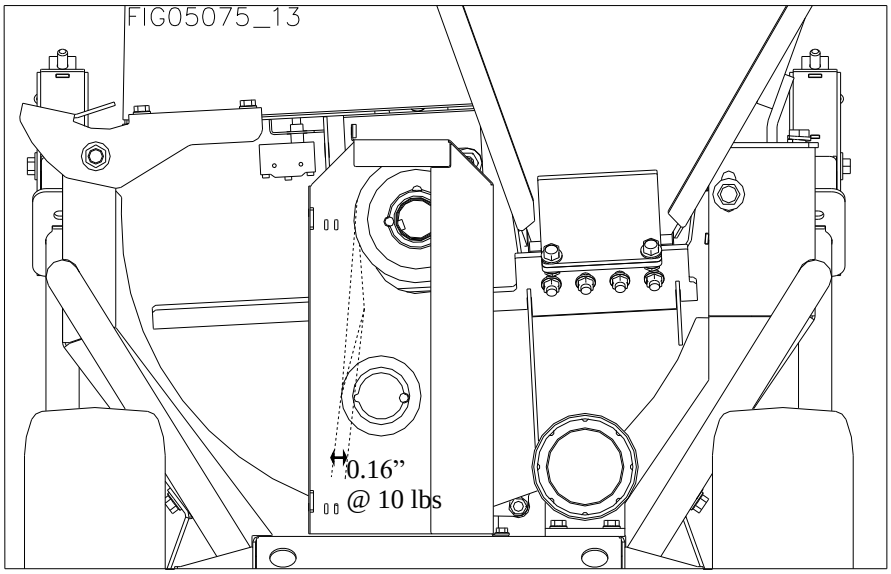
1. Remove belt guard half by removing (6) 1/4" x 1/2" serrated flange bolts.



2. Verify that the clutch lever is in the engaged position.
3. Loosen (2) 1/2" x 1" serrated flange bolts.
4. To increase belt tension, tighten (2) 1/2" x 3 bolts.



5. Check for proper belt tension (10 lb (4.5 kgf or 44.5 N) force results in 0.156" (4 mm) deflection) using a belt tension gauge.
6. Continue to adjust bolts until belt tension is correct.
7. Tighten the (2) 1/2" x 1" serrated flange bolts to 50 ft-lbs (68 Nm).
8. Reinstall the belt guard.



Note: Proper belt tension is just enough to keep the belt from slipping during operation. An easy way to verify this is, when the clutch is engaged and the engine running, adjust the throttle on the engine down and back up again. If the belt squeals or the RPM increase of the engine appears to vary with respect to the RPM increase of the flywheel (you can usually hear the engine hesitate while the flywheel catches up), then the belt is too loose. If the engine moves back from the belt guard significantly when the clutch is engaged or the clutch lever is hard to actuate, the belts are too tight.

⚠ WARNING:

Do not operate the machine without making sure all guards are in place after servicing.

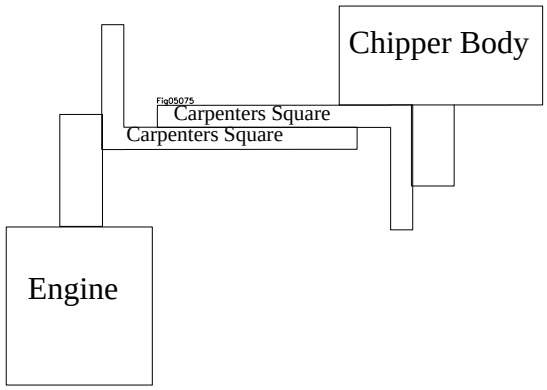
Note: New belts require a "break-in" period of approximately 2 hours. Readjustment may be necessary after "break-in."

Note: Use only factory recommended belts. Contact your DOSKO dealer.

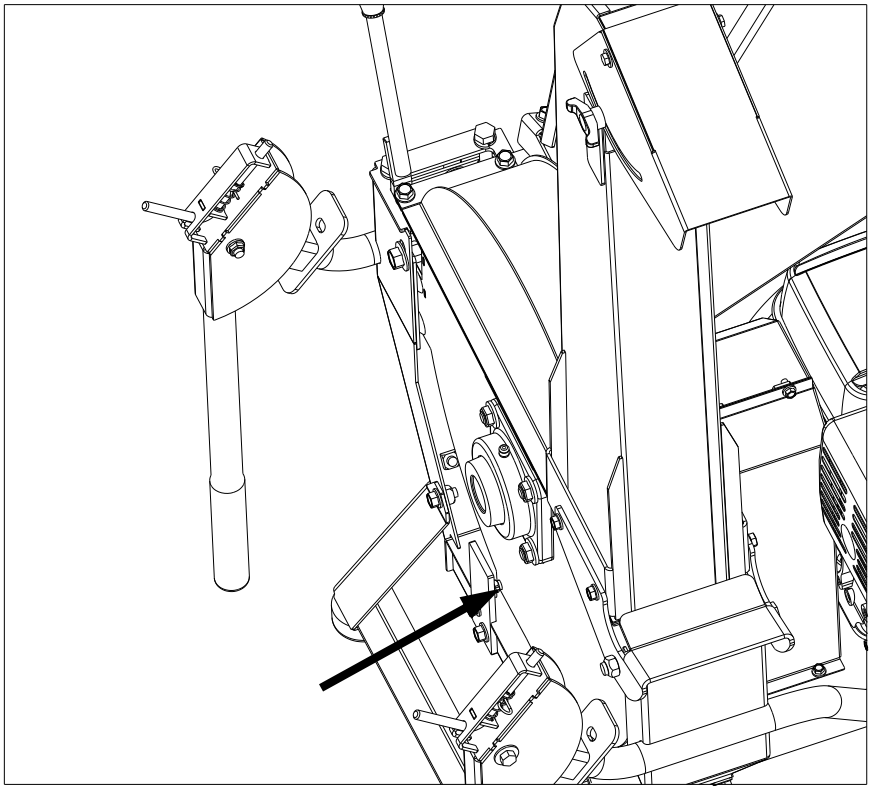
Maintenance and Repair (cont'd)

Sheave Installation & Alignment

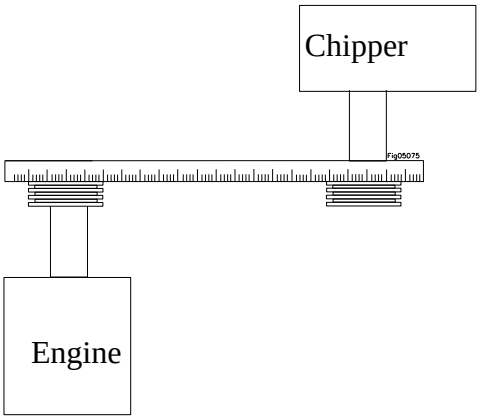
Before installing sheaves, make sure the chipper shaft and engine shaft are clean and square or parallel to each other. This can be done by using two large contractor's squares.



The "parallel" alignment can be adjusted with a 3/8" hex head bolt located on the back of the housing. To adjust the "twist" alignment the engine mounts can be loosened. These should be set from the factory and do not normally need adjustment.



Assemble bushings into sheaves by leaving them loose, then slide them on the shafts and install the key. The sheave on the cutter shaft needs to be seated tightly against the spacer located behind it. Push it up tight and tighten the sheave set screws. Use a long straight edge to align the engine sheave to the cutter shaft sheave and tighten set screws.



Tighten all set screws evenly; chipper and engine sheave bushings should be torqued according to the chart on page 33.

4. Maintenance Schedule

⚠ **CAUTION**:
Before attempting any maintenance, be sure that the engine is shut off and the spark plug wire is removed, and the engine is cool to the touch!

Item (What to check or action req'd)	Daily	Each Use	10 hours	40 hours	2x/year
Bearings, Shaft - Grease			X		
Bearings, Wheel – Grease					X
Belt Tension				X	
Bolts – Tightness		X			
Engine – See manual					
Gasoline – Amount		X			
Knife - Condition		X			
Warning Decals – Legible	X				
Tires, Flaps – Condition	X				

IMPORTANT:
If a part needs replacement, only use parts that meet the manufacturer's specifications. Replacement parts that do not meet specifications may result in a safety hazard or poor operation of the chipper and will void CE certification.

Contact DOSKO Customer Service at 1-800-822-0295 or 1-763-428-2237 for any questions, problems, or parts orders.

5. Bolt Torque Chart

Bolt Size	Bolt Grade	Torque, ft-lbs (Nm)
3/8-16	5	34 (46)
3/8-16	8	44 (60)
1/4-20	5	9 (12)
1/2-13	5	83 (113)
5/16-18	5	19 (26)
3/8 Set Screw		15 (20)

Note: These values are based on clean, dry threads

Specifications

FRAME	
Width	32” (81.3 cm)
Height	61” (155 cm)
Length	45” (114 cm) with handles down
Machine weight/mass	400 lbs (181 kg)
Chassis	12 gauge sheet steel
Axle	3/4” (19.05 mm) solid axle
Tires, Size	15” x 3/4” integral bushing style hub

ENGINE	
Model	Honda GX390
Speed	3600 RPM
Fuel and capacity	Gasoline (86 octane or higher, no more than 10% ethanol or 5% methanol), 1.61 gal (6.1 L)
Oil and capacity	SAE 10W-30, 1.2 qt (1.1 L)

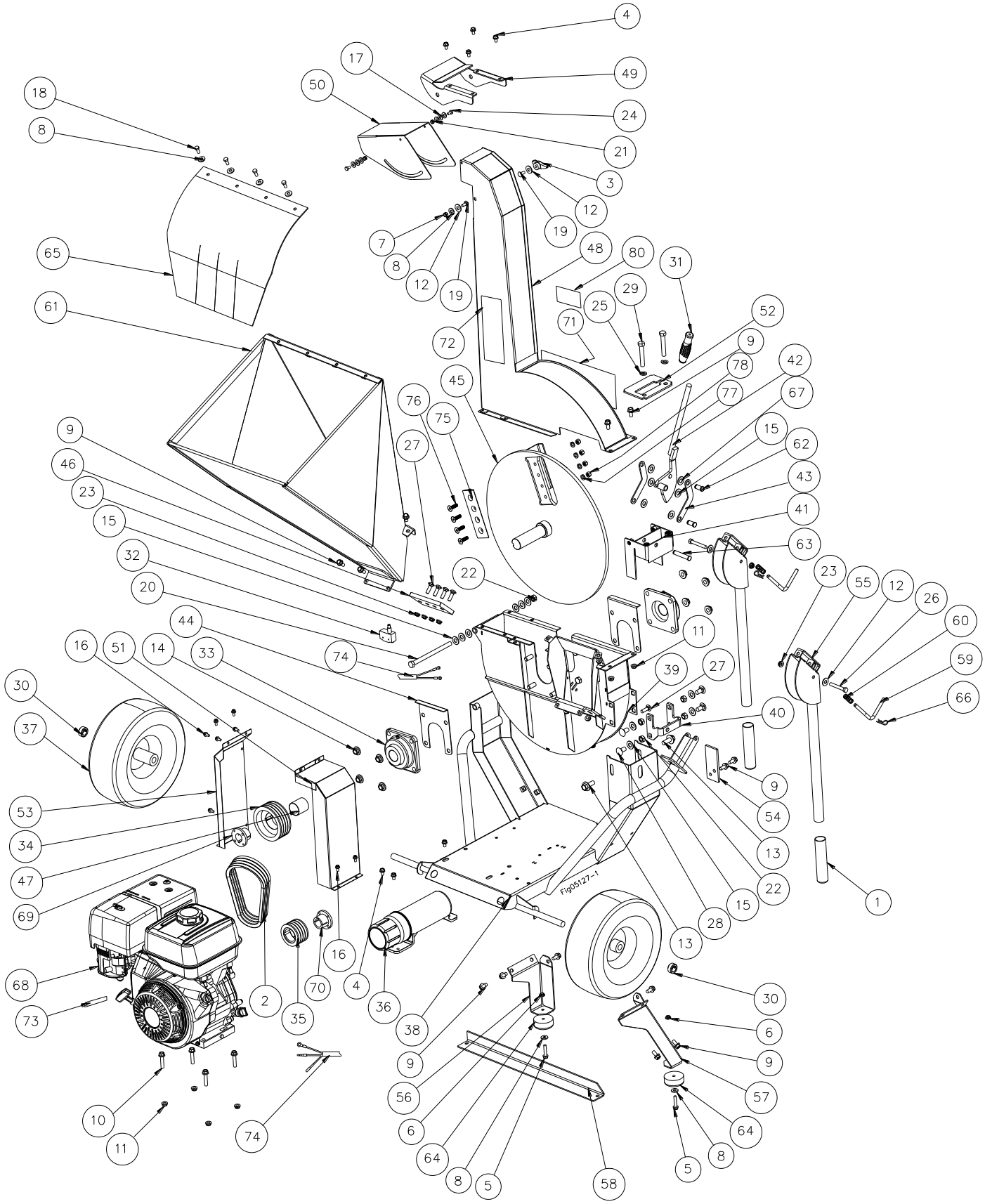
HOPPER	
Hopper Material	12 gauge
Size	20” (50 cm) x 20” (50 cm)
Feed Opening	5-1/2” (14 cm) x 5” (12.7 cm) measured perpendicular to the bed knife
Capacity	4” (10 cm)

FLYWHEEL	
Size	3/4” thick x 21” diameter
Knife	2-1/4” x 6-1/2”, reversible
Bed knife	5-3/8” x 3” x 1/2” thick
Shaft	1-1/2” diameter
Bearings, shaft	Two (2) 1-1/2” four bolt flange style

DRIVETRAIN	
Belts	Four (4) 3L260K (3/8” {95mm} wide x 26” {66cm} long)
Sheave diameter, flywheel	4.75” (12 cm)
Sheave diameter, engine	3” (7.6 cm)
Drive ratio	1 : 0.63

Contact DOSKO Customer Service at 1-800-822-0295 or 1-763-428-2237 for any questions, problems, or parts orders.

2964050 Parts Explosion - Rev K



2964050 Parts List - Rev K

Item	Part #	Description	Qty
1	30747	BLACK PLASTIC GRIP	2
2	791347	BELT, 3L260K GATES	4
3	38578	T-HANDLE KNOB	1
4	82014	5/16-18 X 1/2 HHSF BOLT GR5Z	7
5	82017	BOLT, 5/16-18 X 1 1/2 HHSF GR	2
6	82019	NUT, 5/16-18 SER. FLAG Z	2
7	82020	5/16-18 NYLON INSERT LN Z	1
8	82021	5/16 USS FLAT WASHER Z	8
9	82022	3/8-16 X 3/4 HHSF BOLT Z	14
10	82025	3/8-16 X 1 3/4 HHSF BOLT GR5	4
11	82026	3/8-16 SER. FLG NUT Z	10
12	82028	3/8 USS FLAT WASHER Z	4
13	82032	1/2-13 X 1 1/4 HHSF GR5Z BOL	2
14	82036	1/2-13 SER. FLG NUT Z	8
15	82038	1/2 SAE FLAT WASHER Z	6
16	82070	1/4-20 X 1/2 HHSF BOLT GR5Z	8
17	82085	1/4 USS FLAT WASHER Z	4
18	82087	5/16-18 X 3/4 HHCS GR5Z	4
19	82088	5/16-18 X 3/4 CARR. BOLT GR5	2
20	82340	1/2-13 X 8 HHCS GR5Z	1
21	82222	NUT, 1/4-20 NYLON INSERT LK	2
22	82249	1/2-13 LOCK NUT CLASS C L	5
23	82290	3/8-16 CLASS G FLANGE LCKNT	6
24	82581	1/4-20 X 3/4 HHCS	2
25	82519	WASHER-LOCK 1/2 Z-BR LS	2
26	82576	3/8-16 X 2.5 HHCS	2
27	82578	3/8-16 X 1.25 CARRIAGE	4
28	82579	1/2-13 X 1 CARRIAGE	4
29	82586	1/2-13 X 3 HHCS FULL THREAD	2
30	305200	WHEEL RETAINER	2
31	778459	HAND GRIP-BLACK	1
32	783545	MICROSWITCH-GRINDER	1
32	783769	MICROSWITCH BRACKET	1
33	786842	1-1/2" 4 BOLT FL BEARING	2
34	784054	CUTTER SHFT PLLY-4GR, 4.75DI	1
35	784590	SHEAVE, 4GR 3V 3.0-1210	1
36	788040	MANUAL TUBE	1
37	800484	TIRE,15"WELDED,OFFSET,3/4	2
38	790280	FRAME	1
39	792758	FLYWHEEL HOUSING	1
40	790297	LIFT BRACKET	1
41	790301	TENSIONER	1
42	790304	ENGAGEMENT LEVER	1
43	790308	LINKAGE	2
44	790309	COVER	2
45	793572	FLYWHEEL ASSEMBLY	1

Item	Part #	Description	Qty
46	790316	BED KNIFE	1
47	790317	SLEEVE	1
48	792759	DISCHARGE CHUTE	1
49	791615	SPLIT HOUSING HINGE	1
50	793813	DISCHARGE DEFLECTOR	1
51	791658	BELT GUARD BK WLDT	1
52	790330	LINKAGE COVER	1
53	791657	REMOVABLE GUARD	1
54	790332	TWIST SUPPORT	1
55	790334	HANDLE	2
56	790337	RIGHT LEG	1
57	790338	LEFT LEG	1
58	790816	FOOT REINFORCEMENT	1
59	791249	LATCH PIN	2
60	791260	SPRING, HANDLE LATCH	2
61	791261	HOPPER WLDT	1
62	791348	PIN, 1/2 X 3/4 CLEVIS	2
63	791349	PIN, 1/2 X 2-1/2 CLEVIS	1
64	15431	BUMPER-LARGE SHOCK (2 1/2")	2
65	791650	FLAP, HOPPER	1
	791651	PLASTIC GUARD, HOPPER	1
66	BR001761	CLIP - HAIRPIN 3/32 X 1-5/8	2
67	82587	1/2"ID x 14GA MACHINE BUSHING	10
68	601091	ENGINE-13HP GX390UT2QAA2 HOR	1
69	791346	BUSHING-1610, 1-1/2"	1
70	783563	BUSHING-1210,1" FOR HONDA	1
71	802971	Decal Set, Branding, Small Chipper	1
72			
73	82143	1/4 X 1 3/4 SHAFT KEY	1
74	791423	WIRING HARNESS	1
75	790006	CHIPPER KNIFE	1
76	82594	3/8-16 X 1-1/2 FHCS	4
77	82345	3/8" SPLIT LOCK WASHER,ZINC	4
78	82432	3/8-16 HEX NUT GR.8 YELLOW ZINC	4
79	82429	3/8-16 X 1 HHCS	1
80	797158	Made in USA decal	1

Personal Protection Equipment (not shown):			
n/a	798999	REUSABLE CORDED EARPLUGS	1
	799000	PROFESSIONAL FACE SHIELD	1
	799001	SAFETY GLASS VIRTUA HARD COA	1
	799003	LEATHER PALM KNIT GLOVE LARG	1

Maintenance Equipment (not shown):			
n/a	792650	Bed Knife Adjustment Tool	1

Summary of Important Safety Information

This section provides a summary of the various safety procedures and measures that have been presented throughout the manual. Keep this summary handy and refer to it to refresh your memory about how to safely use your chipper.

⚠ WARNING

Carefully read and make sure you understand the following safety information before using the chipper. Improper use or maintenance of the chipper can result in serious injury or death from amputation, lacerations, entanglement, burns, or fire/explosion. Damage can also occur to windows, siding, vehicles, and bystanders from chips and debris which can become projectiles.

Prohibition Against Modifications

- **Never modify or alter the chipper in any way.** Modifications can create serious safety hazards and will also void the warranty.
- **Fuel/exhaust system.** Never modify the exhaust system, fuel tanks, or fuel lines. Carbon monoxide poisoning, fire, or explosion could result.
- **Engine.** Do not tamper with the engine's governor setting. Over-speeding the machine is dangerous and will cause damage to the engine and other moving parts of the chipper.
- **Guards.** Do not operate chipper unless all guards and cover shields, which prevent access to moving parts and entanglement and pinch points, are in place. Failure to guard the power transmission mechanisms may result in serious injury or death.

Safety – Before Use

General

- **Instruct operators.** The chipper owner or rental company must instruct all operators in safe chipper set-up and operation. Do not allow anyone to operate the chipper who has not read the Owner's Manual and been instructed on its safe use. Make sure Owner's manual is on the chipper.
- **Adults only.** Only trained adults should operate and service the chipper. Do not let children operate.
- **Under the influence.** Never operate, or let anyone else operate, the chipper while under the influence of alcohol, drugs, or medication.
- **Intended use.** Use this machine only for chipping wood. Do not use for other purposes, as unforeseen hazards or equipment damage may result.
- **Controls and safety labels**. Learn how to use the machine and it's controls safely. Understand and follow all safety labels. Replace any labels that are missing or have become unreadable.
- **Weather.** Never use in foul, bad or questionable weather, which causes a slippery ground condition.

Getting Ready

- **Tripping.** Clear all brush and debris from work walking area to eliminate tripping hazards.
- **Flying debris**. Clear area of foreign objects such as wire, rope, etc. that could become caught in moving machine parts and ejected as a projectile. Inserting these objects into the chipper hopper could damage the flywheel and cause injury. Make sure no children or bystanders are within 100' (31 m) of chipping operation. Protect cars, windows and other objects within 100' (31 m) from flying debris.
- **Operate OUTSIDE only – dangerous carbon monoxide exhaust!** Engines give off carbon monoxide exhaust, a poisonous gas that can kill. You CANNOT smell it, see it, or taste it. ONLY run chipper outdoors and away from building air intakes. NEVER run chipper engine inside homes, garages, sheds, or other semi-enclosed spaces. These spaces can trap poisonous gases.
- **Cooling ventilation.** The chipper needs adequate, unobstructed flow of air to allow for proper cooling of engine and chipper. Do not allow debris to accumulate and block airflow.
- **Transporting.** During transporting, take precautions to make sure chipper will not tip over and cause a fuel leak hazard. Never move, load or transport the chipper while the engine is running or flywheel is turning. Shut down the engine, wait for all moving parts to come to a complete stop, disconnect the spark plug and then wait five minutes before moving.

Summary of Important Safety Information

- **Hot exhaust - fires.** Exhaust from engine can be extremely hot and cause fire. Position muffler at least 7' from combustible objects during operation.
- **Spark Arrestor.** Equip engine with a spark arrestor if chipper will be used near any ignitable forest, brush or grassy land. Make sure you comply with applicable local, state and federal codes.
- **Fire extinguisher.** Keep a fire extinguisher rated "ABC" by the National Fire Protection Association nearby. Keep it properly charged and be familiar with its use.
- **Passengers.** Never carry passengers or allow people to sit on the chipper while it is running or being transported.

Personal Protective Equipment

- **Eye protection.** Wear ANSI or EN166 1F eye protection when operating the chipper.
- **Hearing protection.** The use of ear-plugs or other hearing protection device is recommended for those in close proximity to the chipper while it is operating.
- **Head protection**. Wear a hard hat to protect your head from material that may be kicked out of the machine.
- **Hand protection.** Wear snug-fitting gloves. Do not wear gloves with loose cuffs.
- **Loose / dangling.** Loose or dangling apparel, jewelry or hair can become entangled in moving parts. Never wear jewelry or loose-fitting clothing when operating the chipper.
- **Long pants.** Wear long, heavy-duty pants to protect legs from ejected materials.
- **Sturdy Shoes.** Wear sturdy, non-slip shoes to help you keep a firm footing on the ground and reduce the risk of slipping and falling into the chipper. Do not use the machine while barefoot or wearing open sandals.

Gasoline Safety

- **Gasoline is highly flammable and explosive.** You can be burned or seriously injured when handling fuel. Use extreme care when handling gasoline:
- **Fuel outdoors.** Fill fuel tank outdoors – never indoors. Gasoline vapors can ignite if they collect inside an enclosure. Explosion can result. If fuel tank is drained, this should be done outdoors as well.
- **Use approved container.** Never pump fuel directly into engine at gas station. Static charge can build and ignite fuel. Use an UL approved fuel container to transfer gas to the engine.
- **Running / hot engine.** A running engine is hot enough to ignite fuel. Never add fuel or remove gas cap if engine is running or still hot. Stop the engine and allow to cool at least five minutes before adding fuel.
- **Heat / flames / sparks.** Keep sources of heat, flame, or sparks away while adding fuel.
- Don't overfill. DO NOT overfill the gas tank. Allow at least 1" of empty space below the fill neck to allow for fuel expansion.
- **Replace cap.** Replace gas cap securely before starting engine.
- **Spills**. Clean up fuel spills immediately. Move chipper away from spilled fuel on the ground. Wipe fuel off engine and wait 5 minutes for excess fuel to evaporate before starting engine. Gas soaked rags should be disposed of properly.
- **On skin / clothes.** If gasoline is spilled on your skin or clothes, change clothes and wash skin immediately.
- **Inspect fuel system.** Check fuel system on a regular basis. Look for signs of leaks, deterioration, chafed or spongy fuel hose, loose or missing fuel hose clamps, damaged fuel tank, or a defective fuel shut-off valve. Do not start chipper until needed repairs have been completed.
- **Gasoline storage.** Store gasoline in a cool, dry place in an UL-approved, tightly sealed container away from children and open flame, such as a water heater.

Safety – During Use

- **Safety equipment / controls.** Always operate the chipper with all safety covers, guards, and barriers in place and in good working order, and all controls properly adjusted for safe operation.
- **Guard chipper discharge**. Never use the machine with the chipper hopper or discharge chutes removed.
- **Controls.** Stay in the OPERATOR POSITION while actuating controls.
- **Know how to stop**. Be thoroughly familiar with proper use of the equipment and all chipper controls. Know how to stop the chipper quickly.
- **Feeding branches.** Never stand directly in front of the hopper opening. Stand to the side of the chipping hopper when feeding brush into the chipper. Feed material only when chipper is operating at full operating speed.
- **Climbing on**. Never climb or sit on the chipper while it is running.
- **"Bounceback".** Keep your face and body away from the chipper hopper in the event of accidental bounce back of any material.

Summary of Important Safety Information

- **Slipping/Falling.** Operating in slippery, muddy, wet or icy conditions could lead to losing your footing and slipping or falling.
- **Damaged.** Do not operate the chipper with damaged, missing, incorrectly adjusted, or broken parts.
- **Check for gas leak before starting**. After opening gasoline valve, smell for gas before starting engine. If you smell gas, DO NOT start engine. DO NOT light a match. DO NOT flip on an electrical switch. Exit area immediately and call fire department.
- **Carbon monoxide exhaust.** The running engine gives off carbon monoxide, a poisonous gas that can kill you. You CANNOT smell it, see it, or taste it. If you start to feel sick, dizzy, or weak while using the chipper, shut off the engine and get to fresh air RIGHT AWAY. See a doctor. You may have carbon monoxide poisoning.
- **Other exhaust dangers.** This product contains or emits chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Avoid inhalation of exhaust.
- **Smoking/sparks.** Never smoke near the running chipper, and never operate near sources of sparks or flames.
- **Hot muffler.** Never touch hot muffler or hot exhaust manifold. Exhaust and engine parts can be very hot and will burn you.
- **Machine's moving parts.** Keep hands, feet, and apparel away from knives, belts, flywheel, and other moving parts. Never remove any drive belt or guard while the unit is operating. Contact with belt or knives will cause personal injury.
- **Refueling**. DO NOT refuel the engine until it has cooled at least five minutes.
- **Malfunction during operation**. Always shut the machine off if any unusual noise or vibration occurs.
- **Vibration.** Overexposure to machine vibration on a daily basis may lead to circulatory or nerve damage.
- **Adjusting / repairing.** Always turn off chipper and remove spark plug or spark plug wire before working on the chipper to prevent accidental starting.

Safety – After use

- **Cool engine before storing.** Let engine cool for at least five minutes before storing. A hot engine can be a fire hazard.
- **Shut off fuel supply.** Make sure gasoline shut-off valve is in the OFF position.
- **Prevent accidental starting.** When chipper is not in use, remove spark plug in order to ensure that chipper/mulcher cannot be started in a storage location or by untrained persons.
- **Storage location.** Store the chipper in a dry location away from sources of heat, open flames, sparks or pilot lights – such as water heaters, space heaters, furnaces, clothes dryers, or other gas appliances – EVEN IF the chipper's gas tank is empty. Residual gasoline could ignite.
- **Operate engine regularly.** Operate chipper engine every four weeks to dry out moisture that accumulated, lubricate cylinders, and clean out old gas in the carburetor. If chipper cannot be exercised on a regular basis, prepare chipper for long term storage.

Safety - Inspection/Maintenance

- Inspect and maintain your chipper on a regular basis and repair as needed to keep it in safe working condition:
- **Turn off chipper.** Always turn off chipper and remove spark plug – to prevent accidental starting- before working on the engine or chipper.
- **Replace guards / shields.** Make sure all guards and shields are replaced after servicing the chipper.
- **Burns**. Do not touch hot muffler. Muffler may be hot even if unit is stopped. Allow unit to cool before servicing.
- **Replacement parts.** If a part needs replacement, only use parts specified by the manufacturer. Replacement parts that do not meet specifications may result in a safety hazard or poor operation of the chipper and will void the warranty and CE certification.

Special Safety Information on Static Electricity

Static electricity and filling gasoline:
Static electricity can initiate from ungrounded gasoline tanks or containers, from flowing gasoline, and from persons carrying a static electric charge.

Static electricity can explosively ignite gasoline vapors that are present during the fueling process, resulting in serious burns to all nearby persons. To avoid static electricity while fueling, certain steps must be followed before and during the fueling process in order to minimize and safely dissipate static charge build-up.

Filling Portable Containers at Service Stations:

Use a portable container to fill chipper tank. Never fill the chipper's gas tank directly from the service station's fuel dispenser pump – the chipper's tank is not grounded and the high velocity flow of gasoline from a fuel pump can cause static electric build-up. Use an approved portable container to transfer gasoline to the chipper's tank.

- ***Use a portable container made of metal or conductive plastic.*** It will dissipate charge to ground more readily.
- ***Fill container on the ground.*** Never fill the portable gas container while it is sitting inside a vehicle, trailer, trunk, or pick-up truck bed. ALWAYS place container on the ground to be filled.
- ***Touch a grounded metal object before starting***. Always dissipate static charge from your body before beginning the fueling process by touching a grounded metal object at a safe distance away from fuel sources.
- ***Keep nozzle in contact with container.*** Keep fuel dispenser nozzle in contact with the portable container at all times while filling at a service station. Do not use the nozzle lock-open device on the dispenser hose.

About static electricity and fueling

Many common objects can accumulate and retain a static electric charge. Objects made of non-conductive materials (e.g. plastics) easily accumulate and retain static electric charge, as can objects made of conductive material (e.g. metal, water) if they are not electrically grounded. The static electric charge on an object, such as a human body or plastic fuel tank/container, can reach as high as several thousand volts!

A static electric spark can be generated if the static electric charge stored on an object "jumps" to another, less charged object. Such a spark can ignite invisible gasoline vapors that are present during fueling situations.

Typical sources of static electric hazards during fueling

The following objects can accumulate a static electric charge and cause an ignition spark in typical fueling situations:

Ungrounded tanks/containers. Any ungrounded fuel tank or container can accumulate a static electric charge as a result of contact with other objects or friction during transportation. This static electricity can discharge as a spark to the grounded gasoline dispenser nozzle, as the nozzle is first brought close to the tank/container at the beginning of the fueling process.

Flowing gasoline. Most people are not aware that gasoline accumulates static electric charge while flowing through a hose or pipe. This charge then transfers to and accumulates in the gas tank or container that is being filled. The total amount of charge accumulation depends on the amount of gas pumped into the container, the speed with which it is pumped, and whether or not the tank/container is grounded. If sufficient static electric charge accumulates in the fuel tank or container during the fueling process, the tank/container may discharge a spark to the grounded gasoline dispenser nozzle.

Persons. A person dispensing the gasoline can carry a static electric charge on their body, typically resulting from contact with their car seat or electronics. The static electricity can discharge as a spark between that person's hand and either the grounded dispenser nozzle or the fuel tank opening.

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Limited Warranty Policy

Dear Valued Customer:

The Dosko product you just purchased is built with the finest material and craftsmanship. Use this product properly and enjoy the benefits from its high performance. By purchasing a Dosko product, you show a desire for quality and durability. Like all mechanical equipment this unit requires a due amount of care. Treat this unit like the high quality piece of machinery it is. Neglect and improper handling may impair its performance.

Thoroughly read the instructions and understand the operation before using your product. Always contact Dosko Product Support at 1-866-298-3659 prior to having any service or warranty work performed, as some services performed by parties other than Dosko approved service centers may void this warranty. This limited warranty is in lieu of any other warranty expressed or implied, written or oral and Dosko assumes no other responsibility or liability outside that expressed within this limited warranty.

Limited Warranty for Chipper Models:

13-21T-13H
510-6-30KE
510-6-38KE
510-SD-9-30KD

	Consumer Warranty Period	Commercial Warranty Period
Weldments		
	2 years from date of purchase by user	2 year from date of purchase by user
Hydraulic Motors, Valves, Pumps		
	2 years from date of purchase by user	1 year from date of purchase by user
Wear Parts		
	In addition to the normal warranty, Dosko shall warrant some normal wear items from defects in material or workmanship for a period of 30 days from the date of purchase by user. Normal wear items covered under this warranty are limited to: tires, belts, grease zerks, hoses, switches, knives, clutches, bearings, wires, cables. Routine maintenance items such as lubricants, clutch adjustments, tune ups are not covered under warranty.	
Engines		
	The engine warranty is covered under the terms and conditions as outlined by the engine manufactures warranty contained herein and is the sole responsibility of the engine manufacturer. Normal engine maintenance such as spark plugs, oil changes, air filters, adjustments, fuel system cleaning and obstruction due to build up is not covered by this Dosko limited warranty.	

"Consumer use" means personal residential household use by a consumer. **"Commercial use"** means all other uses, including, but not limited to, use for commercial, income producing or rental purposes or when purchased by a business.

This limited warranty applies to the original purchaser of the equipment (verification of purchase, in the form of a receipt, is the responsibility of the buyer), is non-transferable, and covers parts and labor. Parts will be replaced or repaired at no charge, except when the equipment has failed due to lack of proper maintenance. If a part is no longer available, the part may be replaced with a similar part of equal function. Any misuse, abuse, alteration or improper installation or operations will void warranty. Determining whether a part is to be replaced or repaired is the sole decision of Dosko. Dosko will not provide for replacement of complete products due to defective parts. Any costs incurred due to replacement or repair of items outside of a Dosko approved facility is the responsibility of the buyer and not covered under warranty. Transportation costs to and from service center and/or service calls are the responsibility of the customer.

This limited warranty specifically excludes the following; failure of parts due to damage caused by accident, fire, flood, windstorm, acts of God, applications not approved by Dosko in writing, corrosion caused by chemicals, use of replacement parts which do not conform to manufacturer's specifications, damage related to rodent and/or insect infestation and damage caused by vandalism. Additional exclusions: loss of running time, inconvenience, loss of income, or loss of use, including any implied warranty of merchantability of fitness for a specific use. Also, outdoor power equipment needs periodic parts and service to perform well, and this limited warranty does not cover instances when normal use has exhausted the life of a component or the engine.

This limited warranty does not cover any personal injury or damage to surrounding property caused by failure of any part, misuse or inability to use the product. Alteration of the product, including safety features, shall void this limited warranty.

Repair or replacement of parts does not extend the warranty period. This limited warranty gives you specific legal rights. You may also have other rights that vary by state.

Please have model number, item number and serial number on hand prior to making a warranty claim or inquiry.

WARNING: This product can expose you to chemicals including soots, tars, and mineral oils, which are known to the State of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

DOSKO

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