

# DOSKO

# M2963000F

MODEL NUMBER: 2963000

SERIAL NUMBER: \_\_\_\_\_

## Owner's Manual

### Operation, Maintenance and Safety Instructions

### Commercial Road-Towable Chipper/Mulcher

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

#### WARNING

**READ and UNDERSTAND this manual completely before using the chipper/mulcher!** Failure to properly operate, and maintain this chipper/mulcher could result in *serious injury or death* to the operator or bystanders.

All machines have hazards associated with their operation. This chipper/mulcher 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 chipper hood is secured and locked.**
- Do not attempt to perform adjustments, declog or clean unit while engine is running.
- Make sure no children or bystanders are within 100' (feet) of chipping/mulching operation.
- Protect cars, windows and other objects within 100' 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.

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

#### STOP!

**ASSEMBLY REQUIRED:** This product requires assembly before use. Some of the components in this unit are heavy and cannot be lifted by one person safely. Please plan on assembling this product when another person can be available to help out. See "Assembly" section for instructions.

**ADD ENGINE OIL & FUEL:** Engine is shipped without oil. DO NOT start chipper/mulcher 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**

## Hazard Signal Word Definitions






	<p>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.</p>
	<p>DANGER (red) indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.</p>
	<p>WARNING (orange) indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.</p>
	<p>CAUTION (yellow) indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.</p>
	<p>CAUTION (yellow) used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.</p>

fig01453

# Table of Contents

## Part I. Introduction

About Your Chipper/Mulcher .....	4
Safety Labels Locations .....	5
Receiving & Transporting:	
Initial Inspection.....	8
Assembly Instructions.....	8
Moving/Towing Instructions.....	9

## Part II. Operation

Operation:	
1. Pre-start Check List & Procedures .....	12
2. Starting/Feeding the Chipper/Mulcher.....	14
3. Stopping the Engine .....	15
4. Feeding Material/Clearing Jam .....	16
5. Refueling on Site.....	17
6. Refueling at Service Stations .....	18
7. Storing the Chipper/Mulcher .....	18

## Part III. Maintenance and Repair

Maintenance (To be done by owner or Rental Dealer) .....	20
1. Chipping Knives.....	22
2. Mulching Flails.....	25
3. Belt and Sheave Care.....	27
4. Maintenance Schedule.....	31
5. Bolt Torque Chart.....	32
6. Trailer Wiring Diagram .....	33

<b>Specifications .....</b>	<b>34</b>
-----------------------------	-----------

<b>Machine Component Identification.....</b>	<b>35</b>
--	-----------

<b>Parts Explosion .....</b>	<b>37</b>
------------------------------	-----------

## Part IV: Summary of Important Safety Information

Summary of Important Safety Information .....	39
Special Safety Information on Static Electricity .....	42

<b>Limited Warranty Policy .....</b>	<b>43</b>
--------------------------------------	-----------

# About Your Chipper/Mulcher

## 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 top hopper(above engine) of the unit to make sure the chipper/mulcher and engine manuals are inside. All persons to whom you rent/loan this chipper/mulcher 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/mulcher 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/mulcher.

## Product Suitability

Your DOSKO chipper/mulcher has two modes of operation. 1) Chipping – The side hopper 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”. 2) Mulching – The top hopper is designed to mulch shreddable items such as leaves, newspapers, and garden waste. Eight three bladed flails rotate and forces the mulch through a screen. Make sure you completely read and understand this manual before using the chipper/mulcher 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/mulcher. 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.

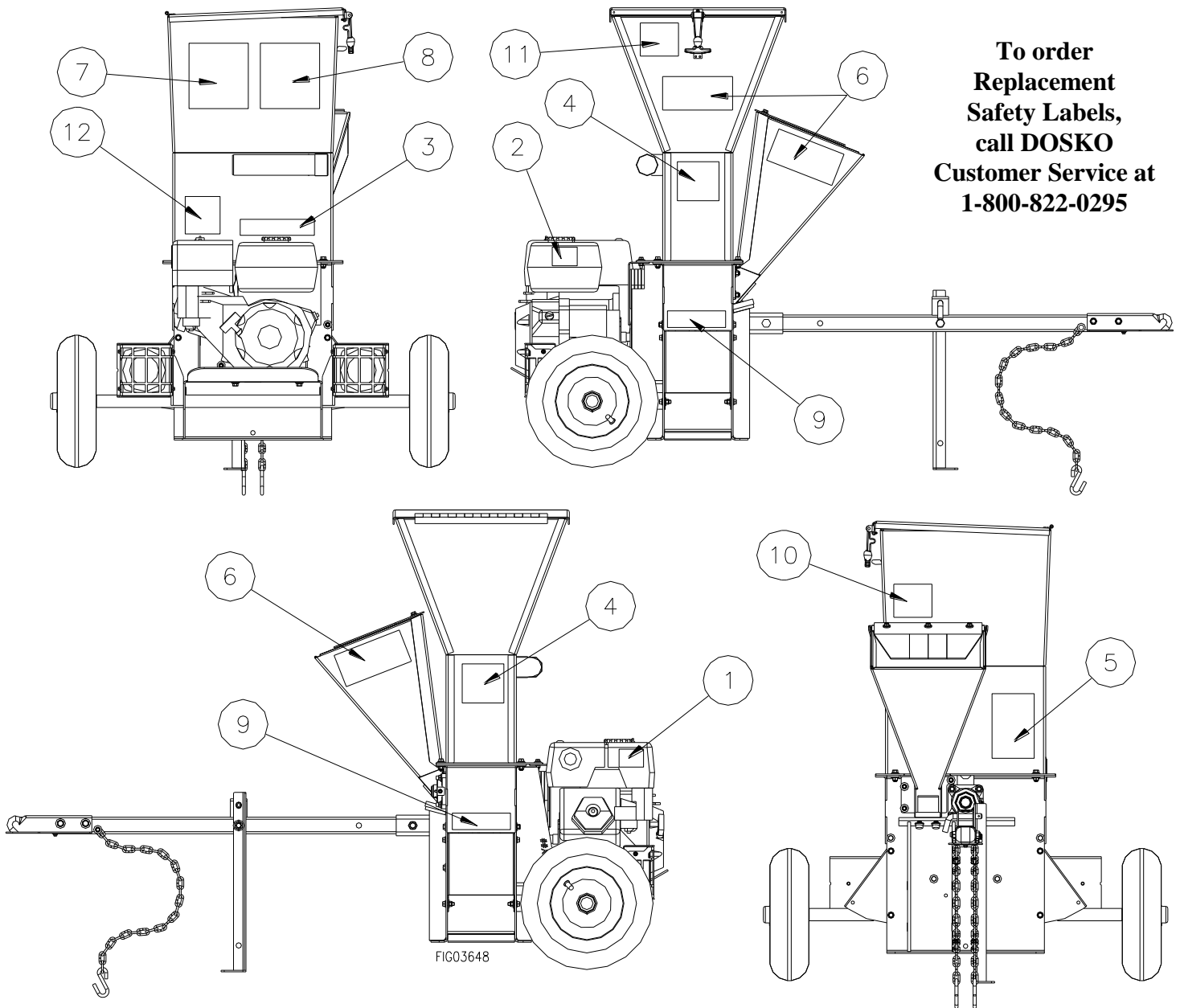
Contact your rental or retail dealer or DOSKO Customer Service at 1-800-822-0295 for any questions about the appropriate use of this chipper/mulcher or about optional accessories.

## 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/mulcher. 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.



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

## **⚠ WARNING: Replace Missing Labels**

ALWAYS make sure safety labels are in place and in good condition. If a safety label is missing or not legible, order new labels.

# Safety Label Locations

Ref #	Part #	Description	Qty
1	39259	CO warning	1
2	785254	Engine instructions	1
3	785266 decal set	Belt entanglement warning	1
4		Flying debris warning	2
5		Danger amputation hazard	1
6		Danger infeed hazard	3
7		Main warning 1 of 2	1
8		Main warning 2 of 2	1
9		Danger discharge screen	2
10		Side feed hopper	1
11		Top feed hopper	1
12		Fire hazard warning	1


2

### Engine Operation:

1. Follow all Job Site, Equipment, and Operator Safety Precautions. Read owner's manual & all decals before operating.
2. Start Engine following engine manual directions. Allow proper warm up period at idle speed before bringing engine to full speed.
3. Bring engine throttle up slowly. Listen for any sounds of foreign material in chipper (metal clanging sounds).
4. Set Engine speed at 3600 RPM

1

**⚠ WARNING**



**POISONOUS GAS**  
This product's use gives off carbon monoxide, an odorless gas that can kill you.


- ONLY use outdoors and away from air intakes.
- NEVER use inside homes, garages or sheds. EVEN IF you run a fan or open doors and windows.

See product manual for more details.


PN 39259

3

**⚠ WARNING**



**Belt Entanglement Hazard**  
KEEP belt guard closed while operating. BEFORE opening guard: remove ignition key, spark plug, and disconnect positive battery cable.



4

**⚠ WARNING**





**Flying Debris Hazard**  
Chips can cause serious injury or property damage.

ALWAYS wear eye protection.  
CHIPS discharge from bottom of machine. Keep away from people, animals, cars, & houses.  
KEEP bystanders 25 ft from machine while in use.

5

**⚠ DANGER**





**Amputation Hazard**  
Keep Hood Closed. Keep Hands Out. Rotating knives and flails within will cause very severe personal injury.

**PRECAUTIONS:**  
DO NOT operate chipper with this hood open.  
DO NOT open this hood while the chipper disc is turning.  
ENSURE that all hood bolts and nuts are torqued to values specified in owner's manual.

**TO SERVICE:**

1. Shut off engine, remove spark plug, ignition key (if applicable), and disconnect positive battery cable (if applicable).
2. Wait at least 3 minutes for disc/drum to stop completely.
3. Open chipper hood gently without slamming against hinge (if applicable). Hinge damage must be repaired immediately.
4. Install clamp or other device to keep chipper disc from turning.

**TO RESTART:**  
Secure all guards and hoods with guard nuts torqued following instructions in the owner's manual.

6

**⚠ DANGER**

**Infeed Hazard**  
No Hands, Arms, or Feet Inside the Hopper!  
Serious Injury Or Death Can Result

You can be drawn into the knives/flails if limbs catch gloves, hands, or loose clothing. Long sleeve loose fitting shirts and jackets are not recommended. Wear no gloves or wear tight fitting gloves without cuffs. Do not reach or kick into feed hopper for any reason.



# Safety Labels

7

**WARNING**

**General Precautions**

DO NOT operate this machine unless you have read the operators manual, read decals, and have been thoroughly trained in safe operating procedures.  
If you are renting the chipper, your rental agent should provide you with personal instructions and make sure that both the engine and chipper owner's manuals are attached to the unit.  
Keep children away. Chipper should be operated only by properly and fully trained adults.  
Replace worn or unreadable labels or missing manuals.

**WARNING**  
The engine exhaust from this product contains chemicals known to the state of California to cause cancer, birth defects or other reproductive harms.

**Personal Protection Equipment**

Never attempt to use this machine without wearing proper personal protection per ANSI Z133 & OSHA 29-1910.  
It is recommended that you wear the following:  
\* No gloves or tight fitting work gloves without cuffs.  
\* Eye & face, ear & hearing protection.  
\* A protective helmet and sturdy non-slip footwear, preferably safety boots or shoes.  
\* Tight fitting and tucked-in clothing. No long sleeve shirts with button cuffs.  
\* No jewelry or clothing with stray straps or strings.

**Preparation for Chipping/Mulching**

Precautions should be taken while using chipper in other areas where persons and property might be damaged by the discharge.  
\* Keep bystanders 25 ft from machine while in use.  
\* Ensure no foreign objects or tripping hazards are in the infeed area.  
\* Ensure all guards & covers are secure and in place.

**Operating Procedure**

Operate this machine only after you have read the operators manual, read and understood the labels, and have been thoroughly trained in safe operating procedures.  
Follow the Operating Procedure label for starting and operating the chipper components.  
Wear recommended personal protective equipment.

8

**WARNING**

**Operating Procedure Cont'd.**

**Chipping Procedure (Side Feed Hopper)**  
Materials: Wood products only! (Tree limbs, branches, etc.)  
Always stand to the side of the in-feed hopper per illustration.  
Keep clothing away as limbs can snag your clothing and pull you into the knives!  
Check the materials to be chipped for any foreign objects, particularly metal tools.  
Feed wood into hopper with larger end (butt-end) first. DO NOT reach into the infeed hopper for any reason.  
Feed small wood debris with wooden push paddle, or throw material on top of big wood as it feeds, or throw it in the trash!

**Mulching Procedure (Top Feed Hopper)**  
Materials: "Shreddable" products only (No wood)  
(Newspapers, leaves, straw, garden waste, etc.)  
Always stand to the side of the in-feed hopper per illustration.  
Check the materials to be chipped for any foreign objects, particularly metal tools.  
DO NOT reach into the infeed hopper for any reason.  
Feed material with a wooden push paddle if necessary.

**Vine-Like Materials - Special Feeding Instructions**  
Vine-like materials are particularly hazardous because they can be rapidly and unexpectedly drawn into the hopper after being entangled in other brush. They can also entangle and draw the operator towards the hopper as well.  
Cut vine-like material into 4 to 5 foot pieces before bringing to the hopper area.  
Do not allow vine-like material to even lay piled near the in-feed hopper!

**Other Precautionary Information**

**Battery (if equipped)**  
Batteries contain caustic acid, do emit explosive gases, and can cause electric shock.  
There should be no smoking, sparks, or flames in the vicinity of the battery.  
Follow operator manual instructions for charging or servicing battery.

**Towing**  
Detailed towing instructions are given in the owner's manual. A few of those important instructions follow:  
\* Use only proper size hitch balls (2" diameter) for the tow coupler.  
\* Safety cables must be used when towing.  
\* Chipper wheel lug nuts must be regularly checked to be tight (if equipped).  
\* Never exceed 45 MPH, and always adjust to a safe towing speed in bad weather or road conditions.

**Maintenance**  
Regular maintenance is required based on hours of operation. A schedule is provided within the owner's manual.  
The following daily checks are required to prevent major damage to your chipper:  
\* Engine Oil  
\* Chipper Belt Tension  
\* Condition of Knives  
\* Fuel Level

**KEEP BYSTANDERS 25FT. FROM MACHINE**

11

## Mulching (Top Feed Hopper)

**Materials: "Shreddable" products only!**  
(Newspapers, leaves, straw, garden waste, etc.) No wood!

**ALWAYS OBSERVE ALL SAFETY INSTRUCTIONS! (SEE OWNER'S MANUAL)**

NOTE: IF YOU HAVE ANY QUESTIONS REGARDING THE SIZE AND TYPES OF MATERIALS THIS MACHINE WAS DESIGNED FOR, CONTACT YOUR LOCAL AUTHORIZED DEALER.

10

## Chipping (Side Feed Hopper)

**Materials: Wood products only!**  
(Tree limbs, branches, etc.)

**ALWAYS OBSERVE ALL SAFETY INSTRUCTIONS! (SEE OWNER'S MANUAL)**

NOTE: IF YOU HAVE ANY QUESTIONS REGARDING THE SIZE AND TYPES OF MATERIALS THIS MACHINE WAS DESIGNED FOR, CONTACT YOUR LOCAL AUTHORIZED DEALER.

9

**DANGER**

**BLADES CUT  
1/4-INCH FROM  
DISCHARGE SCREEN!  
KEEP AWAY**

12

**WARNING**

**Fuel Fire/Explosion Hazard**  
**Fuel is flammable and explosive.**

Never fuel a running or hot engine.  
Clean up fuel spills immediately.  
Ensure there are no fuel leaks before starting.  
Keep sources of sparks and flames away.  
Hot exhaust may also ignite spilled fuel.  
No smoking.  
Keep a fire extinguisher nearby.

# Receiving & Transporting

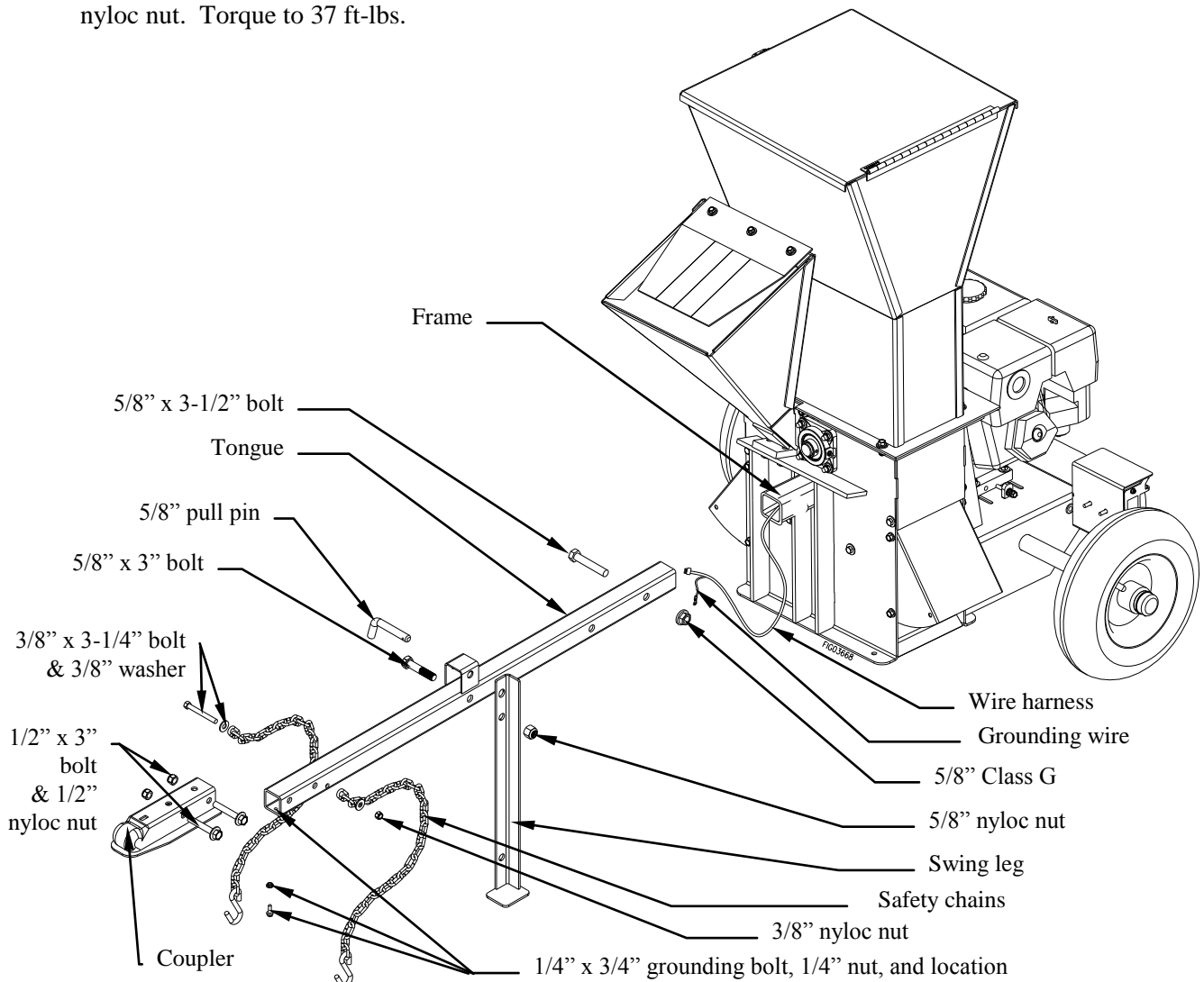
## Initial Inspection

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

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

## Assembly Instructions

1. Feed wire harness through trailer tongue.
2. Attach tongue to frame using (1) 5/8”-11 x 3-1/2” bolt and (1) 5/8” Class G nut. Torque to 180 ft-lbs.
3. Attach grounding wire to tongue using (1) 1/4”-20 x 3/4” HHSF bolt, and (1) 1/4”-20 HHSF nut.
4. Attach swing leg to trailer tongue using (1) 5/8”-11 x 3” bolt, and (1) 5/8”-11 nyloc nut. Tighten so leg swings. Use 5/8” Install 2” coupler using (2) 1/2”-13 x 3” HHSF bolts and (2) 1/2”-13 nyloc nuts. Torque to 90 ft-lbs.
5. Install safety chains using (1) 3/8”-16 x 3-1/4” HHCS bolt, (2) 3/8” USS flat washers, and (1) 3/8”-16 nyloc nut. Torque to 37 ft-lbs.





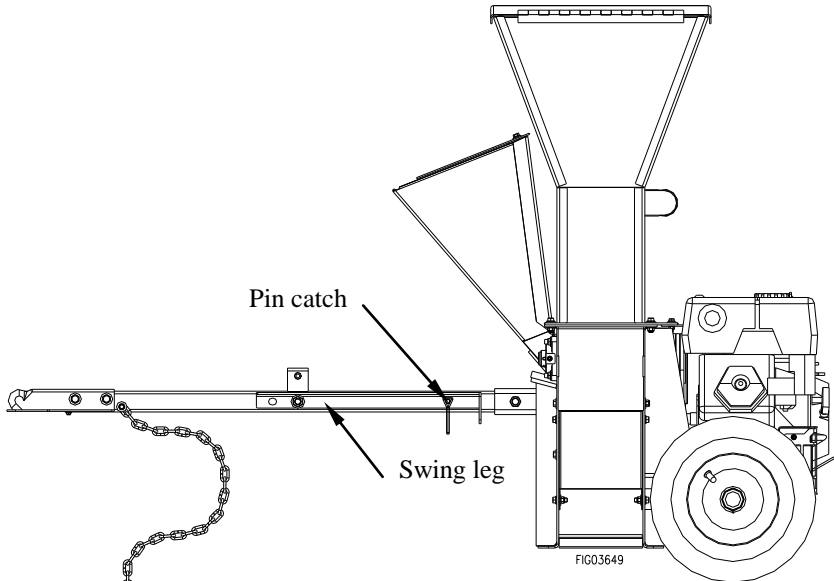
# Receiving & Transporting

## Moving/Towing Instructions

### WARNING

The chipper/mulcher 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 and towing the chipper/mulcher.

### Moving the chipper/mulcher:

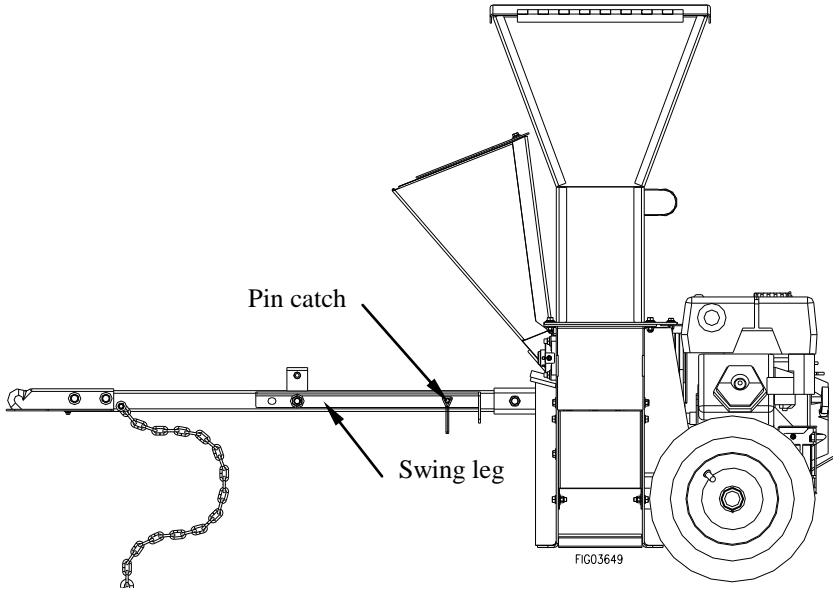
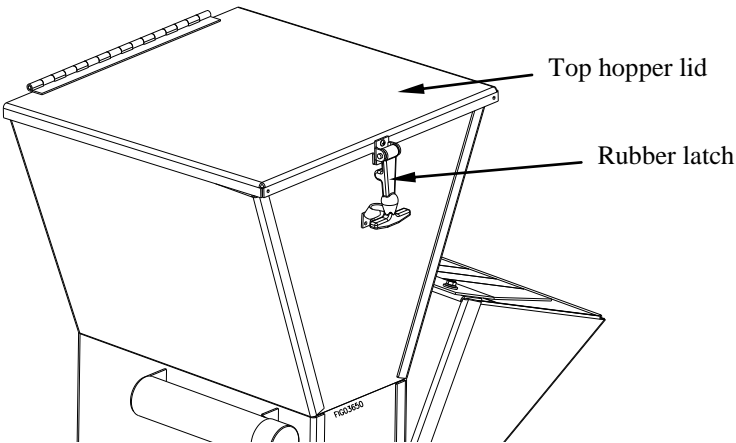
<p><b>1. Engine off</b></p>	<p><b>IMPORTANT: Ensure chipper/mulcher engine is off.</b> Never move the chipper/mulcher with its engine running</p>
<p><b>2. Fuel valve off</b></p>	<p><b>Turn fuel valve off</b> to prevent carburetor flooding and reduce the chance of fuel leakage.</p>
<p><b>3. Swing leg UP</b></p>	<p><b>Lock the leg in the “UP” position before you move the chipper/mulcher anywhere by hand.</b></p> 
<p><b>4. Move chipper/mulcher to work site or tow hitch</b></p>	<p><b>Move chipper/mulcher by hand either directly to chosen work site or to tow hitch for towing.</b> (See “Before Each Use” section on selecting a work site)</p> <p><u>Important Safety Instructions:</u></p> <ul style="list-style-type: none"> <li>• <b>Hills.</b> Do not move the chipper/mulcher up or down hills by hand - use a towing vehicle.</li> <li>• <b>No riding.</b> Never allow anyone to sit or ride on the chipper/mulcher.</li> <li>• <b>No cargo.</b> Never transport cargo on the chipper/mulcher.</li> </ul>

# Receiving & Transporting

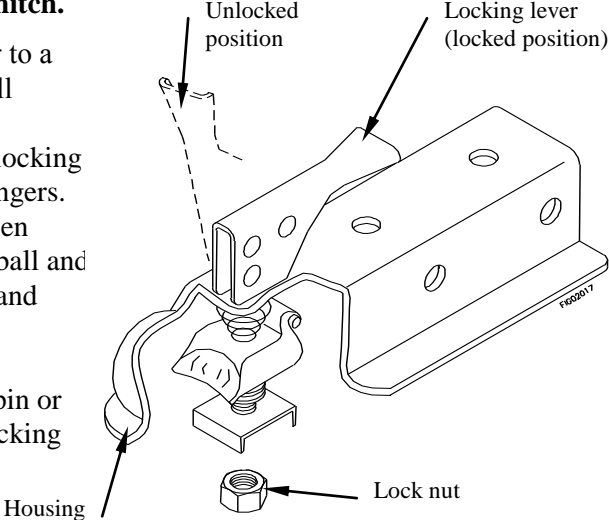
## Towing:

### **⚠ WARNING: Final Check Before Towing**

Before towing be sure safety coupler on ball is closed and locked, safety chains are hooked, and trailer electric is attached. Tow chipper/mulcher at a maximum safe speed of 45 mph. **DO NOT** exceed.

<p><b>1. Read instructions</b></p>	<p><b>Review towing safety instructions in your vehicle manual.</b></p>
<p><b>2. Check tires</b></p>	<p><b>Make sure tires are fully inflated and in good repair.</b> See tire sidewall for recommended tire pressure.</p> <p><b>⚠ WARNING:</b></p> <ul style="list-style-type: none"> <li>• Do not over-inflate tires. Serious injury can occur if tire explodes.</li> <li>• When seating a bead after repair, do not exceed 30 PSI. Pressures higher than 30 PSI can cause the tire and wheel to rupture and explode.</li> </ul>
<p><b>3. Swing leg UP</b></p>	<p><b>Lock the leg in the “UP” position before you move the chipper/mulcher anywhere by hand.</b></p> 
<p><b>4. Secure top hopper lid</b></p>	<p><b>Close and secure the top hopper lid with the rubber latch.</b></p> 

## Receiving & Transporting

<p><b>5. Attach to hitch (2" ball)</b></p>	<p><b>Attach chipper/mulcher to vehicle hitch.</b></p> <ol style="list-style-type: none"> <li>1. Attach chipper/mulcher's coupler to a class 2 or higher hitch with 2" ball (only).</li> <li>2. Adjust coupler to ball by raising locking lever and turning lock nut with fingers.</li> <li>3. Proper adjustment is obtained when coupler is as tight as possible on ball and locking lever can still be opened and closed.</li> <li>4. Lock lever closed to secure the attachment. An optional locking pin or padlock may be inserted in the locking lever hole for extra security.</li> </ol> 
<p><b>6. Attach safety chains</b></p>	<p><b>Attach safety chains.</b></p> <ol style="list-style-type: none"> <li>1. Two safety chains must be used while towing.</li> <li>2. Cross safety chains under the coupler allowing only enough slack for vehicle turns.</li> </ol>
<p><b>7. Attach electrical cable</b></p>	<p><b>Connect and check the electric cable for working stop, turning and brake lights.</b></p>
<p><b>8. Tow to desired location</b></p>	<p><b>Tow chipper/mulcher carefully to desired work site.</b> (See "Before Each Use" section on selecting an appropriate work site.)</p> <p><b><u>Important safety instructions:</u></b></p> <ul style="list-style-type: none"> <li>• <b>Speed limit.</b> Never tow this chipper/mulcher over 45 mph. Faster speeds may result in loss of control.</li> <li>• <b>Added length.</b> Be aware of the added length of the chipper/mulcher.</li> <li>• <b>Rough terrain.</b> Drive slowly and take extra caution when traveling over rough terrain.</li> <li>• <b>On public roads.</b> If towing on a public road, make sure to comply with all local, state, and federal towing requirements. It is the sole responsibility of the purchaser to obtain licensing, trailer lights, safety chains or signage, as needed to comply.</li> <li>• <b>Unattended.</b> Turn off the towing vehicle before leaving the chipper/mulcher unattended.</li> <li>• <b>Under the influence.</b> Never tow or operate this chipper/mulcher while under the influence of alcohol, drugs, or medication.</li> </ul>
<p><b>9. Lock leg down &amp; unhitch</b></p>	<p><b>Lock tow bar leg in the DOWN position and unhitch from vehicle.</b> NEVER operate chipper/mulcher while it is attached to the vehicle.</p>

# 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/mulching 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.

<p><b>Check/add oil</b></p>	<p>Check the oil level using the dipstick and add oil as needed daily.</p> <p>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.)</p> <div style="border: 1px solid black; padding: 2px;"> <p> <b>WARNING: Burn hazard</b></p> </div> <div style="border: 1px solid black; padding: 2px;"> <p><b>Never open oil fill port while engine is running. Hot oil can spray over face and body.</b></p> </div>
<p><b>Fill chipper/mulcher fuel tank(s)</b></p>	<p>Check the fuel level in the chipper/mulcher's fuel tank.</p> <p>If needed, fill tank with fresh fuel from a portable container, after first reading the following warnings and instructions.</p> <p>Do NOT fill the fuel tank to the top. Fuel may spill when operating on a slope.</p> <p>Do NOT overfill the fuel tank. Allow at least 1" of empty space below the fill neck to allow for fuel expansion.</p>

## Operation cont'd

	<p><b>⚠ WARNING: Gasoline fire/explosion hazard</b></p> <p>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:</p> <ul style="list-style-type: none"> <li>• gasoline vapor collection inside enclosures</li> <li>• static electric sparks</li> <li>• sparks from electric wiring, batteries, or running engines</li> <li>• sources of heat (such as a hot engine or exhaust)</li> <li>• open flames, including pilot lights</li> </ul>
<p><b>Inspect Fuel System for Leaks</b></p>	<p>Inspect fuel system &amp; check for leaks BEFORE starting chipper/mulcher.</p> <p><b>⚠ WARNING: Fuel leak hazard</b></p> <p>A leaking fuel line no matter how small can be the source of a fire or explosion when starting or operating the engine.</p> <p>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.</p> <p>If chipper/mulcher 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.</p>
<p><b>Wear Personal Protection</b></p>	<p>Use approved protective clothing and approved protective equipment when using the machine.</p> <ul style="list-style-type: none"> <li>• Wear ANSI-approved and OSHA-compliant safety glasses with side shields and a hard hat.</li> <li>• Use of earplugs or another hearing protection device if working within 15-20 feet of the running chipper/mulcher for longer than a few minutes. Hearing can be damaged from prolonged close-range exposure to the type of noise produced by this chipper/mulcher.</li> <li>• Wear long pants to protect legs from flying debris and hot engine.</li> <li>• Wear gloves with no cuffs.</li> <li>• Never wear jewelry or loose-fitting clothing when starting or operating the chipper/mulcher or any mechanical device. Loose or dangling apparel, jewelry or hair can become entangled in moving parts.</li> </ul>
<p><b>Establish Safe Working Area</b></p>	<p>Layout a safe working area that best fits your project and/or situation by:</p> <ul style="list-style-type: none"> <li>• Using safety tools such as barricade signs, safety cones and caution tape.</li> <li>• Determining placement of equipment and brush pile (i.e. on or off the street) that will minimize interference with auto traffic.</li> <li>• Keeping children, pets and onlookers at a safe distance.</li> </ul>

## Operation cont'd

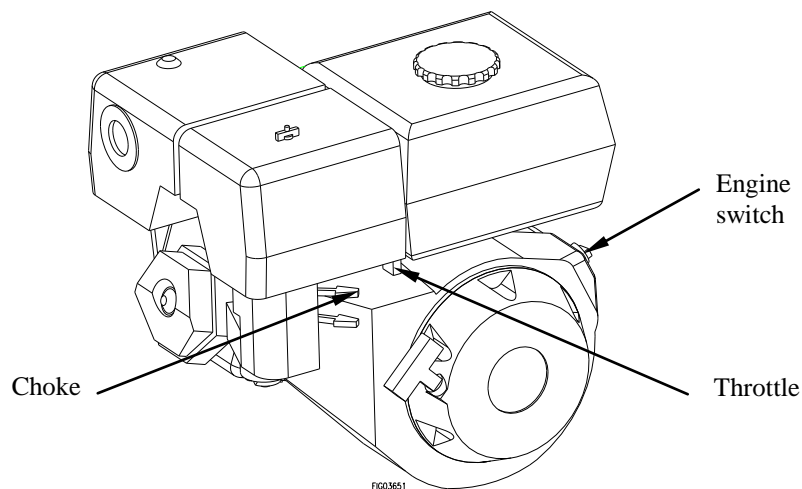
<b>Remove Hazardous Chipping Materials</b>	Thoroughly inspect the area where you will be working and remove all foreign objects. Look for rope, wire, etc. and remove these objects before chipping. (Inserting these objects into the chipper/mulcher could damage the machine and/or cause injury)
<b>Work During Daylight Hours</b>	Use the machine only in daylight or in well-lit conditions. Never operate the chipper/mulcher after dark.

## 2. Starting the Chipper/Mulcher

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

### Starting

- 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.



## Operation cont'd

<b>Warm-Up Checks</b>	<ul style="list-style-type: none"><li>• Slowly bring the engine throttle up.</li><li>• Listen for any unusual metal to metal sounds as chipper wheel is rotating.</li><li>• Listen for any belt squealing indicating belt needs to be tightened or replaced</li><li>• (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)</li><li>• If you don't hear any unusual sounds, slowly bring engine up to full throttle. This should be at the FAST or RUN position.</li></ul>
<b>Normal Operation</b>	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 knives will continue to rotate for a short time.
- Allow the engine to cool for at least 5 minutes before moving to storage or transporting. A hot engine can be a fire hazard.

## Operation cont'd

### 4. Feeding Material/ Clearing Jam

#### 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.

**⚠ WARNING: Flying Debris Hazard**

Stones, chips, and debris can cause serious injury or property damage. Debris can fly 100 ft in any direction out of the chute and bounce off objects and hit operator, bystanders or breakable objects.

#### Chipping – Side Feed Hopper

- 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 get hold of it.
- 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.
- 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.
- 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.

#### Mulching - Top Feed Hopper

- The mulcher is designed to accept “Shreddable” products only (NO WOOD).
- Open top hopper lid.
- Use a push stick to help feed small pieces through the mulcher to keep yourself at a distance from the machine’s moving parts. Do not push material into the chute with your hands or feet, pitch fork, etc.
- Overloading the mulcher 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.
- 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 mulcher hopper.

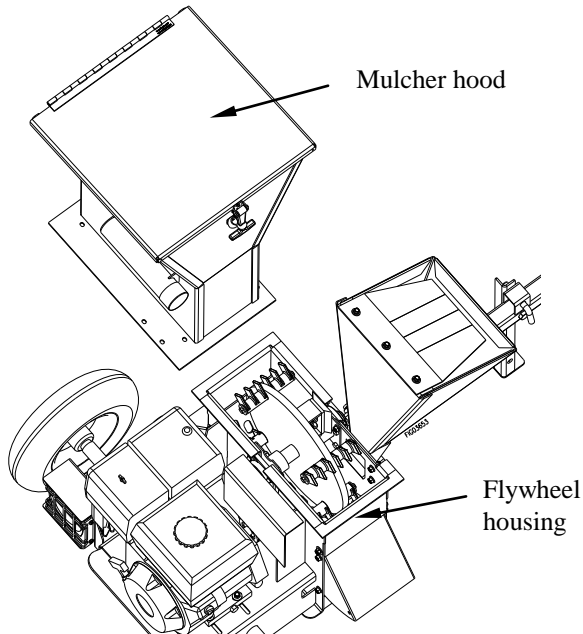


## Operation cont'd

### 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.



1. Remove the top mulcher hopper.
2. Wearing gloves and using a piece of wood, push/pull clogged material up and out of the flywheel housing.
3. Reinstall top mulcher hopper 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/mulcher 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/mulcher's gas tank directly from the fuel pump without grounding it. The chipper/mulcher'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/mulcher's gas tank has been grounded, use an approved portable container to transfer gas to the chipper/mulcher'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.

## Operation cont'd

### 7. Storing the Chipper/Mulcher

#### Short Term

- Cool engine before storage.
- Clean the chipper/mulcher.
- 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/mulcher is prepared for long-term storage.

#### Short Term Storage Procedures

<b>Cool engine</b>	<b>Let engine cool for at least five minutes before storing. A hot engine can be a fire hazard.</b>
<b>Clean chipper/mulcher</b>	Clean any dirt, debris and other foreign matter from the machine, side hopper and top hopper.
<b>Inspect chipper/mulcher</b>	Inspect the machine for worn or damaged parts and tighten any nuts or screws that may have become loose.
<b>Choose a storage location</b>	Store the chipper/mulcher in a location that is: <ul style="list-style-type: none"> <li>• Clean and dry.</li> <li>• Away from sources of heat, open flames, sparks, or pilot lights, even if the chipper/mulcher's gas tank is empty. Residual gasoline could ignite.</li> <li>• Away from extreme high or low temperatures.</li> <li>• Covered for extra protection</li> </ul>
<b>Remove spark plug wire(Long-Term Storage)</b>	Remove spark plug wire in order to ensure the chipper/mulcher 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/mulcher regularly, this is a good time to perform your regular maintenance before storing your unit.

<b>Perform pre-storage maintenance</b>	<ul style="list-style-type: none"> <li>• Change the oil.</li> <li>• Change the fuel filter.</li> <li>• Clean or replace the air filter. (see engine manual)</li> <li>• Lubricate all grease fittings (see "Maintenance &amp; Repair: Lubrication").</li> <li>• Check drive belt for wear and chipper knife, bed knife and feed roll blades for nicks and wear (see "Maintenance &amp; Repair").</li> </ul>
--	--

## Operation cont'd

<p><b>Start chipper/mulcher every 4 weeks</b></p>	<p>The chipper/mulcher should be started regularly. At least every four weeks, start the engine and let it run for 10 to 15 minutes.</p> <p>Monthly exercising of the chipper/mulcher 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.</p> <p>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.</p>
<p><b>Prepare engine for long term (seasonal) storage if needed</b></p>	<p>If you will not be able to start the chipper/mulcher regularly, you must prepare the engine for long term storage to prevent gum deposits from forming and causing malfunction of the engine.</p> <p>Prepare engine for long term storage by:</p> <p>Removing all gasoline from the tank and carburetor OR Adding fuel stabilizer to the gasoline (following manufacturer's instructions)</p> <p>Fuel stabilizer steps:</p> <ul style="list-style-type: none"> <li>• Ensure gas tank is full.</li> <li>• Add fuel stabilizer to fuel tank.</li> <li>• Run engine at least 10 minutes after adding stabilizer to allow it to enter the fuel system.</li> <li>• Shut off engine</li> <li>• Disconnect spark plug wires and remove spark plugs.</li> <li>• Add one teaspoon oil through spark plug holes.</li> <li>• Place rag over spark plug holes and turn starter a few times to lubricate the combustion chamber.</li> <li>• Replace spark plug, but do not reconnect the spark plug wire.</li> </ul>

** 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/mulcher. Make sure all guards and shields are replaced before using.

<p><b>Maintenance safety rules</b></p>	<p>Read and follow these safety rules whenever you will be servicing the chipper/mulcher:</p> <ul style="list-style-type: none"> <li>• <b>Turn off chipper/mulcher.</b> Always turn off chipper/mulcher and remove spark plug before working on the engine or chipper/mulcher.</li> <li>• <b>Replace guards/shields.</b> Make sure all guards and shields are replaced after servicing the chipper/mulcher.</li> <li>• <b>Burns.</b> Muffler may be hot even if unit is stopped. Allow unit to cool before servicing.</li> <li>• <b>Repair.</b> 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.</li> <li>• <b>Replacement parts.</b> 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/mulcher and will void the warranty.</li> <li>• <b>After servicing.</b> Make sure all tools and wrenches have been removed. Start engine and run chipper/mulcher 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.</li> </ul>
<p><b>Engine maintenance</b></p>	<p>Perform engine maintenance as specified in the engine owner's manual. Engine maintenance items include:</p> <ul style="list-style-type: none"> <li>• Lubrication</li> <li>• Oil and oil filter changing</li> <li>• Air filter check/replacement</li> <li>• Spark plug cleaning and replacement</li> <li>• Fuel filter check/replacement</li> <li>• Fuel tank cleaning.</li> </ul>
<p><b>Fuel system leak checks</b></p>	<p>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</p>

## Maintenance and Repair (cont'd)

### Checking and adjusting belt tension

Drive Belts: Check and adjust according to **pg. 27**.

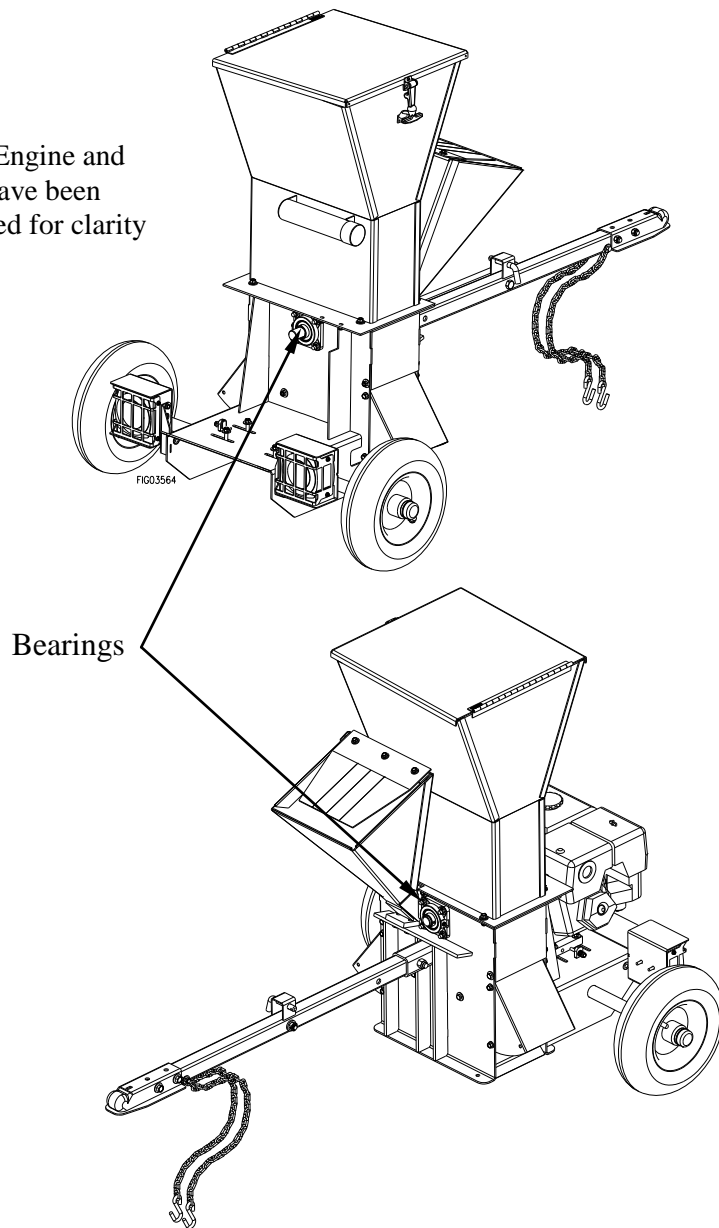
### Lubrication

Your chipper/mulcher was greased at the factory. The operator needs to lubricate the chipper/mulcher main bearings periodically. Bearings should be greased weekly or every 10 hours of use.

There are two chipper/mulcher 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.

Note: Engine and belts have been removed for clarity



## Maintenance and Repair (cont'd)

### 1. Chipping Knives

There are blades (or knives) called the chipper wheel blades. These are mounted on the large spinning wheel which drives the blades (knives) 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/mulcher is operating at full efficiency. Operating with a worn or damaged knives or blades will cause extreme stress and vibration to the machine and make chipping difficult for the operator.

While the chipper knives are 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.

Knives should be checked for damage before each use. They should be turned or changed as necessary. Dull knives:

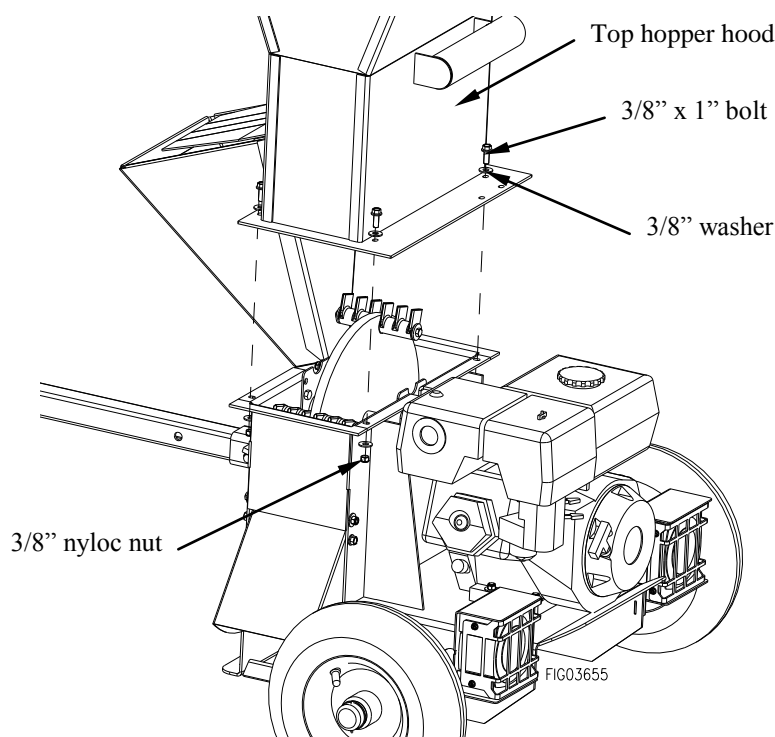
- Cause excessive fuel consumption.
- Cause unnecessary stress and strain on the machine.
- Produce poor quality chips.
- Reduce production rate slowing the feed rate.
- Actually wear further and faster.

To check, turn or change the chipper/mulcher wheel knives you will have to remove the top hopper hood.

### Opening Top Hopper Hood

#### Open Top Hopper Hood

- Remove (4) 3/8” nyloc nuts, (8) 3/8” washers, and (4) 3/8”x 1” bolts.
- Lift and remove the top hopper hood.



## Maintenance and Repair (cont'd)

### Changing or Turning the Chipper/Mulcher Knives

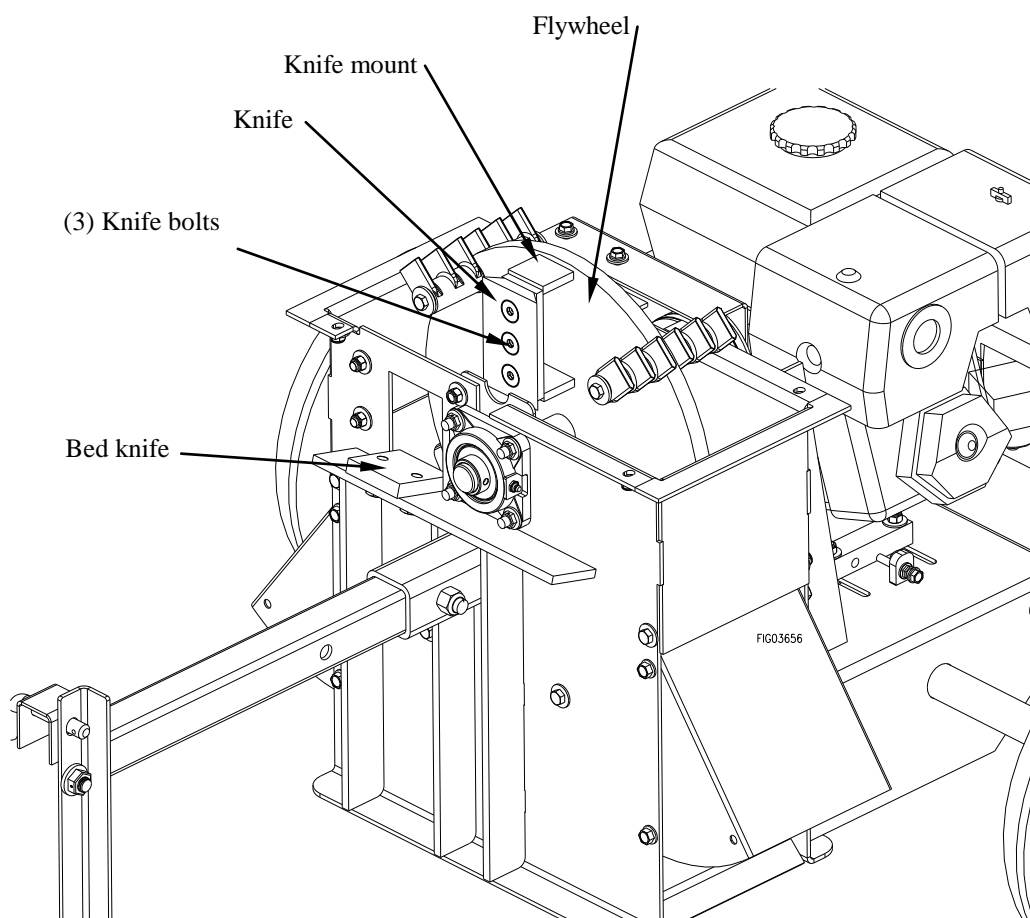
#### Changing Knives

To turn or change the knives:

**⚠ CAUTION:**

**Wear gloves while changing knives.**

- Remove first knife. Hold bolt heads stationary with 5/16" 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 (3) knife bolts before tightening. Hold bolt heads stationary with 5/16" hex wrench and tighten nuts to 80 ft. lbs.
- Repeat the process for the second knife.





## Maintenance and Repair (cont'd)

### Adjust Bed Knife

After changing or turning knives, they will need to be re-adjusted to the bed knife plate. If the gap is not set correctly, you will have excessive vibration when chipping and the knife will seem to be dull.

To adjust the bed knife:

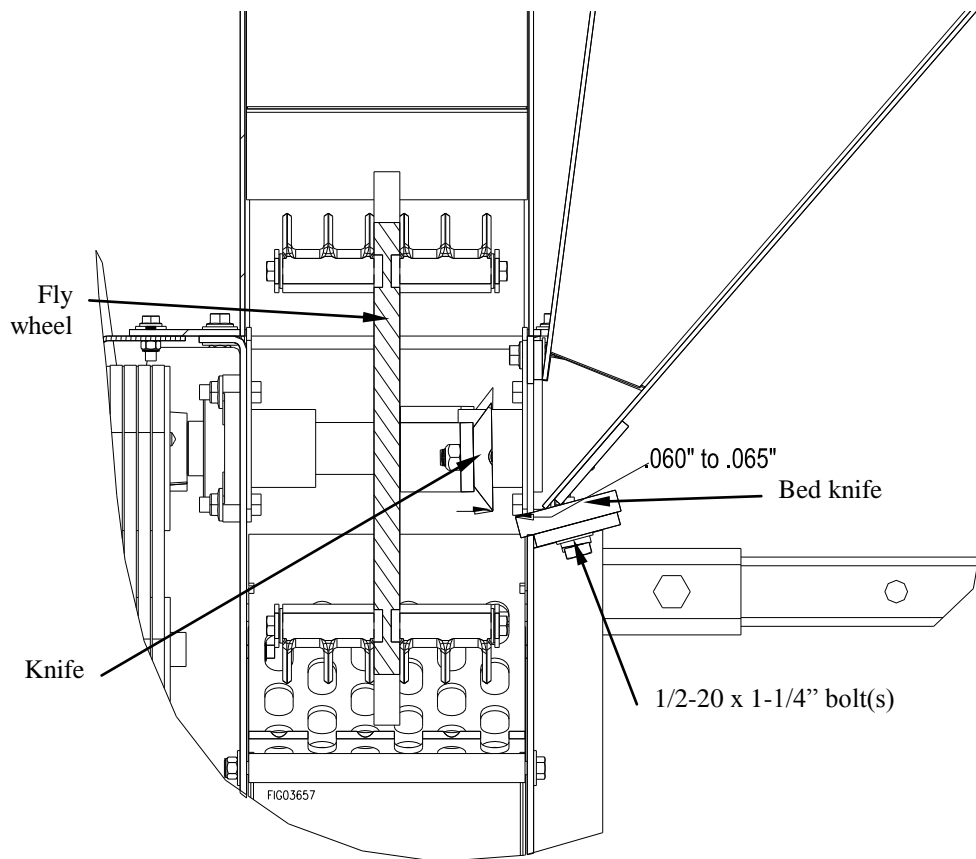
- Loosen bed knife using a impact or socket wrench just enough so it will move but still have a slight resistance.
- You can now slide it up or down (in or out) to achieve the correct gap setting.

Adjust bed knife to proper gap of .060" to .065".

### **⚠ CAUTION: Adjust both knives**

Since knives may vary from one to the other, check each knife gap with a knife gauge. Be sure to adjust to the closest knife.

When adjusted, tighten 1/2"-20 x 1-1/4" bed knife bolts, to 75 ft. lbs. torque.



## Maintenance and Repair (cont'd)

### 2. Mulching Flails

There are eight rotating mulching flails attached to the large flywheel. Each flail has three double edged blades. As the large spinning wheel rotates, the flails rotate and pulverize the shreddable material. The material is broken down and passes through the mulching screen and exits the machine. Routine inspection of the flail blades and mulcher screen for damage will ensure the mulcher is operating correctly. Operating with a worn or damaged flail or mulcher screen will cause extreme stress and vibration to the machine and make mulching less efficient.

While the mulching flails are made from high grade, heat treated steel, their life is also relative to what they shred (mulch). Non-shreddable items like wood or rocks that enter the mulcher will shorten the life of the flails and mulcher screen.

Flails should be checked for damage before each use. They should be turned or changed as necessary. Damaged flails:

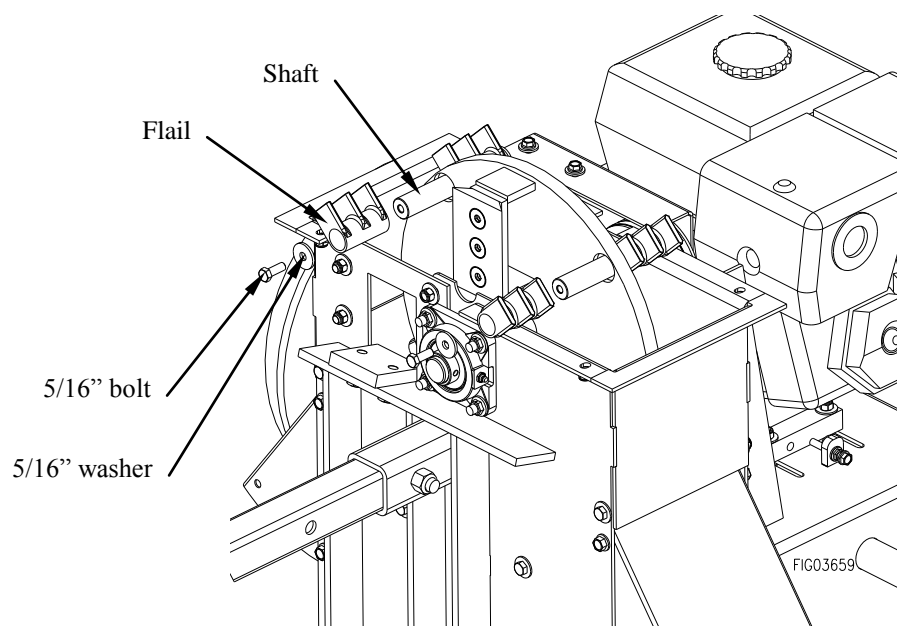
- Cause excessive fuel consumption.
- Cause unnecessary stress and strain on the machine.
- Reduce the production rate.

To check, turn or change the mulching flails, you will have to remove the top hopper hood. See section: "Opening Top Hopper Hood" for instructions

### Changing / Turning Mulching Flails

#### Changing/ turning Flails

- Remove 5/16" bolt and washers.
- Slide the flail off the shaft.
- Turn the flail and slide back onto the shaft.
- Tighten the bolt and washer to the flail shaft to 23-25 ft. lbs.
- Replace the top hopper hood.



## Maintenance and Repair (cont'd)

### Changing the Mulcher Discharge Screen

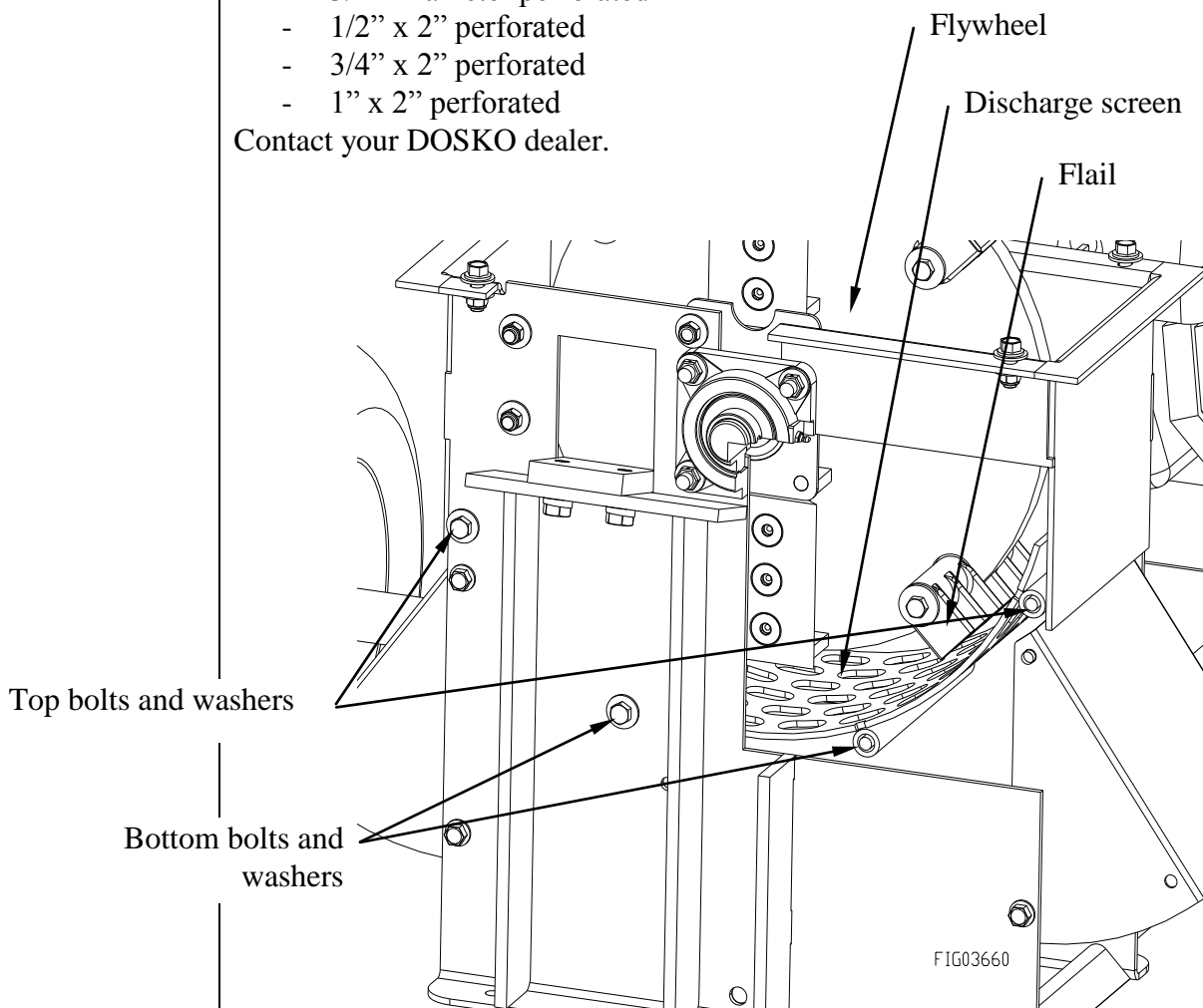
#### Changing Mulching Discharge Screen

- Remove (4) 3/8" x 9" discharge screen bolts, (8) 3/8" washers, and (4) 3/8" nyloc nuts (on opposite side, not pictured).
- Remove the discharge screen from the top, by rotating the screen around the flywheel.
- Install the new discharge screen by rotating around the flywheel.
- Re-install the top discharge screen bolts, washers, and nuts first, then the remaining bottom (2) bolts, (4) washers, and (2) nuts. Torque the bolts to 37 ft. lbs.
- Manually rotate the flywheel to ensure the flails do not contact the discharge screen.
- Replace the top hopper hood.

#### Optional Mulcher Discharge Screens:

- 3/4" Diameter perforated
- 1/2" x 2" perforated
- 3/4" x 2" perforated
- 1" x 2" perforated

Contact your DOSKO dealer.

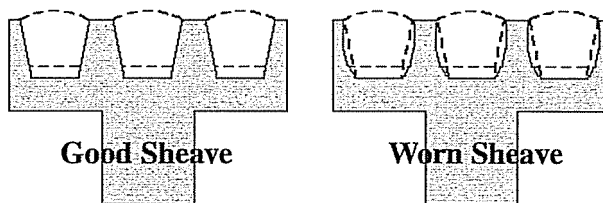


# Maintenance and Repair (cont'd)

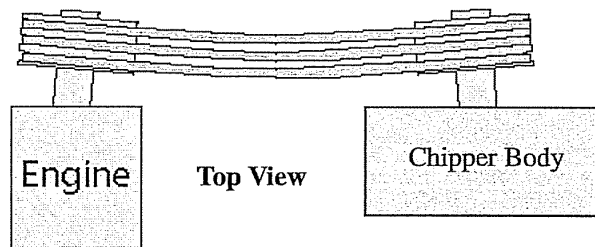
## 3. Belt and Sheave Care

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

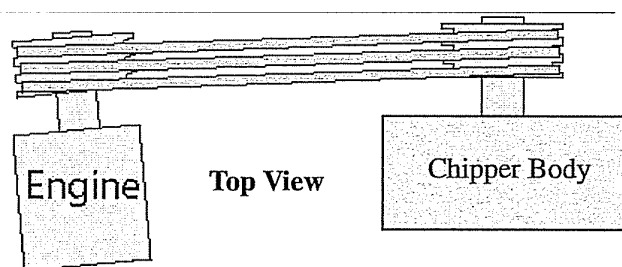
Loose Belt: A loose belt will slip and then glaze over. Once this happens the belt will not transmit power to the flywheel which can cause the chipper/mulcher to clog and also cause excess sheave wear.



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.

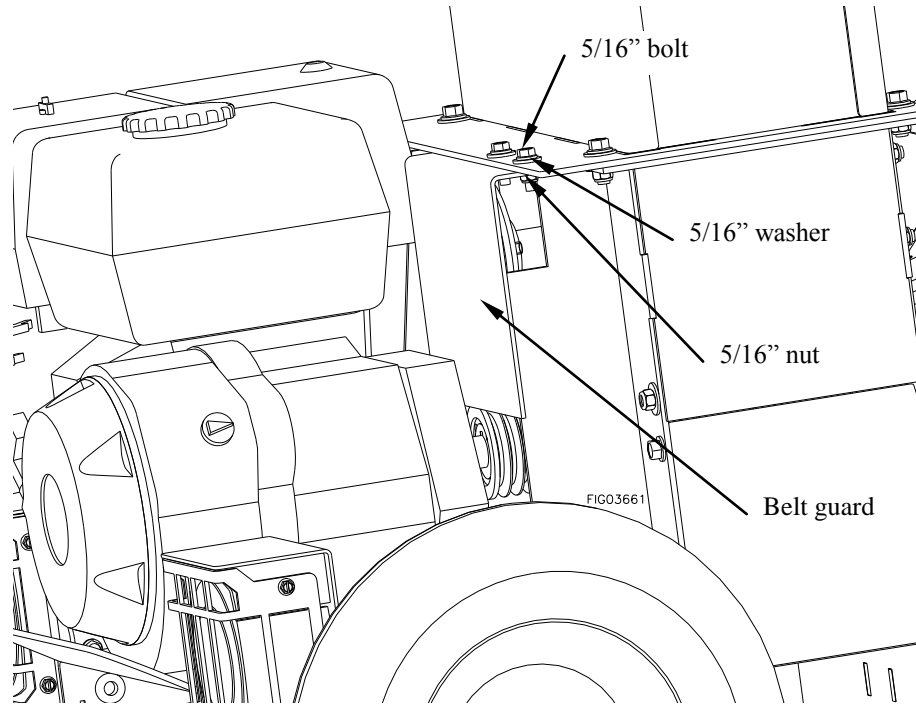


## Maintenance and Repair (cont'd)

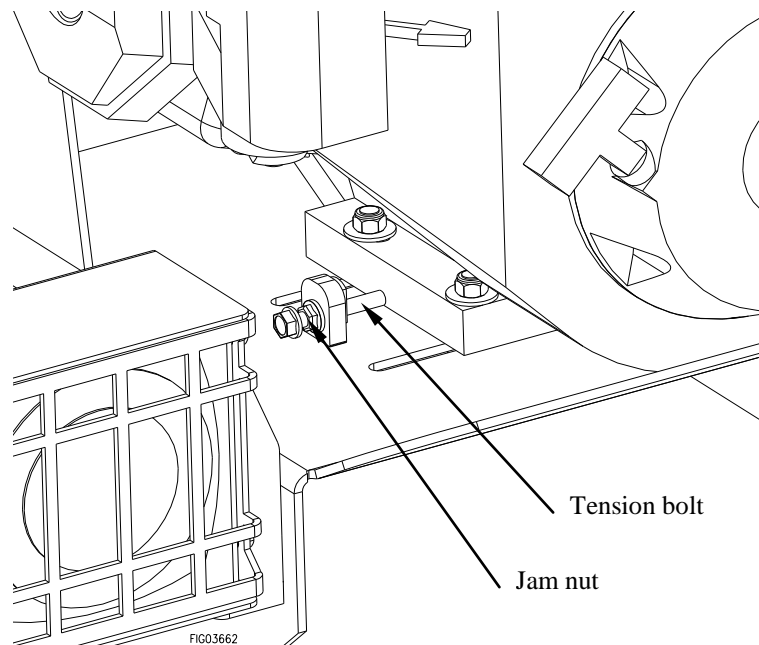
### Chipper/Mulcher Belt Tension Adjustment

Note: Belt tension and alignment are inter-related. Do not adjust one without checking the other.

1. Remove belt guard.
2. Remove (2) 5/16" x 1" bolts, (2) 5/16" washers, and (2) 5/16" nuts.

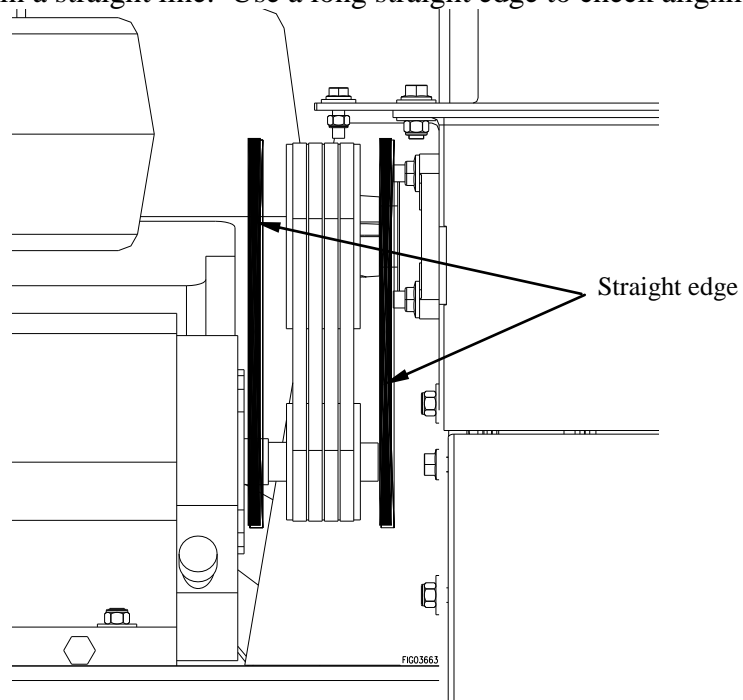


3. Loosen all (4) engine mount bolts.
4. Loosen jam nut on tension bolt.
5. Turn tension bolt to move engine to the side.



## Maintenance and Repair (cont'd)

Note: Proper alignment is for the front and back of both sheaves (all 4 faces) to be in a straight line. Use a long straight edge to check alignment.



6. Check for proper belt tension (3lb force results in 0.156" deflection) using a belt tension gauge.
7. When belt tension is proper, retighten nut on tension bolt, and retighten engine mount nuts and bolts to 37 ft. lbs. torque.
8. Close belt guard.

### **⚠ WARNING:**

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

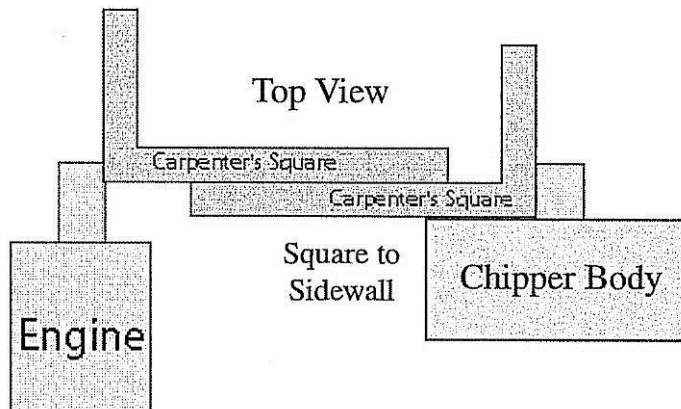
Note: New belts require a "break-in" period of approximately 2 hours. Readjustment may be necessary after "break-in."

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

## Maintenance and Repair (cont'd)

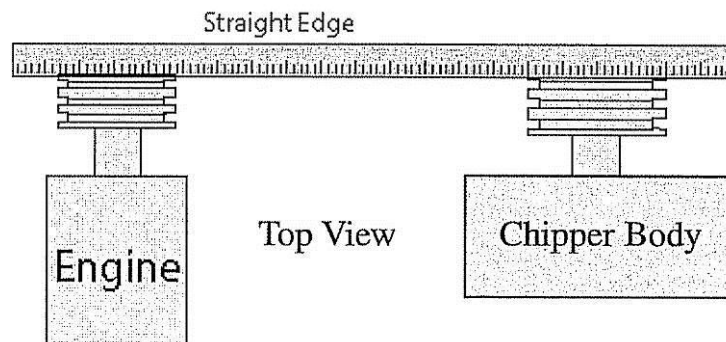
### Sheave Installation & Alignment

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



Assemble bushings into sheaves by leaving them loose, then slide them on the shafts and install the key. Be sure to consider belt guard and cover clearance.

Slide the sheaves on and off the shafts of the engine and chipper/mulcher body as needed to make sure they are in line. Use a long straight edge to align them with each other.



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

Tighten belts keeping sheaves properly aligned.

## Maintenance and Repair (cont'd)

### 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			
Discharge Screen - Condition		X			
Engine – See manual					
Gasoline – Amount		X			
Knives, Flail, Washer, and Bolts – 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/mulcher.

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



## Maintenance and Repair (cont'd)

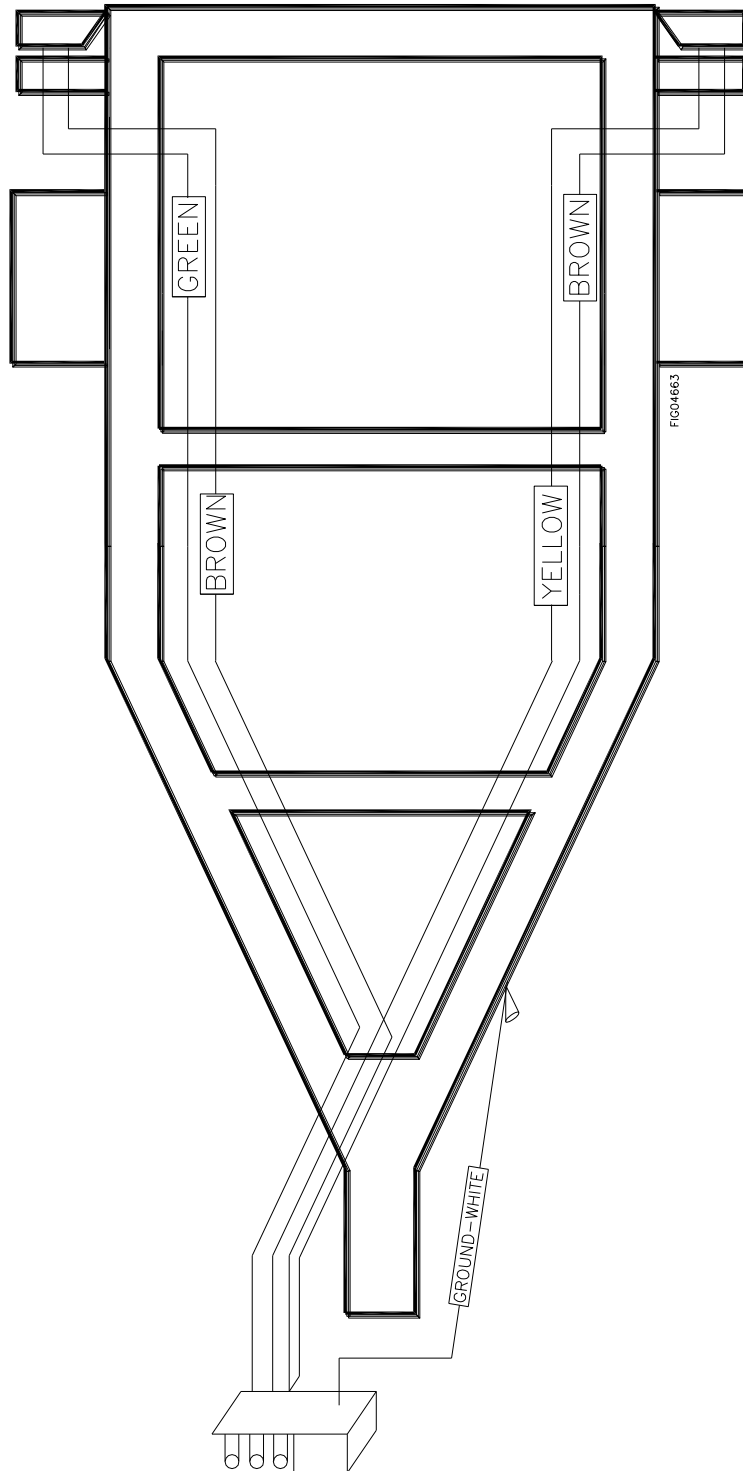
### 5. Bolt Torque Chart

Bolt Size	Location	Bolt Grade	Torque, ft lbs.
3/8-16 NC	Top hopper hood	5	37
1/2-13 NC	Knife bolts (6 each)	8	80
7/16-14 NC	Shaft flange bearing	5	30
3/8-16 NC	Discharge mulcher screen	5	37
1/2-20 NF	Bed knife (4 each)	5	75
3/8-24 NF	Flails	5	25
3/8-16 NC	Engine bolts	5	37
3/8-16 NC	Side discharge deflector	5	37
3/8-16 NC	Safety chain	5	37
3/8-16 NC	Chipping hopper	5	37
5/8-11 NC	Tow bar bolt	5	180
1/2-13 NC	Coupler bolts	5	65
5/16-18 NC	Belt guard	5	20
5/8 Set Screw	Taper bushing		67
1/2 Set Screw	Taper bushing		36
7/16 Set Screw	Taper bushing		23
3/8 Set Screw	Taper bushing		15
5/16 Set Screw	Taper bushing		4.5

Note: These values are based on clean, dry threads

# Maintenance and Repair (cont'd)

## 6. Trailer Wiring Diagram



## Specifications

### TRAILER AND FRAME

Width	47"
Height	53"
Length	80"
Machine Weight	390 lbs.
Chassis	3/16" Steel plate
Axle	1-1/2" Solid axle
Tires, Size	4.80 x 8"
Safety Chains	Standard
Coupler	2" Ball

### ENGINE

Size	Honda GX390
------	-------------

### CHIPPER (SIDE) HOPPER

Hopper Material	10 gauge with reinforced opening
Size:	14" x 14"
Feed Opening	3" x 3"
Capacity	2-1/2"

### MULCHER (TOP) HOPPER

Hopper Material	10 gauge with reinforced opening
Size	20" x 20"
Feed Opening	8" x 8"

### FLYWHEEL

Size	3/4" Thick x 16" diameter
Knives	(2) 3" x 5", reversible
Bedknife	3" x 3" x 5/8" Thick
Flail Knives	(8) Flails – 24 mulching edges
Shaft	1-1/2" Diameter
Bearings, shaft	Two (2) 1-1/2" four bolt flange style

### MISCELLANEOUS

Optional Mulcher Screen sizes	3/4" Diameter Perforated
	1/2" x 2" Perforated
	3/4" x 2" Perforated
	1" x 2" Perforated

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

# Machine Component Identification

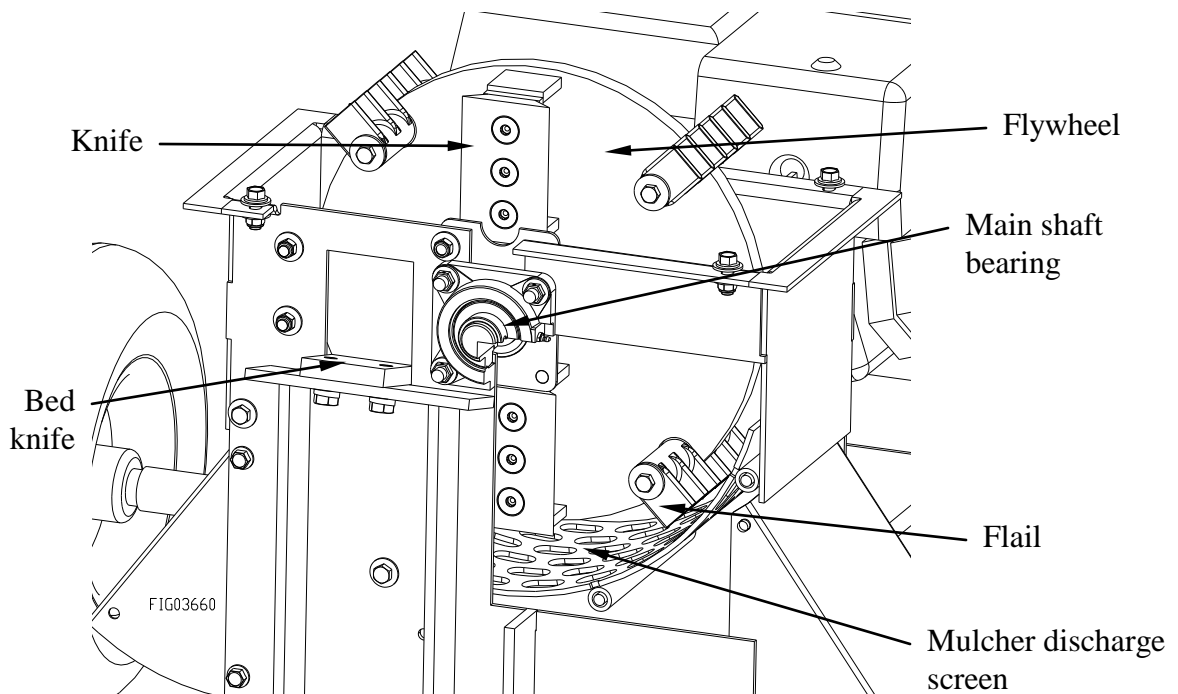
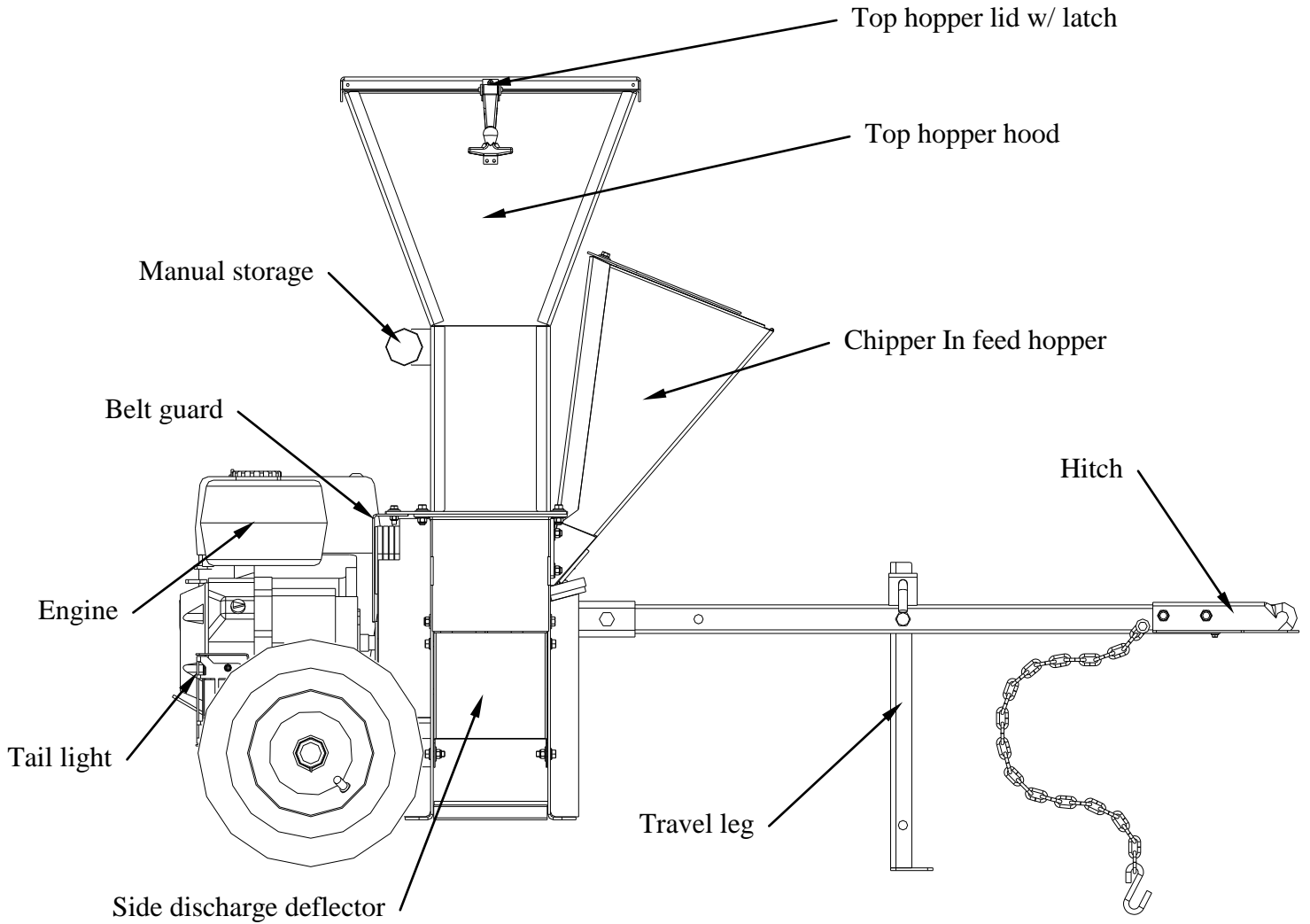


FIG03660

## Machine Component Identification

- **Manual storage** – Provides an on product location to store the owner's manual.
- **Top hopper hood** – Guard for flywheel. Remove to service knives and flails.
- **Engine** – Air cooled, gas engine operates at 3600 RPM.
- **Top hopper lid w/ rubber latch** – Open lid to use operate in mulching mode, close to use in chipping mode. Secure closed when chipping or transporting with rubber latch.
- **Side discharge deflector** – Deflector helps contain chipped/mulched material discharge.
- **Chipper in feed hopper** - Brush enters machine here. Maximum size is 2-1/2" diameter.
- **Main shaft bearing** – Bearings for the rotating flywheel. Grease weekly or every 10 hours.
- **Knives** – Reversible, through-hardened steel
- **Flail** – Reversible, double edged rotating flail for mulching.
- **Flywheel** – Knives and flails are mounted to the rotating flywheel.
- **Belt guard** – Prevents access to belts and moving parts.
- **Travel leg** – Pin leg in down position before operation. Rotate and lock leg in horizontal position for towing.
- **Mulcher discharge screen** – Controls the size of the discharge material. Optional sizes available. Contact your Dosko dealer.
- **Bed knife** – Four sided, adjustable
- **Tail light** – Protected; running, stop, turning, and license.
- **Hitch** – Fits 2" ball.

2963000 Parts Explosion - Rev F

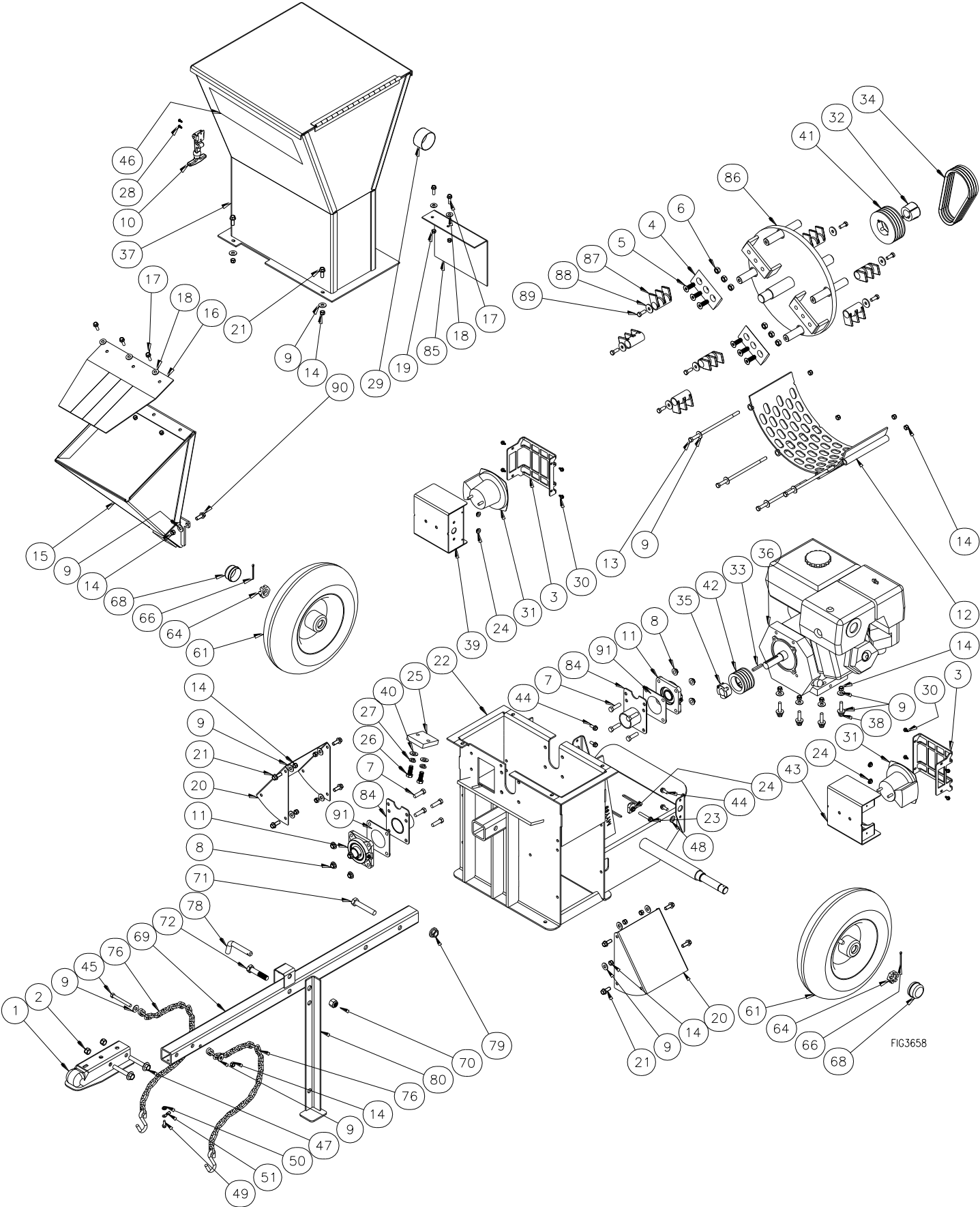


FIG3658

## 2963000 Parts List - Rev F

Item	Part #	Description	Qty
1	38587	2" Coupler	1
2	82037	1/2"-13 nyloc nut	2
3	789552	Tail light cage	2
4	790013	Knife, 5" Long	2
5	82363	1/2"-13 x 1.5" FSHC	6
6	82249	1/2"-13 locknut, class C	6
7	82113	7/16"-14 x 1-1/2" bolt, gr. 5	8
8	82365	7/16"-14 locknut, class C	8
9	82028	3/8" flat washer, USS	29
10	785178	Rubber T-handle latch	1
11	784586	1-1/4" 4-bolt flange bearing	2
12	784751	Mulcher Screen	1
13	82409	3/8"-16 x 9-1/2" bolt, gr. 5	4
14	82027	3/8"-16 locknut, nylon	24
15	785275	Side hopper	1
16	784270	Flap, hopper	1
17	82016	5/16"-18 x 1 bolt, gr. 5	5
18	82021	5/16" flat washer, USS	5
19	82020	5/16"-18 locknut, nylon	5
20	785276	Side discharge deflector	2
21	82023	3/8"-16 x 1" bolt, gr. 5	12
22	785271	Frame	1
23	82018	5/16"-18 x 2" HHSF	1
24	82019	5/16" flange nut	5
25	784585	Bed knife	1
26	82364	1/2"-20 x 1-1/4" HHCS	2
27	781232	1/2" lock washer	2
28	82244	#10-32 x 1/2" pan phillips	2
29	783815	2.5" x 1.5" black cap, vinyl	1
30	82071	1/4" x 1/2" hex head SMS	8
31	789590	Trailer Light Kit	1
32	784588	1610, 1-1/4 bushing	1
33	82143	1/4" x 1/4" x 1-3/4" keyway	1
34	784589	3/8" x 24" belt	4
35	783563	1" bushing, 1210	1

Item	Part #	Description	Qty
36	601091	Honda GX390 engine	1
37	785274	Top hopper	1
38	82025	3/8"-16 x 1-3/4" bolt, gr. 5	4
39	789565	Right Tail Light	1
40	82038	1/2" flat washer	2
41	784054	Sheave, 4 GR 3V 4.75	1
42	784590	Sheave, 4 GR 3V 3.0 - 1210	1
43	789566	Left Tail Light	1
44	82015	5/16"-18 x 3/4" HHSF	4
45	82109	3/8"-16 x 3-1/4" HHCS	1
46	783543	Decal, DOSKO	2
47	82118	1/2"-13 X 3" HHSF	2
48	777111	Grommet	2
49	82009	1/4"-20 x 3/4" HHSF	1
50	82013	1/4"-20 flange nut	1
51	33390	Ring terminal	1
61	777799	Wheel	2
64	777124	1" slotted jam nut	2
66	82140	1/8" x 2" cotter pin	2
68	124A	Dust cap	2
69	785272	Tow bar	1
70	82332	5/8"-11 locknut, nylon	1
71	82123	5/8"-11 x 3-1/2" bolt	1
72	82338	5/8"-11 x 3" bolt	1
76	1130	27" chain w/ 1 s-hook	2
78	37459	5/8" x 3" pull pin	1
79	82288	5/8"-11 flange locknut	1
80	785273	Leg	1
84	784756	Anti-wrap sleeve	2
85	785270	Belt guard	1
86	784587	Flywheel with shaft	1
87	788309	Flail	8
88	82373	1-1/4", .390 hole washer	8
89	82372	3/8"-24 x 1" bolt, gr. 5	8
90	82405	3/8"-16 x 1-1/4" HHCS, gr 5	3
91	786086	1-1/4" flange bearing spacer	2
<b>Personal Protection Equipment (not shown):</b>			
n/a	174630	Reusable corded earplugs	1
	174653	Face shield	1
	174690	Safety eyewear	1
	8503	Safety gloves	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/mulcher.

### WARNING

Carefully read and make sure you understand the following safety information before using the chipper/mulcher. Improper use or maintenance of the chipper/mulcher 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/mulcher 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/mulcher.
- **Guards.** Do not operate chipper/mulcher 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/mulcher owner or rental company must instruct all operators in safe chipper/mulcher set-up and operation. Do not allow anyone to operate the chipper/mulcher who has not read the Owner's Manual and been instructed on its safe use. Make sure Owner's manual is on the chipper/mulcher.
- **Adults only.** Only trained adults should operate and service the chipper/mulcher. Do not let children operate.
- **Under the influence.** Never operate, or let anyone else operate, the chipper/mulcher while under the influence of alcohol, drugs, or medication.
- **Intended use.** Use this machine only for chipping wood and mulching shreddable items. 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 its 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.
- **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/mulcher outdoors and away from building air intakes. NEVER run chipper/mulcher engine inside homes, garages, sheds, or other semi-enclosed spaces. These spaces can trap poisonous gases.
- **Cooling ventilation.** The chipper/mulcher needs adequate, unobstructed flow of air to allow for proper cooling of engine and chipper/mulcher. Do not allow debris to accumulate and block airflow.
- **Transporting.** During transporting, take precautions to make sure chipper/mulcher will not tip over and cause a fuel leak hazard. Never move, load or transport the chipper/mulcher 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/mulcher 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/mulcher while it is running or being transported.

### Personal Protective Equipment

- **Eye protection.** Wear ANSI approved eye protection when operating the chipper/mulcher.
- **Hearing protection.** The use of ear-plugs or other hearing protection device is recommended for those in close proximity to the chipper/mulcher 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/mulcher.
- **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/mulcher. 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.
- **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/mulcher 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/mulcher 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.

### Safety – During Use

- **Safety equipment / controls.** Always operate the chipper/mulcher 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/mulcher controls. Know how to stop the chipper/mulcher 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/mulcher while it is running.

## Summary of Important Safety Information

- **“Bounceback”.** Keep your face and body away from the chipper hopper in the event of accidental bounce back of any material.
- **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/mulcher 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/mulcher, 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/mulcher and remove spark plug or spark plug wire before working on the chipper/mulcher 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/mulcher 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/mulcher 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/mulcher engine every four weeks to dry out moisture that accumulated, lubricate cylinders, and clean out old gas in the carburetor. If chipper/mulcher cannot be exercised on a regular basis, prepare chipper/mulcher for long term storage.

### Safety - Inspection/Maintenance

- Inspect and maintain your chipper/mulcher on a regular basis and repair as needed to keep it in safe working condition:
- **Turn off chipper/mulcher.** Always turn off chipper/mulcher and remove spark plug – to prevent accidental starting- before working on the engine or chipper/mulcher.
- **Replace guards / shields.** Make sure all guards and shields are replaced after servicing the chipper/mulcher.
- **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/mulcher and will void the warranty.

# 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/mulcher tank. Never fill the chipper/mulcher's gas tank directly from the service station's fuel dispenser pump – the chipper/mulcher'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/mulcher'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.

# Limited Warranty Policy

August 2010

This warranty is limited to Dosko units distributed by Great Northern Equipment Distributing, Inc. 20195 South Diamond Lake Road, Rogers, MN and sold by dealers or distributors authorized to sell that product. The following warranty applies to Dosko units purchased at retail or placed into rental service on or after August 1<sup>st</sup> 2010.

Dosko warrants each Dosko unit to be free from defect in factory materials and workmanship for a period of 90 days from date of purchase or first rental. See limitations and time parameters stated below.

**DOSKO SHALL NOT BE LIABLE FOR ANY IMPLIED WARRANTIES INCLUDING THE IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS ON ITS PRODUCTS AFTER THE 90-DAY PERIOD.**

**DOSKO WARRANTY ON ANY OF ITS PRODUCTS SHALL BE VOID IF THE PRODUCT HAS BEEN MODIFIED BY THE ADDITION OF PARTS OR THE DELETION OF PARTS. IN THIS EVENT, TO THE EXTENT PERMITTED BY FEDERAL, STATE OR LOCAL LAWS, DOSKO SHALL BE UNDER NO LIABILITY WHATSOEVER IN RESPECT TO ANY LOSS, DAMAGE, INJURY, OR EXPENSE ARISING FROM ANY DEFECTS IN ANY DOSKO PRODUCTS.**

The warranty period, as explained in the Warranty Policy, is for 90 days from the original date of sale. The fact that our product is repaired, or parts are replaced during the original 90 day period, does not extend the expiration date of the original warranty due to any loss of time resulting from failures. This warranty shall not apply to any Dosko product which has been modified, repaired, or altered in such a manner as to affect its stability, performance or operation, nor which has been subjected to misuse, abuse, negligence or accident.

The owner is responsible for all regular maintenance as explained in the operator's manual. Neglect in regular maintenance or failure to replace normal wear items such as knives, bed knife, lubrication, oils, filters, belts, bearings, etc. may void warranty.

Your authorized Dosko dealer will repair or replace, any parts that are found to be defective within the warranty period. **ALL WARRANTIES MUST BE PRE-APPROVED** through Dosko warranty department prior to any work being done. Failure to do so will void warranty and reimbursement will not be permitted. Proof of purchase date must be provided.

In order to register for the warranty on your new Dosko unit, the dealer or rental owner should fill out and return to Dosko the enclosed warranty registration cards within ten (10) days after your purchase.

---

## **“No Warranty on Purchased Wear Parts”**

Purchased wear parts (example: tires, battery, engine, belts, spark plugs, etc.) are not warranted by Dosko.

---

## **Description of Limited Warranty of Major Component Parts**

Major component failures will be handled according to Manufacturers warranty statement. Problems and defects in the engine should be referred to your authorized engine repair dealer. Other major component failures will be handled according to appropriate manufacturers warranty statement otherwise 90 day warranty applies.

---

## **Limited Warranty of Frames/Fabrication**

Dosko warrants any steel frame, tow bar, handlebar or chute for a period of two (2) years from original date of purchase to be free from defects.

# DOSKO

Great Northern Equipment Distributing Inc.  
20195 S. Diamond Lake Rd, Ste 100  
Rogers, MN 55374  
Made in USA