



LandMax

Suppliers Of Quality Agricultural Machinery

21 Plummers Point Road, Tauranga



Wood Chipper

ECO19

Operator's Manual

Specifications included in this publication were in effect at the time of approval for printing.



This manual contains important safety instructions for Chipper/Shredders
READ SAFETY WARNINGS AND OPERATING INSTRUCTIONS CAREFULLY
SAVE THESE INSTRUCTIONS.

**This owner's manual is considered a permanent part of the chipper/shredder and
should remain with the chipper/shredder if resold.**

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Warnings



This symbol indicates important safety instructions which, if not followed, could endanger personal safety and/or property. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—heed its warning.



CARBON MONOXIDE GAS

Exhaust contains poisonous carbon monoxide, a colorless and odorless gas. Breathing exhaust can cause loss of consciousness and may lead to death.

The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.



This machine has a rotating cutting blade capable of amputating hands and feet and throwing objects. Keep hands and feet out of openings while machine is running. Failure to observe these safety instructions could result in serious injury or death.



WARNING: Do not operate this machine unless the chute deflector has been installed properly.



Keep bystanders, helpers, pets, and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.



Wear hearing and eye protection while operating this machine or if you are within 75 feet of this machine. Thrown objects which ricochet can cause serious injury to the eyes.



Never wear loose clothes or long jewelry and keep your long hair under a headgear when operating machine. Never operate this machine in bare feet or sandals. Never use machine on a slope or hard smooth floor.



Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on you or your clothing, which can ignite. In the event of a gasoline spill, wash your skin and change clothes immediately.

WARNING: Do not deposit branches larger than 3" x 4" inches in diameter (depending on Model #, see Model Specifications table pg 2) in the side chute. Do not deposit branches larger than 1/4 inches into the funnel.

DO NOT force the branches into this machine, allow the machine to automatically feed through.

Warnings

Training

1. Read, understand, and follow all instructions on the machine and in the manual before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 18 years old to operate this machine. Children 18 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. Keep bystanders, helpers, pets, and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
6. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
7. Do not put hands or feet near rotating parts or in the feeding chambers and discharge opening. Contact with the rotating impeller can amputate fingers, hands, and feet.
8. Never attempt to unclog either the feed intake or discharge opening, remove or empty bag, or inspect and repair the machine while the engine is running. Shut the engine off and wait until all moving parts have come to a complete stop. Disconnect the spark plug wire and ground it against the engine.

NOTE:
The operator or user is responsible for accidents or hazards occurring to other people, their property, and themselves.

Product Specifications

Chipper/Shredder Model # Specifications

ECO19	PTO Power
Minimum Tractor HP	15 Horsepower PTO
Specifications	
Chipper Chute Size	475x305mm/18"x12"
Chipper Capacity	80x125mm/3"x5"
Blade Speed	2400rpm
Shredder Feed Opening	475x475mm/18"x18"
Shredder Capacity	330x165mm/13"x6.5"
Shredder Hopper	600x425mm/23.5"x16.75"

Component Identification

Shredder Chute, for leaves and twigs up to 1" diameter

Chipper Chute, for branches up to 3" x 5"

3-Point Cat-I tractor connections

Chip discharge

Adjustable length 6 spline PTO shaft

Adjustable Height stand allow you to aline tractor PTO and chipper/shredder PTO



Safety Information

Your Responsibility

Restrict the use of this chipper/shredder to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

Note: Not all safety labels shown may apply to your chipper/shredder.

Preparation

1. Thoroughly inspect the area where the chipper/shredder is to be used. Remove all rocks, bottles, cans, or other foreign objects which could be picked up or thrown and cause personal injury or damage to the machine.
2. Avoid discharging chipped material out of the discharge chute against a wall or on asphalt, concrete, or other hard surfaces as material being ejected could ricochet, causing injury to you or bystanders.
3. Always wear safety glasses or safety goggles to protect eyes during operation or while performing an adjustment or repair.
4. Wear sturdy, rough-soled work shoes and close fitting pants and shirts. Loose fitting clothing or jewelry can be caught in movable parts. Wear leather work gloves when feeding material in the chipper chute.
5. Before starting the engine, check bolts and screws for proper tightness to be sure the machine is in safe working condition. Also, visually inspect the chipper shredder at frequent intervals for any damage.
6. Maintain or replace safety and instructions labels, as necessary.
7. To avoid personal injury or property damage use extreme care in handling gasoline.
 - a. Use only an approved gasoline container.
 - b. Extinguish all cigarettes, cigars, pipes, and other sources of ignition.
 - c. Never fuel machine indoors.
 - d. Never remove gas cap or add fuel while the engine is hot or running.
 - e. Allow engine to cool at least two minutes before refueling.
 - f. Never over fill fuel tank. Leave at least 1/2 inch open below bottom of filler neck to provide space for fuel expansion.
 - g. Tighten gasoline cap securely.
 - h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area and wait 5 minutes before starting the engine.
- i. Never store machine or fuel container inside near an open flame, spark, or pilot light (e.g., furnace, water heater, space heater, clothes dryer, etc.).
- j. To reduce the fire hazard, keep machine free of grass, leaves, or other debris build-up. Clean up oil or fuel spills and remove any fuel soaked debris.
- k. Allow machine to cool at least 5 minutes before storing.
8. Never attempt to make any adjustments while the engine (motor) is running (except where specifically recommended by the manufacturer).

Safety Label Locations

These labels warn you of potential hazards that can cause serious injury. Read them carefully. If a label comes off or becomes hard to read, contact your PowRkraft for a replacement.

Safety Information

PowRkraft Outdoor Power products are designed to give safe and dependable service if operated according to instructions. Read and understand this owner's manual before operating your power equipment.

Operator Responsibility

Know how to stop your power equipment quickly in case of emergency. Understand the use of all controls and connections. Be sure that anyone who operates this power equipment receives proper instruction. Do not let children operate the power equipment without parental supervision.

Operating Guidelines

READ THESE OPERATING GUIDELINES BEFORE YOU PROCEED ANY FURTHER

1. Do not put hands and feet near rotating parts or in the feeding chambers and discharge opening. Contact with the rotating impeller can amputate fingers, hands, and feet.
2. Before starting the machine, make sure the chipper chute, feed intake, and cutting chamber are empty and free of all debris.
3. Thoroughly inspect all material to be shredded and remove any metal, rocks, bottles, cans, or other foreign objects which could cause personal injury or damage to the machine.
4. If it becomes necessary to push material through the shredder hopper, use a small diameter stick. Do not use your hands or feet.
5. If the impeller strikes a foreign object or if your machine should start making an unusual noise or vibration, immediately shut the engine off. Allow the impeller to come to a complete stop. Disconnect the spark plug wire, ground it against the engine and perform the following steps:
 - a. Inspect for damage.
 - b. Repair or replace any damaged parts.
 - c. Check for any loose parts and tighten to assure continued safe operation.
6. Do not allow an accumulation of processed material to build up in the discharge area. This can prevent proper discharge and result in kickback of material through the feed opening.
7. Do not attempt to shred or chip material larger than specified on the machine or in this manual. Personal injury or machine damage could result.
8. Never attempt to unclog either the feed intake or discharge opening while the engine is running. Shut the engine off, wait until all moving parts have stopped, disconnect the spark plug wire and ground it against the engine before clearing debris.
9. Never operate without the shredder funnel, chipper chute, or discharge chute properly attached to the machine. Never empty or change discharge bag while the engine is running. Stop the engine when leaving the operating position.
10. Keep all guards, deflectors and safety devices in place and operating properly.
11. Keep your face and body back and to the side of the chipper chute while feeding material into the machine to avoid accidental kickback injuries.
12. Never operate this machine without good visibility or light.
13. Do not operate on a non-level surface.
14. Do not operate in a confined space.
15. Do not operate this machine while under the influence of alcohol or drugs.
16. Muffler and engine become hot and can cause a burn. Do not touch.
17. Never pick up or carry machine while the engine is running.
18. Do not leave this machine running while unattended.
19. Keep children, bystanders, and pets 75 feet away.
20. Use only manufacturer approved accessories/ attachments.



The lower chute is for longer and/or thicker pieces of yard waste. Depending on your model, you may cut up to a 3" x 5" in piece of wood.



The upper chute on the chipper/shredder is for Leaves and twigs only. **Do not use the funnel for vines or long branches such as Weeping Willows as they may clog the flails.**

Assembly Instructions

1. Remove the chipper from its carton.

Remove staples, break glue on top flaps, or cut tape at carton end and peel along top flap to open carton.

2. Verify all parts are in the chipper carton.

- Chipper Chute
- Chipper engine and box assembly (pre-assembled)
- Chipper Chute
- Hardware Bag
- Trailer hitch and funnel handles packaged together

Operating Instructions



DANGER

This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury.



WARNING

Always wear hearing and eye protection while operating this machine or if you are within 75 feet of this machine.

Using the Chipper Shredder

Yard waste such as leaves and pine needles can be raked up and placed in the chipper funnel for shredding.

DO NOT PUT BRANCHES INTO THE CHIPPER FUNNEL. BRANCHES SHOULD BE FED INTO THE SIDE CHIPPER CHUTE.

When using the side chipper chute to chip branches, it is important to let the chipper feed the branches through automatically. **DO NOT** attempt to force the branches through. If the branches do not automatically feed through, gently push the branch and then allow the chipper to automatically feed the branch through. Forcing branches into the side chute may wear the belt prematurely.

Once material is shredded by the hammers on the impeller assembly, it is discharged through the open discharge chute or into the chipper bag.

Do not attempt to shred or chip any material other than normal yard vegetation found (i.e., branches, leaves, twigs, etc.) Avoid fibrous plants such as tomato vines until they are thoroughly dried. Twigs and small branches can be fed into the chipper chute. (See model specifications for maximum cutting thickness.)

IMPORTANT: The hammer screen is located inside the housing in the discharge area. If the screen becomes clogged, remove and clean as instructed. For best performance, it is also important to keep the chipper blade sharp.

Maintenance and Storage

Maintenance Schedule

Item	Before Each Use	20 Hrs or Every 3 Mths	50 Hrs or Every 3 Mths	100 Hrs or Every 6 Mths	300 Hrs or Every 1 Yr
Check PTO Shaft Connection	X				
Tighten ALL Nuts & Bolts	X				
Lubricate Release Bracket					X
Lubricate Hopper Assembly			X		
Check Chipper Blade		X			



Always stop engine, disconnect spark plug, and ground against engine before cleaning, lubricating or doing any kind of maintenance on your machine.

Maintenance and Storage

- Never tamper with safety devices. Check their proper operation regularly.
- Check bolts and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage and repair, if needed.
- Before cleaning, repairing, or inspecting, stop the engine and make certain the impeller and all moving parts have stopped. Disconnect the spark plug wire and ground it against the engine to prevent unintended starting.
- Do not change the engine governor settings or overspeed the engine. The governor controls the maximum safe operating speed of the engine.
- Maintain or replace safety and instruction labels, as necessary.

- Follow this manual for safe loading, unloading, transporting, and storage of this machine.
- Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace, clothes dryer, etc.
- Always refer to the operator's manual for proper instructions on off-season storage.
- If the fuel tank has to be drained, do this outdoors.
- Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.

If the Chipper Becomes Clogged:

If the discharge area becomes clogged:

- Stop the engine. Disconnect spark plug wire from spark plug and ground against the engine.
- Remove the large funnel and the clean out the access hatch on the side of the chipper engine box (as necessary).
- Reach in and clear the debris causing the blockage. Reinstall the funnel and the clean out access hatch.
- Connect the spark plug wire and restart.

NOTE: If the blockage is severe, the hammer screen within the discharge chute can be removed as well, providing greater access. To accomplish this, remove the pins and slide the flail screen out of the discharge chute.



WARNING

Always stop engine, disconnect spark plug, and ground against engine before cleaning, lubricating or doing any kind of maintenance on your machine.

Removing and Sharpening the Blade

The chipper was shipped with one blade attached and one blade in the hardware bag. You can extend the belt life by operating the chipper with a sharp blade.

- Disconnect the PTO Shaft
- Remove the blade access hatch and rotate the blade to align with the access hatch.
- Remove the flail screen in the discharge chute by removing the pins that secure it at the top and bottom of the screen.
- Remove the blade using a 3/16" Allen wrench on the outside of the blade and an adjustable wrench on the impeller assembly (through the discharge chute). Use a piece of pipe or wood to block the flails, preventing them from inadvertently turning.
- Add, replace or sharpen the blade as desired.
- When sharpening the blade, protect hands by using gloves and following the original angle of Grind. Torque to 250–300 in. lbs.

NOTE: Make certain the blade is reassembled with the sharp edge facing upward.

Changing or Tightening the Belt

NOTE: The belt is designed to be the weakest link in the mechanical linkage between the engine and the blade. This improves the safety and durability of the chipper/shredder.

Occasionally, changing or tightening the belt is required.

To change the belt:

- Stop the engine and make certain the chipper/shredder has come to a complete stop. Disconnect the PTO Shaft from tractor.
- Remove the belt guard.
- Loosen engine mount bolts and release belt tension. Pry the belt off the pulley using a screw driver shaft as a wedge as you rotate the pulley. Place a new belt on the pulleys in a similar fashion.

To tighten the tension on the pulleys, follow the above steps plus:

Maintenance & Storage

- Scribe a mark on the base plate along the edge of the engine.
- Remove the belt from the pulleys.
- Remove the handle, discharge chute and screen.
- Loosen the four bolts securing the engine.
- Slide the engine about 1/8" further back.
- Tighten the engine mounting bolts securely.
- Re-install the belt and verify the tension. If the belt is still too loose, move the engine back another 1/8" by repeating the above steps.
- Reinstall guards, chutes, and screens.

Cleaning the Chipper/Shredder

- Make sure engine is off.
- Wipe off machine with an oiled rag to prevent rust.
- If the fuel tank has to be drained, do so outdoors.
- Observe proper disposal laws and regulations for gas, oil, etc., to protect the environment.

Storing the Chipper/Shredder

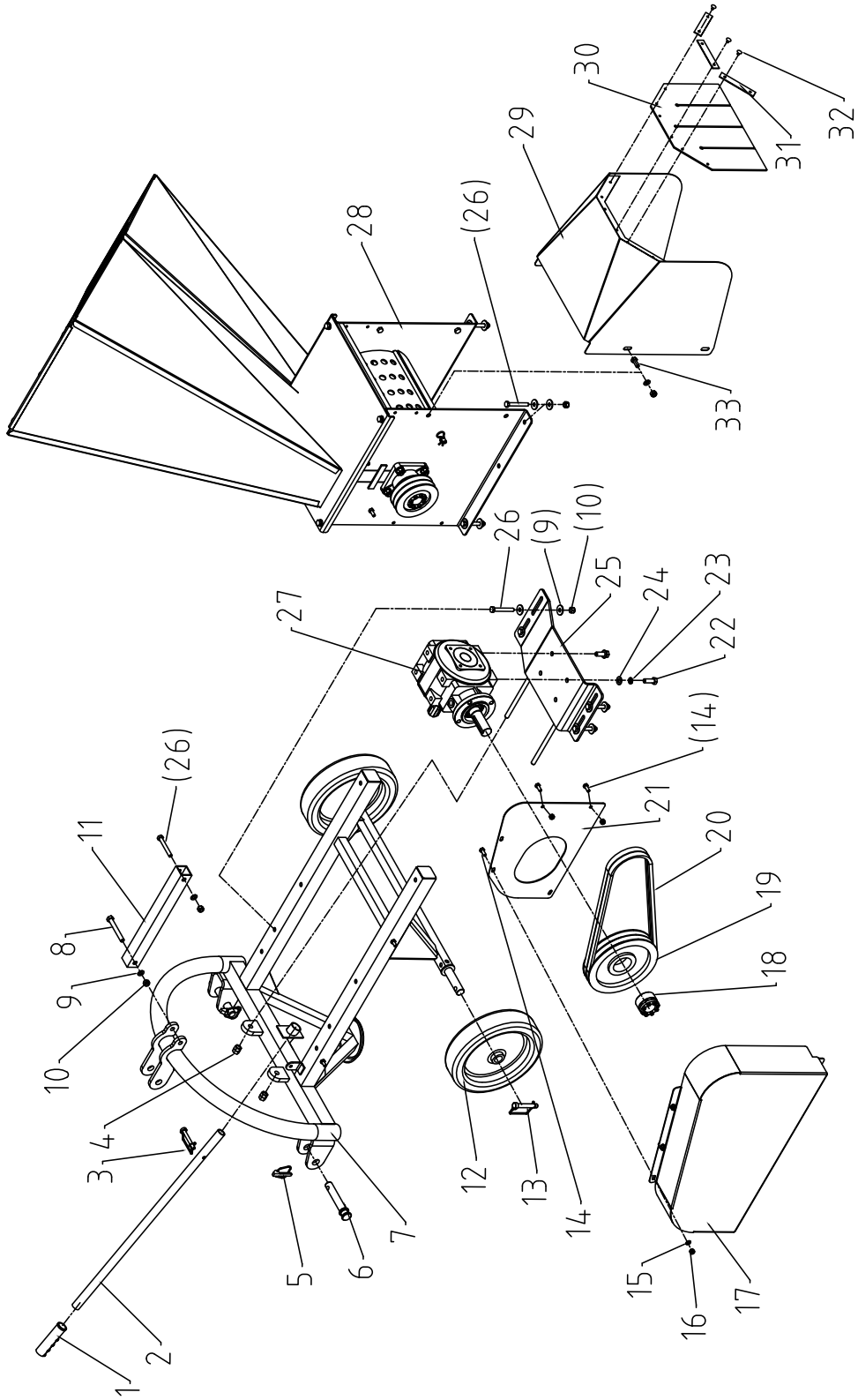
- Clean the equipment thoroughly.
- Wipe equipment with an oiled rag to prevent rust.
- Refer to engine manual for correct engine storage instructions.
- Store unit in a clean, dry area. Do not store next to corrosive materials such as fertilizer.
- Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace, clothes dryer, etc.

Troubleshooting

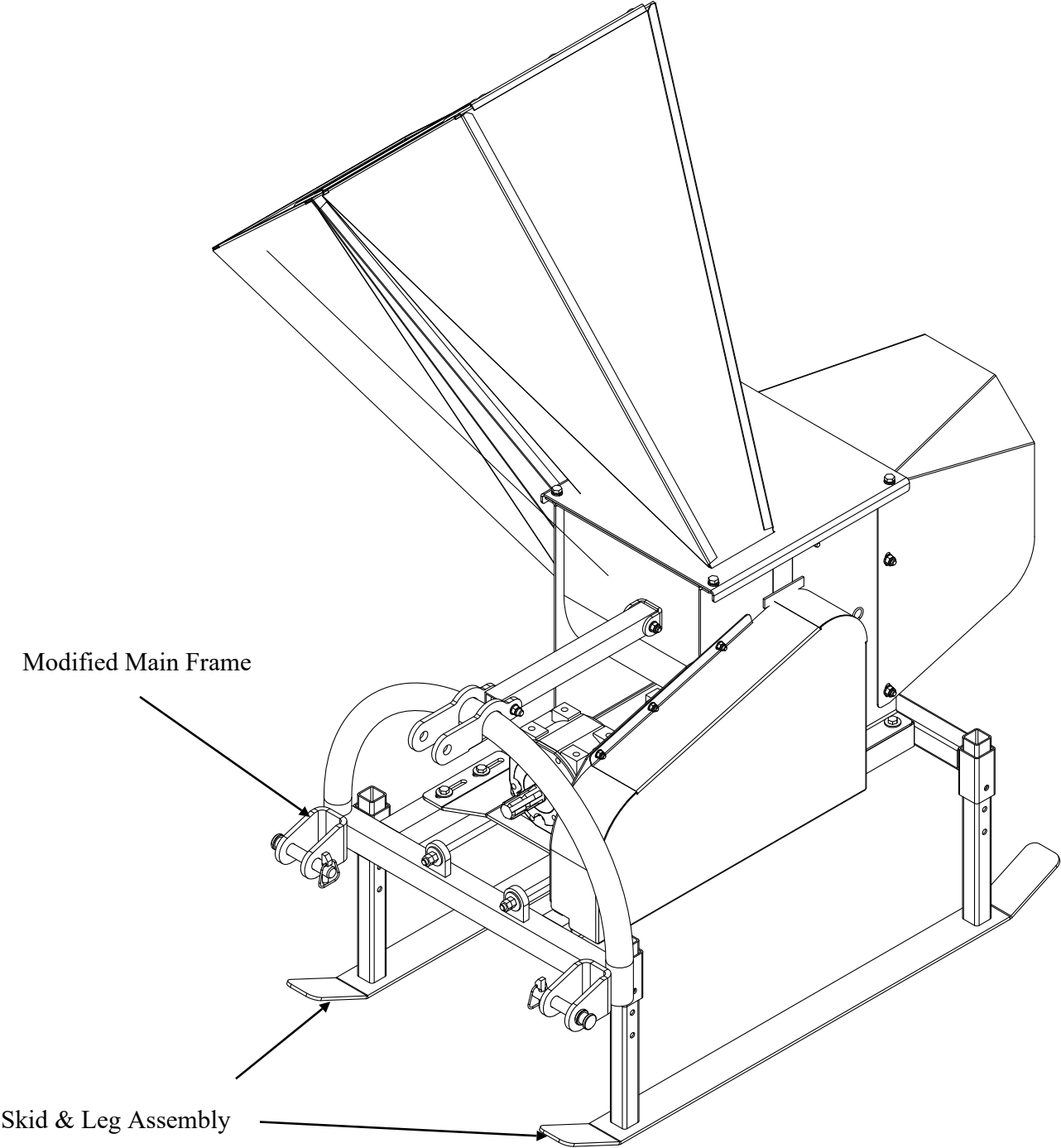
Problem	Cause	Remedy
Too Much Vibration	1. Loose Parts or Damaged Impeller	1. See Authorized Service Dealer
Unit Does Not Discharge	1. Discharge Chute is Clogged 2. Foreign Object lodged in Impeller 3. Low Engine RPM	1. Stop Tractor Engine Immediately & Disconnect PTO Shaft. Clean flail screen & Inside of Discharge Opening. 2. Stop Engine & Disconnect Spark Plug Wire. Remove Lodged Object. 3. Always Run Engine at 540 RPM PTO Speed
Rate of Discharge Slows	1. Low Engine RPM 2. Chipper Blade Dull	1. Always Run Engine at Full Throttle 2. Replace Chipper Blade

Parts Breakdown

EC019.001



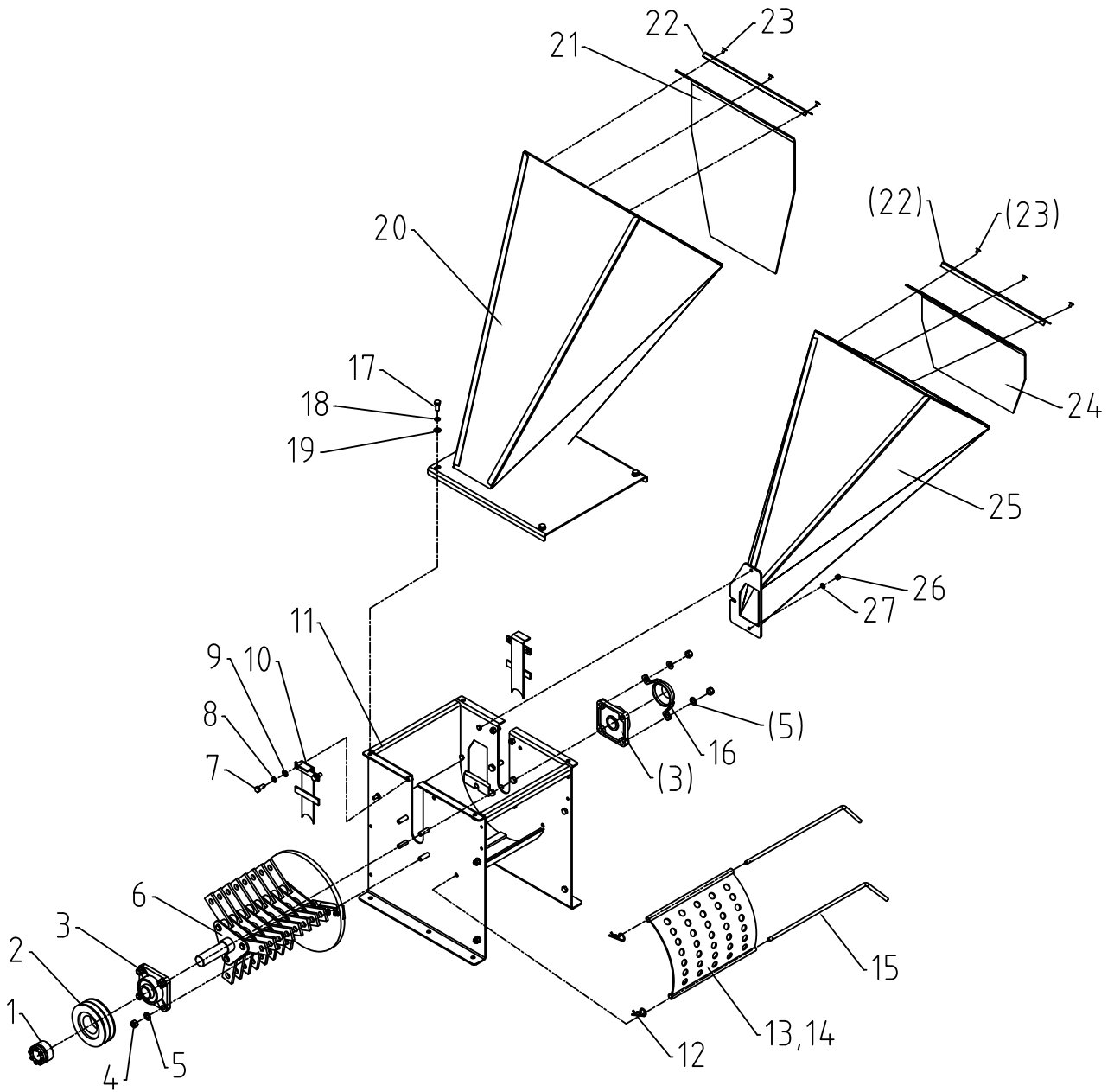
Parts - Adjustable Stand



EC019.001 PARTS LIST				
REF.	PART NUMBER	DESCRIPTION		QTY.
1	LS18.101	HANDLE COVER		1
2	ECO19.101	DRAW BAR		1
3	DP8x60	LOCK PIN D8x60	D 8x60	1
4	GB6170-M12	NUT M12	M12	4
5	LP12	LOCK PIN 12 •	12	2
6	T150.101	LOWER HITCH PIN		2
7	ECO19.011	MAIN FRAME,WDMT		1
8	GB5782-M10x90	BOLT M10x90	M10x90	1
9	GB97.1-10	PLAIN WASHER 10	10	22
10	GB889.1-M10	LOCK NUT M10	M10	14
11	ECO19.102	CONNECTING ROD		1
12	ECO19.021	WHEEL,SET		2
13	DP12x60	LOCK PIN D12x60	D 12x60	2
14	GB5783-M8x20	BOLT M8x20 •	M8x20	4
15	GB97.1-8	PLAIN WASHER 8	8	5
16	GB889.1-M8	LOCK NUT M8	M8	5
17	ECO19.020	SHIELD,PULLEY		1
18	REACH 04-3360	CLAMPING COUPLING 3360 •	3360	1
19	EFGC125.121	PULLEY		1
20	GB11544-SPB1295	V-BELT SPB1295	V SPB1295	2
21	ECO19.105	CONNECTING PLATE		1
22	GB5783-M12x35	BOLT M12x35	M12x35	4
23	GB93-12	LOCK WASHER 12	12	4
24	GB97.1-12	PLAIN WASHER 12	12	4
25	ECO19.012	MOUNTING BASE,GEARBOX		1
26	GB5782-M10x75	BOLT M10x75	M10x75	10
27	TS50.300Z.02	GEARBOX,ASSY		1
28	ECO19.002	CHIPPER,ASSY		1
29	ECO19.016	DISCHARGE COVER		1
30	ECO19.106	DISCHARGE FLAP		1
31	ECO19.107	CLAMPING PLATE		3
32	JB4005-6x12	RIVET 6x12	6x12	6
33	GB5783-M10x25	BOLT M10x25	M10x25	4

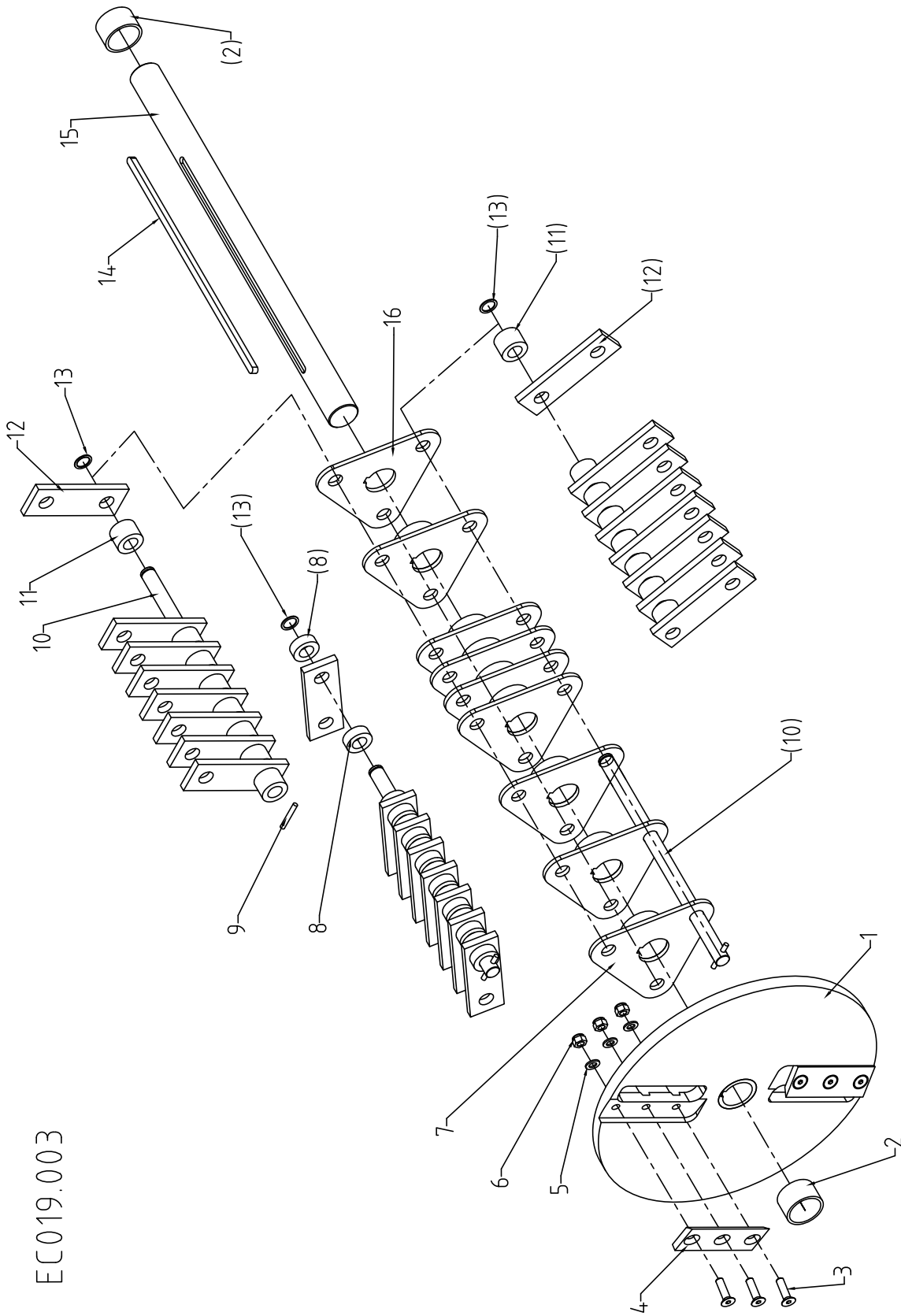
Parts Breakdown - Continued

EC019.002



EC019.002 PARTS LIST				
REF.	PART NUMBER	DESCRIPTION		QTY.
1	REACH 04-3560	CLAMPING COUPLING 3560 •	3560	1
2	ECO19.103	PULLEY		1
3	F90507	BEARING F90507,SET	F90507	2
4	GB889.1-M12	LOCK NUT M12	M12	8
5	GB97.1-12	PLAIN WASHER 12	12	8
6	ECO19.003	ROTOR,ASSY		1
7	GB5783-M10x25	BOLT M10x25	M10x25	4
8	GB93-10	LOCK WASHER 10	10	4
9	GB97.1-10	PLAIN WASHER 10	10	4
10	ECO19.019	PATCHING PLATE,WDMT		2
11	ECO19.013	HOUSING,WDMT		1
12	R PIN 3.2	R PIN 3.2	R 3.2	2
13	ECO19.017	SIFTING PLATE,WDMT		1
14	ECO19.018	SIFTING PLATE,WDMT		1
15	ECO19.109	SUPPORTING ROD		2
16	ECO19.022	COVER,BEARING		1
17	GB5783-M10x25	BOLT M10x25	M10x25	4
18	GB93-10	LOCK WASHER 10	10	4
19	GB97.1-10	PLAIN WASHER 10	10	4
20	ECO19.015	UPPER HOPPER		1
21	ECO19.111	ENTRANCE FLAP,UPPER		1
22	ECO19.112	CLAMPING PLATE		2
23	JB4005-6x12	RIVET 6x12	6x12	6
24	ECO19.110	ENTRANCE FLAP,LOWER		1
25	ECO19.014	LOWER HOPPER		1
26	GB889.1-M8	LOCK NUT M8	M8	3
27	GB97.1-8	PLAIN WASHER 8	8	3

Parts Breakdown - Continued



EC019.003

EC019.003 PARTS LIST				
REF.	PART NUMBER	DESCRIPTION		QTY.
1	ECO19.023	ROTOR,WDMT		1
2	ECO19.114	SPACER		2
3	GB2673-M8x30	COUNTERSUNK SCREW M8x30	M8x30	6
4	ECO19.115	KNIFE		2
5	GB97.1-8	PLAIN WASHER 8	8	3
6	GB889.1-M8	LOCK NUT M8	M8	3
7	ECO19.024	SHAFT HOLDER,WDMT		8
8	ECO19.120	SHORT SPACER		16
9	GB879-5x35	SPRING PIN 5x35	5x35	3
10	ECO19.116	SHAFT		3
11	ECO19.119	LONG SPACER		16
12	ECO19.117	FLAIL KNIFE		24
13	GB893.1-16	RETAINING RING 16	16	3
14	GB1096-A8x7x328	KEY A8x7x328	A8x7x328	1
15	ECO19.113	MAIN SHAFT		1
16	ECO19.118	PLATE		1