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# ABOUT THIS MANUAL

The information contained in this manual has been prepared to assist you in the safe operation, the routine maintenance and general care of your Red Roo product. By following these guidelines, you may look forward to years of reliable service from your Red Roo. Information is categorised and denoted by the following symbols and phrases:



**SAFETY FIRST** Identifies general safety practices.



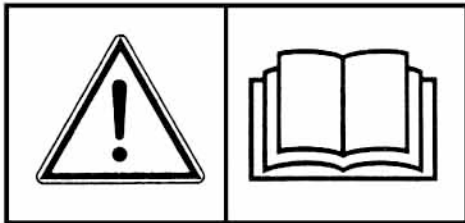
**DANGER!** An instruction which, if not followed, could result in serious or fatal injury.



**WARNING!** An instruction which, if not followed, could result in personal injury.



**CAUTION!** An instruction which, if not followed, could damage machine components.



Before operating this Machine read and observe all Warnings, Cautions and Instructions on the Machine and in the Operators Manual. Although the reading of information contained in this manual does not eliminate the risk involved in operating this machine, your understanding of this information will promote the correct and safe use of your machine. Failure to follow Instructions and Safety Information could result in serious injury or death.

## HAZARD WARNINGS



Read



Hearing Protection



Eye Protection



Wear Gloves



Cut Hand



Electrical Shock



Moving Parts



Hot Surfaces



Remove Spark Plug Leads



Toxic Fumes



Explosion



Don't Refuel Hot Engine

## SAFETY FIRST – Stay Alert, Do Not get Hurt



### Read this section before use!

The MS50/CMS100 is designed to chip/mulch/shred and therefore is potentially dangerous. Careless or improper use may cause serious or even fatal injury.

It is important that you read and understand the contents of this manual and that you allow only mature, adult individuals to operate your Chipper Mulcher Shredder. It is your responsibility to ensure that any individual who operates your MS50/CMS100 Chipper, Mulcher, Shredder have read and understood this manual.

Never use the Chipper Mulcher Shredder for any other purpose than chipping branches and mulching organic garden waste. The machine is designed for this purpose only. Any other use may cause serious or even fatal injury and/or damage to the machine.

# SAFETY PRECAUTIONS FOR MS50/CMS100 USERS

## Outdoor Power Equipment Institute Recommendations



### WARNING TO PURCHASERS OF INTERNAL COMBUSTION ENGINE EQUIPPED MACHINERY OR DEVICES:

The equipment which you have purchased does not have a spark arrester muffler. If this equipment is to be used on any forest and brush covered land or grass covered unimproved land, the law may require that a spark arrester muffler be installed and be in effective working order. The spark arrester must be attached to the exhaust system and comply with local authorities by-laws.



## USE COMMON SENSE AND PLENTY OF IT

- 1)  **DO NOT** allow any person to operate the Chipper/Mulcher/Shredder without first reading and understanding the safety precautions and operating instructions manual. Also read and understand the engine manual. **KNOW THE CONTROLS AND HOW TO STOP THE CHIPPER/MULCHER/SHREDDER QUICKLY IN AN EMERGENCY.**
- 2) **NEVER** allow children to operate the Chipper/Mulcher/Shredder.
- 3) **ALWAYS** wear protective clothing when operating the Chipper/Mulcher/Shredder. This includes, but is not limited to: safety glasses, loose fitting gloves, steel capped boots and hearing protection. **NEVER** wear loose fitting clothing or jewellery when operating the Chipper/Mulcher/Shredder. Keep all clothing away from moving parts. Items could become caught in the machine, resulting in injury.   
- 4) **ALWAYS** operate the Chipper/Mulcher/Shredder in a well lit area.
- 5) **ALWAYS** operate Chipper/Mulcher/Shredder on level ground only. Keep your work area clear and free of debris. Never attempt to move the Chipper/Mulcher/Shredder over uneven or hilly ground without a tow vehicle or adequate help. This machine should be operated only upon a level surface.
- 6) **NEVER** operate the Chipper/Mulcher/Shredder when fatigued. **ALWAYS BE ALERT!** If you get tired while operating the Chipper/Mulcher/Shredder, take a break. If you have any type of physical or mental condition that may be aggravated by strenuous work, check with your physician before you operate this equipment. **NEVER** operate the Chipper/Mulcher/Shredder under the influence of medication, alcohol or drugs.
- 7)  **DO NOT** allow other persons near the Chipper/Mulcher/Shredder. It is up to the operator to keep bystanders and animals a minimum of 6 metres away from the machine while in operation.
- 8)   **NEVER PUT YOUR HANDS, FEET, FACE OR ANY OTHER PART OF YOUR BODY INTO EITHER OF THE FEED HOPPERS. Use a stick, not hands, to push limbs into the shredding and chipper hopper.**
- 9)  **NEVER** remove the guarding attached to the shredding hopper. This protective device minimises material flyback and must be in place at all times during operation. **NEVER** use the chipper with the chipper hopper removed.
- 10) **DO NOT** leave the machine unattended while the engine is running.
- 11) **DO NOT** overspeed the engine or alter the governor settings. Excessive engine speed is dangerous and will shorten engine life.
- 12)  **NEVER** operate the Chipper/Mulcher/Shredder in an enclosed area. Engine exhaust contains carbon monoxide, an odourless and tasteless poison.
- 13)  **STOP** the engine and disconnect the spark plug lead(s) and allow engine to cool before inspecting or performing maintenance.
- 14)  **REFUELLING**
  - \* **SHUT OFF ENGINE. DO NOT REFUEL AN ENGINE WHILE OPERATING!**
  - \* Allow engine to cool. Minimum 5 minutes.
  - \* **USE UNLEADED FUEL ONLY. Use clean, fresh unleaded fuel.**
  - \* **Do not mix oil with unleaded fuel.**
  - \* Do not over-fill fuel tank. Allow space for fuel expansion.
  - \* Do not smoke near equipment.
  - \* Allow no naked flame or hot material in refuelling area.
  - \* Use only approved fuel containers and funnels. Remember, fuel is a potential hazard.
  - \* Refer to engine owners manual for full details.




# OPERATING INSTRUCTIONS

## TRANSPORT

- 1) **WARNING:** Do not exceed 80 kms per hour when towing.




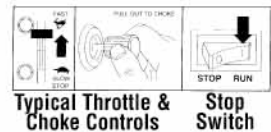
## BEFORE USE

- 1)  **WARNING:** Before starting engine, inspect the chipper intake hopper and mulching shredding chamber and remove any foreign debris or branches, stones, cans, nails sweepings, wire, etc.

## OPERATION



- 1) Familiarize yourself with the Chipper/Mulcher/Shredder and its controls.
- 2) Wear safety glasses or helmet and visor combination, loose fitting gloves, and hearing protection.
- 3) No foreign objects such as stones, steel, cans, glass, wire, rope or nails should be fed into the machine, as damage will occur.
- 4)  Open fuel shut-off valve, if engine is equipped. Move choke control to CHOKE or START position. Note: Choke must fully close. Move throttle control to RUN or FAST position. Turn key to "ON" position. Operate engine in FAST position.



- 5) **SHREDDER HOPPER** (See Figure 1) Four rows of hammers shred material until it reaches such size to allow it to pass through the discharge screen. The discharge screen retains the material within the mulcher shredder chamber for several seconds until the free-swinging hammers have rotated several times. The number of cuts by the hammers and retention time within the chamber varies with different types of organic material.

- 6) **CHIPPER CHUTE** (See Figure 1) Branches are fed into the side hopper for chipping. One at a time if they are thicker than 50mm, several together if of small diameter. The throat opening is approximately 135 mm square. Some side shoots or side branches may have to be trimmed from the main stalk before chipping. Short stubs of branches may be pushed through the chipper section with the next branch. **NEVER ASSUME YOU KNOW WHERE THE BLADE IS. DO NOT PUSH BRANCHES IN BY HAND. BE SAFE – ALWAYS KEEP YOUR HANDS AWAY FROM THE CHIPPING BLADE.**

- 7)  **CAUTION: IF SHREDDER CHUTE OR MULCHER CHUTE CLOGS WITH MATERIAL, STOP THE ENGINE IMMEDIATELY TO PREVENT CLUTCH DAMAGE.**

- 8) Do not allow an accumulation of processed material to build up under the discharge area of the shredder as this will prevent discharge and will result in clogging.

- 9)  **NEVER ALLOW YOUR HANDS OR ANY PART OF YOUR BODY OR CLOTHING INSIDE THE FEED HOPPER OR DISCHARGE AREA OF THE MULCHER/SHREDDER.**



- 10) **ALWAYS STAND CLEAR OF THE DISCHARGE AREA WHEN THE MACHINE IS IN USE.** (See Figure 1)

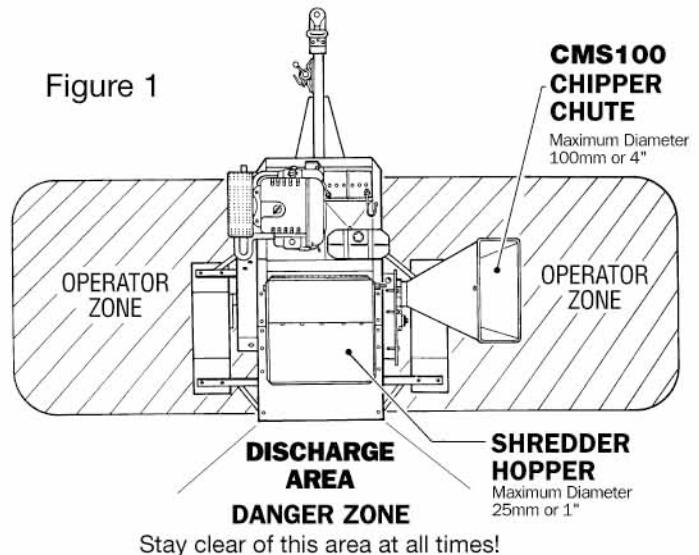
- 11) Keep your face and body away from the intake hoppers to avoid being struck by any material that may bounce back. Do not over-reach. Keep proper balance and footing.

- 12) **Stop Engine:** Do not move choke control to CHOKE position to stop engine. Backfire or engine damage may occur. Move throttle control to SLOW position, and turn key to OFF.



## AFTER USE

- 1)  Turn fuel tap to "OFF" position.
- 2)  Allow machine to cool down.
- 3) Clean with warm soapy water. Ensure no water enters the carburettor.





# BASIC DESIGN PRINCIPLE

Before operating the Chipper/Mulcher/Shredder, you should first understand the basic principle of design.



Whenever you operate your MS50/CMS100, the wearing of gloves, hearing protection and safety glasses is required. If necessary to push material into the shredding chamber, use a wooden stick. Do not use hands or non-organic implements.

## MULCHER/SHREDDER

Adjust the discharge flap (0601-0006) to direct the discharge down and away from the shredder. The discharge end of the shredder body has three drilled holes in each side through which passes a flap rod. The loose end of the plate rests over this rod providing three angles of discharge. **Keep clear of discharge area at all times.**

As engine ignition begins, the engine shaft operates freely until approximately 1400-1600 rpm. The centrifugal clutch engages at this time and begins driving the rotor. The rotor consists of four pins with 60 hammers – four rows of hammers cutting or beating material until it reaches a size to allow it to pass through the discharge screen. The discharge screen retains the material within the mulcher/shredder chamber for several seconds until the free-swinging hammers have rotated several times. The number of cuts by the hammers and retention time within the chamber varies with each organic material.


When viewed from the pulley side of the shredder body, the rotor runs counterclockwise. This action pulls materials into the mulching/shredding chamber. Short stalks (bean plants) and long stalks (sweet corn) sod and similar materials should be fed into the hopper **slowly**. This will prevent the hammermill pulling the complete stalk into the chamber, wrapping the material around the rotor shaft and stalling the mulcher/shredder. When feeding stalks or trimmings by hand, be certain to keep your hands away from the rotor and hammers.

**Remember – technique and understanding is required to successfully shred or grind the variety of materials available to you for compost.**

## CHIPPER

Branches are fed into the side hopper for chipping. One at a time if they are thicker than 50mm, several together if of small diameter. The throat opening is approximately 135 mm square. Side shoots or side branches may have to be trimmed from the main stalk before the chipping process. Short stubs of branches may be pushed through the chipper section with the next branch. **Never assume you know where the blade is! Do not push short branches in by hand. Be safe and always keep your hands away from the chipping blade.**

## GENERAL

1. When feeding material into the chipper/mulcher/shredder be careful that pieces of metal, glass, wire, rope, rocks, cans or other non-organic or foreign objects are not included.
2. Do not allow an accumulation of processed material to build up under the discharge of the mulcher/shredder as this can prevent material from discharging and will result in clogging.
3.  Never allow your hands or any part of your body or clothing inside the feed hopper or discharge area of the mulcher/shredder.
4. Keep all protective guards on the machine and deflectors in place and in good working condition.
5. Always stand clear of the discharge area when the machine is in use.
6. Keep your face and body away from the feed hopper to avoid being struck by any material that may bounce back. Do not over-reach, keep proper balance and footing.
7. Do not transport the machine with the engine running.
8. Do not refuel the engine while it is hot, warm or running.



**NEVER USE THE CHIPPER/MULCHER/SHREDDER FOR ANY OTHER PURPOSE THAN CHIPPING AND SHREDDING ORGANIC YARD DEBRIS OR PAPER. IT IS DESIGNED FOR THIS USE ONLY AND ANY OTHER USE MAY CAUSE SERIOUS PERSONAL INJURY OR DAMAGE TO THE MACHINE.**

## **SAFE ENVIRONMENT**

Use the Chipper/Mulcher/Shredder in a well lit area only. Never use the Chipper/Mulcher/Shredder on slippery, wet, muddy or icy surfaces. **Safe footing** is essential to prevent accidents.

Only operate the Chipper/Mulcher/Shredder on **level ground**. Never on a hillside or incline. Keep your work area clear and free of debris so that you don't stumble over it. Never move the Chipper/Mulcher/Shredder over uneven or hilly ground without a tow vehicle or adequate help.

## **SAFE OPERATOR**

**USE ONLY** on a level earthen surface. Make sure the unit is level and not tilted up or down by the jockey wheel.

**NEVER** put your hands, feet, face or any other part of your body into either of the feed hoppers (Shredder or Chipper). When chipping, never allow your hands to enter the chipper hopper. **Use a stick**, never a hand to push limbs into the chipper hopper.

**NEVER** remove the guarding attached to the shredding hopper. These protective devices prevent flyback and must be in place at all times during operation.

**NEVER** operate the Chipper/Mulcher/Shredder while under the influence of medications, drugs or alcohol. A clear mind is essential for safety.

**NEVER** allow anyone who is tired or otherwise not alert to operate the Chipper/Mulcher/Shredder.

## **SAFE APPAREL**

**NEVER** wear loose clothing or jewelry that can be caught in moving parts of the Chipper/Mulcher/Shredder and pull you into it. Keep all clothing away from moving parts. Wear proper head gear to keep hair away from moving parts.



**Always** wear safety glasses, loose fitting gloves and hearing protection while operating the Chipper/Mulcher/Shredder. A chip could fly out and hit you in the eye. Be sure your glasses fit properly and your gloves do not have loose cuffs or drawstrings.

**DAMAGE TO THE UNIT RESULTING FROM ANY USE OTHER THAN SHREDDING AND CHIPPING ORGANIC MATERIAL IS YOUR RESPONSIBILITY.**

**No sticks or branches larger than 1½" or 40 mm diameter into the Large Mulcher/Shredder Hopper**

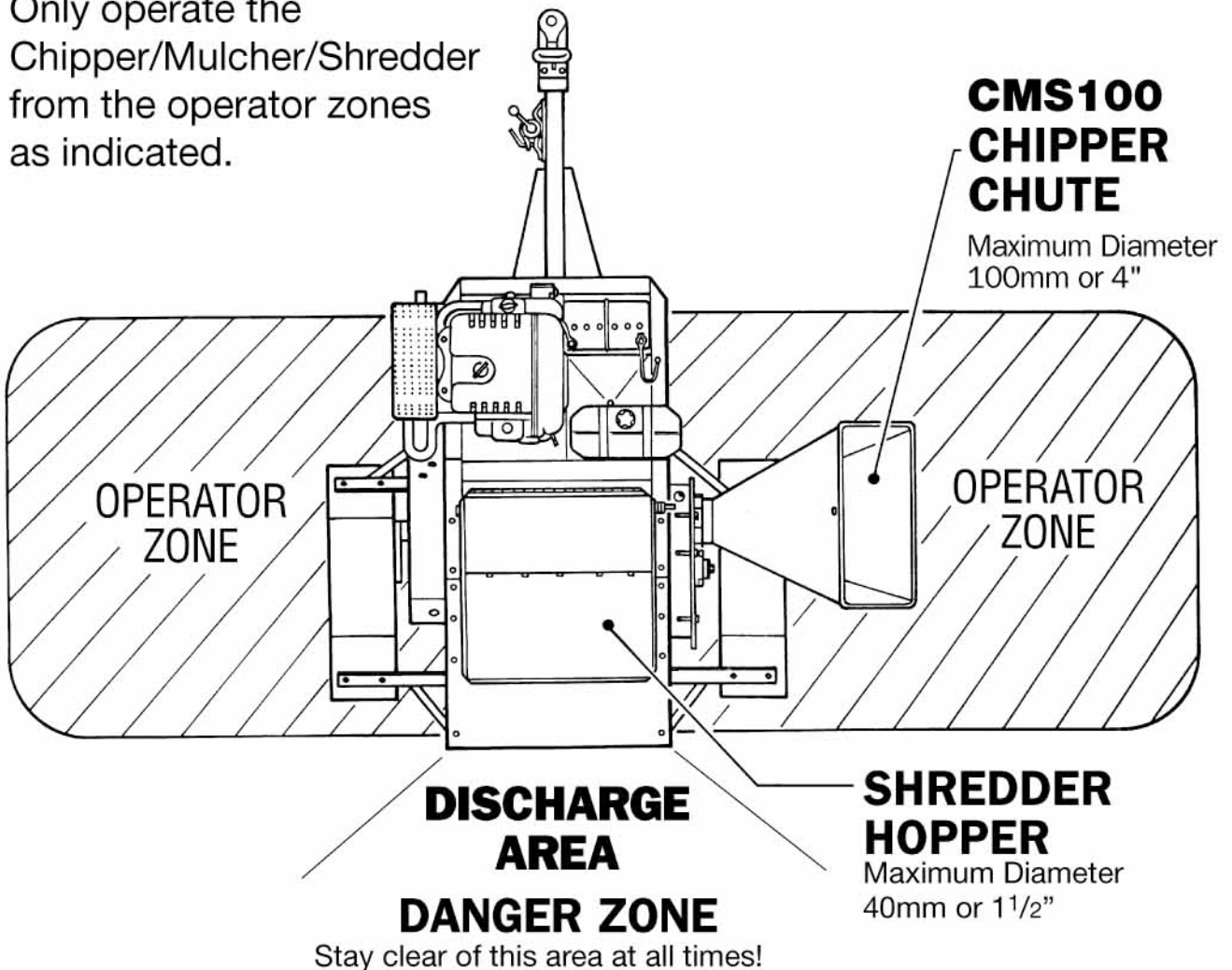


**THIS MACHINE IS CAPABLE OF INFLECTING SERIOUS INJURY IF OPERATED IMPROPERLY. READ WARNINGS AND CAUTION.**

1. The operator of this machine must wear safety glasses, hearing protection and loose fitting gardening or work gloves at all times while operating this chipper/mulcher/shredder.
2. Wear proper work apparel: avoid loose clothing such as skirts or loose sleeves.
3. Children must never be allowed to operate this machine.
4. This machine should never be operated in the vicinity of children, pets, or bystanders.
5. This machine should be operated only upon a level, earthen surface.
6. Never run this machine in an enclosed area. Engine exhaust contains carbon monoxide which is an odourless, tasteless and poisonous gas.
7. Keep hands and face away from feed hopper and discharge area. Read operating section carefully.
8. Do not remove the plastic shield or curtain inside the shredding or the chipping hopper. These guards prevent material from coming back out of the hopper and are installed for operator safety. These are protective guards and should be intact at all times when mulching or chipping.



Only operate the  
Chipper/Mulcher/Shredder  
from the operator zones  
as indicated.



**Know** the controls and how to shut the chipper/mulcher/shredder down in an emergency.  
**Never** clear the discharge area with hands, feet, or any other part of your body.  
**Never** clear the discharge area while the Chipper/Mulcher/Shredder is running.  
After unit is shut off, use a long handle tool to clear the area.

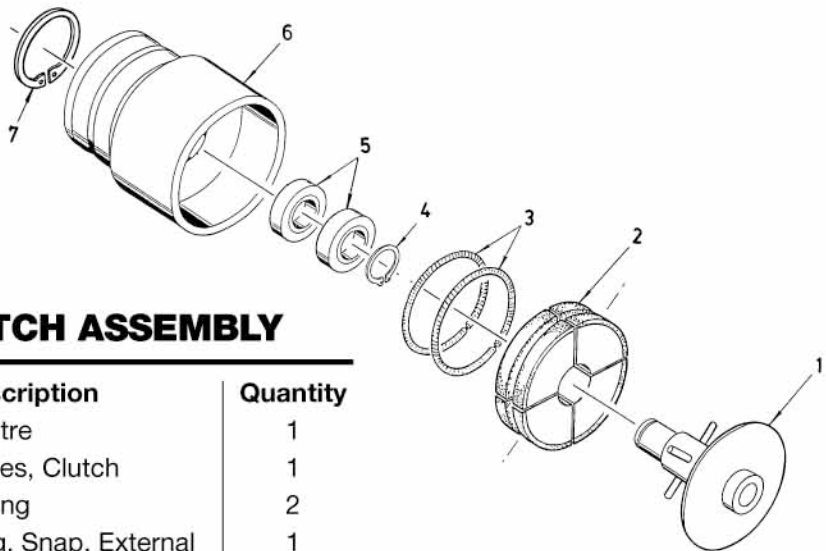


# SHREDDING TIPS (TECHNIQUE)

1. When shredding green or damp material (sweet corn stalks, potato vines, tomato plants, green or fresh pulled plants) – **TAKE YOUR TIME**. Direct the shredder to discharge into a compost pile or wall, large board or other obstruction. Feed sweet corn stalks by hand, slowly, several at a time until the last 50cm remain in your hand - then let go. This will give you a coarsely shredded product several centimetres long and stripped. With a garden spade or pitchfork, re-process this material into the shredder again or until it reaches the condition you want. A sweetcorn stalk that has been processed this way will chemically break down within a day or two in your compost heap. For green materials such as tomato or potato vines, you may first have to snap off extending side shoots. Place vine in the hopper and prod further with a rugged stick (never your hands).
2. For grinding dry leaves, dump leaves into the top feed hopper by basket, bag or pitchfork. If bridging occurs inside hopper, use a stick to stir leaves into the shredding chamber. Freshly fallen leaves do present a problem, and it is best to pile these and allow to sit until they become quite soggy. All by themselves, for the most part, wet leaves will simply blow through the shredder. Soggy, partially decomposed leaves process very well. Dump in pitchfork loads and prod through with a stick.
3. For green hedge prunings, small diameter wood prunings (with leaves), rose or flower trimmings, process bunches at a time through the top feed hopper. Experience will tell you how much your machine will handle at one time.
4. Always use chipper for branches over 25mm as it is quicker and easier on your machine. Never put large branches into the shredder as you will stall the engine and eventually damage the scroll, and the screen. Enter one at a time if there is any thickness (50mm or more) to the branch. Green branches process more quickly and easier than dry branches and soft wood easier than hardwood. Push the branch in at the angle of the hopper and throat. Always use the hopper extension. **Never allow your hands to enter the hopper. As the branch being chipped shortens, finish chipping it by shoving in with the next branch to be chipped.** Only your operator experience will tell how to process difficult materials, and overall length of material. There is such a magnitude of possible materials that we cannot discuss each individually. Some naturally are easier to work with than others, but most all common organic products available to a gardener can be processed by using your machine and common sense.
5. **REMEMBER!** Work with the chipper/mulcher/shredder. Do not overload. Allow the chamber to clear and engine rpm to pick up before processing additional material. Always work with engine at maximum rpm. Otherwise, you **WILL CAUSE PREMATURE WEAR TO THE CLUTCH AND DRIVE BELTS**.
6. Optional discharge screens are available for special applications. Sizes include 6mm, 12mm, 20mm, 30mm, 45mm, 62mm. Uses include potting soil, shells, paper, cardboard, woodchips, pinebark, pinestraw, hay, seaweed.

## CLUTCH ASSEMBLY

Part No. 0310-0007



### PARTS LIST FOR CLUTCH ASSEMBLY

Item No.	Part No.	Description	Quantity
1	0304-0002	Centre	1
2	1909-0003	Shoes, Clutch	1
3	1916-0014	Spring	2
4	1806-0006	Ring, Snap, External	1
5	0204-0017	Bearing	2
6	0406-0005	Drum	1
7	1806-0007	Ring, Snap, Internal	1

**USE ONLY GENUINE RED ROO PARTS**



**STOP ENGINE IMMEDIATELY IF CHIPPER DISCHARGE CLOGS WITH MATERIAL OR THE CHIPPER DISC JAMS. FAILURE TO DO SO WILL RESULT IN CLUTCH DAMAGE.**

**CLUTCH DOES NOT REQUIRE LUBRICATION**



**CAUTION**

IF MACHINE STALLS OR DISC JAMS  
STOP ENGINE IMMEDIATELY TO  
PREVENT CLUTCH DAMAGE

0401-0052

0401-0052

**RED ROO** GROUP OF COMPANIES  
MELBOURNE AUSTRALIA  
www.redroo.com

MODEL SERIAL NUMBER

0401-0049

**WARNING**

READ AND UNDERSTAND ALL SAFETY AND OPERATING INSTRUCTIONS BEFORE USING MACHINE

DO NOT REACH INTO HOPPER WHEN OPERATING MACHINE

EAR, EYE, HAND AND FOOT PROTECTION MUST BE WORN WHEN OPERATING MACHINE

KEEP BYSTANDERS 6 METRES (20 FEET) AWAY FROM MACHINE

0401-0055

4 x 0401-0055

**IMPORTANT**

EXCESS BLADE TO ANVIL CLEARANCE AND BLUNT BLADES CAN LEAD TO METAL FATIGUE AROUND THE THROAT AREA OF HOPPER, FRONT PLATE AND ANVIL SUPPORT.

1 x 0401-0053

**WARNING**

THIS MACHINE IS CAPABLE OF INFLECTING SERIOUS INJURY IF OPERATED IMPROPERLY. - READ AND UNDERSTAND WARNINGS AND CAUTIONS ON THE MACHINE. READ AND UNDERSTAND ALL SAFETY AND OPERATING INSTRUCTIONS BEFORE OPERATING EQUIPMENT. 0401-0050

1 x 0401-0050



Large 1 x 0401-0034 Small 2 x 0401-0036



1 x 0401-0058



3 x 0401-0001

**DANGER**

KEEP BYSTANDERS  
6m (20ft) AWAY  
FROM THE  
MACHINE

0401-0077

0401-0077

**DANGER**

BLADES CUT 4mm  
(5/32in) FROM  
DISCHARGE SCREEN  
KEEP HANDS AWAY!

0401-0066

1 x 0401-0066

**WARNING**

NEVER OPERATE WITHOUT  
BELTGUARD IN PLACE

0401-0070

1 x 0401-0070

**CAUTION**

**TO AVOID INJURY**

- Read and understand all safety and operating instructions before using this machine.
- Know the location and functions of all the controls.
- Keep all safety devices in good working order and never remove protective guarding.
- Turn off engine, allow the engine to become cool, remove spark plug leads before attempting any type of maintenance on this machine.
- Keep all bystanders away from this machine while in operation.

0401-0033

1 x 0401-0038



1 x 0401-0065

**DANGER**

**STOP**

**Do Not Open Cover**  
Wait until all moving parts have come to a complete stop.

0401-0062

1 x 0401-0062

**CUSTOMER SUPPORT SERVICE AND SPARE PARTS**

Australia 1300 133 767 USA 1800 579 7352  
www.redroo.com

0401-0095

1 x 0401-0095

**CAUTION**

- Read instructions and operators manual before operating machine. Know the controls and how to stop in an emergency.
- NEVER allow children to operate the chipper mulcher shredder.
- ALWAYS wear protective clothing when operating the chipper mulcher shredder. e.g safety glasses, loose fitting gloves, steel capped boots and hearing protection. NEVER wear loose fitting clothing or jewellery when operating the chipper mulcher shredder. Keep all clothing away from moving parts.
- ALWAYS operate chipper, mulcher shredder on level ground only.
- Keep stones, nails and all objects other than branched larger than 25mm out of shredder hopper.
- NEVER operate when fatigued. Always be alert! NEVER operate under the influence of medication, alcohol or drugs.
- DO NOT allow other persons near the chipper mulcher shredder. It is up to the operator to keep bystanders and animals a minimum of 3 metres away from the machine while in operation.
- Always stand clear of the discharge area when the shredder is running. Keep your face and body away from the feed hopper to avoid being struck by any material that may bounce back. DO NOT use hands to clear away material from the hopper.
- NEVER put your hands, feet, face or any other part of your body into either of the feed hoppers. Use a stick, not hands, to assist branches into the shredding and chipper hopper. DO NOT use hands to clear away material from the discharge area.
- NEVER remove the guarding attached to the shredding hopper. This protective device minimises material flyback and must be in place at all times during operation. NEVER use the chipper with the chipper hopper removed.
- DO NOT leave the machine unattended while the engine is running.
- If shredder and mulching chamber cloggs with material, stop the engine immediately to prevent clutch damage. Use extreme care before removing screen pin and eliminating blockage or obstruction.
- NEVER operate the chipper mulcher shredder in an enclosed area.

1 x 0401-0061