



Cooper Equipment Inc.
Densification Technology



Model 440 Shredders Safety Manual

SAFETY

MODEL SHR440 SAFETY PROCEDURES

All SHR model shredders have shredder blades and blade guards on both the upper and lower rotor assemblies (Figure 1). Due to excessive wear and the high rotational speeds of the shredder, all blades and blade guards must receive regular scheduled service and maintenance. On a regular maintenance cycle blades and blade guards must be rotated or replaced.

NOTICE All operators and maintenance personnel must receive training at least annually to comply with OSHA CFR 1928.57. It is the employer's responsibility to insure that all individuals associated with the model SHR440 shredders read, understand, and comply with operating and safety instructions discussed in the OSHA standards and this manual.

WARNING SEVERE INJURY OR DEATH CAN RESULT FROM IMPROPER OPERATION, MAINTENANCE, OR SERVICE OF SHREDDER EQUIPMENT.

WARNING MODIFICATION OF SHREDDER EQUIPMENT WITHOUT AUTHORIZATION FROM COOPER EQUIPMENT MAY ALSO RESULT IN SEVERE INJURY OR DEATH!

SAFETY RULES ROTOR, BLADE, AND BLADE GUARD :

- WARNING** SHREDDER MACHINES MUST BE FULLY STOPPED, DISCONNECTED FROM POWER SOURCE, AND PERSONNEL MUST FOLLOW PROPER **LOCK-OUT** PROCEDURES (Re: OSHA CFR 1910.147) PRIOR TO ANY SERVICE OR MAINTENANCE BEING PERFORMED ON THEM. **FAILURE TO DO SO MAY RESULT IN SEVERE INJURY OR DEATH!**
- Do not attempt to cut and remove twine from bales after the warning arrow located 12 feet ahead of the rotor assemblies (Figure 1). **WARNING** **DOING SO COULD RESULT IN SEVERE INJURY OR DEATH!**
- Upper and lower shredder rotor assemblies, blades, and blade guards, must be visually inspected each day to determine if parts are missing, if there is excessive wear, breaks, cracks, or if they are otherwise unsafe to operate. If any unsafe conditions exist, maintenance must be performed immediately to correct those situations prior to putting the machine into operation. **CAUTION** Be

certain to disconnect the shredder from the power source and follow proper OSHA 1910.147 **LOCK-OUT** procedures before inspecting the machine.

NOTICE Replace all shredder parts with dealer authorized replacement items only.

- Shredder assemblies must be inspected whenever foreign material has passed through the assembly. **WARNING** Disconnect the shredder from the power source and follow proper OSHA 1910.147 **LOCK-OUT** procedures before inspecting and removing foreign objects from the machine. Check for damage to rotor assembly, blades, or blade guards. Repair or replace all damaged rotor assembly parts at this time.
- During every inspection or maintenance procedure done on the rotor assembly, remove all foreign material including twine, from the rotor assembly, blades, and blade guards.
- CAUTION** Do not operate a shredder with blades or blade guards that have excessive wear, are broken, cracked, missing, or otherwise rendered unsafe, as this may result in the blade or blade guard breaking loose from the shredder causing severe injury to personnel or damaging equipment!
- Wear appropriate personal protection when replacing blades or blade guards. Hard hats are recommended. Protective eyewear should be worn at all times during blade and blade guard maintenance procedures. If rotor assemblies have been or are to be removed, steel-toed shoes may be required. All pinch points should be avoided.
- Remove all tools, equipment, personal items, and anything not part of the shredder prior to starting up the machine.
- All blades or blade guards on both rotor assemblies must be replaced or rotated at the same time. Blades or blade guards not rotated or replaced at the same time on a rotor assembly may cause that assembly to become unbalanced. **CAUTION** Excessive vibration from an unbalanced rotor assembly may lead to catastrophic failure of the shredder, possible injury to personnel, and significant damage to the equipment!
- All blades (Figure 2) on each rotor assembly should be replaced or rotated at the same time using dealer authorized parts. Reference Cooper Equipment Part Number SHR4X4-V for replacement blades. All replacement blade bolts must be grade 8 bolts, 3/4 inch in diameter and 2-1/4 inches in length. Bolts, nuts, and lock washers must be tightened to 165 foot-pounds of torque.

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11. Blades must be replaced when all 8 possible positions of a blade (Figure 3) have worn through the tungsten carbide chopping surface and when blades are broken, cracked, (Figure 4) missing, or otherwise rendered unsafe.
12. All blades and blade guards must be installed, and in their proper place. **CAUTION** *Missing blades or blade guards cause excessive vibration in the rotor assembly and can lead to catastrophic failure of the shredder, injury to personnel, and significant damage to the equipment!*
13. All blade guards (Figure 5) must be replaced when both possible positions of a blade guard have worn through the surface treatment material and when blade guards are broken, cracked, missing, or otherwise rendered unsafe.
14. All blade guards (Figure 6) on both rotor assemblies should be replaced or rotated at the same time using dealer authorized parts. Reference Cooper Equipment Part Number SHR450 for replacement blade guards. All replacement blade guard bolts must be grade 8 bolts, 5/8 inch in diameter and 2-1/4 inches in length. Bolts, and nuts must be tightened to 165 foot-pounds of torque.
15. Do not strike the blades or blade guards with any solid object. They are hardened steel and could break, crack, or shatter when struck with a solid object.
16. Do not attempt to repair blades or blade guards by welding. Excessive heat will cause blades or blade guards to lose their required hardness and result in failure of the blades or blade guards.

SAFETY RULES **SHREDDER CONVEYOR GUARD**

1. **WARNING** DO NOT REMOVE THE CONVEYOR SAFETY GUARD (Figure 1) FROM THE FEED END OF THE SHREDDER'S CHAIN CONVEYOR (Re: OSHA CFR 1910.212 - Machine Guarding). **REMOVING THE GUARD PLACES PERSONNEL AT RISK FOR SEVERE INJURY OR DEATH.**
2. Proper power disconnect and OSHA 1910.147 **LOCK-OUT** procedures must be followed prior to performing maintenance or service on the conveyor chain assembly.
3. Inspect the shredder conveyor prior to startup of the machine for any foreign items. Remove all such items prior to operating the machine.
4. Repair or replace all broken, or worn parts of the shredder conveyor immediately.

SAFETY RULES **SHREDDER DRIVE BELT GUARD**

1. **WARNING** DO NOT REMOVE THE DRIVE BELT SAFETY GUARD (Figure 1) OR LEAVE IT IN AN OPEN POSITION WHILE OPERATING THE SHREDDER (Re: OSHA CFR 1910.212 - Machine Guarding). **REMOVING OR LEAVING THE GUARD OPEN, PLACES PERSONNEL AT RISK FOR SEVERE INJURY OR DEATH!**
2. All maintenance or service performed on the drive belt assembly requires that proper power disconnect and **LOCK-OUT** procedures be followed prior to opening the guard covering the shredder drive belt.

SAFETY RULES **SHREDDER DUST COLLECTOR**

If the shredder machine has a Torit PowerCore dust collector, the following safety rules apply regarding the compressed air supply. See attached Torit PowerCore manual for all other safety, installation, operation, service and maintenance of the dust collector.

1. **CAUTION** Turn compressed air supply OFF and bleed lines before performing service or maintenance work.

A safety exhaust valve should be used to isolate the compressed air supply. The safety exhaust valve should completely exhaust downstream pressure when closed and include provisions to allow closed-position locking.
2. Do not set compressed air pressure above 100-psi. Component damage can occur.
3. All compressed air components must be sized to meet the maximum system requirements of 90-psi supply pressure.
4. The compressed air supply must be oil and moisture free. Contamination in compressed air used to clean filters will result in poor cleaning, cleaning valve failure or poor collector performance.
5. Purge compressed air lines to remove debris before connecting the unit's compressed air manifold.

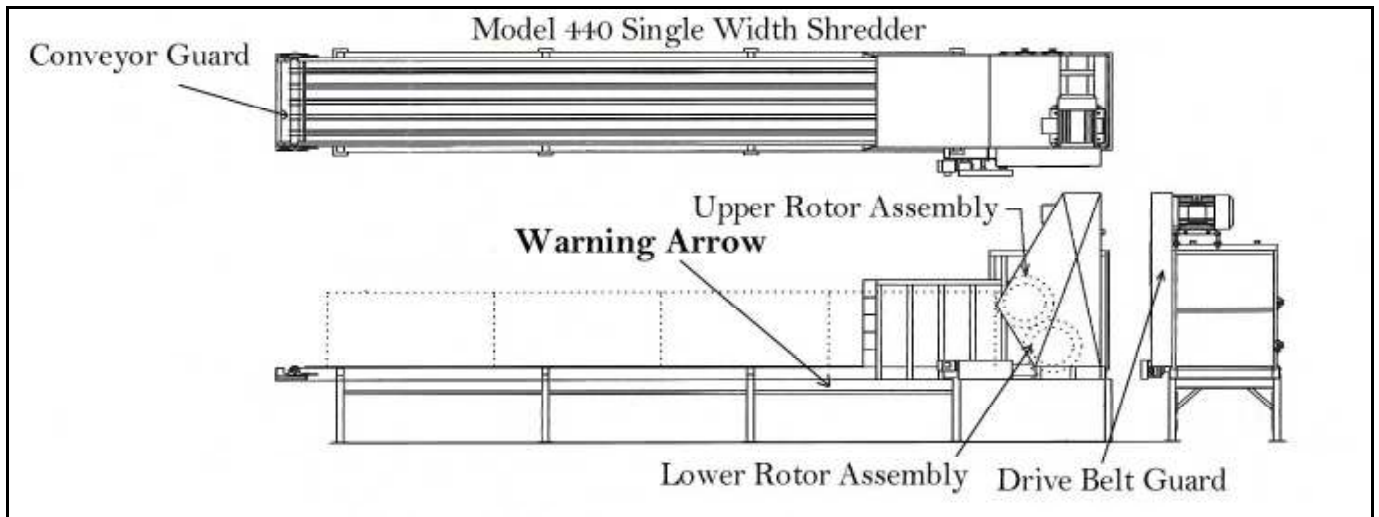


Figure 1 - Warning Arrow and Rotor Assembly Locations

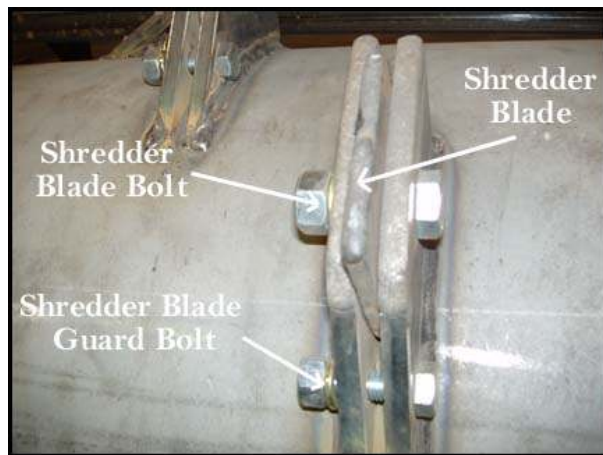


Figure 2 – Shredder Rotor Assembly Showing Blade Position

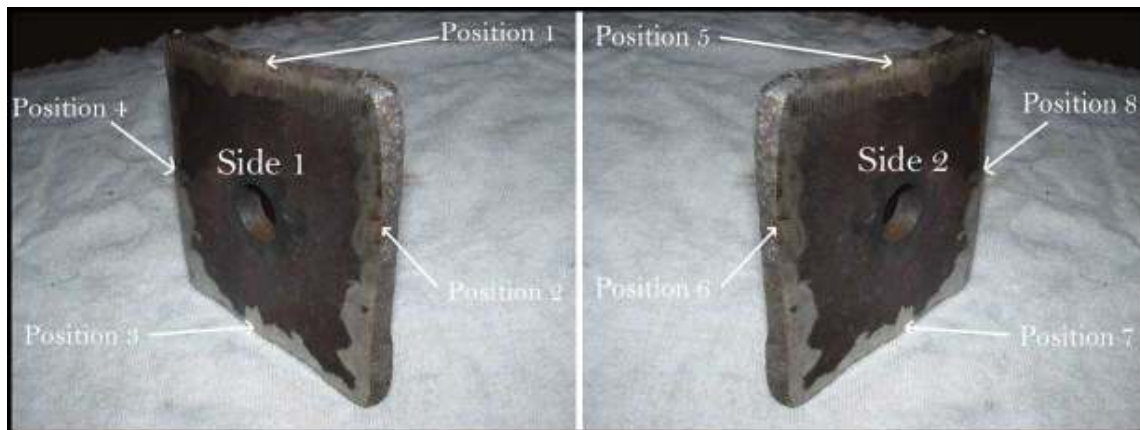


Figure 3 – Shredder Blade With Possible Blade Positions

Figure 4 – Excessively Worn or Damaged Blades



Figure 5 – Excessively Worn or Damaged Blade Guards

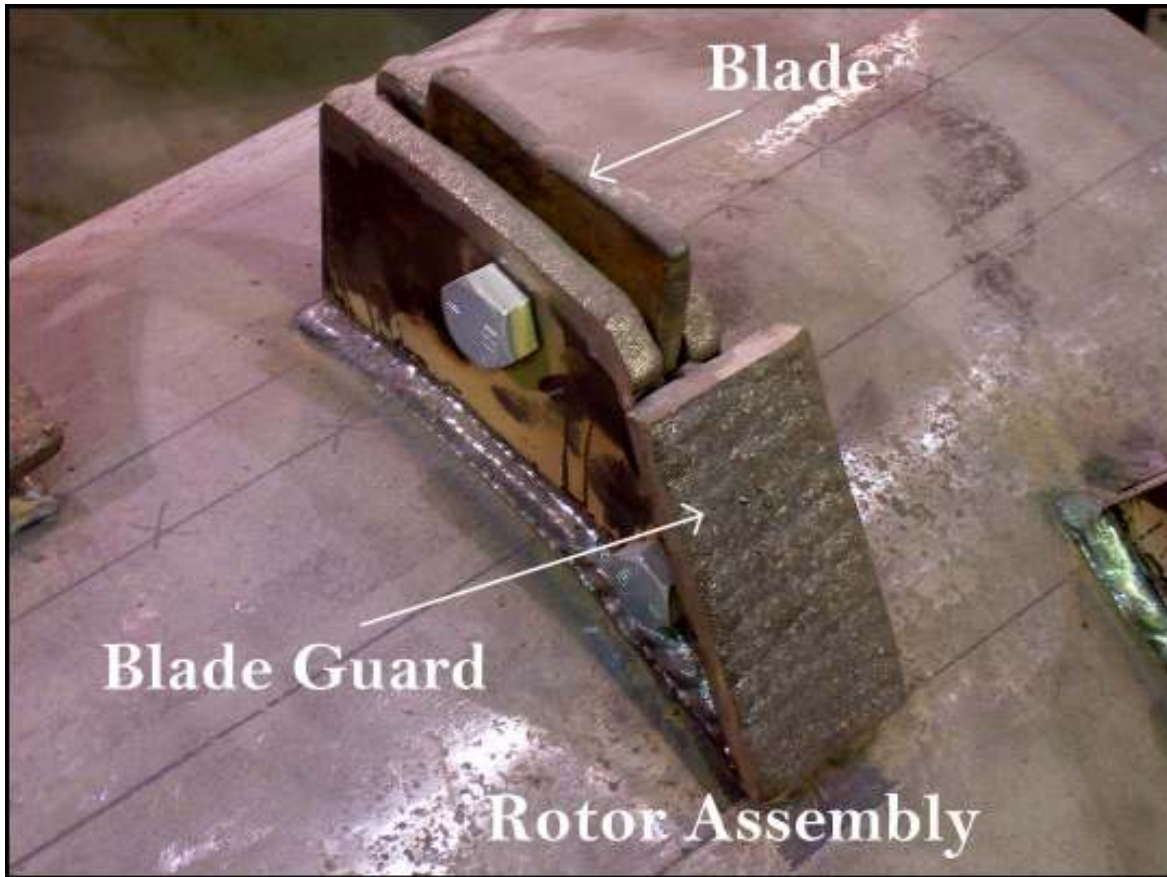


Figure 6 – Shredder Rotor Assembly Showing Blade Guard Position