



# BRUNETTE MACHINERY DRUM CHIPPER

## Instructions for Locking Rotor & Changing Knives

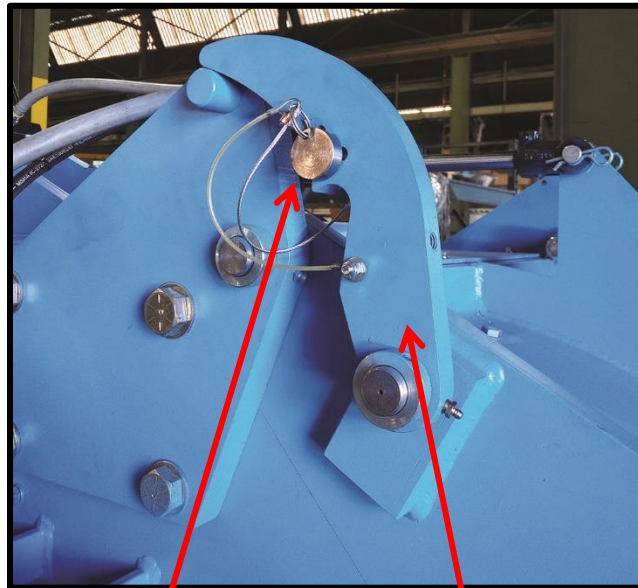




## Maintenance

A properly scheduled maintenance program is very important for ensuring optimum performance, long life and to avoid any unscheduled shutdowns.

- ◆ Always ensure the material feed equipment is shut down to prevent operation and accidental delivery of material.
- ◆ Always keep hands and tools away from the rotor until the electrical drive motor has been locked out and has come to a complete stop.
- ◆ Always lock the rotor access hood. It must be raised into position until the safety latch is engaged, and the safety spring pin is secured into the provided hole.



Safety Spring Pin      Hood Latch Bar

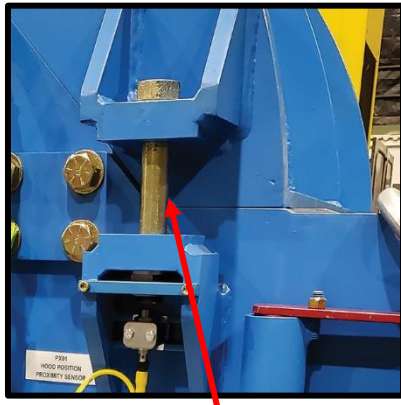
- ◆ Always ensure the rotor lock is engaged prior to removing any knives, knife clamps or other rotor components.
- ◆ Always ensure components are adequately blocked or supported before working on any component of the unit.
- ◆ Always ensure all tools, equipment and personnel are clear of the unit and drive before restarting the unit.

**DANGER:** Never start the Chipper without the guard(s) in place.

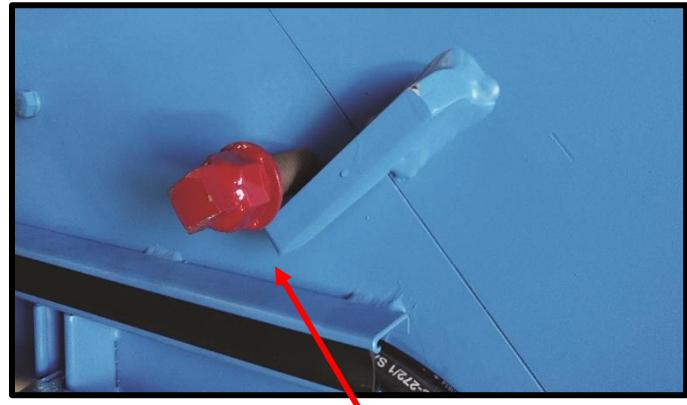


## Mechanical Rotor Lock

The Chipper is supplied with a mechanical rotor lock to prevent the rotor from turning while changing knives and/or doing rotor maintenance.



Hood Lock Bolt



Rotor Lock

## Instructions for Locking Rotor and Changing Knives

- ◆ Prior to changing any of the knives, clamps and/or fasteners, the Chipper rotor must be mechanically locked to prevent any movement, as the rotor will become unbalanced, turn and injury may occur.
- ◆ To lock the rotor in position for changing the knives, clamps and/or fasteners follow the procedure below:
  1. Lockout the Chipper rotor motor and surrounding infeed and outfeed electrical equipment.
  2. Ensure that the Chipper rotor has come to a complete stop.
  3. Loosen the hood lock bolts, removal not required, (1) per side, see picture above left.
  4. Open the hood by energizing the hydraulic power unit and activating the manual control valve.
  5. Secure the supplied safety latch to lock the hood in the open position.
  6. Turn the rotor to the closest knife pocket until the knife is in a vertical position.
  7. Screw in the rotor lock to ensure no rotor movement can occur during the knife removal.
  8. Loosen the knife clamp bolts [do not remove bolts and knife clamps completely], then remove the knives. See note on next page regarding removal of knife clamps.



## Instructions for Locking Rotor and Changing Knife Set (continued)

9. Install new knives and torque fasteners to specification as noted in the table below.
10. Release the locking screw, turn the rotor to the next row of knives and lock rotor in the new position. Repeat as required until all the knife sets have been replaced.
11. Check new knives for proper fit and spin rotor manually to ensure proper clearance.

Repeat steps #6 through #11 as required.

**TORQUE:** Lubricated (NEVER-SEEZ) 600 ft-lbs

**DANGER:** Never release the locking pin unless all the knives, clamps and fasteners are in place as injury may occur by an unbalanced rotor turning unexpectedly.

**WARNING:** Ensure the Chipper has been properly disabled by attempting to activate the control functions from the console.

**NOTE:** Always use a properly calibrated Torque Wrench

**NOTE:** Remove all the knife clamps monthly [320 hrs.] and clean any varnish and/or wood debris from the Knife Seats, knives, clamps, and counter knives to ensure that proper clamping of knives can be maintained

**NOTE:** In the event of a major wreck as the result of tramp metal passing through the Chipper, it is **important** to check the Knife System for damage. Use a dial gauge to ensure all the Knife Seats are parallel and equal distance to each other. Adjust as required.



## Knives and Chip Length (continued)

The Chipper is delivered with a chip size set at approximately [ $\frac{5}{8}$ "] with a knife width setting where [ $M = 7.587" \pm 0.002"$ ] for Actual [1"] Depth of cut.

The knives are supplied ground sharp. Worn knives must be replaced with new ones.

See Page 27 for the Chip Length Chart dwg #B-C2-D3395 for overall Knife Width Measurement [M] and the minimum allowable overall knife width prior to replacement.

Adjust the Knife Setting Jig Part #B-C2-A2438 supplied with the Chipper to dimension [M] to ensure all the knives are set to the same width.

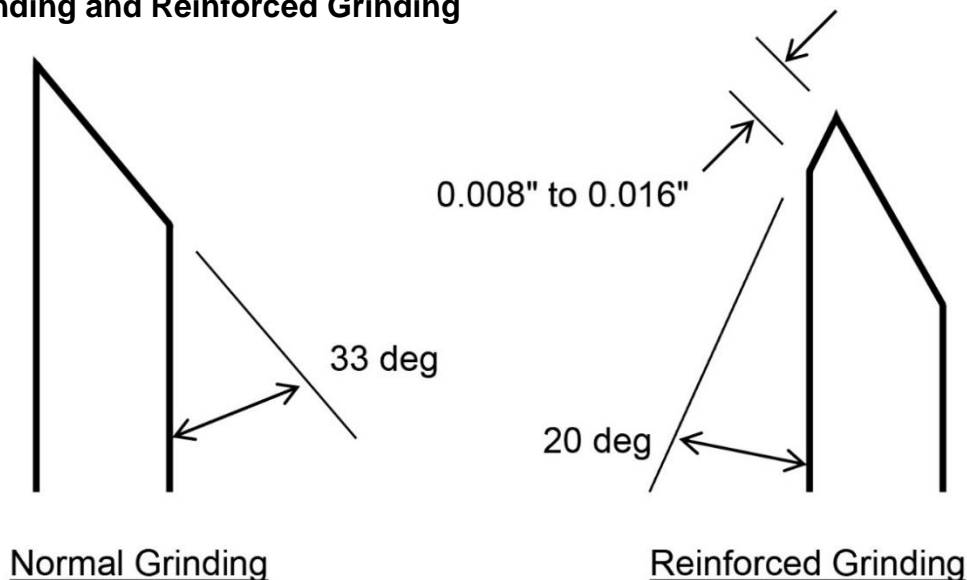
Calculated Chip Length [in] = Bedroll Speed [FPM] / Rotor Speed [RPM] x 12 / Number of Knives.

**Example:**  $\frac{116.6 \text{ FPM} \times 12}{533 \text{ RPM} \times 4} = .656" \text{ Chip Length}$

### **Grinding Chipper Knives**

The knives should be ground as soon as the appearance of the product deteriorates. Grind the knives to a 33° angle as indicated below. When chipping very hard or frozen wood, the cutting edge can be reinforced by a slightly negative chamfer (see Reinforced Grinding.)

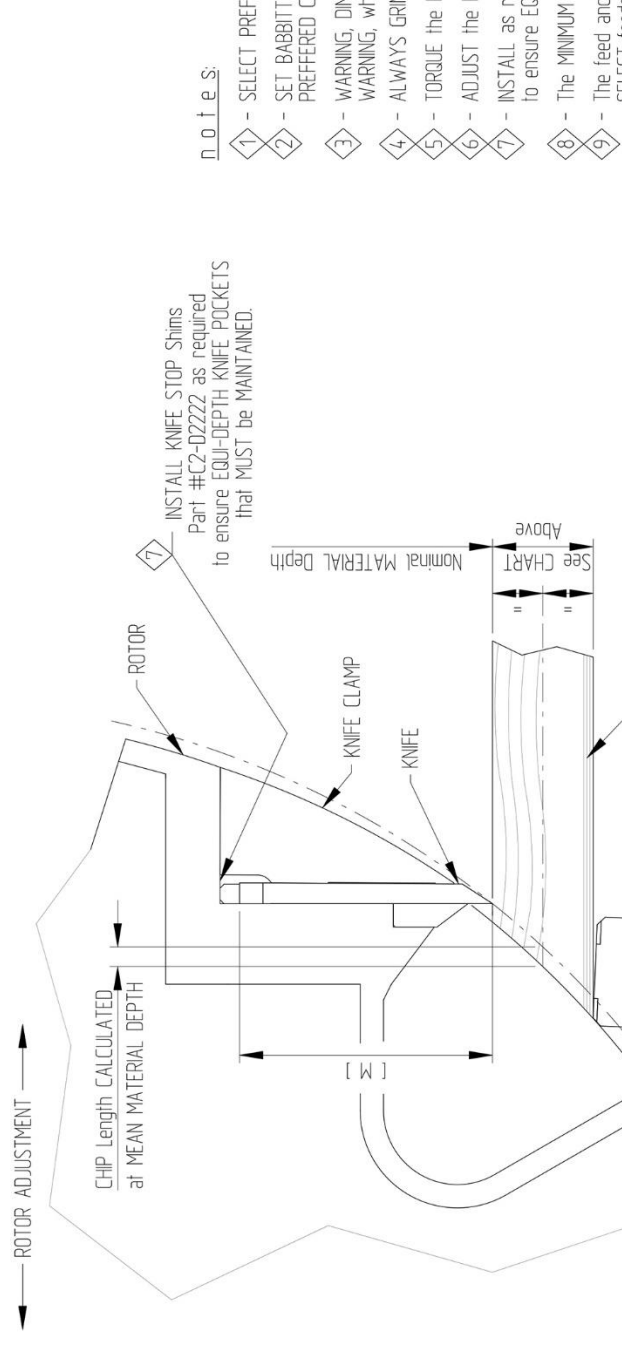
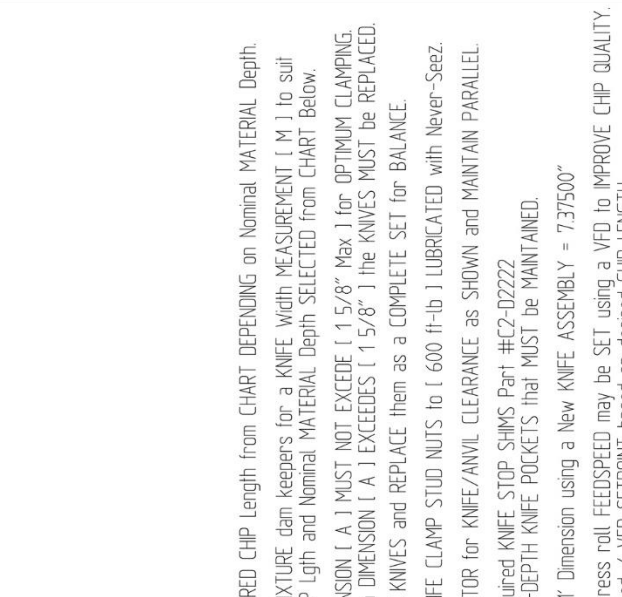
### **Normal Grinding and Reinforced Grinding**



The knives should be thoroughly honed after grinding. In exceptional cases, their sharpness can be temporarily improved by manual filing (see Reinforced Grinding) without removing the knives from the rotor.

Check the grinding angle with the Knife Angle Gauge Part #A-C2-D2332 supplied with the Chipper.

		Nominal MATERIAL Depth										
CHIP Length	Dimension [ M ]	1/8"	1/4"	1/2"	1"	1 1/2"	3"	5"	8"	10"	Feedspeed [ Fpm ]	VFD Setpoint [ HZ ]
5/8	7.476	7.480	7.488	7.488	7.503	7.518	7.559	7.608	7.670	7.705	111	335
3/4	7.592	7.597	7.597	7.607	7.625	7.643	7.692	7.750	7.823	7.865	133	40.2
7/8	7.710	7.715	7.726	7.747	7.768	7.791	7.842	7.891	7.976	8.025	155	46.9
1	7.827	7.833	7.845	7.869	7.893	7.957	8.032	8.129	8.184	8.281	178	53.6
1 1/8	7.944	7.951	7.965	7.992	8.018	8.089	8.173	8.342	8.342	8.499	200	60.3
1 1/4	8.061	8.069	8.084	8.114	8.143	8.221	8.314	8.432	8.432	8.499	222	67.0



**notes:**

- 1 - SELECT PREFERRED CHIP Length from CHART DEPENDING on Nominal MATERIAL Depth.
- 2 - SET BABBITT FIXTURE dam keepers for a KNIFE Width MEASUREMENT [ M ] to suit PREFERRED CHIP Lgth and Nominal MATERIAL Depth SELECTED from CHART Below.
- 3 - WARNING, DIMENSION [ A ] MUST NOT EXCEED ( 1 5/8" Max ) for OPTIMUM CLAMPING. WARNING, when DIMENSION [ A ] EXCEEDS ( 1 5/8" ) the KNIVES MUST BE REPLACED.
- 4 - ALWAYS GRIND KNIVES and REPLACE them as a COMPLETE SET for BALANCE.
- 5 - TORQUE the KNIFE CLAMP STUD NUTS to ( 600 ft-lb ) LUBRICATED with Never-Seez.
- 6 - ADJUST the ROTOR for KNIFE/ANVIL CLEARANCE as SHOWN and MAINTAIN PARALLEL.
- 7 - INSTALL as required KNIFE STOP SHIMS Part #C2-D2222 to ensure EQUI-DEPTH KNIFE POCKETS that MUST be MAINTAINED.
- 8 - The MINIMUM "Y" Dimension using a New KNIFE ASSEMBLY = 7.37500"
- 9 - The feed and press roll FEEDSPEED may be SET using a VFD to IMPROVE CHIP QUALITY. SELECT feedspeed / VFD SETPOINT based on desired CHIP LENGTH.

ITEM	DESCRIPTION	LGTH	QTY	COMMENT
<b>BRUNETTE INDUSTRIES Ltd</b>				
CHIPPER Model 4840HB4V6				
CHIP LENGTH CHART				
DRAWN BY	CHK BY	DATE	SCALE	SHEET
tegart		12-10-01	1 : 4	B
REV	BY	DATE	DESCRIPTION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. MACHINED TOLERANCE: DECIMAL DIMENSIONS: ±0.005 FRACTIONAL DIMENSIONS: ±0.015 BREAK ALL SHARP EDGES.

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- Quality OEM parts
- Service 24/7

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- Complete Machine Inspections
- Detailed Follow-up Reports
- Preventative Maintenance Recommendations

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**For emergencies, please call our 24-hour emergency number: 604.813.3394**



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Reclaimer



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