



BRONTOSAURUS OPERATION INFORMATION

(Diagrams of Bronto teeth on back cover.)

- 1) **THE BRONTOSAURUS TOOTH** (Diagram A), the cutting edge of the tooth should slope down from the top side with a sharp edge (Diagram A). Sharpening at the proper downward angle, at the cutting edge, gives the Bronto tooth the ability to slice the wood fibers instead of abruptly splitting the wood fibers. (Smooth cuts start at microscopic levels).
- 2) **SLICING THE WOOD FIBERS WITH SHARP TEETH** greatly reduces shock to the main bearings. It also creates smaller wood chips that are thrown shorter distances vs. dull mower teeth (BATTING) the wood chips much farther.
- 3) **SHARP TEETH ENABLE THE OPERATOR TO KEEP THE MOWER SHOES** around 6 to 10 inches off the ground during a right to left mowing pass. (or counter clockwise pass). **NORMALLY**, if the mower teeth are sharp, everything gets chopped up on the first pass, providing you don't hurry the mowing head through the brush. The teeth grab the brush and literally suck it up and through the wheel. **THIS IS WHY A NEW BRONTO TOOTH IS SHAPED LIKE IT IS.** (See diagram B). Not only does it cut, but it creates a vacuum which also helps suck the brush up from the ground. Even when the mower teeth are getting shorter as you grind them, you can still keep their original shape. (Diagram A). Sharpening teeth wrong (diagram C,D,E) forces you to chase brush closer to the ground (that's where you find all the hard objects).
- 4) **IN THE FIELD, THE DRUM DEPENDS ON YOU TO KEEP IT FROM VIBRATING:**
 - A. Keep the mower teeth sharp
 - B. Grease the main bearings daily
 - C. Don't hit any rocks or steel
 - D. Grease the mower teeth 2 or 3 times a day.
- 5) **AS YOU GRIND TEETH TO SHARPEN THEM**, your teeth should be replaced when you are $\frac{1}{2}$ to $\frac{3}{4}$ of the way worn down from the tip.

- 6) **REPLACING THE BOLTS** on the drum should be done every second or third knife change. The bolts are Grade 8 11 coarse thread bolts.
- 7) **THE MAIN BEARINGS NEED TO BE GREASED DAILY!**
 - a) 1 or 2 pumps of grease every 2 hours when in heavy dust, sand, or water.
 - b) 3 to 5 pumps of grease per day in normal mowing conditions. You will feel resistance on the grease gun handle when the bearing is full. Don't over grease, The excess grease will push the grease covers out of the bearing.
 - c) 1 or 2 pumps of grease every 2 hours during winter months.
- 8) **WINTER MONTHS REQUIRE A VERY LIGHT GREASE FOR TEETH.**

REGARDING FLAIL KNIVES ONLY: Other operators choose not to use any grease at all for the mower teeth and shafts. Instead, they spray chain and cable fluid, and or dry moly on the shafts (rods) each week. Browns Brontosaurus manufacturer recommend trickling diesel fuel over the knives and shafts during real cold weather. What ever the remedy for keeping the teeth spinning on the shafts, When you shut everything down for the night, make sure the tracks are on a log out of the snow, the booms are extended as far as they can reach, and settle the mower head flat on the belt drive cover. Make sure all the mower teeth are pointing outward before you leave. For cold weather start up, see the Bronto Policy page.
- 9) **PROTECTING THE MAIN BEARINGS.** Besides greasing daily, don't hit any rocks. When mowing, leave high stumps around rocks, junkyards, etc. and your utility person / ground worker will finish cutting the stumps down with a chainsaw.

Bluntly hitting hard objects with the drum creates a shock wave. These shock Waves break mower teeth, bend shafts(rods) and crack main bearings.
KEEP THE TEETH SHARP!!! Sharp teeth will cut the brush. Dull teeth will Bat the brush, creating a higher level of shock waves to the main bearings.
- 10) **AT THE END OF EACH WEEK, GIVE THE BRONTO HEAD A PHYSICAL.** Remove main bearing covers, clean and inspect main bearings for cracks, check all nuts and bolts for tightness.

Check belts for tightness, and wipe off any excess grease. Note any weld cracks, report them, and get them welded ASAP. Small weld cracks get bigger very quickly on a Brontosaurus.
- 11) **BRONTO HEADS ARE HEAVY, AND EXPENSIVE.** Reaching out with the boom slows the reaction time to lift the head up if you see a rock approaching. Remember, the farther you reach with the boom, the slower you should make Your mowing pass. Always be calculating boom reaction time vs. boom extension.

12) **WHEN MOWING ON A HILL**, mow, going down the hill. Keep the tracks pointing straight down the incline to eliminate most chances of sliding. Having the boom on the low side of the machine and in front of you maximizes the machines stability. As you swing the machine back and forth while mowing, don't extend the outer boom much more than half of its reach. If you feel the high side of the machine trying to lift up as you make your mowing pass, you are reaching too far in front of the machine with the outer boom.

IF you bring the outer boom in close to the machine while making your mowing pass, and you still feel the high end trying to lift up, then you are on a hill that's too steep to be on. Shut the mower drum down, and GENTLY track up the hill to the top. The cab will still be facing down the hill. DON'T SPIN THE TRACKS. The precious carpet of vegetation your tracks are hanging on to is very Important. If you do (spin the sod) from under 1 or both of your tracks, stop the machine, (and the drum,) put the mower head to the ground, and at the same time, begin tracking up the hill and pushing with the boom at the same speed that your tracks are moving.

13) **WHILE ON THE FLAT AND YOU COME TO THE BOTTOM OF A HILL**, mow the bottom edge, and reach up the hill with the boom. Mow all you can without climbing the hill. Once you mow everything on stable territory, shut the machine down, get out and hike the easiest path to the top. Once you see the machine will be on solid ground at the top, walk back to the machine, start it up, extend the boom out, and up the hill, keeping the boom as low to the ground as possible. This approach gives the best traction for the machine. Remember to observe your surroundings.

14) **IF YOU'RE ON A STEEP HILL**, with boom extended up the hill and low to the ground, normally, the machine will make it all the way to the top. If the tracks start spinning on the ground, immediately stop the machine, back straight down the hill to the bottom, level out, turn the machine around, pull the boom in close, and start up the hill again. Follow the same easiest path you were on before. This time when you approach the area of loose soil, put the head to the ground, and gently nudge the machine up the hill with just enough boom pressure to keep the tracks from spinning. If you do this right, then you will just leave small ruts in the ground from the head gently pushing.

15) **ALWAYS MOVE THE BOOM (SLOW) WHEN MOWING ON A HILL!**
Also, work the machine in slow motion when on a hill. Keep walking the machine to the top, then mow down the hill to the bottom. This may take several passes on the ROW to mow the entire hill. THAT'S OK. Bad things happen to an excavator when you try to mow up a hill.

16) **WHEN MOWING THE TOP OF THE HILL**, or along the edge of any bank, Always make sure the track that is on the flat surface at the top of the bank is not riding on any rocks or trees. If the ground under the track on the low side of the machine gives out, and the track on the top side is on rocks or tree logs, (anything harder than dirt) the machine will start sliding down the hill.

17) WHEN YOU'RE ENTERING AN AREA THAT LOOKS WET OR MUDDY,

There's normally a downward slope at the edge of the area in question. Walk the machine to the edge of the slope, (mower drum is shut down), reach out with the boom and settle the mower head onto the wet or muddy area. Lift the front end of your tracks off the ground a little. If the mower head does sink in the ground, then avoid that area with the Brontosaurus. Write down where the area is and leave it for a hand crew.

If the mower head does not sink in the ground, then proceed forward with the front of the tracks off the ground. Keep pulling the boom in toward the machine at the same speed the tracks are turning. This way, you don't disturb the ground you are advancing on to. When the back end of the tracks start going down the slope, begin lowering the front of the tracks at the same time. (This method allows both ends of both tracks to settle onto the wet ground at the same time). Then, track forward slowly. You don't want to disturb the grass under the tracks.

Don't turn the tracks when on a wet land, line the tracks up with your exit point at the other side, or the next dry area in the wet land. Then go straight to it, mowing slowly as you go. If you turn the tracks on a wet land, they will cut the Sod, and then you will begin digging up mud. And sinking deeper .and deeper.

Each time you move forward (slowly) on a wetland, make sure the boom is in close to the machine. (this action puts a better center of gravity on the tracks) or in other words, (balances the foot pounds on the tracks more evenly).

18) IF YOU DRIVE ONTO BLACK MUD. You will see the ground shaking around the machine beginning from your tracks extending a foot away and as far as 5+ feet away from your tracks. As soon as you discover this, **SLOWLY** (with boom in close), track the machine back onto dry territory.

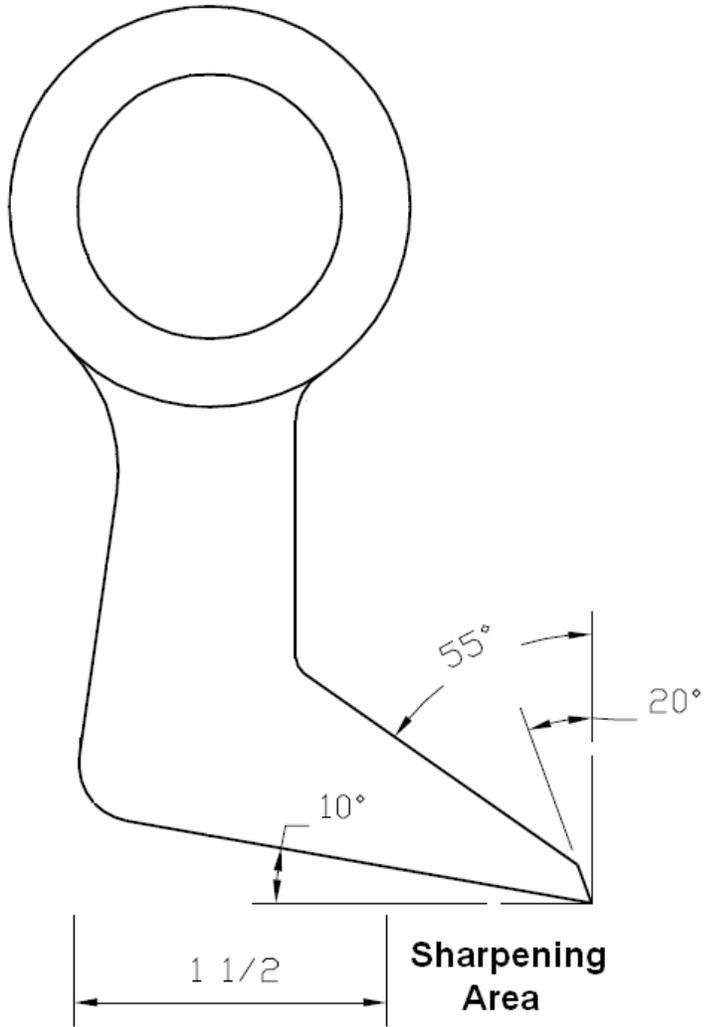
19) IF YOU DO SINK IN THE MUD, don't panic. As the machine is sinking, turn the body of the machine so the boom is pointing in the direction that it will be pulled out. Also, shift the tracks in the same direction. You will have one or two attempts to get the machine lined up for your rescue excavator before you sink to deep. Do not try to paw your way out. A Brontosaurus only sinks, it **CANNOT** dig its way out. It is too heavy and has no bucket. The back engine compartment will hang up in the mud and you will not be able to turn.

20) WHEN THE RESCUE EXCAVATOR ARRIVES, raise your boom so the rescue Excavator can dig out the front of your tracks, and the hook on the frame between the tracks. 5 or 6 scoops of mud will do. Have 30 to 50 feet of chain or cable ready, and hook one end of the chain or cable to the hook between the tracks. Hook the other end to the bucket of the rescue excavator and have him back up until some tension starts. The rescue excavator then booms back while the stuck excavator tracks forward with its own boom pushing down and pulling in toward the tracks. Pushing down with the boom gets the front of the tracks out of the mud. It looks like a fishing derby from a distance. The rescue excavator may have to back up 2 or 3 times and pull to get you out, But the rescue is a smooth one, the machine doesn't get broken, and the rescue bill can stay around \$500.00 instead of up to \$1500.00.

- 21) **AS YOU'RE BEING PULLED OUT OF THE MUD** have your rescuer stop pulling a few times so you can turn the machine around and fill in the mud hole as you're coming out of it. (you need to do this!) Usually, you are more than half way out of the mud when this process begins.
- 22) **AS YOU'RE MOWING AND THE DRUM PICKS UP WIRE**, do not lift the head off the ground. Instead, bring the head near the ground as soon as possible, then power down the drum. Bringing the head close to the ground stops the wire from bending around the bottom of the mower head, and lashing the hoses as the drum is spinning.(This all happens really fast)!
- 23) **IF THE WIRE WEDGES ITSELF** tightly between the drum and the head, it is good practice to remove the main bearing covers. Then remove the collar bolts from both sides. This relieves pressure on the main bearings and also helps loosen the wire that's packed between the drum and head. Once this is done, you can take out the torch and begin cutting wire out. (Don't forget your cutting goggles.) If there is wire wedged on both ends of the drum, start cutting on the end with the least amount of wire in it. If they both look bad, then you are in for a long day.
- 24) **MOWER ENGINE SHUTS DOWN**. If the mower engine over heats, it shuts down automatically. If you hear this happen, quickly push the reset button and start the engine. Keep the reset button depressed so the motor will continue running. Power down the Bronto head to full stop. Then shut the engine down.
- 25) **IF THE MOWER ENGINE SHUTS DOWN** and you let the mower drum continue spinning until it stops, this action creates excessive pressure on the hydraulic system. Which can cause pump failure or pump pick up failure.
- 26) **SETTLING THE TRACKS BEFORE MOWING** stabilizes the machine from the rocking chair effect when mowing. Each time you drive forward or back and stop to mow, drop the head a little to feel if the tracks are stable on the ground. If they are not, then move forward a little more or shift the tracks left or right to settle them in .
- 27) **WHEN MOWING A TRANSMISSION ROW** stay 10ft away from guy wires. A ground person will cut the rest with a chain saw.
- 28) **WHEN MOWING ROAD SIDE** clean up the area as you go. Shut down the drum, and use the outer mower shoe to drag the chips out of the ditch. (just the chips)
- 29) **MOWING ROAD SIDE** involves constant awareness. You need to look out for pedestrians, vehicles, mail boxes, driveways, low hanging telephone lines, guy wires, wires crossing the road, homeowners pets, curious kids, homes, campers, swimming pools, boats, your wood chips in the street, soft ditches, stone walls, land stakes, fences, etc. Know where your wood chips are going! And always make sure the mower teeth are sharp.
- 30) **WHEN THE OUTER MOWER SHOE** gets worked over the ground properly, the ditches get fixed very well. The public loves it, the town loves it, and you get to stay in the area and keep mowing.

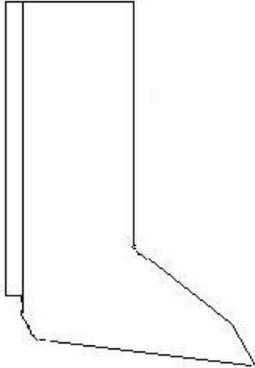
- 31) **OIL CHANGES.** Every 200 hours the oil and oil filters needs to be changed in both engines. If you are operating daily, then change the oil each month. 2 empty 5gal hydraulic pails are enough to drain the used oil into. Put all used filters in a garbage bag and give the used oil and filters to your supervisor to dispose of properly.
- 32) **THE AIR FILTERS** and radiators need to be blown out with compressed air weekly. This is a proven fact. The air filters should be replaced monthly.
- 33) **THE FUEL FILTERS** and secondary fuel filters should be changed monthly. This only pertains to those with an Auxiliary Power Pack that runs the Brown Brontosaurus.

Figure A

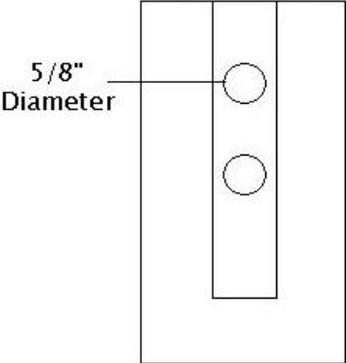


John Brown & Sons
Fixed Tooth Knife

Side View

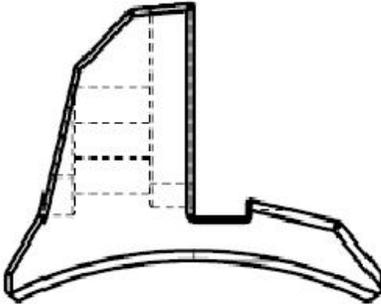


Rear View



Part Number: BBP-0142FT

Fixed Tooth Knife
Holder



Part Number: BBP-KH3116