



BIOCHAR MACHINE FILED READY TOOL KIT DOCUMENTATION

Waste to Wisdom: Subtask 3.1

Biofuels and Biobased Product Development

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Biochar Machine Field Ready Tool Kit Documentation
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A written plan is in place for a field ready tooling a parts box. This technical objective was furthered in addition to the tooling kit – equipment reliability improvements have been made such that less tooling is required. This improvement was developed during cooperative operations between BSI and SERC. During operation productivity levels were increasing leading to a blockage in an output auger. This would be solved with tooling that includes a long wrench, replacement pulley wheels, replacement belts, replacement or increased motor size. As opposed to the increased tooling and parts an auger system was redesigned to allow for greater capacity of materials with the same motor and belt system. Specifically the auger and airlock system was increased in size from a 4 inch ID system to a 6 inch ID system. This required increasing the size of an airlock star valve as well as a drop pipe. This required the modification to equipment screening systems to allow the larger output system to fit inside the existing frame. This will play a role in task d to be accomplished over the next 2.5 years increasing unit capacity. It is possible that this upgrade will need to be repeated depending on the increase in the total productivity of the unit.

To date the infield tooling kit is as follows:

- PPE – eye shields, full face shield, ¼ P100 respirator – general guide book on the same
- PPE manual
- ASME standard mechanical tools up to 2 inch
- Mechanical manual
- Electrical tooling to include plyers, strippers, multi meter (single and three phase, volts test, amp test), lock out tag out ties, can of compressed air to blow out box, dia-electric grease
- Electrical manual
- High temp grease and associated gun
- IR temp gun up to 800 C (is this possible if not 500 is possible)
- Replacement K type thermal couples, and associated wire
- Pressure sensor replacement parts
- Impeller wheel
- Standard motor (5 hp) or listing for purchase the same
- High temp airline, associated hose clamps
- RTV high temp caulking gasket, braded high temp rope, spray glue to set the rope
- Nuts/bolts and washers