

## COCONUT HUSK DECORTICATING MACHINE

The Timber Utilization Division of PCA-ZRC has been involved in designing, fabricating and pilot testing coconut husk-decortivating machines as a means of intensifying the uses of coconut husk and fiber.

In 1996, the first prototype stationary decortivating machine powered by a 10 hp, 3-phase electric motors with optimum outputs ranging from 2,000 to 3,000 pieces coconut husk fiber per day. Today, new mobile decortivating machines powered by diesel engines and with improved designs are being introduced.

### The PCA-Mobile Decortivating Machine

1. Prime Mover. The system was driven by a single piston 22 hp diesel engine running at 2200 rpm (rated). The engine is mounted on a metal cart which can be towed by a tractor or a working animal.
2. Shafting and impellers. The shafting assembly has seven (7) sets of blade consisting of four (4) blades per set or a total of 28 blades uniformly set at 12 degree angle inclination arranged in spiral pattern along the length of the shafting.
3. Semi-Cylindrical Casing. The steel casing that houses the internal mechanism of the machine measures 0.70 meter and 1.20 meter in diameter and length, respectively. It is made of ordinary flat iron steel sheet 9 mm thick. The critical clearance between the tip of the blades and the casing is about at 0.25 ".
4. Intake Chute. The feed intake with dimensions, 0.6 x 0.6 x 0.45 m is mounted at the upper end of the top cover just above the shaft pulley and the prime mover.
5. Exhaust Chute. Exhaust is installed at the opposite end of the prime mover at the top cover of the cylinder fronting the last set of impellers. The exhaust for the dust is located at the bottom of the casing and is made of with square iron grill to filter the peat.



### Quality of Fiber Produced by the Machine

Based on the grading standard, the fibers produced are mixture of long (12.7 cm or more) and short (6.35 cm to < 12.7 cm) fibers including fibers less than 6.35 cm, classified as CH3 produced in two passes.

### Cost of Machine

Based on the current costs of labor and materials, the cost of fabricating this mobile decortivating machine is PhP 165,000.

