

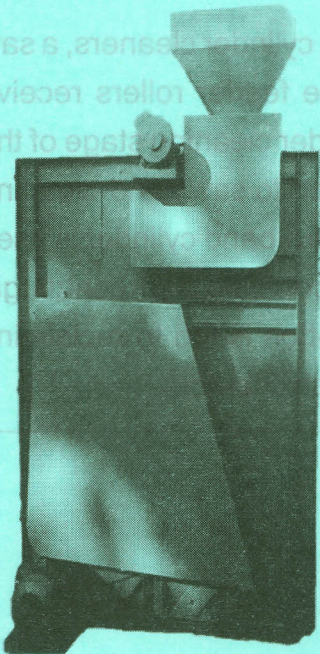


# Machines for cleaning of mechanically harvested cotton

## CIRCOT's Technologies



### (A) Stick Machine



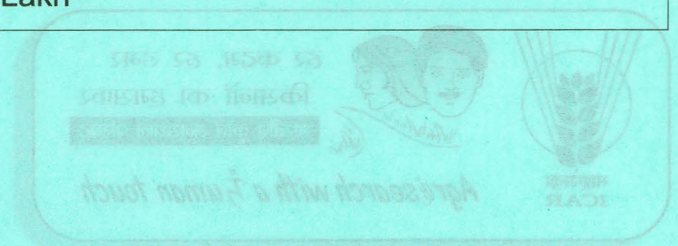
In India, all the seed cotton is handpicked mainly by women. Hand picking of cotton is very tedious and in order to meet the scarcity of labour and timeliness of operation, efforts are being made on mechanization of cotton harvesting. It is observed that the machine picked seed cotton contains around 15-20% trash content including sticks, burrs etc.

CIRCOT has developed stick removal machine to remove the large sized vegetative trash components from mechanically picked cotton. This machine utilizes centrifugal force of high speed rotating saw cylinders to sling off cotton, the stripping action of round grids extracts the trash from seed cotton. The machine consists of hopper, feeder, kicker cylinder, saw cylinders, doffing brush cylinders, loading brushes, grid bars and deflectors. There was no measurable fibre damage observed during trash removal operations, however, slight improvement in uniformity ratio was observed in cleaned cotton mainly because of removal of short fibres during cleaning operation.

### Technical parameters and specification

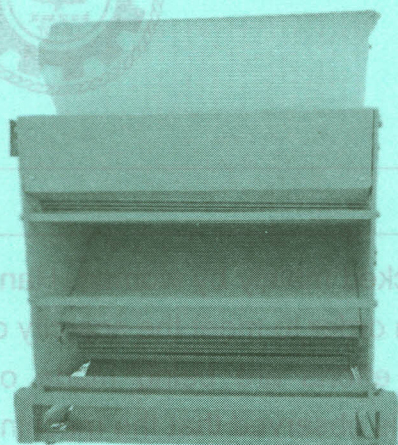
Output capacity	: 750-800 kg seed cotton/h
Stick removal efficiency	: 80-85%
Speed of cylinder and doffing brush	: 360 and 1080 rpm respectively
Fine trash removal efficiency	: 35-40%
Doffing brushe diameters	: 398mm and 314mm
Power requirement	: 3.73 kW and 0.74 kW
Machine size	: 1.4 x 1.5 x 2.8 m
Cost	: 3 Lakh

The Director  
Central Institute for Research on Cotton Technology,  
Aherwala Road, Matunga, Mumbai 400019.  
Web: www.circot.res.in Email: circot@vsnl.com  
Tel: 91-22-24127237 Fax: 91-22-24130835





## (B) Saw Band Cleaner



CIRCOT has developed a saw band cleaner to remove fine trash, burrs etc. from mechanically picked seed cotton. A saw cylinder cleaner works on the sling off principle of saw cylinders and scrubbing action of cylinder cleaners was used for cleaning of fine trash particles and a small amount of sticks and burrs remained in cotton from machine picked seed cotton.

This machine consists of hopper, feeder, two cylinder cleaners, a saw band cleaner and a reclaimer cylinder. The feeder rollers receive cotton from the hopper and deliver it to cylinder cleaning stage of the machine where from the seed cotton is kicked to saw band-cleaning stage. In the saw band cleaning stage, the saw band cylinder is used to clean the seed cotton with the help of combing and centrifugal actions of its cylinders. Finally, the seed cotton is fed to reclaiming stage of machine and trash is collected in trash chamber.

### Technical parameters and specification

Spike cylinder Diameter	: 270 mm
Spike cylinder speed	: 670 rpm
Saw cylinders diameter	: 435 mm and 215 mm
Saw cylinders speed	: 430 rpm and 360 rpm
Stick removal efficiency	: 18-20%
Fine trash removal efficiency	: 25-30%
Power requirement	: 3.73 kW and 0.74 kW for feed roller
Machine size	: 1.4 x 1.5 x 2.7 m
Cost	: 3.5 Lakh
Output capacity	: 800-850 Kg seed cotton/h



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भारतीय कृषि अनुसंधान परिषद

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**For further details, please contact:**

### The Director

Central Institute for Research on Cotton Technology,  
Adenwala Road, Matunga, Mumbai 400019.

Web: [www.circot.res.in](http://www.circot.res.in) Email: [circot@vsnl.com](mailto:circot@vsnl.com)

Tel: 91-22-24127273/76 Fax: 91-22-24130835