

Double-Cob Maize Sheller - An Efficient Option for Smallholder Farmers

What is the purpose of this sheller?

This engine-powered double-cob maize sheller can be used for rapid shelling of maize cobs. It drastically reduces human labour, time and costs compared to traditional hand shelling. The low-cost small-scale sheller can be commercially used by machinery service providers to generate income while minimizing cost and drudgery of farmers.

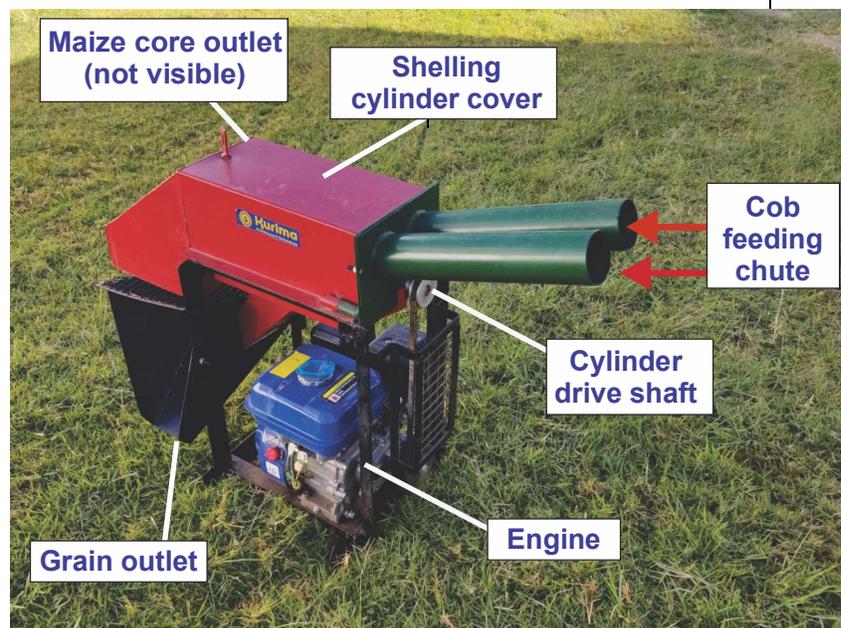
What are the main features of the sheller?

- Continuous feed type maize sheller powered by a small petrol engine
- Maize cobs are continuously hand fed (one by one) into two cylinders where shelling occurs
- Shelled grains get separated from maize cores and clean grains are obtained at the grain outlet
- Minimum damage to the shelled grains
- Husked or un-husked cobs can be shelled
- Woman-friendly machine that can be operated by one person while assisted by a helper (to supply cobs and bag the shelled grain)
- Locally made with available iron materials and parts - easy to maintain or repair
- Shelling cost: US\$ 10/t (US\$ 60/t with manual hand shelling)
- Retail price of the sheller: US\$ 650 (including engine)
- Payback period: 16-20 days

What are the technical specifications of the sheller?

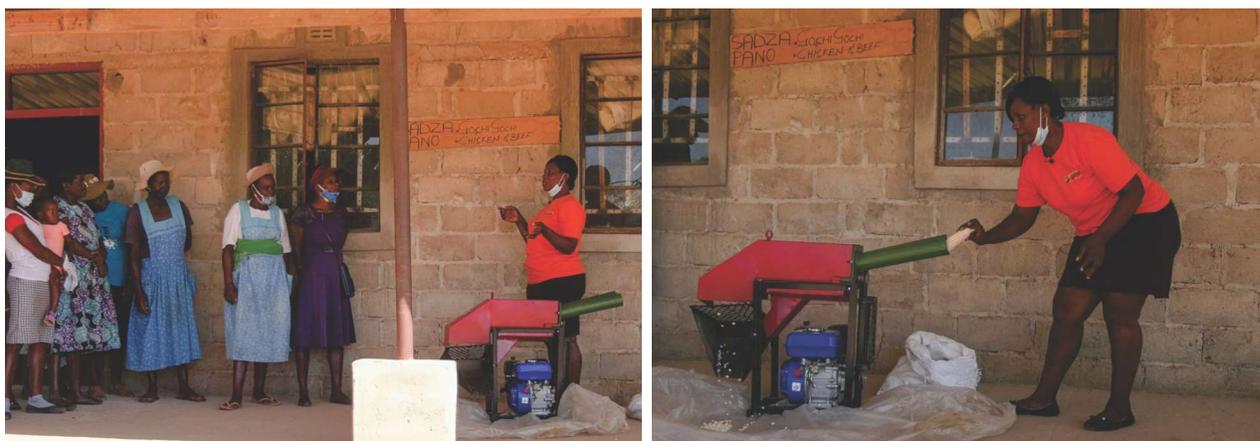
- Source of power: 6.5 hp, 4 cycle air cooled petrol engine
- Shelling capacity: 300 - 450 kg/h (10 kg/h when shelled manually)
- Shelling efficiency: 97 - 98%
- Grain breakage: About 5 - 10% (lower when cobs are optimally dried)
- Overall dimensions: 1.08 m (L) x 0.40 m (W) x 0.82 m (H)
- Weight: 60 kg (including engine)

Maize double-cob sheller powered by a petrol engine



How to set up and operate the sheller

The sheller should be set up on an even ground and firmly secured so that it is stable during shelling. Before starting the attached engine, fuel and oil levels need to be checked and refilled as necessary. All nut-bolts and belts need to be checked and adjusted if need be. The cobs should be de-husked and previously dried (moisture content around 12%) for best shelling performance. After starting the engine (and adjusting it to medium speed), the operator needs to feed cobs into the machine continuously through the feeding chutes using both hands. The shelled grains should automatically come out of the sheller through its grain outlet and the cores through another outlet on the opposite side of the machine. Ideally a person should assist the operator by supplying cobs near to the operator and bagging the shelled grains. Once shelling is done for the day, the sheller should be cleaned, covered and stored in a secured place, preferably under a shed. For long term storage of the sheller after the season, the fuel (petrol) should be drained out of the engine and all the bearings/moving parts be lubricated as necessary.



Shelling training and demonstration of shelling procedures with the two-cob maize sheller

Where to exercise caution

The sheller has an engine, belts and other moving parts. It should be operated with caution (e.g., wear fitting clothes and avoid loose clothing that may interfere with operations, tie hair etc.). Children and animals should be kept away from working areas. Avoid operation of the sheller near open fire or flames. Regular rests should be taken by the operator to avoid accidents due to fatigue.

Where can the maize cob sheller be purchased?

Kurima Machinery & Technology, 5 Hood Rd, Southerton, Harare

Phone: +263778480843 or +263787421839;

Email: sales@kurimamachinery.com



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This technical bulletin was prepared by Abdul Matin and Christian Thierfelder as part of the USAID and SDC-funded Zambuko/R4 Rural Resilience Projects implemented by WFP and its partners.

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