

# RE Onion Harvester



## Design

- Compact and Robust Design
- Self Contained Hydraulic Power System
- Locally Available Components
- Simple Operation and Integration with Tractor
- Easy to Maintain and Work On



## Construction

- High Grade Steel used Throughout (300MPA and better)
- CAD Designed profiles with Laser Cut Panels and Components
- Extra Strength Frame
- Oversized Axels and Bearings
- Quality MIG Welded Assembly



## Performance

- 12 to 20 tons/h behind 80Hp Tractor
- Soft Handling - Low incline ground web with assistor belt and PVC coated lift web
- Adjustable lift arm optimises onion drop into receiving trailer
- Vacuum Fan & Oscelating Topper Blades for Debris and Husk removal
- Clean Pickup



# How it all Works

## Ground Web & Assistor Belt

The ground web is designed to run under the windrow in the soil. The web is 1390mm wide. The machine can be ordered with a web pitch of 36, 42 or 45 mm. The assistor belt is positioned above the ground web. It serves to load the top portion of the windrow onto the ground web as well as creating pockets along the ground web which prevent any onions from rolling back. This ensure soft loading and minimises leaf loss. The new improved traction belting and corresponding drive sprockets ensure that the assistor belt remains aligned and does not slip under load. The rubber flaps are soft on the onions yet firm enough to help load a double windrow.



## Lift Web

The Lift Web is 870mm wide. It consists of Star PVC enclosed 10mm rods and 160mm high rubber flights. This ensures soft handling of the onions during transfer from the ground web and lifting and loading into the trailer. The lift web is supplied by Broekema in Holland. This high quality and highly durable component is an intregal part of the workings of this machine.

## Lift Arm

The lift arm is controlled by 2 sets of hydraulic actuators which are connected to the hydraulic ports on the tractor. The primary section is used to fold the arm up for transport purposes and also assists with rapid receiving trailer interchange. The secondary section completes the folding action for transport, and can also be lowered into the receiving bin to minimise shock on the onions during loading. The overall arm height can be built to order to suite the height of the customers receiving trailers.



## Hydraulic Drive

The webs, vacuum fan and topper bar are all hydraulically driven. Hydraulic power is generated by dual pumps mounted on the tractor PTO shaft. The self contained hydraulic system includes a 250lt oil tank with integrated filter, an oil cooler with electrical fan and a heat exchange manifold. All hydraulic components are sourced in South

Africa. Flow controllers on the belt drive system mean that belt speeds can be adjusted to optimise pickup efficiency and onion handling. The hydraulic drives provide a smooth yet powerful drive system that is highly forgiving when dealing with unavoidable obstructions such as stones and other foreign bodies that find their way into the harvester. This along with minimal chain drives improves reliability and reduces maintenance in dusty working conditions.

### **Vacuum Assisted Topper**

The debris vacuum and topper bar assist with the pre topping of onions as well as the removal of much of the unwanted material from the windrow. The topping and cleaning capability helps reduce the amount of unwanted material that is loaded, along with the onions, into the receiving trailer. This in turn allows for better pack shed operation in terms of sorting and topping the onions. It also means that trailer packouts are higher i.e. more usable onions mass per trip.



### **Bin & Trailer Concept**

The RE Lifter can be built to work with numerous receiving trailers. In order to optimise loading and trailer transfers it is important to understand which trailer system you intend using when ordering your machine. Our aim is to tailor the lift arm to your needs to ensure that the drop height into the trailer is at a minimum, thus improving the handling of the onions. We have investigated several bin / trailer options and believe that the chassis and loose mass bin

design provides the most versatile and cost effective solution. Loose mass bins can be stacked which provides a buffer supply for the packshed. Multiple mass bins can be used with each trailer chassis. This reduces costs and provides for quick turn around times. Commercial truck and trailers can then also be used for longer hauling of mass bins to the packshed. Obviously this requires the use of a 5 ton forklift to handle the bins



### **Other Features**

The compact design and adjustable wheel base means that the harvester can be easily transported on a standard truck. The turning circle and maneuverability of the machine also makes moving in and out of rows simple and means that the machine can operate efficiently even in short fields. The 1400mm machine functions well behind a 60Kw tractor. It must however be noted that a creeper gear is essential for proper functioning.



## Technical Specifications

### Dimensions

Wheel Base	Adjustable 1600mm to 2000mm
Total Width (closed)	2450 mm
Total Length	4500 mm (excl A Frame)
Pickup Width	1400 mm
Total Height (closed)	3100 mm
Weight	< 2 tons

### Operating Data

Operating Speed	0.8 km/h to 1.6 km/h
Tractor Power	Min 80Hp / 62Kw
Tractor Transmission	0.8 km/h at 540 rpm (Creeper Box)
Capacity	12 to 20 tons / hour

1. Operating speed is heavily dependent on soil conditions and whether you are picking up a single or double windrow.
2. Capacity is dependent on ground speed and number of windrows.



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