Product Description

Self-propelled Plot Combine Harvester with Bagging Unit – 1

Engine

- Diesel engine, minimum 52 kW (70 hp) output
- Minimum engine displacement of 2,900 cc
- Water cooled
- 4-cylinder configuration
- Meets EPA Tier 4 Final or Stage 5 emission standards
- Exhaust gas aftertreatment system (without requirement for diesel exhaust fluid / AdBlue)
- Engine located in a central position on the machine for optimal weight distribution
- Engine compartment covers are easily removable for safe access, servicing, and field cleaning

Drive and Steering

- Hydrostatic ground drive system
- Stepless speed adjustment capable of operating from 0 to at least 17 km/h
- Four-wheel drive (4WD) with hydraulic differential lock
- Hydrostatic rear-axle steering
- Steering column adjustable for inclination and height
- Park brake and emergency stop foot brake

Operator Platform and Cab

- Enclosed cab, minimum 1.7 m wide, accommodating at least two persons
- Cab meets applicable tip-over protection standard (e.g., EN 13531 or equivalent)
- Air conditioning and heating with dust filtration and multi-speed fan; cab air filters shall be a standard commercially available size obtainable from suppliers in the United States
- Safety glass and windshield wipers
- Ergonomically designed multifunction lever to control speed, header, and reel
- Emergency stop controls for the header and threshing unit are accessible from the operator position
- Operator display showing engine speed, fuel level, elapsed time, oil/water temperature, threshing drum speed (rpm)
- Spring-mounted, adjustable primary operator seat
- Second operator/passenger seat with seat belt

Cutting Platform (Header)

- Cutting width of at least 1.50 m (59 in)
- Hydraulically driven cutting knife with adjustable speed
- Conveyor belt, feeding auger, and feeding roller for continuous, damage-free material flow
- Hydraulic reverse mechanism on the feeding belt and auger for faster cleanout between plots

- Fast lateral air blowout system to purge header between plots
- Hydraulically driven reel with variable speed adjustment
- Crop lifters for harvesting lodged plots
- Floating header with adjustable skid plates
- Reel brush bars (minimum 2) to clean the cutter bar and prevent seed carryover

Threshing Drum (Cylinder)

- Minimum drum diameter of 350 mm
- Minimum drum width of 780 mm
- Minimum of 6 rasp bars
- Steplessly electrically adjustable threshing drum speed (variator), operable from operator's seat
- Digital display of drum revolution speed
- Electrical engage/disengage of drive coupling
- Mechanical reverse of threshing drum to clear blockages

Threshing Concave

- Universally applicable concave suitable for small grains, oilseeds, legumes, and corn
- Minimum angle of contact of 115°
- Minimum concave area of 0.31 m^2
- Minimum of 4 de-awning bars, laterally insertable
- Quick concave-to-drum gap adjustment operable from the operator's seat

Straw Beater

- Multi-part straw turning drum (straw beater) with loosening elements for optimum grain separation

Cleaning System

- Multi-step surface shaker with minimum 1.8 m^2 separation surface
- Shaker shall include a quick-change mechanism allowing the shaker to be removed and replaced within 5 minutes for rapid field cleaning
- Double sieve system with minimum 2.0 m^2 cleaning surface, including:
  - One adjustable lamella top sieve
  - Minimum of two bottom sieves (round hole, including at least 10 mm and 12 mm diameter)
- Hydraulically driven, steplessly adjustable cleaning fan (wind), operable from operator's seat with digital rpm readout
- Fan capable of rapid high-speed blowout of sieve unit for between-plot cleaning
- Fan shall be capable of complete shutoff (zero airflow) while the machine is combining, to accommodate very light or fine seed crops

Grain Transport and Collection/Bagging Unit

- Pneumatic grain conveyor system by high-performance turbine; system shall be seed-tight with no leakage
- Sieve case with double injection sluice

- Bagging unit with a minimum of two outlets and a platform for bags for the collection of individual plot samples

Grain Tank

- Minimum grain tank capacity of 700 liters (20 bu)
- Manually foldable unloading auger
- Unloading height of at least 2.60 m
- Grain tank shall hydraulically tilt to the rear of the machine to allow complete, mix-free cleanout between plots
- Cleanout tray or equivalent collection point below the grain tank auger to capture residual seed during cleanout
- Filling level indicator visible to operator

Cleanout and Cross-Contamination Prevention

- All interior seams, gaps, and corners of the threshing, separating, and cleaning areas shall be sealed with silicone or equivalent sealant, both inside and outside the machine.
- Rubber gaskets or equivalent seals shall be installed along all access panel gaps and covers to prevent seed or debris from lodging.
- Interior surfaces of the threshing and separating chamber shall be painted white to facilitate visual inspection for crop contamination and residual seed between plots.
- Engine covers shall be easily removable without tools or with minimal tooling to allow safe access for servicing and field cleaning.
- Front and rear axles shall have covers or guards to prevent the accumulation of straw and seed around drivetrain components.
- Spacers shall be installed between hydraulic lines and hoses routed through the machine to prevent seed and straw from accumulating between lines.
- Machine shall be equipped with a combine-powered air compressor with a minimum 10-gallon (38-liter) air tank and a minimum 40 feet (12 m) of air hose, enabling whole-machine cleanout in the field without an external power source.
- The machine shall utilize hydraulic drives to the maximum extent practicable to minimize the number of drive belts. The total number of drive belts shall not exceed five (5) to reduce maintenance downtime and seed trap points.
- Pneumatic grain delivery system shall guarantee seed-tight transport with no seed leakage between the threshing area and the collection point.

Parts Availability and Service

- Common wear parts (including but not limited to: cutting knives, drive belts, sieves, and cab air filters) shall be available through United States distributors or dealers.
- The vendor shall provide, at time of delivery, a list of authorized service and parts dealers located within a 100 distance of Pullman, WA.
- Major mechanical components (engine, hydraulic components, drivetrain) shall be sourced from manufacturers with established dealer networks in the United States to facilitate timely parts procurement and service.

Accessories and Documentation

- Fire extinguisher
- Operator's manual and spare parts catalogue
- Rear-view camera displayed on operator display
- Tool kit and spare cutting knives
- Tie-down rings for front wheels to facilitate safe transport on a trailer
- Additional bottom sieves of multiple hole sizes: 8 mm, 10 mm, 12 mm, 16 mm – for wheat, soybeans, pulse crops

Dimensions and Weight

- Overall length (with header, without row dividers): not to exceed 6.0 m
- Overall width: not to exceed 2.0 m
- Overall height: not to exceed 3.5 m
- Machine weight (basic): not to exceed 4,000 kg

Warranty

- Minimum 24-month warranty on parts and labor from date of delivery and acceptance
- Vendor shall provide a list of authorized service locations in the United States capable of supporting warranty and post-warranty repairs

Training

- Vendor shall provide a minimum of one (1) day of on-site operator and maintenance training by a qualified technician, to include:
  - Machine operation and combine settings/adjustments
  - Harvesting of research plots, including border plots
  - Daily and annual maintenance procedures
  - Field cleanout procedures between plots
  - Operation and setup of the weighing/data collection system (if applicable, may be conducted by weighing system manufacturer representative)
- Vendor shall provide a reference guide or quick-reference card for field operators covering routine operation and cleanout procedures

Delivery

- Delivery within 180 calendar days after contractor receipt of purchase order.
- Delivery to: USDA Natural Resources Conservation Service, Plant Materials Center, 4900 Terre View Dr., Bldg. 195A, Pullman, WA 99163, Attn: Steven Lee
- Delivery shall include all shipping, handling, import fees, and brokerage charges. All such costs shall be included in the quoted price.