Quote Id: 32012536

21 November 2024

STATE OF TENNESSEE PURCHASING AGENT
2200 CHARLOTTE AVE
NASHVILLE, TN 37203

Craig Ketelsen
864-419-8871
Beard Equipment Company

JOHN DEERE

Quote Summary

Prepared For:

STATE OF TENNESSEE PURCHASING AGENT
2200 CHARLOTTE AVE
NASHVILLE, TN 37203
Business: 615-741-1637

Prepared By:

Craig Ketelsen
Beard Equipment Company
7526 Old Nashville Hwy
Murfreesboro, TN 37129
Phone: 864-419-8871
cketelsen@beardequipment.com

Quote Id: 32012536
Created On: 21 November 2024
Last Modified On: 04 December 2024
Expiration Date: 30 September 2025

Equipment Summary	Suggested List	Selling Price		Qty		Extended
JOHN DEERE 7500A E-Cut Hybrid Fairway Mower	$ 122,053.80	$ 83,606.85	X	1	=	$ 83,606.85
Equipment Total						**$ 83,606.85**

Quote Summary	
Equipment Total	$ 83,606.85
SubTotal	$ 83,606.85
Est. Service Agreement Tax	$ 0.00
Total	$ 83,606.85
Down Payment	(0.00)
Rental Applied	(0.00)
Balance Due	**$ 83,606.85**

Salesperson : X _____ **Accepted By : X** _____

Selling Equipment

Quote Id: 32012536 **Customer:** STATE OF TENNESSEE PURCHASING AGENT

JOHN DEERE 7500A E-Cut Hybrid Fairway Mower

Hours:
Stock Number:

Suggested List
$ 122,053.80

Code	Description	Qty
178HTC	7500A E-Cut Hybrid Fairway Mower	1
	Standard Options - Per Unit	
001A	United States and Canada	1
183E	JDLink™ Modem	1
0443	All Other countries (English/Spanish)	1
1201	Quick Adjust 5 (QA5) 7-blade Heavy Section Cutting Units	1
1305	76.2 mm (3-in.) Diameter Heavy Duty Grooved Disc Rollers	1
1400	QA5 Cutting Unit ONLY Counterweights	1
1602	50.8 mm (2-in.) Diameter Wide Tube / Hollow Smooth Rollers	1
9756	(5) 22 In. Smooth Roller Scrapers	1
	Other Charges	
	Freight	1
	Setup	1

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

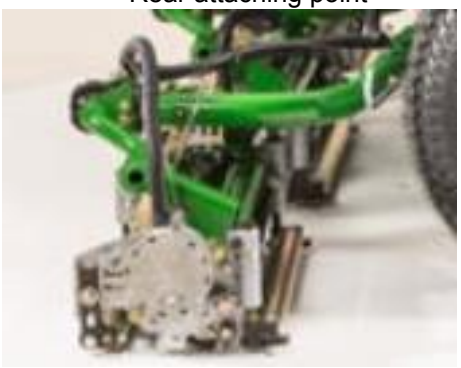
File Created: 04-Dec-2024

2025 JOHN DEERE 7500A E-Cut Hybrid Fairway Mower

Cutting

Rear attaching point and hydraulic down pressure maintain a consistent, quality cutting height

Rear attaching point



Rear attaching point

John Deere A-model PrecisionCut™ and E-Cut™ Hybrid Fairway Mowers have two features that help promote a better cut quality than other competitors in the marketplace.

The first feature is the rear attaching point. As can be seen in the photo, the yoke attaches to the cutting unit in the rear as well as down low. This helps to keep the rear roller on the ground consistently in undulating terrain. This also substantially improves cut quality by maintaining a consistent height of cut in virtually any condition. Rather than pushing the cutting unit through the turf, the yoke system pulls the cutting unit through the turf, keeping the back end of the cutting unit engaged with the turf.

The second feature is hydraulic down pressure. Hydraulic down pressure works together with the rear attaching point to keep a consistent quality of cut.

These two features give the John Deere PrecisionCut and E-Cut Hybrid Fairway Mowers an excellent quality of cut without the use of springs or other mechanical components

Cutting

Top shield adjustment for clipping dispersal and grass catching

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

Top shield adjustment

The Quick-Adjust 5 (QA5) cutting unit features an adjustable top shield to either disperse clippings or throw grass deep into the grass catchers. By adjusting the shield closely to the reel, but not touching the reel, the velocity of the grass as it is being ejected from the cutting unit can be increased.

This throws the clippings further out in front of the machine. When mowing without grass catchers, this means better clipping dispersal and recycling of clippings. When mowing with grass catchers, this helps throw grass deeper into the catcher, making sure as many clippings as possible are caught.

The top shield adjustment is an important adjustment that provides for optimum dispersal and catching performance as the reel diameter changes due to wear.

Shield extensions can also be added to the top shield to improve performance in dry conditions. These extensions are optional with riding greens mowers, fairway mowers, the 180 E-Cut™, and 220 E-Cut Hybrid Walk Greens Mowers.

Cutting

Speed Link™ height-of-cut system adjusts both sides of rear roller at the same time

The ultimate in quick and accurate height-of-cut adjustments: the Speed Link height-of-cut adjustment system ties both sides of the rear roller together, allowing technicians to make height-of-cut adjustments simply by adjusting one end of the rear roller.

How does this innovative system accomplish a one-point height-of-cut adjustment? It all starts with the worm-gear drives in the rear-roller castings. The worm-gear system rotates via hex bolts on the side of the rear-roller castings, adjusting the rear roller up and down. Simply turn the gears by turning the hex adjuster on the side of the casting. Each full turn represents an adjustment of 0.0254 mm (0.001 in.). A diagram on the side of the casting tells which direction to turn the hex bolts to raise or lower the cutting height.

Height-of-cut adjuster

Adjustment with cordless drill

Speed Link system

The true secret to the system is the connecting rod that ties the worm gear systems for each rear-roller tower together. With the connecting rod in place, turning the height-of-cut adjuster on one side automatically turns the other side by the exact same amount. This allows for adjusting the height of cut from one end of the rear-roller, making adjustments not only quick, but with stunning precision.

The Speed Link connecting rod is also spring loaded, so it can be easily removed should both towers need to be adjusted independently. Once the rear roller is paralleled to the front roller when the cutting unit is initially set up, the Speed Link

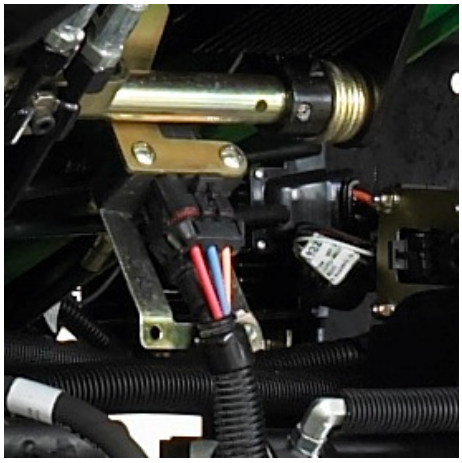
Adjustment with cordless drill

system takes over and moves each side of the roller by the same amount for a quick one-point height-of-cut adjustment.
The preferred way to adjust the cutting unit is with a variable-speed electric or air drill with a 16-mm socket attached. Since the entire rear roller can be adjusted from either side of the cutting unit, this allows for adjusting the cutting unit with the most easily accessible height-of-cut adjuster. This takes the challenge out of adjusting the rear cutting units on fairway mowers, riding greens mowers, and trim mowers. A drill makes the adjustment even easier by rotating the tower quickly, making height-of-cut changes a breeze. And the connecting rod ensures the other side turns just as fast, and just as accurately.

NOTE: Electric or pneumatic impact tools cannot be used to make the height-of-cut adjustment.

Electrical and lighting

Weather-sealed connectors and appropriate strain relief provide increased security for electrical components



Weather-sealed connectors

Given the environment in which fairway mowers are operating in terms of moisture, chemicals, and undulations, they require electrical components that can stand up to the elements.

All electrical connectors on the 7500A and 8000A E-Cut™ Hybrid Fairway Mowers are weather sealed for added protection against moisture and other contaminants.

The key to increasing the life of the connectors is to connect and disconnect them as little as possible. Every time the connectors are connected and disconnected presents an increasing opportunity for moisture and contaminants to enter the connectors. This also opens up opportunities for bent pins or pins that are pulled away from the connector.

John Deere cutting units feature an easy removal system for the cutting unit motors without needing to disconnect the electrical connectors. Simply loosen the two bolts holding the motor, twist the motor, and pull it away from the cutting unit. This process greatly increases the life of the electrical components.

A tether connected to the motors prevents harness and connector damage by keeping the harness from being stretched when the motor is removed from the cutting unit.

Due to the flexing of the cutting units when lifting, lowering, turning, and following undulations, electrical strain relief is also essential in the design of the electrical components.

The electrical reel motors harness features heavy-duty strain relief at both ends of the electrical wiring harness. At the motor end of the harness, durable strain relief can be found where the wiring enters the motor, able to withstand the flexing of everyday operation.

At the controller end of the harness, strain relief is present at the area of connection. This strain relief provides more stability to the controller wires, forcing the flex to occur in the main cable as opposed to flexing at the smaller controller wires, greatly increasing the life and durability of the harness. The strain relief is also secured using a metal bracket, further forcing the flexing to occur within the main cable.

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

Electrical and lighting

TechControl controls direction and speed of electric motor for mowing and backlapping

The TechControl display on the E-Cut™ Hybrid machines takes the place of a traditional hydraulic backlapping valve. The TechControl allows technicians to control the speed and direction of reel rotation. The reel rotation speed is infinitely variable between speeds of 150 rpm (backlap) and 2200 rpm (normal mowing speed). The independent electric reel controllers maintain a consistent speed for more efficient backlapping and superior cut quality.

The password protected reel speed control can allow for fine tuning frequency of clip to meet the changing conditions during the mowing season. This ensures ultimate control of cut quality.

TechControl display

Password-protected settings

The reel speed and backlap controls are password protected and located under the machine service menu.

Service menu

Electrical and lighting

Standard onboard reel circuit electrical system diagnostics located on the operator command arm

The 7500A and 8000A E-Cut™ Hybrid Fairway Mowers come standard with onboard reel circuit electrical diagnostics for quick diagnosis of reel circuit problems. The TechControl display is located on the operator command arm provides easy-to-see icons to aid in diagnostics of the reel circuit and the machine.

The E-Cut Hybrids have the latest in advanced diagnostics through the TechControl display. Most all diagnostics are preformed while sitting in the operator's seat.

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

The TechControl has onboard visual diagnostics allowing quick and easy machine diagnostics, maximizing up time. The system will allow technician to see inputs and outputs of the electrical system. Also, the technician will be able to see stored controller codes on the machine to aide in troubleshooting incidents that may have occurred while on the course.

Input/output screen

Electrical and lighting

Safety interlocks in electrical system yield safe and efficient operation

All A-model PrecisionCut™ Mowers, E-Cut™ Hybrid Mowers, and TerrainCut™ Mowers have an operator presence system to maximize operator safety while starting and operating the machine.

In order to start the engine, the following must be done:
• The park brake switch must be in the engaged position.
• The mow/transport switch must be in the transport position.

If these criteria are not met, the machine will not start.

In addition, once the engine is running, an interlock will automatically shut the engine and cutting units off if the operator leaves the seat. To keep the engine running, the operator must engage the brake switch and move the mow/transport switch to transport which disengages the cutting units.

This equals added protection for operators while using the A-model mowers.

Engine

Automatic filter cleaning processes

The U.S. Environmental Protection Agency's Tier 4 requires certain emission regulations that require the reduction of nitrogen oxides (NOx) and diesel particulate matter. NOx can be formed by higher in-cylinder combustion temperatures, and particulate matter is basically diesel fuel that did not fully burn during the combustion process.

NOx is reduced through the use of cooled exhaust gas recirculation. For particulate matter, John Deere has integrated an exhaust filter. The exhaust filter not only greatly reduces particulate matter within the exhaust stream, but allows for seamless and uninterrupted operation with minimal operator involvement.

The filter consists of two components, a diesel oxidation catalyst (DOC) and a diesel particulate filter (DPF).

DOC

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

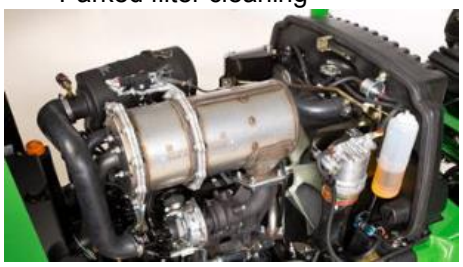
The DOC reacts chemically with exhaust gases to reduce carbon monoxide, hydrocarbons, and some particulate matter.

DPF

The DPF is constructed of ceramic porous channel walls, trapping, and holding any remaining particulate matter.

Depending on the load the machines is under, as well as ambient temperature, humidity, and engine speed, the DPF may build up with particulate matter, thus requiring cleaning. Filter cleaning is an automatic process determined by one of three factors:
• A prescribed time-based estimation of needed filter cleaning
• DOC/DPF pressure sensors
• A particulate matter buildup estimation based on load conditions
Once one of the three parameters has been met, filter cleaning occurs.

There are three different types of filter cleaning processes:
• Passive filter cleaning
• Active filter cleaning
• Parked filter cleaning



Engine

Engine

Horsepower and constant speed combine to meet the most demanding course conditions

All the A-models are equipped with plenty of power to meet the most demanding course conditions. The Tier 4 engines also use an isochronous engine governor or a constant speed governor. The constant speed governor keeps the engine running at a constant speed and enhances the mower's overall efficiency. In tough conditions, the engine governor will help maintain engine rpm, in turn, keeping the traction and cutting unit circuits at high rpm to maintain traction speed and cut quality.

7500A, 7700A PrecisionCut™ and 7500A and 8000A E-Cut™ Hybrid Mowers

7400A TerrainCut™ Mower

Type	Direct-inject turbocharged diesel
Compliant emission regulation	Final Tier 4
Horsepower	-
Maximum rated horsepower, hp (kW)	41.6 (31 kW) at 2800 rpm ISOC

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

8700A and 8900A PrecisionCut, 9009A and 8800A TerrainCut

Engine	
Type	Direct-inject turbocharged diesel
Compliant emission regulation	Final Tier 4
Horsepower	-
Maximum rated horsepower, hp (kW)	55.1 (41.1 kW) at 2800 rpm ISOC

Key Features

56-Volt, 240 amp Smart alternator and electric reel motors provide power for mowing, and verticutting.

56V Smart Alternator

Experience increased mowing and verticutting performance in golf and sports turf applications with the upgraded 56-volt, 240-amp Smart Alternator. The alternator that was used in previous model years of E-Cut™ Hybrid QA5 Fairway Mowers was 48-V, 180-amp.

• Working directly with LoadMatch™, this Smart Alternator senses the load on the cutting units and slows traction speed as needed, maintaining superior cut quality while in heavy mowing conditions.

• Belt driven directly from the engine, which means no additional batteries are required and decreases overall maintenance.

For optimal verticutting performance do not exceed depths greater than 1/8” (3.18mm).

Key Features

Reduced sound levels and fuel consumption at 2300 rpm

Reel circuit power source
180-amp alternator

Electric motors drive cutting units

The E-Cut™ Hybrid Fairway Mowers are unique in that electrical power is used to minimize hydraulic leak opportunities in the reel circuit, but an engine is utilized to ensure optimal performance throughout the day. This presents an opportunity to further enhance machine performance through reduced sound levels and improved fuel savings, by running the machine

at less-than-full throttle. When running the E-Cut Hybrid machines at the recommended reduced setting it does not sacrifice cut quality as the reel speed is still maintained at approximately 2200 rpm.
This reduced throttle setting is set quickly and easily using the TechControl display. Simply use the password-protected mower set-up screen Engine Mow Speed to set maximum engine speed while in mow. Once set, the engine speed automatically uses this rpm when the machine is mowing. This allows complete control of sound levels and fuel savings.

The 7500A and 8000A E-Cut™ Hybrid Fairway Mowers can be effectively run in mow at an engine rpm reduced to 2300 rpm. At this operating rpm, operators will experience noise reductions when compared to running the machines at full throttle.

In addition to the reduced sound levels, the operation at this engine rpm will reduce fuel usage due to slower engine rpm. Comparisons have shown that, depending on conditions and usage, fuel savings can be as high as 30 percent when running the machine at 2300 rpm as opposed to running at full throttle required by traditional hydraulic machines.

Mow engine speed screen

Password-protected settings

Key Features

eHydro™ hydrostatic pump and large-capacity wheel motors for serious hill-climbing capabilities

The eHydro™ traction pump and wheel motors in the new A-model takes performance, traction, and operation to the next level.

We designed the new system to take on the most challenging course conditions. These improvements to the traction system makes the A-models ideal for undulating terrain providing superior performance and traction out on the course.

The traction system in the A-models is driven by a servo-controlled hydrostatic pump. The control of the pump is no longer mechanical linkages but instead it is electronic.

In total approximately 94 parts have been eliminated from the traction drive system along with 4 adjustments compared to prior models. The design reduced the complexity of the drive system meaning no more linkages to adjust or repair decreased routine maintenance and providing reliable day-in/day-out operation.

Quote ID :32012536Customer Name : STATE OF TENNESSEE PURCHASING AGENT

Large wheel motors

eHydro™

The operator will like the eHydro, too. The pedal effort has been reduced, thus reducing the foot fatigue during many hours of mowing.

Forward/reverse pedals