



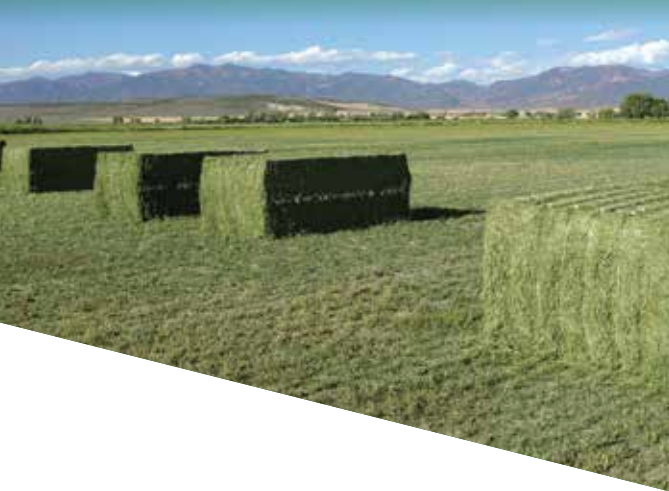
Model 721 Dew Simulator

Allows for the precise addition of moisture to windrowed alfalfa

Waiting for natural dew to soften alfalfa before baling is a challenge for producers in arid areas. Many producers have tried to spray over the windrow to bring the moisture content up, only to find that just the top of the windrow becomes soft, but the leaves still shatter off most of the hay. The Model 721 Dew Simulator from Harvest Tec has now made simulation of natural dew possible.

The Dew Simulator is pulled as a separate pass before baling with a customer supplied water tank. The Dew Simulator preheats water to 240 °F, and applies the hot mist to the windrow via a reel with tines that enter into the windrow and spray from the bottom of the windrow up, the same way that natural dew occurs in windrowed alfalfa. The heated water has been shown to soften the plant's material more effectively than cold water, allowing the crop to retain more leaves.

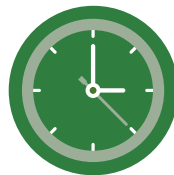
Hay treated with Harvest Tec's artificial dew simulator will look and test as well as hay made under ideal dew conditions.



The Model 721 Dew Simulator operates as a separate pass in front of 1 Large Square Baler



The Model 721 Dew Simulator operates as a separate pass in front of 2 Small Square Balers.



Become more efficient with the Model 721 Dew Simulator by opening your baling window into hours when the hay has been too dry to bale. Take more control and become more productive baling on your own schedule.



Rehydrate and soften windrows and increase bale weights with additional leaf retention. In addition to higher yields, operators treating hay with the Model 721 Dew Simulator can expect better looking and testing bales with more consistent weights.

Model 721 Dew Simulator Water Requirements

- Clean water - free of sand and silt
- Use of Eradicate+ water treatment required for preventing mineral build up (3/4 gal per 1000 gal of water)

Note: A water quality analysis is recommended to determine any additional requirements.

Model 721 Dew Simulator Features

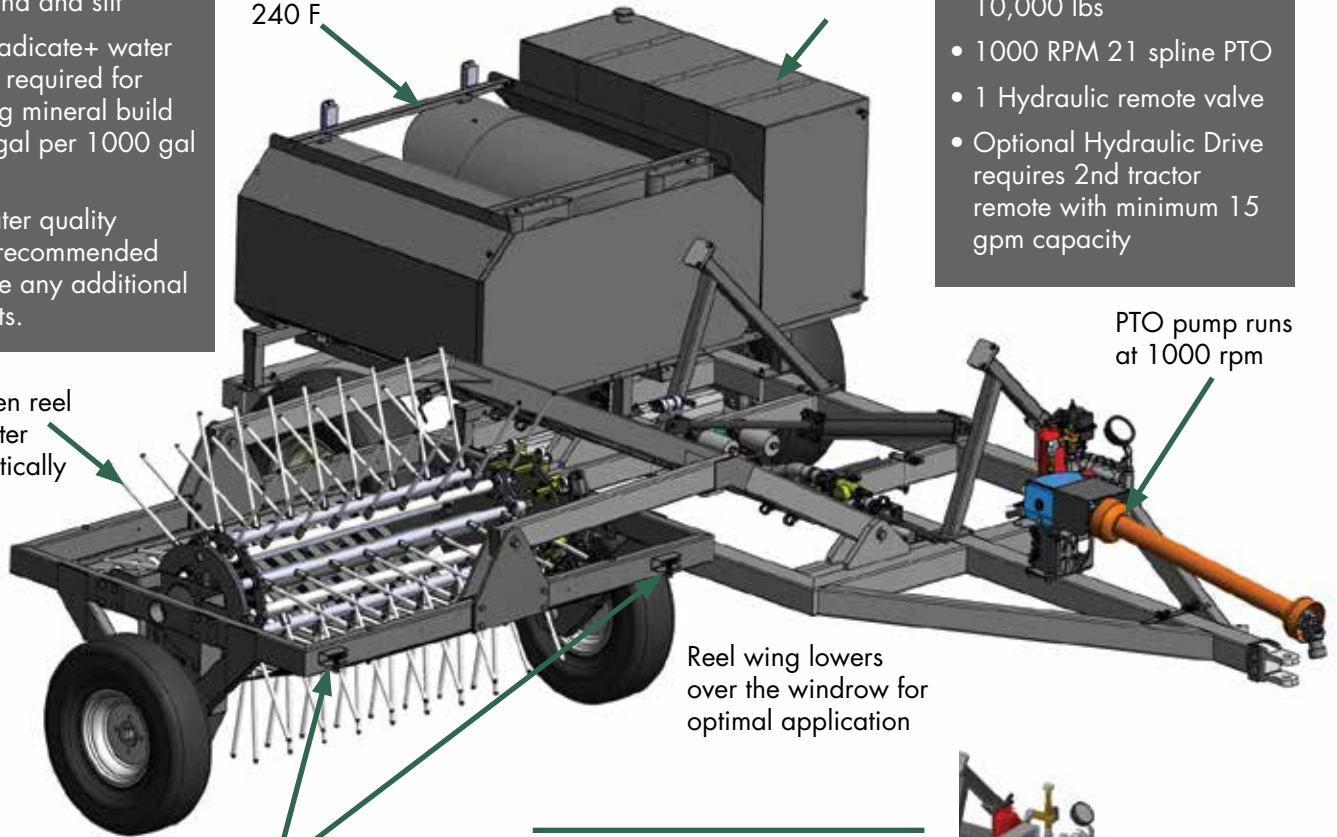
Two diesel fired water heaters with stainless steel coils raise water temp to 240 F

125 gallon diesel fuel tank supplies fuel to water heaters

Model 721 Dew Simulator Tractor Requirements

- Minimum 60 PTO HP and 10,000 lbs
- 1000 RPM 21 spline PTO
- 1 Hydraulic remote valve
- Optional Hydraulic Drive requires 2nd tractor remote with minimum 15 gpm capacity

Ground-driven reel with tines enter windrow vertically

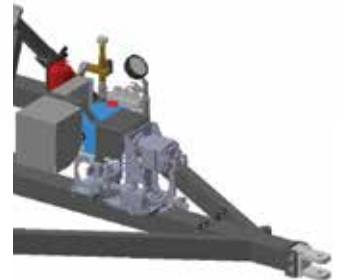


PTO pump runs at 1000 rpm

Reel wing lowers over the windrow for optimal application

Optional perimeter nozzles spray on top and sides of windrow in high evaporation conditions

Optional Hydraulic Drive replaces 1000 RPM CV driveline. Allows operator improved control of water application from seat of tractor.



User friendly control box is mounted in the tractor cab displays water temperature and flow readings.



Dew Simulator in transport position.

How the Dew Simulator Works

- Runs as a separate pass ahead of baling
- In periods of low evaporation (such as evening, nighttime and early morning), the interval between simulating and baling can be 1 to 15 minutes
- In periods of high evaporation (such as early evening and later morning), the interval between simulating and baling can be within seconds
- Water is heated and maintains a target temperature of 240°F with system integrated flow meter and temperature sensors
- 65 tine (85 tine option for wider windrows) cammed reel enters and exits the windrow vertically, with no crop disturbance
- Valve actuated tine rows only apply high pressure mist when inside the windrow
- Valve actuators are adjustable for varying windrow conditions can be turned off for windrows with bottom moisture
- 250 - 1,200 psi spray delivers fine droplets between 20 and 40 microns
- 2 in-series diesel fired water heaters with stainless steel coils each use a maximum 5.5 gallons per hour of #2 diesel
- Water tank is operator supplied and is pulled directly behind (1000 gallons recommended and will treat 50 to 75 tons depending on application rate)

Owner Testimonials



'The biggest factor for us is that we can go out and rake in the morning. Keep all the leaves on with a nice dew and we can then wait for it to get really hot and dry and go out at 12-1pm with a Dew Simulator and go until 5 or 6pm and not have to go all night. It's going to be more efficient for our production, getting the quality of hay they (customers) want'.

'With the Dew Simulator it sets us apart from a lot of people. And with Gary and Steve staying at the forefront of technology and incorporating the Dew Simulator into our game, it doesn't get much better'.

Steve Johnson, Gary Frank & Cliff Dawson of Dakota Hay Service – Burton, TX



'Just the other day we were right at the perfect dew point, just about to put us over the edge to where we could bale. But it just wasn't enough. We were able to fire off the dew machine and we baled 60 acres that morning that otherwise would have laid there until the next day, or two days, whenever we got a natural dew'.

'I think it's a tool that anybody that's putting up commercial hay or just trying to put up high quality hay on any sort of larger scale, it can definitely help'.

Sam Nordick, Nebraska



'This is our first year with the machine and to be honest, we've used it every cutting, every field, every time. It helps with us on our window of being able to bale. We can start a little bit before the dew comes in or if there is a storm approaching, we begin baling right then and there.'

'About 1/3 of our hay goes to local cattlemen. And they want to see a nice tight bale. With the dew simulator you can get a better pack, better stroke, better flake, and make a tighter and fuller bale with better bale weights.'

David Andrade, Utah



"With the dew simulator we can actually control exactly what we want as far as moisture level in the bale. Typically we like to bale with the Dew Simulator and bale through an entire day. We don't just shoot for a two hour target of time. We shoot for a target moisture and bale all day."

Gale Carr, Fort Hancock, TX

To see additional testimonials visit: www.harvesttec.com/model-720-dew-simulator/

Benefits of the Model 721 Dew Simulator

The Model 721 Dew Simulator is designed to re-hydrate dry alfalfa windrows from 6-10% moisture up to 14-16% moisture in dry, arid climates that don't see a lot of natural moisture and have to rely on the dew. By adding the moisture back into the windrow before baling, operators have the ability to open up their baling window, bale longer hours, and make better quality alfalfa bales.

New Operator Questions

How fast do I operate the Dew Simulator?

The Dew Simulator is operated at the same speed as 1 large square baler or twice the speed of 2 small square balers. With ideal field conditions the dew simulator can be implemented ahead of 3 small square balers.

How far ahead of baling do I apply the heated mist?

During windy and hotter days (high evaporation) baling will occur within seconds of application. During lower evaporation periods operators manage a delay from 1 to 15 minutes as hay appearance is evaluated. The heat from the mist provides an initial softening of the windrow. As the windrow continues to absorb the moisture over time it will further soften.

How much water do I apply to the windrow?

This is dependent on how dry the windrow is and evaporation. The monitor displays a flow meter reading and communication between the baler operator and Dew Simulator operator is key. Application can be adjusted to apply 7 to 20 gpm. The baler pressure and moisture meter are monitored as they are with natural dew and adjustments throughout the baling evening/morning are made as natural dew sets in or burns off.



Reap the benefits at the end of season when maintaining reliable and consistent cutting days. Additional year end growth can be realized when hay is cut, raked, and reliably baled on a consistent schedule. A well managed baling program allows irrigation back on fields quicker taking advantage of the maximum growing days during season.



Manage Risk and beat the summer storm by softening windrows that are otherwise too dry, avoiding rained on hay. Beating the storm will also avoid hassle of regrowth beneath the windrow. Contract a premium price with confidence the hay making process can be self controlled.



Compared to other re-hydration technologies the Dew Simulator minimizes soil compaction, allows for tight turning radius in small acreage fields, allows operator to maintain line of site with baler at all times, has minimal fuel consumption, and offers flexibility between all baler makes and models.

Determining the Financial Impact of Re-hydrating Technology



When determining the financial impact for your own operation estimate the percent of time windrows are baled too dry.

User Defined Inputs (example assumes a 500 acre operation)

Number of Annual Acres Per Baler	500
Number of Cuttings Per Year	4
Fuel Cost Per Gallon	\$3.00
Hay Price Per Ton	\$200.00
Dew Simulator Utilization	60%

Fixed Inputs¹

Operating Cost to Bale Per Acre	\$9.76
Dew Simulator Operating Cost Per Acre	\$3.22
Additional Weight Per Acre Added	216.96 lbs

The Bottom Line

Dew Simulator Annualized Cost of Ownership over 5 years	\$14,608.49
Total Dew Simulator Operating Cost	\$3,860.00
Total Baling Cost	\$19,520.00
Total Cost Dew Simulator	\$18,468.49
Dew Simulator Benefits Per Acre	\$21.70
Dew Simulator Cost Per Acre	\$9.23
Dew Simulator Net Benefits Per Acre	\$12.46



For a Financial Impact comparison of industry leading re-hydration technologies and user defined operation sizes visit

www.harvesttec.com

¹ Source: Utah State University in field research data collected 2020, Milford, UT center pivot irrigated alfalfa.