

Please drop by our GIS booth #2704

David Maas & **Scott Bjorge**

PlanetAir Turf Products

PlanetAir Tri-fecta

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The Tri-fecta name ties to the three functions of the new model - Flexible Rolling, Deep Vertical Cutting and Soil Aeration. The number of tines has doubled to provide I" spacing and the PlanetAir Tri-fecta has been developed into a tournament quality roller. So you can aerate and roll or lock the rotor and just roll with your new Tri-fecta.

Deep Verticutter



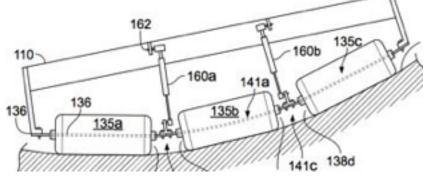
Soil Aerator



Proven Results



Flexible Roller



The Tri-fecta Development Story

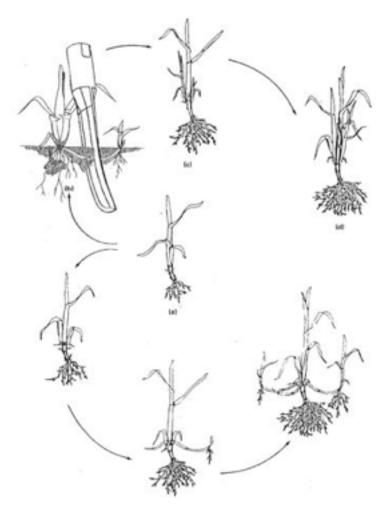
After the economic slowdown of 2001 we began development of the PlanetAir model HD50 aerator. Our GCS customers guided our course. The design goal was to increase hole density and replace the tractor mounted model with a self powered tow behind PlanetAir.

In 2003 we introduced the PlanetAir HD50 tow model and enjoyed 8 years of great success with our dealers hard work and GCS support around the globe.

Now the economic crisis of 2008 and maybe an opportunity for a repeat?

Once again the GCS has guided our new path. Two things, other than the common soil aeration benefits, we heard that surprised us.

- I.The HD50 was being used to smooth the putting surface and increase ball roll. Some GCS who have expensive dedicated rollers chose the HD50 tow to roll their greens for tournament events. They either aerated their normal way or locked the rotor and used the HD50 as a tow behind roller.
- 2. The value of the HD50 was in it's ability to stimulate root development and to vertically cut deep into the green to control daughter plant development promoting new tiller growth on the parent plant resulting in finer textured greens with reduced thatch.



The New PlanetAir Tri-fecta Design Goal

Plant, Soil, and Surface maintenance in one machine one pass over the green the best we can make it.

The easy part. GCS like vertical cutting and they love soil aeration holes so double the number of tines in each shaft changing the tine spacing to 1" rows. Now I million aeration holes/hour the old HD50 model increases to 2 million in the new Tri-fecta. This doubles the amount of soil aeration and vertical plant cutting in the new Tri-fecta.

That's all great right as long as there is still something left of the green when we use it.

We build it we try it and it works. Here's the lucky part. The new 1" rows that cut and aerate also relax the surface tension created by plant growth and we also note a significant increase in the soil expansion over the old 2" rows. We run it over

core aerated greens it flattens them out. We run over deep tine aerated greens it flattens them out. We significantly reduce ball marks and other imperfections.

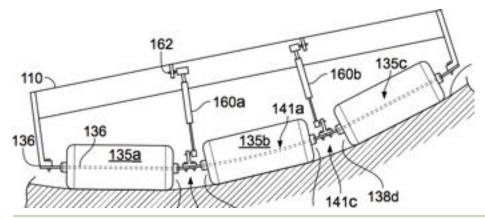


The Tri-fecta Development Story

The green surface becomes very flat dry and fast with the I" rows, but the 50" wide rollers we have used on the PlanetAir model HD50 leave creases caused by the excessive weight that builds on the edge of the roller on a contoured surface.

Tri-fecta roller design solutions.

- I. Move the engine and drive line lower back and to the center to balance the machine.
- 2.Add constant force springs over the hitch to bridge the weight 15% to the tow unit drive wheels and 80% to the rear roller system. Leaving only 5% on the front roller. The Tri-fecta becomes a tri-pod with the rear roller across two legs creating constant roller contact to the green surface.
- 3. Change the 50" wide rear roller to system of five 16" rollers and replace the 50" wide front roller with a 16" guide roller.
- 4. To cap the design we developed what we call a flexible roller by replacing the center round shaft with a high carbon steel bar that flexes like the steel ruler on



your desk which is where the idea came from. A group of constant force gas springs distribute the weight across the roller system to the green contours.

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David Maas & Scott Bjorge Owners PlanetAir Turf Products

Covered by one or more of the following US patents: 5,469.922; 6,513,603; 6,691,791; 6,983,806; 7,096,968; 7,070,005; 7,055,617; 7,152,691; 7,204,317; 7,290,619; 7,451,831B2; 7,438,136 B2; 7,341,115 B2; 7,575,063 B2; 7,575,064 B2; 7,640,994 B2. Other US and foreign patents pending.