

First Tramliner heads west

By Gary Alcorn

Australian engineering ingenuity using a German trailer undercarriage fitted with Swedish tyres has created the 'Tramliner' chaser bin in Toowoomba for a Darling Downs grain grower.

Oztec Manufacturing co-director and agricultural engineer John Sheehan said the client's specifications required careful design and fabrication.

"Our client wanted a 24 tonne tandem, walking beam suspension, self-steering chaser bin on a two metre wheeltrack and low centre of gravity to suit his permanent precision farming layout — hence the name Tramliner," John said.

"It all added up to a reasonable design challenge in that you had to allow for the considerable movement of the wheels within tight space constraints.

"We consulted Germany's BPW company about its range of agricultural equipment suspension systems, in particular the tandem axle suspension with self-steering capabilities.

"This 100 year-old-business is well known for its truck and trailer components in Australia but this is the first time, to our knowledge, that the steerable walking beam system has been applied to chaser bin construction in this country. (This system is commonly used in Europe).

"We approached BPW head office in consultation with Krister Wiengren from

Trelleborg and Norbert Kuckat from BPW Transpec (Australia) to built a special two metre wheeltrack tandem undercarriage and they agreed," John said.

This bolt-on undercarriage features walking beam geometry and a pivot system which makes the rear wheels steerable plus or minus 10 degrees to deliver a five metre turning radius without scrubbing the tyres.

Two hydraulic cylinders lock the rear axle and wheels in the straight-ahead position when reversing or travelling over 40 kph while two hydraulic dampers provide stability.

The client brief specified a low centre of gravity which required tubbing cut-outs in the bin to enable the 10 tonne capacity Trelleborg 16 ply 650-55 B 30.5 tubeless floatation tyres to both turn and move vertically without contacting the bin walls.

The Swedish manufacturers claim these tyres will last two to three times longer than conventional ag tyres.

Benefits include reduced soil compaction, because of the larger tyre-soil footprint, improved plant establishment and natural drainage.

This initial Oztec Tramliner model cost around \$50,000.

"Most of the cost was in the undercarriage and tyre configuration. I suspect the lower rolling resistance of the Tramliner will require around 180-220 tractor pto

hp fully laden which is considerably less than for a conventional chaser bin. On going field tests will establish the actual power requirements," John said.

Co-director and builder Glen Picone said while the Tramliner model represented a new direction for chaser bins, the bin and auger were based on the proven existing Oztec designs.

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Oztec claims the 24 tonne capacity Tramliner is the first locally-built chaser bin to use the BPW steerable undercarriage.



The German-made BPW tandem undercarriage with two metre wheeltrack was built to suit tramline paddock layouts.