



Electronic Control Systems for Off-Highway Vehicles
The Leitwolf Snow Groomer by Prinoth

TTControl

“TTControl’s distributed electronics supports a very high level of flexibility in our vehicles. We could implement functions that would not have been possible with purely mechanical and hydraulic solutions. With the Leitwolf model, we have definitely taken a major step onward into the future of snow groomer technology. By now his elaborate electronics has made it the most innovative snow vehicle in the market.”

Martin Runggaldier, Head of Engineering at Prinoth



TTControl is specialized in providing electronic control systems for off-highway vehicles and special machinery. Located in Brixen, the young high-tech company has proved its competence in an innovative development project conducted with Prinoth by Leitner Snow, formerly known as Leitner. The outcome of their successful collaboration is the next generation of high-performance snow groomers. The “Leitwolf” combines futuristic design and technological know-how to open up a new dimension of slope grooming. Prinoth’s top-of-the-line model comes equipped with an electronic control system from TTControl.



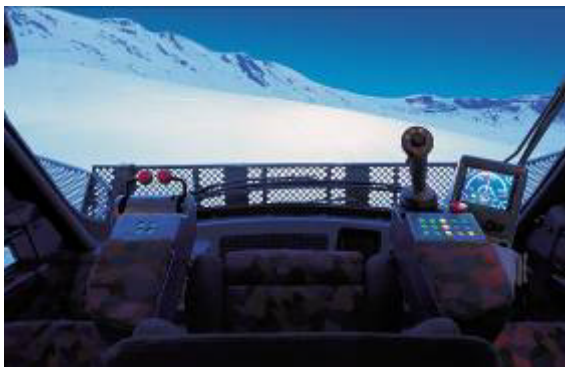
Prinoth’s “Leitwolf” offers state-of-the-art technology. The diesel engine fitted with an electronically controlled injection system reduces fuel consumption and exhaust emissions, thereby increasing the overall economy. The crawler tracks are made of steel and aluminum belts studded with spikes to ensure excellent climbing and driving properties. Enhanced hydropneumatic suspension with eight dampers improves the driving and working experience. Extremely light trellis tubing withstands very high levels of stress and strain.



A network with four control units from TTControl constitutes the technical core of the electronic control system in the “Leitwolf”. One TTC 20 control unit controls the driving system, by means of which the engine power can easily adapt to the operating conditions. Three TTC 10 control units control the rear snow tiller, the front rake blade and the entire on-board instrumentation of the snow groomer.

“Snow groomers are technically demanding vehicles with very complex control functions. It was an interesting challenge for us to equip the Leitwolf with systems and we are glad that we could demonstrate our experience and know-how in the field of off-highway electronics.”

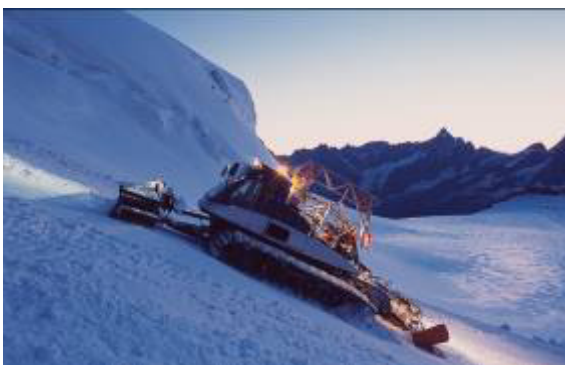
Marc Weissengruber, Business Development at TTControl



Additionally, the system has three command keyboards, a central color display for viewing functions, control lights for monitoring the vehicle, and a joystick-hand control. The joystick-hand control of the “Leitwolf” combines all functions of the front rake blade and the rear snow tiller. It controls the starting, stopping, raising, and lowering of the articulated snow tiller and adjusts the cutting and tilling angle as well as the side shifting of the rear snow tiller. It also monitors the horizontal and vertical float setting and checks the operating times of the front windshield. A special toggle button allows correcting the minimum and maximum tractive power of the winch in critical situations.



The “Leitwolf” benefits from the use of integrated electronics instead of conventional mechanics. TTControl's advanced housing and connector technique results in maximum safety and comfort. The four compact control units are placed in a box behind the driver's seat. This protects them from changes in temperature and bad weather and allows the driver to view more of machine and surroundings through the greatly enlarged windshield.



TTControl's electronic control system opens up new ways to implement mechatronic solutions. New functions can be realized by simply adapting the software. This guarantees a high degree of flexibility and extensibility. For example, a new traction control has been developed and tested without the need to change the mechanics. By this means, the climbing capabilities for bad snow conditions could be optimized. Other features can be integrated in the future by simply changing the software.

About TTControl S.r.l. – TTTech Off-Highway

TTControl offers electronic control systems for off-highway vehicles, such as agricultural and construction machinery, fork lifts, cranes, snow groomers, and ice resurfacing machines. TTControl's software and hardware platforms enable manufacturers of off-highway vehicles to develop reliable electronic control systems quickly and economically. TTControl is a subsidiary of TTTech Computertechnik AG.

Further information on TTControl is available at **www.ttcontrol.com**

About Prinoth AG

Prinoth has always been synonymous with groomers engineered to the very highest standards. Following the merger of the traditional company with the Groomer Division of Leithner AG in 2000, Prinoth now offers the world's most complete range of oversnow vehicles. Advanced technologies combined with forward-looking design make Prinoth the unbeaten full-service operator in the field of grooming and Prinoth groomers bestsellers worldwide.

Further information on Prinoth is available at **www.prinoth.com**

The logo for TTControl, featuring the letters 'TT' in a bold, blue, sans-serif font, followed by the word 'Control' in a lighter blue, italicized, sans-serif font.

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