

PRINOTH SPECIAL MACHINES

# GLOBAL WITH ALL THE FLEET



«When we choose an engine, we look at the overall package. Especially for snow groomers, we are very careful to weight and high power and torque output, as the machine has to push up the snow»

**W**ith Andreas Muigg, Head of product management, and Martin Kirchmair, Head of research and development, we've talked about machines, engines and their integration.

**Which engines do you use on the machines? What's their displacement?**

Of course, they're all industrial engines with some adaptations to fit our needs. We use Caterpillar, MTU or Cummins. In particular, Caterpillar and MTU engines for snow groomers, Caterpillar and Cummins for vegetation management machines and Caterpillar for tracked vehicles. The engine features strongly depend on the vehicles they're mounted on. So to speak, the smallest one is a Caterpillar 3.6-litre and the bigger is an 18-litre, also from Caterpillar.

**We are talking about medium to heavy-duty machinery? What are the main features and the main differences between Prinoth machines?**

Different BUs have different require-

Specialized on special-purpose machines and with production sites in Italy, Germany and Canada, Prinoth's range is divided into 3 business units: snow groomers, tracked vehicles and machines for vegetation management

ments, of course. Common to all Prinoth products is high reliability and superior performance. Snow groomers need to be able to operate on ski slopes with inclinations of up to 45°, and are using the latest available technology. For utility vehicles, the key is on high payload and reliability. Customer orientation and total costs of ownership are other key requirements.

**What type of machine needs more torque for the implements?**

Snow groomers, for instance, where our strongest machine in the portfolio – the LEITWOLF – has 390 kW and 2,600 Nm, need a lot of power for both, tiller and winch. The vehicles are designed for fuel efficiency and therefore have their working speed around 1,300 to 1,500 rpm of the diesel engine. Our new

Stage V engines support this by having the peak torque in this range and a curve looking like a plateau.

**Stage V is a hot issue indeed for both OEMs and engine manufacturers. What's your approach, talking about after treatment or hydrostatic transmissions, in particular?**

It's not that dramatic anymore, since we have always followed emission regulations. The biggest step was from Tier 3 to Tier 4. Of course, now it's important to find a balance between the powertrain and the machine as a whole, but it's not that different compared to the previous stages. We also aim to squeeze all the efficiency we can in terms of hydraulics and hydrostatic transmission. The impact of the Stage V on transmissions has not been that relevant, though. We

are using the same transmissions we developed in the previous stages.

**Talking about alternative engines, CNG or LNG are really available solutions? Are you testing them?**

We are always in search of the so-called 'alternatives'. Compressed or liquefied natural gases or electrification are something we have in our radar, even though it's not always easy to use alternative fuels in some challenging environment that our machines have to face.

Let's think about working sites in the middle of nowhere or ski resorts up on the mountains. We are always searching for new options, technology as well as infrastructure conditions. Sustainable solutions are options we are definitely interested in.

**Full electric and hybrid. Are these only suggestions?**

Full electric is quite tricky for big snow groomers, for example, as big machines running in full power need battery weighing several tons, not to mention their possible cost. Our field is quite different compared to on-highway, where we see several electrification projects.

Hybrid solutions, on the other hand, might be achieved in the medium term. Efficiency might lead to downsizing of big engines. Back in 2009, we tested our first hybrid snow groomer, but it was definitely too early for the market. However, we are in close contact with some possible partners.

We don't have any hybrid machinery in our portfolio yet, but we are keeping our eyes open.