

PistenBully® NEWS

The customer magazine of the
Kässbohrer Geländefahrzeug AG

ISSUE
N°6
AUTUMN 2015

snowsat®
Professional slope and fleet
management with snow
depth measurement

Everything to hand



up to
15%
lower costs

15%
less machine-
made snow

8%
less fuel

5%
less working
time

SNOWsat in the fast lane

With more than 30 ski resorts and over 150 equipped vehicles, SNOWsat has now evolved into the world market leader of fleet and snow management systems. Convinced by SNOWsat, several customers report their experiences.

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New in Europe: PistenBully 400 ParkPro Tier 4 final

It found its road to success in the USA last year – now it's starting to make an impact in Europe and all over the world too. The PistenBully 400 ParkPro has been specifically developed to groom fun parks, boarder and ski cross slopes and funslopes as well – in collaboration with park shapers from all over the world. It is also available in a Tier 4 final model, the latest exhaust gas standard. With this PistenBully is once again demonstrating its innovative strength.



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Usage report silage

The PistenBully 300 GreenTech is the ideal vehicle for depositing silage and works much more efficiently in the silo than wheeled vehicles.



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Eco-SnowDrive pro training

Crucial for all ropeway firms that want to improve both their economic and ecological balance. Use modern technology efficiently and exploit the driver's potential to the full. A few tips and tricks not only reduce costs – you can also increase the quality of the snow grooming too.



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Jens Rottmair, CEO Kässbohrer Geländefahrzeug AG

PistenBully with cult status

Innsbruck once again played host to the most important trade fair in the alpine sector this spring. The Interalp 2015 was a huge success for us and reminded us that our customers' enthusiasm and their identification with our PistenBully are extremely high!

The theme of environmental technology has long been a focus of our development work. Our PistenBully are leading the way in a new era of exhaust technology. The latest engine technology Tier 4 final has been in use since December 2014 in the PistenBully 400 ParkPro. Once again, we have clearly proven ourselves as the innovation leader in the market.

As part of our BLUEIQ corporate strategy, Eco-SnowDrive has now been integrated into our product range. Eco-SnowDrive is more than just a training programme that sensitises snow groomer drivers to responsible driving methods. The quality of snow grooming can be improved with a few tips; fuel consumption and pollutant emissions can be reduced – also by optimising runs. Crucial for all ropeway firms that want to improve both their economic and ecological balance.

The latest version of our professional snow and fleet management system SNOWsat supports all types of vehicles in the ski resort – from snow groomers to snowmobiles. Among other things, the new hardware facilitates driver identification and detailed cost centre management. Supervisors get a complete overview of what's happening in the ski resort in less than 5 minutes – away from the office too, as the software can be used on all mobile end devices like smartphones, tablets etc.

It will certainly be a while until the first snow falls. Take the time now to prepare for the coming season. Consider our many training course options. We wish you a snowy winter!

Kind regards,

Your Jens Rottmair
Chief Executive Officer Kässbohrer Geländefahrzeug AG

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Fit for the new season

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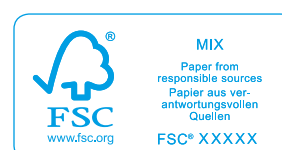
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info@pistenbully.com, www.pistenbully.com

Editorial: Thilo Vogelgsang, Patricia Röhl, Sabine Denzler, Martin Uhlmann, Sibylle Ruf

Photos: Martin Uhlmann, Schneestern, Diamond Peak, Cardrona

Run: 13,500





Park impressions – Nine Knights, Mottolino, Livigno, (Italy) 2014

Creativity and perfection not just for pros

The all-round talent for parks and slopes: PistenBully 400 ParkPro 4F



Park designs are becoming ever more remarkable in the professional sector. With adventure trails, funslopes and family parks, more and more ski resorts are now offering something for “normal” skiers and snowboarders too, increasing their appeal and, thus, their competitiveness. This has also changed what’s expected of the snow groomers. The challenge with the ParkPro was to combine the versatility for work on the slopes with the specific tasks needed for park building.

We have met these challenges with the PistenBully 400 ParkPro. The ParkPro has been specifically developed to groom fun parks, boarder and ski cross slopes and funslopes as well – in collaboration with park shapers from all over the world. As a result, it performs just as brilliantly when used for grooming. Our partner Schneestern really put this vehicle through its paces last year and has already used it at several world-class park events. To an extremely positive response. No wonder, when you consider all the ideas that have been realised in this very special model. It is packed full of innovative technology. It found its road to success in the USA last year – there are now more than 50 PistenBully 400 ParkPro on American slopes. Now it’s starting to make an impact in Europe and all over the world too.

Innovative functions for effective park building – part 1:

SwitchBlade² and quick-change system

Its SwitchBlade² is the broadest and best park blade in the world and features many details to make work in the park easier. The newly developed vertical cutting edge facilitates razor-sharp and right-angled side walls for jumps. For optimum effect the side wings are

now 15 cm wider, ensuring sufficient distance between track and obstacle. The SwitchBlade² is easy to operate using the newly designed joystick. Its range of movement extends to a massive 137° for increased creative freedom thanks to the newly developed push frame and the improved kinematics of the quick-change system. The SwitchBlade² moves to a straight tiller position at the touch of a button. Combined with the drawing bar and the integrated gradient sensor, which facilitates precise angle selection of the blade in the cockpit, it is perfect for reverse creation and precise smoothing of kickers. A variety of transport tasks are also possible, such as moving snow guns, rails and boxes, thanks to reinforcements on the SwitchBlade² and integrated eyelets. The second generation of the SwitchBlade gives shapers an innovative tool, making their work in the park easier, faster and more professional. The SwitchBlade² reduces expensive and strenuous manual labour and opens up a whole world of new and more creative park features.

Innovative functions for effective park building – part 2:

ParkFlexTiller and equipment rack

The ParkFlexTiller has been setting the benchmark for perfect slope quality for many years. The Flexlock makes it easy to lock and unlock the tiller hydraulically. We have integrated innovative functions into the new and even more sensitive Ahyd, specifically designed for the everyday needs of the park, facilitating completely new ways of working and making park modelling more efficient. The new controls for the equipment rack enable the driver to move and position the ParkFlexTiller freely and smoothly using the proportional lifting/lowering function. The equipment rack can now also be moved laterally at any time. The familiar PowerAngle function is now displayed

on the circular instrument for the tiller depth. This provides the driver with feedback on the position of the tiller without having to look round.

Joystick: The Bully under control

A PistenBully has never been so intuitive to control. The innovative joystick specially developed for the ParkPro 4F sets new standards in terms of operation and flexibility of the SwitchBlade² and the ParkFlexTiller. We know that a tool is only as good as how it can be used in practice. The development focus for this revolutionary innovation was on intuitive operation, practical functions, plus perfectly optimised ergonomics for shapers. Equipped with the FlexLock,

the ParkFlexTiller automatically moves to the horizontal position at the touch of a button. The proportional controls make it possible to lower the tiller extremely gently, minimising imprint on contact with the snow. Engine speed can be adjusted smoothly thanks to the potentiometers integrated in the joystick. Additional roll buttons enable sensitive control of tiller speed and contact pressure. The ParkPro is driven and steered directly with stick control. The 3-stage drive profile selection corresponds to aggressive, normal and gentle response from the tracks. Drivers can adjust their speed directly using a potentiometer integrated in the stick, without having to move their hands from the controls.



Revolutionary innovation: intuitive control and maximum ergonomics

(Continued on page 04)

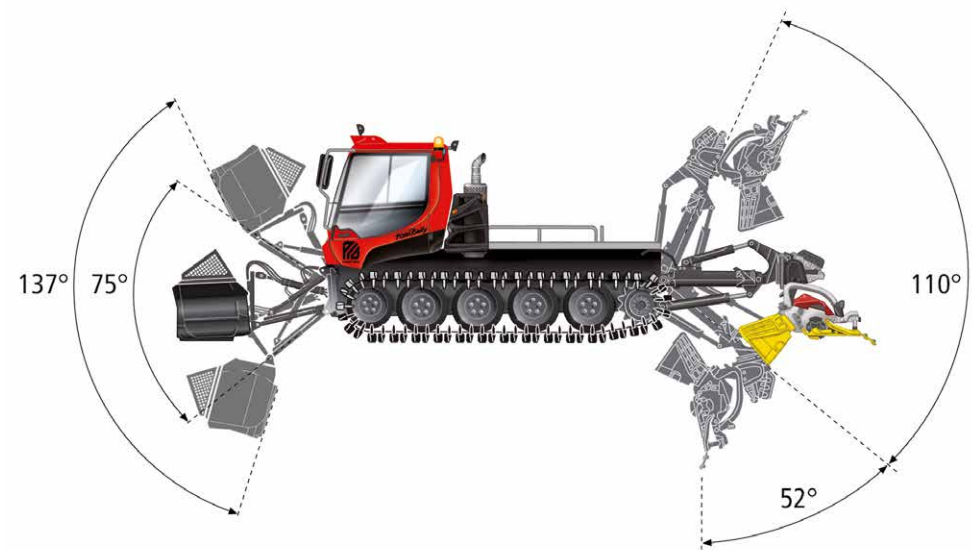
(Continued from page 03)



Precise cutting: the right-angled lateral cutting edge of the SwitchBlade² reduces manual work.



The individually folding side finishers facilitate effective work with the ParkFlexTiller.



Increased action radius – a new dimension in park building.

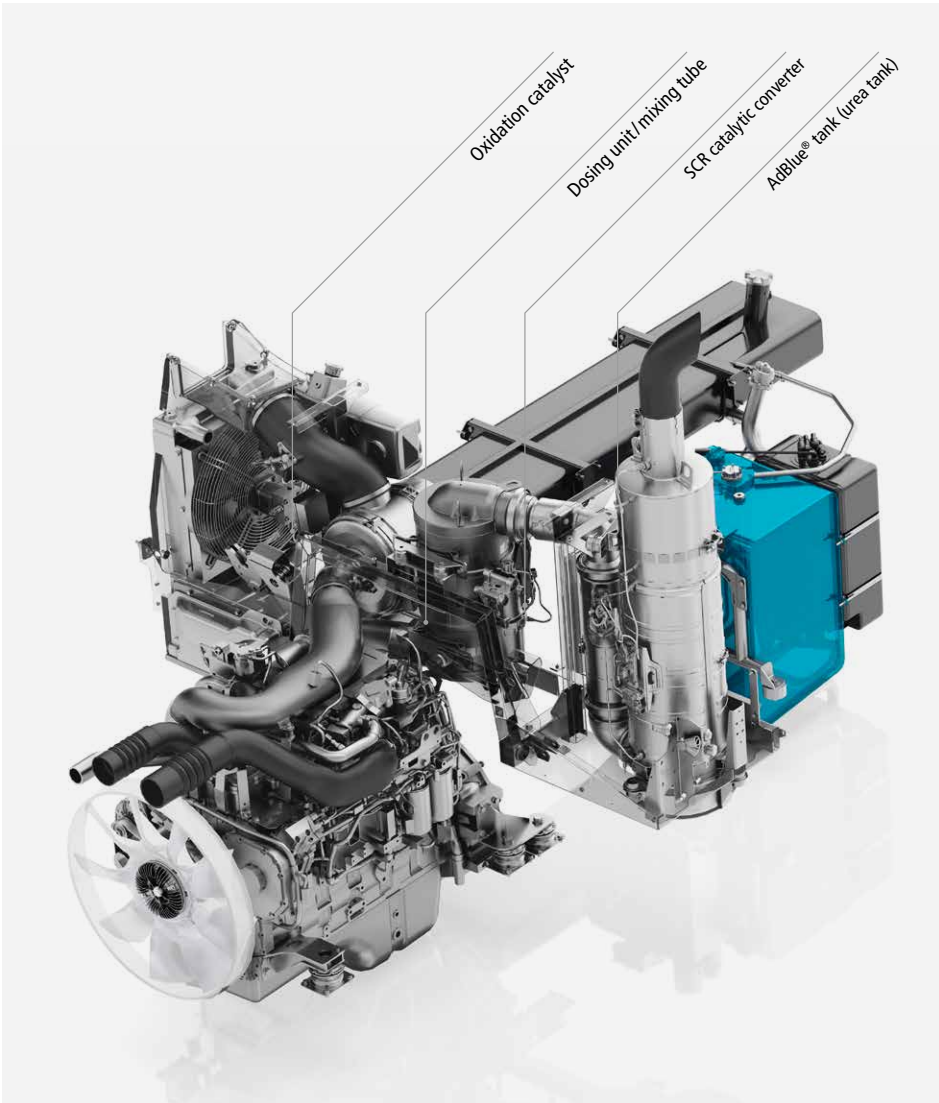
Cockpit: Climb in, sound on, get to work!
With the ParkPro we have created a comfortable and functional home for the driver. You'll make it happily through the night with warm feet, a new ergonomic premium seat and handy tools making your work a pleasure. Bluetooth ensures that the driver can always stay in contact with his team using the hands-free system. Surround sound from the premium sound system with subwoofer keeps the ParkPro pilots working at the right rhythm. And with music that drivers can play from their own devices via Bluetooth or USB. There is a USB interface for direct smartphone connection. The extremely spacious driver's cab was built using PistenBully's tried-and-tested hybrid design. The cab is very stable and is ROPS-certified in accordance with EN 15059. The huge windows provide perfect panoramic visibility. The wing mirrors are electrically operated. Extensive sound-proofing measures in the undercarriage, the cab's roof and the exterior panelling create a quiet and pleasant working environment. There are two separate heat exchangers with fans to provide heat in the foot area and on the side windows in icy temperatures.

The PistenBully 400 ParkPro is coming to Europe

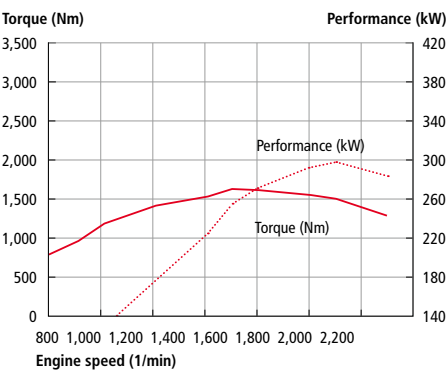
Market launch at the Stubai Prime Park Sessions

The Stubai Prime Park Sessions on the Stubai Glacier have evolved over the last few years into the international highlight of the pre-season. It is seen as the best park in the world in the pre-season by those in the know. For five weeks, the best free skiers and snowboarders in the world will be back again this autumn to prepare for the upcoming international contests under optimum conditions, as it offers ideal training opportunities for all professionals with its perfect park set-up. This unique park is designed and built by Schneestern – naturally with our PistenBully 400 ParkPro.

Perfect backdrop for the product launch of the PistenBully 400 ParkPro in Europe in November 2015.



ParkPro with Tier 4 final engine technology



Technical data	
Type	Cummins QSL9 Tier4f
Cylinders	6
Cubic capacity	8.91 / 8,900 ccm
Power output (ECE)	298kW / 400 hp
Max. torque	1,627 Nm at 1,500 rpm
Fuel consumption	from 18 l/h
Tank capacity	260 l / 69 gal
Emission standard	EPA Tier 4 f / EU Stage 4

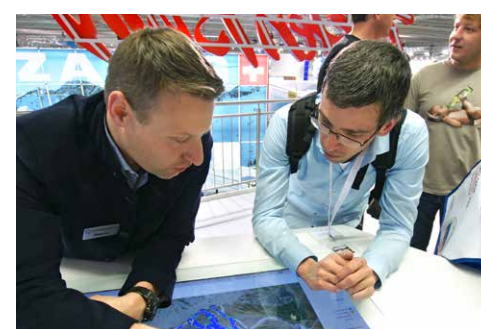
Kässbohrer Geländefahrzeug AG introduced the new Tier 4 final exhaust standard in the PistenBully 400 ParkPro last year, emphasising once again the firm's enduring leadership in innovation. The emission values stipulated by the Tier 4 final exhaust standard are achieved by combining a diesel-oxidation catalytic converter with the SCR catalytic converter. This process drastically reduces the NO_x levels and particles in the exhaust gas. Believe it or not, 23 Tier 4 final vehicles now emit the same levels of exhaust gases as just one vehicle under the Tier 1 exhaust standard.

400 ParkPro 4F drive train:

Get ready for sport mode

The ParkPro 4F has radically increased thrust thanks to the new planetary gear (17:1). This enables professional work even in extremely steep landings, as well as effective and fast snow collection. For the first time, the drive characteristics of a PistenBully can now be individually tailored to the needs of the driver: sport mode for aggressive driving, normal or gentle when the situation requires. The powerful 6-cylinder inline diesel engine with

common rail injection features low fuel consumption combined with low noise and exhaust emissions. It complies with the Tier 4 final standard thanks to an exhaust gas after-treatment system: The SCR catalytic converter (combined with Ad-Blue) and the exhaust gas recirculation reduce nitric oxide emissions, while the diesel oxidation catalyst reduces emissions of carbon monoxide and hydrocarbons. The 400-hp Cummins engine brings pure power to the slopes with a maximum torque of 1,627 Nm at 1,500 rpm. Thanks to the variable turbocharger, the engine also achieves high torque at low revs and responds much better. The patented Fleetguard filter with nanotechnology ensures optimised fuel filtering. Direct-flow air filters reduce the filter change intervals.



Interalpın 2015 =

Records and news at all levels

Even in its 40th anniversary year the Interalpın has broken all the records once again. Whether the 23,000 visitors or the impressive figure of 650 exhibitors – everything was more than at the last show 2 years ago. But it's not just these hard facts that are impressive – every visitor was astounded by what there was to see and experience there. We asked Moritz Hamberger, our intern and also a promising Telemark skier from the DSV squad, to give us his impressions as an "Interalpın newbie".

The show was already casting its enormous shadow back in November when I started my internship in the Marketing department. Intense discussions about the new stand, cute paper models, samples of floorings and fabrics all created a feeling that something major was happening. And the discussions about the ramps... I had no idea at first what they would actually be like – until I was able to experience, when they were tested, whether and how a PistenBully could be driven on such a ramp and a general safety check took place. It slowly began to dawn on me then the true scale of the dimensions everyone was talking about. Our office was also transformed temporarily into a fashion boutique – every possible colleague appeared to try on their new outfit – as we had to order the right sizes. That was really entertaining... the way the ladies talked about the fit of the blazers – unbelievable!

I couldn't believe my eyes when we stood in Hall A of the Innsbruck Exhibition Centre for the first time, two days before the show opened: there is only a hint of what the stand has to look like. And that has to be finished by Wednesday for the start of the show? There is only one thing to do: pitch in!

So bit by bit the stand takes shape. Our PistenBully are standing on the ramps, the flooring is laid, the pretend mountain range is built, the spotlights of our lighting system are set up. Finally, there were just the finishing touches to take care of: hanging pictures (printed on fabric!), applying labels, connecting monitors, installing the Internet and of course endless cleaning. And on Tuesday evening it is finally finished: one final check – and our stand is ready. Simply overwhelming! A few colleagues couldn't resist taking a quick first look at the stand. We get several compliments and are even a little proud.

On Wednesday morning the hour has finally come. I am excited to see how everything would go – it is my first show after all. All the many colleagues have their area of responsibility and make ready. Quickly laying out the brochures, giving everything a brief once over again, preparing the first cups of coffee and pastries, a quick look at the video wall – everything is ready.

There are already throngs of people outside the hall. The doors are opened on the dot of nine and the first visitors reach our stand just two minutes later. What strikes me are the many different languages I can hear. Customers and fans from all over the world. The beginning of three astonishing days.

I still have time to take a close look at our stand. At the bottom, on the ground floor, the vehicles are on show – truly eye-catching. All PistenBully stand on ramps, enabling visitors to see them from a completely new perspective – universal astonishment! The new PistenBully 100 with its intuitive steering concept, a world first, is a real crowd-puller. Lots of very specific questions for our engineers, lots of customers who just want to try out the driver's seat. A small queue has already formed because of the rush. No less popular is of course our flagship, the PistenBully 600 W Polar SCR. Other highlights include the PistenBully 400 ParkPro and our PistenBully 600 E+, which our customers (and fans!) just have to see.

And above all: info wherever you turn: whether about used vehicles, spare parts, fun parks or – now a firm fixture of our portfolio – our SNOWsat system. Experts to talk to everywhere – no question remains unanswered. Our PistenBully Boutique is virtually besieged. Caps, t-shirts and models – they were the big sellers for the young and old alike!

The most memorable thing for me is the atmosphere on the stand and the hordes of cheerful enthusiastic people! You feel as though you are part of an international party celebration – high spirits and happy faces wherever you look. But intensive technical discussions too and the odd sale or two.

There had to be!

My summary is short and sweet: because I have to get back – right away!



Moritz Hamberger
PistenBully intern,
DSV-Telemark Skier



Swiss landmark and tourist attraction: the first successful ascent of the Matterhorn took place 150 years ago.

The peak of reliability – the Swiss team

The Matterhorn – the mountain of mountains. The landmark and symbol of Switzerland. The first successful ascent took place 150 years ago. At 4,478 m above sea level, the Matterhorn is one of the highest peaks in the Alps. And an obvious example of PistenBully reliability. PistenBully ensure that skiers and snowboarders always encounter the perfect snow conditions right at the very top. Always ready for action in every situation and at any time – that is reliability.

Together we are strong

People make a company what it is. The PistenBully team is the engine and drive for the success of the PistenBully brand. Almost 30 people are currently working at 3 locations in the Swiss branch. 8 service engineers are continually on the road – the most important spare parts always on board. They get to customers extremely quickly thanks to the decentralised structure. If a technician doesn't have a particular spare part locally, then the branch steps in. Around 12,000 spare parts for every type of vehicle are kept at Möriken and the service centres in Chur and Sion. From there they can reach all resorts quickly and easily. PistenBully conquered Switzerland in the 1969/70 season. The first ten PistenBully were sold in

Switzerland just one year later. 45 years later, PistenBully is also the most prevalent snow groomer by far in Switzerland. PistenBully has the clear edge especially with winch machines and in the cross-country skiing sector. Many PistenBully are more than 10 years old. And are still delivering reliable service. The Swiss PistenBully team is the clear market leader, looking after around 1,300 machines in the market.

Two new appointments to the Swiss branch

Remo Bulgheroni took over as Manager of the Swiss branch on 1st July 2015. Mr Bulgheroni comes from the snow production sector and is familiar with the winter sports industry as a result. He has been working in the Swiss market for many years. The fact that this experience and his market expertise will be deployed in future for PistenBully is a big win for Kässbohrer Geländefahrzeug AG.

The second new appointment is Rico Storz, who takes over from Luzi Wyss as a salesman in Graubünden. We would like to take this opportunity to express our heartfelt thanks to Luzi Wyss, who is leaving us for a well-earned retirement, for his ever friendly and expert support! Luzi Wyss started his career at the Kässbohrer branch in Graubünden as a PistenBully

mechanic back in 1975. He moved in 1987 to municipal sales and then took over in 1997 from Heinz Storz, the father of Rico Storz. So we've come full circle.

We wish Mr Bulgheroni and Mr Storz every success in their new positions, the right touch when it comes to making decisions, and we hope that they enjoy working with all their colleagues and customers. Welcome to the family!

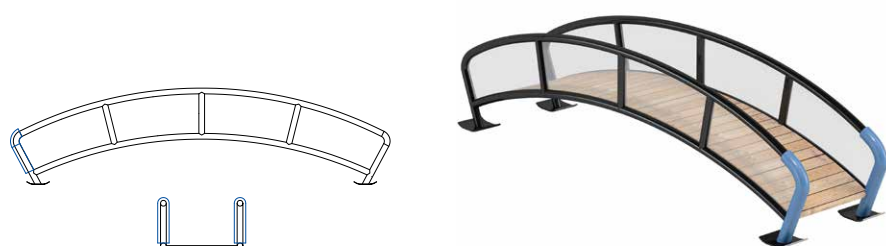


At the peak of the Swiss branch: Remo Bulgheroni



Luzi Wyss and Rico Storz: Passing the baton in Graubünden

Two firms – one quality standard



From the initial idea to series production – a bridge in the snow park.

This image is now familiar in many ski resorts: the snow crunching under the tracks of the 8-tonne PistenBully as it moves through the snow park. Under the supervision of the park staff, the so-called shapers, the PistenBully 400 ParkPro manoeuvres an approx. 5-metre-long obstacle in the form of a bridge into its intended position. Looking at the machine and obstacle together now, it is hard at first glance to imagine other common ground beyond the snow park. And yet – the parallels are there.

The two firms have been working as partners since 2013 and approach development and production with the same responsibility, although the two products, the obstacle and the PistenBully, are very different. The production of snow park obstacles may initially seem very easy compared to the PistenBully. But when you get into the detail it becomes clear that there is a complex development process here too. Just like the development of new PistenBully, the design process for an obstacle starts with the idea of creating an innovative and safe product for the appropriate target group. The industry for snow park obstacles is still very young and dynamic and continually demands innovations.

It's all about re-inspiring snow park visitors. Starting from this motivation, the initial idea for a new obstacle design usually emerges in the form of a hand-drawn sketch. A technical design drawing is produced, just as it would usually be when designing quality industrial products all over the world. At Schneestern it is not just creativity and years of experience from more than 10,000 sold obstacles that flow into this process, but also the firm's standard of the highest quality and uncompromising product safety. The next step is a 3D visualisation using a model, showing how the final product will look. From here the obstacle makes its way to the production process. As a prototype the new obstacle must undergo testing before it receives the final approval for series production. Schneestern and PistenBully alike set extremely high standards here and both subject their products to independent quality and safety testing by the TÜV. Things that are a matter of course for snow groomers, do not necessarily apply to the manufacture of snow park products. Schneestern is the only manufacturer of rail products in the world that voluntarily works at this quality level. A standard that is absolutely essential for modern and safe ski resort infrastructures. Ultimately, the PistenBully and the delivered obstacle stand side-by-side in the snow and have a similar systematic journey behind them. From the idea to the finished TÜV-tested end product, both firms hold themselves to similar standards, delivering products for different purposes, but that are developed and produced with the same responsibility.

Funslope Innovation Days 2015 on Dachstein



A ParkPro delivered powerful support during construction of the spectacular Funslope8.



From the initial idea to series production – a bridge in the snow park.

The Funslope Innovation Days were held on the Dachstein Glacier at the end of April, where our partner Young Mountain Marketing GmbH presented its promising new products in a unique funslope showcase. No effort was spared in transforming the most creative ideas into snowy reality. The Innovation Days Funslope went off as planned thanks to the brand-new PistenBully 400 ParkPro and a PistenBully 600 Park. The invited guests, a total of 57 representatives of ropeway operators, were greeted by an impressive work of snow art, which was the cause of much joy among the young and old alike.

The term Funslope scarcely needs explaining these days – ultimately, there were a total of 29 funslopes scattered throughout the ski slopes of Austria, Italy, Germany and Switzerland last winter. These funslopes captivate thanks to their archetypal snow shapes like snow tunnels, steep bends or the ever popular snails.

Despite the enormous success of the funslope concept, downtime is a foreign concept to Young Mountain Marketing GmbH – which is why they've held an internal ideas competition at the firm to find the funslope elements of the future. A total of 72 concepts were proposed by staff in advance of the Funslope Innovation Days. After a tricky shortlisting process, the most promising ideas were approved for production and for construction. The Dachstein offered the right backdrop and the necessary space for the unprecedented project.

The challenge was huge – technical realisation of the large-scale snow elements, such as the Funslope8, the double wave run or the banked waves, was a major undertaking for the technical directors Flo Penzinger and Andi Röck. The two experienced park building specialists were able to call on the high-powered support of PistenBully for their work though: in all, around 15,000 m³ of snow was shifted using the PistenBully 400 ParkPro and the PistenBully 600 Park. Using these highly specialised machines allows the designers to create fine detail, as well as clearly defined transitions and waves in the snow. The high operating range of the PistenBully 400 ParkPro and its extreme agility were especially advantageous during construction of the spectacular Funslope8: two snow tunnels did have to be built with transitions in a figure-eight form after all.

On the final day of the Funslope Innovation Days, the sun lit up the 620-m-long masterpiece in all its glory. The faces of those attending the first Innovation Days Funslope on the Dachstein Glacier were also resplendent. The partnership has successfully produced the desired result for all involved. We now wait with bated breath to see what the two innovation and market leaders will achieve in winter 2015/16.



Higher revenue, lower costs, good for the environment

News from SNOWsat

A lot has happened over the last 5 years, during which we have been working intensively with our snow and fleet management system SNOWsat. 5 years of numerous innovations, a great deal of technical progress, extensive programming and ever more in-depth dialogue with our customers. We have sold SNOWsat all over the world in these 5 years. From Scandinavia to New Zealand, there are now more than 150 SNOWsat systems in use at more than 30 ski resorts. We are now setting the bar high in this sector too and can proudly say that SNOWsat has developed into the world market leader of slope and fleet management systems.

There are several different aspects that have contributed to this success. SNOWsat is the integrated system that offers all functions relating to snow grooming. A system that can be expanded flexibly and easily from the "simple" fleet to premium slope management including snow depth measurement. With its appealing and extremely well-arranged user interface, the software can be used regardless of the various vehicle systems. The basis remains the same for upgrades and can easily be extended with the appropriate modules. Our long-term PistenBully customers appreciate the fact that they can get everything from one source with SNOWsat – from a firm that has been working for and with ski resorts for more than 45 years and whose core expertise lies in snow grooming. Because we understand customers' needs.

Fleet management:

optimised workflows at lower costs

Even this "simple" vehicle system "fleet management" offers a complete overview, driver identification and controls in the ski resort. The little box can be installed in all vehicles in the ski resort (including snowmobiles, quads, diggers etc.). Workflows can be analysed and optimised using the digital logbook. Working more efficiently creates more time, thereby facilitating higher grooming and slope quality. Data usage also includes documentation in cases of damage. This leads to lower operating costs and increased efficiency:

- ❖ Lower consumption and maintenance costs
- ❖ Optimised personnel deployment
- ❖ Reduced machine hours and working time
- ❖ Careful usage of snow groomers
- ❖ Improved slope quality
- ❖ Reduced emissions

Slope management incl. snow depth measurement: Everything at a glance, higher revenue and good for the environment



Optimised snow grooming thanks to display of routes and snow depth on the Touchscreen in the vehicle.

The highest upgrade level offers an optimum and extremely accurate overview in the driver's display of all vehicles and the entire infrastructure (slope borders, snow-making shafts, anchor points, winch ropes, roads and paths, buildings, obstacles etc.) in the ski resort – and that's from every viewpoint. The driver's safety is the focus. SNOWsat is also great for the environment: reduced energy and water consumption, less fuel and emissions, and minimised terrain damage is all good for the natural world. Optimised distribution of the snow in the resort guarantees a long season with best slope quality – and, thus, more revenue. Costs are also reduced:

- ❖ Optimised snow grooming thanks to display of routes and snow depth
- ❖ Optimised personnel and machine deployment
- ❖ Snow production only as needed on a daily basis
- ❖ Savings of up to 15 % on the costs for machine-made snow

- ❖ Avoidance of terrain damage
- ❖ Slopes can be opened sooner
- ❖ Paths and roads are cleared more quickly at the end of the season (time saving of up to 50 %)
- ❖ Proof of snow quality for ski sport events
- ❖ Cost centre capture

In contrast to other suppliers there are other striking advantages...

All the advantages of SNOWsat are revealed at a glance in the table on the right. The following features are particularly interesting: SNOWsat is the perfect tool for efficient snow grooming, optimised for the needs of ski resorts for integrated use of fleet and snow management incl. snow depth management. Behind SNOWsat is a **global player that stands for system safety and continuity**. Customer proximity, high-tech customer service and an excellent worldwide service network are recognised values of Kässbohrer Geländefahrzeug AG. SNOWsat is continually being refined to incorporate the latest developments and in conjunction with our customers.

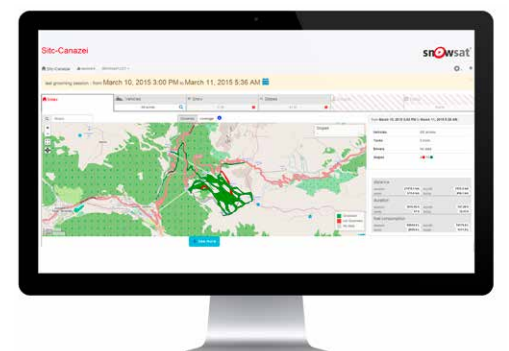
As a manufacturer of snow groomers we understand the needs of ski resorts perfectly when it comes to the relevant vehicle data. That's why we cover not only the PistenBully with our fleet management, but **all other vehicles in use in the resort** as well. With SNOWsat we are the only manufacturer offering the option of using driver identification, task and cost centre capture at the same time. Data security and data protection are extremely important to us. With SNOWsat all sensitive data (e.g. personal and financial information) remains in the ski resort and are not saved in the cloud.

We chose **satellite-based snow depth measurement** very deliberately for SNOWsat. Methods from surveying have been adapted and optimised for use in ski resorts. This facilitates centimetre accuracy even under difficult conditions – the basis of our efficient fleet and snow management. In contrast, radar-based systems are reliant on the consistency and density

of the snow, which frequently leads to inaccuracies. At the same time, this position failure leads to an inaccuracy in snow management as well.

SNOWsat uses the **latest technology from the surveying industry** – XFill™ from Trimble®, the market leader for such equipment. XFill™ is able to compensate for correction signal losses of up to 5 minutes, thereby offering the highest possible and most reliable coverage.

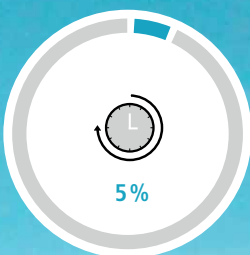
SNOWsat: Everything from one source. And with PistenBully quality!



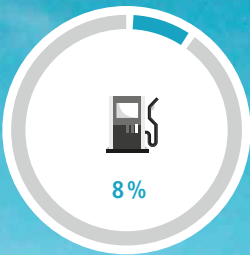
The CAN and Fleet software components are now both web-based and can be accessed on all mobile end devices.



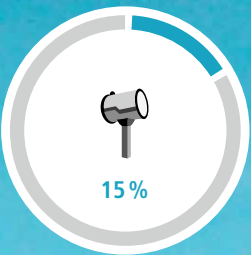
Cost savings in all areas



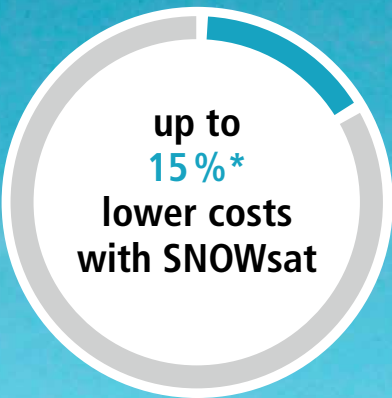
5%* less working time



8%* less fuel



15%* less machine-made snow



up to 15%* lower costs with SNOWsat

* Based on experience and savings by SNOWsat users – actual savings may vary depending on the size and organisation of the ski resort.



SNOWsat in comparison to its competitors



Fleet Management	✓	✓	✓	✓	✓	✗	Planned
Driver identification	Key + display	Key	Key	Key	Key	✗	Key
Order/cost centre capture	Display	Key optional*	✗	✗	✗	✗	Key optional*
Vehicle data							
· Position, speed, direction of travel and time	✓	✓	✓	✓	✓	✓	✓
· Engine data (speed, consumption, water/oil temperature,...)	✓	✓	✓	✓	✓	✗	✓
· Status information for the winches and tiller	✓	✓	✓	✗	✓	✗	✓
· Lights and alarms	✓	✓	✓	✗	✗	✗	✓
Data protection and data security (data in the ski resort)	✓	✗	✗	✗	✗	✗	✗
Pre-installation in the PistenBully	✓	✗	✗	✗	✗	✗	✗
Can be upgraded to Premium Fleet Management system (display)	✓	✗	✓	✗	✗	✗	✗
Can be upgraded to Snow Management system (snow depth measurement)	✓	✗	✓	✗	✗	✗	Planned
Telemetry option	✓	✗	✗	✗	✗	✗	✗
Slope management							
Slope management	✓	✗	✓	✗	✗	✓	✓
Snow depth measurement	✓	✗	Radar	✗	✗	✓	✓
RTK coverage upgrade (XFill™)	✓	✗	✗	✗	✗	✗	✗
Display of the entire ski resort in the vehicle	✓	✗	✓	✗	✗	✓	✗
Accuracy of snow depth measurement	+/- 3 cm	✗	+/- 20 cm	✗	✗	+/- 5 cm	+/- 5 cm
Resolution of snow depth measurement	16 pix./m²	✗	<1 pix./m²	✗	✗	1 pix./m²	1 pix./m²
Snow(-volume) Management	✓	✗	✗	✗	✗	✗	✓
Data exchange with snow-making software (e.g. ATASSplus)	✓	✗	✗	✗	✗	✓	✓

Service & Quality

PistenBully quality	✓	✗	✗	✗	✗	✗	✗
Service team in proximity to customers	✓	Central service centre	Central service centre	Central service centre	Central service centre	Central service centre	Central service centre
Solution from one source	✓	✗	✗	✗	✗	✗	✗
Developed specifically for ski resorts	✓	✗	✓	✗	✗	✗	✓
Global customer base	✓	✗	✗	✗	✗	✗	✗
Continual product updating and refinement	✓	✗	✓	✗	✓	✓	✓

* either for driver ID or order ✓ Function included ✓ Function limited ✗ Function not included Competitors

Top of Europe

Jungfraubahnen and Männlichenbahnen are making full use of SNOWsat 



Part of the PistenBully fleet against an impressive backdrop: Eiger north face

In Winter 2014/2015, the Jungfrau Ski Region with its unique panorama of the Eiger, Mönch and Jungfrau decided to equip 17 of its snow groomers with SNOWsat. Now the first season is over, we take a look back with the managers there. As Manager of the Firstbahn and the Winter Sports division at Jungfraubahnen, Marco Luggen has been involved in the project right from the start. The same goes for Toni Fuhrer, Manager of Snow Grooming and Garage in the Grindelwald-First sub-region.



Marco Luggen (right) and Toni Fuhrer talking to PistenBully News

PistenBully News: How did the decision to buy SNOWsat come about?

Marco Luggen: Naturally, it was a long process. I had heard about this system through several channels, in the trade press, during a visit by your firm and especially from my drivers. They are really well informed and networked...

Toni Fuhrer: The exchange of information between the drivers works well and the men came back with this proposal after an info day in Meiringen 4 years ago.

PistenBully News: What were the main arguments that finally led to the decision?

Marco Luggen: Snow grooming is a major cost factor in winter sports. That's why we look very closely at innovations in this field. Additionally, it is part of the corporate culture that employees bring new ideas and that their arguments are heard too. So then we took a much closer look at SNOWsat and found our drivers' idea very interesting.

Toni Fuhrer: Some were sceptical at first and were worried about the monitoring. "We know where the snow is", was a typical response.

Marco Luggen: Then our trip to Titlis last year was decisive – where we had been invited to a presentation of the system. We had heated discussions on the journey out, and during the presentation too there were still objections from some of my people. Once we got up to the Trübsee lake, they got their hands on a vehicle and could see what the system can do and what it offers in practice. And when we sat down together afterwards with a coffee, that's when the 180° U-turn was really apparent. This one trip swept away all doubt. You simply have to experience SNOWsat live to get a proper understanding of it.

Toni Fuhrer: And we suddenly didn't hear any more about "monitoring" either...

Marco Luggen: I have always made clear to the drivers that this was absolutely not about monitoring, but that my wish is that every driver profits from it. They were part of the SNOWsat decision from the start and knew exactly what to expect. I am convinced that that's the crucial point for the extraordinary acceptance among the drivers.

Toni Fuhrer: The main benefit we see is that drivers get their feedback 1:1 in the vehicle and can react straightaway to that.

Marco Luggen: Safeguarding know-how and optimising snow grooming were significant arguments.

With an experienced driver, who leaves us for one reason or another, we always lose a lot of expertise. With SNOWsat at least some of this experience is saved and it can be improved and passed on from year to year.

PistenBully News: What has changed in the way you work and communicate?

Marco Luggen: We were already using the existing experience, such as snow volume per shaft and snowfall, very specifically in our planning. So we did achieve good slope quality in the past too. Last winter when we had very little snowfall, however, SNOWsat provided additional information, helping us distribute the existing snow more effectively, which meant we could make a greater area available to our visitors early on. And it really came down to centimetres. The downhill runs were excellent up to the end of the season.

Toni Fuhrer: You now know the snow depth as soon as you drive over it. There's no more getting out and measuring with the pole! Marking out the slopes is much easier now too. We have stored our data in the system, and then last season we were able to mark the edges of the slopes really easily even in the thickest fog – just using the navigation. Without SNOWsat we had to do that at night when there was fog – because you can't see anything at all during the day – everything is just white.

PistenBully News: Is snow production also planned with more precision now?

Marco Luggen: We built a very modern linked snow production system in the First sub-region a good 14 years ago. We're still using it today and are now a bit limited in snow production output compared to our other sub-regions. SNOWsat helps here to make better use of the existing snow production. So it helps to make a good quality slope with the existing

natural snow and relatively little machine-made snow. For around 6 years now, there have also been more modern snow production facilities in the Kleine Scheidegg/Männlichen area. The main focus there was on operating the modern system at the optimum and as economically as possible.

PistenBully News: What do you see as the biggest advantages of the system?

Toni Fuhrer: With SNOWsat it is much much easier to train new drivers. Especially in bad weather conditions, a new driver has hardly any orientation. One of us always had to be with them to start with in the past. Now we show him all the tricky spots on the display or with a print-out; he gets to know his area much quicker and can rely on the data.

Marco Luggen: The opening date of the ski region is totally crucial. Reports in the pre-season about the open ski region stay in guests' heads all winter long and are a testament to snow security and good slope quality. After we got snow so late last season, SNOWsat really came to us at the right time. We were able to open some slopes earlier than we would have been able to without SNOWsat. Every scrap of snow that was lying anywhere, was removed and distributed perfectly.

Toni Fuhrer: The melting period was also much more relaxed. Many of our slopes are cultivated farmland. That means we have to shift the snow, meaning distribute it, as soon as the ski season finishes, to ensure it melts away as fast and evenly as possible. There was always a little ground damage in the past if a driver had removed snow too deeply and had driven on the bare ground. This spring that worked much better and without any major damage.

PistenBully News: How satisfied are you with the service provided by PistenBully, during and since installation and commissioning?

Toni Fuhrer: The presentation was very helpful for me personally. I was also able to use that to give my people a better understanding of SNOWsat. The time pressure was enormous, as we were only able to place our order at the start of November. So part of the installation took until the middle of the season.

PistenBully News: But thanks to your good preparation we did manage it together!

Marco Luggen: We were really impressed by the system and had already clarified all technical issues and requirements with the experts from PistenBully well in advance as a result. But I just had to stick to our budget, which is adopted in November for the following season. We definitely wanted to use the system for the imminent season though. And with this in mind, I have to say that it really was a great achievement by PistenBully to have installed it in all 17 vehicles by Christmas. It was a real stroke of luck too given the lack of snow last winter – we really needed it! Now we have a season behind us and can refine the database and the system for next season.

PistenBully News: And we too have learnt a lot of course during this project! This experience makes it easier for us as well and helps us to modify SNOWsat more efficiently so that it is better suited to the needs of ski resorts.

Marco Luggen: With our 17 vehicles, the size of the region and above all the short timescale, there were naturally a couple of issues that didn't work straight-away. But we were pleased with the dedication and expertise used to resolve things.

PistenBully News: Are you able to comment specifically on cost savings after just one season?

Marco Luggen: In terms of specific figures I can't say yet, as we only really started in the middle of the season. Of course we have thought about it – not least because of the six-figure investment. We have concluded that comprehensive coverage with SNOWsat will certainly pay off. Just alone thanks to the direct feedback from the system to snow groomer drivers. I am convinced that the biggest efficiency comes with the drivers, who are sitting in the machine and can see exactly what they're doing. They are certainly working more effectively and that saves time and of course money. Another area of improvement is in effective snow production. The production of machine-made snow is a considerable cost factor in a ski resort. All the more so when you're dealing with 206 km of slopes! Thanks to satellite-guided snow depth measurement, the region can now shift the existing natural snow with extreme precision. This has an impact on the volume of snow that needs to be produced. Our snow managers have always been concerned about managing water supplies carefully. In future they will be able to define the snow production areas and the actual and target values more precisely. This increases security and leads to less water consumption.

Our vehicles consume corresponding amounts of fuel as well. We are talking about some CHF 600,000 a year. If we can save just a few percent here, then that is really something. Altogether I estimate that the investment will have paid for itself within three years. That's a timescale you can bank on!

PistenBully News: What do the drivers think of SNOWsat? Were there concerns? What is their opinion now? Is driving more fun now?

Toni Fuhrer: PistenBully have always been fun to drive – and also remain so! SNOWsat makes lots of things easier! You can plan better, reviewing your section of the slope the evening before, and know exactly where there is need and where snow is scarce on the slope.



Drivers in conference before heading out on the slopes

Marco Luggen: I have also had feedback that there are already grumbings if drivers have to take out a vehicle that isn't fitted with SNOWsat. All our drivers are happy now to have SNOWsat in the machines. That's confirmation enough for me that our decision was the right one.

PistenBully News: Thanks for talking to us!

The Grindelwald Ski Region

Jungfrau Holding AG comprises eight subsidiaries and employs around 800 people in high season. The Group principally operates excursion railways and winter sports facilities in the Jungfrau region. It offers visitors an adventure in the mountains and on the trains against a unique backdrop. The Jungfrau Group has three defined business divisions: JungfrauJoch – Top of Europe, Winter Sports and Mountain Experience.

The JungfrauJoch – Top of Europe, with the highest railway station in Europe at an altitude of 3,454 metres, is the most profitable division of the Group.

This is complemented perfectly by the Winter Sports and Mountain Experience divisions in the areas of Scheidegg-Männlichen and Grindelwald-First.

40 lifts and 206 kilometres of slopes ensure top-class fun and winter sports throughout the Jungfrau ski region.

Jungholz: Practical application =



Long-term experience: Arnold Holl is one of the pioneers with SNOWsat. The Managing Director of the Jungholz ski lift company decided to buy the system 5 years ago. Based on his experiences over the last few years, he knows how essential SNOWsat has become for ropeway operators.

PistenBully News: You've been working with SNOWsat for more than 5 years and have now decided to go for a full system "update". What do you think are the most significant advantages of SNOWsat?

Arnold Holl: SNOWsat has become a powerful tool for us in the preparation of outstanding slopes. We use it to decide when to move the snow-making systems. It means we can start this process much earlier than before and can optimise snow production. This results in the slopes being opened for skiing much faster.

PistenBully News: Keyword "snow management": what makes it so attractive for you?

Arnold Holl: SNOWsat has become an indispensable tool for planning our work – when it's used correctly – with regard to the various decisions we have to make about snow production and grooming. Instead of multiple discussions, the actual status is printed out, laid on the table and both snow production managers and vehicle operators know exactly what needs to be done. This time saving on discussion alone equates to up to 4 hours a week for us.

PistenBully News: Does SNOWsat make snow production easier in your opinion?

Arnold Holl: Yes, because the snow production managers and machine operators know exactly what snow cover is available and under their machines. Indeed, the biggest cost saving we see from using SNOWsat is in snow production.

PistenBully News: Can you tell us what that means in practical terms in your everyday work?

Arnold Holl: While before SNOWsat we would have groomed until the ground ice (if there was any) appeared, we can now start repairing the slope from a very low snow covering of less than 30 cm. The snow is transported from places where it is in abundance to places where it is scarce. As a result, we have hardly had any icy or dirty areas in the last 5 years in the ski area covered by snow production. Our customers have also confirmed this for us. High visitors numbers – even during the week – are the result.

PistenBully News: Have you really been able to keep the resort open longer?

Arnold Holl: Since using the SNOWsat system we have been able to open the resort an average of approx. 1 week earlier over the last 5 years.

(Continued on page 12)

(Continued from page 11)

PistenBully News: Are you producing less snow? And why?

Arnold Holl: We are producing less snow, because we know our ski resort will be measured with a certain snow depth at the end of January that will last to the end of the season. This strategy has paid off over the last few years and reinforced our decision to cease snow production for the rest of the season.

PistenBully News: How do you and especially your snow managers, slope managers and drivers find SNOWsat?

Arnold Holl: Snow managers and slope managers see the SNOWsat system as an important tool that they would not give up. The employees have facts at hand that they can use to justify what they're doing to managers and customers alike. They're no longer basing their decisions on thin air. The system has been perfected and is less prone to glitches. None of our employees see it as a manager's control tool.

PistenBully News: Have the costs of snow grooming gone down?

Arnold Holl: Costs have gone down above all for snow production. Since Eco-SnowDrive training from Christian Zimmermann, we have been grooming very slowly and only in the "green" zone. This extends pure grooming time slightly, but you save this back through reduced diesel consumption. Outstanding slopes with lots of visitors are the end result, which does not translate directly into a cost reduction, but does lead to increased revenue thanks to the higher number of visitors.

PistenBully News: Keyword "cost control": is that a significant criterion for you – and if yes, how do you apply it?

Arnold Holl: The decision on when to stop snow production is only possible thanks to the SNOWsat system, as there are no emotions involved here. An actual status report is generated, which is used to help the decision-makers determine when to stop making snow. In our ski resort this has led to a cost saving of up to 20 % on snow production in comparison to previous winters.

PistenBully News: Mr Holl thank you so much for talking to us!

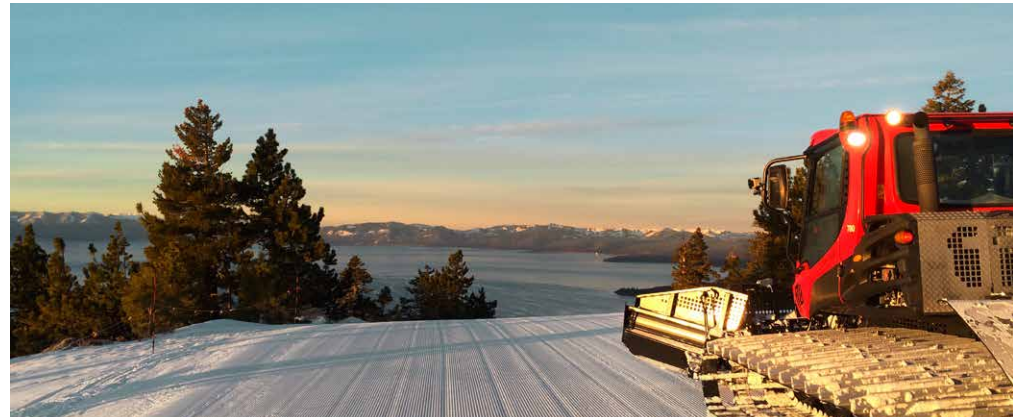


Ready for action

Jungholz – facts and figures

- One of the oldest ski resorts in the Allgäu, opened in winter 1948
- 7 lifts (capacity of 9,400 people/hr)
- 2 travelators (capacity of 3,500 people/hr)
- Invested in snow production system in 2009 (40 snow guns)
- In 2015 SNOWsat updated and snow production area optimised almost 100 %
- All slopes are covered to a depth of 20 cm within 48 hours

SNOWsat Aids Drought Stricken Diamond Peak Through 2014–2015 Season



Diamond Peak on Lake Tahoe: experiences from a difficult season

California's historic four-year drought has correlated directly with historically low snowpack for the Lake Tahoe region of the Sierra Mountain Range. Many Lake Tahoe resorts were forced to close a few weeks early, some even at the beginning of February, due to low snowfall and unseasonably warm temperatures. Diamond Peak, which stands on the northeastern, Nevada side of Lake Tahoe was one of many resorts that struggled to keep a consistent snow base. However, with the installation of SNOWsat in the fall of 2014, Diamond Peak found itself better equipped for the hard season. Diamond Peak Groomers and Snow Makers used the SNOWsat system to evenly distribute snow, resulting in a longer season and a safe, fun surface for customers to ski and ride on. PistenBully was able to catch up with General Manager, Brad Wilson to see just how large an impact SNOWsat had on their season.

PistenBully News: How many weeks is an average ski season for Diamond Peak (provided a good snow year)?

Brad Wilson: We normally open 16 to 18 weeks usually first part of December to middle or end of April.

PistenBully News: How many weeks were you able to stay open during the 2014-15 season and what were the biggest challenges that you faced?

Brad Wilson: Even this season we could open for around 14 weeks. The biggest challenge was to make snow and get trails open when snowmaking temperatures were not optimum. The region saw the warmest and driest (snowfall) in history last winter. The shortened snowmaking windows forced us to build trails as fast as possible. The snow depth measurement function of SNOWsat inside the groomers was a huge help in this process.

PistenBully News: From a financial standpoint, can you speak to how important it is for a resort to open and close on projected dates in a given season?

Brad Wilson: Being open for the Christmas/New Year holidays is critical to the success of the season, accounting for over 25% of our total revenue. Maximizing our snowmaking capability this year, in part due to SNOWsat technology, allowed us to open and maintain our coverage during the most challenging snow and weather conditions in history.

PistenBully News: What contribution has SNOWsat made to extend the season 2014/15? To what extent?

Brad Wilson: The SNOWsat system provided and installed by PistenBully was extremely helpful for Diamond Peak being able to provide a quality experience to our customer. This past season brought historically low snow fall to the Tahoe region. We were so excited to have the technology for our operators to be able to understand snow depths on our slope system. This technology allowed us to be able to move snow with our PistenBully fleet to appropriate areas of slope to optimize coverage of snow. The mapping features also allowed our slope maintenance manager to print out real-time snow depth maps and provide them to our groomers and snowmakers.

PistenBully News: How was the support that PistenBully provided to your resort from the SNOWsat installation to technical support throughout the season?

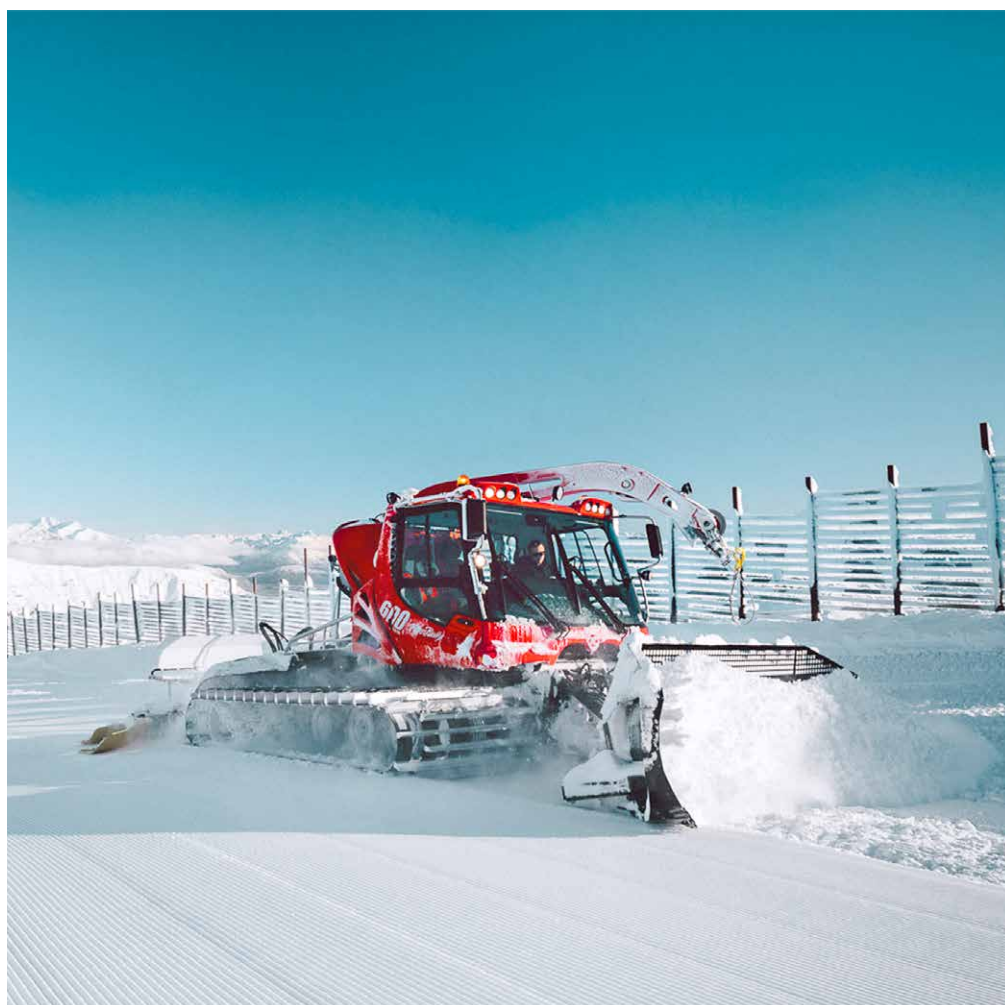
Brad Wilson: When you look to purchase and install new technology at your resort you are sometimes dissatisfied with the support that follows up the installation. Not the case with SNOWsat and PistenBully. I was so impressed with the data collection and installation of the product, the multitude of follow up visits from your technicians for training and user interface. Could not have more pleased. The relationship with Diamond Peak and PistenBully is very impressive.

PistenBully News: Was SNOWsat a good investment for your resort? Would you recommend the technology to other resorts?

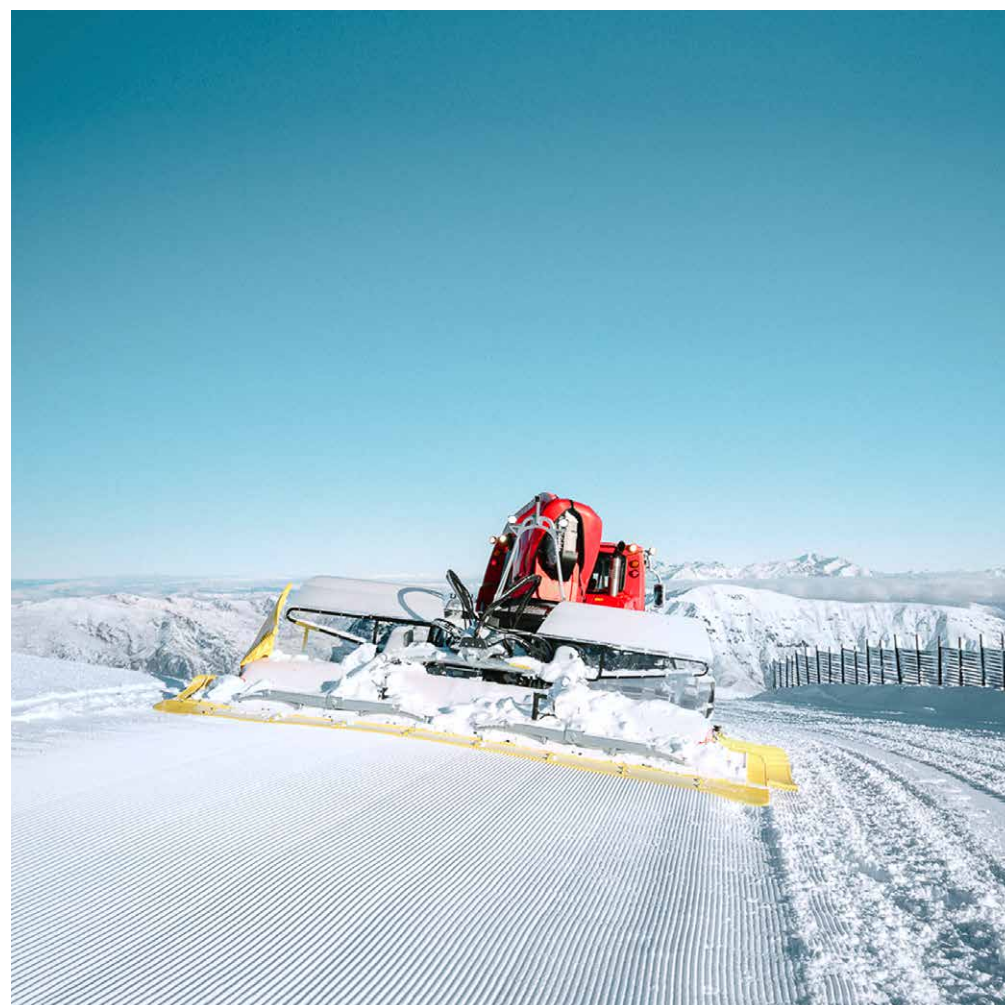
Brad Wilson: I would highly recommend the SNOWsat technology to resort operators, this technology is so usefull and helpful to managing the snowmaking and grooming departments. The system was new last season so we have not taken full advantage of all of its uses. I look forward to learning all aspects of the technology and introducing it to our grooming systems.

PistenBully News: Where do you see yourself with the SNOWsat technology in future?

Brad Wilson: Because of the highly technical aspects of this system, I don't think we have even scratched the surface of what this tool will do for us in the future. Showing our snowmakers where we need to make snow and our groomers to know exactly how much snow they have to work with, will allow us to deliver the highest quality snow surface product to our customers. I am looking forward to continue working with PistenBully and your support technicians.



Pure nature: skiing in New Zealand



Perfect conditions are guaranteed in Cardrona, New Zealand

Skiing in its most original form



The team at the Cardrona Alpine Resort

Every ski fan will find the right setting at the Cardrona Alpine Resort on New Zealand's South Island. There's a few things going on to make sure. There has been further investment this season: the 4 vehicles of the PistenBully fleet have been replaced – all equipped with SNOWsat.

Geographically New Zealand covers roughly the same area as Germany. With just 4 million inhabitants though, the largest ski nation of the southern Hemisphere seems rather small. It is precisely because of this that skiing in New Zealand, and in Cardrona in particular, is so extraordinary. The panorama across a totally unspoilt mountain landscape is simply incredible – a completely new experience even for accomplished skiers (coming from Europe or North America).

The Cardrona Alpine Resort is one of the largest ski resorts on New Zealand's South Island and is one of the "Big Four" in the Southern Lakes area around Queenstown. With 7 different lifts Cardrona, like all ski resorts in New Zealand, offers what seems a relatively low number of transport options to European

or North American sensibilities. However, these lifts enable access to almost 350 hectares of downhill runs, ensuring even the most demanding skiers will get their money's worth.

One of the best freestyle resorts in the world

An impressive environment for freestylers too: three enormous fun parks have been created for beginners, advanced and professionals, and there are 4 halfpipes. The 800-metre-long "Gravity Cross" boardercross course is also extremely popular. Freeride fans will also find some amazing deep powder slopes at this resort.

Almost 2 million dollars has been invested this year in modernisation: alongside an additional Moving Carpet® and diverse earthworks on the almost 8-metre-wide (22 ft) "Olympic Pipe", there is now a completely new fleet with a PistenBully ParkPro, two PistenBully 600 Polar W and a PistenBully 600 Polar. All 4 vehicles are equipped with the SNOWsat fleet management system, and two of them have also been upgraded for snow management with snow depth measurement.

Pioneer in the Southern Hemisphere

Cardrona is the first ski resort in the Southern Hemisphere to introduce this innovative system. Erik Barnes, Cardrona's Manager of Infrastructure and Operations, is now completely convinced: "This technology is leading the way for the entire New Zealand ski scene. We are now able to manage our slopes better to guarantee our guests a perfect day in the mountains. We were looking for ways to work more sustainably and for solutions that reduce our impact on the environment, while guaranteeing even better snow quality. The new PistenBully and SNOWsat will greatly reduce our need for machine-made snow and enable us to create the perfect foundation and ideal snow conditions."

The vision of an ecologically sustainable ski resort

Like so many other ski resorts, Cardrona too has been confronted with the issue of how to manage snow resources more efficiently and more effectively. The vision has long been "natural is best". That's why Cardrona started using machine-made snow relatively late, only installing its first system in 2006. It quickly became apparent, however, that the amount of snow that was actually needed could not be produced from available water reserves. "Accordingly, we always had to be very economical with our usage. We have never wasted any water!", states Erik Barnes firmly.

In 2014 the situation in the ski resort was analysed – also with regard to climate change – as the predictions are alarming: decrease in snow covering at 1,000 metres by 21%; at 2,000 metres by 8%. "We began our journey to sustainable management in our resort with this challenge. In the summer we focussed on optimising the slopes, levelling cavities and hollows, reshaping jumps and halfpipes, refurbishing runs and installing drainage. We replaced four of our veteran PistenBully. These new vehicles have significantly improved our efficiency and also snow quality from their first moment here. We didn't just want modern

machines though: we also wanted to change the way we manage the snow. As I've said, we are always focussed on ways to use water as economically as possible. And even if we were to have more water available, we would still continue to do so!"

This journey is now also supported by SNOWsat: "With SNOWsat we understand our mountains and the snow even better. There are completely new connections between the departments, as our people can now swap much more between each other, concerning when, where and how snow could or should be produced, transported and collected, and how the downhill runs could be groomed even better."

Erik Barnes is thrilled with the new era: "New Zealand has always been famous for its unspoilt nature – and we want to continue that too. Our journey to sustainable skiing has only just begun, but with the new PistenBully and SNOWsat we are off to a great start, are optimistic about our long-term success and guarantee our guests extraordinary memories and amazing holidays."

Cardrona Alpine Resort, New Zealand

- ❖ 4 drag lifts
- ❖ 3 chair lifts
- ❖ 345 hectares of groomed slopes of every difficulty level
- ❖ Ski resort of 1,670 – 1,860 m
- ❖ Skiing from 13th June to 11th October 2015
- ❖ Average annual snowfall 2.9 m
- ❖ Capacity: 11,000 people per hour

Interview with Fritz Heimann

For 42 years, a PistenBully operator in body and soul

Fritz Heimann (62) has been a PistenBully operator and fan since the very beginning. He started using a PistenBully PB 145 D for the first time for his employer, Bergbahnen Meiringen-Hasliberg, in 1973. During his many years of employment on the mountain, he has mastered many exciting challenges and experience countless wonderful moments. PistenBully News talked to him about his 42 years working as a PistenBully operator.

PistenBully News: What was your biggest highlight with a PistenBully?

Heimann: There were so many highlights that I truly don't know where to start. It was always great doing the grooming for international competitions like the Ski Alpine World Cup or Freestyle Ski World Championships. But also building the Mägisalp snow park with the PistenBully 300 Park and 300 Polar with winch was truly a thrill. My favourite thing though is moving around in the big machines in the high-Alpine mountain world. Because of that, the PistenBully 600 Polar with winch or also the PistenBully 600 E+ re-inspire me every day. I am really impressed by this green PistenBully.



PistenBully News: What are the best aspects of your job?

Heimann: Grooming the slopes on a beautiful winter's morning, when everything's covered by a fresh layer of snow and the new snow sprays over the tracks, that is truly indescribable. It's also amazing towards evening, when a sea of fog forms in the valley below and you enjoy the sunset from the PistenBully, listening to music – and earning money at the same time!

PistenBully News: What makes your job as a PistenBully driver difficult sometimes?

Heimann: The long working hours usually starting at 4 in the morning; sometimes we even start at 2 in the morning with just short breaks through to midday. Repairs used to be performed outside in the cold or in a snow storm really often as well. Fortunately that is the exception!

PistenBully News: Tell us an anecdote from your life as a PistenBully driver?

Heimann: In my first year I went on an exploratory trip on the Hasliberg with Arnold Glatthard, the former Chairman of the Board of Directors and major initiator of Bergbahnen Meiringen-Hasliberg. We wanted to create the sunshine slope. We'd almost reached the ridge when we encountered a snow cornice. Arnold Glatthard got out, went on foot across to the cornice and beckoned me, the inexperienced Fritz, very convincingly, it was OK to proceed. So I set off. But suddenly my PistenBully flipped over on itself over the cornice and ended up on its blade. Fortunately I had my skis with me and was able to go for help. We got my vehicle back on its tracks with snow shovels, rope and our second machine. The front axle was very bent, but it was drivable. The name "Gladis cornice" is still used by the drivers today!



PistenBully News: What makes PistenBully stand out for you?

Heimann: I was always a fan of Kässbohrer. In my career, I've also been given competitors' vehicles for work. But PistenBully was always a step ahead of all other brands. I was a PistenBully driver in my heart, body and soul during all those years. The whole technical development has always fascinated me. Driving PistenBully is like an addiction – once you've done it, it's hard to forget. Also the camaraderie in the ever increasing Bully team was always brilliant. I'm excited about SNOWsat now – we will be using the snow and fleet management system in 2 vehicles from the coming winter.



I hope that the Kässbohrer Geländefahrzeug AG continues to follow its sure instinct in the development of the PistenBully and that my employer, Bergbahnen Meiringen-Hasliberg, as always enjoys every success – if they always stay with PistenBully!

PistenBully 600 E+ on the road to success



A responsible future

Awareness of sustainability is stronger than ever across the whole industry. Many ski resorts have made an impressive commitment to eco-friendly business and management. We like that! Ultimately, we have adopted this concept wholeheartedly ourselves – with our corporate strategy BLUEIQ for a responsible approach to the future.

Our PistenBully 600 E+ is part of this – the first and only diesel-electric snow groomer in alpine use worldwide. Worldwide in the truest sense of the word, as three years after its launch this "green" PistenBully is hard at work not just in many European countries, but also in the USA. This model was in high demand right from the start especially in Switzerland and France. More green PistenBully will be working in Davos and St. Moritz, for example, from the coming season onwards. Winter 2015/2016 will see more expansions on the E+ front in other countries too – more on that in the next issue!



The PistenBully 600 E+

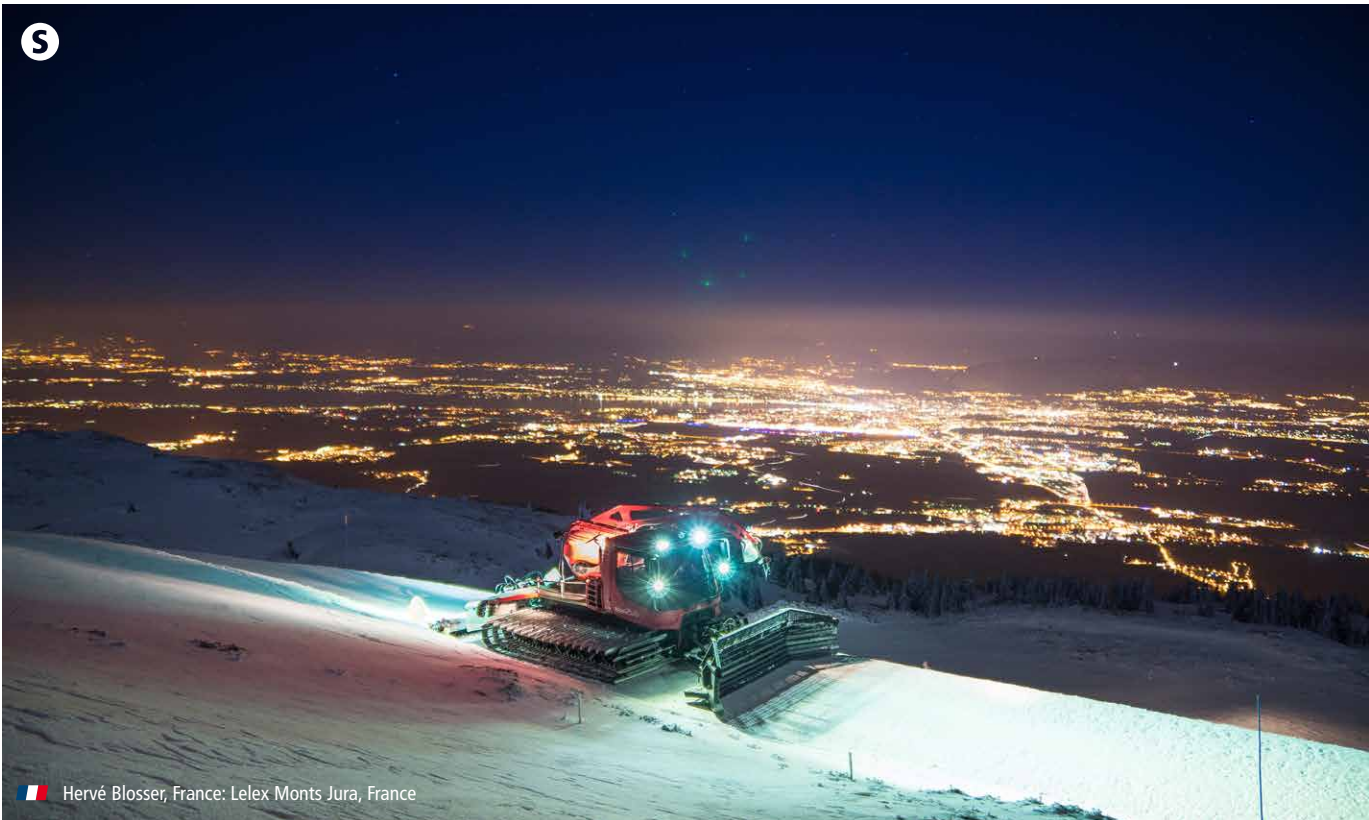
"Environment" is a very important theme for this model: the technology of the drive facilitates not only a reduction in NO_x and CO₂ emissions by 20 % in each case, but also a 20 % drop in fuel consumption and associated operating costs. No surprise – given that the vehicle can operate at much lower revs.

This also makes the PistenBully 600 E+ much quieter. Because of this, drivers can hear their music much better with less noise in the cab, and can work closer to the hotels during the night.

The fact that 99 % less soot particles are released into the air is an additional happy bonus. And yet with all this the PistenBully 600 E+ remains a 100 % genuine PistenBully.

Photo contest 2014/2015

Here you can find the prize-winning subjects from our 16th photo contest. 320 submissions from 21 countries are proof of the popularity of the PistenBully photo contest. We would like to thank our many participants and are already looking forward to the repetition in the coming winter season!





Mission silage

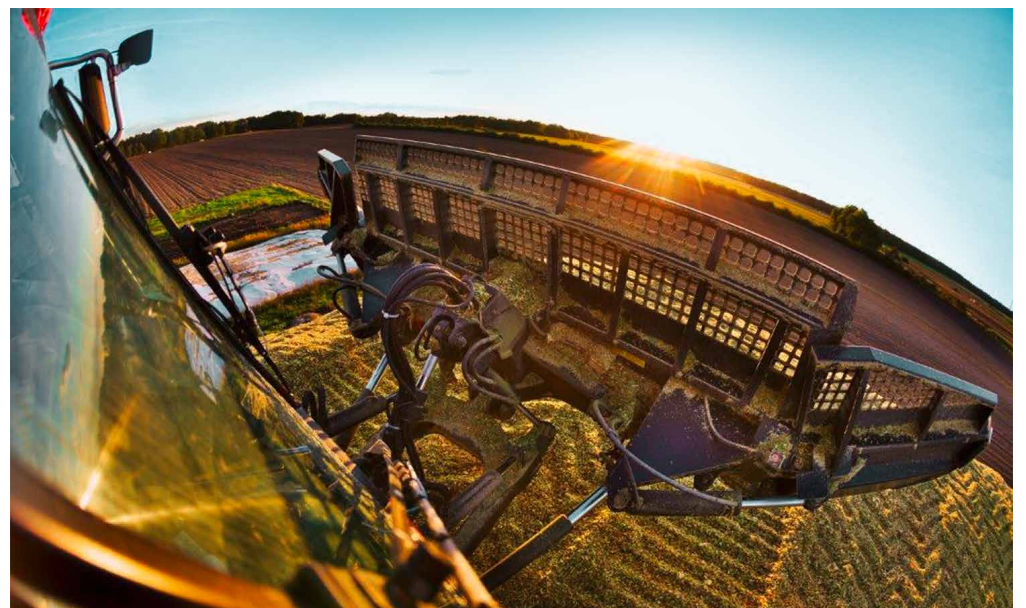
Target met: an enthusiastic customer 

PistenBully have been at home away from the ski slopes for many years. Shifting silage is a major topic for GreenTech vehicles. We have reported on it multiple times in the PistenBully News. In this issue we'd like to introduce you to another of our long-term customers, Stefan von Campen from Wittingen.

Stefan von Campen has been the satisfied owner of a PistenBully 300 Polar for 5 years now. He uses the PistenBully in his contracting business, mainly for moving silage in biogas plants with plant sizes ranging from 500 kW to 1.3 MW. His vehicle is used for 350 hours per year on maize harvesting and for 50 hours on harvesting grass, green rye and whole crop silage. "The PistenBully impresses in every regard, thanks to its enormous thrust and excellent re-compaction, as well as the necessary safety in the silo. Additionally, the PistenBully GreenTech not only facilitates rapid deposits, but also steep build-up and higher deposits depending on the space available", reports

Stefan von Campen. The PistenBully GreenTech are equipped with rubber tracks, known as silo special tracks. The tracks give the driver outstanding slope performance and absolute safety in the silo, even on steep angles. "Higher deposits are possible than with wheeled vehicles thanks to the broad tracks. Steep silage mountains are no challenge to the PistenBully" says von Campen enthusiastically.

The PistenBully GreenTech can also be used for mowing and mulching, peat excavation and other moving jobs on rough terrain. With an average fuel consumption from 13 litres per hour, depending on conditions, the PistenBully is a low-consumption vehicle. A single machine can deposit up to 200 tonnes of silage per hour. A comparable volume would require 2 wheel loaders, for example. "Thanks to the lower consumption coupled with higher performance, the PistenBully shows its significant credentials here compared to other roller vehicles" emphasises von Campen.



First-class service

Stefan von Campen has nothing but praise for the customer service of Kässbohrer Geländefahrzeug AG: "Maintenance is kept very easy and service from Kässbohrer is quick and straightforward." We at Kässbohrer Geländefahrzeug AG are very pleased with this statement! Reliability is the top priority for us.



Reinforcement for GreenTech



The special vehicles have always enjoyed a singular position at Kässbohrer Geländefahrzeug AG. PistenBully GreenTech are the most diverse vehicles you will find for a variety of jobs on rough terrain – simply wherever you need to transport, work or move things. PistenBully GreenTech are the all-year machines that work just as well on steep slopes as they do on very sensitive terrain, such as silos in biogas plants or nature reserves.

Johannes Linder will be joining the GreenTech Sales team from 1st September 2015 as an expert point of contact, able to offer detailed explanations and recommendations with regard to the the high demands of the market and complex technical issues.

The graduate of industrial engineering (FH) Johannes Linder is not just ideally qualified to sell GreenTech because of his studies, but also because of his professional experience with silage technology and loaders, most recently working as a product manager for a large European manufacturer. He also happened to grow up on a farm, adding an extra dimension to his knowledge. He will be incorporating all this experience into his new role as your expert contact on all issues around GreenTech sales.

We offer a heartfelt welcome to our new colleague and wish him every success with his challenges!

Contact:

Johannes Linder
Sales GreenTech
Telephone +49 (0)7392 900-422
Mobile +49 (0)171 4036217
johannes.linder@pistenbully.com

Russia: New representation

A young team, experienced and committed



Prime Pride-Managing Director Sergei Orlov



Evgenija Sedykh, Sales

Since 1st July 2015, PistenBully has been represented in Russia and Belarus by the firm of Prime Pride from Samara. Founded in 2014, Prime Pride is made up of young and ambitious people who have been working with and for PistenBully for many years. Alongside PistenBully, the firm also represents other well-known brands of special vehicles used for particularly eco-friendly work. The 14 employees, of whom 4 are mechanics, have a lot of experience in selling and supply PistenBully for various world and European championships, as well as around the Olympic Games in Sochi.

Prime Pride can build on our well-known and practised support in Russia and Belarus. Just like PistenBully, Prime Pride Managing Director Sergei Orlov places a great deal of emphasis on customer orientation.

This is also reflected in the after-sales service: the customer service specialists have a wealth of experience in servicing PistenBully, guaranteeing reliable and expert technical support for our customers in Russia and Belarus.

Prime Pride

Prime Pride has its head office in Samara, an industrial city in the south-east of the European part of Russia, on the Volga. With more than a million inhabitants, Samara is the sixth largest city in Russia. Prime Pride has a stock of used vehicles and a workshop offering enough space for every type of repair work.



New stand, new outfit: The entire Sales and Service team presented themselves at the Interalp, along with Michi Klemra, Managing Director of Luis Trenker, in casual corduroy!

Collaboration with Luis Trenker

Top styling at the Interalp

Since this spring, there has been further collaboration between the two brands of the fashion and lifestyle label from South Tyrol LUIS TRENKER and Kässbohrer Geländefahrzeug AG. In addition to clothing for staff, such as outfitting the entire sales

team with stylish alpine sports jackets and blazers for the Interalp, we are eagerly anticipating further joint projects over the months to come.

Japan: First ParkPro

Ikenotaira Onsen ski resort 

At the end of March, Kässbohrer Geländefahrzeug AG's Japanese agency, along with the Area Sales Manager Japan, hosted a two-day vehicle presentation at the Ikenotaira Onsen ski resort.

Ikenotaira lies around 300 kilometres north-west of Tokyo. The ski resort is the first in all Japan to purchase a ParkPro from Kässbohrer Geländefahrzeug AG. As well as the ParkPro, guests also had the chance to try out the PistenBully 400 Park and the PistenBully 400 for the purposes of comparison. 60 ski resorts took part in all and around 130 people seized the opportunity to put the vehicles through their paces. Another notable fact at the Ikenotaira Onsen resort is that the newly purchased ParkPro is



Enthusiastic PistenBully driver: Kei Kawamura

driven by a woman. Kei Kawamura is 30 years old and has been driving PistenBully for around four years. She was impressed with the PistenBully 400 ParkPro thanks to the excellent ergonomics of the joystick, the sophisticated stick control and its outstanding agility on the snow.



Simple and customer-oriented: with an individual code combination, drivers can collect their spare parts packages whatever the time.

Collecting spare parts on time

Red collection boxes for spare part packages

Urgently required spare parts can also be collected directly from Kässbohrer Geländefahrzeug AG in Laupheim outside opening hours.

Shortly before 4pm – and a traffic jam on the A7. The truck should actually already be in Laupheim by now to collect important spare parts bound for the Czech Republic. A PistenBully there is sitting on the freshly covered slope and is waiting for a new sprocket.

No problem – a call to Kässbohrer Geländefahrzeug AG and the driver can relax in the traffic jam. That's because there are three collection boxes outside the gate at the plant in Laupheim, enabling collection of spare parts even outside open hours. The freight forwarder is given a code combination by his PistenBully spare part contact and the number of his box and passes these on to the driver. The spare parts package is left in the box for him. This means he can collect the package at a later hour using his code and get it to the client on time. PistenBully customers from nearby regions like the Allgäu and Black Forest or Green-Tech customers are using this service often and with pleasure. However, numerous orders have also been delivered in this way to Eastern Europe, for example – ensuring that customers get their parts on time despite traffic hold-ups.

So that PistenBully can get back on track quickly!

Airmail to Japan

And then on to the eternal ice 🇯🇵

Following initial expeditions from 1910 to 1912 as a continuation of whaling and deep-sea fishing activities, Japan became involved in Antarctic research in 1956 with the construction of the permanent Showa Station. It is coordinated by the National Institute of Polar Research (NIPR), which acquired a PistenBully 300 with cab and crane for cross beams back in 2012 that is used for supplies between the stations. More recently, a PistenBully 100, which is being used as a station vehicle and for scientific investigations, for instance, was delivered to Japan by plane. It then continued its journey to the Antarctic on an expedition ship.



PistenBully 100 on the tarmac at Frankfurt/Main Airport



Firmly secured for the trip to Japan



Loading at the port in Tokyo



PistenBully 100 working at the Japanese Showa Station (Antarctica)



The entire Marketing team: Patricia Röhl, Thilo Vogelgsang, Heike Mathes, Sabine Denzler, Martin Uhlmann (from left to right)

News from Marketing 🇩🇪

Thilo Vogelgsang – new Marketing Manager since 1st July

Thilo Vogelgsang, a highly experienced marketing professional, has been appointed to head the Marketing & Communication department at Kässbohrer Geländefahrzeug AG. Following several positions in well-known companies in various industries, the 49-year-old business graduate (BA) has built up a wealth of experience in all areas of marketing, branding and sales.

In his new role, Thilo Vogelgsang is responsible for all marketing activities and for supporting sales at Kässbohrer Geländefahrzeug AG with the aim of consolidating the positive image of the PistenBully, PowerBully, SNOWsat and BeachTech brands and shepherding them into the future.

He can rely on an experienced team, in which everyone supports each other and collaborates on tasks:

Martin Uhlmann, specialising in everything to do with photography, film and print, is also our expert for trade fairs and events, as well as all promotional equipment.

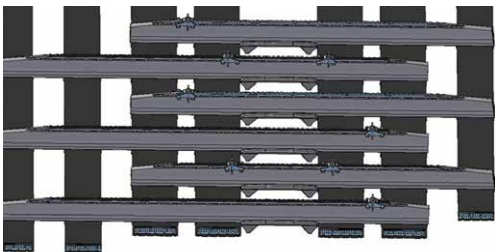
Heike Mathes is always willing to answer your questions. She is the contact for our promotional items and the webshop.

Patricia Röhl is responsible in particular for press work relating to all product areas, is the editor-in-chief of the customer magazine and is always thrilled to receive news and photos from the field.

Sabine Denzler's remit covers everything to do with the website – she writes the copy, designs the layout and maintains the Internet presence of our product areas.

Always looking for optimisation

Combined Tracks Plus for PistenBully 600 SCR/ 600 SCR W



New arrangement, new design: the track elements of the Combined Tracks Plus for improved gradability and thrust

Until a product is perfect for us we're always working on more refinements. We take your suggestions very much to heart, questioning, testing alternatives, refining. Also true of the Combined Tracks Plus. One step closer to perfection thanks to new revisions.

These all-round tracks are the perfect combination of light-weight aluminium cleat and high-performance cutting edge. The powerful and extremely wear-resistant broader track plates represent high stability and optimum power transfer. The Combined Tracks Plus

can be used anywhere, from "normal" terrain to steep slopes and guarantee optimum drive and handling on any type of snow. The new design with 7 belts distributes forces more evenly and relieves pressure on the studs and rubber belts. The staggered arrangement of the track elements offers improved climbing ability and reduces vibration. Combining the lateral guide elements and spikes reduces the component diversity still further. The new cone spike penetrates the ice more cleanly, offering improved hold overall and, thanks to the integrated lateral guide, optimised lateral hold in particular.

The new geometry of the drive wheel allows the guide unit to roll in and out more smoothly. This results in reduced vibrations and substantially improved quiet running. Symmetrical tracks and reduced component diversity overall, make it much simpler to order, stock and fit replacement tracks and studs. We have also improved materials. So you can rely on even better gradability and thrust.



Christian Zimmermann at work

Eco-SnowDrive

Reduce your costs with a couple of tips and tricks

Eco-SnowDrive is an essential component of our corporate strategy BLUEIQ. The measures integral to BLUEIQ are part of our philosophy of taking a responsible approach to the future. As the world market leader we are convinced that technical innovations must be incorporated into integrated concepts. That's why we link environmental, social and economic aspects. For our customers this means more benefits and greater profitability, for us all a better environment.

Local snow management

Use modern technology efficiently and exploit the driver's potential to the full. A few tips and tricks not only reduce costs – you can also increase the quality of the snow grooming too. Fuel consumption and pollutant emissions are reduced: partly down to the driving, but thanks simply to optimised runs as well.

What's the benefit of Eco-SnowDrive training?

drivers are made aware of economically and ecologically responsible driving. We expose drivers who waste time during snow grooming and also show where runs can be saved. But also where intensive grooming is required due to heavy use. We train your drivers on their own PistenBully and, thus, explain a driving style tailored to their specific vehicle type, plus ideal use of the winch if applicable. With Eco-SnowDrive we answer questions like: Where is the ideal anchoring point to reduce costs and wear and to increase effectiveness? Where do I position the snow guns so they do not detract from grooming? Where are the best places to turn the PistenBully? But the Eco-SnowDrive training also covers machine-made snow, in particular how best to incorporate this into the natural snow covering. And we also include themes like improved communication between drivers. This ultimately results in lower fuel consumption, reduced wear costs and less environmental impact.

Are you interested in Eco-SnowDrive training in your resort?
Then just get in touch with Christian Zimmermann



Contact:
Christian Zimmermann
Area Sales Manager SNOWsat – Eco-SnowDrive
Telephone +49 (0)7392 900-418
Mobile +49 (0)151 65521910
christian.zimmermann@pistenbully.com



PistenBully training courses are fun too

Training courses 2015 Fit for the new season

We believe: "Learning has to be fun", and so does your job. Motivation is crucial to learning success and that pays off in the workshop and on the slopes too. That's why we make sure our training courses are very realistic, varied and include lots of practical sessions.

Drivers and workshop crew know that: working with a PistenBully is shaped by passion and enthusiasm for the vehicle and its technology. You want to know your PistenBully inside out and get the most you can from it.

That's why we have expanded and optimised our training programme in close collaboration with our customers. All courses have a practical focus, improve quality and safety on the slopes and facilitate even more efficient operation.

You would like to take several courses but only undertake the trip once? No problem: the dates are planned so that you can take part in different workshops in the individual course weeks.

You'll find more information on registering on our website. You can also download the full training brochure as a PDF. Important: Please register promptly, as there are limited spaces available on the course.

Type of course	Code	Vehicle type	Date	Days	Costs
Basic course Workshop crew	2.15	all types	KW 47 (16.–18.11.2015)	2	280,00 €
			KW 50 (07.–09.12.2015)	2	280,00 €
Technical information Drivers and workshop crew	T.15	all types	KW 49 (30.11.15)	1	140,00 €
			KW 49 (01.12.15)	1	140,00 €
			KW 51 (14.12.15)	1	140,00 €
			KW 51 (15.12.15)	1	140,00 €
Winch theory/ advanced training Workshop crew	W.15	4/4.5t winch	KW 42 (13.–14.10.2015)	1	140,00 €
			KW 47 (19.–20.11.2015)	1	140,00 €
Basic/ advanced training Drivers and workshop crew	P.15	Paana	KW 49 (03.–04.12.2015)	1.5	210,00 €
Advanced training Workshop crew	100.15	100	KW 44 (29.–30.10.2015)	1	140,00 €
			KW 48 (26.–27.11.2015)	1	140,00 €
			KW 50 (09.–10.12.2015)	1	140,00 €
	400.15	400	KW 44 (28.–29.10.2015)	1	140,00 €
			KW 48 (23.–24.11.2015)	1	140,00 €
			KW 50 (10.–11.12.2015)	1	140,00 €
	600.15	600	KW 42 (12.–13.10.2015)	1	140,00 €
			KW 47 (18.–19.11.2015)	1	140,00 €
			KW 48 (24.–25.11.2015)	1	140,00 €
CAN technology/ basic course Workshop crew	600CAN.15	600	KW 48 (25.–26.11.2015)	1	140,00 €

From the PistenBully Shop

Our latest fan shop merchandise



PistenBully flex baseball cap BLUEIQ

With PistenBully logo and BLUEIQ logo.

Size: one size fits all

Colour: red with white embroidery

Material: 100 % polyester



PistenBully Multitool TOOL TEC

Multi-functional tool with 12 functions:

pliers with wire cutter, file, saw, flat tip and cross tip screwdriver, window breaker, bit adapter with 9 bits, cap lifter, can opener, blade and belt pouch.

Dimensions: 95 x 43 x 24 mm

Colour: silver

Material: stainless steel

Brand: Richartz



ParkPro Hoody

Sporty hooded sweater, chest and shoulder areas stand out due to the colour contrast. Embroidered with a ParkPro logo.

Size: L – XXL

Colour: grey/black

Material: 63 % cotton, 37 % polyester

Brand: Urban Classics



ParkPro Cap

The original Snapback Visor cap with embroidered ParkPro logo. Size is adjustable with a plastic fastener on the back.

Colour: black

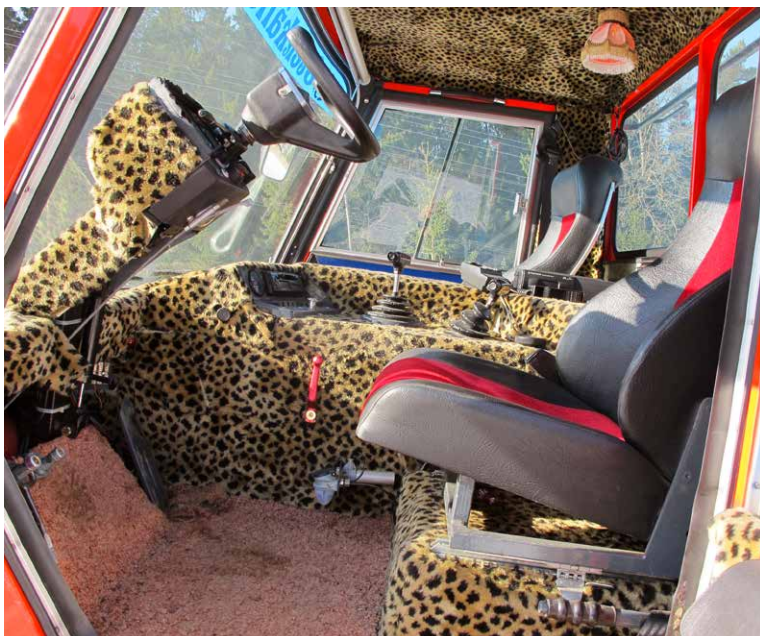
Material: 100 % cotton

*Price incl. 19% VAT excl. shipping costs

Do you perhaps have a very special PistenBully yourself?

Then we'd be thrilled to receive your photos, which we'd like to show off in future to a wide audience right here!

Send your email to info@pistenbully.com



The 34-year-old PistenBully with slightly unusual interior design from the Stenkällegården ski resort in southern Sweden

Tiger-style snow groomer



Dates 2015/16

October 2015

14.10. – 16.10.2015, German ropeway Conference

Miesbach, Germany

PowerBully Exhibition



29.09. – 01.10.2015,

ICUEE International Construction & Utility Equipment Exposition

Louisville, Kentucky (KY), USA

April 2016

11.04. – 17.04.2016, bauma

Munich, Germany

PowerBully on the bauma



**April 11–17
Munich**

13.04. – 15.04.2016, Mountain Planet

Grenoble, France



Reader survey

Take part by **30.10.2015** at **survey.pistenbully.com** to win a PistenBully 600 model (scale 1:87).



The BIG DEAL in September

BIG DEAL



Every month, a used PistenBully is offered at pistenbully.com at a spectacularly low price. In September, the Kässbohrer Geländefahrzeug AG offers a **PistenBully 300 PREMIUM**, built 2005. Order number 700.82512691



Alexander Hörger

Head of Used and Utility vehicles

Phone +49 (0)7392 900-424

alexander.hoerger@pistenbully.com