

# PistenBully® NEWS

The customer magazine of the  
Kässbohrer Geländefahrzeug AG

ISSUE  
**N°9**  
SPRING 2017

## Easy snow grooming

Valuable hints for effectively using the tiller



Apart from other factors, proper handling of the tiller is of crucial importance for the quality of a slope.

**Page 04 – 05**

### **SNOWsat-Installation: All you need is a reliable partnership**

Personal support right by your side is indispensable when installing SNOWsat. PistenBully NEWS has accompanied engineer, Tobias Kirsamer, on his customer service tour in Eastern Europe to equip two ski areas with the slope and fleet management system.



**Page 10 – 11**

### **Top performance in St. Moritz: From a grooming point of view, the most sustainable world championship ever**

Professionals striving to set new records: In co-operation with leading staff of the Engadin St. Moritz Mountains AG, SNOWsat expert Adrian Mattli and the head of PRO ACADEMY, Florian Profanter, created an environmentally-friendly concept for slope grooming, which is state of the art.



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### **Buckle up, start the engine, and set off: Beginners' training course at PRO ACADEMY**

Just how important it is to invest in skilled personnel is evident when looking at the increasing demand for perfectly groomed slopes. At PRO ACADEMY, tomorrow's expert drivers learn what it takes to control a groomer. PistenBully NEWS asked three youngsters about their expectations, experience, and goals.



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Jens Rottmair, CEO Kässbohrer Geländefahrzeug AG

## Always one step ahead

Dear Reader,

Skiers and snowboarders certainly don't take it easy on the slopes during the final days of spring. There is still an expectation for perfect slopes in April. No problem – because our tillers ensure outstanding quality in all snow conditions.

Apropos: the fact that our tillers can be used universally is due in no small part to the technological quantum leaps made in their development. Per usual, our engineers have been very busy. Regardless of the weather conditions or type of snow, ice or slush: performance is always on track. That is very impressive. Read more in our article on page 04–05.

Worldwide there are over 5,300 ski resorts employing hundreds of thousands of people. The need to groom slopes perfectly with the lowest possible overall costs results in enormous challenges for operators. We can help you conquer them with our economical and cost-saving snow and fleet management system, SNOWsat. You'll find more information on page 10–11.

Combining environmental aspects with our customers' business needs has always led us into uncharted territory. The result: our integrated corporate strategy, BLUE IQ, which not only includes sustainable technologies and production processes, but also encompasses our approach to training, service and spare part availability.

We even kept our promise of wanting an eco-friendly future with the PistenBully 100 – it is already prepared for EU Stage V. Experience it live at the INTERALPIN 2017. You'll also be able to find out what's been happening with our PRO ACADEMY training programme, take a look at the new PistenBully 100 FunSlope and find out exactly what the story is with the limited edition of our PistenBully 600 SCR.

You can see: we have a lot to report.  
I would be delighted to see you in Innsbruck.

Cordially yours,

Jens Rottmair  
CEO Kässbohrer Geländefahrzeug AG

**VOTE  
AND WIN!**  
WITH A BIT OF LUCK

## Printed or online?

What format should PistenBully NEWS take in the future?

A quick look at the stock prices, checking emails or following world news while you are on your way: In the digital age, information is available at any time or place in almost limitless abundance. Naturally, this also affects our PistenBully NEWS. We would like to ask you, as our valued readers to give us your opinion: Should PistenBully NEWS continue to be published in print, or would you prefer to get informed about our latest news online?



**You can cast your vote here:**

**<https://www.pistenbully.com/pistenbully-world/news-press/survey.html>**  
**Among all participants there will be three PistenBully models raffled.**

By the way: Visitors of the "Interalpin 2017" fair can take part in a raffle regarding this question at our exhibition stand.



**3**  
**PistenBully models  
to win!**





Opening of the new Kässbohrer customer centre

# Where PistenBully is at home

It's a gem – in every respect. The new customer centre of Kässbohrer Geländefahrzeug AG in Laupheim thrilled both guests and staff at its opening event on 24 March 2017. This is not surprising, because here, a place has been created where visitors get a hands-on impression of the radiance/charisma of all Kässbohrer brands.

The new building is attached to the existing one by a "time tunnel", taking the spectator on a journey through the history of the red snow groomer. Once the visitor has arrived in the actual customer centre,

the main actors make an impressive appearance: legendary classics next to dynamic innovations; and some of them are spectacularly set centre stage.

In the purist design of the architecture, room layout and decor, winter coolness is merged with the warm cosiness of a modern, alpine interior. Friendly points of encounter invite visitors to have open dialogue, and the modern media centre allows them to become fully immersed in the world of Kässbohrer.





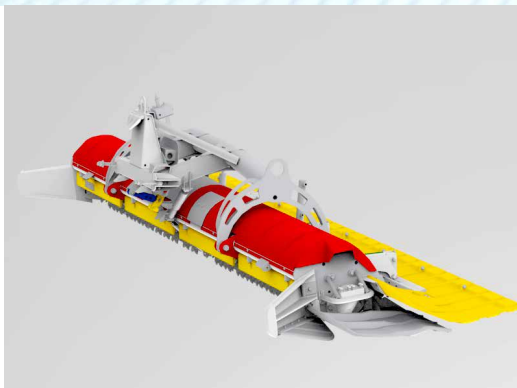
Guarantee for top quality in slope preparation

# Smart tiller used

Efficient, precise and powerful: our developments of the past years

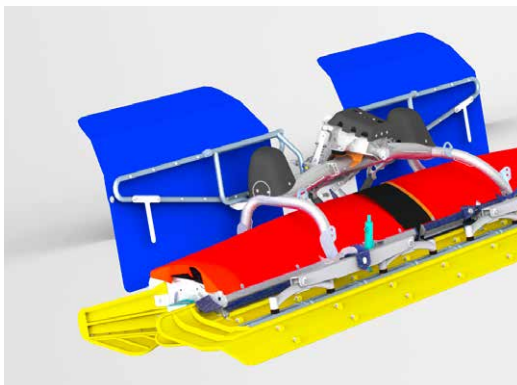
### 1. MultiFlexTiller

Much has happened in the development history of our tillers. At the beginning of the 2000s, the MultiFlexTiller with a mounted tube frame was state-of-the-art, whereas today, a high-tech tiller looks totally different!



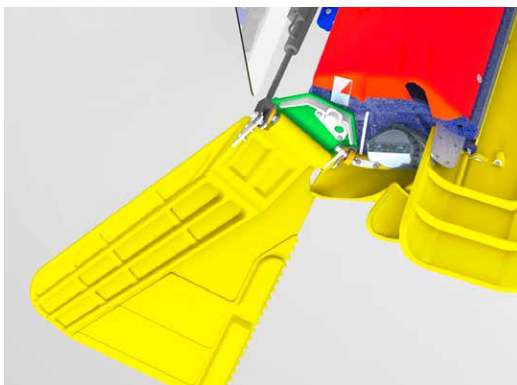
### 2. AlpineFlexTiller

With the development of the AlpineFlexTiller in 2007, an optimized finisher contour for good movement through the snow, a more consistent concentration and a better view on the shafts were provided. No matter what the snow conditions may be, the AlpineFlexTiller always performs excellently. By means of the "windscreen wiper" system, its finishing outrigger ensures perfect alignment with the terrain.



### 3. Side finisher

Optional hydraulically foldable side finishers prevent the creation of side embankments and ensure a perfect transition in case of overlapping grooming. The side finishers are easy to align using the adjustable hydraulic cylinder. When they reach a certain resistance, they flap aside. Not long afterwards, the introduction of door kinematics at the side finisher facilitated the passing through narrow passages the finisher more compact.



It is a well-known fact that the slope quality is a decisive criteria when it comes to choosing a ski resort. In our last issue, we reported about it. Of course, a durable, rideable and safe slope depends on many uncontrollable factors like temperature, snow depth and snow quality. For obvious reasons, the dozer blade is indispensable for preparation but, to provide good slope quality, the correct use of a quality tiller is decisive.

Our larger PistenBully models, the PistenBully 400 and PistenBully 600 are equipped with the AlpineFlexTiller (AFT), a tiller more powerful than one might think. Correct usage, however, is essential. In the following, our experts provide useful advice on the most effective ways to operate an AlpineFlex Tiller.



The experts of our "tiller team" f.l.t.r.: Alexander Dehm, Thomas Menz, Wolfgang Seibert, Andreas Häußler, Claudius Hänger.

### Snow cover

Once it is closed it stays closed – and often times the cover is closed too early and too often. As a consequence, snow and ice pile up. Having too much snow in the tiller makes the diesel consumption increase. If the cover is left wide open, however, the slope quality will suffer. If the snow is soft, the cover must be open wide to enable a fast passing of the snow. In case of firm snow, it better be closed – the chunks of ice are tilled more intensely and after a few cycles in the tiller they are crushed and transported to the slope.

🔴 **Our advice:** Changing the cover settings several times a day will make a big difference!

### SNOWtronic

SNOWtronic enables an automated and consistent tiller depth, especially when driving over hills. According to the setting, snow hills can be removed (0 %) or built up (100 %). With a medium setting of 40 – 60 %, a consistent tiller depth is maintained.

🔴 **Our advice:** An adapted driving speed helps a lot!

### Vehicle and tiller calibration

To make sure that SNOWtronic works in a reliable and correct way, both the vehicle and tiller must be properly calibrated. The setting to the so called zero position is another important factor for a decent grooming result. The changing of the chassis or the weight by mounting or removing a cabin





or winch also has an impact on the zero position of SNOWtronic. Its calibration is carried out on an even ground when the new vehicle is handed over and afterwards on an annual basis (or upon need) by a mechanic during revision.

⊕ **Our advice:** Correctly calibrate and recalibrate as changes are made to the equipment to optimize SNOWtronic capabilities.

#### Tiller depth

Whether SNOWtronic or not, when it comes to extreme slope conditions, 10 tons of vehicle and tiller react differently when driving up and down the hill. Gravity has a slight impact on the tiller depth.

⊕ **Our advice:** Especially for very difficult/hard slope conditions, it is recommended to adjust the tiller depth each time you go up and down the mountain according to the gradient. All it takes is just a little adjustment to get the perfect tiller and slope quality! A huge impact is guaranteed!

... and some more advice: Studies show that in the case of fresh snow, tilling is crucial. When tilled, snow crystals are crushed and air is sucked in. The snow becomes significantly more dense.

#### Timing

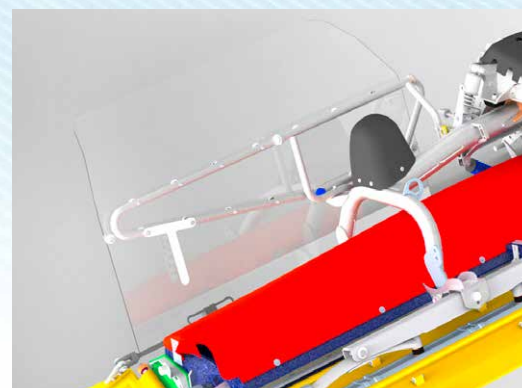
Another highly influential component of the grooming is choosing the right time, so that the snow can sinter; thereby, a higher density is achieved. However, this process needs time: To make sure a slope meets the needs of winter athletes the snow needs sintering time of approx. 8 hours. The right time for grooming depends on the snow quality, the expected amount of rain or snow fall and the night temperature.

⊕ **Our advice:** When there is fresh snow, it is recommended to only use low contact pressure of the tiller. The lower the contact pressure, the better the climbing ability of the machine.

#### Spot: Finisher structure

A proper, freshly groomed slope with its typical cord structure simply looks nice. This is a fact every skier can confirm.

Comprehensive tests prove that the enlarged surface supports the sintering process when it has more contact with the cold night air. It provides the slope with more grip.



#### 4. Protector unit

The large protector unit prevents snow from finding its way onto the tiller or the finished parts of the slope. And the result is a perfectly groomed slope.



#### 5. Best tilling result

Ideal shafts are responsible for the snow preparation and for transport within the tiller box. In addition, a large tiller pump provides the AlpineFlexTiller with optimal rotational speed and perfect torque even in the most difficult operating conditions. The powerful shock-absorbers guarantee an even contact pressure of the tiller.



#### 6. Easy servicing

Easily accessible hydraulic valves on top of the tiller make servicing easier and simplify retrofitting, e.g. of track setters. The stable design of the shafts and the tiller teeth of high-strength fine-grain steel ensure lower wear and tear.



#### Terminals

**iTerminal:** for an easily manageable operation, configuration and diagnosis of the entire vehicle  
**Assistance terminal:** optional for additional tasks, e.g. SNOWsat

#### Joystick

#### STOP

now integrated in the panel design and always positioned at the same spot)

#### Rotary encoder

for adjustments in the iTerminal

#### Brake

now an electrical-hydraulic switch, and always positioned at the same spot

#### Close range

one-touch keys that can be controlled with the joystick, e.g. cruise control

#### Button to adjust the position of the joystick (forward / back)



Straightforward, intuitive, everything in place

# Ground-breaking control concept for all PistenBully vehicles

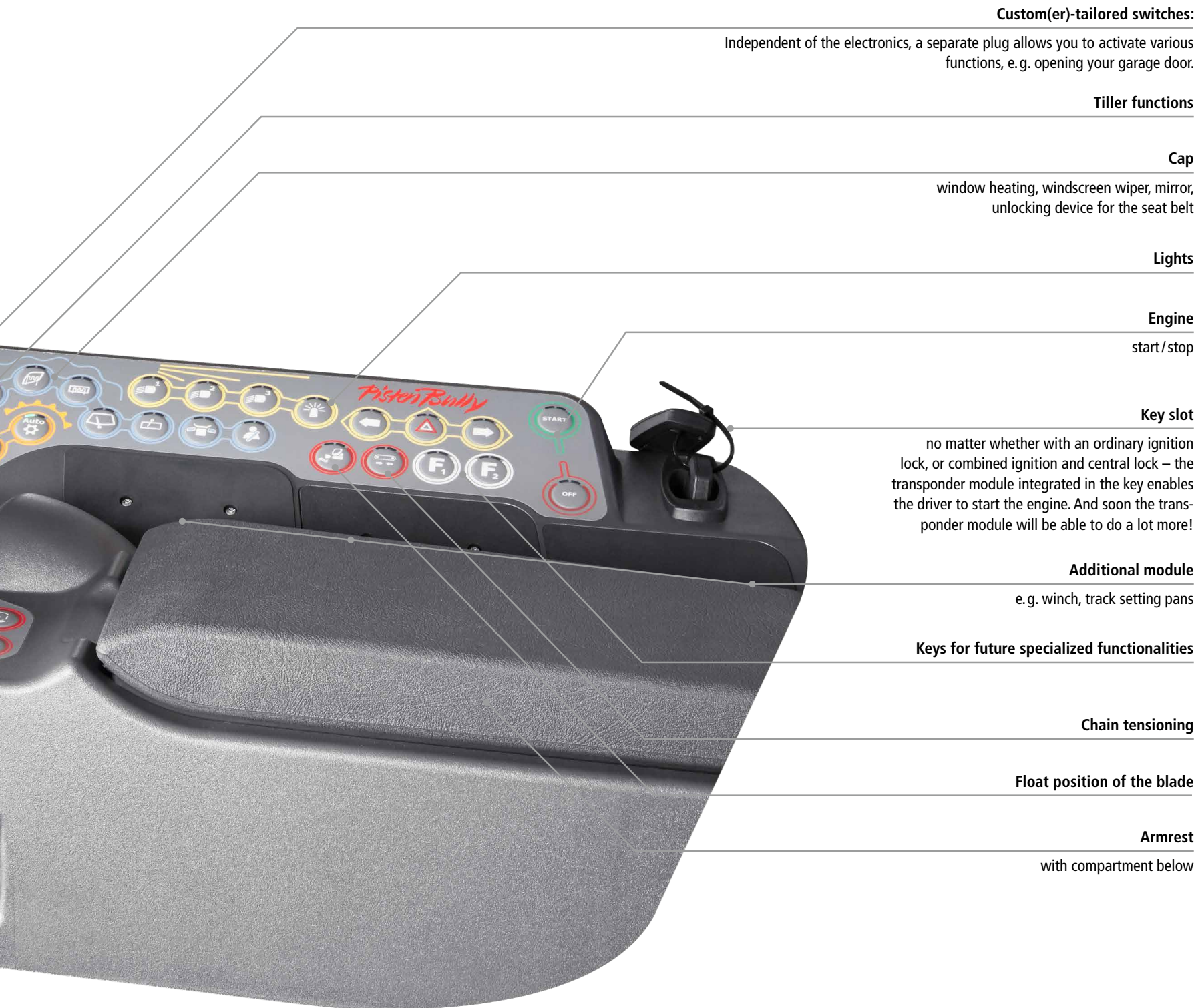


Coinciding with the introduction of our PistenBully 100, the starting gun has also been fired for our ground-breaking and completely novel control concept, which in the future will be found in all of our new vehicles, and which will revolutionize the ease of using them. Apart from the innovative 4-axis joystick, the armrest will also look the same in all the cockpits from here on out. The operator does not have to adjust to a new setup, but can easily and very comfortably control every vehicle in the same manner.

#### Uniform "Look and Feel"

From the very beginning, a top priority of the developers was a uniform operating philosophy. Until now, the arrangement of the switches and levers and the assignment of keys and buttons have been different for every individual model. In the foreseeable future, the commands and their position will all be the same – and this also applies to the





the winch, for track setting and for park building. Control of the vehicle is becoming more and more personalized. For example, every driver can define their own lighting profile. Once it is configured, they can then switch on their preferred lighting by pressing a single button. All command elements in the armrest and the joystick are transmitted to the PCU (PistenBully Control Unit) via a CANbus system, the system's computing unit. It is here that the push of a button triggers the corresponding function.

#### As much as necessary, as little as possible

Another objective was to cover all functions with fewer buttons. In the basic panel, only 32 easily managed buttons now control all commands. A maximum of 3 additional modules with 8 buttons each control optional tasks like using the winch, the track setting pans or specific demands of the customer. Thanks to the plug and play recognition, they can be plugged in anywhere, always maintaining their assignment of functionalities.

For the joystick and the armrest, only sturdy products of the RAFI company in Ravensburg, very close to Laupheim, are used, which is a guarantee for ultimate switching reliability and a long operational lifetime.

Not to be underestimated, and highly desired by our customers: the high quality membrane keyboard offers easy care, because it is wipeable.

The keycaps can be illuminated in two colours and can be dimmed and are therefore recognizable in extremely bright sunlight and do not blind the driver in the darkness. So-called "2-Status-LEDs" visualize the status of the functionality: if the button is pressed, it confirms that the function is activated.

#### Maximum comfort

The joystick rests comfortably in your hand, your arm on the armrest. The latter is adjustable and thus perfectly fits

every arm's length, long or short. With its soft padding it guarantees a pressure-free positioning of your arm for many hours. Below the armrest is a compartment for mobile phones etc., including an extra USB port. The complete unit (Armrest, Joystick, etc.) moves according to the movement of the machine.

We put a lot of thought into the concept, which was developed in close co-operation with our customers. We are happy about all the positive feedback that we get from the drivers. Once they have gotten used to the new control concept, they never want to operate without it again. For despite the simplified mode of operation, its options for personalization are boundless.



# Beginners’ training course at PRO ACADEMY

## Well on track

When grooming ski slopes, it is not only precision that matters. Efficiency and sustainability also play a major role. At PRO ACADEMY, future drivers – both male and female – of snow groomers find out all they need to know about smart snow management. The schedule of the beginners’ training course, the first of five consecutive modules, is focused on providing basic skills for slope preparation. Florian Profanter, a long-term consultant for managers of skiareas, and head of PRO ACADEMY, likes to pass on this basic knowledge personally. PistenBully NEWS wanted to know what the novice drivers think about the training, and has asked the participants enrolled in the the current course to give their feedback.



Florian Profanter  
is head of the  
PRO ACADEMY



### Katharina Bergmann, 28

ski monitor from East Tyrol, who, in the summer is in charge of the Mt. Buller Race & Events Department in Australia

**PistenBully NEWS:** What do you find fascinating about PistenBully?

**Katharina Bergmann:** The size of the machines and the incredible amount of options that these snow groomers have to offer. I am a passionate skier myself, and this is why it fascinates me to see what you can do with snow. If I had the money, I would surely have a PistenBully in my garage.

**PistenBully NEWS:** How did the other participants react to a woman taking part in the beginners’ training course?

**Katharina Bergmann:** I reckon that most of them were rather surprised. But I think that in some instances, they were impressed with my knowledge. I have always been working in male-dominated fields, so I am used to standing my ground.

**PistenBully NEWS:** Will you continue with the training?

**Katharina Bergmann:** Of course I will continue the training. There are still a lot of things I need to learn.

**PistenBully NEWS:** Where and how would you like to work?

**Katharina Bergmann:** I run the Mt. Buller Race & Events Department in Australia, and therefore co-operate very closely with the grooming department. I was almost always there as a co-pilot when we had to pile up a start mound, prepare ski runs for races, build ski-cross and snowboard-cross courses, create parks for slope-style events, set up cross-country tracks for over 1,000 skiers in the middle of nowhere and organize mogul slope competitions. My ambition is to alleviate the grooming department’s workload by helping out as a driver.

**PistenBully NEWS:** How do you assess the beginners’ training course of PRO ACADEMY?

**Katharina Bergmann:** I can really recommend the training at PRO ACADEMY, be it for drivers or managers. It gives a perfect first overview over the application range and functional options. Moreover, it provides a sound basic knowledge with regard to maintenance and safety, as well as driving strategies.



### Markus Heeb, 22

driver at the cable car Luftseilbahn Fiesch-Eggishorn, participated in both the beginners’ and the advanced learners’ training course

**PistenBully NEWS:** What do you find fascinating about PistenBully?

**Markus Heeb:** The elegance of the groomers when they glide across the slopes. And the fact that despite their size and incredible power they can be precise to the centimetre.

**PistenBully NEWS:** How do you assess the beginners’ training course of PRO ACADEMY?

**Markus Heeb:** I really learned a lot. Especially the combination of the theoretical beginners’ and the practical advanced learners’ training in the same winter was a great personal advancement. Even if the beginners’ course was very much focused on theoretical aspects, I can remember many of the topics we covered very well.

**PistenBully NEWS:** : What does the training at PRO ACADEMY enable you to do?

**Markus Heeb:** In the beginners’ course I learned the basics that every driver needs to know. In the advanced learners’ course – especially in the practical part – I was taught how to drive efficiently and how to make optimal use of the vehicle’s capacities.

**PistenBully NEWS:** What do you enjoy most about your work?

**Markus Heeb:** Being able to work outdoors, to enjoy the beautiful panoramic view and the sunrise and sunset. And making the best of the slopes every single day, so that in the morning, the guests find top skiing conditions.

**PistenBully NEWS:** Is there anything else that you would like to tell our readers?

**Markus Heeb:** Yes: I recommend everybody who would like to start working in the field or learn new skills to attend the course. The many helpful hints and tricks that you are get there are simply invaluable.



### Timo Burgert, 22

driver in the skiing area of Bernau in the Black Forest

**PistenBully NEWS:** What do you find fascinating about PistenBully?

**Timo Burgert:** I like it that this is a future-oriented company that highly values customer satisfaction and service. Whenever there is a problem, the engineers strive to solve it as quickly and efficiently as possible.

**PistenBully NEWS:** How do you assess the beginners’ training course of PRO ACADEMY?

**Timo Burgert:** In the course, Mr. Profanter explains and shows everything in a very practice-oriented manner. As a beginner, it was important that I learned how to turn on a slope, what tactical and engine-friendly driving means, and what is important when adjusting the cutter. I also appreciate that every participant receives easy-to-understand documentation that they can read again at home. I can recommend the training course to everybody who feels insecure in specific situations, or who wants to refresh his (or her) knowledge.

**PistenBully NEWS:** Will you attend further courses?

**Timo Burgert:** Of course! Because PRO ACADEMY not only offers courses for beginners. I am particularly interested in the practical drivers’ training that is a follow-up to the theoretical beginners’ training course.

**PistenBully NEWS:** What do you enjoy most about your work?

**Timo Burgert:** No day is like the other. Every time I start the snow groomer, the snow is slightly different. Then you have to specifically adjust the settings in order to prepare the perfect slope. Sometimes it can be a real challenge. But when I park the groomer in the garage and then look up to the slopes the next morning, I know that I can be absolutely satisfied with my performance.



Cardrona is investing in a sustainable future

# Understanding the peaks better with SNOWsat



## QUICK FACTS

All infos: [www.cardrona.com](http://www.cardrona.com)

Cardrona Alpine Resort is one of the most popular ski and snowboard resorts in New Zealand and the Southern Hemisphere.



It is on New Zealand's South Island in the Cardrona valley, between Queenstown and Wanaka.

Lift facilities:	8	Altitude valley station:	1,670 m
Downhill runs:	345 ha	Altitude mountain station:	1,860 m
Snow Parks:	yes	Average annual snowfall:	Ø 2.90 m

The quality of the slopes is crucial for any ski resort wanting to offer its guests a world-class experience. Like any resort, Cardrona Alpine Resorts Ltd. in New Zealand has had to confront the issue of how to make the most efficient and effective use of their most important resource, snow. The answer came with SNOWsat.



Erik Barnes, Manager  
Infrastructure & Operations at  
Cardrona Alpine Resorts Ltd.

**Challenging journey to sustainable slope operations**  
“We came to snowmaking late in the game, installing our first system in 2006”, explains Erik Barnes, Manager Infrastructure & Operations at Cardrona Alpine Resorts Ltd. The resort conducted a critical review of operations back in 2014. They investigated what was working well and where there was room for improvement. “Not only did we consider operational issues, but also the longer term issue of climate change.” Forecasts suggest a

potential snow cover reduction by 2040 of 21 % at 1,000 m and 8 % at 2,000 m. “The question for us was how to ensure sustainable fun and excellence. With this we began a journey towards sustainable mountain management. We invested in summer earthworks to improve the surface of our slopes, filling hollows, reshaping jumps and half pipes, grooming runs and adding drainage. We developed a programme to assess available

water and storage requirements, and identified that our vehicle fleet was reaching the end of its service life.”

**SNOWsat supporting change**  
Accordingly, the decision to invest in the snow grooming fleet was made in the summer of 2014. The resort bought four new PistenBully: two PistenBully 600 Polar W, a PistenBully 600 and – to ensure it continues to offer the best fun park in the Southern Hemisphere – a PistenBully 400 ParkPro. The addition of these new machines has significantly improved the efficiency and quality of the slopes. That’s why the SNOWsat snow and fleet management system was installed at the same time. All vehicles of the fleet have been equipped. The first season’s experiences have fulfilled all of Erik Barnes’ hopes: “With SNOWsat we can understand our mountains and our snow even better. The system is creating connections for our people between departments, enabling them to discuss when, where and how we make snow, move snow, collect snow naturally and groom the runs to perfection. We are all learning that what we thought we knew isn’t always what is happening on the mountain and that there are always better ways to do things. Just because we have always done it that way, doesn’t mean it is the right way.”

**SNOWsat offers many advantages**  
For Cardrona, SNOWsat’s biggest advantages include the ability to create the best possible snow cover, by detecting snow deposits and shifting them accordingly. SNOWsat gives snow makers precisely the information they need about where snow is required and where there

is already enough. It’s also helpful that the system minimises the risk of damage by rocks and boulders. SNOWsat also shows where earthworks are needed in the summer, in order to form a smooth snow cover in the winter even on difficult terrain. The integrated fleet management system is very intuitive too.

Erik Barnes is now looking to the future full of confidence: “New Zealand prides itself on being 100 % pure. As a resort focused on winter fun we need to do our part in promoting this vision. Our journey on the road to sustainable fun has just begun, but with the new groomers and SNOWsat we are well placed to make a difference, set ourselves up for long-term success, and ensure our guests have the most epic experience possible.”





SNOWsat for the entire fleet



Customer service engineer Tobias Kirsamer: "Well prepared is half the battle!"



Activation of the software right in the vehicle

# Hand in hand

# SNOWsat installation

# from A to Z

**sn**ow**sat**®

**Completely equipping a whole ski resort with SNOWsat requires comprehensive preparation and a considerable amount of knowledge. We accompanied our customer service engineer, Tobias Kirsamer, during the installation in Poland and the Czech Republic.**

## Being involved from the very beginning

Tobias Kirsamer works in technical customer service and is responsible for, among others, Eastern European countries. He established initial contacts as early as June because he was brought on board during the sales negotiations to provide professional support to the decision makers – in Kotelnica - Białka Tatrzańska, Poland and Jasná, Slovakia – and to remove possible concerns. At that time, he already clarified details such as individual requirements as well as data and infrastructure that the ski resorts needed to provide on their own. Together with plant and workshop managers, IT specialists and the external surveyor, he inspected the ski resort and the possible locations for the base station and the repeater, to guarantee optimum reception. In the summer of 2016, both ski resorts decided to completely equip their fleets with SNOWsat. In Jasná, they ordered three new PistenBully 600 SCR including SNOWsat, which were delivered in the fall. In Kotelnica, one new vehicle and eight existing ones, from which two were third-party vehicles, had to be equipped with SNOWsat on-site.

## Good preparation is everything!

After the initial planning and communication takes place, a lot of emails and phone calls follow. Tobias discusses the circumstances with his local contacts. A terrain model has to be contracted out and the server of the ski resort's IT department has to be prepared. Tobias identifies the

best location for the base station and the repeater using a simulation program. A location with a good view is, based on experience, also the perfect location for the station, but control is everything!

At the same time, the ski resorts apply for a license at the frequency authority. A good thing because later on Tobias will have to deal with a serious frequency disturbance...

## Let's go! Installation!

"The most important part of such a project is careful preparation," says Tobias Kirsamer. "The ski resorts in Poland and the Czech Republic are more than 1,000 km away. Therefore, it is not only inconvenient, but also extremely expensive when something goes wrong or is missing." That being said, Tobias is well prepared. Some of the necessary components and his tools travel with him in his car. The rest is delivered by truck at the same time. On site, he works together with the technicians of the respective PistenBully representation. "This makes communication easier because Polish and Czech languages are over my head!" Together with the ski resort's staff, they start installing the base station and the repeater. "Here, you have to be able to improvise. Try soldering an antenna cable at minus 10 degrees! In Jasná, we prepared the cables and the base station box inside and installed it later on outside on the weather station's

mast." However, there is always something: In this particular installation, the requested frequency showed disturbances, which can cause difficulties in measuring the snow depth.

## Homework

Clarification with the frequency authority is done by the ski resort and fortunately, they quickly receive an interference-free frequency. Back in Laupheim, Tobias remotely installs the programs on the server – as

soon as the terrain model is available – clarifies last details and prepares everything for the next visit.

## Finally! All set for the winter!

Now everything should work. The ski-resort-specific software is automatically installed in the client's vehicle systems. Tobias puts each one in operation and makes sure that everything runs smoothly. Now, his night shift starts and he takes extra time for that. He spends two nights riding along with everyone in Kotelnica, switches from vehicle to vehicle and explains the system, operation and the many application possibilities to each driver on the screen. "That is always a very intense time. The drivers learn the most here. And so do I!" Because driving the vehicles is the easiest way to find out if everything is running smoothly. Tobias tests small adjustments right in the vehicle and imports them into the system the following morning. "In the beginning, it can happen that the accuracy varies by a few centimetres. But that is quickly corrected and afterwards I can be sure that it is right." However, in Kotelnica that was not necessary. "It was a showcase installation and everything ran like clockwork," says Jose Marek, our representative in Poland for more than 30 years.

## Intensive training so everybody knows what to do

The following day, Tobias is back behind his computer again and installs the SNOWsat programs on the customer's workstations. From now on, every employee can work with SNOWsat on their PC. However, before that, Tobias will have to run an in-depth training for everyone involved. Everybody who is interested and especially those who have to work with it on a daily basis participate and learn everything about SNOWsat Web (CAN and Fleet) and SNOWsat Z.

Then they are ready to start. Tobias and his colleagues are always available for questions. However, the better the training, the fewer the questions...



»The most important part of such a project is careful preparation«

Tobias Kirsamer, Customer service engineer





Installation of the antenna in an extraordinary place



The licence for radio communication had been granted and a frequency assigned – but the signal noise prevailed. The radio authority came and could rapidly solve all problems. After all, there are a lot of frequencies to choose from. No more noises now!



#### Josef Marek: A role model of customer orientation for 30 years

He started in the garage next to his house...

Josef Marek worked full-time at mountain rescue. Even back then he repaired PistenBully in his free time. In 1986, with the launch of PistenBully 240 D, he became our representative in Poland – a country that has more mountains and ski resorts than many would suspect.

With Josef Marek, we gained an extremely committed and reliable partner for whom the client always comes first. He passed on his enthusiasm for PistenBully to his family: Both his sons are today important members of the family business. His extraordinary commitment has clearly proved its worth: The PistenBully market share in Poland is looking for its match...

Thank you very much for that! Congratulations and ongoing success for the future!



SNOWsat experts amongst themselves

## SNOWsat: Optimisation through dialogue

More than anything else, SNOWsat's success is based on one thing: the excellent co-operation with our customers all over the world. Their feedback helps us to find technical solutions, which we can then integrate into our professional groomer and fleet management system. During specific SNOWsat training events we pass on this knowledge to our technicians and sales team. They, in turn, have the opportunity to share their experience. Ultimately, this enables the sales team to successfully support our customers in all questions and concerns regarding our software.

*"Apart from the training, these events offer technicians the opportunity to co-operate. Thanks to this exchange we receive highly interesting feedback. We in R&D are particularly interested in finding out what our customers are actually using."*

Olivier Hargoa (Technical Director SNOWsat)

*"The two days that we spend with technicians from other countries are very enriching. We exchanged our views on our methods of operation, made deliberations and found answers to questions. Apart from the technical information pertaining to the new software version, we found out during this training event in which direction the system will develop in the future."*

Josef Fischer (Italy)





Schneestern, SPT, and PistenBully join forces for the X-Games

## The world's top snow acrobats enjoy perfect conditions

Hafjell is a renowned name when it comes to winter sports. A Norwegian ski resort with Olympic tradition, it will now be engraved in the memory of the younger generations of freestyle riders and skiers. The reason being the X-Games, one of the most popular freestyle winter sports events, which was hosted there in March 2017. Together with its partners Schneestern (SST) and Snow Park Technologies (SPT), PistenBully provided the right tools to build the necessary courses for this event as the official equipment supplier.

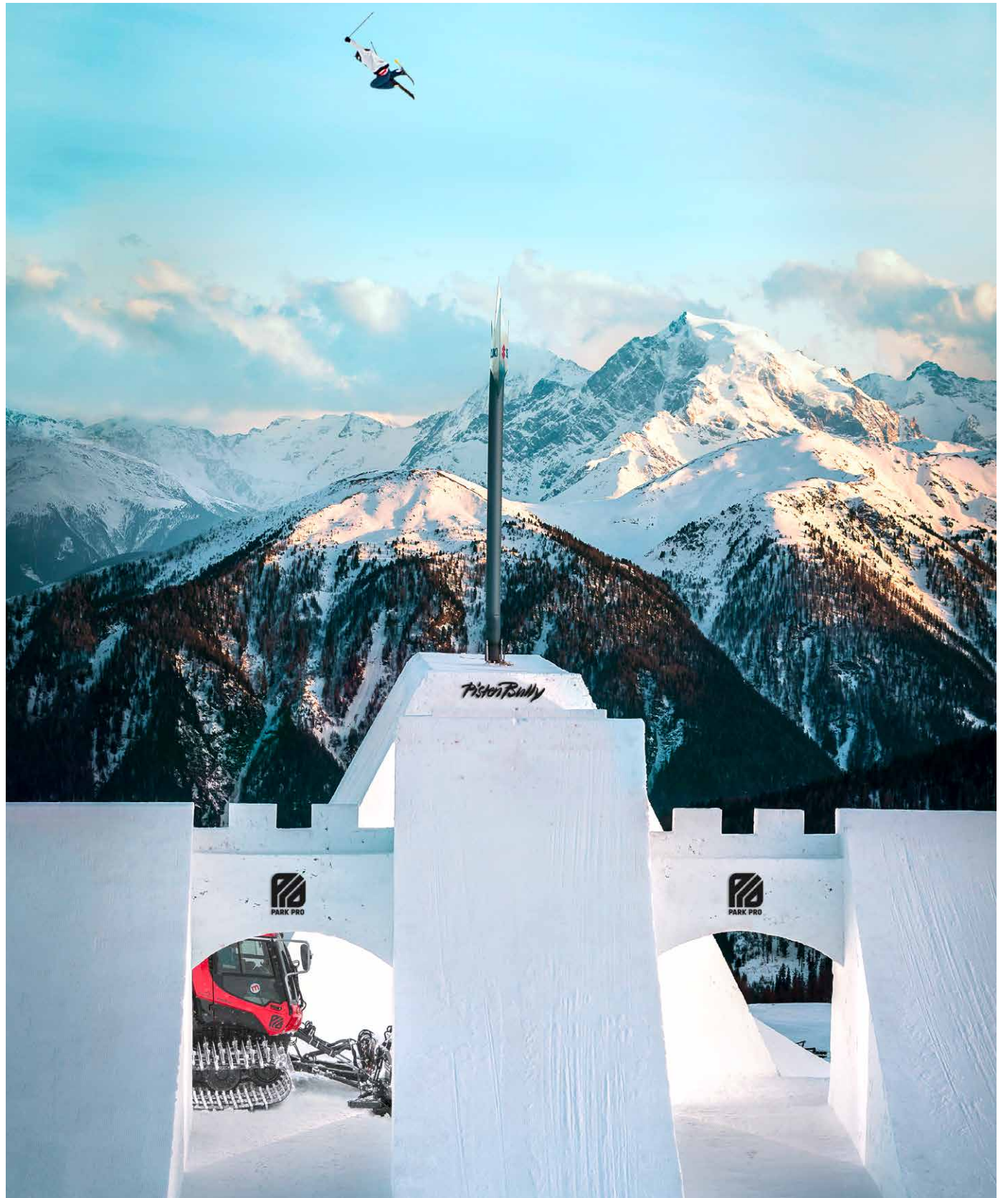
### Outstanding quality

Already in 2016, PistenBully was able to convince the Hafjell ski resort of the quality made in Laupheim. Three vehicles, one 600 Polar, one 600 Park and one 400 ParkPro have supported the Norwegian snow groomer operators since February 2016. In part due to the convincing quality provided by the red vehicles, Hafjell extended its trust in PistenBully for the X-Games Norway. In February 2017, four PistenBully in special Park and Winch designs were delivered exclusively for the creation of the Big Air and Slopestyle Contests, those machines were used at X Games Norway.

### The right tools for the right workers

At this year's X-Games Aspen in January, PistenBully proved its ability to provide the right tools for X-Games Norway. The red vehicles groomed Big Air, Slopestyle and Superpipe at Buttermilk resort. To do so, not only the right tools but also the right operators were indispensable. That is why at X-Games Norway, the PistenBully vehicles were operated by the two most qualified partners cooperating with Kässbohrer when it comes to freestyle winter sports: Schneestern and Snow Park Technologies. The European market leader SST and the number one company in North America, SPT worked closely together at this major project. SPT took care of the design whilst SST was in charge of the creation of the legendary courses.

PistenBully is proud to have laid the groundwork for one of the most popular freestyle winter sports events in cooperation with these two professional teams.



Suzuki Nine Royals, a freestyle event of superlatives.

PistenBully sponsors the popular freestyle event until 2021

## Vigorous support for the Nine Royals



**We are proud to be sponsoring the revamped Suzuki Nine Royals for the next four years. The previous Suzuki Nine Knights and Nine Queens events have been popular far beyond the world of Freestyle winter sports. From now on, the Knights and Queens events will be combined into one and will continue to inspire with technical tricks, style and positive vibes in snow action sports.**

After last year's Nine Knights event in Watles, South Tyrol, Italy, the signature "Perfect Hip" became notorious to winter athletes around the globe. On the biggest Hip ever built in the history of Freeskiing or Snowboarding, two athletes managed to break world records for achieving the highest "air."

### New concept with familiar support

The concept of Nine Royals unites the two previous events into one totally new event. For the first time in Watles, both female and male Riders will unite to present their skills. To be able to do so, they will be provided with a unique setup, as was the case at previous events, a "snow castle" beyond all imaginations will be built. Also consistent with previous years, the castle will be built by our cooperation partner, Schneestern. Again, the experts for building such setups will use PistenBully power to move and shape countless cubic metres of snow for this event. The Suzuki Nine Royals build will include two massive Big-Air-Kickers, two Hips, numerous Transitions and Redirects as well as Jibs. This

setup is made possible because Schneestern is able to rely on the right hardware. In this case, the PistenBully ParkPro series will provide everything the snow park experts need: The vehicles must perform excellently at all times, withstand difficult conditions 24/7 and deliver exactly the tensile force, climbing skills and range of motion needed for freestyle winter sports setups.

We are happy to provide support – and are looking forward to many new records!





"These cats are a total working tool that makes our jobs much easier", says SPT co-founder Mike Binnell.

#### QUICK FACTS

##### X GAMES BY NUMBERS

1	PistenBully sponsored athlete gold medal (Lisa Zimmermann, Big Air Skiing)
4	The number of X Games courses built
10	The number of PistenBully machines used for the build
16	The number of extensive television coverage hours
17	The number of SPT personnel at the event
20	The number of years SPT has designed and constructed X Games courses
45	The number of Jib and snow elements
70	The number of feet in height of the tallest feature
215	The number of countries and territories that X Games is broadcasted to
300	The number of hours that went into X Games design planning
12 Mio.	Cubic feet of snow used for X Games
27,1 Mio.	The number of people who tuned into the 2016 X Games from the US



PistenBully is the sponsor of X-Games winner Lisa Zimmermann

## Lisa achieves gold at first try!

The ski freestyle professional from Fürth is the first German to win the gold medal in the BigAir competition at the X-Games in Aspen, Colorado. We are very enthusiastic about this: the talent, who qualified for the Olympics in Sochi just recently signed the contract with us. With PistenBully as a sponsor by her side, Lisa Zimmermann is well prepared for the next two seasons.

Winning this gold medal, Lisa wrote a piece of German winter sports history. It was the first time that Lisa Zimmermann participated in the X-Games, these "Olympics of the extreme athletes", and as the first German, she completely swept the board. Doing a "switch double-cork 1080", a jump including three complete turns, she was the first woman who ever landed standing after such a jump, and convinced the jury.

Zimmerman's achievements thrilled everyone at Kässbohrer, too. And in the same way similarly, Lisa is enthusiastic about PistenBully's commitment for the young generation. Promoting young talents is very near and dear to her. We'll keep our fingers crossed for the winter Olympics 2017/18, Lisa!

# PistenBully Teams Up With SPT for X-Games

The X Games, owned and orchestrated by sports broadcaster ESPN, is an invitation only event meant to showcase the world's best ski, snowboard, snow bike (for the first time) and snowmobile athletes in snow action sports. Skiers and snowboarders compete in Big Air, Slopestyle and Superpipe events. Snowmobilers and snow bikers contend in Best Trick, Freestyle, SnoCross, SnoCross Adaptive and Snow Bike Racing. The 2017 X Games, hosted by Buttermilk Resort in Aspen, Colorado, took place January 26 – 29. X Games Aspen 2017 was televised globally in 215 countries and territories to more than 365 million homes!

Snowpark Technologies (SPT), the designer and builder of the X Games teamed up with PistenBully for the event. The build fleet included five ParkPros, a 600, a 600 Polar, a 400 and a 400 Winch. The majority of hours that go into the X Games build happen long before Snow Park Technologies ever reaches the snowy slopes of Aspen, Colorado. Design work, preparation, jib construction and logistics work start about a year before the event. This year, PistenBully was on the hill pushing snow on December 15

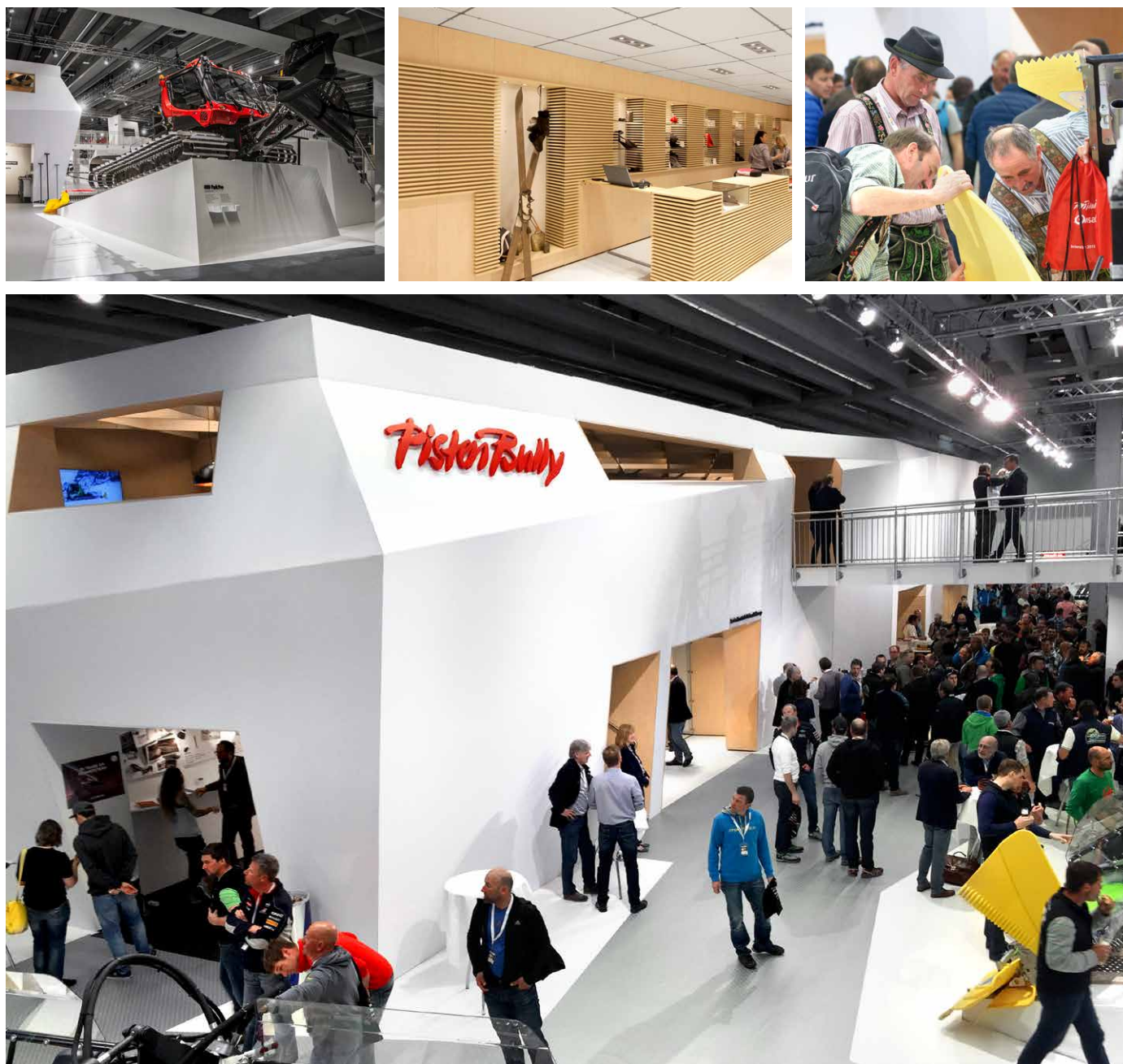
almost a month and a half before the event commenced.

The functionality of the ParkPro with Switch-Blade<sup>2</sup> quickly became apparent. Such features as "auto straight blade" and backblading teeth in combination with the increased action radius of the blade motion were key to shaping the snow features. The blade is reinforced at the top and incorporates eyelets for attaching strap hooks. This allowed SPT to quickly and efficiently move jibs, snow making guns, boxes and equipment. The PistenBully Snowbucket was a game changer for the SPT build team. The Snowbucket connects directly to the front quick-mount-system. At 165 inches (4,200 mm) wide it can hold 2.6 cubic yards of snow (2.0 cubic meters). The attachment enabled SPT builders to move a great deal of snow and drop it at precise locations on the hill. With an estimated 12 million cubic feet of snow used for X Games, SPT builders took full advantage of the Snowbucket capabilities. The Snow Park Technologies team was very pleased with how all of the PistenBully equipment functioned and with the service that the

PistenBully team provided. SPT co-founder, Mike Binnell reported about a week before the event took place that in his 20 years building X Games, "This is the best that we have ever had it and we are way ahead on the build." He continued "These cats are a total working tool that makes our jobs much easier." SPT finished the build ahead of schedule, which gave the team peace of mind going into the training and event days.

It is truly impressive to see what X Games has grown to and the influence that it has had on winter action sports over the years. The amount of work that goes into planning and construction of the courses and features for this type of event adds an entirely different perspective to X Games. PistenBully is proud to have been a part of the Aspen 2017 X Games and facilitate the SPT team in a seamless and efficient build. Kudos to the whole SPT staff on yet another successful X Games!





# Greater performance. More highlights.

PistenBully at the INTERALPIN 2017 trade show  
26. – 28. April 2017 · Innsbruck, Austria  
hall A, stand 28

Naturally, we will be present in Innsbruck for Interalp 2017 with some highlights in store for our audience! Particular attention will be devoted to the PistenBully 100, which is the first snow groomer of its class to feature a diesel particulate filter and therefore comply with the new EU Stage V regulation.

Visitors of the show can also look forward to seeing the PistenBully 100 FunSlope. It has been co-developed with our partner QParks, the specialist for snow parks, fun parks and family parks. QParks will introduce the new vehicle to the public. We also invite you to engage in a very special virtual reality experience: just get on

board, put on your glasses and go up and down the steep slopes with the PistenBully!

We plan to create another sensation with a modern classic involving luxury equipment and superior design. It will be out just in time for the INTERALPIN in a limited edition of only 50 vehicles.

For the first time, PRO ACADEMY will also be present at the trade show. The training concept, which is independent of manufacturing companies, perfectly prepares beginners and advanced drivers for efficient and resource-conserving slope grooming. It also provides advice on snow

and slope management to managers of ski areas – tailored to their needs.

Additionally, special information spaces will tell interested visitors about the advantages of the latest generation of our professional management system for snow groomers and fleets, SNOWsat.

Per usual, we will answer any question regarding maintenance, spare parts and used vehicles, and give PistenBully lovers the opportunity to buy anything their heart desires from our fan shop.



**PistenBully is always  
good to serve as a  
model...**

*Luis Trenker*  
LUIS TRENKER

Here it poses at a photo shoot in St. Vigil for the new Luis Trenker catalogue. Now, barely returned from the ISPO, it can be admired at the Interalp International Trade Fair 2017.



Promotions for service and spare parts

# Ideally prepared for challenging work

Regardless of where our PistenBully are used: they have to work reliably. That's the only way ski resorts can guarantee optimum snow conditions at any time and, thus, stay commercially successful.

With special service and spare part promotions we ensure that our customers not only save time, but also money. Just one call and your personal PistenBully contact will give you all the expert help you need. An overview of our promotional service offers:



For details of the special offers, please refer to the "service" section on our website at [www.pistenbully.com](http://www.pistenbully.com).

SUMMER-SPECIAL!



## Our summer promotion 2017

Save big on spare parts and service

Even a PistenBully has a break sometimes. Why not make good use of the time with a thorough service and overhaul? From 1<sup>st</sup> April to 15<sup>th</sup> September, we are offering lots of original parts and service deals at really great prices.

Overview of our services:

- ⊕ Over 25,000 original spare parts in stock
- ⊕ All spare parts of OEM quality
- ⊕ Tested safety and high reliability
- ⊕ Service hotline: 24 hours a day, 7 days a week
- ⊕ Expert advice on spare parts
- ⊕ Digital and up-to-date spare parts catalogue incl. ordering function
- ⊕ Spare parts for machines up to 15 years after series discontinued



## "Clean & Care" package

Gentle cleaning and strong protection

Cleaning a PistenBully regularly not only makes it look great, but also protects it against harmful external influences. Our water and dirt-repellent care products ensure long-lasting surface protection. They are also eco-friendly and bio-degradable.



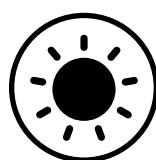
## "Pump Review" package

Boosting operational capability long-term

The components of the traction hydraulics face particular challenges in the everyday life of a PistenBully. That's why we recommend removing the hydraulic pumps (drive, tiller, winch) for an overhaul after approx. 6,000 operating hours. This makes your PistenBully fit for work again.

Snow groomers profit from

- ⊕ Extended service life
- ⊕ Secure appreciation
- ⊕ Increased operating security
- ⊕ Warranty on serviced pumps (for one season)



## "Summer Review" package

Ensuring everything runs smoothly again in winter

We can be really petty. As part of our Summer Review we painstakingly check and service your PistenBully, replacing on request anything that needs replacing. Breakdowns in winter are a thing of the past.

The advantages at a glance:

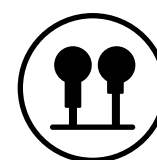
- ⊕ Improved durability
- ⊕ Greater security and reliability
- ⊕ Better value retention
- ⊕ Planning security for cost issues (with a multi-year service agreement)
- ⊕ Prerequisite for a component warranty in the 2nd year on new vehicles



## "Fit for Winter" package

The perfect complement to our "Summer Promotion"

Would you like greater security next winter? Our technicians check over your PistenBully thoroughly and then create a test report for you. Comprehensive advice in terms of spare parts and other useful steps is naturally included and free of charge.



## "Stick Conversion" package

The right control element to suit everyone

Steering wheel or joystick? We are happy to convert your PistenBully 400 or PistenBully 600 quickly and at a reasonable cost. This enables you to react flexibly to the individual preferences of your drivers.





Funslope Innovations Days 2017



# Experience the Funslope of tomorrow, today

We asked you for your ideas for the Funslope of the future and received over 200 entries for the Funslope Innovation Days 2017 by PistenBully. The best suggestions are now being turned into reality for the Innovation Days Funslope in Sölden. It will be open for proper testing on the 29<sup>th</sup> and 30<sup>th</sup> of April, giving all visitors a chance to choose their personal favourite element. Become part of the jury and decide what the Funslopes of the future should look like. There are already three joint favourites.

Innovation is the key to success. That goes for Funslopes too. What does the Funslope of the future need to look like to ensure optimum enjoyment, variety and action? PistenBully and Young Mountain are asking these questions as part of the Funslope Innovation Days 2017. The goal: to create an even more thrilling experience for skiers and snowboarders. It's a natural step to get the target audience involved in the development process. We put out the call for an ideas competition and have been showered with creative entries.

## From the drawing board to the snow

The professionals at Young Mountain and PistenBully have now selected the best of the best from more than 200 concepts for new elements. You can check out the fun factor of the new creations on the exclusive Funslope at the Funslope Innovation Days 2017 by PistenBully. All registered visitors who try out the Innovation Days Funslope in person will also be asked to give their personal assessment right there and then. This makes you a member of the jury with a say in the future of the Funslope.

The favourites for the total prize money of 6,000 euros include three particularly unusual concepts: a super snail, also known as a double snail, which allows for two complete loops – dizziness warning. And a triple tunnel with a bridge, which offers countless variations and a collection of round sound boxes, which each emit different noises when you use them. Take the opportunity and experience the Funslope of tomorrow, today!

## Interested in a test drive?

The Funslope Innovation Days 2017 offer more than just the chance to be at the forefront of development of the latest trends in construction, however. PistenBully is also inviting you to take a seat in the machine that plays a crucial role in the construction of a Funslope: thanks to its agility, the PistenBully 400 ParkPro is the ideal tool for the challenging work of Funslopes. The brand-new PistenBully 100 FunSlope will also be available for a test drive. Visitors are sure to get their money's worth.

Be part of the decision-making for the future of Funslopes! Register now at [info@funslopes.com](mailto:info@funslopes.com) or by phone on +43 (0)316 677755 and reserve yourself one of the limited spots on the jury! Come to the Funslope Innovation Days by PistenBully in Sölden on 29<sup>th</sup> and 30<sup>th</sup> April 2017, do a couple of circuits and give your opinion. Enjoy!





Above: PistenBully owner and supporter: Alan Dugas (right) together with Josh Nelson from KATV.

Right: The new PistenBully 400 Trail 4F has a specialized blade for narrow trails.



## Snowmobile Grooming in Jackman, Maine

# "We love our PistenBully groomers!"

Snowmobiling is a popular winter sport in North America. Well maintained and groomed trails to ride are key to this popularity. A bulk of the trail maintenance is provided by independent snowmobile clubs. These clubs depend on volunteers and private land owners for their everyday function and existence. Volunteers provide trail maintenance (summer and winter), fundraising efforts for local clubs as well as facilitation of tourism and enthusiasm within the community.

Private land owners provide permission and access for snowmobilers and snowmobile clubs to build trails and ride through their land. It truly is a community effort for the vast majority of snowmobile clubs and yet, some individuals stand out as they go above and beyond to provide safe, and fun trails for snowmobilers to ride.

Alan Dugas who owns a cabin and a piece of land in Jackman, a township located in northern Maine, provides assistance to the local Jackman snowmobile club. He is the perfect example of an individual whose efforts greatly impact an entire snowmobile community.

Dugas is the owner of the Royal River Boatyard and Boat Repair in Yarmouth on Maine's Atlantic coast but in his free time, he is in Jackman dedicating countless hours to grooming and maintenance work on roughly 40 miles (65 km) of trails. He operates a Tier 4 PistenBully 400 Trail and an older TrailBully with help from his family and neighbor, Randolph Petrin, who owns the

Long Pond Camps and Guide Services next door. Dugas operates entirely as a volunteer, receiving insurance and fuel from the local snowmobile club, The Border Riders, where he sits as Vice President. He devotes a great deal of personal energy and finances to his trails because he "loves to groom and make smooth trails for a lot of people to enjoy." He says "I like being outside, doing trail work and signing trails. I like to make new trails and build bridges. I am someone who likes to make things happen, I am proud of what we do for the Town of Jackman and the Border Rider's Sportsman Club." Dugas' selfless nature and strong work ethic are exemplary.

Randolph Petrin, also a volunteer, shares Mr. Dugas' passion for the sport. He loves working hard to provide a good surface for snowmobilers to ride on. Relying on their new PistenBully 400 Trail 4F and the older PistenBully Trail between them roughly 40 miles of trail are groomed on a nightly basis.

Alan Dugas worked with the PistenBully New England Branch to install a custom blade on his 400 Trail 4F to allow narrow passage through his trails. His two favorite features of the 400 Trail are the machine's blade functions and the smooth, responsive steering control. He says enthusiastically, "We love our PistenBully groomers!"

## PistenBully® Fan-Shop



## CHILDREN'S HOODED SWEAT JACKET

39,90 €\*

PistenBully lettering on the chest, PistenBully 600 W lettering on the back. · Sizes: S – XL (children) · Colour: Navy/red · Material: 80 % cotton / 20 % polyester



## BED LINEN

59,90 €\*

Reversible cotton bed linen in PistenBully design, with zip. Pillows · Duvet: ca. 80 x 80 cm · Cover: ca. 135 x 200 cm · Material: 100 % cotton



## HAPPY FAMILIES

9,90 €\*

PistenBully design card game. Packed in a plastic case.

\*Price incl. 19 % VAT excl. shipping costs

You find these and other beautiful PistenBully products in our Webshop.

[www.shop.pistenbully.com](http://www.shop.pistenbully.com)



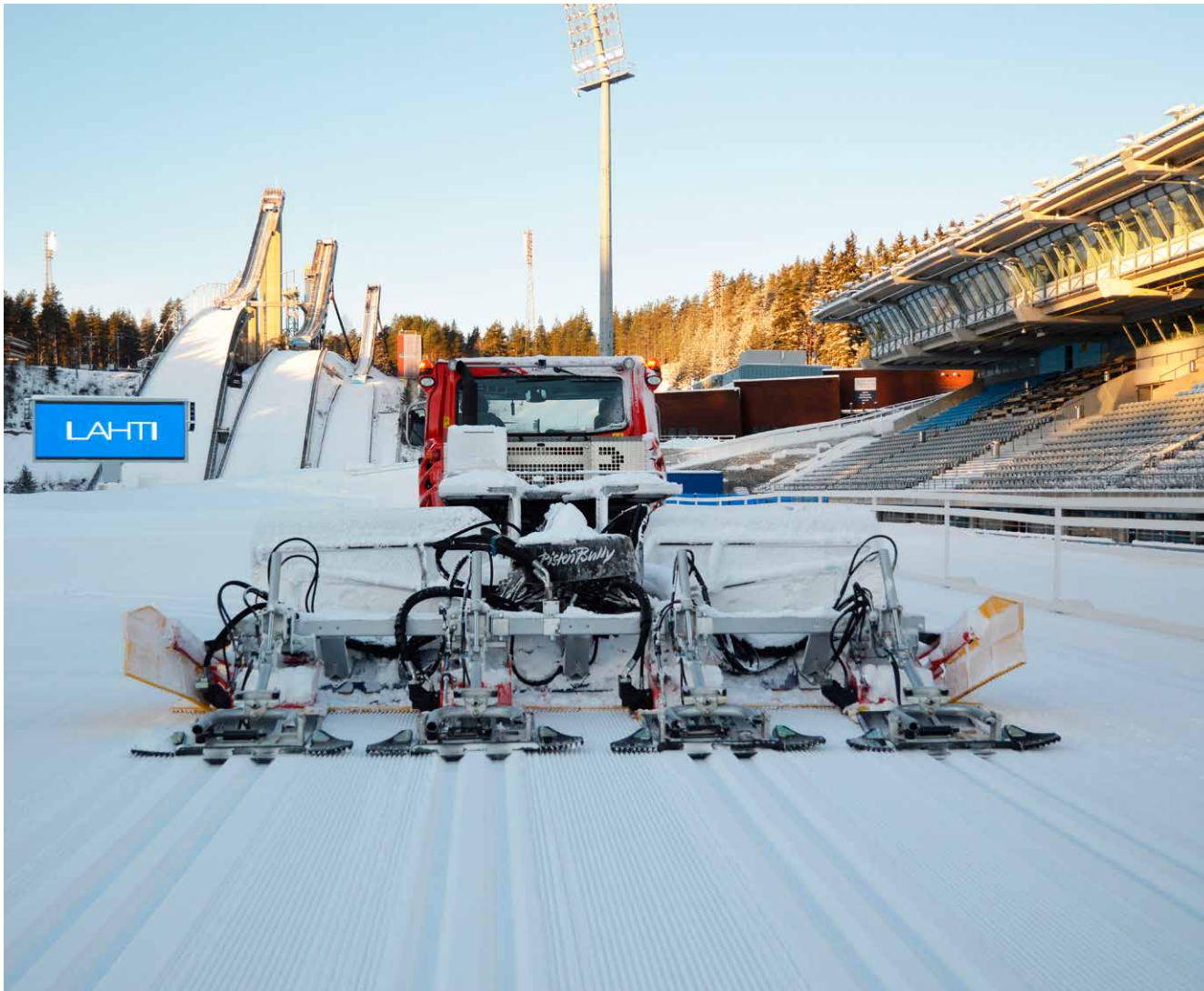


Champions count on PistenBully

# All winter sports world championships 2017 entrusted to PistenBully

PistenBully guarantees perfect conditions in all four winter sports world championships. The FIS Alpine World Ski Championships in St. Moritz, the IBU Biathlon World Championships in Hochfilzen, the FIS Nordic World Ski Championships in Lahti, and last but not least the FIS Freestyle World Championships in Sierra Nevada: be it steep slopes, spectacular kicker ramps or demanding trails – whatever you need, there is a PistenBully for everything. PistenBully has provided impressive proof of what these machines can do – over and over again.





Left: PistenBully 400 with quadruple track-setter for world masterly cross country ski runs.

Right: Hannu Krouvi, trackmaster in Lahti

## With PistenBully, Lahti is ready for the WC

# The Nordic Ski World Championship 2017 in Lahti is a pure PistenBully world championship!

**PistenBully acted as supplier to the Nordic World Championships in 2017. This time in Lahti, Finland, again.**

It is the seventh time that Lahti, Finland, in its 100 year old history has played host to the 51<sup>st</sup> World Championships. 250,000 spectators watched the games and over 100,000 tickets were sold in advance. To put on a successful event, it is crucial to be able to guarantee the best quality snow conditions. PistenBully was the "Official Supplier of track-setting machines for the Nordic Ski World Championship 2017": 6 machines have been used in Lahti. Perfect competition conditions were granted.

### The best equipment for the preparation of the tracks

"The FIS Nordic Combined World Cup at the beginning of January 2017 was good to prove ourselves for the World Championship!" Hannu Krouvi, cross country skiing track master in Lahti, was quite relieved and optimistic before the event started. "At present we are using four PistenBully – a PistenBully 400, two of the smaller PistenBully 100 and 1 PistenBully Paana. In addition, one PistenBully 300 and a PistenBully 100 will be provided by Kässbohrer before the World Championships. We will be perfectly equipped then!"

For the World Championships they needed to prepare two different 5 km

cross country ski courses in February, one for skate skiing style and one for the traditional classic skiing style. Also a 1 kilometer long warm up loop had to be provided. "The snowmaking of the cross-country skiing trails began early, in November 2016 during the first frost," explains Jarkko Laine, the Venue Coordinator in Lahti. "In total 75,000 cubic meters of snow were needed in March in order to create 10 kilometers of competition cross country skiing trail. And we really managed it without difficulties!"

Hannu Krouvi explains the use of the PistenBully: "We have been using the PistenBully 100 with rubber track under soft weather conditions because the rubber tracks don't break the surface of the snow. The Paana has been used for moving the artificial snow to the cross-country ski courses. And the PistenBully 100 as always for traditional cross-country tracks. The PistenBully 400 however provides a smoother surface for the free skiing style." The cross-country ski tracks are groomed normally in the evening so the track hardens during the night. Hannu Krouvi has to decide often in quite a spontaneous way: "We always decide the evening grooming according to the weather situation. If the weather report promises snow for the night, the cross-country skiing track is groomed in the morning. But normally all the tracks are driven at 21.00

o'clock. The stadium is always made with big machines and the other tracks with the smaller ones. But the Skiathlon's track is always groomed with a PistenBully 400 because four track grooves are needed."

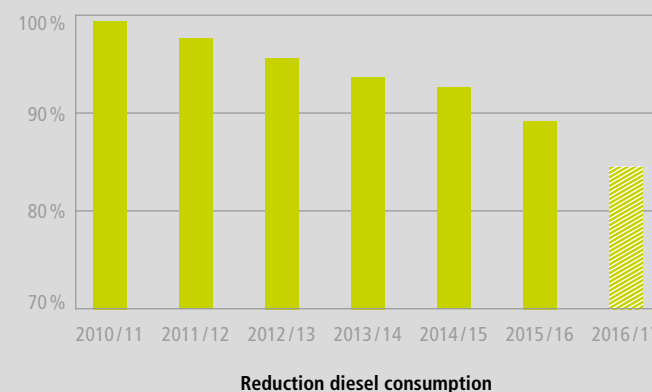
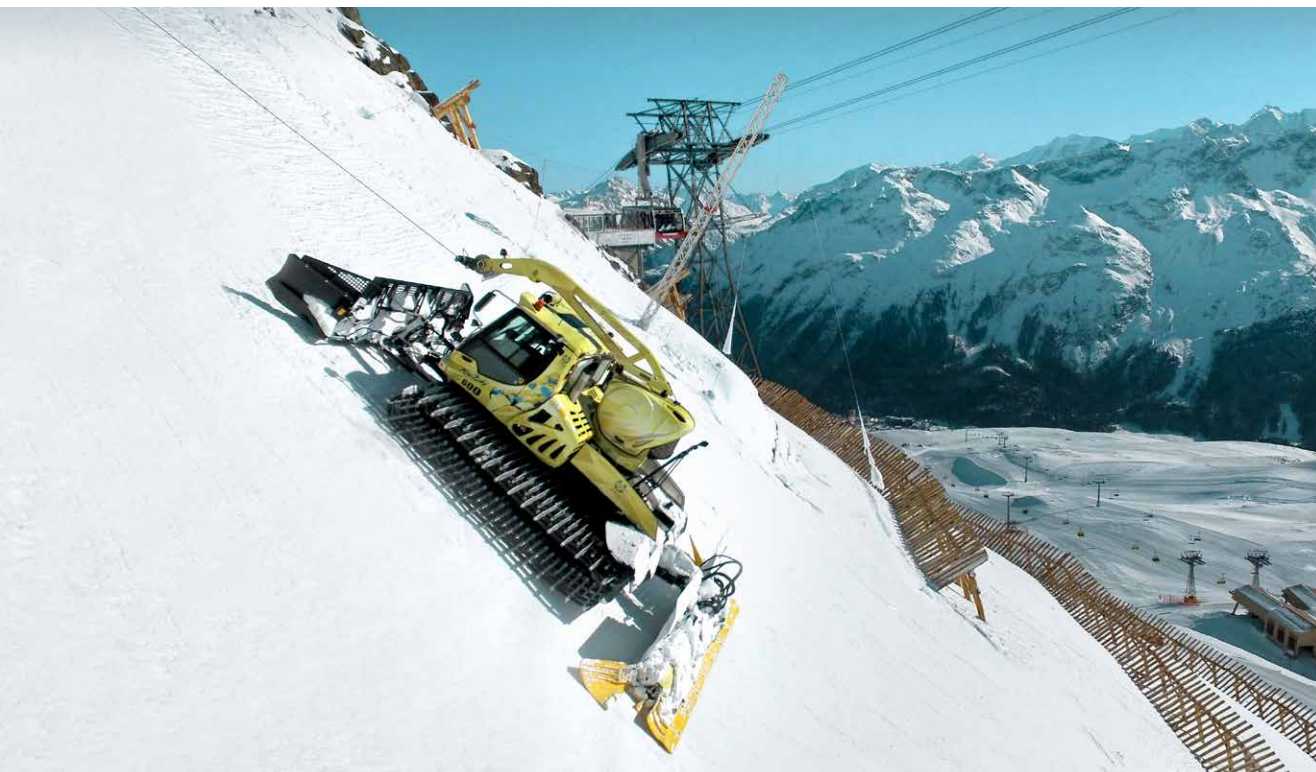
### Only professionals at work

There are only 8 groomers who have operated at the world championships. That's because the traditional classic style skiing track requires a lot of know-how – especially of the PistenBully 400 with the 4-track groove. During the races all 5 ski trail machines have been in use. "The ski jump is always groomed with the roll. But the lower part of the downhill is always finished with a big groomer," says Hannu.

The World Championships were a success for all involved. And we are happy for having been part of it!

However, Hannu is not only in charge of the World Championship. "Lahti has a network with tracks of a cumulative 65 kilometers for 'ordinary' cross-country skiers. Surely we won't get bored during the championship!" Hannu laughs. But the effort is definitely worth it!





Snow management – concept at St. Moritz ensures reduction at all levels



# What a (sustainable) World Championships!



Adrian Jordan's vision for Engadin St. Moritz Mountain's Alpine Ski World Championships was exceptional in the truest sense of the word: the FIS Alpine Ski World Championships 2017 should enter the history books as the "most sustainable world championships in snow management".

One thing is certain: the preparations relating to snow grooming and to the "most sustainable world championships in snow management" went smoothly. Everything that our experts planned so intensively with the local managers has since been implemented convincingly. Even the athletes confirmed the daily high-quality of the slopes in several interviews.

## Good planning is half the battle: the snow management concept

In 2012 St. Moritz was the first E+ customer in the world. A true eco commitment, which was completed by upgrading the fleet to SCR technology, buying 2 additional PistenBully 600 E+ and now installing SNOWsat in all vehicles. Over the summer, Adrian Jordan, Head of Technology COO at Engadin St. Moritz Mountains AG, and his team collaborated with Adrian Mattli, Swiss SNOWsat expert, and Florian Profanter, Head of the PRO ACADEMY, to develop a complex snow management concept over several meetings. The first task was to survey the status quo from all relevant perspectives. The recorded data formed the basis of all optimisation proposals. The concept is extremely ambitious:

- ⊕ to offer greater snow security and snow quality
- ⊕ to reduce resources and costs sustainably: diesel, water, power, maintenance and personnel
- ⊕ to optimise snow-making / grooming

- ⊕ to define and stipulate snow-making and grooming
- ⊕ universalize an approach to snow-making
- ⊕ achieve sustainable water management
- ⊕ to exploit SNOWsat properly and to the max.
- ⊕ to record and evaluate key process data
- ⊕ to increase the planning security of snow production
- ⊕ create operator qualification (construction and grooming of slopes)
- ⊕ to professionalize the snow-making and vehicle team

## TARGET-ACTUAL comparison reveals

A great deal of data was recorded, previous working methods were evaluated, optimisation potentials detected, and recommendations made: from reduced revs, shorter idle times and less overlapping grooming, to savings in snow production – there was real potential all over the place. The TARGET-ACTUAL comparison, which Adrian Mattli and Florian Profanter have now created and presented, is truly impressive. Since 2010, fuel consumption and CO<sub>2</sub> emissions have reduced by 15 %, while NO<sub>x</sub> emissions are down by almost 25 %. 10–15 % is envisaged for machine-made snow production.

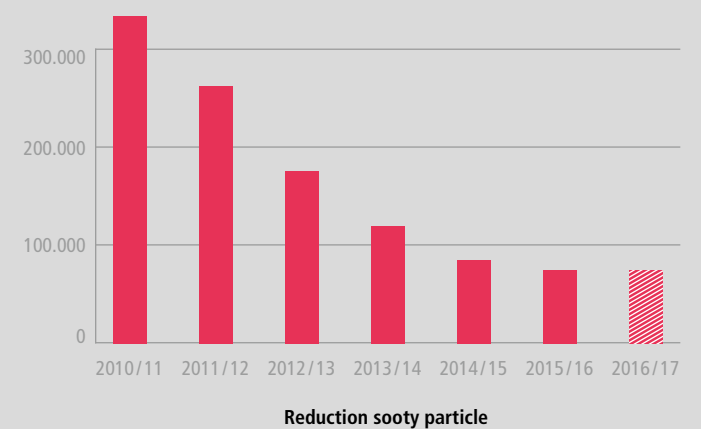
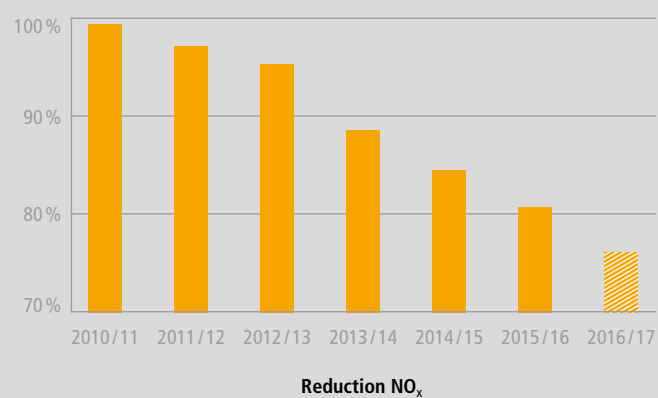
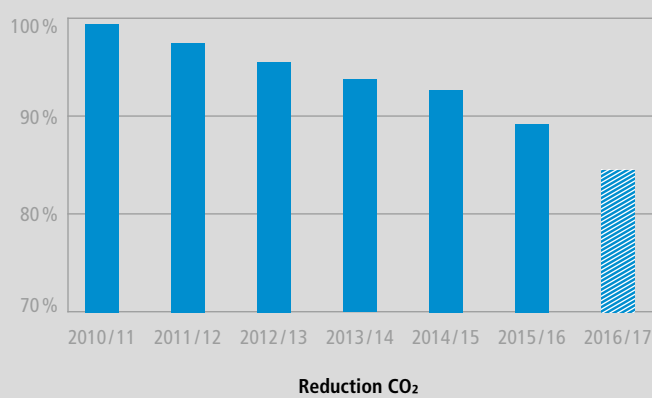
Adrian Jordan was very pleased with this joint project from the beginning: "The concept was striking – clear improvements to the snow-making and grooming process can be made through intensive planning. We identified weak points and are now able to tackle these much better. This helps managers with the planning and my colleagues with their day-to-day work. With the tips from Florian Profanter and Adrian Mattli you have tools that make work clearer and more efficient. Together – I am convinced – we will achieve the goal of the most sustainable snow management for a ski world championship. And then of course carry on in that way afterwards."



Above: The St. Moritz team is perfectly prepared for the most sustainable world championships in snow management.

Below: Professionals: Adrian Mattli (left) and some colleagues from St. Moritz.





Clearly identifiable: the first wave of savings came in 2012/13 with measures like the SCR technology and modern exhaust standards. The values went back down during recent winters thanks to the 3 PistenBully 600 E+. For the coming season we're now looking to full outfitting with SNOWsat and the new slope and snow management concept. We expect the curve to take a sharp dive!

#### Step-by-step towards the goal

The first step started way back in 2012 with the modernisation of the existing PistenBully fleet. This included buying a total of 3 PistenBully 600 E+. Setting standards by retrofitting all snow groomers with diesel particle filters or buying new ones with them already installed. Additionally, the entire PistenBully fleet was converted to the emissions-reducing SCR technology for the World Championships 2017. 23 cutting-edge, eco-friendly PistenBully have now all been set to create the perfect snow conditions with a lessened environmental.

#### Step 2: Economical snow management with SNOWsat

The second component was SNOWsat, the fleet and snow management system with snow depth measurement. Most of the vehicles have been equipped with SNOWsat for the 2017 competition. In brief – the most eco-friendly fleet imaginable. The goal was to make the most efficient use of the existing snow at the resort. Machine-made snow is produced very economically and extremely selectively using the latest and automated snow-making systems. SNOWsat shows where snow is lacking and which systems need to be triggered. This results in savings everywhere: energy, water, time, fuel, NO<sub>x</sub>, CO<sub>2</sub>, etc. And in the end there is less terrain damage.

#### Professional grooming with the PRO ACADEMY

Florian Profanter eventually devised a plan with the team for grooming the competition slopes in line with the high standards of a world championship event. From the basic structure and quality features of competition slopes to use of existing course data and cost optimisation – there was also a lot here that is now being implemented effectively.



#### Interview with the man responsible for the slopes and snow-making

Shortly before the start of the World Championships, we spoke to Reto Bieri, the man responsible for the slopes and snow-making at Engadin St. Moritz Mountains AG, about the final stages of snow grooming.

**PistenBully NEWS:** A complex snow concept was developed in summer. Have the expected savings in snow production been achieved? Is there enough snow?

**Reto Bieri:** I can answer that with a yes very easily. We have reduced snow production by 10 to 15 %. We started on the next round of optimisation straight after the slopes were created, working with the snow groomer drivers. After an early winter with very little rain, I am also proud to say that there is enough snow. And we were able to stop snow production at Corviglia on 20<sup>th</sup> December.

**PistenBully NEWS:** Are the tips from training now bearing fruit in "acute" practice? If yes, which and how.

**Reto Bieri:** Adrian Mattli and Florian Profanter worked with us intensively for 2 days in December, discussing various aspects in detail. The combination of tips from Florian Profanter and the technical refinements of SNOWsat from Adrian Mattli have helped us enormously. We had already defined a process last summer, however, which is now continually being refined and promises even more potential for improvement in future.

**PistenBully NEWS:** Are the drivers now driving more effectively with less environmental impact?

**Reto Bieri:** A change in thinking is tangible and can also be quantified thanks to SNOWsat. You also need a underlying change in philosophy though. We're working on another 1 to 3 years before we've achieved optimum performance.

**PistenBully NEWS:** Are things easier?

**Reto Bieri:** Any initial scepticism has disappeared and the possibilities with grooming are enormous. And once you've driven with SNOWsat you simply can't go "back"!





»This next generation PowerBully 15 T really focuses on the needs of its users, both from the view point of the up-fitter, as well as of the fleet departments that work with these machines.«



John Gilbert, CEO of Kässbohrer All Terrain Vehicles

**PowerBully**

Brand-new at ConExpo 2017 in Las Vegas

## PowerBully launches their new Tier 4F industrial track carriers at ConExpo 2017

PowerBully debuted two new track carriers at ConExpo 2017. This is the largest exhibition for construction equipment in North America. It is held every 3rd year in Las Vegas and is on par in scope and size with the Bauma show in Munich Germany. Attendance numbers in excess of 125,000 people. This year there were over 2,500 exhibitors. Total exhibit space was more than 232,000 m<sup>2</sup> (2,500,000 sq ft).

### PowerBully 12 RT: the ideal mix of power, weight and size

A show highlight was the PowerBully 12 RT. This rubber track carrier has a rotating dump body that can be smoothly turned and tipped through 180 degrees. Equally impressive is the rotating driver's cockpit to ensure perfect visibility front and rear. The unique combination of the two makes time consuming turning manoeuvres on unstable ground unnecessary and increases work safety. The PowerBully 12 RT is equipped with a state-of-the art Cummins diesel engine. It fulfills the strict EPA exhaust emission standards of Tier 4 Final. The PowerBully 12 RT is also set apart by its new comfort cab. It has ample interior space, an air suspension driver's seat, automatic heating/air-conditioning, heated front windshield and a high quality interior.

### PowerBully 15 T: 100% performance on any terrain

The all new PowerBully 15 T was also of keen interest. With a payload of 35,000 lb (16 ton metric) this track carrier features the new Quick Mount truck style chassis. Attachments such as digger derricks or man lifts can be more quickly fitted with the Quick Mount system.

The advantages of the PowerBully 15 T carrier were apparent at first sight. It is equipped with a custom developed, ergonomically designed cabin. The ROPS structure is certified to 65,000 lbs. It also has FOPS protection. As with the 12 RT the PowerBully 15 T is powered by a Cummins QSB 6.7 liter diesel engine that is rated to 275 hp and meets Tier 4 Final emission standards.

"This next generation PowerBully 15 T really focuses on the needs of its users, both from the view point of the up-fitter, as well as of the fleet departments that work with these machines," according to John Gilbert, CEO of Kässbohrer All Terrain Vehicles, the manufacturer of PowerBully track carriers. "Our goal has been to provide ease-of-use and full access for all features of this powerful carrier. From the custom operator cabin to the easily accessed 3rd pump pad for attachment installation, we're giving users what will enable them to get their job done efficiently and safely."

### PowerBully Scout: the transport genius

As an added attraction the PowerBully Scout was on display. This 5 – 10 man transport vehicle is designed for driving work crews in a comfortable ROPS certified cabin while protected from the elements. The Scout offers contractors an economical way to transport personnel to the job site where terrain is too soft for wheeled vehicles.

In the towed vehicles sector, the Cherrington 440 XL with a 1.20m working width rounds out the BeachTech product range (between 1.85 and 2.50 m) at the lower end. Right: BeachTech 3000.



We are now the sole supplier in the self-propelled beach cleaner market with a variety: between the Cherrington 5500 (above, 1.60 m) and 3000 (0.95 m) models we have the BeachTech Marina with a working width of 1.40m.

**BeachTech** 

Beach cleaners for any beach and any budget

## BeachTech takes over Cherrington

There are exciting innovations in the BeachTech product range! Kässbohrer Geländefahrzeug AG has taken over the American company, Cherrington Inc., expanding the beach cleaner product line-up.

BeachTech, our beach cleaning division is expanding its position as the world's largest supplier of beach cleaners and accessories. The Cherrington models increase the previous product range, achieving greater market coverage.

A lot has been happening at Cherrington over the last few years. The developers have been working hard to hone the cleaning technology, a screening method which is now producing impressive results even under difficult conditions.

The merger brings together over 65 years of experience in the beach cleaning sector and provides customers with a broad spectrum of solutions. In the future, for example, the company will be offering three self-propelled models with varying working widths under the well-known brands of BeachTech and Cherrington. The range of towed vehicles is also being expanded. Customers will be able to choose from several sizes and different screening technology in future to acquire the perfect tool for their needs.

We welcome our new colleagues from North Dakota to the team – first and foremost Mike McPherson and Cory Struble, responsible for selling Cherrington, who now stand with us, bringing their expertise and their experience to the equation.



Mike McPherson



Cory Struble





Above: Parade of the Mottolino PistenBully fleet.  
Left: The Rocca family receives the symbolic key for the 2,500<sup>th</sup> PistenBully 600. From right to left: Elia Rocca, Tiziana Rocca, Anna Rocca, Matteo Bongiolatti, Valter Tura, Luciano e Imelde Rocca, Davide Rocca, Jan Rocca, Marco Rocca, Jens Rottmair, Stefan Spindler, Barbara Pucci.

Mottolino S.p.A., Livigno, receiving the anniversary vehicle

# PistenBully 600: 2,500 experts for slopes all over the world

PistenBully now looks back on 11 years of success for the 600 model. As part of a stunning ceremony, vehicle number 2,500 was handed over to its proud new owner: Mottolino S.p.A. in Livigno, Italy.

“PistenBully 600 comes up with plenty of first-class technical equipment – the focus being on ergonomics, driving comfort and easy handling”, began the presentation of the PistenBully 600 introduction at the “Fire-in-red” tour of early 2006. These aspects remain essential up to this day. Various further developments and optimizations make the PistenBully 600 series a flagship of the company.

This year, the 2,500<sup>th</sup> PistenBully 600 was delivered to Mottolino S.p.A. in Livigno, Italy. The brand-new PistenBully 600 Polar W is composed of a winch featuring 1,400 metres of rope and is equipped with the SNOWsat fleet management system.

Jens Rottmair, CEO of Kässbohrer Geländefahrzeug AG and Stefan Spindler, Head of Sales and Marketing, joined Valter Tura, Managing Director of Kässbohrer Italia S.r.l., in handing over the

symbolic key for this special vehicle. The setting was a spectacular parade of PistenBully vehicles. Atmospheric illumination was not only provided by 15 PistenBully of the Mottolino vehicle fleet, but also by a bright full moon.

The business partners Mottolino and Kässbohrer are looking back on a relation full of mutual trust, respect and friendship, having connected both companies for more than 25 years. In 1992, the first PistenBully 320 D arrived in Livigno.

The Rocca family, owner of Mottolino S.p.A., all of their PistenBully drivers and representatives of Kässbohrer Geländefahrzeug AG spent a night full of festivity and “happiness in red” together.

## Dates 2017



26. – 28. April 2017  
**INTERALPIN 2017**  
Innsbruck  
Austria



26. April 2017  
**D-A-CH Cable Car Conference**  
Innsbruck  
Austria



29. – 30. April 2017  
**Innovation Days by PistenBully**  
Sölden  
Austria



05. – 08. May 2017  
**NSAA Convention 2017**  
Scottsdale, AZ  
USA



20. September 2017  
**BIG DEAL DAY**  
Laupheim  
Germany



You find current dates also on our website:  
**[www.pistenbully.com/dates](http://www.pistenbully.com/dates)**

## The BIG DEAL in April



Every month, a used PistenBully is offered at [pistenbully.com](http://pistenbully.com) at a spectacularly low price. In September the Kässbohrer Geländefahrzeug AG offers a **PistenBully 600 W**: built 2007, approx. 6,700 operating hours, STANDARD version. **Order number 700.82610420**

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# Fun in the snow with PistenBully



## More than 2,000 primary school children join in the PistenBully Cup



Under the motto "Switch off the PCs and get on the skis!" the skiing associations of Baden-Wuerttemberg and PistenBully organized 20 event days in the first quarter of 2017, getting over 2,000 primary school children between 7 and 9 years out into the snow.

For one entire day the children's schedule read: "PistenBully Cup". It included everything from small ramps and jumps to a slalom run – always with the PistenBully mini-skis. The highlight at the end of the day was the PistenBully-Cup. All the kids had lots of fun in this little competition with their classmates. It allowed the children to try out winter sports in a more casual and uncomplicated

manner. All the SBW coaches agree that the short mini-skis make gliding and the first contact with snow what it should be: child's play. The coaches were equally enthusiastic about the event: "What a terrific idea! Today over 100 kids had massive fun practising winter sports. They all were absolutely thrilled. This is an example of great work with young athletes. Real cool!"

In some of the locations, the organizers prepared a very special treat. After all the fun in the snow, the kids were allowed to ride in a PistenBully. We won't stop there: In the summer, the children will master a trial of skills and practise specific tasks in their sports classes that help them exercise the co-ordination required for winter sports.



Sponsoring the Regional team Oberallgäu

## PistenBully takes the next step



For years, PistenBully has been the patron/ name-giver of the international PistenBully children's ski race at the Fellhorn, with over 350 participants. Organizer of the event is the Regionalteam Oberallgäu. PistenBully will be the team's main sponsor.

The Regionalteam Oberallgäu is known for its excellent work at the interface between youth promotion and elite sports. Up-and-coming athletes between 12 and 14 years of age are being coached and trained. This is why both partners match so well.

PistenBully is true to its motto "Switch off the PCs and get on the skis!" and supports many

activities aimed at encouraging popular sport. The main objective is to show children at primary school age how enjoy outdoor activities, and particularly how to have fun in the snow. Besides sports for all, PistenBully also support top-class athletes like Lisa Zimmermann and Daniel Bohnacker.

Taking up the main sponsorship of the Regionalteam Oberallgäu now, PistenBully promotes both young talents and internationally established athletes.

### Imprint

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