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 **Doppelmayr®**

# Doppelmayr masters Olympic fever

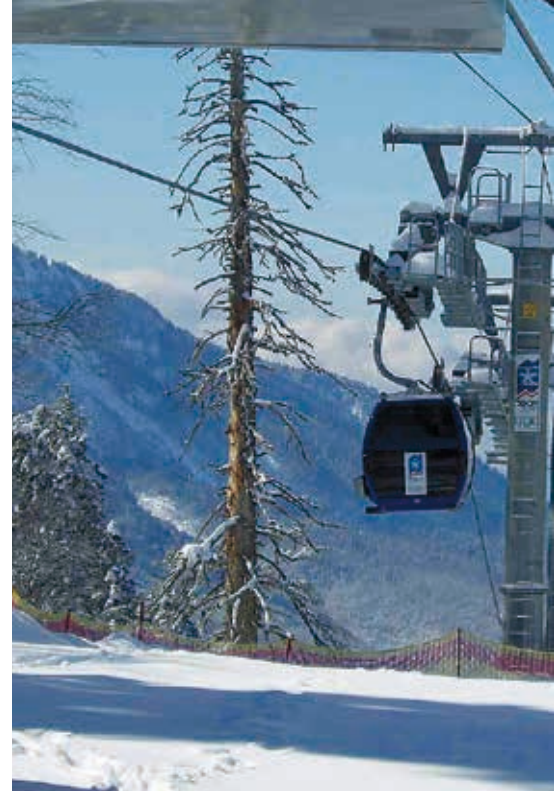
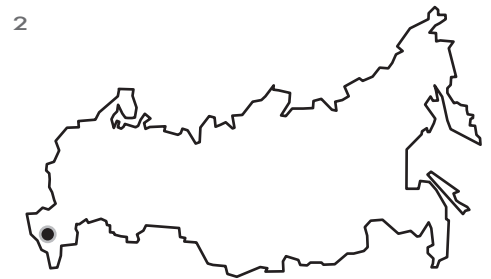
**Doppelmayr is building 40 lifts in the area around Krasnaya Polyana in the Caucasus. By the start of the 2014 Winter Olympic Games, 35 of these installations will be in service.**

In the ski resorts of Rosa Khutor, Alpika Service and Laura/Psekhako located around Krasnaya Polyana, 16 Doppelmayr lifts have already been handed over to the operators; another 19 are under construction.

Hundreds of contractors are simultaneously carrying out construction work for the Winter Olympics and strict security regulations have been put in place. This unusual situation has presented its particular logistical challenges.

## Doppelmayr lifts are already winners

Doppelmayr has risen to the challenge. Its lifts have already proved themselves to be highly successful during the test events this winter in preparation for the Olympics. Once the Olympic Games are over, the region is destined to become a modern center for winter sports enthusiasts from Europe and Asia.



8-MGD Psekhako Lift A

*The Krasnaya Polyana region is the biggest center for winter sports in Russia.*



Doppelmayr Lifts in Krasnaya Polyana			
Resort	2004 – 2010	By October 2013	After 2014 Olympics
Rosa Khutor	4 detachable lifts	2 detachable lifts	2 detachable lifts
	1 fixed-grip lift	2 fixed-grip lifts	
	3 loading carpets	1 surface lift 2 3S lift	
Laura/Psekhako (Gazprom)	5 detachable lifts	1 3S lifts	
	1 fixed-grip lift	3 detachable lifts	
	2 surface lifts	1 fixed grip lift 1 surface lift	
Alpika Service		5 combined lifts	1 fixed-grip lift
		1 detachable lift	1 surface lift



## Ropeway expertise up close and hands on

Doppelmayr offers its customers an optimal cost-benefit ratio. That means developing technical innovations at the right time as well as ensuring comprehensive project management which also takes into account social trends such as minimizing environmental impact. At the same time, customers can rely on rapid assistance and spare parts availability whenever necessary over the lifetime of a ropeway installation.

These capabilities are perceived and recognized as major benefits. There are sound reasons why Doppelmayr is the world market leader as well as occupying pole position in almost all national markets. Doppelmayr can be relied upon to deliver installations of all sizes, from heavy-duty ropeway systems to small lifts with top comfort such as surface lifts serving the requirements of ski schools and hotel-owned lifts.

Interalp in Innsbruck provides the perfect platform for showcasing the ropeway expertise of the Doppelmayr/Garaventa Group. Highlights of the 1,500 m<sup>2</sup> presentation will include much more than a few new products. In keeping with the theme "Doppelmayr up close", our customers will be able to follow the design and production of top-class ropeway components at first hand and carry out their very own quality control.



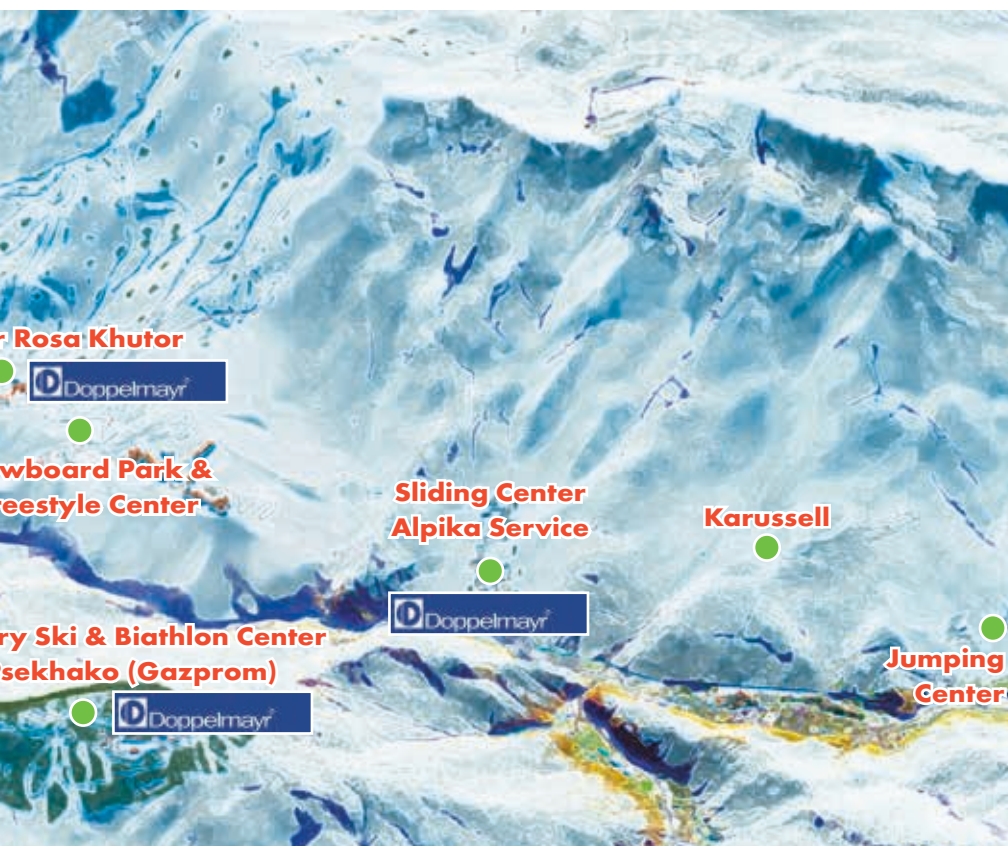
Michael Doppelmayr



8-MGD Rosa Khutor Lift B and Lift C



8-MGD Rosa Khutor Lift A



## "Ski Jewel" thanks to new gondola lift



**Two of Tyrol's traditional ski resorts have joined forces: Alpbachtal and Hochtal Wildschönau. The connection is provided by the new 8-passenger gondola lift.**

**T**he link-up addresses customer demand for a bigger ski region. With the new lift, it is now possible to make a direct trip up to the Schatzberg from Inneralpbach; previously, the trip from Alpbach had meant an hour's drive.

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### *Mid station for repeat uphill trips*

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The new lift has a mid station on the Pechalm. Skiers wishing to use the new two-kilometer-long ski trail with snowmaking facilities can make repeat trips up the mountain. The return trip to Alpbach is via

the new gondola lift. Building a ski trail down to the village would have been too complex in view of the need to cross the main road, a river (the Alpbacher Ache) and the valley floor.

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### *Good connection to other lifts*

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To get to the heart of the Alpbach ski region, skiers take the Pögl lift which accesses Alpbach's local mountain, the Gmahlkopf, on the opposite side. The base of this lift is barely 100 m from the bottom station of the new gondola.

*When planning the new connecting lift, the emphasis was on maximum availability and comfort. The installation consists of two independent lift systems which allow through transport in the mid station or separate operation of the two sections. An RPD system has been incorporated for additional safety in high winds.*





### **Cabin parking in the mid station**

The lift passes through an angle of 105° at the mid station. The continuous loop parking facility for the cabins and the control room are incorporated into the angle.

### **Huge time saving**

The new connecting lift provides access to 145 kilometers of ski trails and 47 ropeways, giving the Alpbachtal-Wildschönau Ski Jewel its place among the top 10 biggest ski resorts in Tyrol.

### **8-MGD Alpbach-Wildschönau 1**

Transport capacity	2,400 PPH
Trip time	6.3 min
Speed	6.0 m/s
Cabins	62
Interval	12.0 s
Inclined length	1,858 m
Top station altitude	1,446 m
Vertical rise	434 m
Towers	10
Drive	Top
Tensioning	Bottom

### **8-MGD Alpbach-Wildschönau 2**

Transport capacity	2,400 PPH
Trip time	5.0 min
Speed	6.0 m/s
Cabins	50
Interval	12.0 s
Inclined length	1,421 m
Top station altitude	1,446 m
Vertical rise	432 m
Towers	10
Drive	Bottom
Tensioning	Bottom



Peter Hausberger, managing director of Alpbacher Bergbahnen (left) and Ludwig Schäffer director of Schatzbergbahn.

The two operators, Alpbacher Bergbahnen and Schatzbergbahn, set up the company Schatzberg OG to run the new 8-MGD. The management team consists of three directors – Peter Hausberger, Ludwig Schäffer and Arnd Krogmann. Ludwig Schäffer: "The ski regions are a perfect match. The gentler slopes on the Schatzberg are great for families. For the more ambitious skiers, the steeper trails on the Alpbacher Wiedersbergerhorn are ideal." Peter Hausberger adds that the lift has been built with the usual Doppelmayr perfection. It has been very well received, especially as the cabins and access organization offer a high level of comfort.

# Doppelmayr world first on Loferer Alm

**Since the winter season 2012/13, the new Schwarzeckbahn has provided access to the Schwarzeck plateau from Lofer. This ultramodern 8-seater chairlift offers the same level of comfort and safety for adults and children alike.**

**T**he new Schwarzeckbahn boasts individual footrests, bubbles and heated seats. And what's more, it is the first 8-seater chairlift worldwide to incorporate these features. Up to now, equivalent chairs in the CS10 series have only been installed on quad and 6-seater chairlifts.

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### *Safety for the kids and top comfort for all the family*

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The Schwarzeckbahn has been built with families and children in mind. It ensures maximum safety thanks to the automatic restraining bars. These are automatically closed before the carrier leaves the bottom station and do not open again until passengers unload in the top station. The closing operation is electronically monitored. Whether or not the bubble is closed is a decision for the passengers.

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### *Photovoltaic power system in the bottom station*

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The south-facing side of the carrier parking facility at the bottom station is fitted with 240 m<sup>2</sup> of photovoltaic cells. The electricity produced by this solar installation will help to provide the power required by the ski resort.

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### *Expansion of the ski area made possible by the new chairlift*

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The ski trails in the Loferer Alm ski area are also being extended with the new Schwarzeckbahn. That makes using this lift all the more attractive, particularly as the top station at 1,565 m provides a magnificent panoramic view: from the Kitzbüheler Horn across Chiemsee, the city of Salzburg and the Berchtesgaden Alps as far as the Leogang and Loferer Mountains.







*By providing access to the Schwarzeck, the new lift has added another mountain to the Almenwelt*

*Lofer ski region. As Willi Leitinger, managing director of Bergbahn Lofer, sees it, other important points are the "completely safe travel for kids – we now have no problem carrying seven children and one ski instructor – and the solid execution of the lift". The installation also offers a high level of comfort. "We were very pleased with Doppelmayr's project handling from start to finish. The fitters worked tirelessly until everything was absolutely right, down to the smallest detail; and we were even provided with a test chair for the ski schools to practice on."*

*Almenwelt Lofer operates ten lifts. 46 km of trails; 60 snowmaking installations ensure reliable snow conditions. Snowmaking capability was expanded in conjunction with the lift construction project. The area is also a popular summer tourist destination.*

#### **8-CLD-B-S Schwarzeckbahn**

Transport capacity	2,360 PPH
Trip time	3.2 min
Speed	5.0 m/s
Chairs	49
Interval	12.2 s
Inclined length	923 m
Top station altitude	1,565 m
Vertical rise	211 m
Towers	11
Drive	Top
Tensioning	Bottom







## Switzerland's first 10-passenger gondola lift



**Since December 2012, visitors have been able to take a 10-passenger gondola lift to reach the 2,332 m Crêt-du-Midi. This lift is the first 10-MGD in Switzerland.**

**V**ercorin lies in the Val d'Anniviers, high above the Rhone valley and the town of Sierre. In 2012, the 4-passenger gondola lift built back in 1973 was replaced by a 10-MGD offering twice the speed.

The new 10-passenger gondolas have level access and fold-away seats, which makes them ideal for transporting bulky items such as hang gliders or supplies for the mountain restaurant and the buffet bar in the mid station. Holders for skis and snowboards are provided on the cabin exterior.

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### *2 sections – through travel*

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The lift consists of two sections with through travel. The drive with twin-groove bullwheel is housed in the mid station which is designed as an angle station.

The Vercorin ski resort has a reversible aerial tramway, a two-section gondola lift and seven surface lifts. In the summer, the new lift is used by hikers as well as hang glider and paraglider enthusiasts. From the Crêt-du-Midi, it is possible to fly as far as Chalais, which is the longest flying route within a large radius.





The installation was completed in just 21 weeks. In view of the tight schedule, Garaventa deployed as many as 15 fitters at any one time.

#### 10-MGD Vercorin-Crêt-du-Midi

		Section 1	Section 2
Transport capacity	PPH	1,800	1,800
Trip time	min	4.4	3.2
Speed	m/s	6.0	6.0
Cabins		41	41
Interval	s	30	30
Inclined length	m	1,720	1,245
Vertical rise	m	543	461
Towers		10	9
Drive		Mid station	Mid station
Tensioning		Bottom	Top



Dany Perruchoud, chairman of Télé Vercorin: "The quality of the overall package we got from Garaventa was amazing. The new lift was a project that was very close to the hearts of local residents: Most of the 850 shareholders hail from the immediate catchment area."



Top station



Mid station with freight carrier (left)



Bottom station with ample parking space

# 65% increase in passenger volumes with the new chairlift

**Jungfraubahnen replaced their Wixi-Lauberhornschulter chairlift with a 6-CLD-B from Doppelmayr in 2012. This has increased transport capacity by one third.**



**T**he new 6-seater chairlift replaces a double originally built in 1964 and modernized in 1992. It ranks among the lifts with the best capacity utilization in the region. As well as cutting down on long waiting times by significantly increasing transport capacity, construction of the 6-seater chairlift with bubbles has also addressed the higher comfort expectations of the guests.

## *Close to the start of the famous Lauberhorn downhill course*

The top station was moved 20m behind its old location. It now stands right next to the starting gate for the Lauberhorn downhill race, one of the most famous downhill courses in the FIS Alpine Ski World Cup. The bottom station has been relocated to one side and the old structure completely dismantled. The carriers are parked in an underground automatic facility with underground conveyor. The parking facility is connected to the bottom station.

## *First Swiss lift with DSD drive system*

This lift is the first in Switzerland with a DSD (Doppelmayr Sector Drive). The DSD system is quieter and more energy-efficient than conventional drives. Marco Luggen of Jungfraubahn AG is

### **6-CLD Wixi - Lauberhornschulter**

Transport capacity	2,500 PPH
Trip time	5.9 min
Speed	5.0 m/s
Chairs	80
Interval	9.0 s
Inclined length	1,614 m
Top station altitude	2,326 m
Vertical rise	495 m
Towers	13
Drive	Top
Tensioning	Bottom

keen to point out another special feature: "The ropeway automatically adjusts its speed according to passenger volume. Line speed is controlled by the passenger flow recognition at the turnstiles in the bottom station."

## *RPD rope position monitoring system and service carrier*

The Wixi-Lauberhornschulter chairlift was equipped with the fail-safe rope position monitoring system RPD. If the rope deviates from the center of the groove on the rope sheave, travel speed is slowed and the lift stopped if necessary.

A newly developed service carrier





As well as providing access to an idyllic ski area, the Wixi lift acts as a feeder to the Lauberhorn alpine ski course. And this has given rise to a special tradition: Every year a chair is dedicated to the winner of the Lauberhorn downhill race. To the left in the background is the world-famous north face of the Eiger.

made of aluminum has been used on the Wixi lift. It means that sheave assemblies can be inspected on the tower, rather than having to dismantle them and fly them out for the periodic inspection.

#### **Car-free zone – rope installation using the railway carriage**

Automobiles are not permitted on the high plateau. Anything that could not be carried on the Wengernalp rack and

pinion railway was flown to its ultimate destination by helicopter. For the civil engineering work, a concrete mixing plant was specially installed at the base.

The rope was installed directly from the carriage of the Wengernalp railway. And the Garaventa fitters had just one night to complete the operation; there were to be no interruptions to the timetable for passenger service up to the terminal Jungfraujoch – Top of Europe (3,454 m).



Marco Luggen, director for winter sports and Firstbahn at the operating company, Jungfrauabahn:

*"With its yellow bubbles and the yellow and black upholstery, this lift is a real stunner. We've had a great response from guests, especially in view of the fact that it serves an attractive ski slope with a new, good-sized bridge across the Wengernalp rack and pinion railway. In the first two months, we already had a 65% increase in passenger volumes!"*

## Comfortable and safe ride to vacation paradise



**The 50-year-old double chairlift on the Hündle in Oberstaufen in Allgäu has been replaced by a modern 8-passenger gondola lift with heated seats.**

The Hündlebahn takes passengers to an extensive hiking and skiing region in one of Germany's highland regions. The bottom station of the new lift has remained in the same position as the old one, while the top station has been relocated and the lift line shifted accordingly. As well as making it easier to connect up with the other ski trails, this meant that operations were able to continue as the new lift was being built. The old chairlift completed its final run on November 5, 2012 and its replacement opened in time for Christmas.

Modifications were also made to the terrain while the new lift was under construction. In addition to the demanding black run, there is now a generously proportioned ski slope down to the bottom

station for intermediate skiers. The lower section of this trail is equipped with a snowmaking installation.

### 8-MGD Hündle

Transport capacity	2,360 PPH
Trip time	4.2 min
Speed	5.0 m/s
Cabins	40
Interval	12.2 s
Inclined length	930 m
Top station altitude	1,060 m
Vertical rise	294 m
Towers	8
Drive	Bottom
Tensioning	Bottom



*The gondola lift to the Hündle area is driven by a low-noise DSD motor and operates all year round. This installation is Germany's first gondola lift with heated seats. The power is charged via busbars in the stations.*



# Winterberg: New chairlift links two ski mountains



**Doppelmayr has built the detachable 6-seater chairlift known as Schneewittchen (Snow White) at the ski resort of Winterberg. This lift acts as an important link between the two ski mountains Bremberg and Kappe in the Winterberg ski circuit.**

The chairs are fitted with individual footrests. The restraining bars are closed manually and, once closed, they are automatically locked. When the carrier reaches the top station, the locking mechanism is automatically released, allowing passengers to open the restraining bar by hand. The new connecting lift replaces a shuttle service between the two areas.

## *Lift crosses federal road*

While the new chairlift was being built, a new ski slope was constructed with mechanical snowmaking equipment. Roughly one kilometer in length, the slope has a 25 m tunnel beneath it for a cross-country ski trail and incorporates a ski bridge

over the B236 federal road. A safety net is fitted beneath the chairlift to prevent any objects from falling onto the road.

## **6-CLD Schneewittchen**

Transport capacity	3,000 PPH
Trip time	3.2 min
Speed	5.0 m/s
Chairs	52
Interval	7.2 s
Inclined length	820 m
Top station altitude	813 m
Vertical rise	112 m
Towers	8
Drive	Bottom
Tensioning	Bottom



*The Winterberg ski circuit harmonizes well with the landscape and is barely visible from the main traffic routes. The crossing over the B236 federal road is an effective form of advertising for the resort.*

## First orange bubbles in the Czech Republic



**Installation of the new 4-CLD-B-O Centrální, the Czech Republic's first chairlift with orange bubbles, has led to a rapid 50% boost in visitor numbers for the Klínovec ski region.**

**T**he 1,244 m Mount Klínovec lies on the Bohemian side of the Ore Mountains and just a short drive from the German border.

**Rapid uptrend since the early 1990s**

The ski area has a long tradition stretching back to the 1930s. Privatization in 1991 brought new momentum for the region. The rapid uptrend culminated most recently with the construction of new ropeways in 2011. Three old surface lifts were replaced by a detachable quad chairlift with orange bubbles. At the same time, the Paezovka ski trail was doubled in length. But that's not all. In 2012, an old surface lift was replaced by the Pře-



*Dipl.-Ing. Petr Zeman, managing director and shareholder of Skiareál Klínovec s.r.o.: "I'm delighted to say that the collaboration*

*with Doppelmayr – and also with the building firm KERS – has been and continues to be excellent. Our new lifts and infrastructure improvements are greatly appreciated by skiers. We are seeing a vast increase in the numbers of guests."*

mostěná fixed-grip quad chairlift, the snowmaking installation extended and snow-grooming capability expanded.

		<b>4-CLD-B Centrální</b>	<b>4-CLF Přemostěná</b>
Capacity	PPH	2,400	2,392
Trip time	min	4.4	6.9
Speed	m/s	5.0	2.6
Chairs		89	139
Interval	s	6.0	6.0
Length	m	1,235	1,074
Top station	m	955	1,001
Vertical rise	m	288	243
Towers		11	12
Drive		Bottom	Bottom
Tensioning		Bottom	Top

*The ski areas of Klínovec (Bohemia) and Oberwiesenthal (Germany) have joined forces. This has increased the region's appeal and attracted skiers from far afield.*





## New chairlift for the family ski resort of Klíny



**The Czech ski resort of Klíny in the Ore Mountains, not far from the town of Litvínov, lies roughly one and a half hours from Prague and Dresden by car; it is also within an hour's drive of several cities such as Ústí nad Labem, Chomutov and Most.**

**T**he Sport Areál Klíny – just an hour's drive from Klínovec – has three surface lifts and the new quad chairlift which replaces an old surface lift. The lift line of the old installation was extended to accommodate the new chairlift. The top station posed something of a challenge for the planners in view of the limited space available. The chosen solution was a very compact cube-shaped building with the station at the top and housed below it the frequency converter cabinets along with the emergency drive and storage units plus switchgear cabinets for the ski slope floodlighting and snowmaking installation.

In the case of the bottom station, the planners again proved resourceful. The construction of an eight-meter-high re-



*Dipl.-Ing. Josef Dlouhý, managing director and shareholder of Sport areál Klíny s.r.o.: "The construction and installation work*

*on the chairlifts went off without a hitch. Up to now, the lift has exceeded all our expectations. The number of visitors has doubled. We're constantly seeing new guests who don't just come for the weekend but like to stay longer."*

taining wall made it possible to create a large flat space enabling convenient access.

### 4-CLF Klíny

Transport capacity	1,812 PPH
Trip time	3.9 min
Speed	2.6 m/s
Chairs	60
Interval	7.9 s
Inclined length	606.8 m
Top station altitude	722 m
Vertical rise	130.3 m
Towers	9
Drive	Top
Tensioning	Top

The Sport Areál Klíny operates all year round; in the summer season, it offers an outdoor climbing wall, tennis courts, miniature golf course, children's play area, trampoline, mountain scooters, Nordic walking and downhill biking routes along the ski trails.





From the idea...



# Thank you!

Visions. They empower us to continually rise to new heights.  
Ideas that we cherish. They enable us to strive for excellence.  
It was your visions and ideas that we implemented in 2012.  
Worldwide. Your trust is also our driving force for the future.  
And that's why we want to say thank you.



...to the ideal solution.



## Funitel in stylish design and elegant materials

**Jasná is one of Slovakia's leading ski regions. The new Funitel brings a major improvement in the local transport infrastructure.**

**W**hile the tourist center lies in the Demänovská valley on the northern side, the extensive freeride trails are located to the south. The idea was to link these two areas by a connecting ropeway which should offer high availability even in high winds (The area around the summit of the Chopok

is well-known for its unpredictable weather). The decision-makers therefore chose the most wind-resistant ropeway there is: the Funitel.

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### ***New landmark***

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They also intended to make this top-of-the-





*Unique technical feature: The twisted curve tower structure on the Krupová surface lift*

and was no longer needed. It has now become the 1-SL Krupová II in the valley section on the southern side of the ski region where additional feeder capacity was required.

#### **Surface lift with twisted curve station**

The prime challenge when relocating the surface lift was the fact that a straight towing track was not permitted by the authorities. This meant incorporating a twisted curve station midway along the lift line. The structure had to be particularly compact in design due to space limitations; this was achieved with a novel cantilevered tubular tower construction incorporating three deflection bullwheels.

*Jasná has claimed its place among Europe's premium ski resorts in record time. Modern lifts from Doppelmayr have contributed to that trajectory.*

range installation a defining symbol for Jasná and therefore attached great importance to optimal ride comfort and a stylish appearance. The stations and cabins are in elegant black throughout; only the very best materials could be considered for the station exteriors.

Furthermore, this Funitel incorporates an impressive number of technical developments such as fully galvanized steel-

work for the stations, an innovative drive configuration and a new cabin design with enhanced seating concept. Another first is the travel speed of 7m/s with an exceptionally smooth glide into the stations.

Once the Funitel was completed, a platter lift built in 2006 was relocated. It had been installed temporarily to provide access to the northern side of the Chopok

#### **24-FUN Priehyba-Chopok**

Transport capacity	2,480 PPH
Trip time	6.4 min
Speed	7.0 m/s
Interval	35 s
Inclined length	2,130 m
Top station altitude	2,000 m
Vertical rise	655 m
Towers	10
Drive	Bottom
Tensioning	Bottom



## Wind-stable 15-passenger gondola lift to the Chopok

**The 15-MGD Kosodrevina-Chopok takes passengers to the summit of the 2,000 m Chopok from the southern side and simultaneously provides the return link to the new Funitel.**



A key requirement for this installation was high wind stability. After carrying out meticulous calculations, the customer decided in favor of a 15-passenger gondola lift which offers high resistance to strong winds thanks to its high self-weight and double grip.

In place of the tapered cabin designs normally used on this type of ropeway system, an elegant new cabin model was chosen: the Omega-IV-15-SI from CWA. In Jasná's case, the cabins are designed to carry 10 seated and 5 standing passengers.

### 15-MGD Kosodrevina-Chopok

Transport capacity	2,800 PPH
Trip time	5.4 min
Speed	6.0 m/s
Cabins	34
Interval	19.3 s
Inclined length	1,433 m
Top station altitude	2,009 m
Vertical rise	516 m
Towers	13
Drive	Top
Tensioning	Bottom





Even greater comfort for the 6-CLD  
Štart in Tatranská Lomnica



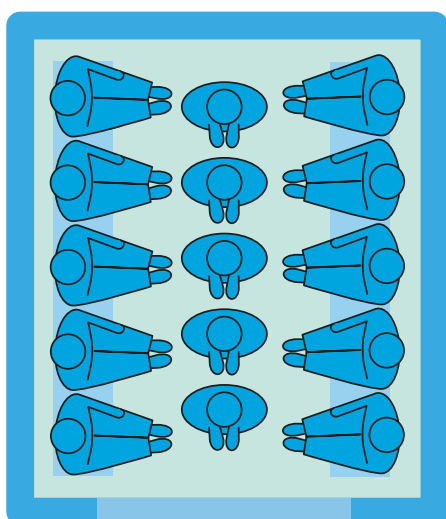
Ing. Bohuš Hlavatý, chairman of Tatry Mountain Resorts, a.s. (TMR): "With its modern lifts and 45 km of ski trails, Jasná ranks among Europe's premium ski resorts. We are rapidly expanding our offering – both for winter and summer tourism. We run three mountain resorts in the High Tatras – Tatranská Lomnica, Starý Smokovec and Štrbské Pleso – as well as Tatralandia, which is the biggest aqua park in central Europe. The facilities we offer at our resorts include a total of 2,000 beds, several restaurants, stores, ski shops and ski schools. We employ 1,300 people and generate annual revenues of EUR 45 million. That makes us one of the biggest enterprises in the region. When we started up our mountain resorts in 2004, the transport infrastructure was outmoded, pretty poor in terms of capacity and often closed due to bad weather." Since then, there have been fundamental changes. With Doppelmayr/Garaventa, TMR has built high-capacity surface, chair- and gondola lifts as well as the Funitel and the funicular in Starý Smokovec.

#### Other capacity and comfort upgrades in Jasná ...

The 4-CLF Biela Púť – which also belongs to the Jasná ski resort – has been retrofitted for downhill transport.

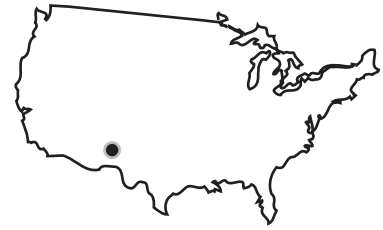
#### ... and Tatranská Lomnica

In the Tatranská Lomnica ski region, which is operated by the same customer, Tatry Mountain Resorts, a.s. (TMR), the 6-CLD Štart has been fitted with heated bubbles throughout. Up to now, open chairs with ballast weights had been used in the case of strong wind. It was subsequently found that bubble chairs offer sufficient wind stability.



Layout of the 15-passenger cabin  
in Jasná: ten seats and room for  
five standing passengers. Other  
cabin layouts are also possible.

## Skiing with the Apaches



**The 2012/13 season saw the start-up of three Doppelmayr lifts in New Mexico's Ski Apache resort in the Rocky Mountains.**

**T**he resort is owned and operated by the Mescalero Apache Tribe. The Mescalero Apaches bought it from oil tycoon Robert O. Anderson just two years after it opened in 1961. The resort was then known as Sierra Blanca ("white mountains" – which rise up well over three and a half thousand meters).

### *Well-known name*

Since the mid 1980s, Ski Apache has been the brand name for the most southerly ski resort in the US, which boasts agreeable temperatures and plentiful snowfall; in addition, a third of the trails (300 ha) are equipped with snowmak-

ing facilities. There are 55 downhill runs and eleven lifts – including the only gondola in New Mexico.

### *Rapid assistance from Doppelmayr*

The new gondola lift replaces an old installation built in 1962. As well as doubling transport capacity, the new installation acts as an important feeder system in the summer, offering ease of access to the cabins for mobility-impaired passengers. The other two lifts also replace old ropeways which had been severely damaged by wildfire.

Doppelmayr acted as general contractor and was able to get the new lifts



Photo: Brett Nichols



installed in just six months. That achievement was greatly valued by the customer as it meant they would not lose the forthcoming winter season. The remote location of the area led to additional challenges when it came to organizing the installation crews and the heavy construction equipment and materials required.

Well-known as an all-year tourist resort and not far from the Lincoln National Park, the region boasts an outstanding infrastructure. As well as having a regional airport, it can be reached from big cities such as El Paso, Santa Fé or Amarillo in two to four hours by car. Inn of the Mountain Gods has 273 luxury rooms and suites, 4 restaurants and a casino.



*Frederick Chino Sr., President of the Mescalero Apache Tribe: "Doppelmayr was the only lift company able to meet our*

*tight deadlines with this lift project and their pricing was very competitive. The collaboration between Doppelmayr and the resort staff was a vital success factor. Doppelmayr also showed great attention to detail and genuine concern for ensuring that all our requirements were met."*



#### 8-MGD Apache Arrow Gondola

Transport capacity	2,000 PPH
Trip time	8.9 min
Speed	5.0 m/s
Cabins	74
Interval	14.4 s
Inclined length	2,429 m
Top station altitude	3,478 m
Vertical rise	504 m
Towers	22
Drive	Top
Tensioning	Bottom

#### 3-CLF Lincoln Lift

Transport capacity	1,800 PPH
Trip time	10.2 min
Speed	2.5 m/s
Chairs	204
Interval	6.0 s
Inclined length	1,546 m
Vertical rise	394 m
Top station altitude	3,368 m
Towers	20
Drive	Bottom
Tensioning	Bottom

#### 4-CLF Capitan Lift

Transport capacity	2,000 PPH
Trip time	3.5 min
Speed	2.0 m/s
Chairs	61
Interval	7.2 s
Inclined length	433 m
Vertical rise	144 m
Top station altitude	3,119 m
Towers	7
Drive	Bottom
Tensioning	Top

*The three new lifts – the only gondola lift in New Mexico plus a triple and a quad chairlift – ensure that the resort has the highest transport capacity in New Mexico. These installations went into service at the start of the ski season 2012/13 on Thanksgiving Day (November 22, 2012).*

# Blatten aerial tramway is now faster and more comfortable



**Garaventa has modernized the twin-track reversible aerial tramway between Blatten and Belalp in the Swiss canton of Valais.**

The customer's wish to use the existing track ropes while simultaneously creating greater passenger comfort but without reducing transport capacity posed quite a tricky challenge. As the new cabins are heavier than their predecessors, there was only one solution: reduce the payload. For this reason, each cabin now carries 70 rather than the previous 80 passengers.

## Increased number of trips

Consequently, the number of trips has been increased by reducing loading and unloading times. This was made possible by installing the latest generation of hydraulic swing doors on the platforms.

Additional time is also saved by avoiding unnecessary stops at the inter-



Stefan Jossen,  
CEO of Belalp  
Bahnen AG:  
"Our aerial  
tram is packed  
with technical  
innovations."

mediate station in the holiday village of Tschuggen. The cabin operates according to a fixed timetable and only stops here if a passenger wants to board or disembark. The cabin driver is informed by means of CCTV.

## Level access when required in the intermediate station

Roller containers are used to handle freight. To enable these containers to be pushed in and out of the cabins without any problem, cabin floor and platform have to be level. This made it necessary to provide a special technical solution in the intermediate station. In view of the fact that this station is not located at a rope saddle immediately next to a tower, the floor level of the cabin changes, depending on the amount of rope sag caused by the weight of the cabin. To ensure level access between cabin floor and platform, an optical sensor guides the cabin to a position where that is the case.

### 70-ATW Blatten-Belalp

Transport capacity	740 PPH
Trip time	4.7 min
Speed	8.5 m/s
Inclined length	1,767 m
Upper terminal platform	2,106 m
Vertical rise	763 m
Towers	2
Drive	Bottom
Haul rope counterweight	Top
Track rope counterweight	Bottom



Belalp is a car-free zone so guests and cargo have to arrive by tram. And in the winter, the road to Tschuggen becomes impassable.





## Vietnam: Gondola lift operates 22 hours a day

Since the beginning of the year, a Doppelmayr gondola lift has been taking visitors up to the extinct Ba Den volcano, one of Vietnam's most famous historic sites.

Nui Ba Den is a solitary mountain that rises up majestically to a height of 1,000m from the otherwise flat Mekong Delta. Buddhist temples and shrines can be found midway up the mountain. They venerate the heroic Ly Thi Thien Huong, the "black lady", who centuries ago was forced to marry the unpopular son of a rich mandarin and consequently committed suicide by jumping off a mountain edge – hence the name Ba Den or Black Virgin Mountain.

**Up to 130,000 visitors on a daily basis**

Every year, the mountain is visited by over a million pilgrims and tourists. The journey starts with a 15-minute bus ride from the town of Tay Ninh; the next step is to stand in line "patiently". Particular



Director Kien, Tay Ninh Cable Car Tour Comp.: "The specialists from Doppelmayr were very efficient. They worked hard and

with a great sense of responsibility. It was due to their immense dedication that the lift was able to go into service for the Tet Quy Ty celebrations (February 9, 2013). We remain totally convinced that we found the best supplier in Doppelmayr.

patience is called for during the Vietnamese New Year celebrations, known as the Tet Festival, when streams of up to 130,000 people per day travel to the theme park on the mountain. Fast passes are dispensed to visitors in order to cope with the huge crowds. The gondola lift operates 22 hours a day at such times!

The topography of the region made construction particularly difficult. The mountain has dense forests and is covered in loose basalt boulders of all sizes which first had to be cleared before the line structures and material ropeway could be installed. The towers were assembled using the material ropeway and installation struts.

### 8-MGD Tay Ninh

Transport capacity	2,400 PPH
Trip time	4.5 min
Speed	5.0 m/s
Cabins	46
Interval	12 s
Inclined length	1,106 m
Top station altitude	265 m
Vertical rise	214 m
Towers	7
Drive	Bottom
Tensioning	Bottom



The lift was completed within a very short time frame. There were just 12 months between signing the contract and handing over the lift; the installation on site took two months.

# Another urban ropeway opens in Caracas



**The "Tramo Expreso" is the latest 8-passenger gondola lift in Caracas. It was opened in December 2012 and links the densely populated district of Mariche with the subway in Palo Verde. The lift's immediate catchment area has a population of 93,000.**

**T**he lift was installed with minimal intervention in the existing building infrastructure; the construction of a road, on the other hand, would have meant demolishing any buildings in its path.

## *Fast, comfortable and safe*

The efficiency of the public transport network has received a great boost from the new lift. The narrow, winding streets are always congested with traffic. At peak times, vehicles can only travel along the main road, Petare-Santa Lucia, at walking pace, averaging a speed of 6 km/h. The buses are overcrowded. Thanks to the new gondola lift, the time it takes the Marichitos to get to work in the wider area has been cut by up to two hours. Palo Verde is the terminal for the subway line 1 which goes to the hub at Plaza Venezuela in the city center.

## *Big plans for the city*

In the long term, the city council is planning to build new apartment blocks and wants to achieve a better social mix

among the residents.

In 2009, Doppelmayr completed a two-kilometer-long 8-passenger gondola lift in the district of San Agustín.

## *One ticket for gondola, bus and subway*

The ropeways are operated by the urban transport organization C.A. Metro de Caracas, which is also responsible for the city's buses and subways.

## **8-MGD Mariche Tramo Expreso**

Transport capacity	2,000 PPHPD
Trip time	17.3 min
Speed	5.0 m/s
Cabins	144
Interval	14.4 s
Inclined length	4,813 m
Vertical rise	222 m
Towers	32
Drive	Palo Verde
Tensioning	Mariche



Eventually, there will be two gondola lifts linking Mariche with the subway station Palo Verde: The first, faster line (red dotted line) has already opened for passenger service. The trip takes 15 minutes. The second, which will be known as the *Línea Local*, is scheduled for 2014. This will lead over the hills of the La Dolorita and Guaicoco districts and incorporate several stations; the trip time will be 25 minutes.



The 8-MGD from Mariche - Palo Verde is the second Doppelmayr gondola lift in the Venezuelan capital Caracas. It is 4.8 kilometers in length, has two stations and offers passengers fast and safe travel to and from the subway. Tickets issued by the metropolitan bus and subway network are valid for the gondola lift.







## Early completion thanks to rapid action



**On the Großer Kornberg in the northeast of Bavaria, a 40-year-old T-bar lift has been replaced by a modern version – and in record time.**

The Fichtel Mountains are a highland range with a long tradition of downhill skiing. One of the highest peaks is the 827 m Großer Kornberg.

At the height of the summer in 2012, the control unit and the rope of the surface lift on this mountain were struck by lightning. The bottom station was completely burned down. The decision to build a new lift was not finalized until October 2, 2012.

The bids were opened on October 16. Doppelmayr was subsequently appointed as general contractor for the lift including top and bottom stations. The building construction department of Hof district authority was responsible for the cash desk and entrance control system, the service building and other infrastructure.



Walter Schmidt, director of Hof district authority's building construction department: "Our collaboration with Doppelmayr was extremely efficient."

An all-wheel drive truck with special crane was used for the installation work on the towers, drive and return stations (A helicopter would have been too costly because none was available within the immediate area.). The narrow streets in Spielberg made access for heavy trucks particularly difficult. Despite all these challenges, the surface lift was completed before Christmas – three weeks ahead of the envisioned schedule.

### 2-SL Großer Kornberg

Transport capacity	1,000 PPH
Trip time	3.8 min
Speed	2.5 m/s
Towing units	69
Interval	7.3 s
Inclined length	622 m
Top station altitude	824 m
Vertical rise	110 m
Towers	6
Drive	Bottom
Tensioning	Bottom

The main factor in the decision to build a new surface lift on the Kornberg was to provide schools and ski courses with a local winter sports facility. At the same time, the aim was to promote tourism and the local businesses that depend on it. Most of the day trippers come from neighboring towns such as Hof, Rehau, Selb and the local communities.





## Youth hotel with own surface lift



**The Mitterlengau young people's hotel – a short bus ride from the Saalbach-Hinterglemm ski circuit – boasts a special attraction: its very own surface lift. It has a bullwheel exit point, which was the ideal solution for the limited space available at the top station.**

**T**he bullwheel exit point technology has been used for the first time in the Austrian province of Salzburg<sup>1</sup>.

### Special technology for exit point

With this solution, there is no T-bar retraction section between the last tower and the return station and instead special safety features are incorporated in case a skier fails to exit the lift in time. Monitoring of the loading and unloading areas is performed by an operator in the bottom station. A video and audio system is installed at the exit point.

Tourism in the valley area around Lengau developed from a farming tradition. "In order to secure income, farmers began building big houses to provide accommodation decades ago and re-

galed guests their own farm produce," explains Johann-Alois Breittfuß, owner of the surface lift and the youth hotel.

The hotel lies at the end of the Glemm valley in the well-known Saalbach-Hinterglemm ski resort, in a sunny location 50 m up from the valley base. The surface lift serves the practice slope and from there acts as a convenient means of reaching the hotel.

### 1-SL Lengau

Transport capacity	650 PPH
Trip time	1.3 min
Speed	1.5 m/s
Towing units	32
Interval	5.6 s
Inclined length	130 m
Top station altitude	1,170 m
Vertical rise	26 m
Towers	1
Drive	Bottom
Tensioning	Bottom

<sup>1</sup> A bullwheel exit point is usually chosen to avoid major interventions in the terrain (such as slope reinforcement or hillside excavation), or in the case of top stations which are severely exposed to winds.



Owner and  
managing

director Johann-Alois Breittfuß – here with son Dominik – is full of praise for Doppelmayr: "We were very impressed with the way the project was handled as it saved us from unnecessary costs!"

*Special feature bullwheel exit point: The towing cable must retract exactly at the unload point. That calls for precision!*



## Express chairlift in Argentina

**Argentina's famous ski resort Las Leñas has put an express quad chairlift from Doppelmayr into service. This is the first new lift in a South American ski area for many years.**

Las Leñas lies 1,100km west of Buenos Aires in the cordillera near the Chilean border. To get to the ski resort from Buenos Aires, it normally takes an hour's flight to either the city of Mendoza or San Rafael. The roughly four hours from Mendoza or two and a half from San Rafael are then completed by taxi or shuttle bus.

In terms of the quality of its infrastructure, this ski region can stand up to any comparison with European and North American counterparts. Las Leñas has 14 chairlifts. The ski season begins in mid-June and runs to mid-September.

The ski region was opened in 1983. It ranges in altitude between 2,240m and 3,430m, and offers three dozen trails with a total length of 27 km. The longest continuous downhill run is 7 km.

### 4-CLF Minerva

Transport capacity	2,098 PPH
Trip time	7.9 min
Speed	2.6 m/s
Chairs	140
Interval	6.9 s
Inclined length	1,233 m
Top station altitude	2,593 m
Vertical rise	298 m
Towers	15
Drive	Bottom
Tensioning	Top

*Doppelmayr was responsible for the ropeway technology on the Minerva lift while the customer took care of the construction work.*





## Doppelmayr after-sales: Professional service worldwide

**Whenever assistance is needed for inspection and maintenance work or to resolve a technical problem, help is always at hand from Doppelmayr's after-sales team.**

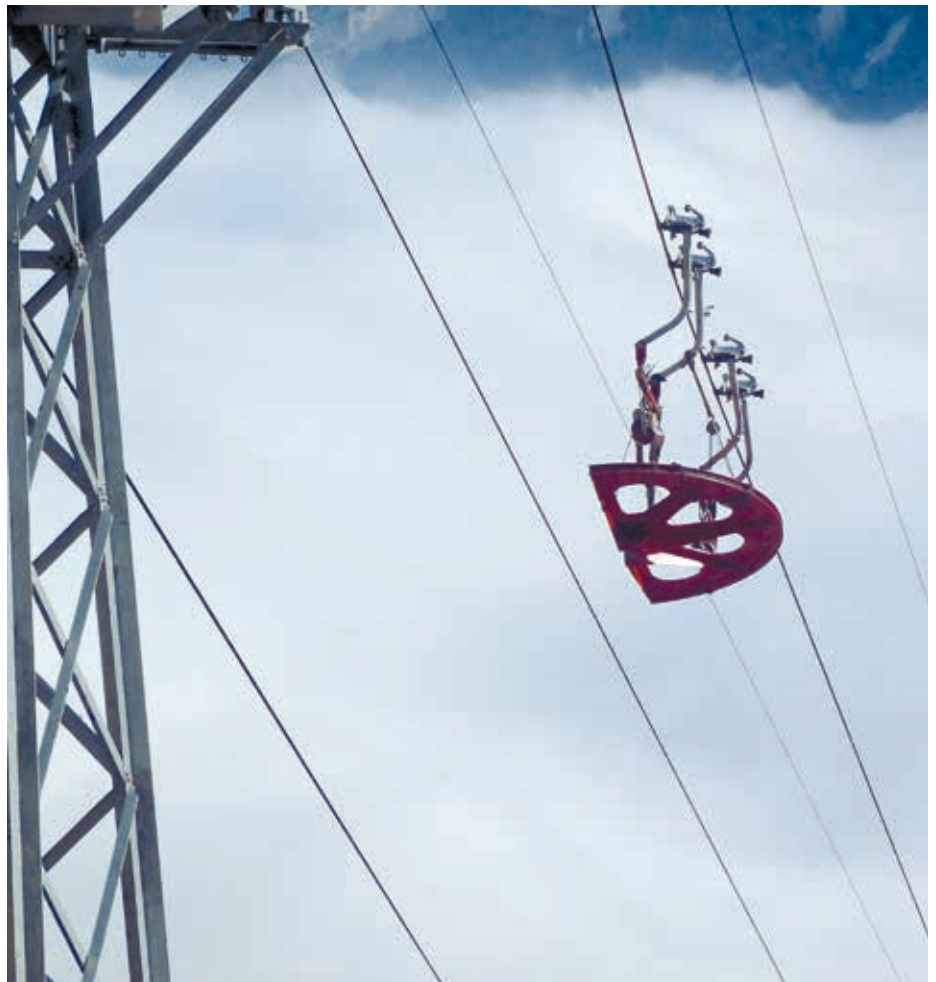
"We always strive to provide support for Doppelmayr ropeways as quickly and as cost-effectively as possible, and to respond to technical inquiries with professionalism and expertise." For department head Peter Thurner, the after-sales team has completely internalized the Doppelmayr/Garaventa corporate philosophy. And when you want to be good, you can't stop aiming to be even better. "We're in the process of expanding the customer service capability of our locations around the globe. We attach great importance to our employees being well trained – even those in the most remote parts of the world – and to ensure that critical and frequently used spare parts and tools are available locally wherever that makes sense." After-sales staff are all-rounders. They have to be

hands on in all areas, whether it's mechanics, electrics or hydraulics, and they must know where to quickly obtain a solution to a problem when necessary. "Nowadays, nobody can run the risk of having their lifts out of service for long. High availability of the equipment is the be-all and end-all of the ropeway business. That's why we take care of our customers' installations throughout the entire lifetime of the equipment. And we can be reached by our customers 24/7!"



*Peter Thurner,  
Doppelmayr  
after-sales:  
We stand for fast,  
professional  
support.*

*Bullwheel replacement on the  
6-MGD Hua Shan in Shanxi, China.  
Good service avoids downtime and  
extends the life of the ropeway.*



### Ferris wheel for Mexico with CWA cabins

In Munich, a Ferris wheel ultimately destined for Mexico has been erected for testing by TÜV. The 54 air-conditioned gondolas are from CWA.



### World Cup in Schladming: The world's best visit Doppelmayr

Doppelmayr customers had the opportunity to meet up in the relaxed atmosphere of the Doppelmayr lounge at the Tirol-berg communications center.



### Doppelmayr presentation at Interalp

For Doppelmayr, the most important industry event worldwide – Interalp in Innsbruck – is the ideal occasion for showcasing many new developments alongside the classic exhibits such as lift gondolas and chairs.

The show "Doppelmayr up close" highlights the great care and attention to detail that defines the way Doppelmayr works. Customers will be able to see welding being performed live and inspect the quality of Doppelmayr products for themselves (e.g. with magnetic particle testing for flaws).



### Ski fun with Skippy



**Hi kids!** It's me again, Skippy! Today, we're on Golm in Montafon, Austria. This ski area just got the first solar-powered chairlift in the world. The solar panels are built into the stations and specially curved to make them fit. They make a whole third of the electricity needed.

