



# SS6

### S6 – THE SNOW MAKING SYSTEM FOR INDOOR SKI CENTERS

The production of snow for indoor use calls for a special approach. A decisive factor for indoor snow-making is the enduring snow quality under the given conditions: Snow production at a higher room temperature than outdoors and with limited fresh air circulation.

Snow of excellent quality – coming very close to natural snow in its consistency – can also be produced for indoor ski centers with the snow making system S6 developed by TechnoAlpin.

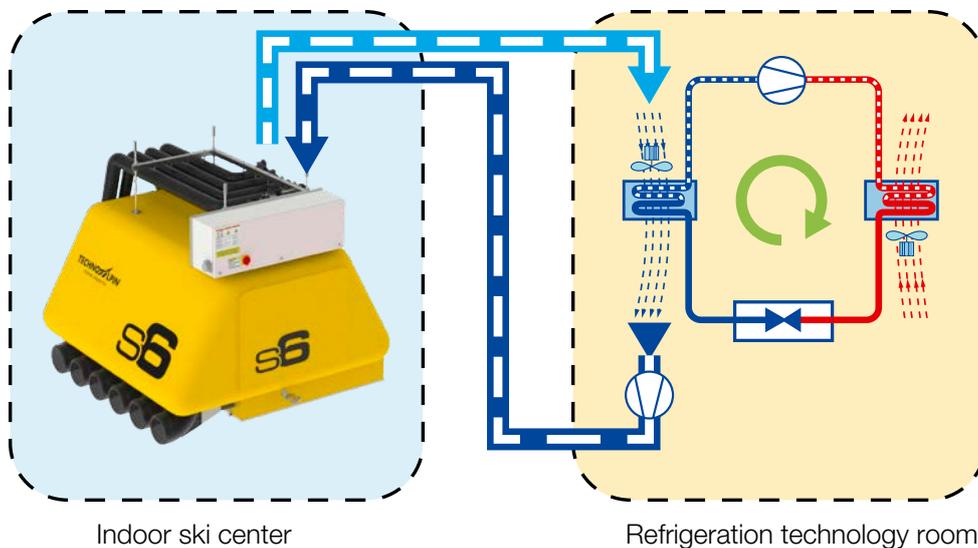
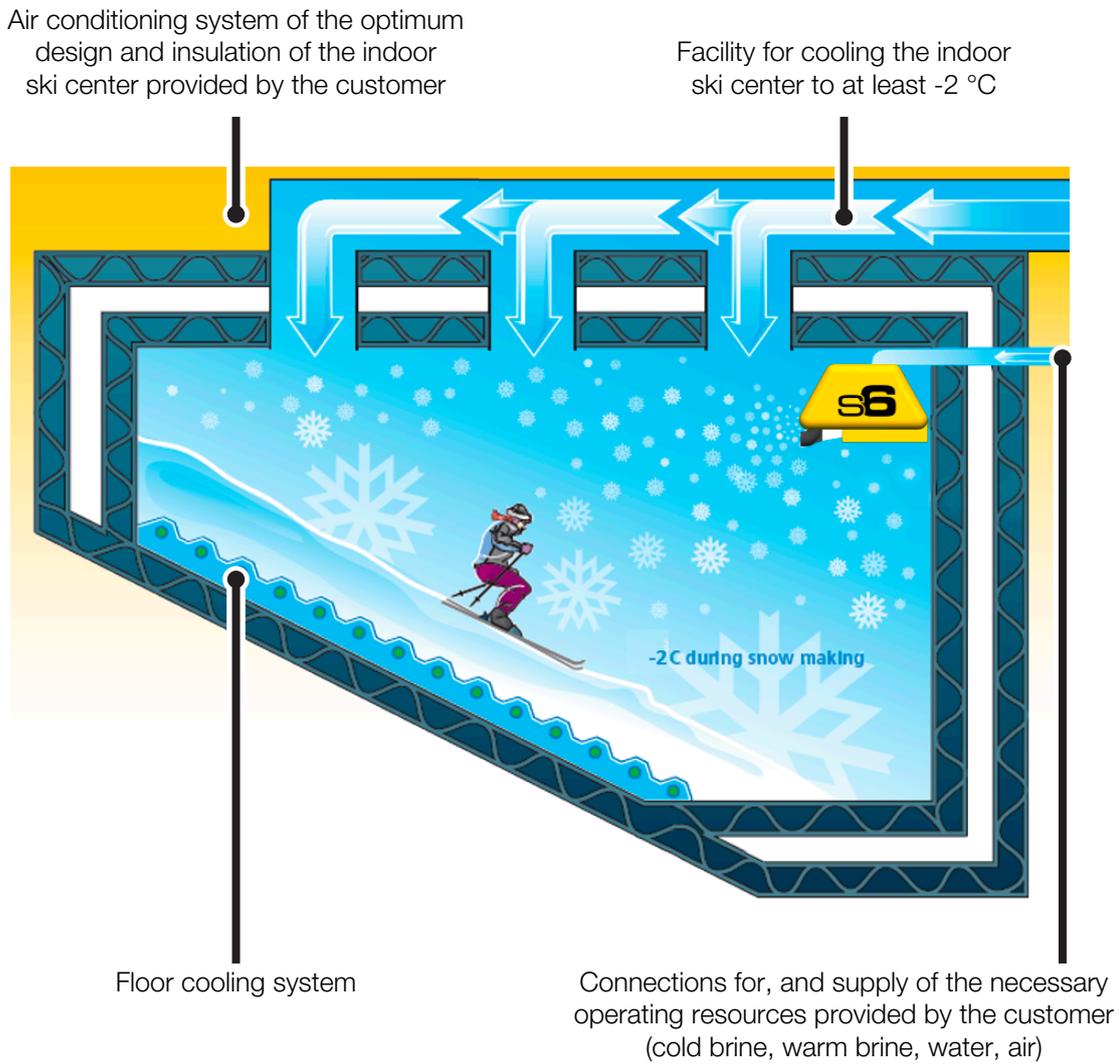
Snow can be guaranteed for indoor ski centers of different sizes by calculating the exact number of snow making systems required and planning their positioning on the ceiling.

Example calculation parameters:

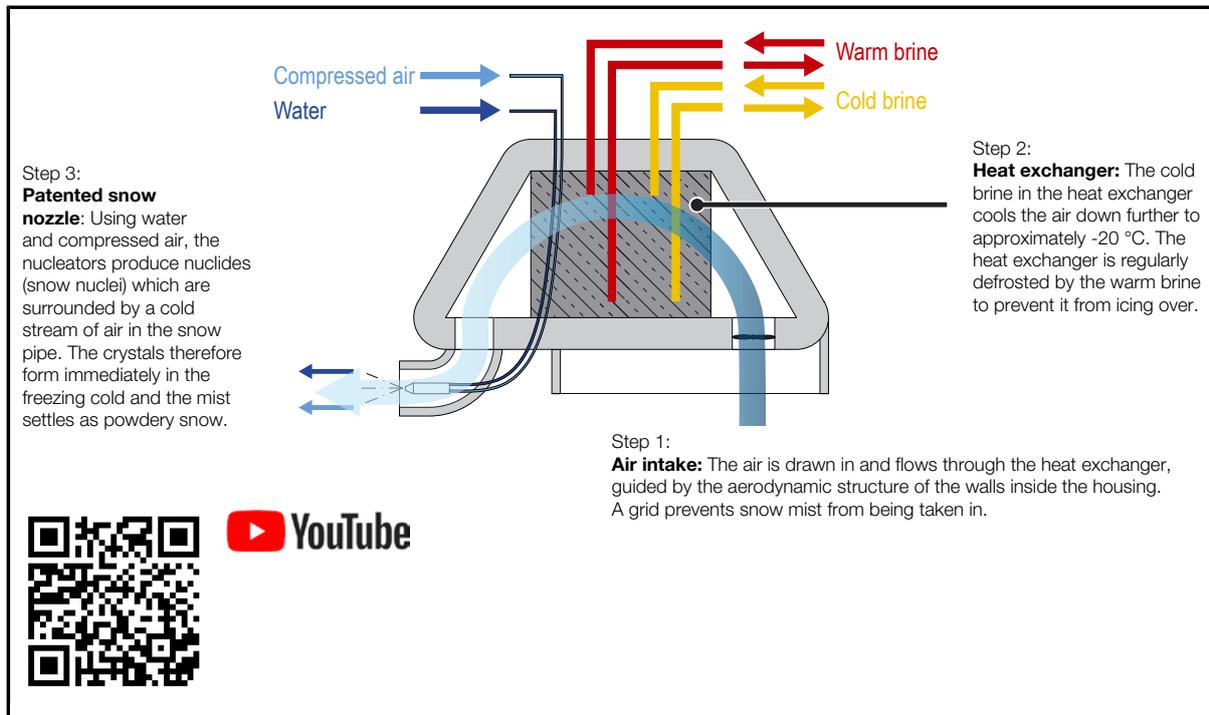
- ▶ Area to be covered with snow: 5000 m<sup>2</sup>
- ▶ Snow depth: min. 40 cm
- ▶ Initial snowmaking time: 30 days
- ▶ Number of S6 required: 12



### Basic conditions for the integration of an S6 unit in an indoor ski center



### Advantages of the patented solution for indoor snowmaking technology



The S6 technology works independently and ensures constant snow quality:

- ▶ Long-lasting snow of a powdery consistency due to the innovative system whereby the snow forms immediately in the cold airflow.
- ▶ The S6 does not have any negative influence on the indoor conditions and there is no adverse effect on the skiing experience as encountered with the increased humidity generated by conventional snow producers. The conditions inside are still comfortable and visibility remains good.
- ▶ There is no need to replace all the snow because it is dirty or of poor quality and therefore there is no need to close the indoor ski center. The center can remain open 365 days a year.
- ▶ Sustainable use of water resources: no need for complete replacement of the snow. Only the top layer of snow is renewed daily. An efficient control system together with its visualization program SnowControl enables the adjustment of the quantity and quality of snow.

In contrast to conventional snowmaking systems, the S6 boasts the following advantages:

- ▶ Productive capability regardless of the positioning of the air conditioning units: Rival products need to be positioned directly above the air conditioning units in order to achieve the rapid freezing of the snow crystals.
- ▶ Minimum ceiling height of the indoor ski center is 4 m (competing products require a height of 8 m).
- ▶ No need for extreme sub-zero temperatures in the indoor ski center (only -2 °C).
- ▶ Optimum snow production regardless of the temperature outside the building (snow production possible all year round).
- ▶ No dehumidifier systems required.



### SnowControl – Central control of the snowmaking system



#### SNOWCONTROL

The SnowControl software allows the operator to control the machines centrally and to monitor their operating status. As soon as a machine is activated and has reached the relevant levels, it begins to snow. A communication interface informs the operator about the status of the necessary operating supplies.

A time control program makes it possible to define a time setting for machine groups.

The adjustable parameters in the software enable three different snow qualities which can be selected depending on the application.



General view of the ski center



Snow producer control

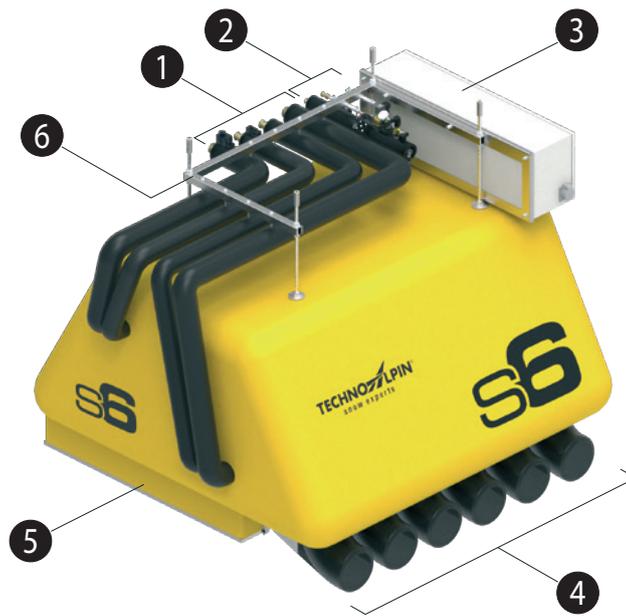


General view of resources

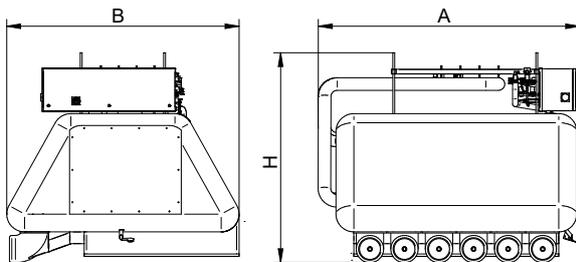


Planning of snowmaking

# INDOOR SNOW SNOWMAKING SYSTEM



Pos.	Description
1	Water and air supply connections
2	Cold and warm brine connections
3	Electric switchboard with electric and data interfaces
4	Snow nozzles
5	Snow separator
6	Machine mountings



TECHNICAL DATA				S6
<b>Dimensional data</b>				
Length [max.]	A	mm	2205	
Width [max.]	B	mm	1980	
Total height	H	mm	1775	
<b>Weights</b>				
Weight loadless		kg	650	
Total weight – in operation		kg	800	
<b>Various</b>				
Snow volume	max.	m <sup>3</sup> /d	30	
<b>Cooling 50%-ethylene glycol</b>				
Feed 1 1/2"		°C	-27	
Return 1 1/2"		°C	-19 ÷ -23	
Flow rate		l/sec.	1,67	
Pressure		bar	1 ÷ 6	
<b>Defrosting 50%-ethylene glycol</b>				
Feed 1"		°C	40	
Return 1"		°C	10 ÷ 22	
Flow rate		l/sec.	1,11	
Pressure		bar	1 ÷ 6	
<b>Water</b>				
Water quality	2)		Drinking water	
Operating water pressure	min.	bar	6	
Operating water pressure	max.	bar	10	
Water temperature [max.]		°C	2 ÷ 5	
Water flow Production of snow [max.]	2)	l/h	450	
Water flow Dimensioning of the plant [max.]		l/h	500	
<b>Compressed air *</b>				
Operating air pressure	min.	bar	6	
Operating air pressure	max.	bar	10	
Air throughput		m <sup>3</sup> /h	54	
Temperature		°C	≤ 10	
* Air quality according to ISO 8573-1:2010 (particle class 1, water class 2, oil class 1)				
<b>Electrical characteristics</b>				
Operating voltage	VAC		230	
Nominal frequency	Hz		50	
Power consumption [max.]		kW	3	
<b>Data management system</b>				
Central computer system control				
<b>Installation</b>				
Indoor temperature		°C	≤ -2	
Installation height [min.]	3)	m	6	
Storage temperature		°C	10 ÷ 35	

- 1) The achievable quality is dependent on the location and height of the machine as well as the adjustable snow quality.
- 2) **Drinking water quality**: Drinking water quality conforming to EU Drinking Water Directive 98/83/EC 1998 is recommended. See: Chapter 7.4 Hydraulic connections in the manual IGMLO6DE. **Filter specifications** can be found in the enclosed "Design Manual".
- 3) Installation height = Distance between snow pipe and floor

**NB:** Subject to technical modifications

Data are subject to change depending on the type of plant and/or the country of installation (please always refer to the wiring diagrams).



YEAR OF OPENING			
Country	Customer	Units	Snow-covered surface (m <sup>2</sup> )
<b>2009</b>			
China	Ski Dome Shaoxing	13	20,000
<b>2010</b>			
Germany	Nordic Skiing Tunnel Zweckverband Thüringer Wintersportzentrum Oberhof	4	1,100
<b>2011</b>			
Lithuania	Snow Arena Druskininkai	15	29,000
<b>2016</b>			
China	Sushi Changsha	1	2,700
Egypt	Ski Egypt	15	7,700
<b>2017</b>			
China	Wuhan New World	3	10,000
<b>2018</b>			
Sweden	Arctic Falls	2	1,000
Qatar	Doha Festival City	7	50,000
<b>2019</b>			
China	Guangzhou Wanda Mall	25	54,000
China	Wuxi Wanda Mall	5	10,000
China	Kunming Wanda Mall	11	22,000
China	Chengdu Wanda Mall	25	54,000
United Arab Emirates	Doha Vendome	7	7,200
United Arab Emirates	Reem Abu Dhabi-Oman	12	7,200



