

Building project: SNOW DOME, Bispingen

# ELCO turns on the heat in Europe's largest indoor ski slope

The SNOW DOME in Bispingen, on the A7 motorway near Hamburg, is regarded as the most modern indoor ski slope in Germany. A track 300 m long, equipped with a 6er lift gives young and old the opportunity to use skis and snowboards all year round, in any weather.

In the spring of 2006, the planning office of Wenzel in Lüneburg requested tenders for the planned heating system. After several presentations, ELCO received the order. The recommended two gas condensing boilers, which work primarily for the ventilation, appealed to the technical partners on several counts: compact construction, low weight, low water content and a wide range of modulation for demand-oriented, energy-saving warmth. The Longlife service contract for guaranteed reliability and fixed maintenance costs rounded off the solution package perfectly.

**Customer**  
 SNOW DOME  
 Sölden Bispingen GmbH  
 Horstfeldweg 9  
 D-29646 Bispingen

**Technical partner**  
 Ingenieurbüro Wenzel  
 Industriegebiet  
 Volksdorf Süd-West  
 D-21397 Vasdorf



## BENEFITS

### Efficiency

- Low operating costs
- Latest energy-saving technology
- Compact

### Convenience

- Quiet
- Clean

### Reliability

- High operating reliability through cascade solution
- Calculable costs through Longlife maintenance contract
- Guaranteed service dispatch within 3 hours

## Building project: SNOW DOME, Bisingen

# Energy-saving heating performance coolly calculated

### The starting point

In the spring of 2006 the planning office of Wenzel requested tenders for all technical systems in the SNOW DOME. Construction of the indoor ski slope began in May 2006.

The required boiler system was to have a power of about 630 kWh overall. The tender was for a cascaded double boiler: one heating boiler for the base load, and a second one for peak loads.

### The new system

ELCO succeeded in winning over the responsible heating company with their competence in the area of condensing boilers. The types that were selected were the RENDAMAX 2906 with 387 kW and RENDAMAX 507 with 247 kW. The ELCO gas condensing boilers are characterised by very compact dimensions, low weight and the fact that they can be completely stripped down.

The extremely low noise and pollutant emissions - mean noise pressure level at 1 m distance from boiler < 52 db(A), NO<sub>x</sub> < 35 mg per kWh - make these boilers the most environmentally friendly of their kind. These values are achieved by the series installation of air-intake and exhaust-gas resonance mufflers combined with elastomer sound-insulation feet, and by the water-cooled pre-mix burner system.

Because of the wide range of modulation (control range of up to 1:5) and the very high standard efficiency factor of up to 110.8 %, these boilers enable ELCO to achieve a reduction in fuel costs of around 15 % compared with conventional heating systems. Thanks to the small dimensions and the wide, infinitely adjustable range of modulation, the boilers cause extremely slight stand-time losses.



#### Equipment

#### New system

<b>Boilers</b>	1 gas condensing boiler R 2906 and 1 condensing boiler R 507
<b>Rated power</b>	1 x 387 kW and 1 x 247 kW
<b>Total power</b>	634 kW
<b>Standard efficiency factor</b>	up to 110.8 %

# Longlife Service: Economy and reliability right from the start

## Service to match the system:

### Longlife 5 Plus with guaranteed technical availability

The Longlife service package ensures reliable operation of the overall system with exactly calculable costs.

#### • Cost transparency

The 5-year system contract allows exact calculation of the maintenance and repair costs on the basis of annual lump sums with constant costs. All original ELCO replacement and wear parts are included.

#### • Protection of investment

With system commissioning and the annual maintenance, the entire system is in perfect condition at all times.

#### • Reliability

Reliable operation of the gas condensing boilers is guaranteed for 5 years. In addition, ELCO offers repair of faults within 24 hours, 365 days a year, including nights.



## SNOW DOME Sölden Bispingen GmbH

### Dimensions of slope:

Length: 300 m; width at bottom: 100 m; gradient: 9 % to 20 %.

### Areas:

23,500 m<sup>2</sup> total area; approx. 3,100 m<sup>2</sup> ground area; approx. 600 m<sup>2</sup> seminar area; approx. 2,000 m<sup>2</sup> catering and hospitality area.

### Snow production:

At indoor temperatures between 2 and -4 °C, 13 high-performance indoor snow guns spray unique powdery snow every day.

### Ski-lifts:

Coupled 6er chair-lifts with 30 chairs; capacity: 3,000 Persons per hour; speed: 2.0 m/sec; 80 m long "magic carpet", capacity 1.3 m/sec.

### Visitors:

Per year: 480,000.



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# RENDAMAX 3600: Gas condensing boilers for highest efficiency

## The RENDAMAX 3600

### Double condensation for high energy utilisation

The RENDAMAX 3600 low-temperature gas condensing boilers offer convincing figures at an attractive price in the upper performance range of 639 to 1,043 kW. Thanks to double condensation through a smooth-pipe and a ribbed-pipe heat exchanger, the standard efficiency factor of the RENDAMAX 3600 is 109.8 %. All parts that come into contact with condensation are made of stainless steel, and are therefore extremely resistant to corrosion. There is no return temperature limit. A three-stage boiler-circuit pump is installed ex works.

- Compact system unit comprising boiler and burner.
- Modulation ratio 1:4.
- High standard efficiency factor (109.8 %).
- Extremely low emissions.
- Particularly quiet operation.
- Timer and weather-influenced controls for up to 14 mixer circuits.
- Integration in existing control systems and factory master control systems possible (DDC 2-10 V).
- Low weight.
- Built-in premix burner.



Technical Data			R 3601	R 3602	R 3603	R 3604	R 3605
Power, full load	at 80/60 °C	kW	639	747	846	945	1,043
Power, minimum load		kW	183	213	242	270	298
Standard efficiency factor	at 40/30 °C	%	109.8	109.8	109.8	109.8	109.8
Width overall		mm	1,330	1,130	1,130	1,330	1,330
Height overall		mm	1,405	1,405	1,405	1,405	1,405
Length overall, including connections		mm	2,265	2,653	2,653	2,653	2,658
Weight		kg	890	1,040	1,150	1,280	1,410

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