# Decentralised indoor climate systems

Efficient Flexible Reliable

At a Glance



# Hoval – heating and climate technology for industrial, commercial and leisure applications.

With over 70 years' experience, Hoval is one of the leading international companies for indoor climate systems. For our customers, we develop modern, decentralised heating, cooling and ventilation solutions for large halls for a diverse range of applications.

From workshops, production halls and logistics centres to aircraft hangars, shopping centres and swimming pools – our experts can design indoor climate systems tailored to your individual requirements.

And the best part: the flexibility of our systems means they can easily be adapted to meet your changing needs in the future, giving you excellent long-term results.

As a specialist in universal systems for heating, cooling and ventilation, we assist our customers at every stage of the system lifecycle at their facility – from planning and operation right through to modernisation. In doing so, we help our customers to benefit from energy-efficient solutions and first-class air quality both today and tomorrow.



# The perfect climate in every hall.

The perfect climate and pleasant, performance-enhancing conditions for both work and well-being in halls for industrial, commercial and leisure applications. The new generation of decentralised indoor climate systems from Hoval makes it all possible.

The modular ventilation, heating and cooling systems consist of units distributed within the hall space with demand-driven control. Installed in a select number of specific locations, these systems ensure optimum climate conditions throughout the entire hall, even where different requirements are involved. The supply and extract air handling units, supply air units and recirculation units are equipped with optimised air distribution and, if desired, their own heat and cold generation system.

# Decentralised indoor climate systems

#### Hoval indoor climate systems overcome any challenge

- Decentralised and modular
- Efficient and economical
- Clean and ecological
- Competent and reliable

#### A single system – the interplay of perfectly-matched products

- RoofVent® supply and extract air handling units for ventilating, heating and cooling high spaces with energy recovery
- **TopVent**® recirculation units, the cost-effective solution for heating and cooling high spaces
- TopVent® supply air units, the cost-effective solution for heating and cooling high spaces with recirculation or mixed air
- **TopVent® gas** gas-fired recirculation or supply air units for efficient heating with recirculation or mixed air
- ProcessVent compact units for ventilating, heating and cooling production halls with highly efficient energy recovery from process air

# Decentralised and modular.

We design our Hoval indoor climate systems as technically autonomous and energy-independent individual solutions.

Quick and easy to plan, our systems can be perfectly integrated into virtually any environment without the need for additional structural measures.

And if things change in the future, our solutions simply develop along with your plans. Whether converting or expanding, the modular structure of the Hoval systems allows you to adapt to new challenges with minimal expense and low investment costs.

Maximum practicality and perfectly matched – we tailor your indoor climate system to your exact specifications

- Efficient air distribution with the integrated Air-Injector reduced heat loss and no pressure drops in ducts
- Huge choice of units and specific designs for every application
- Complete, preassembled, ready-to-connect systems for hassle-free installation, quick start-up and easy maintenance
- Compatible, open-interface components for easy connectivity to external connections and perfect integration with the building management system





#### **Efficient** and economical.

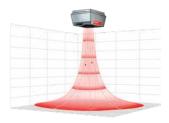
Hoval indoor climate systems are an easy and efficient solution. The patented Hoval Air-Injector air supply and distribution system helps reduce temperature stratification in the halls. The difference between the room temperature under the roof and the outside temperature remains small and only a minimal amount of energy is lost through the roof.

The Air-Injector's powerful, efficient air distribution allows the components to cover a large operating area, meaning that only a relatively low air flow rate is required. Not only does this save on investment costs, but also on drive energy and running costs too. Potential energy savings for specific applications can quickly and easily be calculated using the Hoval calculation tool.

The ready-to-connect, preinstalled units with integrated measurement, control and regulation components also ensure cost-effective, quick and smooth system planning, installation and start-up.

#### Efficient indoor climate systems are good for the environment - and your bank balance

- Ideal air supply and distribution for minimum energy loss and maximum comfort
- Connection of recirculation units optimised according to requirements
- "Air-Quality" operating mode for ventilation according to requirements
- Economical night cooling with temporarily adapted reduced air volume
- 24/7 cooling and overheating protection
- Energy recovery technology from specialist Hoval Enventus offering superior performance and even higher energy efficiency



**Heating operation:** The supply air is warmer and thus lighter than the interior air. The vertical inflow of air ensures that the heat reaches the areas where it is needed.



Cooling operation: The inflowing air is colder than the interior air and sinks. To avoid draughts, it is injected horizontally.





Compared to other systems, far lower air volumes are often sufficient to achieve the required and desired conditions.

# Clean and ecological.

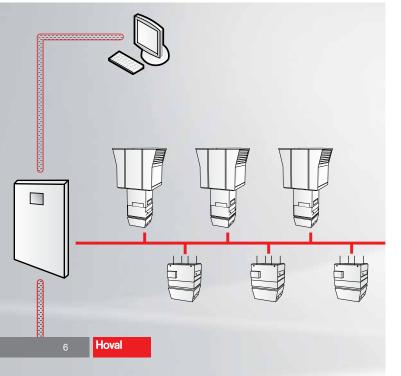
Hoval indoor climate systems create a comfortable climate and always ensure fresh air. The inflowing air is odourless.

By guiding the air streams separately in the plate heat exchanger, dirt and odours from the extract air are diverted directly outside.

The individual indoor climate system units are installed on the ceiling or in the roof, distributed throughout the interior. Supply and extract air ducts are not required and there are no contaminated, difficult-to-clean pipes. Duct-free ventilation is therefore able to ensure maximum hygiene and comfort.

#### Fresh air at all times – a plus for the environment and your health

- Renewable energy sources as raw materials for heating and cooling
- Highly efficient energy recovery
- Fully separate air streams in energy recovery
- Clean supply air at all times, as difficult-to-clean air ducts are not required



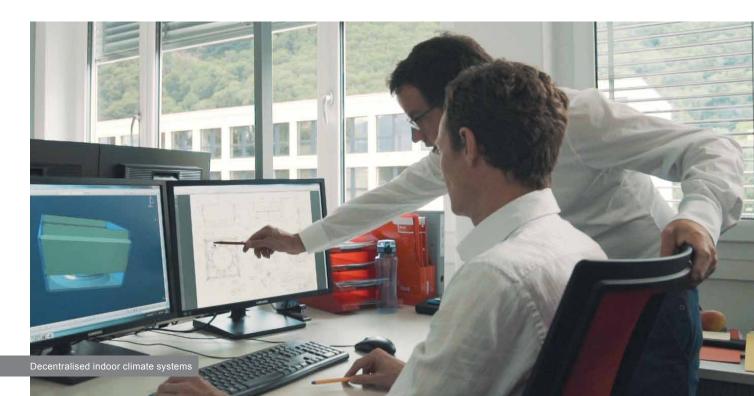
The zone-based control concept enables need-based ventilation, heating and cooling of differently used indoor areas.

# Competent and reliable.

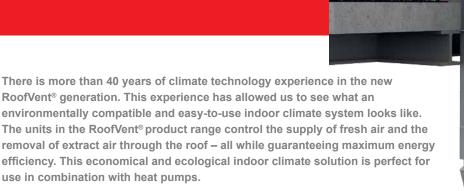
Right from the planning stage, our specialists get to grips with your system's unique requirements profile. Drawing on their expertise and years of experience, they bring together the best possible units and components from across the Hoval product ranges to create your tailor-made indoor climate system. Energy-efficient and cost-effective, easy to operate, environmentally friendly, easy to service and good for your staff.

#### You can rely on Hoval – over the entire lifecycle of our products

- Ready-to-connect systems with pre-defined hydraulic and electric connection points for hassle-free planning
- Compact and simple function units with easy, clearly defined operating modes for smooth integration in any building
- Patented control algorithms with our specialists' expertise for energy-efficient operation
- Safety guarantee with CE certification
- Reliable, durable operation and hassle-free maintenance during operating times due to units that can be deactivated individually
- Independent unit response to alarm messages with alarm notification via e-mail
- Local contact for guaranteed close cooperation and immediate assistance at all times
- One contact person for the entire system



RoofVent® supply and extract air handling units.
Heating, cooling and ventilation of high spaces with energy recovery.



#### RoofVent® supply and extract air handling units – it doesn't get more efficient than this

- Huge amount of flexibility and customised applications due to diverse product variants with optional equipment
- Heat recovery rate of up to 86% with the Hoval high-performance plate heat exchanger
- Suitable for combination with reversible heat pumps with a heating and cooling capacity of 30 kilowatts – can be expanded to 60 kilowatts
- Reduced investment costs, as an equipment room and water supply network are not required
- Easily extendable with additional units
- Connection point for the entire electrical system on the below-roof unit the electrical supply for the roof unit is integrated and tested at the factory
- Hoval HK-Select planning tool with all technical data for the quick and easy design of the RoofVent® units
- Efficient air distribution with the integrated Air-Injector reduced heat loss and no pressure drops in ducts

Technical data	
Air flow rate	m³/h
Heat output	kW
Cooling capacity (total)	kW
Operating distance	m x m
Weight	kg









#### Supply and extract air handling units with efficient air distribution

#### RoofVent® RP

Heating and cooling with decentralised heat pump

#### RoofVent® RH

Heating with central heat generation

#### RoofVent® RC

Heating and cooling with central heat and cold generation in the 2-pipe system

#### RoofVent® RHC

Heating and cooling with central heat and cold generation in the 4-pipe system

#### Ventilation

- Fresh air supply
- Extract air removal
- Filters fresh air and extract air
- Air distribution with Air-Injector
- Recirculation operation

#### Ventilation

- Fresh air supply
- Extract air removal
- Filters fresh air and extract air
- Air distribution with Air-Injector
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#### Ventilation

- Fresh air supply
- Extract air removal
- Filters fresh air and extract air
- Air distribution with Air-Injector
- Recirculation operation

#### Heating

- With heat pump
- Supplementary heater with electric heating coil (option)
- Supplementary heater with hot water (option)

#### Heating

With connection to boiler system

#### Heating

With connection to boiler system

#### Heating

With connection to boiler system

#### Cooling

With heat pump

#### Cooling

 With connection to water chiller

#### Cooling

 With connection to water chiller

#### **Energy recovery**

RP-6	RP-9
5500	8000
up to 39	up to 53
up to 30	up to 60
22 x 22	28 x 28
889	1151

#### **Energy recovery**

RH-9	RH-6
8000	5500
up to 121	up to 80
-	_
28 x 28	22 x 22
1053	809

#### **Energy recovery**

RC-6	RC-9
5500	8000
up to 80	up to 121
up to 52	up to 98
22 x 22	28 x 28
842	1101

#### **Energy recovery**

RHC-9	RHC-6
8000	5500
up to 121	up to 80
up to 98	up to 52
28 x 28	22 x 22
1174	879

**TopVent®** air recirculation units. The cost-effective solution for heating and cooling high spaces.

From high halls and spaces to high-bay warehouses and supermarkets, the extensive model range in the TopVent® recirculation unit series caters to even the most diverse requirements and individual comfort expectations. The combination of decentralised and central heat and cold generation and the decentralised ventilation unit guarantees maximum sustainability in both the medium and long term.

#### The future of indoor climate systems: cost-efficient, flexible and environmentally friendly

- Maximum flexibility for all types of halls and hall usages with its modular and scalable system building block design (heat generation, recirculation air heating and cooling and zone-based control)
- Cost-effective supplement to the RoofVent® supply and extract air handling systems
  if there is a temporary increase in demand for heat or cooling capacity
- Designed especially for use in supermarkets and hypermarkets, with discreet roof installation and easy maintenance access from the roof during operation
- Air duct-free systems for easy assembly and low energy consumption
- Different coil types and accessories for tailor-made solutions
- Air curtains of different sizes and designs to protect entrance areas against the cold
- Control of up to ten units with the EasyTronic EC controller

Technical data	
Air flow rate	m³/h
Heat output	kW
Cooling capacity (total)	kW
Operating distance	m x m
Weight	kg









#### Recirculation units with efficient air distribution

#### TopVent® TP

Heating and cooling with decentralised heat pump

#### TopVent® DHV

Heating with central heat generation

#### TopVent® NHV

Heating with central heat generation and single outlet nozzle

#### TopVent® DKV

Heating and cooling with central heat and cold generation in the 2-pipe system

#### Ventilation

- Recirculation operation
- Air distribution with Air-Injector
- Air filtration (option)

#### Ventilation

- Recirculation operation
- Air distribution with Air-Injector
- Air filtration (option)

#### Ventilation

- Recirculation operation
- Air distribution via outlet
- Air filtration (option)

#### Ventilation

- Recirculation operation
- Air distribution with Air-Injector
- Air filtration (option)

#### Heating

- With heat pump
- Supplementary heater with electric heating coil (option)
- Supplementary heater with hot water (option)

#### Heating

With connection to boiler system

#### Heating

With connection to boiler system

#### Heating

Cooling

chiller

With connection to boiler system

With connection to water

#### Cooling

With heat pump

DHV-9	DHV-6	TP-9	TP-6
9000	6000	9000	6000
up to 16	up to 89	up to 53	up to 39
-	_	up to 56	up to 28
30 x 30	23 x 23	28 x 28	22 x 22

281

NHV-6	NHV-9
6000	9000
up to 89	up to 164
_	-
23 x 23	30 x 30
103	157

157

103

DKV-6	DKV-9
6000	9000
up to 89	up to 164
up to 60	up to 118
23 x 23	30 x 30
202	289

237







#### Recirculation units with efficient air distribution

#### TopVent® DHKV

Heating and cooling with central heat and cold generation in the 4-pipe system

#### TopVent® CUM

Heating and cooling with central heat and cold generation

#### TopVent® HV

Heating with central heat generation

#### Ventilation

- Recirculation operation
- Air distribution with Air-Injector
- Air filtration (option)

#### Ventilation

- Recirculation operation
- Air distribution with Air-Injector
- Air filtration (option)

#### Ventilation

- Recirculation operation
- Air distribution via air outlet louvre

#### Heating

With connection to boiler system

#### Heating

 With connection to boiler system

#### Heating

 With connection to boiler system

#### Cooling

With connection to water chiller

#### Cooling

 With connection to water chiller

Technical data
Air flow rate
Heat output
Cooling capacity (total)
Operating distance
Weight

DHKV-9	DHKV-6
9000	6000
up to 164	up to 89
up to 118	up to 60
30 x 30	23 x 23
357	269

CUM-9/D	
9000	
up to 164	
up to 118	
30 x 30	
498	

HV-5	HV-3	HV-2
5300	3400	2000
up to 46	up to 27	up to 16
_	_	_
11 x 11	9 x 9	7 x 7
42	28	18







#### **Recirculation units**

#### TopVent® curtain

Air curtain for doors with central heat generation

#### TopVent® TW

Air curtain with central heat generation

#### TopVent® TV

Heating with central heat generation

#### Ventilation

- Recirculation operation
- Air distribution with outlet

#### Ventilation

- Recirculation operation
- Air distribution via outlet nozzle

#### Ventilation

- Recirculation operation
- Air distribution via air outlet louvre

#### Heating

With connection to boiler system

#### Heating

With connection to boiler system

#### Heating

With connection to boiler system

CUR-2	CUR-3	CUR-5
2000	3400	5300
up to 16	up to 27	up to 46
_	_	_
Door I	neight up to	6 m
22	36	53

TW-5	TW-3	TW-2
4400	3100	1850
up to 26	up to 18	up to 15
_	_	_
3.7 m	eight up to	Door h
24.4	23	16.2

TV-4	TV-5
4850	5700
up to 25	up to 37
_	_
10 x 10	12 x 12
23	24.4
	4850 up to 25 — 10 x 10

**TopVent**® supply air units. The cost-effective solution for heating and cooling high spaces with recirculation air and mixed air.

No less than four supply air units in different output levels guarantee efficient air distribution via the patented Air-Injector vortex air distributor. Depending on the difference in temperature between the hall air and the air being blown in, the Air-Injector continuously and automatically adjusts the blowing angle and ensures an optimum flow stability. With the wide range of equipment options, the TopVent® supply air units can be seamlessly adapted to cater to even the most diverse requirements and individual comfort expectations.

From high-bay warehouses to hypermarkets, supply or recirculation air – the choice is yours

- All supply air units can easily be adapted for operation with recirculation or mixed air
- Available in two sizes, each fitted with a continuously adjustable fan and heating/ cooling coil in different output levels for tailor-made solutions
- Designed especially for use in supermarkets and hypermarkets, with discreet roof installation and easy maintenance access from the roof during operation

Technical data	
Air flow rate	m³/h
Heat output	kW
Cooling capacity (total)	kW
Operating distance	m x m
Weight	kg









#### Supply air units with efficient air distribution

#### TopVent® MH

Heating with central heat generation

#### TopVent® MK

Heating and cooling with central heat and cold generation in the 2-pipe system

#### TopVent® MHK

Heating and cooling with central heat and cold generation in the 4-pipe system

#### TopVent® CAU

Heating and cooling with central heat and cold generation in the 2-pipe system

#### Ventilation

- Fresh air supply (duct connection)
- Mixed air operation
- Recirculation operation
- Air distribution with Air-Injector
- Air filtration

#### Ventilation

- Fresh air supply (duct connection)
- Mixed air operation
- Recirculation operation
- Air distribution with Air-Injector
- Air filtration

#### Ventilation

- Fresh air supply (duct connection)
- Mixed air operation
- Recirculation operation
- Air distribution with Air-Injector
- Air filtration

#### Ventilation

- Fresh air supply
- Mixed air operation
- Recirculation operation
- Air distribution with Air-Injector
- Air filtration

#### Heating

With connection to boiler system

#### Heating

 With connection to boiler system

#### Heating

 With connection to boiler system

#### Heating

With connection to boiler system

#### Cooling

 With connection to water chiller

#### Cooling

 With connection to water chiller

#### Cooling

 With connection to water chiller

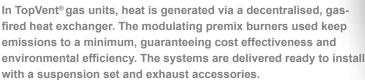
MH-9	MH-6
9000	6000
up to 164	up to 89
-	_
30 x 30	23 x 23
217	153

MK-6	MK-9
6000	9000
up to 89	up to 164
up to 60	up to 118
23 x 23	30 x 30
251	348

MHK-9	MHK-6
9000	6000
up to 164	up to 89
up to 118	up to 60
30 x 30	23 x 23
381	284
381	284

CAU-9/D	
9000	
up to 164	
up to 118	
30 x 30	
578	

# TopVent® gas Gas-fired recirculation and supply air units. Efficient heating with recirculation and mixed air.



#### Generates heat exactly where it is needed – superior technology for decentralised heating

- Heat is generated exactly where it is needed and is guided directly into the hal without any losses. No pipes or heat loss from the heat generator to the heat consumer
- Reduced investment and running costs, as a boiler room, fuel storage room and hot water supply network are not required for the gas-fired system
- Room air-independent supply supply air is injected from outside
- Broad model range permits planning to size precisely attuned to the room circumstances and specific requirements
- The electronic TempTronic RC controller, specially developed for this model range, ensures optimal energy utilisation and cost-efficient operation
- Air distribution is continuously adjusted with the integrated Air-Injector

tall	Ho	Pyal
into the hall to the heat		

Technical data	
Air flow rate	m³/h
Heat output	kW
Operating distance	m x m
Weight	kg









#### Gas-fired recirculation and supply air units for heating with decentralised heat exchangers

#### TopVent® DGV

Recirculation unit with efficient air distribution

#### TopVent® MG

Supply air unit with efficient air distribution

#### TopVent® GA

Supply air unit with efficient air distribution

#### TopVent® GV

Recirculation unit

#### Ventilation

- Recirculation operation
- Air distribution with Air-Injector
- Air filtration (option)

#### Ventilation

- Fresh air supply (duct connection)
- Mixed air operation
- Recirculation operation
- Air distribution with Air-Injector
- Air filtration

#### Ventilation

- Fresh air supply
- Mixed air operation
- Recirculation operation
- Air distribution with Air-Injector
- Air filtration

#### Ventilation

- Recirculation operation
- Air distribution via air outlet louvre

#### Heating

With gas-fired heat exchanger

#### Heating

With gas-fired heat exchanger

#### Heating

 With gas-fired heat exchanger

#### Heating

With gas-fired heat exchanger

DGV-6/30	DGV-6/60	DGV-9/60
5700	7000	8200
29	61	61
23 x 23	26 x 26	29 x 29
125	135	170

MG-6/30	MG-6/60	MG-9/60
4200	5900	7000
29	61	61
19 x 19	23 x 23	26 x 26
175	185	230

GA-9/60
6800
61
25 x 25
510

GV-5/50	GV-3/30
4650	2350
50	29
11 x 11	8 x 8
80	38

ProcessVent compact units.
Ventilating, heating and cooling production halls with highly efficient energy recovery from process air.

ProcessVent units in combination with an extract air purification plant form a single efficient overall system with outstanding emission levels and heating cost savings of up to 98%. The compact units are deployed in halls with enclosed machine tools or welding plants and are positioned right next to machine groups.

#### Clear the air and benefit from a healthy indoor climate and reduced operating costs

- Energy recovery from reduced process air via an oilproof plate heat exchanger for significantly reduced heat energy costs
- Choice of a heating/cooling coil for supplemental heating or cooling of the fresh air, or in recirculation operation
- Complies with the legal requirements for energy-efficient, environmentally-friendly production methods and healthy working conditions
- Possibility of an investment subsidy through relevant subsidy programmes, including subsidies for cross-sectional technologies or energy recovery and waste heat utilisation measures



Technical data	
Air flow rate	m³/h
Heat output	kW
Cooling capacity (total)	kW
Operating distance	m x m
Weight	kg







#### Compact units with energy recovery from process air

#### **ProcessVent PV**

Compact unit for ventilating with energy recovery from process air

#### **ProcessVent PVH**

Compact unit for ventilating and heating with energy recovery from process air

#### **ProcessVent PVC**

Compact unit for ventilating, heating and cooling with energy recovery from process air

#### Ventilation

- Fresh air supply
- Extract air removal (air conveyance via the extract air purification plant)
- Recirculation operation
- Air filtration

#### Ventilation

- Fresh air supply
- Extract air removal (air conveyance via the extract air purification plant)
- Recirculation operation
- Air filtration

#### Ventilation

- Fresh air supply
- Extract air removal (air conveyance via the extract air purification plant)
- Recirculation operation
- Air filtration

#### Heating

With connection to boiler system

#### Heating

 With connection to boiler system

#### Cooling

 With connection to water chiller

#### Energy recovery

from process air

PV-10
10,000
_
_
1657

#### **Energy recovery**

from process air

#### **Energy recovery**

from process air

PVC-10	
10,000	
up to 239	
up to 142	
_	
1754	

## Simply change the world Hoval references

Hoval's sophisticated air and climate solutions are ensuring the supply of healthy, fresh air and pleasant heat around the world – in modern French skyscrapers and in the Vatican papal chambers, in distant China and high up on our own mountain peaks. Discover the world of Hoval's indoor climate systems.

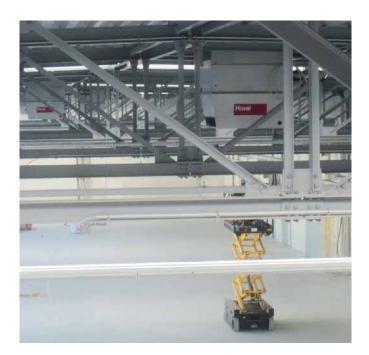
### Join us on a journey across the globe and discover more about our technologically superior indoor climate systems:

- At long-established tool, mould and fixture manufacturer
   Veith in Öhringen, Baden-Württemberg, Germany
- In the "green building" at the Pannonian Wood Competence Center in Virovitica, Croatia
- At Italian plastic caps producer Invat in Ovada, Piemont, Italy

#### Expansion of production at metal processing company Veith

Globally operational and steeped in tradition, Alfred Konrad Veith GmbH & Co. KG's production operations are spread across two sites with a total of 200 employees and over 7000 m² of production space. The company has stood for premium products for over 100 years, and Veith's passion for quality and precision is equally reflected in its choice of ventilation and heating solution.

- 5 RoofVent® RH-9 units ventilate and heat the production hall for stamping parts and the tool shop
- Hoval TopTronic® C controls energy-efficient heating and ventilation
- Overnight cooling with fresh air preserves resources



#### Competence centre housed the "green building"

The largest project to be backed by the European structural and investment funds to date, construction of the "green building" at the Pannonian Wood Competence Center in the Croatian city of Virovitica was completed in 2016. The innovation and development centre supports wood processing companies and was designed according to "green building" principles. Hoval's decentralised indoor climate system serves to perfectly extend the centre's sustainability in terms of heating and ventilation with 2 RoofVent® RH and 2 TopVent® DHV.



The ventilation is barely perceptible, but the climatic conditions in the hall are always excellent.

Nana Filipović
Pannonian Wood

Competence Center

#### Invat Srl in Ovada, Piemont, Italy

Invat Srl has been producing a range of products including plastic caps and PET bottles for cooking oils and chemicals for over 50 years. With its own Research and Development department, the company produces safe and easy-to-use products. Exceptional quality, affordable prices and first-class customer service are also integral to the company's philosophy. Invat relies on Hoval for the ventilation and heating of its production hall for plastic caps.

- 3 RoofVent® RC-9
- 6 TopVent® DKV-9
- 3 TopVent® DKV-6
- Hoval TopTronic® C controller for energy-efficient heating and ventilation



# All good things come from above Indoor climate systems in use

Whatever your requirements, we will make sure that you get the very best air quality, in factory and production halls, logistics centres, airplane hangars, maintenance hangars, shipyards, shopping centres, building centres, sports facilities, swimming pools, trade fair halls, multi-purpose halls, car showrooms – and wherever else you need it.

















#### Hoval quality. You can count on us.

As a specialist in heating and climate technology, Hoval is your experienced partner for system solutions. For example, you can heat water with the sun's energy and your rooms with oil, gas, wood or a heat pump. Hoval ties together the various technologies and also integrates room ventilation into the system. You can be sure to save both energy and costs while protecting the environment.

Hoval is one of the leading international companies for indoor climate solutions. More than 70 years of experience continuously motivates us to design innovative system solutions. We export universal systems for heating, cooling and ventilation to more than 50 countries.

We take our responsibility for the environment seriously. Energy efficiency is at the heart of the heating and ventilation systems we design and develop.

Responsibility for energy and environment

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