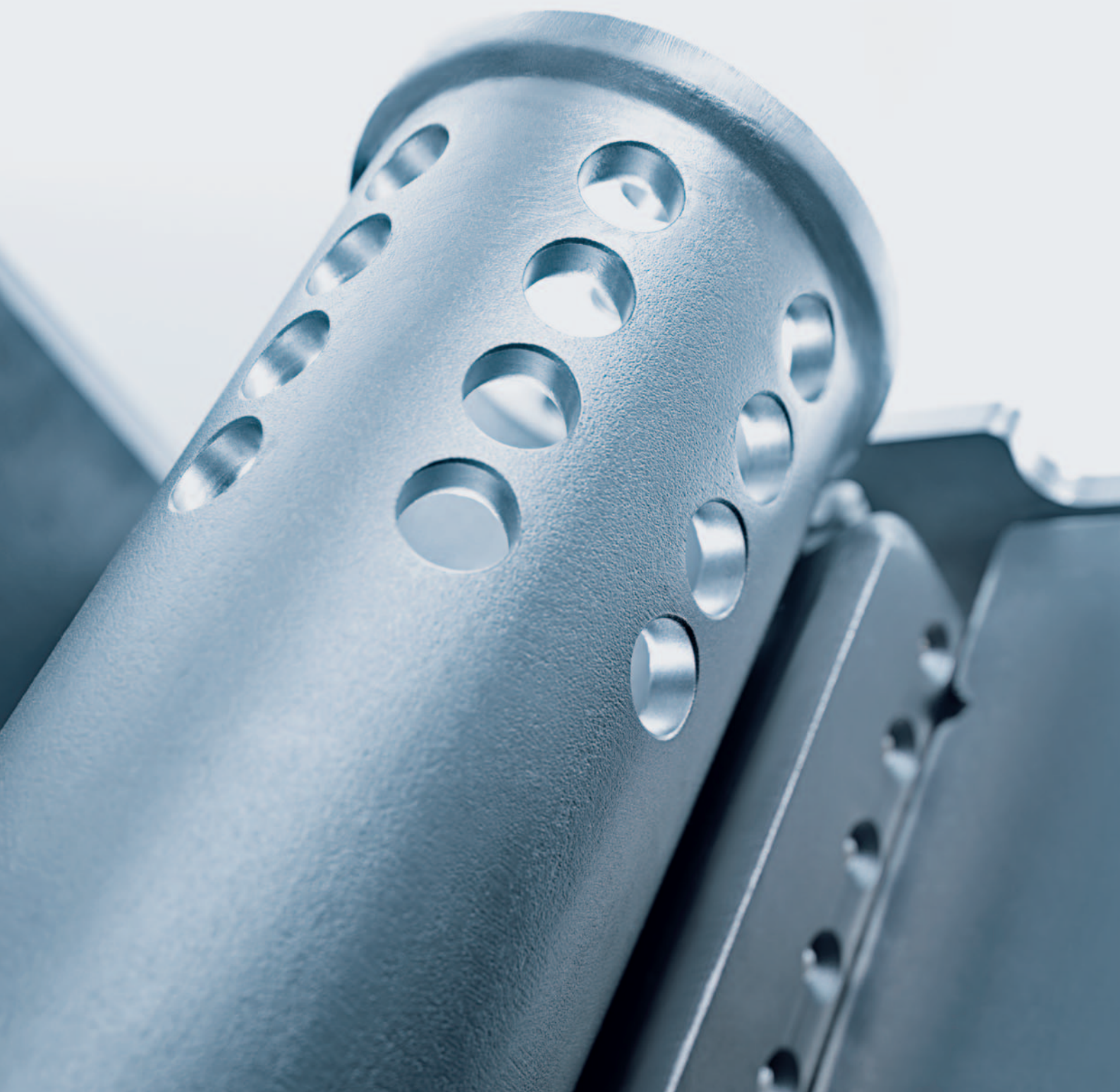


**Wood pellet boilers**  
BioLyt (50 - 160)

**Hoval**

Responsibility for energy and environment



**Environmentally friendly and powerful.  
Ideal for new buildings and upgrades of large systems.**



*Front page:  
Close-up view of the burner tube  
in the BioLyt (100-160).*

## **Wood pellet boilers. BioLyt (50 - 160).**

Easy to use, clean and profitable. The BioLyt is ideal when it comes to carbon-neutral heating with a high output. Unbeatable in its efficiency and compact size, the BioLyt (50-160) is perfectly suited to large buildings such as blocks of flats, hotels, municipal buildings, schools and commercial properties, as well as to heating networks.

The BioLyt features numerous intelligent design details that make it an ideal choice, especially for upgrades. Due to its clever construction details, the BioLyt is sure to find space in the boiler room when replacing a boiler. The boiler body, trim, burner and controller are delivered separately and mounted on-site in just a few steps. Thanks to its automatic suction supply, the boiler can also be easily connected to a wide variety of pellet storage systems by means of flexible tubes.

The technology and design of the BioLyt (50-160) enable environmentally aware, user-friendly pellet heating to now be achieved in mid-size systems in an urban setting too. The low-cost fuel ensures a short payback period.





BioLyt (50-75)

BioLyt (100-160)

# BioLyt (50 - 160). Advantages at a glance.

## Economical



### Rapid return on investment

- **Fast payback**  
due to considerably lower fuel costs compared to heating with oil or gas
- **Consistently high efficiency**  
through advanced combustion technology
- **Independent of pricing on the international oil and gas market** due to the use of a home-grown energy source - wood

## Environmentally friendly



### Very low environmental impact

- **Carbon-neutral heating**  
due to wood, a renewable energy source
- **Low emissions**  
through very high combustion efficiency
- **Wood and sun – a winning combination**  
which meets the highest ecological standards for a future-proofed heat supply

## Sophisticated



### Ideal choice especially for upgrades

- **Easy boiler replacement (oil) and easy installation**  
via rear connections
- **Low space requirements**  
due to exceptionally compact design
- **Suitable for all pellet storage systems**  
due to flexible, automatic suction supply
- **High outputs and good operational safety**  
via double or multi-boiler systems

## Easy to use



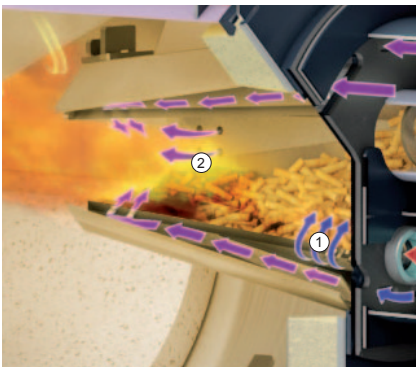
### Easy to use and reliable

- **User-friendly operation**  
due to fully automatic pellet filling
- **Low-maintenance**  
due to fully automatic cleaning of heating surfaces and burner
- **Easy ash disposal** via automatic removal system and ash box on wheels
- **Remote maintenance and system monitoring**  
through optional TopTronic® online



## BioLyt (50 - 160).

More efficient and easier to use than ever before due to advanced wood heating technology.



Two-stage combustion in the BioLyt (50-160): wood gasification (1) and incineration (2).



With an optimised combustion process that is automatically adapted to the pellet quality, the BioLyt achieves high efficiency of over 90%.



Consistently high efficiency through thermolytic heating surfaces with a self-cleaning effect and an automatic cleaning device.



### Wood gasification for maximum combustion efficiency and minimal emissions.

With its ingenious wood gasification process, the BioLyt achieves top grades in cleanliness and efficiency:

#### Stage 1: wood gasification

In the first stage, the wood fuel (pellets) is converted into wood gas through the addition of primary air.

#### Stage 2: incineration

Via the addition of secondary air, the wood gas is incinerated completely and with exceptionally low emissions of pollutants.

This two-stage process improves combustion and the energy yield, whilst also reducing emissions, so the BioLyt complies with even the strictest fine-dust emissions limits of 20 mg/m<sup>3</sup>\*.

\* (based on 13% O<sub>2</sub>)



### Efficiency of over 90 % thanks to fully automatic adaptation to pellet quality.

The BioLyt (50-160) features a microprocessor-driven firing controller with a lambda sensor, which ensures that ideal combustion is always performed, with minimal pollutants.

The lambda sensor measures the oxygen content of the flue gases. The adaptation of the fuel/air mixture automatically optimises the combustion process and compensates for variations in pellet quality.



### Thermolytic heating surfaces with a self-cleaning effect for consistent efficiency.

The heating surfaces transmit the thermal heat to the heating water. If they are dirty, this hinders the heat transmission process, leading to increased fuel consumption and emissions of pollutants.

The patented design of the thermolytic heating surfaces significantly reduces the accumulation of soot or other combustion residues. Soot particles are thermally decomposed, whilst other residues are easily detached and are removed automatically via a motor-driven cleaning device.

In the interests of stable operation, deposits are also removed from the burner tube by an automatic burner tube cleaning device.

Through these features, the system ensures consistently high efficiency – with reduced maintenance requirements.



An automatic removal system transports the ash into an ash box on wheels to make it easy to dispose of.



The BioLyt (50-160) can be connected to a wide variety of pellet storage systems via a flexible suction supply system.



The BioLyt (50-160) can be combined with various heat generators to produce an efficient system solution.



### Automatic ash removal and practical box on wheels.

Sophisticated and detailed solutions make the operation and maintenance of a BioLyt system convenient, user-friendly and fast.

For example, the ash removal system automatically transports the ash to a box designed for this purpose. This ash box is on wheels, and can be used to remove the ash so that it can be disposed of.

One tonne of burned pellets produces around 5 kg of ash. The ash boxes have very large dimensions (65 or 180l, which will hold the residual ash produced from around 7 or 20 tonnes of burned pellets) to allow for long disposal intervals.



### Unique flexibility thanks to pellet hopper with fully automatic suction supply.

The BioLyt (50-160) is one of the few pellet boiler in its class to feature a pellet hopper with suction supply.

The fully automatic pellet supply system transports the pellets from the storage space to the BioLyt hopper via flexible ducts, without generating dust.

The suction supply equipment is compatible with all pellet storage systems and, thanks to its flexible design, is easy to install – particularly as part of upgrades.

Hoval offers a variety of pellet storage systems, including a large selection of fabric silos with capacities of up to 30 tonnes. These have been specially developed for use with larger pellet boilers and can also be operated as cascades.



### Especially powerful as part of a system.

The BioLyt (50-160) is also ideally suited for combining with other heat generators. With Hoval system technology, it is possible to implement even complex solutions with a minimum of planning effort.

- Monovalent cascades with up to 5 pellet boilers
- Bivalent systems with (existing) gas or oil boilers to help meet peak demand
- Integration of solar energy systems

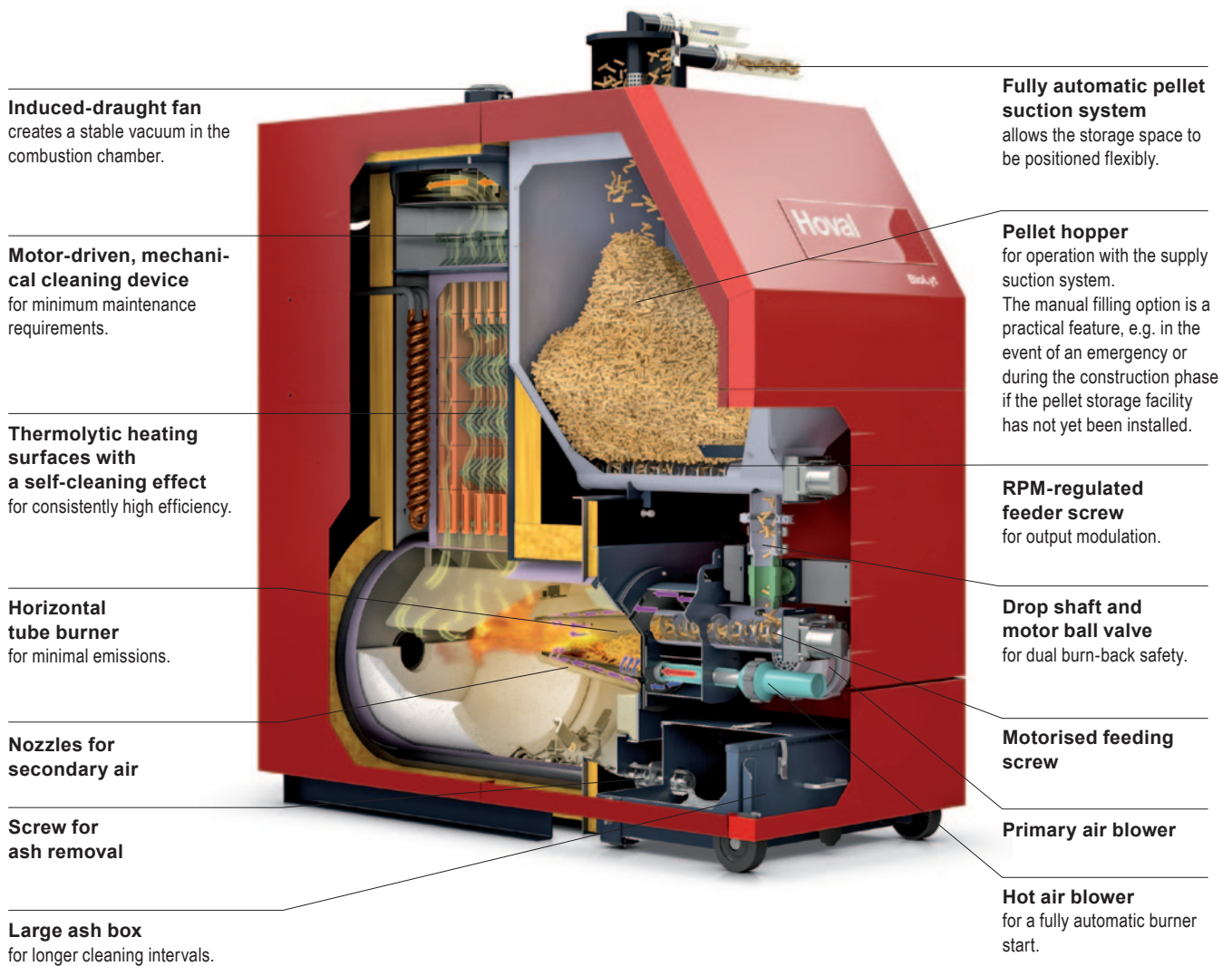


*The BioLyt (50-160) now makes heating with biomass in larger urban systems not only possible, but also profitable.*

*It is a very promising alternative, particularly where upgrades are concerned.*

Thomas Eckert, Director of Product Management, Biomass Heating Systems

# BioLyt (50 - 75).



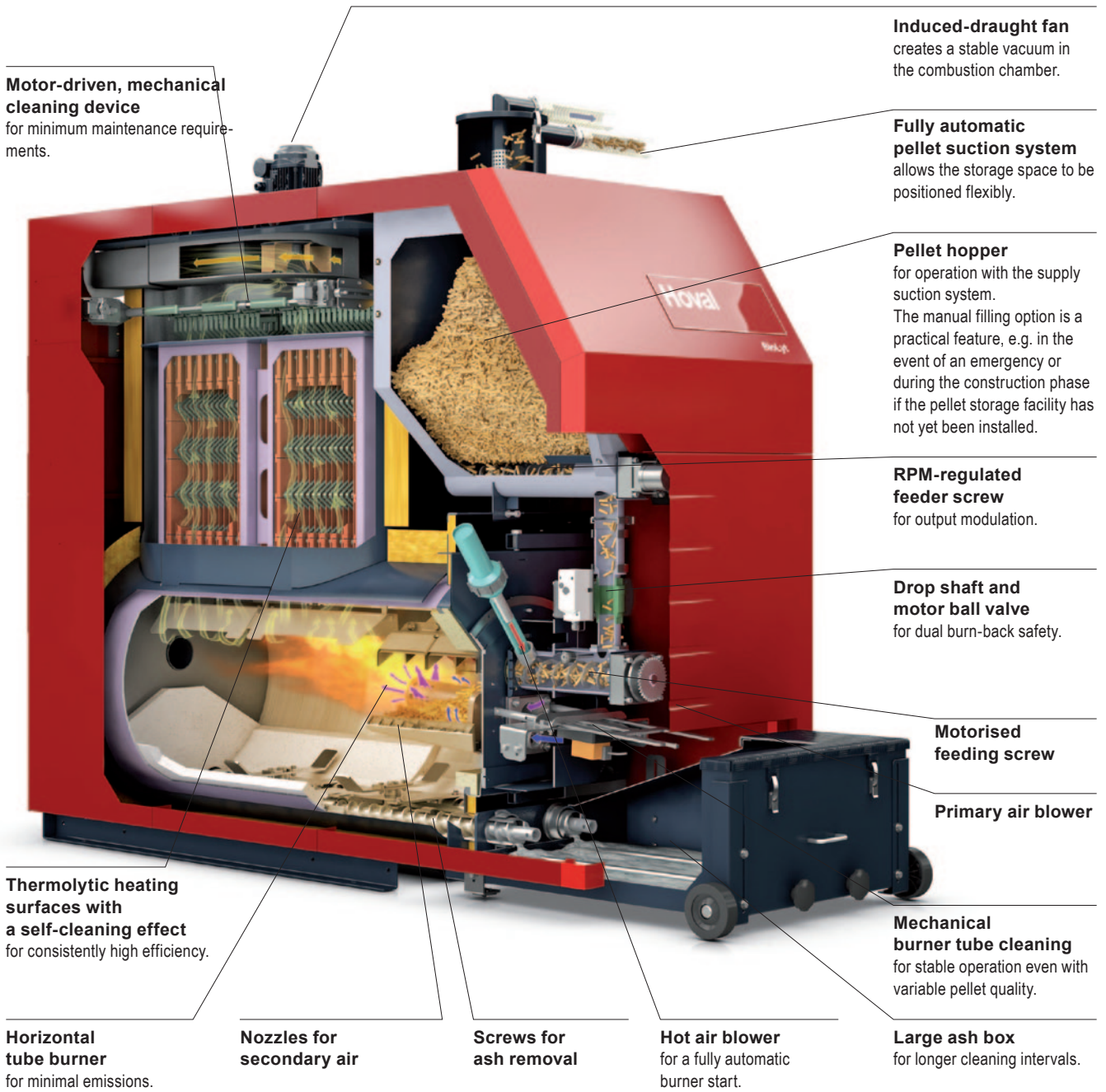
Technical data		(50)	(70)	(75)
BioLyt				
Heat output range	kW	14 - 49	20 - 69	20 - 73
Boiler efficiency at nominal heat output	%	>90	>90	>90
Capacity of pellet box	kg		130	
Boiler weight	kg	640	780	780
Dimensions with automatic pellet feed W/H/D	mm	740 / 1945 / 1820	800 / 2025 / 1845	

For lower power outputs of 8 to 36 kW, see the brochure for BioLyt (8-36).

Subject to modification



# BioLyt (100 - 160).



Technical data		(100)	(110)	(130)	(150)	(160)
BioLyt						
Heat output range	kW	29 - 99	31 - 105	39 - 130	43 - 149	43 - 156
Boiler efficiency at nominal heat output	%	>90	>90	>90	>90	>90
Capacity of pellet box	kg			130		
Boiler weight	kg	1340	1340	1340	1340	1340
Dimensions with automatic pellet feed W/H/D	mm			895 / 2050 / 2675		

For lower power outputs of 8 to 36 kW, see the brochure for BioLyt (8-36).

Subject to modification



# Pellets.

## Heating with a sustainable resource and no compromise in terms of comfort.

### Required pellets and storage space

The size of the pellet storage space will depend on the annual amount of pellets required, local conditions and transportation issues. The following rule of thumb will help with the initial estimate:

**Annual amount of pellets required: approx. 400 kg per kW of heat load**

Example

**Building with a heat load of 100 kW**

**Annual amount of pellets required: 40 t** (approx. 64 m<sup>3</sup>)

**Size of storage space: 25 t\*** (approx. 40 m<sup>3</sup> usable volume)



In this example, the pellet storage space equates to exactly one tanker load and covers requirements for half a year, including a reserve. So two deliveries will be scheduled for the whole year.

\* Guideline; a different size may be more practical depending on individual circumstances.

### Wood pellets – ecological bundles of energy

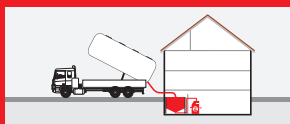
Wood pellets are made of 100% untreated wood. The raw material used for their manufacture is obtained from waste products such as saw dust and shavings from the wood processing industry. This raw material is compressed at high pressure and compacted into small, cylindrical shapes. The lignin contained in the wood serves as a natural binding agent, making the pellets extremely firm without the need for any additional binding materials.

Pellets are real bundles of energy. The high levels of compression make them much denser than the original wood and give them a higher heating value. This means that 2 kg of pellets generate the same heat energy as 1 litre of heating oil.

### The journey of the pellets

1

**Delivery by tanker**



2

**Transportation to the pellet storage space by tube**

(conventional storage space, fabric silo or underground tank)



3

**Removal from the storage space**

(using probes, a screw system or a mole system)



4

**Transportation to the pellet boiler via a tube system**



### Convenient: pellet transportation and storage

Supplying a building with pellets is almost as simple as using an oil heating system. The fuel supplier delivers the pellets in a silo wagon and they are blown into the storage space via a tube (1).

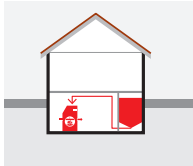
Pellets must be stored in a dry, fireproof area. There are generally various storage options available (2):

- Storage room: a dry, enclosed room in a cellar, on the ground floor or in the attic, e.g. the room previously used to store oil
- Fabric silos: can be free-standing in the boiler room or placed in an annex. If fabric silos are used, pellets can be stored in humid environments
- Underground pellet tanks made from concrete or plastic

Pellets are taken automatically from the storage space by suction probes, screw systems or mole systems (3: extraction system) and then transported through flexible tubes to the pellet boiler (4). These tubes are available in various lengths, which means that the pellets can be stored some distance from the boiler.

The pellet boiler contains a pellet hopper which maintains a continuous supply to the burner. This serves as a buffer, which helps prevent the noise of the pellets being transported from the storage space to the boiler at night, for example.

# Pellet storage systems. Exactly the right solution for any demand.



## Storage room

The conventional place to store pellets is in a dry room in the building. As the pellets are transported to the boiler through ducts, they do not need to be stored right next to the boiler. In fact, they can even be stored on a different floor, or in a separate area in a secondary room.

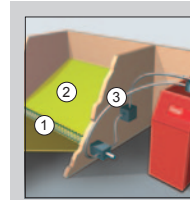
Different output systems are used depending on the size and type of the storage space:

### Suction system with screw output:

- Suitable for larger spaces with sloping floors
- Screw length up to 5.4 m
- Completely empties the storage space

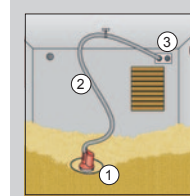
### Suction system with mole:

- Suitable for smaller, square spaces (up to 2.5 x 2.5 m)
- Better use of space (no sloping floor)
- Mole positioned using a manual hoist or the convenient, fully automatic system



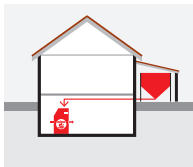
### Suction system with screw output

- 1: Screw for pellet output
- 2: Sloping floor
- 3: Transport tube to boiler



### Suction system with mole

- 1: Mole for pellet output
- 2: Special feeder tube
- 3: Connection to transport tube to boiler



## Fabric silo

The free-standing fabric silos are used in enclosed spaces (e.g. boiler rooms), in carports or in humid environments. They consist of a stable steel frame and a tearproof, electrostatically conductive fabric container. The fabric is dust-proof but permeable to air, which means that there is no need for additional air extraction when filling the silo. The fabric silos are available in standard sizes for 1.9–9.8 tonnes of pellets (the maxi version can in fact hold up to 32.5t).

Custom-made versions are available to cater for special requirements – including fully interconnected cascades made up of multiple silos.



### Conical silo

Capacity:  
up to 9.8 t (15 m<sup>3</sup>)



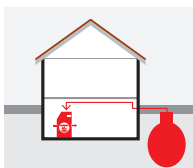
### Trough silo

Capacity:  
up to 12.1 t (18.7 m<sup>3</sup>)



### Maxi version

Capacity:  
up to 32.5 t (50 m<sup>3</sup>)



## Underground tank

Underground tanks provide an ideal alternative when there is no room to store pellets in the building or in an annex.

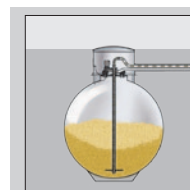
They are available in two versions to meet different requirements:

### Spherical pellet tank

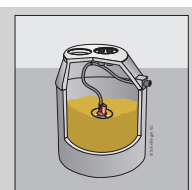
- Glass fibre reinforced plastic
- Suction system with lance
- 5 variants up to 14 m<sup>3</sup>

### Concrete pellet tank

- Reinforced concrete
- Suction system with mole
- 8 variants up to 22 m<sup>3</sup>



Spherical pellet tank with suction lance

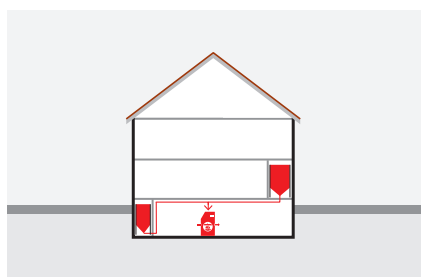


Concrete pellet tank with mole system



## Individual storage systems

In upgrade projects in particular, the pellet storage facility often has to be adapted to the existing space available. The combination of fabric silos and flexible ducts enable pellet storage systems to be created that are precisely tailored to your spatial conditions and energy demands.

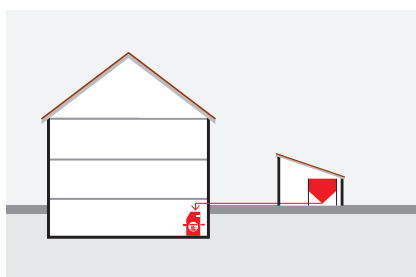


### Storage system consisting of multiple small rooms:

Smaller unused rooms, e.g. attic or cellar rooms, are used for pellet storage thanks to silos of exactly the right size. They are combined into a single storage unit via flexible tube systems and switching units.

#### Advantages:

- Smart use of small rooms, access to valuable usable space is not blocked
- Greater flexibility due to storage being distributed across multiple rooms
- Increased operational safety due to redundant boiler filling



### Pellet storage in annexes

Unused rooms in annexes, store-rooms, barns or garages can serve as a location for fabric silos. It is no problem if such rooms are damp, as the pellets will be kept dry inside the silos. Since the silos are custom-made, the available space is utilised to the best possible extent, with the pellets being easily transported to the boiler via a sufficiently long tube.

#### Advantages:

- Access to central usable space is not blocked
- Utilisation of damp rooms, which would otherwise be useless



### Cascades for high pellet requirements

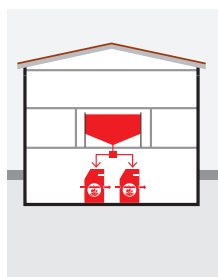
In the case of high storage requirements, multiple silos are connected with a continuous screw conveyor to form a cascade.

#### Advantages:

- Smart use of long, narrow rooms
- Greater flexibility in terms of pellet supply and for purchasing due to storage being distributed across multiple silos
- Lower storage costs due to cost-effective small units

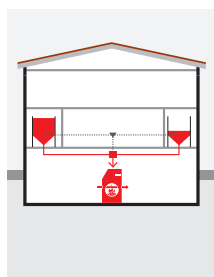
## More flexibility thanks to switching unit

Multiple boilers and/or pellet storage spaces are connected to one another via a switching unit. This allows for the following combinations:



### 1 pellet storage space for 2 boilers

- If only 1 storage space is available for pellets
- For easier utilisation and load distribution across 2 boilers



### 1 boiler with 2 pellet storage spaces

- If only 2 smaller storage spaces are available
- Increased operational safety due to redundant filling from 2 storage spaces
- Automatic switch-over between the storage spaces thanks to optional level monitoring



# Wood pellets. Responsible heating now for larger systems too.



## Payback and CO<sub>2</sub> savings: Heating with wood pellets for high performance classes.

Unpredictable price developments in oil and gas are increasingly causing investors in large buildings to consider wood as an intelligent alternative, particularly in the form of practical wood pellets. For good reason: today, heating with pellets is already 40-50 % less expensive per kilowatt-hour of heat energy than heating with oil.

The BioLyt (50- 160) combines environmental responsibility, maximum user-friendliness and demands for energy efficiency in the power output range up to 160kW. By coupling the system with double or multi-boiler systems, its heat output can be further multiplied.

With its compact dimensions, installation-friendly connections and flexible suction supply, the BioLyt (50-160) is especially suited to upgrade work – such as when replacing an old oil heating system.

## Heating with pellets in practice



Switch-over to environmentally friendly energy:  
Hotel Edelweiss,  
Wagrain (AT)



Example 1:

### Heating system upgrade and extension building of a hotel

Building an extension building to the hotel, the heating system had to be upgraded. A cascade of 2 BioLyt (150) is now the primary source of heating energy. The old oil boiler serves as backup for high energy demands. The Hoval TopTronic® T controller ensures the efficient operation of all boilers in a bivalent cascade.

- 2 BioLyt (150)
- old oil boiler as backup for higher energy demands
- estimated CO<sub>2</sub>-reduction: 130 tons per year



Environmentally friendly heating system upgrade  
Monovalent cascade at  
St.Gallus, Tettngang (DE)

Example 2:

### Environmental awareness in old buildings:

A powerful heating system was installed in interconnected cellar rooms of just 25 m<sup>2</sup>. For reasons of space, 2 smaller BioLyt units were combined to form a cascade. The pellet storage facility consisting of a custom-made trough silo and 2 buffer storage tanks was also installed in the small cellar rooms.

- 2 BioLyt (50)
- 2 buffer storage tanks
- custom-made trough silo as pellet storage



## Intelligent TopTronic® T controller. For a perfectly coordinated overall solution.

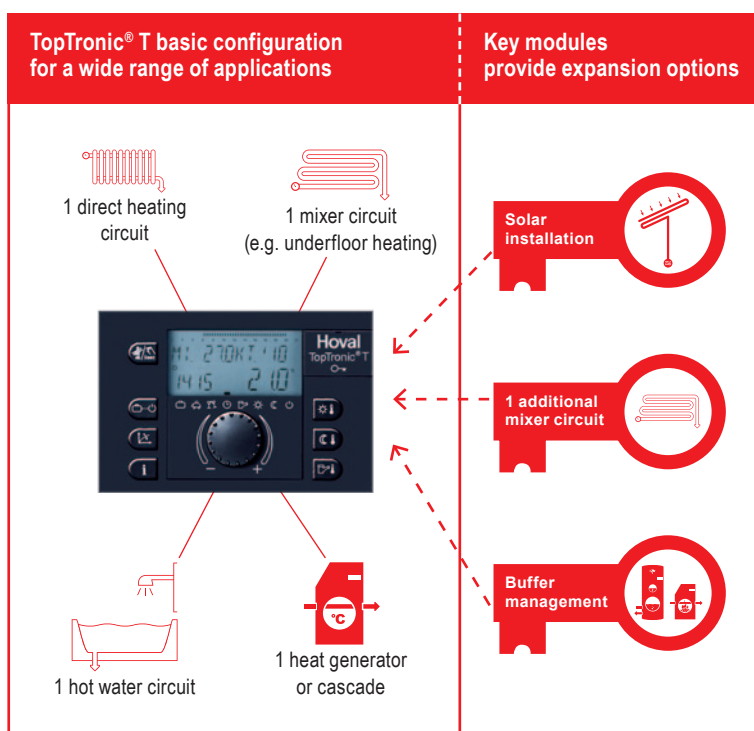
### Intelligent command centre with flexible expansion options

The TopTronic® T controller is a component part of every Hoval heat generator and is responsible for controlling every aspect of the heating system. It guarantees energy-efficient interaction between the heat generator and the system components.

The basic version controls a heating and mixer circuit as well as the hot water charging. Plug-in key modules make it easy to add up to 3 extra functions without the need for additional controllers:

- 1 solar installation
- 1 additional mixer circuit
- Buffer management (for system solutions with buffer storage tanks or bivalent operation with an additional heat generator).

The basic version also includes a cascade function. This ensures the efficient operation of up to 5 interconnected heat generators.



TopTronic® T controller: Key modules make it easy to expand the controller to include extra functions, without the need for additional controllers.



### User-friendly operation with the room station

The optional room station is the ideal solution for convenient heat regulation. It is easy to operate, it controls the room temperature (day

and night) and hot water temperature, and it displays system information.

The room station is a smart addition, particularly in the case of separate heating circuits and when using separate activation time programs.



### Remote access via TopTronic® online or mobile phone

There are two ways to operate and optimise the heating system remotely:

#### Via TopTronic® online over the Internet:

A user-friendly interface allows you to access the system from anywhere with a pc or a smartphone. It is easy to operate and also offers interesting additional functions such as fault notification management and visualisation options.

#### Via mobile phone using text messages:

For this option, the only thing you need is a mobile phone. You can use simple text messages to switch the heating on and off, and fault notifications are sent as text messages from the system to defined telephone numbers.

# Hoval system solutions. All components from a single source.



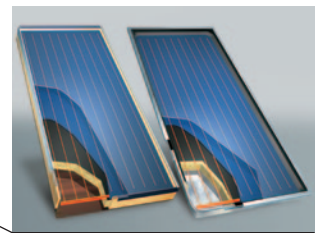
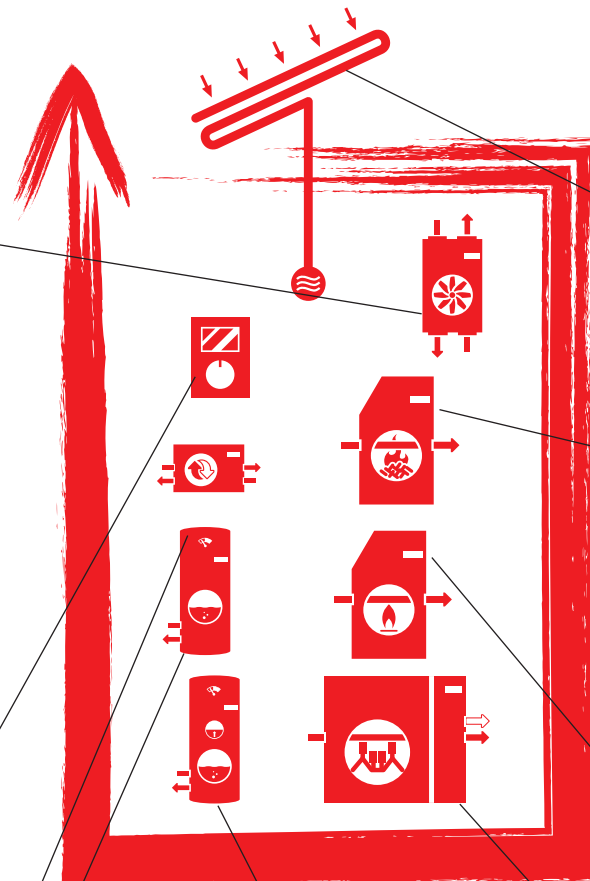
**Hoval comfort ventilation** ensures a continuous, regulated supply of fresh air. By recovering heat and moisture, the system ensures a well-balanced indoor climate whilst also preventing energy loss through open windows. Furthermore, the fresh air is filtered to remove pollen and other airborne particles.



**Hoval TopTronic® T controller** is the brain of the system. It ensures efficient interaction between the system components. It can be expanded to provide additional functions using key modules.



**Flat station** for supplying individual residential units with heat and hot water in a user-friendly way.



**Hoval solar installations** supply a large proportion of the energy for heating water and/or for supporting the heating system. They can be integrated seamlessly into the Hoval heating system using the solar installation module for the TopTronic® T controller.

**Hoval BioLyt (50-160)** For a short payback period and environmental responsibility with larger system solutions, e.g. housing complexes, schools, municipal buildings, commercial properties and heating networks.



**Hoval gas condensing boiler** In order to manage higher energy demands, the system can be expanded with an additional heat generator.



**Hoval Calorifiers** Hoval calorifiers provide a reliable hot water supply at the right temperature. They are available in capacities ranging from 200 - 2000 litres.



**Hoval buffer storage tanks** store the heat energy and keep it ready for use in room and/or water heating.



**Hoval cogeneration system** Decentralised energy system for producing electricity and heat.

Hoval system solutions that include the BioLyt (50-160) unit are used in a wide variety of applications:



Blocks of flats



Commercial facilities



Municipal buildings  
Schools



Shopping centres



Industry



Sport arenas

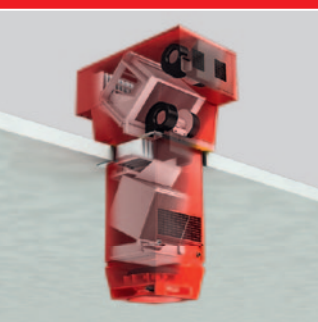
# Solutions you can rely on.

# Hoval

## Conservation of energy – protection of the environment.

The Hoval brand is internationally recognised as one of the leading suppliers of indoor climate control solutions. More than 65 years of experience have given us the necessary capabilities and motivation to continuously develop exceptional solutions and technically superior equipment.

Maximising energy efficiency and thus protecting the environment are both our conviction and our incentive. Hoval has established itself as an expert provider of intelligent heating and climate control systems that are exported to over 50 countries worldwide.



## Hoval indoor climate systems

Indoor climate systems ensure top air quality and economical usability. Hoval has been installing decentralised systems for many years. The key to its work is using combinations of multiple air conditioning units (even those of different types) that can be controlled individually, but also together as a single system. This enables Hoval to respond flexibly to a wide range of requirements for heating, cooling and ventilation.



## Design support from experts.

Take advantage of the expertise of our experienced specialists. We will be happy to support you throughout all project phases when designing your system.

Working in close cooperation with you and taking into account all the specifications of the energy supplier, we develop the most efficient and cost-effective solution for you.



## Hoval service expertise.

Hoval systems are professionally commissioned by specially trained and experienced Hoval service technicians, ensuring that the systems will operate perfectly from day one. Maintenance and troubleshooting are performed on-site by an adept customer service team.

Hoval Group

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