REFERENCES SINGLE FAMILY HOUSES

PICHLER

Systematic ventilation.

REFERENCE OVERVIEW

OBJECT OF THE MONTH

SINGLE FAMILY HOUSE, SLOVENIA

Modern architecture meets excellent living comfort with an energy-optimized overall building technology concept.

The home ventilation of this single family house was realized with the passive house-certified compact ventilation unit LG 350 including an enthalpy exchanger and pre-heating battery.

The acoustically optimized compact ventilation unit offers permanent air exchange and all the advantages of comfort ventilation. At the same time, a pleasant pre-tempering of the supply air is made possible in both winter and summer.

The LG 350 is one of the quietest devices on the market and was specially developed for controlled home ventilation in single family homes.

Operation is simple and intuitive via the 4.3" color touch display or via the free smartphone app for Android and iOS, whether at home or on the go.

DATA & FACTS

Location:	Slovenia
Completion:	2021
Type of building:	Single family house
Products:	LG 350 with enthalpy exchanger and pre-heating battery incl. TOUCH control unit, Kom*Flex*® 75, supply and exhaust air valves Airy

Product groups**:**

AIR CONDUCTION | AIR DISTRIBUTION | COMFORT VENTILATION

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH

SINGLE FAMILY HOME, SLOVENINA

The family of 4 in this 180 m² house is happy about fresh air in all rooms, a pleasant, feel-good climate and lots of saved energy.

A highly efficient LG 250 comfort ventilation unit with built-in electrical PTC preheater and hygiene-certified redirect mufflers is housed in the building services room. The Kom*Flex*® pipe system with visually appealing airy valves is used for air distribution.

With the highly efficient system solution, energy and money are saved at the same time. The comfort ventilation wins in winter the heat from the exhaust air and transfers it to the supply air by means of a heat exchanger. This keeps the valuable thermal energy in the house, which significantly reduces heating costs. Energy consumption drops, sustainability increases. And that's good for both the household budget and the environment. The comfort ventilation works fully automatically and is absolutely user-friendly as well as smart home enabled and can be accessed remotely if required be monitored.

DATA & FACTS

Location:	Slovenia
Completion:	2019
Type of building:	Single family home
Products:	Ventilation unit LG 250, redirect mufflers, Kom*Flex*® pipes, airy valves, exterior wall element

Product groups:

AIR CONDUCTION ***AIR DISTRIBUTION*** ***COMFORT VENTILATION***

PICHLER
Systematic ventilation.

OBJEKT DES MONATS

SINGLE FAMILY HOME, SLOVENIA

The 400-square-meter single-family house relies on the ventilation system from PICHLER. The heart is located in the building services room with two compact ventilation units LG 250A / LG 500 and a humidification unit LBE 500.

From there, the ventilation units supply all rooms with air via KomFlex® pipes, the ventilation units supply all the rooms with the necessary fresh air and at the same time remove odors and pollutants. The modulating bypass damper in the ventilation units is controlled depending on the outside air temperature and the set temperature control mode (supply air, extract air or room air) controlled.

This allows the output of the heat exchanger to be continuously regulated via the air volumes. In summer the heat exchanger can be bypassed during the night and cool outside air can be blown into the living space.

The hygiene-certified LBE 500 air humidification unit ensures a constant and optimal air humidity in the living rooms with an adjustment range from 40 % to 60 % relative humidity.

DATA & FACTS

Location:	Laibach
Completion:	2018
Type of building:	Single family home
Products:	LG250 A, LG 500, LBE 500, System Safe® Click + KomFlex®-Pipes, Silencers

Product group:

COMFORT VENTILATION

PICHLER
Lüftung mit System.

OBJECT OF THE MONTH

SYSTEM SOLUTION FOR THE FAMILY HOME

With fresh air in all rooms, a pleasant feel-good climate the residents of this family home are happy about the amount of energy they have saved.

The compact ventilation unit is the centrepiece of controlled residential ventilation which was housed in the building services room. Thanks to its radial fans with EC technology, the PICHLER LG 350 is exceptionally quiet and highly efficient. The unit can be operated easily and intuitively via the operating control unit and with an Internet connection via the PICHLER app.

The Kom*Flex*® pipe system was used to distribute the air. The flexible supply and extract air ducts were encased in the concrete ceiling. The single pipes lead to the living rooms from the distribution box. The complete system was supplemented by integrated deflection sound absorbers, spiro tubes and components.

Individual components that complement each other are key to an ecological, energy- and cost-efficient ventilation system.

DATA & FACTS

Location:	Germany
Completion:	2019
Type of building:	Single family house
Building technology:	Nothaft Neue HeizSysteme GmbH
Products:	Compact ventilation unit LG 350, Kom*Flex*® round, valves, ventilation grilles, spiro, fittings, deflection sound absorbers

Product groups:

AIR CONDUCTION · AIR DISTRIBUTION · COMFORT VENTILATION

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH

LOW-ENERGY HOUSE, CARINTHIA

In 2018 the first phase of the innovative construction project was completed, the centrepiece of the low-energy house being the compact heat pump combi unit PKOM^4 from Austrian research and production. It unites all four functions (heating-cooling-ventilation-hot water) on a footprint of less than 0.75 m^2. The controlled ventilation permanently supplies the rooms of the single-family house with fresh and filtered air from the outside and ensures the hygienic exchange of air. With its smart functions the PKOM^4 can furthermore be easily combined with renewable energy like that of a photovoltaic system and a storage battery.

The next expansion level of the construction project towards an even more energy-efficient overall system is therefore already being planned. It's about retrofitting the energy management system designed by Pichler with the objective of making the low-energy house independent and secure. Therefore the housing technology system with the PKOM^4 constitutes an innovative system solution that makes a substantial contribution to climate and environmental protection.

DATA & FACTS

Location:	Carinthia
Completion:	2020
Type of building:	Low-energy house
Heating demand (for heating, cooling, hot water, ventilation):	11,9 kWh/(m^{2}a)
Energy reference area:	122 m^2
Overall power consumption:	6.221 kWh/year
Energy demand (for heating, cooling, hot water, ventilation):	11,9 kWh/m^2
Power generation:	7.495 kWh/year
Products:	Heat pump combi unit PKOM^4

Product groups:

COMFORT VENTILATION

PICHLER
Systematic ventilation.

09/2020

OBJECT OF THE MONTH

PASSIVE HOUSE, CZECH REPUBLIC

Although it doesn't look like it, this single-family house is a new building. It is a typical example showing that a passive house can take many forms. The passive house of aerated concrete seems to have been standing in this region for a hundred years, and yet this newly constructed classical building is the core element of modern spirit, and, due to its compactness, it does not need any greater technological achievements really. The heat pump combination unit PKOM^4, however, is essential for the passive house and is used as the main source of ventilation, heating, cooling and hot water preparation – it provides for a perfect room climate in a sustainable and highly efficient fashion.

This model example won the „Passive House 2018" price, which shows that a traditional country house including its traditional facade construction can also be implemented in the passive house standard.

DATA & FACTS

Location:	Czech Republic
Completion:	2018
Type of building:	Single family house
Architect:	ATELIÉR ELAM – Ing. arch. Mojmír Hudec
Building technology:	Evora CZ s.r.o.
Products:	Heat pump combi unit PKOM^4

Product groups**:**

COMFORT VENTILATION

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH

SUNNY ALLEY, CZECH REPUBLIC

The aim of the „Sunny Alley" project from BUBA VISION was to build family houses that are energy efficient in terms of operating costs and also user friendly in terms of the environment, control and management of technologies in the house. PICHLER PKOM^4 units were involved in the houses by Evora CZ.

Each unit provides the houses with heat recovery ventilation, space heating and cooling together with domestic hot water. A central air humidifier allows for regulation of humidity in the houses to achieve the optimum level based on users needs. This option is particularly appreciated by allergy sufferers and all fresh air lovers.

The family houses are located on the very edge of the village of Chýně, with a convenient location both to the center of the capital city of Prague and to Václav Havel Airport. The drive to the Prague ring road, as well as to the Pilsen exit, is less than ten minutes by car from the houses, which allows a comfortable drive to both the center of Prague on the motorway network.

DATA & FACTS

Location:	Czech Republic
Completion:	2020
Type of building:	family houses
Architect:	Ing. Petr Mareček
Building technology:	Evora CZ, s.r.o.
Products:	Heat pump combi units PKOM^4

Product groups**:**

COMFORT VENTILATION

PICHLER
Systematic ventilation.

07/2020

OBJECT OF THE MONTH

SINGLE FAMILY HOUSE, SLOVAKIA

Residential living will always be changing and developing with the times. Apart from architectural considerations, the total energy balance is of increasing importance. Legislators, ongoing development of building materials and the quality of construction are consistently raising the standard, thereby reducing energy consumption.

Whether Passive House, EnerPHit or Near Zero Energy Building – ventilation of the living quarters is deemed essential and at the core of single family house design. Extension of the functionalities of a ventilation unit to include heating, cooling and hot water supply is a natural consequence!

Ventilating – heating – cooling – hot water
The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m² in the modern single family home.

DATA & FACTS

Location:	Slovakia
Completion:	2019
Type of building:	Single family home
Architect:	Createrra s.r.o.
Products:	Heat pump combi unit PKOM⁴

Product groups:

AIR CONDUCTION ***AIR DISTRIBUTION*** ***COMFORT VENTILATION***

OBJECT OF THE MONTH

© Jiri Cech

Single family house Czechia

Classical single family house built in pleasant cooperation of investor, designer (Jiri Cech) and craftspersons (Pro-mart and Evora CZ, s.r.o.).

It combines a classical saddle roof with a modern look and integrates a building automation system to improve the comfort of living and decrease energy requirements.

Ventilating, heating, cooling and hot water in such a well insulated and PHI-certified building were a central point of concern. The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m². Controlled ventilation of living rooms constantly ensures fresh and filtered outside air in the rooms of the single family house and ensures hygienic exchange of air.

Certified Passive House
Passive House Institute

DATA & FACTS

Location:	Czechia
Completion:	2017
Type of building:	Detached single family house
Architecture:	Jiri Cech
Building technology:	Pro-mart and Evora CZ, s.r.o.
Products:	PKOM⁴ classic heat pump combi unit with highly efficient heat recovery

Product groups:

COMFORT VENTILATION


© Jiri Cech

PICHLER
Systematic ventilation.

04/2018

OBJECT OF THE MONTH

Austria‘s first certified passive house

The demands on Austria’s first certified passive house were: no more costs than a standard house, due consideration of ecological criteria, minimum technical apparatus and maximum economy.

The single storey passive house without basement was built on a level piece of ground. The 140 m² single family house has an outside diameter of 15 m. The highly compact building deliberately dispenses with unnecessary structures and weight. Minimum common areas allow full utilisation of the basic area for living space.

LOW TECH CONZEPT:

Excellent thermal insulation of building shell and windows, no thermal bridges, airtight.All building services including comfort ventilation, heating, cooling and hot water generation in a single heat pump combi unit in a 0.75 m² area in the toilet.

The passive house received the **„House of the Future“** award in 2000, later followed by several other awards.

DATA & FACTS

Location	4661 Roitham, Upper Austria
Completion:	2000
Type of building:	Detached single family house
Architecture:	Arch. Dipl. Ing. Hermann Kaufmann + LANG Consulting
Builder:	Christine und Ing. Günter Lang
Products:	Controlled comfort ventilation system: PKOM⁴ classic heat pump combi unit with highly efficient heat recovery

Product groups**:**

COMFORT VENTILATION

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH

PASSIVE HOUSE, GERMANY

The older part of the passive house in solid construction was built in 1997 and certified as the first passive house. First, two window elements and glasses in the existing building were replaced. The necessary extension in lightweight timber construction in 2019/20 raised the issue of further energy supply. Heating energy is hardly required in a passive house. The hot water supply and the residual current as well as the electric car should be supplied by PV as far as possible.

The compact heat pump combi unit PKOM⁴ provides for ventilation, heating and cooling as well as warm water treatment. By its innovative heat pump technology (air-heating pump) and its intelligent heat recovery system it achieves optimum efficiency values. In combination with an intelligent energy management system and photovoltaics the operating costs are reduced. The passive house certified super combination presents itself in a compact, efficient, cost-effective, low-maintenance, and environmentally friendly fashion. Completely in step with the times.

In summary, the idea from initial planning of the existing building from 1996 has been clearly visualized and expanded here. Saving energy when it comes to housing construction is easy and simple – it merely requires consistent implementation by the persons involved in the construction process. This refurbishment including the expansion makes it possible to control the energy costs of the coming decades.

DATA & FACTS

Location:	Germany
Completion:	2020
Type of building:	Single family house
Heating demand:	12.1 kWh/(m²a)
Heat transition coefficients:	0.09 0.1 W/(m²K)
PV system:	8.4 kWp
Storage battery:	9 kWh
Products:	PKOM⁴ System solution

Product groups:

COMFORT VENTILATION

TRIGOS 2020 REGIONAL KÄRNTEN GEWINNER

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH

RESIDENTIAL BUILDING, UK

The residential complex includes four one-bedroom flats, eight two-bedroom semi-detached homes and two four-bed homes, all built to be energy positive, where more energy is put back into the National Grid than is used. The aim was to ensure low running costs for their residents and to provide a comfortable, healthy environment.

The heating and ventilation system included in the whole house approach had to be at a reasonable cost whilst not taking up too much space. Ventilating, heating, cooling and hot water in such well insulated buildings were a central point of concern. The PKOM⁴ heat pump combi unit unites these four functions on a footprint of less than 0.75 m². The PKOM⁴ that has separate heat pumps for heating and hot water means residents do not have to compromise on the warmth of their home, whilst water is being heated.

DATA & FACTS

Location:	Bridgend, Wales, United Kingdom
Completion:	2020
Type of building: Energy-positive social housing development	
Building technology:	Total Home Environment Ltd
Products:	Heat pump combi unit PKOM⁴

Produkt groups**:**

COMFORT VENTILATION

PICHLER
Systematic ventilation.

07/2021

OBJECT OF THE MONTH

BIOBASED HOUSE, NETHERLANDS

Residential living will always be changing and developing with the times. Apart from architectural considerations, the total energy balance is of increasing importance. Legislators, ongoing development of building materials and the quality of construction are consistently raising the standard of residential construction, thereby reducing energy consumption.

As an example of this, a modular bio-based house was built in the Netherlands. The house stores more CO_2 than it emits!
A central element in such a sustainable object is of course the ventilation system. That's why the heat pump combi unit PKOM⁴ was used. The building technology is compactly packaged in a combi unit that is also responsible for ventilating, heating, cooling and hot water preparation. The PKOM⁴ heat pump combi unit with patented two-circuit heat pump system unites these four functions on a footprint of less than 0.75 m^2. It achieves the best efficiency values thanks to its innovative and patented heat pump technology (air heat pump) and its sophisticated heat recovery. The system is easily set and controlled at the push of a button.

DATA & FACTS

Location:	Netherlands
Completion:	2023
Type of building:	Modular biobased house
Building technology:	Climavent bvba
Products:	Heat pump combi unit PKOM⁴, Air distribution system

Product groups:

AIR CONDUCTION ***AIR DISTRIBUTION*** ***COMFORT VENTILATION***

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH

SINGLE FAMILY HOUSE, SLOVENIA

At a time when the requirements for the overall energy efficiency of buildings are becoming ever stricter, the demands on ventilation systems are also increasing, as they are directly linked to many of the building's energy parameters: Heating, cooling, humidity control and electricity consumption. This should be kept in mind when selecting technologies and solutions for the ventilation system, taking into account both the operating costs and the amortization period in addition to the acquisition costs - it is obvious that the most advanced technology also pays for itself the fastest. This is why a ventilation unit from our Komfovent series with an intelligent control system was chosen for this newly built detached house. In combination with flexible silencers, whisper-quiet operation is guaranteed. The split outer wall element serves as a weather protection grille and closure for the outdoor and exhaust air ducts on the façade.

DATA & FACTS

Location:	Ptuj
Completion:	2023
Products:	Ventilation unit Komfovent Domekt R450V, Split outer wall element AWEG 160, Flexible Silencers

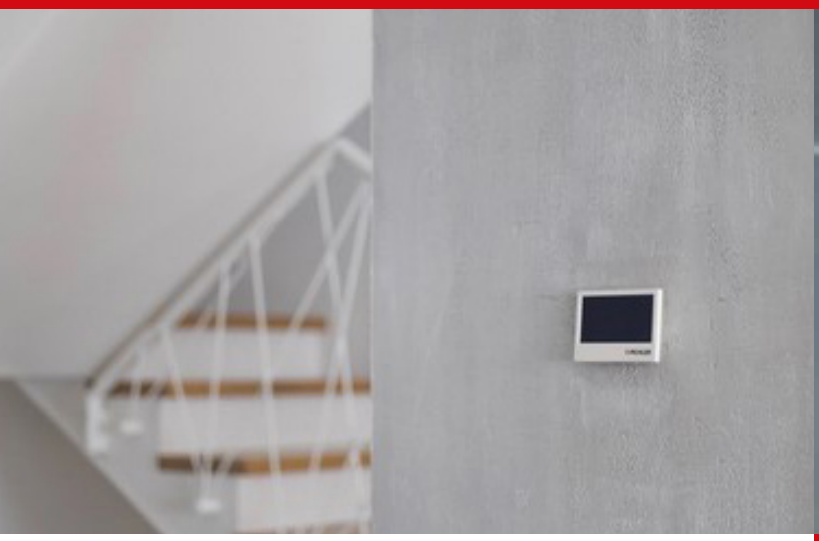
Product groups:

AIR CONDUCTION

COMFORT VENTILATION

PICHLER
Systematic ventilation.

OBJECT OF THE MONTH



SINGLE FAMILY HOUSE, CZECH REPUBLIC

Minimalism meets comfort
This single family house impresses with its understated, minimalist design, which creates a fresh and calm living atmosphere. During the planning phase, a customised heating and ventilation concept was developed that not only meets the latest standards, but also ensures a high level of living comfort, energy savings and a healthy indoor climate - so that the residents can enjoy their new home to the full.

Healthy air with cutting-edge technology
Modern ventilation ducts and the compact PKOM⁴ heat pump combi unit were installed for the realisation. This highly efficient solution combines controlled ventilation, heating, cooling and hot water supply in a single unit. Thanks to innovative heat recovery, the energy from the exhaust air is utilised to heat the fresh air. This significantly reduces heat loss and cuts heating costs in the long term. Another highlight is the integrated hot water preparation - ideal for households that want to optimise energy costs and reduce their dependence on conventional heat sources.

Intelligent, quiet and efficient
The PKOM⁴ also impresses with its intelligent control system, which allows the settings to be flexibly adapted to individual requirements. Its extremely low noise level ensures undisturbed living comfort, while its high energy efficiency guarantees sustainable operation.

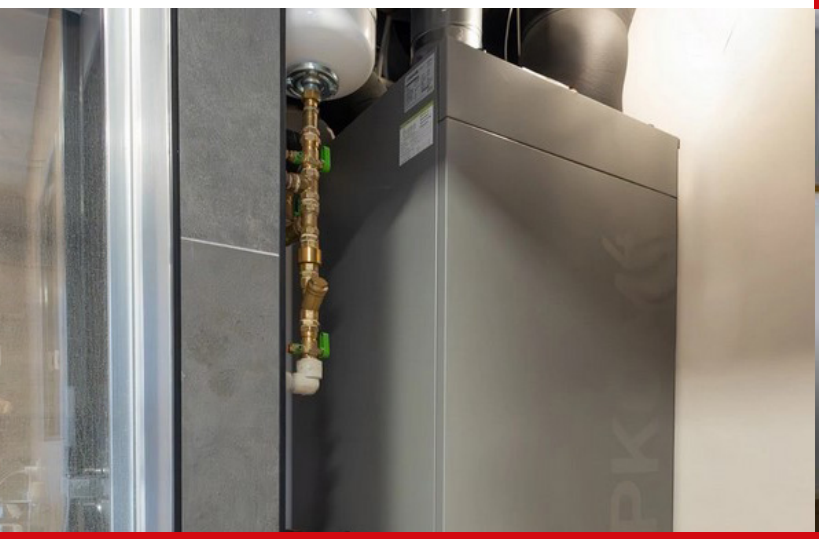
DATA & FACTS

Location:	Czech Republic
Completion:	2024
Type of building:	Passive house
Building technology:	Evora CZ s.r.o.
Products:	Heat pump combi unit PKOM⁴, ducts and fittings

Product groups:

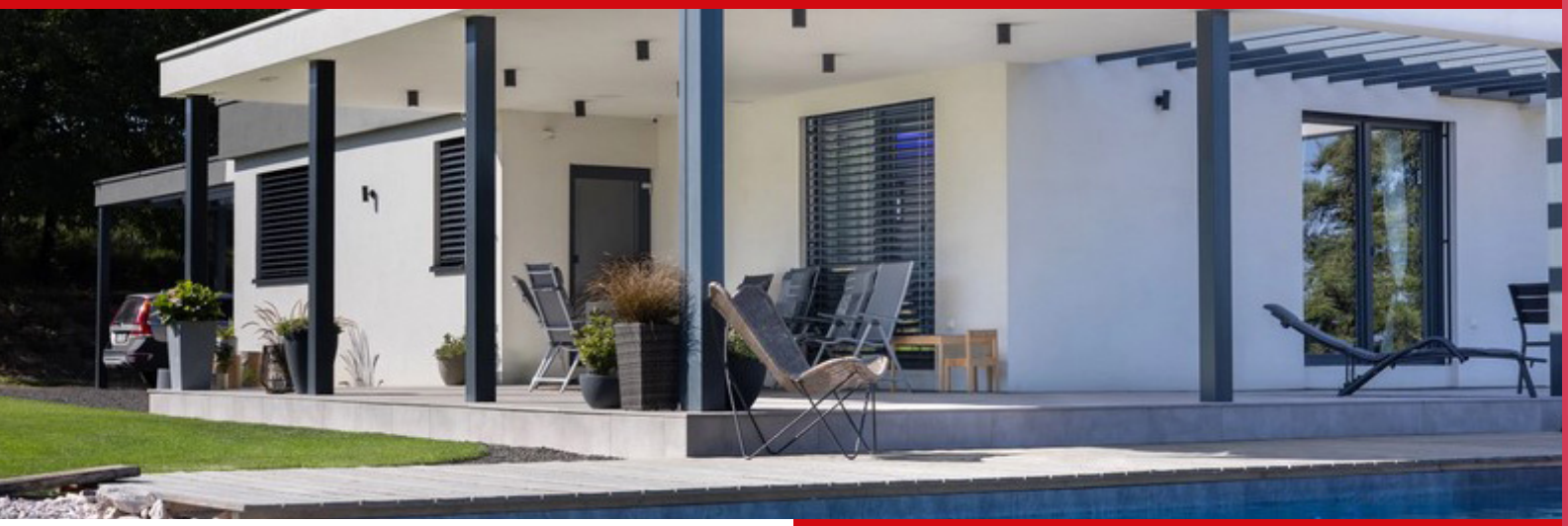
COMFORT VENTILATION

AIR CONDUCTION



PICHLER
Systematic ventilation.

OBJECT OF THE MONTH



SINGLE FAMILY HOUSE, CZECH REPUBLIC

During the planning phase of this single family house, a ventilation system from PICHLER was chosen, which was installed by our Czech partner Evora. The LG 350 compact ventilation unit acts as the central unit for controlled ventilation of the building. It is characterised by high thermal efficiency, low sound pressure levels during operation and a compact, integrated unit concept with a contemporary design.

The system ensures a continuous and demand-controlled air exchange rate with high energy efficiency. The use of the filter system in combination with a precisely controllable control unit ensures consistently high indoor air quality - while complying with current energy and hygiene standards.

The highly efficient heat recovery system is particularly noteworthy: it extracts heat from the extract air and uses it to heat the fresh air supplied, significantly reducing the building's heating requirements. This leads to a noticeable reduction in energy consumption while maintaining the same high indoor air quality.

DATA & FACTS

Location:	Czech Republic
Completion:	2024
Type of building:	Single family house
Building technology:	Evora CZ s.r.o.
Products:	Compact ventilation unit LG 350

Product groups:

COMFORT VENTILATION

PICHLER
Systematic ventilation.

PICHLER

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