

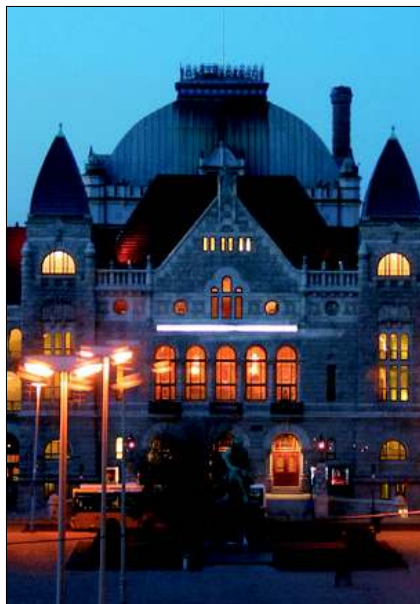
**PUZAIR PRO** central vacuum cleaners  
**PUZAIR PROTECT** shredder vacuums  
**PUZAIR PROCESS** tailor-made material transfer systems for trade and industry



Building technology for well being

## Puzair Oy

Puzair Oy is a company specialised in environmental and building technology. Operations began on 1 January 1989. The company designs, manufactures and markets central vacuum cleaning systems, information security systems, as well as tailor-made systems for trade and industry. When it comes to central vacuum cleaners for professional applications and apartment buildings, Puzair is the market leader in Finland and the world; the company exports its products to approximately 20 countries. The company's mission is to make people's working and living environments healthier and safer. A device or system can serve one or more properties. The business idea is to develop and implement systems that meet customers' needs.



National Theatre: Puzair Pro central vacuum cleaner.



Urjala Church: Puzair Promiss central vacuum cleaner.



Museum of Contemporary Art Kiasma's technical facilities: Puzair Pro central vacuum cleaner.



Nokia Headquarters: Puzair Protect vacuum shredder.



As Oy Hopeaharju: Puzair Multivac central vacuum cleaner.



Scandic Hotel Simonkenttä: Puzair Pro central vacuum cleaner.



Kemin Energia: Puzair industrial system.



Tallink Galaxy passenger ship: Puzair Pro central vacuum cleaner.

## Puzair Pro central vacuum cleaner

Utilising a new technology, Puzair Pro is an effective central vacuum cleaner system that is optimised project-specifically. The finished result is an operationally reliable and economic central vacuum cleaner system that serves the needs of its particular location.

A central vacuum cleaner system's advantages include silence and the absence of odours. Studies have shown that vacuuming with ordinary vacuum cleaners increases the amount of microscopic dust particles - the kind detrimental to health - in the room air. Puzair Pro, on the other hand, reduces the quantity of dust particles and purifies the air. This saves air treatment filters and extends the service life of digital and electronic equipment.

### Fields of application

The Puzair Pro central vacuum cleaners are designed for professional use; vacuuming can take place at several points simultaneously. Puzair Pro can be utilised in new construction as well as in existing buildings and production facilities.

- Hotels
- Apartment buildings
- Service buildings
- Day-care centres
- Shops/service stations
- Passenger ships
- Offices and government agencies
- Hospitals
- Trains
- Production and warehouse facilities
- Museums and theatres

The Puzair Pro central vacuum cleaner system can also be integrated with the Puzair Protect shredder vacuum system (see p. 3).

### Technical information

The Puzair Pro system's technical features make it an international leader in its sector. The Puzair Pro system is always designed to suit each location's requirements and needs.

#### Automatic pipe flushing

The logic-controlled multi-user system features automatic pipe flushing.

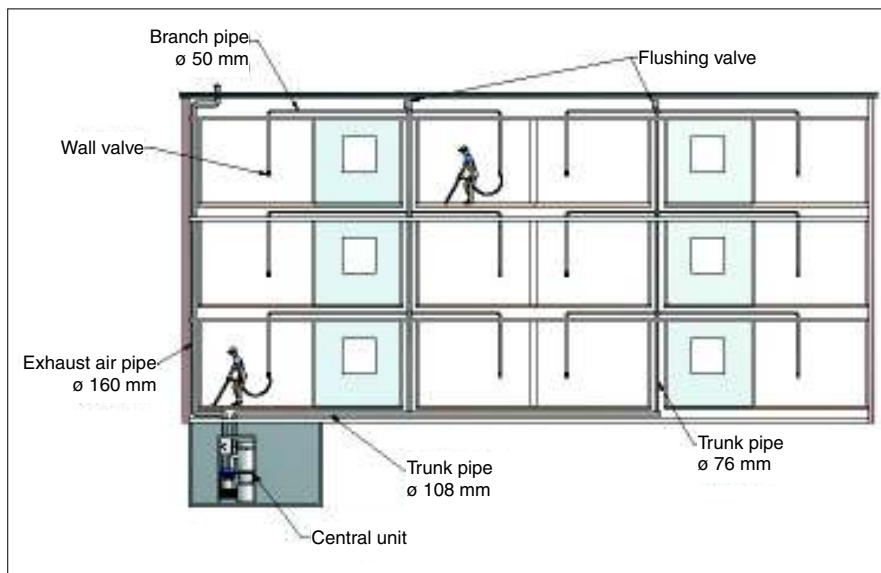
When the logic function receives the information that all users are detached from the system, the central unit starts up at maximum power and each trunk pipe's valves open sequentially. The maximum airflow led through each trunk pipe cleans all pipe sections.

#### Double filtration

Puzair Pro devices have double filtration. First a cyclone filter separates the coarse dust, after which a cartridge filter stops the fine dust. In Pro equipment there is an 8m<sup>2</sup> cartridge filter whose replacement interval is 3-12 months for normal use.

#### Automatic filter cleaning

An automatic filter cleaning technology based on pressure impacts is also available for Puzair Pro devices; this doubles the length of the replacement interval.



*Schematic drawing of an apartment building's central vacuum cleaner system. The central unit can also be located in an attic. The trunk pipe can be floor-specific as shown in the drawing or the risers can also be built to align with the apartments. The riser pipe is dimensioned at ø 75, 110 or 160 mm depending on the number of simultaneous users. The wall valves' connection tube is ø 42-50 mm. Normally one wall valve is installed in apartments 80 m<sup>2</sup> and smaller. In larger dwellings 2 or 3 wall valves may be necessary. In multi-floor apartments there should always be a separate wall valve on each floor. A wall valve can also be in the floor.*



**Design**

The design of a central vacuum cleaner system's piping should be co-ordinated with the design of a building's structural, mechanical and electrical systems. The trunk pipe can be placed in the same spaces with other HPAC piping. The positioning of wall valves will depend on the room's eventual furnishings and use.

**Selection of system typ**

When designing a Puzair Pro system for a project location, the number of simultaneous users must first be defined. The Puzair Pro system allows 1-6 simultaneous users per central unit.

**Location of central unit**

When planning the location of central units, the spaces' sound insulation requirements must be taken into account, and there must also be sufficient ventilation. The temperature of the space must not exceed +40 °C.

**Specification of wall valve locations**

Wall valves should be placed to ensure that the system covers all areas requiring cleaning. An 8-12 m hose is used in cleaning work. Installing the wall valves at the same height as electrical sockets is recommended, or they can be floor-recessed.

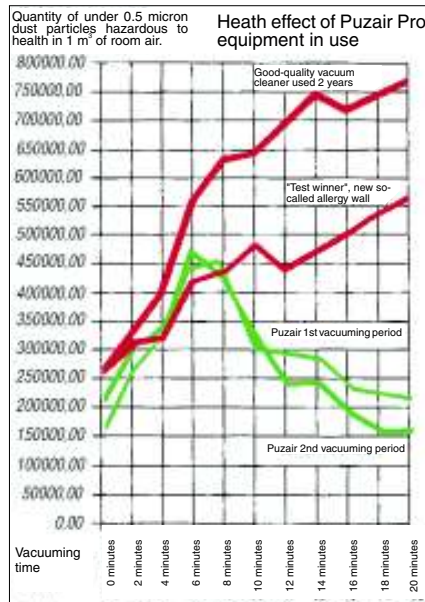
**Pipeline design**

The Puzair Pro pipeline consists of branch pipes leading from wall valves, trunk pipes and exhaust pipes. The dust piping can be installed, for example, in suspended ceilings, hollow-

core floor slabs, drywall construction, wooden floors, poured concrete slabs. Y-branches, 45° bends, and when necessary 90° bends - in steeper bends the pressure loss is greater - are used in the dust pipes' forks and corners.

**Flushing valves**

A flushing valve is located at the end of a logic-controlled system's trunk lines.



*Puzair Pro's health effects have been studied; Dr. Ilmari Lindgren (HYKS/Allergy Hospital). The Finnish Allergy Association recommends central vacuum cleaners.*

**Puzair Protect vacuum shredder**

Puzair Protect conveys shredded paper through pipes to a central unit that can be, for example, a wastepaper receptacle or trash compactor. Several existing shredders can also be joined to the system. Puzair Protect can be installed in new construction or existing buildings.

**Protect's advantages:**

**Cost savings**

The concentrated system facilitates the effective and economic gathering of all recyclable paper for reuse. The system eliminates the intermediate storage of waste paper in offices and saves on waste expenses.

**Data security**

When information is destroyed in the same space where it was produced, you can be sure that it will not end up in the wrong hands. Puzair Protect destroys papers as well as recordings containing sensitive information.

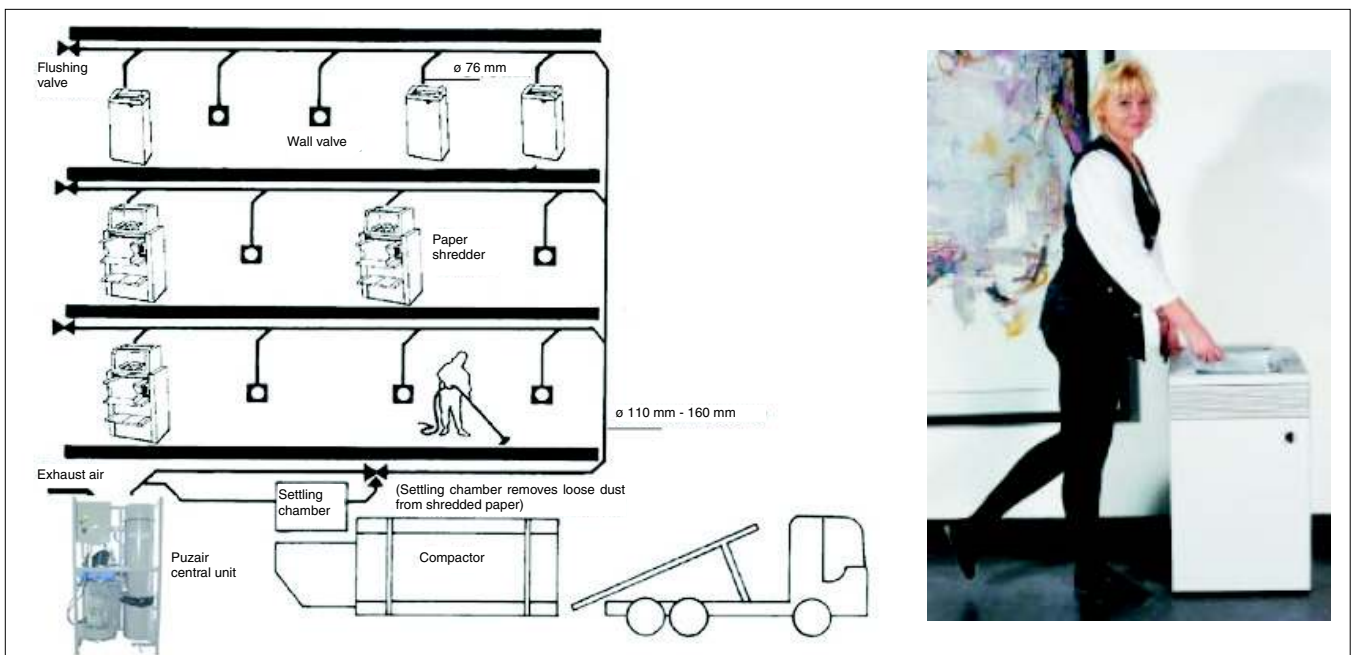
**Indoor air purity**

When the shredders are emptied with negative pressure, particles harmful to health do not pass into the room air and the working environment remains pleasant, even for dust allergics. Clean indoor air also improves the functionality of EDP devices.

**Fire safety**

Puzair Protect reduces an office's fire loading.

**Domestic and international high tech companies trust the Puzair Protect vacuum shredder**



*A ø 110-160 mm metal pipe, from which ø 110 mm metal tubes are branched to shredders, is used as the trunk pipe. The Puzair Protect system has a logic control that provides a sufficient airflow and prevents the pipe from clogging.*

## PUZAIR PRO TECHNICAL INFORMATION

	Promiss	Promiss Invert	Pro 1/Pro 1 SR/Pro 1 SRP	Pro 3/Pro 3 S/Pro 3 SR/Pro 3 SRP	Pro 6 S/Pro 6 SR/Pro 6 SRD/Pro 6 SRPD/Pro 6 SRD
Trunk (RAL 7030)	Powder painted steel	Powder painted steel	Powder painted steel	Powder painted steel	Powder painted steel
Turbine/Fan	3 kW	3 kW	3 kW	5,5 kW	12,5 kW
Nominal current	6,2 A	6,2-12,5 A	6,2 A	13,3 A	28 A
Number of simultaneous users	1	2-3	1	3	6
Diameter of cyclone intake pipe	ø = 76 mm	ø = 76 mm	ø = 76 mm	ø = 76 mm	ø = 108 mm
Size of fan's exhaust pipe	ø = 100 mm	ø = 100 mm	ø = 100 mm	ø = 100 mm	ø = 125 mm
Pipe dimensions (plastic or metal)					
- trunk pipe	ø = 2"	ø = 2" or 110 mm	ø = 2"	ø = 75 mm	ø = 110 mm
- wall valve tubes metal or plastic	ø = 2"	ø = 2"	ø = 2"	ø = 2"	ø = 2"
- exhaust pipe	metal ø 100 mm	metal ø 100 mm	metal ø 100 mm	metal ø 100 mm	metal ø 125 mm
Maximum pipe length (10 m cleaning hose)					
- single user	60 m	60-120 m depends on piping	60 m	125 m	150 m
- maximum number of simultaneous users				85 m / ø 75 mm + 25 m ø 2" mm	105 m / ø 75 mm + 25 m ø 2" mm
Control centre					
- nominal voltage	3-400 V	3-400 V	3-400 V	3-400 V	3-400 V
- required front fuses	16 A slow	16 A slow	16 A slow	25 A slow	35 A slow
- plug/connection	16 A	16 A	16 A	32 A	32 A or 63 A
Adjustment valve	None	None	None	1, mechanical	2, mechanical
Flushing valve	None	None	None	1-8, all at end of 75-mm pipes	1-8, all at end of 75-mm pipes
Filter	3,5 m <sup>2</sup>	3,5 m <sup>2</sup>	8 m <sup>2</sup>	8 m <sup>2</sup>	8 m <sup>2</sup>
Automatic filter cleaning			-/compressed air impact/ compressed air impact	-/compressed air impact/ compressed air impact	-/compressed air impact/ compressed air impact/ compressed air impact/ compressed air impact
Control cabling to wall valves	Cable (2 x 0,5 mm <sup>2</sup> )	Cable (2 x 0,5 mm <sup>2</sup> )	Cable (2 x 0,5 mm <sup>2</sup> )	Cable (2 x 0,5 mm <sup>2</sup> )	Cable (2 x 0,5 mm <sup>2</sup> )
Control cabling to flushing valves	Unnecessary	Unnecessary	Unnecessary	Cable (2 x 0,5 mm <sup>2</sup> )	Cable (2 x 0,5 mm <sup>2</sup> )
Max. air volume	320 m <sup>3</sup> /h	504 m <sup>3</sup> /h	320 m <sup>3</sup> /h	490 m <sup>3</sup> /h	1013 m <sup>3</sup> /h
Maximum negative pressure	270 mbar	270 mbar	270 mbar	310 mbar	280 mbar
Width x height x depth	700 x 1990 x 700 mm	700 x 1990 x 700 mm	1130 x 1990 x 700 mm	1130 x 1990 x 700 mm	1130 x 1990 x 700 mm
Service access need	in front 800 mm	in front 800 mm	in front 800 mm and above 200 mm	in front 800 mm and above 200 mm	in front 800 mm and above 200 mm
Heat loss	20 % of nominal voltage	20 % of nominal voltage	20 % of nominal voltage	20 % of nominal voltage	20 % of nominal voltage
Minimum sound level**	72 dB (A) **	72 dB (A) **	72 dB (A) **	71 dB (A) **	75 dB (A) **
Dust container	steel 80 l, plastic sack 150 l (strong)	steel 80 l, plastic sack 150 l (strong)	steel 80 l, plastic sack 150 l (strong)	steel 80 l, plastic sack 150 l (strong)	steel 80 l, plastic sack 150 l (strong)
Weight	110 kg	110 kg	146 kg	251 kg	410 kg
Air compressor	None	None	None/on/none	None/none/on/none	None/on/none/none/on

\*\*=(Measured in anechoic chamber).  
All models can be tailored for special needs. Request an offer.  
Other voltages by special order.

## Puzair Process

Puzair Process negative pressure systems are used to solve problems in industry caused by dust, gas and other impurities. The system is also used to transfer and separate industrial materials.

### Fields of application

Process systems have been supplied for, among others, the following applications:

- cleaning systems
- elimination of edge strips
- elimination of cuttings and other residue at book publisher
- sawdust removal directly from machines and work benches
- local exhaust systems for materials and gases in production processes
- transfer separation of sand and oil at wagon depot
- dust removal at power plants.



### Puzair Oy's design and installation service

Puzair Oy provides design and installation services as a part of architectural and mechanical design, as well as system design and installation.

## MANUFACTURING, MARKETING AND CONTRACTING

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