

DUCT FANS WKO



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Please read this instruction manual carefully before beginning any work.

I. CONTACTS



Szymański, Nowakowski General Partnership
31 Lubelska Str., 08-500 Ryki
POLAND

phone +48 81 883 56 00,
info@juwent.com.pl
www.juwent.com.pl

Export department
mob.+48 502 087 841
mob.+48 664 465 243
export@juwent.com.pl

II. ORIGINAL INSTRUCTION MANUAL

DUCT FANS WKO size 10 to 35

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1. INTENDED USE

Duct fans are intended for in the intake and exhaust ventilating installations being delivered in the industrial and civil construction industries.

The flowing air can be polluted with vapours and corroding gases, and dusts within the limit values as specified by the environment protection regulations

Fans can operate in any position.



Permissible temperature of the air being removed is up to +50°C.



Fans cannot operate in the atmosphere with humidity exceeding 90%.



Use of the fans in explosion-hazard atmosphere is not admissible.

2. DEVICE DESCRIPTION

Series of fan types includes 6 sizes.

The fans comprise the following:

- » enclosure made of plastic with the connectors for ventilating installation ducts;
- » highly efficient plastic centrifugal impeller with the motor placed inside the impeller.

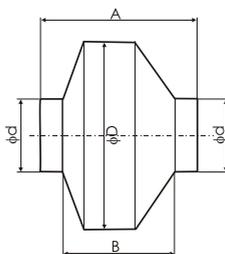
3. DESIGNATIONS

Duct fan

WKO -

Size 10; 12,5; 16; 20; 25; 31,5

4. TECHNICAL DATA



Fan size	Ød [mm]	ØD [mm]	A [mm]	B [mm]	Weight [kg]
WKO-10	100	255	215	155	5,5
WKO-12,5	125	255	215	155	5,5
WKO-16	160	345	225	165	7
WKO-20	200	340	250	190	8
WKO-25	250	340	250	190	8
WKO-31,5	315	405	285	225	9,5

Ambient parameters for the fan and the motor (for all sizes)

Air temperature range	Max. air humidity	Max. dust content	Motor parameters	
			IP	Insulation class
from -20°C to + 55°C	90%	5 mg/m ³	44	F

Fan operating noise level

Fan size	Operating noise level	
	Acoustic energy directed to the duct from the suction and pressing side L _{wa} [dB(A)]	Acoustic pressure level in the fan environment L _p [dB(A)]*
WKO-10	64	47
WKO-12,5	65	49
WKO-16	68	53
WKO-20	69	55
WKO-25	70	57
WKO-31,5	73	61

*Acoustic pressure level in the fan environment measured at the distance of 1m with the accommodation acoustic absorption A=20m² and directional factor Q=2.

5. TRANSPORT

The fans are delivered as completely assembled in carton packaging. The fan is delivered with the Product Book.



The fans should be transported in a manner preventing any mechanical damages. Protect them against any impacts and do not put any heavy objects inside the packagings.

6. INSTALLATION

Fans can be installed in any position.

They can be connected to round, spiro-type and flexible ducts using cable ties.

The fans are supposed to be suspended in a manner used for suspending ventilation ducts whilst taking into account the weight of the fans. When suspending the fans it is advisable to use absorbers preventing transmission of vibrations.

7. SAFETY RECOMMENDATIONS



The fans should be used in accordance with the instruction manual.



Installation, connection, commissioning, inspection and repair works on the fans should be performed by an authorised technician, and electrical works by a person holding the required qualifications.

All maintenance and repair works should be carried out with voltage off.



In the case of the fan failure immediately turn the motor electrical power supply off.



The fan can only work with properly operating electrical protection devices. It must be uninterruptedly connected to the electrical installation fitted with protection terminal (earthing), residual-current device and service switch.
Pay attention to distinguish the protective conductor from power cords.



Fans are intended for installation with ventilating ducts providing protection of the fan impeller. If the length of the ducts being connected at both sides of the fan is less than 0.8m, use protective grates on the duct.



When installing the fan for the exhaust ventilation in rooms where the boiler is installed, check whether the room has sufficient area of the air intake holes to ensure proper combustion.

Due to its design, the device does not emit any hazardous radiation.

Important note! Any installation or use of the fan not in accordance with the instruction manual may cause the fan damage and voids the warranty.

Despite the fact that the device has been designed and manufactured in accordance with the standards valid as for the moment of the manufacture start, probability of injury and damage to health when using the device is unavoidable. This probability is related to frequency of using, cleaning and repairing the device, presence of persons within the danger area, and not respecting the safety rules as set out in the instruction.

Severity of the bodily injury and deterioration of health is dependant on numerous conditions which can be foreseen partially only by considering them when designing the device and by providing descriptions and warnings in the instruction manual.

Therefore residual risk is present if recommendations and instructions are not respected by the operator.

8. ELECTRICAL INSTALLATION

Electrical installation and connection of the power supply to the fan must be carried out in accordance with relevant construction standards and regulations.



Electrical connections can be carried out by persons who hold relevant qualifications and authorizations for performing electrical works and who are familiarized with this instruction.

Before connecting make sure that the voltage and frequency rating of the power supply are in accordance with the information given on the motors data plates. Otherwise, do not connect the fan. Electrical connection of the motor should be carried out taking into account both the WS-3 service switch located directly by the fan, and overcurrent and short-circuit protections. Basic supply voltage is 230V/50Hz for single-phase motors, delivered from the main switchgear equipped with residual-current device.

Examples of electrical connection diagrams (Fig. 1, 2)

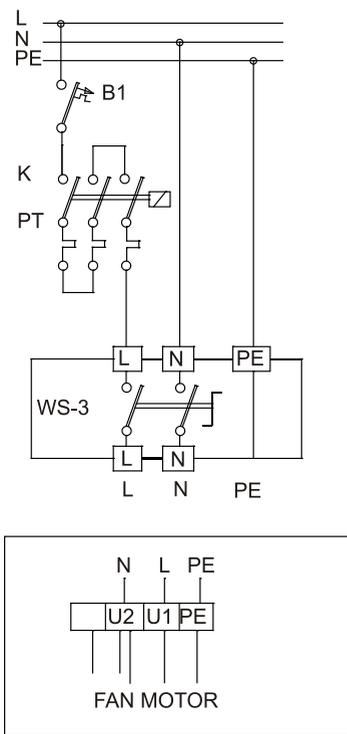


Fig. 1 Electrical connection and control diagram for WKO fans

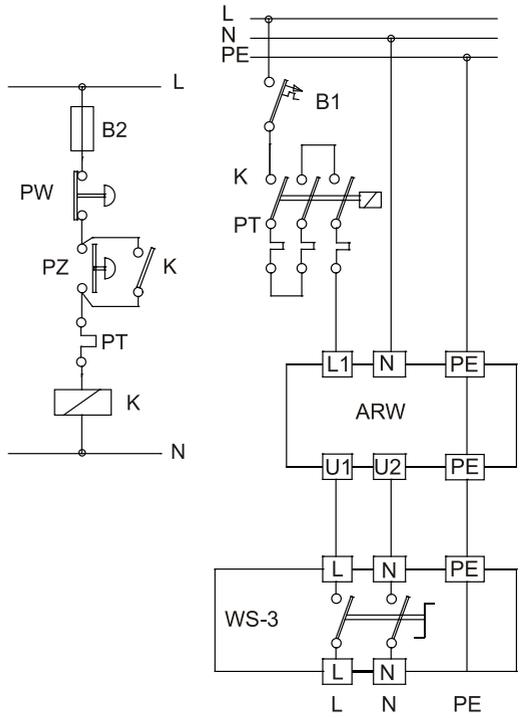


Fig. 2 Electrical connection and control diagram for WKO fans with ARW controller

DESIGNATIONS FOR DIAGRAMS:

PT - Motor overcurrent protection
 PZ - Control button ON
 B1, B2 - Fuses
 PE - Protection terminal

K - Contactor
 PW - Control button OFF
 WS-3 - Service switch
 ARW - Speed controller

9. AUTOMATICS

The fan can be fitted with the following:

- » speed controllers: ARW-1,2 (WKO-10; WKO-12,5; WKO-16; WKO-20; WKO-20) and ARW-3 (WKO-31,5);
- » TP room thermostats;
- » TPP room thermostats with programmable timer;
- » ZS power supply/control boxes (equipped with main switch, overcurrent switches, short-circuit switches, signal lamps) intended for operation and control of the automatics components.

Single control box enables control of a group of fans with a single thermostat.

In the case of an order including the delivery of the fans fitted with automatics, electrical diagram for the fan and the automatics is also supplied.

10. DEVICE COMMISSIONING

Before commissioning:

- » check the fan for proper mounting;
- » check the electrical motor for proper connection (according to the electrical diagram);
- » check the fan impeller for free rotating motion (not rubbing the enclosure).

Once the above is completed, turn the fan on.

11. REPAIR, MAINTENANCE AND WITHDRAWAL FROM USE

The fans are intended for continuous operation.

At least once a year check the condition of the fan motor (the motor bearings require no regular lubrication) and, if necessary, remove the defects found according to the motor manufacturer instructions.

Depending on the degree of air pollution, and no less than once a year, clean the fan impeller from any dust and dirt.

Clean the fan with a damp cloth and do not use any aggressive cleaning agents.



All maintenance and repair works should be carried out with voltage off.



Use of high-pressure washers is not admissible.

Once the device is withdrawn from use, handle it to a proper waste treatment plant.

12. REMOVING MALFUNCTIONS

Description of malfunction	Possible causes of malfunction	Measures of prevention/removal
Fan won't work	Incorrect connection to power supply	Check for proper connection to power supply.
	Locked impeller	Remove cause of locking
	Damaged motor	Report at JUWENT service department
Low fan performance	Incorrect impeller rotational direction (not in accordance with marking on fan enclosure)	Change polarity of power supply connection
	Contaminated fan inlet grate	Clean inlet grate
Fan high vibrations	Incorrect fan - roof base or roof base - fan connection.	Check for correct connections
	Contaminated or damaged impeller	Remove impeller contaminations. Report any impeller damages at JUWENT service department
Fan operates with excess noise, knocks	Plays on connections between fan elements or on connection between fan and roof base	Remove plays on connections by tightening bolts and screws
	Rubbing between impeller and enclosure	Report at JUWENT service department
	Damaged motor bearings	
Activation of motor overload protections	Damaged or worn bearings. Damaged motor windings (break, overheat). Damaged circuit-breaker or protection system.	Report at JUWENT service department
	Incorrectly set protection relay. Loss of one of supply phases	Check electrical installation and protection systems

13. INFORMATION

As to all issues concerning the duct fan please contact JUWENT Production Plant or our Representatives

III. WARRANTY TERMS AND CONDITIONS

1. JUWENT Szymański, Nowakowski General Partnership, headquartered in Ryki at 31 Lubelska Str., hereinafter referred to as the Warrantor, grants the Customer a warranty of proper operation of the unit with reservation of the requirement of its use in accordance with the conditions determined in the instruction manual and the terms and conditions specified below.
2. The warranty has been granted for a period of 24 months from the purchase date demonstrated in this warranty document with a possibility of its special extension according to a separate agreement and specified in the Special Warranty Terms and Conditions.
3. The warranty covers the removal of technical defects of the unit arisen as a result of its use in accordance with the instruction manual, revealed within the warranty period. The warranty provisions are valid in the territory of the Republic of Poland.
4. By virtue of the granted warranty the Warrantor is not liable for the loss of expected profits and costs resulting from a periodical impossibility of the use of the unit incurred by the Customer.
5. To realize the Customer's rights resulting from the warranty it is required to deliver the claimed unit with the warranty document to the Warrantor at his expense.
6. The claimer delivers the unit in an original factory packing, in case there is no factory packing the claimed unit should be delivered by the Customer for the repair in a way ensuring a safe transport. The risk of accidental damage of the unit during the transport burdens always the party that dispatches the parcel.
7. The defects revealed with the warranty period will be removed by the Warrantor free of charge. A method selection of the realization of obligations resulting from the warranty granted to the Customer belongs to the Warrantor that may remove a defect by the repair or the replacement of the damaged subassembly or by the replacement of the unit. The property of the unit withdrawn from service and / or defective subassemblies is transferred to the Warrantor.
8. The warranty is extended by a period for which the Customer has been deprived of a possibility to use the unit.
9. The Warrantor will make efforts that the repair is executed without further delay within the time-limit of up to 14 working days from the delivery date of the unit. In reasonable cases of which the Customer will be informed by the Warrantor, this time-limit may be extended, e.g. by the time of provision import or when there is a necessity to execute an expertise or laboratory tests in specialized institutions.
10. The Warrantor is liable exclusively for the defects inherent in the sold unit. The damages arisen after its sale for other reasons are not covered by the warranty, in particular:
 - a) mechanical damages (including also damages caused by microparticles occurring in the working environment of the unit), thermal damages, chemical damages and aleatory damages or damages caused by the atmospheric factors,
 - b) damages occurred as a result of non-observance of typical rules or the rules required by the instruction manual related to the operation and mounting of the unit or the use of the unit against the intended use and other damages caused by the Customer's activity or omission,
 - c) damages being a result of defective operation of the system in which the unit has been built or used,
 - d) damages occurred as a result of non-execution of the actions to which the Customer has been obliged in accordance with the instruction manual, e.g. periodical cleaning, maintenance, adjustment, etc.,
 - e) damages occurred due to the use of materials or parts subject to a normal operational wear other than the materials recommended by the Warrantor in the instruction manual,
 - f) damages being a result of use of power supply of the unit (of the system in which this unit functions) incompliant with the standard, and in case the unit is also supplied with water, damages being a result of use of water (supply water and / or boiler water) with parameters other than the parameters foreseen in the valid standard (PN-93/C-04607),
 - g) damages occurred as a result of operation and / or maintenance of the unit in a way incompliant with the instruction manual and / or executed by the unauthorized persons.
11. The warranty does not cover as well:
 - a) activities executed by the Customer in accordance with the recommendations included the instruction manual of the unit within the framework of normal maintenance and inspections,
 - b) travel and work costs of the Warrantor's service or an entity delegated by the Warrantor in case when a warrant call turns out to be groundless.
12. An annotation made by a trained employee in the Inspection and Maintenance Document of the unit is a confirmation of time-limit holding and range of activities foreseen for the maintenance of the unit.
13. The Warrantor is not liable for damages incurred by the Customer or third parties caused the run of the unit occurred in particular as a result of non-observance of the afore-mentioned terms and conditions by the Customer.
14. In case the service works are executed by the Warrantor at the place where the unit is mounted, the Customer will make available a free access to the rooms where the units are located to the Warrantor.
15. In case the units are mounted at the height making an access from the floor surface impossible, the Customer will ensure the scaffolding compliant with the OHS regulations or mobile lifting platforms and vertical transport equipment.
16. The equipment from the electric and / or hydraulic system is disassembled by the Customer.
17. The claims should be lodged at the Warrantor's address in writing / by fax / email using a service notification form.
18. The Warrantor refuses to execute the warranty activities (periodical service works or repair) in case the price for the unit or previous service work is not paid for the benefit of the Warrantor.

DATE OF SALE

STAMP AND SIGNATURE

Special Warranty Terms and Conditions:

Warranty period extension up to months.

Other:

STAMP AND SIGNATURE

TYPE OF UNIT:	
FACTORY NUMBER:	
YEAR OF PRODUCTION:	

IV. UNIT STARTUP REPORT

Date of startup	Executor of startup stamp / name and signature	Motor current [A]	User's representative stamp / name and signature	Remarks

V. INSPECTION AND MAINTENANCE DOCUMENT

Date of inspection	Executor of inspection stamp / name and signature	Service activity range	Remarks

* Inspection of the unit in accordance with the section "Repair and Maintenance" in the instruction manual

VI. SERVICE NOTIFICATION

Date:

Notification type WARRANTY POST-WARRANTY PAID

Unit's user (name)	
Contact person	
User's address	
Phone, fax, and email	
Type of unit	
Factory No.	
Year of production	
Startup executed by	

Description of defect:

NOTE: AFTER COPYING AND FILLING IN SEND THE NOTIFICATION BY FAX OR EMAIL TOGETHER WITH A COPY OF THE STARTUP REPORT.

JUWENT Company accepts notifications filled legibly and completely.

When the lodged claim is not justified, the claimer will be burdened with service costs.

Date of warranty issue

Order No.

(company's stamp)

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