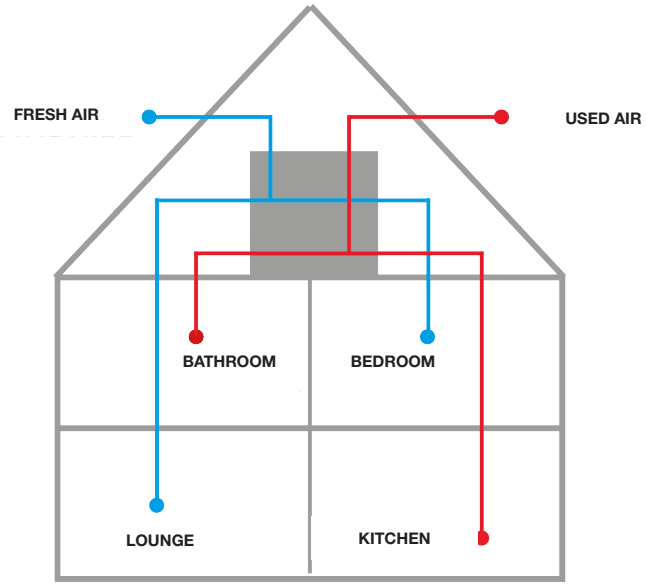
DEFRO® AIR

ADVANTAGES OF THE DEFRO AIR HEAT RECOVERY

INFORMATION BROCHURE FOR THE INVESTOR

How does the heat recovery work?



Fresh air is drawn from intake vent by a fan in the recuperative heat exchanger and supplied through the heat exchanger, where it is cost-free heated with the already heated air, drawn from the hot rooms in the house, simultaneously removing the stale air to the outside of the building.

Both fresh air and exhaust air from the rooms is filtered by the air filters, ensuring stopping the external contaminations and majority of smog.

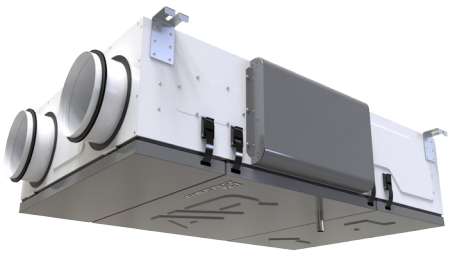
Clean and hot air is supplied to each of the residential rooms in adequate amounts and then it is extracted to the outside.

DEFRO AIR DRX AND DRX OPTI RECUPERATIVE HEAT EXCHANGERS

Defro offers many types of recuperative heat exchangers. They include DRX 300, 400 and 500, DRX OPTI 300, 400, 500 series and suspended models DRX 350 F and 450 F. Our air handling units are steel structures, distinguishing with a very high heat recovery efficiency - over 86% reaching even 95% in favourable conditions.

DRX and DRX F series offers also:
- flow balancing

DRX OPTI series - optimum alternative for the less demanding users.Selected series of recuperative heat exchangers can cooperate with energy recovery ventilators, which protects the houses against excessive drying of the building and using the already generated moisture in a way ensuring that both heat and steam content will be used and such process will be used in cycles.



Advantages of our devices

Hygiene and comfort of use

DEFRO AIR DRX series air handling units of the mechanical ventilation system with heat recovery supplies clean air, filtered by the anti-smog filters of the latest generation. Therefore, the user can be sure that using our equipment he will have total control over the system contamination.

Our units are also one of the quietest devices available on the market. This is due to the use of special axial fans dedicated to heat recovery.

We bet on professional service

DEFRO attaches great importance to professional customer service - both distributors and the end-users. We organize professional training courses in our company and selected locations and construction sites.

When deciding to select the DEFRO DRX series you can rely on our qualified online assistance.

You can also rely on our advisers, who will willingly help you in the selection of the optimum solution for your house.

Our highly qualified staff ensures the highest quality of products and solutions optimized for each project.

Our strengths

High efficiency

Defro Air ventilators (recuperative heat exchangers) - meet the expectations of the most demanding customers. They distinguish with the highest efficiency of the heat exchangers, which are a “heater” of the system.

Heat recovery efficiency in the ventilation is vital because it decides whether you will pay bills lower by 30-50% for heating or you will pay twice as much selecting the cheap solution with low efficiency.

Correct configuration of the heat exchanger, fans and controller of the ventilation units is a key for customer satisfaction.

Advantages

Health
- Clean fresh air after the filtration process, removing considerable part of contaminants and smog. It is also possible to use anti-allergic filters.

Comfort
- Skillful control of air parameters influencing the temperature sensibility and assurance of optimum amount of fresh air in the house.

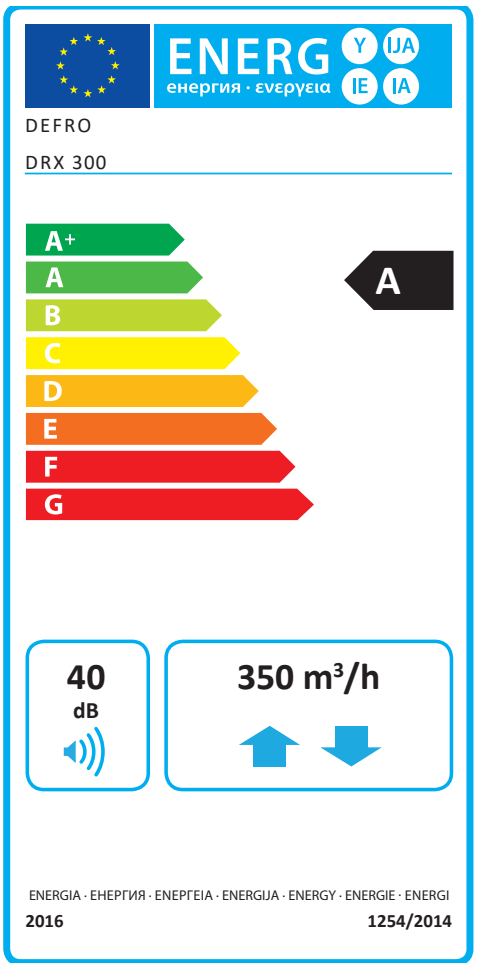
Energy-saving
- Considerable savings on heating with Defro Air system and the system made under our supervision.

How to choose recuperation?

The heat recovery system is usually used in the residential buildings, one-family houses, flats and apartments to ensure proper air quality and thermal comfort inside the buildings. This system is the best solution for newly constructed civil structures but it can be also used in upgraded buildings.

An important part of the process is the preparation of air balance, the concept for the distribution system and location of the air handling unit. Therefore we can be sure that the equipment and the system will be executed correctly.

Correctly selected and installed heat recovery system has a series of advantages, where thermal comfort and assurance of an adequate amount of the air are the most important. Anti-smog filters, ensuring purity and hygiene of the air and whole system. Heat recovery distinguishes with a low level of noise and its installation is simple and quick.



Air handling units, recuperative heat exchangers are classified in the given energy efficiency class based on the unit power consumption calculated for the conditions of temperate climate. The higher the value (negative), the more primary energy will be saved and therefore the energy class of the equipment will be higher.

Defro air handling units are classified in energy efficiency class A. Equipment control method also influences this classification.

The label contains information on maximum air capacity and emitted noise (measured for 70% of maximum capacity) by the equipment. The mentioned parameters apply only to the noise emitted from the housing. The sound is transferred by the comfort ventilation and air distribution system is actually considerably smaller. You should be aware that the incorrectly executed ventilation system, not the air handling unit, is the main reason for noise and discomfort in the house.

Energy efficiency class in short:
- alphabetical order of the energy efficiency classes from A+ to G,
- unit power consumption JZE indicates a coefficient expressing the value of energy used for the ventilation per square meter of the heated area of the room or building. The volumetric flow rate of the air, heat and moisture recovery, fans, control influence the efficiency class.

Enthalpy exchanger

The membrane of the heat exchanger is made of polymer. Its structure of the walls ensures the flow of moisture and heat and simultaneously extracts contaminants and stale air to the outside. Counter-flow and cross-flow heat exchanger is the most efficient design of the heat exchanger so far. Product maintenance includes washing of the heat exchanger with water every two years.

Membrane with Microban® technology prevents ingress of microorganisms causing that the design is resistant to fungal attack and bacteria. The membrane is resistant to frost. Long service life. Almost without any condensate. Recovering moisture from the stale air we obtain a so-called latent heat. Let's stop here not to get lost in the arcana of academic knowledge cause it will not be useful. Each liquid has its heat (its temperature) and since it returns to the ventilation system it is an additional, but not the only one, bonus. An obvious thing is a fact that we sense the heat more when the moisture content is higher.

LOW NOISE LEVEL

The recuperative heat exchanger is one of the quietest devices available on the market due to use of the latest generation axial fans and design of the recuperative heat exchanger ensuring the smallest resistances. The acoustics of the recuperative heat exchanger will in reality do little if the mechanical ventilation system has been incorrectly selected or made. In Defro this is included in the price.

IMPROVED HEAT RECOVERY

The best Core heat exchangers - used by the best manufacturers of the air handling units in the world are used are used also in our units. We should not forget that the higher efficiency of the heat exchanger the lower difference in temperatures between the air outside and inside the building. We have the best efficiency and will not say that it will be equal to 95% in any conditions because it is impossible.

FACILITATIONS FOR THE USER

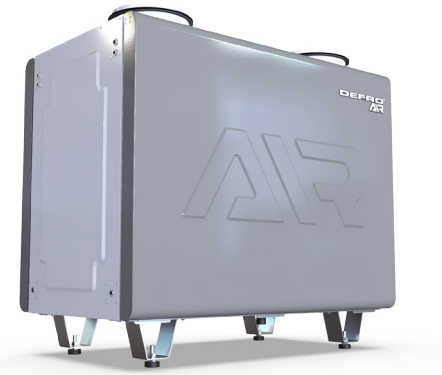
Our recuperative heat exchangers are equipped with controllers with colour display, which are already programmed and you should only "adjust" the building settings during start-up. The display can be hung on any wall in the house (with 4-wire cable). The offered equipment can be also controlled from any place in the world with our application.

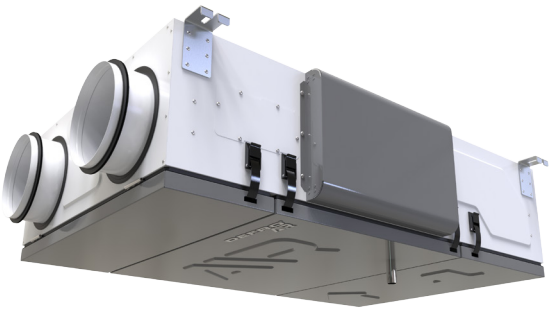
Our air handling units

DRX series recuperative heat exchangers are made of steel. They are equipped with low-noise and low-energy fans with EC direct current motors. They are manufactured with three capacities 350, 450 and 550 m^3/h, what in huge simplification, will be completely enough for comfortable ventilation of residential buildings of area up to approx. 200 m^2.

However, we recommend preparing an air balance, which you will receive free of charge from Defro. Each Defro recuperative heat exchanger is equipped with a flow balancing system therefore we can adapt the device ideal for your house.

Each ventilation unit is equipped as a standard with - without any extra paid options - a controller with ST-340 touch control panel used to control the operation of the air handling unit, controlling the air consumption in accordance with user preferences. This process is stabilized by a flow balancing function. The controller controls also the operation of preheater by smooth modulation preventing frosting of the exchanger. Furthermore, it is possible to connect CO2 sensor and humidity sensor (HR). DRX series recuperative heat exchangers can be also equipped with ST-505 or WiFi RS module for remote control of the recuperative heat exchanger. DRX series is equipped with 4.3” touch display.





DESCRIPTION OF DRX RECUPERATIVE HEAT EXCHANGERS								
series	DRX			DRX F		DRX OPTI		
model	300	400	500	350	450	300	400	500
steel structure	●	●	●	●	●	●	●	●
capacity in m^3/h at 200 Pa	350	450	550	350	450	350	450	550
energy efficiency class	A							
heat recovery from up to 95%	●	●	●	●	●	●	●	●
control panel with colour display	●	●	●	●	●	●	●	●
low power consumption due to EC direct current motors	●	●	●	●	●	●	●	●
automatic bypass 100%	●	●	●	●	●	●	●	●
automatic preheater with very low power consumption	●	●	●	●	●	●	●	●
flow sensors	●	●	●	●	●	–	–	–
Anti Freeze Control - cooperation with a modulated heater	●	●	●	●	●	–	–	–
pre-heater	–	–	–	–	–	●	●	●
set of wall hangers	●	●	●	●	●	●	●	●
simple and intuitive operation	●	●	●	●	●	●	●	●
energy recovery ventilator	○	○	○	–	–	–	–	–
modern design	●	●	●	●	●	●	●	●
mobile control (application)	○	○	○	○	○	○	○	○
quick assembly and easy maintenance	●	●	●	●	●	●	●	●

key: ● standard equipment, ○ extra paid equipment, **– equipment not available for the given model**

Air handling unit DRX 300, 400, 500

Capacity to 350, 450, 550 (200 Pa), cross-flow and counter-flow heat exchanger, automatic by-pass, preheater, filters standard G4/ISO Coarse ≥ 65% and flow balancing system. Made of steel, DN 200 mm connectors in two versions: horizontal (H) and vertical (V).

The units are equipped with a 4.3" control touch panel as a standard and can be additionally supplied with a mobile control, air temperature and flow sensors and set of wall mounts. Can be mounted on the wall (standard), suspended, set upright.

CAT. NUMBER	ITEM	NET PRICE
REKU-DRX-300-H	Air handling unit DRX 300 H with capacity 350m³/h	2 212 EUR
REKU-DRX-400-H	Air handling unit DRX 400 H with capacity 450m³/h	2 282 EUR
REKU-DRX-500-H	Air handling unit DRX 500 H with capacity 550m³/h	2 353 EUR
REKU-DRX-300-V	Air handling unit DRX 300 V with capacity 350m³/h	2 212 EUR
REKU-DRX-400-V	Air handling unit DRX 400 V with capacity 450m³/h	2 282 EUR
REKU-DRX-500-V	Air handling unit DRX 500 V with capacity 550m³/h	2 353 EUR
REKU-DRX-300-H E	Air handling unit DRX 300 H E with capacity 350m³/h and enthalpy heat exchanger	2 647 EUR
REKU-DRX-400-H E	Air handling unit DRX 400 H E with capacity 450m³/h and enthalpy heat exchanger	2 717 EUR
REKU-DRX-500-H E	Air handling unit DRX 500 H E with capacity 550m³/h and enthalpy heat exchanger	2 788 EUR
REKU-DRX-300-V E	Air handling unit DRX 300 H E with capacity 350m³/h and enthalpy heat exchanger	2 647 EUR
REKU-DRX-400-V E	Air handling unit DRX 400 H E with capacity 450m³/h and enthalpy heat exchanger	2 717 EUR
REKU-DRX-500-V E	Air handling unit DRX 500 H E with capacity 550m³/h and enthalpy heat exchanger	2 788 EUR

Air handling unit DRX OPTI 300, 400, 500

Capacity to 350, 450, 550 (200 Pa), cross-flow and counter-flow heat exchanger, preheater, filters standard G4/ISO Coarse ≥ 65%.

Made of steel, DN 200 mm connectors in two versions: horizontal (H) and vertical (V).

The units are equipped with a 4.3" control touch panel and set of wall mounts as a standard. Can be mounted on the wall (standard), suspended, set upright.

CAT. NUMBER	ITEM	NET PRICE
DRX OPTI 300 H	Air handling unit DRX OPTI 300 H with capacity 350m³/h	1 976 EUR
DRX OPTI 400 H	Air handling unit DRX OPTI 400 H with capacity 450m³/h	2 047 EUR
DRX OPTI 500 H	Air handling unit DRX OPTI 500 H with capacity 550m³/h	2 117 EUR
DRX OPTI 300 V	Air handling unit DRX OPTI 300 V with capacity 350m³/h	1 976 EUR
DRX OPTI 400 V	Air handling unit DRX OPTI 400 V with capacity 450m³/h	2 047 EUR
DRX OPTI 500 V	Air handling unit DRX OPTI 500 H with capacity 550m³/h	2 117 EUR

Air handling unit DRX F 350, 450

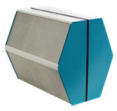
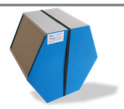
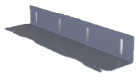
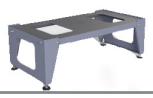
Capacity to 350, 450, 450 (200 Pa), cross-flow and counter-flow heat exchanger, automatic by-pass, preheater, filters standard G4/ISO Coarse ≥ 65% and flow balancing system.

Made of steel, DN 200 mm connectors. Flat design allowing fixing in even under the ceiling or in the garage - a height only 33 cm.

The units are equipped with a 4.3" control touch panel as a standard and can be additionally supplied with a mobile control, air temperature and flow sensors and set of wall mounts. Assembly only in suspended version.

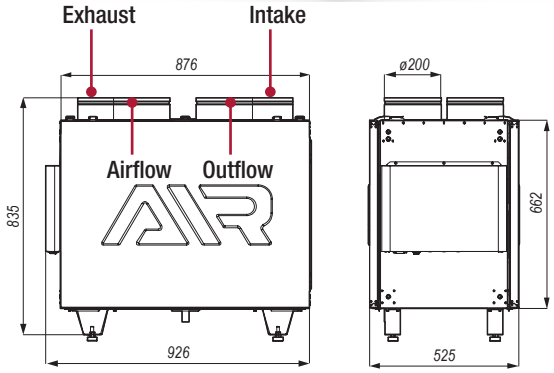
CAT. NUMBER	ITEM	NET PRICE
DRX 350 F	Air handling unit DRX 350 F with capacity 350m³/h	2 306 EUR
DRX 450 F	Air handling unit DRX 450 F with capacity 450m³/h	2 353 EUR

Accesories

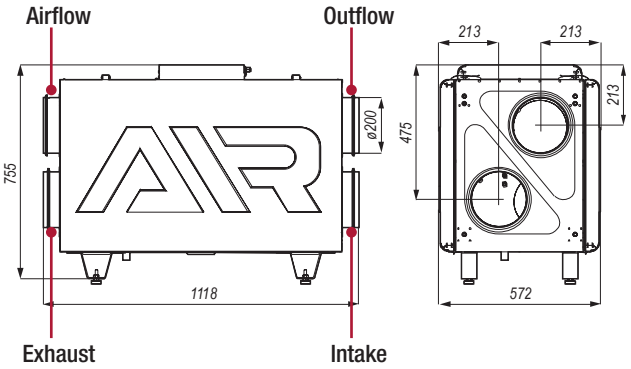
PHOTO	CAT. NUMBER	ITEM	NET PRICE
	ST505LAN	ST-505 (LAN) internet communication module	240 EUR
	WIFIRSINT	WiFi RS internet communication module	259 EUR
	CZTHR	Temperature and humidity sensor	69 EUR
	CZCO2	CO2 detector	306 EUR
	HRV366-H300-S	Cross-flow and counter-flow heat exchanger HRV 300	216 EUR
	ERV366-H300-S	Cross-flow and counter-flow heat exchanger ERV 300 Recuperative	647 EUR
	FPG4	Primary filter cl. G4/ISO Coarse ≥ 65% for version DRX H and DRX H OPTI	16 EUR
	FPG4V	Primary filter cl. G4/ISO Coarse ≥ 65% for version DRX V and DRX V OPTI	16 EUR
	FWG4	Carbon filter cl. G4 Metal casing for version DRX H and DRX H OPTI	21 EUR
	FWG4V	Carbon filter cl. G4 Metal casing for version DRX V and DRX V OPTI	21 EUR
	FDF7	Fine filter cl. F7/ISO ePM1 ≥ 65% for version DRX H and DRX H OPTI	26 EUR
	FDF7V	Fine filter cl. F7/ISO ePM1 ≥ 65% for version DRX V and DRX V OPTI	27 EUR
	FDF9	Fine filter cl. F9/ ISO ePM1 ≥ 80% for version DRX H and DRX H OPTI	28 EUR
	FDF9V	Fine filter cl. F9/ ISO ePM1 ≥ 80% for version DRX V and DRX V OPTI	29 EUR
	FPG4F	primary filter cl. G4/ISO Coarse ≥ 65% for version DRX F	16 EUR
	FWG4F	carbon filter cl. G4/ISO Coarse ≥ 65% for version DRX F metal casing	21 EUR
	FPF7F	primary filter cl. F7/ISO ePM1 ≥ 65% for version DRX F	27 EUR
	FPF9F	primary filter cl. F9/ISO ePM1 ≥ 80% for version DRX F	29 EUR
	FKA125	Sack filter for diffusers Dn 125	5 EUR
	8075409	Angle waterless trap DN 32	13 EUR
	2912301	Adapter dn 25 / dn 32 for waterless traps	7 EUR
	8075414	Straight waterless trap PURUS	16 EUR
	KMSH	Wall mounting bracket for recuperative heat exchanger H (2 pcs.)	29 EUR
	KMSV	Wall mounting bracket for recuperative heat exchanger V (2 pcs.)	29 EUR
	KMPV	Suspended mounting bracket for recuperative heat exchanger (4 pcs.)	18 EUR
	KMST	Base for recuperative heat exchanger	75 EUR

Units dimensions

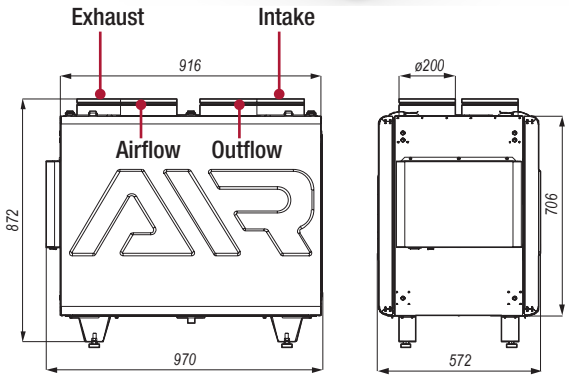
DRX V



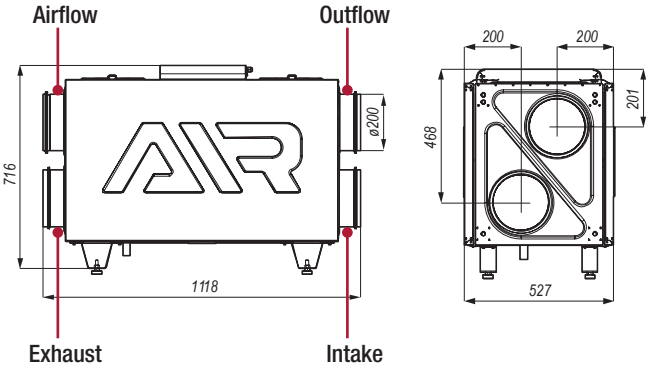
DRX H



DRX V OPTI

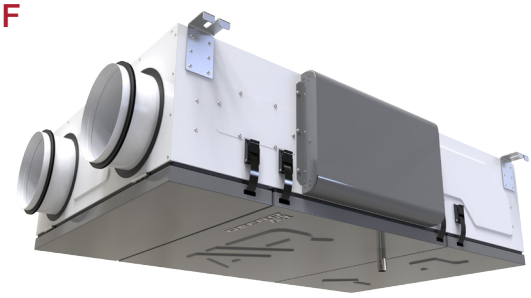


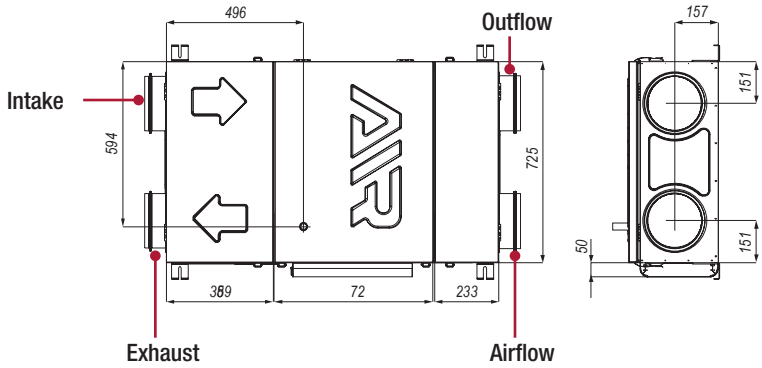
DRX H OPTI



Units dimensions

DRX F





There are no questions without answers

We attach great importance to spreading knowledge about our equipment among our customers. We know also that issues related to the mechanical ventilation with heat recovery can be a “black magic” for many people and therefore we encourage to contact us.

Our ventilation team consists of qualified staff with technical advisors, who have a professional and up-to-date knowledge within the scope of heat recovery.

We will be very glad to answer all your questions regarding the ventilation.

DISTRIBUTOR

Producer: DEFRO spółka z ograniczoną odpowiedzialnością spółka komandytowa, siedziba: 00-403 Warszawa, ul. Solec 24/253, KRS: 0000620901, NIP: 9591968493, REGON: 363378898

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