THE GLOBAL PLAYER

Newsletter **1/2016**

Issue topic:

Success of VTS America Inc at the world's greatest fair in HVAC sector - AHR EXPO 2016

Indroduction

Dear Readers!

25 years of experience on the European, Asiatic and Middle-Eastern markets and, since recently, also on the American market, is a tremendous capital of knowledge and competence that we would like to share with you in the VTS Newsletter – "The Global Player.

The contents have been selected with great care by our editors to provide you with much news from the HVAC world – a world that is now also being shaped by VTS. New products, expert articles and company events are only some of the topics included in the first issue.

The lead story of the first issue will be the report on the participation of VTS in the world's largest fair of the HVAC industry – AHR EXPO 2016 in Orlando in Florida. The state-of-the-art stand exhibiting the flagship product of VTS – air handling unit American VENTUS 2016 – attracted crowds of visitors, as you will see in the included gallery of photographs.

We hope you enjoy reading our newsletter.
CEO, Hanna Siek-Zagórska

| CONTENTS

Success of VTS America Inc at the world's greatest fair in HVAC sector - AHR EXPO 2016

For the second time VTS company has presented its current product offer at the world's greatest fair of HVAC industry - AHP EXPO 2016 in Orlando in Florida. A modern stand exhibiting a flagship product of VTS - central air handling unit American VENTUS 2016 attracted crowds of visitors. As set out in the global development strategy of VTS group participation in the fair is another step in building a position of a global leader in HVAC sector.

W Another edition of the world's greatest fair of HVAC market - AHR EXPO 2016 organized since 1930 took place on 25-27 January 2016 in Orlando in Florida. More than 60 000 people from all over the world visited the Orange County Convention Center and became familiarized with the current product offer exhibited on stands of the most important companies from the sector.

"The AHR fair is a perfect opportunity to show consistent development of VTS company. Over 25 years of experience on European, Asian and Near East markets resulted in creation of an innovative product, perfectly adjusted to restrictive requirements of American market. The presence here brings us closer to a position of a global leader in HVAC industry. With the use of innovative technologies in the area of project research, production and logistics, we provide our clients with a technically advanced product offering at the same time a very attractive price and unrivalled order execution deadlines. Through the modern production and logistics center which is located in Atlanta we execute orders of clients from the entire area of North America within an average time-limit of 7 days. This is our undoubted competitive advantage which enables us to be always one step further in each place in the world" - says CEO of VTS Group Hanna Siek-Zagórska.

The first day of the fair ended for VTS with an event organized in a Tommy Bahama restaurant during which it rewarded the best business partner - "REP of the year 2015" - Northrich company from Ohio appreciating the entire cooperation. The award was collected by Mike Goetz, CEO of the company.

During the second day VTS recorded the largest number of visits to the website of the fair http://www.ahrexpo.com/ out of all exhibitors. Also people representing sector-specific magazines and web portals demonstrated enormous interest in the stand of VTS i.e. Control Engineer or Business Energy. For staff members of VTS it was a day of numerous interviews. Already today one of them can be watched on the portal: ProudGreenBuilding.com at the address: http://www.proudgreenbuilding.com/videos/video-2/).

The third and simultaneously last day of the fair was full of meetings with students, academic staff and people from outside of the sector who visited the exceptional stand of VTS with great interest.

"A pure form of the stand whose central part was occupied by an exposed device: VENTUS AVS-100 attracted numerous specialists from HVAC industry. Practically all persons who I talked to emphasized high quality of the presented product. They also paid attaention, which is characteristic of American market, to solid construction and durability of applied components. Modern technology, authenticated by all certificates required on American market, also attracted numerous representatives of competitive companies to our stand. They congratulated us on the design of the stand and appreciated the product itself as well as visible results already achieved by us in building the position of VTS brand in the territory of North America. - says maciej Grzegowski, CEO of VTS America Inc.

YouTube See VENTUS2016 from the inside

After the successful fair, the company plans another edition - AHR EXPO Las Vegas 2017.

ADDITIONAL INFORMATION:

VTS Group is a manufacturer of technically advanced devices for HVAC sector using innovative technologies in the area of project research, production and logistics. Constantly the highest quality of products, the best prices on the market and the shortest delivery time are three pillars of the market policy which enable VTS to be always one step further in each place in the world.

Modeling on the best practice in the automotive sector VTS created a network of 6 efficient production and logistics centers (Atlanta, Dubai, Moscow, Shanghai, Warsaw, Mumbai), thanks to which it guarantees the shortest delivery time on the market irrespective of a place in the world. A mass scale of production of repetitive devices enables VTS to offer them at the most competitive prices maintaining high quality. A multi-level system of quality control makes it possible for VTS to offer the longest on the market 5-year reliability warranty for the devices as a standard.

PHOTO GALLERY

more on

YouTube See the interview

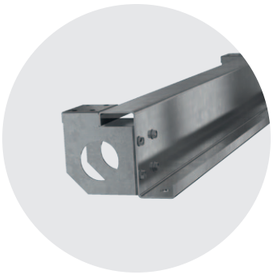
VENTUS 2016 – effect of 25-year experience

20% THICKER ALUZINC (AZ 150) SHEETS

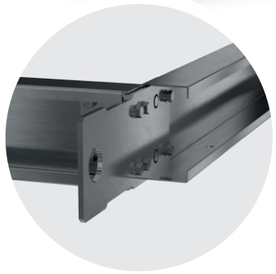
ALUMINUM COLUMNS AS STANDARD

INTELLIGENT SMART HINGE SYSTEM

LABYRINTH CONNECTION WITH AN ADDITIONAL SEALING FIN

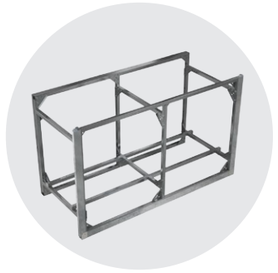


PROFIL Z
VS 21-150



PROFIL C
VS 180-650

STEEL BASE AS STANDARD



REINFORCED FAN CAGE

YouTube See the film

Pump group – new option now available from VTS

The pump groups are packaged hydraulic systems designed to control the output of hot water air heaters. They complement the sales offer of VTS air handling units, ensuring optimal parameter adjustment of the complete system.

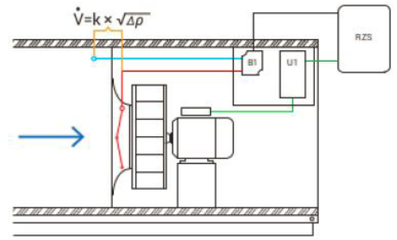
The main pump group components include: circulation water pump, three-way control valve with analogue signal controlled cylinder, mesh filter and two thermomanometers.
The entire system is enclosed in casing made of EPP.
The casing ensures lasting protection against outdoor weather conditions and mechanical damage. It also provides effective thermal insulation for the internal components.

CAV/VAV control – more options on standard

Air volume control and air pressure control have a considerable impact on the efficiency of the air handling unit's operation.

Owing to the CAV (constant air volume) function, it is possible to control a constant set air volume with changing flow resistance in order to compensate for the variable internal resistance of the unit (e.g., with various degree of air filter contamination, various setpoints of the mixing chamber, etc.) so as to adjust fan power to the changing demands of the system. The VAV function can be used to similarly control air pressure with changing air volume (volume change is implemented by the air distribution system – e.g., VAV controllers).

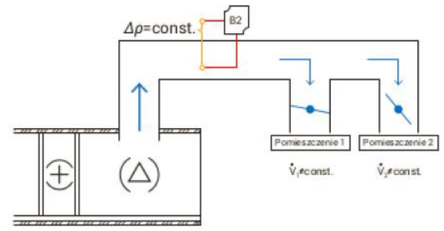
CAV operating principle



V - air volume
k - proportionality factor
Δp - pressure drop in the fan ring

B1 - differential pressure transducer
U1 - frequency converter
RZS - switchgear and controlgear assembly

VAV operating principle



V 1 - air volume for room 1
V 2 - air volume for room 2

Δp - air pressure in the air duct vs. atmospheric pressure
B2 - przetwornik różnicy ciśnień

EcoDesign 2016

Accordance with EcoDesign 2016

VTS, in order to facilitate the selection of equipment conforming to Ecodesign 2016 requirements, proposes the option of premium heat recovery based on cross-flow recuperators. The dry recovery efficiency for the PREMIUM option is greater than the standard option by approximately 20 percentage points, i.e., by approximately 40%. Read more on page 9.

Ecodesign 2016: units with high energy recovery – future of the AHU segment

THE NEW, GLOBAL TREND

in environmental protection is aimed at limiting energy use. One of the methods is to use highly efficient equipment for heat and cooling recovery in ventilation and air conditioning systems.

THE USE OF HIGHLY EFFICIENT ENERGY RECOVERY

also provides (in addition to the clear ecological effects) measurable benefits to the user in the form of reduced operating costs of such a system. HIGHER ENERGY.

RECOVERY EFFICIENCY

usually requires greater project implementation costs and, sometimes – due to the larger size of the highly efficient ventilation equipment – more space in order to install such equipment.

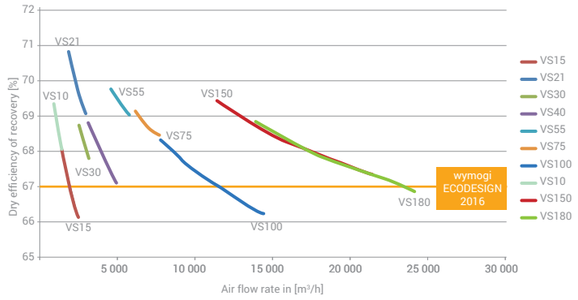
Accordance with EcoDesign 2016

Due to the above, the competing manufacturers and contractors of ventilation systems use all available methods to demonstrate to the investors and future users the high energy efficiency of the offered equipment while maintaining a relatively low selling price in relation to their competition. Energy efficiency is usually specified in terms of the thermal efficiency of heat recovery, which does not only depend on the quality of the equipment itself but also, to a very large extent, on the humidity and temperature of exhaust air and supply air and on the ratio between those air streams. Making use of the limited knowledge of the customers, the competing companies outdo each other in manipulating those parameters so as to demonstrate the superiority of their products. For instance, the same cross-flow exchanger that, with identical flow rate of supply air and exhaust air and in conditions without moisture condensation, achieves a thermal heat recovery efficiency of 49% will have 63% efficiency in conditions with condensation (with 60% humidity of exhaust air). If the volumes of supply air and exhaust air differ by as little as 10%, the efficiency of the same exchanger will be increased by a further 2%.

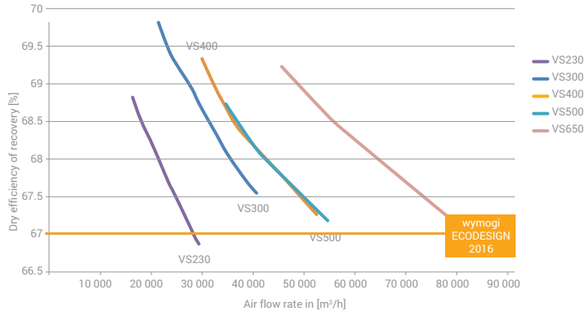
In order to put an end to such practices and enable an objective evaluation of the quality of the equipment itself, the European Commission issued "COMMISSION REGULATION (EU) No. 1253/2014 of 7 July 2014 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements (ErP 2016 – Ecodesign 2016) for ventilation units," where it specified the requirements and method of determining the energy efficiency factor. That formula is in line with European industry standards No. EN 13053 and No. EN 308. The formula is limited to the so-called dry recovery (without condensation) with a constant 20K temperature difference between the indoor air temperature and outdoor air temperature. The efficiency of the system should be established for the same (balanced) volume of supply air and exhaust air.

At the same time, the European Commission, in the same legal act, increased the requirements for the minimum thermal efficiency of heat recovery. Thus, starting from the first of January, 2016, the minimum efficiency is 63% for run-around heat recovery systems and 67% for other systems (recirculation is not regarded as an energy recovery system).

In order to face up to the requirements of Ecodesign 2016, VTS proposes the use of cross-flow exchangers of the PREMIUM class.
The dependence of dry thermal efficiency of heat recovery in the PREMIUM class for various sizes of VENTUS units is presented below:



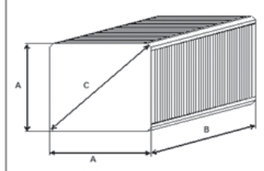
Dry recovery efficiency for VENTUS VS 10 to VS 180 units
calculated in compliance with the COMMISSION REGULATION (EU) No. 1253/2014.



Dry recovery efficiency for VENTUS VS 230 to VS 650 units
calculated in compliance with the COMMISSION REGULATION (EU) No. 1253/2014

The energy efficiency is increased through the enlargement of the heat exchange surface. This increases the number of the aluminum plates at the inlet of the exchanger and, consequently, the mass of the exchanger. There is also an increased resistance to air flow through the exchanger. In order to reduce that resistance, exchangers with a larger inlet cross-section are used, which often increases the length of unit casing by 366 to 730 mm, depending on the size of the device and air flow configuration.

Comparison of the masses and dimensions of the cross-flow exchangers presented below.



PREMIUM VS. STANDARD comparison			
Dimensions, mm			Weight, kg
A	B	C	
273	-50	386	12,7
300	-51	424	25
-203	405	-287	26
100	112	141	23
100	159	141	28
123	223	174	49
150	212	212	61
300	161	424	166
300	89	424	188
350	243	495	107
222	243	321	62
222	186	321	66
293	306	421	276
293	308	421	321
293	221	421	356
44	88	69	213

VS				PREMIUM			
	Dimensions, mm		Weight, kg	Dimensions, mm			Weight, kg
	A	C		A	B	C	
10	567	789	17,3	840	225	1175	30
15	690	963	30	990	254	1387	55
21	670	935	12	467	705	648	38
30	467	648	17	567	705	789	40
40	467	648	21	567	889	789	49
55	567	789	25	690	1044	963	74
75	690	963	39	840	1174	1175	100
100	690	963	44	990	1303	1387	210
120	690	963	52	990	1502	1387	240
150	840	1175	83	1190	1660	1670	190
180	968	1349	128	1190	1660	1670	190
230	968	1349	159	1190	2011	1670	225
300	1387	1942	269	1680	2073	2363	545
400	1387	1942	324	1680	2495	2363	645
500	1387	1942	389	1680	2918	2363	745
650	1936	2718	695	1980	2997	2787	908

In addition to the minimum temperature efficiency requirement of energy recovery equipment, the EU Commission Regulation also imposes the obligation to use air by-pass in that equipment. That is why such by-pass has been added to the VTS offer in VS 10 to VS 15 units.

For PREMIUM cross-flow exchangers, VTS proposes mixing chambers integrated with the by-pass space of the recuperator:

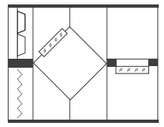
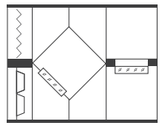
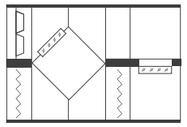
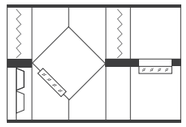
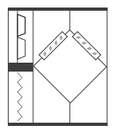
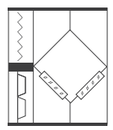
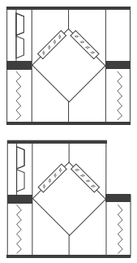
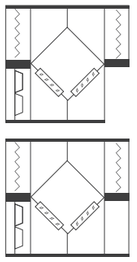
In order to ensure correct operation of the exchanger for cooling recovery, VTS has equipped the unit with a damper closing the air flow at the cross-flow exchanger:

by-pass air damper

air damper for the mixing chamber in cross-flow exchanger blocks with the mixing chamber (PM)

The integration of the mixing chamber with the cross-flow exchanger significantly changes the configuration and appearance of the handling unit.

The elements equivalent to cross-flow exchanger blocks with the mixing chamber have been presented below.

	PM_CD	PM_CU	PM_CD_S	PM_CU_S
STANDARD				
PREMIUM				

Marek Obuchowski
Senior Corporate Product Manager

In order to ensure correct operation of the exchanger for cooling recovery, that exchanger is factory-equipped with **dampers closing the flow at the cross-flow exchanger:**

air damper closing the flow of air at the cross-flow exchanger

On its website, VTS provides certified software for the selection of air handling units (CCOL). Upon selection of a suitable option, the software generates a report of conformity of the selected VENTUS unit to the requirements of the Ecodesign 2016 Regulation of the European Commission, including the temperature efficiency of heat recovery, specific fan power, air speed and many other technical parameters.

A sample report is provided below (Information as per Commission Regulation No. 1253/2014):

Parameter	Unit	Value
Manufacturer's name		VTS sp. z o.o.
Product identification code		VS-100-R-PH
Declared type		DSW
Type of drive installed		Variable speed drive
Type of heat recovery system		Other
Thermal efficiency of heat recovery	%	67
Nominal NRVU flow rate	m^3/s	2,78 / 2,78
Effective power input	kW	3,48 / 3,37
Internal specific fan power SFPint	$W/m^3/s$	613,94 / 642,02
Face velocity	m/s	2,06
Nominal external pressure	Pa	300,00 / 300,00
Internal pressure drop of ventilation components Δps,int	Pa	342,86 / 356,36
Internal pressure drop of non-ventilation components	Pa	57,14 / 17,64

The reliability of the generated technical parameters, in addition to good product quality, is a major competitive advantage of VTS.

| With Mike Goetz, the principal of Northrich Company - REP of the Year 2015 speaks Jeron Burrows, VTS America Inc.

I would like to start off by saying a well-deserved "Congratulations" to both you and your team at Northrich, Mike. This award wasn't given away lightly, and there was quite a bit of stiff competition that you were able to overcome to get to this point.

If you don't mind me asking, tell me in your own words why Northrich was able to rise to the top. Was it the people that you have, or perhaps a specific strategy that you used? What makes Northrich the best? Thanks Jeron. We attribute our success as a company to several factors. First, we have an amazing sales team at Northrich and we are very proud of that. In addition, VTS has been a great partner. Maciek assembled an impressive sales and support staff which makes promoting a new product much easier.

VTS has entered the US market at a perfect time in our opinion. While most AHU manufactures are scaling inventory back and pushing lead times, VTS has a completely different philosophy. VTS carries a very large inventory allowing them to manufacture AHU's at unprecedented standard lead times. The fact that they can offer a quality standard product at a competitive price and faster than anyone else makes it an easy sell.

Alright, thank you for that answer. We definitely cannot argue with the results that you achieved up to this point. Northrich as a team has had many successes that has secured you with your current position. What would you say is your biggest success from the past year? What hurdle have you overcome that has brought you farther than any other?

We were able to convert several projects that were over budget and behind schedule and save the project. One project in particular, we provided units to a local university inside of two weeks and under budget. The contractor and the university were both pleased with the final product.

It's really sounds like your hard work and determination paid off. It's encouraging to see that a bit of grit, resolve, and effort can bring you far in the HVAC industry. And speaking of going far, with all the things that Northrich has accomplished, what steps do you believe are the most important for any HVAC rep to take for continual success?

I realize that every market is very different but the key to our continued growth is private / design build projects which make up the majority of our sales. Initially, we took a VTS AHU around to service contractors and institutional customers and showed them the product. They were very impressed that a quality product could be delivery in a few weeks.

As far as continued success, we plan to stay focused on the engineering community, contractors and institutional customers. I hope that helps.

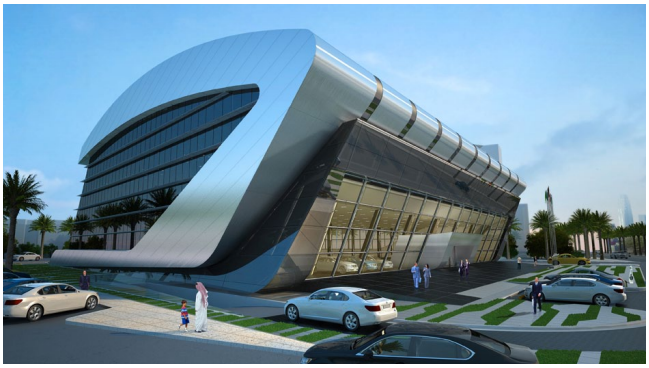
Excellent! Thank you for your time Mike. I look forward to hearing about your many triumphs in the future!

VTS THE WORLD: THE LATESTS REFERENCE

We are proud to present the latests reference objects with our units:

http://www.ece.com/en/centers-projects/shopping/detail/zielone-arkady-bydgoszcz/

SHOPPING MALL "GREEN ARCADES" / Poland



http://www.fitzwilliampartnership.com/projects/showrooms-offices/

LEXUS SHOWROOM / Katar

http://forum.skyscraperpage.com/showthread.php?t=209901

PRESBYTERIAN WEILL CORNELL MEDICAL CENTER
USA

http://baike.baidu.com/subview/1400060/8196440.htm

SHANGHAI HONGQIAO SUNNYWORLD CENTRE
China

http://www.magicbricks.com/indiabulls-blu-worli-mumbai-pdpid-4d4235303231373136

INDIABULLS BLU / India

http://europe-re.com/verny-capital-to-invest-300-mln-in-the-construction-of-talan-towers-in-astana-kazakhstan-kz/41175

TALAN TOWERS / Kazachstan

http://www.vacigreens.hu/en/virtual-tour-and-gallery/

OFFICE COMPLEX VACI GREENS / Hungary

http://adevarul.ro/educatie/universitar/laserul-magurele-pariu-nobel-1_50ad9db77c42d5a66398301a/index.html

LASER INSTITUTE / Romania