

Case story | Motorized control valves

# Compact design. Easy installation **saves** **precious time.**

Bulgaria

86

AMZ two-way valves  
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In early December 2011 Tangra Ltd. addressed the largest Danfoss wholesaler for Bulgaria, NASA-D Ltd., with an inquiry for selection and supply of zone valve controls for an air-conditioning system which they intended to install.

TANGRA-AV Ltd. is a private company specialized in the field of ventilation, air-conditioning and heating equipment, established in 1989. Its organizational structure includes an engineering design department, two manufacturing plants, a sales and consultation centre in Sofia, offices and stores in the cities of Varna and Burgas.

A team of highly qualified specialists is in charge of preparing project materials, designing and implementation of new products. Their work is facilitated by a well-equipped laboratory for aerodynamic tests. The company has introduced and certified an ISO 9001:2008 Quality management system for all its business activities.

Thanks to years of experience and beneficial cooperation with leading European manufacturers, TANGRA has developed a wide range of excellent quality ventilation and air-conditioning equipment. The products and services offered by the company, as well as the unfailing stock of products and the distribution

network established in the country create quite favourable conditions for both the customers and partners of TANGRA.

'It is our belief that satisfied customers are the best advertisement!', says Y. Armianov, MS/Eng., Manager of TANGRA Ltd. The company's credo has been proved by the long years of doing business on the Bulgarian air-conditioning and ventilation market.

The project TANGRA Ltd. was invited to take part in included erection of a new airconditioning system in the first H&M store in Bulgaria, which is to be opened in the largest metropolitan trading centre The Mall located at Tsarigradsko shosse Blvd. The specificity of the project was that the old air-conditioning system existing in the store had to be adjusted to the specific requirements and standards of the world-famous Swedish chain for fashion clothing H&M (Hennes & Mauritz AB) which runs over 2300 stores in 41 countries all over the world.

The boutique is situated over an area of 2200 sq. meters on two floors of the mall building. The store was supposed to be opened early March 2012, which meant an extremely short term for renovation the installation.

TANGRA Ltd. and NASA-D are long-standing partners. In recent years TANGRA has been supplied with Danfoss heating and air-conditioning products on many occasions. NASA-D has made regular presentations of all new Danfoss HVAC products and solutions to TANGRA Ltd. The acquaintance with products, as well as their high quality and functionality have always served as grounds for their successful partnership.

In this project a determining factor was also the tight term for its completion – the selection of valves and submission of an offer by NASA, confirmation thereof by the main contractor and the delivery were all done within just a week.



Nikolay Nedyalkov, Manager of the project and the installer's team, TANGRA Ltd., says:

'This is the first H&M store to be opened in Bulgaria. It is located in the Mall over a floorage of over 2200 sq.m. Hennes & Mauritz AB was established in 1947 and now is the second largest retailer of clothing in the world.'

In the store we installed 45 fan coil units of 350 kW total cooling capacity. The coil fan system is a four-pipe one. For switching between 'heating' and 'cooling' modes we used Danfoss AMZ 112 two-way valves of the relevant kvs. We have installed 86 valves of this type. The main reasons for making such a selection can be summarized in the following way:

One of the major factors of importance for our choice was the opportunity of a very short delivery period. The time for reconstruction of the entire HVAC installation was limited to just 45 days. This period coincided with the Christmas and New Year's Eve holidays, but our NASA partners nevertheless assured us of timely delivery.

We are confident of the traditional high quality of these products, and furthermore for this project compact design and ease of installation were especially important to us. The valves compact design proved to be particularly appropriate for the levels of the suspended ceilings which required certain restrictions with regard to overall dimensions. The easy installation of the valves in its turn saved us precious time. Considering the short terms for completion of the project he had to keep that in mind, too.

Last but not least in terms of importance for making our decision was the competitive price, as well as the quality guarantee offered by the manufacturer. This ensured to a certain extent the possibility for us to meet the high level of requirements set by the project principal who quite naturally expected us to provide an air-conditioning system that would meet any requirement of all modern European standards for quality and functionality.'

#### **AMZ 112 is an on/off zone valve with an actuator.**

It is normally used in:

- Domestic and commercial central heating applications
- Domestic hot water applications
- Solar energy plants
- Priority control of hot water supply and heating (diverting function)
- Priority control of boiler and solid fuel installations (diverting function)

#### **Basic data of the valves:**

- DN 15-50 (AMZ 112)
- kvs 17-290 m<sup>3</sup>/h (AMZ 112)
- PN 16
- Maximum differential pressure 6 bar
- Temp.: Circulation water/glycolic water up to 30%: 2..130°C

- Connections: Internal thread
- Material: Nickel-plated brass (CuZn40Pb2)

#### **Basic data of actuators:**

- Power supply: 24 VAC or 230 V AC
- Protection rating: IP 44
- Rotation time 90°: 30s (AMZ 112)
- Ambient Temperature: 0 ... 50°



#### **Benefits of AMZ valves:**

- Compact design
- Full bore and minimum pressure loss
- Easy installation and electric connection - no need to remove the housing cover
- Manual override
- Self-cleaning effect, thus no dismantling required for cleaning

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