ICS - Praha

GAS-FIRED HEATERS, EXCHANGER COMPONENTS FOR MTPAL AIR-HEATERS – MTP-V VERSION

MTP-V exchanger components are gas-fired air heaters with pressure burners designed for use in systems with integral fans. Due to their wide flexibility and output range they can be used as

- Part of air conditioning and air handling units of all producers
- Pipe air heater
- New and simple heat source during reconstruction
- Process heater

Advantages of MTP-V units

- **Quick and easy heating and ventilation**
- **High efficiency**
- **Low investment and operational costs**
- **High flexibility of delivered types**
- **Possibility of advantageous regulation**

Basic characteristics of MTP-V heaters

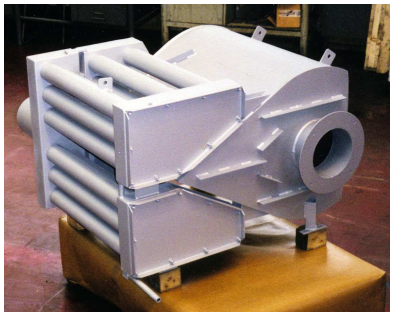
Modified dimensions and design matching the application
Heat load: 20-3000 kW
Outlet temperature: up to 300°C

The air volume heated by the standard series of the MTP-V air heaters lies within the range of 1 000 – 100 000 m^3/h. Special exchangers heat up to 150 000 m^3/h.
The heat load of standard MPT-V heaters lies within the range of 10 - 1200 kW. Upon request we can deliver heaters with outputs up to 3000 kW. The heaters are delivered with or without a bypass and in vertical or horizontal design.

Exchanger

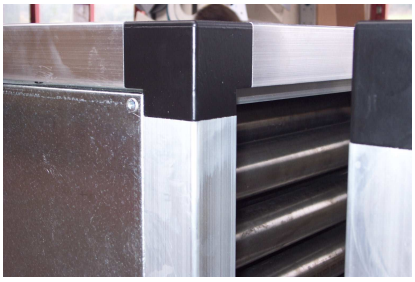
The core of the heater is a flue gas – air exchanger. Depending on its output, the heater is 3 ducted or 4 ducted, and it is made from selected materials to guarantee the longest lifetime and highest efficiency with the given specifications. The combution chamber is constructed to maximise flue gas recirculation and minimise combustion emissions. The tubular exchanger is constructed for maximum efficiency and operation with the lowest air resistance. The combustion chamber and the edges of the tubular exchanger are supplemented with build-up plates and ribs to regulate air flow in the exchanger components and maximise the heat transfer surface. All pipes are fitted with a flue gas whirler.

The high quality workmanship and refined construction of the MTP exchanger guarantees a lifetime exceeding the standard exchangers that work on the same principle.



Baffle and guidance plates direct air around the exchanger to ensure smooth operation of the exchanger.

Depending on the given specifications or on customer request, the chimney exhaust can be situated on the rear side of the heater, the burner side or the upper side. Conventional standards for chimneys of gas facilities with a pressure burner apply to this chimney.



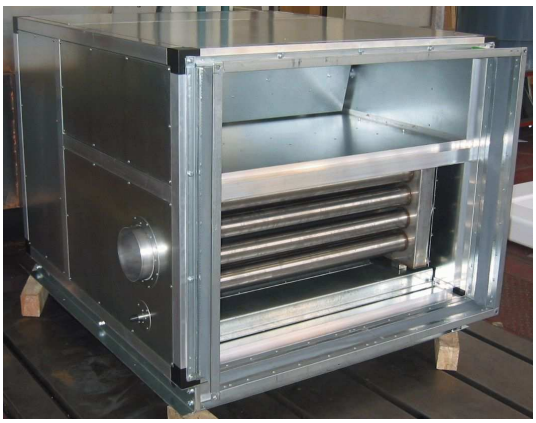
Jacketing

MTP-V air heaters are produced either with their own jacketing, or they are built into empty chambers of air conditioning units from another producer.

The heaters can be produced with several types of jacketing depending on the customer's requirements. When the heater is used independently, e.g. in a ductwork or as a substitute for a discarded steam exchanger, the jacketing is largely made of assembled aluminium frame with 50 mm thick sandwich panels from zinc-coated or varnished sheet metal. For specific technical or other applications, heaters are produced with a steel welded sections frame, which gives the heater exceptional toughness and strength, increases fitting possibilities and allows work at higher temperatures.

When designed as a part of an air conditioning unit from another producer, the size and design of the heater can be adjusted as needed: the heater frame can be made from the same elements as the air conditioning unit, the panels produced with the same design and the front fitting dimensions are identical with those of the air conditioning unit. The heater and the air conditioner then form an integrated unit.

If the gas heating is built into empty chambers by another producer, the whole chamber is kept. It is adjusted and supplemented with exchanger, baffle plates, and, if needed, with bypass and further components.



Bypass

The bypass is a detached space in the MTP-V air heater box, through which air circulates outside the exchanger. The ratio of air flowing through the exchanger and through the bypass is regulated by all-metal louver valves in the bypass and/or before the exchanger.

The bypass has two basic functions – not more than the required amount of air needed for adequate cooling flows through the exchanger, which ensures that the exchanger works with high efficiency, low pressure loss and without unnecessary condensation – and further the regulation function. It is possible to regulate the amount of air passing through the exchanger in each moment, thus rapidly increasing or reducing the intensity, and thus the speed of heat transfer. The result is a rapid change of air temperature at the outlet. The bypass can balance sudden differences in temperature caused by the burner regulation. When using a bypass heater with an appropriate regulation, the outlet temperature can be kept within the range of about 2°C of the desired value.

Burners

Weishaupt pressure burners come as standard with the unit; these burn natural gas, propane butane, extra light heating oil and other kinds of fuels. Burners are standardly delivered with a two-stage or modulating regulation. Burners comprise entire gas fittings, electric control and all safety functions.

Application of the unit with regard to its placement:

We deliver MPT-V heaters in designs for indoor and outdoor use.

The indoor design can be used only in a basic environment in compliance with the Czech standard ČSN EN 330300. Unlike the basic design, units for outdoor use are equipped with sealed panels and an all-covering zinc-coated sheet metal roof that totally covers every part of the unit; the roof is sealed with capping strips. The outdoor design is further equipped with covering for the burner, thermostats and for all delivered components that require protection.

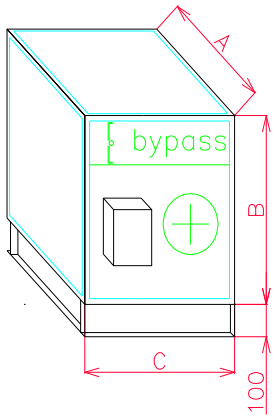
Electric accessories of the heaters and Metering and Regulation System

As a standard, heaters are equipped with one or more safety triple thermostats containing an operational shut-off thermostat, a safety shut-off thermostat with information and the possibility of remote unblocking, and a fan run-out thermostat.

We can deliver heaters that include controls and safety elements or whole air conditioning units in any output range, upon customer request. For example, the heaters we deliver can be equipped only with fitted actuating mechanisms, or include basic control electric starter box, or a complex Metering and Regulation System.

Basic series of MTP-V heaters with bypass

Parameters / Type	50	80	150	200	300	500	700	900
max Output [KW]	50	80	140	200	275	460	700	900
max Flow [m^3/h]	7000	10000	16000	22000	30000	42000	58000	70000
approx. Pressure loss [Pa]	150	125	150	200	250	300	500	500
Weight [kg]	300	400	600	800	1000	1300	1800	2200
Width [mm]	900	1100	1350	1450	1600	2000	2400	2800
Height [mm]	700	900	1000	1250	1500	1650	2100	2200
Length [mm]	1000	1150	1350	1600	1700	1950	2400	2550



REFERENCE:

PSA Trnava
TOYOTA Kolín
AOYAMA Lovosice
TOKAI-RIKA Lovosice
Rautenbach Žiar nad Hronom
TESCOMA Zlín
FUTABA Havlíčkův Brod
EATON Chomutov
AISAN Louny
TOYODA Pardubice
Olympia Teplice, Plzeň
Hypernova Průhonice, Liberec
AUPARK Bratislava
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