

# ICS – Praha



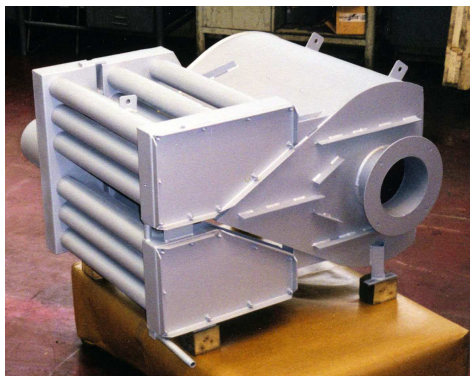
**MTP GAS-FIRED AIR HEATERS**



Direct heaters are intended for air transportation and treatment in ventilation and heating systems of utility services and civic amenities such as:

- shop floors and factory buildings
- warehouses
- lounges and assembly-rooms
- shops
- health-care and other facilities

Their main advantage is the utilization in premises where forced ventilation is required. Ventilation can be thus combined with heating. Investment costs for hot-water heating system distribution are reduced; useful plan coverage area is maintained, operating energy demands are lower (more flexible regulation than in case of hot water heating systems). The system is not dependant on the activity of the hot water boiler plant; this is in particularly useful in transition periods.



#### **Description of MTP heaters**

The core of the MTP air heater is a flue gas-air exchanger, well designed from selected materials according to the intended way of use in order to ensure maximum efficiency and lifetime. Bypass of the exchanger is supplied by air delivered by propeller bilateral suction fans. The air can be sucked either from the base or sides of the heater and distributed through the air timer directly to the heated space or attached to ductwork.

MTP air heaters are produced in horizontal or vertical designs. Both designs can be equipped with a number of accessories such as louver valves, filters, elastic joints etc.

Heaters are delivered with fans and motors according to the customers' needs, with the requested disposal pressure for articulation at the ductwork.

Composite panels with 30 mm mineral insulation are used for jacketing. Their finishing is made of zinc-coated sheet metal. Upon customer's request, the heater can be delivered in any colour.

Outdoor design is complemented with a covering or ultimately with a canopy.

#### **Special designs**

Apart from the standard output series, upon request, the air heater can be constructed with custom specifications. The heaters are adapted respectively constructed in compliance with the desired specifications. The heaters can be delivered with high temperature bypass, control bypass with double course jacketing etc. The advantages are: heat load up to 4 000 kW, air volume up to 150 000 m<sup>3</sup>/h, outlet temperature up to 350°C and external pressure up to 10 000 Pa.

### **Construction**

The heaters are delivered in block designs. The frame is made from welded steel sections, which contributes to greater stability of the unit and enables it to use a non-standard design (hanger etc.). Jacketing is made to allow to the maximum heat insulation of the unit. A centrifugal fan design ensures a silent operation of the assembly. The heat exchanging surface is made from materials that guarantee the required lifetime of the exchanger (steel class 11, stainless steel).

### **Electric accessories and regulation**

The heater comes as standard delivered with its own electric starter box and wiring that secures protection and start-up of the fan motor - a triple thermostat placed at the unit ensures both



burner lockout and fan run-out and

allows manual operation of the unit. Regulation can be enhanced further with automatic operation of the unit, a regulator for continuous control of the burner output, control of other actuating mechanisms etc.

An electric starter box is placed at the heater, but upon customer's request can be delivered separately.



### **Burner**

Standard designs of the heaters are equipped and tested with a Weishaupt burner for gas and liquid fuels. Substitution for another type of burner is also possible.

### **Parameters of MTP burners**

Output series: see Performance specification for MTP Standard chart. Parameters given in the chart can be modified.



The following applies for design according to the basic parameters:

#### 1) Heat load

- a) Heating – the heater covers basic heat loss of the premises caused by heat transfer in winter. Calculation is necessary to determine the heat load heat loss.
- b) Heating and ventilation – the heater covers basic heat loss of the premises and heat load of the ventilated outdoor air.
- c) Ventilation – the heater covers the heat load with ventilating outdoor air. The heat loss of the premises is covered by another heating system.

#### 2) Air flow

The air flow with heat increase of  $\Delta t$  is associated with the necessary heat load. If a greater or lower heat load than standard is needed, it is possible to use a larger or smaller heat

load (burner). When calculating the air flow, requirements concerning the microclimate of the ventilated space should be considered (sanitary requirements, serviceability).

### 3) Disposal pressure

With standardly designed MTP heaters, the discharge pressure from the heater can be selected accordingly to the fan speed (V-belt drive). In non-standard designs – to avoid greater heat losses, it is necessary to set the external air pressure of the air from heater; the fan part will adjust accordingly to this pressure.



#### **Attachment of the heater to ductwork**

The heater can be attached to ductwork at the inlet as well as outlet side. The ductwork can be bolted directly to the heater frame by attached nuts. When the heater is provided with other accessories – i.e. filter, the flange of these accessories is identical with the flange of the unit. It is advisable to separate the successive ductwork parts with an elastic sleeve.

#### **Flue-gas ducting**

Placement of the flue-gas ducting is optional:

- MTP 25 - MTP 400 heaters: the standard outlet of the flue-gas exhaust is on the opposite side of the burner. Upon request it is possible to make the exhaust on flank sides at rear or burner side.
- MTP 525 - MTP 1000 heaters: the standard outlet of the flue-gas exhaust is on the burner side. Upon request, it is possible to make the exhaust on the flank sides at front or on back side.

The static pressure in the branch flue can be 0 Pa. When installing the heaters all operative state regulations and directives must be observed (i.e. study analyzing the spread of contaminants). For all designs of MTP heaters it is absolutely necessary to secure the condensate outlet from the chimney flue-gas exhaust.



#### **Filtration**

For suction piping an air filter should be used, Components with fluted, pocket or frame filters to attach to any inlet side of the heater are delivered with the MTP heaters.

### **Noise level**

The mean value rating measured by SZÚ Brno Engineering Test Institute at the measuring face is  $L_{dI} = 74.2$  dB(A); it does not exceed the allowed maximum value of 85 dB(A)

### **Handling area**

To ensure easy servicing and accessibility of the heater it is necessary to maintain the following minimum distance separations from the heater:

- In front of the burner side it is necessary to have free space at least the size of the depth of the unit,
- From the flank side of the fan part a space of a minimum size of the width of the unit.



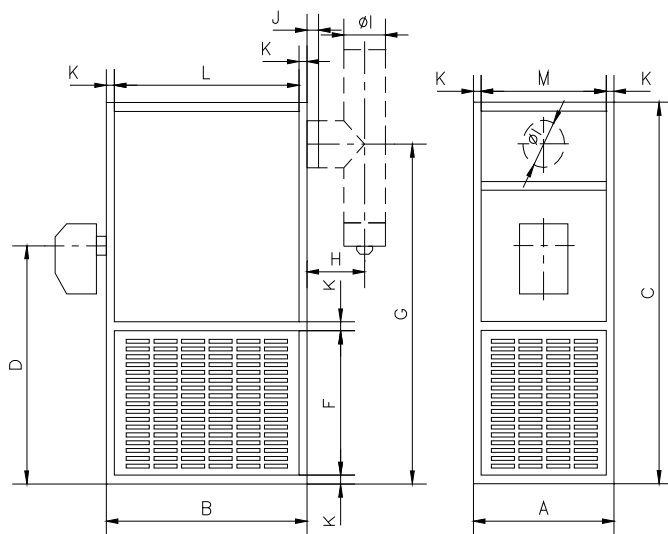
### **Delivery, storage**

Heaters up to the size MTP 400 are delivered fully assembled, heaters from the size MTP 525 and up are delivered in two parts (i.e. component of the fan part and exchanger part), burners are delivered in cardboard packing. Storage conditions are stated in the letter of guarantee (technical terms) from the manufacturer.

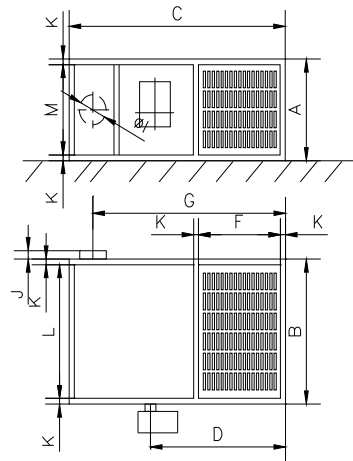
### **Performance specification for MTP Standard**

Model	Heat load kW	Air flow m <sup>3</sup> /h 20°C	Exit pressure P <sub>external</sub> Pa	Consumption n-natural gas m <sup>3</sup> /h	Rated input kW	Weight kg
MTP 25	29	2200	40 - 300	3,11	0,50 - 1,00	220
MTP 37	45	3000	40 - 260	4,87	0,50 - 1,00	220
MTP 50	60	4000	40 - 340	6,47	0,70 - 1,50	310
MTP 65	75	5100	40 - 260	8,06	1,15 - 1,90	310
MTP 85	100	6600	40 - 300	10,75	1,15 - 2,60	450
MTP 100	120	7500	40 - 280	12,94	1,15 - 2,60	450
MTP 125	150	10000	40 - 300	16,13	1,60 - 3,60	585
MTP 150	175	12000	40 - 340	18,82	2,70 - 4,50	590
MTP 175	200	14000	40 - 360	21,50	2,70 - 4,50	800
MTP 225	260	18000	40 - 260	29,97	4,70 - 6,20	803
MTP 300	350	24000	40 - 380	37,63	6,50 - 12,00	1100
MTP 350	400	28000	40 - 450	43,00	8,50 - 16,00	1120
MTP 400	465	32000	40 - 280	49,98	12,00 - 16,00	1200
MTP 525	600	41000	40 - 250	64,51	17,00 - 20,50	2300
MTP 650	750	52000	40 - 280	80,64	17,00 - 24,00	2800
MTP 850	990	62000	40 - 300	106,43	25,00 - 33,00	5700
MTP 1000	1160	73500	40 - 300	124,74	25,00 - 33,00	6000

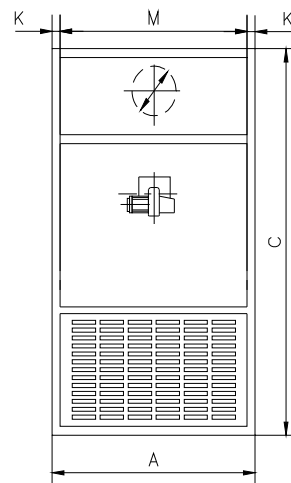
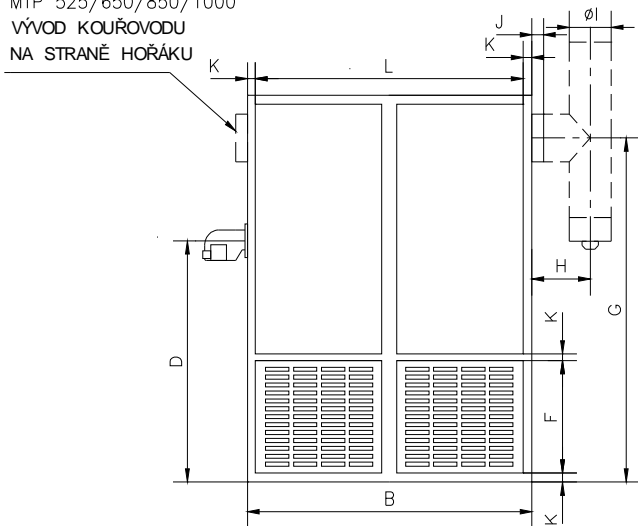
## **MTP 25 - MTP 1000 heater dimensions– standard set**



LEŽATÉ PŘEVEDENÍ U VŠECH TYPŮ MTP, LEVÉ  
I PRAVÉ (PODLE SMĚRU VÝFUKU OHŘÁTÉHO  
VZDUCHU) STEJNÉ ROZMĚRY JAKO STOJATÉ  
PŘEVEDENÍ



MTP 525/650/850/1000  
VÝVOD KOUŘOVODU  
NA STRANĚ HOŘÁKU



	A	B	C	D	F	G	H	I	J	K	L	M
MTP 25/37	610	870	1465	915	555	1305	250	180	50	34	802	542
MTP 50/65	650	1080	1615	940	575	1380	250	180	50	34	1012	582
MTP 85/100	780	1300	1835	1025	610	1555	250	200	50	34	1232	712
MTP 125/150	1000	1400	2120	1150	660	1835	250	250	50	34	1332	932
MTP 175/225	1160	1500	2190	1155	640	1915	300	300	50	34	1432	1092
MTP 300/350/400	1360	2040	2600	1406	766	2307	300	300	50	34	1972	1292
MTP 525	1412	2712	3010	1560	957	2795	270	250	69	34	2622	1344
MTP 650	1522	2725	3345	1674	1062	3140	270	250	70	34	2662	1454
MTP 850/1000	2012	3312	4047	1957	1062	3731	270	400	69	34	3222	1944

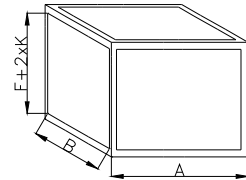
Both outdoor and indoor designs can be complemented with 500 mm high support baseboard.  
The horizontal design is supplied in left and right version, according to the direction of air flow from the view opposite to the burner.

## Accessories

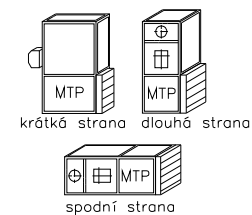
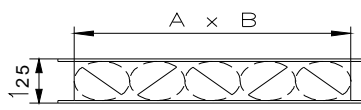
The MTP air heaters can be provided with a whole range of accessories, which can be attached directly to the frame of the heater. On suction side the accessories can be attached wherever practical – at long longitudinal sides, front and rear sides and base (especially for attachment in case of horizontal design).

Basic accessories include:

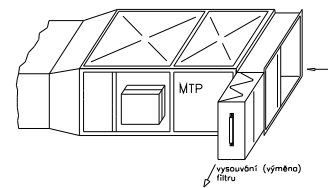
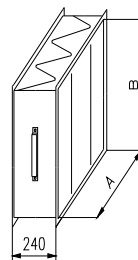
**Loose chambers** can be used as mixing chambers in case mixing is not possible directly in the MTP fan part.



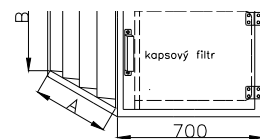
**Regulatory valves** – mixing is possible, (i.e. circulating/fresh air) thanks to two valves that are mounted directly to the fan part of the MTP heater.



**Fluted filters** represent the basic and easiest way of filtration. Standard delivery is in the G3 category. Filters are manufactured as iron boxes, where an exchangeable filtration cloth is attached. They are commonly used with mixing valves.



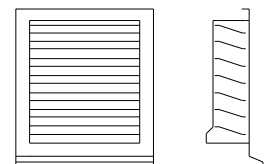
**Pocket filters** are equipped with pocket filters of all standard filtration categories.



**Silencing blocks** are intended primarily for the attachment of ductwork to the MTP unit. There is again a possibility to mount the silencing blocks directly to the MTP heater frame or to its accessories.

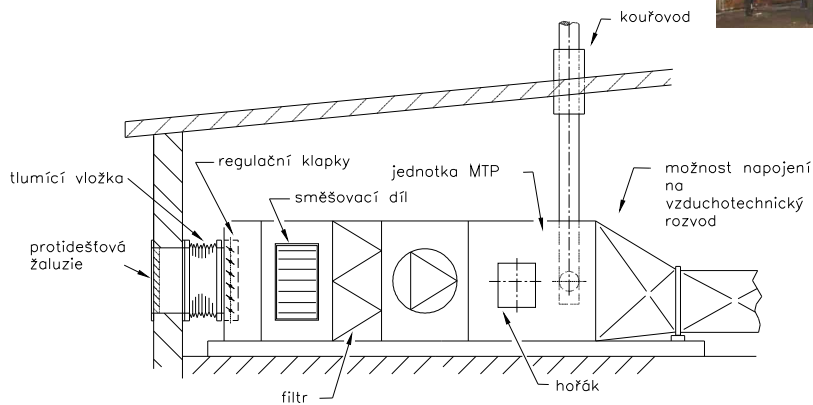
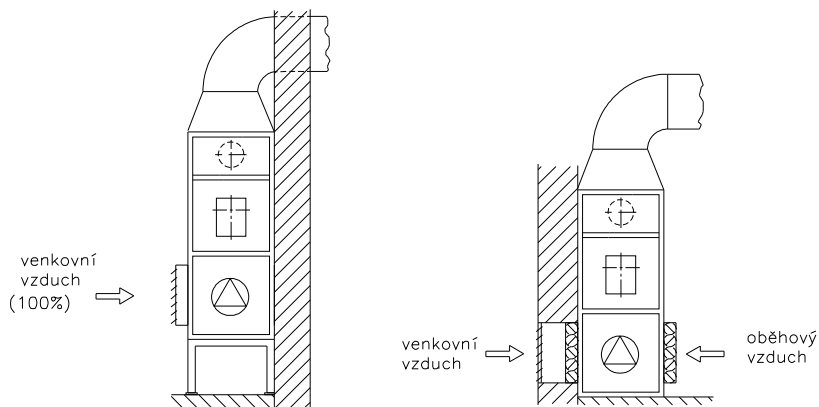


**Rain-proof louvers** are used when the air is sucked from outdoors; they are mounted to the MTP heaters with an attachment flange.



Note: The above stated dimensions A, B are identical with the panel dimensions of the relevant suction side (exhaust), where the accessories are mounted to. For lateral sides the dimension AxB is identical with heater dimensions LxF, for front and rear sides is it identical with dimension MxF, for base and exhaust with dimension MxL.

## Examples of placements of the units



### **REFERENCE:**

Slovácké Strojírny Uherský Brod  
 AKUMA Mladá Boleslav  
 Vagónka Česká Lípa  
 Sportovní areál HAMR Záběhlice, Pha  
 Sportovní areál Štvanice  
 Slovmag Lubeník

ŠKODA Auto, Kvasiny  
 Žďas Žďár nad Sázavou  
 KÖGEL Choceln  
 KAROSA Vysoké Mýto  
 GOLDBECK Prefabetron, Vrdu  
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