

Secondary-air appliances – Draught Regulators

according to DIN 4795

**Draught Regulators
Z 130 / Z 180**

**Draught Regulators with pressure relief valve
ZUK 130 / ZUK 180**



INSTALLATION INSTRUCTION



89/392/EWG



Safety Advice

Secondary-air appliances interact with the flue gas system and the fireplace. Therefore you should inform your responsible building control before installation.

The appliance will only operate flawlessly if the following advice is heeded:

Secondary-air appliances (draught regulators) must only be connected to fireplaces, connection pieces (flue gas pipe) or flue gas systems. Secondary-air appliances must only be installed in the same room as the fireplace or in adjacent rooms that provide combustion air. Exceptions are possible with approval from building control if the pressure difference between the room of the fireplace and that of the draught regulator does not exceed 4 Pa (same side of building).

Warning:

The installation has to follow effective laws, guidelines, stipulations and standards.

If a flue gas silencer is used, the secondary-air appliance should be installed behind it as there may be positive pressure in the connection pipe in front of the silencer.

Fireplaces for solid fuels - a special case

If fireplaces for solid fuels are connected to the flue gas system, secondary-air appliances that are positioned in the vertical part of the flue gas system have to be at least 40 cm above the base.

Force-pilot operated or combined secondary-air appliances must not be used.

When burning out the chimney (**Warning:** In some countries - for example the UK - it is not allowed to burn out the chimney, please contact your authorities to find out if you allowed to do so).

Before you burn out the chimney, the draught regulator has to be removed from the flue gas system and replaced with a closing cap. When it is put back in, its functionality has to be tested again.



Technical Data

Model	Z 130	ZUK 130	Z 180	ZUK 180
max. flue gas temperatur (DIN 1860)	400 °C	400 °C	400 °C	400 °C
Setting range (required draught in neg. pressure)	10 – 25 Pa	10 – 25 Pa	10 – 60 Pa	10 – 60 Pa
Air flow rate a Δp 5 Pa	0,025 Kg/s	0,025 Kg/s	0,063 Kg/s	0,063 Kg/s
	75 m ³ /h	75 m ³ /h	190 m ³ /h	190 m ³ /h
Air flow rate a Δp 20 Pa	0,044 Kg/s	0,044 Kg/s	0,092 Kg/s	0,092 Kg/s
	130 m ³ /h	130 m ³ /h	275 m ³ /h	275 m ³ /h
Air flow rate a Δp 40 Pa	0,054 Kg/s	0,054 Kg/s	0,112 Kg/s	0,112 Kg/s
	160 m ³ /h	160 m ³ /h	360 m ³ /h	360 m ³ /h
Response pressure of pressure relief valve	-----	> 100 Pa	-----	> 100 Pa
max. open cross-section pr. relief valve	-----	65 cm ²	-----	90 cm ²
DIN - Reg. Nr	NL 100 / 97			
Classification (DIN 4795)	1 to 3	1 to 3	1 to 5	1 to 5
Air flow rate as combined				
sec.-air appliance at Δp 20 Pa	> 100 m ³ /h	> 100 m ³ /h	> 200 m ³ /h	> 200 m ³ /h
Classification (DIN 4795)	A and B	A and B	C and D	C and D

Please see the dimension sheet - installation equipment for exact dimensions.

The air flow rates given under Δp refer to the respective higher negative pressure in the flue gas system compared to the set value of the draught regulator (pressure difference).

e.g. negative pressure in the flue gas system 20 Pa, set value of the draught regulator 15 Pa \Rightarrow the air flow rate Δp is 5 Pa



Installation

Insert the draught regulator into the corresponding bearing (see accessories). Now adjust the draught regulator carefully with an air level (fig. 2, axis of control wheel horizontal, frame and control wheel vertical). Now fasten the draught regulator by turning the clamp eccentric(s) clockwise (fig. 1).

Setting the Nominal Value (required draught)

The default setting for the KW DRAUGHT REGULATORS is the lowest value of 10 Pa. The required draught for the fireplace is set by turning the two-part setting weight (fig. 3). The measure "a" in mm corresponds to the draught in Pa (N/m³). After the setting is complete, the discs of the setting weight have to be secured by turning them against each other. Turn the interlock clockwise to unlock the control wheel (fig. 1).

The required draught of the fireplace is stated on its type plate or installation instruction. If the draught regulator is positioned in the connection piece closely behind the measuring opening, the set value is identical to the stated draught requirement. For systems with gas fireplaces with burner without a fan or boilers with low capacity, a draught of 10 Pa is usually sufficient.

When installing the draught regulator in the flank of the flue gas system, you have to consider the pressure losses in the connection piece in addition to the draught requirement of the fireplace. The reference value is an addition of about 1 Pa per meter in a straight flue gas pipe and an additional 0.5 Pa per 90° bend.

The regulation performance is impaired if the draught regulator is not installed with fitting installation equipment, gets deformed by overwinding the clamp eccentric or is not aligned correctly.



This changes the draught in the flue gas system uncontrollably which may disrupt the combustion process in the fireplace.

After setting the draught regulator it is always necessary to check if the required draught is ensured at the measuring opening behind the connection port of the fireplace.

If the draught regulator is set too low and the required draught is therefore not reached, there will be disruptions of the combustion in the fireplace. An insufficient draught in the flue gas system may cause the burner flame to flash back, soot deposits on the heating surface and/or in the connection piece as well as long-term leaking of flue gasses at the flow safeguard of gas fireplaces with burner without a fan.

Fig. 2
(e. g. Z 130)

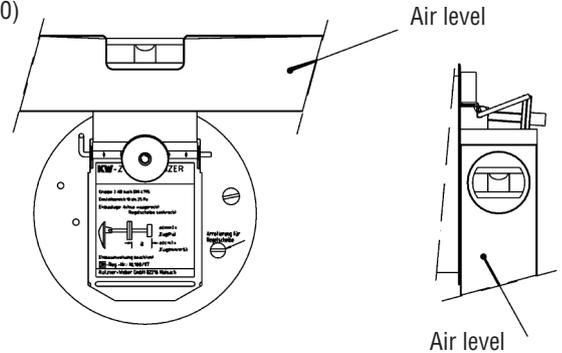


Fig. 3
(e. g. Z 130)

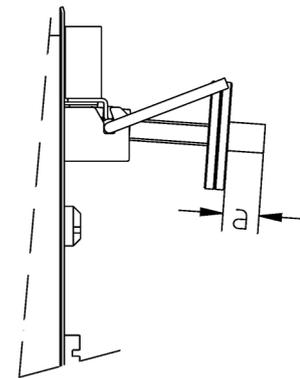
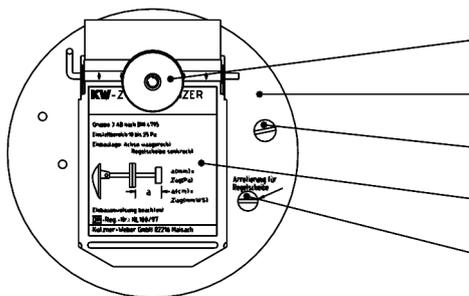
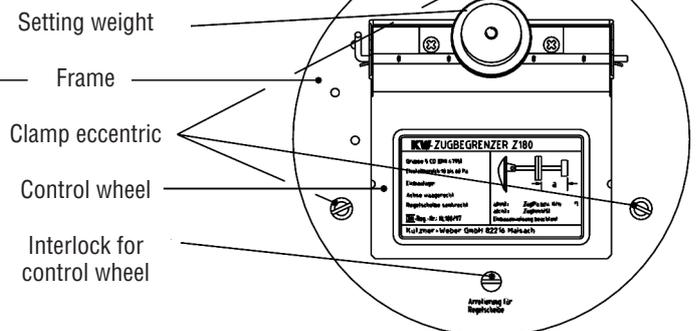


Fig. 1
Z 130 / ZUK 130
(closed position)



Z 180 / ZUK 180
(closed position)





Start-Up (functional test)

After installing and setting the draught regulator you need to check if the axis of the control wheel moves easily in the bearings. To do this, completely open the control wheel manually. When you let go of the control wheel it should swing back to the control position by itself. Now you have to check if the setting of the draught regulator (see Setting the Nominal Value) ensures a flawless operation of the fireplace. In addition, the functionality of the entire flue gas evacuation has to be tested. In the case of an accumulation or return flow of flue gasses, these must not escape at the draught regulator in dangerous quantities. It also has to always be possible to inspect or clean the flue gas system.

When installing a combined secondary-air appliance, i.e. a KW DRAUGHT REGULATOR with motor-control, it is necessary to ensure that the fuel supply or the program of automatic firing devices is not unlocked until the draught regulator is back in the control position. This is guaranteed if the draught regulator is activated through the motor-control based on the wiring diagram.



In the case of firing systems with a post-purge period, only the draught regulator without motor-control should be used for ventilating the system under normal circumstances!

When using a combined secondary-air appliance (KW DRAUGHT REGULATOR with motor-control), make sure that the opening of the secondary-air appliance is at least 25% to at most 50% of the cross-section of the flue gas system. If the opening of the secondary-air appliance is too small, the system may not be sufficiently ventilated which means that condensate cannot dry properly during downtime of the fireplace and this causes sooting. If the opening is too large, the flue gas system will cool down too much during longer downtimes which may cause start-up difficulties when heating up the fireplace.

If the draught regulator is installed properly and set carefully, it will run flawlessly for years and ensure a high efficiency and low standby losses in firing systems.



Maintenance

The KW DRAUGHT REGULATORS and SECONDARY-AIR APPLIANCES require virtually no maintenance. However, in the case of high dust accumulation in the installation room, the bearing of the control wheel should be cleaned with a fine brush. If necessary (before the heating period begins), the bearings can be lubricated with a drop of non-resinous oil (sewing machine oil).



Do not lubricate or grease the bearings excessively since this only increases the build-up of sediments. If dirt or soot has set on the control wheel, it needs to be removed carefully to maintain the accuracy of the draught regulator.



Accessories

Connection equipment (see price list)

KW pipe lining	Part Nr. F ...
KW connection pieces	A .../..., AZ ...

Motor-controls for turning the draught regulator into a combined secondary-air appliance

Motor-control with plug	Part Nr.	M 130/180 S1
Motor-control complete with cable and plug		M 130/180 S1 KS

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