

Technical documentation

Comfort domestic ventilation system

CWL Excellent • CWL-F Excellent • CWL





Comfort domestic ventilation system General info (CWL) Function

Units with an air flow rate of von 50 - 400 m³/h.

Suitable for detached houses and apartment buildings as well as offices and apartments. The Comfort domestic ventilation system CWL Excellent with heat recovery extracts stale air from the kitchen, bathroom and toilet areas. This air is routed across a cross countercurrent plate-type heat exchanger and is expelled to the outside.

At the same time, fresh outside air is drawn into the system, cleaned by an air filter, heated by the cross countercurrent heat exchanger and routed into the appropriate rooms, such as the living room, bedrooms and children's rooms.



domestic ventilation system

- (not only for those suffering from allergies).
- Removable cross countercurrent plate-type heat exchanger made from plastic; up to 95 % heat recovery from extracted stale air.
- One fan each for ventilation and extract air, both variable speed; low energy consumption through DC fans.
- Constant flow fans keep the air flow rate constant at the selected fan speed. This achieves a consistently high efficiency; and adjustments are limited to a minimum.
- The automatic frost stat control offers optimum protection against frost damage.
- Fully wired; filter change requirement indicated at the switch.
- Optional connections as standard available for air quality sensor, humidity sensor, electrical pre- and postheating element.

Design software



- Design software based on DIN 1946-6.
- The exceptional level of user friendliness enables competent, reliable air volume calculation in next to no time.
- In addition, the software provides a complete list of materials, a matching quotation, numerous supplementary information, and a full ventilation concept in accordance with DIN 1946-6.
- Download from www.wolf-systemprofi.de

CWL unit options

								*	
Туре		CWL-F-150 Excellent	CWL-F-300 Excellent	CWL-180 Excellent	CWL-300 Excellent	CWL-400 Excellent	CWL-180	CWL-300	CWL-400
max. fan capacity	m³/h	150	300	180	300	400	180	300	400
Installation mode wall n	nounting	✓	✓	✓	✓	~	✓	~	✓
ceiling n	nounting	✓	~	-	-	-	-	-	-
Operation display in unit		-	-	✓	✓	~	✓	~	✓
Remote control	BM-2	✓	✓	✓	✓	~	-	-	-
BML-	Excellent	✓	~	~	✓	~	-	-	-
	e control enTherm	-	-	-	-	-	~	~	~
4-stag	ge switch	~	~	~	✓	~	✓	~	~
remot	e control	✓	✓	✓	✓	~	✓	~	\checkmark
Bypass in	ntegrated	\checkmark	✓	-	✓	~	-	~	~
	without	-	-	✓	-	-	✓	~	\checkmark
Electrical preheater in	ntegrated	✓	-	-	✓	~	-	_	-
A	Accessory	-	✓	✓	-	-	-	~	~
Electrical postheating A element	Accessory	~	~	~	\checkmark	~	-	~	~
Enthalpy heat exchanger	optional	-	-	-	-	~	-	-	-
Ą	Accessory	-	~	-	✓	✓	-	-	-
Air quality-, humidity- A and CO ₂ -sensor	Accessory	~	~	~	~	~	_	~	~
Passive house certification	ı	~	~	-	✓	~	-	-	~
DIBt – type approval		applied	~	-	~	~	-	~	~

CWL-F-150/300 Excellent

Flat unit



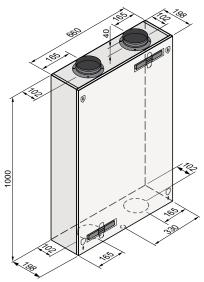
CWL-F-150 Excellent



• Compact, flat design for ceiling and wall mounting

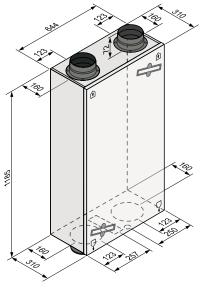
- Bypass as standard
- Filter grade G4 (optional F7)
- CWL-F-150 Excellent includes electrical preheater 375W as standard

Tec	hn	ical	da	ta
ice		icai	ua	ια



Comfort dome	stic		CWL-F-150	CWL-F-300
ventilation syst	tem		Excellent	Excellent
Air flow rate at	150 Pa	m³/h	max. 150	max. 300
Heat recovery n	nax.	%	95	95
Dimensions	Length	mm	1000	1185
	Width	mm	660	644
	Heigth	mm	198	310
Filter grade		mm	Ø125	Ø150 / 160
Power factor			G4	G4
			(optional F7)	(optional F7)
Wirkfaktor		Cos φ	0,34 - 0,49	0,39 - 0,53
Power consump	tion	W	11 - 72 W	9 - 162 W
Power consump	tion at 100 Pa	W	54 W at 100 m³/h	79 W at 225 m³/h
Weight		kg	24,5	37
Protection		IP	30	30
Electricity supp	ly		230 V / 50 Hz	230 V / 50 Hz

CWL-F-150 Excellent

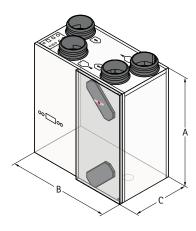


CWL-F-300 Excellent

CWL-180 Excellent

Technical data

Technical data



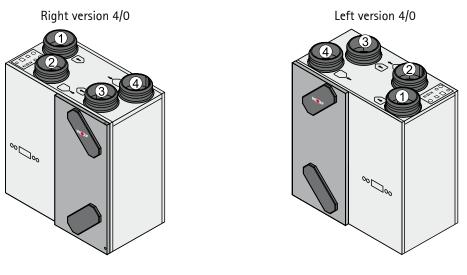
Optional connections

Comfort domes ventilation syst			CWL-180 Excellent
Fan capacity at	150 Pa	m³/h	max. 180
Heat recovery ra	ite max.	%	95
Dimensions	Length	A mm	600
	Width	B mm	560
	Heigth	C mm	315
Duct connection	IS	mm	Ø125
Filter grade			G4
Power factor		Cos φ	0,56 - 0,67
Power consumpt	tion	W	16 - 132
Power consumpt	tion at 150 Pa	W	86 at 150m³/h
Weight		kg	25
Protection	Protection IP		30
Electricity supply	у		230 V / 50 Hz

To do justice to the varied installation situations, Wolf offers these devices with two different connection options:

- Right version 4/0
- Left version 4/0

The inspection door for filter service is arranged either on the left or on the right. The connections for ventilation air, expelled air, extract air and outside air are as shown in the diagrams.

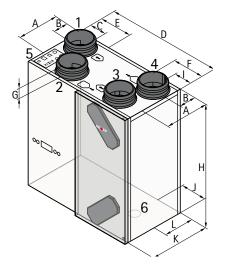


1 Supply air (living room)

- 2 Exhaust air (to the outside)
- 3 Extract air (living room)
- 4 Outdoor air (from the outside)
- 5 Electrical connection

6 Condensate connection

Dimensions

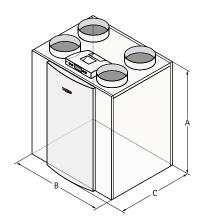


Туре	А	В	С	D	Е	F	G	Н	Ι	J	К	L
CWL-180 Excellent R	213	77	79	560	168	125	45	600	75	248	290	145

CWL-300/400 Excellent

Technical data

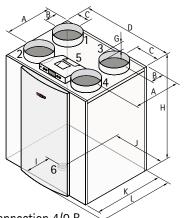
Technical data



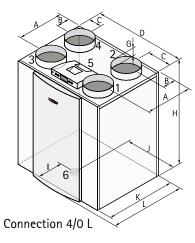
Comfort domes ventilation syst			CWL-300 Excellent	CWL-400 Excellent
Fan capacity at	150 Pa	m³/h	max. 300	max. 400
Max. heat recov	ery rate	%	95	95
Dimensions	Length	A mm	765	765
	Width	B mm	677	677
	Heigth	C mm	564	564
Duct connection	ıs	mm	Ø160	Ø180
Filter grade			G4 (F7 as accessory)	G4 (F7 as accessory)
Power factor		Cos φ	0,37 - 0,51	0,38 - 0,61
Power consump	tion	W	3 - 138	3 - 172
Power consump	tion at 150 Pa	W	66 at 225 m³/h	98 at 300m³/h
Weight		kg	38	38
Protection		IP	30	30
Electricity suppl	у		230 V / 50 Hz	230 V / 50 Hz

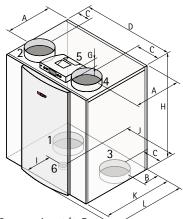
• Bypass as standard

• Includes electrical preheater 1000W as standard

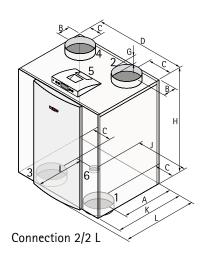


Connection 4/0 R

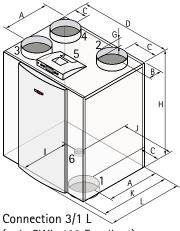




Connection 2/2 R



Connection 3/1 R (only CWL-400 Excellent)



(only CWL-400 Excellent)

1 Supply air (living room)3 Extract air (living room)5 Electrical connection2 Exhaust air (to the outside)4 Outdoor air (from the outside)6 Condensate connectione

Туре	А	В	С	D	G	Н	I	J	К	L
CWL-300/400 Excellent R	388	138	138	677	45	765	198	397	526	564
CWL-300/400 Excellent L	388	138	138	677	45	765	328	280	526	564

Dimensions

CWL-180/300/400 Excellent Control unit-accessories

Controller

User interface



Microprocessor control unit with display for adjusting and displaying the individual control functions:

- Set value adjustment of the ventilation and extract air flow rate
- Fans ON / OFF
- Programmable pressure compensation or pressure balancing i.e. generally over- or underpressure can be created deliberately via an adjustable value, if required, inside the accommodation
- Filter alarm on the display (filter service)
- Frost protection
- Displaying the selected values

Accessories

The following accessories can be connected directly to the unit:

- Smoke detector this shuts down the fans in dangerous situations
- Humidity sensor ensures automatically the extraction of a larger amount of air in case of excessive relative humidity (e.g. in the bathroom) (extraction)
- Air quality sensor ensures that a larger amount of supply air is provided automatically in case of excessive CO2 content (e.g. in the living room) (ventilation)
- Control of a booster heater bank (1000 W) the booster heater bank heats the ventilation air to an adjustable value

Four-stage switch



Four-stage switch with LED

This illuminates when the filters need cleaning.

- Position 1: Minimum ventilation, e.g. during absence (holiday)
- Position 2: Reduced ventilation
- Position 3: Basic ventilation corresponding to standard operation if the occupants are present
- Position 4: Intensive ventilation, e.g. during a party, when there are visitors (high oxygen consumption)

Remote control

Stage 1—	æ	\$1	— Stage 3
Stage 2 —	3	G	— Stage 3 – time

	Press at the top left	Fans turn at stage 1 (minimum ventilation)
3	Press at the bottom left	Fans turn at stage 2 (basic ventilation)
•	Press at the top right	Fans turn at stage 3 (intensive ventilation)
3 – time	Press briefly at bottom right (< 1 s)	Fans turn at stage 3 for 15 min.; then the fans revert to stage 1
	Press longer at bottom right	Fans turn at stage 3 for 30 min.; then the fans revert to stage 1



CWL-180/300/400 Excellent CWL-F-150/300 Excellent



BML Excellent ventilation programming modul with eBus interface

- Graphical Display
- Fixed time programs can be selected
- 4 ventilation stages can be set
- Frost protection
- Setting the parameters at the remote control

Extension kit for additional functions

With connection options for air quality sensor, humidity sensor and booster heater bank



Air quality sensor Mixed gas sensor to measure the air quality; output signal 0 – 10 V, power supply 24 V, extension kit for additional functions required

Humidity sensor

RH sensor to measure the relative humidity; output signal 0 – 10 V, power supply 24 V, extension kit for additional functions required



 CO_2 -sensor required for CO_2 -led operation, plug-in, as a reference value for the CO_2 -based control



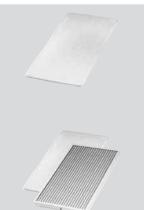
Electric pre-heater bank 1000 W



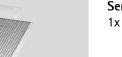
Electric booster heater bank 1000 W



CWL-180/300/400 Excellent CWL-F-150/300 Excellent



Service set filter G4 2 pieces



Service set filter 1x grade G4 and 1x grade F7

Enthalpy heat exchanger for moisture recovery Hygiene: AATCC - certificate (VDI 6022) Degree of heat supply to EN 308: 78% Humidity recovery 59%

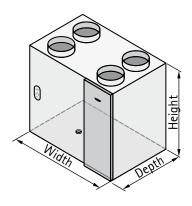
Available for CWL-300/400 Excellent CWL-F-300 Excellent

accessories

CWL-180 to 400

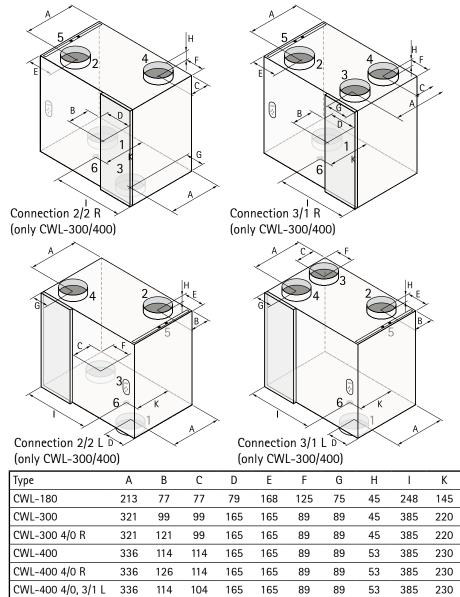
Technical data

Technical data

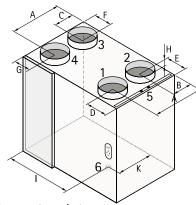


Comfort don ventilation s			CWL-180	CWL-300(B)	CWL-400(B)
Fan capacity	at 150 Pa	m³/h	max. 180	max. 300	max. 400
Heat recover	y rate max.	0/ ₀	95	95	95
Dimensions	Heigth	mm	600	602	602
	Width	mm	560	675	675
	Depth (with bypass)	mm	315	445 (525)	455 (535)
Duct connect	tions	mm	Ø125	Ø150 / Ø160	Ø150 / Ø160 / Ø180
Filter grade			G4	G4	G4
				(F6 as accessory)	(F6 as accessory)
Power factor		Cos φ	0,58 - 0,67	0,60 - 0,66	0,54 - 0,62
Power consu	mption	W	16 - 112	16 - 174	12 - 300
Power consumption at 150 Pa (with bypass)		W	112 bei 180m³/h	174 (184) bei 300m³/h	300 (310) bei 400m³/h
Weight (with bypass) kg		25	31 (35)	32 (36)	
Protection			IP31	IP31	IP31
Electricity su	pply		230 V / 50 Hz	230 V / 50 Hz	230 V / 50 Hz

• Unit types CWL-300 B and CWL-400 B with bypass.



Connection 4/0 R



Connection 4/0 L

Dimensions [mm]

- 1 Ventilation air (living room)
- 2 Expelled air (to the outside)
- 3 Extract air (living room))
- 4 Outside air (from the outside) 5 Electrical connection
- 6 Condensate connection

Dimensions without bypass

CWL-180 to 400

Control unit – accessory

Controller

User interface



Accessories

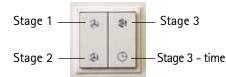
Auxiliary PCB



Four-stage switch



Remote control



CWL remote control OpenTherm



Air quality sensor



Microprocessor control unit with display for adjusting and displaying the individual control functions:

- Set value adjustment of the ventilation and extract air flow rate
- Fans ON / OFF
- Programmable pressure compensation or pressure balancing i.e. generally over or underpressure can be created deliberately via an adjustable value, if required, inside the accommodation.
- Filter alarm on the display (filter service)
- Frost protection
- Control of a pre-heater bank (1000 W). The pre-heater bank is designed to maintain a ventilation air temperature above 0 °C.
- Control of a bypass damper (if installed) for models CWL-300 and CWL-400. This enables the supply of fresh outside air into the accommodation for night time cooling.
- The bypass damper opens if the room temperature exceeds an adjustable value, and the outside air temperature is below that value.
- Displaying the selected values

Additional PCB with switching inputs for:

- Smoke detector this shuts down the fans in dangerous situations
- Humidity sensor ensures a larger amount of air is extracted automatically in case of excessive relative humidity (e.g. in the bathroom) (extraction)
- Carbon dioxide sensor ensures a larger amount of ventilation air is supplied automatically in case of excessive CO2 content (e.g. in the living room) (ventilation)
- Control of a booster heater bank (1000 W) the booster heater bank heats the ventilation air to an adjustable value

Four-stage switch with LED

This illuminates when the filters need cleaning.

- Position 1: Minimum ventilation, e.g. during absence (holiday)
- Position 2: Reduced ventilation
- Position 3: Basic ventilation corresponding to standard operation if the occupants are present
- Position 4: Intensive ventilation, e.g. during a party, when there are visitors (high oxygen consumption)

Wireless remote control with transmitter and receiver

Press at the top left	Fans turn at stage 1 (minimum ventilation)
Press at the bottom left	Fans turn at stage 2 (basic ventilation)
Press at the top rightn	Fans turn at stage 3 (intensive ventilation)
Press briefly at bottom right	Fans turn at stage 3 for 15 min.; then
(< 1 s)	the fans revert to stage 1
Press longer at bottom right	Fans turn at stage 3 for 30 min.; then
	the fans revert to stage 1

- 1 fixed time program and 1 time program that can be freely selected
- OpenTherm interface (master)
- 3 ventilation stages can be set
- Frost protection
- Setting the parameters at the remote control

Mixed gas sensor to measure the air quality; additional PCB (see above) required

CWL-Excellent / CWL

Function

Function



Air from the distributors to the valves routed in a hose system 75/63 or 63/52

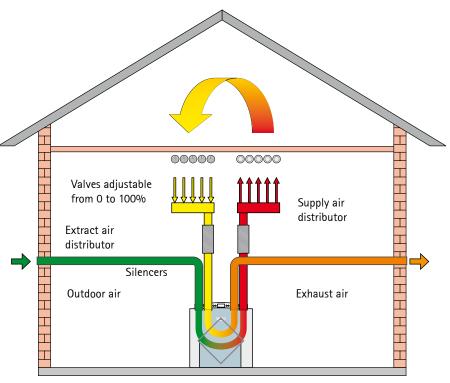


Air routing from the distributor to the valves using flat duct system Excellent 50 x 100 or 60x130



Air for outside and expelled air and to the ventilation air and extract air distributor routed in ISO pipes DN 125/150/180.

General technical properties	
ISO pipe CWL	



- Material density 50 kg/m³, anti-static
- Heat transfer coefficient 0.041 W/(m²K)
- Temperature range -40 °C to +60 °C
- Fire safety class B1 to DIN 4102-1 tested by the MPA Dortmund Institut
- Insulated roof outlet
- A special knife is offered for installation purposes

Characteristics

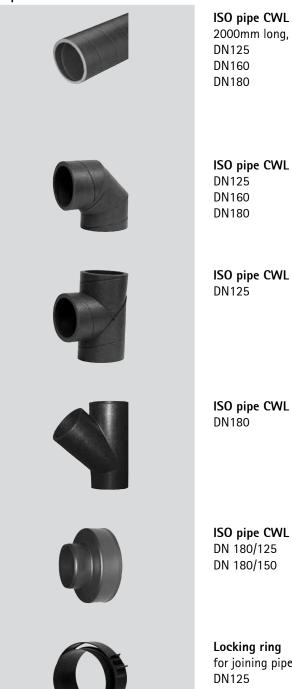
ISO pipe CWL replaces the traditional folded spiral-seam tube with insulation with a readyinsulated round pipeline DN 125, DN 150 and DN 180 made from vapour-proof EPE foam with reduced system costs. Perfectly matching pipe elements combined with insulated roof outlets for superior system benefits:

- Quick installation (savings in labour costs up to 70 % compared with folded spiral-seam tube)
- Consistent soundness of the pipework
- Consistent insulation (prevents the formation of condensate)
- Good sound insulation thanks to the relatively soft material
- Easy cleaning due to optimum smooth internal surface without edge
- Connection of profiles by means of smooth space- saving plug-in fem. connection
- Easy line inspection without dismantling through the plug-in fem. connection with tensioning toggle
- Visually and in function perfect, even after many years in use
- Wall thickness 17 mm = DN 125 and DN 150
 - 20 mm = DN 180

CWL-Excellent / CWL

Insulated pipework

Components



ISO pipe CWL bend 90° and 45°,

ISO pipe CWL tee,

ISO pipe CWL 45° Y-piece,

ISO pipe CWL Reducer, DN 180/125 DN 180/150



Locking ring for joining pipes and profiles with anti-twist protection. DN160 DN180



Special knife for trimming pipes to size. The special teeth facilitate a quick and clean cut.

CWL-Excellent / CWL

Insulated pipework



CWL roof outlet, thermally insulated 1159mm long Color black or red DN125 and DN160 Color black DN180

Sealing collar for CWL roof outlet

CWL universal roof tile 25° to 45° Color black or red DN125 - DN180

CWL flat roof outlet 0° DN125 - DN180

Color black or white

DN125 DN160 DN180

Color withe

Fixing clamp for ISO pipe DN 180 DN125 DN160 DN180

CWL wall outlet with protective grille;

Double grille, DN125 for outdoor and exhaust air for CWL-F-150 Excellent and CWL-180 Excellent



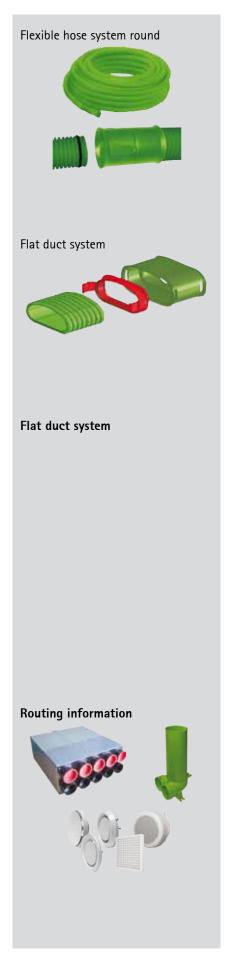
Silencer, for supply or exhaust air Length 1000mm

DN125, 50mm insulation DN160, 50mm insulation DN180, 50mm insulation

Silencer, DN125 for supply and exhaust air insulation 482mm

Flexible duct system

General info



Pipe system specially designed for ventilation systems for flexible routing across or in false ceilings.

Twin layer construction (smooth interior, corrugated exterior) ensures:

Excellent sound insulation through low flow resistance; high annular stability yet high level of flexibility; low weight; the flat duct system Excellent assures neutral smell and anti-bacterial performance (optional) due to environmentally-friendly material (PE) and the use of hygienically ideal virgin materials. Minimum dust deposits through anti-static internal skin (optinal) mark out both the flexible round hose system and the flat duct system Excellent. Hygienically perfect due to easy to clean special internal skin. Tested without measurable contaminant concentration in the air. Shorter installation times through easy processing without special tools; no waste through endless routing via click joints; direct routing on unfinished concrete, screed or in false ceilings; watertight and airtight to DIN EN 1610 through the use of seal rings at joints. With the flexible round hose system, two diameters are available (male:75/female:63 mm or male:63/female: 52 mm); the flat duct system Excellent is available in the 50 x 100 mm size.

An optimum operation can be achieved when the flow rate inside the pipe is limited to approx. 3.0 m/s (low resistance).

The ventilation air and extract air valves can be preset when the maximum pipe length (15 m in a detached house) is known and the pressure drop details from the diagram are applied. This reduces the adjustment time considerably.

The flow rate is, elative to the recommendation of approx. 3.0 m/s:

Flexible hose system round:

single hose DN 63/52 approx. \pm 20 m³/h single hose DN 75/63 approx. \pm 30 m³/h

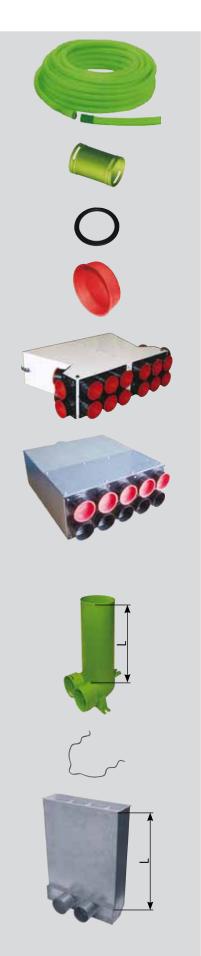
Flat duct system Excellent:

single duct routing 50 x 100mm up to 30 m³/h single duct routing 60 x 130mm up to 55m³/h

Various air distributors are available for supply and extract air distribution in the building. Supply and extract air valves are integrated into the hose system via the connectors. The ventilation air and extract air lines, air distributors and connectors for the ventilation air and extract air valves are predominantly routed and installed on/above the ceiling and under the screed. The ventilation air and extract air valves may be installed either in the ceiling or the wall.

These components may also be routed and installed in false ceilings.

Flexible hose system round



Air distribution hose	
with smooth internal skin, anti-static	63/52, roll 50m 75/63, roll 50m
with smooth internal skin	63/52, roll 50m 75/63, roll 50m
Click joint for air distribution hose	
anti-static and anti-bacterial	63/52 75/63
Seal ring	63/52, bag of 10 pce 75/63, bag of 10 pce
Pipe cap for	75 mm 63 mm

Air distributor, for supply and exhaust air sound attenuating material to DIN 1946-6

DN125: 10 connectors 75/63 with 5 pipe caps for supply and exhaust air each

Air distributor, for supply or exhaust air sound attenuating material to DIN 1946-6

- **DN125:** 6 connectors 63/52 with 3 pipe caps for supply or exhaust air each 5 connectors 75/63 with 2 pipe caps for supply or exhaust air each
- **DN160:** 12 connectors 63/52 with 6 pipe caps for supply or exhaust air each 10 connectors 75/63 with 5 pipe caps for supply or exhaust air each
- **DN180:** 18 connectors 63/52 with 6 pipe caps for supply or exhaust air each 15 connectors 75/63 with 5 pipe caps for supply or exhaust air each

Connector for valve DN 125, one pipe cap and two pipe connectors

anti-static and anti-bacterial

63mm, L = 325mm **75mm,** L = 325mm

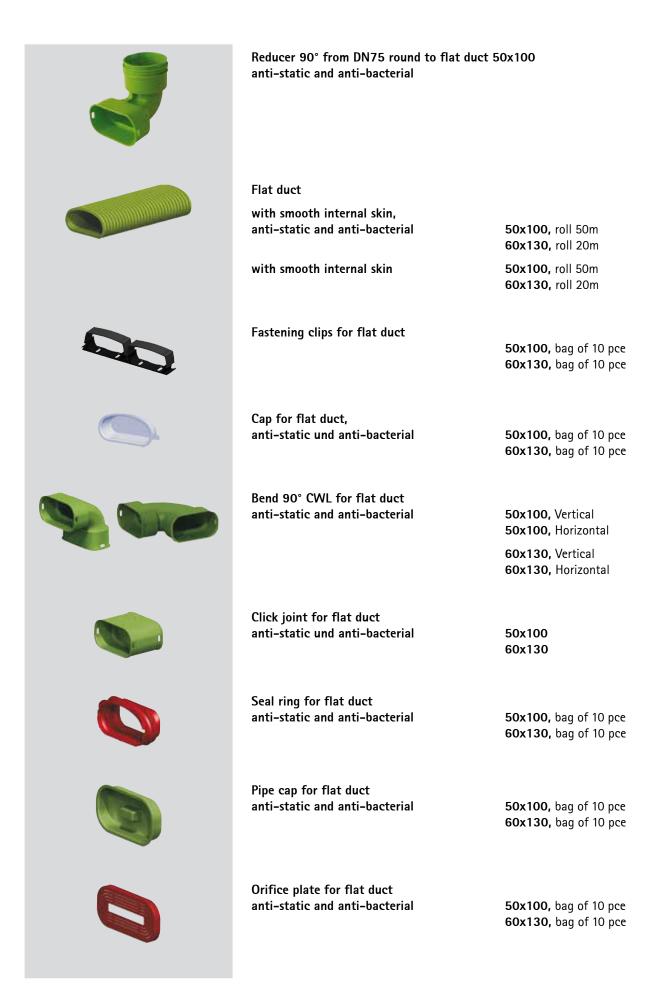
Fixing ring, for round tube in conjunction with connector for valve DN 63/75mm

63/52, (bag of 10 pce) 75/63, (bag of 10 pce)

Connector for floor grille, one pipe cap and two pipe connectors

63mm, L = 350mm **75mm,** L = 350mm

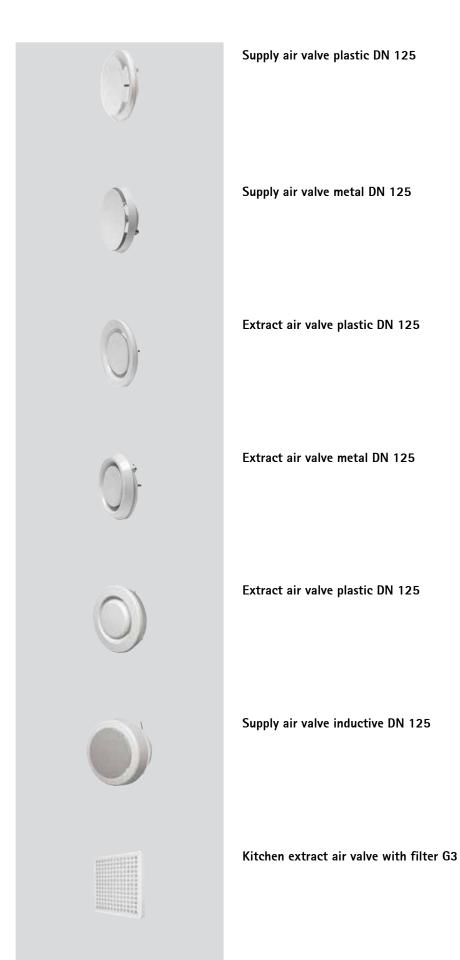
Flexible flat duct system



Flexible flat duct system

· · · · · · · · · · · · · · · · · · ·	Air distributor, for supply <u>and</u> exhaust air sound attenuating material to DIN 1946-6 DN125: 6 connectors 50x100 with 3 pipe	caps for supply and exhaust air each
	DN180: 15 connectors 50x100 with 5 pipe	caps for supply or exhaust air each caps for supply or exhaust air each
	Connector for valve DN 125, two duct connections and one pipe cap anti-static and anti-bacterial Length L = 240mm	50x100 – 90° 60x130 – 90°
	Connector for floor grille DN125, one or two duct connections and one pipe anti-static and anti-bacterial Length L = 220mm	e cap 50x100 (two duct connections) 60x130 (one duct connection)
	Connector for valve DN 125, one pipe cap and two tube connectors 180° anti-static and anti-bacterial Length L = 250mm	60x130 - 180°
Contraction of the second seco	Floor grille, metal white or stainless steel	

Supply / extract air valves





Das umfassende Gerätesortiment des Systemanbieters Wolf bietet bei Gewerbe- und Industriebau, bei Neubau sowie bei Sanierung/Modernisierung die ideale Lösung. Das Wolf Regelungsprogramm erfüllt jeden Wunsch in Bezug auf Heizkomfort. Die Produkte sind einfach zu bedienen und arbeiten energiesparend und zuverlässig. Photovoltaik- und Solaranlagen lassen sich in kürzester Zeit auch in vorhandene Anlagen integrieren. Wolf Produkte sind problemlos und schnell montiert und gewartet.

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