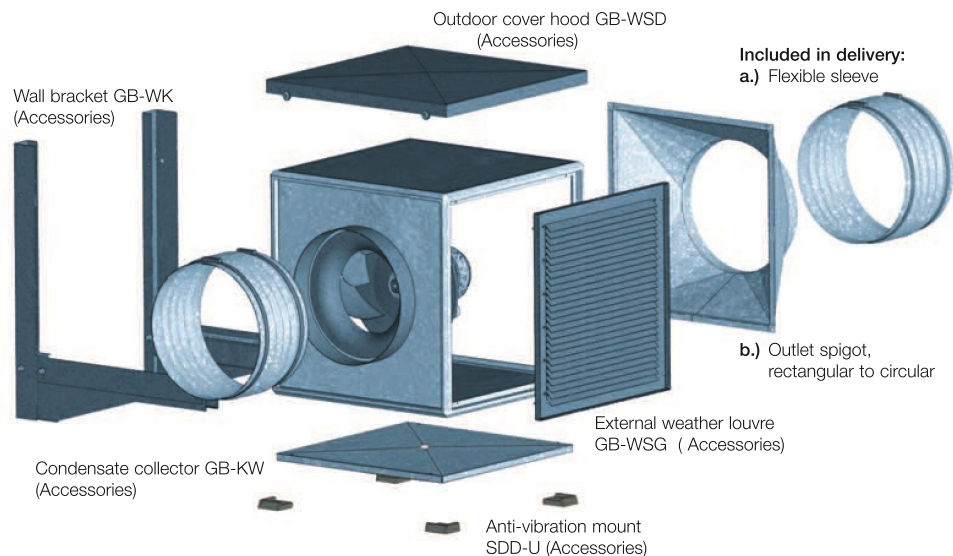


GigaBox and accessories



Information	Page
Information for planning, acoustics	10 on
General techn. information, speed control	15 on

Application

Multifunctional fan box, suitable for medium to higher air flow volumes against high resistances in every type of ventilation system. The compact frame construction offers easy conversion of the outlet position, together with a choice of ideal accessories make these units ideal for all applications.

GB T120

The GigaBox T120 types are suitable for the extraction of dirty, humid and hot air up to max. 120 °C, such as extract air fan in commercial kitchens and many process technology applications.

GB EC

GigaBox types with EC motor technology are available for energy-saving application and low-cost operating costs.

Casing

Self-supporting frame construction from aluminium hollow profiles. Double-walled side panels from galvanised sheet steel, lined with 20 mm thick temperature insulating and flame-retardant mineral wool. Intake cone for ideal airflow, spigot and flexible connector for duct connection. With outlet adapter (from rectangular to circular) on the exhaust side for low-loss discharge and flexible connector to reduce vibration transmission.

The flexible connectors are supplied as standard and correspond to the max. permissible air flow temperature of +70 °C and/or +120 °C with the types GB T120. Easy positioning with crane hooks as standard.

- With GB T120, the motor is located outside of the air flow.

The thermally insulated partition panel is also the support plate for the motor and impeller unit and can be removed completely for inspection without removing the complete fan from the system.

Speed control

GB and GB T120

All types (except GBD 630/4 T120, GBD 710/4 and GBD 710/4 T120) are speed controllable by voltage reduction using a 5-step transformer controller or an electronic controller. The 3-phase GB types can also be 2 speed controlled by Y/Δ switch (accessories DS 2 or full motor protection device M4). The performances stages are specified in the performance curve. 3-phase models are controllable by means of frequency inverter with Sine filter (FU-BS, accessories); GBD 630/4 T120, GBD 710/4 and GBD 710/4 T120 only controllable by frequency inverter FU-BS.

GB EC

All EC types are steplessly speed-controllable by means of speed-potentiometer. Furthermore, control is also possible by means of three-step switch or steplessly via a universal control system or electronic differential pressure/temperature controller. The example performances stages are specified in the performance curve.

Assembly, Installation

GB and GB EC

Installation in any position and flexible assembly using the five possible discharge directions via the discharge adapter. Removable panels allow inspection access on all sides.

GB T120

Installation must be carried out with downward condensation discharge. Flexible assembly through three possible centrifugal discharge directions via the discharge adapter. Easy-access inspection cover with handle, for cleaning and maintenance. Easy positioning of all types with integrated crane hooks. Vibration transmission to the building is minimised with anti-vibration mounts (Type SDD-U, accessories). Vibration transmission to the ducting is prevented using the standard flexible connector supplied.

Impeller

Free-running high-performance centrifugal impeller with backward curved polymer blades (NG 250 made from steel) on a galvanised steel back plate, direct driven. Series GB EC, GB from NG 500 and GB T120 with aluminium impellers. Energy-efficient with low noise generation. Dynamically balanced together with the motor according to DIN ISO 1940 T.1 – grade 6.3 or 2.5.

Motor

GB and GB T120

IEC-standard motor or maintenance-free external rotor motor protected to IP 54 or 44. Thermal overload protection through built-in thermal contacts. Suitable for continuous operation S1. Insulation class F. Ball bearings are lubricated for life.

GB EC

Energy-saving, speed-controllable EC external rotor motor protected to IP 54 with high level of efficiency. Maintenance-free and interference-free, ball bearing mounted.

Electrical connection

GB and GB T120

Standard terminal box, protected to IP 54.

GB EC

Standard terminal box (IP 54) mounted to running cable.

Air flow direction

The air flow direction of centrifugal fans is not reversible, but can be set by positioning the fan to the required air flow direction. Furthermore the position can be set individually to constructional conditions through the conversion of the discharge adapter and panels. The correct motor rotation direction is marked by rotation arrows on the motor and must be checked at start-up.

Incorrect direction of rotation

If the fan is operated in the incorrect direction of rotation, the motor will overheat and the thermal contact will trip. A typical indication of this is a very low air flow combined with high noise levels and vibration.

Air flow temperature

The maximum permitted air flow temperature is specified in the type table.

Ambient temperature

From –40 °C to +40 °C.

VDI 2052 (2006) "Ventilation equipment for kitchens – Planning, design, inspection" is applied when planning exhaust air systems in commercial kitchens. This means the following for exhaust air fans:

- Fans in exhaust air systems must be designed and fitted so that they are easy to access, easy to control and easy to clean. It must be possible to turn them off from inside the kitchen. The motors must be located outside the flow line of the exhaust air. Connected extractor hoods must be able to distinguish between solid and liquid components where possible. Passage of flame to the following components is to be prevented.

These specific requirements are excellently fulfilled in the GigaBox GB T120. Freely accessible casing and dual-wall side panels allow easy cleaning with degreasing agents and steam.

The guidelines on fire safety requirements for ventilation systems (LüAR) from September 2006 have been introduced across large areas of Germany.

This places the following additional requirements on exhaust air systems in commercial and comparable kitchens:

- Exhaust air ducts must be made of non-flammable components (building material class A1 or A2 according to DIN 4102). From the kitchen outlet, they have to have at least a fire resistance class of L90 or must be equipped with a shut-off device with proof of use for this purpose.
- Kitchen exhaust air ducts must not be connected to one another or to other ventilation ducts. Having a joint line for the room air and the kitchen exhaust within the kitchen and the connection of multiple extractor hoods in a kitchen to a shared exhaust line is permitted.
- Suitable grease filters or separating devices made of non-combustible materials are to be attached placed on or directly behind exhaust devices (hoods or ventilation ceilings). It must be possible to remove and reattach these easily for cleaning.

- The exhaust ducts must have smooth, easy-to-clean interior surfaces. Profiled walls, such as flexible ducts and porous or absorbent materials are not permitted. Neither fat nor condensate must be able to pass through the walls.

- The exhaust ducts must have a cleaning opening after every change of direction and in horizontal, straight sections at intervals of no more than 3 m. Their dimensions must have a duct cross-section of at least 3600 cm². Devices must be placed at suitable locations in the ducting to collect and discharge condensate and cleaning agents.

■ Fire protection to neighbouring buildings

If there is a ventilation system on the building envelope (wall), the parts of the ventilation system must have fire-resistant L90 lining. This also applies to fans and their exhaust lines, which are guided outwardly up through the roof.

■ Fire protection in the roof space

Parts of the ventilation system (fan) in the roof space must have fire-resistant L90 lining. Lines that lead to the outdoors must have this lining up to the roof panels. Ventilation ducts (in the building and roof space) must have fire-resistant lining.



- In the GigaBox T120 range, the motor is located outside the delivery flow and is separated from the impeller by a heat-insulated wall. The motor impeller unit can be removed without dismantling the ducting system.



- Assembly of the shaped piece on exhaust side with GB T120 centrifugally above or at the side.



- GB T120 with easy-to-remove access panel.

By combining the parameters of static pressure increase Δp_{fa} , radiated noise and intake air noise as sound pressure at 4 m

(free field conditions), the following table facilitates the selection of GigaBox centrifugal fans.

	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V}m^3/h$ depending on static pressure												
Type GB EC	L _{PA} dB(A)	L _{PA} dB(A)	(ΔP_{fa}) in Pa												
	at 4 m	at 4 m	0	50	100	150	200	250	300	350	400	500	600	700	800
GBW EC 250	31	43	2010	1880	1750	1600	1360	1010							
GBW EC 315	32	44	2620	2460	2310	2130	1830	1500							
GBW EC 355	30	49	3440	3270	3120	2950	2740	2500	2135	1630					
GBW EC 400 A	36	48	4050	3860	3600	3350	3050	2670	1880						
GBW EC 400 B	37	52	5160	4970	4730	4550	4210	4100	3800	3410	2900				
GBW EC 450	38	55	6460	6280	6100	5890	5660	5450	5190	4870	4600	3810			
GBD EC 450	39	56	7300	7120	6870	6650	6390	6110	5800	5500	5180	4420	3070		
GBD EC 500 A	43	55	8280	7980	7700	7380	7000	6620	6170	5680	5070	1800			
GBD EC 500 B	46	59	10500	10260	9980	9730	9410	9100	8850	8600	8320	7600	6650	5300	
GBD EC 560	49	59	13370	13110	12800	12510	12190	11930	11610	11280	10920	10310	9580	8320	6700
GBD EC 630	44	60	15000	14680	14200	13870	13450	12930	12380	11900	11310	10180	7850		
GBD EC 710 A	42	53	15890	15020	14250	13500	12510	11670	10680	9500	6730				
GBD EC 710 B	48	61	19630	19060	18400	16760	17130	16460	15720	15050	14060	11910	6960		

	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V}m^3/h$ depending on static pressure												
Type GB	L _{PA} dB(A)	L _{PA} dB(A)	(ΔP_{fa}) in Pa												
	at 4 m	at 4 m	0	50	100	150	200	250	300	350	400	500	600	700	800
GBW 250/4	27	39	1420	1160	890	500									
GBW 315/4	29	41	1760	1500	1260	970	560								
GBW 355/4	38	48	3060	2850	2640	2420	2180	1900	1510	560					
GBD 355/4/4	34	46	3090	2910	2720	2520	2290	2030	1680	1000					
GBW 400/4	38	50	4120	3920	3720	3500	3270	3000	2690	2260	1440				
GBD 400/4/4	38	50	4120	3910	3710	3500	3290	3050	2780	2430	1870				
GBW 450/4	40	49	4610	4400	4200	3990	3770	3530	3270	2970	2610				
GBD 450/4/4	40	52	5500	5220	4930	4640	4330	4000	3640	3210	2670				
GBW 500/4	47	59	8320	8020	7740	7460	7180	6910	6630	6340	6030	5330	4340	370	
GBD 500/4/4	45	57	8860	8540	8220	7880	7530	7160	6770	6350	5900	4800	2940	140	
GBW 560/4	45	57	9150	8910	8670	8420	8160	7890	7620	7330	7030	6360	5570	4500	2270
GBD 560/4/4	44	57	12610	12260	11910	11560	11200	10830	10450	10050	9630	8690	7540	5950	2940
GBD 560/6/6	35	48	8670	8160	7600	6990	6280	5410	4210	2190					
GBD 630/4/4	51	62	14430	14070	13710	13370	13040	12720	12390	12050	11710	11000	10200	9280	8110
GBD 630/6/6	42	53	9990	9430	8870	8290	7670	6980	6160	5070	3020				
GBD 710/4	46	59	20280	20020	19760	19490	19210	18930	18640	18340	18040	17400	16730	15990	15190
GBD 710/6/6	51	62	18740	17980	17190	16360	15490	14560	13550	12440	11170	7730	970		

	Sound press. case breakout	Sound press. intake	Air flow volume $\dot{V}m^3/h$ depending on static pressure												
Type GB T120	L _{PA} dB(A)	L _{PA} dB(A)	(ΔP_{fa}) in Pa												
	at 4 m	at 4 m	0	100	200	300	400	500	600	700	800	900	1000	1100	1200
GBW 355/4 T120	36	49	3460	2990	2460	1505									
GBD 355/4/4 T120	36	49	3470	3045	2510	1690									
GBW 400/4 T120	40	53	4930	4380	3790	2900	1580								
GBD 400/4/4 T120	40	53	4870	4295	3650	2740	1370								
GBW 450/4 T120	45	57	7110	6480	5850	5135	4350	3300	1900						
GBW 500/4 T120	45	59	8345	7770	7160	6480	5670	4680	3510	1840					
GBD 500/4/4 T120	45	59	8345	7770	7160	6480	5670	4680	3510	1840					
GBD 560/4/4 T120	48	62	12300	11690	11080	10475	9800	9120	8410	7430	6000				
GBD 630/4 T120	53	67	14140	13690	13200	12720	12230	11670	11150	10470	8830	7850	6820	5150	
GBD 710/4 T120	55	66	18200	17650	17200	16650	16000	15300	14500	13750	12800	11850	10850	9800	8500

Ref: 75B London Road, Proposed Fan Motor Data, Refer above GBW500/4 T120