M.C Tech VENTILATION

Mixed Flow In-line Duct Fan

DUCT FANS

PROFESSIONAL MANUFACTURER

m.c Or-Shy ltd

m.c Or-Shy ltd
16 Hasatat Street, Holon Industrial zone Israel
Telephone: +972-35583303 Fax: +972-35583808
www.orshy.co.il

m.c Or-Shy ltd

M.C Tech
VENTILATION

www.orshy.co.il

DUCT FANS

PROFESSIONAL MANUFACTURER

Healthy Ventilation Leader

Or-Shy Ventilation products bring you a pure, natural and quiet exclusive space, enjoy fresh and healthy air every time.

www.orshy.co.il M.C Tech VENTILATION

CATALOGUE

Company profile

Founded in 1987 by Dan Caspi that is still the general manager and the owner until today with the purpose of supplying the Israeli market with refrigeration and air conditioning components, m.c Or-Shy ltd is able to supply a wide product range, resulting from the technological evolution and from an experience in the field of more than 30 years. In the year of 1991 in an effort to expand, the company has purchased and merged Moshe Hayon ltd.

Experience, quality, innovation These are the characteristics which have enabled m.c Or-Shy ltd to achieve and consolidate in 27 years of business, a leading position in the air conditioning and refrigeration field in the Israeli market, both domestic, commercial and industrial. The reliability and efficiency of its products make Or-Shy the preferred brand for large as small Israeli distributors, workshops and technicians for household refrigeration as well as the biggest manufacturersof commercial refrigeration equipment.

Nowadays Or-Shy is the result of the progressive evolution of a company, which has made any effort to achieve development and renovation without disregarding its traditional care for the tiniest quality details. The small company of the past, managed in an informal way, has grown step by step, increasing sales and services giving every year. Moreover Or-Shy has provided itself with an up-to-date organized structure, able to face successfully the market's daily challenges. A natural process of development, in which experience and knowledge matured in years, is set to the benefit of the company clients.

Ventilation Is Everywhere

Good ventilation to protect you and your family

Our house can reach thermal insulation, sealing performance, but it also prevents air circulation what led to accumulation of feculent and harmful gases , reduces the oxygen content of the air and affects our health, all which is that people can not smell detected.

Do you know when the doors and windows closed, indoor air carbon dioxide how many do? Do you know if the polluted air content level is high, how much harm it will cause to the occupants? Do you know that in order to maintain good health, how much fresh air one person should breathe in per hour ? Do you know when the difference of temperature between outdoor and indoor is large, how much energy will waste by opening windows to ventilate? These questions, perhaps, you never thought or did not pay attention before, or subject to restrictions on the living conditions that can not be solved.

According to the survey, more than 50% respondents open windows for ventilation less than 15 minutes. Although, most of the occupants are not content with their indoor air quality more or less, they still do not pay much attention to ventilation importance. In a closed room people can't breathe well so that they have poor quality of sleep. Ordinary people will exhale 20 liters of carbon dioxide which occupy 4% of the exhaled gas per hour , while the carbon dioxide content in the fresh air is 0.03 to 0.04%. If the atmospheric carbon dioxide content of is more than 0.1% ,it is slightly polluted. Therefore, the scientific ventilation is very important.

Ventilation means fresh air

"Green" living air: fresh,energy saving and environmental protective.

Air quality determination

Oxygen and carbon
Dioxide Concentration of harmful substances content in the air
Odours
Air Humidity
The comfortable temperature 21~23℃
Air Motion

Mixed Flow Fans vs. Axial & Centrifugal Fans

Axial Fans

- Low noise levels
- High air volumes
- Very little static pressure capability

Noise Level: High / Low
Air Volume: High / Low
Static Pressure: High / Low

Centrifugal Fans

- Higher noise levels
- Lower air volumes
- Very high static pressure capability

Noise Level: High / Low
Air Volume: High / Low
Static Pressure: High / Low

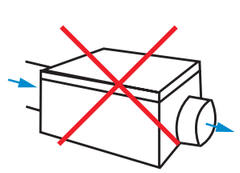
Mixed Flow Fans

- Low noise levels
- High air volumes
- Significant static pressure capability

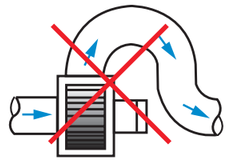
Noise Level: High / Low
Air Volume: High / Low
Static Pressure: High / Low

Static pressure is the ability of the fan to overcome resistance such as in long or complicated duct runs.

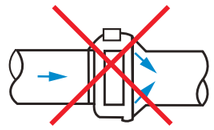
Or-Shy Mixed flow Duct fans (HF series) offer the best of both axial and centrifugal fans and are suitable for most air. movement applications. There has all the benefits of a mixed flow fan,plus it requires minimal space and it is easy to install.



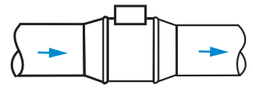
Ventilation Box



Classic Centrifugal



In-line Centrifugal



HF Mixed Flow Fan

www.orshy.co.il M.C Tech VENTILATION

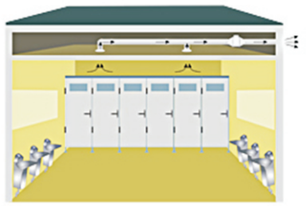
Application Example

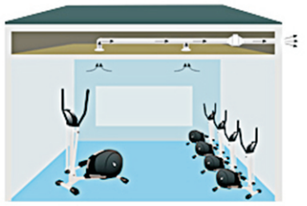
Below are application examples of the HF mixed flow fans. The HF fans provides a large number of solutions for small and large ventilation installations.

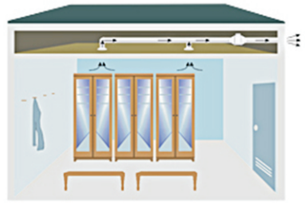

The hotel


The meeting room


The sitting room


toilet


The gym


The dressing room


The bedroom


Rest area


In public places


Club restaurant

Installation and Maintenance

Easy to mount

Fix the support

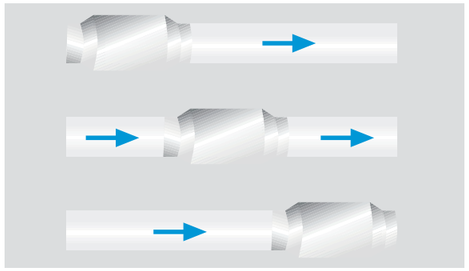
Place the motor body

Carry the connections out

Couple the ducts

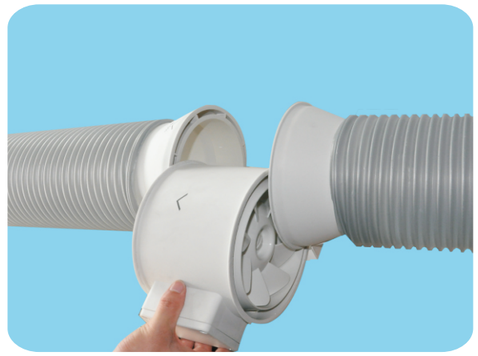
The low profile design of the range makes them the most effective solution for installations where space is restricted, such as false ceilings.

Flexible mounting position



Can be mounted at any place of the air duct.

Easy maintenance



The unique design of the support bracket allows that the motor and impeller can be easily installed and removed, without dismantling the duct pipe.

HF-T

HF-T fans (from 100 to 200 models) are fitted with an adjustable timer between 1 and 30 minutes , it is also suitable for speed control.

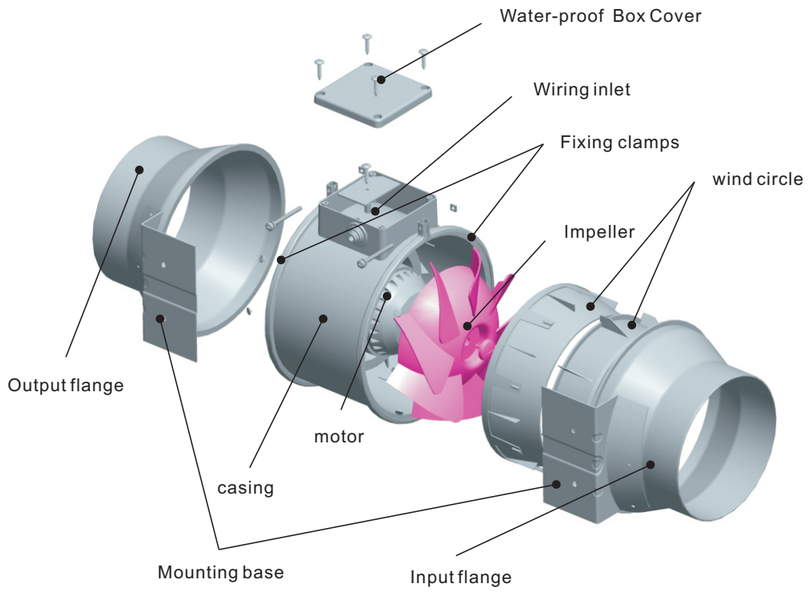
HF Fan

HF series mixed flow fans offer very low noise level, with a motor mounted on silent-elastic-blocks which absorb the vibrations.

General Features

HF Mixed Flow In-Line Fan

Applications	HF Mixed Flow Fan can be used for exhaust and supply ventilation systems that require high pressure, powerful airflow and low noise levels. With a range of sizes that include 100, 125, 150 and 200 mm.HF fan can be used with rigid and flexible ducting. The HF Mixed Flow Fan are the ideal solution for air exhaust systems for rooms with high humidity such as bathrooms and kitchens, as well as ventilation for apartments, houses, shops, cafes, restaurants, cinemas etc.
Design	The motor is attached to the body of the fan by two quick release clips which enables the motor to rotate to provide connection for confined spaces and removal for maintenance without removing the whole fan or ducting. All models have an option of standard which has a two speed motor or overrun timer option variable range of 1 to 30 minutes.
Motor	The single phase ball bearing motor has two speeds and is equipped with Standard Thermal Overload Protection (STOP) with automatic restart. Motor protection rating IP 44 and are fully speed controllable. Complies with Part F building regulations and designed for ambient temperatures up to 60℃ and low to -20℃, supply voltage 110V-380V,50/60Hz.
Mounting	The fan can be mounted in line or at either end of the duct run and at any angle, horizontally or vertically. All fans can be mounted in parallel to increase the volume of air or in series to increase the pressure. The casing is fitted with a mounting plate. The mounting box can be rotated to be installed in any position for easy installation and connection.



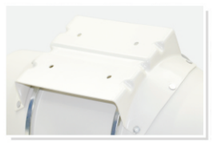
www.orshy.co.il M.C Tech VENTILATION

HF Mixed-flow In-line Duct Fan

Impellers with high-grade ABS plastic, one - time molding, not easily deformed, good appearance

Junction box with polypropylene plastic, integrally molded with the body. With high anti-acid function and easy to clean

Wind circle, customized according to hydrodynamics, ensure the fan to achieve optimal pressure



The fan mounting base is designed according to the structure and safety requirements, higher Safe, easy installation

Design characteristics

	HF-100	HF-125	HF-150	HF-200
Polypropylene casing	•	•	•	•
ABS impeller	•	•	•	•
Protection class	II	II	II	II
Thermal protection by fuse	•	•		
Auto resetting thermal protector (PTC)			•	•
Ball bearings greased for life	•	•	•	•
2 speed controllable (2) motor	•	•	•	•

HF Mixed-flow In-line Duct Fan

Features:

- The shell is made of polypropylene plastic, one-time disposable molded, with high anti-acid function
- The impeller is made of ABS, designed by hydromechanics to reach the optimal air and pressure
- Two-speed motor, imported NMB ball bearing, its life expectancy up to 50,000 hours
- IP44 Protection class, waterproof and dustproof more effective
- Can be designed with a delay function, temperature sensors and humidity sensors， more of user-friendly features design
- Operating temperature range: -20 ℃ ~ 60℃

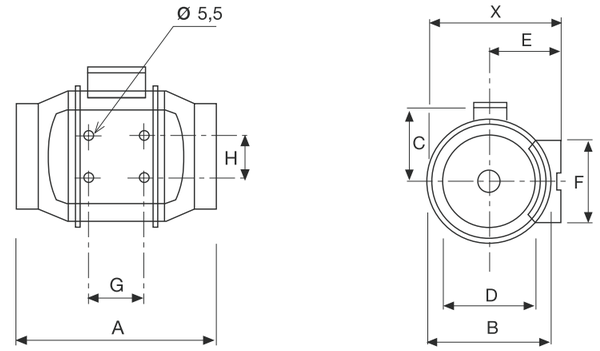
Performance parameter

Model	Gear	Voltage/ Frequency	Current (Amps)	Power (W)	Speed (RPM)	Weight (Kg)	Air Flow (M^3/H)	Air Pressure (Pa)	Avg.dBA@3m (db)
HF-100	H	230V/50Hz	0.12	26	2200	2.0	198	156	31
	L		0.11	23	1850		165	131	26
	H	115V/60Hz	0.26	30	2200		198	156	31
	L		0.24	28	1850		165	131	26
HF-125	H	230V/50Hz	0.14	33	2250	1.8	284	159	31
	L		0.13	28	1850		248	106	26
	H	115V/60Hz	0.30	32	2250		284	159	31
	L		0.26	27	1850		248	106	26
HF-150	H	230V/50Hz	0.24	54	2550	2.7	530	300	33
	L		0.21	48	1850		410	240	29
	H	115V/60Hz	0.58	65	2550		530	300	33
	L		0.49	53	1850		410	240	29
HF-200	H	230V/50Hz	0.57	128	2450	4.9	840	352	63
	L		0.52	123	1950		690	274	55
	H	115V/60Hz	1.41	162	2450		840	352	63
	L		1.28	146	1950		690	274	55

www.orshy.co.il

HF Mixed-flow In-line Duct Fan

Dimensions (mm)



Model	X	A	ΦB	C	ΦD	E	F	G	H
HF-100	188	303	176	115	97	100	90	80	60
HF-125	188	258	176	115	123	100	90	80	60
HF-150	212	320	200	127	147	112	130	80	60
HF-200	232.5	302	217	141	197	124	140	100	94

ower spectrum in dB(A) performance tables

Acoustic power spectrum in dB(A), for every frequency band, at the air inlet and outlet , under high speed

Air inlet	63	125	250	500	1000	2000	4000	8000
HF-100	28	47	46	53	52	47	39	33
HF-125	35	47	46	53	54	50	41	33
HF-150	32	35	55	57	59	62	56	48
HF-200	37	47	61	63	68	67	64	54

Air outlet	63	125	250	500	1000	2000	4000	8000
HF-100	27	46	45	44	43	43	32	25
HF-125	33	46	46	47	47	45	33	24
HF-150	25	32	43	39	44	53	42	29
HF-200	29	36	47	46	54	57	48	33

HF Mixed-flow In-line Duct Fan

Performance curves

qv: Air volume in m^3/h and m^3/s.

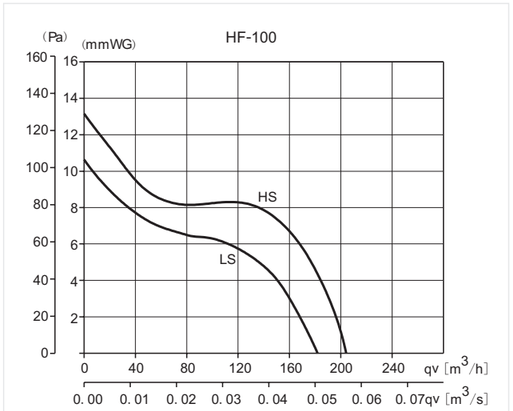
psf: Static pressure in mmWG and Pa.

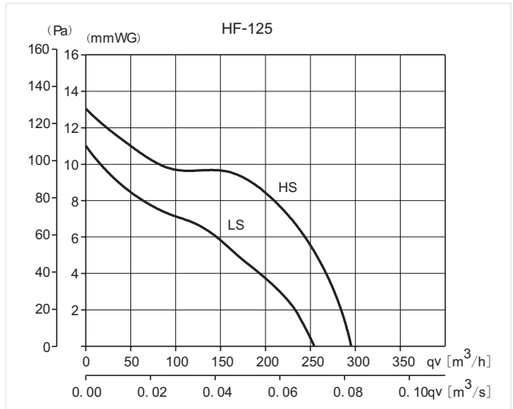
Dry air at 20℃ and 760 mmHg.

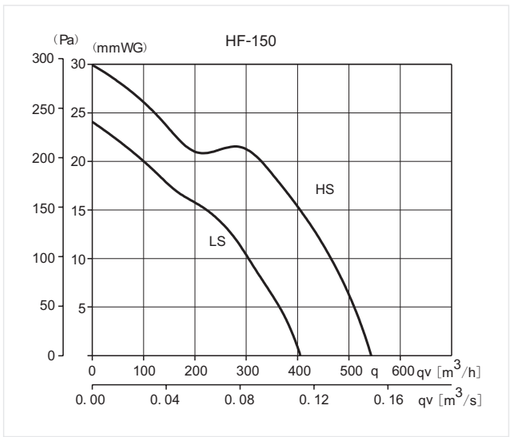
Performance data in accordance with ISO 5801 and AMCA 210-99 Standards.

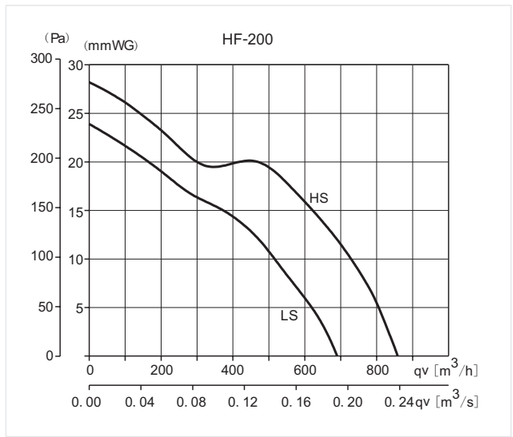
HS : High speed

LS: Low speed









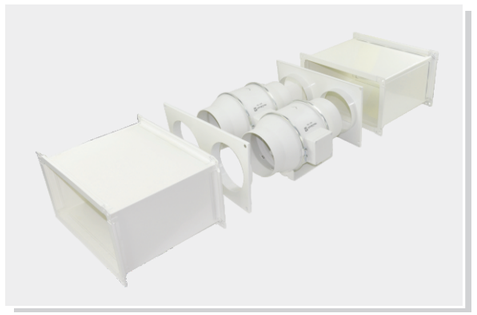
www.orshy.co.il M.c Tech VENTILATION

HF Mixed-flow In-line Duct Fan System

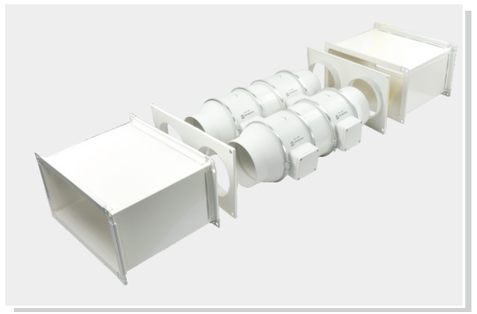
Duct system introduction

HF mixed flow In-Line duct fan series System includes a specific range of accessories enabling the installation of different combinations of the maintaining the concept that makes the difference: deliver the maximum airflow using the minimum space.

HF x 2 Fans and HFx3 Fans
To increase the pressure.



HF TWIN Fans
To double the airflow.



HF increase the pressure and double the airflow.

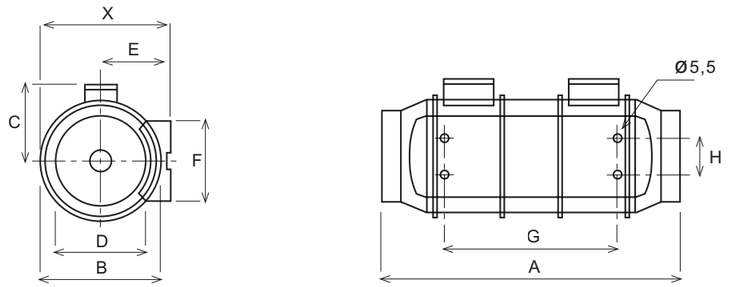
HF x2 Series System

The HFx2 range consists of two HFx2 fans mounted in series to produce almost twice the pressure of the single TD fan. System specially recommended when the fan has the suitable airflow and when an increase of the pressure is required due to the high pressure drops. HFx2 are standard catalogue products, from HF-100 to HF-200 model.HFx2 can also be obtained coupling 2 HF model fans using a flange MBR.

Performance parameter

HF x2 FAN	Speed (RPM)	Power (W)	Current (A)	Airflow (m^3/h)	Air pressure(Pa)	Operating temperature(℃)	Sound pressure level (dB(A))	Weight (Kg)
HFx2-125	2250	60	0.26	395	238	-20/+60	36	5.4
	1900	44	0.20	320	182		31	
HFx2-150	2500	100	0.44	580	500	-20/+60	48	5.0
	1950	88	0.38	475	446		41	
HFx2-200	2500	240	1.00	1.020	538	-20/+60	52	8.7
	2000	200	0.90	790	520		48	

Dimensions (mm)



HF x2 FAN	X	A	φB	C	φD	E	F	G	H
HFx2-125	188.0	417	176	115	123	100	90	253	60
HFx2-150	212.5	520	200	127	147	111.5	130	249	60
HFx2-200	232.5	500	217	141	197	124	140	298	94

www.orshy.co.il M.C Tech VENTILATION

Mixed Flow Duct Series System

power spectrum in dB(A) performance tables

Acoustic power spectrum in dB(A), for every frequency band, at the air inlet and outlet , under high speed

Air inlet	63	125	250	500	1000	2000	4000	8000
HFx2-125	41	53	52	59	60	56	47	39
HFx2-150	38	41	61	63	65	68	62	54
HFx2-200	43	53	67	69	74	73	70	60

Air outlet	63	125	250	500	1000	2000	4000	8000
HFx2-125	39	52	52	53	53	51	39	30
HFx2-150	31	38	49	45	50	59	48	35
HFx2-200	35	42	53	52	60	63	54	39

Performance curves

q_v: Air volume in m3/h and m3/s.

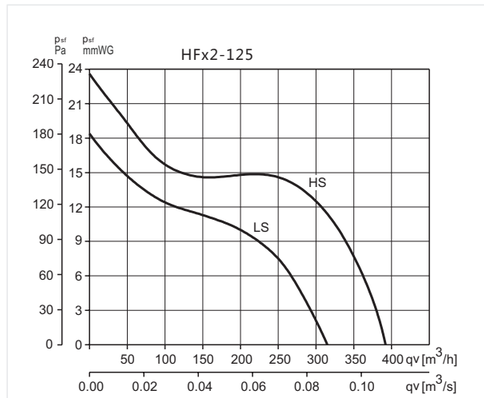
p_{sf}: Static pressure in mmWG and Pa.

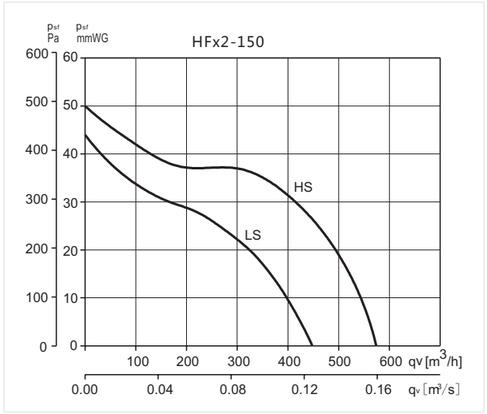
Dry air at 20℃ and 760 mmHg.

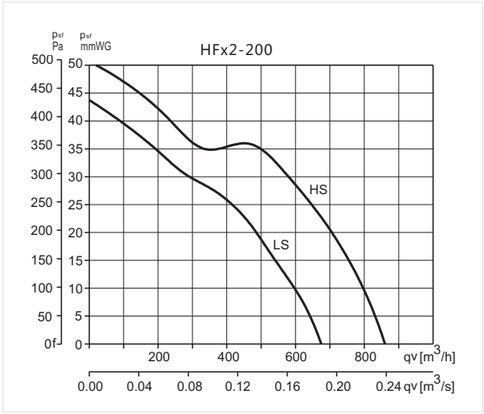
Performance data in accordance with ISO 5801 and AMCA 210-99 Standards.

HS : High speed

LS: Low speed



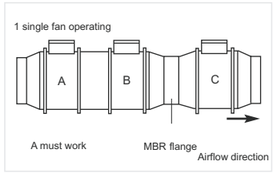


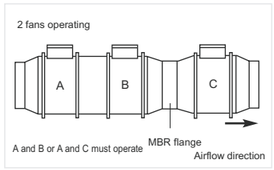


HF x3 System

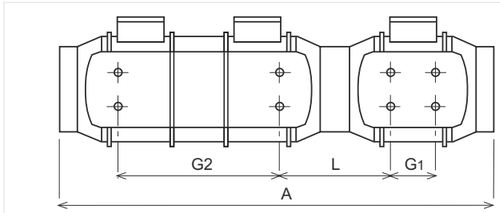
The HFx3 range consists of a HFx2 and HF fans mounted in series using the flange MBR.System specially recommended when the fan has the suitable airflow and when an important increase of the pressure is required due to the very high pressure drop. Technically more units could be installed in series to increase the pressure but it is recommended to carry out a study before.

Design





Dimensions (mm)



Model	A1	G1	G2	L
HF x 3- 125	755	80	253	213
HF x 3- 150	766	80	249	223
HF x 3- 200	801	100	298	207

Performance curves

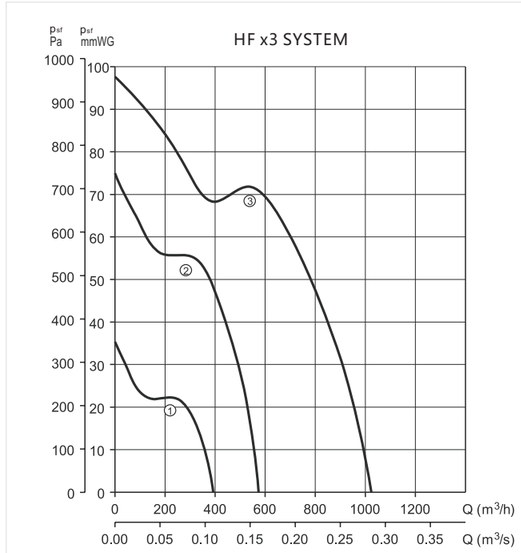
qv: Air volume in m3/h and m3/s.

psf: Static pressure in mmWG and Pa.

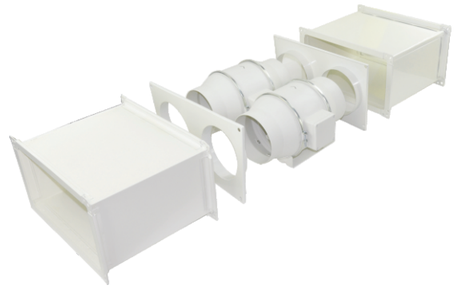
ry air at 20℃ and 760 mmHg.

Performance data in accordance with ISO 5801 and AMCA 210-99 Standards.

①	HF x 3-125
②	HF x 3-150
③	HF x 3-200

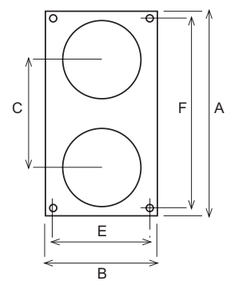


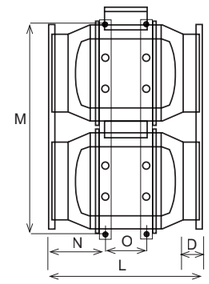
HF Twin System



The HF-Twin consists of two HF fans mounted in parallel using the Kit Twin Base (suitable from 100 to 200 model). System specially recommended when a large airflow is required (at the same pressure) within a confined space,or where a supplementary airflow is occasionally needed. Once mounted, the whole assembly is ready to be connected to a rectangular duct.

Dimensions (mm)

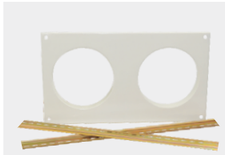


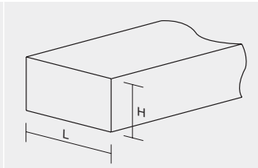


Model	A	B	C	D	E	F	L	M	N	O
HF Twin-125	320	180	184	33.5	160	300	305	333	91	80
HF Twin-150	395	220	206	37	200	375	310	417	110	80
HF Twin-200	440	240	225	37	220	420	317	456	103	100

Kit base

This accessory consists of two rectangular duct couplings with standardized dimensions and two supports allowing mounting two HF or two HFx2 fans in parallel.





KIT TWIN BASE	Dimensions (mm)		Nominal dimensions of the rectangular duct (mm)	
	L	H	L	H
KIT TWIN BASE 100	320	180	280	140
KIT TWIN BASE 125	320	180	280	140
KIT TWIN BASE 150	395	220	355	180
KIT TWIN BASE 200	440	240	400	200

HF Twin System

power spectrum in dB(A) performance tables

Acoustic power spectrum in dB(A) for every frequency band at the air inlet and outlet , under high speed

Air inlet	63	125	250	500	1000	2000	4000	8000
HF TWIN-125	38	50	49	56	57	53	44	36
HF TWIN-150	35	38	58	60	62	65	59	51
HF TWIN-200	40	50	64	66	71	70	67	57

Air outlet	63	125	250	500	1000	2000	4000	8000
HF TWIN-125	36	49	49	50	50	48	36	27
HF TWIN-150	28	35	46	42	47	56	45	32
HF TWIN-200	32	39	50	49	57	60	51	36

Performance curves

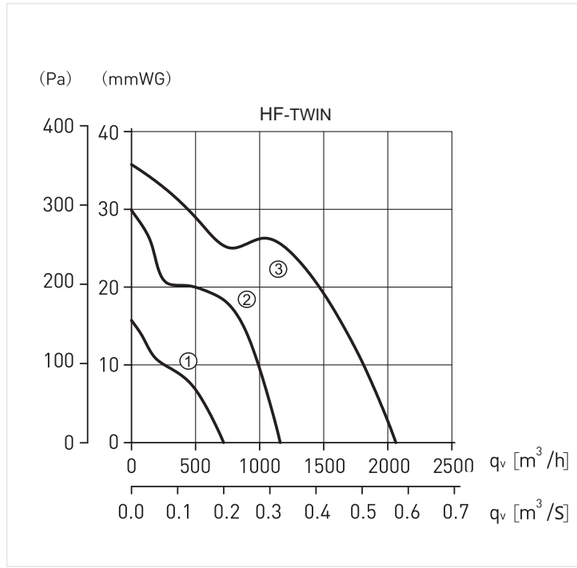
qv: Air volume in m^3/h and m^3/s.

psf: Static pressure in mmWG and Pa.

Dry air at 20℃ and 760 mmHg.

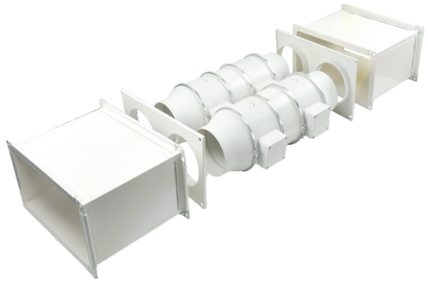
Performance data in accordance with ISO 5801 and AMCA 210-99 Standards.

①	HF TWIN-125
②	HF TWIN-150
③	HF TWIN-200



www.orshy.co.il M.C Tech VENTILATION

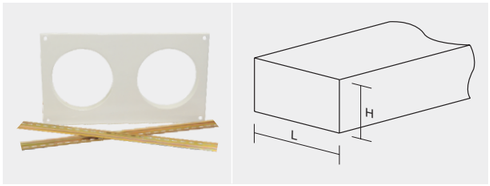
HF Twin x2 System



The HF-Twin x2 consists of two HF x2 fans mounted in parallel using the Kit Base (suitable from 100 to 200 model). System specially recommended when a large airflow is required (at the same pressure) within a confined space, or where a supplementary airflow is occasionally needed.Once mounted, the whole assembly is ready to be connected to a rectangular duct .

Kit base

This accessory consists of two rectangular duct couplings with standardized dimensions and two supports allowing mounting two HF or two HFx2 fans in parallel.



KIT TWIN BASE	Dimensions (mm)		Nominal dimensions of the rectangular duct (mm)	
	L	H	L	H
KIT TWIN BASE 100	320	180	280	140
KIT TWIN BASE 125	320	180	280	140
KIT TWIN BASE 150	395	220	355	180
KIT TWIN BASE 200	440	240	400	200

Performance curves

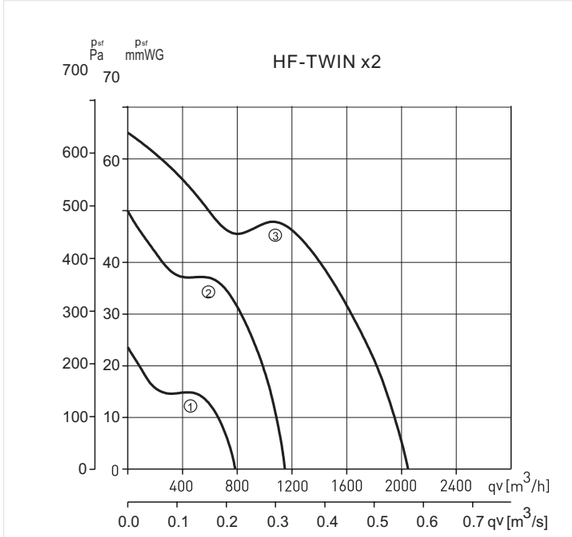
qv: Air volume in m^3/h and m^3/s.

psf: Static pressure in mmWG and Pa.

Dry air at 20℃ and 760 mmHg.

Performance data in accordance with ISO 5801 and AMCA 210-99 Standards.

①	HF TWIN x2-125
②	HF TWIN x2-150
③	HF TWIN x2-200



HF Twin System

Round plastic air intake

ABS material, white air, can be adjusted the input air, prevent rain, aquatint and mosquitoes into, more user-friendly design. Applicable to Φ100, Φ125, Φ150,Φ200.

Square pipe air intake

ABS material, the panel can be easily removed for cleaning, opening and closing internal design and fine comb design prevents debris into,the air volume can be adjusted, look beautiful and popular.Applicable to Φ100, Φ125, Φ150, Φ200.

Stainless steel Bull-Nose vent

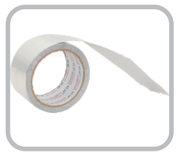
With fixed louvers and integral fly screen behind, to fit the round ducting (Diameter:100mm,125mm,150mm,160mm,200mm, 250mm, 315mm).

wind pipe

Two kinds of air duct, aluminum foil and aluminum foil duct style, more durable steel frame, good scalability, the standard length of 10m / root.

Aluminum tape

Common thickness 0.025,0.03,0.05,0.1 mm, single-sided adhesive.



Switch

Made by ABS material, can adjust high speed and low speed, also can switch the power.

Purge tank

Inside with the filter, manhole set at the bottom, remove simple, easy to regularly clean and replace, usually only need to clean the filter of purify boxes, paper core can be replaced periodically.

Check valve

Two types, plastic check valves and metal check valve ,For Φ100, Φ125, Φ150, Φ200 fan diameter or duct diameter .

Ventilation selection

Selection Calculation

The required air volume of ventilation depends on the usage situation, created contamination within the room and amount of heat needs to be extracted, calculated in various criteria and ways with following equations and tables.

Remark : Two methods to calculate the required airflow volume (m^3/h)

Calculated by the times of required air exchange per hour

V=RV x N

Rv : room volume (m^3)

$$\text{Required Product Qty} = \frac{\text{required airflow volume V } (m^3/h)}{\text{airflow volume of selected product } (m^3/h)}$$

Calculated by required air volume to each person

V=PV x P

PV : volume of needed air to each person per hour (m^3/h)

P : number of people

Choose air exchange Standard

Room types	Air exchange Rate (t/h)	Room types	M^3/per person
Libraries	10~20	Canteens	30
Paint room	10~20	Cinema	30
School Classroom	3~8	Classroom	30
Gymnasiums	4~6	Common rooms	30
Auditoriums	6~8	Auditoriums	30
Cinemas	5~8	Meeting room	30
Laboratories	8~15	Exhibition halls	20
Storeroom	1~3	Gymnasiums	30
Garage	4~8	Hotel rooms	30
Cellar	4~6	Museums	20
Bathroom	7~9	Bathroom	30
Living room	3~6	Open plan offices	50
warehouses	1~2	Small offices	30
Kitchen	10~15	Reading room	20
Office	5~7	Rest rooms	30
Retail shops	4~8	shops	20
Restaurant	8~10	Restaurant	20
Supermarket	2~3	Concert halls	20
Smoking room	8~10	Smoking room	50
Laundry room	10~13	Laundry room	30
Bank	2~4	Bank	40
KTV Bar	9~11	KTV Bar	50