



FX-SV, FX-SW, FM . . . series

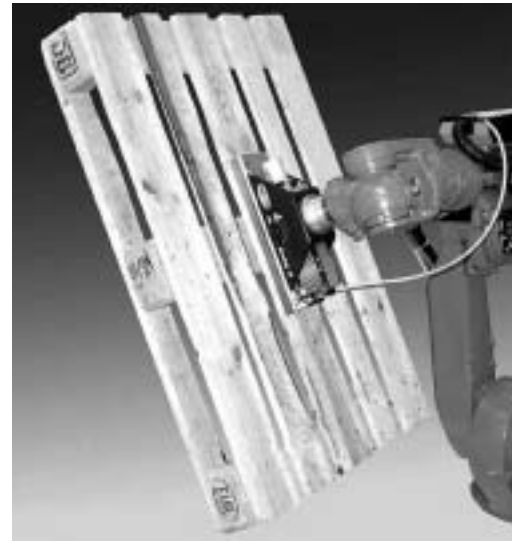
– maximum flexibility.

Our highlights ...

- Maximum flexibility due to modular design of the gripping system
- Integrated vacuum generation through a SCHMALZ multistage ejector
- Very light construction
- Suction mats can be replaced quickly and easily
- Intelligent valve system integrated (FX-SV)

Your advantages

- ▶ Optimal adjustment to different handling problems
- ▶ Secure handling through high suction capacity. Economical operation due to an outstanding efficiency of the ejector.
- ▶ Low weight permits high acceleration values and thus shorter cycle times
- ▶ Minimum costs and no machine down-times
- ▶ Secure handling of workpieces with perforated surface. Valves which are not covered will switch-off automatically.



Applications

VacuGrip FX is a complete solution for the automatic handling of many different workpieces. No matter if it is cardboard, wood, sheet metal or another material to handle. With VacuGrip FX applications can be realized with vacuum, which before were considered to be unsolvable. Porous workpieces like insulation material, goods with a perforated surface and even parts which do not cover the complete area of the suction plate are now allowed to be handled with vacuum. Palletizing, depalletizing, commissioning or pick & place of many different goods are the main applications for the FX system. The two different operating principles and the various available modules mean that it is always possible to find an optimum customer-specific solution.

Construction

Equipped with a powerful multi-stage ejector SEM, the VacuGrip FX generates a high vacuum on almost any surface, regardless of whether it is smooth or rough, airtight or porous. The modular design permits several large-area vacuum grippers to be combined to form a complete system which matches your handling task. The extremely quick replacement of the foam suction mats guarantees maximum flexibility. The large-area grippers are available with two different operating principles which permit optimal customisation of the gripper systems for various handling tasks. Each variant is also available with or without solenoid valves and in three different sizes.





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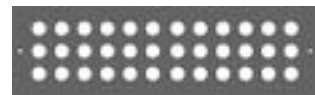
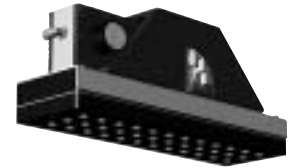
FX range

FX-SV – maximum holding force on the surface available for gripping

The new diaphragm technology ensures that vacuum apertures which are not in contact with the workpiece are closed automatically. The vacuum is thus present only at the vacuum apertures which actually participate in the generation of the holding force. The suction capacity of the vacuum generator is thus utilised extremely efficiently at the active vacuum apertures. This innovative, self-controlled valve technology ensures that the maximum possible holding force – which depends on the porosity of the workpiece to be handled – is generated. For this, between 30 % and 50 % of the suction area must be in contact with the workpiece.



Application example:
Safe handling, even with only part of the gripper active

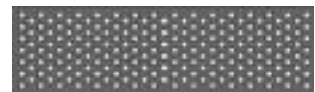


FX-SW – maximum flexibility regardless of the number of active vacuum apertures

The large-area vacuum grippers of this series guarantee maximum flexibility of the gripper system, regardless of how many vacuum apertures are in contact with the workpiece. The suction surface of this version has a large number of individual vacuum apertures, each of which is connected via a flow resistor to a vacuum chamber. Due to this design, the holding force increases continuously as more and more apertures are in use, since the amount of leakage air is reduced accordingly.

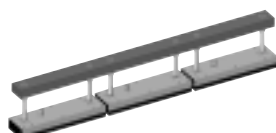


Application example:
Handling of uneven sheet-metal parts

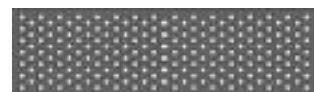


FM range – standard components for flexible large-area gripper solutions

The technical construction of the gripper modules is the same as that of the large-area grippers of the VacuGrip FX-SW series, which means that they offer the same flexibility as these, regardless of how much of the gripper is in contact with the workpiece. In contrast to the grippers of the FX series, these modules are delivered without a vacuum generator, aluminium cover and manometer, but have connection facilities for all possible types of vacuum generators. With the aid of the wide range of SCHMALZ vacuum components, they can be used to construct complete gripper solutions quickly and easily.

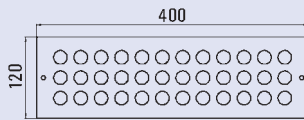
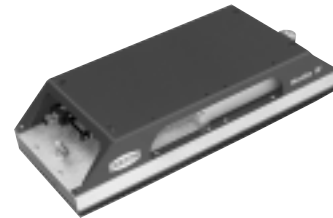


Application example:
Three large-area gripper modules with spring plungers and a connecting element

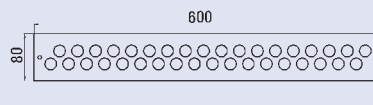




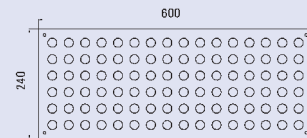
Various modules and corresponding suction plates for FX-SV, FX-SW and FM



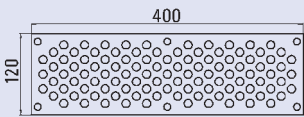
Suitable for: FX-400/120-SV



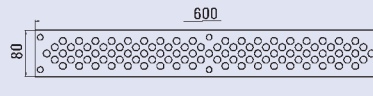
Suitable for: FX-600/80-SV



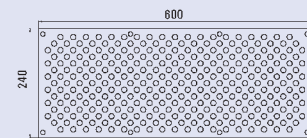
Suitable for: FX-600/240-SV



Suitable for: FX-400/120-SW,
FM-400/120



Suitable for: FX-600/80-SW,
FM-600/80



Suitable for: FX-600/240-SW

Ordering data

Type	FX-400/120-SV	FX-600/80-SV	FX-600/240-SV	FX-400/120-SW	FX-600/80-SW	FX-600/240-SW	FM-400/120	FM-600/80
Basic module	10.01.10.00400	10.01.10.00405	10.01.10.00410	10.01.10.00402	10.01.10.00407	10.01.10.00412	10.01.10.00404	10.01.10.00409
Module with 2 solenoid valves	10.01.10.00401	10.01.10.00406	10.01.10.00411	10.01.10.00403	10.01.10.00408	10.01.10.00413	–	–

Further sizes (in preparation)

Type	FX-400/320-SV	FX-600/400-SV	FX-400/320-SW	FX-600/400-SW	FX-120/60-SW
Basic module	10.01.10.00415	10.01.10.00420	10.01.10.00417	10.01.10.00422	N. N.
Module with 2 solenoid valves	10.01.10.00416	10.01.10.00421	10.01.10.00418	10.01.10.00423	–

Technical data

Type	FX-400/120-SV	FX-600/80-SV	FX-600/240-SV	FX-400/120-SW	FX-600/80-SW	FX-600/240-SW	FM-400/120	FM 600/80
Weight in kg	4.5	5.0	14.5	4.5	5.0	14.5	2.5	2.5
Air consumption in NI/min (5 bar)	197	197	752	197	197	752		
Max. suction capacity in NI/min	642	642	1780	642	642	1780		
No. of suction cells	36	36	96	107	97	304	107	97
Max. vacuum in %	80	80	80	80	80	80		
Max. retention force in N at								
80 % vacuum*	900	900	2400	980	890	2760	980	890
60 % vacuum*	650	650	1800	730	670	2070	730	670
40 % vacuum*	450	450	1200	490	440	1380	490	440
Ejector-type	SEM 50-SDA	SEM 50-SDA	SEM 100-FX-LC	SEM 50-SDA	SEM 50-SDA	SEM 100-FX-LC	**	***

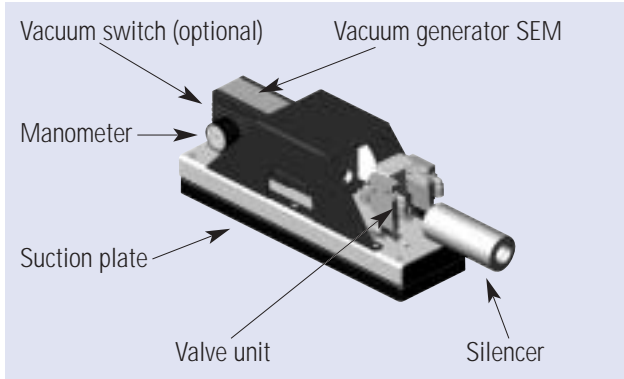
* With no vacancy suction area.

** Recommended ejector SEM 50 SDA; minimum required suction capacity –0.3 bar vacuum = ca. 13.9 m³/h.

*** Recommended ejector SEM 50 SDA; minimum required suction capacity –0.3 bar vacuum = ca. 12.6 m³/h.



Construction / Accessories

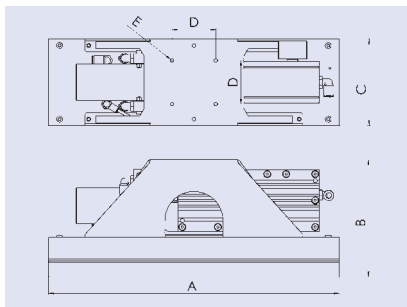


Ordering data

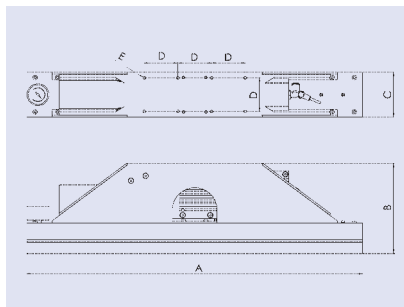
Designation		Part No.
Vacuum switch kit	VS-V-D-PNP*	10.01.10.00431
Vacuum switch kit	VS-V-A-PNP*	10.01.10.00433
Suction plate	400/120-SV	10.01.10.00435
Suction plate	600/80-SV	10.01.10.00439
Suction plate	600/240-SV	10.01.10.00443
Suction plate	400/120-SW	10.01.10.00447
Suction plate	600/80-SW	10.01.10.00449
Suction plate	600/240-SW	10.01.10.00451

* including connection accessories.

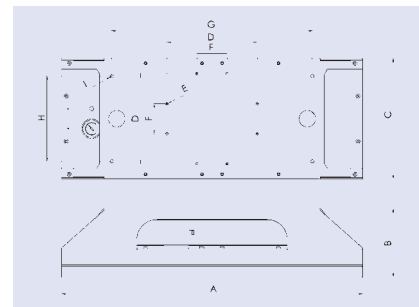
Design data



FX-400/120



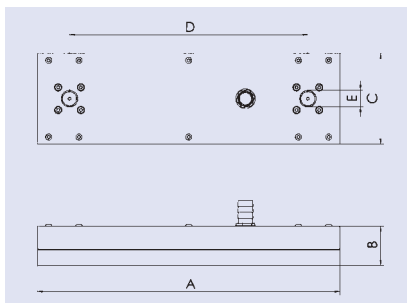
FX-600/80



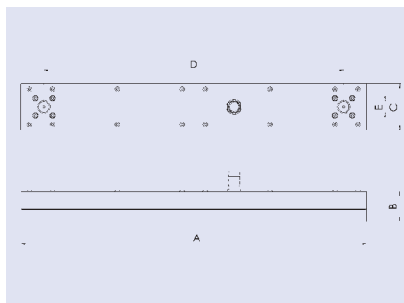
FX-600/240

Design data type series FX

Type	Dimensions in mm									
	A	B	C	D	E	F	G	H	I	
FX 400/120	400	160	120	60	M6	–	–	–	–	
FX 600/80	600	160	80	180	M6	60	400	170	M8	
FX 600/240	600	140	240	60	M6	–	–	–	–	



FM-400/120



FM-600/80

Design data type series FM

Type	Dimensions in mm				
	A	B	C	D	E
FM 400/120	400	50	120	315	1/2"
FM 600/80	600	50	80	520	1/2"

Vacuum connection with 1/2" hose nozzles.