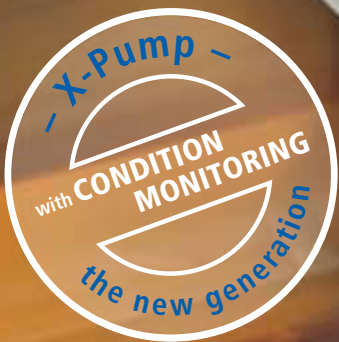


Innovative vacuum for automation



Schmalz X-Pump – SXP / SXMP
Vacuum compact ejectors for automation solutions

Schmalz X-Pump – SXP / SXMP

The future of vacuum generation!

Schmalz X-Pump ...

Construction, functions and p



Schmalz X-Pump in use on a press line



Single SXMP ejector plate



Two SXP on one block

Schmalz X-Pump: the new generation of vacuum compact ejectors for automation applications.

The innovative X-Pump is designed, developed and built for the special tasks and requirements which exist in the automotive sector – assembly and press shops – and for use in automated vacuum systems in the sheet-metal and plastics industries and many other industrial sectors.

X-Pump – innovations for your success!

...eXtra strong!

- extremely high suction capacity and powerful blow-off pulse
- safe and economical operation
- maximum availability

...eXtra robust!

- compact design and simple connection facilities
- resistance to faults
- degree of protection IP65

...eXtra intelligent!

- condition monitoring
- integrated diagnostic functions
- intelligent detection of and compensation for leaks and other faults

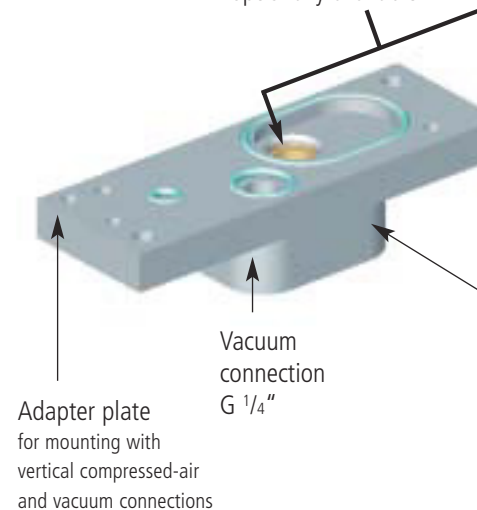
- Diagnostic indicator
 - easily visible diagnostic indicator lamp
 - two-colour status indication

Valve state indication

Integrated pilot valves in compact design (option: pulse valve)

Adjustable blow-off pulse

Three different adapter plates are optionally available



eXtra strong! ...eXtra robust! ...eXtra intelligent!

performance of the new X-Pump*

Condition Monitoring

- control module with versatile diagnostic functions
- intelligent and timely detection of faults for maximum process safety

Controls and indicators

- very easy to operate
- large, easy-to-use keypad
- easily legible display



Electrical connections

- M12 (8-pole) or 2xM12 (5-pole), (optionally with potential isolation)
- option: direct connection to all common bus systems



Silencer:

- simple quick-change facility
- reduced noise level (63-72 db (A))
- open system, unaffected by dirt



Option:

Power module (SXMP version)

- maximum blow-off power
- very short cycle times

Adapter plate for rapid mounting on the base plate

Compressed-air connection G 3/8"

- only one connection for one or more ejectors



Compact design

- no protruding edges
- extreme robustness

Adapter plate for mounting with horizontal compressed-air and vacuum connections

Vacuum connection G 3/8"



Base plate with quick-change system

- safe and fast connection of ejector blocks
- can accommodate multiple ejectors
- including safety interlock when compressed air is connected



* Patent pending

Schmalz X-Pump ... eXtra strong!

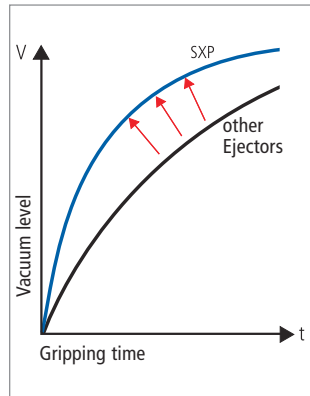
The Schmalz X-Pump offers many possibilities...



Quick changing of SXP pumps on a dual block



SXP: short cycle times



SXP: considerably faster

During the development of the X-Pump, emphasis was placed on high performance coupled with good flexibility.

Our highlights	Your benefits
<ul style="list-style-type: none"> • High suction capacity and powerful blow-off pulse thanks to optimised nozzles and the power module 	<ul style="list-style-type: none"> > Rapid evacuation and a powerful blow-off pulse permit very short cycle times
<ul style="list-style-type: none"> • Integrated automatic air saving function 	<ul style="list-style-type: none"> > Economical operation even in continuous use
<ul style="list-style-type: none"> • Flexible modular system 	<ul style="list-style-type: none"> > Optimum adaptation to specific tasks
<ul style="list-style-type: none"> • Wide power range 	<ul style="list-style-type: none"> > Optimum power ratings for all applications, resulting in cost savings
<ul style="list-style-type: none"> • Very simple construction of multiple-ejector blocks 	<ul style="list-style-type: none"> > Blocks of two to six ejectors can be constructed with standard components
<ul style="list-style-type: none"> • Quick-change system 	<ul style="list-style-type: none"> > Quick changing of ejectors for evaluation purposes
<ul style="list-style-type: none"> • Clever mounting and connection facilities 	<ul style="list-style-type: none"> > Simple mounting on all types of industrial robots and handling units
<ul style="list-style-type: none"> • Option: direct bus connection 	<ul style="list-style-type: none"> > No need for I/O ports and external components – reduced costs

Schmalz X-Pump ... eXtra robust!

The X-Pump is designed specially for use on very rough operating environments.



The X-Pump withstands even difficult ambient conditions

During the manufacture of sheet-metal parts, particularly in press shops, vacuum generators are exposed to extreme stresses. The X-Pump withstands these dirty (oily and dusty) surroundings and is equally resistant to strong mechanical forces (high positive and negative acceleration values).

Our highlights	Your benefits
<ul style="list-style-type: none"> • Compact design 	<ul style="list-style-type: none"> > No projecting parts or edges
<ul style="list-style-type: none"> • Extremely resistant to wear thanks to a friction-free piston system 	<ul style="list-style-type: none"> > High availability and very low maintenance costs
<ul style="list-style-type: none"> • Extreme resistance to dirt 	<ul style="list-style-type: none"> > Maximum process safety
<ul style="list-style-type: none"> • Needs no filter 	<ul style="list-style-type: none"> > Maintenance-free operation
<ul style="list-style-type: none"> • Degree of protection IP 65 	<ul style="list-style-type: none"> > Protected against splash-water

Schmalz X-Pump ... eXtra intelligent!

NEW: **Condition Monitoring** – fault detection before the system shuts down!

Many diagnostic functions are integrated as standard features into the new Schmalz X-Pump to permit preventive maintenance. Parameters such as the evacuation time and the limit values for the generated vacuum are permanently monitored.

The intelligent vacuum generator detects faults, evaluates them and generates the appropriate signals. The X-Pump also immediately initiates any necessary countermeasures.

If, for example, the defined leakage rate is exceeded, the automatic air-saving function is immediately deactivated and the X-Pump generates full power.



Condition Monitoring – timely detection of faults

Our highlights

- Optical status indication with an easily visible indicator lamp (various states: OK/warning/fault)
- Integrated counter module
- Diagnostic output for external monitoring
- Time-based monitoring of the vacuum curve and the regulation rate

Your benefits

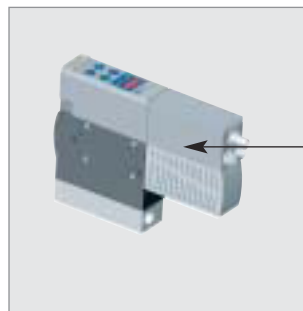
- > Permanent and continuous monitoring of the complete vacuum system
- > In the case of a leak (due to a worn suction pad or a faulty hose), the fault indicator remains active even when the system is switched off in order to permit fast fault-finding.
- > Counting of production cycles (e.g. per shift or day)
- > Permits fault detection by an external controller
- > For identification of defective vacuum spiders

The advantages of the X-Pump:

- Lower operating costs due to reduced maintenance and preventive maintenance
- Increased process safety thanks to the automatic detection of and compensation for faults
- Simple setup procedure saves time
- The X-Pump combines high intelligence with ease of use

Intelligent connection facilities:

The signals generated by the versatile diagnostic functions of the X-Pump can be transmitted via a M12 plug connector or a direct bus connection (suitable for all common protocols) to an external controller for evaluation.



Bus interface optional

Ejector SXMP with bus module

Schmalz X-Pump ... eXtra intelligent!

Simple operation and versatile diagnostic facilities...



The key pad, the 3-digit display, 4 additional LEDs and the diagnostic indicator make adjustment and use of the ejector very simple.

Diagnostic indicator

The easily visible diagnostic indicator permits rapid and unambiguous recognition of the status of the vacuum system.

Steady green light: vacuum system is free of leaks

Blinking green light: the vacuum system has a small leak, but can still be used.

Blinking red light: the vacuum is generated too slowly or the desired value is not reached. There are leaks in the vacuum system and it should not be used until these have been repaired.

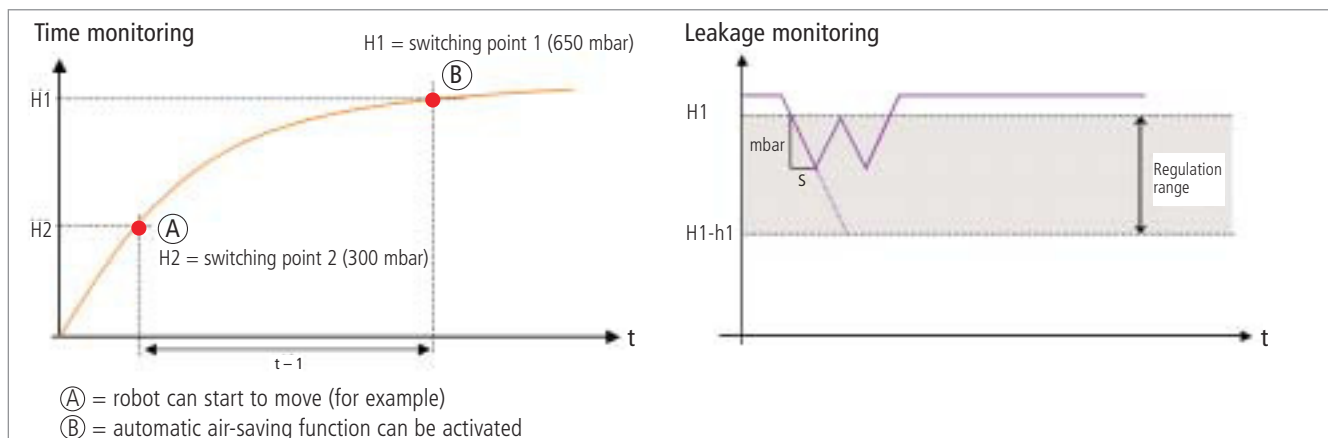
Steady red light: vacuum too low or non-existent. The vacuum system must be checked and repaired immediately.

- ① Display
- ② LEDs
- ③ MENU key
- ④ ENTER key
- ⑤ UP key
- ⑥ DOWN key
- ⑦ Diagnostic indicator

Two examples: Condition Monitoring

Monitoring of the evacuation time (see the diagram below). The evacuation time between the switching points H2 and H1 is measured when the vacuum is generated for the first time. If the time for this is greater than $t - 1$, the diagnostic indicator blinks with a red light and a diagnostic signal is generated at the connector. This monitoring function is permanently active!

Monitoring the system for leaks (see diagram). After the switching point H1 has been reached, the automatic air-saving function is activated and the system monitors the leakage from the gripper. If a preset leakage rate is exceeded, the automatic air-saving function is (if necessary) deactivated and the diagnostic indicator lights to signal the fault. The diagnostic output is also activated.





Ordering designation Schmalz X-Pump

Type	Nozzle size	Idle state of suction valve	Compressed-air connection	Electrical connections
Example: SXMP	25	NO	Q	M12
SXP ... without Power Modul	15... 1.5 mm 20... 2.0 mm 25... 2.5 mm 30... 3.0 mm	NO... normally open NC... normally closed IMP...bistable, switched with pulse	H...horizontal V... vertical Q...quick change	M12... M12 connector (8-pole) 2xM12... 2xM12 connectors (5-pole)
SXMP ... with Power Modul				



Ordering data Schmalz X-Pump

SXP 15		SXP 20		SXP 25		SXP 30	
Type	Article No.	Type	Article No.	Type	Article No.	Type	Article No.
SXP15 NO H M12	10.02.02.02192	SXP20 NO H M12	10.02.02.02210	SXP25 NO H M12	10.02.02.02228	SXP30 NO H M12	10.02.02.02246
SXP15 NO H 2xM12	10.02.02.02193	SXP20 NO H 2xM12	10.02.02.02211	SXP25 NO H 2xM12	10.02.02.02229	SXP30 NO H 2xM12	10.02.02.02247
SXP15 NO V M12	10.02.02.02194	SXP20 NO V M12	10.02.02.02212	SXP25 NO V M12	10.02.02.02230	SXP30 NO V M12	10.02.02.02248
SXP15 NO V 2xM12	10.02.02.02195	SXP20 NO V 2xM12	10.02.02.02213	SXP25 NO V 2xM12	10.02.02.02231	SXP30 NO V 2xM12	10.02.02.02249
SXP15 NO Q M12	10.02.02.02196	SXP20 NO Q M12	10.02.02.02214	SXP25 NO Q M12	10.02.02.02232	SXP30 NO Q M12	10.02.02.02250
SXP15 NO Q 2xM12	10.02.02.02197	SXP20 NO Q 2xM12	10.02.02.02215	SXP25 NO Q 2xM12	10.02.02.02233	SXP30 NO Q 2xM12	10.02.02.02251
SXP15 NC H M12	10.02.02.02198	SXP20 NC H M12	10.02.02.02216	SXP25 NC H M12	10.02.02.02234	SXP30 NC H M12	10.02.02.02252
SXP15 NC H 2xM12	10.02.02.02199	SXP20 NC H 2xM12	10.02.02.02217	SXP25 NC H 2xM12	10.02.02.02235	SXP30 NC H 2xM12	10.02.02.02253
SXP15 NC V M12	10.02.02.02200	SXP20 NC V M12	10.02.02.02218	SXP25 NC V M12	10.02.02.02236	SXP30 NC V M12	10.02.02.02254
SXP15 NC V 2xM12	10.02.02.02201	SXP20 NC V 2xM12	10.02.02.02219	SXP25 NC V 2xM12	10.02.02.02237	SXP30 NC V 2xM12	10.02.02.02255
SXP15 NC Q M12	10.02.02.02202	SXP20 NC Q M12	10.02.02.02220	SXP25 NC Q M12	10.02.02.02238	SXP30 NC Q M12	10.02.02.02256
SXP15 NC Q 2xM12	10.02.02.02203	SXP20 NC Q 2xM12	10.02.02.02221	SXP25 NC Q 2xM12	10.02.02.02239	SXP30 NC Q 2xM12	10.02.02.02257
SXP15 IMP H M12	10.02.02.02204	SXP20 IMP H M12	10.02.02.02222	SXP25 IMP H M12	10.02.02.02240	SXP30 IMP H M12	10.02.02.02258
SXP15 IMP H 2xM12	10.02.02.02205	SXP20 IMP H 2xM12	10.02.02.02223	SXP25 IMP H 2xM12	10.02.02.02241	SXP30 IMP H 2xM12	10.02.02.02259
SXP15 IMP V M12	10.02.02.02206	SXP20 IMP V M12	10.02.02.02224	SXP25 IMP V M12	10.02.02.02242	SXP30 IMP V M12	10.02.02.02260
SXP15 IMP V 2xM12	10.02.02.02207	SXP20 IMP V 2xM12	10.02.02.02225	SXP25 IMP V 2xM12	10.02.02.02243	SXP30 IMP V 2xM12	10.02.02.02261
SXP15 IMP Q M12	10.02.02.02208	SXP20 IMP Q M12	10.02.02.02226	SXP25 IMP Q M12	10.02.02.02244	SXP30 IMP Q M12	10.02.02.02262
SXP15 IMP Q 2xM12	10.02.02.02209	SXP20 IMP Q 2xM12	10.02.02.02227	SXP25 IMP Q 2xM12	10.02.02.02245	SXP30 IMP Q 2xM12	10.02.02.02263

SXMP 15		SXMP 20		SXMP 25		SXMP 30	
Type	Article No.	Type	Article No.	Type	Article No.	Type	Article No.
SXMP15 NO H M12	10.02.02.02264	SXMP20 NO H M12	10.02.02.02282	SXMP25 NO H M12	10.02.02.02300	SXMP30 NO H M12	10.02.02.02318
SXMP15 NO H 2xM12	10.02.02.02265	SXMP20 NO H 2xM12	10.02.02.02283	SXMP25 NO H 2xM12	10.02.02.02301	SXMP30 NO H 2xM12	10.02.02.02319
SXMP15 NO V M12	10.02.02.02266	SXMP20 NO V M12	10.02.02.02284	SXMP25 NO V M12	10.02.02.02302	SXMP30 NO V M12	10.02.02.02320
SXMP15 NO V 2xM12	10.02.02.02267	SXMP20 NO V 2xM12	10.02.02.02285	SXMP25 NO V 2xM12	10.02.02.02303	SXMP30 NO V 2xM12	10.02.02.02321
SXMP15 NO Q M12	10.02.02.02268	SXMP20 NO Q M12	10.02.02.02286	SXMP25 NO Q M12	10.02.02.02304	SXMP30 NO Q M12	10.02.02.02322
SXMP15 NO Q 2xM12	10.02.02.02269	SXMP20 NO Q 2xM12	10.02.02.02287	SXMP25 NO Q 2xM12	10.02.02.02305	SXMP30 NO Q 2xM12	10.02.02.02323
SXMP15 NC H M12	10.02.02.02270	SXMP20 NC H M12	10.02.02.02288	SXMP25 NC H M12	10.02.02.02306	SXMP30 NC H M12	10.02.02.02324
SXMP15 NC H 2xM12	10.02.02.02271	SXMP20 NC H 2xM12	10.02.02.02289	SXMP25 NC H 2xM12	10.02.02.02307	SXMP30 NC H 2xM12	10.02.02.02325
SXMP15 NC V M12	10.02.02.02272	SXMP20 NC V M12	10.02.02.02290	SXMP25 NC V M12	10.02.02.02308	SXMP30 NC V M12	10.02.02.02326
SXMP15 NC V 2xM12	10.02.02.02273	SXMP20 NC V 2xM12	10.02.02.02291	SXMP25 NC V 2xM12	10.02.02.02309	SXMP30 NC V 2xM12	10.02.02.02327
SXMP15 NC Q M12	10.02.02.02274	SXMP20 NC Q M12	10.02.02.02292	SXMP25 NC Q M12	10.02.02.02310	SXMP30 NC Q M12	10.02.02.02328
SXMP15 NC Q 2xM12	10.02.02.02275	SXMP20 NC Q 2xM12	10.02.02.02293	SXMP25 NC Q 2xM12	10.02.02.02311	SXMP30 NC Q 2xM12	10.02.02.02329
SXMP15 IMP H M12	10.02.02.02276	SXMP20 IMP H M12	10.02.02.02294	SXMP25 IMP H M12	10.02.02.02312	SXMP30 IMP H M12	10.02.02.02330
SXMP15 IMP H 2xM12	10.02.02.02277	SXMP20 IMP H 2xM12	10.02.02.02295	SXMP25 IMP H 2xM12	10.02.02.02313	SXMP30 IMP H 2xM12	10.02.02.02331
SXMP15 IMP V M12	10.02.02.02278	SXMP20 IMP V M12	10.02.02.02296	SXMP25 IMP V M12	10.02.02.02314	SXMP30 IMP V M12	10.02.02.02332
SXMP15 IMP V 2xM12	10.02.02.02279	SXMP20 IMP V 2xM12	10.02.02.02297	SXMP25 IMP V 2xM12	10.02.02.02315	SXMP30 IMP V 2xM12	10.02.02.02333
SXMP15 IMP Q M12	10.02.02.02280	SXMP20 IMP Q M12	10.02.02.02298	SXMP25 IMP Q M12	10.02.02.02316	SXMP30 IMP Q M12	10.02.02.02334
SXMP15 IMP Q 2xM12	10.02.02.02281	SXMP20 IMP Q 2xM12	10.02.02.02299	SXMP25 IMP Q 2xM12	10.02.02.02317	SXMP30 IMP Q 2xM12	10.02.02.02335



Ordering data spare parts / accessories

Type	Article No.
Connecting cable M12, 8-pole, 5 m, PUR	21.04.05.00079
Connecting cable M12, 5-pole, 5 m, PUR	21.04.05.00080
Double base plate with quick-change connections	10.02.02.02154



Technical data Schmalz X-Pump

Type	Nozzle size [mm]	Max. vacuum at 4.5 bar [%]	Suction capacity at 4.5 bar [l/min]	Max. blow-off pulse at 4.5 bar [l/min]	Air consumption at 4.5 bar [l/min]	Noise level* at 4.5 bar [dba]	Weight [kg]
SXP15	1.5	85	70	200	115	63	0.98
SXP20	2.0	85	135	200	180	65	0.98
SXP25	2.5	85	185	200	290	67	0.98
SXP30	3.0	85	220	200	380	72	0.98
SXMP15	1.5	85	70	320	115	63	1.13
SXMP20	2.0	85	135	320	180	65	1.13
SXMP25	2.5	85	185	320	290	67	1.13
SXMP30	3.0	85	220	320	380	72	1.13

Ambient temperature 0-50 °C, pressure range 3-6 bar, supply and control voltage 24 V DC

*Values with an airtight workpiece gripped



Vacuum components and gripping systems

For a large range of users in many different branches of trade and industry – from the automotive to the pharmaceutical industries – Schmalz offers reliable support and assistance in the solution of automation and handling tasks – either as individual components or complex vacuum gripping systems.

Our teams are at your service!

Vacuum components

Tel. +49 (0)7443 2403 201

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Vacuum gripping systems

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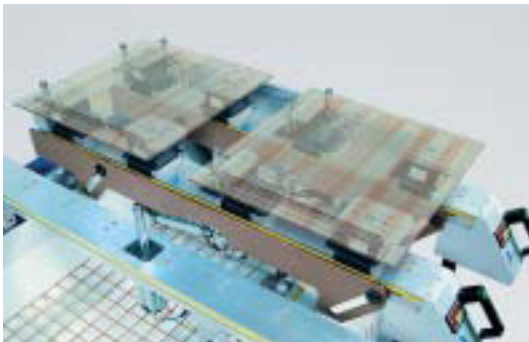
Vacuum handling systems

Ergonomical solutions for many types of applications. Vacuum lifting devices VacuMaster and vacuum tube lifters Jumbo for easy handling of effortless, damage-free workpiece handling. Workshop equipment as practical aids in trade and industry.

Our "Vacuum handling systems" team is at your service!

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Vacuum clamping systems

Future-oriented vacuum clamping technology from Schmalz is the intelligent answer to the continually increasing demands for more productivity and the economical use of CNC machine tools.

Our "Vacuum clamping systems" team is at your service!

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