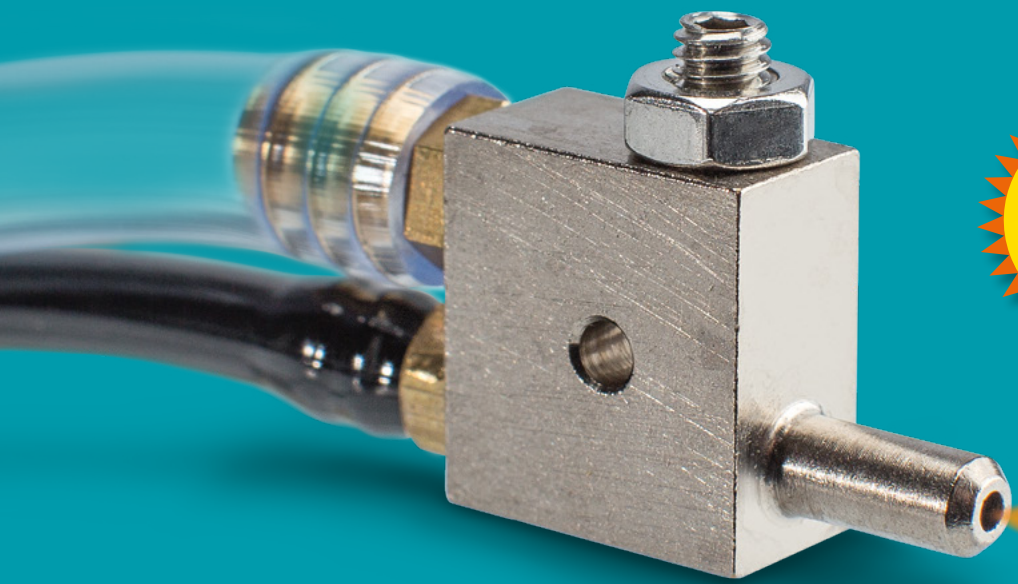
Spraying Ideas for Automation

sommer TECHNIK

V8.1

Catalogue V8.1
Vacuum- & Fluid Technology



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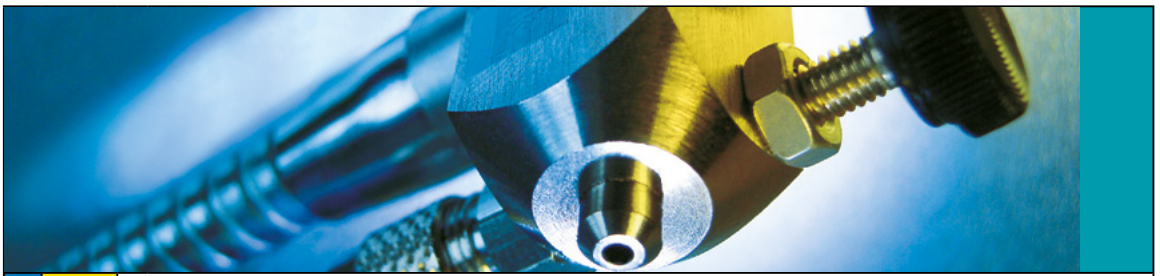

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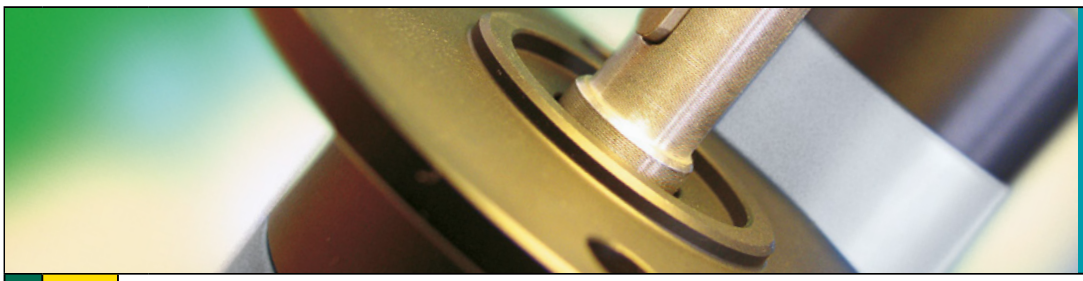
*) Vulkollan® = Registered Trademark of Bayer AG



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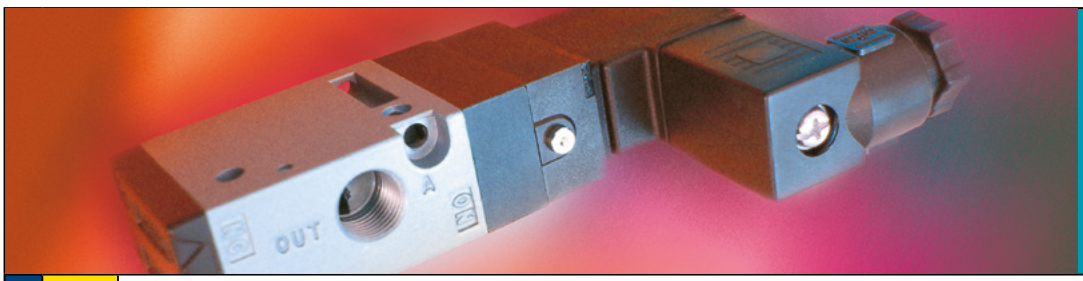

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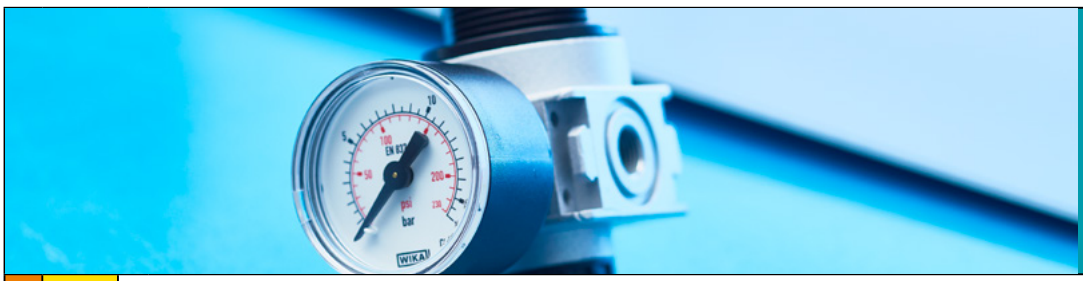

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WELCOME... to the current SOMMER-TECHNIK Catalogue. Webshop: B2B, in preparation

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is not what you buy from us. You can take your time to test all SOMMER-TECHNIK products – order them **10 days on trial** – with a return guarantee!* (Available only in Germany)

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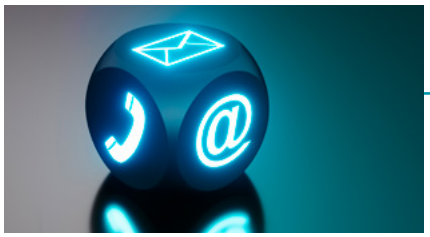
is our regular delivery time. We have a large inventory and are able to deliver 97 % of our catalogue products immediately. The delivery is done through a fast and dependable shipping company.



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What else goes on at SOMMER?...

Another company in the SOMMER-Group is **SOMMER CABLE GmbH.** Here we deliver professional connections for audio, video, broadcasting and media engineering. More information is available under www.sommercable.com or in the current SOMMER CABLE Catalogue.
We are looking forward to your call and your sample order!

Yours truly,

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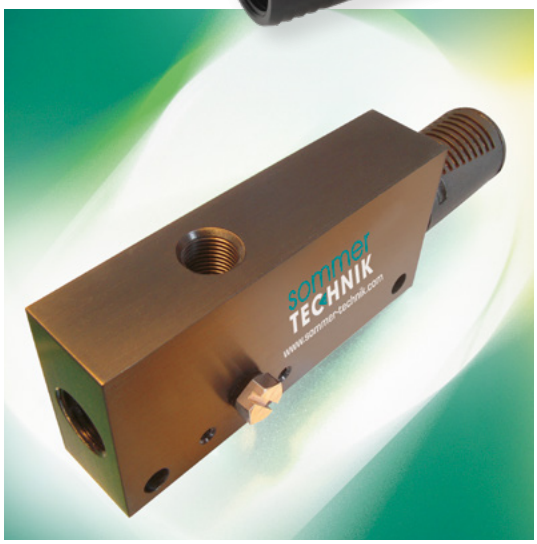
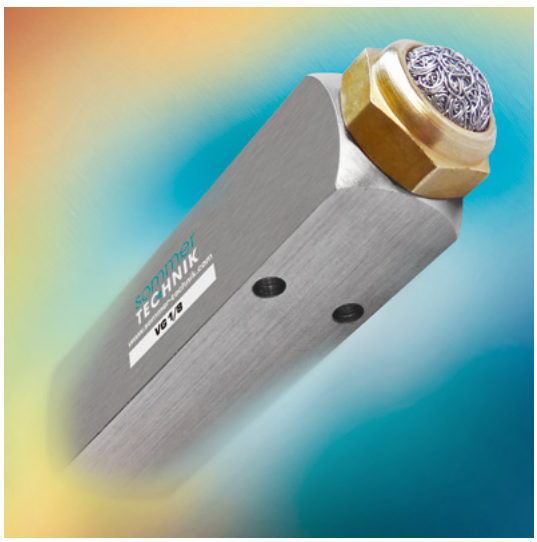
* Except for felt roller lubricators, sealing tapes, adhesives



VACUUM TECHNOLOGY



95 % – High Performance Vacuum Power!

95 % Vacuum power is tough to top. Vacuum Ejectors commonly available on the market only achieve 80 – 85 %.

95 % Vacuum power

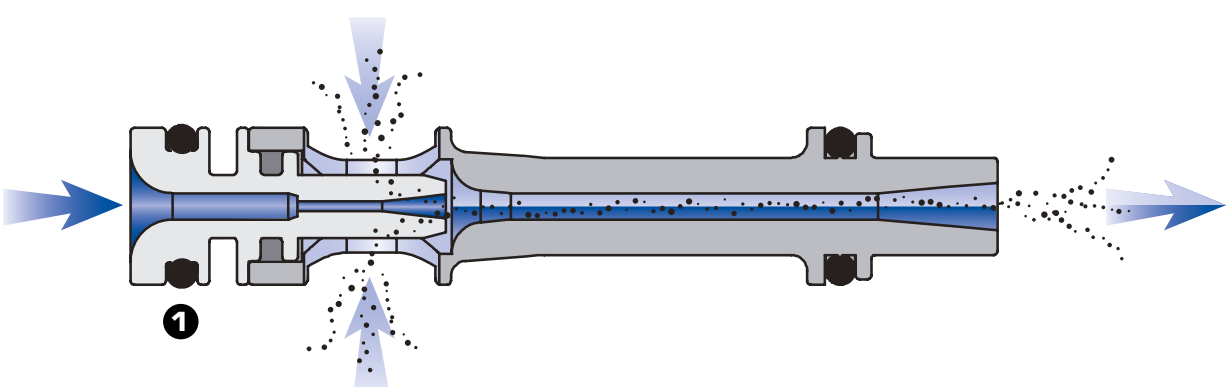
- ➜ a very special technical success.
- ➜ minimum air consumption saves energy. The high vacuum allows to use smaller suction cups.
- ➜ rapid suction and cycle times for increased productivity and time savings.
- ➜ optimized flow technology engineered by the aviation and aerospace industry.

Safe vacuum

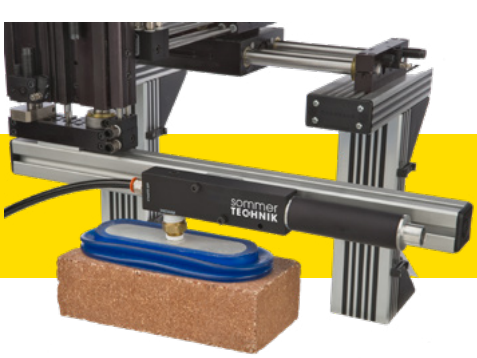
- ➜ consistent performance even in adverse conditions, in dusty and dirty environments – where other technologies often fail!
- ➜ maintenance-free and indestructible due to a simple, compact, and robust construction, no filter required – you will save maintenance and replacement costs!
- ➜ no jamming from dirt particles due to large nominal diameters and high performance. ❶

Variable vacuum

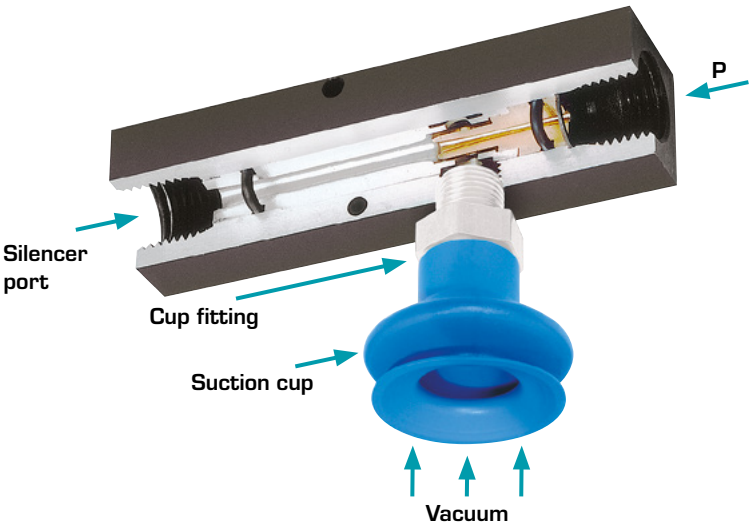
- ➜ whatever you want to move – our wide vacuum range provides lots of applications
- ➜ variably adjustable vacuum power and volume on a number of series



Versatile applications

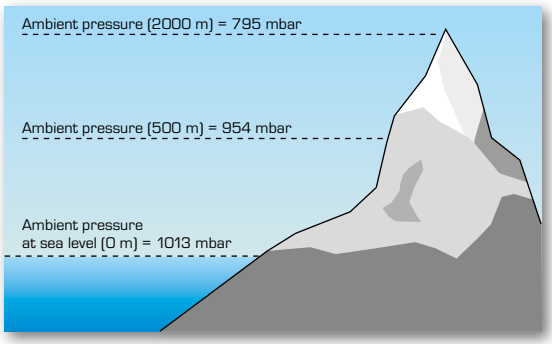


We proudly present the Centennial-Generation of SOMMER TECHNIK Vacuum Ejectors:



When it comes to fluids it is well worth asking the sciences. The new ejector cartridges and the improved surface have liftet the vacuum performance into a new dimension. So now we are able to convert compressed air into vacuum power almost free of losses. Take good care of your tie during testing! Refer to the following pages for details.

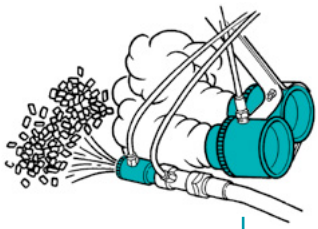
The vacuum decreases by 12.5 mbar per each 100 m above sea level:



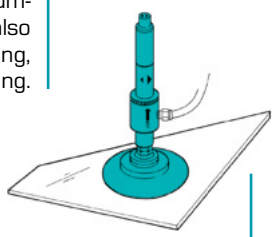
The vacuum cartridges can be mounted and removed quick and easily. This allows a comfortable cleaning of the system.

Standard material: high-strength polyamid. Optionally available in brass/aluminium at an upcharge.

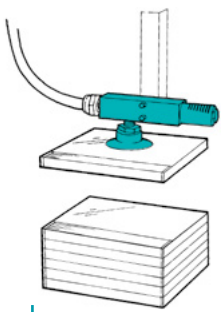
Sample Applications:



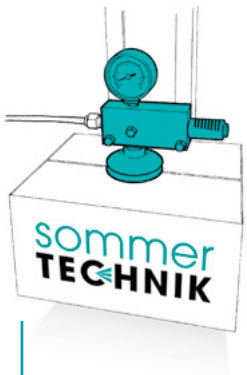
In this case sweets are powdered with sugar glazing. The vacuum-ejector CDF can also be used for cooling, drying, or suctioning.



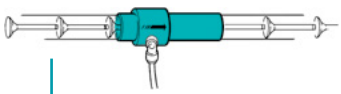
The VDF-vacuum ejector for sensitive and safe vacuum suctioning of fragile glass panes.



Loading or removing for high-speed CD-manufacturing. The compact power vacuum ejector VP... fits in almost everywhere.



"Pick and place" in packaging industries. With its high vacuum performance and high volume the power vacuum ejectors VP... are able to carry even the heaviest loads. The bellows cup compensates for deviations in height.



Part transport (valve piston) via vacuum with the DF. Speed and range are controlled by compressed air. Problem-free transport of compact parts such as screws, granules, powder, etc. as well as blowing off or suctioning dirt, chips, or dust.

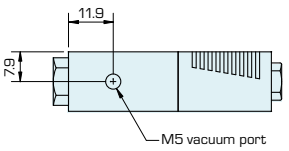
Power Vacuum Ejector – Series VP00

The power midget...

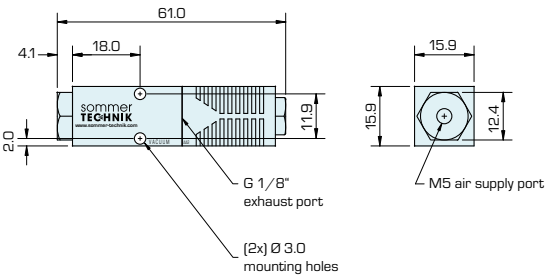
- **With silencer**

With a mere 5.5 bar the VP00 is able to produce 95 % (948 mbar) of vacuum power. With its **compact** design and **simple** construction it fits into the **smallest of spaces** to achieve **great vacuum performance.**
A true power vacuum ejector – **try it** for yourself!
The VP0X has an integrated **pulse counter blow function** which ensures an **instant detachment** of the workpiece from the suction cup and thus enables **fast clock cycles.**
The ADJ version has an adjustable counter blow function for extremely light-weight workpieces.
Suitable screw joints see the "Fittings" category in the "Accessories" chapter, hoses see chapter on "Fluid Technology". Additional sound absorbers can be found on the following pages.

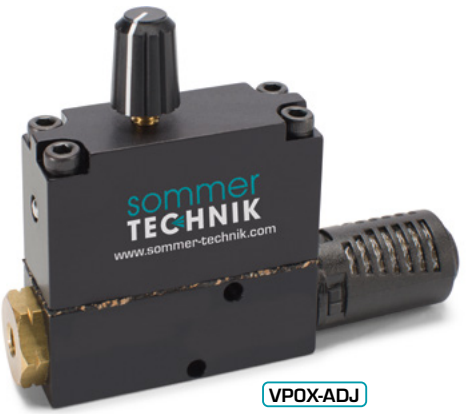
VP00



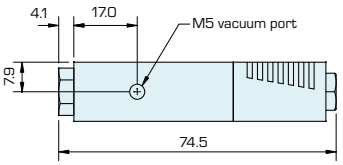
The power midget transports "power food" (a candy bar)

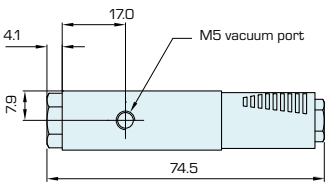


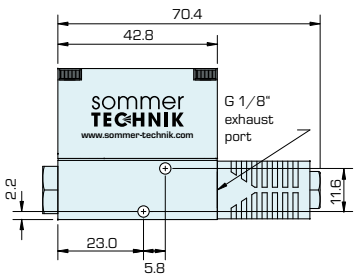
VP0X

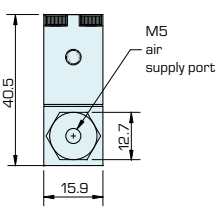


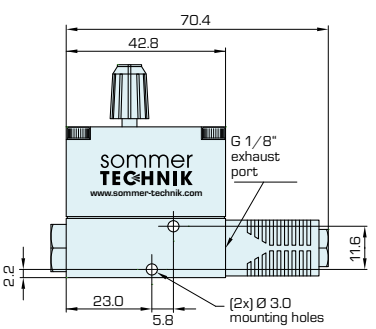
VP0X-ADJ

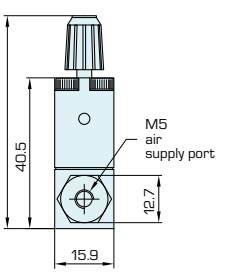


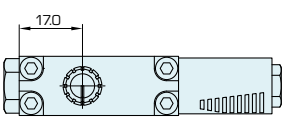












Power Vacuum Ejector

Operating pressure: 5.5 bar · operating temperature: –10 °C...+80 °C

Order-No.	Version	Air consumption [l norm. / min.]	Max. vacuum level* [mbar]	Max. vacuum flow [l norm. / min.]	Noise level [dB]
VP00-060H	standard	22.7	948	14.2	58
VP0X-060H	with blow-off function	22.7	948	14.2	58
VP0X-060H-ADJ	with adjustable counter blow function	22.7	948	14.2	58

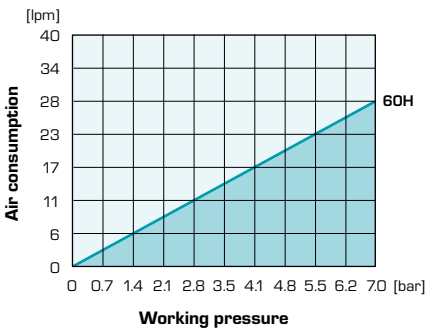
*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

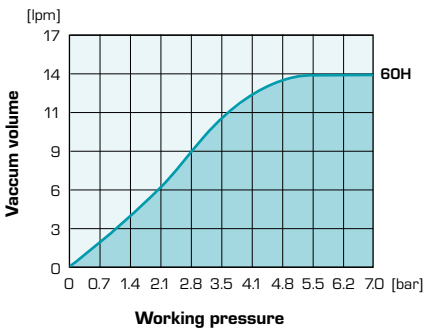
Vacuum volume in l norm./min, depending on the vacuum performance [mbar]*

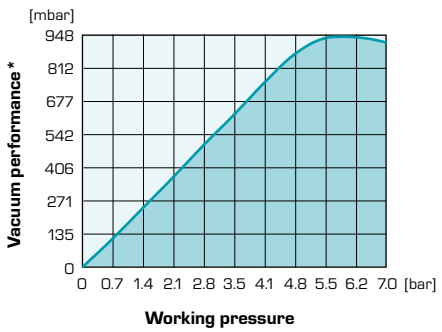
Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP00-060H/VP0X-060H	14.2	10.8	9.1	8.5	7.6	6.5	5.7	3.7	1.4	0.6	0

Evacuation time in seconds based on 1 liter volume/mbar

Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP00-060H/VP0X-060H	0	0.5	1.1	1.8	2.6	3.6	4.8	6.5	8.7	14.5	27.9







*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

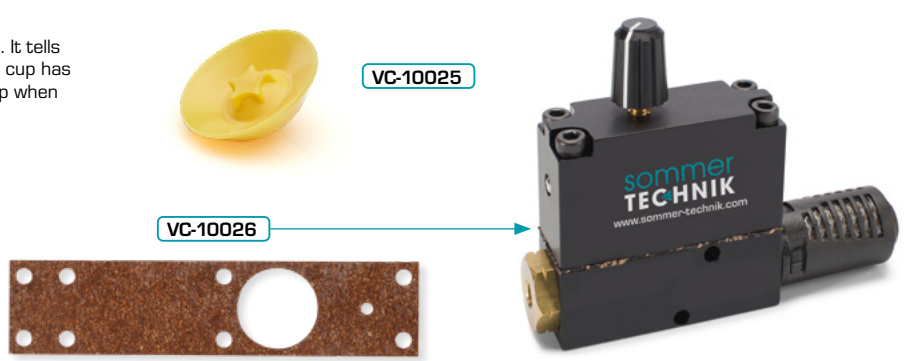
Spare parts – power vacuum ejector

Switch and prevail ...

that's possible with this vacuum ejector (N/O contact, PNP). It tells your control system if things get interesting and the suction cup has set down. Now it can be switched to full energy. LED lights up when vacuum is applied.

Suitable for VPOX

Order no.	
VC-10025	Replacement diaphragm
VC-10026	Gasket



Power Vacuum Ejector 948 mbar – Series VP10

The compact lightweight...

- With silencer

With 5.5 bar the VP10 is able to produce 95 % (948 mbar) of vacuum power. With its **compact design** and simple construction it fits into the smallest of spaces to achieve great vacuum performance– **try it** for yourself!
The VP1X has an integrated **counter blow function** to ensure that the suction cup **releases the part** quickly for very **fast cycle times.**

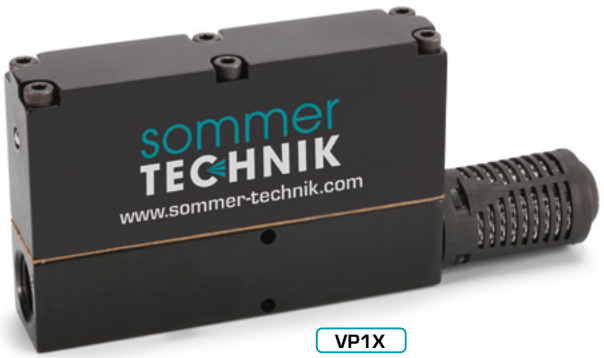
More models with **different vacuum performances/volumes** are available on our homepage under www.sommer-technik.com.

Matching fittings can be found under "Plug Fittings" in Chapter "Accessories" and hoses in Chapter "Fluid Technology".

More silencers are available on the following pages.

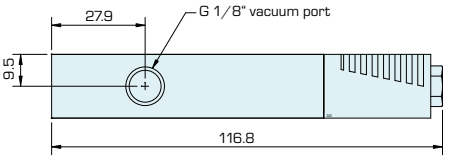
A VP10 multi-handling pins

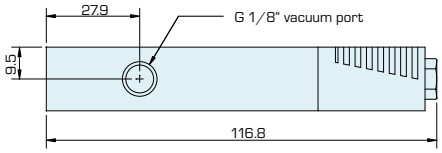
Sensitive handling of a halogen bulb

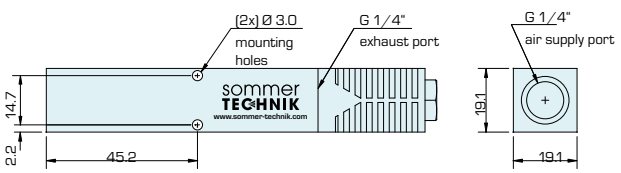


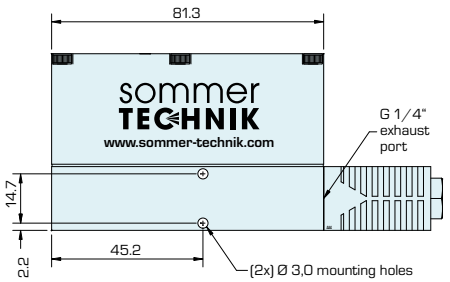
VP1X

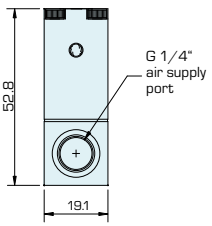
VP10











Power Vacuum Ejector 948 mbar

Operating pressure: 5.5 bar · operating temperature: –10 °C...+80 °C

Order-No.	Version	Air consumption [l norm. / min.]	Max. vacuum level* [mbar]	Max. vacuum flow [l norm. / min.]	Noise level [dB]
VP10-060H	standard	22.7	948	14.2	64
VP10-090H	standard	51.0	948	34.0	64
VP10-100H	standard	79.3	948	56.6	64
VP10-150H	standard	135.9	948	90.6	64
VP1X-060H	with blow-off function	22.7	948	14.2	64
VP1X-090H	with blow-off function	51.0	948	34.0	64
VP1X-100H	with blow-off function	79.3	948	56.6	64
VP1X-150H	with blow-off function	135.9	948	90.6	64

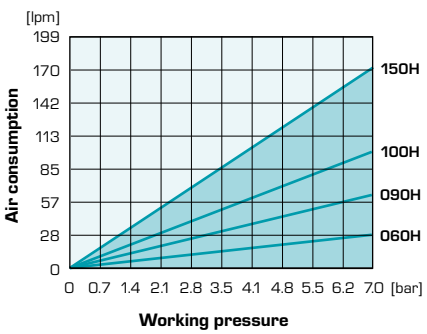
*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

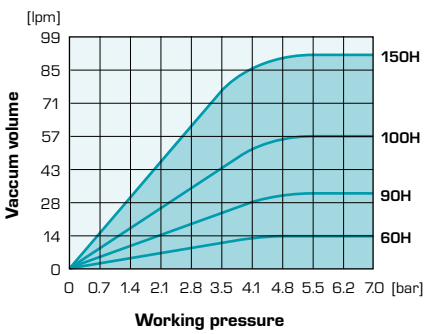
Vacuum flow [l norm./min.] vs. vacuum level [mbar]*

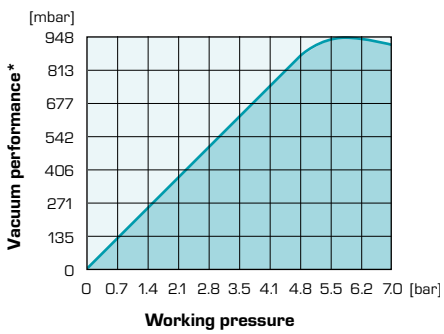
Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP10-060H/VP1X-060H	14.2	10.8	9.1	8.5	7.6	6.5	5.7	3.7	1.4	0.6	0
VP10-090H/VP1X-090H	34.0	28.3	26.9	25.5	24.1	21.2	19.8	14.7	13.3	5.7	0
VP10-100H/VP1X-100H	56.6	52.4	49.6	44.5	39.6	35.4	29.7	23.8	19.8	9.9	0
VP10-150H/VP1X-150H	90.6	79.3	70.8	65.1	56.6	45.3	39.6	34.0	22.7	14.6	0

Evacuation time in seconds based on 1 liter volume/mbar

Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP10-060H/VP1X-060H	0	0.5	1.1	1.8	2.6	3.6	4.8	6.5	8.7	14.5	27.9
VP10-090H/VP1X-090H	0	0.2	0.4	0.7	1.1	1.7	2.3	3.3	4.6	7.8	9.9
VP10-100H/VP1X-100H	0	0.1	0.2	0.4	0.6	0.9	1.4	1.9	2.8	5.9	8.9
VP10-150H/VP1X-150H	0	0.1	0.1	0.2	0.3	0.5	0.8	1.6	1.9	2.9	4.4







*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

Vacuum Switch VSMP

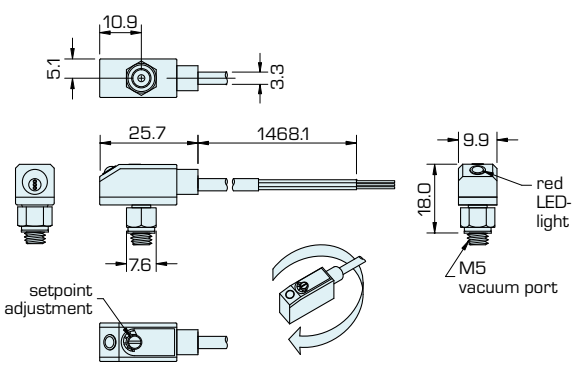
Switching and disposing...

is what you can do with this vacuum switch (closer PNP).
It **tells** your controls **when** things start to get interesting and the **suction cup has been positioned.** Now full energy can be activated.
A function-LED lights up when vacuum power is activated.

Suitable for M5 vacuum connection on UP00, VP0X, VP10, VP1X

Temperature range: –10 °C...+ 60 °C
Supply voltage: 11 – 30 VDC/20 mA
Hysteresis: 0.5 % of vacuum power

Order-No.
VSMP



Power Vacuum Ejector 948 mbar – Series VP20

The convenient one...

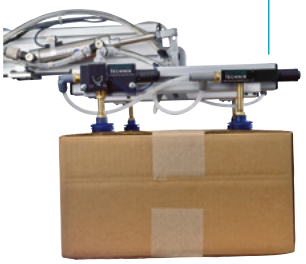
- With silencer

With a mere 5.5 bar the VP20 is able to produce 95 % (948 mbar) of vacuum power. It offers a **number of connection options.** An **adjustable vacuum monitor** and a vacuum **manometer** can be installed. A true power vacuum ejector – **try it** for yourself!
The VP2X has an integrated **counter blow function** that ensures that the suction cup **releases the part** quickly to provide **very fast cycle times.**

More models with **different vacuum performances/volumes** are available on our homepage under www.sommer-technik.com.

Matching fittings can be found under "Plug Fittings" in Chapter "Accessories" and hoses in Chapter "Fluid Technology".
More silencers are available on the following pages.

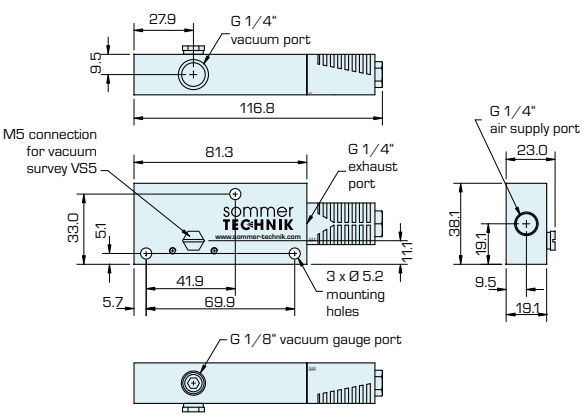
VP20 handling sheet metal (pinned plate) with VSMP and PMM1/8

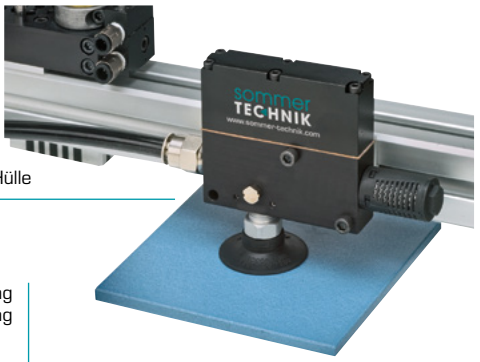


4 x VP20 as a "parcel service provider"

VP20 handling yoghurt cup

VP20

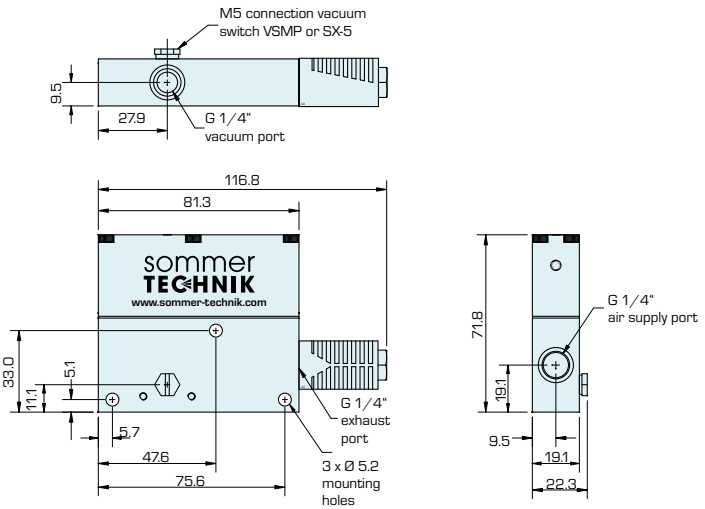




VP2X beim Handling einer CD Hülle

VP2X handling foil packaging

VP2X



Power Vacuum Ejector 948 mbar

Operating pressure: 5.5 bar · operating temperature: –10 °C...+80 °C

Order-No.	Version	Air consumption [l norm. / min.]	Max. vacuum* level [mbar]	Max. vacuum flow [l norm. / min.]	Noise level [dB]
VP20-090H	standard	51.0	948	34.0	64
VP20-100H	standard	79.3	948	56.6	64
VP20-150H	standard	135.9	948	90.6	64
VP2X-090H	with blow-off function	51.0	948	34.0	64
VP2X-100H	with blow-off function	79.3	948	56.6	64
VP2X-150H	with blow-off function	135.9	948	90.6	64

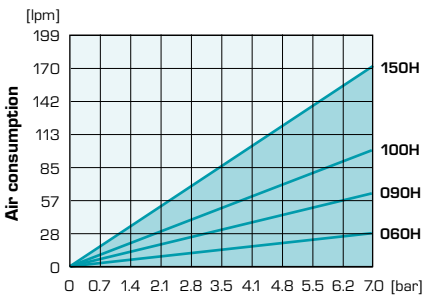
*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

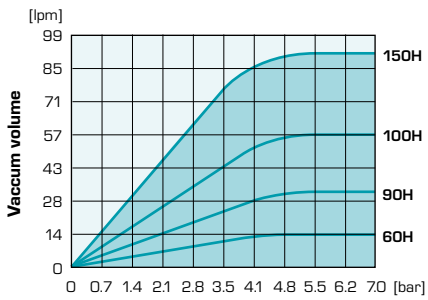
Vacuum volume in l norm./min, depending on the vacuum performance [mbar]*

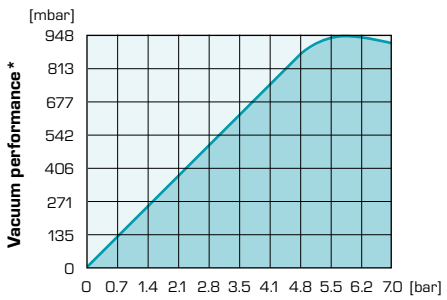
Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP20-090H/VP2X-090H	34.0	28.3	26.9	25.5	24.1	21.2	19.8	14.7	13.3	5.7	0
VP20-100H/VP2X-100H	56.6	52.4	49.6	44.5	39.6	35.4	29.7	23.8	19.8	9.9	0
VP20-150H/VP2X-150H	90.6	79.3	70.8	65.1	56.6	45.3	39.6	34.0	22.7	14.6	0

Evacuation time in seconds based on 1 liter volume/mbar

Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP20-090H/VP2X-090H	0	0.2	0.4	0.7	1.1	1.7	2.3	3.3	4.6	7.8	9.9
VP20-100H/VP2X-100H	0	0.1	0.2	0.4	0.6	0.9	1.4	1.9	2.8	5.9	8.9
VP20-150H/VP2X-150H	0	0.1	0.1	0.2	0.3	0.5	0.8	1.6	1.9	2.9	4.4







*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

Spare parts – power vacuum ejector

Switch and prevail ...

that's possible with this vacuum ejector (N/O contact, PNP). It tells your control system if things get interesting and the suction cup has set down. Now it can be switched to full energy. LED lights up when vacuum is applied.

Suitable for VP0X

VC-10027

VC-10028

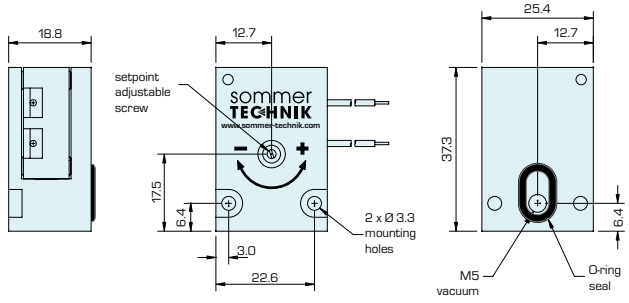
Order no.	
VC-10027	Replacement diaphragm
VC-10028	Gasket

Vacuum Switch SX-5, adjustable

Switching and disposing...

is what you can do with this vacuum switch (closer PNP). It **tells** your controls **when** things start to get interesting and the **suction cup has been positioned.** Now full energy can be activated.
The switching range is **adjustable** from 250 – 1015 mbar.
Optionally the VSMP vacuum switch – see previous pages – can also be used.

Temperature range: –40 °C...+ 120 °C
Supply voltage: 24 VDC/500 VAC/20 mA
Hysteresis: 0.5 % of vacuum power



Order-No.	ST-type (old)
SX-5	(VS5)

Suitable for VP20 and VP2X

Power Vacuum Ejector 948 mbar – Series VP80 / VP90

The marathon man...

with extraordinary performance and **air volume** intake.

We are proud to present a so-called top athlete:

Fed with 5.5 bar of compressed air the VP90 vacuum ejector delivers up to **680 liters** of vacuum power per minute, **948 mbar** of low pressure.
These are **absolute top results** when compared to very good marathon times of 2 hours and 15 minutes.
Go to the starting line and **test it out** – 10 days on trial!

A silencer is included.

More models with **different vacuum performances/volumes** are available on our homepage under www.sommer-technik.com.

Matching fittings can be found in Chapter "Accessories" and hoses in Chapter "Fluid Technology".

More silencers are available on the following pages.

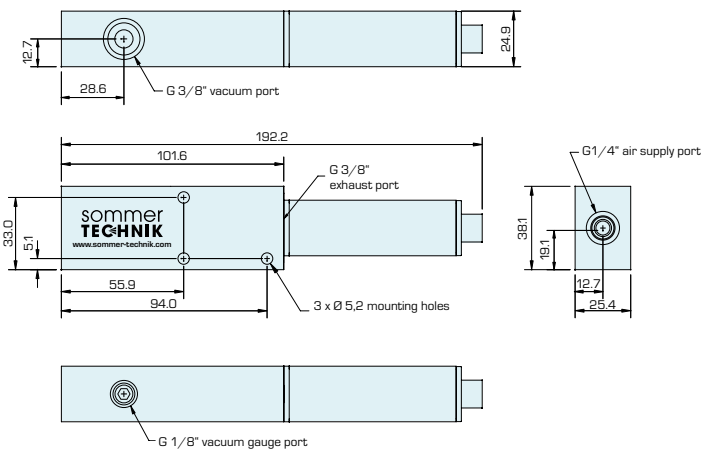
VP80 handling cardboards

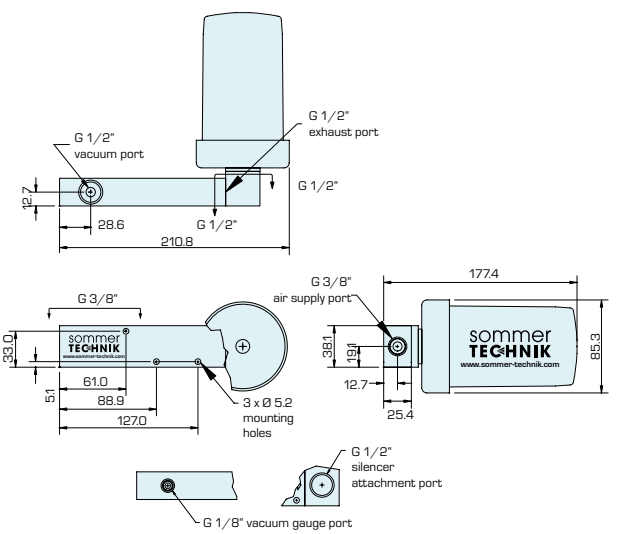
... foil packaging (chili powder)

... hollow bricks

VP80

VP90





Power Vacuum Ejector 948 mbar

Operating pressure: 5.5 bar · operating temperature: –10 °C...+80 °C

Order-No.	Air consumption [l norm. / min.]	Max. vacuum level* [mbar]	Max. vacuum flow [l norm. / min.]	Noise level [dB]
VP80-200H	220.9	948	152.9	72
VP80-250H	354.0	948	254.9	73
VP90-300H	623.0	948	566.3	70
VP90-350H	792.9	948	792.9	70

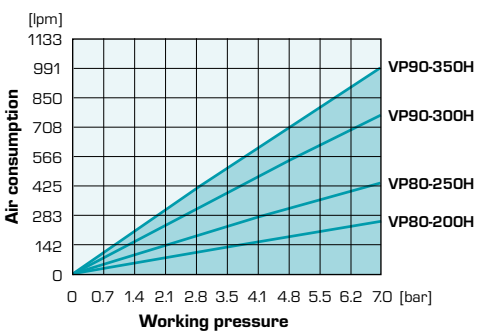
*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

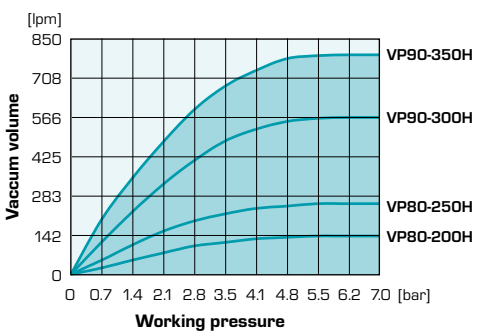
Vacuum flow [l norm./min.] vs. vacuum flow [mbar]*

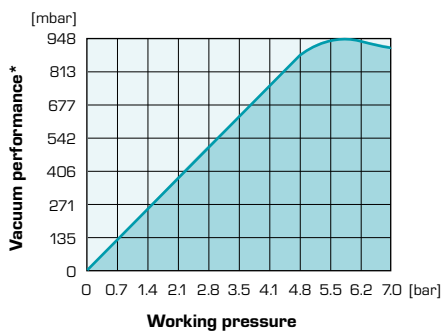
Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP80-200H	152.9	133.1	109.0	93.4	85.0	73.6	59.5	45.3	34.0	17.0	0
VP80-250H	254.9	240.7	222.3	198.2	184.1	150.1	110.4	70.8	51.0	25.5	0
VP90-300H	566.3	481.4	396.4	359.6	339.8	238.2	209.5	138.8	76.5	36.8	0
VP90-350H	792.9	623.0	529.5	450.2	410.6	334.1	229.4	161.4	127.4	63.7	0

Evacuation time in seconds based on 1 liter volume/mbar

Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	914 mbar	948 mbar
VP80-200H	0	0	0.1	0.1	0.2	0.3	0.4	0.7	1.2	2.2	3.5
VP80-250H	0	0	0	0.1	0.1	0.2	0.3	0.6	1.1	2.0	2.7
VP90-300H	0	0	0	0	0.1	0.1	0.1	0.2	0.4	1.2	2.1
VP90-350H	0	0	0	0	0.1	0.1	0.1	0.2	0.3	0.9	1.6







*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

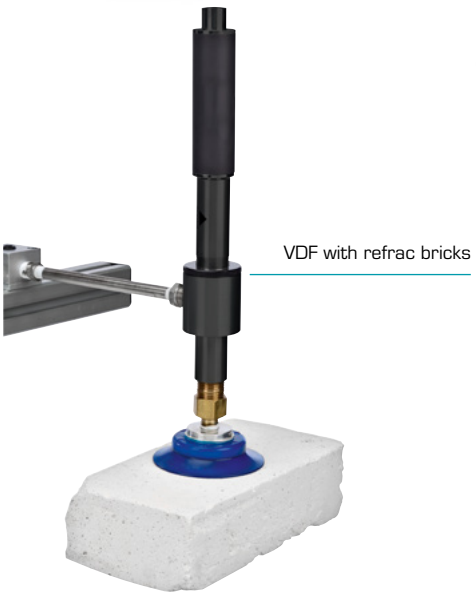
Power Vacuum Ejector with Flow Through Function, adjustable – Series VDF

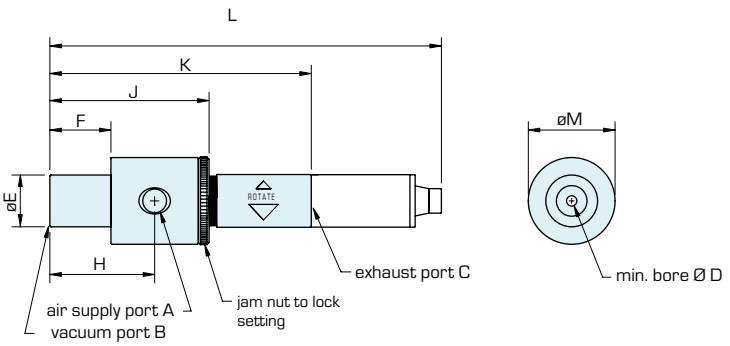
The sensitive guy with full-length hole…

Sensitive parts (glass panes, paper) sometimes have to be **suctioned with great care.** This is a welcome task for the adjustable VDF vacuum ejector. The adjustability **optimizes energy, holding power,** and **air consumption.** Despite the sensitivity the VDF is quite a guzzler. It transports, **doses,** or **suctions** even **fluids,** which makes it ideal for dosing, suctioning, and filling units.

Suitable screw joints see the "Fittings" category in the "Accessories" chapter, hoses see chapter on "Fluid Technology". Matching sound absorbers see the following pages.

Note: With maximum performance the connection cross-section of the air supply should be equal to the flow rate øA.


VDF with refrac bricks



Operating pressure: 5.5 bar · Operating temperature without sound absorber: –70 °C...~200 °C

Order-No.	Air consumption [l norm. / min.]	Vacuum level [mbar]	Vacuum flow [l norm./min.]	Noise level without silencer Open flow [dB]	Noise level without silencer Sealed vacuum [dB]	Noise level with silencer Open flow [dB]	Noise level with silencer Sealed vacuum [dB]	Matching silencer (order separately)
VDF100	0 – 37	0 – 850	0 – 56.6	88	76	70	68	ST4
VDF150	0 – 68	0 – 850	0 – 90.6	88	90	74	68	ST4
VDF200	0 – 133	0 – 850	0 – 169.9	86	100	76	80	ST4
VDF250	0 – 235	0 – 850	0 – 283.2	90	100	82	80	ST4A-2
VDF375	0 – 481	0 – 850	0 – 849.6	102	104	88	82	ST8B
VDF500	0 – 793	0 – 850	0 – 1699.2	96	100	82	78	ST12C
VDF750	0 – 1246	0 – 850	0 – 3398.4	112	108	98	88	ST16C

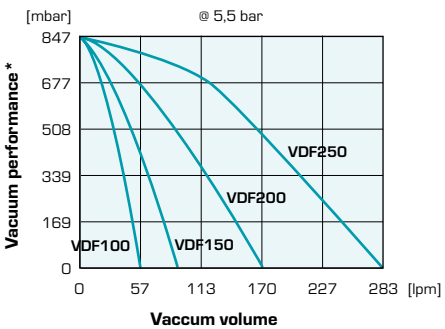
Order-No.	Dimensions									
				[Ø mm]		[mm]				[Ø mm]
	A	B	C	D	E	F	H	J	K	M
VDF100	G1/8“	G1/4“	G1/4“	3.2	18.8	22.1	38.1	57.7	94.7	31.5
VDF150	G1/8“	G1/4“	G1/4“	3.7	18.8	22.1	38.1	57.7	94.7	31.5
VDF200	G1/8“	G1/4“	G1/4“	4.8	18.8	22.1	38.1	57.7	94.7	31.5
VDF250	G1/8“	G1/4“	G1/4“	6.7	18.8	22.1	38.1	57.7	94.7	31.5
VDF375	G3/8“	G1/2“	G1/2“	9.5	25.1	38.1	60.2	87.6	153.4	44.2
VDF500	G3/8“	G1/2“	G3/4“	12.7	31.5	38.1	63.5	94.0	153.9	50.0
VDF750	G1/2“	G3/4“	G1“	19.1	37.8	38.1	63.5	94.0	176.5	56.4

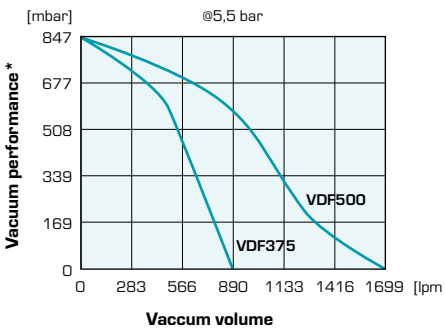
Vacuum flow [l norm./min.] vs. vacuum level [mbar]*

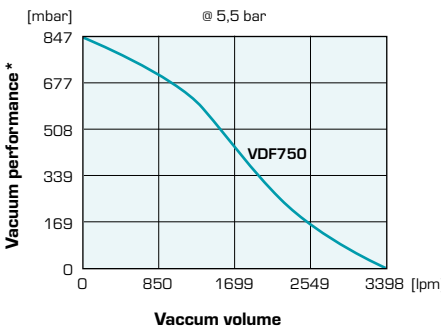
Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	847 mbar
VDF100	56.6	51.0	45.3	39.6	36.8	34.0	31.2	21.2	7.1	0.0
VDF150	90.6	79.3	70.8	62.3	51.0	45.3	36.8	25.5	11.3	0.0
VDF200	169.9	158.6	141.6	118.9	102.0	85.0	73.6	51.0	25.5	0.0
VDF250	283.2	260.5	235.1	212.4	186.9	164.3	147.3	107.6	36.8	0.0
VDF375	849,6	764.6	708.0	651.4	594.7	509.8	453.1	311.5	85.0	0.0
VDF500	1699.2	1472.6	1274.4	1161.1	1076.2	991.2	793.0	538.1	141.6	0.0
VDF750	3398.4	2803.7	2350.6	2095.7	1755.8	1444.3	1302.7	962.9	254.9	0.0

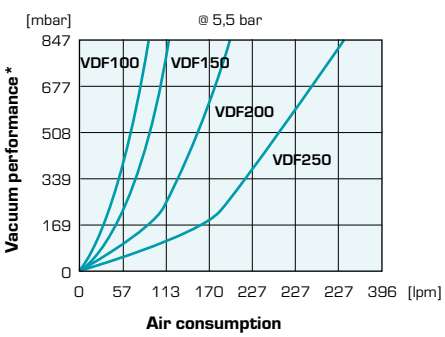
Evacuation time in seconds based on 1 liter volume/mbar

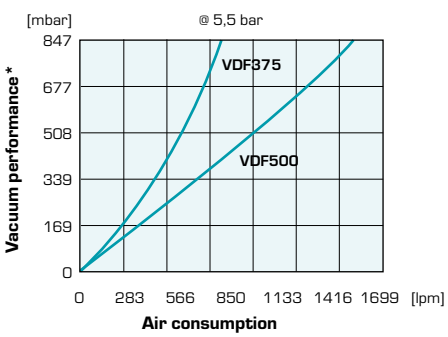
Order-No.	0 mbar	102 mbar	203 mbar	305 mbar	406 mbar	508 mbar	609 mbar	711 mbar	813 mbar	847 mbar
VDF100	0.0	0.1	0.3	0.5	0.7	1.0	1.4	1.9	3.0	3.7
VDF150	0.0	0.1	0.2	0.4	0.5	0.8	1.1	1.6	2.7	3.4
VDF200	0.0	0.0	0.1	0.1	0.2	0.3	0.5	0.7	1.1	1.3
VDF250	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.3	0.6	0.8
VDF375	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.5
VDF500	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2
VDF750	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2

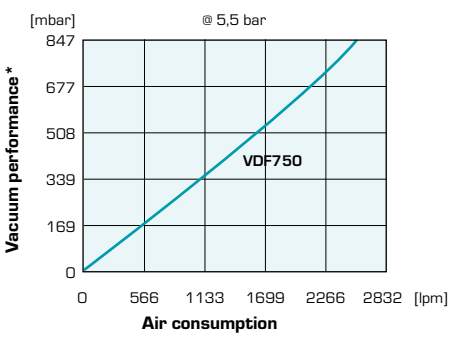












*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

Vacuum and Air Booster with Flow Through Function, adjustable – Series CDF

The hungry one...

- For dust, chips, and porous parts

You can't have everything: A low of vacuum volume and high vacuum power. Here we waved the **vacuum power** in favor of a **very high** suction volume, so that every loose particle put in front of the CDF simply gets swallowed up. Even **porous, air-permeable parts** can be **suctioned, transported,** or **held safely.** The **vacuum power** stays **consistent.**
The high vacuum volume provides a lot of blowing power. This also makes it an **ideal blowing unit.** The ratio air consumption – air delivery is 20 : 1.
The **vacuum and air volume** can be **adjusted to an optimum** by turning the adjustment sleeve.

The CDF is a multi-function unit – it will solve a lot of your problems:
- Suctioning (dust, chips, gas, smoothing foil, etc.)
- Blowing off, drying, or cooling
- Suctioning air-permeable parts (filter bags, sponges, seals, etc.)

Check it out – and have it take a trial swallow ...

Matching fittings can be found in Chapter "Accessories" and hoses in Chapter "Fluid Technology". More silencers are available on the following pages.

Note: For max. performance the connection diameter for the air intake should be the same as flow through øA.

...rapid inflation and deflation of inflatable (Coast Guard)

... porous foam

CDF handling a felt

CDF1500H

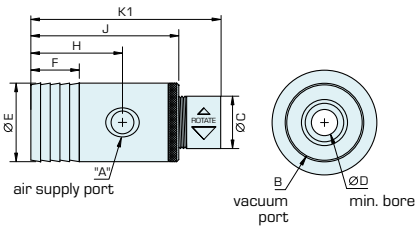
CDF0200H

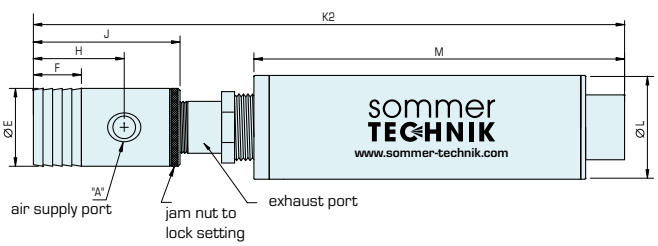
CDF2000H

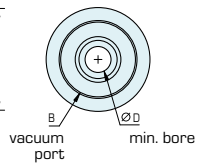
CDF1500H-ST2020

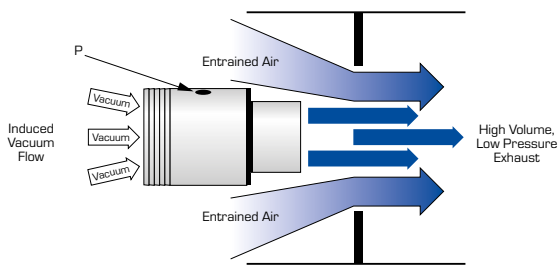
CDF0750H-ST16FC

CDF0200H-ST4AX









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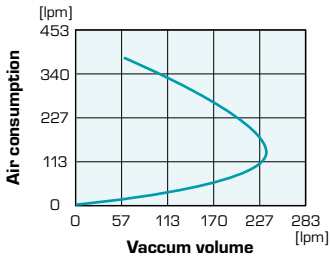

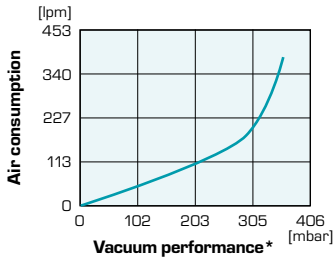

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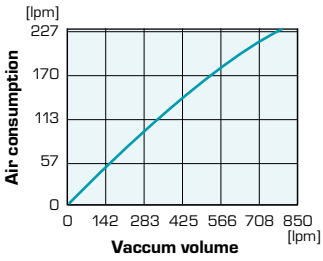

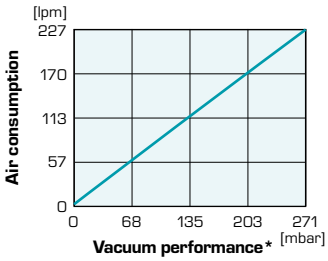

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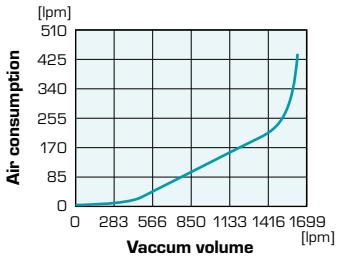

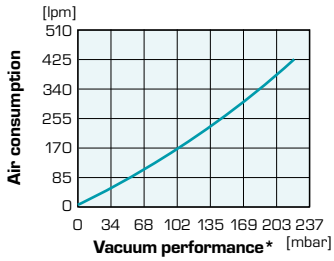

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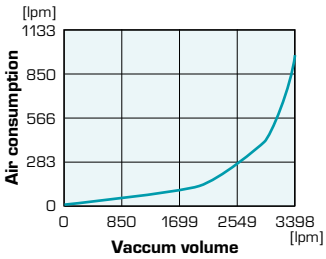

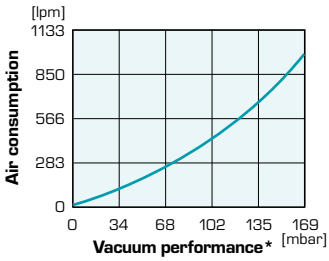

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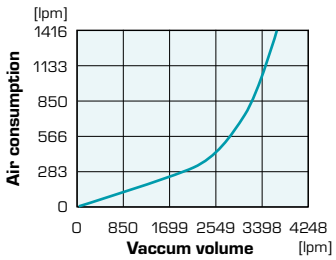

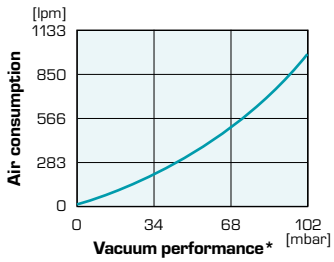

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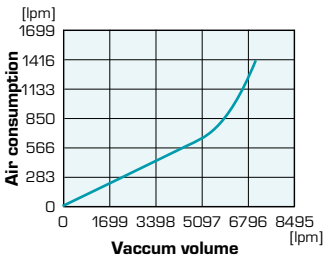
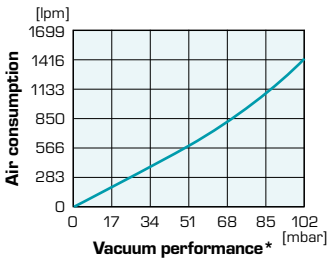
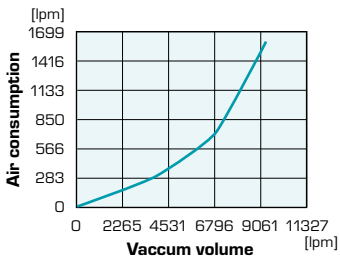
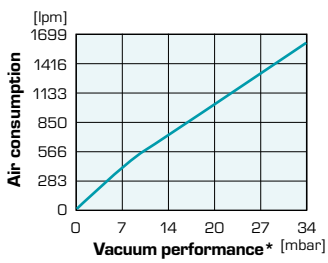




CDF2000H





*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

Operating pressure: 5.5 bar · Operating temperature without sound absorber: –70 °C...~200 °C

Order-No.	Air consumpt. [l norm./min.]	Vacuum level [mbar]	Vacuum flow [l norm./min.]	Exhaust output [l norm./min.]	Dimensions [Ø mm] A	B	C	D	E	[mm] F	H	J	K1	K2	[Ø mm] L	[mm] M	Noise level Open flow [dB]	Sealed vacuum [dB]
CDF0200H	0-113	0-305	0-340	0-453	G1/8"	G3/8"	14.2	6.4	31.8	19.3	30.7	47.5	72.4	–	–	–	98	94
CDF0375H	0-226	0-271	0-793	0-1019	G1/8"	G3/8"	17.5	9.5	31.8	19.3	30.7	47.5	72.4	–	–	–	78	84
CDF0500H	0-425	0-237	0-1557	0-1982	G1/4"	G1/2"	25.1	12.7	37.8	23.6	44.5	71.9	104.9	–	–	–	84	96
CDF0750H	0-849	0-169	0-3115	0-3964	G1/4"	G1"	31.2	19.1	50.0	23.6	44.5	71.9	104.9	–	–	–	86	96
CDF1000H	0-1416	0-102	0-3681	0-5097	G1/4"	G1 1/4"	37.6	25.4	56.4	23.6	44.5	71.9	104.9	–	–	–	86	96
CDF1500H	0-1416	0-102	0-7079	0-8495	G3/8"	G2"	50.5	38.1	69.1	23.6	44.5	71.9	104.9	–	–	–	86	96
CDF2000H	0-1699	0-34	0-9345	0-11044	G3/8"	Ø72.1	63.2	50.8	81.8	23.6	44.5	71.9	104.9	–	–	–	86	94
with silencer:																		
CDF0200H-ST4AX	0-113	0-305	0-340	0-340	G1/8"	G3/8"	–	6.4	31.8	19.3	30.7	47.5	–	156.2	25.4	90.7	86	78
CDF0375H-ST6BX	0-226	0-271	0-793	0-793	G1/8"	G3/8"	–	9.5	31.8	19.3	30.7	47.5	–	188.7	31.8	121.9	74	70
CDF0500H-ST16FC	0-425	0-237	0-1557	0-1557	G1/4"	G1/2"	–	12.7	37.8	23.6	44.5	71.9	–	289.3	50.8	180.8	72	78
CDF0750H-ST16FC	0-849	0-169	0-3115	0-3115	G1/4"	G1"	–	19.1	50.0	23.6	44.5	71.9	–	297.2	50.8	180.8	78	80
CDF1000H-ST24FC	0-1416	0-102	0-3681	0-3681	G1/4"	G1 1/4"	–	25.4	56.4	23.6	44.5	71.9	–	304.8	50.8	199.4	80	82
CDF1500H-ST2020	0-1416	0-102	0-7079	0-7079	G3/8"	G2"	–	38.1	69.1	23.6	44.5	71.9	–	431.8	87.9	345.9	80	82

*) without thread

Vacuum Conveyor – Series DF

The pneumatic express courier ...

whips your precious objects from A to B.
A piece of pipe is coming to life when such a "pipe vacuum ejector" is put in between. Through angular drills the vacuum is created in the DF by the inrushing compressed air. With **incredible speed** you can now **transport** all kinds of **"things"** from one place to another – with only **little air consumption.** You might as well come up with the idea of replacing the robot with it, i.e. using the DF as a handling device. The DF is firmly packed, works without moving parts and is therefore ready for the very **robust applications.**
The T version* has an internal thread on both sides.
Simply a **brilliant solution.** Check it out and play with your creativeness. We are happy with you about every solution found – because it's so easy!

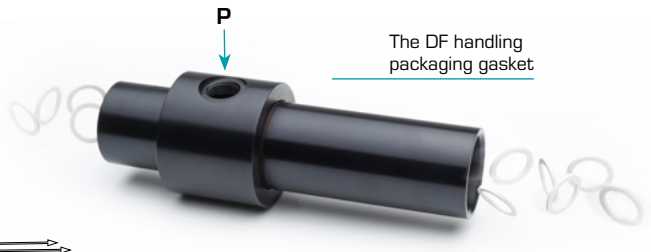
Suitable screw joints see the "Fittings" category in the "Accessories" chapter, hoses see chapter on "Fluid Technology".

DF15

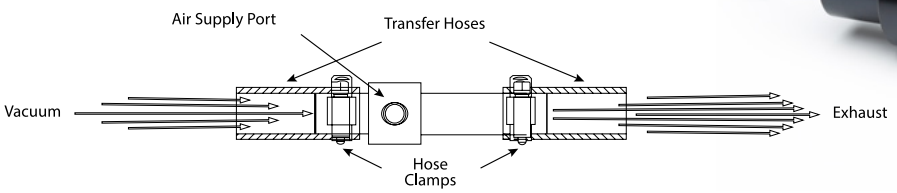
DF ...-T

Handling of different part sizes up to powders

The Advabtages:
- Efficient - instant on and off, low operating costs
- Fast response - Installation close to vacuum point
- Evacuation of large quantities of gas or air with a low vacuum level
- Easy installation - simply connect tubing to the vacuum and exhaust ports and supply compressed air
- Fast transport of bulk material, individual objects, even with complex shapes and edges.
- Safe operation - no electricity needed at the pump



The DF handling packaging gasket



Operating pressure: 5.5 bar · Operating temperature without sound absorber: –70 °C...~200 °C

Order-No.	Air consumpt. [l norm. / min.]	Max. vacuum level [mbar]	Max. vacuum flow [l norm. / min.]	Dimensions A	[Ø mm] D	[mm] E	[mm] F	[mm] H	[mm] J	[mm] K	[Ø mm] L	[Ø mm] M
DF01-3	67	372	85	G1/8"	3.8	12.2	25.4	12.7	38.1	76.2	12.4	25.1
DF02-3	170	288	283	G1/8"	6.4	18.4	31.8	19.1	44.5	88.9	18.8	31.5
DF03-3	170	152	510	G1/8"	9.7	18.4	31.8	19.1	44.5	88.9	18.8	31.5
DF03-6	283	203	708	G1/8"	9.7	18.4	31.8	19.1	44.5	88.9	18.8	31.5
DF05-3	255	129	1189	G1/4"	12.7	25.0	41.1	25.4	57.2	139.7	25.4	37.6
DF05-6	680	339	1189	G1/4"	12.7	25.0	41.1	25.4	57.2	139.7	25.4	37.6
DF07-3	680	186	3058	G3/8"	19.1	31.4	63.5	38.1	88.9	190.5	31.8	50.3
DF07-6	1359	322	3398	G3/8"	19.1	31.4	63.5	38.1	88.9	190.5	31.8	50.3
DF10-3	680	102	4531	G3/8"	25.4	37.1	63.5	38.1	88.9	190.5	37.6	56.6
DF10-6	1359	196	5947	G3/8"	25.4	37.1	63.5	38.1	88.9	190.5	37.6	56.6
DF12-3	680	78	5380	G3/8"	31.8	43.5	63.5	38.1	88.9	190.5	50.3	69.3
DF12-6	1359	188	6796	G3/8"	31.8	43.5	63.5	38.1	88.9	190.5	50.3	69.3
DF15-3	680	51	6796	G3/8"	38.1	49.8	63.5	38.1	88.9	190.5	50.3	69.3
DF15-6	1359	85	7362	G3/8"	38.1	49.8	63.5	38.1	88.9	190.5	50.3	69.3
DF20-3	680	27	8495	G3/8"	50.8	62.5	63.5	38.1	88.9	190.5	63.0	82.0
DF20-6	1359	51	9203	G3/8"	50.8	62.5	63.5	38.1	88.9	190.5	63.0	82.0
DF30-6	1699	24	10619	G1/2"	76.2	87.9	63.5	38.1	88.9	215.9	88.4	113.5
DF40-12	3398	17	16990	G3/4"	101.6	124.2	82.6	50.8	114.3	241.3	125.7	148.6

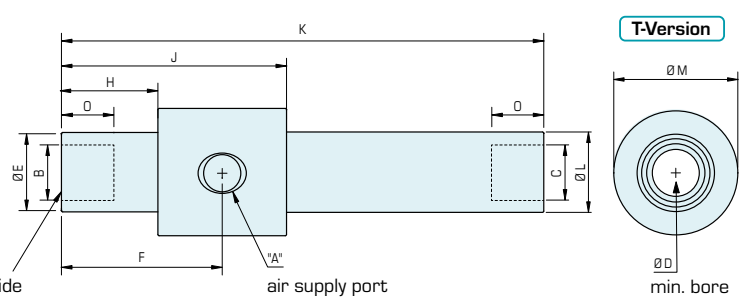
***) T version with internal thread:**

Order-No.	B	C	[mm] O
DF01-3-T	G1/8"	G1/8"	9
DF02-3-T	G1/4"	G1/4"	12
DF03-3-T	G1/4"	G1/4"	12
DF03-6-T	G1/4"	G1/4"	12
DF05-3-T	G1/2"	G1/2"	15
DF05-6-T	G1/2"	G1/2"	15
DF07-3-T	G3/4"	G3/4"	19
DF07-6-T	G3/4"	G3/4"	19
DF10-3-T	G1"	G1"	25
DF10-6-T	G1"	G1"	25

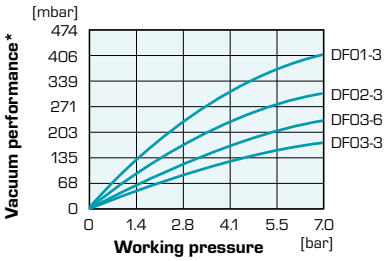
See standard type for more data.

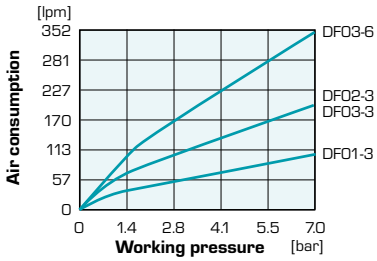
Other versions available on request.

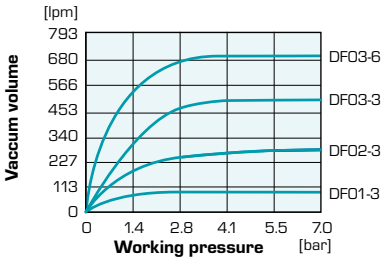
Suitable pressure controllers see "Accessories" on the last pages.

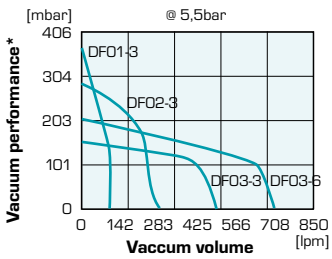


DF01-3, DF02-3, DF03-3, DF03-6

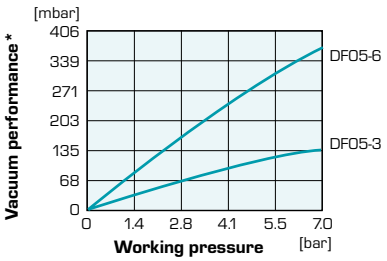


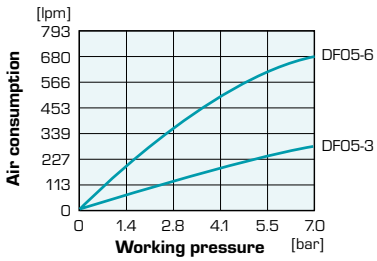


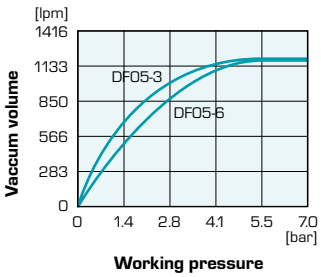


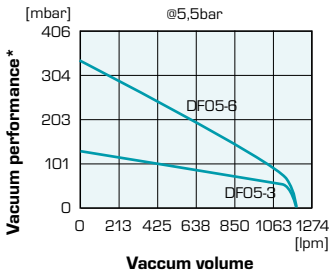


DF05-3, DF05-6

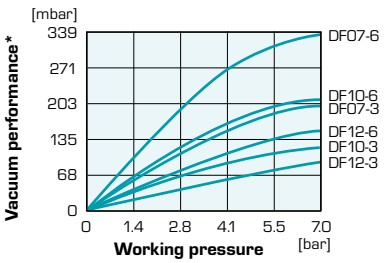


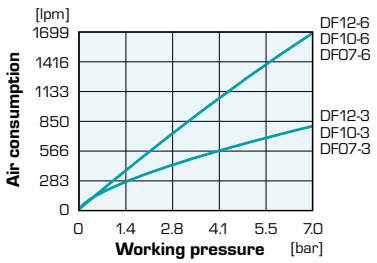


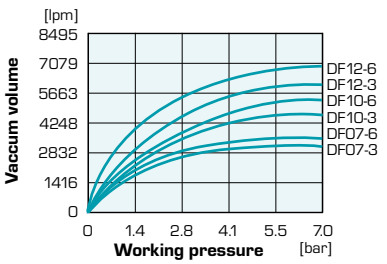


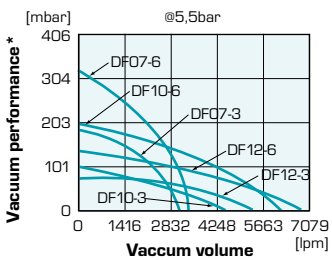


DF07-6, DF10-3, DF10-6, DF12-3, DF12-6



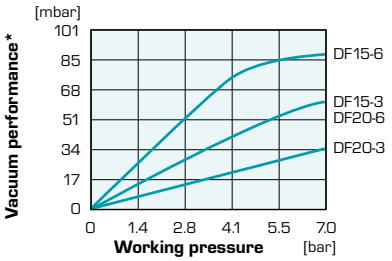


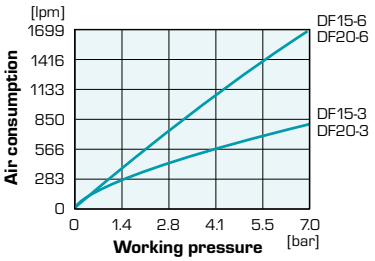


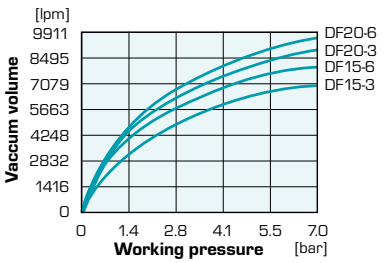


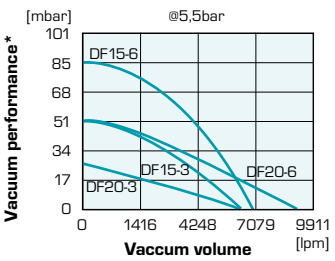
*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

DF15-3, DF15-6, DF20-3, DF20-6

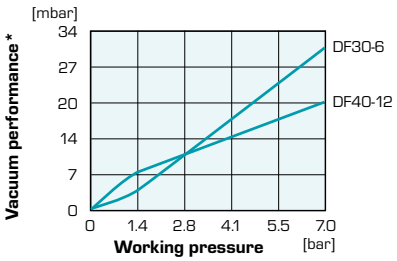


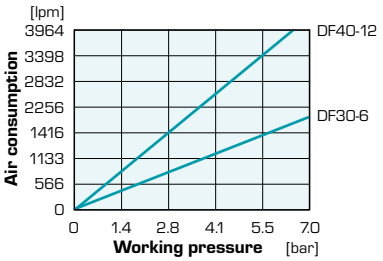


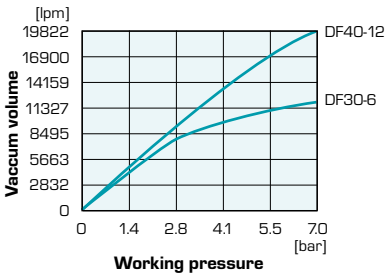


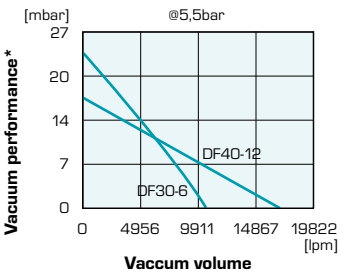


DF30-6, DF40-12









*) Please bear in mind that the vacuum decreases by 12 mbar per each 100 m above sea level.

Vacuum Manometer 1/8“

- For power vacuum ejectors

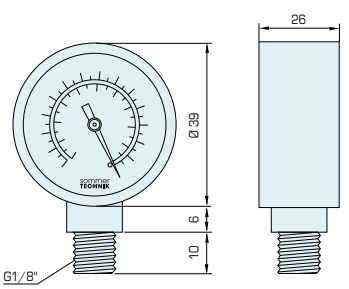
I can see clearly now...

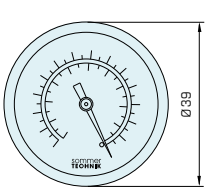
Now you can have the vacuum power level displayed. The handy PMM1/8 (Class 2.5) fits all vacuum power products with a 1/8“ connection.

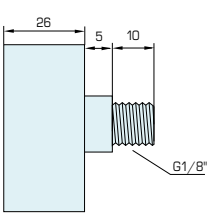
Case materials: plastic/brass

Measuring range: 0 to –1.0 bar
Operating temperature: –20 °C...+60 °C

Order-No.	Size threading	Diameter
PMM1/8	G 1/8”	39 mm
PMM1/4	G 1/4”	62 mm
PMM1/8/01	G 1/8”	39 mm

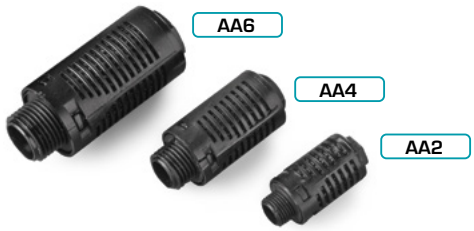






Silencer – Series AA / ST

- For power vacuum ejectors



There is a hissing sound...

when compressed air exhausts. The silencer will help.
The exclusive "whisper silencer" is made of Nylon or aluminum and reduces the noise to an acceptable level.
The aluminum version is open and suitable for transport of solids and liquids.

Operating pressure: 5.5 bar · operating temperature: –10 °C...+80 °C

Plastic PA version, closed, external thread

Order-No.	Noise level [dB]	Thread type	Dimensions A	B [mm]	C [mm]	D [mm]	E [Ø mm]	F [Ø mm]
AA2	58	NPT/ BSPP/ BSPT	Outside Ø 1/8"	5.8	24.6	27.4	9.91	15.5
AA4	62		Outside Ø 1/4"	8.1	32.0	35.3	11.94	19.6
AA6	70		Outside Ø 3/8"	10.4	44.2	47.2	15.75	24.4

Aluminium (or plastic PA*) version, always open, external thread

Order-No.	Noise level [dB]	Thread type	Dimensions A	B [mm]	C [mm]	D [mm]	E [Ø mm]	F [Ø mm]
ST2*	68	NPS M	Outside Ø 1/8"	7.6	16.0	25.4	5.1	16.0
ST4*	68		Outside Ø 1/4"	7.6	37.8	47.2	8.9	19.1
ST4A-2	72		Outside Ø 1/4"	9.4	55.4	65.0	12.7	25.4
ST6A	72		Outside Ø 3/8"	9.7	81.0	90.4	12.7	25.4
ST8A	74		Outside Ø 1/2"	9.7	81.0	90.4	12.7	25.4
ST8B	76		Outside Ø 1/2"	9.7	106.4	122.4	18.3	31.8
ST12C	80		Outside Ø 3/4"	12.7	157.0	176.0	31.8	50.8
ST16C	80		Ø 1" Outside	12.7	157.0	176.0	31.8	50.8

*) ST2, ST4 made of plastic PA

Plastic PA version, always open

Order-No.	Noise level [dB]	Dimensions A	B [mm]	C [mm]	D [mm]	E [Ø mm]	F [Ø mm]
ST-2020	82	Ø 2"	17.8	310.6	328.4	56.1	87.9

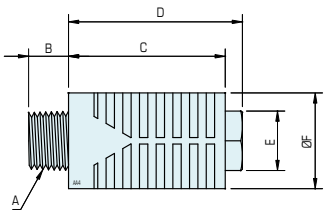
Aluminium version, always open, internal thread

Order-No.	Noise level [dB]	Thread type	Dimensions A	B [mm]	C [mm]	D [Ø mm]	E [Ø mm]
ST4AX	75	NPT F	Inside Ø 1/4"	81.0	90.4	12.7	25.4
ST6BX	77		Inside Ø 3/8"	106.4	122.4	18.3	25.4
ST16FC	80		Inside Ø 1"	162.3	181.4	31.8	50.8
ST24FC	82		Inside Ø 1 1/2"	180.3	199.4	31.8	50.8

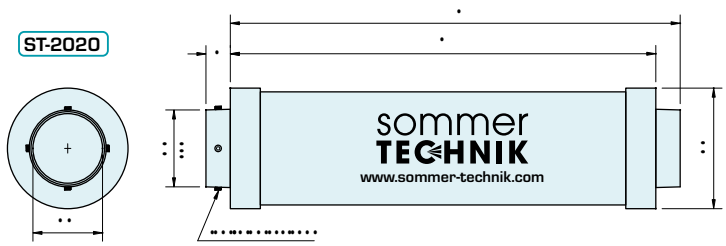
Alu/plastic PA version, closed, external thread

Order-No.	Noise level [dB]	Thread type	Dimensions A	B [mm]	C [mm]	D [mm]	E [Ø mm]
STAA4	58	NPS M	Outside Ø 1/4"	7.6	74.6	SW12	19.6

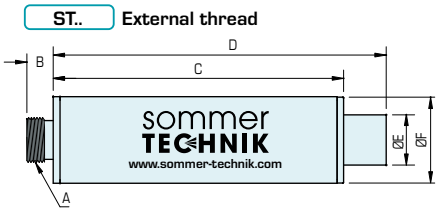
AA..



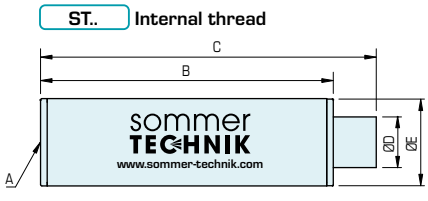
ST-2020



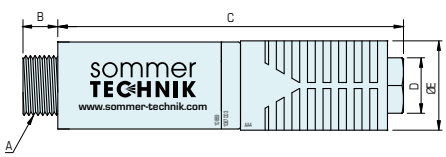
ST.. External thread



ST.. Internal thread



STAA4



Suction Devices – Overview

Properties	Material				
	Nitrile Perbunan – NBR	Silicone SI	Natural rubber NK	High temp HT	Vulkollan® [1] V
Color	black	transparent	grey, light brown	blue	dark green
Abrasion value accord. to DIN 53516 [mm³]	100 – 120 at 55 Shore	180 – 200 at 55 Shore	100 – 120 at 40 Shore	100 – 120 at 60 Shore	10 – 12 at 72 Shore
Temperature range* short-term (< 30 sec.)	–30 °C ... +120 °C	–50 °C ... +220 °C	–35 °C ... +120 °C	–30 °C ... +170 °C	–40 °C ... +100 °C
Temperature range long-term	–10 °C ... +70 °C	–30 °C ... +180 °C	–25 °C ... +80 °C	–10 °C ... +140 °C	–40 °C ... +80 °C
Shore hardness accord. to DIN 53505 A	55 +/–5	55+/–5	45 +/–5	60 +/–5	72
Wear/abrasion resistance	++	+	++	+++	++++
Permanent deformation resistance	++	++	+++	++	++
Ozone resistance	+	++++	++	++++	+++
Oil resistance	++++	+	+	++++	+++
Alcohol/ethanol 96 % resistance	++++	++++	++++	++++	++++
Solvent resistance	++	++	+	++	+
General acid resistance	+	+	++	+	+
Tensile strength	++	+	++	++	++++
suitable for...					
• Edible foods		+			
• Free of imprint marks		+	+	++	++
• Glass/ceramics	++				++
• Metal	+				++
• Rough surfaces, e.g. wood/stone	+		+	+	++
• Cardboard/paper	+	+	+		++
• Plastic	+	+		+	
• CD/DVD	+	+			
• Oily, greasy, lubricated parts	++			++	+
• High temperatures		+		+	++
• High stress					++

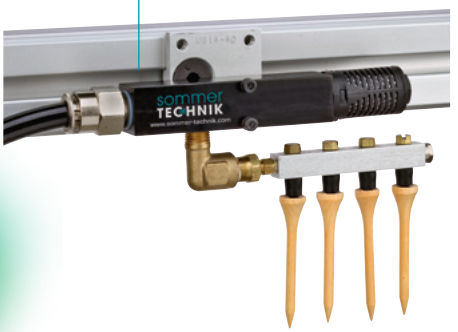
*)in dependence of environmental temperature, contact pressure, and recovery time

[1]) Vulkollan® = Registered Trademark of Bayer AG

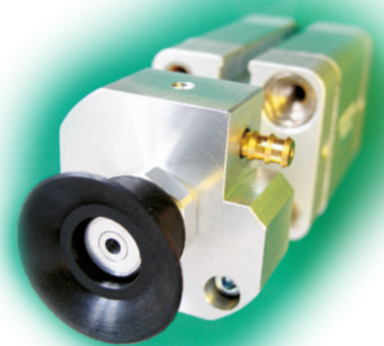
Applications

The power midget transports "power food" (a candy bar)

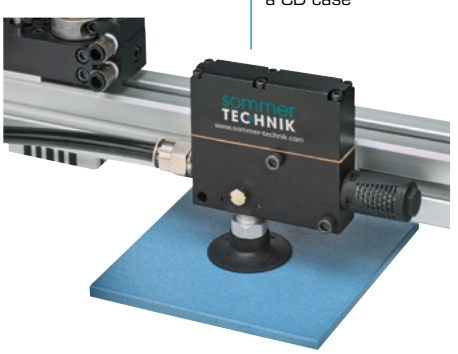
A VP10 multi-handling pins



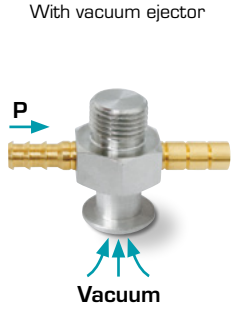
Sensitive handling of a halogen bulb



VP2X handles a CD case



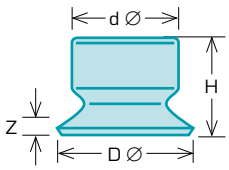
Suction Cup – Series SG...

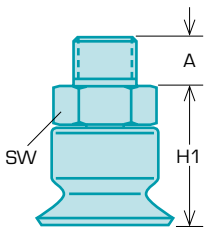


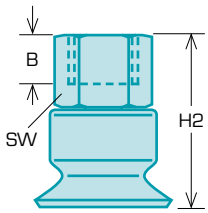
Suction cups				Matching adapters					
D Ø [mm]	Perbunan [SGN...] 55 ± 5 ShA Order-No.	Silicone [SGS...] 55 ± 5 ShA Order-No.	High temp HT [SGT...] 60 ± 5 ShA Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside thread.
2	SGN 02	SGS 02	–	SAAM 3	M3	–	–	–	–
3.5	SGN 03.5	SGS 03.5	–						
5	SGN 05	SGS 05	SGT 05	SAA 18	G1/8"	SIA 18	G1/8"	SVA 18	G1/8"
6	SGN 06	SGS 06	SGT 06						
8	SGN 08	SGS 08	SGT 08						
10	SGN 10	SGS 10	SGT 10						
15	SGN 15	SGS 15	SGT 15	SAB 18	G1/8"	SIB 18	G1/8"	SVB 18	G1/8"
20	SGN 20	SGS 20	SGT 20	SAC 18	G1/8"	SIC 18	G1/8"	SVC 18	G1/8"
25	SGN 25	SGS 25	SGT 25	SAD 18	G1/8"	SID 18	G1/8"	SVD 18	G1/8"
30	SGN 30	SGS 30	SGT 30						
35	SGN 35	SGS 35	SGT 35						
40	SGN 40	SGS 40	SGT 40						
50	SGN 50	SGS 50	SGT 50	SAE 18	G1/8"	SIE 18	G1/8"	SVE 18	G1/8"
60	SGN 60	SGS 60	SGT 60	SAF 14	G1/4"	SIF 14	G1/4"	SVF 14	G1/4"
80	SGN 80	SGS 80	SGT 80						
95	SGN 95	SGS 95	–						

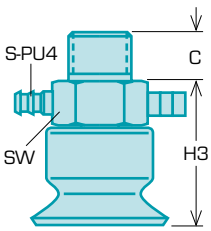
The blue model HT (high temperature material) leaves no imprints and is especially suitable for plastics, oily surfaces, and porous materials like stone and wood.
Also refer to the material overview at the beginning of the Chapter. Matching stroke cylinders are available on the following pages.

Installation dimensions + forces









D Ø [mm]	dØ [mm]	Force (N)	Volume [cm³]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
2	2.0	0.12	0.001	4.0	6.0	–	–	3.0	–	–	5	0.5
3.5	2.0	0.42	0.002	4.0	6.0	–	–	3.0	–	–	5	0.5
5	7.5	0.75	0.005	6.5	11.5	27.5	14.5	8.0	9.0	8.0	14	0.9
6	7.5	1.2	0.008	6.5	11.5	27.5	14.5	8.0	9.0	8.0	14	1.0
8	8.0	2.3	0.030	7.0	12.0	23.0	15.0	8.0	9.0	8.0	14	1.4
10	8.5	4.0	0.070	7.5	12.5	23.5	15.5	8.0	9.0	8.0	14	1.3
15	12.0	9.0	0.400	8.0	13.0	24.0	16.0	8.0	9.0	8.0	14	1.9
20	12.0	15.5	0.800	10.0	15.0	26.0	18.0	8.0	9.0	8.0	14	2.3
25	13.0	26.5	1.300	14.0	19.0	30.0	23.0	8.0	9.0	8.0	14	3.0
30	11.0	34.0	1.300	12.0	17.0	28.0	20.0	8.0	9.0	8.0	14	2.0
35	18.0	44.0	2.700	14.0	19.0	30.0	22.0	8.0	9.0	8.0	14	3.0
40	21.0	57.7	3.800	14.0	19.0	30.0	22.0	8.0	9.0	8.0	14	3.5
50	23.0	91.0	7.000	15.0	20.0	31.0	23.0	8.0	9.0	8.0	14	4.0
60	38.5	125.0	10.000	16.0	21.0	37.0	24.0	10.0	11.0	10.0	17	5.0
80	53.0	260.0	25.000	18.0	23.0	39.0	26.0	10.0	11.0	10.0	17	6.0
95	68.0	350.0	35.000	18.5	23.5	39.5	26.5	10.0	11.0	10.0	17	6.0

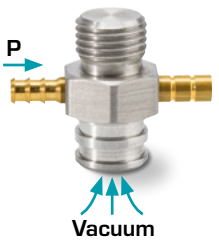
*) Z = Working stroke

The suction cups lift, grip, and transport parts. Our suction cups are available in oil-resistant Perbunan (NBR, balck) or temperature-resistant food safe Silicone (up to +200 °C, white-transparent). They can be pushed onto the adapters or the vacuum ejectors very easily. Vacuum ejector SV can turn compressed air into vacuum power. The suction and release functions are activated without delay. When several suction cups are used this system offers additional safety, because the vacuum power for each of the suction cups is created individually. We especially recommend this reasonably priced solution for short cycle times.

Order example: SGN 50 + SAE 18

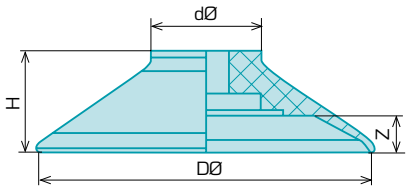
Suction Cup Vulkollan® [1] – Series SGV...

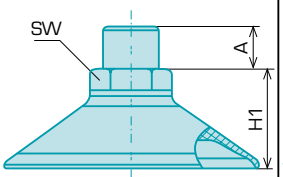
With vacuum ejector

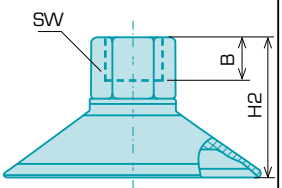


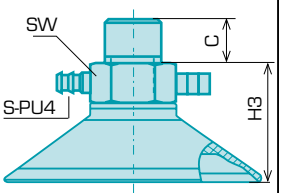
Suction cups		Matching adapters					
D Ø [mm]	Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside thread.
15.0	SGV 15	SAB 18	G1/8"	SIB 18	G1/8"	SVB 18	G1/8"
30.0	SGV 30	SAD 18	G1/8"	SID 18	G1/8"	SVD 18	G1/8"
50.0	SGV 50	SAN 14	G1/4"	SIN 14	G1/4"	SVN 14	G1/4"
61.5	SGV 60						
81.5	SGV 80	SAP 14	G1/4"	SIP 14	G1/4"	SVP 14	G1/4"
96.5	SGV 95						

Installation dimensions + forces









D Ø [mm]	dØ [mm]	Force (N)	Volume (cm³)	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
15.0	11.5	8.5	0.5	9.5	14.5	25.5	17.5	8.0	9.0	8.0	14	1.5
30.0	16.0	32.0	1.7	13.0	18.0	29.0	21.0	8.0	9.0	8.0	14	3.0
50.0	18.0	95.0	6.0	17.0	22.0	32.0	23.5	10.0	12.0	8.5	17	4.5
61.5	20.0	130.0	15.0	18.5	23.5	33.5	25.0	10.0	12.0	8.5	17	6.0
81.5	25.0	260.0	30.0	25.0	30.0	40.0	31.5	10.0	12.0	8.5	22	6.0
96.5	31.0	350.0	42.0	25.0	30.0	40.0	31.5	10.0	12.0	8.5	22	6.0

*) Z = Working stroke

The Methuselah of suction cups...

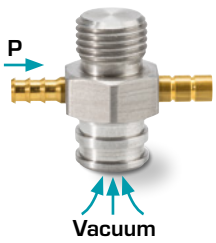
made of highly wear-resistant hightech elastomer has a life expectancy and durability 20 times that of "normal suction cups". This results in reduced maintenance intervals, which saves both time and money. The ideal solution to achieve high cycle rates for multi-shift operation of (almost) maintenance-free mechanical equipment in far away countries. The hard working SGV is highly suitable for implementation in tough surrounding, such as e.g. the wood and paper industry or metal machining and sheet metal forming.
You can simply push the SGV suction cup onto the adapter or vacuum ejector. The vacuum ejector SV turns compressed air into vacuum air. Suction and release take place quickly and without delay. If several suction cups are used, this system offers added safety because the vacuum power for each suction cup is created separately. We especially recommend this convenient solution for short cycle times.
Information about the technical features is available in our material overview at the front of the chapter; suitable stroke cylinders are shown on the following pages.

Order example: SGV50 + SIN14
Suction cup and adapter with internal thread.

[1] Vulkollan® = Registered Trademark of Bayer AG

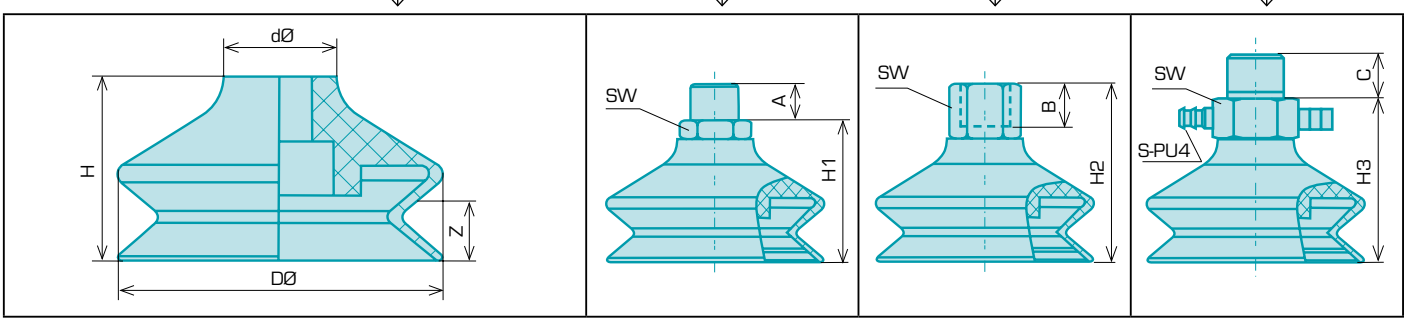
Suction Cup Vulkollan® [1] – Series SHV...

With vacuum ejector



Suction cups		Matching adapters					
D Ø [mm]	Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside thread.
30	SHV 30	SAR 14	G1/4“	SIR 14	G1/4“	SVR 14	G1/4“
40	SHV 40	SAN 14	G1/4“	SIN 14	G1/4“	SVN 14	G1/4“
50	SHV 50						
60	SHV 60	SAS 14	G1/4“	SIS 14	G1/4“	SVS 14	G1/4“
85	SHV 85	SAT 14	G1/4“	SIT 14	G1/4“	SVT 14	G1/4“

Installation dimensions + forces



D Ø [mm]	dØ [mm]	Force (N)	Volume (cm³)	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
30	18.0	13.5	4.2	27.0	32.0	42.0	33.5	10.0	12.0	8.5	17	8.5
40	14.0	33.0	11.3	27.0	32.0	42.0	33.5	10.0	12.0	8.5	17	12.8
50	17.5	52.0	22.6	32.5	37.5	47.5	39.0	10.0	12.0	8.5	17	14.5
60	21.0	75.0	31.0	34.0	39.0	49.0	40.5	10.0	12.0	8.5	17	12.5
85	25.0	140.0	78.0	47.0	52.0	62.0	53.5	10.0	12.0	8.5	22	15.0

*) Z = Working stroke

The Methuselah of suction cup with a fold...

made of highly wear-resistant hightech elastomer has a life expectancy and durability 20 times that of “normal suction cups“. This results in reduced maintenance intervals, which saves both time and money. The ideal solution to achieve high cycle rates for multi-shift operation of (almost) maintenance-free mechanical equipment in far away countries. The integrated fold is a great help to compensate differences in height and ensures good adaptation. The hard working SHV is highly suitable for implementation in tough surrounding, such as e.g. the wood and paper industry or metal machining and sheet metal forming. You can simply push the SHV suction cup onto the adapter or vacuum ejector. The vacuum ejector SV turns compressed air into vacuum air. Suction and release take place quickly and without delay. If several suction cups are used, this system offers added safety because the vacuum power for each suction cup is created separately. We especially recommend this convenient solution for short cycle times. Information about technical features is available in our material overview at the front of the chapter; suitable stroke cylinders are shown on the following pages.

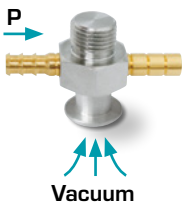
Order example: SHV30 + SAR14
Suction cup and adapter with external thread.

[1] Vulkollan® = Registered Trademark of Bayer AG

Bellowed Suction Cup 1.5 Folds – Series SH...



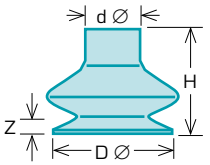


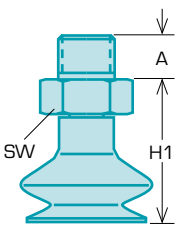



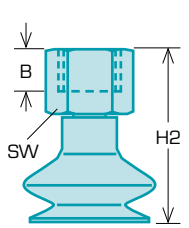
	Suction cups				Matching adapters					
D Ø mm	Perbunan [SHN...] [55 ± 5 ShA] Order-No.	Silicone [SHS...] [55 ± 5 ShA] Order-No.	Rubber [SHK...] [45 ± 5 ShA] Order-No.	High temp HT [SHT...] [60 ± 5 ShA] Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside threading
11	SHN 11	SHS 11	SHK 11	SHT 11	SAG 18	G1/8"	SIG 18	G1/8"	SVG 18	G1/8"
14	SHN 14	SHS 14	SHK 14	SHT 14						
16	SHN 16	SHS 16	SHK 16	SHT 16						
20	SHN 20	SHS 20	SHK 20	SHT 20						
22	SHN 22	SHS 22	SHK 22	SHT 22						
25	SHN 25	SHS 25	SHK 25	SHT 25						
33	SHN 33	SHS 33	SHK 33	SHT 33	SAG 14	G1/4"	SIG 14	G1/4"	SVG 14	G1/4"
43	SHN 43	SHS 43	SHK 43	SHT 43						
53	SHN 53	SHS 53	SHK 53	SHT 53						
63	SHN 63	SHS 63	SHK 63	–						

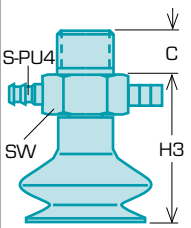
The blue model HT (high temperature material) leaves no imprints and is especially suitable for plastics, oily surfaces, and porous materials like stone and wood.
Also refer to the material overview at the beginning of the Chapter.
Matching stroke cylinders are available on the following pages.

Installation dimensions + forces









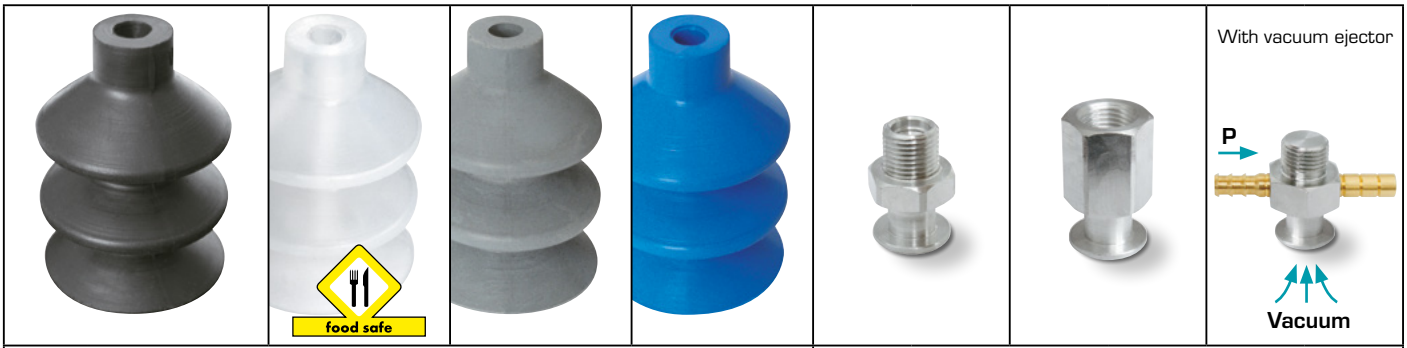
D Ø [mm]	d Ø [mm]	Force [N]	Volume [cm³]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
11	10.0	0.95	0.225	16.0	22.0	28.0	24.0	7.5	8.0	7.5	14	4.0
14	10.0	1.2	0.420	16.0	22.0	28.0	24.0	7.5	8.0	7.5	14	5.0
16	10.0	2.3	0.750	19.0	25.0	31.0	27.0	7.5	8.0	7.5	14	6.0
20	10.0	4.7	1.150	15.5	21.5	27.5	23.5	7.5	8.0	7.5	14	5.0
22	10.0	5.7	1.400	19.0	25.0	31.0	27.0	7.5	8.0	7.5	14	5.0
25	10.0	5.3	3.150	23.0	29.0	35.0	31.0	7.5	8.0	7.5	14	12.0
33	18.0	13.6	4.750	27.0	31.0	42.0	35.0	11.0	10.0	11.0	17	12.0
43	18.0	22.8	9.250	28.0	32.0	43.0	36.0	11.0	10.0	11.0	17	10.0
53	18.0	51.3	26.150	34.0	38.0	49.0	42.0	11.0	10.0	11.0	17	15.0
63	18.0	85.0	39.000	34.0	38.0	49.0	42.0	11.0	10.0	11.0	17	15.0

*) Z = Working stroke

Nobody likes wrinkles! But for these suction cups they are of an advantage. They compensate differences in height, and provide good adaptation. Stroke "Z" suctions the work piece, and that could eventually make an additional stroke cylinder obsolete.
The bellowed suction cups are available in oil-resistant Perbunan (NBR, black), temperature resistant food safe Silicone (up to +200 °C, white-transparent), or natural rubber (grey) with a soft consistency like 45 Shore, especially suitable for uneven problematic surfaces.
The suction cups can be plugged onto the adapters or the vacuum ejectors very easily.

Order example: SHS 25 + SIG 18

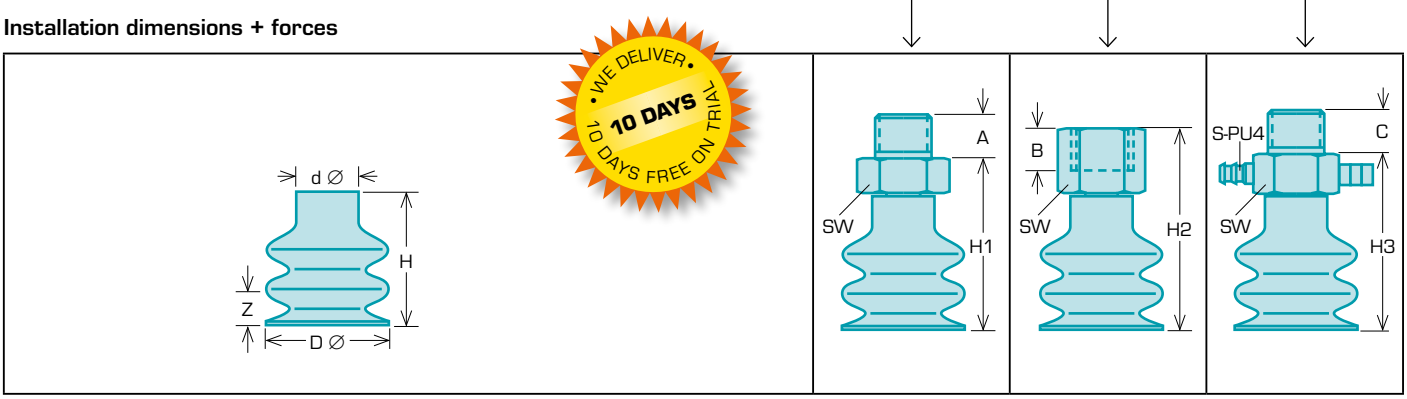
Bellowed Suction Cup 2.5 Folds – Series SR...



Suction cups					Matching adapters					
D Ø [mm]	Perbunan [SRN...] [55 ± 5 ShA] Order-No.	Silicone [SRS...] [55 ± 5 ShA] Order-No.	Rubber [SRK...] [45 ± 5 ShA] Order-No.	High temp HT [SRT...] [60 ± 5 ShA] Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside threading
7	SRN 07	SRS 07	–	–	SAG 18	G1/8"	SIG18	G1/8"	SVG 18	G1/8"
9	SRN 09	SRS 09	SRK 09	SRT 09						
12	SRN 12	SRS 12	SRK 12	SRT 12						
14	SRN 14	SRS 14	SRK 14	SRT 14						
18	SRN 18	SRS 18	SRK 18	SRT 18						
20	SRN 20	SRS 20	SRK 20	SRT 20						
25	SRN 25	SRS 25	SRK 25	SRT 25						
32	SRN 32	SRS 32	SRK 32	SRT 32	SAG 14	G1/4"	SIG 14	G1/4"	SVG 14	G1/4"
42	SRN 42	SRS 42	SRK 42	SRT 42						
52	SRN 52	SRS 52	–	–						
62	SRN 62	SRS 62	SRK 62	–						

The blue model HT (high temperature material) leaves no imprints and is especially suitable for plastics, oily surfaces, and porous materials like stone and wood.
Also refer to the material overview at the beginning of the Chapter.
Matching stroke cylinders are available on the following pages.

Installation dimensions + forces



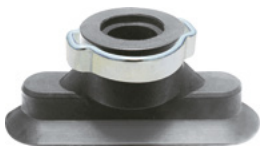
D Ø [mm]	d Ø [mm]	Force [N]	Volume [cm³]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
7	9.0	0.1	0.043	14.0	20.0	26.0	22.0	7.5	8.0	7.5	14	4.0
9	9.0	0.7	0.150	15.0	21.0	27.0	23.0	7.5	8.0	7.5	14	3.0
12	10.0	0.9	0.600	21.0	27.0	33.0	29.0	7.5	8.0	7.5	14	6.0
14	10.0	1.2	0.975	22.0	28.0	34.0	30.0	7.5	8.0	7.5	14	8.0
18	10.0	2.3	1.350	22.0	28.0	34.0	30.0	7.5	8.0	7.5	14	8.0
20	10.0	3.8	2.000	22.0	28.0	34.0	30.0	7.5	8.0	7.5	14	8.0
25	10.0	4.5	5.400	34.0	40.0	46.0	42.0	7.5	8.0	7.5	14	20.0
32	18.0	12.0	10.000	37.5	41.5	49.5	45.5	11.0	10.0	11.0	17	16.5
42	18.0	13.6	19.500	46.0	50.0	61.0	54.0	11.0	10.0	11.0	17	23.0
52	18.0	27.0	62.000	49.0	53.0	64.0	57.0	11.0	10.0	11.0	17	27.0
62	22.0	39.6	72.500	55.0	59.0	70.0	63.0	11.0	10.0	11.0	17	29.0

*) Z = Working stroke

Nobody likes wrinkles! But they are very desirable on these suction cups. They compensate for deviations in height, and provide good adaptation. The part is suctioned with stroke "Z". This can make one additional stroke cylinder obsolete. The bellowed suction cups are available in oil-resistant Perbunan (NBR, black), temperature-resistant food safe Silicone (up to +200 °C, white-transparent), or a natural rubber (grey) with a soft consistency like 45 Shore, especially suitable for uneven problematic surfaces. The suction cups can be pushed onto the adapters or vacuum ejectors very easily.

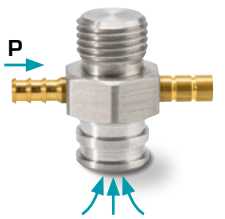
Order-example: SRN 32 + SVG 14

Suction Cup oval – Series SO...





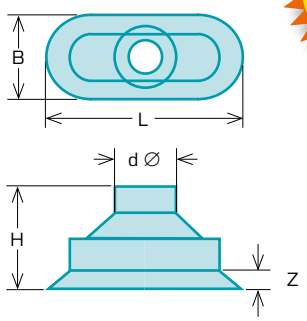


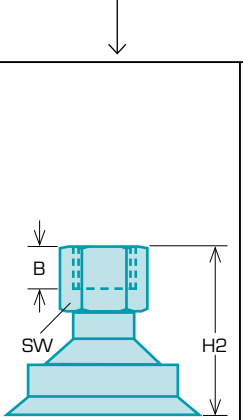


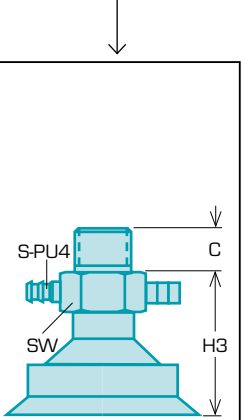
Suction cups				Matching adapters					
Dim. B x L [mm]	Perbunan [SON...] [60 ± 5 ShA] Order-No.	Silicone [SOS...] [65 ± 5 ShA] Order-No.	High temp HT [SOT...] [60 ± 5 ShA] Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside threading
3.5 x 7	SON 03	SOS 03-W	SOT 03	SAAM 3	M3	–	–	–	–
4 x 12	SON 04	SOS 04-W	SOT 04	SAOM 5	M5	–	–	–	–
5 x 15	SON 05	SOS 05-W	SOT 05	SAWM 5	M5	SIWM 5	M5	–	–
6 x 18	SON 06	SOS 06-W	SOT 06						
8 x 24	SON 08	SOS 08-W	SOT 08	SAH 18	G1/8"	SIH 18	G1/8"	SVH 18	G1/8"
10 x 30	SON 10	SOS 10-W	SOT 10						
15 x 45	SON 15	SOS 15-W	SOT 15	SAK 14	G1/4"	SIK 14	G1/4"	SVK 14	G1/4"
20 x 60	SON 20	SOS 20-W	SOT 20						
25 x 75	SON 25	SOS 25-W	SOT 25						
30 x 90	SON 30	SOS 30-W	–						

The blue model HT (high temperature material) leaves no imprints and is especially suitable for plastics, oily surfaces, and porous materials like stone and wood.
For suction cup sizes 8 x 24 and larger, a 2-ear clamp is included in the delivery.
Also refer to the material overview at the beginning of the Chapter.
Matching stroke cylinders are available on the following pages.

Installation dimensions + forces







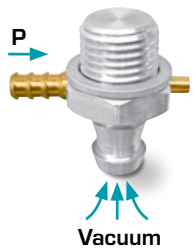
W x L [mm]	d Ø [mm]	Force [N]	Volume [cm³]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
3.5 x 7	6.0	1.0	0.019	6.0	8.0	–	–	3.0	–	–	5	0.8
4 x 12	8.0	1.8	0.048	15.0	18.0	–	–	4.5	–	–	8	0.5
5 x 15	8.5	3.1	0.036	12.0	17.0	22.0	–	5.0	5.5	–	8	0.7
6 x 18	8.5	4.5	0.058	12.0	17.0	22.0	–	5.0	5.5	–	8	0.8
8 x 24	11.5	8.0	0.138	12.0	17.0	25.0	20.0	8.0	8.0	8.0	14	1.0
10 x 30	11.5	12.2	0.280	12.0	17.0	25.0	20.0	8.0	8.0	8.0	14	1.5
15 x 45	15.5	28.2	0.980	21.0	26.0	36.0	29.0	10.0	12.0	10.0	17	2.0
20 x 60	15.5	50.1	2.300	21.0	26.0	36.0	29.0	10.0	12.0	10.0	17	2.5
25 x 75	17.5	78.3	4.700	21.0	26.0	36.0	29.0	10.0	12.0	10.0	17	2.8
30 x 90	17.5	112.6	8.500	21.0	26.0	36.0	29.0	10.0	12.0	10.0	17	3.5

*) Z = Working stroke

Oval suction cups are ideal for long profiles, pipes, and parts with bars or grooves in between a number of holes. The clamp included in the delivery fixes the suction cup in place and prevents it from twisting and suctioning improperly. The oval suction cups are available in oil-resistent Perbunan (NBR, black), temperature-resistant food safe Silicone (up to +200 °C, white transparent). The blue model HT (high temperature material) leaves little imprint and is especially suitable for plastics, oily surfaces, and porous materials like stone and wood. Also refer to the material overview at the beginning of the Chapter. The suctions cups can be plugged on the adapters or vacuum ejectors very easily and be fixed in place with the clamp.

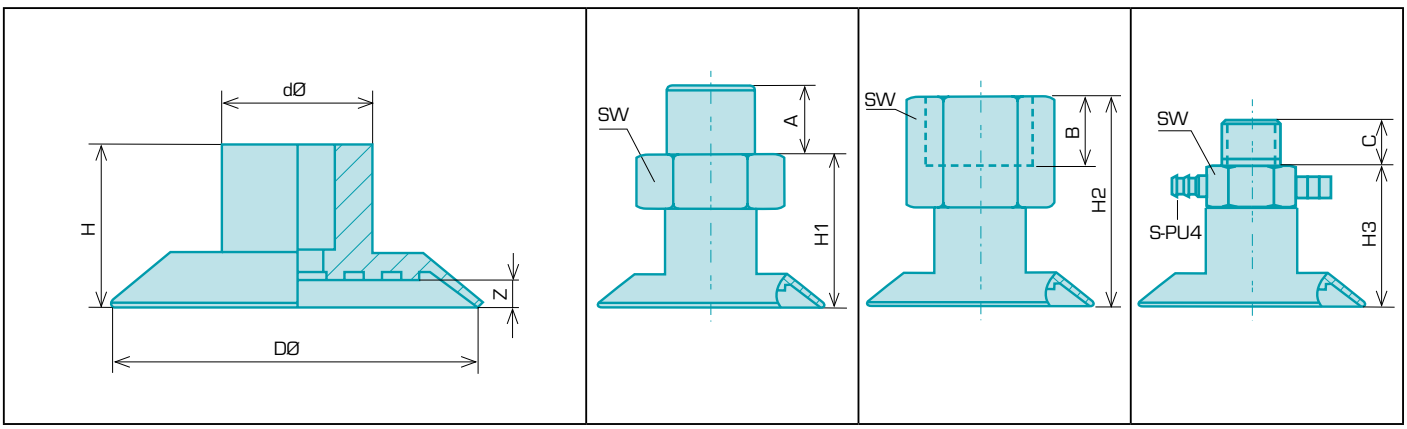
Order example: SON15 + SIK14

Suction Cup – Series SP...



Suction cups			Matching adapters					
D Ø [mm]	Natural rubber [SPK...] [40 ± 5 ShA] Order-No.	Silicone [SPS...] [50 ± 5 ShA] Order-No.	Order-No.	Outside threading	Order-No.	Inside threading	Order-No.	With vacuum ejector outside threading
15	SPK 15	SPS 15	SAG 18	G1/8"	SIG 18	G1/8"	SVG 18	G1/8"
20	SPK 20	SPS 20						
24	SPK 24	SPS 24						
30	SPK 30	SPS 30	SAL 14	G1/4"	SIL 14	G1/4"	SVL 14	G1/4"
34	SPK 34	–						
40	SPK 40	–	SAM 14	G1/4"	SIM 14	G1/4"	SVM 14	G1/4"

Installation dimensions + forces



D Ø [mm]	d Ø [mm]	Force [N]	Volume [cm³]	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	A [mm]	B [mm]	C [mm]	SW [mm]	Z* [mm]
15	9.0	5.5	0.12	10.0	16.0	22.0	18.0	5.0	8.0	5.0	14	0.8
20	10.5	8.5	0.31	10.4	16.4	22.4	18.4	7.5	8.0	7.5	14	1.3
24	10.0	11.0	0.70	10.8	16.8	22.8	18.8	7.5	8.0	7.5	14	1.8
30	15.6	19.0	1.50	22.2	27.2	37.2	28.7	10.0	12.0	8.5	17	2.3
34	15.2	25.0	2.10	23.0	28.0	38.0	29.5	10.0	12.0	8.5	17	2.3
40	16.0	33.0	2.90	20.6	25.6	35.6	27.1	10.0	12.0	8.5	17	2.3

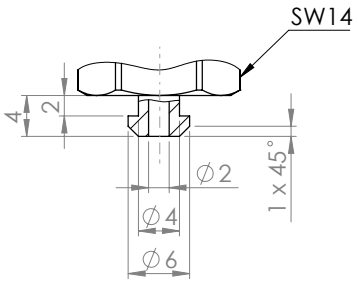
*) Z = Working stroke

The paper collector...

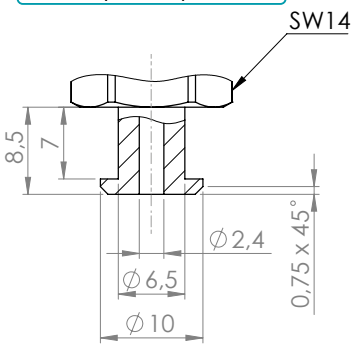
also handles foils, veneers, and other flat parts – because the fine sealing lip and the inside support structure help it to perfectly adapt to plane surfaces with an anti-wrinkle guarantee. It even handles highly sensitive solar cells and computer parts gently and safely. It is available in a natural rubber (40 Shore) or a heat-resistant silicone (50 Shore). You can simply push the SPK suction cup onto the adapter or vacuum ejector. The vacuum ejector SV turns compressed air into vacuum air. Suction and release take place quickly and without delay. If several suction cups are used, this system offers added safety because the vacuum power for each suction cup is created separately. We especially recommend this convenient solution for short cycle times.
Information about technical features is available in our material overview at the front of the chapter; suitable stroke cylinders are shown on the following pages.

Order example: SPK24 + SAG18
Suction cup and adapter with external thread.

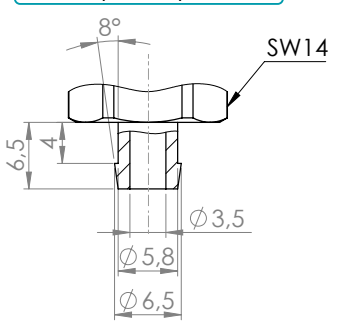
SAA18 / SIA18 / SVA18



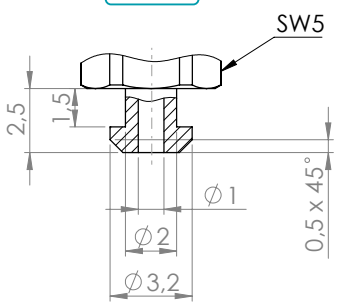
SAD18 / SID18 / SVD18



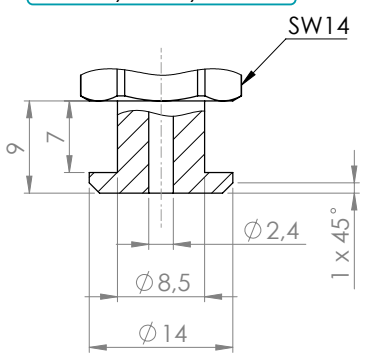
SAG18 / SIG18 / SVG18



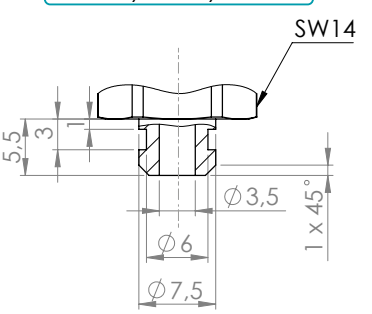
SAAM3



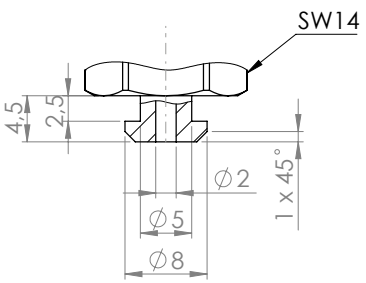
SAE18 / SIE18 / SVE18



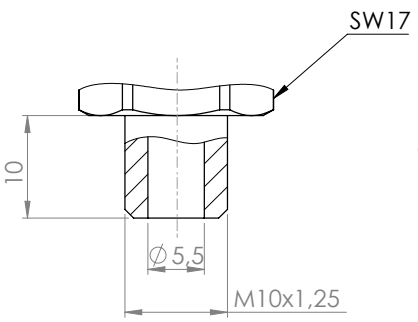
SAH18 / SIH18 / SVH18



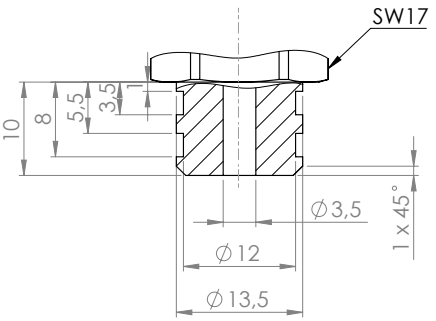
SAB18 / SIB18 / SVB18



SAF14 / SIF14 / SVF14



SAK14 / SIK14 / SVK14



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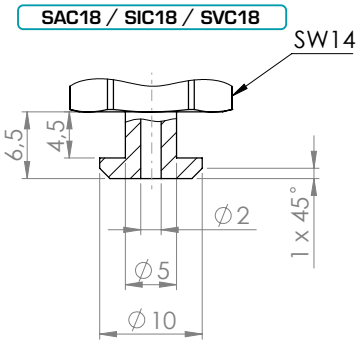
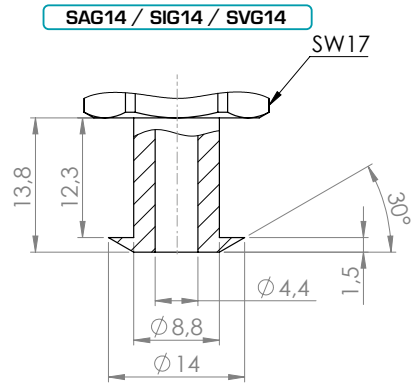


SAG14 / SIG14 / SVG14



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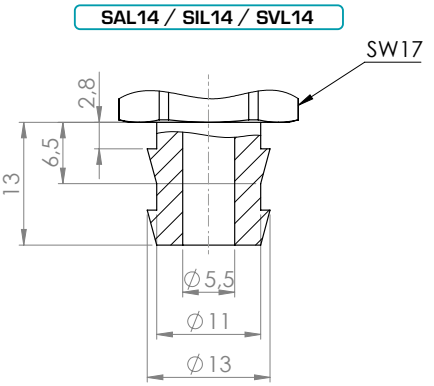
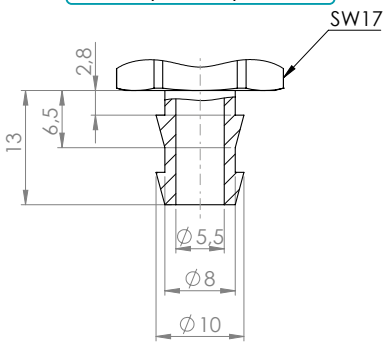


SAM14 / SIM14 / SVM14



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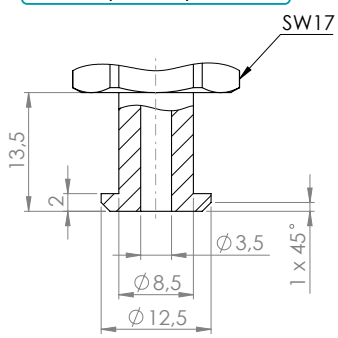

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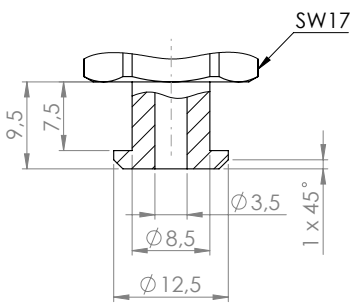
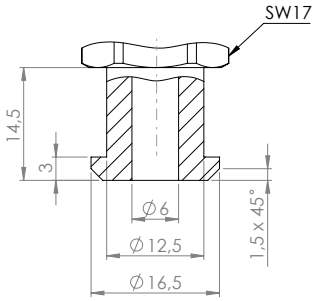
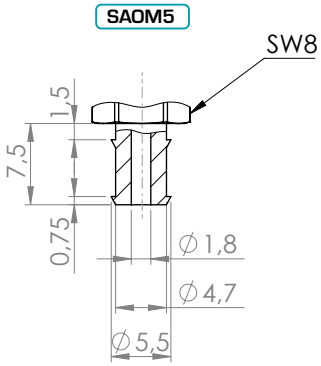


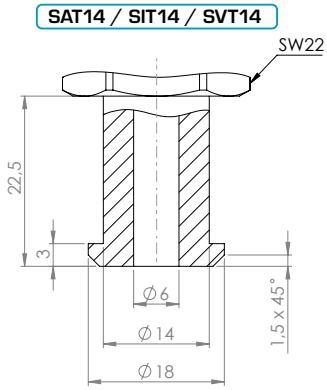
SAS14 / SIS14 / SVS14



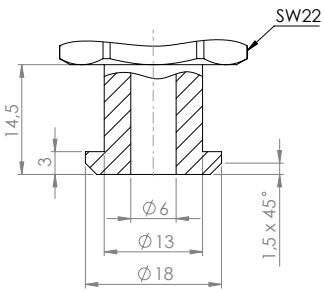
SAOM5



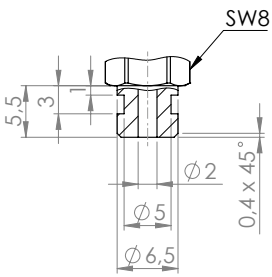
SAT14 / SIT14 / SVT14



SAP14 / SIP14 / SVP14



SAWM5 / SIWM5



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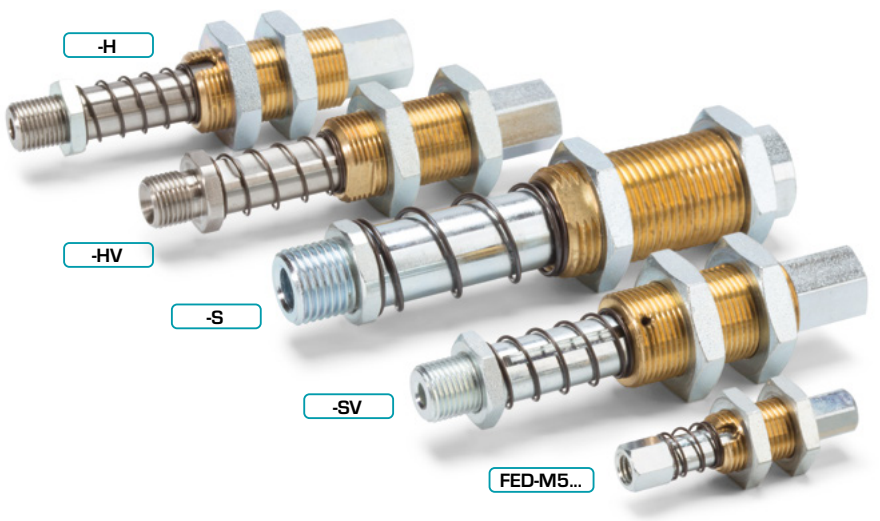
Spring Plunger for 1/8“ or 1/4“ Connection (up to 75 mm Stroke)

These standard spring plungers (S versions) can be used for tolerance compensation on workpieces of different height (up to 75 mm). They fit on all adapters with internal thread (SI adapters).

For tougher strains we recommend our high-grade versions **(H versions)** with solid slide bearing and polished push rod for a smooth contact with delicate workpieces.

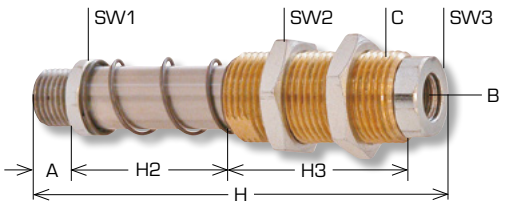
Optionally we deliver the spring plungers **with a twist-proof locking device** for using oval suction cups **(V variants). Please add “V“ to order code.**

Order example for twistproof model versions:
FED-1825-HV



Order-No.	Plunger stroke [mm]	Size threading	Spring rate [N/mm]	Spring pretension [N]	Spring force [N]	Vertical force** [N]	Horizontal force*** [N]
FED-M505-S	5	M5	0.508	3.30	4.57	1500	132
FED-M510-S	10	M5	0.323	2.75	4.36	1500	97
FED-M520-S	20	M5	0.209	1.78	3.87	1500	63
FED-1815-S	15	G1/8“	0.221	3.53	5.19	3700	385
FED-1815-H	15	G1/8“	0.221	3.53	5.19	3700	385
FED-1825-S*	25	G1/8“	0.143	3.57	5.36	3700	283
FED-1825-H	25	G1/8“	0.143	3.57	5.36	3700	283
FED-1850-S	50	G1/8“	0.097	2.92	5.34	3700	173
FED-1850-H	50	G1/8“	0.097	2.92	5.34	3700	173
FED-1425-S	25	G1/4“	0.711	6.47	15.36	2400	747
FED-1425-H	25	G1/4“	0.711	6.47	15.36	2400	747
FED-1450-S*	50	G1/4“	0.452	1.40	12.70	2400	466
FED-1450-H	50	G1/4“	0.452	1.40	12.70	2400	466
FED-1475-S	75	G1/4“	0.262	5.38	15.20	2400	340
FED-1475-H	75	G1/4“	0.262	5.38	15.20	2400	340

Application temperature 0 °C to +80 °C
* No torsion-proof version available.
** Maximum static load.
*** The horizontal load is a maximum static load that impairs the deflection and rebound process in horizontal state.



Type	H [mm]	H2 [mm]	H3 [mm]	A	B	C	SW1 [mm]	SW2 [mm]	SW3 [mm]	Z* [mm]
FED-M505-S	41.2	17.0	15	M5 IG	M5 IG	G1/8	7	14	7	5
FED-M510-S	47.2	23.0	15	M5 IG	M5 IG	G1/8	7	14	7	10
FED-M520-S	59.2	35.0	15	M5 IG	M5 IG	G1/8	7	14	7	20
FED-1815-S	73.5	29.5	30	G1/8 AG	G1/8 IG	M16x1	14	22	12	15
FED-1815-H	72.5	28.5	30	G1/8 AG	G1/8 IG	M16x1	14	22	12	15
FED-1825-S*	86.5	42.5	30	G1/8 AG	G1/8 IG	M16x1	14	22	12	25
FED-1825-H	85.5	41.5	30	G1/8 AG	G1/8 IG	M16x1	14	22	12	25
FED-1850-S	117.5	73.5	30	G1/8 AG	G1/8 IG	M16x1	14	22	12	50
FED-1850-H	116.5	72.5	30	G1/8 AG	G1/8 IG	M16x1	14	22	12	50
FED-1425-S	86.0	40.5	40	G1/4 AG	G1/8 IG	M20x1.5	17	24	17	25
FED-1425-H	86.0	40.5	40	G1/4 AG	G1/8 IG	M20x1.5	17	24	17	25
FED-1450-S*	115.5	70.0	40	G1/4 AG	G1/8 IG	M20x1.5	17	24	17	50
FED-1450-H	115.5	70.0	40	G1/4 AG	G1/8 IG	M20x1.5	17	24	17	50
FED-1475-S	145.0	99.5	40	G1/4 AG	G1/8 IG	M20x1.5	17	24	17	75
FED-1475-H	145.5	100.0	40	G1/4 AG	G1/8 IG	M20x1.5	17	24	17	75

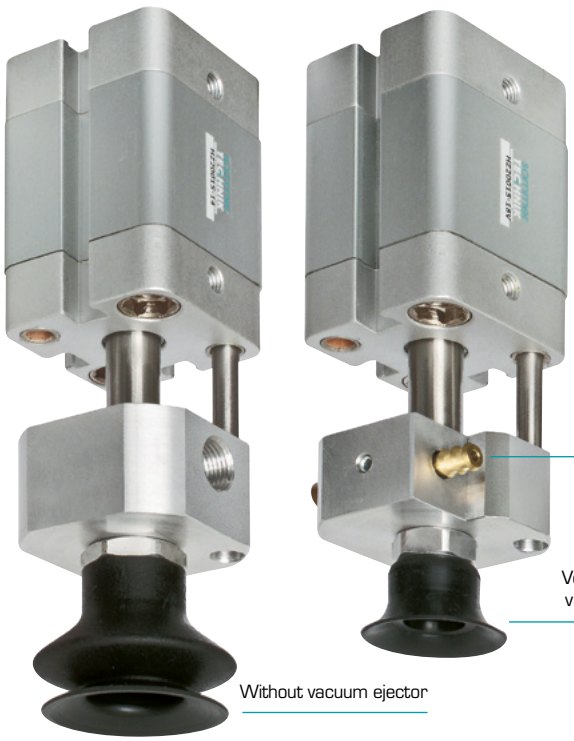
*) Z = Working stroke • IG = Internal thread • AG = External thread

Suction Lifting Cylinder – Series HZ20

The suction stroke cylinder...

is a simple and reasonably priced component with a lot of automation.
It is torsion-proof and has a universal holder for all our suction cup models with a 1/8" or 1/4" outside fitting (SG..., SH..., SO..., and SR...) – refer to the previous pages.
Version "V" has an integrated vacuum ejector.
For supervisory purposes the position of the magnet piston can be requested via the HZ20-RS reed switches. These can each be fixed in the case groove.

Magnetic piston Ø:	20 mm
Function:	Double acting, torsion-proof
Traction:	125 N
Load:	Only in axial direction
Operating pressure:	4 – 10 bar
Temperature range:	–20 °C...+80 °C
Material housing:	Anodized aluminium (suction holder: aluminium)

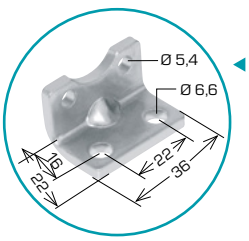


Order-No.	Stroke [mm]	Connection	With vacuum ejector
HZ20-005-18	5	G 1/8"	–
HZ20-005-18V	5	G 1/8"	+
HZ20-005-14	5	G 1/4"	–
HZ20-005-14V	5	G 1/4"	+
HZ20-015-18	15	G 1/8"	–
HZ20-015-18V	15	G 1/8"	+
HZ20-015-14	15	G 1/4"	–
HZ20-015-14V	15	G 1/4"	+
HZ20-025-18	25	G 1/8"	–
HZ20-025-18V	25	G 1/8"	+
HZ20-025-14	25	G 1/4"	–
HZ20-025-14V	25	G 1/4"	+
HZ20-050-18	50	G 1/8"	–
HZ20-050-18V	50	G 1/8"	+
HZ20-050-14	50	G 1/4"	–
HZ20-050-14V	50	G 1/4"	+
HZ20-100-18	100	G 1/8"	–
HZ20-100-18V	100	G 1/8"	+
HZ20-100-14	100	G 1/4"	–
HZ20-100-14V	100	G 1/4"	+

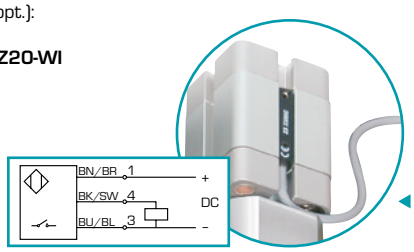
Other stroke lengths are available upon request, delivery exclud. suction cups.

We recommend the following accessories:

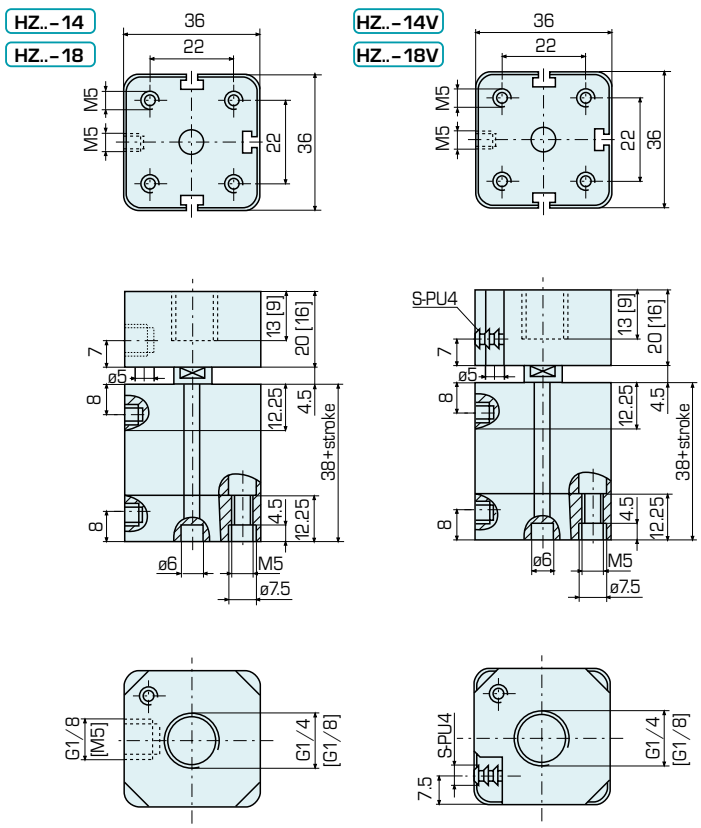
Order-No.	Description
HZ20-RS	Reed-switch, closed, 3-pin, 10 – 30 VAC/DC, 500 mA / 10 W, 3 m cable
HZ20-WI	Mounting bracket for HZ20
ECP4-M5-K	M5 hose connection piece, straight
S-PU2,5	Pneumatic hose 2.5 x 4 mm
S-PV4	Pneumatic hose 4 x 6 mm



◀ Accessory (opt.):
Bracket
Order-No. **HZ20-WI**



◀ Accessory (optional): Reed-switch
Order-No. **HZ20-RS**



Handheld suction cup HDS

No more troublesome fiddling ...

With our handheld suction device even very small parts like screws, balls, springs, washers etc. can be accurately positioned manually. The handheld suction device has a needle on which one of our miniature suction cups is attached. Closing the hole with your index finger will control the compressed air flow. The vacuum generation is regulated by connecting a vacuum ejector.

We deliver the complete **HDSK01** set with handheld suction device, angled needle and various suction cups. The **HDSK02** complete set contains the matching vacuum ejector including plug fitting and hose.

All components are also available in different versions as individual parts; for detailed information please refer to the ordering tables below.

Complete sets:

Order-No.	Consisting of:
HDSK01	**HDS** handheld suction device, **HDSNWK13**, short angled needle Ø 1.3 mm, **VC032N**, miniature suction cup Ø 3.2 mm, **VC064S** Ø 6.4 mm and **VC095N** Ø 9.5 mm
HDSK02	**VG1/8** vacuum ejector 1/8" thread, **ECP6-1/8-K**, 2 m pneumatic hose transparent 6 x 4 mm nominal diameter **S-PUN4**

Individual parts:

- **Handheld suction cup**

Order-No.	Designation	Overall length [mm]	Suitable vacuum ejector
HDS	Handheld suction cup	149.1	VG1/8

- **Needles**

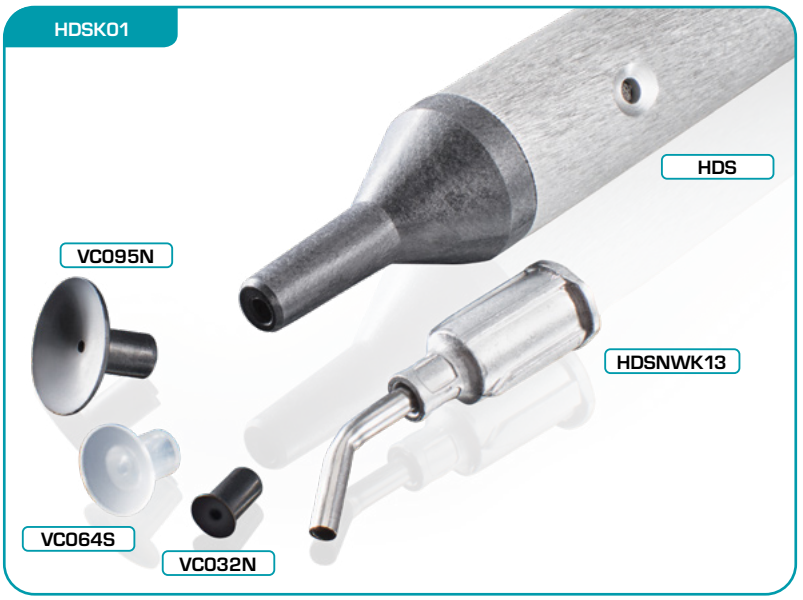
Suitable for the HDS handheld suction device
Material: anodised aluminium

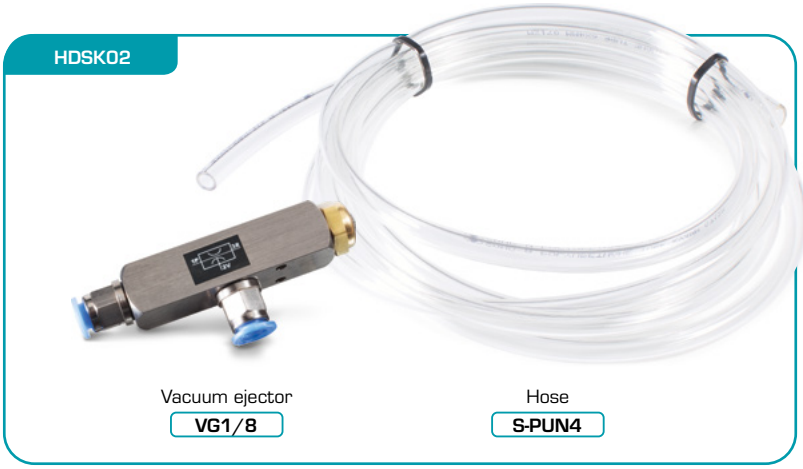
Order-No.	Form	Overall length [mm]	Outside Ø [mm]
HDSNWK13	angled short	28.4	1.3
HDSNWL13	angled long	41.1	1.3
HDSNGK13	straight short	28.4	1.3
HDSNGL13	straight long	41.1	1.3
HDSNWK18	angled short	28.4	1.8
HDSNWL18	angled long	41.1	1.8
HDSNGK18	straight short	28.4	1.8
HDSNGL18	straight long	41.1	1.8

- **Miniature suction devices**

Order-No.	Material	Dia-meter [mm]	Suction force [N] [1]	suitable needle
VC024N	Perbunan black [2]	2.4	0.3	HDSNGK13, HDSNGL13 HDSNWK13, HDSNWL13
VC024S	Silicon transparent [3]	2.4	0.3	
VC032N	Perbunan black [2]	3.2	0.6	HDSNWK18, HDSNWL18, HDSNGK18, HDSNGL18
VC032S	Silicon transparent [3]	3.2	0.6	
VC064N	Perbunan black [2]	6.4	2.3	
VC064S	Silicon transparent [3]	6.4	2.3	
VC095N	Perbunan black [2]	9.5	6.0	
VC095S	Silicon transparent [3]	9.5	6.0	
VC127N	Perbunan black [2]	12.7	9.0	
VC127S	Silicon transparent [3]	12.7	9.0	

[1] at 0.8 bar vacuum
[2] Temperature range: –15 °C to +121 °C
[3] Temperature range: –55 °C to +250 °C





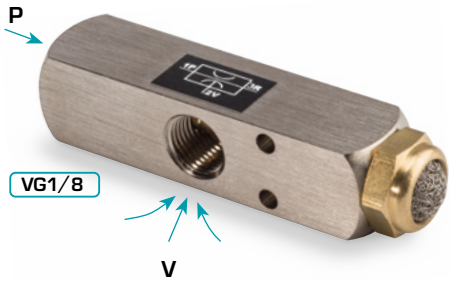
Vacuum Ejector – compact and very reasonably priced – Series VG

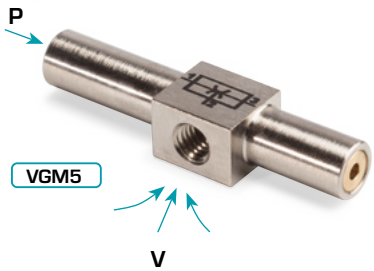
• (Venturi-principle)

Anybody who has compressed air now also has vacuum power! No more expensive vacuum pumps! A super-ejector now provides a simply incredible suction performance. At 6 bar about 13 norm liters/min. of compressed air are required to produce a low pressure of 0.8 bar. This corresponds to 10 liters of vacuum volume per minute. You can connect the VGM5 directly with the hose.
There is no simpler way! The VG1/8 has the same insides and also achieves the same performance. A handy and space-saving way to turn compressed air into vacuum power. You can let it hang loose between hoses or fix it in place with a hose clamp.
Due to increasing requests we have developed the super flat VGM3 for very tight spaces which allows to tap the vacuum right beside the compressed air supply.

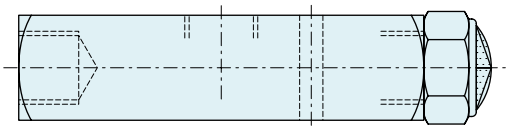
The housing is made of nickel-plated brass.

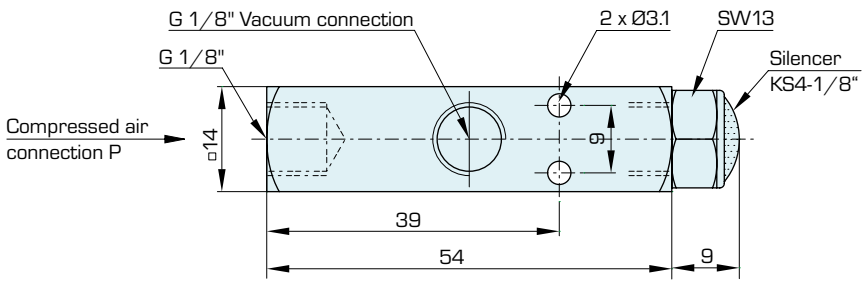
Matching fittings are available in Section "Fittings".
Hoses are available in Chapter "Accessories".

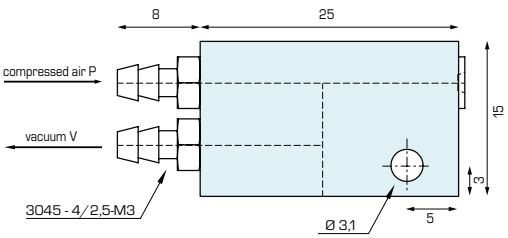


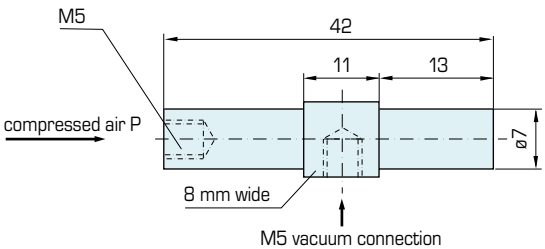


Order-No.	Size [G=Threading]	Version	Sound level [dB]
VG1/8	G 1/8"	incl. silencer	70
VGM5	M5	–	75
VGM3	M3	-	75









Vacuum Filter for Line Installation – Series VF

Application: This filter is put into the hose line immediately before the vacuum generator to avoid soilings in the vacuum injector.

Material: Housing: plastic, filter element: paper
Temperature range: –10 °C...+80 °C
Pore density: 10 µm
Scope of delivery: Filter and mounting clamp

Vacuum filter		Replacement filter	Mounting clamp
Order-No.	For hoses	Order-No.	Order-No.
VF4	4 mm outs. Ø	VFE4	VFBK4
VF6	6 mm outs. Ø	VFE4	VFBK4
VF8	8 mm outs. Ø	VFE8	VFBK8
VFEW6	6 mm inside Ø	–	–

Flow Valve

Closes the vacuum line when ejectors are inactivate, thus maintaining the vacuum pressure within the system.

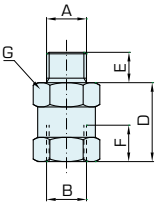
Order-No.	Suction performance required for pu = –0.6 bar [norm. l/min]	Max. flow during blow-off Blow-off press. 5 bar [norm. l/min]
SV18I	2.50	310
SV14I	3.40	340

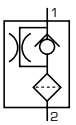
Dimensions:

Order-No.	A	B	D [mm]	E [mm]	F [mm]	G [mm]
SV18I	G1/8"-AG	G1/8"-IG	26	10	11	SW17
SV14I	G1/4"-AG	G1/4"-IG	26	10	12	SW22

SV14I

SV18I SV14I





Flexible Fitting with Ball Joint

Adaptation of up to 15° in all directions.

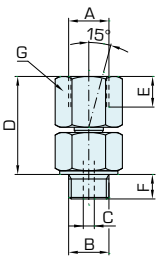
Order-No.	Vertical force [N]
SKG18I-18A	300
SKG14I-14A	1500
SKG14I-10A	1500

Dimensions:

Order-No.	A	B	C [Ø mm]	D [mm]	E [mm]	F [mm]	G [mm]
SKG18I-18A	G1/8"-IG	G1/8"-AG	2	26.5	8.5	7	SW14
SKG14I-14A	G1/4"-IG	G1/4"-AG	3.5	37.5	12	10	SW19
SKG14I-10A	G1/4"-IG	M10x1.25-AG	3.5	37.5	12	10	SW19

SKG14I-14A

SKG18I-18A SKG14I-14A SKG14I-10A



Flexible Fitting with Rubber-Metal Connection

Adaptation of up to 12° in all directions. Independent return to zero position.

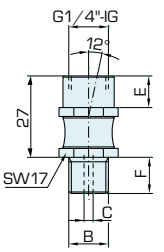
Order-No.	Vertical force [N]	Bending moment [Nm]
SGG14I-10A	500	8
SGG14I-14A	750	10
SGG14A-14A	750	10

Dimensions:

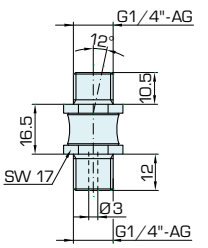
Order-No.	B	C [Ø mm]	E [mm]	F [mm]
SGG14I-10A	M10x1.25-AG	2.8	10.5	8
SGG14I-14A	G1/4"-AG	3	12	12
SGG14A-14A	G1/4"-AG	3	10.5	12

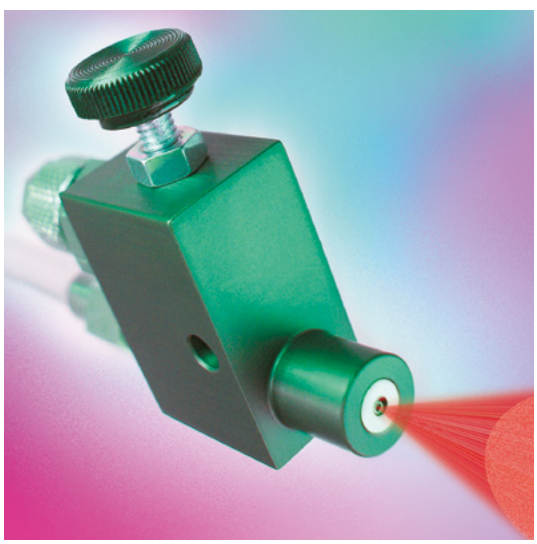
SGG14A-14A

SGG14I-10A SGG14I-14A

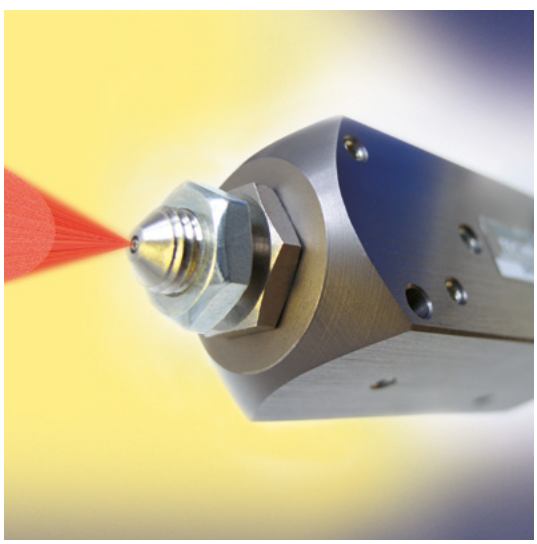


SGG14A-14A





FLUID TECHNOLOGY



Atomizer – low Pressure – ZN / ZN-KOPF

- With or without metal hose
- For thin fluids

To spray thin oils and fluids (max. viscosity 350 mm²/s) with a targeted effective range.

Example: Oils are sprayed in manufacturing areas. The more automatic this process is, the less likely it is omitted.
The atomizer acutates at an excess pressure of 2 bar.
Think of tools, extruding plastics, lubricants, polishing, etc.
The higher the pressure, the finer the spray mist and the smaller the spray angle.

How it works:
The fluid hose is either laid into a pressure-free tank or connected. The atomizer should always be fixed a little above the maximum fluid level in the tank. With compressed air applied, the atomizer will instantly start to spray (a built-in check valve in the hose prevents the fluid level from dropping too fast). The atomizer can be actuated either permanently or on a cycle base by a control unit but always in well-metered quantities. The fluid is properly and economically fed into the centre of the air stream. With the air and fluid choke (see picture) the amount of air and fluid is finely adjustable.
For containers, hoses, and other accessories, refer to Chapter "Accessories".

ZN – the movable one:

Less effort – more performance. Because of the flexible metal hose the atomizer ZN can be twisted and turned as desired, and it can be mounted in any location with a magnetic holder (refer to the following pages). It adapts to the requirements of your machine.

ZN-KOPF – for fixed installation:

An atomizer for fixed installation. Like the ZN, but without the metal hose (1).

Technical data:

Material:	Anodized aluminum, nickel-plated brass
Operating pressure:	3 – 6 bar
Environmental temperature:	–25 °C...+80 °C
Viscosity range:	1 – 300 mm²/sec. at 20 °C
Spray angle:	max. 30°
Max. air cons. at 6 bar:	54 l norm./min.
Sound level:	84 dB

Measuring examples for suction volume, 1 min. at 20 °C:

ISOVG150	2.1 ml at 5 bar compressed air
	1.9 ml at 3 bar compressed air
Water	62 ml at 6 bar compressed air
	48 ml at 5 bar compressed air
	30 ml at 3 bar compressed air

Included in the delivery:
1) Metal hose, nickel-plated (only with the ZN version)
2) Air inductor
3) Fluid inductor
4) PVC-hose 1 m
5) Connection for pneumatic hose 6 x 4
6) Sieve filter
7) Return valve

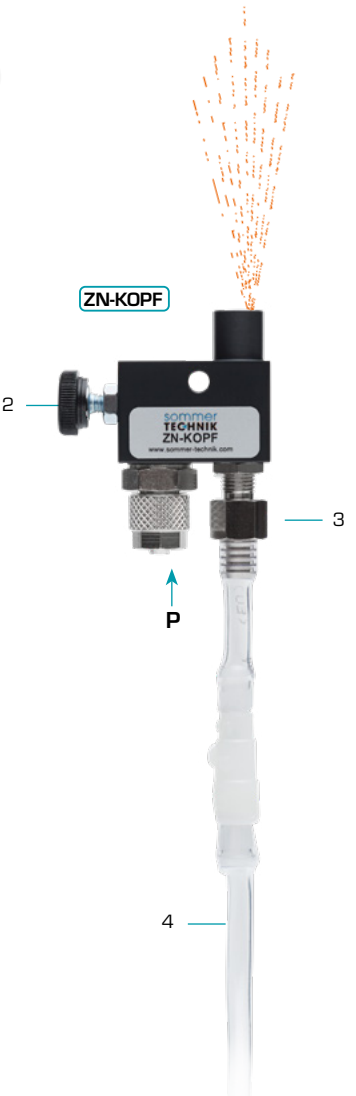
Atomizer with magnetic holder MH.
Ideal for flexible installation in machines.
Detailed information is available on to the following pages.

Order-No.	Model versions
ZN	Atmomiser with metal hose
ZN-KOPF	Atmomiser without metal hose

ZN

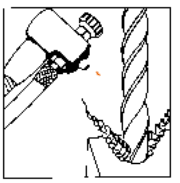
MADE IN GERMANY

ZN-KOPF

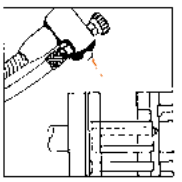


Sample application:

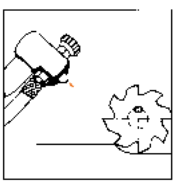
For drilling

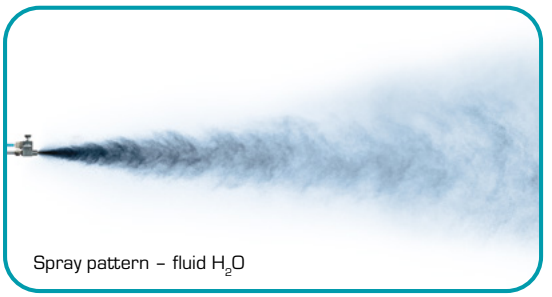


...turning

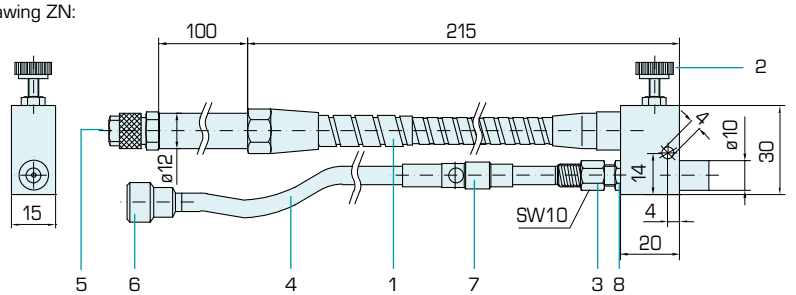


...grinding





Drawing ZN:



Right-angled Atomizer – ZQ / ZQ-KOPF

- With or without metal hose
- For low and high viscosity fluids

To atomize low and high viscosity fluids (max. viscosity 420 mm²/s). The spraying angle on this atomizer is 90° in reference to air and fluid connection.
The higher the pressure, the finer the spray mist and the smaller the spray angle.

How it works:
The fluid hose is either laid into a pressure-free tank or connected. The atomizer should always be fixed a little above the maximum fluid level in the tank. With compressed air applied, the fluid is carried along well-metered by the air rushing through (a built-in check valve in the fluid hose prevents the medium from dropping too fast). The fast response times allow ultra short clock cycles. The atomizer can be actuated either permanently or on a cycle base by a control unit but always in well-metered quantities. The fluid is properly and economically fed into the centre of the air stream. With the air and fluid choke (see picture) the amount of air and fluid is finely adjustable.

Tank, hoses, and other accessories are available in Chapter "Accessories".

ZQ – the movalbe one:

Less effort – more performance. With the flexible stainless metal hose the atomizer ZQ can be twisted and turned as desired, and be mounted just anywhere with the magnetic holder (see the following pages). It will adapt to the requirements of your machine.

ZQ-Kopf – for fixed installation:

An atomizer for fixed installation.
Like the ZQ, but without the metal hose (1).

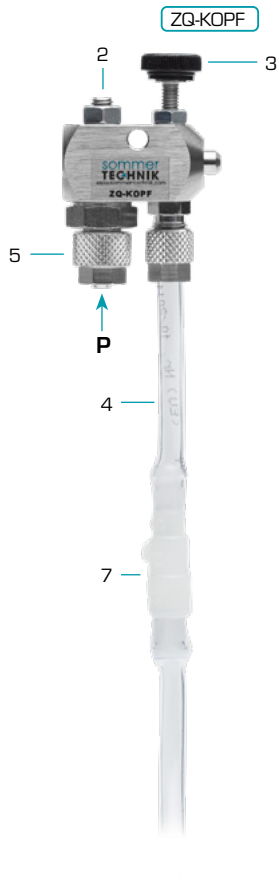
Technical data:

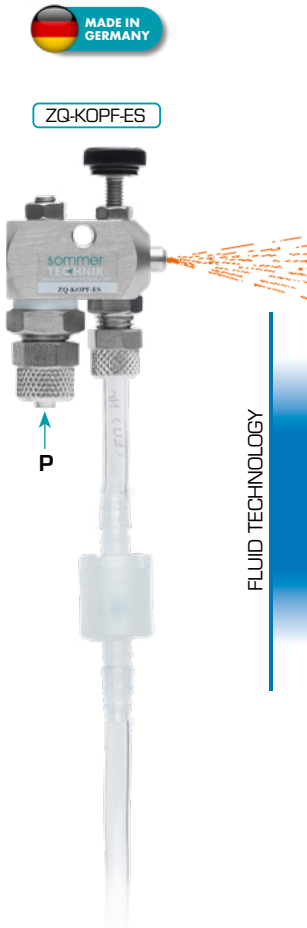
Material:	Nickel-plated brass
Operating pressure:	3 – 6 bar
Environmental temperature:	–25 °C...+80 °C
Viscosity range:	1 – 300 mm²/sec. at 20 °C
Spray angle:	max. 30°
Max. air cons. at 6 bar:	60 l norm./min.
Sound level:	78 dB

Measuring example for suction volumes for 1 min. at 20 °C:

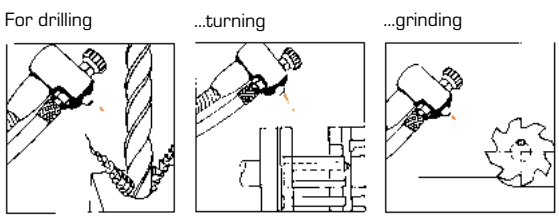
ISOVG150	2.1 ml at 5 bar compressed air
	1.9 ml at 3 bar compressed air
Water	62 ml at 6 bar compressed air
	48 ml at 5 bar compressed air
	30 ml at 3 bar compressed air

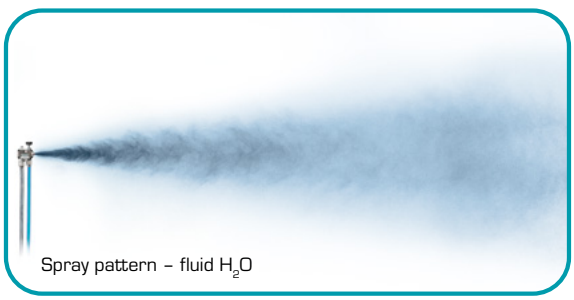
Included in the delivery:
1) Nickel-plated metal hose (only with the ZQ version)
2) Air inductor
3) Liquid inductor
4) PVC-hose 1 m
5) Connection for pneumatic hose 6 x 4 mm
6) Sieve filter
7) Return valve



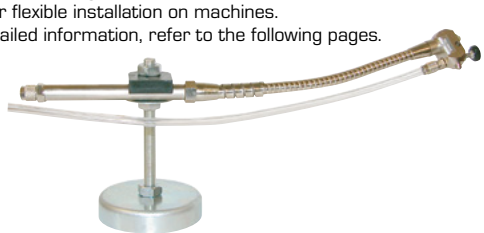


Sample applications:

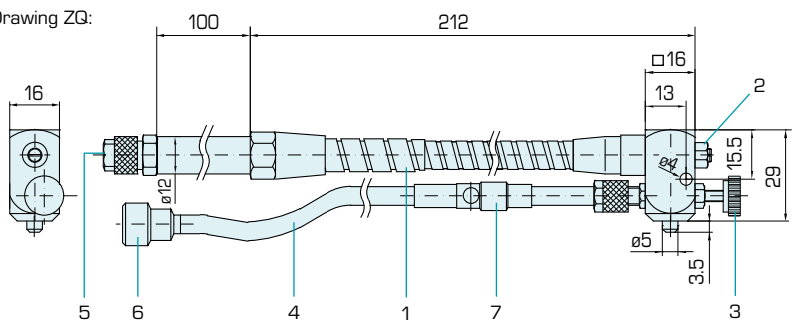




Atomizer with magnetic holder MH.
Ideal for flexible installation on machines.
For detailed information, refer to the following pages.



Drawing ZQ:



Order-No.	Model versions:
ZQ	Atmomiser with metal hose
ZQ-KOPF	Atmomiser without metal hose
ZQ-KOPF-ES	Atmomiser without metal hose, stainless steel AISI 303

Compact Atomizer – ZK-KOPF

Good things come in small packages

Often there is not a whole lot of space available inside machines, which can cause technicians a lot of headaches – especially if a lubricating system has to be retrofitted.
The compact design of this atomizer (18 x 30 x 15 mm – without fittings) makes it suitable for use in even the tightest spaces.

How it works:
The fluid hose is either laid into a pressure-free tank or connected. The atomizer should always be fixed a little above the maximum fluid level in the tank. With compressed air applied, the atomizer will instantly start to spray (a built-in check valve in the hose prevents the fluid level from dropping too fast). The atomizer can be actuated either permanently or on a cycle base by a control unit but always in well-metered quantities. The fluid is properly and economically fed into the centre of the air stream. With the air and fluid choke (see picture) the amount of air and fluid is finely adjustable.

Technical data:

Material:	Anodized aluminum, nickel-plated brass
Operating pressure:	3 – 8 bar (The higher the pressure, the finer the spray mist and the smaller the spray angle.)
Environm. temperature:	–25 °C...+80 °C
Viscosity range:	1 – 200 mm²/sec. at 20 °C
Max. flow rate:	62 ml/min.
Max. cycle frequency:	60/min.
Spray angle:	max. 30°
Max. air cons. at 6 bar:	54 l norm./min.
Sound level:	80 dB

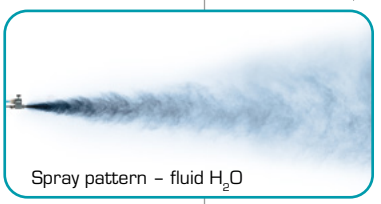
Measuring examples for suction volume for 1 min. at 20 °C:

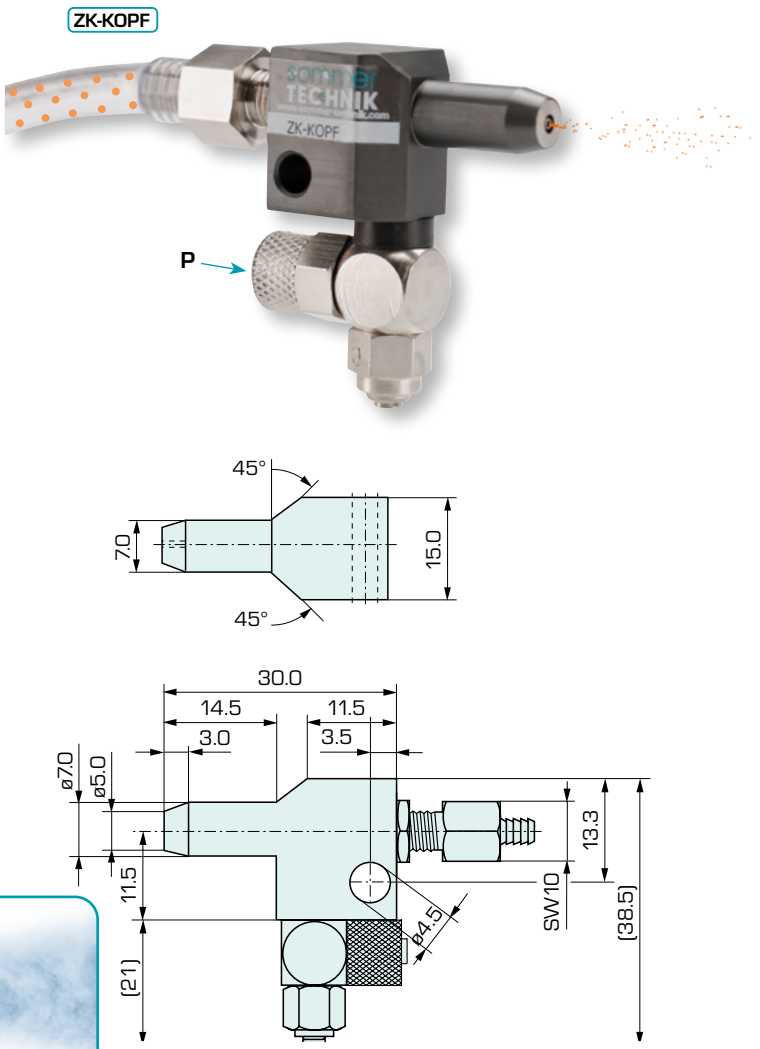
ISOVG150	2.1 ml at 5 bar compressed air
ISOVG150	1.9 ml at 3 bar compressed air
Water	62 ml at 6 bar compressed air
Water	48 ml at 5 bar compressed air
Water	30 ml at 3 bar compressed air

Suitable accessories (please order separately):

Pneumatic hose:	**S-PU4**
Fluid hose:	**S-PVC4**
Fluid tank 1 liter:	**B01R/B01E**

Order-No.
ZK-KOPF


Spray pattern – fluid H_2O



Maximum Atomizer – The budget type – ZMAX

Maxi-Atomizer

When it comes to suctioning and spraying as much fluid as possible, this atomizer is just the right one. It is ideal for scent spraying lines, water humidifying units indoors, or for direct irrigation e.g. of wood.
An uncomplicated, functional atomizer.
We can deliver it on trial.

Technical data:

Material:	Anodized aluminum; nickel-plated brass
Operating pressure:	2 – 8 bar
Environm. temperature:	–25 °C...+80 °C
Viscosity range:	1 – 300 mm²/sec. at 20 °C
Spray angle:	max. 30°
Max. air cons. at 6 bar:	200 l norm./min.
Sound level:	88 dB

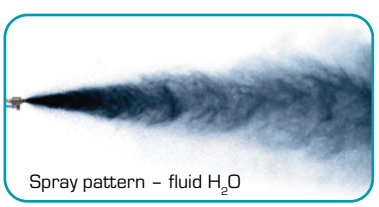
Measuring example for fluid volume, 1 min. at 20 °C:

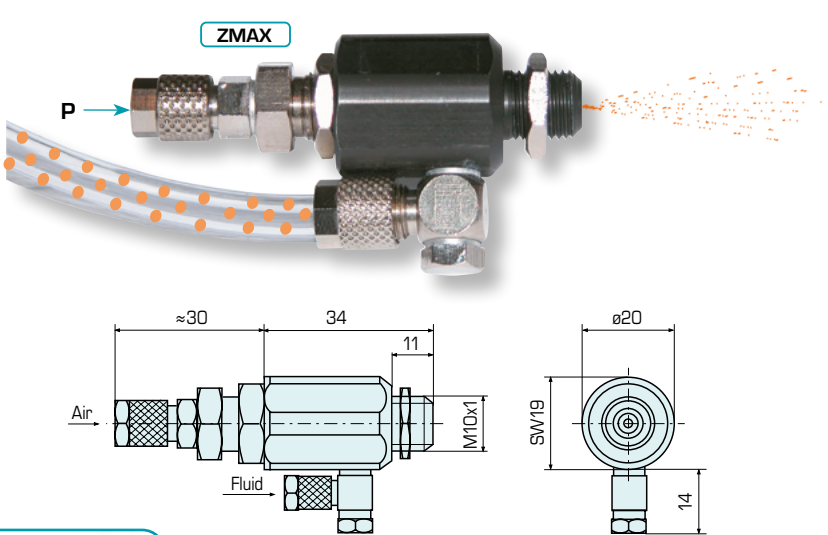
ISOVG150:	24 ml at 6 bar; 18 ml at 3 bar
Water:	370 ml at 6 bar; 250 ml at 3 bar

Matching accessories (please order separately):

Pneumatic hose:	**S-PU4**
Fluid hose:	**S-PVC4**
Fluid tank:	**B10, B20**

Order-No.	
ZMAX	Atomizer
SK01-10	Hose clamp


Spray pattern – fluid H_2O



Hose clamp **SK01-10** is recommended to regulate the medium.
Suitable for hoses measuring 1 – 10 mm Ø.

Minimal Atomizer – ZMIN / ZMIN-V60 / ZMIN-MS

- With or without metal hose
- For thing liquids
- Minimal lubrication/fine atomizing

The compact, economical atomizer, or

"The micro-fine oil film"

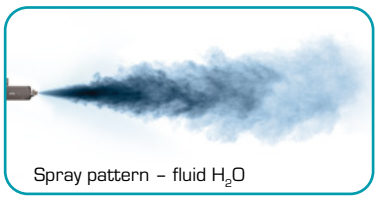
This atomizer has a simple construction for dependable function. With its compact design (95 x 35 x 32 mm) it fits into just about any space, even if things get tight.

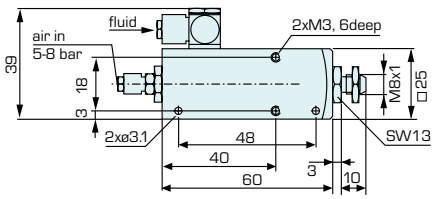
All good things come from above:
The oil is not suctioned, but fed in from the top. Thus, very little air is needed. An oil shut-off valve is installed inside the atomizer. As soon as the atomizer receives compressed air, the oil valve opens up and the dosed oil is applied simultaneously.
The minimal-atomizer ZMIN has a built-in fluid shut-off valve. It only switches to flow when compressed air is actually available and blocks the fluid infeed immediately when the compressed air is interrupted. This simplifies control, because a reaction only takes place in dependence of the compressed air, e.g. via our 3/2 way valve (see below).
The fluid is simply fed in from above (e.g. through the connection with the container). So the ZMIN can operate with very little air.
The spray pattern can be adjusted on the atomizer and the fluid inductor.
The more atomized air, the finer the droplets.

Technical data:

Material:	Anodized aluminum, nickel-plated brass, seals PTFE + 25 % carbon, NBR
Operating pressure:	5 – 8 bar
Environmental temp.:	–25 °C... +80 °C
Viscosity range:	1 – 150 mm²/sec. at 20 °C
Max. cycle frequency:	60/min.
Spray angle:	30°
Max. air consumpt.:	58 l norm./min.
Sound level:	75 dB/with metal hose: 76 dB

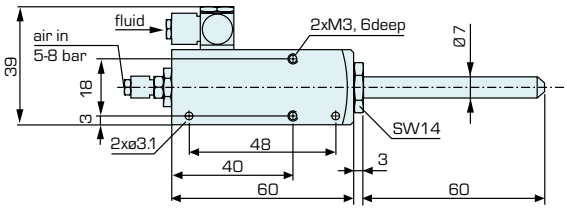
Order-No.	Model versions
ZMIN	without metal hose
ZMIN-V60	extended nozzle, 60 mm





ZMIN Measuring example for fluid volumes, 1 min. at 20 °C:

ISOVG150	0.9 ml at 5.5 bar/atomized air 50 % open
	1.0 ml at 5.5 bar/atomized air 100 % open
Water	42 ml at 5.5 bar/atomized air 50 % open
	54 ml at 5.5 bar/atomized air 100 % open



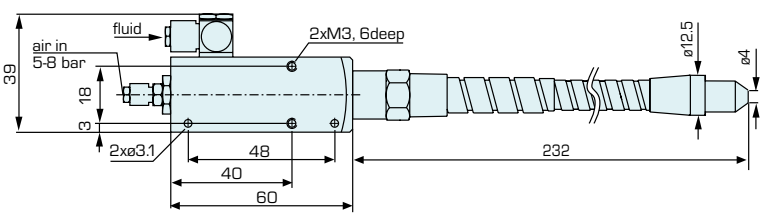
ZMIN-MS – the movable one:

With its flexible stainless steel hose the atomizer ZMIN-MS can be twisted and turned as desired.

Matching accessories for ZMIN; ZMIN-V60 and ZMIN-MS – please order separately:

3/2 way valve:	MV26-3218-30 (= 24 VDC) or MV26-3218-06 (= 230 VAC)
Pneumatic hose:	S-PU4
Fluid hose:	S-PVC4 /S-PUN4
1-litre fluid tank:	B01R/01 (incl. hose attachment and mounting option)
1-litre fluid tank with floater switch:	B01E/02-SSIO PA (suitable for oil) B01E/02-SS10 PP (suitable for water) (incl. hose attachment and mounting option)
10-litre fluid tank with float switch:	B-SS10 PA (suitable for oil) B-SS10 PP (suitable for water) (incl. hose attachment and mounting option)

Order-No.	Model versions
ZMIN-MS	with metal hose, 232 mm
EZMIN-MS	metal hose mounted as add-on or replacement



ZMIN-MS Measuring example for fluid volumes, 1 min. at 20 °C:

ISOVG150	0.5 ml at 5.5 bar/atomized air 50 % open
	0.5 ml at 5.5 bar/atomized air 100 % open
Water	25 ml at 5.5 bar/atomized air 50 % open
	20 ml at 5.5 bar/atomized air 100 % open

360° Atomizer – ZR-KOPF

Out of the way!

The fine mist – 360° in all directions – is simply ideal to moisten inaccessible cavities or the inside of pipes. The 6-fold spray head only measures 14 mm in diameter and can atomize any type of fluid – from oil to water. The 40 cm long stainless steel rod solidly connects the spray head with the distributor for compressed air and spraying fluid.

Function:
The fluid hose is laid into a pressure-free tank.
The atomizer should always be fixed a little above the maximum fluid level in the tank. With compressed air applied, the atomizer will instantly start to spray (a built-in check valve [vertical position of installation] in the hose prevents the fluid level from dropping too fast). The atomizer can be actuated either permanently or on a cycle base by a control unit but always in well-metered quantities. The fluid is properly and economically fed into the centre of the air stream. With the air and fluid choke (see picture) the amount of air and fluid is precisely adjustable.

Technical data:

Material:	Anodized aluminum, stainless steel rod
Operating pressure:	3 – 8 bar (The higher the pressure, the finer the spray mist and the smaller the spray angle.)
Environm. temp.:	–25 °C...+80 °C
Viscosity range:	1 – 200 mm²/sec. at 20 °C
Max. fluid flow:	114 ml/min.
Max. cycle frequency:	60/min.
Spraying angle:	6 x max. 30°
Max. air consumption:	128 l norm./min.
Sound level:	75 dB

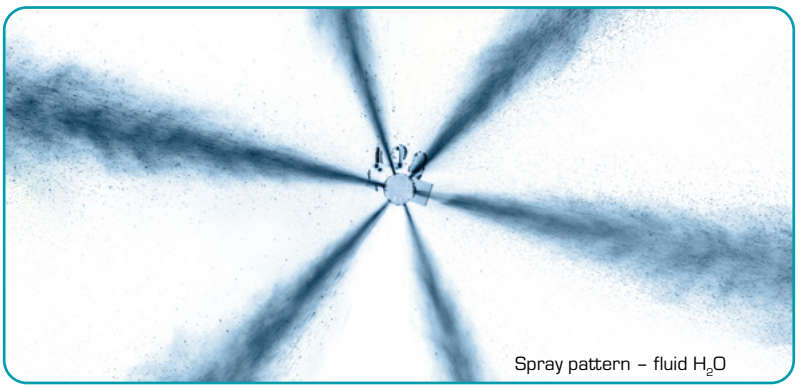
Measuring examples of suction volumes in 1 min. at 20 °C:

ISOVG150	4.5 ml at 6 bar
	2.4 ml at 3 bar
Water	114 ml at 6 bar
	48 ml at 3 bar

Matching accessories – please order separately:

Pneumatic hose:	**S-PU4**
Fluid hose:	**S-PVC4**
Fluid tank:	**B01R, B10**

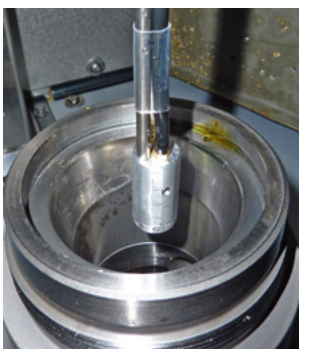
Order-No.
ZR-KOPF



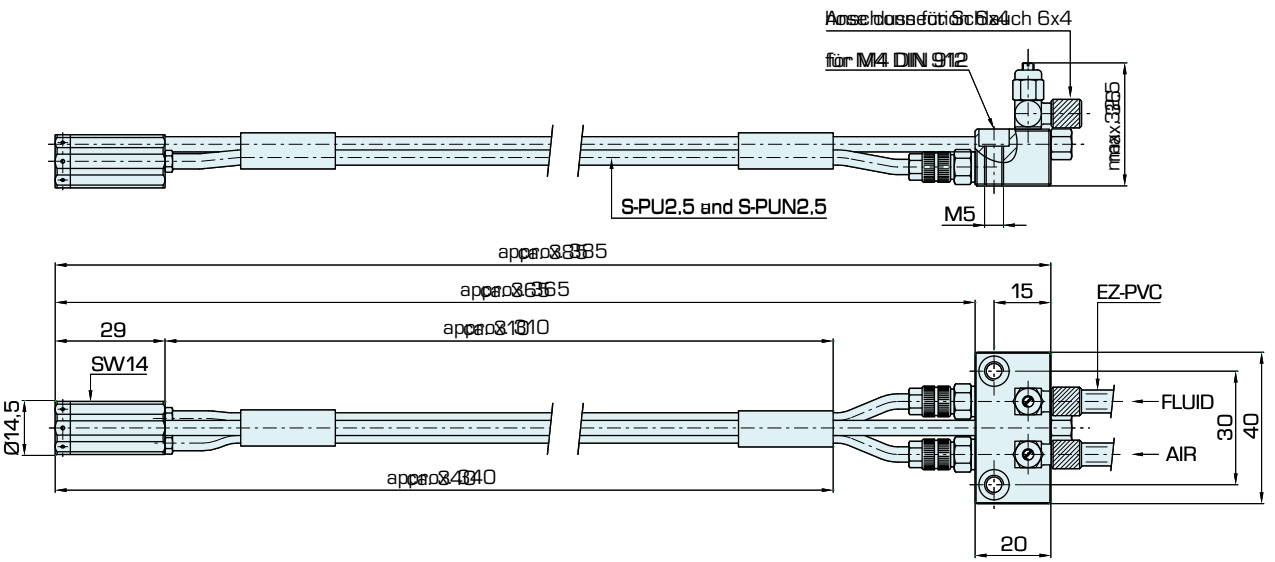
Spray pattern – fluid H_2O

Application example:

Cleaning car rims



Oiling cylinders



Mini Atomizer – ZWERG

Small like a flea...

is our mini atomizer. Recently our developer Bernd Heise lost track of the newly developed prototype and had to search for days on end. Fortunately the atomizer turned up again so you can install it in the smallest of spaces. But be careful! Do not misplace this mini atomizer – you will have a very hard finding it again. But, if all is lost you can always order another one – we have plenty of them in stock. An adjustment screw on the atomizer head controls the fluid quantity, the air intake can be adjusted with the choke valve on the pneumatic hose.

Function:
The fluid hose is laid into a pressure-free tank.
The atomizer should always be fixed a little above the maximum fluid level in the tank. With compressed air applied, the atomizer will instantly start to spray (a built-in check valve [vertical position of installation] in the hose prevents the fluid level from dropping too fast). The atomizer can be actuated either permanently or on a cycle base by a control unit but always in well-metered quantities. The fluid is properly and economically fed into the centre of the air stream. With the air and fluid choke (see picture) the amount of air and fluid is precisely adjustable.

Technical data:

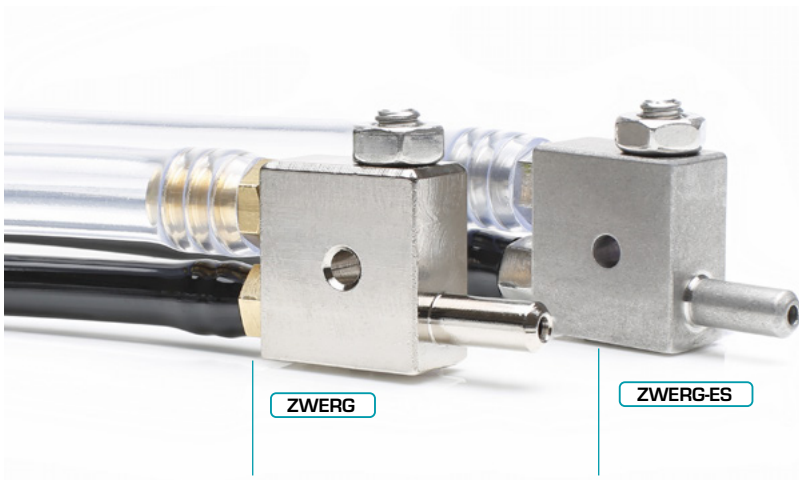
Material:	Nickel-plated brass
Operating pressure:	3 – 8 bar (The higher the pressure, the finer the spray mist and the smaller the spray angle.)
Environmental temp.:	–25 °C...+80 °C
Viscosity range:	1 – 480 mm²/sec. at 20 °C
Max. fluid flow:	36 ml/min.
Max. cycle frequency:	60/min.
Spraying angle:	max. 30°
Max. air consumption:	18 l norm./min.
Sound level:	73 dB

Measuring examples of suction volumes in 1 min. at 20 ° C:

ISOVG150	2.0 ml at 6 bar
	1.5 ml at 3 bar
Water	36 ml at 6 bar
	30 ml at 3 bar

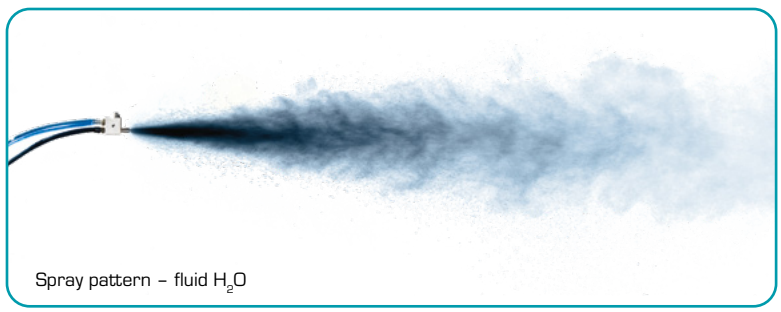
Matching accessories – please order separately:

Pneumatic hose:	**S-PU2,5**
Fluid hose:	**S-PVC4**
Fluid tank:	**B01R, B10**



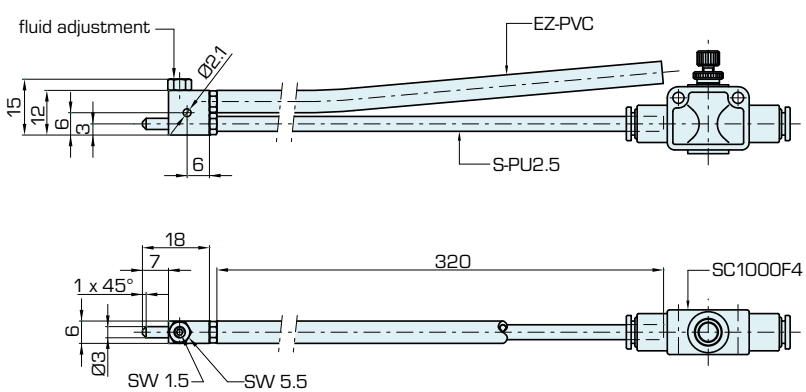

incl. ERV, SC1000F4, Sieb-PA


incl. ERV-LE, SC1000F4, open


Spray pattern – fluid H_2O

Bestell-Nr.	Material
ZWERG	Messing vernickelt
ZWERG-ES	Edelstahl AISI 303


Original size



Wide-angle Atomizer – ZBW-KOPF

"Full force ahead!"

When it comes to covering a large surface from a short distance this atomizer is just the right one to use. Its compact design is ideal for tight spaces.
Two stray channels provide a large spray angle and an elliptical spraying range. Contrary to the ZBG is connected perpendicular to the spraying direction.

Technical data:

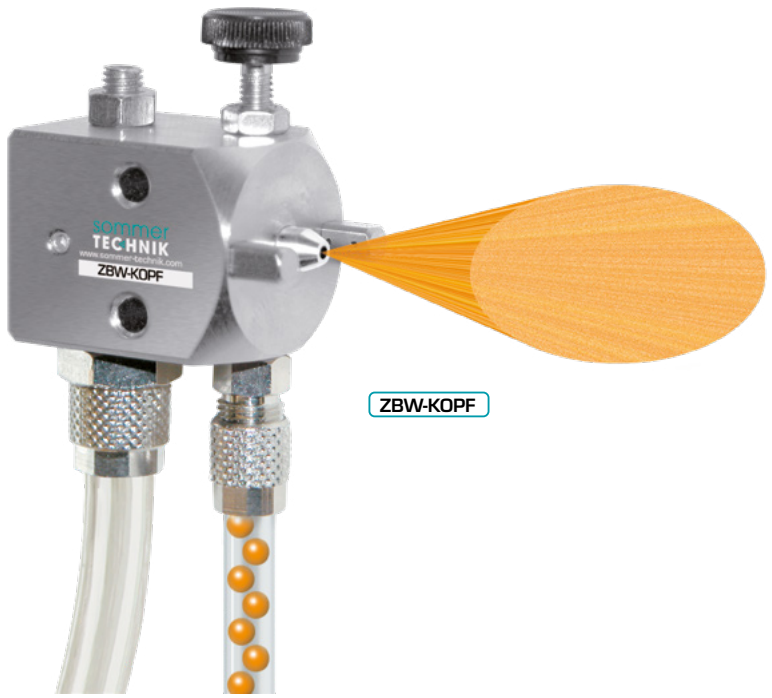
Material:	Nickel-plated brass
Operating pressure:	2 – 8 bar
Environm. temp.:	–25 °C...+80 °C
Viscosity range:	1 – 300 mm²/sec. at 20 °C
Spraying angle:	120 – 150° Elliptical shape
Max. air consumption:	152 l norm./min.
Sound level:	82 dB

Measuring example for fluid volume for 1 min. at 20 °C:
ISOVG150: 2.1 ml at 5 bar; 1.9 ml at 3 bar
Water: 62 ml at 5 bar; 30 ml at 3 bar

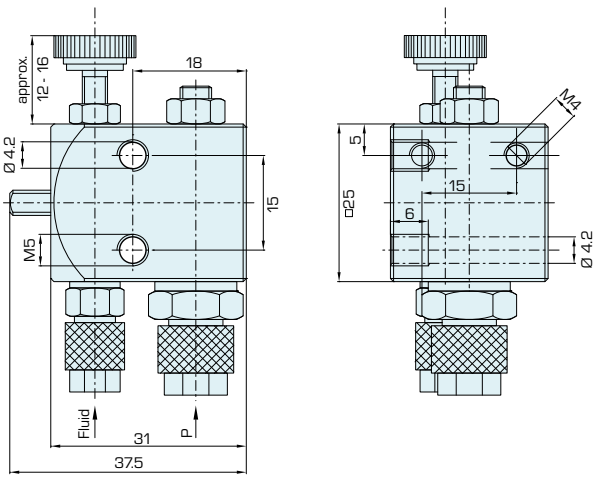
Order-No.	Model versions
ZBW-KOPF	Connection from below

Suitable accessories (order separately):

Pneumatic hose:	**S-PU4**
Fluid hose:	**S-PVC4**
Fluid tank:	**B05C, B10, B20**



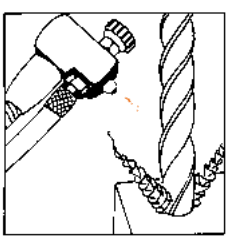
ZBW-KOPF



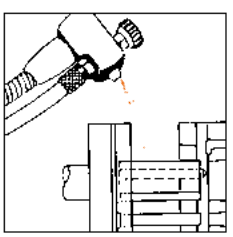
Spray pattern – fluid H_2O

Application samples:

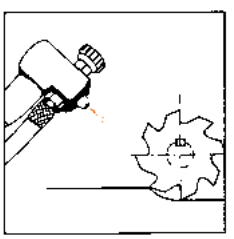
For drilling



...turning



...grinding



FLUID TECHNOLOGY

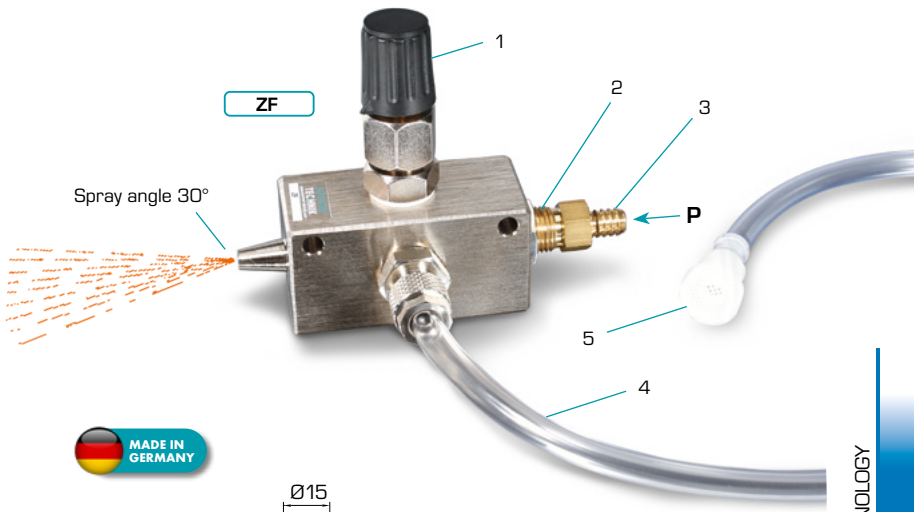
Atomizer – The rugged one – ZF

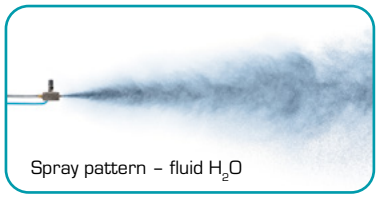
• For fixed installation

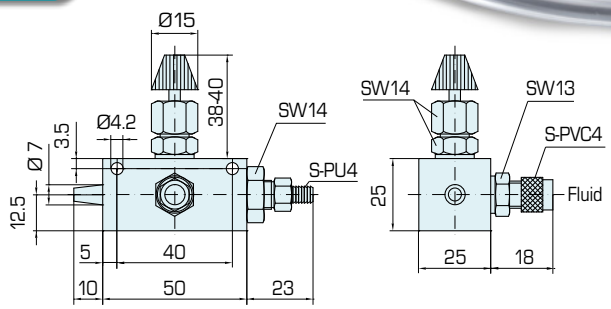
...directly in the machine. This robust model is very suitable for large fluid quantities and thicker oils (max. viscosity 480 mm²/s). The atomizer operates cyclically and continuously. The fluid hose can be placed inside an unpressurized container or be connected to it. The atomizer should always be installed slightly above the max. fluid level inside the container. The fluid is dosed and taken along by the air flow.
Spray angle: 30°.
Max. air consumption at 6 bar: 70 l norm./min.
Sound level: 77 dB

Measuring examples for suction volumes in 1 min. at 20 °C:
ISOVG150 2.3 ml at 5 bar
2.1 ml at 3 bar
Water 70 ml at 5 bar
63 ml at 3 bar

Included in the delivery:
1) Fluid choke
2) Air inductor
3) Compressed air connection
4) 1 m PVC-hose
5) Sieve filter
6) Return valve (not visible)







Order-No.
ZF

Gravity Feed Lubricator – TO

• No power supply required

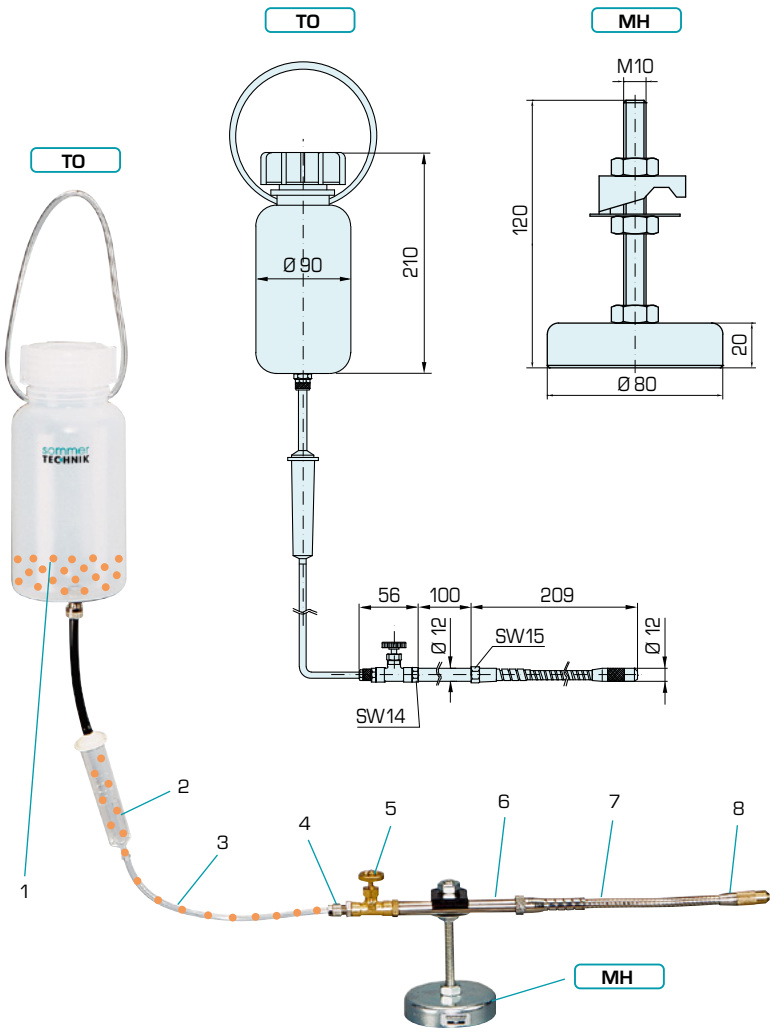
The lateral drop is indispensable with lathes, drilling and milling machines and also when cutting threads.
The drip oiler sends a continuous lubrication to any desired location.

The droplet quantity can be regulated and permanently monitored through the drip chamber. Using the magnet holder this practical device can be fixed on virtually all machines.

ADVANTAGE:
You will not need a power supply or a pump. Make sure that the tank is installed above the metal hose.

Included in the delivery:
1) Tank with hose connection 8 x 6
2) Drip chamber
3) PVC-hose
4) Push & pull fitting
5) Shut-off needle valve
6) Extension for metal hose
7) Metal hose
8) Attachment nozzle for metal hose

Order-No.
TO



Magnetic Holder

• For ZN, ZQ, MS, TO, AS.

The magnetic holder holds atomizers with metal hoses (refer to the previous pages), gravity feed lubricators (TO), automatic sprayers (AS, refer to the following pages), and of course a whole lot of other things in place. It can be attached to all magnetic surfaces fast and easily.

Holding force: 550 N

Order-No.
MH

Compressed Air Timer for Atomizer – PTV18

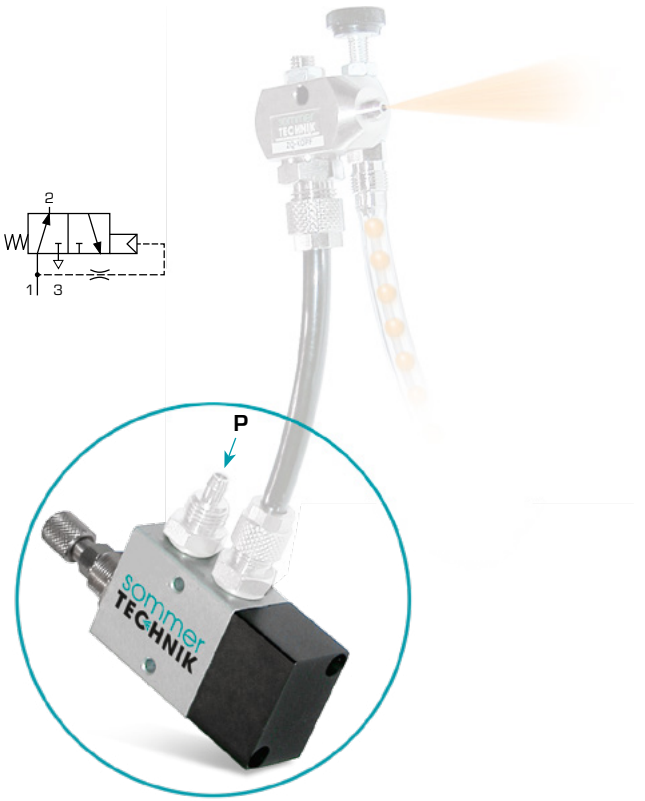
The spraying time of this Compressed Air Timer can be adjusted from 0.1 to 10 sec..
It can be connected to the compressed air line very easily. As soon as the compressed air flows, time is running and it shuts down automatically. The compressed air has to be reactivated for the next working cycle.

Advantages:
- Low cost
- You save on expensive electronics
- Ideal for all atomizers and other fluid units

Technical data:

Operating pressure:	2 – 10 bar
Connection:	G 1/8"
Impulse length:	0.1 – 10 sec. adjustable
Environmental temp.:	–10 °C...+60 °C
Weight:	0.108 kg
Material:	Aluminium, brass

Order-No.
PTV18

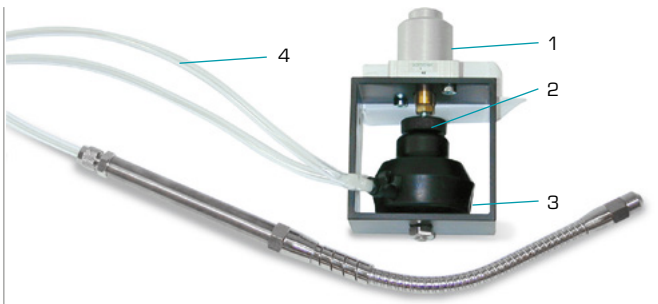


Automatic Nozzle – AS

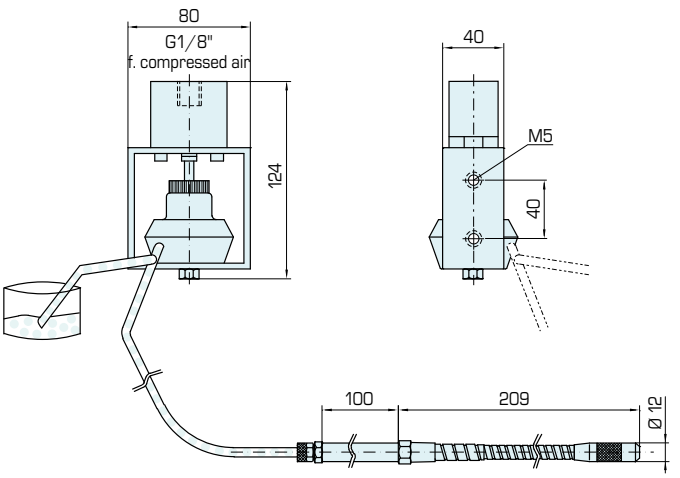
- Drops or jet stream – all well-dosed

The automatic sprayer operates similar to windshield wipers on a car.
The actuation by hand or foot resp. is taken over by a pneumatic cylinder squeezing a rubber bellows.
This cylinder is controllable via a 3/2-way valve. A set screw on the cylinder rod provides for the travel adjustment, thereby regulating the amount of fluid.

1) Cylinder
2) Set screw
3) Rubber bellows,
   per switching cylce 10 cm³ max. / 0.2 cm³ min.
   medium cooling agent or thin oils
4) PVC hose, fully mounted
   Return valve (not visible)
   Return T-valve (not visible)
   Sieve filter (not visible)



MADE IN GERMANY



Order-No.	Model versions
AS	incl. metal hose
AS/02	without metal hose

Blow Unit – variable Oscillator for robust Applications – Series BA

• Setting the pace

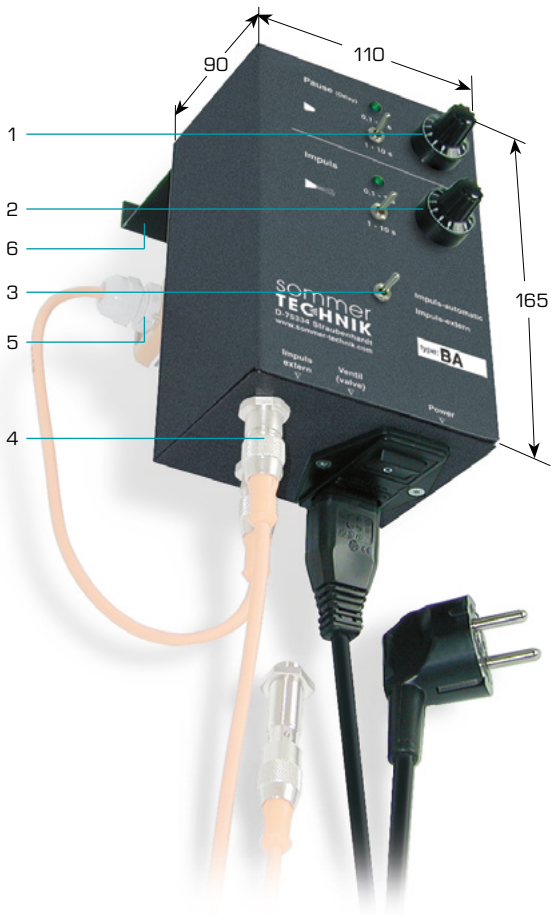
Compressed air should be available in the right moment and at the precise point, e.g. for tools on punches and presses. Each punching or pressing movement generates foreign particles that have to be removed from the tool.

How it works:
Indepent of the machine, one can set pause and pulse times between 0.1 and 10 seconds. The pause time (delay) can be set with the upper control, the pulse time (blast time) with the lower control. That way the compressed air is used in a controlled and economical manner. The toggle switches left of the controls allow to select a time frame between 1 s and 10 s or between 0.1 s and 1 s for the fine adjustment. The automatic blow unit has a proprietary clock generator (= automatic). However, you can also request the machine cycle rate via an inductive switch which can be connected externally on the bottom of the housing (suitable inductive switch + cable – see table).
The pressure valve with its large 3/8" aperture allows a strong air blast. Order code incl. valve: BA/01

Technical Data:
Output power 12 W / switching time < 50 ms

1) Pause (delay) controller
2) Impulse (blow time) controller
3) Switch for impulse automatic or external impulse
4) Connection for inductive switch Order-No. **IN12x1-S1** + cable **K12S+B-200** – refer to the chart
5) Optional valve – refer to the chart
6) Overall depth incl. mounting bracket: 172 mm

Order-No.	without magnetic valve	with magnetic valve
BA	■	–
BA/04	–	3/2 way 1/8"
IN12-S1	Inductive switch M12x1, switching distance 2.0 mm, length 45 mm, closer	
K12S+B-200	Connection cable 2 m + plug with socket	



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Dosing Systems – the Steady Drop – D-TG200

Control the air!

Everything here functions without expensive electronics.
The pure compressed air controls make the unit significantly more reasonable in price – 50 % less !
You can dose everything: Adhesives, soldering paste, water, oil, Silicone, etc.

Our mission:

Simplifying things with compressed air – this makes operations uncomplicated, reasonably priced, and functional!

The simple principle:

You only need compressed air at a pressure of approx. 4 bar.

The interval for the air blast, which determines the droplet size, is adjustable via the time (Time) and the pressure (P) controls.
The droplet size can also be influenced by using different needle apertures.
Once set, pressing the pneumatic footswitch will always release the same amount time after time.
Metering thin liquids requires a vacuum to avoid dripping.
This vacuum generation is another feature of the D-TG200 – and it's even finely adjustable.

Your advantages:

Simply connect 4 bar of compressed air and the unit is ready for operation.
The simple design makes the unit reasonable in price and service-friendly. The simple operation saves time.

Try it out – free of charge.
We deliver 10 days on trial!

Dosing system table unit (incl. foot valve)

with pressure, time, vacuum controller, and foot switch

Controls:	Pneumatic (4 bar)
Operating pressure:	3 – 6 bar
Drip. pressure regul.:	0 – 2 bar adjustable
Weight:	2400 g
Dimens. (W x H x D):	210 x 150 x 110 mm

We recommend an air filter for the unit.

Order-No.
D-TG200

Test set

with 1 cartridge 30 cm³, 1 adapter 30 cm³,
8 different needles, 1 closing cap

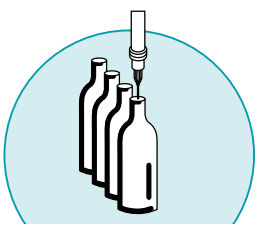
Order-No.
D-PS

Pneumatic foot valve

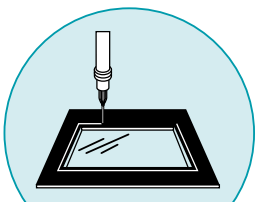
This budget-priced foot valve can also be used separately and employed as a hand or desk valve resp..

Connection:	M5
Actuation force:	6 N
Flow rate:	100 l/min
Operating pressure:	2 – 10 bar
Nominal diameter:	Ø 2.3 mm

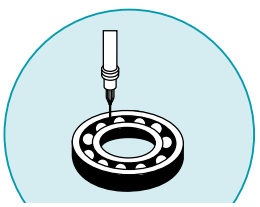
Order-No.
FV-PKU



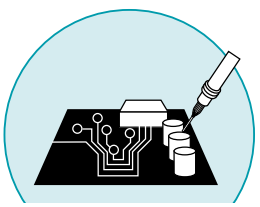
(Automatic) filling of containers up to a preset level



Dosed application of a silicone sealing groove

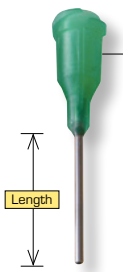


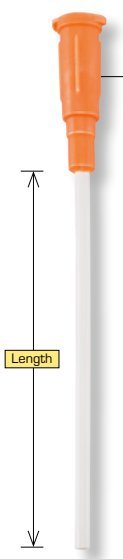
Lubrication of ball bearings

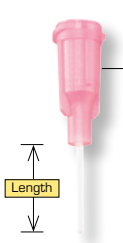


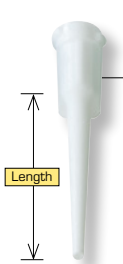
Preservation of electronic build parts

Accessories for Dosing Systems (Table and Foot Units)

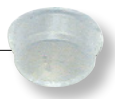


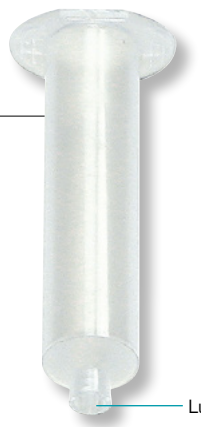






Order-No.	Description	PU
D-AD10	Adapter for 10 cm³, gray, incl. 2 m hose	1 pc.
D-AD30	Adapter for 30 cm³, gray, incl. 2 m hose	1 pc.
S-PUN4	PU-hose, transparent (max. 14 bar)	1 m
D-STV10	Closing plug for 10 cm³, transparent	10 pcs.
D-STV30	Closing plug for 30 cm³, transparent	10 pcs.
D-STPE10	PE-plug for 10 cm³, gray	10 pcs.
D-STPE30	PE-plug for 30 cm³, gray	10 pcs.
D-STNP10	Polychloroprene stopper for 10 cm³, white	10 pcs.
D-STNP30	Polychloroprene stopper for 30 cm³, white	10 pcs.
	Lenght x Ø outside (Luer Lock)	
D-KT10	Cartridge 10 cm³, 90 x 19 mm, transparent	10 pcs.
D-KT30	Cartridge 30 cm³, 115 x 25 mm, transparent	10 pcs.
D-KTUV10	Cartridge 10 cm³, UV-resistant, black	10 pcs.
D-KTUV30	Cartridge 30 cm³, UV-resistant, black	10 pcs.
Length 13 mm:	Ø inside x Ø outside (Luer Lock)	
D-N13-160	Dosing needle 1.60 x 2.11 mm, white	10 pcs.
D-N13-119	Dosing needle 1.19 x 1.65 mm, black	10 pcs.
D-N13-069	Dosing needle 0.69 x 1.09 mm, light green	10 pcs.
D-N13-051	Dosing needle 0.51 x 0.81 mm, violet	10 pcs.
D-N13-033	Dosing needle 0.33 x 0.64 mm, orange	10 pcs.
D-N13-020	Dosing needle 0.20 x 0.41 mm, gray	10 pcs.
Length 26 mm:		
D-N26-137	Dosing needle 1.37 x 1.83 mm, brown	10 pcs.
D-N26-084	Dosing needle 0.84 x 1.27 mm, dark green	10 pcs.
D-N26-058	Dosing needle 0.58 x 0.91 mm, pink	10 pcs.
D-N26-041	Dosing needle 0.41 x 0.71 mm, blue	10 pcs.
D-N26-025	Dosing needle 0.25 x 0.51 mm, red	10 pcs.
Length 38 mm:		
D-N38-160	Dosing needle 1.60 x 2.11 mm, white	10 pcs.
D-N38-119	Dosing needle 1.19 x 1.65 mm, black	10 pcs.
D-N38-069	Dosing needle 0.69 x 1.19 mm, light green	10 pcs.
D-N38-051	Dosing needle 0.51 x 0.81 mm, violet	10 pcs.
D-N38-033	Dosing needle 0.33 x 0.64 mm, orange	10 pcs.
D-N38-020	Dosing needle 0.20 x 0.41 mm, gray	10 pcs.
Length 51 mm:	Ø inside x Ø outside (Luer Lock)	
D-NTF51-175	PTFE-needle flex. 1.75 x 2.11 mm, orange	10 pcs.
D-NTF51-120	PTFE-needle flex. 1.20 x 1.68 mm, gray	10 pcs.
D-NTF51-100	PTFE-needle flex. 1.00 x 1.35 mm, blue	10 pcs.
D-NTF51-084	PTFE-needle flex. 0.84 x 1.17 mm, pink	10 pcs.
D-NTF51-048	PTFE-needle flex. 0.48 x 0.64 mm, red	10 pcs.
Length 13 mm:	Ø inside (Luer Lock)	
D-NPP13-135	PP-needle flex. 1.35 mm, amber	10 pcs.
D-NPP13-084	PP-needle flex. 0.84 mm, green	10 pcs.
D-NPP13-058	PP-needle flex. 0.58 mm, pink	10 pcs.
D-NPP13-025	PP-needle flex. 0.25 mm, red	10 pcs.
Length 38 mm:	Ø inside (Luer Lock)	
D-NPP38-135	PP-needle flex. 1.35 mm, amber	10 pcs.
D-NPP38-084	PP-needle flex. 0.84 mm, green	10 pcs.
D-NPP38-058	PP-needle flex. 0.58 mm, pink	10 pcs.
D-NPP38-025	PP-needle flex. 0.25 mm, red	10 pcs.
Conical PE:	Ø inside (Luer Lock)	
D-NKO-160	Needle PE tapered 1.60 mm, white	10 pcs.
D-NKO-119	Needle PE tapered 1.19 mm, gray	10 pcs.
D-NKO-084	Needle PE tapered 0.84 mm, green	10 pcs.
D-NKO-058	Needle PE tapered 0.58 mm, pink	10 pcs.
D-NKO-041	Needle PE tapered 0.41 mm, blue	10 pcs.
D-VK	Closing cap front, universal, white	10 pcs.
D-PS	**Test set** includes: D-KT30, D-AD30, D-VK, D-N13-160, D-N13-069, D-N13-033, D-N26-137, D-N26-084, D-N26-025, D-NKO-058, D-NPP13-058, D-STPE30	1 pc.





Color statements non-binding.

Oil Gun – OS

- For environmentally safe and targeted lubrication

Targeted lubrication in hard to access locations... often only a single drop of oil is needed in the right spot.
The oil gun sprays with precision up to a distance of 1 m (depending on viscosity and pulse frequency). Its area of application – wherever there is little space and cleanliness is a must.
Each drop reaches its target. So, lubricating can be economical and free of health hazards (without oily mist).

Viscosity: 10 – 150 mm²/sec. (medium oils) without adhesives, without solids.
Operat. temperature: –25 °C...+80 °C.
Max. clock speed: 160/min. (measured at a viscosity of 150 mm²/sec.).

Model with Viton-seals,
Order-No: **OS-BP/V, OS-BP4,5/V**

How it works:
The pneumatic operating pressure is 4 - 8 bar. The function is actuated by a 3/2 way-valve (Order-No. **MV26-3218-30 (= 24 VDC)** or **MV26-3218-06 (= 230 VAC)**). The pump container has to be installed vertically, as shown. The oil is pressed through a pressure cylinder into the lines at an approx. pressure of 50 bar. The oil is released by the dosing valve (5 – 100 mm³). All parts are ready to connect at the time of delivery, only the hoses (Order-No. **S-PA4** – refer to the chart) must be ordered, cut, and installed as needed.
A max. expansion for up to 8 lubricating points is possible with 2 **V4**-distributors.
Before each dosage valve a **V1** dispenser is inserted for venting the supply pipe. The dosage valves have fixed dosages and are not adjustable. They can be exchanged according to your needs.

Remark:
With increasing viscosity, reach and cycle frequency will decrease.

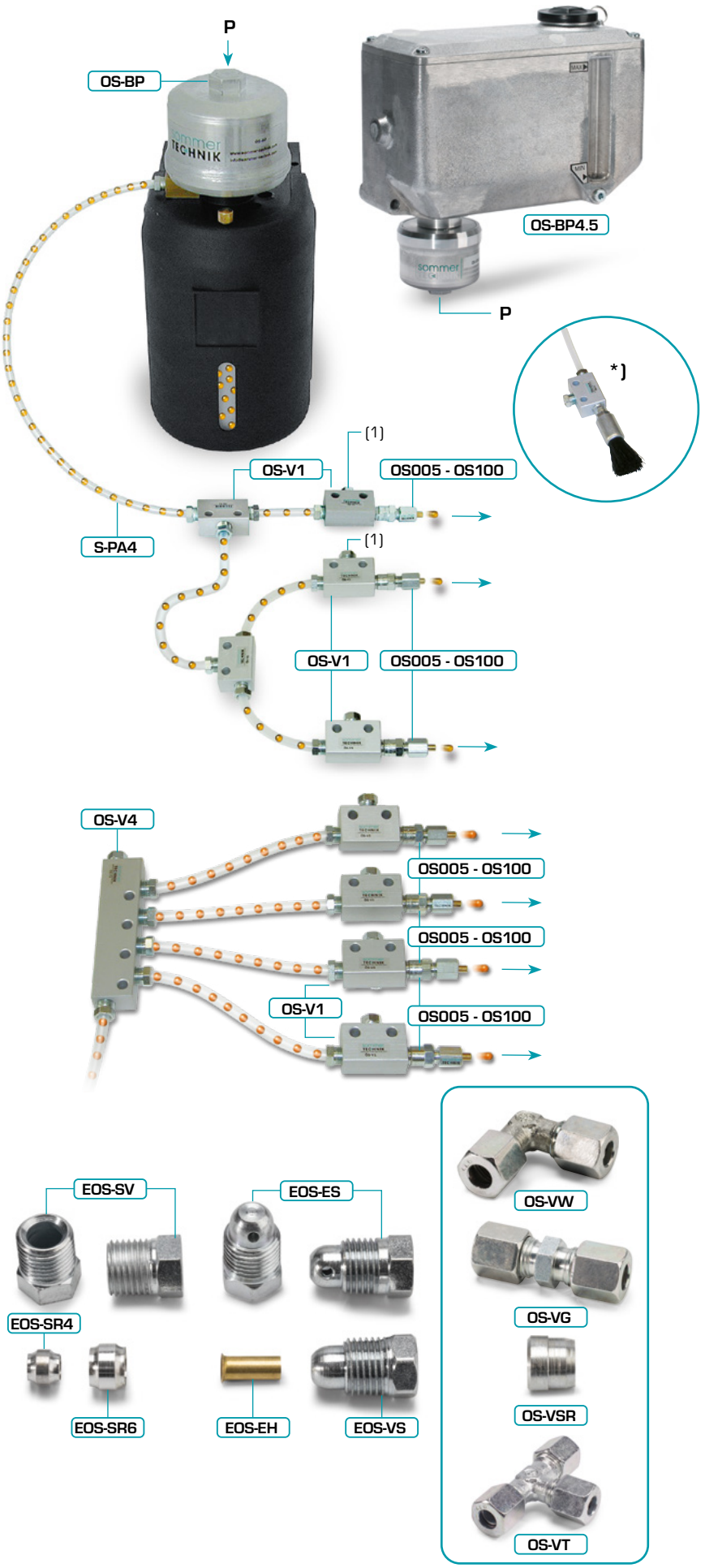
*) Matching brushes (BU-R12, BU-R20) for surface atomizing – see next pages.

Order example for 2 lubricating points:
1x OS-BP + 3x 05-V1 + 2x 05010 + 5 m S-PA4

Remark:
Before initial start-up the system must be vented several times, until it is free of air bubbles.

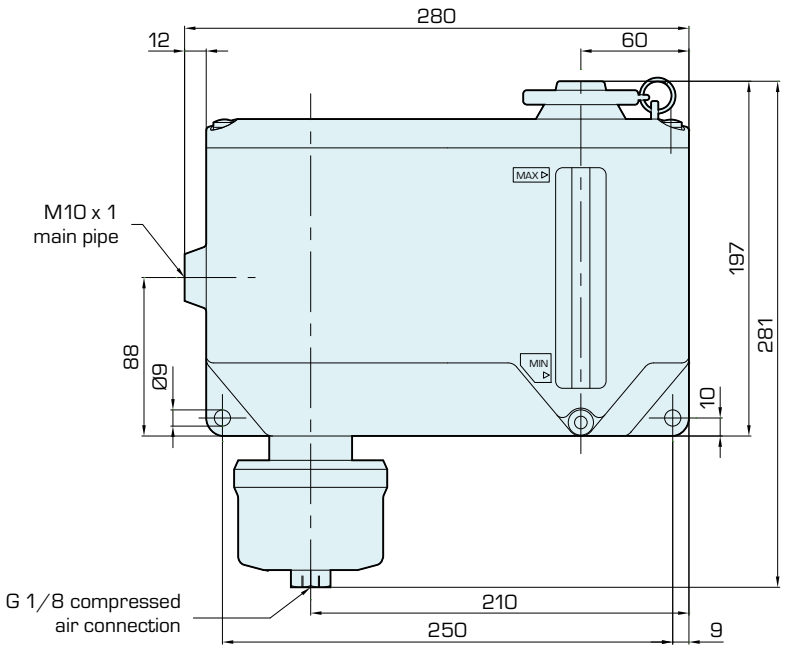
(1) Venting

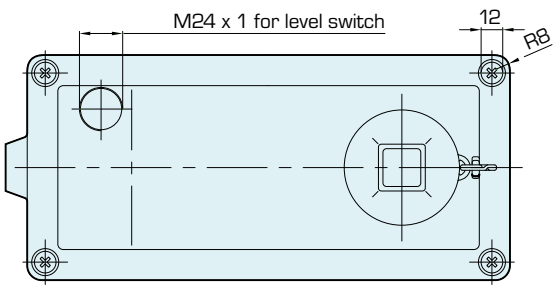
Lubricating points on the V4-distributor which are not in use have to be closed (suitable blind plugs are included in the delivery).



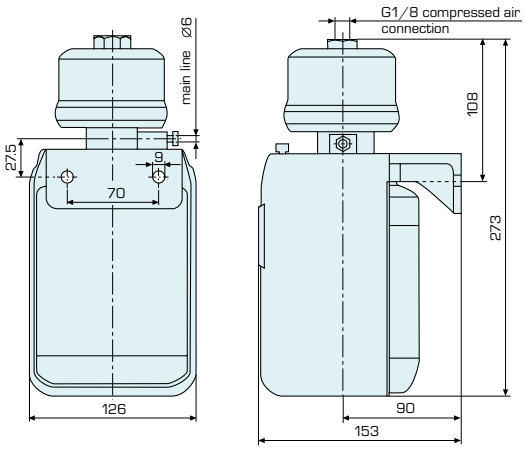
Order-No.	Description
OS005	Dosing valve 5 mm³
OS010	Dosing valve 10 mm³
OS025	Dosing valve 25 mm³
OS050	Dosing valve 50 mm³
OS100	Dosing valve 100 mm³
OS-BP	Container + pump 1.2 l
OS-BP/V	Container + pump 1.2 l Viton
OS-BP4,5	Container + pump 4.5 l
OS-BP4,5/V	Container + pump 4.5 l Viton
OS-S1,5	Level switch for OS-BP
OS-S4,5	Level switch for OS-BP4,5
OS-VW	Angled cutting ring screw joint
OS-VG	Cutting ring screw joint
OS-VSR	Spare cutting ring for screw joint
OS-VT	T cutting ring screw joint
EOS-SR6	Cutting ring ø 6 mm for S-PA4
EOS-SR4	Cutting ring ø 4 mm
EOS-SV	Hose connector
EOS-ES	Venting screw
EOS-VS	Closing screw
EOS-EH	Hose plug-in sleeve
OS-V1	Connection-ready distributor
OS-V4	Connection-ready distributor
S-PA4	Fluid Hose per m

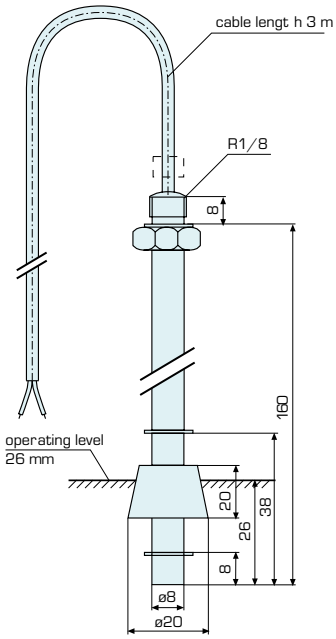
OS-BP4.5





OS-BP



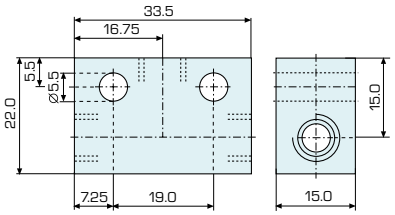


Electrical oil level monitoring for OS-BP

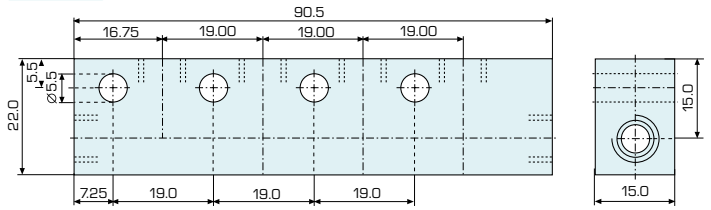
Contact container, empty:	Closed
Max. power:	250 V AC/DC
Max. switching performance:	10 VA / 10 W
Max. current:	0.5 A
Material:	Plastic / brass
Installation position:	Vertical ±30°
Operating temperature range:	Up to +80 °C

Additional drawings →

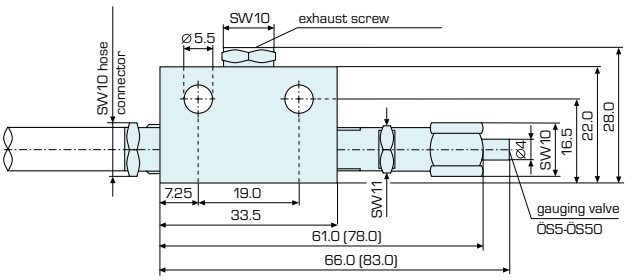
OS-V1



OS-V4



V1 + OS005/OS010/OS025/OS050 (OS100)

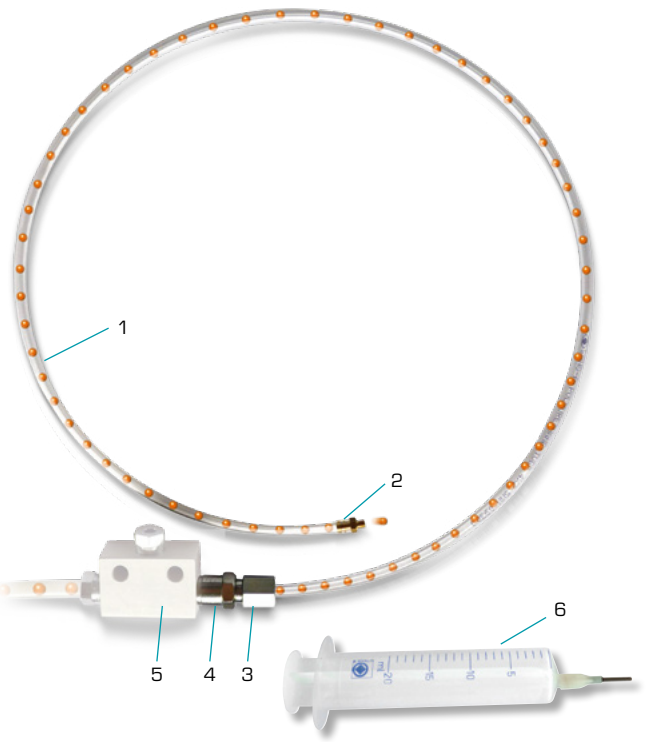


Central Lubrication for difficult to access Lubricating Points – OS...-Z

- The Loop Oiler...

Tight spaces or lubricating points are difficult to access can be quite a challenge for design engineers.
To solve the problem you can install a flexible PU-hose extension (max. 2 m, outside-Ø 4 mm) on our OS-dosing valve to help you guide the oil around corners or into closed spaces (engine blocks, machine beds, etc.).
Cut the PU-hose to the desired length, use the enclosed cartridge to fill in the desired oil and attach the hose end using a M3-fitting (wrench size 4.5 mm, nominal width 1.5 mm) included in the delivery.

1) Hose (Order-No. S-PUN2,5)
2) Plug fitting (Order-No. 3045-4/2,5-M3)
3) Cutting ring ø 4 mm, not visible (Order-No. OS-SR4)
4) Dosing valve (Order-No. OS005-OS100)
5) Distributor (Order-No. OS-V1) – not included in the delivery
6) Cartridge and dosing needle



Order-No.	Description
OS005-Z	Dosing valve 5 mm³ with 2 m hose extension
OS010-Z	Dosing valve 10 mm³ with 2 m hose extension
OS025-Z	Dosing valve 25 mm³ with 2 m hose extension
OS050-Z	Dosing valve 50 mm³ with 2 m hose extension
OS100-Z	Dosing valve 100 mm³ with 2 m hose extension

Suitable oil tanks, atomizers and accessories for your lubricating system are available on the previous pages under "Oil Gun".

Magnet valve for additional lubricant circuit – OS-MV-2218-30

Perfect for the integration of a second lubricant circuit, this 2/2-way valve can engage the circuit (pressure-free), while the OS-BP pump is in non-operating state.

Model versions:	currentless when closed
Housing material:	brass
Cyclic duration factor:	100 %
Appliance outlet:	DIN 43650
Voltage:	24 VDC
Permissible voltage tolerance:	–15 % to +10 %
Nominal diameter:	Ø 2 mm
Static pressure:	40 bar
Dynamic pressure:	15 bar
Power consumption:	11 VA / 8 W
Protection class:	IP 54 (with appliance inlet)
Temperature range:	–10 °C ... +95 °C
Max. ambient temperature:	+50 °C
Coil adjustment:	infinitely variable 360°

Order-No.	Description
OS-MV-2218-30	Magnet valve for additional lubricant circuit

Brushes – BU...

Brushes for BMT, BKT, and oil gun OS

These brushes are very suitable for simple lubrication of small surfaces, strips, and belts.
The oil is fed through a hose (connection G1/8") from the top.
BMT- or the BKT-hoses can be used for oil infeed.
Matching hoses are available in Chapter "Accessories" on the last pages of the catalogue.
For mounting on machines or conveyor belts, use stainless steel bracket BU-WI.
Two M6x12 fixing screws are included.

The brushes BU-R12 and BU-R20 can also be used together with the OS oil gun (see previous pages). They are simply mounted together with the oil gun OS005 to OS100. See fig. (A)

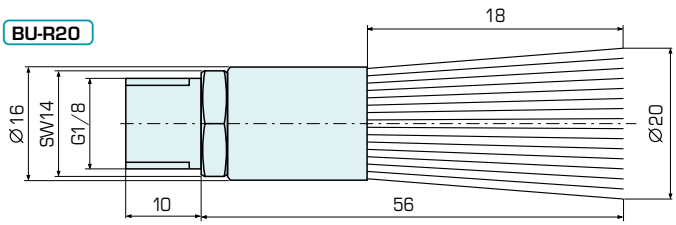
Material:
Bristles: PA black, Nylon transparent
Housing: Zinc-plated steel, brass, aluminium

Order-No.	Description
BU-R10 [2]	Brush round Ø 10 mm, transparent
BU-R12 [1] [2]	Brush round Ø 12 mm, black
BU-R20 [1] [2]	Brush round Ø 20 mm, black
BU-WI	Mounting angle for brushes

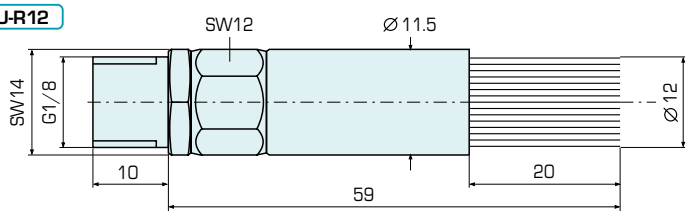
[1] Suitable for oil gun.
[2] Included in the delivery: 1 x hose attachment screw joint (1030-6/4-1/8) + 2 x gasket (1600-1/8)

Fig. (A)

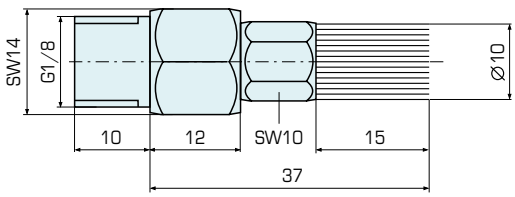
BU-R20



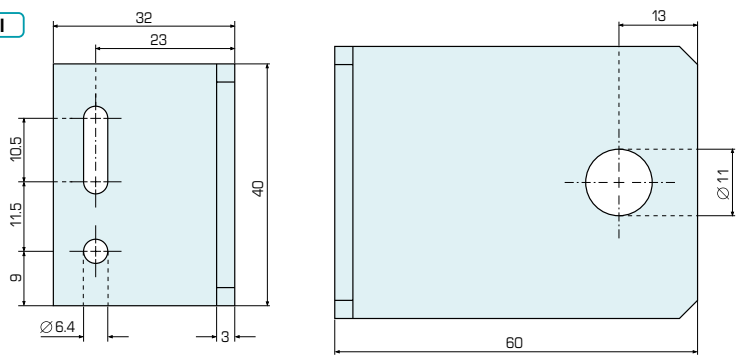
BU-R12



BU-R10



BU-WI



BMT – Tank, Magnetic Valve, Drip Feed

- BMT – the dosing unit for all brushes (see previous page) and roller lubricators (see next page).

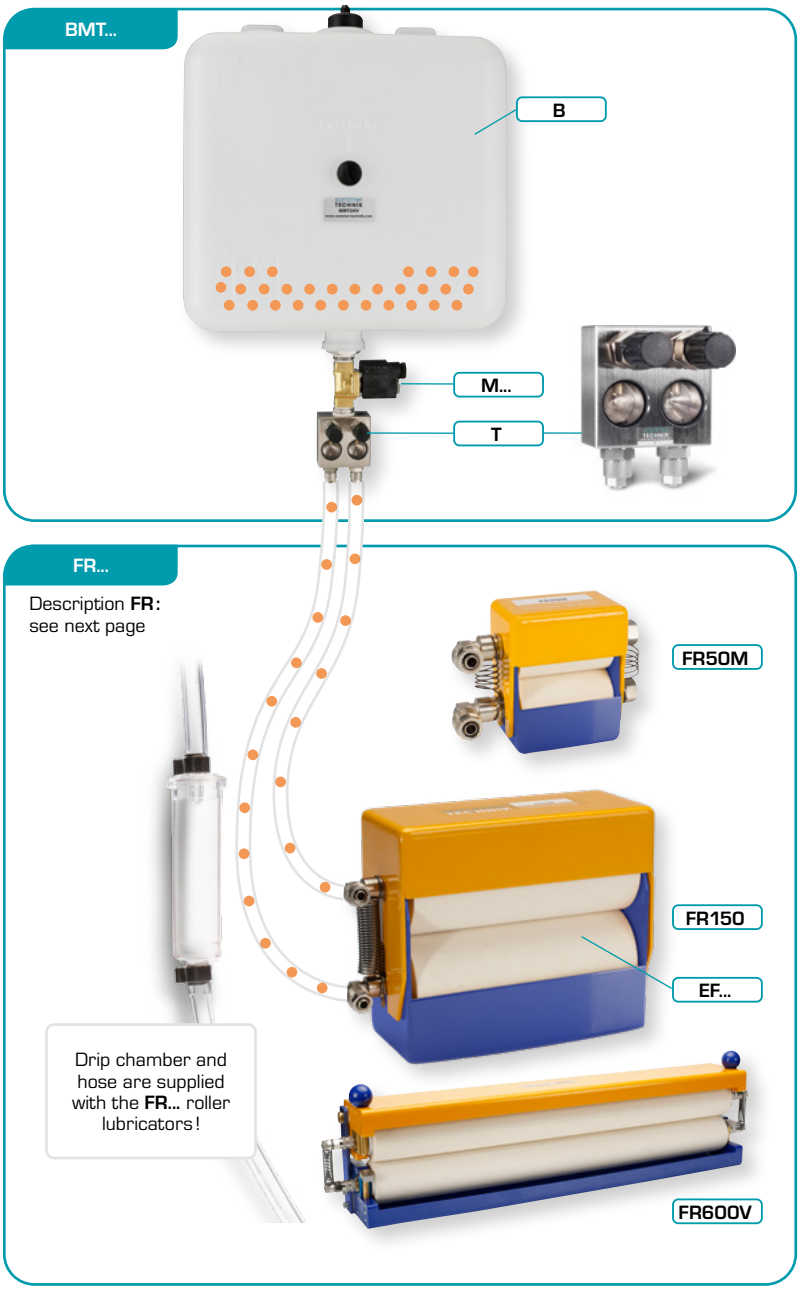
The 10-litre tank **(B)** provides a sufficient supply of lubricating fluid for continuous operation. The fluid level is well readable even from a larger distance. With the help of an optional level switch the tank can be automatically filled and its complete drain avoided. By means of a magnet valve **(M)** (24 V DC or 230 V AC – please specify with your order), which is actuated together with the machine, the fluid gets to the drip unit **(T).** Via 2 choke screws the droplet quantity can be individually metered for each felt roller. The oil quantity is checked through the inspection window on the drip unit.

Instead of the magnet valve a 1/2" ball valve may also be delivered – order code **BKT** (see below).

Delivery includes 4 m **S-PVC4** hose and
2 x **1020-8/6-1/8" fittings** for connecting the **ESG** drip chamber.

Order-No.	Voltage AC [V]	Voltage DC [V]
complete:		
BMT24V	–	24
BMT230V	230	–
with level switch for oil:		
BMT24V-SS10PA	–	24
BMT230V-SS10PA	230	–
with level switch for water and ethanol:		
BMT24V-SS10PP	–	24
BMT230V-SS10PP	230	–
individually:		
B*	–	–
MV01-2214-06	230	–
MV01-2214-30	–	24
T	–	–

*) Temperature range:
PE-HD: –100 °C to +90 °C, short-time max. +110 °C



BKT – Tank, Stopcock, Drip Feed (for Roller Oiler)

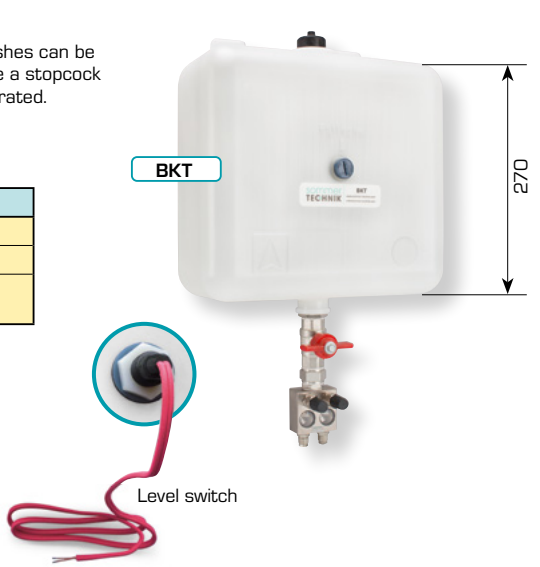
Tank, Stopcock, Drip Feed

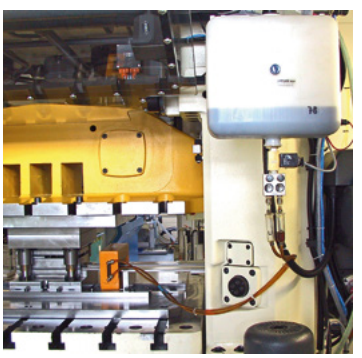
As with the **BMT**, the oil feed to roller lubricators or brushes can be metered and regulated here. Instead of the magnet valve a stopcock ball valve for the purely manual operation has been integrated. Additional dimensions see **BMT** (see above).

Order-No.	Version
BKT	–
BKT-SS10PA	incl. level switch for oils
BKT-SS10PP	incl. level switch for water and ethanols

Temperature range (tank B):
PE-HD: –100 °C to +90 °C, short-time max. +110 °C

Attachment (mounting SS10PA/SS10PP):
Bolt circle Ø 22 mm/wall thickness 0.5 – 4.0 mm





A little bit of oil keeps things running smoothly. Here our Roller Oiler FR applies a layer of oil onto the sheet metal surface before punching.

FR – Roller Oiler

Tapes and plates need to be lubricated to increase the tools' lifetime. The roller lubricator has two felt rollers which are moistened separately. Through a drilled quill (see schematic) the oil is spread evenly over the entire roller length. The felt rollers are mounted in ball bearings and can be replaced if worn.

The lateral springs ensure a steady contact pressure of the felt rollers, also with varying plate gauges.

Drip chamber and hose are included in the delivery!

NOTE!

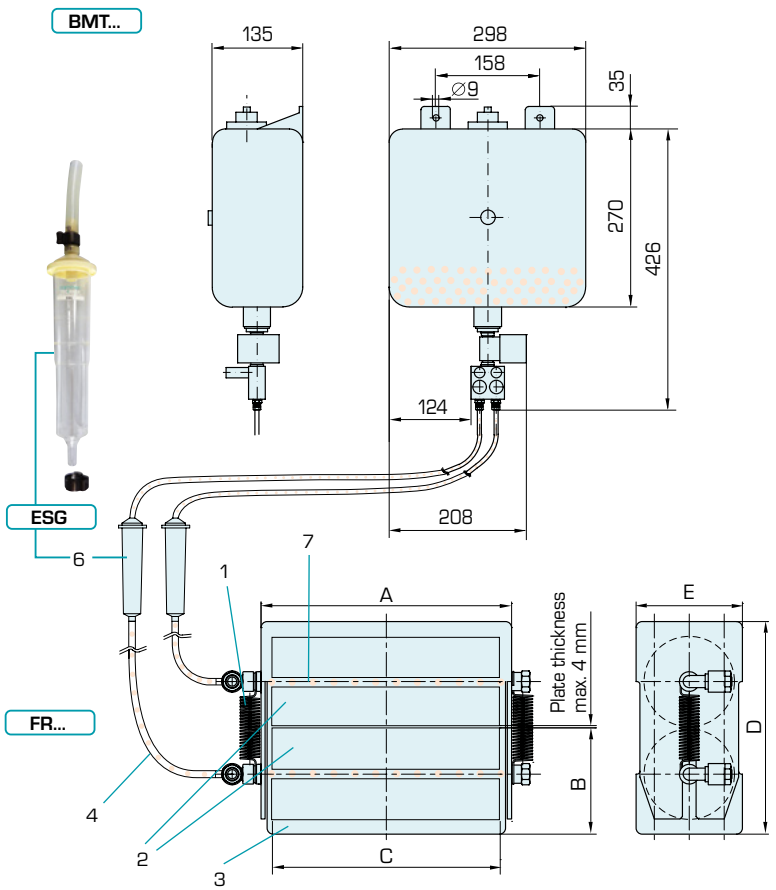
Roller lubricators and replacement felts are excluded from our trial order service.

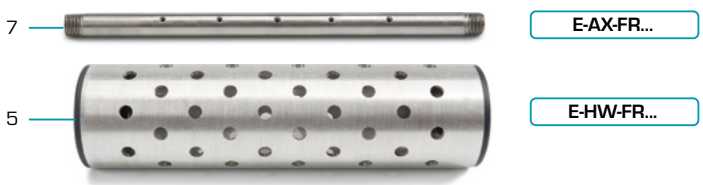
Order-No.	Dimension					Max. hous. thickn. [mm]
	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	
FR50M	62	36	50	73	41	1.5
FR100M	112	36	100	73	41	1.5
FR150M	162	36	150	73	41	1.5
FR75	91	70	75	140	70	4
FR150	166	70	150	140	70	4
FR225	241	70	225	140	70	4
FR300	316	70	300	140	70	4
FR450	466	70	450	140	70	4
FR600V	664	80	600	205	100	4
FR700V	764	80	700	205	100	4
ESG	Drip chamber					

Flow speed: max. 300 m/min.
Viscosity at 40 °C: 100 – 150 mm²/sec.

Spare parts:

1) Spring – Order-No.: **E-FZ-FR...**
2) Felt roller (Replacement felt see below)
3) Steel housing
4) Hose – Order-No.: **S-PVC5** (see page 61)
5) Hollow shaft – Order-No.: **E-HW-FR...**
6) Drip chamber – Order-No.: **ESG**
7) Axle – Order-No.: **E-AX-FR...**



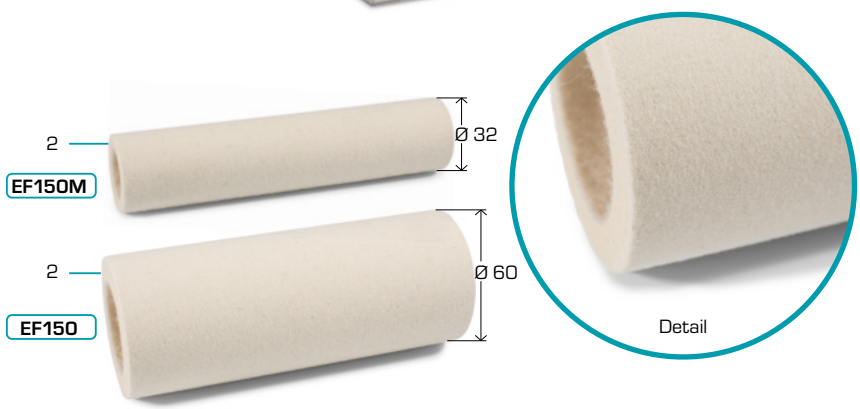


The roller lubricator can be fixed with the FRH clamp mountings.

Order-No.	suitable for roller lubricator
FRH075-300	FR75, FR150, FR225, FR300
FRH300-450	FR300, FR450
FRHM050-150	FR50M, FR100M, FR150M
FRHV600-700	FR600V, FR700V

Replacement rollers can be ordered. Instead of **"FR"**, add **"EF"** to the Order-No. Order example: **EF50M**

Order-No.	Order-No.
EF50M	EF225
EF75	EF300
EF100M	EF450
EF150	EF600
EF150M	EF700



Universal Supply Tanks

Our tanks are made of hard Polyethylene PE-HD and are excellently suitable for use with alcohol, electrolytes, glycol, mineral oils, lubricants, and acids.

The **TR** version is a drip bottle for drop-by-drop dosing. The **SR** and **SE** tanks are equipped with a drip nozzle. The **B05K** also has a pouring spout.

The 10l and 20l version is fitted with a bleed screw for a steady flow rate. The **B01R/01** is delivered connection-ready with a 6 x 4 mm hose attachment and suspension.

The tank **B** has a mounting suspension and is also available with a filling level indicator (see next page).

Order-No.	Filling qty. liter	Dim. [W x H x D] mm	Material
BK050-TR	0.05	Ø37 x 85	PE-LD
BK100-TR	0.10	Ø47 x 105	PE-LD
BK500-SR	0.50	Ø75 x 177	PE-LD
B01E	1.0	86 x 180 x 86	PE-HD
B01R	1.0	Ø95 x 185	PE-HD
B01R/01	1.0	Ø95 x 185	PE-HD
B03E	3.0	152 x 220 x 128	PE-HD
B03R	3.0	Ø140 x 280	PE-HD
B05C	5.0	195 x 305 x 130	PE-HD
B06E	6.0	190 x 250 x 190	PE-HD
B10	10.0	280 x 325 x 180	PE-HD
B	10.0	298 x 305 x 135	PE-HD
B20	20.0	340 x 160 x 485	PE-HD

Temperature range:
PE-LD: –50 °C to +80 °C, short-time max. +90 °C
PE-HD: –100 °C to +90 °C, short-time max. +110 °C

Tank with level switch...

The level switch enables to control the filling level of a tank. The switch is available separately or complete with tank.

The **B-SS10PA** and **B-SS10PP** versions are ideally suited for the oil supply by our **ZMIN** atomizer.

The switch can be used both as a minimum or maximum indicator. By rotating the switch by 180° the switching function can be reversed.

Mounting: Circular array Ø 22 mm/Wall thickness 0.5 – 4 mm

Technical specifications level switch:

Order-No.	...PA	...PP
Min. switching density of medium:	0.65 g/cm³	0.55 g/cm³
Operating temperature:	–40 °C...+120 °C	–40 °C...+107 °C
Max. working pressure:	3.5 bar	3.5 bar
Power consumption:	20 VA (max. 0.5 A, 250 VAC)	20 VA (max. 0.5 A, 250 VAC)
Float displacement:	53 mm	53 mm
Protection class:	IP65	IP65
Weight:	90 g	90 g
Material:	PA	PP

Order-No.	Description
B-SS10PA[1] **B-SS10PP**[2]	Tank for suspension 10 l, with level switch
B01E-SS10PA[1] **B01E-SS10PP**[2]	Oblong tank for upright placing 1 l, with level switch
B01E/02-SS10PA[1] **B01E/02-SS10PP**[2]	Tank for suspension 1 l, with level switch and push-pull fitting for 6x4 hose
B03EH	Oblong tank for suspension 3 l, with plastic carrying handle, mini ball valve and push-pull fitting for 6x4 hose
B03EH-SS10PA[1] **B03EH-SS10PP**[2]	Oblong tank for suspension 3 l, with plastic carrying handle, mini ball valve and push-pull fitting for 6x4 hose, with level switch
B05K-SS10PA[1] **B05K-SS10PP**[2]	Tank for upright placing 5 l, with level switch
B05K-SS10PA/SD[1] **B05K-SS10PP/SD**[2]	Tank for upright placing 5 l, with level switch and hose grommet
B05K/SD	Tank for upright placing 5 l, hose grommet
B10-SS10PA[1] **B10-SS10PP**[2]	Tank for upright placing 10 l, with level switch and hose grommet
B10-SS10PA/SD[1] **B10-SS10PP/SD**[2]	Tank for upright placing 10 l, with level switch and hose grommet
B10/SD	Tank for upright placing 10 l, with hose grommet
B20-SS10PA[1] **B20-SS10PP**[2]	Tank for upright placing 20 l, with level switch
B20-SS10PA/SD[1] **B20-SS10PP/SD**[2]	Tank for upright placing 10 l, with level switch
B20/SD	Tank for upright placing 20 l, with hose grommet
SS10PA[1] **SS10PP**[2]	Level switch

[1] **made of PA – not suitable for long-time use in water**
[2] **made of PP – not suitable for mineral oils**

* Assembly switch to **NO**: The float switches at the upper liquid level.
* * Assembly switch to **NC**: The float switches at lower liquid level.


B03EH


B03EH-SS10PA


B01E-SS10PA


for hose with 4 x 6 mm nominal diameter (inside x outside)

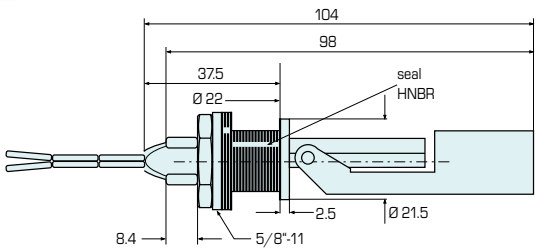
B10-SS10PA/SD

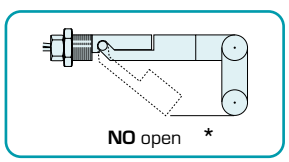

for hose with 4 x 6 mm nominal diameter (inside x outside)

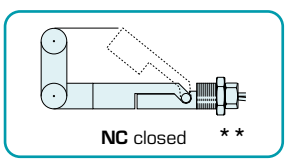
B01E/02-SS10PP


SS10PA


SS10PP




NO open *


NC closed * *

Handheld blower with atomizer for inviscid media – HBPZ

Whenever mobile, fast atomizing is required, the HBPZ is called into action. Operating the compressed air pistol will generate a vacuum. Thereby the medium is drawn out of the tank through a suction tube and atomized by the inrushing compressed air. The quantity is regulated by rotating the nozzle at the end of the tube.

No matter if water, release agents, thin oils, washing additives or emulsions – our handheld blower has a versatile the range of applications. The 700 ml PE tank is unscrewed and filled quickly. Since the container is located close to the blower pistol, the handling with the filled tank is well-balanced and prevents your hand from premature fatigue.

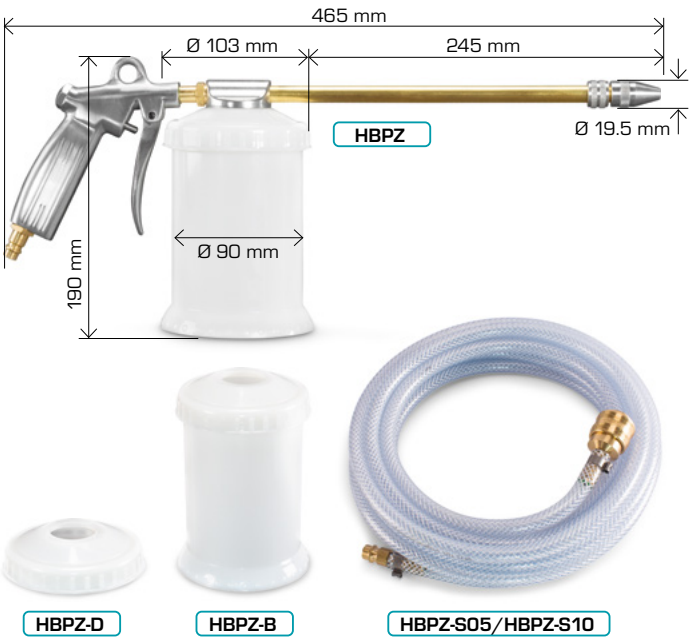
Technical specifications:

Working pressure [bar]	Sound pressure level [dB]	Air consumption [l/min]	Sample measured value water volume in 1 min at 20 °C [ml] max.
2	84	42	390
3	88	50	410
4	96	60	370
5	98	72	325
6	100	83	320
7	102	95	260

Max. working pressure:	10 bar
Recommended working pressure:	2 – 6 bar
Operating temperature:	+5 °C to +50 °C
Spray conus:	appr. 40°
Connection:	coupling plug NW7,2
Fluid regulation:	by nozzle rotation
Material hand blower:	aluminium, brass
Weight:	700 g
Tank filling quantity:	0.7 l
Mat. tank:	PE
Tank thread:	FI 94 x 7 flat thread
Hose:	compressed air hose 6 x 11 mm/20 bar with fittings NW7.2 (coupling and plug) Length 5 m and 10 m, transparent PVC with fabric lining

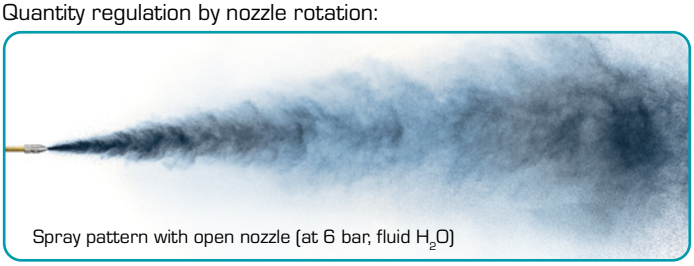
Individual parts:

Order-No.	Description
HBPZ	Handheld blower for atomizing, incl. tank + cover lid
HBPZ-D	Spare lid, PE
HBPZ-B	Spare tank, incl. cover lid, PE
HBPZ-S05	Compressed air hose 5 m, connection-ready
HBPZ-S10	Compressed air hose 10 m, connection-ready

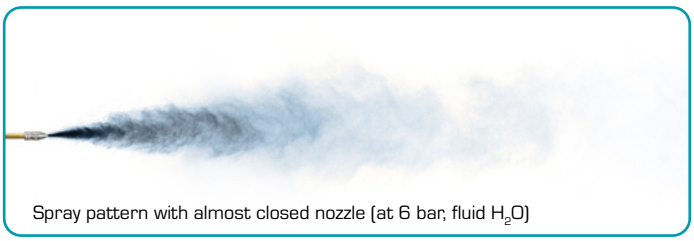


HBPZ-D | HBPZ-B | HBPZ-S05/HBPZ-S10

Quantity regulation by nozzle rotation:

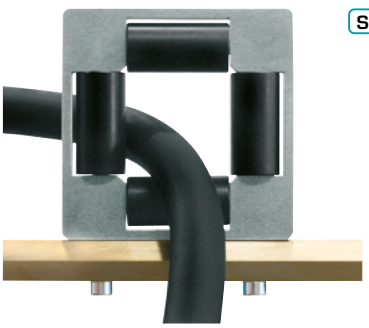


Spray pattern with open nozzle (at 6 bar, fluid H_2O)



Spray pattern with almost closed nozzle (at 6 bar, fluid H_2O)

Hose and Cable Guide



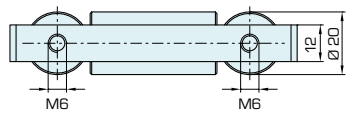
SCHLAFU-40

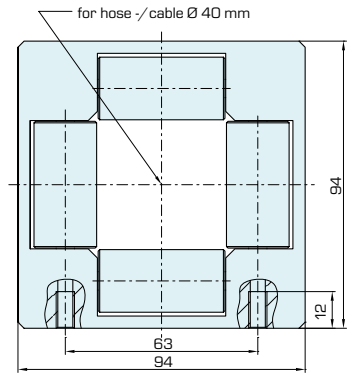
Just around the corner...

This gentle hose and cable guide is very practical, because it lets you wind cables off several reels, rings, or drum from the shelf directly onto a permanently installed winding unit or length measuring unit. Max. diameter 40 mm.
Aluminum casing [W x H x D]: 94 x 94 x 12 mm.
Two M6-threaded holes spaced 63 mm apart are provided for installation.

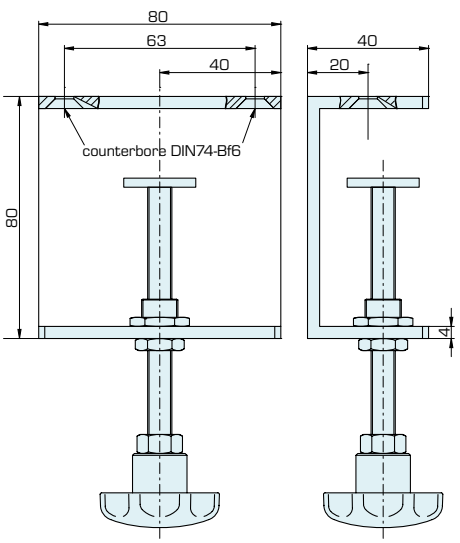
Order-No.	Description
SCHLAFU-40	Hose and cable guide
SCHLAFU-HA	Table holder for a plate thickness up to 40 mm

SCHLAFU-40





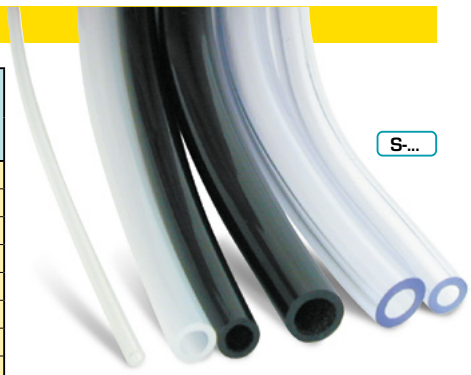
SCHLAFU-HA



80 mm depth

Hoses made of PA, PU, PVC

Order-No.	Nominal width inside x outside [mm]	Color white	Color black	Color transparent	Suitable for	Max. press. [bar]	Temperature range [°C]	Bending radius [mm]
S-PA1,5	1.5 x 2.5	■	—	—	ZMIN-MS	12	-50... +100	25
S-PA4	4 x 6	■	—	—	OS	45	-60... +100	30
S-PTFE1,5	1,5 x 2,5	■	—	—	ZMIN-MS	10	-190... +260	12
S-PTFE4	4 x 6	■	—	—	ZMIN-MS	25	-196... +260	30
S-PU2	2 x 3	—	■	—	—	10	-35... +60	10
S-PU2,5	2.5 x 4	—	■	—	ZR-KOPF	13	-35... +60	10
S-PU3	3 x 4.3	—	■	—	—	12	-35... +60	10
S-PU4	4 x 6	—	■	—	VP, VG, Atomizer	14	-35... +60	15
S-PU6	6 x 8	—	■	—	VDF, DF, CDF	12	-35... +60	15
S-PUN2,5	2.5 x 4	—	—	■	ZR-KOPF	13	-35... +60	10
S-PUN4	4 x 6	—	—	■	AS, BMT, TO, Atomizer	14	-35... +60	10
S-PUN4L	4 x 6	—	—	■	AS, BMT, TO, Atomizer	14	-35... +60	10
S-PUN5	5 x 8	—	—	■	BMT, BKT	16	-35... +60	23
S-PVC4	4 x 6	—	—	■	AS, BMT, TO, Atomizer	7.5	-20... +60	15
S-PAW4	4 x 6	■	—	—		26	-60... +100	30
S-PVC5	5 x 8	—	—	■	BMT, FR	8.5	-20... +60	23
CUT14	Hose cutter Ø 0 – 14 mm							
CUT14-EK	Replacement blade for hose cutter							



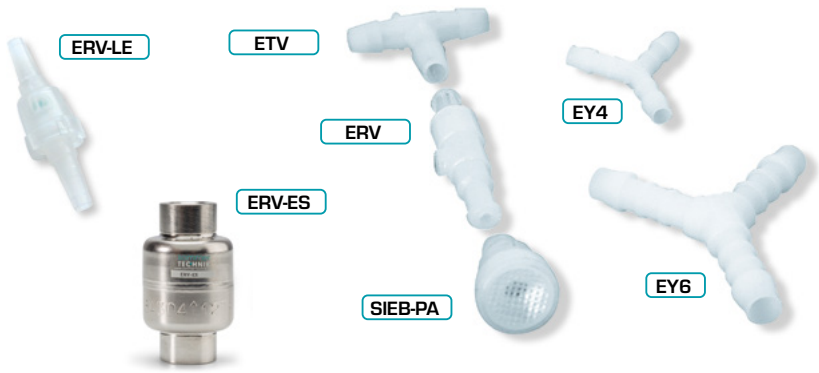
Hose Connector, Return Valve, Filter

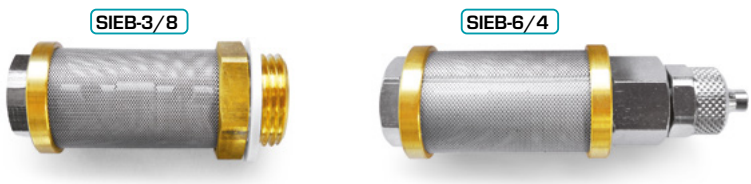
Hose Connector, Return Valve

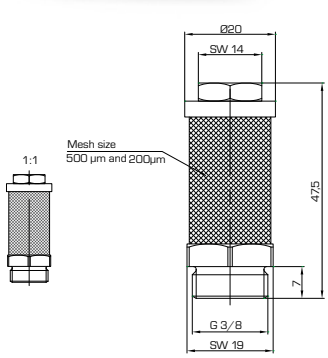
- Made of plastic
- Resistant to alcohol and acids
- Food safe (Version **LE**)

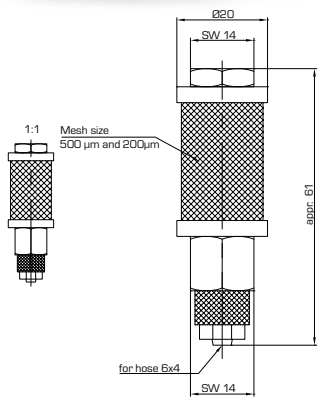
Suitable for all PVC and PU hoses with 4 mm nominal diameter save the **EY6** Y-piece which is designed for 6 mm hoses.

Order-No.	Description
ERV	Check valve without spring, plastic
ETV	Check T-valve, plastic
EY4	Y-piece hose – inside Ø 4 mm
EY6	Y-piece hose – inside Ø 6 mm
ERV-LE	Check valve, food-safe
ERV-ES	Check valve, stainless steel G1/4" with spring reset. Cracking pressure: 0.03 bar









Sieve

Our "cleaning guys" filter dirt particles out of liquids such as oils, alcohols or alcaline solutions and thus prevent undesirable pluggings. The **SIEVEs** can be used in our tanks or individual containers. They funtion independently from temperature in a pressure-free ambience. Choose between the **SIEVE** with external thread for permanent installation or else with hose attachment (nominal diameter 4 mm).

Order-No.	Mounting	Sieve openings stainless steel mesh	Suitable for tanks (see previous pages)	Material	Weight [g]
SIEB-3/8	External thread for permanent installation	500 µm and 200 µm *	B (BMT24V, DC, BKT, B-SS10PP)	Brass, nickel-plated brass, stainless steel	50
SIEB-6/4	Hose attachment for hose Ø 4 mm	500 µm and 200 µm *	B01E, B01R, B03R, B05, B10, B20	Brass, nickel-plated brass, stainless steel	51
SIEB-PA	Hose attachment	700 µm	B01E, B01R, B03R, B05C, B10, B20	Polyamid	1.5
SIEB-PP	Hose attachment	250 µm	B01E, B01R, B03R, B05C, B10, B20	Polypropylene + stainless steel	11.5

*) Both mesh sizes are included in the delivery.

Silent Air Nozzle

- Noise reduction down to 20 dB

When compressed air escapes, it sizzles.
The noise can be as high as 100 dB and can damage the hearing. The trade association has enacted stringent regulations regarding this matter. One more reason to use a silent air nozzle.

Depending on the pressure, the sound level of the **SO-NW4** can be reduced by up to 20 dB, and that without pressure drop. A special air shroud exploits the existing pressure in a better way. The air supply can be regulated by rotating the SO-NW4 on the MS-M10x1; this saves a choke valve.
To reduce the sound generated by tightly compressed air while escaping, the air jet is directed through 5 exit holes in a linear manner, which results in lower sound levels – i.e. less noise.

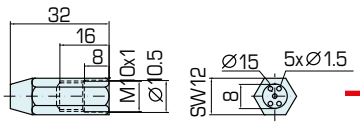
The regulator nozzle **SO-RD** is used for liquid products. The fluid quantity can be adjusted or even be shut off by turning the **SO-RD.**

Material: Nickel-plated brass

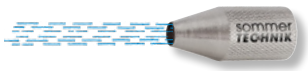
Order-No.	Air consumpt. per min. [m³]	Size [threading]	Sound level [dB]
SO-NW4	0.140	M10x1	86
SO-RD4	0.240	M10x1	85
SO-RD6	0.300	M12x1	86

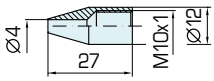
All data measured at: 6 bar operating pressure

SO-NW4



SO-RD4





Metal Hose

- Protection against hot chips

The **MS** is a flexible metal hose for fluids and air and is available in two sizes. The metal hose is extremely robust and resistant to hot chips, grease, and oils. The plastic sleeve (PVC) on the inside makes it absolutely tight.

A long life, outstanding flexibility, and the ability to remain in a set position make this metal hose a useful "work aid".

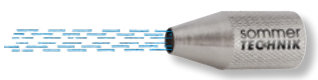
Area of application: Infeed of fluids (cooling agent, water, oils, etc.) and air.

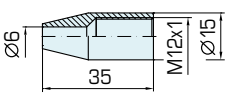
An extension piece **(VS)** measuring 100 mm is available for the metal hose.

All SOMMER nozzles can be installed directly onto a fitting or any metal hose. This makes the nozzle very flexible.

Material: Nickel-plated steel with plastic hose (PVC) inside.

SO-RD6





Order-No.	Nominal diameter (mm)	Length (mm)	Bending radius (mm)
MS-M10x1	4	200	64
MS-M10x1-400	4	400	64
MS-M12x1	6	320	72
MS-M12x1-500	6	500	72

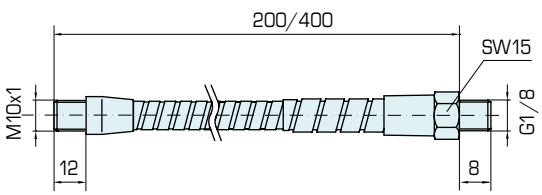
Extension Piece

- For metal hoses **MS-M10x1** and **MS-M12x1**

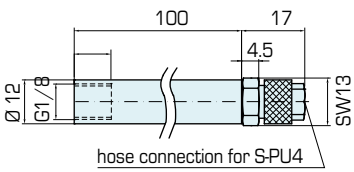
Order-No.	suitable for
VS1/8	MS-M10x1 & MS-M10x1-400
VS1/4	MS-M12x1 & MS-M12x1-500

You can mix and match.
Order example: "SO-NW4 + MS-M10x1 + VS1/8"

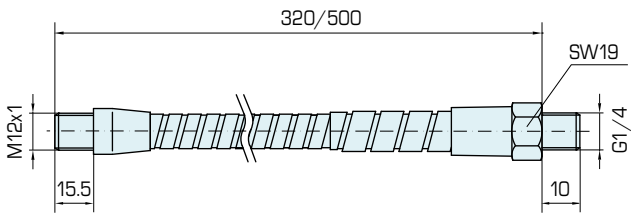
MS-M10x1 **MS-M10x1-400**



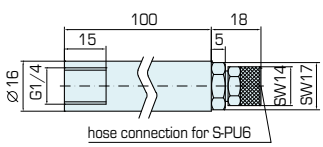
VS1/8



MS-M12x1 **MS-M12x1-500**



VS1/4



Silent Air Nozzle

- Noise reduction by 20 dB

When compressed air is decompressed, a hissing noise occurs. The noise can reach up to 100 dB and is hazardous for the hearing. Concerning this matter, the professional association has imposed strict conditions. Depending on the pressure, the sound level can be reduced by up to 20 dB with the muted air nozzle, and that without pressure drop. A special air shroud exploits the existing pressure in a better way. The nozzle is regulated via an (ESO-RE) (fine-pitch thread M12 x 0.75), this saves the choke valve.
To reduce the sound generated by tightly compressed air while escaping, the air jet is directed through the existing plastic inset (4 – 7 exit holes) in a linear manner, which results in lower sound levels – i.e. less noise. The different model versions (round, flat, oblong and flexible) are available with internal or external thread, according to your needs (order separately). The various threaded fittings offer connectivity options for metal hoses, handheld blowers etc.

Version: heat-resistant up to 150 °C

Material: Nickel-plated brass, except for SO-RW (aluminium)

Info: The SOMMER low-noise air nozzle is the original and we filed a patent application for it already in 1974. Competitors have often copied it complete with the product declaration.

Order-No.	Air consumpt. per min. [m³]	Size [Threading]	Sound level [dB]
SO-RW	0.105	M12x0.75	83
SO-RK	0.160	M12x0.75	84
SO-R	0.160	M12x0.75	81
SO-M	0.140	M12x0.75	83
SO-F	0.140	M12x0.75	79
SO-Q	0.240	M12x0.75	83
SO-B	0.105	M12x0.75	87
ESO-BSR6	Additional cutting ring for SO-B		
ESO-BVS	Connection for SO-B		
ESO-RE	Adjustment insert for blow nozzles		

All data measured at: 6 bar operating pressure.

Threaded Connection Piece / Blow Pistol

- For metal hoses, blow pistols, and variable installations

Order-No.	Size Threading
GR-M10x1i	M10x1
GR-M12x1i	M12x1
GR-M12x1a	M12x1
GR-M12x1,25a	M12x1.25
GR-M12x1,5a	M12x1.5
GR1/4a	G1/4"
GR1/4i	G1/4"
GR1/8a	G1/8"
GR1/8i	G1/8"
HBP	Pistol M12x1.25

Metal Hose

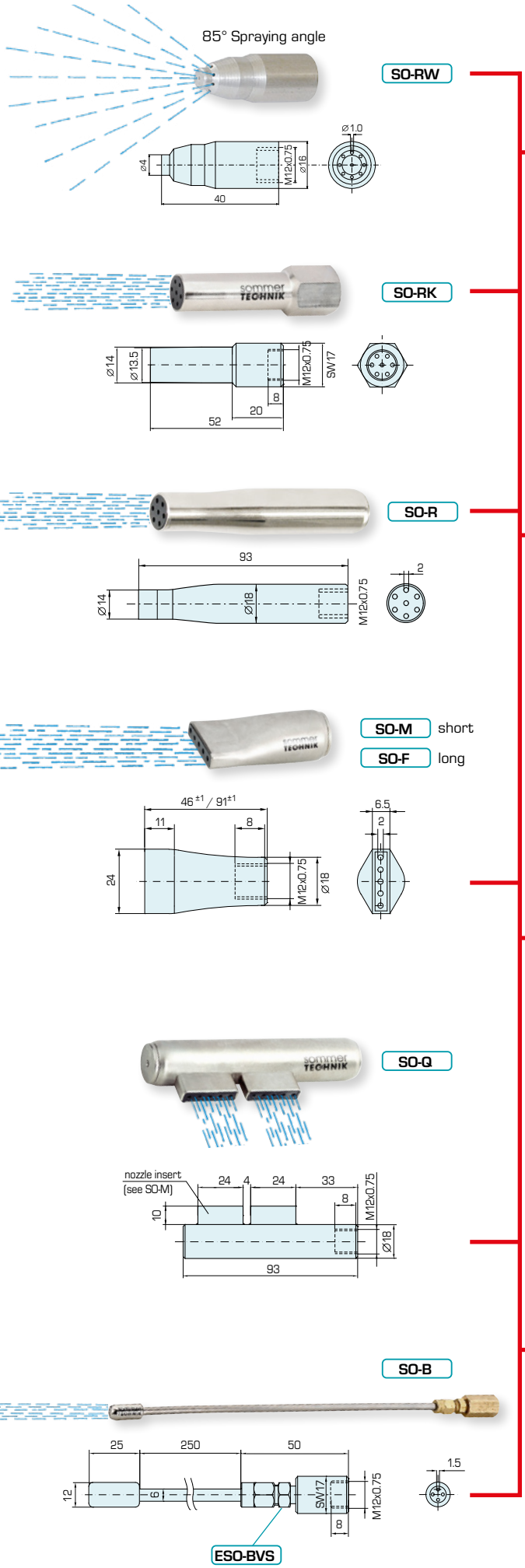
A 100 mm extension (VS) is available for the metal hose. All SOMMER nozzles can be mounted directly onto all metal hoses or with a threaded fitting to render the nozzle freely movable.

Order-No.	Nominal diameter (mm)	Length (mm)	Bending radius (mm)
MS-M10x1	4	200	64
MS-M10x1-400	4	400	64
MS-M12x1	6	320	72
MS-M12x1-500	6	500	72

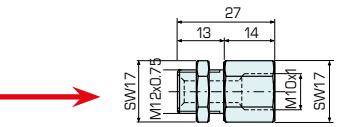
Extension Piece 100 mm

- for metal hose MS-M10x1 and MS-M12x1

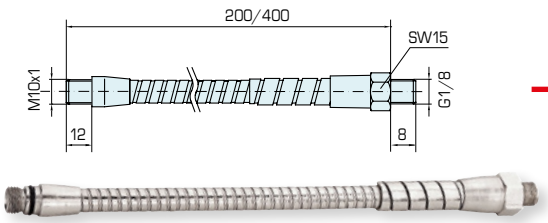
Order-No.	Suitable for
VS1/8	MS-M10x1 & MS-M10x1-400
VS1/4	MS-M12x1 & MS-M12x1-500



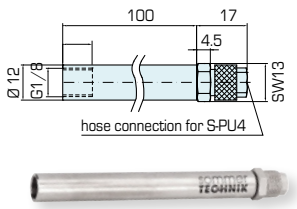
GR-M10x1i



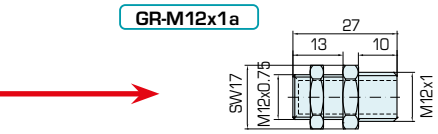
MS-M10x1 **MS-M10x1-400**



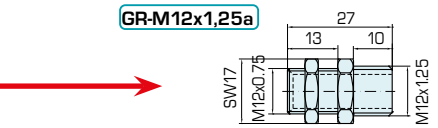
VS1/8



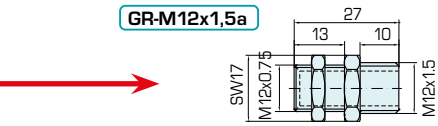
GR-M12x1a



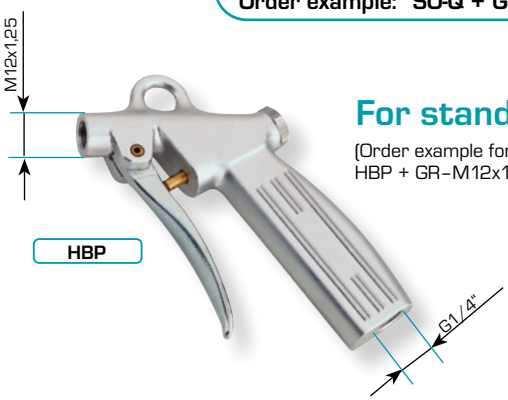
GR-M12x1,25a



GR-M12x1,5a



You can mix and match.
Order example: "SO-Q + GR-M10x1 + MS-M10x1 + VS1/8"

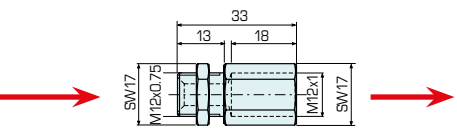


HBP

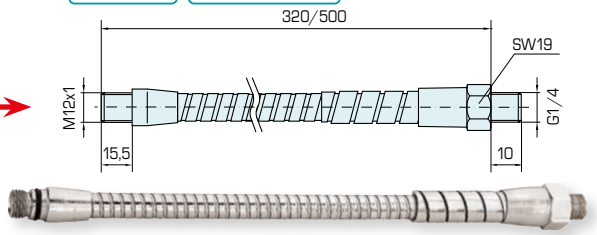
For standard air guns

(Order example for our air gun HBP:
HBP + GR-M12x1.25 + SO-M)

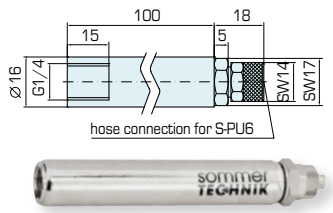
GR-M12x1i



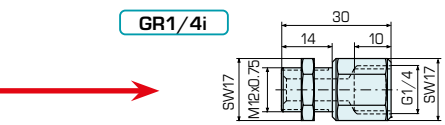
MS-M12x1 **MS-M12x1-500**



VS1/4



GR1/4i

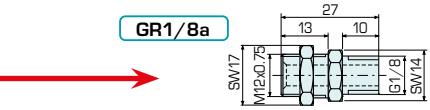


→ **For permanent installation**

GR1/4a

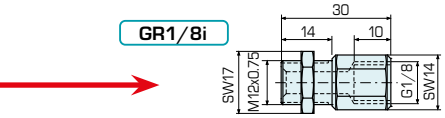
→ **For permanent installation**

GR1/8a



→ **For permanent installation**

GR1/8i



→ **For permanent installation**

Air Curtain

Temperature range: –40 °C...+260 °C

Material: Housing: Aluminium

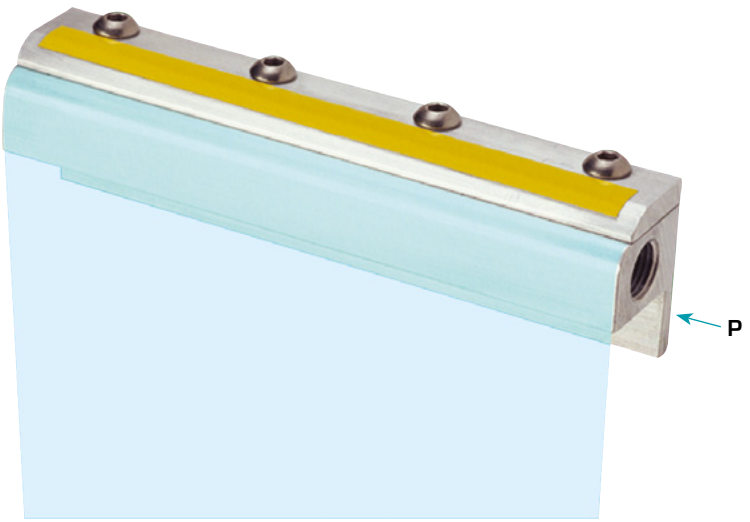
Air connection: G1/4" (filtered, non-oiled compressed air)

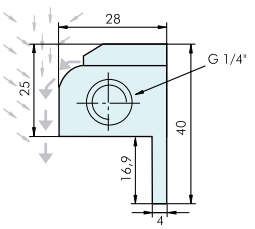
How it works: Across the length of the air curtain, air escapes through a 0.05 mm wide slot at almost the speed of sound. External air is taken along and an air curtain, consisting of approx. the 25-fold of the air volume used, is created.

Application: Air curtains are used to remove large quantities of chips, dirt, water, or oil with a minimal quantity of compressed air or when the air blast has to cool down products across large surfaces.

Application examples:
- Removing water from plastic foil or metal
- Removing chips, cutting remnants, or grinding dust
- Cleaning parts before lacquering
- Creating an air curtain to shield different processes
- Cooling and cleaning extruded parts
- Cooling and cleaning transport belts and parts of it
- Cooling and drying adhesives or colors in the printing industry

Advantages:
- Low air consumption – energy-saving
- Low purchasing and operating costs
- Maintenance-free
- No moving components – no wear
- Low noise level



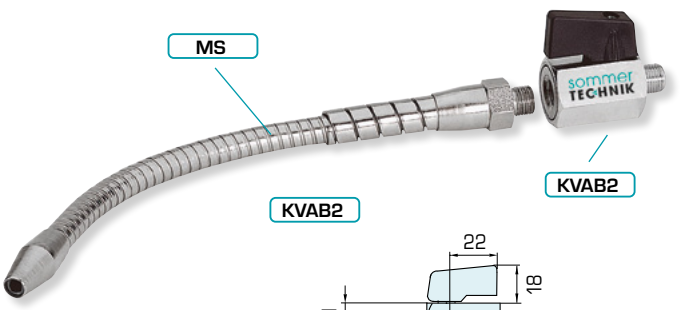


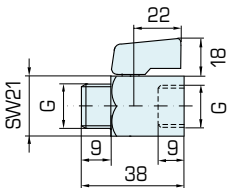
Order-No.	Size Threading	Air consumpt. at 5 bar [m³/min.]	Air volume [m³/min.]	Length [mm]	Sound level [dB] at 3 bar	at 4 bar	at 5 bar	at 6 bar
LV14/080	G 1/4"	0.4	10	80	77	81	84	85
LV14/100	G 1/4"	0.5	12	100	77	81	84	85
LV14/150	G 1/4"	0.75	18	150	72	77	80	82
LV14/300	G 1/4"	1.5	37	300	65	69	73	76

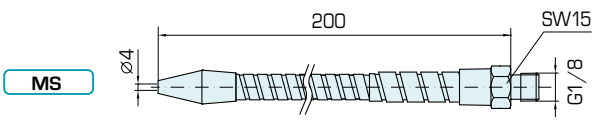
Metal Hose

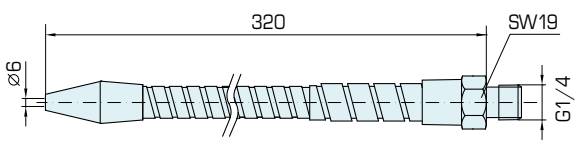
- Protection against hot chips

The MS is a flexible metal hose for fluids and air that comes in two sizes. The fluid can be adjusted with an additional fluid inductor (KVAB) or can be shut off completely.
The metal hose is extremely robust and resistant to hot chips, grease, and oils. The plastic sleeve on the inside makes it absolutely tight.
A long life, outstanding flexibility, and the ability to remain in a set position make this metal hose a useful "work aid".
Areas of application: Fluid infeed (cooling agent, water, oil, etc.) and air infeed.
All SOMMER-nozzles can be installed directly on fittings or mteal hoses. This makes the nozzle very flexible.

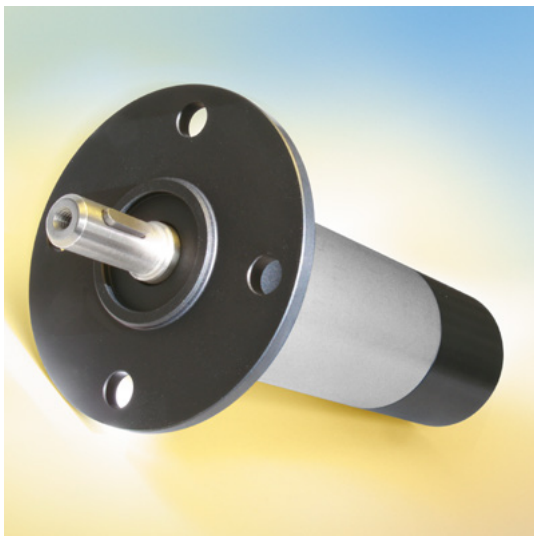




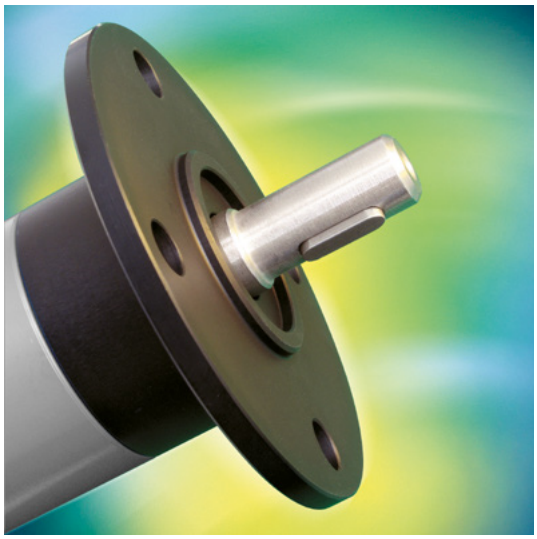


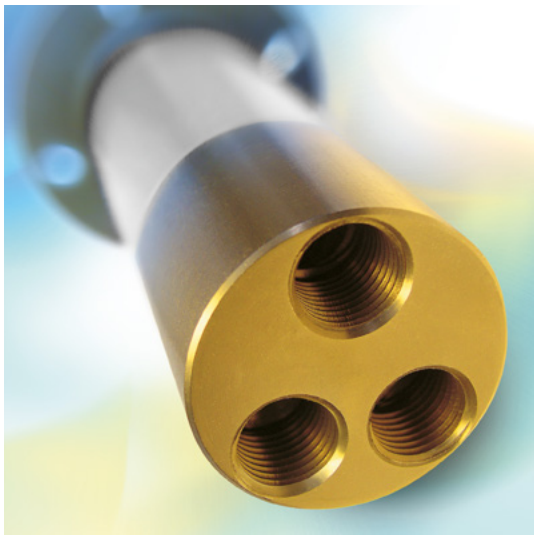


Order-No.	Size Threading	Bending radius [mm]
MS1/8	G 1/8"	64
MS1/4	G 1/4"	72
KVAB2-1/8	G 1/8"	–
KVAB2-1/4	G 1/4"	–



AIR VANE MOTORS





Air Vane Motors

Material: • Housing: Anodized aluminium
• Shaft: Steel ETG 100
• Blades: Special synthetic material with high durability
Temperature range: Environmental temperature –20 °C...+80 °C (risk of icing below 5 °C compressed air temperature)
Compressed air temp.: 5 °C – 60 °C
Pressure range: 0.2 to 7 bar
Medium: Filtered, dry, and oiled compressed air, oil quantity approx. 3 to 4 drops per m^3 of compressed air (Motors for oil-free operation are available upon request).

Advantages:

- **Flexible**
  Adapts its speed and torque to the load at hand and can be stalled without being damaged (stall-proof).
- **Adjustable**
  Torque, speed, and turning direction is easily adjustable. Torque and speed are infinitely variable via air pressure or air quantity.
- **Solid**
  Infinitely variable switching and 100 % start-up duration at maximum performance. Performance reserves, as commonly required, are obsolete. If there should be an overload after all, the speed decreases until a balance between target momentum and speed has been achieved.
- **Problem-free**
  The internal pressure for each motor part is higher than the external one. This prevents foreign particles from intruding. After the technical external conditions have been released the motor can also be operated submerged in water.
- **Maintenance-friendly**
  Few moving parts (only the rotors are subject to wear) and thus maintenance-friendly.
- **Compact**
  A performance density superior to most other motors: Approx. 30 % smaller than a comparable asynchronous electrical motor.
- **Easy start-up**
  Contrary to traditional motors with an air hole system, leave springs press the rotors of our motors against the cylinder wall during standstill. This ensures a safe start-up, even if the pressure is low.

General (Fig. 1)

The compressed air motor is one of the most robust and versatile drives available for construction today. It is infinitely variable across a wide rev range and offers its highest torque when it is most needed, during start-up.
The performance of the compressed air motor depends on the flow pressure, which is infinitely variable via pressure controller or throttles. With a consistent input pressure, non-controlled motors have a linear relationship between speed and torque. Contrary to traditional motors with an air hole system, blade springs press the rotors of our motors against the cylinder wall during standstill. This ensures a safe start-up, even if the pressure is low.

Performance (Fig. 2)

The compressed air motor performance is made up of torque and speed. All non-controlled compressed air motors have about the same characteristic performance curves, whereas the highest performance is reached at approx. 50 % of the idling speed. Here the prevailing speed or torque is considered the nominal speed or nominal torque.
If the motor is burdened past the nominal torque, speed and performance decrease accordingly until the highest torque (stalling torque) is reached shortly before the motor stops. The stalling torque is approx. 200 % of the nominal torque.
If the motor starts up strained, the min. start-up torque is also the max. permissible torque, ensuring that the motor can restart. The mininum start-up torque is approx. 150 % of the nominal torque of the compressed air motor.

Controls (Figs. 3 and 4)

For speed reduction throttle valves can be installed on air intake and outlet, or a pressure controller on the air intake of the motor (Fig. 3).
Intake throttle: The speed decreases and simultaneously the min. start-up torque is also reduced, so is the air consumption. Recommended for all applications where the min. start-up speed is secondary and the torque is to be reduced.
Output throttle: The torque decreases and the min. start-up speed only decreases slightly, while the air consumption almost remains the same.
Pressure control: The torque is reduced without the speed being reduced too much. (Fig. 4)

All data for the compressed air motors refers to 6 bar. The chart below shows the changes in performance, nominal speed, nominal torque and air consumption when a motor is run with higher or lower pressure.

Operat. pressure	Performance	Nominal speed	Nominal torque	Air consumption
7 bar	120 %	104 %	115 %	115 %
6 bar	100 %	100 %	100 %	100 %
5 bar	75 %	96 %	81 %	81 %
4 bar	55 %	87 %	63 %	63 %
3 bar	36 %	75 %	47 %	47 %

Fig. 1

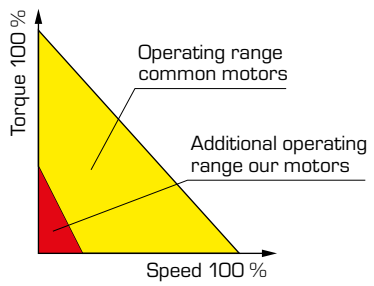


Fig. 2 Torque/performance

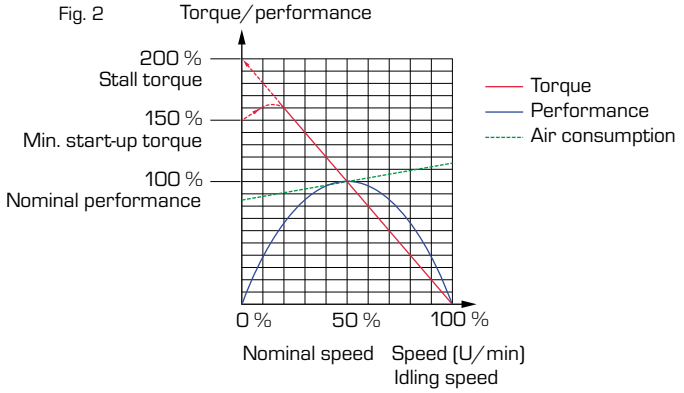


Fig. 3

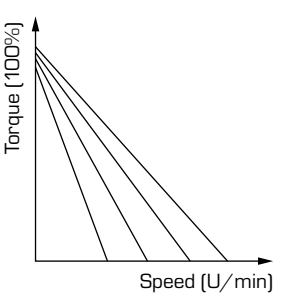
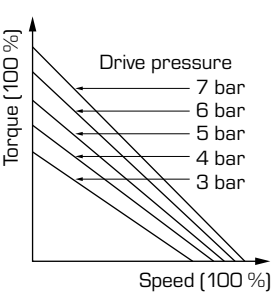


Fig. 4



Selecting the right motor (Fig. 5)

1. Determining the parameters

- Is it a reversible or a non-reversible motor?
- How much torque is required for which speed?
- Is it a stall-proof or a non-stall-proof motor?

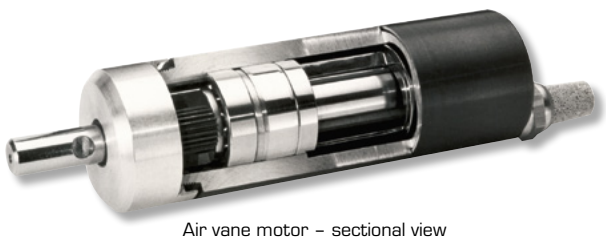
Non-stall-proof motors can only be operated up to max. torque and should be protected against overload with a safety clutch.

2. Calculating the required performance

Formula

$$\text{Load perform.} = \frac{3.14 \times M1\ [Nm] \times n1\ [U/min.]}{30}$$

Load torque	= M1	[Nm]
Nominal torque	= M_{nom}	[Nm]
Load speed	= n1	[U/min.]
Nominal speed	= n_{nom}	[U/min.]



Air vane motor – sectional view

Example (load torque = 10 Nm, load speed = 300 U/min.)

$$\text{Load perform.} = \frac{3.14 \times 10\ Nm \times 300\ U/min.}{30} = 314\ Watt$$

The min. performance for the compressed air blade motor should be 314 Watt. Thus, the models in Series RDU 400 (reversible) or RDR 550 (clockwise rotating) can be considered.
The nominal speed should be as close to the required working speed (300 U/min.) as possible. In consideration of these facts the selection can be limited to models RDU 400/240 (reversible) and RDR 550/275 (clockwise rotating).
Once the motor has been selected it can be adapted to the exact requirements by adapting the operating pressure.

3. Determining the operating pressure

The operating pressure for the motor can be calculated by entering ratio parameters $M1/M_{nom}$ and $n1/n_{nom}$ in the diagram (Fig. 5). For nominal speed and torque, refer to the charts on the following pages.

Formula

$$\text{Parameter 1} = \frac{M1}{M_{nom}} \qquad \text{Parameter 2} = \frac{n1}{n_{nom}}$$

Model RLA-0400-0480: M_{nom} = 15.9 Nm, n_{nom} = 240 U/min., M1 = 10 Nm, n1 = 300 U/min.

$$\text{Parameter 1} = \frac{10\ Nm}{15.9\ Nm} = 0.63 \qquad \text{Parameter 2} = \frac{300\ U/min.}{240\ U/min.} = 1.25$$

Model RXA-0550-0550: M_{nom} = 19.1 Nm, n_{nom} = 275 U/min., M1 = 10 Nm, n1 = 300 U/min.

$$\text{Parameter 1} = \frac{10\ Nm}{19.1\ Nm} = 0{,}52 \qquad \text{Parameter 2} = \frac{300\ U/min.}{275\ U/min.} = 1.09$$

Based on the ratio parameters and after entering and reading in the diagram at the right, a pressure of approx. 5.3 bar is determined for model RDU 400/240 and approx. 4.0 bar for model RDR 550/275.

If a higher min. start-up or stalling torque is required, the speed can also be adjusted through curbing.

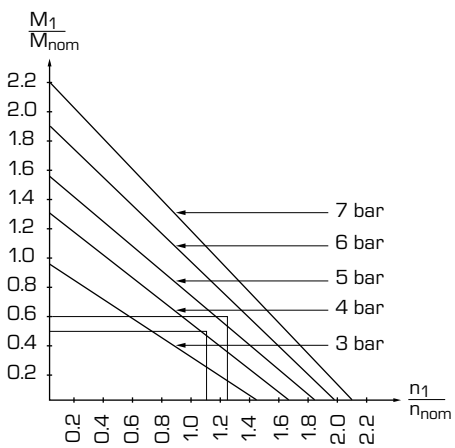


Fig. 5

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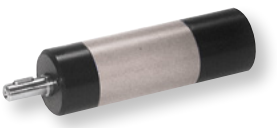
Air Vane Motors 180/300 Watt

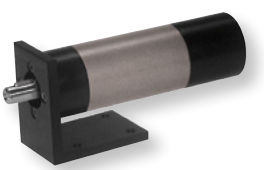
Max. load on shaft: radial 800 N / axial 1600 N
Temperature range: Compressed air temperature: +10 °C...+40 °C, max. environmental temperature: +80 °C
Optional: Mounting flange **-FL**, mounting bracket **-W**

Order-No.	Nominal speed (U/min)	Idling speed (U/min)	Nominal torque (Nm)	Min. start-up torque (Nm)	Stalling torque (U/min)	Air consumpt.** (l/min)	Length L (mm)	Weight (Kg)
Reversible, stall-proof, nominal performance: 180 Watt								
RLA-0180-4620	2310	4620	0.7	1.0	1.4	330	145	0.5
RLA-0180-2600	1300	2600	1.3	1.9	2.6	330	145	0.5
RLA-0180-2040	1020	2040	1.7	2.5	3.4	330	145	0.5
RLA-0180-1120	560	1120	3.1	4.6	6.2	330	179	0.6
RLA-0180-0630	315	630	5.5	8.2	11.0	330	179	0.6
RLA-0180-0490	245	490	7.0	10.5	14.0	330	179	0.6
RLA-0180-0350	175	350	9.8	14.7	19.6	330	179	0.6
RLA-0180-0280	140	280	12.3	18.4	24.6	330	213	0.9
Reversible, not stall-proof, nominal performance: 180 Watt								
RLX-0180-0150	68*	150	max. 25.0	max. 25.0	–	330*	213	0.9
RLX-0180-0085	59*	85	max. 25.0	max. 25.0	–	360*	213	0.9
RLX-0180-0050	41*	50	max. 25.0	max. 25.0	–	360*	213	0.9
RLX-0180-0007	6.82*	7	max. 25.0	max. 25.0	–	380*	247	1.0
Not reversible, clockwise rotation, stall-proof, nominal performance: 300 Watt								
RXA-0300-4750	2375	4750	1.2	1.8	2.4	380	145	0.5
RXA-0300-2680	1340	2680	2.1	3.1	4.3	380	145	0.5
RXA-0300-2100	1050	2100	2.7	4.0	5.4	380	145	0.5
RXA-0300-1150	575	1150	5.0	7.5	10.0	380	179	0.6
RXA-0300-0650	325	650	8.8	13.2	17.6	380	179	0.6
RXA-0300-0500	250	500	11.5	17.2	22.9	380	179	0.6
RXA-0300-0360	180	360	15.9	23.0	31.8	380	179	0.6
Not reversible, clockwise rotation, not stall-proof, nominal performance: 300 Watt								
RXX-0300-0160	104*	160	max. 25.0	max. 25.0	–	400*	213	0.9
RXX-0300-0090	72*	90	max. 25.0	max. 25.0	–	420*	213	0.9
RXX-0300-0050	45*	50	max. 25.0	max. 25.0	–	425*	213	0.9
RXX-0300-0007	6.89*	7	max. 25.0	max. 25.0	–	440*	247	1.0
Counterclockwise rotation, different drive shafts are available upon request.								

* With max. permissible torque ** At nominal performance

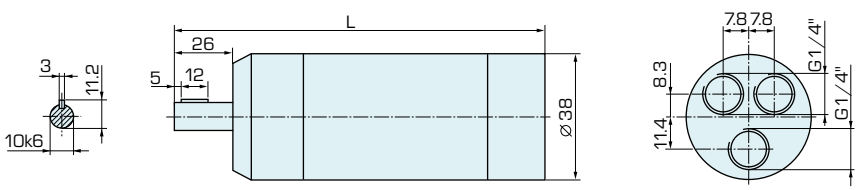


Version „FL"*

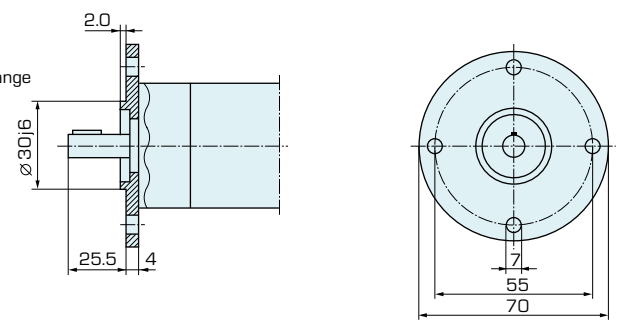


Version „W"*

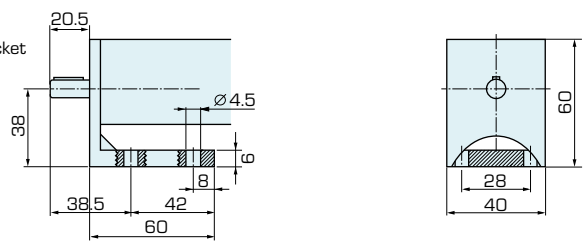
Dimensions – Air vane motors 180/300 Watt



Mounting flange



Mounting bracket



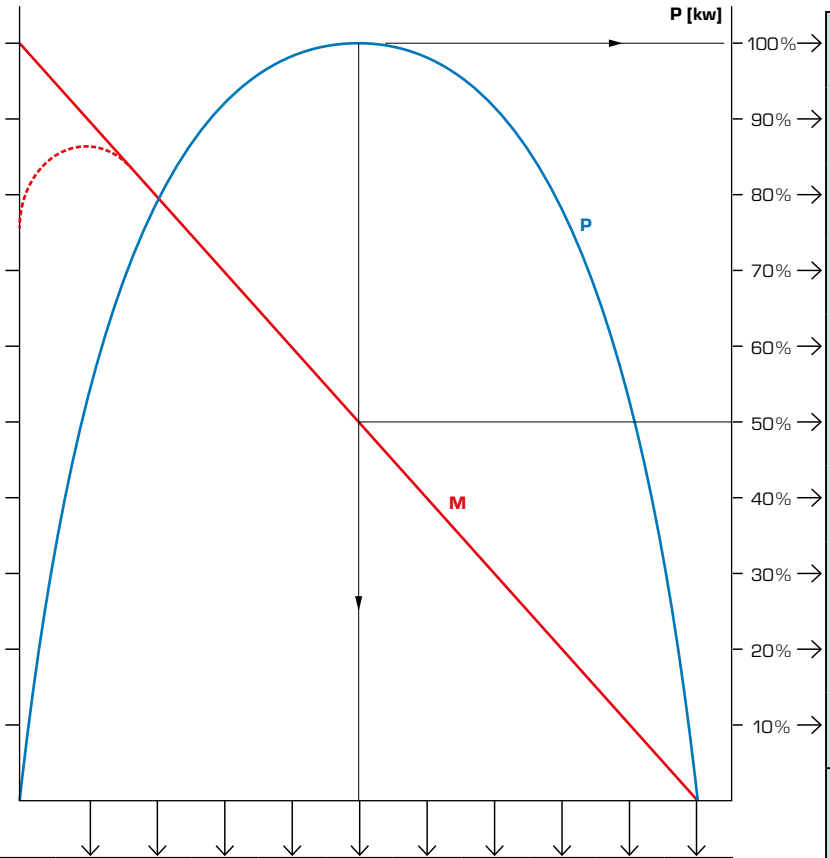
*Order example: **RLA-0180-4620** **

Standard type

Order add-on:
Mounting flange . . . . . **-FL**
Mounting bracket . . . . . **-W**

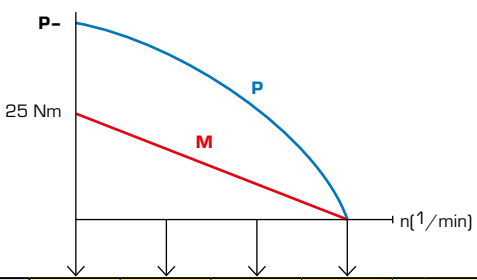
AIR VANE MOTORS

Performance diagrams (operating pressure: 6 bar)



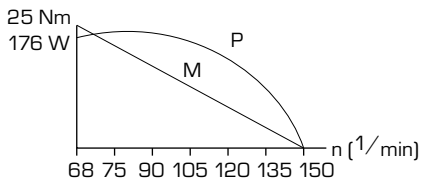
Order-No.	Speed (min⁻¹)									
RLA-0180-4620	462	924	1386	1848	2310	2772	3234	3696	4158	4620
RLA-0180-2600	260	520	780	1040	1300	1560	1820	2080	2340	2600
RLA-0180-2040	204	408	612	816	1020	1224	1428	1632	1836	2040
RLA-0180-1120	112	224	336	448	560	672	784	896	1008	1120
RLA-0180-0630	63	126	189	252	315	378	441	504	567	630
RLA-0180-0490	49	98	147	196	245	294	343	392	441	490
RLA-0180-0350	35	70	105	140	175	210	245	280	315	350
RLA-0180-0280	28	56	84	112	140	168	196	224	252	280
RXA-0300-4750	475	950	1425	1900	2375	2850	3325	3800	4275	4750
RXA-0300-2680	268	536	804	1072	1340	1608	1876	2144	2412	2680
RXA-0300-2100	210	420	630	840	1050	1260	1470	1680	1890	2100
RXA-0300-1150	115	230	345	460	575	690	805	920	1035	1150
RXA-0300-0650	65	130	195	260	325	390	455	520	585	650
RXA-0300-0500	50	100	150	200	250	300	350	400	450	500
RXA-0300-0360	36	72	108	144	180	216	252	288	324	360

Order-No.	Torque (Nm)										
RLA-0180-4620	0.15	0.30	0.44	0.59	0.74	0.89	1.04	1.18	1.33	1.48
RLA-0180-2600	0.26	0.53	0.79	1.06	1.32	1.58	1.85	2.11	2.38	2.64
RLA-0180-2040	0.34	0.67	1.01	1.34	1.68	2.02	2.35	2.69	3.02	3.36
RLA-0180-1120	0.61	1.22	1.84	2.45	3.06	3.67	4.28	4.90	5.51	6.12
RLA-0180-0630	1.09	2.18	3.27	4.36	5.45	6.54	7.63	8.72	9.81	10.90
RLA-0180-0490	1.40	2.81	4.21	5.62	7.02	8.42	9.83	11.23	12.64	14.04
RLA-0180-0350	1.96	3.93	5.89	7.86	9.82	11.78	13.75	15.71	17.68	19.64
RLA-0180-0280	2.45	4.91	7.36	9.82	12.27	14.72	17.18	19.63	22.09	24.54
RXA-0300-4750	0.24	0.48	0.72	0.96	1.20	1.44	1.68	1.92	2.16	2.40
RXA-0300-2680	0.43	0.85	1.28	1.70	2.13	2.56	2.98	3.41	3.83	4.26
RXA-0300-2100	0.54	1.09	1.63	2.18	2.72	3.26	3.81	4.35	4.90	5.44
RXA-0300-1150	1.00	1.99	2.99	3.98	4.98	5.98	6.97	7.97	8.96	9.96
RXA-0300-0650	1.76	3.52	5.29	7.05	8.81	10.57	12.33	14.10	15.86	17.62
RXA-0300-0500	2.29	4.58	6.87	9.16	11.45	13.74	16.03	18.32	20.61	22.90
RXA-0300-0360	3.18	6.36	9.55	12.73	15.91	19.09	22.27	25.46	28.64	31.82



RLX-0180-0085	59.00	68.00	76.50	85.00	P= 154 Watt
RLX-0180-0050	41.00	44.00	47.00	50.00	P= 107 Watt
RLX-0180-0007	6.82	6.88	6.94	7.00	P= 18 Watt
RXX-0300-0160	104.00	128.00	144.00	160.00	P= 272 Watt
RXX-0300-0090	72.00	78.00	84.00	90.00	P= 130 Watt
RXX-0300-0050	44.50	48.17	51,84	50.00	P= 116 Watt
RXX-0300-0007	6.89	6.93	6.96	7.00	P= 18 Watt

RLX-0180-0150



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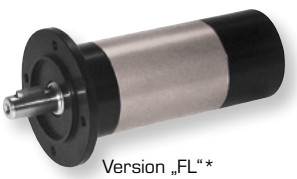
Air Vane Motors 400/550 Watt

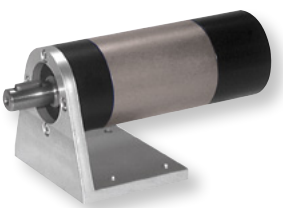
Max. load on shaft: radial 2800 N / axial 4200 N
Temperature range: Compressed air temperatur: +10 °C...+40 °C, max. environmental temperature: +80 °C
Optional: Mounting flange **-FL**, mounting bracket **-W**

Order-No.	Nominal speed (U/min)	Idling speed (U/min)	Nominal torque (Nm)	Min. start-up torque (Nm)	Stalling torque (U/min)	Air consumpt.** (l/min)	Length L (mm)	Weight (Kg)
Reversible, stall-proof, nominal performance: 400 Watt								
RLA-0400-2700	1350	2700	2.8	4.2	5.6	700	172	1.4
RLA-0400-2130	1065	2130	3.6	5.4	7.2	700	172	1.4
RLA-0400-1800	900	1800	4.2	6.3	8.4	700	172	1.4
RLA-0400-0660	330	660	11.5	17.2	23.0	700	213	1.7
RLA-0400-0480	240	480	15.9	23.8	31.8	700	213	1.7
RLA-0400-0400	200	400	19.1	28.6	38.2	700	213	1.7
RLA-0400-0380	190	380	20.1	30.1	40.2	700	213	1.7
RLA-0400-0340	170	340	22.5	33.7	45.0	700	213	1.7
Reversible, not stall-proof, nominal performance: 400 Watt								
RLX-0400-0110	82*	110	max. 35.0	max. 35.0	–	770*	255	2.1
RLX-0400-0086	69*	86	max. 35.0	max. 35.0	–	770*	255	2.1
RLX-0400-0025	23,6*	25	max. 35.0	max. 35.0	–	790*	297	2.6
RLX-0400-0010	9.8*	10	max. 35.0	max. 35.0	–	800*	297	2.6
Not reversible, clockwise rotation, stall-proof, nominal performance: 550 Watt								
RXA-0550-3000	1500	3000	3.5	5.2	7.0	820	172	1.4
RXA-0550-2420	1210	2420	4.3	6.4	8.6	820	172	1.4
RXA-0550-2050	1025	2050	5.1	7.6	10.2	820	172	1.4
RXA-0550-0700	350	700	15.0	22.5	30.0	820	213	1.7
RXA-0550-0550	275	550	19.1	28.6	38.2	820	213	1.7
RXA-0550-0460	230	460	22.8	34.2	45.6	820	213	1.7
Not reversible, clockwise rotation, not stall-proof, nominal performance: 550 Watt								
RXX-0550-0360	144*	360	max. 35.0	max. 35.0	–	820*	213	1.7
RXX-0550-0125	97*	125	max. 35.0	max. 35.0	–	900*	255	2.1
RXX-0550-0075	66*	75	max. 35.0	max. 35.0	–	900*	255	2.1
RXX-0550-0028	26*	28	max. 35.0	max. 35.0	–	920*	297	2.6
RXX-0550-0010	9.8*	10	max. 35.0	max. 35.0	–	940*	297	2.6
Counterclockwise rotation, different drive shafts are available upon request.								

* With max. permissible torque ** At nominal performance



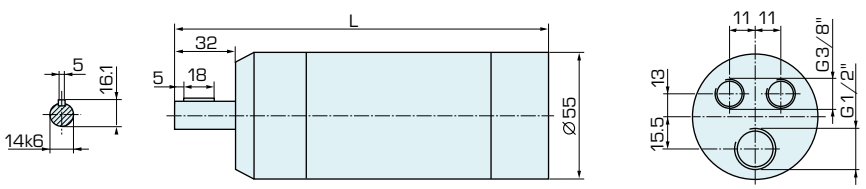
Version „FL“*



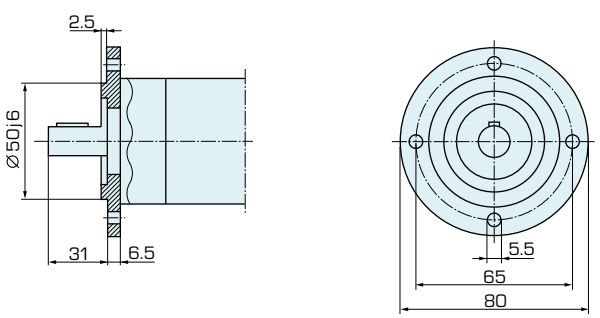
Version „W“*

AIR VANE MOTORS

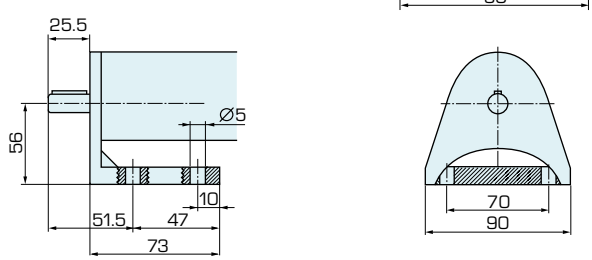
Dimensions – Air vane motors 400/550 Watt



Mounting flange



Mounting bracket

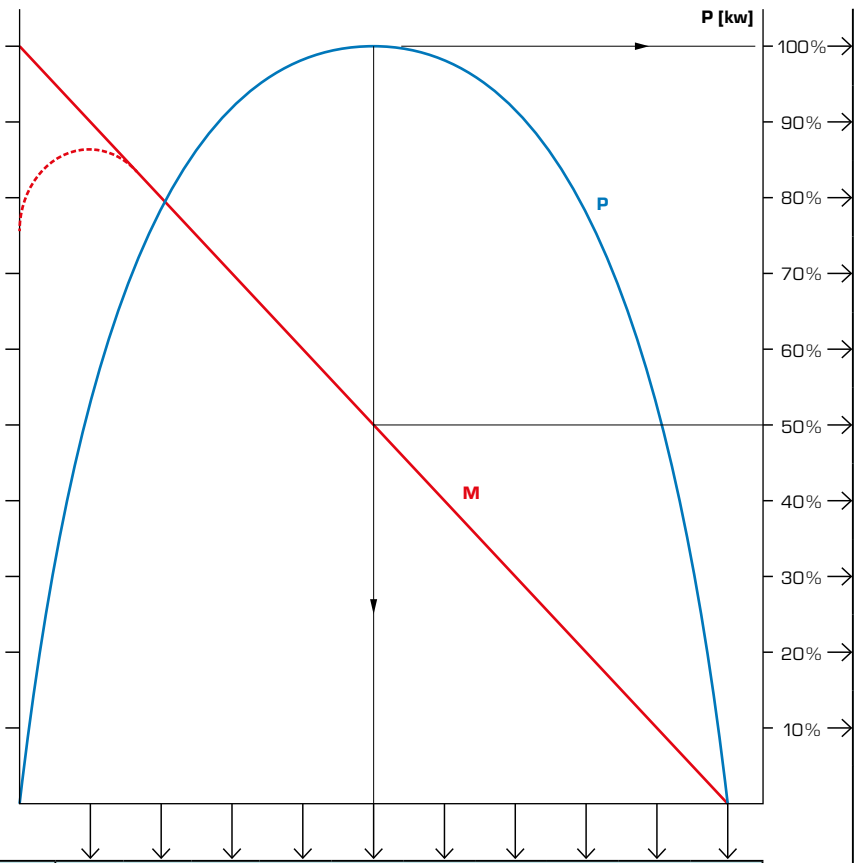


*Order example: **RLA-0400-2700** **

Standard type

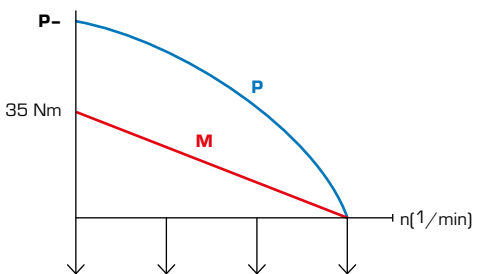
Order add-on:
Mounting flange . . . . . **-FL**
Mounting bracket . . . . . **-W**

Performance diagrams (operating pressure: 6 bar)



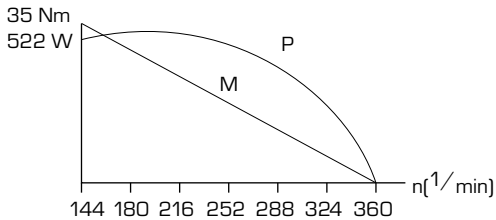
Order-No.	Speed (min^{-1})									
RLA-0400-2700	270	540	810	1080	1350	1620	1890	2160	2430	2700
RLA-0400-2130	213	426	639	852	1065	1278	1491	1704	1917	2130
RLA-0400-1800	180	360	540	720	900	1080	1260	1440	1620	1800
RLA-0400-0660	66	132	198	264	330	396	462	528	594	660
RLA-0400-0480	48	96	144	192	240	288	336	384	432	480
RLA-0400-0400	40	80	120	160	200	240	280	320	360	400
RLA-0400-0380	38	76	114	152	190	228	266	304	342	380
RLA-0400-0340	34	68	102	136	170	204	238	272	306	340
RXA-0550-3000	300	600	900	1200	1500	1800	2100	2400	2700	3000
RXA-0550-2420	242	484	726	968	1210	1452	1694	1936	2178	2420
RXA-0550-2050	205	410	615	820	1025	1230	1435	1640	1845	2050
RXA-0550-0700	70	140	210	280	350	420	490	560	630	700
RXA-0550-0550	55	110	165	220	275	330	385	440	495	550
RXA-0550-0460	46	92	138	184	230	276	322	368	414	460

Order-No.	Torque (Nm)										
RLA-0400-2700	0.57	1.13	1.70	2.26	2.83	3.40	3.96	4.53	5.09	5.66
RLA-0400-2130	0.72	1.43	2.15	2.86	3.58	4.30	5.01	5.73	6.44	7.16
RLA-0400-1800	0.85	1.70	2.54	3.39	4.24	5.09	5.94	6.78	7.63	8.48
RLA-0400-0660	2.31	4.63	6.94	9.26	11.57	13.88	16.20	18.51	20.83	23.14
RLA-0400-0480	3.18	6.36	9.55	12.73	15.91	19.09	22.27	25.46	28.64	31.82
RLA-0400-0400	3.82	7.64	11.45	15.27	19.09	22.91	26.73	30.54	34.36	38.18
RLA-0400-0380	4.02	8.04	12.06	16.08	20.10	24.12	28.14	32.16	36.18	40.20
RLA-0400-0340	4.49	8.98	13.48	17.97	22.46	26.95	31.44	35.94	40.43	44.92
RXA-0550-3000	0.70	1.40	2.10	2.80	3.50	4.20	4.90	5.60	6.30	7.00
RXA-0550-2420	0.87	1.74	2.60	3.47	4.34	5.21	6.08	6.94	7.81	8.68
RXA-0550-2050	1.02	2.05	3.07	4.10	5.12	6.14	7.17	8.19	9.22	10.24
RXA-0550-0700	3.00	6.00	9.00	12.00	15.00	18.00	21.00	24.00	27.00	30.00
RXA-0550-0550	3.82	7.64	11.45	15.27	19.09	22.91	26.73	30.54	34.36	38.18
RXA-0550-0460	4.57	9.13	13.70	18.26	22.83	27.40	31.96	36.53	41.09	45.66



RLX-0400-0110	82.00	88.00	99.00	110.00	P = 300 Watt
RLX-0400-0086	69.00	74.60	80.30	86.00	P = 253 Watt
RLX-0400-0025	23.60	24.06	24.53	25.00	P = 86 Watt
RLX-0400-0010	9.80	9.87	9.93	10.00	P = 36 Watt
RXX-0550-0125	97.00	100.00	112.50	125.00	P = 335 Watt
RXX-0550-0075	66.00	69.00	72.00	75.00	P = 241 Watt
RXX-0550-0028	26.00	27.13	27.56	28.00	P = 98 Watt
RXX-0550-0010	9.80	9.86	9.93	10.00	P = 36 Watt

RXX-0550-0360



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Air Vane Motors 800/1000 Watt

Order-No.	Nominal speed (U/min)	Idling speed (U/min)	Nominal torque (Nm)	Min. start-up torque (Nm)	Stalling torque (U/min)	Air consumpt.** (l/min)	Length L (mm)	Weight (Kg)
Reversible, stall-proof, nominal performance: 800 Watt								
RLA-0800-4000	2000	4000	3.8	5.7	7.2	1000	258	3.5
RLA-0800-2670	1335	2670	5.7	8.5	11.4	1000	258	3.5
RLA-0800-2000	1000	2000	7.6	11.4	15.2	1000	258	3.5
RLA-0800-1600	800	1600	9.5	14.2	19.0	1000	274	3.7
RLA-0800-1340	670	1340	11.4	17.1	22.8	1000	274	3.7
RLA-0800-1000	500	1000	12.1	18.1	21.2	1000	274	3.7
RLA-0800-0800	400	800	19.0	28.5	38.0	1000	281	4.1
RLA-0800-0620	310	620	24.6	36.9	49.2	1000	281	4.1
RLA-0800-0500	250	500	30.6	45.7	61.0	1000	281	4.1
Reversible, not stall-proof, nominal performance: 800 Watt								
RLX-0800-0300	123*	300	max. 60.0	max. 60.0	–	1000*	281	4.1
RLX-0800-0190	119*	190	max. 60.0	max. 60.0	–	1040*	301	4.4
RLX-0800-0110	86*	110	max. 60.0	max. 60.0	–	1090*	301	4.4
RLX-0800-0060	53*	60	max. 60.0	max. 60.0	–	1120*	327	4.7
RLX-0800-0030	28.2*	30	max. 60.0	max. 60.0	–	1140*	327	4.7
Not reversible, clockwise rotation, stall-proof, nominal performance: 1000 Watt								
RXA-1000-4530	2265	4530	4.2	6.3	8.4	1470	258	3.5
RXA-1000-3020	1510	3020	6.3	9.5	12.6	1470	258	3.5
RXA-1000-2260	1130	2260	8.4	12.8	16.8	1470	258	3.5
RXA-1000-1800	900	1800	10.6	15.9	21.2	1470	274	3.7
RXA-1000-1500	750	1500	12.7	19.1	25.4	1470	274	3.7
RXA-1000-1000	500	1000	19.1	28.7	38.2	1470	281	4.1
RXA-1000-0820	410	820	23.3	35.0	46.6	1470	281	4.1
RXA-1000-0600	300	600	31.4	47.1	62.8	1470	281	4.1
Not reversible, clockwise rotation, not stall-proof, nominal performance: 1000 Watt								
RXX-1000-0380	193*	380	max. 60.0	max. 60.0	–	1470*	301	4.4
RXX-1000-0260	159*	260	max. 60.0	max. 60.0	–	1530*	301	4.4
RXX-1000-0160	120*	160	max. 60.0	max. 60.0	–	1590*	301	4.4
RXX-1000-0120	98*	120	max. 60.0	max. 60.0	–	1620*	301	4.4
RXX-1000-0070	62*	70	max. 60.0	max. 60.0	–	1620*	327	4.7
RXX-1000-0030	28.5*	30	max. 60.0	max. 60.0	–	1680*	307	4.4
Counterclockwise rotation, different drive shafts are available upon request.								

* With max. permissible torque ** At nominal performance

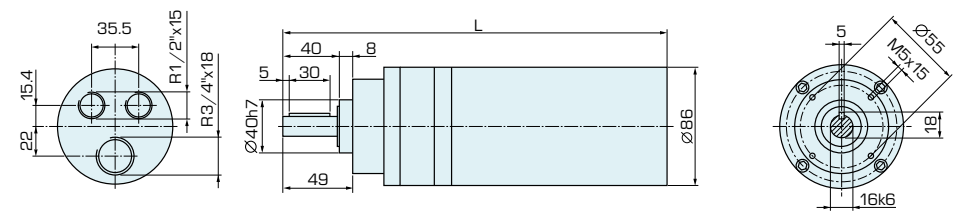
Max. load on shaft: radial 2800 N / axial 3500 N

Accessory (can be installed later on)	
Order-No.	**Description**
RDFL-0800-1000	Mounting flange incl. screws for motor installation
RW-0800-1000	Mounting bracket incl. screws for motor installation

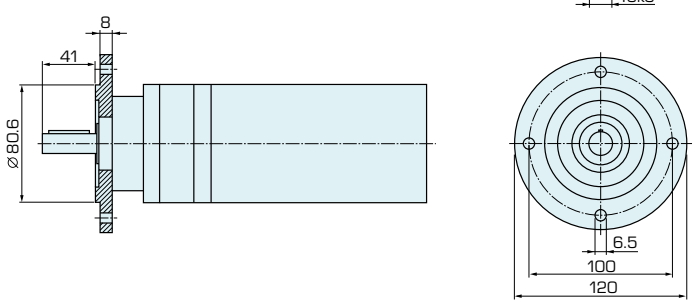
RDFL

RW

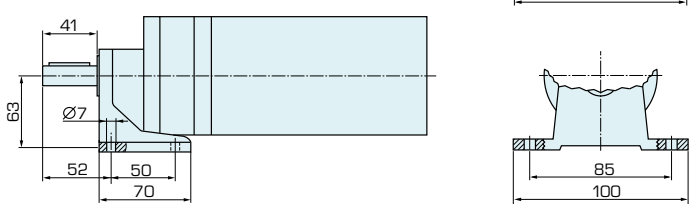
Dimensions – Air vane motors 800/1000 Watt



Mounting flange

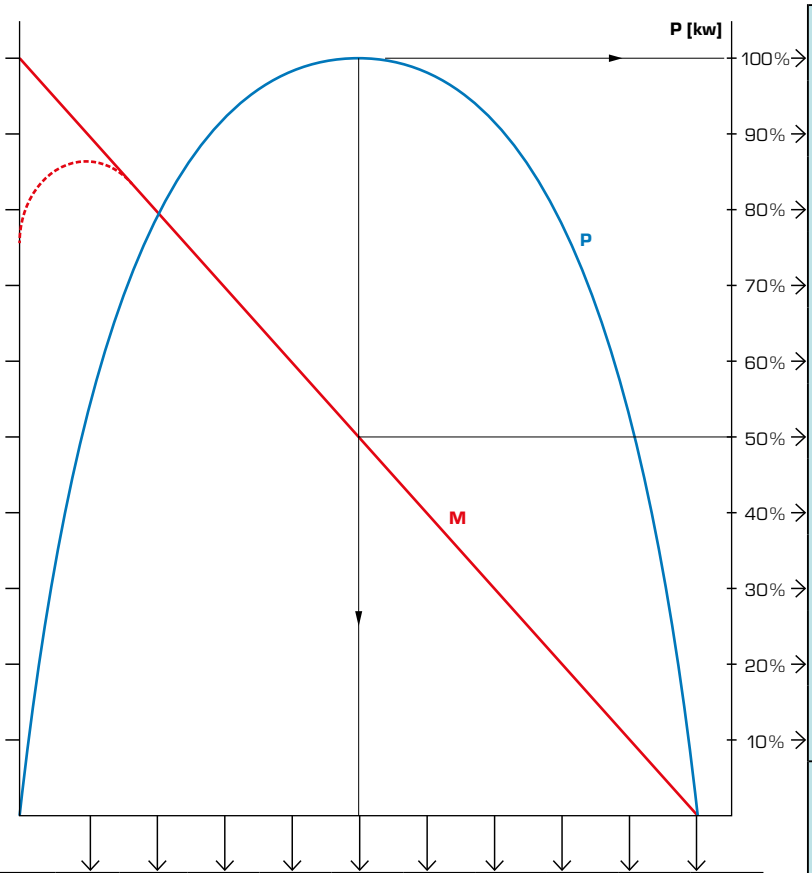


Mounting bracket



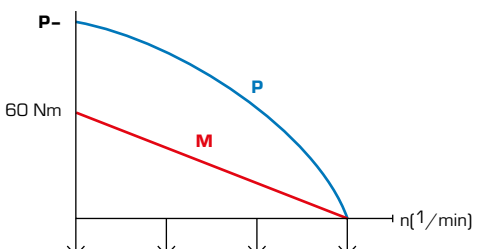
AIR VANE MOTORS

Performance diagrams (operating pressure: 6 bar)



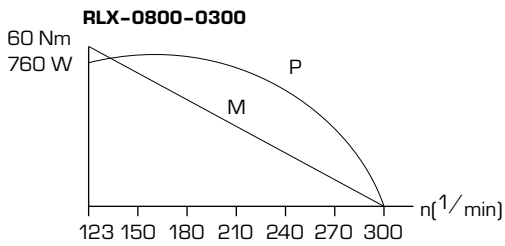
Order-No.	Torque (Nm)									
RLA-0800-4000	0.76	1.52	2.29	3.05	3.81	4.57	5.33	6.10	6.86	7.62
RLA-0800-2670	1.14	2.29	3.43	4.58	5.72	6.86	8.01	9.15	10.30	11.44
RLA-0800-2000	1.53	3.05	4.58	6.10	7.63	9.16	10.68	12.21	13.73	15.26
RLA-0800-1600	1.91	3.82	5.72	7.63	9.54	11.45	13.36	15.26	17.17	19.08
RLA-0800-1340	2.28	4.56	6.84	9.12	11.40	13.68	15.96	18.24	20.52	22.80
RLA-0800-1000	2.45	4.91	7.36	9.82	12.27	14.72	17.18	19.63	22.09	24.54
RLA-0800-0800	3.82	7.64	11.45	15.27	19.09	22.91	26.73	30.54	34.36	38.18
RLA-0800-0620	4.93	9.86	14.78	19.71	24.64	29.57	34.50	39.42	44.35	49.28
RLA-0800-0500	6.11	12.22	18.33	24.44	30.55	36.66	42.77	48.88	54.99	61.10
RXA-1000-4530	0.84	1.69	2.53	3.38	4.22	5.06	5.91	6.75	7.60	8.44
RXA-1000-3020	1.26	2.53	3.79	5.06	6.32	7.58	8.85	10.11	11.38	12.64
RXA-1000-2260	1.69	3.38	5.07	6.76	8.45	10.14	11.83	13.52	15.21	16.90
RXA-1000-1800	2.12	4.24	6.37	8.49	10.61	12.73	14.85	16.98	19.10	21.22
RXA-1000-1500	2.55	5.09	7.64	10.18	12.73	15.28	17.82	20.37	22.91	25.46
RXA-1000-1000	3.82	7.64	11.45	15.27	19.09	22.91	26.73	30.54	34.36	38.18
RXA-1000-0820	4.66	9.32	13.97	18.63	23.29	27.95	32.61	37.26	41.92	46.58
RXA-1000-0600	6.28	12.55	18.83	25.10	31.38	37.66	43.93	50.21	56.48	62.76

Order-No.	Speed (min^{-1})									
RLA-0800-4000	400	800	1200	1600	2000	2400	2800	3200	3600	4000
RLA-0800-2670	267	534	801	1068	1335	1602	1869	2136	2403	2670
RLA-0800-2000	200	400	600	800	1000	1200	1400	1600	1800	2000
RLA-0800-1600	160	320	480	640	800	960	1120	1280	1440	1600
RLA-0800-1340	134	268	402	536	670	804	938	1072	1206	1340
RLA-0800-1000	100	200	300	400	500	600	700	800	900	1000
RLA-0800-0800	80	160	240	320	400	480	560	640	720	800
RLA-0800-0620	62	124	186	248	310	372	434	496	558	620
RLA-0800-0500	50	100	150	200	250	300	350	400	450	50
RXA-1000-4530	453	906	1359	1812	2265	2718	3171	3624	4077	4530
RXA-1000-3020	302	604	906	1208	1510	1812	2114	2416	2718	3020
RXA-1000-2260	226	452	678	904	1130	1356	1582	1808	2034	2260
RXA-1000-1800	180	360	540	720	900	1080	1260	1440	1620	1800
RXA-1000-1500	150	300	450	600	750	900	1050	1200	1350	1500
RXA-1000-1000	100	200	300	400	500	600	700	800	900	1000
RXA-1000-0820	82	164	246	328	410	492	574	656	738	820
RXA-1000-0600	60	120	180	240	300	360	420	480	540	600

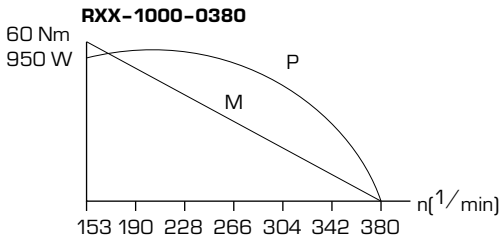


RLX-0800-0190	119.00	143.00	166.00	190.00	P = 557 Watt
RLX-0800-0110	86.00	94.00	102.00	110.00	P = 541 Watt
RLX-0800-0060	53.00	54.50	57.00	60.00	P = 332 Watt
RLX-0800-0030	28.20	28.80	29.40	30.00	P = 177 Watt
RXX-1000-0160	120.00	133.00	147.00	160.00	P = 753 Watt
RXX-1000-0120	98.00	105.00	113.00	120.00	P = 611 Watt
RXX-1000-0070	62.00	64.50	67.00	70.00	P = 391 Watt
RXX-1000-0030	28.50	29.00	29.50	30.00	P = 179 Watt

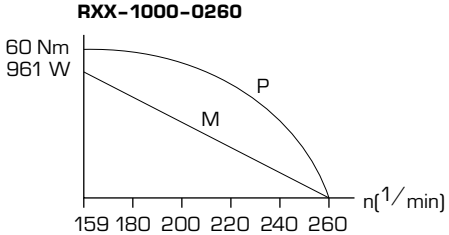
RLX-0800-0300

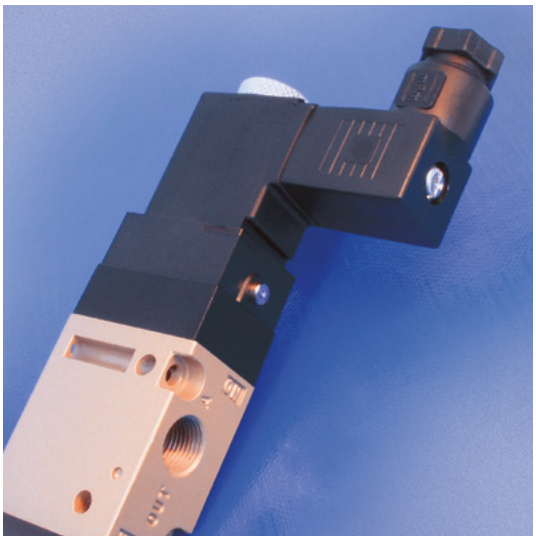


RXX-1000-0380

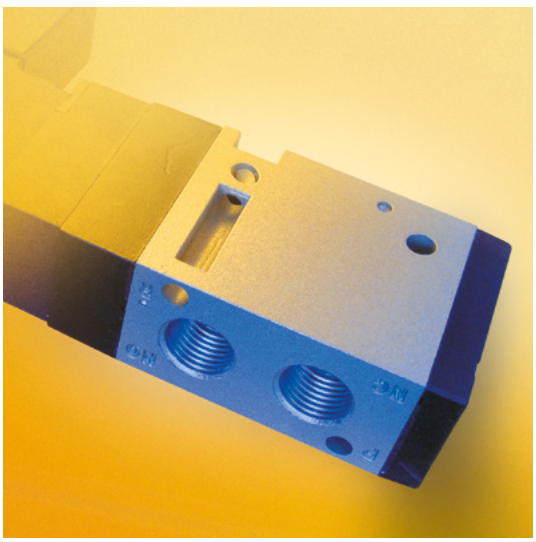


RXX-1000-0260





VALVES



Magnetic Valve Standard

Good and reasonably priced

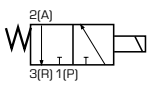
are the following standard valve series either available in 24 VDC or 230 VAC.

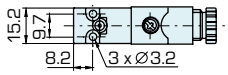
Model: **3/2 way (NC) with spring return**
Connection: **G 1/8" above linking plate**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.0 W / AC: 3.5 VA (60 Hz)
Switching time: < 20 ms
Nom. width: Ø 1.1 mm
Max. flow: 28 liters/min.
Pressure: 0 – 8 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter "Accessories".

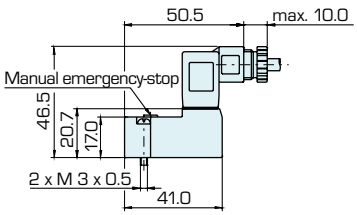
Order-No.	Voltage
MV20-3218-30	24 VDC
MV20-3218-06	230 VAC

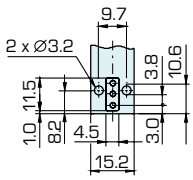
Linking plate (please order separately):

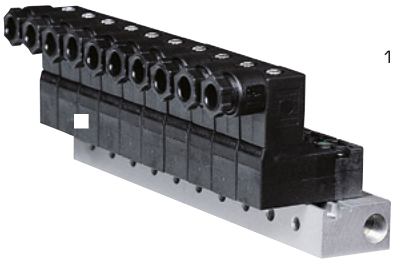
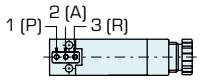
Order-No.	Stations
MV-VP-2002	2
MV-VP-2004	4
MV-VP-2006	6
MV-VP-2008	8
MV-VP-2010	10
MV-VP-20BL	Blind plate

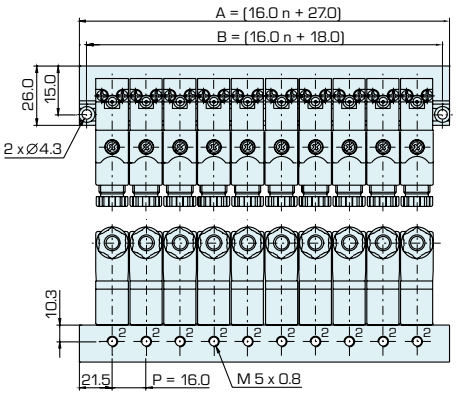



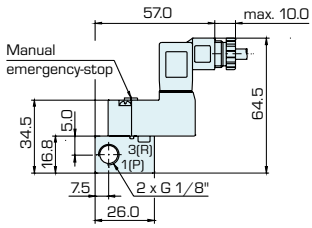




Sealing surface


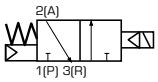



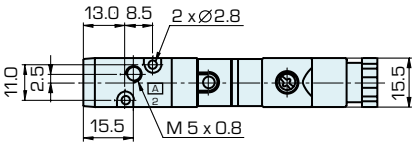


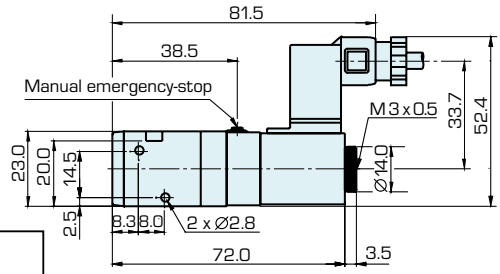


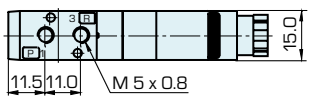
Model: **3/2 way (NC) with spring return**
Connection: **M5**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 3.5 VA (60 Hz)
Switching time: < 25 ms
Max. flow: 190 liters/min.
Pressure: 1.5 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter "Accessories".

Order-No.	Voltage
MV16-32M5-30	24 VDC
MV16-32M5-06	230 VAC

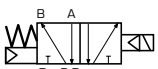


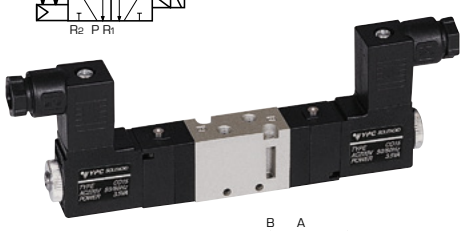
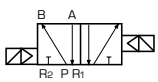


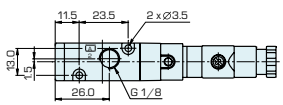


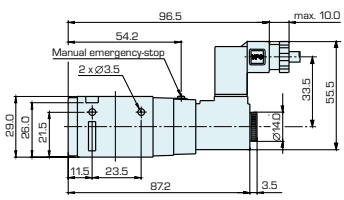
Model: **5/2 way**
Connection: **M5**
Protection class: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 3.5 VA (60 Hz)
Switching time: < 25 ms
Max. flow: 190 liters/min.
Pressure: 1.5 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter "Accessories".

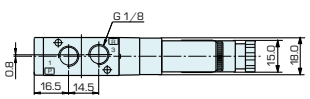
Order-No.	Voltage	Function
MV11-52M5-30	24 VDC	With spring return
MV11-52M5-06	230 VAC	With spring return
MV10-52M5-30	24 VDC	Impulse valve
MV10-52M5-06	230 VAC	Impulse valve







VALVES

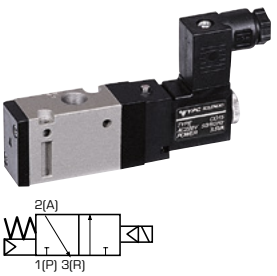
Magnetic Valve Standard

Model: **5/3 way**
Connection: **M5**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 3.5 VA (60 Hz)
Switching time: < 35 ms
Max. flow: 170 liters/min.
Pressure: 2 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter "Accessories".

Order-No.	Voltage	Function
MV13-53M5-30	24 VDC	Center position closed
MV13-53M5-06	230 VAC	Center position closed
MV14-53M5-30	24 VDC	Center position vented
MV14-53M5-06	230 VAC	Center position vented

For drawings, refer to 5/2 way valve **MV11-52M5-30/06**

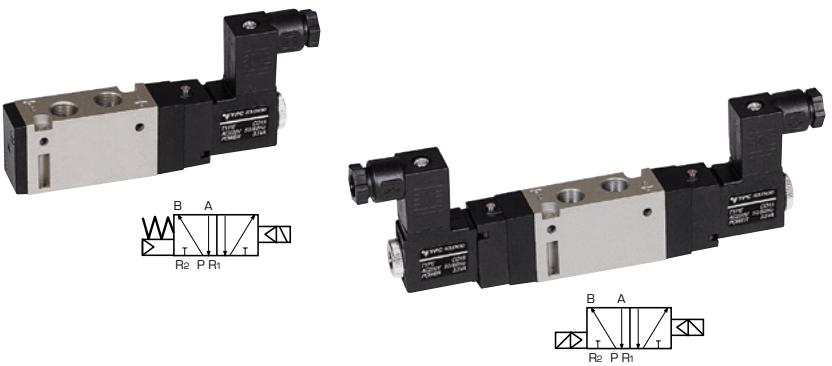
Model: **3/2 way (NC) with spring return**
Connection: **G 1/8"**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 3.5 VA (60 Hz)
Switching time: < 25 ms
Max. flow: 590 liters/min.
Pressure: 1.5 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter "Accessories"



Order-No.	Voltage
MV26-3218-30	24 VDC
MV26-3218-06	230 VAC

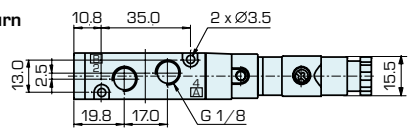
For drawings, refer to 5/2 way valve **MV11-52M5-30/06**

Model: **5/2 way**
Connection: **G 1/8"**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 3.5 VA (60 Hz)
Switching time: < 25 ms
Max. flow: 590 liters/min.
Pressure: 1.5 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter "Accessories"

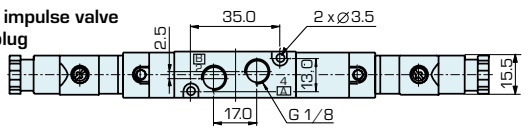


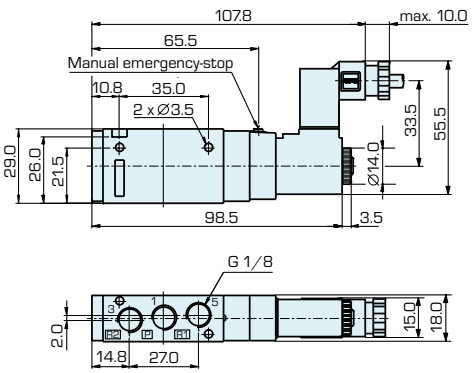
Order-No.	Voltage	Function
MV19-5218-30	24 VDC	With spring return
MV19-5218-06	230 VAC	With spring return
MV22-5218-30	24 VDC	Impulse valve
MV22-5218-06	230 VAC	Impulse valve

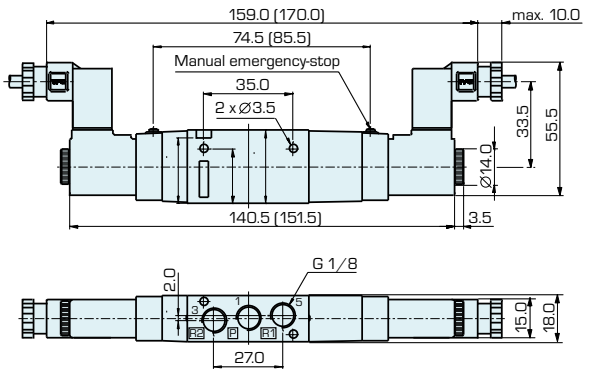
Type with spring return and DIN-plug



Type with impulse valve and DIN-plug





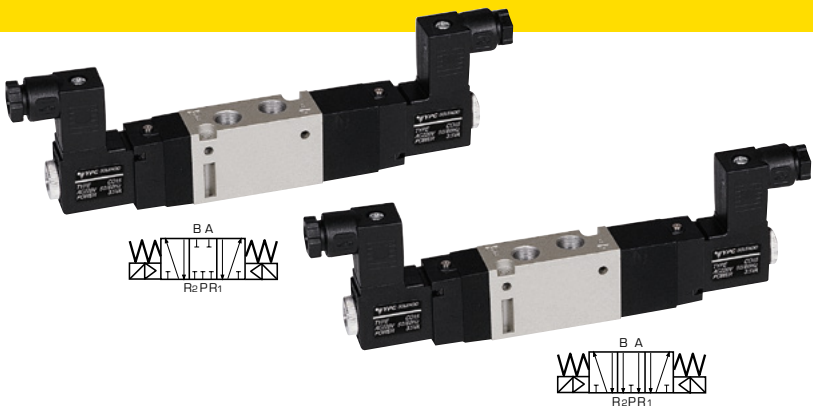


VALVES

Magnetic Valve Standard

Model: **5/3 way**
Connection: **G 1/8“**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 3.5 VA (60 Hz)
Switching time: < 35 ms
Max. flow: 490 liters/min.
Pressure: 2 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fittings are available in Chapter “Accessories“.

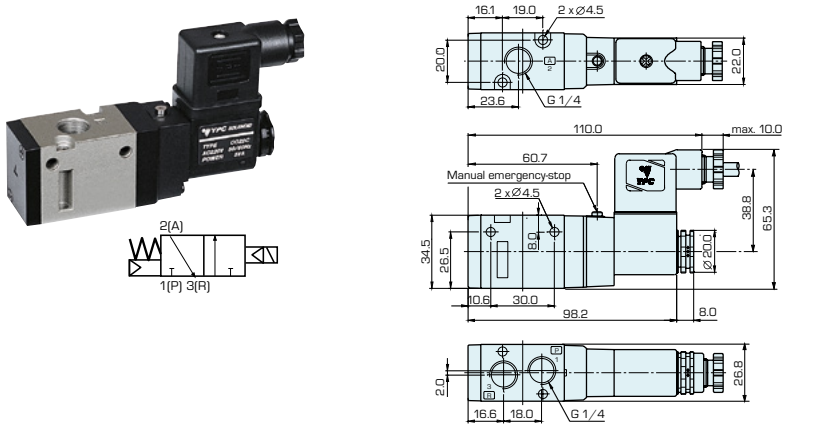
Order-No.	Voltage	Function
MV23-5318-30	24 VDC	Center position closed
MV23-5318-06	230 VAC	Center position closed
MV25-5318-30	24 VDC	Center position vented
MV25-5318-06	230 VAC	Center position vented



For drawing, refer to 5/2 way valve **MV22-5218-30/06** type impulse valve with DIN-plug

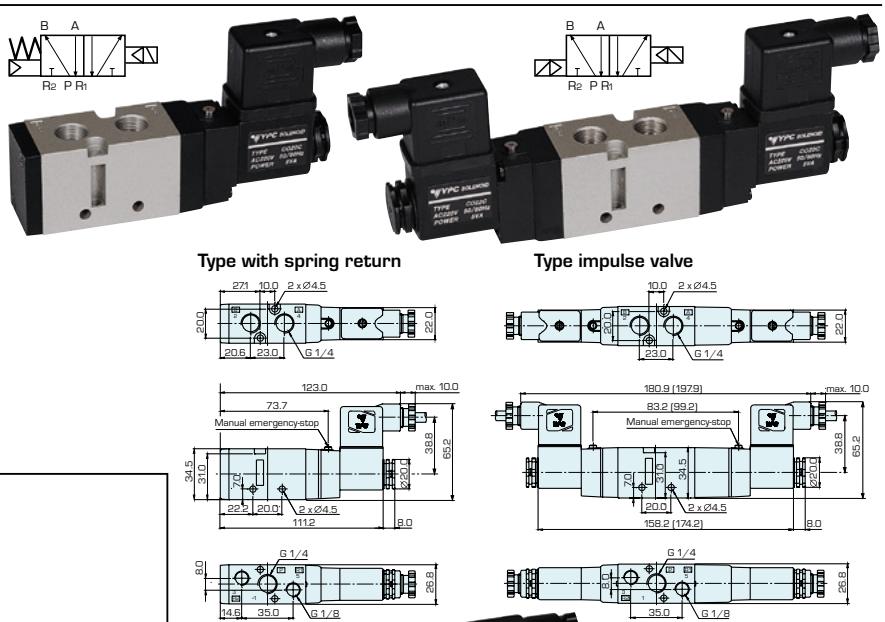
Design: **3/2 way (NC) with spring return**
Connection: **G 1/4“**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 5.5 VA (60 Hz)
Switching time: < 25 ms
Max. flow: 980 liters/min.
Pressure: 1.5 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fillings are available in Chapter “Accessories“.

Order-No.	Voltage
MV46-3214-30	24 VDC
MV46-3214-06	230 VAC



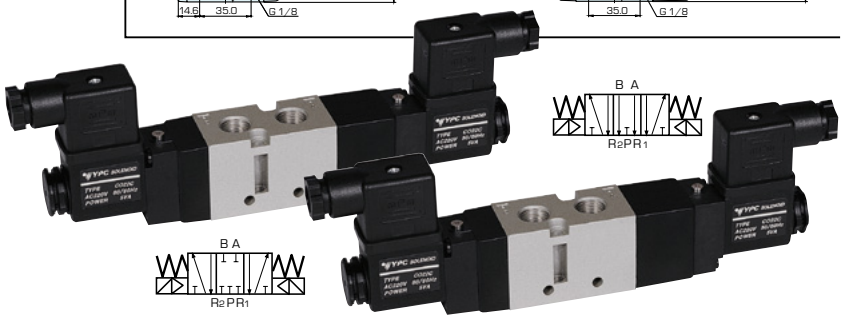
Model: **5/2 way**
Connection: **G 1/4“**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 5.5 VA (60 Hz)
Switching time: < 25 ms
Max. flow: 980 liters/min.
Pressure: 1.5 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fillings are available in Chapter “Accessories“.

Order-No.	Voltage	Function
MV41-5214-30	24 VDC	With spring return
MV41-5214-06	230 VAC	With spring return
MV47-5214-30	24 VDC	Impulse valve
MV47-5214-06	230 VAC	Impulse valve



Model: **5/3 way**
Connection: **G 1/4“**
Protection type: IP65
Medium: Oiled and non-oiled, filtered air
Power input: DC: 2.5 W / AC: 5.5 VA (60 Hz)
Switching time: < 35 ms
Max. flow: 590 liters/min.
Pressure: 2 – 10 bar
Temperature: –10 °C...+60 °C
Recom. accessories: Silencers and plug fillings are available in Chapter “Accessories“.

Order-No.	Voltage	Function
MV43-5314-30	24 VDC	Center position locked
MV43-5314-06	230 VAC	Center position locked
MV44-5314-30	24 VDC	Center position vented
MV44-5314-06	230 VAC	Center position vented



For drawing, refer to 5/2 way valve **MV47-5214-30/06** type impulse valve

Magnetic Valve – Minisol

Connection	G 1/8"
Design	2/2 way
Nom. width [Ø mm]	1.6
Max. flow	0,09 m³/h
Pressure [bar] DC	0 – 20
Temperature	-20 °C...+90 °C
LED	no
Clock rate	2000 cycles/min.
Response time	10 – 20 ms
DC [W]	6.0
Protection type	IP65
Order-No. 24 VDC	**MV02-2218-30**

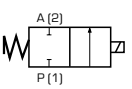
Material:

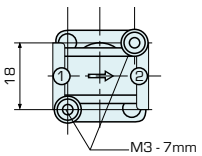
- Housing: Brass
- Pin and spring: Stainless steel
- Seals: NBR

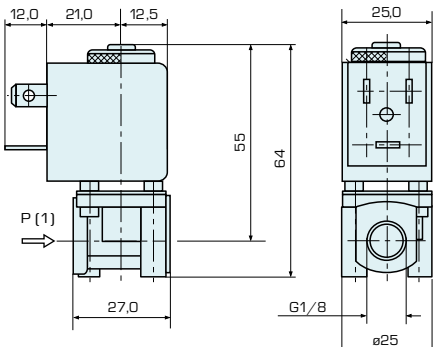
Power input:

- DC 5 W/ AC 6,5 VA

2/2 way





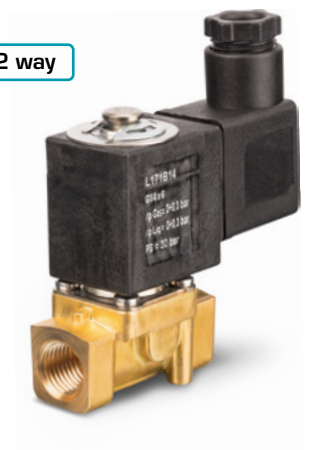


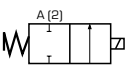
Connection	G 1/4"
Design	2/2 way
Nom. width [Ø mm]	6
Pressure [bar] AC	0 – 1.0
Pressure [bar] DC	0 – 0.3
Temperature	-10 °C...+90 °C
LED	no
Clock rate	2000 cycles/min.
AC [VA]	10.0
DC [W]	6.0
Protection type	IP65
Order-No. 24 VDC	**MV01-2214-30**
Order-No. 230 VAC	**MV01-2214-06**

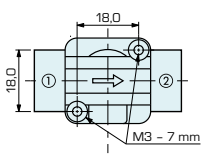
Material:

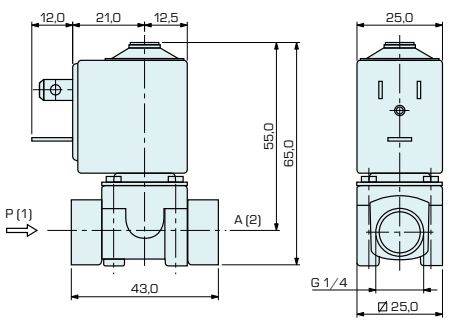
- Housing: Brass
- Pin and spring: Stainless steel
- Seals: NBR

2/2 way



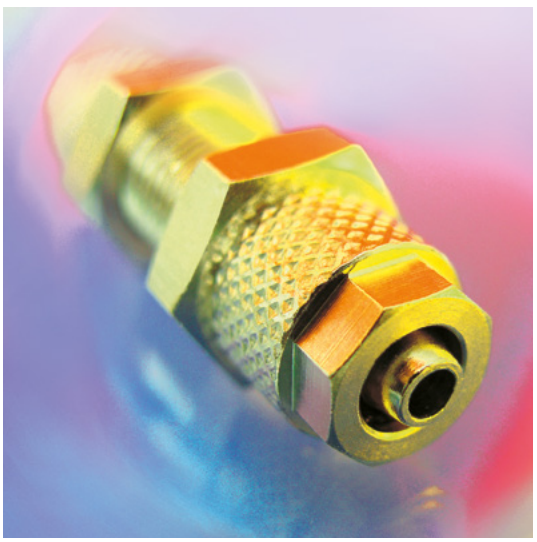






VALVES

ACCESSORIES



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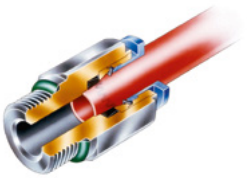
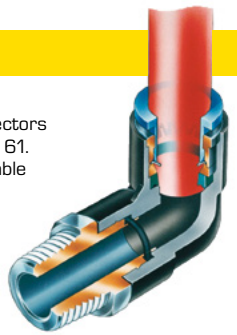
PLUG FITTINGS

Advantages: Quick and simple connection
Compact, light design
High plug cycles
Material: Brass nickel-plated, plastic, seal NBR
Pressure: –0.9 to +10 bar
Temperature range: 0 °C...+60 °C

Other versions are available upon request.



Matching hose connectors are available on page 61. Other sizes are available upon request.



Hose Connector straight with/without Reducer

Order-No. ①②
EUC3-3-K
EUC4-3-K
EUC4-4-K
EUC4-4
EUC6-4-K
EUC6-4
EUC6-6-K
EUC6-6
EUC8-4
EUC8-6
EUC8-8

Type "K" with a compact design
Order example **EUC6-4**:
① Hose outside Ø: 6 mm
② Hose outside Ø: 4 mm

Hose Connector angled

Order-No.
EUL3-K
EUL4-K
EUL4
EUL6-K
EUL6
EUL8

Type "K" with a compact design
Order example **EUL4**:
① Hose outside Ø: 4 mm

Hose Connector T-Piece

Order-No. ①②
EUT3-3-K
EUT4-3-K
EUT4-4-K
EUT4-4
EUT6-4-K
EUT6-4
EUT6-6-K
EUT6-6
EUT8-4
EUT8-6
EUT8-8

Type "K" with a compact design
Order example **EUT6-4**:
① Hose outside Ø: 6 mm
② Hose outside Ø: 4 mm

Closing Plug for Hose Connector

Order-No.
EPP3
EPP4
EPP6
EPP8

Order example **EPP4**:
① Hose connector Ø: 4 mm

Hose Connector angled with Reducer

Order-No ①②
ERL6-4
ERL8-6

Order example **ERL6-4**:
① Hose connector Ø: 6 mm
② Hose outside Ø: 4 mm

Hose Connector "Y" with/without Reducer

Order-No. ①②
EUY3-3-K
EUY4-3-K
EUY4-4-K
EUY4-4
EUY6-4-K
EUY6-4
EUY6-6-K
EUY6-6
EUY8-4
EUY8-6
EUY8-8

Type "K" with a compact design
Order example **EUY6-4-K**:
① Hose outside Ø: 4 mm
② Hose outside Ø: 6 mm

ACCESSORIES

Hose Connector "X"

Order-No.
EUX3-K
EUX4-K
EUX4
EUX6-K
EUX6
EUX8

Order example **EUX4**:
① Hose outside Ø: 4 mm

Bulkhead Fitting Connection

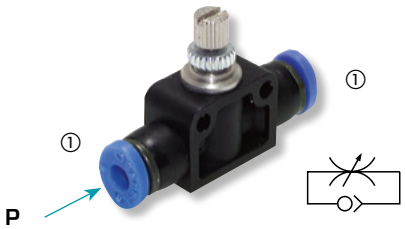
Order-No.	G
EPC3-K	M8x0.75
EPC4-K	M10x1
EPC6-K	M12x1
EPC8	M16x1

Order example **EPC4-K**:
① Hose outside Ø: 4 mm

Hose Connector with Return Valve

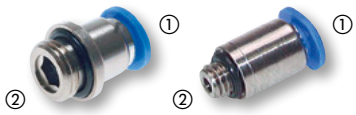
Order-No.
SC 1000 F4
SC 1000 F6
SC 2050 F8

Order example **SC 1000 F4**:
① Hose outside Ø: 4 mm



Connection Piece straight, Mini Design (Hex Socket)

Order-No. ① ②
ECPI3-M3-K
ECPI3-M5-K
ECPI4-M3-K
ECPI4-M5-K
ECPI4-M5
ECPI4-1/8-K
ECPI4-1/8
ECPI6-M5-K
ECPI6-M5
ECPI6-1/8-K
ECPI6-1/8
ECPI6-1/4
ECPI8-1/8
ECPI8-1/4
ECPI8-3/8
ECPI10-3/8



Type "K" with a compact design
Order example **ECPI4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Hose Connector, 4 reduced Outputs

Order-No. ① ②
EUQ6-4
EUQ8-6

Order example **EUQ6-4**:
① Hose outside Ø: 6 mm
② Hose outside Ø: 4 mm

Connection Piece straight (also avail. in a Mini design)

Order-No. ① ②
ECP 3-M3-K
ECP 3-M5-K
ECP 4-M3-K
ECP 4-M5-K
ECP 4-M5
ECP 4-1/8-K
ECP 4-1/8
ECP 4-1/4
ECP 6-M5-K
ECP 6-M5
ECP 6-1/8-K
ECP 6-1/8
ECP 6-1/4
ECP 8-1/8
ECP 8-1/4
ECP 8-3/8

Type "K" with a compact design
Order example **ECP4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Connection Piece straight with 1 Ball Bearing

Order-No. ① ②	U/min.
ECPR 4-M5	500
ECPR 4-1/8	500
ECPR 6-M5	500
ECPR 6-1/8	500
ECPR 6-1/4	500
ECPR 8-1/8	400
ECPR 8-1/4	400

Order example **ECPR6-1/8**:
① Hose outside Ø: 6 mm
② Threading: G 1/8"

Turnable by 360°

Connection Piece angled (also avail. in a Mini Design)

Order-No. ① ②
ELP 3-M3-K
ELP 3-M5-K
ELP 4-M3-K
ELP 4-M5-K
ELP 4-M5
ELP 4-1/8-K
ELP 4-1/8
ELP 4-1/4
ELP 6-M5
ELP 6-M5-K
ELP 6-1/8-K
ELP 6-1/8
ELP 6-1/4
ELP 8-1/8
ELP 8-1/4

Type "K" with a compact design
Order example **ELP4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Connection Piece angled turnable with 1 Ball Bearing

Order-No. ① ②	U/min.
ELPR 4-M5	500
ELPR 4-1/8	500
ELPR 6-M5	500
ELPR 6-1/8	500
ELPR 6-1/4	500
ELPR 8-1/8	400
ELPR 8-1/4	400

Turnable by 360°

Order example **ELPR4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Connection T-Piece (also available in a Mini Design)

Order-No. ① ②
ETP 3-M3-K
ETP 3-M5-K
ETP 4-M3-K
ETP 4-M5-K
ETP 4-M5
ETP 4-1/8-K
ETP 4-1/8
ETP 4-1/4
ETP 6-M5-K
ETP 6-M5
ETP 6-1/8-K
ETP 6-1/8
ETP 6-1/4
ETP 8-1/8
ETP 8-1/4

Type "K" with a compact design
Order example **ETP4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Connection Piece angled long (also avail. in a Mini Design)

Order-No. ① ②
ELPL 3-M3-K
ELPL 3-M5-K
ELPL 4-M3-K
ELPL 4-M5-K
ELPL 4-M5
ELPL 4-1/8-K
ELPL 4-1/8
ELPL 4-1/4
ELPL 6-M5-K
ELPL 6-M5
ELPL 6-1/8-K
ELPL 6-1/8
ELPL 6-1/4
ELPL 8-1/8
ELPL 8-1/4

Order example **ELPL4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Connection Piece angled 2 Outputs

Order-No. ① ②
ELP2A 4-1/8
ELP2A 4-1/4
ELP2A 6-1/8
ELP2A 6-1/4
ELP2A 8-1/8
ELP2A 8-1/4

Order example **ELP2A4-1/8**:
① Hose outside Ø: 4 mm
② Threading: G 1/8"

Connection Piece angled 3 Outputs

Order-No. ① ②
ELP3A 4-1/8
ELP3A 4-1/4
ELP3A 6-1/8
ELP3A 6-1/4
ELP3A 8-1/8
ELP3A 8-1/4

Order example **ELP3A 4-1/8**:
① Hose outside Ø: 4 mm
② Threading: G 1/8"

Connection Piece angled 4 Outputs

Order-No. ① ②
ELP4A 4-1/8
ELP4A 4-1/4
ELP4A 6-1/8
ELP4A 6-1/4
ELP4A 8-1/8
ELP4A 8-1/4

Order example **ELP4A 4-1/8**:
① Hose outside Ø: 4 mm
② Threading: G 1/8"

Connection Piece, 4 Outputs

Order-No. ① ②
EQP 4-1/8
EQP 4-1/4
EQP 6-1/8
EQP 6-1/4

Order example **EQP4-1/8**:
① Hose outside Ø: 4 mm
② Threading: G 1/8"

Connection Piece "Y"

Order-No. ① ②
EYP 4-M5
EYP 6-M5
EYP 4-1/8
EYP 4-1/4
EYP 6-1/8
EYP 6-1/4
EYP 8-1/8
EYP 8-1/4

Order example **EYP4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

Connection Piece "L" (also available in a Mini Design)

Order-No. ① ②
ESTP 3-M3-K
ESTP 3-M5-K
ESTP 4-M3-K
ESTP 4-M5-K
ESTP 4-M5
ESTP 4-1/8-K
ESTP 4-1/8
ESTP 4-1/4
ESTP 6-M5-K
ESTP 6-M5
ESTP 6-1/8-K
ESTP 6-1/8
ESTP 6-1/4
ESTP 8-1/8
ESTP 8-1/4

Type "K" with a compact design
Order example **ESTP4-M5**:
① Hose outside Ø: 4 mm
② Threading: M5

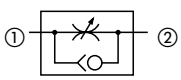
Connection Piece staight, inside Thread. (also avail. in a Mini Design)

Order-No. ① ②
EFCP3-M3-K
EFCP3-M5-K
EFCP4-M3-K
EFCP4-M5-K
EFCP4-1/8
EFCP4-1/4
EFCP6-1/8
EFCP6-1/4
EFCP8-1/8
EFCP8-1/4

Type "K" with a compact design
Order example **EFCP4-1/8"**:
① Hose outside Ø: 4 mm
② Threading: G 1/8"

Stop Valve (Exhaust) – Plastic

Order-No. ②	① [mm]
SCP 1200F-M3-03	
SCP 1200F-M3-04	
SCP 1200F-M5-03	
SCP 1200F-M5-04	
SCP 1200F-M5-06	

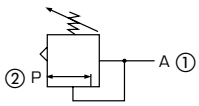


Order example
SCP 1200F-M5-04:
① Hose outside Ø: 4 mm
② Threading: M5

Pressure Regulator with Manometer 0 – 8 bar

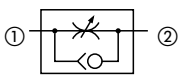
Order-No.	Connect. ②	Hose outside Ø ① [mm]
DRM-M5-04	M5	4
DRM-18 - 04	G1/8"	4
DRM-18 - 06	G1/8"	6
DRM-14 - 08	G1/4"	8

Order example
DRM-18-04:
① Hose outside Ø: 4 mm
② Threading: G 1/8"



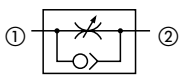
Return Valve MS nickel-plated (Exhaust)

Order-No.	Connect. ②	Hose outside Ø ① [mm]
DVA-M5-04	M5	4
DVA-M5-06	M5	6
DVA-18-04	G1/8"	4
DVA-18-06	G1/8"	6
DVA-18-08	G1/8"	8
DVA-14-06	G1/4"	6
DVA-14-08	G1/4"	8



Stop Valve MS nickel-plated (Intake)

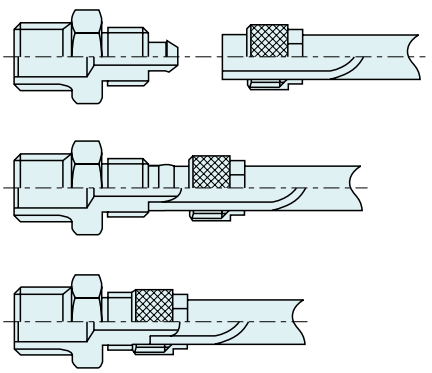
Order-No.	Connect. ②	Hose outside Ø ① [mm]
DVZ-M5-04	M5	4
DVZ-M5-06	M5	6
DVZ-18-04	G1/8"	4
DVZ-18-06	G1/8"	6
DVZ-18-08	G1/8"	8
DVZ-14-06	G1/4"	6
DVZ-14-08	G1/4"	8



PUSH & PULL FITTINGS with Cylindrical Threading

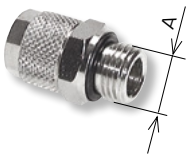
Advantages: Also suitable for vacuum
Suitable for hoses PA, PVC, PU
Robust design (see "Accessories" on the next pages)
Material: Nickel-plated brass
Pressure: –1 to +15 bar
Temperature range: –18 °C...+70 °C

Sample connection:



1020 Series – Straight Threading

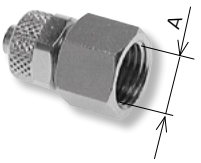
Order-No.	A
1020-6/4-M5	M5
1020-6/4-1/8	G 1/8"
1020-6/4-1/4	G 1/4"
1020-6/4-3/8	G 3/8"
1020-6/4-1/2	G 1/2"
1020-8/6-1/8	G 1/8"
1020-8/6-1/4	G 1/4"
1020-8/6-3/8	G 3/8"
1020-8/6-1/2	G 1/2"



Order example **1020-6/4-1/8**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm
Threading: G 1/8"

1030 Series – Inside Threading

Order-No.	A
1030-6/4-1/8	G 1/8"
1030-6/4-1/4	G 1/4"
1030-6/4-3/8	G 3/8"
1030-8/6-1/8	G 1/8"
1030-8/6-1/4	G 1/4"
1030-8/6-3/8	G 3/8"
1030-8/6-1/2	G 1/2"



Order example **1030-6/4-1/8**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm
Threading: G 1/8"

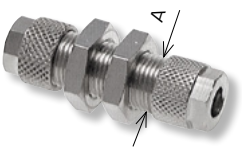
1040 Series – Double Threading

Order-No.
1040-4,3/3
1040-6/4
1040-8/6-6/4
1040-8/6

Order example **1040-6/4**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm

1050 Series – Bulkhead Fitting

Order-No.	A
1050-4,3/3	M7 x 0.75
1050-6/4	M10 x 1.0
1050-8/6-6/4	M12 x 1.0
1050-8/6	M12 x 1.0
1050-10/8-6/4	M14 x 1.0
1050-10/8-8/6	M14 x 1.0
1050-10/8	M14 x 1.0



Order example **1050-6/4**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm

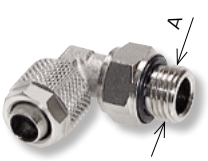
1105 Series – L-Threading (MS nickel-plated)

Order-No.	A
1105-4,3/3-M5	M5
1105-4,3/3-1/8	G 1/8"
1105-6/4-M5	M5
1105-6/4-1/8	G 1/8"
1105-6/4-1/4	G 1/4"
1105-6/4-3/8	G 3/8"
1105-8/6-1/8	G 1/8"
1105-8/6-1/4	G 1/4"
1105-8/6-3/8	G 3/8"

Order example **1105-6/4-M5**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm
Threading: M5

1115 Series – Angled Threading 360° turnable (MS nickel-plated)

Order-No.	A
1115-6/4-1/8	G 1/8"
1115-6/4-1/4	G 1/4"
1115-8/6-1/8	G 1/8"
1115-8/6-1/4	G 1/4"



Order example **1115-6/4-1/4**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm
Threading: G 1/4"

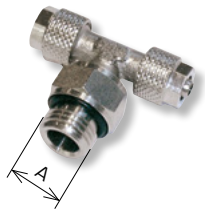
1120 Series – Angular Fitting with Inside Threading

Order-No.	A
1120-6/4-1/8	G 1/8"
1120-6/4-1/4	G 1/4"
1120-8/6-1/8	G 1/8"
1120-8/6-1/4	G 1/4"

Order example **1120-6/4-1/8**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm
Threading: G 1/8"

1215 Series – T-Fitting turnable by 360° (MS nickel-pl.)

Order-No.	A
1215-6/4-1/8	G 1/8"
1215-6/4-1/4	G 1/4"
1215-8/6-1/8	G 1/8"
1215-8/6-1/4	G 1/4"



Order example **1215-6/4-1/8**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm
Threading: G 1/8"

1230 Series – T-Fitting

Order-No.
1230-4,3/3
1230-6/4
1230-8/6-6/4
1230-8/6

Order example **1230-6/4**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm

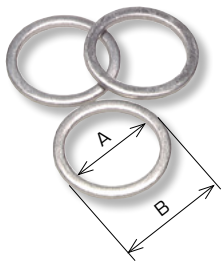
1300 Series – X-Fitting

Order-No.
1300-6/4
1300-8/6
1300-10/8
1300-12/10

Order example **1300-6/4**:
Hose outside Ø: 6 mm
Hose inside Ø: 4 mm

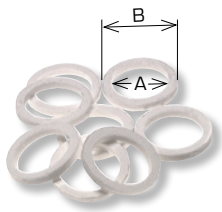
1600 Series – Sealing Ring (Aluminum)

Order-No.	A [mm]	B [mm]	H [mm]
1600-M5	5.2	8.0	1.0
1600-1/8	10.2	14.0	1.5
1600-1/4	13.2	18.0	1.5
1600-3/8	17.2	21.0	1.5
1600-1/2	21.2	26.0	1.5
1600-3/4	27.3	32.0	2.0



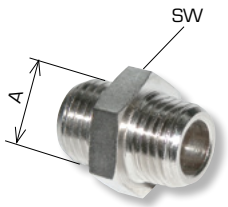
1610 Series – Sealing Ring (Plastic)

Order-No.	A [mm]	B [mm]	H [mm]
1610-M5	5.4	8.0	1.3
1610-1/8	10.0	14.0	2.0
1610-1/4	13.2	18.0	2.0
1610-3/8	17.0	21.0	2.0
1610-1/2	21.1	27.0	2.0
1610-3/4	26.7	32.5	2.0



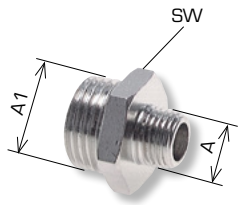
2010 Series – Double Nipple

Order-No.	A	SW [mm]
2010-M5	M5	8.0
2010-1/8	G 1/8"	14.0
2010-1/4	G 1/4"	17.0
2010-3/8	G 3/8"	19.0
2010-1/2	G 1/2"	24.0
2010-3/4	G 3/4"	30.0



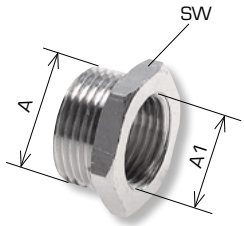
2030 Series – Double Nipple with Reducer

Order-No. A	A1	SW [mm]
2030-M5-1/8	G 1/8"	14.0
2030-1/8-1/4	G 1/4"	17.0
2030-1/8-3/8	G 3/8"	19.0
2030-1/4-3/8	G 3/8"	19.0
2030-1/4-1/2	G 1/2"	24.0
2030-3/8-1/2	G 1/2"	24.0
2030-1/2-3/4	G 3/4"	30.0



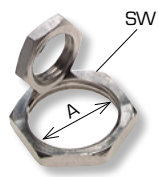
2090 Series – Reducing Nipple w. Outside and Inside Threading

Order-No. A	A1	SW [mm]
2090-1/8-M5	M5	14.0
2090-1/4-1/8	G 1/8"	17.0
2090-1/2-1/8	G 1/8"	24.0
2090-3/8-1/4	G 1/4"	19.0
2090-1/2-1/4	G 1/4"	24.0
2090-1/2-3/8	G 3/8"	24.0
2090-3/4-3/8	G 3/8"	30.0
2090-3/4-1/2	G 1/2"	30.0



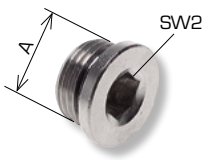
2096 Series – Hex Nut

Order-No.	A	SW [mm]	H [mm]
2096-1/8	G 1/8"	12.0	3.0
2096-1/4	G 1/4"	17.0	3.0
2096-3/8	G 3/8"	19.0	4.0
2096-1/2	G 1/2"	24.0	4.0
2096-3/4	G 3/4"	30.0	5.0
2096-M07x075	M7x0,75	10.0	2.0
2096-M10x100	M10x1,00	14.0	2.5
2096-M12x075	M12x0,75	16.0	2.0



3020 Series – Closing Screw

Order-No.	A	SW1 [mm]	SW2 [mm]
3020-M5	M5	8.0	–
3020-1/8	G 1/8"	14.0	5.0
3020-1/4	G 1/4"	17.0	8.0



3045 Series – Threaded nozzle with cylindrical thread

Order-No.	Hose outside ø mm	Hose inside ø mm	SW [mm]	Thread	Material	Overall length mm
3045-4/2,5-M3	4,0	2,5	4,5	M3	Brass	11
3045-4/2,5-M3-ES	4,0	2,5	4,5	M3	Stainless steel	11
3045-6/4-M3	6,0	4,0	5,0	M3	Brass	12
3045-6/4-M3-ES	6,0	4,0	5,0	M3	Stainless steel	12

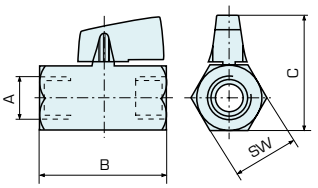
3045-4/2,5-M3

3045-6/4-M3

KVAB1 – Mini Ball Valve with 2 x Inside Threading

Technical specifications
Pressure range –0.9...+15 bar
Temperature range 0 °C...+90 °C

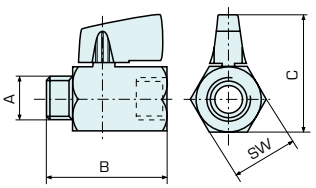
Order-No.	A	B [mm]	C [mm]	SW [mm]
KVAB1-1/8	G 1/8"	40.0	38.0	21.0
KVAB1-1/4	G 1/4"	40.0	38.0	21.0
KVAB1-3/8	G 3/8"	40.0	38.0	21.0
KVAB1-1/2	G 1/2"	46.0	42.0	25.0
KVAB1-3/4	G 3/4"	52.0	47.0	30.0



KVAB2 – Mini Ball Valve with Outside and Inside Threading

Technical specifications
Pressure range –0.9...+15 bar
Temperature range 0 °C...+90 °C

Order-No.	A	B [mm]	C [mm]	SW [mm]
KVAB2-1/8	G 1/8"	39.0	38.0	21.0
KVAB2-1/4	G 1/4"	39.0	38.0	21.0
KVAB2-3/8	G 3/8"	40.0	38.0	21.0
KVAB2-1/2	G 1/2"	45.0	42.0	25.0
KVAB2-3/4	G 3/4"	51.0	47.0	30.0



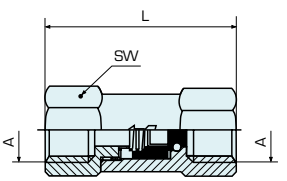
KVNR – Return Valve

Technical specifications
Temperature range –10 °C...+60 °C

Order-No.	A	L [mm]	SW [mm]	Pressure [bar] Cracking pressure	Pressure [bar] max. press.
KVNR-M5	M5	26.5	8.0	0.6 – 1.5	10
KVNR-1/8	G 1/8"	35.5	13.0	0.2 – 1.0	10
KVNR-1/4	G 1/4"	42.5	17.0	0.2 – 1.0	10
KVNR-3/8	G 3/8"	58.0	24.0	0.025	20
KVNR-1/2	G 1/2"	64.0	24.0	0.025	20

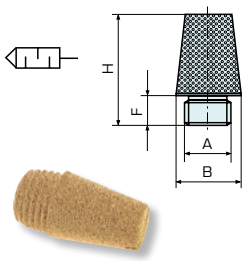
G1/8" – G1/4"

G3/8" – G1"



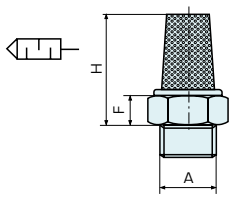
KS1 – Silencer (sintered)

Order-No.	A	F [mm]	B [mm]	H [mm]
KS1-1/8	G1/8"	6.0	12.0	16.0
KS1-1/4	G1/4"	6.0	15.0	19.0
KS1-3/8	G3/8"	8.0	19.0	25.0
KS1-1/2	G1/2"	10.0	23.0	32.0
KS1-3/4	G3/4"	13.0	30.0	52.0
KS1-1	G1"	15.0	38.0	60.0



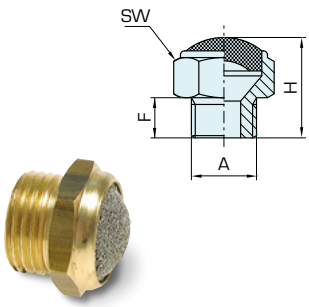
KS2 – Sound absorber (hexagonal)

Order-No.	A	F [mm]	H [mm]	SW [mm]
KS2-M5	M5	4.0	15.5	8.0
KS2-1/8	G1/8"	6.0	18.0	13.0
KS2-1/4	G1/4"	8.0	25.0	16.0
KS2-3/8	G3/8"	9.0	33.0	19.0
KS2-1/2	G1/2"	11.0	39.0	24.0
KS2-3/4	G3/4"	13.0	47.0	30.0
KS2-1	G1"	5.0	57.0	36.0



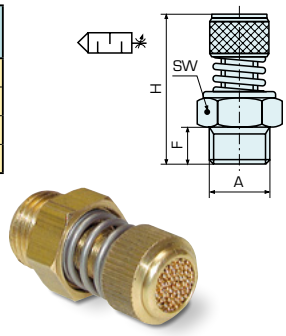
KS4 – Silencer with Stainless Steel Canvas

Order-No.	A	F [mm]	H [mm]	SW [mm]
KS4-M5	M5	5.0	11.5	8.0
KS4-1/8	G1/8"	6.0	15	13.0
KS4-1/4	G1/4"	8.0	18	16.0
KS4-3/8	G3/8"	9.0	20	19.0
KS4-1/2	G1/2"	10.0	22	24.0
KS4-3/4	G3/4"	10.0	26	30.0



KS5 – Sound absorber with regulator

Order-No.	A	F [mm]	H_{min} [mm]	H_{max} [mm]	SW [mm]
KS5-1/8	G1/8"	6.0	26.0	28.0	13.0
KS5-1/4	G1/4"	8.0	30.0	32.0	15.0
KS5-3/8	G3/8"	10.0	35.0	38.0	18.0
KS5-1/2	G1/2"	11.0	36.0	39.0	22.0



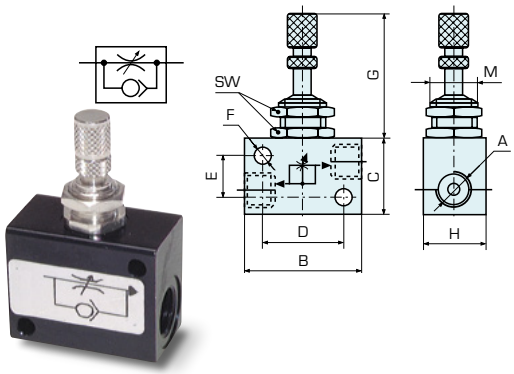
Reduction Nipple without Collar

Order-No.	Threading [Outside]	Threading [Inside]	Length [mm]
RN1418	G1/4"	G1/8"	8
RN3814	G3/8"	G1/4"	9
RN1238	G1/2"	G3/8"	10
RN3412	G3/4"	G1/2"	14

KFRU... Series – Return Valve

Technical specifications
Pressure range 0...+10 bar
Temperature range 0 °C...+60 °C

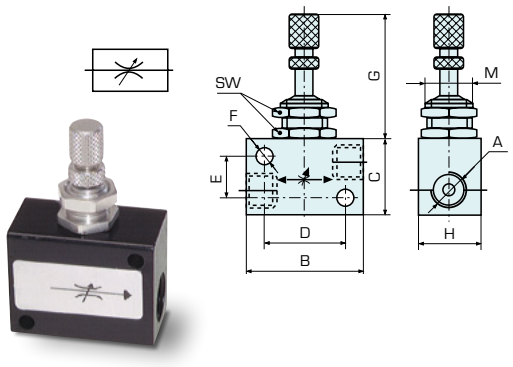
Order-No.	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	M	SW [mm]	Max. flow [l/min.]
KFRU1/8	G1/8"	32.0	22.0	23.0	13.0	4.5	35.0	17.0	M12x0.75	15.0	5-80
KFRU1/4	G1/4"	40.0	32.0	30.0	22.0	4.5	35.0	22.0	M12x0.75	15.0	8-435
KFRU3/8	G3/8"	56.0	42.0	43.0	27.0	6.5	43.0	27.0	M18x1	24.0	10-820
KFRU1/2	G1/2"	56.0	42.0	43.0	27.0	6.5	43.0	27.0	M18x1	24.0	15-1450



KFRB... Series – Stop Valve

Technical specifications
Pressure range 0...+10 bar
Temperature range 0 °C...+60 °C

Order-No.	A	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]	G [mm]	H [mm]	M	SW [mm]	Max. flow [l/min.]
KFRB 1/8	G1/8"	32.0	22.0	23.0	13.0	4.5	35.0	17.0	M12x0.75	15.0	5-80
KFRB 1/4	G1/4"	40.0	32.0	30.0	22.0	4.5	35.0	22.0	M12x0.75	15.0	8-435
KFRB 3/8	G3/8"	56.0	42.0	43.0	27.0	6.5	43.0	27.0	M18x1	24.0	10-820
KFRB 1/2	G1/2"	56.0	42.0	43.0	27.0	6.5	43.0	27.0	M18x1	24.0	15-1450



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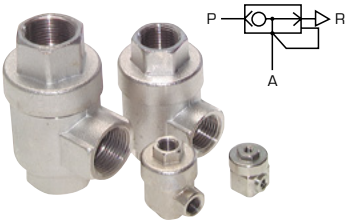
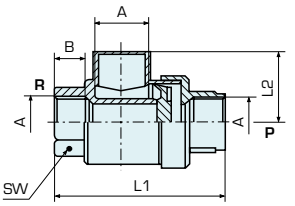
KVQE... Series – Rapid Exhaust Valve

Technical Specifications
Pressure range +1...+10 bar
Temperature range –20 °C...+70 °C

Order-No.	A	B [mm]	L1 [mm]	L2 [mm]	SW [mm]	Aerated P-A (l/min.)	Deaeration A-R (l/min.)
KVQE1/8	G1/8"	7.5	42.0	19.5	15.0	650	1100
KVQE1/4	G1/4"	11.0	54.0	25.0	19.0	1200	2250
KVQE3/8	G3/8"	11.5	60.5	26.5	22.0	1200	2250
KVQE1/2	G1/2"	14.0	71.0	32.0	26.0	3200	7400

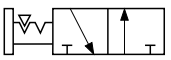


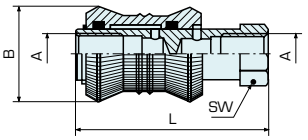


KVAS – Sliding Valve

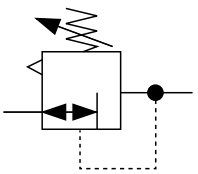
Technical Specifications
Pressure range 0...+10 bar
Temperature range –10 °C...+80 °C

Order-No.	A	B [mm]	L [mm]	SW [mm]
KVAS1/8	G1/8"	25.0	48.0	14.0
KVAS1/4	G1/4"	30.0	58.0	19.0
KVAS3/8	G3/8"	35.0	68.0	22.0
KVAS1/2	G1/2"	40.0	80.0	27.0





Pressure controller without mounting bracket with pressure gauge



Order-No.	Connection	Pressure [bar]	Max. flow [l/min]	Suitable bracket
RG18	G1/8"	0.5 – 10	1000	WN1
RG14	G1/4"	0.5 – 10	1600	WN1
RG12	G1/2"	0.5 – 10	6000	WN2

Max input pressure: 16 bar
Material: Die-cast zinc
Temperature range: –10 °C...+60 °C
For oiled and non-oiled compressed air
Automatic excess pressure venting

Order-No.	Description	Connection
WN1	Mounting bracket	M30x1.5
WN2	Mounting bracket	M50x1.5

KG – Manometer

Order-No.	Ø [mm]	Connection	Pressure [bar]	Class
MA4018	40	G1/8"	0 – 10	2.5
MA2518	25	G1/8"	0 – 10	4.0
MA2518-16	25	G1/8"	0 – 16	4.0
MA5014	50	G1/8"	0 – 16	2.5

MA4018

MA2518

Filter-Regulator-Oiler – Combi-Unit without Holder

WAF14

WAF38

WAF12

Order-No.	Connection	Pressure [bar]	Max. flow [l/min.]	Suitable bracket
WAF14	G1/4"	0.5 – 10	600	WN1
WAF38	G3/8"	0.5 – 10	1100	WN1
WAF12	G1/2"	0.5 – 10	3500	WN2

Order-No.	Description	Connection
WN1	Mounting bracket	M30x1.5
WN2	Mounting bracket	M50x1.5

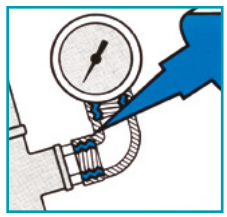
WN

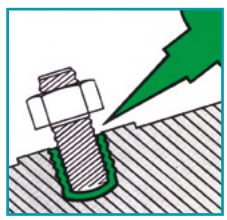
Adhesive for Sealing, Installation and Securing

Temperature range: –55 °C...+150 °C

Order-No.	Cont. [ml]	Gap dim. max. [mm]	Max. load [Nm]	Function	Similar properties to
K-GD10	10	0.15	15	Sealing hydraulic, pneumatic, and gas threadings	Loctite 542
K-GD50	50	0.15	15	Sealing hydraulic, pneumatic, and gas threadings	Loctite 542
K-SM10	10	0.25	20	Securing screws medium	Loctite 243
K-SM50	50	0.25	20	Securing screws medium	Loctite 243
K-SH10	10	0.15	30	Securing screws high	Loctite 270
K-SH50	50	0.15	30	Securing screws high	Loctite 270

NOTE!
Adhesive is excluded from our trial order service





Plunger Valve and Fine Regulating Valve – 7 mm nominal diameter

Fine regulating valve FRV – throttle valve

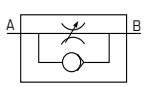
Contrary to a pusher valve an infinitely variable adjustment of the nominal width and the air flow is possible with this valve by moving the curled sleeve all the way to 0. On the FRV1/8 the inside connection measures 1/8", and for the FRV1/4 it is 1/4". The max. nominal width is 7 mm. For the regulation of pneumatic cylinders.

Plunger valve FSV1/4" – 3/2 way

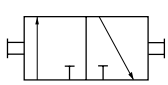
Axial movment of the black curled sleeve closes or opens up the air flow. An ideal valve to input and vent air on pneumatic lines. The connection pieces at the front and rear each have an inside threading of 1/4". The nominal width of 7 mm allows for a large flow volume.

Order-No.
FRV1/8
FRV1/4
FSV1/4

FRV



FSV



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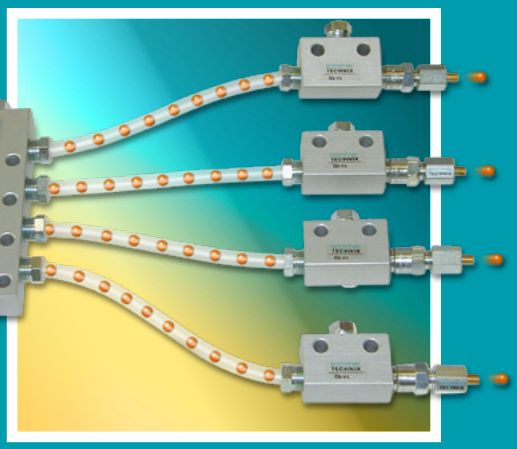

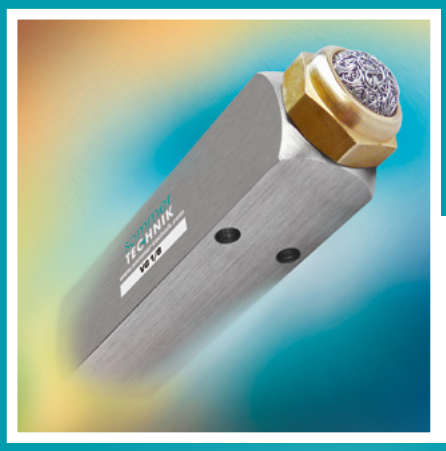

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