

Vacuum ejector with vacuum break

VS Series

- Nozzle diameter: $\varnothing 0.5$, $\varnothing 0.7$
- Integrating the ejector and vacuum cycle to enable a high-speed suction and break cycle.



Features

- Compact lightweight design enables use at the end of the vacuum pipe. Installing a shutoff valve enables a high-speed suction and break cycle.
- A function to discharge break air to the ejector has been added. A more accurate vacuum break is possible than with the conventional discrete ejector.
- Integrated ejector and vacuum break
Vacuum generation and break air are toggled by turning the air supply to the ejector on or off. (Refer to How to use on Page 11.)

Specifications

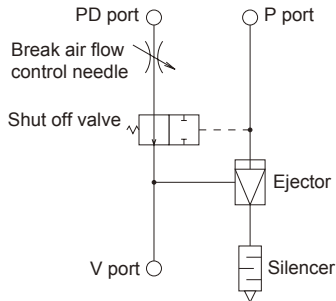
Descriptions	VS Series
Working fluid	Compressed air
Working pressure range MPa	0.3 to 0.7
Ambient temperature range °C	5 to 50
Lubrication	Not required

Specifications of vacuum filter

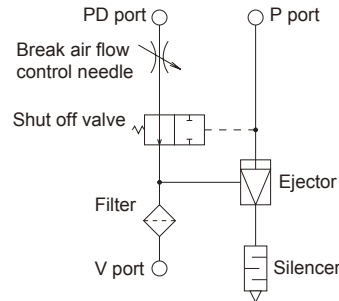
Descriptions	Vacuum filter
Working fluid	Low vacuum/air
Working pressure range	-100 to 0kPa
Filtration precision	10 μ m
Ambient temperature range	0 to 60°C
Filtration area	Port size $\varnothing 4$: 0.8cm ²
	Port size $\varnothing 6$: 1.1cm ²

Circuit diagram

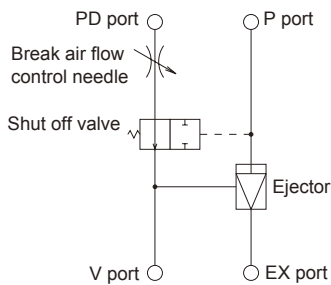
- VS Series-*S (atmospheric release with silencer)



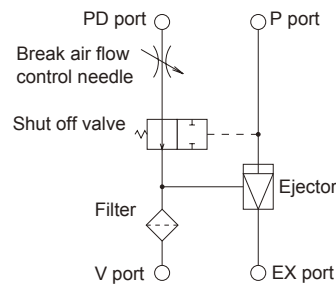
- VS Series-*S-F (atmospheric release with silencer, with vacuum filter)



- VS Series-*J (common exhaust)



- VS Series-*J-F (common exhaust with vacuum filter)



How to order

- Vacuum ejector with vacuum break

VSY - H 07 - 6 6 6 S - F

A Vacuum characteristics

B Nozzle diameter

C Vacuum port (V)

D Air supply port to generate vacuum (P)

E Air supply port to break vacuum (PD)

F Exhaust port (EX)

G Vacuum filter

Symbol	Descriptions
A Vacuum characteristics	
H	High vacuum/medium flow type
L	Medium vacuum/large flow rate type
E	High vacuum/small flow rate type
B Nozzle diameter	
05	ø0.5
07	ø0.7
C Vacuum port (V) Note 1	
4	ø4 push-in joint
6	ø6 push-in joint
D Air supply port to generate vacuum (P) Note 1	
4	ø4 push-in joint
6	ø6 push-in joint
E Air supply port to break vacuum (PD) Note 1	
4	ø4 push-in joint
6	ø6 push-in joint
F Exhaust port (EX)	
S	Atmospheric release with silencer
J	Common exhaust
G Vacuum filter	
Blank	Without
F	With vacuum filter

Ejector system

VSY

VSH·VSU
VSB·VSC

VSG

VSK
VSKM

VSJ
VSJM

VSX
VSXM

VSQ

VSZM

⚠ Note on model no. selection

Note 1: **CDE** combination can be selected for 444 or 666 only.

- Model no.

- Vacuum filter for change

VSY - F - 44M

A Port size

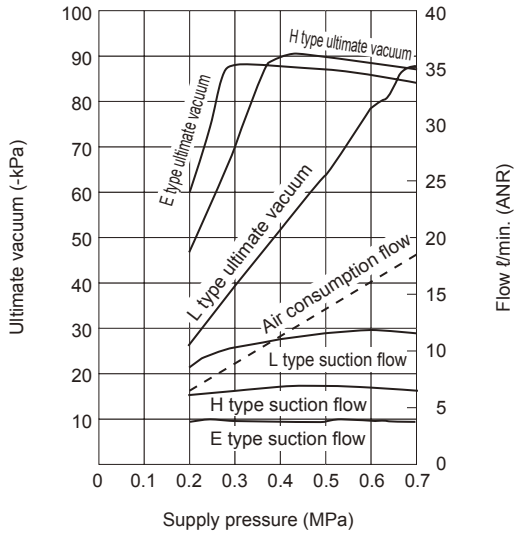
Symbol	Descriptions
A Port size	
44M	VSY-*444*
66M	VSY-*666*

- Bracket

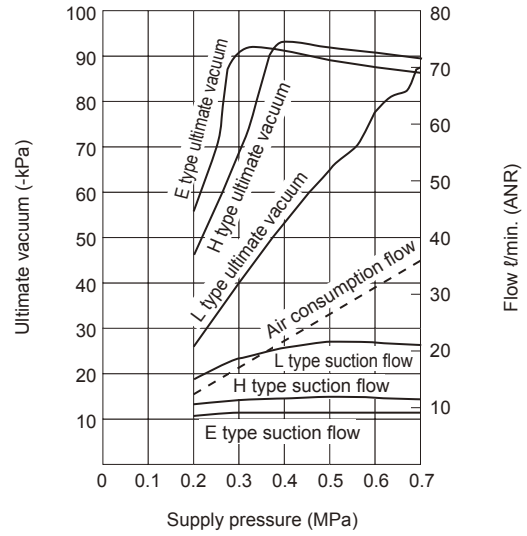
VSY - B

Vacuum characteristics

● VSY-*05

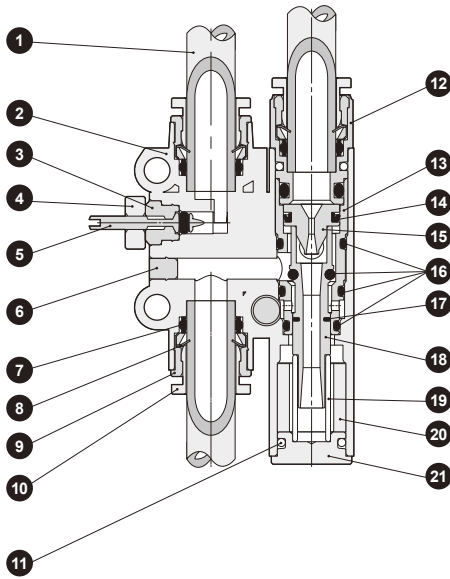


● VSY-*07



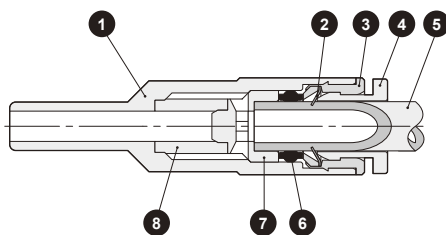
Internal structure drawing

● VSY



No.	Parts name	Material
1	Tube	-
2	Resin	PBT
3	Top plug	Brass, electroless nickeling
4	Lock nut	Aluminum
5	Destruction needle	SUS303 or equivalent
6	Plug 2	Brass, electroless nickeling
7	Rubber sleeve	NBR
8	Lock jaw	Stainless steel
9	Guide ring	Brass, electroless nickeling
10	Release ring	POM
11	Spring pin	Stainless steel
12	Cartridge	-
13	Sleeve	Brass, electroless nickeling
14	Y packing seal	NBR
15	Nozzle piston	Brass, electroless nickeling
16	O ring	NBR
17	Spool packing seal	H-NBR
18	Diffuser spool	Brass, electroless nickeling
19	Diffuser spring	Stainless steel
20	Silencer element	PVF
21	End plug	Brass, electroless nickeling

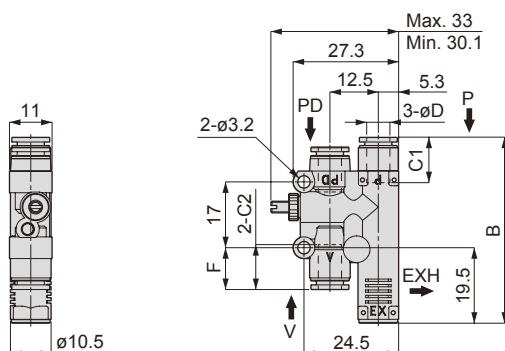
● Vacuum filter



No.	Parts name	Material
1	Resin	PP
2	Lock jaw	Stainless steel
3	Guide ring	Brass, electroless nickeling
4	Release ring	POM
5	Tube	Urethane or nylon
6	Rubber sleeve	NBR
7	Element holder	POM
8	Filter element	PVF

Dimensions

● VSY-*S (atmospheric release with silencer)



Ejector system

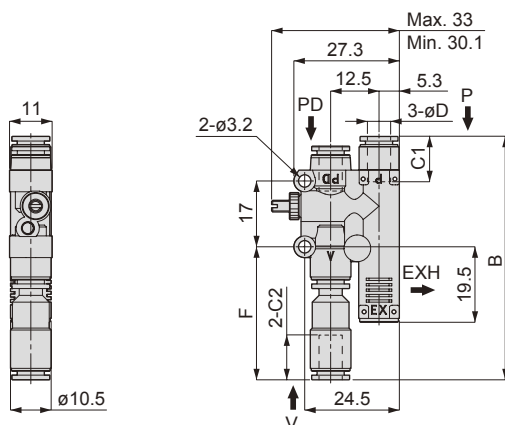
Model no.	O.D. ϕD	B	F	C1	C2	Nozzle diameter	Rated pressure (MPa)	Ultimate vacuum (-kPa)	Suction flow (l/min. (ANR))	Air consumption (l/min. (ANR))	Weight (g)	
VSY-H05-444S	4	45.4	10.7	11.2	11.3	0.5	0.5	90	7	11.5	19	
VSY-H05-666S	6	48.2	11	11.9	11.8						19.5	
VSY-H07-444S	4	45.4	10.7	11.2	11.3	0.7		66	12.5	23	19	
VSY-H07-666S	6	48.2	11	11.9	11.8						19.5	
VSY-L05-444S	4	45.4	10.7	11.2	11.3	0.5			90	12	11.5	19
VSY-L05-666S	6	48.2	11	11.9	11.8							19.5
VSY-L07-444S	4	45.4	10.7	11.2	11.3	0.7	66			18	23	19
VSY-L07-666S	6	48.2	11	11.9	11.8							19.5
VSY-E05-444S	4	45.4	10.7	11.2	11.3	0.5		0.35		3	8	19
VSY-E05-666S	6	48.2	11	11.9	11.8							19.5
VSY-E07-444S	4	45.4	10.7	11.2	11.3	0.7			90	9	17	19.5
VSY-E07-666S	6	48.2	11	11.9	11.8							20

VSY

VSH·VSU
VSB·VSC

VSG

● VSY-*S-F (atmospheric release with silencer, with vacuum filter)



VSK
VSKM

VSJ
VSJM

VSX
VSXM

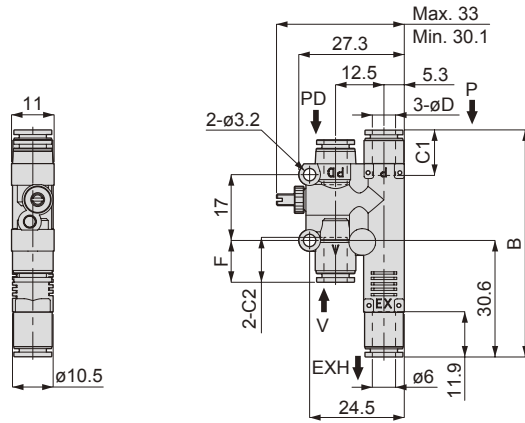
VSQ

VSZM

Model no.	O.D. ϕD	B	F	C1	C2	Nozzle diameter	Rated pressure (MPa)	Ultimate vacuum (-kPa)	Suction flow (l/min. (ANR))	Air consumption (l/min. (ANR))	Weight (g)	
VSY-H05-444S-F	4	60.3	34.4	11.2	11.3	0.5	0.5	90	7	11.5	20.5	
VSY-H05-666S-F	6	63.3	34.6	11.9	11.8						21.5	
VSY-H07-444S-F	4	60.3	34.4	11.2	11.3	0.7		66	12.5	23	20.5	
VSY-H07-666S-F	6	63.3	34.6	11.9	11.8						21.5	
VSY-L05-444S-F	4	60.3	34.4	11.2	11.3	0.5			90	12	11.5	20.5
VSY-L05-666S-F	6	63.3	34.6	11.9	11.8							21.5
VSY-L07-444S-F	4	60.3	34.4	11.2	11.3	0.7	66			18	23	20.5
VSY-L07-666S-F	6	63.3	34.6	11.9	11.8							21.5
VSY-E05-444S-F	4	60.3	34.4	11.2	11.3	0.5		0.35		3	8	20.5
VSY-E05-666S-F	6	63.3	34.6	11.9	11.8							21.5
VSY-E07-444S-F	4	60.3	34.4	11.2	11.3	0.7			90	9	17	21
VSY-E07-666S-F	6	63.3	34.6	11.9	11.8							22

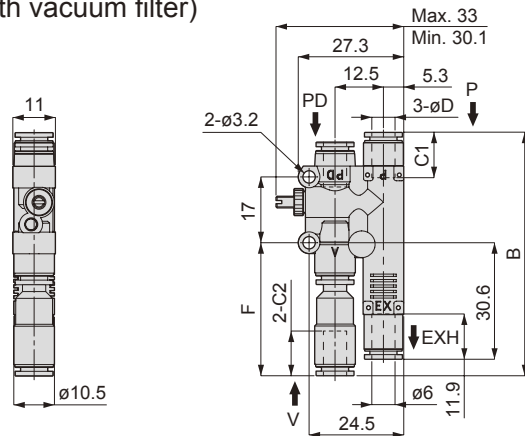
Dimensions

● VSY-*J (common exhaust)



Model no.	O.D. øD	B	F	C1	C2	Nozzle diameter	Rated pressure (MPa)	Ultimate vacuum (-kPa)	Suction flow (ℓ/min. (ANR))	Air consumption (ℓ/min. (ANR))	Weight (g)	
VSY-H05-444J	4	56.3	10.7	11.2	11.3	0.5	0.5	90	7	11.5	23	
VSY-H05-666J	6	59	11	11.9	11.8							
VSY-H07-444J	4	56.3	10.7	11.2	11.3	0.7		92	12.5	23		22.5
VSY-H07-666J	6	59	11	11.9	11.8							
VSY-L05-444J	4	56.3	10.7	11.2	11.3	0.5		66	12	11.5	23	
VSY-L05-666J	6	59	11	11.9	11.8							
VSY-L07-444J	4	56.3	10.7	11.2	11.3	0.7	18		23	22.5		
VSY-L07-666J	6	59	11	11.9	11.8							
VSY-E05-444J	4	56.3	10.7	11.2	11.3	0.5	0.35	90	3	8	23	
VSY-E05-666J	6	59	11	11.9	11.8							
VSY-E07-444J	4	56.3	10.7	11.2	11.3	0.7		9	17	23.5		
VSY-E07-666J	6	59	11	11.9	11.8							

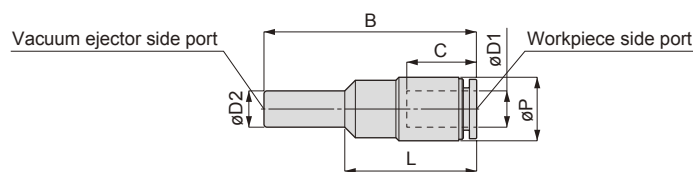
● VSY-*J-F (common exhaust with vacuum filter)



Model no.	O.D. øD	B	F	C1	C2	Nozzle diameter	Rated pressure (MPa)	Ultimate vacuum (-kPa)	Suction flow (ℓ/min. (ANR))	Air consumption (ℓ/min. (ANR))	Weight (g)
VSY-H05-444J-F	4	60.3	34.4	11.2	11.3	0.5	0.5	90	7	11.5	24
VSY-H05-666J-F	6	63.3	34.6	11.9	11.8						
VSY-H07-444J-F	4	60.3	34.4	11.2	11.3	0.7		92	12.5	23	24
VSY-H07-666J-F	6	63.3	34.6	11.9	11.8						
VSY-L05-444J-F	4	60.3	34.4	11.2	11.3	0.5		66	12	11.5	23
VSY-L05-666J-F	6	63.3	34.6	11.9	11.8						
VSY-L07-444J-F	4	60.3	34.4	11.2	11.3	0.7	18		23	24	
VSY-L07-666J-F	6	63.3	34.6	11.9	11.8						
VSY-E05-444J-F	4	60.3	34.4	11.2	11.3	0.5	0.35	90	3	8	24
VSY-E05-666J-F	6	63.3	34.6	11.9	11.8						
VSY-E07-444J-F	4	60.3	34.4	11.2	11.3	0.7		9	17	24.5	
VSY-E07-666J-F	6	63.3	34.6	11.9	11.8						

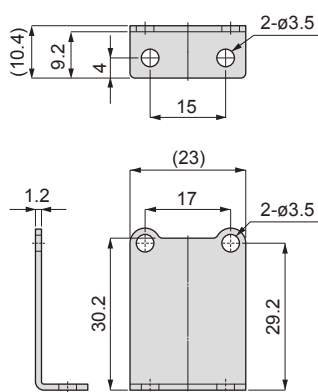
Dimensions

● VSY-F (vacuum filter for change)



Model no.	O.D. øD1	Applicable joint dia. øD2	B	L	C	øP	Filtration area (cm ²)	Weight (g)
VSY-F-44M	4	4	35	21.8	11.3	8	0.8	1.5
VSY-F-66M	6	6	35.4	22	11.8	10.5	1.1	2.5

● VSY-B (bracket)



Ejector system

VSY

VSH·VSU
VSB·VSC

VSG

VSK
VSKM

VSJ
VSJM

VSX
VSXM

VSQ

VSZM

Safety precautions

Refer to Intro 13 for general precautions of the pneumatic system components.

⚠ WARNING

■ Read this manual thoroughly before installing piping for the VSY vacuum ejector. Incorrect piping could injure personnel or damage devices.

■ The filter is polypropylene, so resin could deteriorate if exposed to direct sunlight or ultraviolet rays.

⚠ CAUTION

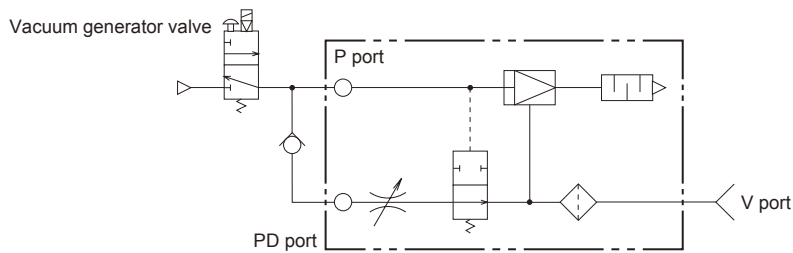
■ Read this manual thoroughly before adjusting the break air flow or break time.

■ The built-in vacuum filter cannot be replaced using individual elements. The entire filter must be replaced in maintenance and inspection.

■ When using different pressures for vacuum generation and vacuum break supply air, set vacuum break supply air pressure lower than vacuum generation supply air pressure.

Leaks could occur if pressure is higher than vacuum generation supply air pressure.

■ When using the following piping, break air from the check valve is led in and discharged from the V port until the shutoff valve completes switchover.



Ejector system

VSY

VSH•VSU
VSB•VSC

VSG

VSK
VSKM

VSJ
VSJM

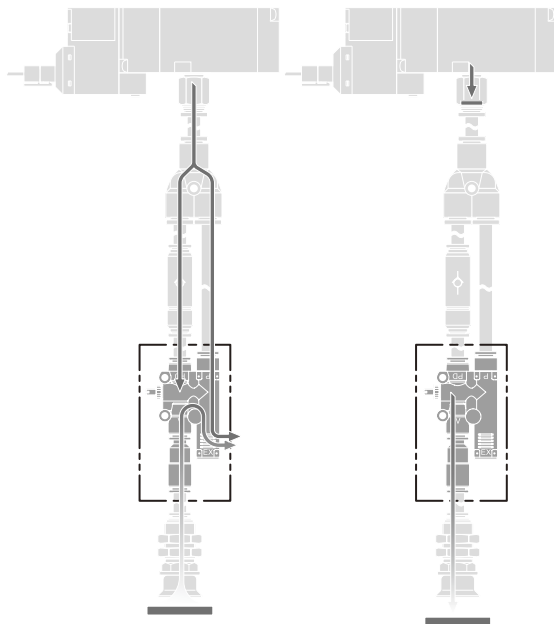
VSX
VSXM

VSQ

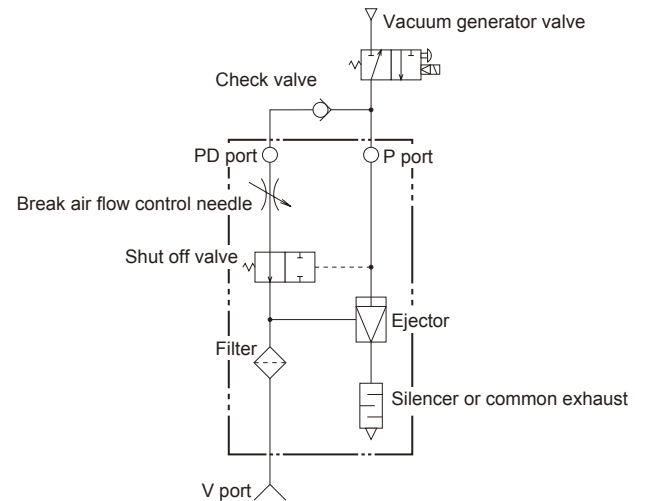
VSZM

How to use

(example 1)

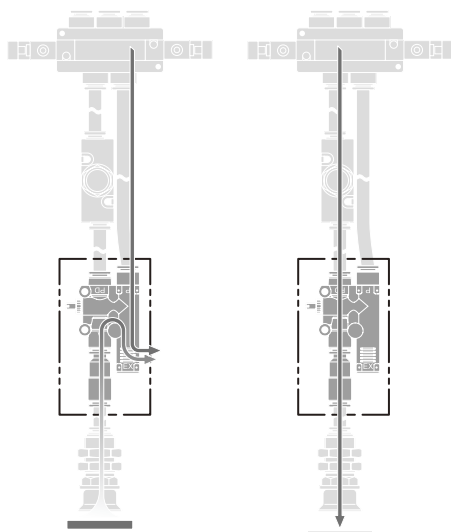


Circuit diagram

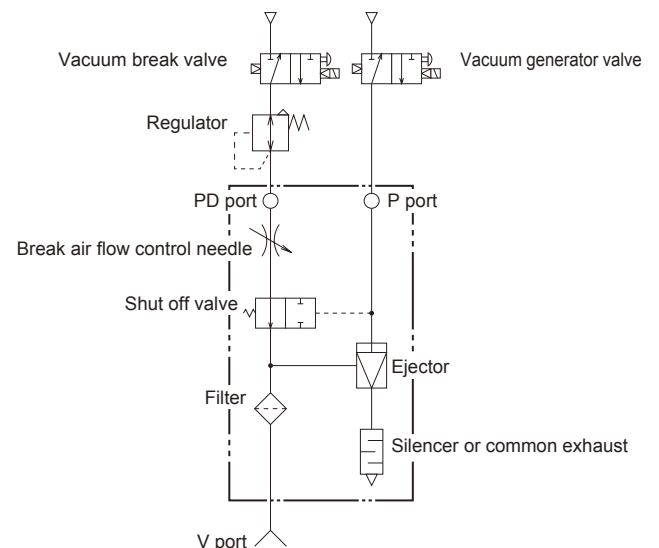


Connect the P port and PD port with a check valve (optional), and use residual pressure between the check valve and PD port as break air. Break air flow is adjusted with the break air flow adjustment needle, and break time is adjusted based on the tubing length connecting the check valve and PD port.

(example 2)



Circuit diagram



Break air pressure and flow are adjusted if the workpiece must be released immediately with vacuum break air, etc. Use carefully because the workpiece could be blown off. Above is a case in which different pressures are used for air supply for vacuum generation a□

The vacuum break air flow is adjusted using the break air flow adjustment needle, and break time is adjusted using the vacuum break valve, etc.

Ejector system

VSY

VSH·VSU
VSB·VSC

VSG

VSK
VSKM

VSJ
VSJM

VSX
VSXM

VSQ

VSZM