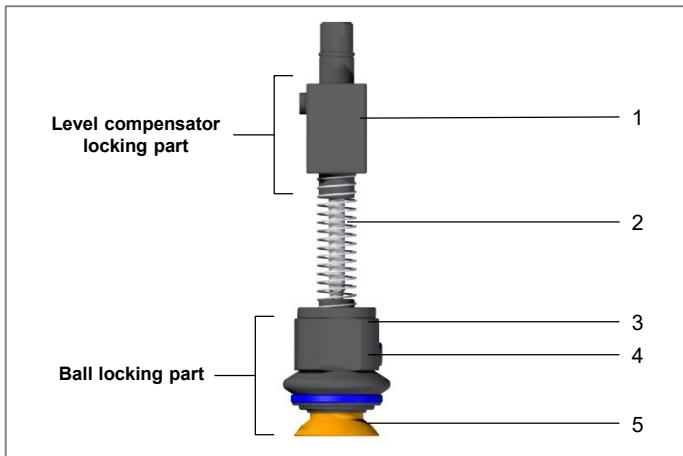


Valock



Valock : Automatically fix the positioning according to application



Products Structure of VMECA Valock system



Valock system being used in automobile industry - Body line

Suitable for handling

Features & Strengths

- ▶ Automatic flexible positioning which fixates and locks its positioning regardless of shape (Elimination of multiple special jigs / fixtures)
- ▶ No vibration while transferring products in rotating application
- ▶ Various shapes of products can be handled with one VALOCK SYSTEM

Products Structure

- ▶ Strong locking force by double locking structure¹⁾
- ▶ Level compensator²⁾ for long life-span due to bearing inserted
- ▶ Ball locking³⁾ to fix angle according to shape of product
- ▶ Integrated with VMECA Vacuum Cartridge Pump⁴⁾
- ▶ Easily changeable with different size and material suction cups without any tools – Smart cups⁵⁾

Applications

- ▶ Automobile industry (Body / Assembly line)
- ▶ Metal Sheet
- ▶ Glass
- ▶ Wood panel
- ▶ Uploading products of different angles
- ▶ Clamping type Zig system

Valock – Smart ball joint type

Designation Ordering No.

Level compensator locking	Smart cup*		Ball Joint	Suction cup Material	Thread
	F – Series	C – Series			
BX407B – 40Ø locking piston & 70mm stroke	F60T F70T F80T F90T F100T	FCF40 FCF50 FCF60 FCF70 FCF80 FCF100 FCF125	BJ	N – NBR PU – Polyurethane U – Urethane	M12F
Example) BX407B-F100T-BJ-N-M12F or BX407B-FCF40-BJ-PU-M12F					

* In Smart cup option, F – series is not available with PU material and C – series is not available with Urethane material.

* For detail information, dimension section on request.

Spare part Ordering data for Suction cups

Suction cup material					
N - NBR	Code	PU - Polyurethane	Code	U - Urethane	Code
F60T-N	12U0 1010 000	-		F60T-U	12U0 1040 000
F70T-N	12U0 2010 000	-		F70T-U	12U0 2040 000
F80T-N	12U0 3010 000	-		F80T-U	12U0 3040 000
F90T-N	12U0 4010 000	-		F90T-U	12U0 4040 000
F100T-N	12U0 5010 000	-		F100T-U	12U0 5040 000
FCF40-N	5202 0400 100 000	FCF40-PU	5202 0400 800 000	-	
FCF50-N	5202 0500 100 000	FCF50-PU	5202 0500 800 000	-	
FCF60-N	5202 0600 100 000	FCF60-PU	5202 0600 800 000	-	
FCF70-N	5202 0700 100 000	FCF70-PU	5202 0700 800 000	-	
FCF80-N	5202 0800 100 000	FCF80-PU	5202 0800 800 000	-	
FCF100-N	5202 1000 100 000	FCF100-PU	5202 1000 800 000	-	
FCF125-N	5202 1250 100 000	FCF125-PU	5202 1250 800 000	-	

* For detail information, dimension section on request.

Technical Data – Valock (Brake cylinder - BX407B)

Description	Unit	Data
Cylinder locking piston diameter	Ø	40
Cylinder stroke*	mm	70
Lock torque	Kgf	40
Cylinder rod thread	-	M12
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	2~7
Max. hose inner diameter	Ø	4
Net weight**	g	800

* Another cylinder stroke option is on request to VMECA.

** Net weight is calculated only for brake cylinder.

Valock – Smart ball joint type

Performance Data (Lifting force) – Suction cup (F - series)

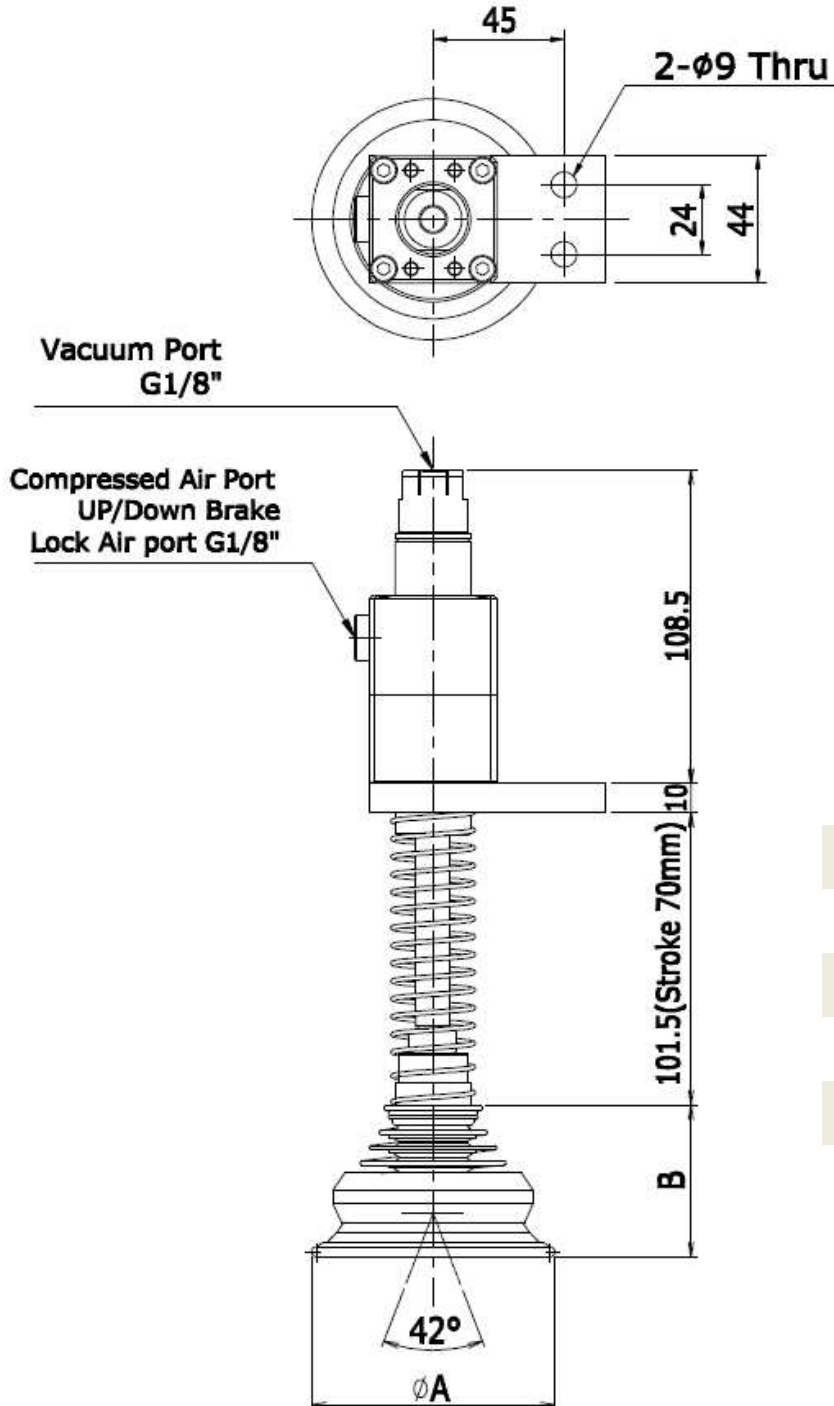
Model	Volume (cm ³)	Lifting Force (kg) - Perpendicular		
		-20 kPa	-60 kPa	-90 kPa
F60T	16	5.8	12.6	17.3
F70T	23.5	8.4	16.9	26.3
F80T	30	10.5	24.6	35.0
F90T	38.8	11.3	31.2	43.7
F100T	48.7	15.6	38.4	55.0

Performance Data (Lifting force) – Suction cup (C - series)

Model	Volume (cm ³)	Lifting Force (kg) - Perpendicular			Lifting Force (kg) - Parallel		
		-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa
FCF40	4.4	2.9	6.9	9.9	2.1	5	7.2
FCF50	8	4.2	10.8	15.4	3.7	6.7	8.9
FCF60	14.6	5.6	15.2	22.3	5.5	13.3	16.7
FCF70	20.7	7.6	19.6	28.2	6.3	15.8	20.1
FCF80	36.0	10.3	25.9	34.4	6.7	17.7	23.8
FCF100	58.0	14.7	37.1	50.6	13.6	35.4	43.7
FCF125	115.0	19.4	44.5	57.9	19.1	42.5	64.9

Dimensional Data

BX407B with Smart ball joint type (F – series)

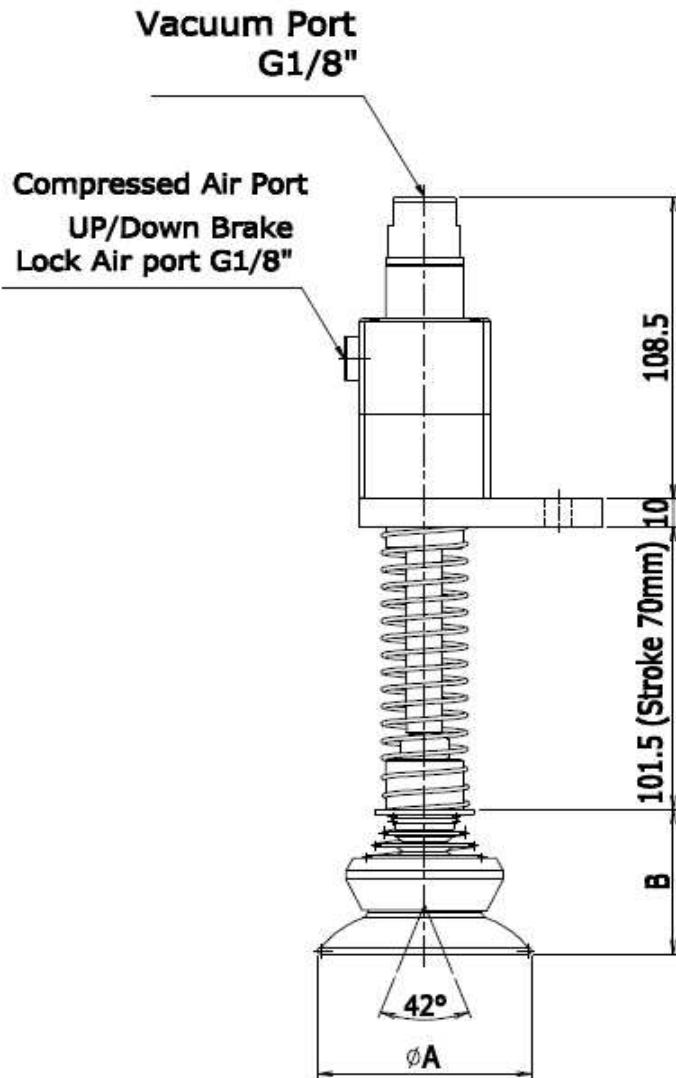
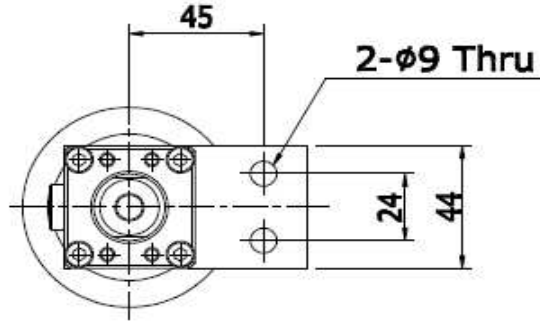


Model	ϕ A	B
F60T	ϕ 62.5	53.5
F70T	ϕ 73.5	55
F80T	ϕ 83.5	55
F90T	ϕ 93.5	56.5
F100T	ϕ 103.5	56.5

[Measure unit : mm[in]]

Dimensional Data

BX407B with Smart ball joint type (C – series)

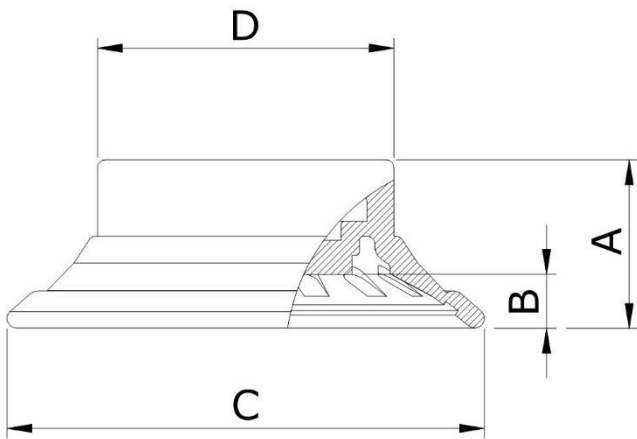


Model	Ø A	B
FCF40	42	45.5
FCF50	52	49
FCF60	62	52
FCF70	72	52
FCF80	82.5	56.5
FCF100	104	56.5
FCF125	128	63

[Measure unit : mm[in]]

Dimensional Data for Suction cup

F suction cup for F-series

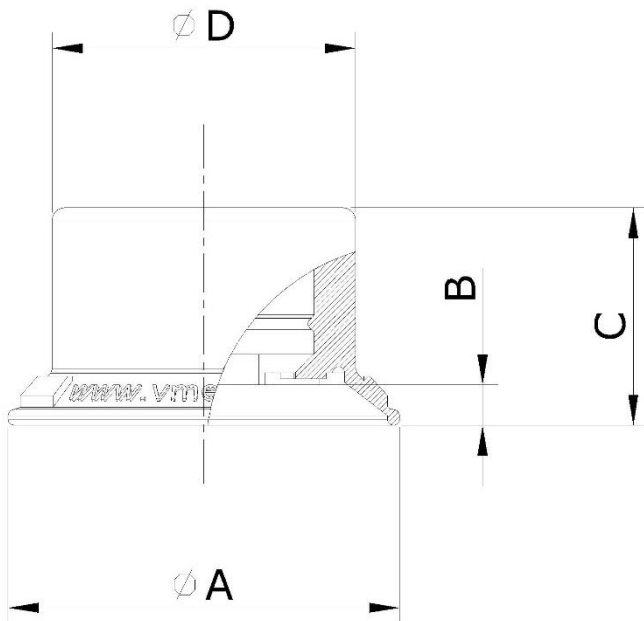


Model	A	B	Ø C	Ø D
F60T	22	7	62.5	38.8
F70T	23	9.5	73.7	50
F80T	23	9.5	83.7	60
F90T	23	9.5	93.7	70
F100T	23	9.5	103.7	80

[Measure unit : mm[in]]

Dimensional Data for Suction cup

FCF Suction cup for C-series



Model	Ø A	B	C	Ø D
FCF40	42	4	19.5	25
FCF50	52	5	23.5	38.5
FCF60	62	6	26.5	38.5
FCF70	72	6.5	26.5	38.5
FCF80	82.5	7.5	30	38.5
FCF100	104	9.5	30	38.5
FCF125	128	13	36.5	38.5

[Measure unit : mm[in]]

Valock – Ball locking type

Designation Ordering No.

Level compensator locking	Ball lock	Vacuum Switch	Smart cup (C – Series)	Suction cup Material
BX407B – 40Ø locking piston & 70mm stroke	VL40 – without cartridge VL40C – with VC202 cartridge	(No mark)* SG2 SG2P S2 S2P	FCF40 FCF50 FCF60 FCF70 FCF80 FCF100 FCF125	N – NBR PU – Polyurethane

Example) BX407B-VL40-SG2-FCF100-N or BX407B-VL40C-S2P-FCF80-PU

* No mark means not included.

* For additional switch information, section "Overall Switch" on request.

* For detail information, dimension section on request.

Spare part Ordering data for Suction cups

Suction cup material			
N - NBR	Code	PU - Polyurethane	Code
FCF40-N	5202 0400 100 000	FCF40-PU	5202 0400 800 000
FCF50-N	5202 0500 100 000	FCF50-PU	5202 0500 800 000
FCF60-N	5202 0600 100 000	FCF60-PU	5202 0600 800 000
FCF70-N	5202 0700 100 000	FCF70-PU	5202 0700 800 000
FCF80-N	5202 0800 100 000	FCF80-PU	5202 0800 800 000
FCF100-N	5202 1000 100 000	FCF100-PU	5202 1000 800 000
FCF125-N	5202 1250 100 000	FCF125-PU	5202 1250 800 000

* For detail information, dimension section on request.

Technical Data – Valock (Brake cylinder - BX407B)

Description	Unit	Data
Cylinder locking piston diameter	Ø	40
Cylinder stroke*	mm	70
Lock torque	Kgf	40
Cylinder rod thread	-	M12
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	2~7
Max. hose inner diameter	Ø	4
Net weight**	g	800

* Another cylinder stroke option is on request to VMECA.

** Net weight is calculated only for brake cylinder.

Valock – Ball locking type

Technical Data – Valock (Ball lock - VL40)

Description	Unit	Data
Ball joint angle	-	±15° ~ 360°
Ball joint moment torque	Kg.cm	30 at 7bar
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	5~7
Air connection thread	-	M5xP0.8
Max. hose inner diameter	Ø	4
Net weight*	g	600

* Net weight is calculated only for ball lock.

Technical Data – Valock (Ball lock - VL40C)

Description	Unit	Data
Max. vacuum level	kPa	-90
Max. Flow rate	NI/min	41.3
Air consumption	NI/min	17 ~ 32
Ball joint angle	-	±15° ~ 360°
Ball joint moment torque	Kg.cm	30 at 7bar
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	2.2 ~ 4
Air connection thread	-	M5xP0.8
Max. hose inner diameter	Ø	4
Net weight*	g	623

* Net weight is calculated for only ball lock.

Valock – Ball locking type

Performance Data (Lifting force) – Suction cup (C - series)

Model	Volume (cm ³)	Lifting Force (kg) - Perpendicular			Lifting Force (kg) - Parallel		
		-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa
FCF40	4.4	2.9	6.9	9.9	2.1	5	7.2
FCF50	8	4.2	10.8	15.4	3.7	6.7	8.9
FCF60	14.6	5.6	15.2	22.3	5.5	13.3	16.7
FCF70	20.7	7.6	19.6	28.2	6.3	15.8	20.1
FCF80	36.0	10.3	25.9	34.4	6.7	17.7	23.8
FCF100	58.0	14.7	37.1	50.6	13.6	35.4	43.7
FCF125	115.0	19.4	44.5	57.9	19.1	42.5	64.9

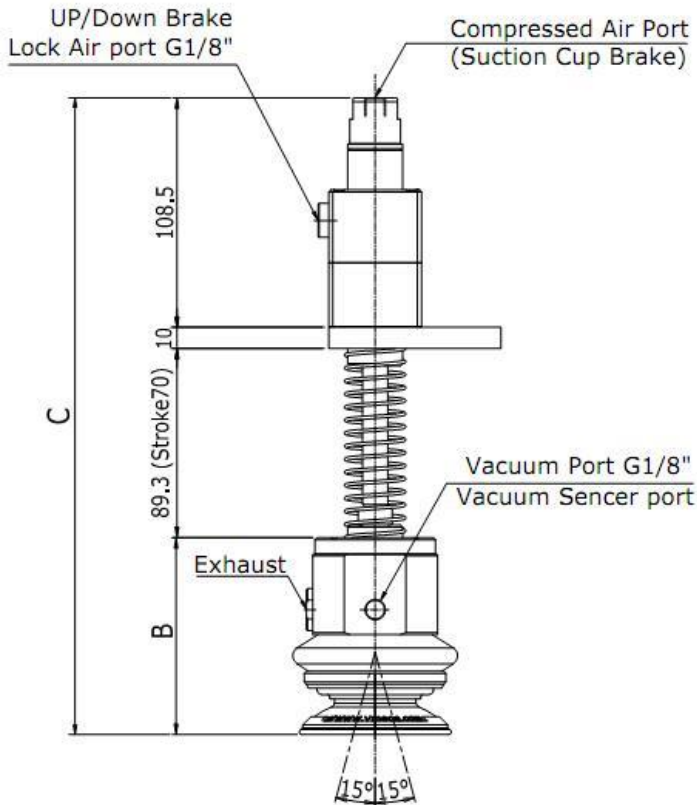
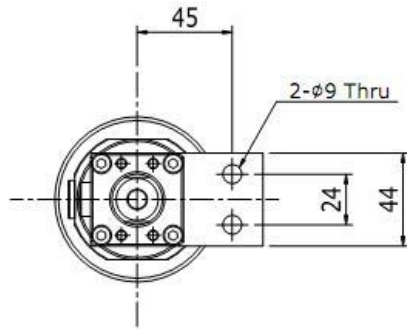
Ordering No. for overall Switch

Model	Ordering Designation	Description	Remark
	No Mark	Not included	
	SG2	Solid state switch, 3-wire type with 1m length	
Vacuum Switch	SG2P	PNP open collector of SG2	* VCM8 42 (M8-4Pin connector wire) is available only for 'S' or 'SP'
	S2	Solid state switch, M8- 3Pin, M8 male connector with 0.15m	
	SP2	PNP open collector of S2	

Valock – Ball locking type

Dimensional Data

BX407B-VL40 series (without cartridge)

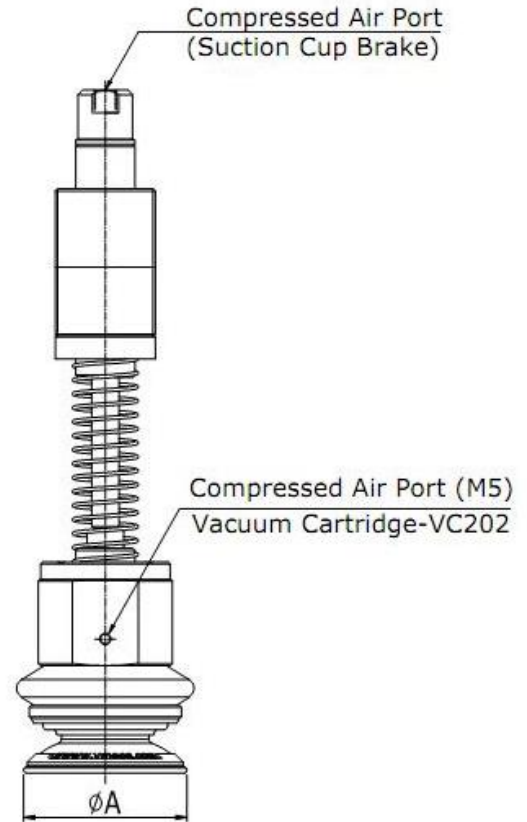
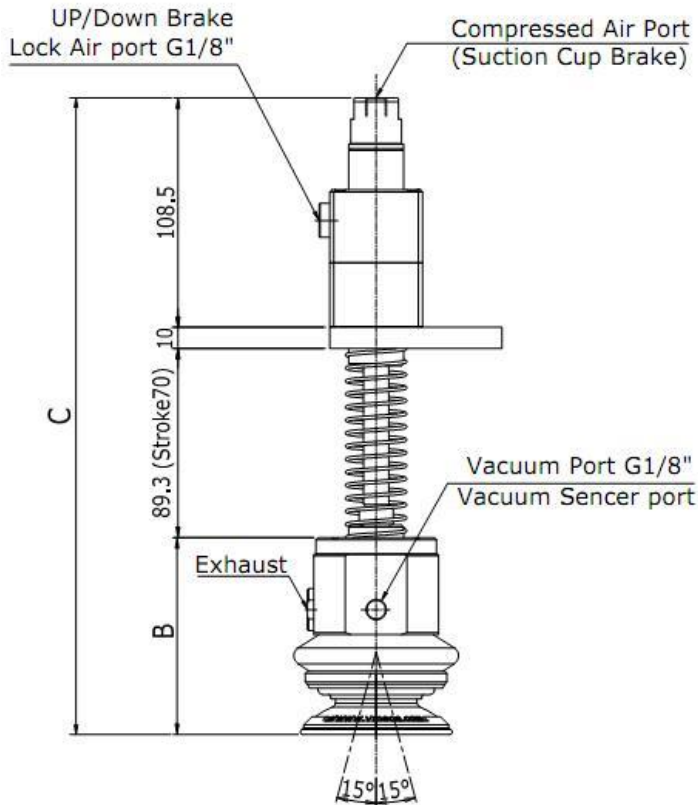
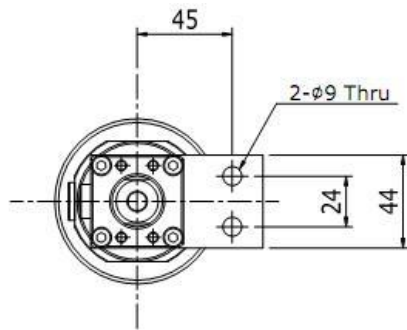


Model	Ø A	B	C
FCF40	42	86.2	294
FCF50	52	90	297.8
FCF60	62	93	300.8
FCF70	72	93	300.8
FCF80	82.5	97	304.8
FCF100	104	97	304.8
FCF125	128	103.5	311.3

[Measure unit : mm[in]]

Dimensional Data

BX407B-VL40C series (with cartridge)

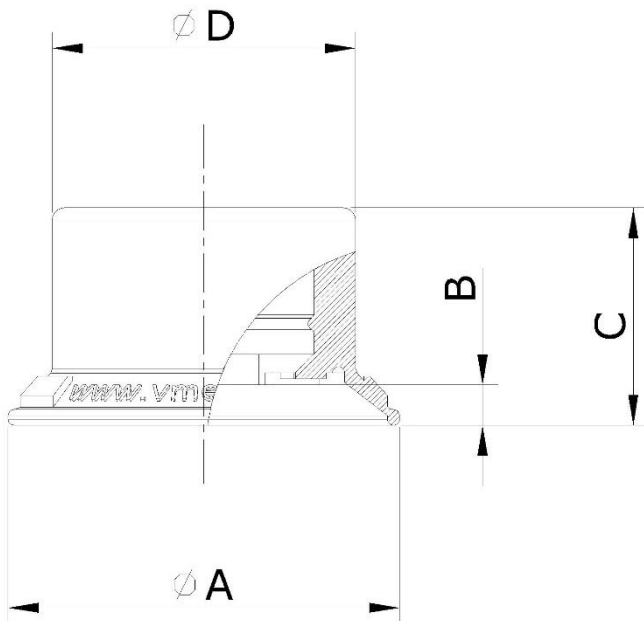


Model	ø A	B	C
FCF40	42	86.2	294
FCF50	52	90	297.8
FCF60	62	93	300.8
FCF70	72	93	300.8
FCF80	82.5	97	304.8
FCF100	104	97	304.8
FCF125	128	103.5	311.3

[Measure unit : mm[in]]

Dimensional Data for Suction cup

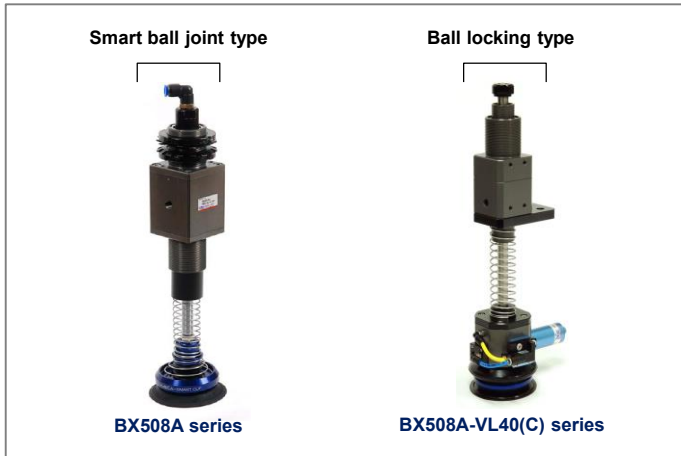
FCF Suction cup for C-series



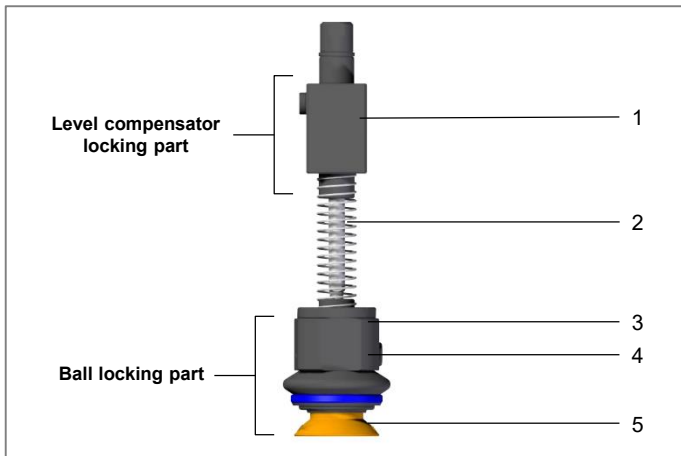
Model	Ø A	B	C	Ø D
FCF40	42	4	19.5	25
FCF50	52	5	23.5	38.5
FCF60	62	6	26.5	38.5
FCF70	72	6.5	26.5	38.5
FCF80	82.5	7.5	30	38.5
FCF100	104	9.5	30	38.5
FCF125	128	13	36.5	38.5

[Measure unit : mm[in]]

Valock



Valock : Automatically fix the positioning according to application



Products Structure of VMECA Valock system

Suitable for handling

Features & Strengths

- ▶ Automatic flexible positioning which fixates and locks its positioning regardless of shape (Elimination of multiple special jigs / fixtures)
- ▶ No vibration while transferring products in rotating application
- ▶ Various shapes of products can be handled with one VALOCK SYSTEM

Products Structure

- ▶ Strong locking force by double locking structure¹⁾
- ▶ Level compensator²⁾ for long life-span due to bearing inserted
- ▶ Ball locking³⁾ to fix angle according to shape of product
- ▶ Integrated with VMECA Vacuum Cartridge Pump⁴⁾
- ▶ Easily changeable with different size and material suction cups without any tools – Smart cups⁵⁾

Applications

- ▶ Automobile industry (Body / Assembly line)
- ▶ Metal Sheet
- ▶ Glass
- ▶ Wood panel
- ▶ Uploading products of different angles
- ▶ Clamping type Zig system



Valock system being used in automobile industry - Body line

Valock – Smart ball joint type

Designation Ordering No.

Level compensator locking	Smart cup*		Ball Joint	Suction cup Material	Thread
	F – Series	C – Series			
BX508A – 56Ø locking piston & 80mm stroke	F60T F70T F80T F90T F100T	FCF50 FCF60 FCF70 FCF80 FCF100 FCF125	BJ	N – NBR PU – Polyurethane U – Urethane	M12F
Example) BX508A-F100T-BJ-N-M12F or BX508A-FCF40-BJ-PU-M12F					

* In Smart cup option, F – series is not available with PU material and C – series is not available with Urethane material.

* For detail information, dimension section on request.

Spare part Ordering data for Suction cups

Suction cup material					
N - NBR	Code	PU - Polyurethane	Code	U - Urethane	Code
F60T-N	12U0 1010 000	-		F60T-U	12U0 1040 000
F70T-N	12U0 2010 000	-		F70T-U	12U0 2040 000
F80T-N	12U0 3010 000	-		F80T-U	12U0 3040 000
F90T-N	12U0 4010 000	-		F90T-U	12U0 4040 000
F100T-N	12U0 5010 000	-		F100T-U	12U0 5040 000
FCF40-N	5202 0400 100 000	FCF40-PU	5202 0400 800 000	-	
FCF50-N	5202 0500 100 000	FCF50-PU	5202 0500 800 000	-	
FCF60-N	5202 0600 100 000	FCF60-PU	5202 0600 800 000	-	
FCF70-N	5202 0700 100 000	FCF70-PU	5202 0700 800 000	-	
FCF80-N	5202 0800 100 000	FCF80-PU	5202 0800 800 000	-	
FCF100-N	5202 1000 100 000	FCF100-PU	5202 1000 800 000	-	
FCF125-N	5202 1250 100 000	FCF125-PU	5202 1250 800 000	-	

* For detail information, dimension section on request.

Technical Data – Valock (Brake cylinder - BX508A)

Description	Unit	Data
Cylinder locking piston diameter	Ø	56
Cylinder stroke*	mm	80
Lock torque	Kgf	30
Cylinder rod thread	-	M12
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	3.5~7
Max. hose inner diameter	Ø	4
Net weight**	g	1400

* Another cylinder stroke option is on request to VMECA.

** Net weight is calculated only for brake cylinder.

Valock – Smart ball joint type

Performance Data (Lifting force) – Suction cup (F - series)

Model	Volume (cm ³)	Lifting Force (kg) - Perpendicular		
		-20 kPa	-60 kPa	-90 kPa
F60T	16	5.8	12.6	17.3
F70T	23.5	8.4	16.9	26.3
F80T	30	10.5	24.6	35.0
F90T	38.8	11.3	31.2	43.7
F100T	48.7	15.6	38.4	55.0

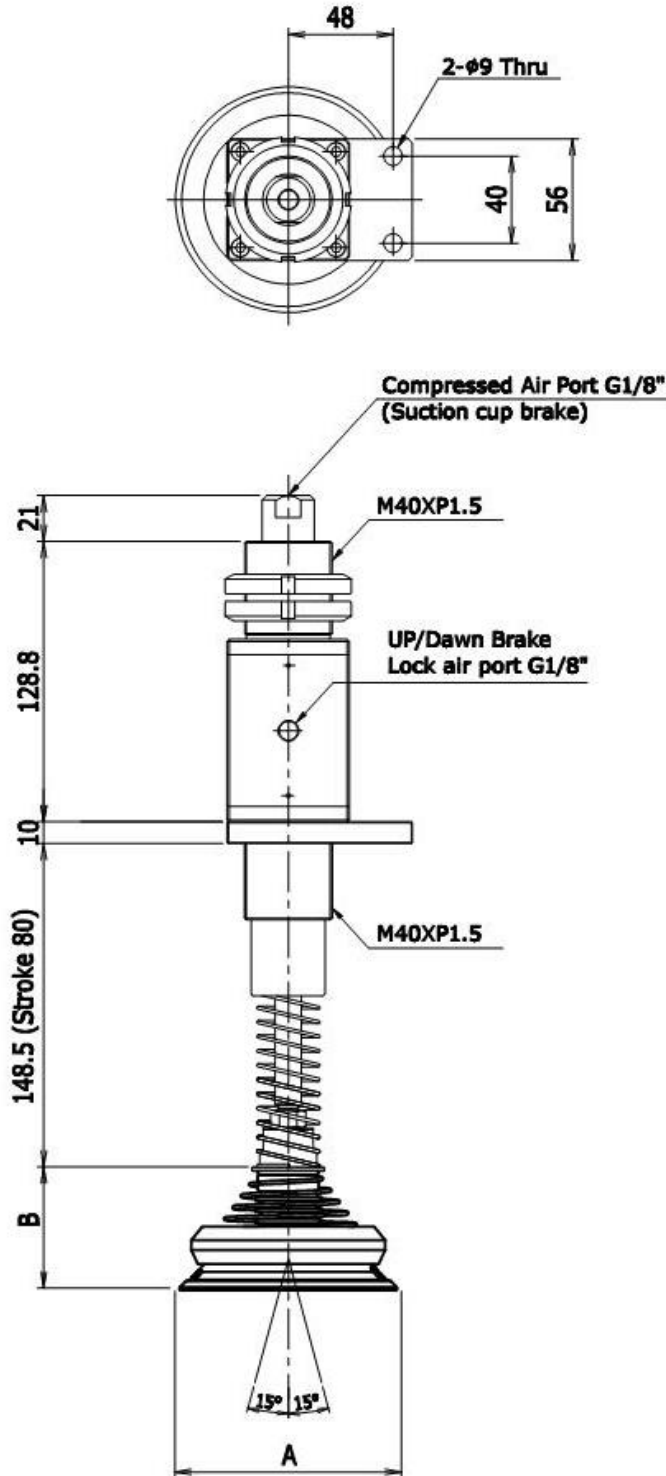
Performance Data (Lifting force) – Suction cup (C - series)

Model	Volume (cm ³)	Lifting Force (kg) - Perpendicular			Lifting Force (kg) - Parallel		
		-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa
FCF40	4.4	2.9	6.9	9.9	2.1	5	7.2
FCF50	8	4.2	10.8	15.4	3.7	6.7	8.9
FCF60	14.6	5.6	15.2	22.3	5.5	13.3	16.7
FCF70	20.7	7.6	19.6	28.2	6.3	15.8	20.1
FCF80	36.0	10.3	25.9	34.4	6.7	17.7	23.8
FCF100	58.0	14.7	37.1	50.6	13.6	35.4	43.7
FCF125	115.0	19.4	44.5	57.9	19.1	42.5	64.9

Valock – Smart ball joint type

Dimensional Data

BX508A with Smart ball joint type (F – series)



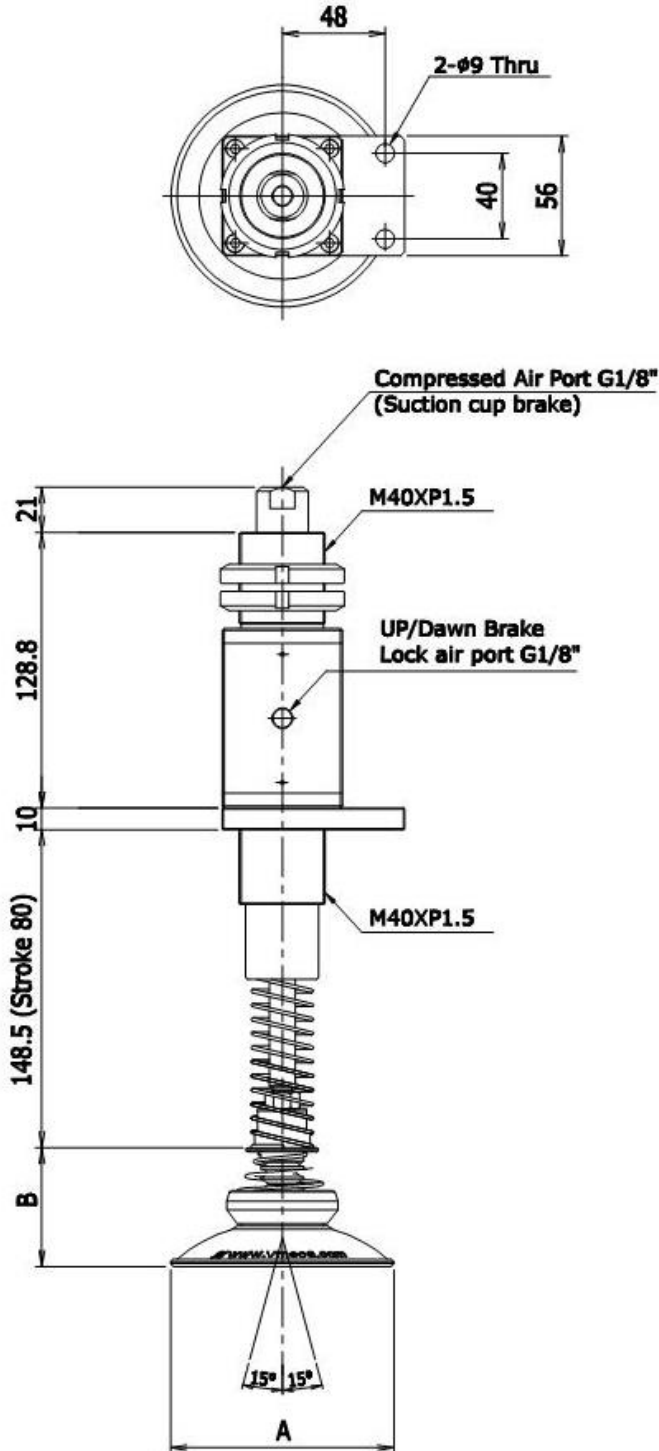
Model	ϕ A	B
F60T	ϕ 62.5	53.5
F70T	ϕ 73.5	55
F80T	ϕ 83.5	55
F90T	ϕ 93.5	56.5
F100T	ϕ 103.5	56.5

[Measure unit : mm[in]]

Valock – Smart ball joint type

Dimensional Data

BX508A with Smart ball joint type (C – series)

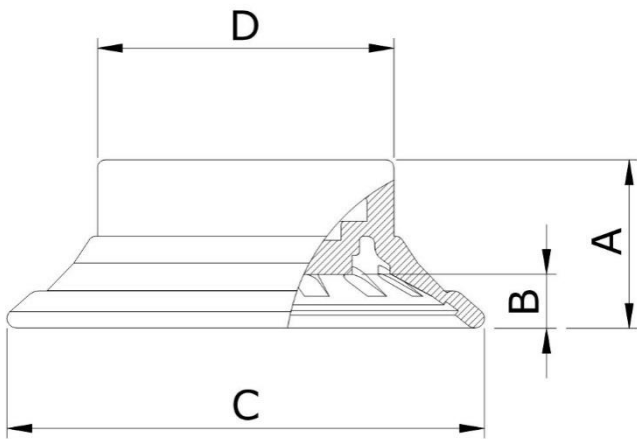


Model	Ø A	B
FCF40	42	45.5
FCF50	52	49
FCF60	62	52
FCF70	72	52
FCF80	82.5	56.5
FCF100	104	56.5
FCF125	128	63

[Measure unit : mm[in]]

Dimensional Data for Suction cup

F suction cup for F-series

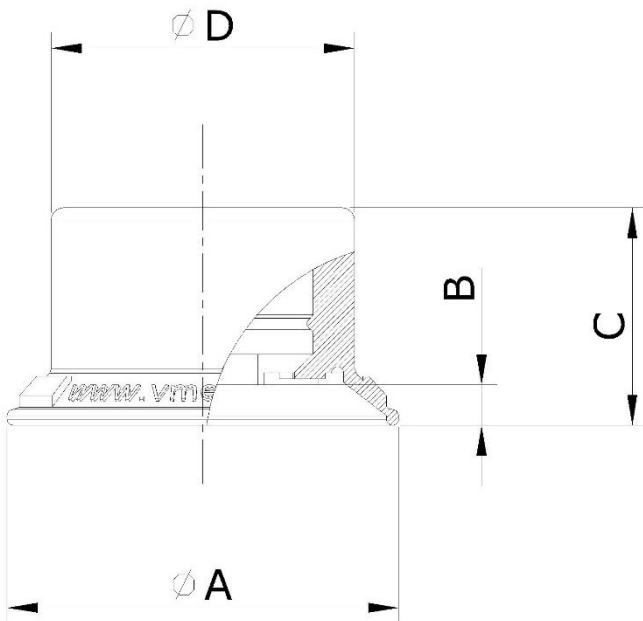


Model	A	B	Ø C	Ø D
F60T	22	7	62.5	38.8
F70T	23	9.5	73.7	50
F80T	23	9.5	83.7	60
F90T	23	9.5	93.7	70
F100T	23	9.5	103.7	80

[Measure unit : mm[in]]

Dimensional Data for Suction cup

FCF Suction cup for C-series



Model	Ø A	B	C	Ø D
FCF40	42	4	19.5	25
FCF50	52	5	23.5	38.5
FCF60	62	6	26.5	38.5
FCF70	72	6.5	26.5	38.5
FCF80	82.5	7.5	30	38.5
FCF100	104	9.5	30	38.5
FCF125	128	13	36.5	38.5

[Measure unit : mm[in]]

Valock – Ball locking type

Designation Ordering No.

Level compensator locking	Ball lock	Vacuum Switch	Smart cup (C – Series)	Suction cup Material
BX508A – 56Ø locking piston & 80mm stroke	VL40 – without cartridge VL40C – with VC202 cartridge	(No mark)* SG2 SG2P S2 S2P	FCF40 FCF50 FCF60 FCF70 FCF80 FCF100 FCF125	N – NBR PU – Polyurethane

Example) BX508A-VL40-SG2-FCF100-N or BX508A-VL40C-S2P-FCF80-PU

* No mark means not included.

* For additional switch information, section "Overall Switch" on request.

* For detail information, dimension section on request.

Spare part Ordering data for Suction cups

Suction cup material

N - NBR	Code	PU - Polyurethane	Code
FCF40-N	5202 0400 100 000	FCF40-PU	5202 0400 800 000
FCF50-N	5202 0500 100 000	FCF50-PU	5202 0500 800 000
FCF60-N	5202 0600 100 000	FCF60-PU	5202 0600 800 000
FCF70-N	5202 0700 100 000	FCF70-PU	5202 0700 800 000
FCF80-N	5202 0800 100 000	FCF80-PU	5202 0800 800 000
FCF100-N	5202 1000 100 000	FCF100-PU	5202 1000 800 000
FCF125-N	5202 1250 100 000	FCF125-PU	5202 1250 800 000

* For detail information, dimension section on request.

Technical Data – Valock (Brake cylinder - BX508A)

Description	Unit	Data
Cylinder locking piston diameter	Ø	56
Cylinder stroke*	mm	80
Lock torque	Kgf	30
Cylinder rod thread	-	M12
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	3.5~7
Max. hose inner diameter	Ø	4
Net weight**	g	1400

* Another cylinder stroke option is on request to VMECA.

** Net weight is calculated only for brake cylinder.

Valock – Ball locking type

Technical Data – Valock (Brake cylinder - BX508A)

Description	Unit	Data
Cylinder locking piston diameter	Ø	56
Cylinder stroke*	mm	80
Lock torque	Kgf	30
Cylinder rod thread	-	M12
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	3.5~7
Max. hose inner diameter	Ø	4
Net weight**	g	1400

* Another cylinder stroke option is on request to VMECA.

** Net weight is calculated only for brake cylinder.

Technical Data – Valock (Ball lock - VL40)

Description	Unit	Data
Ball joint angle	-	±15° ~ 360°
Ball joint moment torque	Kg.cm	30 at 7bar
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	5~7
Air connection thread	-	M5xP0.8
Max. hose inner diameter	Ø	4
Net weight*	g	600

* Net weight is calculated only for ball lock.

Technical Data – Valock (Ball lock - VL40C)

Description	Unit	Data
Max. vacuum level	kPa	-90
Max. Flow rate	NI/min	41.3
Air consumption	NI/min	17 ~ 32
Ball joint angle	-	±15° ~ 360°
Ball joint moment torque	Kg.cm	30 at 7bar
Supply air type	-	Dry Compressed Air
Supply air pressure	Bar	2.2 ~ 4
Air connection thread	-	M5xP0.8
Max. hose inner diameter	Ø	4
Net weight*	g	623

* Net weight is calculated for only ball lock.

Valock – Ball locking type

Performance Data (Lifting force) – Suction cup (C - series)

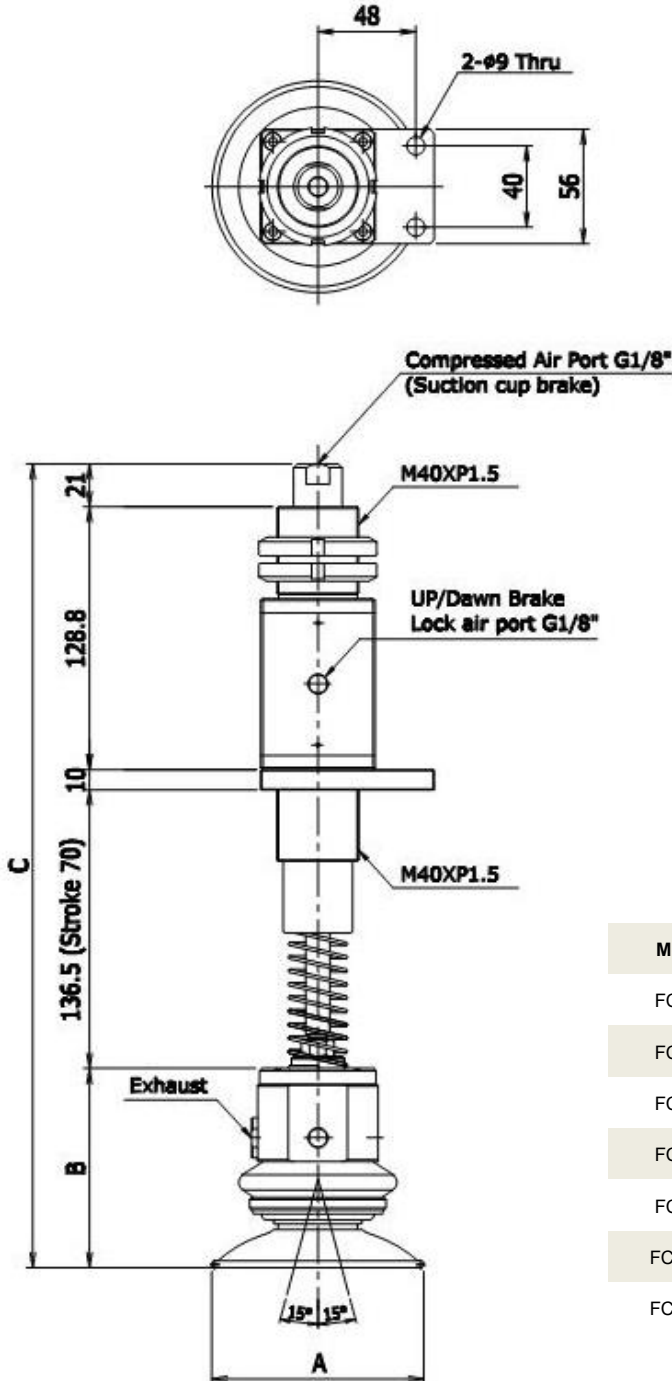
Model	Volume (cm ³)	Lifting Force (kg) - Perpendicular			Lifting Force (kg) - Parallel		
		-20 kPa	-60 kPa	-90 kPa	-20 kPa	-60 kPa	-90 kPa
FCF40	4.4	2.9	6.9	9.9	2.1	5	7.2
FCF50	8	4.2	10.8	15.4	3.7	6.7	8.9
FCF60	14.6	5.6	15.2	22.3	5.5	13.3	16.7
FCF70	20.7	7.6	19.6	28.2	6.3	15.8	20.1
FCF80	36.0	10.3	25.9	34.4	6.7	17.7	23.8
FCF100	58.0	14.7	37.1	50.6	13.6	35.4	43.7
FCF125	115.0	19.4	44.5	57.9	19.1	42.5	64.9

Ordering No. for overall Switch

Model	Ordering Designation	Description	Remark
	No Mark	Not included	
	SG2	Solid state switch, 3-wire type with 1m length	
Vacuum Switch	SG2P	PNP open collector of SG2	* VCM8 42 (M8-4Pin connector wire) is available only for 'S' or 'SP'
	S2	Solid state switch, M8- 3Pin, M8 male connector with 0.15m	
	SP2	PNP open collector of S2	

Dimensional Data

BX508A-VL40 series (without cartridge)

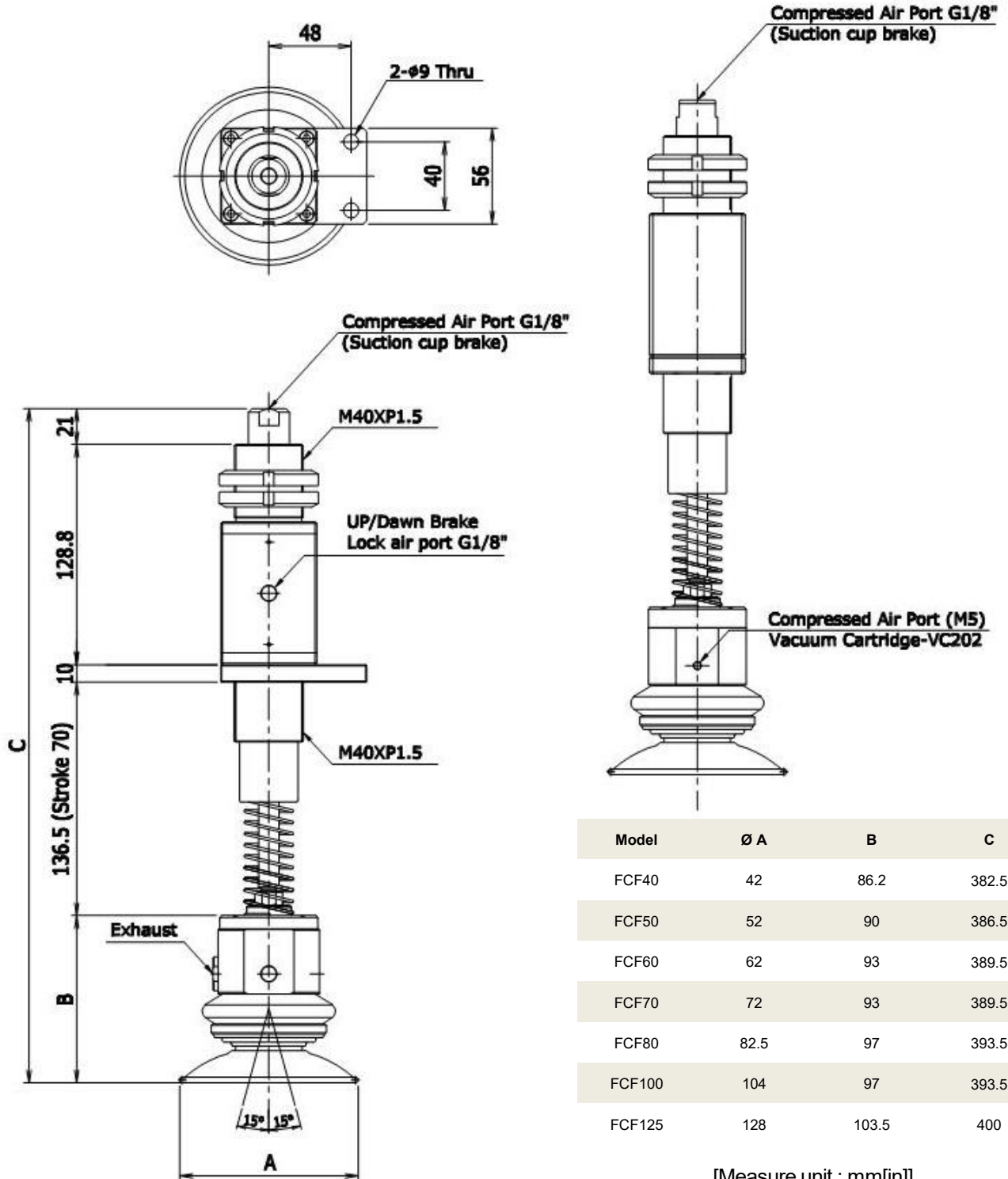


Model	Ø A	B	C
FCF40	42	86.2	382.5
FCF50	52	90	386.5
FCF60	62	93	389.5
FCF70	72	93	389.5
FCF80	82.5	97	393.5
FCF100	104	97	393.5
FCF125	128	103.5	400

[Measure unit : mm[in]]

Dimensional Data

BX508A-VL40C series (with cartridge)

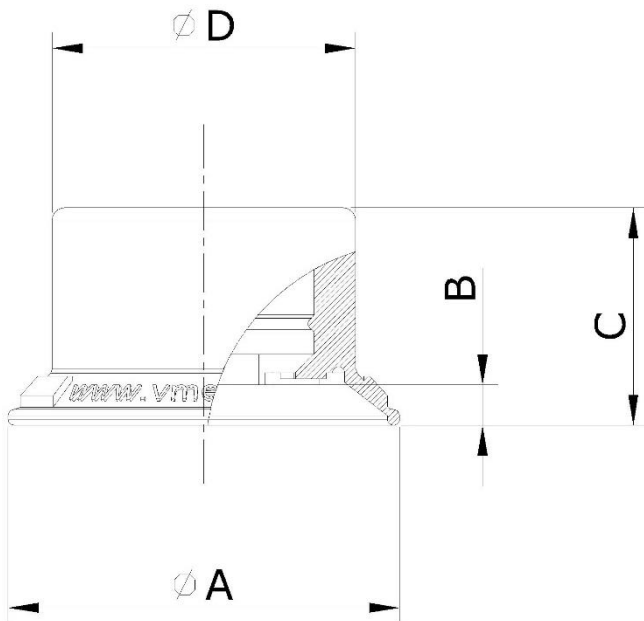


Model	Ø A	B	C
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FCF50	52	90	386.5
FCF60	62	93	389.5
FCF70	72	93	389.5
FCF80	82.5	97	393.5
FCF100	104	97	393.5
FCF125	128	103.5	400

[Measure unit : mm[in]]

Dimensional Data for Suction cup

FCF Suction cup for C-series



Model	Ø A	B	C	Ø D
FCF40	42	4	19.5	25
FCF50	52	5	23.5	38.5
FCF60	62	6	26.5	38.5
FCF70	72	6.5	26.5	38.5
FCF80	82.5	7.5	30	38.5
FCF100	104	9.5	30	38.5
FCF125	128	13	36.5	38.5

[Measure unit : mm[in]]