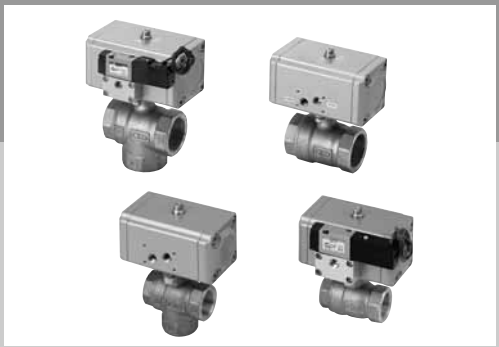
CHB/CHG

(Compact rotary valve)
Air operated 2, 3 port ball valve

For water, hot water, air, oil (500 mm²/s or less)



Overview

The actuator has a double piston type air operated structure provided with rack and pinion. The valve is a ball valve type configured of materials and a structure resistant to water and hot water scales.
This compact and accurate high-power 2, 3 port valve (Rc3/8 to Rc2) can handle various fluids including water, hot water, air and oil.

Features

Highly accurate new structure
A highly reliable air operated double piston rack and pinion method has been incorporated to ensure precise operations.

Pilot operated valve installable
A solenoid valve for switching the actuator section helps reduce design and installation steps and save space.

Usable in flammable environments
With its completely air operated structure, this valve is safely used even in a flammable environment or outdoors. Note that this does not apply to models with solenoid valve for switching.

Resistant against foreign matter and water scales
This valve operates both forward and in reverse, enabling foreign matter to be easily removed even if it enters the valve. The valve's structure and material make it resistant to cold and hot water deposits.

Compact, light and large flow rate
Large flow rates are controlled even with this compact, light design.

Wide variation
The 7 available sizes are from 10A to 50A. The 2 materials available to handle fluids are brass (CAC407) and stainless steel (SCS13).

CONTENTS

⚠ Always read the precautions in the Introduction and page 520 before starting use.

Air operated 2, 3 port ball valve
(compact rotary valve)

Actuation		Model	Bore shape	Body material		
				Bronze (CAC406)	Stainless steel (SCS13)	
Double acting type	Air operated type	2 port valve (CHB)	Standard bore	●	●	
		2 port valve (CHBF)	Full bore	●		
		3 port valve (CHG)	Standard bore	●	●	
	Solenoid valve mounted type	2 port valve (CHB-V)	Standard bore	●	●	
		2 port valve (CHBF-V)	Full bore	●		
		3 port valve (CHG-V)	Standard bore	●	●	
Single acting type (Spring return)	Air operated type	2 port valve (CHB-R)	Standard bore	●	●	
		2 port valve (CHBF-R)	Full bore	●		
		3 port valve (CHG-R)	Standard bore	●	●	
	Solenoid valve mounted type	2 port valve (CHB-X)	Standard bore	●	●	
		2 port valve (CHBF-X)	Full bore	●		
		3 port valve (CHG-X)	Standard bore	●	●	

Note: For details on differences by bore shape, refer to the orifice diameter and dimensions on each page.

	Port size (Upper: Nominal, Lower: Port size)							Page
	10A	15A	20A	25A	32A	40A	50A	
	3/8	1/2	3/4	1	11/4	11/2	2	
	● *	●	●	●	●	●	●	522
		●	●	●	●	●		522
		●	●	●	●	●	●	530
	● *	●	●	●	●	●	●	536
		●	●	●	●	●		536
		●	●	●	●	●	●	542
	● *	●	●	●	●	●	●	522
		●	●	●	●	●		522
		●	●	●	●	●	●	530
	● *	●	●	●	●	●	●	536
		●	●	●	●	●		536
		●	●	●	●	●	●	542

* The model belongs to the standard bore type, but it has a full bore structure.

Safety precautions
Always read this section before starting use.

Air operated 2, 3 port ball valve (compact rotary valve)

Design & Selection

⚠ WARNING

1 Working environment

(1) If there are high levels of dust in the area, install a downward-facing silencer or elbow joint on the exhaust port so that dust does not enter.

(2) The solenoid valve mounted type cannot be used in an explosive gas atmosphere. When using in an explosive gas atmosphere, change to the CHB, CHBF, CHG, CHB-R, CHBF-R or CHG-R Series, and provide a separate explosion proof solenoid valve on the pilot air circuit.

(3) The solenoid valve mounted type must not be used outdoors. When using in a place where water or oil splashes on the valve, take appropriate measures to protect it.

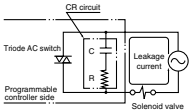
⚠ CAUTION

1 Fluid viscosity

Generally, the valve can be used with a fluid viscosity of up to 500 mm²/s. However, the properties may differ according to the fluid type, so consult with CKD.

2 Leakage current from other fluid control components

When operating the solenoid valve with a programmable controller, etc., check that the output leakage current from the programmable controller is within the following specifications. Failure to observe this could lead to malfunctions.



100 VAC: 3 mA or less
200 VAC: 1.5 mA or less
24 VDC: 1.8 mA or less must be maintained.

3 External pilot air

(1) Drainage measures - Compressed air contains high levels of drainage (water, oxidized oil, tar, foreign matter) that can significantly reduce the reliability of pneumatic components. As measures against drain, improve air quality by dehumidifying with an after cooler or dryer, removing foreign matter with a filter, and removing tar with a tar removal filter, etc.

(2) Pre-lubrication - This series is pre-lubricated, so no lubricator is required. However, once lubrication has been started, it must be continued so that the lubricant is not used up. For lubrication, use the turbine oil Class 1 ISO VG32 (#90) or equivalent.

(3) Filter - Install a filter with a 5 μm or less filter element.

4 Limit switch

Refer to the following table for the limit switch ratings.

Rated voltage (V)	No inductive load (A)			
	Resistance load		Light load	
	Always closed circuit	Always open circuit	Always closed circuit	Always open circuit
250 AC	5		1.5	
30 DC	5		-	

Note 1: The above values indicate normal current.
Note 2: Light load refers to a load with 10-fold rush current.
Note 3: The maximum rush current is 10 A.
Note 4: Consult with CKD when using extremely small loads.
Note 5: OMRON D4E-1G20N limit switch is used. Refer to the OMRON catalog for more details.

Installation, Piping & Wiring

⚠ CAUTION

1 Installation

(1) Always hold the body when handling or installing the product. Do not pull the lead wires or drop the product.

2 Piping

(1) Fix the product when tightening or reinstalling the piping. When piping to the body side, fix the body, and when piping to the cap side, fix the cap.

(2) Fix and support the pipes so that the weight and vibration of the pipes are not directly applied on the valves.

(3) Observe the pressurization direction (limited to port C pressurization) for the 3 port valve.

(4) Refer to the following table for the tightening torques for the pilot air piping.

Nominal pipe diameter	Recommended pipe tightening torque (N·m)
Rc1/8	7 to 9
Rc1/4	12 to 14

(5) Do not pipe using the solenoid valve section. There is a risk of damage. (For solenoid valve mounted type)

3 Wiring (for solenoid valve mounted type)

(1) The CKD 4-way valve (4KB119) is used for the pilot operated solenoid valve. Refer to the general catalog of "Pneumatic Valves" for details on the wiring methods.

When Using

⚠ CAUTION

1 Water hammer prevention

To prevent water hammer, restrict the exhaust side with a metering valve with silencer and a flow control valve, etc.

2 Cycle rate

Failure to observe the cycle rate could shorten service life.

3 Manual operation (only for double acting type)

Exhaust residual pressure in the actuator by turning OFF pilot air. Place an adjustable spanner on the stem on the top of the actuator and turn it slowly.

* The single acting type (CHB-R/CHBF-R/CHG-R/CHB-X/CHBF-X/CHG-X Series) cannot be manually operated because a spring is incorporated.

4 Do not touch the stem on the top of the actuator during operation.

The stem rotates during operation.

Maintenance

⚠ WARNING

1 Handling of single acting type actuator section

Do not disassemble the single acting type actuator section. An incorporated powerful spring will pop out when disassembling.

Air operated 2 port ball valve with solenoid valve
(compact rotary valve)

CHB-V*/CHB-X*
CHBF-V*/CHBF-X* Series

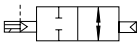
● Port size: Rc3/8 to Rc2

CAD

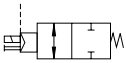
JIS symbol

● CHB-V1
CHBF-V1
(Double acting - NC)

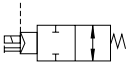
● CHB-V2
CHBF-V2
(Double acting - NO)



● CHB-X1
CHBF-X1
(Single acting - NC)



● CHB-X2
CHBF-X2
(Single acting - NO)



Common specifications

Item			Double acting type **CHB-V* (standard bore) CHBF-V* (full bore)**	Single acting type **CHB-X* (standard bore) CHBF-X* (full bore)**
Actuation			Solenoid valve mounted type: double acting	Solenoid valve mounted type: single acting
Working fluid			Water, hot water, air, oil (500 mm^2/s or less)	
Working pressure range MPa			0 to 1.0	
Withstanding pressure (water) MPa			2.0	
Fluid temperature ˚C			0 to 80 (no freezing)	
Ambient temperature ˚C			-10 to 60 (no freezing)	
Working environment			Indoors	
Valve seat leakage cm^3/min.			0 (at water pressure 1 MPa)	
Mounting attitude			Free	
Cycle rate cycle/min.			1 or less	
Rotary actuator	Pilot fluid		Compressed air	
	Lubrication		Not required (when lubricating, use the turbine oil Class 1 ISO VG32.)	
	Withstanding pressure (water) MPa		1.05	
	Working pressure range MPa		0.35 to 0.7	0.4 to 0.7
	Fluid temperature ˚C		5 to 60	
	Port size	IN port	Rc1/8	Rc1/8
		EHX port	Rc1/8	Rc1/8

Electric specifications		
Rated voltage		100 VAC (50/60 Hz), 200 VAC (50/60 Hz), 24 VDC
Inrush current (A)	100 VAC	0.056/0.044 (50/60 Hz)
	200 VAC	0.028/0.022 (50/60 Hz)
	24 VDC	0.075
Holding current (A)	100 VAC	0.028/0.022 (50/60 Hz)
	200 VAC	0.014/0.011 (50/60 Hz)
	24 VDC	0.075
Power consumption (W)	100 VAC	1.8/1.4 (50/60 Hz)
	200 VAC	1.8/1.4 (50/60 Hz)
	24 VDC	1.8
Heat proof class		Class B molded coil
Protective structure		Dust proof
Voltage fluctuation range		±10%

Individual specifications

Item / Model no.		Port size	Orifice (mm)	Cv flow factor	Weight (kg)	
					Double acting	Single acting
Standard bore	**CHB-V*/X*-10-***	Rc3/8	10	10	1.2	1.3
	CHB-V*/X*-15-*	Rc1/2	10	6	1.2	1.3
	CHB-V*/X*-20-*	Rc3/4	15	16	1.4	1.5
	CHB-V*/X*-25-*	Rc1	20	29	1.5	2.4
	CHB-V*/X*-32-*	Rc1 1/4	25	50	2.4 (2.5)	2.9 (3.0)
	CHB-V*/X*-40-*	Rc1 1/2	32	98	2.8 (2.9)	5.0 (5.1)
	CHB-V*/X*-50-*	Rc2	40	125	3.6 (3.7)	5.8 (5.9)
Full bore	**CHBF-V*/X*-15-***	Rc1/2	15	23	1.4	1.5
	CHBF-V*/X*-20-*	Rc3/4	20	51	1.5	2.4
	CHBF-V*/X*-25-*	Rc1	25	66	2.4	2.9
	CHBF-V*/X*-32-*	Rc1 1/4	32	114	2.8	5.0
	CHBF-V*/X*-40-*	Rc1 1/2	40	176	3.6	5.8

Values shown in ( ) are for stainless steel body.

Note 1: The model numbers above show the basic body material. Refer to How to order for other combinations.
Note 2: CHB-V*/X*-10-* are full bore.
Note 3: Weight increases by 0.2 kg with one limit switch and by 0.3 kg with two limit switches.
Note 2: CHB-X*-40/50-* and CHBF-X*-32/40-* are not compatible with the limit switch.

How to order

CHB - V1 - 25 - O B - W S - AC100V

CHBF

Model no.

Symbol	Descriptions	Model no. CHB (standard bore)	Model no. CHBF (full bore)
Ⓐ Actuator			
V1	Double acting NC (normally closed) type	●	●
V2	Double acting NO (normally open) type	●	●
X1	Single acting NC (normally closed) type	●	●
X2	Single acting NO (normally open) type	●	●
Ⓑ Port size			
10	Rc3/8	●	
15	Rc1/2	●	●
20	Rc3/4	●	●
25	Rc1	●	●
32	Rc1 1/4	●	●
40	Rc1 1/2	●	●
50	Rc2	●	
Ⓒ Body material			
0	Bronze	●	●
E	Stainless steel	●	
N	Stainless steel, oil-free specifications	●	
Ⓓ Coil option			
Blank	Grommet lead wire	●	●
B	Compact terminal box	●	●
L	Compact terminal box + light	●	●
C	C-connector + lead wire	●	●
C2	C-connector + lead wire Surge suppressor + light	●	●
D	D-connector + lead wire	●	●
D2	D-connector + lead wire Surge suppressor + light	●	●
Ⓔ Limit switch			
Blank	Without switch	●	●
H	Detection at valve open	●	●
V	Detection at valve closed	●	●
W	With 2 switches	●	●
Ⓕ Other options			
Blank	Blank	●	●
S	Metering valve with silencer *4	●	●
Ⓖ Voltage			
AC100V	100 VAC 50/60 Hz, 110 VAC 60 Hz	●	●
AC200V	200 VAC 50/60 Hz, 220 VAC 60 Hz	●	●
DC24V	24 VDC	●	●

*1: When port size is 10, the valve is full bore but the model is CHB.
2: CHB-X-40/50-* and CHBF-X*-32/40 are not compatible with the limit switch.
*3: OMRON D4E-1G20N
*4: CDK SMW2-6A is enclosed with the product.

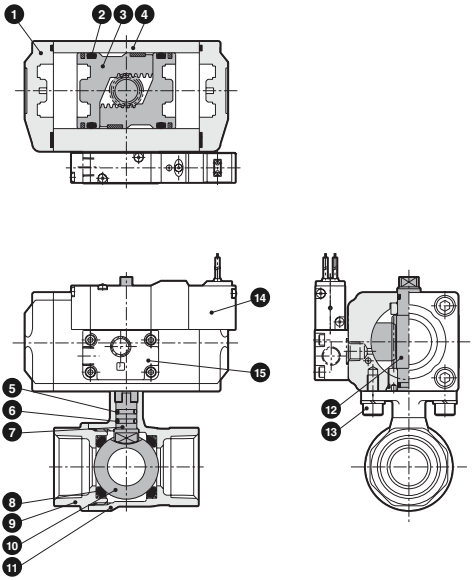
<Example of model number>

CHB-V1-25-OB-WS-AC100V
Model no.: CHB (standard bore)

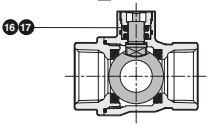
Ⓐ Actuator : Double acting NC (normally closed) type
Ⓑ Port size : Rc1
Ⓒ Body material : Bronze
Ⓓ Coil option : Compact terminal box
Ⓔ Limit switch : With 2 switches
Ⓕ Other options : Metering valve with silencer
Ⓖ Voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz

Internal structure and parts list: CHB-V*/CHBF-V* Series

● CHB-V*-10/15/20/25-*
CHBF-V*-15/20-*



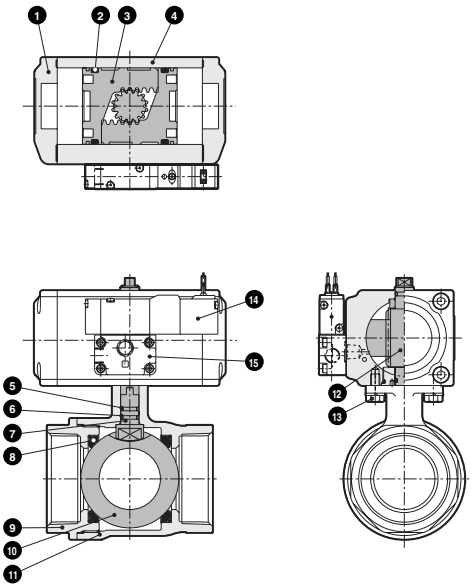
● Oil-free specifications (ball valve)
CHB-V*-10/15/20/25-N



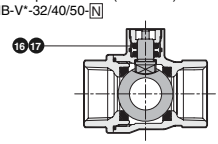
No.	Parts name	Material	
1	Cylinder cap	ADC12	Aluminum die casting
2	O ring	NBR	Nitrile rubber
3	Piston	ADC12	Aluminum die casting
4	Cylinder body	A6063	Aluminum
5	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
6	O ring	FKM	Fluoro rubber
7	Shaft	SUS303 (SUS304)	Stainless steel (stainless steel)
8	Valve seat	PTFE	Tetrafluoroethylene resin
9	Valve cap	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
10	Valve ball	C3771, Cr plating (SUS304)	Brass, chrome plating (stainless steel)
11	Valve body	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
12	Stem	SUS303	Stainless steel
13	Hexagon socket head cap screw	SUSXM7	Stainless steel
14	Solenoid valve [4KB119-00]		
15	Block	ADC12	Aluminum die casting
16	O ring	FKM	Fluoro rubber
17	Seal ring	UHMW-PE	Ultra high molecular weight polyethylene

Materials shown in ( ) are for stainless steel body.

● CHB-V*-32/40/50-*
CHBF-V*-25/32/40-*



● Oil-free specifications (ball valve)
CHB-V*-32/40/50-N

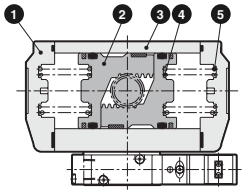


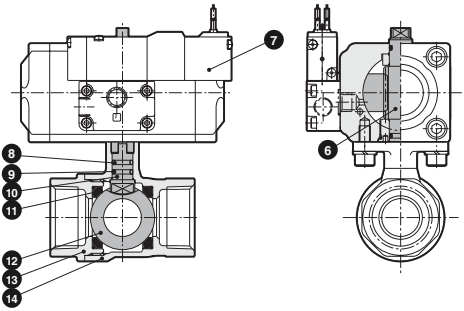
No.	Parts name	Material	
1	Cylinder cap	ADC12	Aluminum die casting
2	O ring	NBR	Nitrile rubber
3	Piston	ADC12	Aluminum die casting
4	Cylinder body	A6063	Aluminum
5	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
6	O ring	FKM	Fluoro rubber
7	Shaft	SUS303 (SUS304)	Stainless steel (stainless steel)
8	Valve seat	PTFE	Tetrafluoroethylene resin
9	Valve cap	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
10	Valve ball	C3771, Cr plating (SUS304)	Brass, chrome plating (stainless steel)
11	Valve body	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
12	Stem	SUS303	Stainless steel
13	Hexagon head bolt	SUSXM7	Stainless steel
14	Solenoid valve [4KB119-00]		
15	Block	ADC12	Aluminum die casting
16	O ring	FKM	Fluoro rubber
17	Seal ring	UHMW-PE	Ultra high molecular weight polyethylene

Materials shown in ( ) are for stainless steel body.

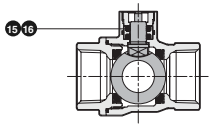
Internal structure and parts list: CHB-X*/CHBF-X* Series

● CHB-X*-10/15/20-*
CHBF-X*-15-*





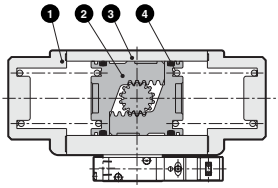
● Oil-free specifications (ball valve)
CHB-X*-10/15/20-N

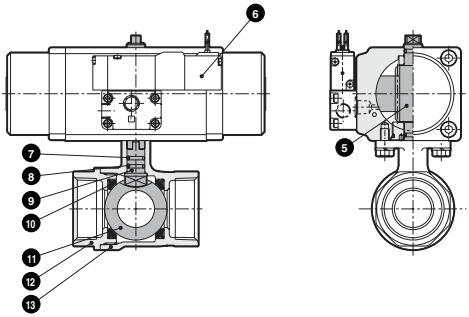


No.	Parts name	Material	
1	Cylinder cap	ADC12	Aluminum die casting
2	Piston	ADC12	Aluminum die casting
3	Cylinder body	A6063	Aluminum
4	Spring	SWP	Piano wire
5	Spring	SWP	Piano wire
6	Stem	SUS303	Stainless steel
7	Solenoid valve [4KB119-00]		
8	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
9	O ring	FKM	Fluoro rubber
10	Shaft	SUS303 (SUS304)	Stainless steel (stainless steel)
11	Valve seat	PTFE	Tetrafluoroethylene resin
12	Valve ball	C3771, Cr plating (SUS304)	Brass, chrome plating (stainless steel)
13	Valve cap	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
14	Valve body	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
15	O ring	FKM	Fluoro rubber
16	Seal ring	UHMW-PE	Ultra high molecular weight polyethylene

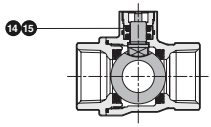
Materials shown in ( ) are for stainless steel body.

● CHB-X*-25/32/40/50-*
CHBF-X*-20/25/32/40-*





● Oil-free specifications (ball valve)
CHB-X*-25/32/40/50-N

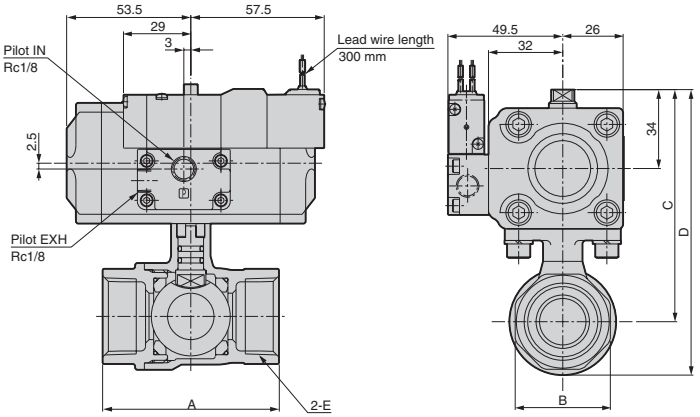


No.	Parts name	Material	
1	Cylinder cap	ADC12	Aluminum die casting
2	Piston	ADC12	Aluminum die casting
3	Cylinder body	A6063	Aluminum
4	Spring	SWP	Piano wire
5	Stem	SUS303	Stainless steel
6	Solenoid valve [4KB119-00]		
7	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)
8	O ring	FKM	Fluoro rubber
9	Shaft	SUS303 (SUS304)	Stainless steel (stainless steel)
10	Valve seat	PTFE	Tetrafluoroethylene resin
11	Valve ball	C3771, Cr plating (SUS304)	Brass, chrome plating (stainless steel)
12	Valve cap	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
13	Valve body	CAC408, CAC407 (SCS13)	Bronze casting (stainless steel casting)
14	O ring	FKM	Fluoro rubber
15	Seal ring	UHMW-PE	Ultra high molecular weight polyethylene

Materials shown in ( ) are for stainless steel body.

Dimensions: CHB-V*/CHBF-V* Series CAD (Page 549)

● CHB-V*-10/15/20/25-*
CHBF-V*-15/20-*

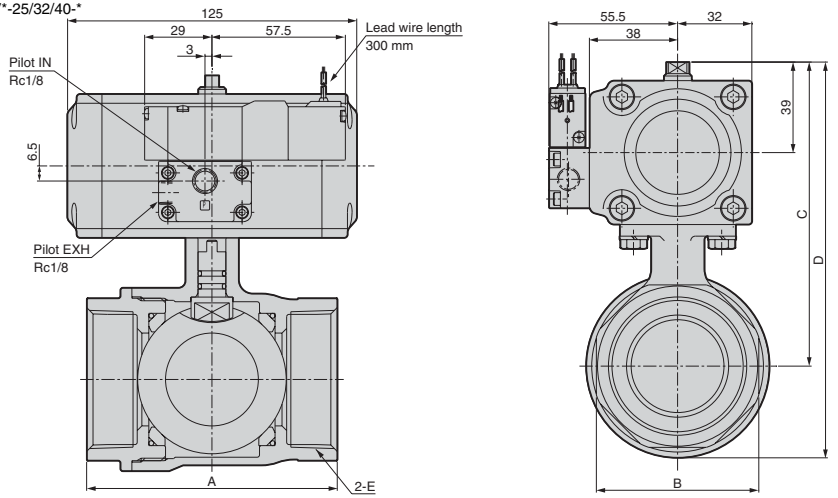


Model no.	A	B	C	D	E
CHB-V*-10-*	50 (56)	24 (28)	91	106 (107)	Rc3/8
CHB-V*-15-*	56	28	91	106 (107)	Rc1/2
CHB-V*-20-*	65	34	97	116.5 (117.5)	Rc3/4
CHB-V*-25-*	76	41	100	123 (124)	Rc1

Values shown in ( ) are for stainless steel body.

Model no.	A	B	C	D	E
CHBF-V*-15-*	65	28	97	116.5	Rc1/2
CHBF-V*-20-*	71	34	100	123	Rc3/4

● CHB-V*-32/40/50-*
CHBF-V*-25/32/40-*



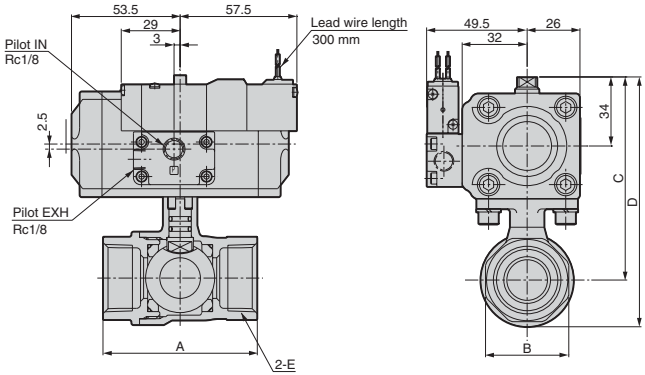
Model no.	A	B	C	D	E
CHB-V*-32-*	84	50	116	143.5 (145.5)	Rc1 1/4
CHB-V*-40-*	94	57	122	155.5 (157.5)	Rc1 1/2
CHB-V*-50-*	108	70	131	170.5 (171.5)	Rc2

Values shown in ( ) are for stainless steel body.

Model no.	A	B	C	D	E
CHBF-V*-25-*	84	41	116	143.5	Rc1
CHBF-V*-32-*	95	50	122	155.5	Rc1 1/4
CHBF-V*-40-*	107	57	131	170.5	Rc1 1/2

Dimensions: CHB-X*/CHBF-X* Series CAD (Page550)

● CHB-X*-10/15/20-*
CHBF-X*-15-*

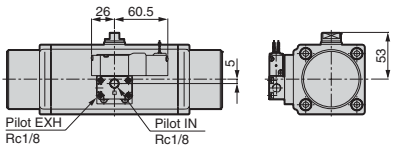


Model no.	A	B	C	D	E
CHB-X*-10-*	50 (56)	24 (28)	91	106 (107)	Rc3/8
CHB-X*-15-*	56	28	91	106 (107)	Rc1/2
CHB-X*-20-*	65	34	97	116.5 (117.5)	Rc3/4

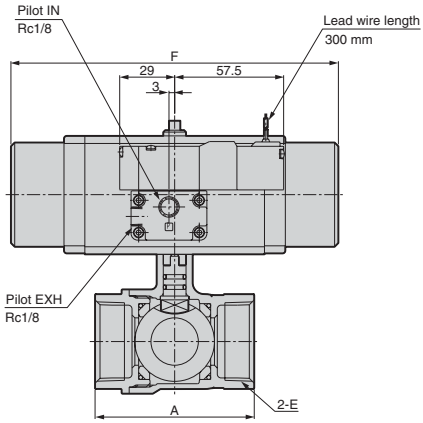
Values shown in ( ) are for stainless steel body.

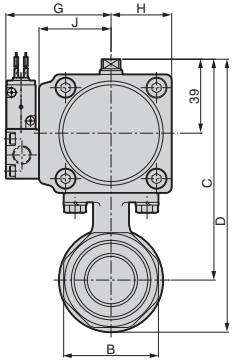
Model no.	A	B	C	D	E
CHBF-X*-15-*	65	28	97	116.5	Rc1/2

● CHB-X*-40/50 actuator
CHBF-X*-32/40



● CHB-X*-25/32/40/50-*
CHBF-X*-20/25/32/40-*





Model no.	A	B	C	D	E	F	G	H	J
CHB-X*-25-*	76	41	110	133 (134)	Rc1	173	55.5	32	38
CHB-X*-32-*	84	50	116	143.5 (145.5)	Rc1 1/4	173	55.5	32	38
CHB-X*-40-*	94	57	162	195.5 (197.5)	Rc1 1/2	244	70.5	38	41
CHB-X*-50-*	108	70	171	210.5 (211.5)	Rc2	244	70.5	38	41

Values shown in ( ) are for stainless steel body.

Model no.	A	B	C	D	E	F	G	H	J
CHBF-X*-20-*	71	34	110	133	Rc3/4	173	55.5	32	38
CHBF-X*-25-*	84	41	116	143.5	Rc1	173	55.5	32	38
CHBF-X*-32-*	95	50	162	195.5	Rc1 1/4	244	70.5	38	41
CHBF-X*-40-*	107	57	171	210.5	Rc1 1/2	244	70.5	38	41

Optional dimensions CAD (Page550)

Refer to page 528 for the dimensions with limit switch.

Air operated 2 port valve CHB

Electronic Catalog file list is applied to "CAD DATA 2006".

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
● Double acting type CHB: Page 526			
CHB-10	CHB	chb_10	CKD-CHB-10
CHB-15		chb_15	CKD-CHB-15
CHB-20		chb_20	CKD-CHB-20
CHB-25		chb_25	CKD-CHB-25
CHB-32		chb_32	CKD-CHB-32
CHB-40		chb_40	CKD-CHB-40
CHB-50		chb_50	CKD-CHB-50
CHB-10-E/N		chb_10_e_n	CKD-CHB-10-E/N
CHB-15-E/N		chb_15_e_n	CKD-CHB-15-E/N
CHB-20-E/N		chb_20_e_n	CKD-CHB-20-E/N
CHB-25-E/N		chb_25_e_n	CKD-CHB-25-E/N
CHB-32-E/N		chb_32_e_n	CKD-CHB-32-E/N
CHB-40-E/N		chb_40_e_n	CKD-CHB-40-E/N
CHB-50-E/N		chb_50_e_n	CKD-CHB-50-E/N
CHBF-15		chbf_15	CKD-CHBF-15
CHBF-20		chbf_20	CKD-CHBF-20
CHBF-25		chbf_25	CKD-CHBF-25
CHBF-32		chbf_32	CKD-CHBF-32
CHBF-40		chbf_40	CKD-CHBF-40
● Single acting type CHB-R: Page 527			
CHB-R-10	CHB	chb_r_10	CKD-CHB-R-10
CHB-R-15		chb_r_15	CKD-CHB-R-15
CHB-R-20		chb_r_20	CKD-CHB-R-20
CHB-R-25		chb_r_25	CKD-CHB-R-25
CHB-R-32		chb_r_32	CKD-CHB-R-32
CHB-R-40		chb_r_40	CKD-CHB-R-40
CHB-R-50		chb_r_50	CKD-CHB-R-50
CHB-R-10-E/N		chb_r_10_e_n	CKD-CHB-R-10-E/N
CHB-R-15-E/N		chb_r_15_e_n	CKD-CHB-R-15-E/N
CHB-R-20-E/N		chb_r_20_e_n	CKD-CHB-R-20-E/N
CHB-R-25-E/N		chb_r_25_e_n	CKD-CHB-R-25-E/N
CHB-R-32-E/N		chb_r_32_e_n	CKD-CHB-R-32-E/N
CHB-R-40-E/N		chb_r_40_e_n	CKD-CHB-R-40-E/N
CHB-R-50-E/N		chb_r_50_e_n	CKD-CHB-R-50-E/N
CHBF-R-15		chbf_r_15	CKD-CHBF-R-15
CHBF-R-20		chbf_r_20	CKD-CHBF-R-20
CHBF-R-25		chbf_r_25	CKD-CHBF-R-25
CHBF-R-32		chbf_r_32	CKD-CHBF-R-32
CHBF-R-40		chbf_r_40	CKD-CHBF-R-40
● Option: Page 528			
Limit switch detection at valve open	CHB	chb_sw_h	CKD-CHB-SW-H
Limit switch detection at valve closed		chb_sw_v	CKD-CHB-SW-V
Limit switch: With 2 switches		chb_sw_w	CKD-CHB-SW-W

Air operated 3 port valve CHG

Electronic Catalog file list is applied to "CAD DATA 2006".

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
● Double acting type CHG: Page 534			
CHG-15	CHG	chg_15	CKD-CHG-15
CHG-20		chg_20	CKD-CHG-20
CHG-25		chg_25	CKD-CHG-25
CHG-32		chg_32	CKD-CHG-32
CHG-40		chg_40	CKD-CHG-40
CHG-50		chg_50	CKD-CHG-50
CHG-15-E/N		chg_15_e_n	CKD-CHG-15-E/N
CHG-20-E/N		chg_20_e_n	CKD-CHG-20-E/N
CHG-25-E/N		chg_25_e_n	CKD-CHG-25-E/N
CHG-32-E/N		chg_32_e_n	CKD-CHG-32-E/N
CHG-40-E/N		chg_40_e_n	CKD-CHG-40-E/N
CHG-50-E/N		chg_50_e_n	CKD-CHG-50-E/N
● Single acting type CHG-R: Page 535			
CHG-R-15	CHG	chg_r_15	CKD-CHG-R-15
CHG-R-20		chg_r_20	CKD-CHG-R-20
CHG-R-25		chg_r_25	CKD-CHG-R-25
CHG-R-32		chg_r_32	CKD-CHG-R-32
CHG-R-40		chg_r_40	CKD-CHG-R-40
CHG-R-50		chg_r_50	CKD-CHG-R-50
CHG-R-15-E/N		chg_r_15_e_n	CKD-CHG-R-15-E/N
CHG-R-20-E/N		chg_r_20_e_n	CKD-CHG-R-20-E/N
CHG-R-25-E/N		chg_r_25_e_n	CKD-CHG-R-25-E/N
CHG-R-32-E/N		chg_r_32_e_n	CKD-CHG-R-32-E/N
CHG-R-40-E/N		chg_r_40_e_n	CKD-CHG-R-40-E/N
CHG-R-50-E/N		chg_r_50_e_n	CKD-CHG-R-50-E/N
● Option: Page 535			
Limit switch detection at valve open	CHB	chb_sw_h	CKD-CHB-SW-H
Limit switch detection at valve closed		chb_sw_v	CKD-CHB-SW-V
Limit switch: With 2 switches		chb_sw_w	CKD-CHB-SW-W

2 port valve with solenoid valve CHB-V

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
● Double acting type CHB-V: Page 540			
CHB-V-10	CHB V	chb_v_10	CKD-CHB-V-10
CHB-V-15		chb_v_15	CKD-CHB-V-15
CHB-V-20		chb_v_20	CKD-CHB-V-20
CHB-V-25		chb_v_25	CKD-CHB-V-25
CHB-V-32		chb_v_32	CKD-CHB-V-32
CHB-V-40		chb_v_40	CKD-CHB-V-40
CHB-V-50		chb_v_50	CKD-CHB-V-50
CHB-V-10-E/N		chb_v_10_e_n	CKD-CHB-V-10-E/N
CHB-V-15-E/N		chb_v_15_e_n	CKD-CHB-V-15-E/N
CHB-V-20-E/N		chb_v_20_e_n	CKD-CHB-V-20-E/N
CHB-V-25-E/N		chb_v_25_e_n	CKD-CHB-V-25-E/N
CHB-V-32-E/N		chb_v_32_e_n	CKD-CHB-V-32-E/N
CHB-V-40-E/N		chb_v_40_e_n	CKD-CHB-V-40-E/N
CHB-V-50-E/N		chb_v_50_e_n	CKD-CHB-V-50-E/N
CHBF-V-15		chbf_v_15	CKD-CHBF-V-15
CHBF-V-20		chbf_v_20	CKD-CHBF-V-20
CHBF-V-25		chbf_v_25	CKD-CHBF-V-25
CHBF-V-32		chbf_v_32	CKD-CHBF-V-32
CHBF-V-40		chbf_v_40	CKD-CHBF-V-40

2 port valve with solenoid valve CHB-X

Electronic Catalog file list is applied to "CAD DATA 2006".

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
● Single acting type CHB-X: Page 541			
CHB-X-10	CHB_V	chb_x_10	CKD-CHB-X-10
CHB-X-15		chb_x_15	CKD-CHB-X-15
CHB-X-20		chb_x_20	CKD-CHB-X-20
CHB-X-25		chb_x_25	CKD-CHB-X-25
CHB-X-32		chb_x_32	CKD-CHB-X-32
CHB-X-40		chb_x_40	CKD-CHB-X-40
CHB-X-50		chb_x_50	CKD-CHB-X-50
CHB-X-10-E/N		chb_x_10_e_n	CKD-CHB-X-10-E/N
CHB-X-15-E/N		chb_x_15_e_n	CKD-CHB-X-15-E/N
CHB-X-20-E/N		chb_x_20_e_n	CKD-CHB-X-20-E/N
CHB-X-25-E/N		chb_x_25_e_n	CKD-CHB-X-25-E/N
CHB-X-32-E/N		chb_x_32_e_n	CKD-CHB-X-32-E/N
CHB-X-40-E/N		chb_x_40_e_n	CKD-CHB-X-40-E/N
CHB-X-50-E/N		chb_x_50_e_n	CKD-CHB-X-50-E/N
CHBF-X-15		chbf_x_15	CKD-CHBF-X-15
CHBF-X-20		chbf_x_20	CKD-CHBF-X-20
CHBF-X-25		chbf_x_25	CKD-CHBF-X-25
CHBF-X-32		chbf_x_32	CKD-CHBF-X-32
CHBF-X-40		chbf_x_40	CKD-CHBF-X-40
● Option: Page 541			
Solenoid valve coil option Metering valve with silencer	CHB_V	chb_chg_opt	CKD-CHB-CHG-OPT
Limit switch detection at valve open	CHB	chb_sw_h	CKD-CHB-SW-H
Limit switch detection at valve closed		chb_sw_v	CKD-CHB-SW-V
Limit switch: With 2 switches		chb_sw_w	CKD-CHB-SW-W

3 port valve with solenoid valve CHG-V/CHG-X

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
● Double acting type CHG-V: Page 546			
CHG-V-15	CHG_V	chg_v_15	CKD-CHG-V-15
CHG-V-20		chg_v_20	CKD-CHG-V-20
CHG-V-25		chg_v_25	CKD-CHG-V-25
CHG-V-32		chg_v_32	CKD-CHG-V-32
CHG-V-40		chg_v_40	CKD-CHG-V-40
CHG-V-50		chg_v_50	CKD-CHG-V-50
CHG-V-15-E/N		chg_v_15_e_n	CKD-CHG-V-15-E/N
CHG-V-20-E/N		chg_v_20_e_n	CKD-CHG-V-20-E/N
CHG-V-25-E/N		chg_v_25_e_n	CKD-CHG-V-25-E/N
CHG-V-32-E/N		chg_v_32_e_n	CKD-CHG-V-32-E/N
CHG-V-40-E/N		chg_v_40_e_n	CKD-CHG-V-40-E/N
CHG-V-50-E/N		chg_v_50_e_n	CKD-CHG-V-50-E/N
● Double acting type CHG-X: Page 547			
CHG-X-15	CHG_V	chg_x_15	CKD-CHG-X-15
CHG-X-20		chg_x_20	CKD-CHG-X-20
CHG-X-25		chg_x_25	CKD-CHG-X-25
CHG-X-32		chg_x_32	CKD-CHG-X-32
CHG-X-40		chg_x_40	CKD-CHG-X-40
CHG-X-50		chg_x_50	CKD-CHG-X-50
CHG-X-15-E/N		chg_x_15_e_n	CKD-CHG-X-15-E/N
CHG-X-20-E/N		chg_x_20_e_n	CKD-CHG-X-20-E/N
CHG-X-25-E/N		chg_x_25_e_n	CKD-CHG-X-25-E/N
CHG-X-32-E/N		chg_x_32_e_n	CKD-CHG-X-32-E/N
CHG-X-40-E/N		chg_x_40_e_n	CKD-CHG-X-40-E/N
CHG-X-50-E/N		chg_x_50_e_n	CKD-CHG-X-50-E/N
● Option: Page 547			
Solenoid valve coil option Metering valve with silencer	CHG_V	chb_chg_opt	CKD-CHB-CHG-OPT
Limit switch detection at valve open	CHB	chb_sw_h	CKD-CHB-SW-H
Limit switch detection at valve closed		chb_sw_v	CKD-CHB-SW-V
Limit switch: With 2 switches		chb_sw_w	CKD-CHB-SW-W