



Direct acting 3 port solenoid valve for dry air
(general purpose valve)

AG3*/AG4*-Z Series

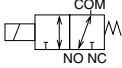
- Universal type, NC pressurization type, NO pressurization type
- Port size: Rc1/8, Rc1/4, Rc3/8



JIS symbol

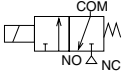
● AG31/41-Z

: Universal type



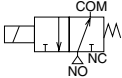
● AG33/43-Z

: NC pressurization type



● AG34/44-Z

: NO pressurization type



Common specifications

Item	Standard specifications
Working fluid	Dry air (atmospheric dew point -60°C or more), inert gas, low vacuum (1.33 x 10 ² Pa (abs))
Working pressure differential range MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Withstanding pressure (water) MPa	25
Fluid temperature °C	-10 to 45 (no freezing)
Ambient temperature °C	-10 to 45
Heat proof class	B
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min. (ANR)	0.2 or less
Mounting attitude	Free

Individual specifications

Item Model no.	Port size	Orifice (mm)		Max. working pressure diff. (MPa)	Max. working pressure MPa	Rated voltage	Power consumption (W)				
		TOP	BODY				AC	DC			
Universal type											
AG31- ⁰¹ / ₀₂ -1-*****Z	Rc1/8	1.5	1.5	0.7	1	100 VAC 50/60 Hz	17	14			
	Rc1/4	2.0	2.0	0.4							
AG41- ⁰² / ₀₃ -1-*****Z	Rc1/4	2.0	2.0	0.65	1						
	Rc3/8	2.3	2.3	0.4							
NC pressurization type											
AG33- ⁰¹ / ₀₂ -1-*****Z	Rc1/8	1.5	1.5	1.0	1				200 VAC 50/60 Hz	17	14
	Rc1/4	2.0	2.0	0.7							
AG43- ⁰² / ₀₃ -4-*****Z	Rc1/4	3.0	3.0	0.7	1						
	Rc3/8	3.5	3.0	0.4							
NO pressurization type											
AG34- ⁰¹ / ₀₂ -1-*****Z	Rc1/8	1.5	1.5	1.0	1.5	12 VDC 24 VDC 48 VDC 100 VDC	17	14			
	Rc1/4	2.0	2.0	0.45							
AG44- ⁰² / ₀₃ -1-*****Z	Rc1/4	2.0	2.0	0.75	1.5						
	Rc3/8	2.0	3.0	0.7							
			3.0	3.0	0.25						

*1: The model numbers above show the basic port size (Rc). Refer to How to order for other combinations.

*2: The port size symbol is 01 for Rc1/8 (6A), 02 for Rc1/4 (8A) and 03 for Rc3/8 (10A).

*3: Voltage fluctuation should be within ±10% of the rated voltage.

*4: Keep the leakage current at the following value or less.

*5: When using with a low vacuum, vacuum the NO port side for the NC pressurization type, or the NC port side for the NO pressurization type.

Leakage current	Voltage	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
	Model no.						
	AG31/33/34-1-*****Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
	AG41/43/44-1-*****Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model no.	Port size	Orifice (mm)		Flow characteristics			
		TOP	BODY	C [dm ³ /(s·bar)]		b	
				TOP	BODY	TOP	BODY
Universal type							
AG31 ₀₁ ⁰² -1-*****Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
AG41 ₀₂ ⁰³ -1-*****Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
	Rc3/8	2.3	2.3	0.74	0.74	0.66	0.53
NC pressurization type							
AG33 ₀₁ ⁰² -1-*****Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
AG43 ₀₂ ⁰³ -4-*****Z	Rc1/4	3.0	3.0	1.1	1.1	0.72	0.52
	Rc3/8	3.5	3.0	1.5	1.1	0.62	0.52
NO pressurization type							
AG34 ₀₁ ⁰² -1-*****Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
AG44 ₀₂ ⁰³ -1-*****Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
	Rc3/8	2.0	3.0	0.53	1.1	0.54	0.52
		3.0	3.0	1.1	1.1	0.72	0.52

*1: Effective sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve for dry air
Direct acting 2-port solenoid valve

AG3*/4*-Z Series

How to order

● Universal type

AG31 - 02 - 2 - H 3A A B G S Z - DC24V

AG41

● NC pressurization type

AG33

AG43

● NO pressurization type

AG34

AG44

Model no.

- D Coil housing
- E Other options
- F Manual override (locking)
- G Mounting plate
- H Surge suppressor
- I Voltage

A Port size

B Orifice

C Body/sealant combination

*1

						Model no.												
						AG31	AG41	AG33	AG43	AG34	AG44							
Symbol	Descriptions		Symbol	Descriptions		Symbol	Descriptions											
A Port size																		
01	Rc 1 / 8		1G	G 1 / 8		1N	NPT 1 / 8											
02	Rc 1 / 4		2G	G 1 / 4		2N	NPT 1 / 4											
03	Rc 3 / 8		3G	G 3 / 8		3N	NPT 3 / 8											
B Orifice																		
	AG31		AG41		AG33		AG43		AG34		AG44							
	TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY						
1	ø1.5	ø1.5	ø2.0	ø2.0	ø1.5	ø1.5	-	-	ø1.5	ø1.5	ø2.0	ø2.0	●	●	●	●	●	●
2	ø2.0	ø2.0	ø2.3	ø2.3	ø2.0	ø2.0	-	-	ø2.0	ø2.0	-	-	●	●	●	●	●	●
3	-	-	-	-	-	-	-	-	-	-	ø2.0	ø3.0						●
4	-	-	-	-	-	-	ø3.0	ø3.0	-	-	ø3.0	ø3.0						●
5	-	-	-	-	-	-	ø3.5	ø3.0	-	-	-	-						●
C Body/sealant combination																		
	Body	Sealant		Treatment		Remarks												
H	Brass	Nitrile rubber		Oil free		-		●	●	●	●	●	●					
J		Fluoro rubber				-		●	●	●	●	●	●	●				
P		Ethylene propylene diene rubber				-		●	●	●	●	●	●	●				
L	Stainless steel	Nitrile rubber		Oil free		-		●	●	●	●	●	●					
M		Fluoro rubber				-		●	●	●	●	●	●	●				
R		Ethylene propylene diene rubber				-		●	●	●	●	●	●	●				
Refer to page 36 in the Introduction for details on the material combinations.																		
D to I																		
Refer to the following page for details on the coil housing, other options and voltage, etc.																		

The combinations indicated with ● in the above table are available.

<Example of model number>

AG31-02-1-H3AASZ-DC24V
Series: AG31

A Port size: Rc1/4

B Orifice: TOP - ø1.5, BODY - ø1.5

C Body/sealant combination

: Body - brass, sealant - nitrile rubber

D Coil housing

: Open frame lead wire for DC voltage

E Manual override (locking): Selected

F G: Blank

H Surge suppressor: Selected

I Voltage: 24 VDC

Note on model no. selection




Note on


*1: For AG34 and AG44, the NO valve sealant is fluoro rubber.

For ① to ④, the combinations indicated with symbols can be manufactured.
 Note that if options ⑤ to ⑧ are not required, no symbol is indicated.

D Coil housing		E	F	G Other options			H	I Rated voltage			
Descriptions		Manual override (locking)	Mounting plate	Cable gland			Conduit		Surge suppressor	Descriptions	
				(Marine cable gland)			(Conduit pipe)				
				A-15a	A-15b	A-15c	CTC19	G1/2			
3A	Open frame type	A	B				G	H	S	12 VCD, 24 VDC, 48 VDC, 100 VDC	
3M				HP terminal box (G1/2)						12 VDC, 24 VDC, 100 VDC	
3N				HP terminal box + light (G1/2)	D	E	F			12 VCD, 24 VDC, 48 VDC, 100 VDC	
3I				HP terminal box (IP65 or equivalent) (G1/2)						12 VDC, 24 VDC, 100 VDC	
3J											
5A	Open frame type	A	B				G	H		100 VAC, 200 VAC	
5M				HP terminal box (G1/2)							
5N				HP terminal box + light (G1/2)	D	E	F				
5I				HP terminal box (IP65 or equivalent) (G1/2)							
5J											

▲ Refer to the following precautions for ① to ④.

3A 5A		<ul style="list-style-type: none"> ● Open frame grommet lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G (CTC19) ● H (G1/2)
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Refer to page 306 for coil selection.

▲ Note on model no. selection

Note on ①

- * 2: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.
 Not compatible with voltages less than 100 VAC.

Note on ② to ④

- * 3: Select one among D, E, F, G and H for ③.
- * 4: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
- * 5: The surge suppressor is incorporated in the coil with diode as standard.
- * 6: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
 Note that the tropicalization is not available when the manual override option A is selected.

Note on ⑦

- * 7: 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
- * 8: For voltages other than above, consult with CKD.
- * 9: The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVE/
CVSE

CPE/
CPD

Medical
analysis

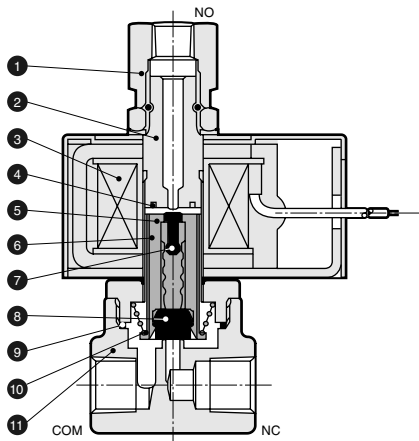
Custom
order

General purpose valve for dry air
Direct acting 2-port solenoid valve

AG3*/4*-Z Series

Internal structure and parts list

● AG3*/4*-Z Series



No.	Parts name	Material	
1	Socket	C3604 (SUS303)	Brass (stainless steel)
2	Core assembly	SUS405 or equivalent, 316, 403 ^{*1}	Stainless steel
3	Coil assembly	-	-
4	Shading coil	Cu (Ag for SUS body)	Copper (silver for stainless steel body)
5	Plunger	SUS405 or equivalent	Stainless steel
6	Plunger tube	PET	Polyethylene terephthalate
7	NO valve sealant	NBR (FKM, EPDM) *3	NBR: Nitrile rubber (FKM: Fluoro rubber)
8	NC valve sealant	NBR (FKM, EPDM)	(EPDM: Ethylene propylene diene rubber)
9	O ring	NBR (FKM, EPDM)	
10	Plunger spring	SUS304	Stainless steel
11	Body	C3771 (SUS303)	Brass (stainless steel)

*1: When the body/sealant combination symbol is other than H, the material is SUS405 or equivalent, 316L, 430.

*2: () shows options.

*3: For AG34 and AG44, if the body/sealant combination symbol is H or L, the NO valve sealant is FKM.

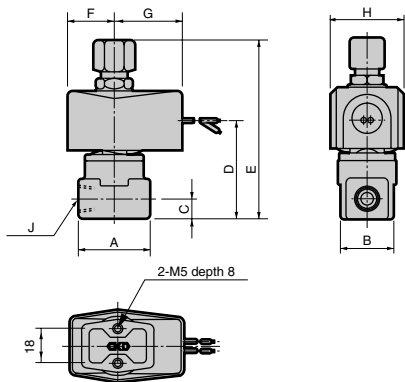
Figure shows AG31/33/34.

Dimensions



● Open frame lead wire type

AG3*/4*-**-(H/J/SA/P)3A****Z



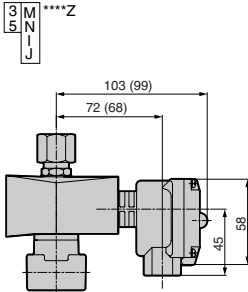
Model no.	A	B	C	D	E	F	G	H	J
AG3*- ⁰² / ₀₁ -1 to 2-****Z	36	28	11	50.5	94	24	38	38	Rc1/8 Rc1/4
AG4*-02-1 to 5-****Z	36	28	11	52	99.5	28	42	46	Rc1/4
AG4*-03-1 to 5-****Z	40	28	12	55	106	28	42	46	Rc3/8

Optional dimensions



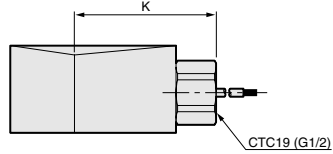
* Refer to the open frame lead wire type dimensions on the left page for common dimensions.

- Open frame type + HP terminal box
AG3*/4*-**-3M****Z



Dimensions shown in () are for AG3 Series.

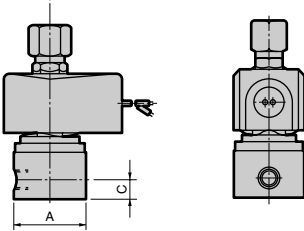
- Open frame type + conduit
AG3*/4*-**-3A|G|5A|H****Z



Dimensions shown in () are for G1/2.

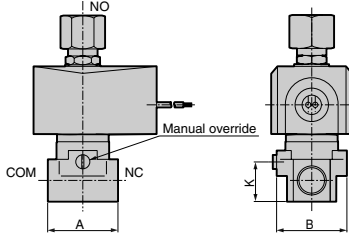
Model no.	K
AG3*	53 (56)
AG4*	57 (60)

- Stainless steel body
AG3*/4*-**-L|M|R****Z



Model no.	A	C
AG3*-01-1 to 2-****Z	ø37.5	11
AG4*-02-1 to 5-****Z	ø37.5	11
AG4*-03-1 to 5-****Z	ø45	12

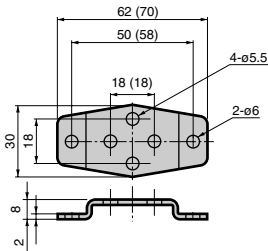
- Manual override (locking)
AG3*/4*-**-A****Z
(Figure shows the brass body)



Model no.	A	B	K
AG3*-01-1 to 2-**A****Z	36	38 (ø37.5)	19.5
AG4*-02-1 to 5-**A****Z	36	38 (ø37.5)	19.5
AG4*-03-1 to 5-**A****Z	40	40 (ø45)	22.5

Values shown in () are for stainless steel body.

- Mounting plate
AG3*/4*-**-B****Z

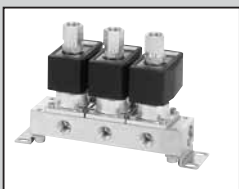


Dimensions shown in () are for the mounting plate No. 2.

Model no.	Applicable model
Mounting plate No. 1 GE-100106	● AG3* all series
	● Brass body AG4*-02-03-1 to 5- H/J/P
	● Stainless steel body AG4*-02-1 to 5- L/M/R
Mounting plate No. 2 GE-100159	● Stainless steel body AG4*-03-1 to 5- L/M/R

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve for dry air
Direct acting 2 port solenoid valve



Direct acting 3 port solenoid valve for dry air, manifold and actuator (general purpose valve)

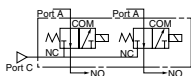
GAG31*/GAG35*/GAG41*/GAG45*-Z Series

- Universal type
- Common supply / individual exhaust type, common supply / separate flow type

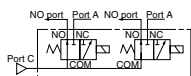


Manifold circuit structure

- GAG31*/41*-Z
(Common supply / individual exhaust type)



- GAG352/452-Z
(Common supply / separate flow type)



Common specifications

Item	Standard specifications
Working fluid	Dry air (atmospheric dew point -60°C or more), inert gas, low vacuum (1.33 x 10 ² Pa (abs))
Working pressure differential range MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1
Withstanding pressure (water) MPa	10
Fluid temperature °C	-10 to 45 (no freezing)
Ambient temperature °C	-10 to 45
Heat proof class	B
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min. (ANR)	0.2 or less
Mounting attitude	Free

Individual specifications

Item Model no.	NO port size	Orifice (mm)		Max. working pressure diff. (MPa)	Rated voltage	Power consumption (W)	
		TOP	BODY			AC 50/60 Hz	DC
GAG311-1-Z -2-Z	Rc1/8	1.5	1.5	0.7	100 VAC 50/60 Hz	17	14
		2.0	2.0	0.4			
GAG312-1-Z -2-Z	Rc1/4	1.5	1.5	0.7	200 VAC 50/60 Hz	17	14
		2.0	2.0	0.4			
GAG412-1-Z -2-Z	Rc1/4	2.0	2.0	0.65	12 VDC 24 VDC 48 VDC 100 VDC	17	14
		2.3	2.3	0.4			
GAG413-1-Z -2-Z	Rc3/8	2.0	2.0	0.65	12 VDC 24 VDC 48 VDC 100 VDC	17	14
		2.3	2.3	0.4			

*1: The model numbers above show the basic NO port size and orifice diameter. Refer to How to order for other combinations.

*2: Refer to How to order (page 330) and Dimensions (pages 180 to 183) for the port sizes of port A and C.

*3: Voltage fluctuation should be within ±10% of the rated voltage.

*4: When continuously energizing the valve, use a fluoro rubber seal.

*5: Keep the leakage current at the following value or less.

Leakage current Model no.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
	GAG31*-*****Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less
GAG41*-*****Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model no.	Port size	Orifice (mm)		Flow characteristics			
		TOP	BODY	C [dm ³ /(s·bar)]		b	
				TOP	BODY	TOP	BODY
GAG311-1-Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG312-1-Z	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG412-1-Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
-2-Z		2.3	2.3	0.74	0.74	0.66	0.53
GAG413-1-Z	Rc3/8	2.0	2.0	0.53	0.53	0.54	0.52
-2-Z		2.3	2.3	0.74	0.74	0.66	0.53

*1: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Internal structure and parts list

This is the same as the AG3*/4*-Z Series. Refer to page 326.

Dimensions

This is the same as the GAG 31/35/41/45 Series open frame type. Refer to pages 180 to 183.

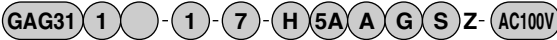
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve for dry air
Direct acting 2 port solenoid valve

GAG31*/35*/41*/45*-Z Series

How to order

● Common supply / individual exhaust type (port C pressurization)



● Common supply / separate flow type (port C pressurization)



● Common supply / individual exhaust type (port C pressurization)



● Common supply / separate flow type (port C pressurization)



Model no. A NO port size

B Type of thread

C Orifice

D Station no.
*2

E Body/sealant combination

<Example 1 of model number>

GAG311-1-4-H5AZ-AC200V

Series: GAG311

(common supply / individual exhaust type port C pressurization)

A NO port size: 1/8

B Type of thread: Rc

C Orifice: TOP - ϕ 1.5, BODY - ϕ 1.5

D Station no.: 4 stations

E Body/sealant combination

: Body - brass, sealant - nitrile rubber

F Coil housing: Open frame

(diode integrated) lead wire for AC voltage

G to I: Blank

J Rated voltage

: 200 VAC 50/60 Hz

<Example 2 of model number>

GAG352N-2-7-H3AASZ-DC24V

Series: GAG352

(common supply / separate flow type port C pressurization)

A NO port size: 1/4

B Type of thread: NPT

C Orifice: TOP - ϕ 2.0, BODY - ϕ 2.0

D Station no.: 7 stations

E Body/sealant combination

: Body - brass, sealant - nitrile rubber

F Coil housing

: Open frame lead wire for DC voltage

G Manual override (locking): Selected

H Other options: Blank

I Surge suppressor: Selected

J Rated voltage: 24 VDC

Model no.

GAG3** GAG4**

Symbol	Descriptions	GAG3**	GAG4**
A NO port size			
1	1 / 8	●	
2	1 / 4	●	●
3	3 / 8		●

B Type of thread				GAG3**	GAG4**
Blank	Rc	●	●		
G	G	●	●		
N	NPT	●	●		

	GAG3**		GAG4**			
	TOP	BODY	TOP	BODY		
1	ϕ 1.5	ϕ 1.5	ϕ 2.0	ϕ 2.0	●	●
2	ϕ 2.0	ϕ 2.0	ϕ 2.3	ϕ 2.3	●	●

D Station no.				GAG3**	GAG4**
2	2 stations				
10	10 stations	●	●		
0	Only actuator	●	●		

E Body/sealant combination						
	Body	Sealant	Treatment	Remarks	GAG3**	GAG4**
H J P L M R	Brass	Nitrile rubber	Oil free	-	●	●
		Fluoro rubber		-	●	●
		Ethylene propylene diene rubber		-	●	●
		Nitrile rubber		-	●	●
		Fluoro rubber		-	●	●
		Ethylene propylene diene rubber		-	●	●

Refer to page 36 in the Introduction for details on the material combinations.

F to J	
Refer to the following page for details on the coil housing, other options and voltage, etc.	

The combinations indicated with ● in the above table are available.

⚠ Note on model no. selection

*1: Discrete masking plate and sub-plate are available. Contact CKD for more information.




Note on D and E


*2: Consult with CKD about more than 10 stations manifold.

For (F) to (J), the combinations indicated with symbols can be manufactured.
 Note that if options (G) to (I) are not required, no symbol is indicated.

(F) Coil housing		Manual override (locking)	(H) Other options			Surge suppressor	(J) Rated voltage	
Descriptions			Cable gland		Conduit			
			(Marine cable gland)		(Conduit pipe)			
		A-15a	A-15b	A-15c	CTC19	G1/2	Descriptions	
3A	Open frame type	Lead wire				G	H	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		HP terminal box (G1/2)						
3N		HP terminal box + light (G1/2)	D	E	F			
3I		HP terminal box (IP65 or equivalent) (G1/2)						
3J		HP terminal box + light (IP65 or equivalent) (G1/2)						12 VDC, 24 VDC, 100 VDC
5A	Open frame type (Diode integrated)	Lead wire				G	H	100 VAC, 200 VAC
5M		HP terminal box (G1/2)						
5N		HP terminal box + light (G1/2)	D	E	F			
5I		HP terminal box (IP65 or equivalent) (G1/2)						
5J		HP terminal box + light (IP65 or equivalent) (G1/2)						

⚠ Refer to the following precautions for (F) to (J).

3A 5A		<ul style="list-style-type: none"> ● Open frame grommet lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G (CTC19) ● H (G1/2)
--------	---	--

Refer to page 306 for coil selection.

⚠ Note on model no. selection

Note on (F)

* 3: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.

Note on (H) and (I)

- * 4: Select one among D, E, F, G and H for (F).
- * 5: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
- * 6: The surge suppressor is incorporated in the coil with diode as standard.
- * 7: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
 Note that the tropicalization is not available when the manual override option A is selected.

Note on (J)

- * 8: 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
- * 9: For voltages other than above, consult with CKD.
- * 10: The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVB/
CVSE

CPE/
CPD

Medical
analysis

Custom
order

General purpose valve for dry air
Direct acting 2 port solenoid valve



Direct acting 3 port solenoid valve for dry air, manifold and actuator (general purpose valve)

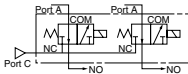
GAG33*/GAG43*-Z Series

- NC pressurization type
- Common supply / individual exhaust type



JIS symbol

- GAG33*/GAG43*-Z
(Common supply / individual exhaust type)



Common specifications

Item	Standard specifications
Working fluid	Dry air (atmospheric dew point -60°C or more), inert gas, low vacuum (1.33 x 10 ² Pa (abs))
Working pressure differential range MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1
Withstanding pressure (water) MPa	10
Fluid temperature °C	-10 to 45 (no freezing)
Ambient temperature °C	-10 to 45
Heat proof class	B
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min. (ANR)	0.2 or less
Mounting attitude	Free

Individual specifications

Item Model no.	NO port size	Orifice (mm)		Max. working pressure diff. (MPa)	Rated voltage	Power consumption (W)	
		TOP	BODY			AC 50/60 Hz	DC
GAG331-1-Z -2-Z	Rc1/8	1.5	1.5	1.0	100 VAC 50/60 Hz	17	14
		2.0	2.0	0.7			
GAG332-1-Z -2-Z	Rc1/4	1.5	1.5	1.0	200 VAC 50/60 Hz	17	14
		2.0	2.0	0.7			
GAG432-4-Z -5-Z	Rc1/4	3.0	3.0	0.7	12 VDC 24 VDC 48 VDC 100 VDC	17	14
		3.5	3.0	0.4			
GAG433-4-Z -5-Z	Rc3/8	3.0	3.0	0.7	12 VDC 24 VDC 48 VDC 100 VDC	17	14
		3.5	3.0	0.4			

*1: The model numbers above show the basic NO port size (Rc) and orifice diameter. Refer to How to order for other combinations.

*2: Refer to How to order (page 334) and Dimensions (pages 198 to 201) for the port sizes of port A and C.

*3: Voltage fluctuation should be within ±10% of the rated voltage.

*4: Keep the leakage current at the following value or less.

*5: When using with a low vacuum, vacuum the NO port side.

Leakage current	Voltage	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
	Model no.						
	GAG33*-*****Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
	GAG43*-*****Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model no.	Port size	Orifice (mm)		Flow characteristics			
		TOP	BODY	C [dm ³ /(s·bar)]		b	
				TOP	BODY	TOP	BODY
GAG331-1-Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG332-1-Z	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG432-4-Z	Rc1/4	3.0	3.0	1.1	1.1	0.72	0.52
-5-Z		3.5	3.0	1.5	1.1	0.62	0.52
GAG433-4-Z	Rc3/8	3.0	3.0	1.1	1.1	0.72	0.52
-5-Z		3.5	3.0	1.5	1.1	0.62	0.52

*1: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Internal structure and parts list

This is the same as the AG3*/4*-Z Series. Refer to page 326.

Dimensions

This is the same as the GAG33/43 Series open frame type. Refer to pages 198 to 201.

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve for dry air
Direct acting 2 port solenoid valve

GAG33*/GAG43*-Z Series

How to order

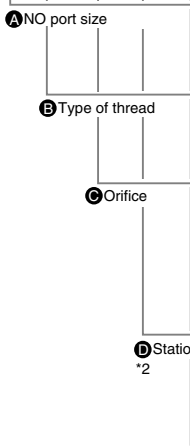
● Common supply / individual exhaust type (port C pressurization)

GAG33 **1** **2** **6** **H** **5A** **A** **G** **S** **Z** - **AC100V**

GAG43

- F** Coil housing
- I** Surge suppressor
- G** Manual override (locking)
- J** Voltage
- H** Other options

Model no.



		Model no.			
		GAG33*	GAG43*		
Symbol	Descriptions				
A NO port size					
1	1 / 8	●			
2	1 / 4	●	●		
3	3 / 8		●		
B Type of thread					
Blank	Rc	●	●		
G	G	●	●		
N	NPT	●	●		
C Orifice					
		GAG33*		GAG43*	
		TOP	BODY	TOP	BODY
1	ø1.5	ø1.5	-	-	●
2	ø2.0	ø2.0	-	-	●
4	-	-	ø3.0	ø3.0	●
5	-	-	ø3.5	ø3.0	●
D Station no.					
2	2 stations			●	●
	to				
10	10 stations				
0	Only actuator			●	●

E Body/sealant combination

	Body	Sealant	Treatment	Remarks		
H	Brass	Nitrile rubber	Oil free	-	●	●
J		Fluoro rubber		-	●	●
P		Ethylene propylene diene rubber		-	●	●
L	Stainless steel	Nitrile rubber		-	●	●
M		Fluoro rubber		-	●	●
R		Ethylene propylene diene rubber		-	●	●

Refer to page 36 in the Introduction for details on the material combinations.

F to J

Refer to the following page for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

<Example 1 of model number>

GAG311-1-4-H5AZ-AC200V
Series: GAG331

(common supply / individual exhaust type port C pressurization)

- A** NO port size: 1/8
- B** Type of thread: Rc
- C** Orifice: TOP - ø1.5, BODY - ø1.5
- D** Station no.: 4 stations
- E** Body/sealant combination : Body - brass, sealant - nitrile rubber
- F** Coil housing: Open frame (diode integrated) lead wire for AC voltage
- G** to **J**: Blank
- J** Rated voltage : 200 VAC 50/60 Hz

<Example 2 of model number>

GAG332G-2-7-H3AASZ-DC24V
Series: GAG332

(common supply / individual exhaust type port C pressurization)

- A** NO port size: 1/4
- B** Type of thread: G
- C** Orifice: TOP - ø2.0, BODY - ø2.0
- D** Station no.: 7 stations
- E** Body/sealant combination : Body - brass, sealant - nitrile rubber
- F** Coil housing : Open frame lead wire for DC voltage
- G** Manual override (locking): Selected
- H** Other options: Blank
- I** Surge suppressor: Selected
- J** Rated voltage: 24 VDC

⚠ Note on model no. selection

*1: Discrete masking plate and sub-plate are available. Contact CKD for more information.




Note on **D** and **E**


*2: Consult with CKD about more than 10 stations manifold.

For (F) to (J), the combinations indicated with symbols can be manufactured.
 Note that if options (G) to (I) are not required, no symbol is indicated.

(F) Coil housing		(G)		(H) Other options			(I)	(J) Rated voltage	
Descriptions		Manual override (locking)	Cable gland			Conduit		Surge suppressor	Descriptions
			(Marine cable gland)			(Conduit pipe)			
			A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame type	Lead wire				G	H	S	12 VCD, 24 VDC, 48 VDC, 100 VDC
3M		HP terminal box (G1/2)							12 VDC, 24 VDC, 100 VDC
3N		HP terminal box + light (G1/2)	D	E	F				12 VCD, 24 VDC, 48 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)							12 VDC, 24 VDC, 100 VDC
3J		HP terminal box + light (IP65 or equivalent) (G1/2)							
5A	Open frame type	Lead wire				G	H		100 VAC, 200 VAC
5M		HP terminal box (G1/2)							
5N		HP terminal box + light (G1/2)	D	E	F				
5I		Diode integrated	HP terminal box (IP65 or equivalent) (G1/2)						
5J		HP terminal box + light (IP65 or equivalent) (G1/2)							

⚠ Refer to the following precautions for (F) to (J).

3A 5A		<ul style="list-style-type: none"> ● Open frame grommet lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G (CTC19) ● H (G1/2)
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Refer to page 306 for coil selection.

⚠ Note on model no. selection

Note on (F)

- * 3: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.

Note on (H) and (I)

- * 4: Select one among D, E, F, G and H for (F).
- * 5: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
- * 6: The surge suppressor is incorporated in the coil with diode as standard.
- * 7: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
 Note that the tropicalization is not available when the manual override option A is selected.

Note on (J)

- * 8: 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
- * 9: For voltages other than above, consult with CKD.
- * 10: The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.



Direct acting 3 port solenoid valve for dry air, actuator
(general purpose valve)

GAG34*/GAG44*-Z Series

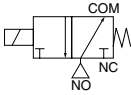
●NO pressurization type



JIS symbol

● GAG34*/44*-Z

: NO pressurization type



Common specifications

Item	Standard specifications
Working fluid	Dry air (atmospheric dew point -60°C or more), inert gas, low vacuum (1.33 x 10 ² Pa (abs))
Working pressure differential range MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1.5
Withstanding pressure (water) MPa	10
Fluid temperature °C	-10 to 45 (no freezing)
Ambient temperature °C	-10 to 45
Heat proof class	B
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min. (ANR)	0.2 or less
Mounting attitude	Free

Individual specifications

Item Model no.	Port size	Orifice (mm)		Max. working pressure diff. (MPa)	Rated voltage	Power consumption (W)	
		TOP	BODY			AC 50/60 Hz	DC
GAG341-1-Z -2-Z	Rc1/8	1.5	1.5	1.0	100 VAC 50/60 Hz	17	14
		2.0	2.0	0.45			
GAG342-1-Z -2-Z	Rc1/4	1.5	1.5	1.0	200 VAC 50/60 Hz	17	14
		2.0	2.0	0.45			
GAG442-1-Z -3-Z -4-Z	Rc1/4	2.0	2.0	0.75	12 VDC 24 VDC 48 VDC 100 VDC	17	14
		2.0	3.0	0.7			
		3.0	3.0	0.25			
GAG443-1-Z -3-Z -4-Z	Rc3/8	2.0	2.0	0.75	12 VDC 24 VDC 48 VDC 100 VDC	17	14
		2.0	3.0	0.7			
		3.0	3.0	0.25			

*1: The model numbers above show the basic NO port size (Rc) and orifice diameter. Refer to How to order for other combinations.

*2: Voltage fluctuation should be within ±10% of the rated voltage.

*3: Keep the leakage current at the following value or less.

*4: When using with a low vacuum, vacuum the NC port side.

Leakage current	Voltage	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
	Model no.						
	GAG34*-*****Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
	GAG44*-*****Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model no.	Port size	Orifice (mm)		Flow characteristics			
		TOP	BODY	C [dm ³ /(s·bar)]		b	
				TOP	BODY	TOP	BODY
GAG341-1-Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG342-1-Z	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG442-1-Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
-3-Z		2.0	3.0	0.53	1.1	0.54	0.52
-4-Z		3.0	3.0	1.1	1.1	0.72	0.52
GAG443-1-Z	Rc3/8	2.0	2.0	0.53	0.53	0.54	0.52
-3-Z		2.0	3.0	0.53	1.1	0.54	0.52
-4-Z		3.0	3.0	1.1	1.1	0.72	0.52

*1: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Internal structure and parts list

This is the same as the AG3*/4*-Z Series. Refer to page 326.

Dimensions

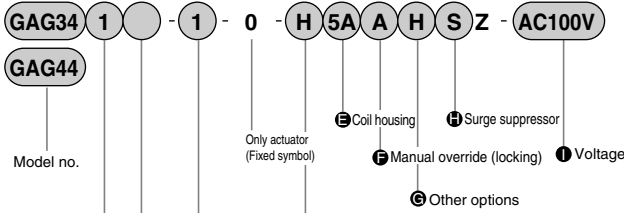
This is the same as the GAG34/44 Series open frame type. Refer to pages 214 to 217.

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve for dry air
Direct acting 2 port solenoid valve

GAG34/GAG44*-Z Series

How to order



		Model no.		
		GAG34*	GAG44*	
Symbol	Descriptions			
A NO port size				
1	1 / 8	●		
2	1 / 4	●	●	
3	3 / 8		●	
B Type of thread				
Blank	Rc	●	●	
G	G	●	●	
N	NPT	●	●	
C Orifice				
	GAG34*		GAG44*	
	TOP	BODY	TOP	BODY
1	ø1.5	ø1.5	ø2.0	ø2.0
2	ø2.0	ø2.0	-	-
3	-	-	ø2.0	ø3.0
4	-	-	ø3.0	ø3.0
D Body/sealant combination				
	Body	Sealant	Treatment	Remarks
H	Brass	Nitrile rubber	Oil free	-
		Fluoro rubber		-
		Ethylene propylene diene rubber		-
L	Stainless steel	Nitrile rubber		-
		Fluoro rubber		-
		Ethylene propylene diene rubber		-
Refer to page 36 in the Introduction for details on the material combinations.				
E to ①				
Refer to the following page for details on the coil housing, other options and voltage, etc.				

The combinations indicated with ● in the above table are available.

<Example 1 of model number>

GAG341-1-0-H5AAZ-AC200V
Series: GAG341

- A** NO port size: 1/8
- B** Type of thread: Rc
- C** Orifice: TOP - ø1.5, BODY - ø1.5
- D** Body/sealant combination
: Body - brass, sealant - nitrile rubber
- E** Coil housing: Open frame
(diode integrated) lead wire for AC voltage
- F** to **H**: Blank
- I** Rated voltage: 200 VAC 50/60 Hz

<Example 2 of model number>

GAG342N-2-0-H3AASZ-DC24V
Series: GAG342

- A** NO port size: 1/4
- B** Type of thread: NPT
- C** Orifice: TOP - ø2.0, BODY - ø2.0
- D** Body/sealant combination
: Body - brass, sealant - nitrile rubber
- E** Coil housing
: Open frame lead wire for DC voltage
- F** Manual override (locking): Selected
- G** Other options: Blank
- H** Surge suppressor: Selected
- I** Rated voltage: 24 VDC

⚠ Note on model no. selection




Note on ①


*1: The NO valve sealant is fluoro rubber.

For (E) to (I), the combinations indicated with symbols can be manufactured.
 Note that if options (F) to (H) are not required, no symbol is indicated.

E Coil housing			F	G Other options					H	I Rated voltage
Descriptions			Manual override (locking)	Cable gland			Conduit		Surge suppressor	Descriptions
				(Marine cable gland)			(Conduit pipe)			
				A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame type	Lead wire	A				G	H	S	12 VCD, 24 VDC, 48 VDC, 100 VDC
3M		HP terminal box (G1/2)		D	E	F				
3N		HP terminal box + light (G1/2)								
3I		HP terminal box (IP65 or equivalent) (G1/2)								
3J	HP terminal box + light (IP65 or equivalent) (G1/2)									
5A	Open frame type	Lead wire	A				G	H	S	100 VAC, 200 VAC
5M		HP terminal box (G1/2)		D	E	F				
5N		HP terminal box + light (G1/2)								
5I		HP terminal box (IP65 or equivalent) (G1/2)								
5J		HP terminal box + light (IP65 or equivalent) (G1/2)								

⚠ Refer to the following precautions for (E) to (I).

3A 5A		<ul style="list-style-type: none"> ● Open frame grommet lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G (CTC19) ● H (G1/2)
--------	---	--

Refer to page 306 for coil selection.

⚠ Note on model no. selection

Note on (E)

* 2: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.

Note on (G) and (H)

- * 3: Select one among D, E, F, G and H for (G).
- * 4: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
- * 5: The surge suppressor is incorporated in the coil with diode as standard.
- * 6: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
 Note that the tropicalization is not available when the manual override option A is selected.

Note on (I)

- * 7: 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
- * 8: For voltages other than above, consult with CKD.
- * 9: The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

HNB/G
 USB/G
 FAB/G
 FGB/G
 FVB
 FWB/G
 FHB
 FLB
 AB
 AG
 AP/
 AD
 APK/
 ADK
 For
 dry air
 Explosion
 proof
 HVB/
 HVL
 SAB/
 SVB
 NP/NAP/
 NVP
 CHB/G
 MXB/G
 Other G.P.
 systems
 PD/FAD/
 PJ
 CVE/
 CVSE
 CPE/
 CPD
 Medical
 analysis
 Custom
 order

General purpose valve for dry air
 Direct acting 2 port solenoid valve

AP/APK/AD/ADK

(General purpose valve)

General purpose pilot operated 2 port solenoid valve

■ For air, vacuum, water, oil

Overview

The general purpose valve series enables control of various types of fluids including water, air, oil and vacuums. In addition to the high reliability and high quality of the valve, the variety of options and variations are available.

Features

Various working fluids control

Various types of fluids can be handled by selecting the proper body material and sealant.

Wide option range

Including open frame, coil with diode, and terminal boxes.

A great variety of series and variation

A wide selection is available from the Rc1/4 to large 50 flanges with series such as pilot operated diaphragm and piston valves, and pilot kick type diaphragm and piston valves.



CONTENTS

Series variation	220
Coil selection guide	222
▲ Safety precautions	226

Pilot operated 2 port solenoid valve

Piston structure

● AP11/12	NC (normally closed) type / NO (normally open) type	228
● AP21/22	NC (normally closed) type / NO (normally open) type	238

Diaphragm structure

● AD11/12	NC (normally closed) type / NO (normally open) type	248
● AD21/22	NC (normally closed) type / NO (normally open) type	258

Pilot kick type 2 port solenoid valve

Piston structure

● APK11	NC (normally closed) type	268
● APK21	NC (normally closed) type	276

Diaphragm structure

● ADK11/12	NC (normally closed) type / NO (normally open) type	282
● APK21	NC (normally closed) type	294



Electronic Catalog file list	300
------------------------------	-----

▲ Always read the precautions in the Introduction and page 226 before starting use.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVB/
CVSE

CPE/
CPD

Medical
analysis





Custom
order

Custom
order

General purpose valve
Pilot operated/Pilot kick type 2 port solenoid valve

Series variation

General purpose pilot operated 2 port solenoid valve

No. of port	Model	Structure	Actuation	Working fluid							
				Air	Low vacuum (1.33 x 10 ³ Pa (abs))	Water	Kerosene	Oil (50 mm ² /s or less)	Hot water	Steam	
2 port		AP11 *1	Pilot operated (Piston structure)	NC (normally closed) type	●		●	●	●		●
		AP12 *1		NO (normally open) type	●		●	●	●		●
		AP21		NC (normally closed) type	●		●	●	●		●
		AP22		NO (normally open) type	●		●	●	●		●
		AD11 *1	Pilot operated (Diaphragm structure)	NC (normally closed) type	●		●	●	●		
		AD12 *1		NO (normally open) type	●		●	●	●		
		AD21		NC (normally closed) type	●		●	●	●		
		AD22		NO (normally open) type	●		●	●	●		
		APK11	Pilot kick type (Piston kick drive)	NC (normally closed) type	●	●	●	●	●*2		●
		APK21		NC (normally closed) type	●	●	●	●	●*2		●
		ADK11	Pilot kick type (Diaphragm structure)	NC (normally closed) type	●	●	●	●	●	●	
		ADK12		NO (normally open) type	●	●	●	●	●	●	
ADK21		NC (normally closed) type		●	●	●	●	●			

*2: 20 mm²/s or less for APK11/12 Series.

	Port size											Page
	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 1/4	32 flange	Rc1 1/2	40 flange	Rc2	50 flange	
	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}							228
	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}							228
						●	●	●	●	●	●	238
						●	●	●	●	●	●	238
	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*4}							248
			● ^{*3}	● ^{*3}	● ^{*4}							248
						●	●	●	●	●	●	258
						●	●	●	●	●	●	258
	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}							268
						●	●	●	●	●	●	276
	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}	● ^{*3}							282
			● ^{*3}	● ^{*3}	● ^{*3}							282
						●	●	●	●	●	●	294

*3: Refer to each How to order column for the thread types.

Refer to page 222 for details on the coil system.

HNB/G
 USB/G
 FAB/G
 FGB/G
 FVB
 FWB/G
 FHB
 FLB
 AB
 AG
 AP/
 AD
 APK/
 ADK
 For
 dry air
 Explosion
 proof
 HVB/
 HVL
 SAB/
 SVB
 NP/NAP/
 NVP
 CHB/G
 MXB/G
 Other G.P.
 systems
 PD/FAD/
 PJ
 CVE/
 CVSE
 CPE/
 CPD
 Medical
 analysis
 Custom
 order












General purpose valve
 Pilot operated/Pilot kick type 2 port solenoid valve

Coil selection guide

● Coil housing types and selection guide

A wide variety is available to match applications.

Refer to the structure and features to select the optimum model.

AP/AD*		Appearance				
Coil variations	Heat proof class B mold	<ul style="list-style-type: none"> ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP61 or equivalent ● Outdoor use not available 	Grommet lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm 		2C 6C	
		<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP61 or equivalent ● Outdoor use not available 	DIN terminal box <ul style="list-style-type: none"> ● Easy wiring and maintenance ● Reliable electric protection (ground terminal) ● Light available (optional - 100, 200 VAC and 24 VDC only) 		2E 2G 2H 6E 6G 6H	
		<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Conduit (CTC19) for direct conduit wiring can be mounted 		3A	
		<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC / 24, 100 VDC only) 		3M 3N	
		<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC / 24, 100 VDC only) 		3I 3J	
		<ul style="list-style-type: none"> ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● High temperature fluid and high ambient temperature available ● Outdoor use not available ● Protection property symbols: IP00 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Conduit (CTC19) for direct conduit wiring can be mounted 		4A	
	Open frame type	Heat proof class B taped	<ul style="list-style-type: none"> ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● High temperature fluid and high ambient temperature available ● Outdoor use not available ● Protection property symbols: IP00 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 		4M 4N
			<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Perfect for places where beat can be a problem ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Conduit (CTC19) for direct conduit wiring can be mounted 		5A
		<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Perfect for places where beat can be a problem ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 		5M 5N	
		<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Perfect for places where beat can be a problem ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 		5I 5J	
		<ul style="list-style-type: none"> ● Use a conduit (CTC19 or G1/2) when using direct conduit wiring for the open frame lead wire. 	Conduit <ul style="list-style-type: none"> ● Use a conduit (CTC19 or G1/2) when using direct conduit wiring for the open frame lead wire. 		G H	

● Repair parts table per coil option

Coil option symbol	Voltage	Repair parts			
		Plunger assembly	Core assembly	Coil assembly	Actuator assembly *1
0 or 2C	AC	○	○	○	○
6C *2	DC	—	—	—	○
2E 2G 2H	AC	○	○	○	○
2E 2G 2H	DC	○	○	○	○
6E 6G 6H *2	DC	—	—	—	○
3A	AC	○	○	○	○
	DC		○	○	○
3M 3N	AC	○	○	○	○
	DC		○	○	○
3I 3J	AC	○	○	○	○
	DC		○	○	○
4A	AC	○	○	○	○
4M 4N	AC	○	○	○	○
5A	AC	○	○	○	○
5M 5N	AC	○	○	○	○
5I 5J	AC	○	○	○	○

*1: The actuator assembly includes the coil assembly, core assembly and plunger assembly.

*2: As 6C, 6E, 6G and 6H are dedicated parts, they are provided as part of the actuator assembly.

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order












General purpose valve
Pilot operated/Pilot kick type 2 port solenoid valve

Coil selection guide

● Coil housing types and selection guide








Wide coil variation is available.

Refer to the structure and features to select the optimum model.

APK11/ADK1*		Appearance			
Coil variations	Heat proof class B mold	<ul style="list-style-type: none"> ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP61 or equivalent ● Outdoor use not available 	Grommet lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm 	 2C	
	Heat proof class B mold	<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP61 or equivalent ● Outdoor use not available 	DIN terminal box <ul style="list-style-type: none"> ● Easy wiring and maintenance ● Reliable electric protection (ground terminal) ● Light available (optional - 100, 200 VAC and 24 VDC only) 	 2E 2G 2H	
	Heat proof class B mold	<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Conduit (CTC19) for direct conduit wiring can be mounted 	 3A	
	Heat proof class B mold	<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC / 24, 100 VDC only) 	 3M 3N	
	Heat proof class B mold	<ul style="list-style-type: none"> ● DC and AC (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC / 24, 100 VDC only) 	 3J 3I *1	
	Open frame type	Heat proof class H tapped	<ul style="list-style-type: none"> ● AC dedicated (50/60 Hz common) ● Heat proof temperature 180°C ● High temperature fluid and high ambient temperature available ● Outdoor use not available ● Protection property symbols: IP00 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Conduit (CTC19) for direct conduit wiring can be mounted 	 4A
		Heat proof class B mold with diode	<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Perfect for places where heat can be a problem ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 	 4M 4N
		Heat proof class B mold with diode	<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Perfect for places where heat can be a problem ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Conduit (CTC19) for direct conduit wiring can be mounted 	 5A
		Heat proof class B mold with diode	<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Perfect for places where heat can be a problem ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 	 5M 5N
		Heat proof class B mold with diode	<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Perfect for places where heat can be a problem ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 	 5I 5J *1
Conduit		<ul style="list-style-type: none"> ● Use a conduit (CTC19 or G1/2) when using direct conduit wiring for the open frame lead wire. 	 G H		

1: Only ADK1 is supported.

APK21/ADK21

Open frame type		Appearance		
Open frame type	Heat proof class B mold	<ul style="list-style-type: none"> ● DC and AC ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Direct conduit wiring thread CTC19 integrated 	 3A
	Heat proof class B mold	<ul style="list-style-type: none"> ● DC and AC ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC / 24, 100 VDC only) 	 3M 3N
	Heat proof class H taped	<ul style="list-style-type: none"> ● AC dedicated ● Heat proof temperature 180°C ● High temperature fluid and high ambient temperature available ● Protection property symbols: IP00 ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Direct conduit wiring thread CTC19 integrated 	 4A
			HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 	 4M 4N
	Heat proof class B mold with diode	<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP65 or equivalent ● Perfect for places where heat can be a problem ● Outdoor use not available 	Lead wire <ul style="list-style-type: none"> ● Lead wire length 300 mm ● Direct conduit wiring thread CTC19 integrated 	 5A
	Heat proof class B mold with diode	<ul style="list-style-type: none"> ● A diode is mounted on the coil section for direct-current conversion (AC-DC conversion) ● AC dedicated (50/60 Hz common) ● Heat proof temperature 130°C ● Protection property symbols: IP21 or equivalent ● Perfect for places where heat can be a problem ● Outdoor use not available 	HP terminal box <ul style="list-style-type: none"> ● Easy wiring ● Light available (optional - 100, 200 VAC only) 	 5M 5N
			Conduit <ul style="list-style-type: none"> ● Use a conduit (G1/2) when using direct conduit wiring for the open frame lead wire. 	 H

- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- For dry air
- Explosion proof
- HVB/HVL
- SAB/SVB
- NP/NAP/NVP
- CHB/G
- MXB/G
- Other G.P. systems
- PD/FAD/PJ
- CVE/CVSE
- CPE/CPD
- Medical analysis
- Custom order

General purpose valve
Pilot operated/Pilot kick type 2 port solenoid valve



Safety precautions

Always read this section before starting use.

Pilot operated 2 port solenoid valve (AP/AD) and pilot kick type 2 port solenoid valve (APK/ADK)

Design & Selection

WARNING

1 Working fluid

- (1) When using this valve for dry air or inert gas, the life can be shortened considerably due to wear. Use a valve for dry air.
- (2) This valve cannot be used for maintaining the vacuum.

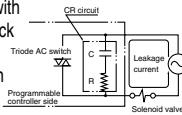
CAUTION

1 Fluid viscosity

The fluid viscosity must be 50 mm²/s or less. Malfunctions could occur if the viscosity is higher than 50 mm²/s. (This value is 20 mm²/s or less for the APK Series.)

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.



Series no.	Voltage		AC diode		DC	
	100 V	200 V	100 V	200 V	12 V	24 V
AP, AD	6 mA or less	3 mA or less	2 mA or less	1 mA or less	2 mA or less	1 mA or less
APK, ADK	6 mA or less	3 mA or less	2 mA or less	1 mA or less	2 mA or less	1 mA or less

Installation, Piping & Wiring

CAUTION

1 Installation

- (1) As a general rule, the valve must be installed vertically with the coil facing upward.

2 Piping

- (1) If the pipe vibrates when the solenoid valve is opened and closed, securely fix the piping.
- (2) When passing steam, steam generated from a boiler will contain a large amount of drainage. Always install a drain trap.
- (3) When passing steam, water replenished to the boiler will contain matters such as "calcium salt" and "magnesium salt". These matters will react with oxygen and carbon oxide causing scales and sludge, so always install a "water softener" and a filter for steam.
- (4) When the regulator and solenoid valve are directly coupled, the parts could mutually vibrate causing resonance and chattering.
- (5) If the piping cross-section area on the fluid inlet is reduced, the operation may become unstable due to a differential pressure fault during valve operation. The piping on the fluid inlet must have a size that matches the valve port size.

3 Wiring

- (1) Refer to page 53 in the Introduction for details on connecting the terminal box.

When Using

CAUTION

1 Instantaneous leakage

With the pilot operated type or pilot kick type 2 port valve, if sudden pressure is applied when the pump starts while the valve is closed, the valve may open for an instant causing fluid to leak. Caution is required during use.

2 Operation

Do not apply back pressure. The valve could malfunction.

3 Water hammer

If water hammering occurs causing a problem, consider using the CKD "WHL type" or "RSV type" solenoid valve or a motor valve.

4 Manual operation

Always observe the following points when using a manual override.

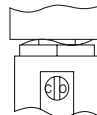
<For NO (normally open) type>

Opening: Insert a flat-tip screwdriver into the slit on the manual shaft, and turn it approx. 120° to the right or left. The plunger will rise up, and the valve will open.

The open state is held even when the screwdriver is removed.

Always return the valve to the original position after use.

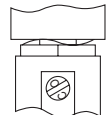
Closing: Turn the manual shaft from the open position to the vertical position. The plunger will lower and the valve will close. (Refer to the following drawings.)



Valve closed



Valve opened



Valve opened

<For NO (normally open) type>

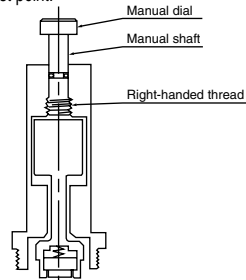
(1) Closing the valve with manual operations

The manual shaft is threaded, so hold the manual dial and rotate the shaft clockwise.

When the manual dial has been rotated downward 5 to 6 mm and no longer rotates, the solenoid valve will switch to closing operation.

(2) Resetting (when not using manual override)

Always rotate the manual dial counterclockwise and return it to the highest point.



Maintenance

CAUTION

1 Thermal insulation cover

When piping for steam or hot water, etc., use an insulating cover structure that can be disassembled for maintenance purposes. Avoid placing an insulating cover on the entire solenoid valve or on the coil section. The coil could burn.

2 Tightening torque

When disassembling or assembling, tighten the body bolt, core assembly and nut with the following tightening torques.

		Body bolt tightening torque	Core assembly tightening torque	Nut tightening torque
AP ¹¹ ₁₂	8A	3 to 4 N·m	30 to 45 N·m (45 to 60 N·m for (APK11-15A to 25A))	8 to 16 N·m
AD ¹¹ ₁₂	10A			
APK11	15A	5 to 7 N·m		
ADK ¹¹ ₁₂	20A			
	25A	9 to 12 N·m		
AP ²¹ ₂₂	32 ^A _F	18 to 28 N·m	80 to 120 N·m	
AD ²¹ ₂₂	40 ^A _F			
	50 ^A _F			
APK21	32 ^A _F			
ADK21	40 ^A _F			
	50 ^A _F			

Working Environment

CAUTION

IP65 (IEC60529 (IEC529:1989-11)) standards are applied to the test. Avoid use in conditions where water or cutting oil directly contacts the valve.

Explanation of protection property symbols and examination method of IP65

●Protective structure

Note: IP-65 is a standard as followings.

■IEC (International Electrotechnical Commission) standards

(IEC60529 (IEC529:1989-11))

IP- * * □ □

Protection property symbols (International Protection)

1st characteristic number (protection grade for foreign solid)

Grade	Degree of protection
6	Dust proof type Powder and dust do not enter inside.

2nd characteristic number (protection grade for entry of water)

Grade	Degree of protection	Overview of test method (fresh water is used)
5	Protection for jet No harmful effects occur even when water is sprayed with nozzles from all directions.	Using the following test device, spray water for 1 minute per 1 m ² of test sample (exterior) surface area from all directions, for a total of 3 minutes or more. 2.5 to 3 m 12.5 L/min. Spray nozzle inner diameter: φ6.3 mm

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVE/
CVSE

CPE/
CPD

Medical
analysis

Custom
order

General purpose valve
Photo operated/Pilot kick type 2 port solenoid valve

2, 3 port solenoid valve for dry air (general purpose valve)

Electronic Catalog file list

2, 3 port solenoid valve for dry air (general purpose valve)

Direct acting 2 port AB_Z (pages 316 to 317)

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

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
AB31-Z	AB_Z	ab31_z	CKD-AB31-Z
AB31-Z-K/H		ab31_z_k_h	CKD-AB31-Z-K/H
AB31-Z-A		ab31_z_a	CKD-AB31-Z-A
AB31-Z-SUS		ab31_z_sus	CKD-AB31-Z-SUS
AB41-02-Z		ab41_02_z	CKD-AB41-02-Z
AB41-02-7-Z		ab41_02_7_z	CKD-AB41-02-7-Z
AB41-03/04-Z		ab41_03_04_z	CKD-AB41-03/04-Z
AB41-Z-K/H		ab41_z_k_h	CKD-AB41-Z-K/H
AB41-02-Z-A		ab41_02_z_a	CKD-AB41-02-Z-A
AB41-02-7-Z-A		ab41_02_7_z_a	CKD-AB41-02-7-Z-A
AB41-02-Z-SUS		ab41_02_z_sus	CKD-AB41-02-Z-SUS
AB41-02-7-Z-SUS		ab41_02_7_z_sus	CKD-AB41-02-7-Z-SUS
AB41-03/04-Z-SUS		ab41_03_04_z_sus	CKD-AB41-03/04-Z-SUS
GAB3-Z		gab3_z	CKD-GAB3-Z
GAB3-Z-A		gab3_z_a	CKD-GAB3-Z-A
Mounting plate, cable gland, conduit		ab_ag_z_op	CKD-AB/AG-Z-OP

Direct acting 3 port AG_Z (pages 326 to 327)

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
AG3-Z	AG_Z	ag3_z	CKD-AG3-Z
AG3-Z-K/H		ag3_z_k_h	CKD-AG3-Z-K/H
AG3-Z-A		ag3_z_a	CKD-AG3-Z-A
AG3-Z-SUS		ag3_z_sus	CKD-AG3-Z-SUS
AG4-02-Z		ag4_02_z	CKD-AG4-02-Z
AG4-03-Z		ag4_03_z	CKD-AG4-03-Z
AG4-Z-K/H		ag4_z_k_h	CKD-AG4-Z-K/H
AG4-02-Z-A		ag4_02_z_a	CKD-AG4-02-Z-A
AG4-03-Z-A		ag4_03_z_a	CKD-AG4-03-Z-A
AG4-02-Z-SUS		ag4_02_z_sus	CKD-AG4-02-Z-SUS
AG4-03-Z-SUS		ag4_03_z_sus	CKD-AG4-03-Z-SUS
GAG3-Z		gag3_z	CKD-GAG3-Z
GAG3-Z-A		gag3_z_a	CKD-GAG3-Z-A
Mounting plate, cable gland, conduit		ab_ag_z_op	CKD-AB/AG-Z-OP

Explosion proof direct acting 2 port AB*E-Z (pages 342 to 343)

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
AB41E-02-Z	AB_E_Z	ab41e_02_z	CKD-AB41E-02-Z
AB41E-02-7-Z		ab41e_02_7_z	CKD-AB41E-02-7-Z
AB41E-02-Z-A		ab41e_02_z_a	CKD-AB41E-02-Z-A
AB41E-03-Z-A		ab41e_03_z_a	CKD-AB41E-03-Z-A
Accessory (mounting plate, manual mounting plate)		a_e_f	CKD-A*E-F

Explosion proof direct acting 3 port AG4*E-Z (pages 346 to 347)

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
AG4E-02-Z	AG_E_Z	ag4e_02_z	CKD-AG4E-02-Z
AG4E-03-Z		ag4e_03_z	CKD-AG4E-03-Z
AG4E-02-Z-A		ag4e_02_zva	CKD-AG4E-02-Z-A
AG4E-03-Z-A		ag4e_03_z_a	CKD-AG4E-03-Z-A
Accessory (mounting plate, manual mounting plate)		a_e_f	CKD-A*E-F

Pilot kick type 2 port ADK_Z (page 352)

Model no.	DXF		MICRO CADAM
	Folder name	Filename	Filename (GROUP: CAD, USER: STDLIB)
ADK11-8/10-Z	ADK_Z	adk11_8_10_z	CKD-ADK11-8/10-Z
ADK11-15-Z		adk11_15_z	CKD-ADK11-15-Z
ADK11-20-Z		adk11_20_z	CKD-ADK11-20-Z
ADK11-25-Z		adk11_25_z	CKD-ADK11-25-Z