

CKD

Fluid Control Components

2012

Technical Brochure

CKD Corporation

CC-1104A

Sensor unit

Medical

Pure water Chemical liquids



MAB



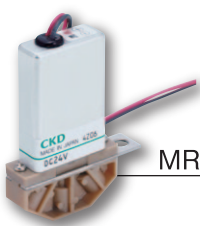
MYB



MEB



USB



MR10



HYN

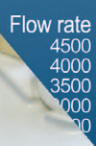
Water Air



PPX



WFK



Contributing to fluid control

Fluid control equipment is used in many industries. That is why CKD stays with the full valve of quality.



LAD

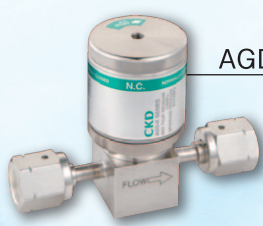
New



AMD



AVB



AGD-R

Semiconductor/liquid crystal

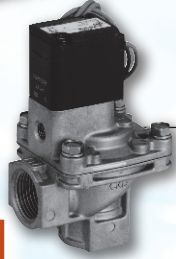
Chemical liquids Chemical gas



CVSE2



PJVB



PD3/PDV3

Dust collection/machining

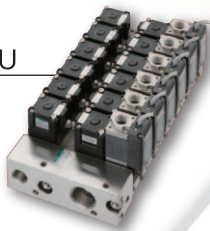
Dust Coolant





PFD

WXU



FSM2

General



AB

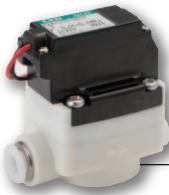


New

FWD



ADK



New

EXA



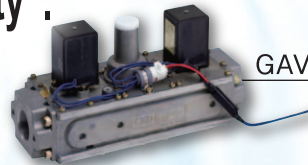
SAB



MXB

Control in any applications

used in all kinds of situations.
for "energy-saving", "high-efficiency" and "safety".



GAV

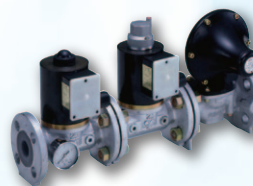


VNA/VLA

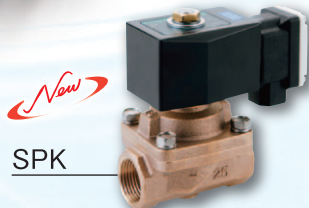


New

GHV



TAC-25



New
SPK



KZV3

Industrial furnace/boiler/burner



SAB*S/SVB*S



MSB



3-in-1 package (solenoid valve + governor + solenoid valve) realizes compact piping in double shutoff application.

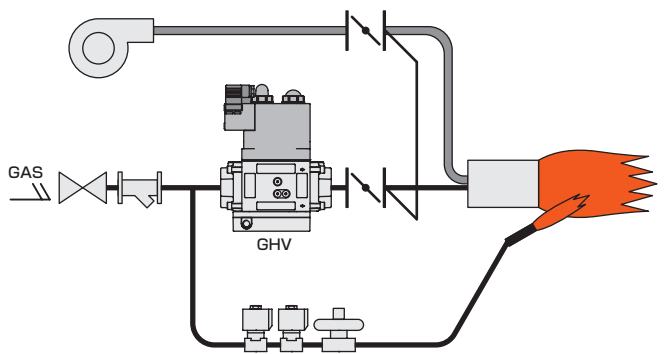
Main features

- **Space-saving integrated structure**
Two solenoid valves equipped with a governor function are integrated into a compact structure.
Face to face 1/3 (50 A, CKD comparison)
JIS B 8415 double shutoff is realized with one unit, reducing the space of the system or equipment.
- **Reduction of man-hour for wiring and piping**
(The solenoid valve is of a simultaneous energizing type.)
The integrated structure of double shutoff reduces the wiring and piping man-hour to that of one unit.
- **Available for medium pressures up to 50 kPa**
- **Ample variations**
 - Solenoid valve with integrated governor + solenoid valve
 - Solenoid valve + solenoid valve
 - Solenoid valve + solenoid valve (slow open)
- **Option**
With switch for confirming action
- **Easily changed port size**
The port size can be changed in the range of 20 A to 50 A by flange replacement.
- **Compliant with ISO23551-1 and ISO23551-2** **RoHS**

Main applications

- Gas boiler
- Industrial furnace
- Gas absorption water cooler/heater
- Drying furnace

System Example

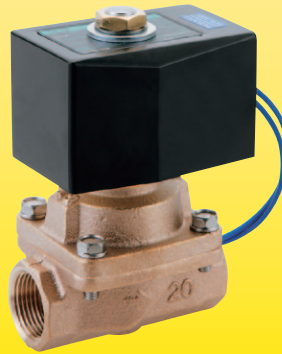


Descriptions	GHV-G				GHV-N				GHV-L			
	-D25	-D32	-D40	-D50	-D25	-D32	-D40	-D50	-D25	-D32	-D40	-D50
Working fluid	City gas/Natural gas/LPG											
Working primary pressure range kPa	0 to 50											
Pressure adjusting range kPa	0.4 to 2.0				-							
Flow rate <small>Natural gas specific gravity 0.65 P = 0.25 kPa</small> m ³ /h(ANR)	35	43.7	47.5	51	35	43.7	47.5	51	35	43.7	47.5	51
Voltage V	100VAC ^{+10%} / _{-15%} 200VAC ^{+10%} / _{-15%}											
Frequency Hz	50, 60 common											
Power consumption (apparent power) VA	80											
Ambient temperature °C	-15 to 70 (no freezing)						-15 to 60 (no freezing)					
Close operating time s	1.0 or less											
Cycle rate times/min	10 or less						1 or less					

* Refer to catalog No. CC-1079A for details.

Steam only
Long-lasting

New



Increased reliability! Proven 1 million cycle-life!!

SPK Series solenoid valve improves on the reliability of our conventional model APK Series' 30 years.

Features

- (1) 1 million cycle-life
- (2) Lower wattage coil
- (3) Improved external seal functionality
- (4) Mounted HP terminal box (optional)
- (5) Foreign matter-resistant structure

- (1) 1 million cycle-life
Greatly improved durability by mitigating shock during operation through altering the structure of the solenoid.
- (2) Contributes to energy-saving with lower power consumption (1/2 of our previous models)
Lowered coil power through improved efficiency, and optimization of the pilot valve structure for steam use.
- (3) Improved external seal functionality
Improved external seal functionality through the use of high temperature steam resistant PTFE square rings.
- (4) Easier maintenance
Greatly improved performance through the use of a high-maintainability HP terminal box (optional).
- (5) High resistance to scaling and dust
Incorporation of our proven specially-designed piston ring.

Descriptions	SPK11
Working fluid	Steam
Working pressure differential range MPa	0 to 1.0
Max. working pressure MPa	1
Pressure resistance (water) MPa	2
Fluid temperature °C	5 to 180
Ambient temperature °C	-10 to 60
Heat proof class	H

* Refer to catalog No. CC-1068A for details.

Energy efficiency and large flow rate

Flow

450 l/min or more

Estimating figure with $\phi 6$ push-in fittings Primary pressure: 0.5MPa
Secondary pressure: Release to atmospheric pressure

Power consumption

0.6W

New!!

Oil-prohibition type
Suitable for oil-restricted environment

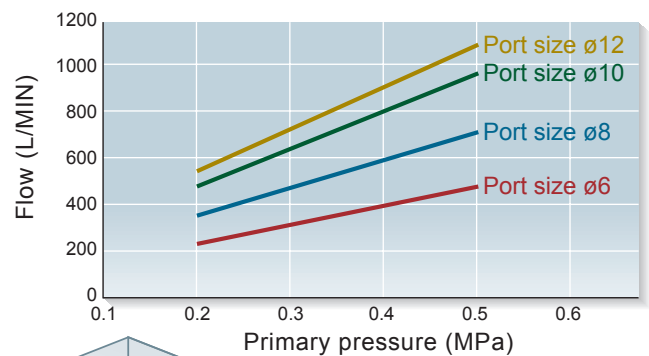


Energy efficiency and large flow rate

Realizing energy efficiency and large flow at once with a low wattage (0.6W) 3 way pilot valve. (Can be directly operated from PC)

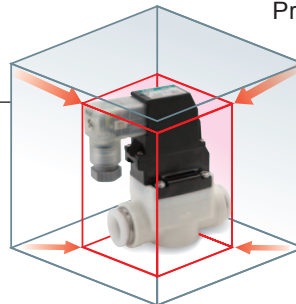
Contributes to space and energy efficiency

Secondary flow in the atmospheric pressure



Compact, light weight

Weight reduced by optimization of materials. Now, the volume has been reduced by 30%, weight by 70%.



Compared to CKD's conventional models

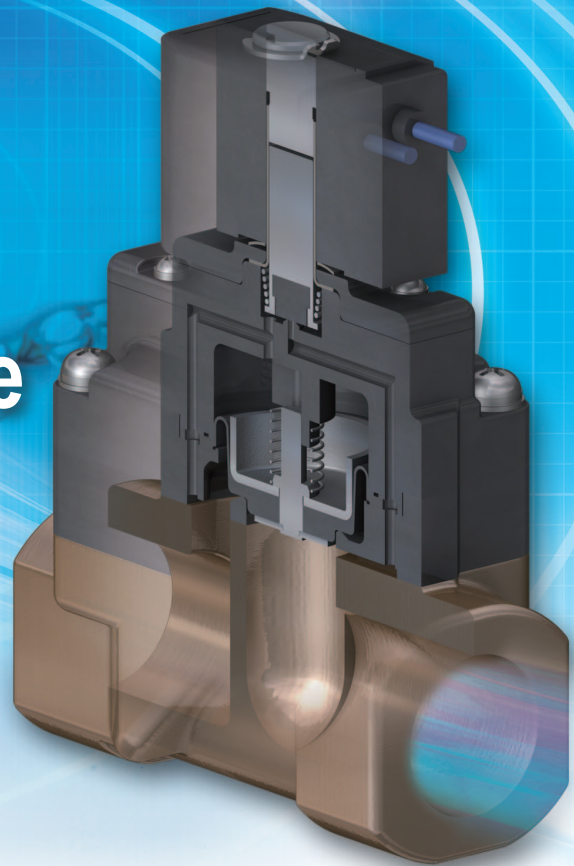
Up to **30%** smaller

Up to **70%** lighter

Descriptions	EXA-C6	EXA-C8	EXA-C10	EXA-C12
Working fluid	Compressed air			
Working pressure differential MPa	0.01 to 0.7 (external exhaust specification: 0.01 to 0.3)			
Max. working pressure MPa	0.7 (external exhaust specification: 0.3)			
Withstanding pressure (water) MPa	1.05			
Fluid temperature °C	0 to 55 (no freezing)			
Ambient temperature °C	-5 to 55			
Atmosphere	Place where the product does not contact water, and is free from corrosive or flammable gas.			
Valve structure	Pilot operated diaphragm structure			
Internal leakage cm ³ /min	2 or less			
External leakage cm ³ /min	2 or less			
Mounting attitude	Free			

* Refer to catalog No. CC-1007A for details.

Product lineup expanded to 25A! Eco-friendly CKD solenoid valve



Large flow rate

Specially formed diaphragm provided

Specially formed diaphragm enables handling of large flow despite its compact size

Cv flow factor 6.0 (15A)

Ecology

Low power consumption

Power consumption

Power consumption reduced to **4W!** (DC)

Reduced by
1/3
(CKD comparison)

Compact and lightweight

Product size

56 × 38 × 91mm (15A)

Reduced by
1/3
(CKD comparison)

Weight
390g (15A)

Reduced by
1/3
(CKD comparison)



Descriptions	FWD11-8A	FWD11-10A	FWD11-15A	FWD11-20A	FWD11-25A
Actuation	NC (normally closed)				
Working fluid	Water (other than sewage, agricultural water, liquid manure, antifreeze)				
Working pressure differential range MPa	0.02 to 0.7				
Max. working pressure MPa	0.7				
Pressure resistance (water) MPa	1.05				
Fluid temperature °C	5 to 60 (no freezing)				
Ambient temperature °C	-10 to 60 (no freezing of fluid)				
Atmosphere	Area without corrosive or explosive gases				
Valve structure	Pilot operated poppet structure diaphragm structure				
Valve seat leakage cm ³ /min	0 (water pressure)				
Installation attitude	Free				
Protection property	IPX5				
Port size	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1

* Refer to catalog No. CC-1057A for details.

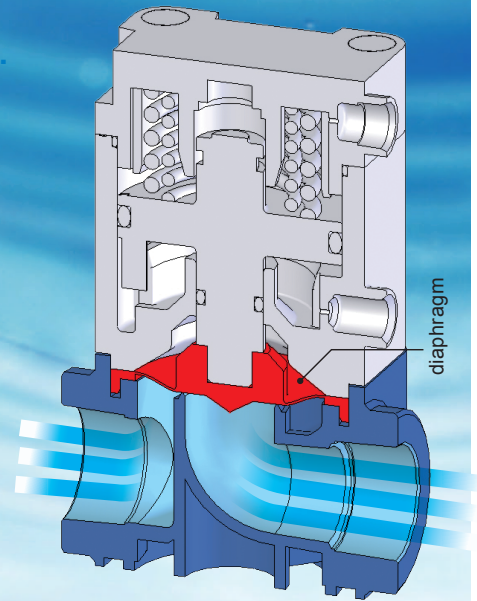
Isolated construction with diaphragm that has completely separate flow path and sliding sections.
Prevents entry of oil and foreign matter.
Diaphragm cylinder valve LAD/NAD series.

Sliding section is separate from flow path

Diaphragm completely separates cylinder and flow path sections.
Flow path is grease free since there is no sliding piston rod.

Handles various fluids

Handles many types of fluids from general fluids to nitrogen gas and deionized water.



LAD Series



Light weight

Weight reduction achieved with plastic (PPS) actuator.

With flow adjustment (Option)

Space saving achieved with integrated flow control.



NAD Series



Descriptions	LAD1	LAD2	LAD3
Actuation	NC (Normally closed)	NO (Normally open)	Double acting type
Working fluid	Water, pure water, air, N2 gas, non-corrosive and non-penetrable fluids		
Fluid temperature °C	5 to 90		
Withstanding pressure (water pressure) MPa	0.9		
Working pressure range (A → B) MPa	0 to 0.3		
Valve seat leakage cm ³ /min	0 (water pressure), 1 or less (air pressure)		
Back pressure MPa	0 to 0.1		
Ambient temperature °C	0 to 60		

Descriptions	NAD1-10	NAD2-10	NAD3-10
Actuation	NC (Normally closed)	NO (Normally open)	Double acting type
Working fluid	Air, inert gas, water, non-corrosive liquids		
Fluid viscosity mm ² /s	500 or less		
Working pressure range	0 to 0.5MPa (secondary pressure 0.4MPa or less)		
Pressure resistance (water) MPa	1.0		
Fluid temperature °C	-10 to 50 (no freezing)		
Ambient temperature °C	-10 to 50		

* Refer to catalog No. CC-1082A for details.