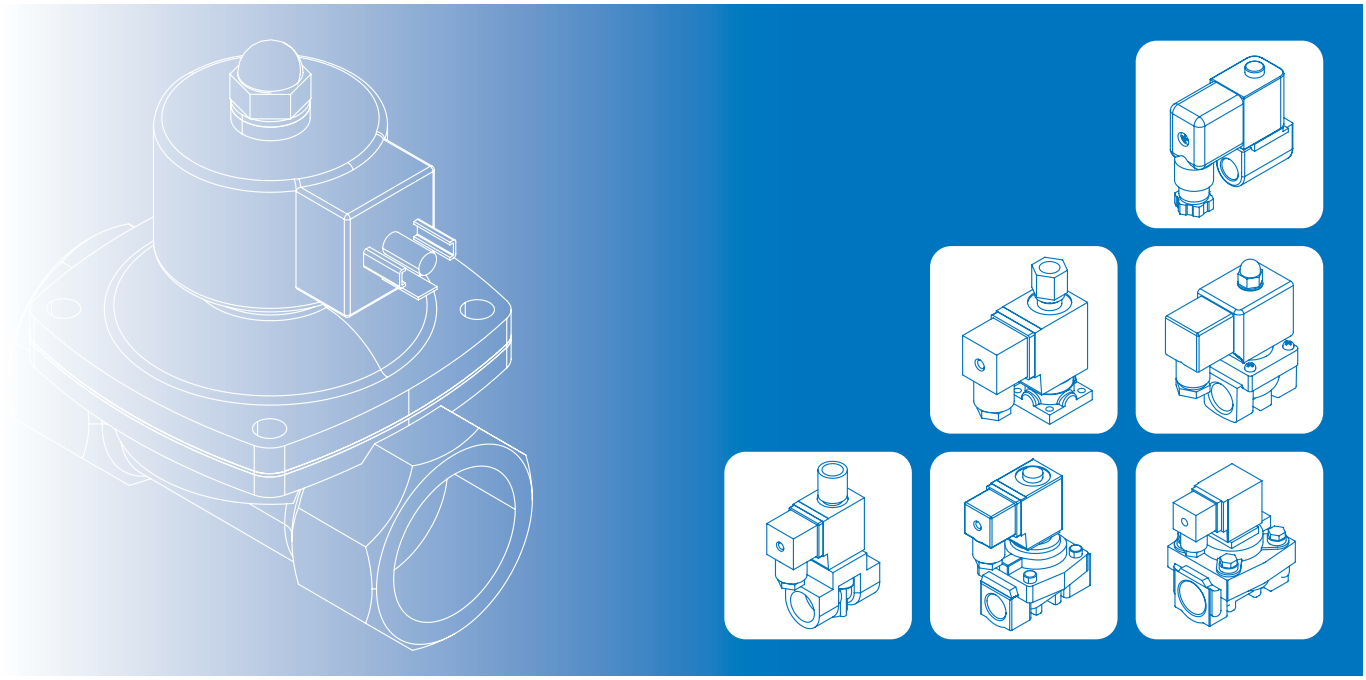
PROCESS VALVE



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Selector table

*Seal-code **N** NBR, **J** EPDM, **V** Viton, **T** Teflon, **R** RUBY, **Z** FFKM, **S** Silicon

	Model	Inside structure			N.C.	N.O.	Fluid							Material		Port size	CV
		Piston	Diaphragm	Plunger			Water / Air	Hot water	Steam	Light oil	Heavy oil	Gas	Vacuum	Body	Seal		
2/2 WAY	**MBS**			○	●		●			●		●	●	Brass	N,J,V,T,Z	M5,1/8,1/4	0.03~0.40
	MBD			○	●		●			●		●	●	Forged brass	N,V	1/4~1/2	0.14~0.95
	MCS			○	●		●			●		●	●	Forged brass	N,J,V,T,R,Z	1/4~3/4	0.10~1.30
	MED		○		●		●			●		●		Forged brass	N,J,V	1/4~1/2	1.1~2.2
	MEP			○	●		●							Forged brass	N,J,V	3/8,1/2	2.4
	MGA	○			●		●	●						Forged brass	N,J,V	3/8,1/2	1.9~2.6
	MGS	○			●		●	●	●					Forged brass	T	3/8,1/2	1.9~2.6
	MGD		○		●		●					●		Forged brass	N,J,V	3/8,2	2.0~31
	MJS			○	●		●			●		●	●	Brass	N,J,V	–	0.08~0.32
	MJR			○	●		●			●		●	●	Brass	N,J,V	–	0.10~0.42
	MPD		○		●		●							PA (Nylon)	N,J,V	3/8~1	1.6~11
	MPK		○		●		●							PA (Nylon)	N,J,V	3/8~1	1.6~11
	MRB			○	●	●	●			●		●	●	Brass	V	1/8,1/4	0.05~0.09
	MRC			○		●	●			●		●	●	Brass	N,J,V	1/8~3/8	0.10~0.31
	MUCL (*1)			○	●		●			●		●		S.S.#303	N,J,V,T,Z	1/8,1/4	0.03~0.27
	MUPH		○		●		Corrosive fluid							PVC / PTEF	T	1/4~3/4	0.11~2.5
	MUSC			○	●		●			●		●	●	S.S.#303	N,J,V,T,R,Z	1/8~3/8	0.03~1.30
	MUSD		○		●		●			●		●		SCS14	N,J,V	1/2	2.0
	MUSK														N,J,V	1/2	2.0
	MUSL (*1)		○		●		●			●		●		SCS14	N,J,V	1/2	2.0
	MWA	○			●		●			●		●		Forged brass	N	3/8~2	3.0~31
	MWH	○			●						●			Forged brass	V	3/8~2	3.0~31
	MWS	○			●		●	●	●					Forged brass	T	3/8~2	3.0~31
	MWD		○		●		●					●		Forged brass	N,J,V	3/8~2	3.0~31
	MWK		○		●		●			●		●	●	Forged brass	N,J,V	3/8~2	3.0~31
	MYA	○			●		●	●						Forged brass	N,J,V	3/8,1/2	1.9~2.6
	MYS	○			●		●	●	●					Forged brass	T	3/8,1/2	1.9~2.6
	MZS			○	●		●		●	●		●		Forged brass	N,J,V,T,R,Z	1/8~1/2	0.12~0.83
	MUD			○	●	●	●			●		●	●	Brass	N,J,V,S	1/8~1/2	0.18~0.79
	MUS-6~10			○	●				●	●				Brass	T	1/8~3/8	0.23
	MUDC		○		●		●		Hydrochloric acid, sulfuric acid					PVC / PTEF	T	1/4~1	0.28~4
	MSUS	○		○	●	●	●		●	●		●	●	S.S.#304	N,J,V,T,S	1/8~2	0.23~48
	MUAO	○			●		●				●			Brass	N	1/4~1/2	2.5
	MUW		○		●		●			●				Forged brass	N,J,V,S	3/8~2	4.5~48
	MUW-NO		○			●	●			●		●	●	Forged brass	N,J,V,S	3/8~2	4.5~48
	MUW-F		○		●	●	●			●				FC-20	N,J,V,S	1 1/4~4	22~180
	MUG		○		●							●		Forged brass	N	3/8~2	4.5~48
	MUV		○		●								●	Forged brass	N	3/8~2	4.5~48
	MUAW	○			●		●							Cast bronze	N	1/2~2	4~48
	MUS	○			●				●	●	●			Cast bronze	T	1/2~2	4~48
	MUS-F	○			●		●		●	●				FC-20	J,V,T,S	1 1/4~4	22~175
	MSUW		○		●	●	●			●		●	●	S.S.#304	N,J,V,S	1/2~2	4.5~48
	MSUW-F		○		●		●			●			●	S.S.#304	N,J,V,S	1/2~2	4.5~48
	MUPS	○			●		●		●	●				Cast bronze	J,V,T,S	1/2~1	4~12
	MXAD			○	●		●			●		●	●	Forged brass	N,J,V,S	1/8~1/2	0.26~0.97
	MXAD-AF		○		●		●			●		●	●	Forged brass	N,J,V,S	3/8~2	4.5~48
	MXCD		○		●		●			●				Forged brass	N,V	1/4~1/2	2.4~2.7
	MXPV		○		●		●			●				Forged brass	N,J,V,S	3/8~3/4	4.5~9.3

	Model	Inside structure			N.C.	N.O.	Fluid							Material		Port size	CV
		Piston	Diaphragm	Plunger			Water / Air	Hot water	Steam	Light oil	Heavy oil	Gas	Vacuum	Body	Seal		
3/2 WAY	**MCT**			○	●		●			●		●	●	Forged brass	N,J,V,Z	1/4~3/4	0.02~0.65
	MJT			○	●		●			●		●	●	Brass	N,J,V	–	0.10~0.42
	MRJ			○		●	●			●		●	●	Brass	N,J,V	–	0.10~0.31
	MUST			○	●		●			●		●	●	S.S.#303	N,J,V,Z	1/8~3/8	0.03~0.65
	MUT			○	●	●	●			●	●	●	●	Forged brass	V	1/8~3/8	–
	MZT			○	●		●			●		●	●	Forged brass	N,J,V,Z	1/8~1/2	0.05~0.65
	MUA			○	●		●						●	Forged brass	N,V	1/4,3/8	0.1~0.12

*1. MUCL, MUSL are Latch valve.

Seal material

Code	Generic Name	Names	Features
N	NBR -5ºC~80ºC	Nitrile rubber	* Oil resistance and abrasion resistance, often apply to seal materials, particularly resistant to mineral oil for the best. * Not suitable for using in polar solvents, such as ketones, ozone, nitro hydrocarbons, MEK and chloroform.
T	PTFE (Teflon) -5ºC~185ºC	Polytetrafluoroethylene	* Able to withstand all the strong acid(including aqua regia), strong oxidants, reducing agents and various organic solvents except alkali metal fluoride, sodium hydroxide medium. * It is better than rubber almost in all physical properties except elasticity and it has the characteristics of a low coefficient friction.
J	EPDM -5ºC~130ºC	Ethylene propylene rubber	* Resistance to polar solvents (alcohols, ketones, ethylene glycol) of hydrochloric acid. With good ozone resistance, excellent water resistance and chemical resistance. * Not recommended for aromatic hydrogen.
V	VITON (FKM) (FPM) -5ºC~130ºC	Fluorocarbon rubber	* Premium chemical resistance and higher price are the two characteristics, can be resistant to most oils and solvents * Not recommended for ketones, esters and mixtures containing nitrate
R	RUBY -10ºC~200ºC	–	* The artificial ruby sheet is used as a seal to block the orifice, which is resistant to various corrosive and volatile fluids such as aromatic hydrocarbon fluids. But a slight gas leak is caused by the hardness of the ruby.
Z	FFKM -10ºC~290ºC	Perfluoroelastomer	* Excellent air tightness and optimum temperature and chemical resistance in all elastomer materials. * Resistant to corrosion from various chemical products such as strong acids, alkalis, ethers, ketones, esters, lubricants, fats, aromatics, nitrogenous compounds, hydrocarbons, alcohols, aldehydes, oils, vapors, amines, etc.
S	Silicone -5ºC~130ºC	Silicone rubber	* Excellent ozone ,oxides corrosion, and neutral solvent resistance * Not recommended for most concentrated solvents, oils, concentrated acid and dilution sodium hydroxide

* Please follow the recommended solenoid valve temperatures.

◎: Outstanding ○: Resistant, unless otherwise specified △: Have no resistance ,Unless otherwise specified ×: Have no resistance

Oil, solvents		Rubber types					
		NBR	PTFE	EPDM	VITON	FFKM	Silicone
Engine oil	SAE#30	◎	◎	×	◎	–	◎
	SAE 10w-#30	◎	◎	×	◎	–	○
Gear oil	For Vehicles	◎	◎	×	○	–	△
	Industrial second type (polarity) synthesis	◎	◎	△	○	–	△
Brake oil	DOT3(ethanol)	△	◎	○	×	–	○
	DOT5(ethanol)	△	◎	○	×	–	○
	DOT5(Silicon-based)	◎	◎	×	◎	–	×
Machine oil (the 2nd axis lubricants)		○	◎	×	◎	–	×
Hydraulic operating oil (mineral oil-based)		◎	◎	×	◎	–	△
Flame retardant hydraulic oil	Phosphate ester	×	◎	×	△	–	◎
	Water + diethanol Department	○	◎	×	△	–	△
Consumers cut oil		△	◎	×	◎	–	◎
Lubricating oil	Mineral oil-based	◎	◎	×	◎	◎	◎
	Silicon-based	◎	◎	○	◎	◎	×
	Fluorine	◎	◎	×	×	◎	◎
Refrigerant	R12+Paraffinic	△	◎	×	×	–	×
	R134a+Glycol	△	◎	◎	×	–	×
Gasoline, diesel oil		△	◎	×	◎	◎	×
Light oil, kerosene		△	◎	×	◎	◎	×
Heavy oil		△	◎	×	◎	–	×
Antifreeze (in ene glycol system)		○	◎	◎	×	–	△
Warm water		◎	◎	◎	○	◎	◎
Sea water		△	◎	◎	○	–	×
Hot water, Steam (100ºC)		×	◎	◎	△	○	○
Hydrochloric acid solution		△	◎	◎	○	–	○
30% Sulfuric acid solution		×	◎	○	△	–	×
10%Nitric acid solution		×	◎	○	△	–	×
40% Sodium hydroxide solution		△	◎	◎	×	–	×
Benzene		×	◎	×	×	◎	×
Alcohol		△	◎	◎	○	◎	○
Butanone		×	◎	×	×	◎	△

◎: Outstanding ○: Resistant, unless otherwise specified △: Have no resistance ,Unless otherwise specified ×: Have no resistance

Oil, solvents		Rubber types					
		NBR	PTFE	EPDM	VITON	FFKM	Silicone
Organic acids	Acetic acid	△	◎	◎	○	◎	◎
Inorganic acid	Hydrochloric acid solution	△	◎	◎	○	◎	◎
	Sulfuric acid solution	–	◎	◎	◎	◎	○
	Nitric acid solution	×	◎	○	△	◎	○
Alkalies	Sodium hydroxide	△	◎	◎	○	◎	○
	Ammonium hydroxide	△	◎	◎	○	◎	◎
Salt	Sodium chloride	△	◎	◎	◎	–	◎
	Sodium carbonate	△	◎	◎	○	–	◎
Oxidizing agent	Sydrogen peroxide	△	◎	○	◎	◎	◎
	Sodium hypochlorite	×	◎	○	◎	◎	○
Aliphatic carbohydrates	Trimethylpentane	△	◎	×	◎	◎	×
Aromatic carbohydrate	Methylbenzene	△	◎	×	◎	◎	△
Chlorination of carbohydrates	Trichloro ethylene	△	◎	×	◎	–	×
Alcohols	Methyl alcohol	△	◎	◎	△	◎	◎
	Ethyl alcohol	△	◎	◎	◎	◎	◎
Ethers	Diethyl ether	△	◎	△	×	◎	×
Esters	Ethyl acetate	×	◎	○	△	–	×
Ketone	Chloromethyl ethyl ketone	×	◎	◎	×	◎	×
Aldehydes	Furfuraldehyde	△	◎	◎	×	◎	×
Amine	Triethanolamine	△	◎	◎	×	–	×
Sulfur	Carbon disulfide	△	◎	×	◎	–	–

MBS series

2/2 WAY N.C. PLUNGER TYPE **SOLENOID VALVE**

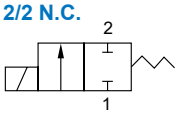
Selection table

Seal material

Caution for safety
(Read before installing)







Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.
- Ambient temp.: -15~50°C
- Voltage tolerance: ±8%
- Installing position is free. (You'd better put the coil upright)

Power consumption

Coil power	2	3	2E
AC (VA)	6.9	8.0	5.3
DC (W)	6.0	6.8	5.2

Dimensions

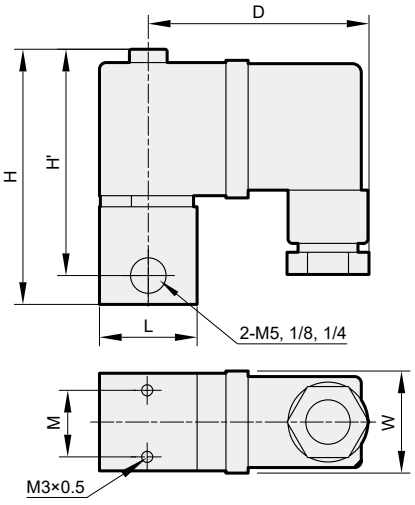
Model		MBS			
Code Dimension (mm)		**01**	**03**	**04**	**06**
D	#2	51	51	51	51
	#3	54	54	54	54
	#2E	48	48	48	48
H		54	58	60	60
H'		49	51	51	51
L		22	22	35	35
M		15	15	11	11
W	#2	22	22	22	22
	#3, 2E	30	30	30	30
N.W. (kg)	#2	0.16	0.17	0.20	0.18
	#3	0.21	0.22	0.25	0.23
	#2E	0.48	0.49	0.52	0.50

Order example

MBS — 03 — 2 — N — 2 — D — AC110 — □

- **MODEL**
- **CODE**: **01**: M5, **03**: 1/8, **04**: 1/8, **06**: 1/4
- **FIG.**: **1**, **2**, **3**, **4**, **5**, **6**, **7**
- **SEAL MAT'L**: **N**: NBR, **J**: EPDM, **V**: Viton, **T**: Teflon (*1), **Z**: FFKM
- **COIL**: **2**: #2, **3**: Bigger, **2E**: Explosion-Proof (*2)
- **PLUG**: Blank: DIN, **D**: LED, **G**: 1/2" NPT, **Y**: 2 wires (only for coil #2)
- **VOLTAGE**: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- **PORT THREAD**: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

*1. When the seal material is (**T**) Teflon, the valve has slight leakage.
*2. Explosion-Proof (**2E**) coil with LED (**D**) plug is not applicable.



Specification

Model **MBS**: Brass body, mini 2/2 way N.C. for air, gas, water, vacuum, light oil (50cst down) etc.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp.°C										Max. O.P.D bar (Min. 0 bar)						CV	VAC. torr
					Coil 2, 2E					Coil 3					Coil 2		Coil 3		Coil 2E			
					N	J	V	T	Z	N	J	V	T	Z	AC	DC	AC	DC	AC	DC		
01(M5) 03(1/8) 04(1/8) 06(1/4)	1	N J V T Z	2 3 2E	1.0	-5 ~ 80	-10 ~ 80	-20 ~ 80	-5 ~ 80	-10 ~ 145						30						0.03	10^{-2}
	2			1.3											30	24	30	30	30	30	0.05	
	3			1.6											30	20	30	30	30	24	0.09	
	4			2.0											16	11	22	20	17	14	0.14	
	5			2.5											10	7	12	10	10	8	0.18	10^{-1}
	6			3.0											6	4	8	8	7	5	0.27	
	7*1			5.0											1	0.2	2	0.5	1	0.1	0.40	10

*1. Only for code 01(M5), 03(1/8).
*2. Connect air source to outlet port for vacuum application.

MBD series

2/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)



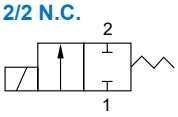
Specification

- IP65 100% ED coil
- PTB approval EExm II T4 coil

Dimensions

Model		MBD			
Code / Dimension (mm)		6	9	10	15
L		36		46	
H		31		37	
W		69		91	
C		49		67	
D		21		28	
E		8.5		7	
F		30		41	
G		11			
N.W. (kg)	Coil 2	0.26	0.25	–	
	Coil 3	0.30	0.29	–	
	Coil 2E	0.66	0.65	–	
	Coil 4	–		0.50	0.49
	Coil 5	–		0.59	0.58
	Coil 3E	–		0.84	0.83

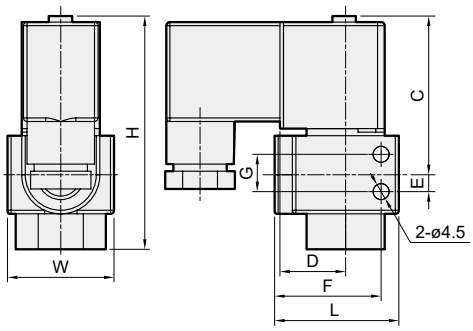
2/2 N.C.



Order example

MBD – 09 – 2 – V – 3 – D – AC110 – □

- **MODEL**
- **CODE**: **06**: 1/4; **09**: 3/8; **10**: 3/8; **15**: 1/2
- **FIG.**: **1**, **2**, **3**, **4**, **5**
- **SEAL MAT'L**: **N**: NBR; **V**: Viton
- **COIL**: **2**, **3**, **2E**, **4**, **5**, **3E** (*)
- **PLUG**: Blank: DIN; **D**: LED; **G**: 1/2" NPT; **Y**: 2 wires (only for coil #2)
- **VOLTAGE**: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- **PORT THREAD**: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread



* Explosion-Proof (**2E/3E**) coil with LED (**D**) plug is not applicable.

Specification

Model **MBD**: Forged brass body, for water, air, gas, light oil, vacuum.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp.°C Coil 2, 2E N	Temp.°C Coil 2, 2E V	Temp.°C Coil 3 N	Temp.°C Coil 3 V	Working press. bar Coil 2 AC	Coil 2 DC	Coil 3 AC	Coil 3 DC	Coil 2E AC	Coil 2E DC	CV
06(1/4) 09(3/8)	1	N V	2 3 2E	2.0	-10 ~ 90		-10 ~ 90	-10 ~ 145	13	5	20	10	14	8	0.14
	2			2.5					7	2.5	11	6	7	4	0.18
	3			3.0					5	2	9	4	5	3	0.27
	4			3.5					2	0.5	4	2	3	1	0.30

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp.°C Coil 4, 5, 3E N	Temp.°C Coil 4, 5, 3E V	Working press. bar Coil 4 AC	Coil 4 DC	Coil 5 AC	Coil 5 DC	Coil 3E AC	Coil 3E DC	CV
10(3/8) 15(1/2)	1	N V	4 5 3E	3.5	-10 ~ 90	-10 ~ 160	20	16	25	20	16	16	0.45
	2			4.0			16	13	20	16	10	13	0.53
	3			4.5			13	10	16	13	8	10	0.65
	4			5.0			8	5	12	10	4	5	0.83
	5			6.0			4.5	1.5	7	3	1.5	1.5	0.95

* Connect air source to outlet port for vacuum application.

Power consumption

Coil power	2	3	2E
AC 50/60Hz (VA)	6.9	8.0	5.7
DC (W)	6.0	6.8	5.2

Coil power	4	5	3E
AC 50/60Hz (VA)	19.5	23.0	9.2
DC (W)	15.0	18.5	10.0

MCS series

2/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

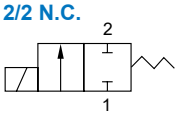
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.
- Ambient temp.: -15~+50°C
- Voltage tolerance: ±8%
- Installing position is free. (You'd better put the coil upright)
- The Max. Orifice for seal **T**=4.0mm, **R**=2.5mm, **Z**=5.0mm.
- Opening: 15~30 ms
  Closing: 30~60 ms

Order example

MCS – 06 – 2 – J – 5 – D – AC110 – □

- MODEL: MCS
- CODE: **06**: 1/4, **10**: 3/8, **15**: 1/2, **20**: 3/4
- FIG.: **1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**
- SEAL MAT'L: **N**: NBR, **J**: EPDM, **V**: Viton, **T**: Teflon (*1), **R**: RUBY (*1), **Z**: FFKM
- COIL: **4**: #4, **5**: Bigger, **3E**: Explosion-Proof (*2)
- PLUG: Blank: DIN, **D**: LED, **G**: 1/2" NPT
- VOLTAGE: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- PORT THREAD: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

*1. Teflon(**T**) and RUBY(**R**) seal have below 300cc/min. slight leakage, not suitable for vacuum.
*2. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

Weight

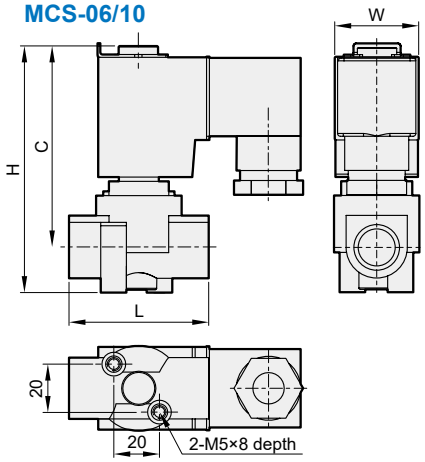
Unit: kg

Model	MCS		
Coil Code	**4**	**5**	**3E**
06	0.43	0.51	0.74
10	0.41	0.49	0.72
15	0.47	0.55	0.80
20	0.55	0.63	0.88
Coil power			
AC (VA)	19.5	23.0	9.2
DC (W)	15.0	18.5	10.0

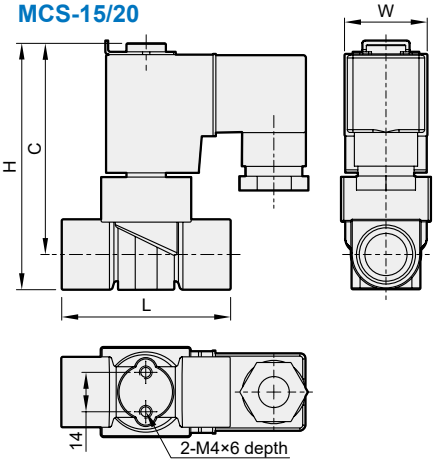
Dimensions

Code / Dimension (mm)		06	10	15	20
L		49		55	60
H		86		88	91
C		71		74	74
W	Coil 4	30		32	
	Coil 5	36		36	
	Coil 3E	36		36	

MCS-06/10



MCS-15/20



Model **MCS**: Forged brass body, 2/2 way N.C. Available fluid: water, air, gas, vacuum, light oil etc.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Seal temp.°C												Working pressure 0~ bar						CV	VAC. torr
					Coil 4, 3E						Coil 5						Coil 4		Coil 5		Coil 3E			
					N	J	V	R	T	Z	N	J	V	R	T	Z	AC	DC	AC	DC	AC	DC		
06(1/4) 10(3/8) 15(1/2) 20(3/4)	1	N J V T R Z	4 5 3E	1.6	-5 ~ 80	-10 ~ 145		-20 ~ 160			-5 ~ 80	-10 ~ 145		-20 ~ 185			30	20	40	30	25	20	0.10	10^{-2}
	2			2.0													24	14	30	28	16	12	0.15	
	3			2.5													17	10	24	20	10	8	0.23	
	4			3.0													10	6	16	13	7	6	0.31	
	5			4.0													9	5	12	8	5	4	0.47	10^{-1}
	6			5.0													7	4	10	7	3.5	3.5	0.63	
	7			5.5													6	3	7	6	2.5	2	0.70	
	8			7.5													3	2	5	4	1.5	1.2	1.10	10
	9			10.0													1.5	1	2.5	1.5	1	0.7	1.50	

MCT series

3/2 WAY N.C. PLUNGER TYPE **SOLENOID VALVE**

mindman

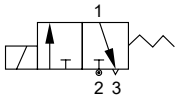
Selection table

Seal material

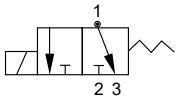
Caution for safety
(Read before installing)



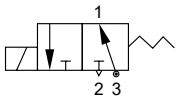
3/2 Function 1



3/2 Function 2



3/2 Function 3



Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.
- Ambient temp.: -15~50°C (No freezing)
- Voltage tolerance: ±8%
- Installing position is free. (You'd better put the coil upright)
- Opening: 20~60 ms
  Closing: 40~120 ms

Power consumption

Coil power	4	5	3E
AC (VA)	19.5	23	9.2
DC (W)	15	18.5	10

Order example

MCT — 06 — 2 — J — U — 5 — D — AC110 — □

MODEL

CODE
06: 1/4"
10: 3/8"
15: 1/2"
20: 3/4"

FIG.
A, **0**, **1**, **2**, **3**, **4**, **5**, **6**,

SEAL MAT'L
N: NBR
J: EPDM
V: Viton
Z: FFKM

EXHAUST ACCESSORIES

U	—	Without
F		PS female
C		Dust-proof & silencer cap
P		1/8" PS male

PLUG
Blank: DIN
D: LED
G: 1/2" NPT

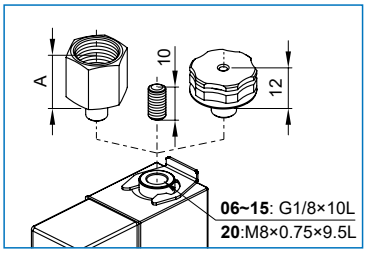
PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

COIL
4: #4
5: Bigger
3E: Explosion-Proof (*)

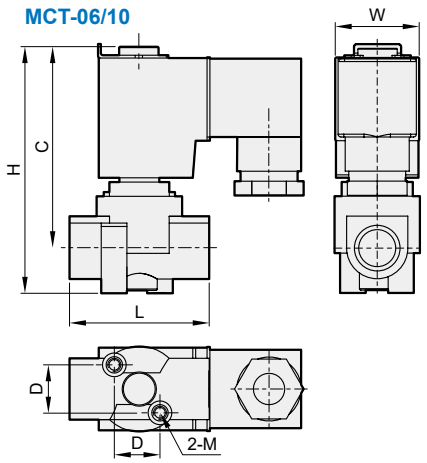
VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

* Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

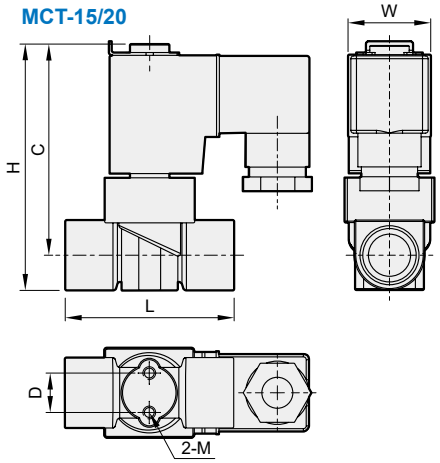
Exhaust accessories



MCT-06/10



MCT-15/20



Dimensions

Code / Dimension (mm)		06	10	15	20
A		21	23	—	
C		71		74	
D		20		21	14
H		86		88	91
L		49		56	60
M		M5			M4
W	4	31		32	
	5, 3E	36			
N.W (kg)	4	0.43	0.41	0.43	0.55
	5	0.51	0.49	0.51	0.63
	3E	0.76	0.74	0.76	0.88

Model **MCT**: Forged brass body, Available fluid: water, air, gas, vacuum, light oil (50 mm²/s down) etc. 3/2 way N.C.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp.°C						Working pressure 0 ~ bar								CV	VAC. torr
						Coil 4, 3E			Coil 5			Coil 4			Coil 5		Coil 3E				
				Body	Tube	N	J V	Z	N	J V	Z	AC/DC, Funtion									
												1	2	3	1	2	1	2	3		
06(1/4) 10(3/8) 15(1/2) 20(3/4)	A	N J V Z	4 5 3E	1.0	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	12	10	3	16	12	11	10	3	0.02	10^{-2}
	0			1.3								9	10	3	12	12	8	10	3	0.05	
	1			1.6								7	10	2	8.5	12	6	10	2	0.10	
	2			2.0	2.0							5.5	8	2	7	10	5	8	2	0.15	
	3			2.5	2.5							4	6.5	1	5.5	8	3	6.5	1	0.20	
	4			3.0								2.5	4.5	1	4	5.5	2	4.5	1	0.31	
	5			4.0	3.0							1.5	4.5	1	2.5	5.5	1.5	4.5	1	0.51	10^{-1}
	6			5.0								0.8	4.5	1	1.5	5.5	0.8	4.5	1	0.65	

MED series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

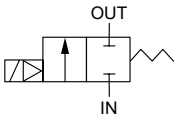
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Specification

- when using air and working pressure is over 5 bar, the operating cycle should keep under 10 times/min.
- Opening: 200~300 ms, Closing: 400~600 ms

Power consumption

Coil power	2	3	2E
AC (VA)	6.9	8.0	5.3
Last temp.°C	70.0	60.0	50.0
DC (W)	6.2	6.8	5.2
Last temp.°C	78.0	73.0	62.0
Coil ambient temp.	-15~50°C (No freezing)		

Dimensions

Model		MED			
Code / Dimension (mm)		08	09	10	15
D		50.0		50.0	
L		40.0		55.0	
H		72.0		76.5	
M		17.0		24.0	
W		32.0		38.0	
N.W. (kg)	Coil 2	0.25	0.24	0.33	0.31
	Coil 3	0.30	0.29	0.36	0.34
	Coil 2E	0.57	0.56	0.59	0.57

Order example

MED – 10 – □ – N – 2 – □ – AC110 – □

MODEL

Code	Fig.
08: 1/4 **09**: 3/8	**A**: High pressure **B**: Big flow
Code	**Orifice**
10: 3/8 **15**: 1/2	**0**: Standard

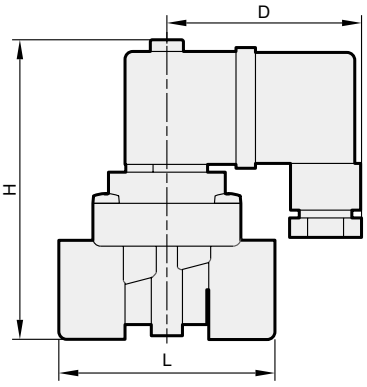
SEAL MAT'L
N: NBR
J: EPDM
V: Viton

COIL
2: #2
3: Bigger
2E: Explosion-Proof (*)

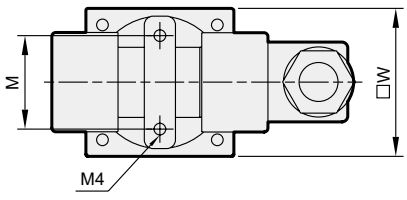
PLUG
Blank: DIN
D: LED
G: 1/2" NPT
Y: 2 wires (only for coil #2)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread



* Explosion-Proof (**2E**) coil with LED (**D**) plug is not applicable.



Specification

* **A**: Air, **L**: Liquid

Model **MED**: Forged brass body, pressure forming S.S. plate, for water, air, gas, light oil. 2/2 way N.C.																						
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp.°C						Working press. (0.3~ bar)												CV
					Coil 2, 2E			Coil 3			Coil 2				Coil 3				Coil 2E				
											AC		DC		AC		DC		AC		DC		
					N	J	V	N	J	V	A*	L*	A	L	A	L	A	L	A	L	A	L	
08(1/4)	A	N J V	2 3 2E	10	-5 ~ 80	-10 ~ 80		-5 ~ 80	-10 ~ 120		7	4	4	4	10	4	7	4	7	4	5	4	1.1
09(3/8)	B										6	4	2	2	9	4	5	2	6	4	4	2	1.4
10(3/8) 15(1/2)	–			15							6.5	5	5	4	10	7	7	5	5.5	4	4	3	2.2

MEP series

2/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

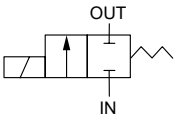
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Specification

- IP65 100% ED coil
- Opening: 5~20 ms, Closing: 10~40 ms

Power consumption

Coil power	4	5	3E
AC (VA)	19.5	23.0	9.2
DC (W)	15.0	18.5	10.0

Weight

Model		MEP		
Code \ Coil		4	5	3E
N.W (kg)	10	0.44	0.52	0.74
	15	0.41	0.49	0.71

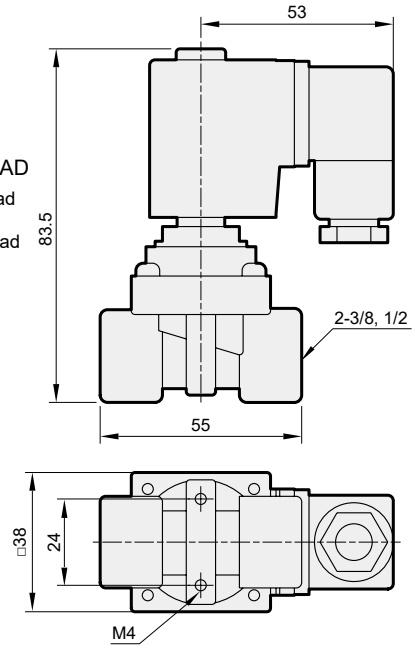
Order example

MEP — 10 — 0 — N — 4 — □ — AC110 — □

- MODEL
- CODE
  10: 3/8
  15: 1/2
- ORIFICE
  0: Standard
- SEAL MAT'L
  N: NBR
  J: EPDM
  V: Viton
- COIL
  4: #4
  5: Bigger
  3E: Explosion-Proof (*)
- PLUG
  Blank: DIN
  D: LED
  G: 1/2" NPT
- VOLTAGE
  AC220V(50/60)Hz
  AC110V(50/60)Hz
  DC24V
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

* Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

Dimensions



Specification

Model **MEP**: Forged brass body, pressure forming S.S. plate, for water, air. 2/2 way N.C.																						
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C						Working press. (0~ bar)						VAC. Torr						CV
				Coil 4		Coil 5		Coil 3E		Coil 4		Coil 5		Coil 3E		Coil 4		Coil 5		Coil 3E		
				N	J,V	N	J,V	N	J,V	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC	
10(3/8) 15(1/2)	N J V	4 5 3E	15	-5 ~ 80	-10 ~ 90	-5 ~ 80	-10 ~ 145	-5 ~ 80	-10 ~ 145	0.5	0.2	1.2	0.5	0.2	0.1	400	600	10	400	600	700	2.4

MGA / MGS series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

mindman

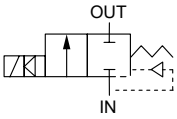
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Specification

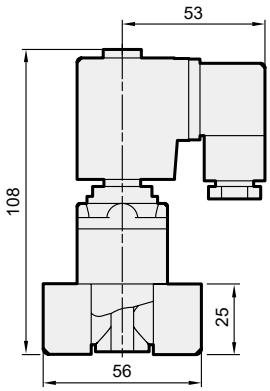
- Forged brass body.
- IP65 100% ED coil.
- PTB approval EExm II T4 coil.

Power consumption

Coil power	4	5	3E
AC (VA)	17.6/15.4	33/23	9.2
DC (W)	15.0	18.5	10

Model	MGA / MGS	
Code	10	15
N.W (kg)	0.6	

Dimensions

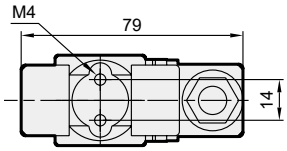


Order example

MGA — 10 — N — 4 — □ — AC110 — □

MODEL	CODE	SEAL MAT'L	COIL	PLUG	VOLTAGE	PORT THREAD
MGA **MGS**	**10**: 3/8 **15**: 1/2	**N**: NBR **J**: EPDM **V**: Viton **T**: Teflon (*1)	**4**: #4 **5**: Bigger **3E**: Explosion-Proof (*2)	Blank: DIN **D**: LED **G**: 1/2" NPT	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V	Blank: Rc thread **G**: G thread **NPT**: NPT thread

*1. When the seal material is (**T**) Teflon, the valve has slight leakage.
*2. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.



Specification

Model **MGA**: for water, air and higher temp. fluids. 2/2 way N.C.														
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. 5~°C						Working press. bar					CV
				Coil 4			Coil 5, 3E			Coil 4		Coil 5		Coil 3E	
				N	J	V	N	J	V	AC	DC	AC	DC	AC/DC	
10(3/8)	N,J,V	4,5,3E	12	95	120		95	145		0.3~10	0.3~7	0.3~16	0.3~10	0.3~5	1.9
15(1/2)															2.6

Model **MGS**: for steam and higher temp. fluids. 2/2 way N.C.								
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. 5~°C		Working press. bar		CV
				Coil 4	Coil 5	Coil 4	Coil 5	
10(3/8)	T*	4, 5	12	158	185	0.3~5	0.3~10	1.9
15(1/2)								2.6

* Teflon seal will have 400cc/min. down gas leakage.

MGD series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)



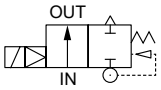
Specification

- IP65 100% ED coil
- EExm II T4 PTB approval coil
- Opening: 200~500 ms, Closing: 500~2000 ms

Power consumption

Coil power	2	2E	3	4	3E
AC (VA)	6.9	5.3	8.0	19.5	9.2
DC (W)	6.2	5.2	6.8	15.0	10.0

2/2 N.C.



Order example

MGD — 25 — N — 3 — D — F — □ — AC110 — □

MODEL

CODE
10, **15**, **20**, **25**, **32**, **40**, **45**, **50**

SEAL MAT'L
N: NBR
J: EPDM
V: Viton

COIL
2, **3**, **4**, **2E**, **3E** (*1)

PLUG
Blank: DIN
D: LED
G: 1/2" NPT
Y: 2 wires (only for coil #2)

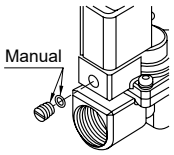
CONN.
Blank: Screwed
F: Flanged (*2)

MANUAL
Blank: Without
M: With (*2)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

*1. Explosion-Proof (**2E/3E**) coil with LED (**D**) plug is not applicable.
*2. **F** type #4, #3E no manual, for code 25~50 only.

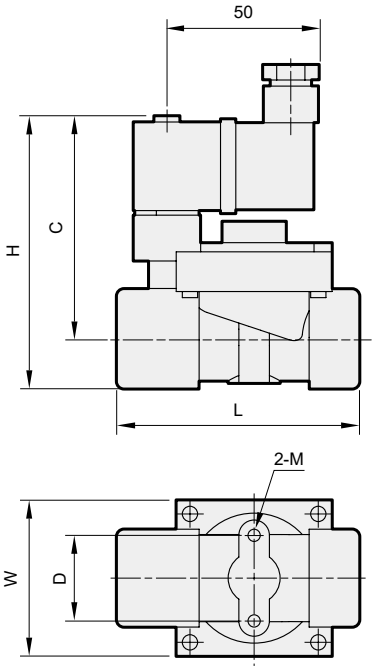


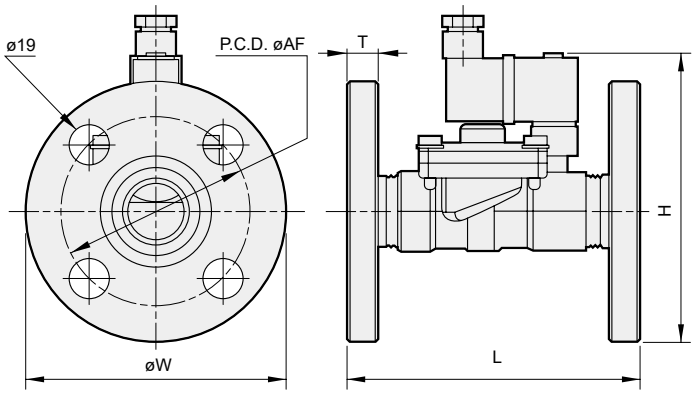
Specification

Model **MGD**: Forged brass body, for water, air, gas, light oil etc. 2/2 way N.C.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C					Working press.(0.3~ bar)													CV
				Coil 2, 2E	Coil 3		Coil 4, 3E		Coil 2				Coil 2E				Coil 3				Coil 3E, 4		
									AC		DC		AC		DC		AC		DC		AC	DC	
				N,J,V	N	J,V	N	J,V	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas / Liquid		
10(3/8)	N J V	2 2E 3 4 3E	15	-5 ~ 80	-5 ~ 80	-10 ~ 120	-5 ~ 80	-10 ~ 145	10	10	10	10	16	12	11	10	16	14	15	12	16	16	3
15(1/2)			15						10	10	10	10	16	12	11	10	16	14	15	12	16	16	3.9
20(3/4)			20						10	10	10	10	14	11	10	9	16	13	14	11	16	16	7.5
25(1)			25						10	10	9	9	12	10	9	8	16	12	12	10	16	16	10
32(1 1/4)			33						10	10	8	8	10	9	8	7	13	11	11	9	16	16	16
40(1 1/2)			33						10	10	8	8	10	9	8	7	13	11	11	9	16	16	21
45(1 1/2)			44						8	8	5	5	10	8	7	6	11	10	10	7	16	16	26
50(2)			44						8	8	5	5	10	8	7	6	11	10	10	7	16	16	31

F **Flanged** (JIS10K)





Dimensions & Weight

Model		MGD (Screwed)								MGD-F (Flanged)				
Code / Dimension (mm)		10	15	20	25	32	40	45	50	25	32	40	45	50
AF		–								90	100	105	105	120
C	Coil 2, 3, 2E	68	68	72	76	91	91	99	99	–				
	Coil 4, 3E	79	79	83	87	102	102	110	110					
D		22	22	28	34	–								
H	Coil 2, 3, 2E	81	81	88	95.5	119.5	119.5	133	133	138	158	161	169	176
	Coil 4, 3E	92	92	99	106.5	130.5	130.5	144	144	149	169	172	180	187
L		64	64	80	90	102	102	123	123	138	155	155	175	177
M		M5×0.8				–				M5×0.8	–			
T		–								14	16	16	16	16
W		42	42	51	61	76	76	95	95	125	135	140	140	155
N.W (kg)	Coil 2	0.50	0.47	0.71	0.92	1.95	1.68	3.48	2.90	3.31	5.07	5.13	6.92	7.02
	Coil 2E	0.77	0.74	0.98	1.19	2.22	1.95	3.75	3.17	3.58	5.33	5.40	7.20	7.28
	Coil 3	0.54	0.51	0.74	0.96	1.99	1.72	3.51	2.93	3.35	5.10	5.17	6.97	7.05
	Coil 4	0.60	0.57	0.81	1.03	2.07	1.80	3.62	3.04	3.42	5.19	5.26	7.07	7.16
	Coil 3E	0.91	0.88	1.11	1.32	2.36	2.09	3.90	3.32	3.71	5.48	5.54	7.36	7.45

MJ* / MRJ series

2/2, 3/2 WAY N.C., N.O. PLUNGER TYPE **ACTUATOR VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)

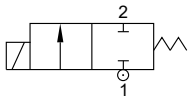


MJS/MJR

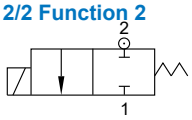


MJT/MRJ

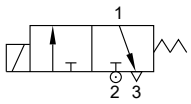
2/2 Function 1



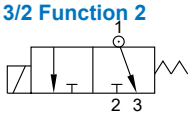
2/2 Function 2



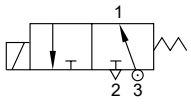
3/2 Function 1



3/2 Function 2



3/2 Function 3



Specification

- IP65 100% ED coil.
- PTB approval EExm II T4 coil.
- MJS, MJR Opening: 15~30 ms, Closing: 30~60 ms
- MJT, MRJ Opening: 20~40 ms, Closing: 40~80 ms

Power consumption

Coil power	4	5	3E
AC (VA)	19.5	23.0	9.2
DC (W)	15.0	18.5	10.0
Ambient temp.	-15~50°C (No freezing)		

Weight

Model		MJS / MJR / MJT / MRJ	
Body mat'l		**C** (Brass)	**S** (S.Steel)
Body weight (g)	Coil 4	318	326
	Coil 5	394	402
	Coil 3E	614	622

Order example of valve

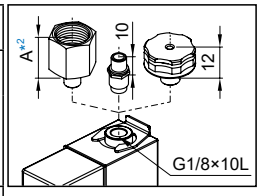
MJS — 1 — N — C — F — U — 4 — D — □ — AC110

MODEL	FIG.	SEAL MAT'L	BODY MAT'L	BOTTOM	COIL	MANUAL	VOLTAGE
MJS **MJR** **MJT** **MRJ**	**1**, **2**, **3**, **4**, **5**	**N**: NBR **J**: EPDM **V**: Viton	**C**: Brass **S**: S. Steel	Blank: Concave **F**: Flat	**4**: #4 **5**: Bigger **3E**: Explosion-Proof (*)	Blank: Without **M**: With manual	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V

PLUG
Blank: DIN
D: LED
G: 1/2" NPT

EXHUST ACCESSORIES (● : MJT, ○ : MRJ only)

U	–	Without	●	○
F6		PS1/8" female	●	○
F8		PS1/4" female		
F10		PS3/8" female		
C		Dust-proof cap	●	
P		1/8" PS male	●	○



*1. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

*2.

Code	1/8"	1/4"	3/8"
A	20	21	23
Weight (g)	20	30	40

Order example of manifold

MJ — 03 — 2 — □

MODEL	CODE	MANIFOLD NUMBER	PORT THREAD
	03: 1/8 **06**: 1/4 **10**: 3/8	**2**,**3**...n	Blank: Rc thread **G**: G thread **NPT**: NPT thread

2/2 way N.C. Brass, stainless steel body. For water, low pressure steam, air, gas, oil(below 50 mm^2/s), vacuum etc.

Model	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C		Working press. 0~ bar						CV	Torr
							Coil 4		Coil 5		Coil 3E			
					Coil 4, 3E, 5		Funtion 1							
					N	J,V	AC	DC	AC	DC	AC	DC		
MJS	1	N J V	4 5 3E	1.6	-5 ~ 80	-10 ~ 145	30	20	40	30	25	20	0.08	10^{-2}
	2			2.0			24	14	30	20	16	12	0.12	
	3			2.5			14	10	20	15	10	8	0.18	
	4			3.0			10	6	15	10	7	6	0.25	10^{-1}
	5			3.5			7	4	10	7	4.5	3.5	0.32	

2/2 way N.C. Brass, stainless steel body. For water, low pressure steam, air, gas, oil(below 50 mm^2/s), vacuum etc.

Model	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C		Working press. 0~ bar						CV	Torr
							Coil 4		Coil 5		Coil 3E			
					Coil 4, 3E, 5		AC/DC, Funtion 1, 2							
					N	J,V	1	2	1	2	1	2		
MJR	1	N J V	4 5 3E	1.6	-5 ~ 80	-10 ~ 145	20	7	30	8.5	20	6	0.08	10^{-2}
	2			2.0			14	5.5	20	7	12	5	0.12	
	3			2.5			10	4	15	5.5	8	3	0.18	
	4			3.0			6	2.5	10	4	6	2	0.25	10^{-1}
	5			3.5			4	1.5	7	2.5	3.5	1.5	0.32	

3/2 way N.C. Brass, stainless steel body. For water, low pressure steam, air, gas, oil(below 50 mm^2/s), vacuum etc.

Model	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp. °C		Working press. 0~ bar								CV	Torr
								Coil 4			Coil 5		Coil 3E				
				Body	Tube	Coil 4, 3E, 5		AC/DC, Funtion 1, 2, 3									
						N	J,V	1	2	3	1	2	1	2	3		
MJT	1	N J V	4 5 3E	1.3	1.6	-5 ~ 80	-10 ~ 145	9	5.5	3	12	6	8	5.5	3	0.05	10^{-2}
	2			1.6				7		2	8.5		6		2	0.08	
	3			2.0				5.5		2	7		5		2	0.12	
	4			2.5	2.0			4		1	5.5		3		1	0.18	10^{-1}
	5			3.0				2.5		1	4		2		1	0.25	

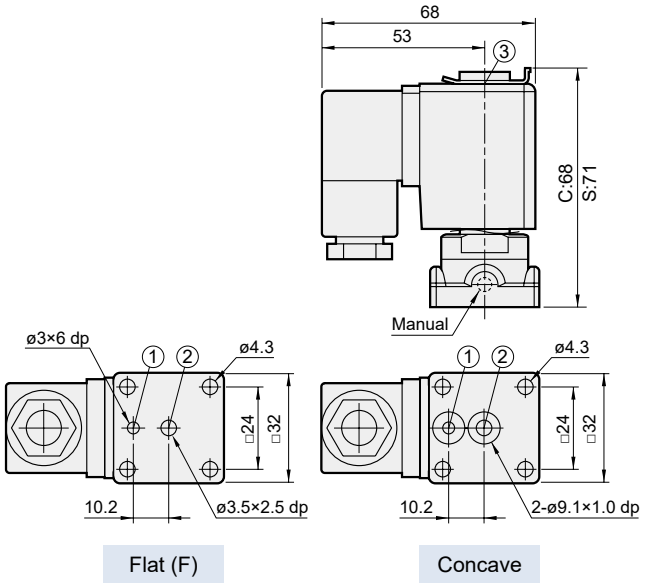
3/2 way N.O. Brass, stainless steel body. For water, low pressure steam, air, gas, oil(below 50 mm^2/s), vacuum etc.

Model	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp. °C		Working press. 0~ bar		CV	Torr
						Coil 4, 3E		Coil 4	Coil 3E		
				Body	Tube	N	J,V	AC/DC, Funtion 3			
MRJ	1	N J V	4 3E	1.3	1.6	-5 ~ 80	-10 ~ 145	12	12	0.08	10^{-2}
	2			1.6				10	10		
	3			2.0				8	8		
	4			2.5	2.0			6	6	0.12	
	5			3.0				4	4		

* Connect air source to outlet port for vacuum application.

MJ* / MRJ Dimensions

2/2, 3/2 WAY N.C., N.O. PLUNGER TYPE **ACTUATOR VALVE**



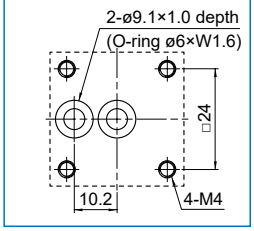
No. of stations	Code (mm)		MJS, MJR weight (kg)			MJT, MRJ weight (kg)		
	L	P	Coil 4	Coil 5	Coil 3E	Coil 4	Coil 5	Coil 3E
2	104	96	1.28	1.43	1.86	1.26	1.41	1.84
3	142	134	1.92	2.14	2.79	2.89	2.11	2.76
4	180	172	2.55	2.85	3.72	2.52	2.82	3.68
5	218	210	3.19	3.57	4.65	3.15	3.52	4.60
6	256	248	3.83	4.28	5.58	3.78	4.23	5.52
7	294	286	4.47	5.00	6.51	4.41	4.93	6.44
8	332	324	5.11	5.71	7.44	5.04	5.64	7.36
9	370	362	5.75	6.43	8.37	5.67	6.34	8.28
10	408	400	6.39	7.14	9.31	6.30	7.05	9.20
Bracket kit	–		0.02 [(J1+J2)×2]					

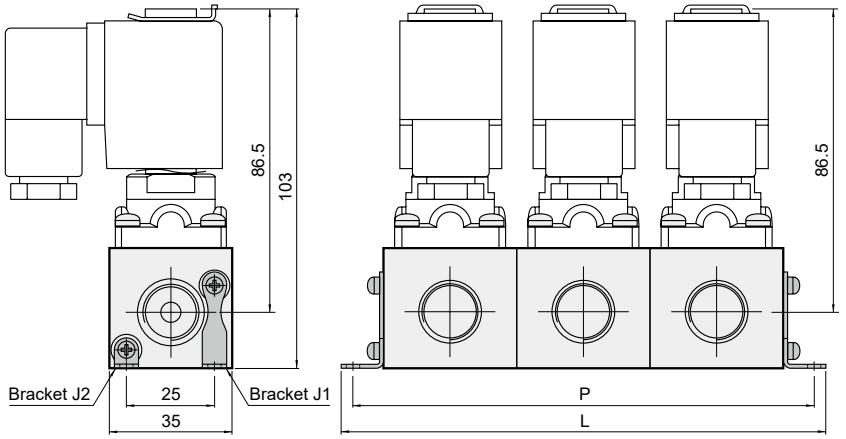
MJ Manifold

Material: Brass

Flat type

Installation dimensions

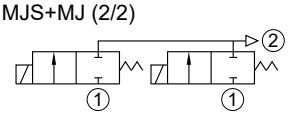




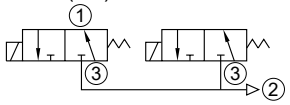
Manifold assembling

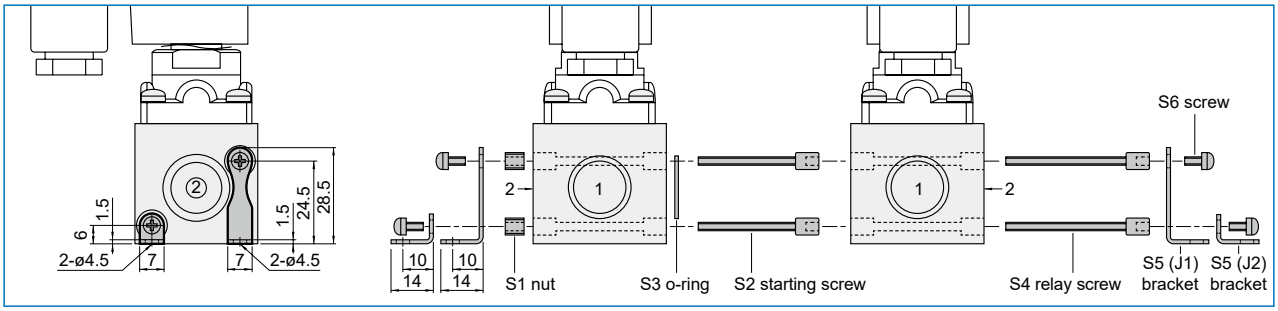
Manifold base could be added freely (only for brass material).
MJS/**MRJ** APPLICATION: Port ② is a common port.

MJS+MJ (2/2)



MRJ+MJ (3/2)





MPD / MPK series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

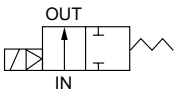
Seal material

Caution for safety
(Read before installing)

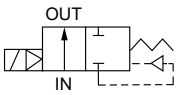


2/2 N.C.

Code 09,14



Code 10, 15~25



Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ambient temperature: –15~50°C (No freezing).

Power consumption

Coil power	2	3	4	5
AC (VA)	6.9	8.0	18.0	–
DC (W)	6.2	6.8	–	18.5

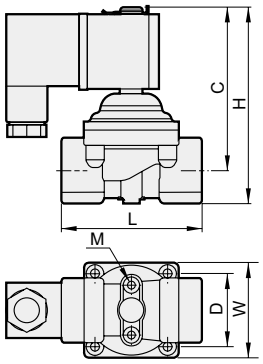
Dimensions

Model		MPD / MPK					
Code / Dimension (mm)		09	14	10	15	20	25
C		65		93		98	
D		20		36		–	
H		78		109		121	
L		56		75		92	
M		ø3.5				–	
W		38		56		76	
N.W (g)	Coil 2,4	185	180	420		630	620
	Coil 3,5	235	230	500		710	700

Order example

MPD – 15 – J – 5 – D – AC110 – □

- **MODEL**: **MPD**, **MPK**
- **CODE**: **09**: 3/8, **10**: 3/8, **14**: 1/2, **15**: 1/2, **20**: 3/4, **25**: 1
- **SEAL MAT'L**: **N**: NBR, **J**: EPDM, **V**: Viton
- **COIL**: **2**: #2, **3**: #3, **4**: #4, **5**: Bigger
- **PLUG**: Blank: DIN, **D**: LED, **G**: 1/2" NPT, **Y**: 2 wires (**G**, **Y** only for coil #2, #3)
- **VOLTAGE**: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- **PORT THREAD**: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread



Specification

Model **MPD**: PA (Nylon) body, low pressure N.C., for water, air etc.												
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C				Work pressure 0.3~ bar (*1)				0.2~ bar		CV
				Coil 2	Coil 3	Coil 4	Coil 5	Coil 2		Coil 3		Coil 4	Coil 5	
				N,J,V				AC	DC	AC	DC	AC	DC	
09(3/8)	N J V	2 3	15	4 ~ 60				4.0 (3.5)	0.8 (3.5)	5.0 (3.5)	3.5 (3.5)	–		1.6
14(1/2)			15											2.0
10(3/8)		4 5	18					–				7	1.5	4.0
15(1/2)			18											4.0
20(3/4)			28											9.8
25(1)			28											11.0

Model **MPK**: PA (Nylon) body, zero pressure N.C., for water, air etc.												
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C				Work pressure 0~ bar (*1)					CV
				Coil 2	Coil 3	Coil 4	Coil 5	Coil 2		Coil 3		Coil 4	Coil 5	
				N,J,V				AC	DC	AC	DC	AC	DC	
09(3/8)	N J V	2 3	15	4 ~ 60				6.0 (4.0)	0.8 (3.5)	7.0 (7.0)	7.0 (7.0)	–		1.6
14(1/2)			15											2.0
10(3/8)		4 5	18					–				7	2	4.0
15(1/2)			18											4.0
20(3/4)			28											9.8
25(1)			28											11.0

*1. Standard value is for gas, ( ) the value is for liquid.

MRB / MRC series

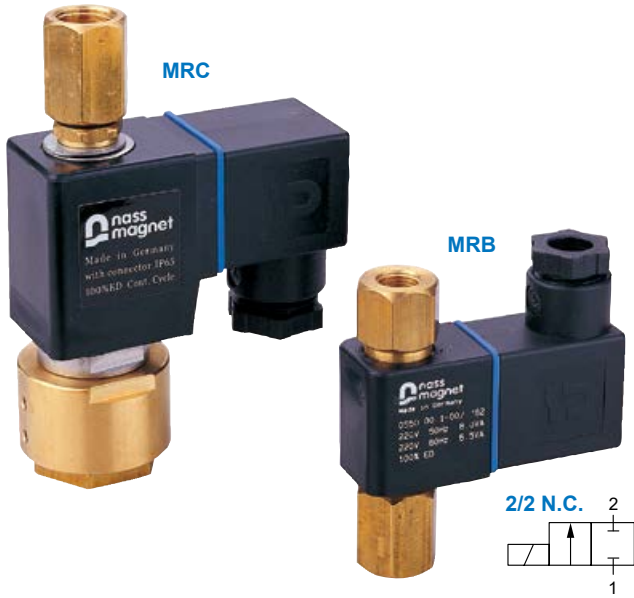
2/2 WAY N.C., N.O. PLUNGER TYPE **SOLENOID VALVE**

mindman

Selection table

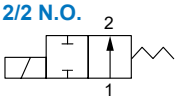
Seal material

Caution for safety
(Read before installing)



2/2 N.C.

2/2 N.O.



Specification

- IP65 100% ED coil.
- PTB approval EExm II T4 coil.
- Opening: 5~20 ms, Closing: 10~40 ms

Power consumption

Coil power	2	2E	4	5	3E
AC (VA)	6.9	5.3	17.6/15.4	33/23	9.2
DC (W)	6.2	5.2	15	18.5	10
Ambient temp.	-15~50°C (No freezing)				

Dimensions

Model		MRB				MRC		
Code Dimension (mm)		03		06		03	06	10
		2	2E	2	2E			
L		77		78.6		98		
H		50				53		
W		22	30	22	30	34		
S		19.5				16		
S'		–				8		
N.W (g)	NC	138	406	140	409	–		
	NO	146	466	141	461	450		

Order example

MRB – 06 – 2 – NO – N – 2 – □ – AC110 – □

MODEL
MRB
MRC

CODE
03: 1/8
06: 1/4
10: 3/8

FIG.
1, **2**, **3**, **4**, **5**

NC: Normally closed
NO: Normally open
(MRB only)
Blank: Normally open
(MRC only)

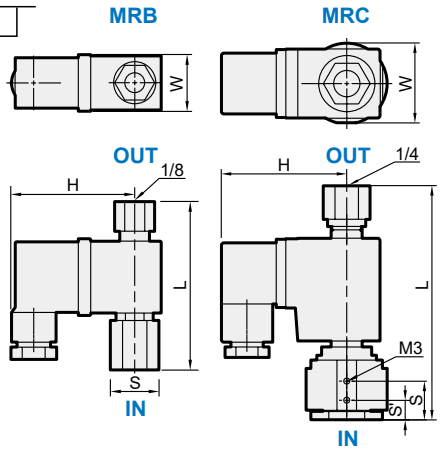
SEAL MAT'L
N: NBR
J: EPDM
V: Viton

COIL
2, **2E**
4, **5**, **3E**
(*)

PLUG
Blank: DIN
D: LED
G: 1/2" NPT
Y: 2 wires (only for coil #2)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread



* Explosion-Proof (**2E/3E**) coil with LED (**D**) plug is not applicable.

Specification

Model **MRB**: Brass body, 2/2 way N.C., N.O., for water, air, gas, light oil, vacuum.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Seal temp. °C	Working press. 0~bar (AC/DC)		CV	VAC. torr
					Coil 2, 2E	Coil 2, 2E			
					V	NC	NO		
03(1/8) 06(1/4)	1	V	2, 2E	1.3	-10~80	9	10	0.05	10^{-2}
	2			1.5		5	8	0.09	

Model **MRC**: Brass body, 2/2 way N.O., for water, air, gas, light oil, vacuum.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Seal temp. 5~°C						Working press. bar			CV	VAC. torr
					Coil 4, 3E			Coil 5			Coil 4	Coil 5	Coil 3E		
					N	J	V	N	J	V	AC/DC				
03(1/8) 06(1/4) 10(3/8)	1	N J V	4 5 3E	1.6	90	120		90	150		0~16	0~24	0~16	0.10	10^{-3}
	2			2.0							0~13	0~20	0~13	0.15	
	3			2.2							0~10	0~16	0~10	0.17	
	4			2.5							0~7	0~10	0~7	0.20	10^{-2}
	5			3.0							0~5	0~7	0~5	0.31	

MUCL series

2/2 WAY N.C. PLUNGER TYPE **LATCH VALVE**

Selection table

Seal material

Caution for safety
(Read before installing)



Features

- Valve open when power on, then power shut off, valve still open. Change to opposite pole, valve close.
- Energy-saving, blocking hazardous fluid.

Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Open: 50~20ms, Close: 10~40ms

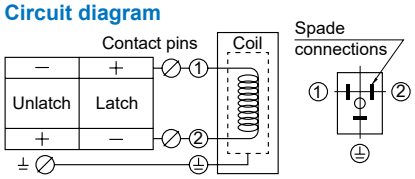
Power consumption

Coil power	**2L**
DC 6/12V (W)	6.9
DC 24V (W)	6.0

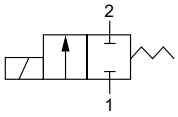
Dimensions

Model	MUCL	
Code Dimension (mm)	**03**	**06**
C	51	53
D	18	23
H	58	63
L	25	30
W	25	25
N.W (kg)	0.18	0.23

Circuit diagram



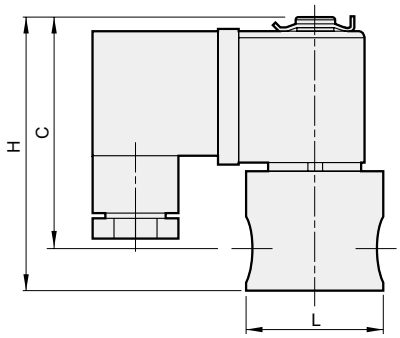
2/2 N.C.

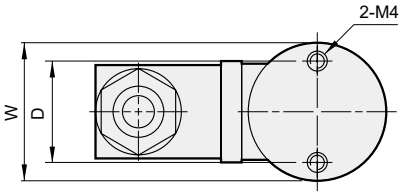


Order example

MUCL — 06 — 1 — T — L — D — DC12 — G

- **MODEL**
- **CODE**: **03**: 1/8; **06**: 1/4
- **FIG.**: **1,2,3**; **4,5,6**
- **SEAL MAT'L**: **N**: NBR; **J**: EPDM; **V**: Viton; **T**: PTFE; **Z**: FFKM
- **COIL**: **L**: #2L
- **PLUG**: Blank: DIN; **D**: LED; **G**: 1/2" NPT; **Y**: 2 wires
- **VOLTAGE**: **DC6**V; **DC12**V; **DC24**V
- **PORT THREAD**: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread





Specification

Model **MUCL**: SUS303 Body, For water, air, gas, light oil (below 50cst), vacuum etc. 2/2 way N.C.										
Code (Port)	Fig no.	Seal mat'l	Coil	Orifice mm	Temp. °C			Working press. (0~ bar)	CV	Torr
					N	J,V	T,Z			
03(1/8) 06(1/4)	1	N J V T Z	2L	1.0	-5 ~ 80	-10 ~ 80	-20 ~ 80	15	0.03	10^{-2}
	2			1.3				12	0.05	
	3			1.6				10	0.07	
	4			2.0				6	0.11	
	5			2.5				5	0.18	10^{-1}
	6			3.0				4	0.27	

* Max. orifice: T-2.5mm
* PTFE seal has below 300cc/min. slight leakage, not suitable for vacuum.

MUPH series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)



Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Open: 50~200ms, Close: 100~400ms

Power consumption

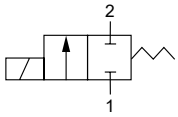
Coil power	5	5K	6	6K
AC (VA)	–	21	–	30
DC (W)	18.5	–	25	–

Dimensions

Model		MUPH			
Code / Dimension (mm)		06	10	15	20
C		79	80.5	102	105
D		25.5		41.7	
H		97		128	126
L	5, 5K	82		–	
	6, 6K	–		99	
M		M4		M5	
W		45		70	
N.W (kg)	5, 5K	0.46 (0.45)*		–	
	6, 6K	–		0.97 (0.89)*	0.99 (0.91)*

* ( ) The value for PVC body material.

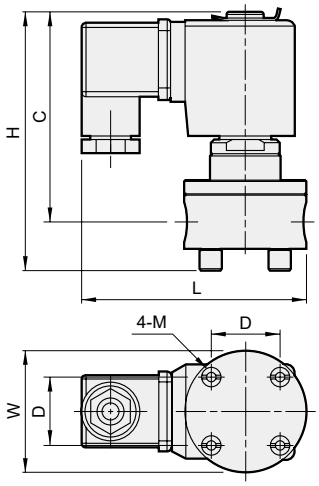
2/2 N.C.



Order example

MUPH – 15 – 1 – T – A – D – AC220

- **MODEL**
- **CODE**: **06**: 1/4, **10**: 3/8, **15**: 1/2, **20**: 3/4
- **FIG.**: **1,2,3**
- **BODY MAT'L**: **T**: PTFE, **P**: PVC
- **COIL**: **5**: #5 (DC), **6**: #6 (DC), **A**: #5K (AC), **B**: #6K (AC)
- **PLUG**: Blank: DIN, **D**: LED, **K**:Rectifier, **X**:Rectifier w/ Lamp (AC coil should have rectifier plug)
- **VOLTAGE**: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V



Specification

Model **MUPH**: PTFE/PVC Body, for sulfuric acid, hydrochloric acid, chemically corrosive fluids.

Code (Port)	Fig no.	Body mat'l	Coil	Orifice mm	Temp. °C	Working press. (0~ bar)		CV
						Coil 5,5K	Coil 6,6K	
06(1/4)	1	T P	5 5K	2.5	-5 ~ 80 (PTFE)	5.0	–	0.11
	2			4		3.6		0.26
	3			6		2.5		0.57
10(3/8)	1			4		3.6		0.3
	2			6		2.7		0.6
	3			8		1.4		0.9
15(1/2)	1		6 6K	6		–	1.8	0.8
	2			9			1.6	1.2
	3			12			0.4	1.6
20(3/4)	1			10			1.0	1.5
	2			15			0.5	2.5

MUSC series

2/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

mindman

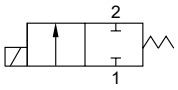
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Specification

- IP65 waterproof coil. ● Continuous cycle, 100% ED.
- Ex coil is EExm II T4 PTB approval.
- Response time: 03,06 ON: 5~20ms, OFF: 10~40ms
  08,10 ON: 15~30ms, OFF: 30~60ms

Power consumption

Coil power	2	3	2E	4	5	3E
AC (VA)	6.9	8.0	5.3	18	24	8.6
DC (W)	6.0	6.8	5.2	15.0	18.5	10.0
Ambient temp.	-15~50°C (No freezing)					

Dimensions

Model	MUSC											
Code Dimension (mm)	03			06			08			10		
	2	3	2E	2	3	2E	4	5	3E	4	5	3E
L	25			30			40			42		
W	25	30		25	30		–			–		
H	58			62			86			87		
C	51			53			75			75		
D	18			23			–			31		
F	50			50			53			53		
M	M4			M4			M5			M5		
A	–			–			22			–		
N.W (kg)	0.17	0.21	0.44	0.22	0.25	0.48	0.50	0.58	0.79	0.52	0.60	0.81

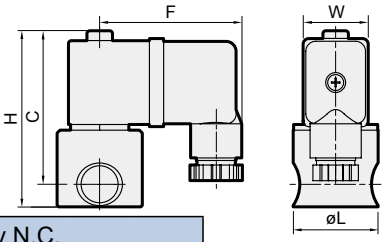
Order example

* Standard port thread: Rc thread.
G and NPT thread please contact our sales.

MUSC—06—2—N—3—D—□—AC110

MODEL	CODE	FIG.	SEAL MAT'L	COIL	PLUG	FIXED HOLE	VOLTAGE
	03: 1/8 **06**: 1/4 **08**: 1/4 **10**: 3/8	**1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**	**N**: NBR **J**: EPDM **V**: Viton **T**: Teflon (*1) **R**: RUBY (*1) **Z**: FFKM	**2**, **3**, **2E** **4**, **5**, **3E** (*2)	Blank: DIN **D**: LED **G**: 1/2" NPT **Y**: 2 wires (only for coil #2)	Blank: Opposite (*3) **A**: Diagonal (*4)	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V

*1. When the seal material is (**T**) Teflon or (**R**) RUBY, the valve has slight leakage.
*2. Explosion-Proof (**2E/3E**) coil with LED (**D**) plug is not applicable.
*3. Only for code **03**,**06**,**10**.
*4. Only for code **08**.



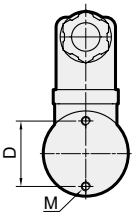
Specification

Model **MUSC**: 303 S.S. body, for water, air, gas, light oil (50cst down), vacuum. 2/2 way N.C.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C					Working pressuer 0~bar						CV	VAC. torr
					Coil 2/2E			Coil 3		Coil 2		Coil 3		Coil 2E			
					N	JV	TZ	N	JVTZ	AC	DC	AC	DC	AC	DC		
03(1/8) 06(1/4)	1	N J V T Z	2 3 2E	1.0	-5 ~ 80	-10 ~ 80	-20 ~ 80	-5 ~ 80	-10 ~ 145	30	30	30	30	30	30	0.03	10^{-2}
	2			1.3						30	24	30	30	30	30	0.05	
	3			1.6						30	20	30	30	30	24	0.09	
	4			2.0						16	11	22	20	17	14	0.14	
	5			2.5						10	7	12	10	10	8	0.18	10^{-1}
	6			3.0						6	4	8	8	7	5	0.27	
	7			3.5						4	2	8	6	5	4	0.30	10
	8			5.0						1	0.2	2	0.5	1	0.1	0.40	

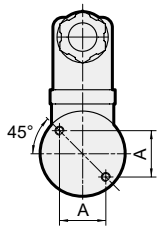
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C						Max. O.P.D. bar (Min. 0 bar)						CV	VAC. torr
					Coil 4, 5			Coil 3E			Coil 4		Coil 5		Coil 3E			
					N	JV	TRZ	N	JV	TRZ	AC	DC	AC	DC	AC	DC		
08(1/4) 10(3/8)	1	N J V T R Z	4 5 3E	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	30	20	40	30	25	20	0.10	10^{-2}
	2			2.0							24	14	30	28	16	12	0.15	
	3			2.5							17	10	24	20	10	8	0.20	
	4			3.0							10	6	16	13	7	6	0.31	
	5			4.0							8	4	12	8	4.5	3.5	0.54	10^{-1}
	6			5.0							6	2	9	5	2.5	2	0.80	
	7			5.5							4	2	7	4	2	2	0.95	
	8			7.5							2	0.8	3	2	1	1	1.10	10
	9			10.0							0.8	0.4	1.6	0.8	0.4	0.4	1.30	

*1. Max. Orifice: 03/06 **T**=2.5mm, **Z**=3.0mm., 08/10 **J**=5.0mm, **T**=4.0mm, **R**=2.5mm, **Z**=5.0mm.
*2. Seal **T** and **R** might have below 300cc/min. slight leakage, so it is not suitable for vacuum.
*3. Connect air source to outlet port for vacuum application.



A

Diagonal fixed hole



MUSD series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table
Seal material
Caution for safety
(Read before installing)



Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 PTB approval.
- Response time: ON 100~200ms, OFF: 200~400ms

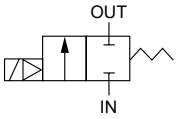
Power consumption

Coil power	2	3	2E
AC (VA)	6.9	8.0	5.3
DC (W)	6.2	6.8	5.2

Dimensions

Model		MUSD
Code Dimension (mm)		**15**
L		55
H		77
W		38
C		65
D		24
N.W (kg)	Coil 2	0.30
	Coil 3	0.35
	Coil 2E	0.62

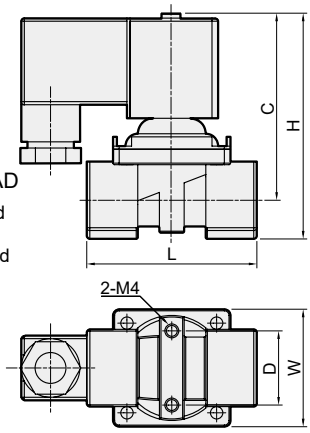
2/2 N.C.



Order example

MUSD — 15 — 0 — J — 2 — D — C — AC110 — G

- MODEL
- CODE: **15**: 1/2
- ORIFICE: **0**: Standard
- SEAL MAT'L: **N**: NBR; **J**: EPDM; **V**: Viton
- COIL: **2**: #2; **3**: Bigger; **2E**: Explosion-Proof (*1)
- PLUG: Blank: DIN; **D**: LED; **G**: 1/2" NPT; **Y**: 2 wires (only for coil #2)
- PLUNGER: Blank: Standard; **C**: PTFE coating
- VOLTAGE: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- PORT THREAD: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread



*1. Explosion-Proof (**2E**) coil with LED (**D**) plug is not applicable.

Specification

* **A**: Air, **L**: Liquid

Model **MUSD**: SCS14 body, #304 cover, for water, air, gas, light oil. 2/2 way N.C.																					
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. °C						Working press. (0.3~ bar)											CV
				Coil 2, 2E			Coil 3			Coil 2				Coil 3				Coil 2E			
										AC		DC		AC		DC		AC		DC	
				N	J	V	N	J	V	A*	L*	A	L	A	L	A	L	A	L	A	L	
15(1/2)	N J V	2 3 2E	15	-5 ~ 60	-10 ~ 60		-5 ~ 60	-10 ~ 120		6.5	5	5	4	10	7	7	5	5.5	4	4	3	2

MUSK series

2/2 WAY N.C. PILOT DIAPHRAGM TYPE **SOLENOID VALVE**

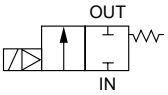
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Features

- Process valve for special environment.

Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Open: 100~200ms, Close: 200~400ms

Power consumption

Coil power	2	3	2E
AC (VA)	6.9	8	5.3
DC (W)	6.2	6.8	5.2

Dimensions

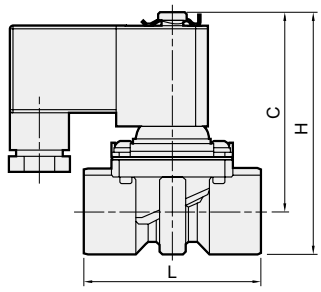
Model	MUSK		
Code Dimension (mm)	2	3	2E
C	65		
D	24		
H	77		
L	55		
W	38		
N.W (kg)	0.30	0.35	0.62

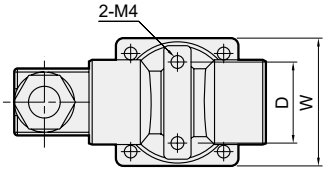
Order example

MUSK — 15 — 0 — J — 2 — D — C — DC24 — G

- MODEL
- CODE: **15**: 1/2
- ORIFICE: **0**: Standard
- SEAL MAT'L: **N**: NBR; **J**: EPDM; **V**: Viton
- COIL: **2**: Standrad; **3**: Bigger; **2E**: Expiosion-proof (*1)
- PLUG: Blank: DIN; **D**: LED; **G**: 1/2" NPT; **Y**: 2 wires (Only for coil 2)
- PLUNGER: Blank: Standard; **C**: PTFE coating
- VOLTAGE: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- PORT THREAD: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

*1. Explosion-Proof (2E) coil with LED (D) plug is not applicable.





Specification

* **A**: Air, **L**:Liquid

Model **MUSK**: SCS14 S.S. body, #304 cover, for water, air, gas, light oil, Vacuum etc. 2/2 way N.C.																					
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. °C				Working press. (0~ bar)												CV	Torr
				Coil 2,2E		Coil 3		Coil 2				Coil 3				Coil2E					
								AC		DC		AC		DC		AC		DC			
				N	J,V	N	J,V	A*	L*	A	L	A	L	A	L	A	L	A	L		
15(1/2)	N J V	2 3 2E	15	-5~60	-10~60	-5~60	-10~120	6.5	4.0	4.5	3.0	9.0	7.0	6.0	5.0	5.0	4.0	4.0	3.0	2.0	10^{-1}

MUSL series

2/2 WAY N.C. DIAPHRAGM TYPE **LATCH VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)



Features

- Energy-saving, blocking hazardous fluid.

Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Open: 100~200ms, Close: 200~400ms

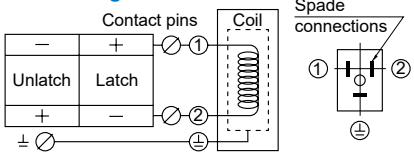
Power consumption

Coil power	**2L**
DC 6V/12 (W)	6.9
DC 24V (W)	6.0

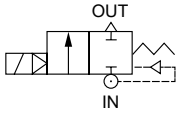
Dimensions

Model	**MUSL**
Code Dimension (mm)	**15**
C	65
D	24
H	77
L	55
W	38
N.W (kg)	0.30

Circuit diagram



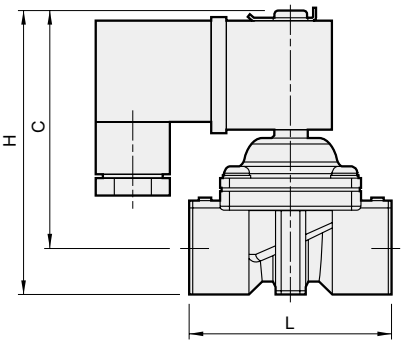
2/2 N.C.

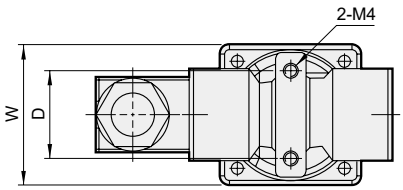


Order example

MUSL — 15 — 0 — J — L — D — DC12 — G

- MODEL
- CODE: **15**: 1/2
- ORIFICE: **0**: Standard
- SEAL MAT'L: **N**: NBR, **J**: EPDM, **V**: Viton
- COIL: **L**: #2L
- PLUG: Blank: DIN, **D**: LED, **G**: 1/2" NPT, **Y**: 2 wires
- VOLTAGE: **DC6**V, **DC12**V, **DC24**V
- PORT THREAD: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread





Specification

Model **MUSL**: SCS14 S.S. body, #304 cover, for water, air, gas, light oil, vacuum etc. 2/2 way N.C.									
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. °C		Working press. (0~ bar)		CV	Torr
				Coil L		Coil L			
				N	J, V	gas	liquid		
15(1/2)	N J V	2L	15	-5 ~ 60	-10 ~ 60	5	3	2	10^{-1}

MUST series

3/2 WAY N.C. PLUNGER TYPE **SOLENOID VALVE**

mindman

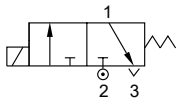
Selection table

Seal material

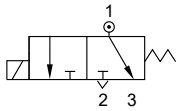
Caution for safety
(Read before installing)



3/2 Function 1



3/2 Function 2



* O.P.D. of function 1, 2 refer to specification table.

Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.

Power consumption

Coil power	2	3	2E	4	5	3E
AC (VA)	6.9	8.0	5.3	18.0	24.0	8.6
DC (W)	6.2	6.8	5.2	15.0	18.5	10.0

Dimensions

Model		MUST			
Code / Dimension (mm)		03	06	08	10
L		25	30	40	42
W	2	25	25	–	–
	3, 2E	30	30	–	–
F		22	22	29	29
H		58	63	86	87
C		51	53	75	75
D		18	23	31	31
M		M4	M4	M5	M5
A		–	–	22	–
N.W (kg)	2, 4	0.18	0.23	0.52	0.52
	3, 5	0.23	0.28	0.58	0.60
	2E, 3E	0.50	0.55	0.83	0.85

Order example

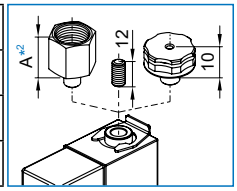
* Standard port thread: Rc thread.
G and NPT thread please contact our sales.

MUST — 06 — 2 — N — C — 5 — D — A — AC110

MODEL	CODE	FIG.	SEAL MAT'L	COIL	PLUG	FIXED HOLE	VOLTAGE
	03: 1/8 **06**: 1/4 **08**: 1/4 **10**: 3/8	**1**, **2**, **3**, **4**, **5**, **6**, **7**	**N**: NBR **J**: EPDM **V**: Viton **Z**: FFKM	**2**, **3**, **2E** **4**, **5**, **3E** (*1)	Blank: DIN **D**: LED **G**: 1/2" NPT **Y**: 2 wires (only for coil #2)	Blank: Opposite **A**: Diagonal (*3)	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V

EXHUST ACCESSORIES

U	–	Without
F		PS female
C		Dust-proof & silencer cap
P		1/8" PS male

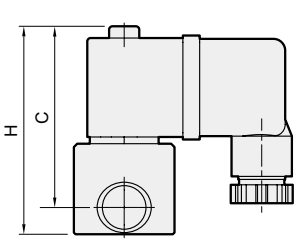


*1. Explosion-Proof (**2E/3E**) coil with LED (**D**) plug is not applicable.

*2.

Code	03	06	08	10
A	19	20	20	22

*3. Only for code **08**.

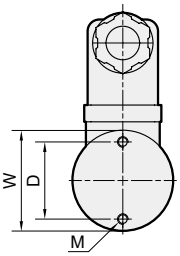


Specification

Model **MUST**: 303 S.S. bar body , for water, air, gas, light oil (50cst down) , vacuum. 3/2 way N.C., N.O.

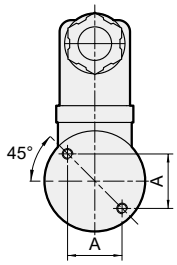
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp.°C						Working pressure (0~ bar)						CV	Torr
						Coil 2, 2E			Coil 3			Coil 2		Coil 3		Coil 2E			
				Body	Tube	N	J V	Z	N	JVZ		Function							
												1	2	1	2	1	2		
03(1/8) 06(1/4)	2	N J V Z	2 3 2E	1.0	1.2	-5 ~ 80	-10 ~ 80	-20 ~ 80	-5 ~ 80	-10 ~ 145		6.5	7.0	8.0	9.0	5.5	5.5	0.03	10^{-1}
	3			1.3								6.0		7.0		4.8		0.05	
	4			1.6								4.0		5.5		3.5		0.09	
	5			2.0	1.5							2.8	5.0	3.5	7.0	2.0	3.5	0.14	
	6			2.5								1.2		1.5		0.8		0.18	

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp. °C						Working pressure (0~ bar)						CV	Torr
						Coil 4, 3E			Coil 5			Coil 4		Coil 5		Coil 3E			
				Body	Tube	N	JV	Z	N	JV	Z	Function							
												1	2	1	2	1	2		
08(1/4) 10(3/8)	1	N J V Z	4 5 3E	1.3	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	9.0	10	12	12	8.0	10	0.05	10^{-2}
	2			1.6								7.0		8.5		6.0		0.10	
	3			2.0	2.0							5.5	8.0	7.0	10	5.0	8.0	0.15	
	4			2.5	2.5							4.0	6.5	5.5	8	3.0	6.5	0.20	
	5			3.0	3.0							2.5	4.5	4.0	5.5	2.0	4.5	0.31	
	6			4.0								1.5		2.5		1.5		0.51	10^{-1}
	7			5.0								1.0		1.5		0.8		0.65	



A

Diagonal hole



MUT series

3/2 WAY N.C., N.O. PLUNGER TYPE **SOLENOID VALVE**

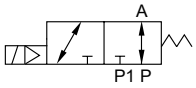
mindman

Selection table

Seal material

Caution for safety
(Read before installing)





Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.
- Response time: ON 5~20ms, OFF 10~40ms.

Power consumption

Coil power	2	3	2E	4	5	3E
AC (VA)	6.9	8.0	5.3	19.5	23.0	9.2
DC (W)	6.0	6.8	5.2	15.0	18.5	10.0

Dimensions

Model	MUT			
Code / Dimension (mm)	03	06	08	10
C	48		65	
D	14		22	
E	25		29	
G	51		57	
H	69		87	
L	46		51	
M	M3		M4	
W	32		39	
N.W (kg) 2, 4	0.33		0.5	
N.W (kg) 3, 5	0.31		0.6	
N.W (kg) 2E, 3E	0.58		0.8	

Order example

MUT – 10 – 2 – 3 – □ – AC110 – □

MODEL

CODE
03: 1/8
06: 1/4
08: 1/4
10: 3/8

FIG.
1
2
3
4

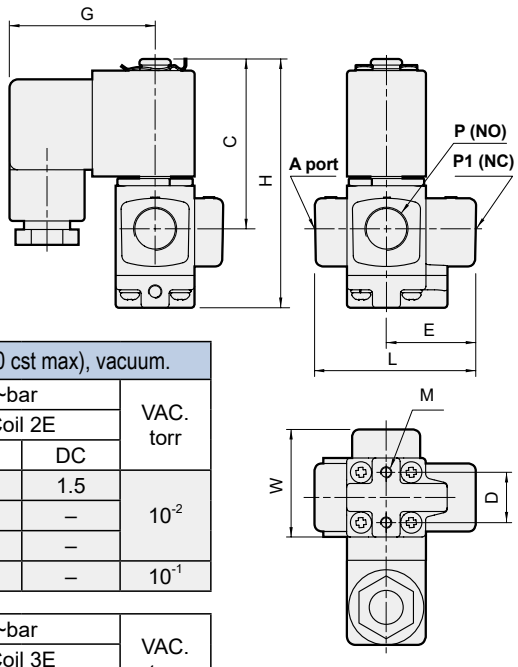
COIL
2, **3**, **2E**
4, **5**, **3E**
(*)

* Explosion-Proof (**2E/3E**) coil with LED (**D**) plug is not applicable.

PLUG
Blank: DIN
D: LED
G: 1/2" NPT
Y: 2 wires (only for coil #2)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread



Specification

Model **MUT**: Forged brass body, 3/2 way N.C., N.O., for water, air, gas, light oil, heavy oil (120 cst max), vacuum.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Mat'l / Temp.°C / V	Working pressure 0~bar Coil 2 AC	Coil 3 DC	Coil 2E AC	Coil 2E DC	VAC. torr
03(1/8) 06(1/4)	1	V*	2 3 2E	1.0	-5~95	6	6	5.5	1.5	10^{-2}
	2			1.3		5	5	4.5	–	
	3			1.6		2.5	2	2	–	
	4			2.0		1.5	0.7	1.5	–	10^{-1}

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Mat'l / Temp.°C / V	Working pressure 0~bar Coil 4 AC/DC	Coil 5 AC/DC	Coil 3E AC	Coil 3E DC	VAC. torr
08(1/4) 10(3/8)	1	V*	4 5 3E	1.3	-5~95	10	14	8	7	10^{-2}
	2			1.6		7	12	7	4	
	3			2.0		6	10	5	2	
	4			2.5		5	8	5	1.5	10^{-1}

* V: Viton (FKM)

MWA / MWH / MWS series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

Selection table

Seal material

Caution for safety
(Read before installing)



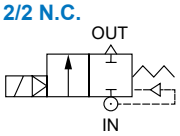
Specification

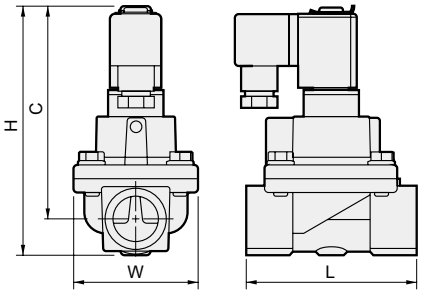
- IP65 waterproof coil.
- Ex coil is EExm II T4 PTB approval.
- Ambient temp.:-15~50°C
- Voltage tolerance: ±8%
- Installing position is free.
  (You'd better put the coil upright)
- Pilot piston series.
- Opening: 100~300 ms, Closing: 300~2000 ms

Power consumption

Coil power	4	5	3E
AC (VA)	19.5	23	9.2
DC (W)	15	18.5	10

2/2 N.C.





Order example

* Standard port thread: Rc thread.
G and NPT thread please contact our sales.

MWA — 10 — N — 4 — □ — F — AC110

MODEL
MWA
MWH
MWS

CODE
10, **15**, **20**, **25**,
32, **40**, **45**, **50**

SEAL MAT'L
N: NBR
V: Viton
T: Teflon (*1)

COIL
4: #4
5: Bigger
3E: Explosion-Proof (*2)

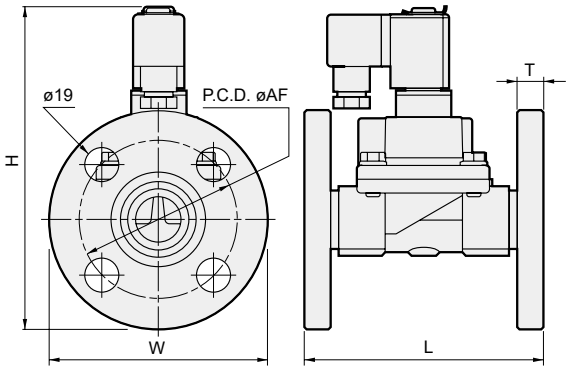
PLUG
Blank: DIN
D: LED
G: 1/2" NPT

CONN.
Blank: Screwed
F: Flanged

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

*1. When the seal material is (**T**) Teflon, the valve has slight leakage.
*2. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

F **Flanged** (JIS10K)



Dimensions

Model		MWA / H / S (Screwed)								MWA / H / S (Flanged)				
Code / Dimension (mm)		10	15	20	25	32	40	45	50	25	32	40	45	50
AF		–								90	100	105	105	120
C		116		117	122	137		151		–				
L		77		82	96	102		123		138	155	155	175	175
H		130		134	142	165		185		185	204	207	221	228
T		–								14	16	16	16	16
W		51		61	72	76		95		125	135	140	140	155
N.W (kg)	4	1.14	1.11	1.34	1.82	2.88	2.62	4.80	4.23	4.21	5.99	6.07	8.25	8.35
	5	1.22	1.19	1.42	1.89	2.95	2.69	4.88	4.31	4.29	6.07	6.15	8.33	8.43
	3E	1.44	1.41	1.63	2.11	3.17	2.91	5.09	4.52	4.51	6.29	6.37	8.55	8.65

MWA / MWH / MWS

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

mindman

Specification

Model **MWA**: Forged brass body, 2/2 way N.C. for air, water, light oil, gas etc.												
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C	Working pressure 0.5 ~ bar						CV
				Coil 4, 5, 3E	Coil 4		Coil 5		Coil 3E		
				N	AC	DC	AC	DC	AC	DC	
10(3/8)	N	4 5 3E	15	-5 ~ 80	8	6	15	10	7	5	3.0
15(1/2)			15		8	6	15	10	7	5	4.0
20(3/4)			20		8	6	15	10	7	5	6.8
25(1)			25		6	4	12	7	4	3	11.0
32(1 1/4)			31		6	4	12	7	4	3	16.0
40(1 1/2)			31		6	4	12	7	4	3	21.0
45(1 1/2)			41		4	3	10	5	3	2	26.0
50(2)			41		4	3	10	5	3	2	31.0

Model **MWH**: Forged brass body, 2/2 way N.C. for light oil, heavy oil, high viscosity fluids (Max. 120 cst) etc.												
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C	Working pressure 0.5 ~ bar						CV
				Coil 4, 5, 3E	Coil 4		Coil 5		Coil 3E		
				V	AC	DC	AC	DC	AC	DC	
10(3/8)	V	4 5 3E	15	-10 ~ 145	8	6	15	10	7	5	3.0
15(1/2)			15		8	6	15	10	7	5	4.0
20(3/4)			20		8	6	15	10	7	5	6.8
25(1)			25		6	4	12	7	4	3	11.0
32(1 1/4)			31		6	4	12	7	4	3	16.0
40(1 1/2)			31		6	4	12	7	4	3	21.0
45(1 1/2)			41		4	3	10	5	3	2	26.0
50(2)			41		4	3	10	5	3	2	31.0

Model **MWS**: Forged brass body, 2/2 way N.C. for steam, high temp fluid, etc. (Internal leakage)												
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C		Working pressure 0.5 ~ bar						CV
				Coil 4,3E	Coil 5	Coil 4		Coil 5		Coil 3E		
				T		AC	DC	AC	DC	AC	DC	
10(3/8)	T	4 5 3E	15	-10 ~ 155	-10 ~ 185	8	6	15	10	7	5	3.0
15(1/2)			15			8	6	15	10	7	5	4.0
20(3/4)			20			8	6	15	10	7	5	6.8
25(1)			25			6	4	12	7	4	3	11.0
32(1 1/4)			31			6	4	12	7	4	3	16.0
40(1 1/2)			31			6	4	12	7	4	3	21.0
45(1 1/2)			41			4	3	10	5	3	2	26.0
50(2)			41			4	3	10	5	3	2	31.0

MWD / MWK series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

Selection table

Seal material

Caution for safety
(Read before installing)



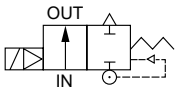
Specification

- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 PTB approval.
- Opening: 200~500 ms
  Closing: 1000~4000 ms

Power consumption

Coil power	4	5	3E
AC (VA)	19.5	23.0	9.2
DC (W)	15.0	18.5	10.0

2/2 N.C.



Order example

MWD — 15 — J — 5 — G — □ — M — AC110 — □

- MODEL: **MWD** **MWK**
- CODE: **10**, **15**, **20**, **25**, **32**, **40**, **45**, **50**
- COIL: **4**: #4; **5**: Bigger; **3E**: Explosion-Proof (*)
- SEAL MAT'L: **N**: NBR; **J**: EPDM; **V**: Viton
- PLUG: Blank: DIN; **D**: LED; **G**: 1/2" NPT
- CONN.: Blank: Thread; **F**: Flanged
- MANUAL: Blank: Without; **M**: With
- VOLTAGE: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- PORT THREAD: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread (Not suitable for flanged)

* Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

Specification

Model **MWD**: Forged brass body, 2/2 way N.C., for water, air, LPG, light oil etc.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C			Working press. (0.2~ bar)												CV
				Coil 4, 5, 3E			Coil 4				Coil 5				Coil 3E				
							AC		DC		AC		DC		AC		DC		
				N	J	V	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid	
10(3/8)	N J V	4 5 3E	18	-10 ~ 80	-10 ~ 145		12	10	1.5	1.5	13	12	5	5	5	2	1	1	3.2
15(1/2)			18				12	10	1.5	1.5	13	12	5	5	5	2	1	1	4.2
20(3/4)			23				10	8	1.5	1.5	12	10	5	5	5	2	0.7	0.7	8.0
25(1)			28				9	8	1.2	1.2	12	10	4	4	5	2	0.5	0.5	11.0
32(1 1/4)			33				9	8	1	1	12	10	3	3	4	2	–	–	16.0
40(1 1/2)			33				9	8	1	1	12	10	3	3	4	2	–	–	21.0
45(1 1/2)			44				8	3	–	–	10	7	1	1	4	0.1	–	–	26.0
50(2)			44				8	3	–	–	10	7	1	1	4	0.1	–	–	31.0

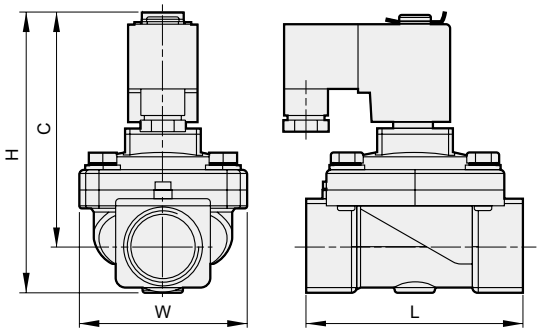
Model **MWK**: Forged brass body, 2/2 way N.C., for vacuum, water, air, gas, light oil etc.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C			Working press. (0~ bar)								CV	VAC. torr
				Coil 4, 5, 3E			Coil 4		Coil 5				Coil 3E			
							AC		AC		DC		AC			
				N	J	V	Gas	Liquid	Gas	Liquid	Gas	Liquid	Gas	Liquid		
10(3/8)	N J V	4 5 3E	18	-10 ~ 80	-10 ~ 145		10	7	12	10	4	4	7	2	3.2	10^{-2}
15(1/2)			18				10	7	12	10	4	4	7	2	4.2	
20(3/4)			23				9	7	11	10	3.5	3.5	7	1.5	8.0	
25(1)			28				9	6.5	11	10	3	3	7	1.2	11.0	
32(1 1/4)			33				8	5.5	10	10	2	2	7	0.8	16.0	10^{-1}
40(1 1/2)			33				8	5.5	10	10	2	2	7	0.8	21.0	
45(1 1/2)			44				7	3.5	10	5.5	1	1	1	0.2	26.0	
50(2)			44				7	3.5	10	5.5	1	1	1	0.2	31.0	

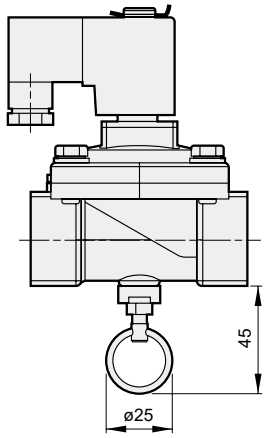
* Connect air source to outlet port for vacuum application.

MWD / MWK Dimensions & Weight

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**



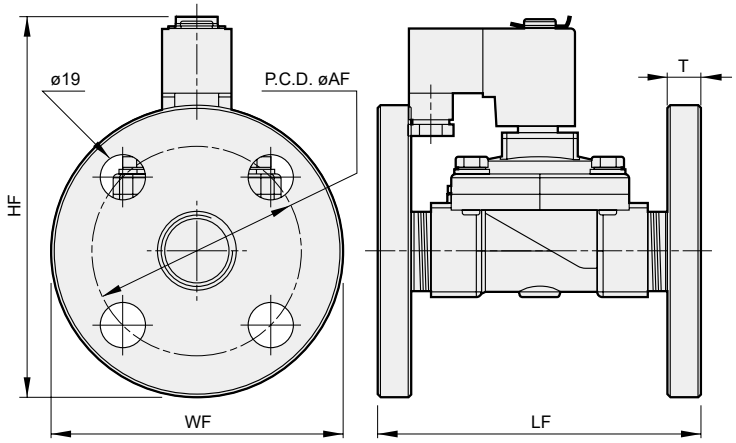
M With manual



CW: Close
CCW: Open

Model		MWD / MWK							
Code Dimension (mm)		10	15	20	25	32	40	45	50
C		93		95	99	107	107	118	118
L		77		82	96	102	102	123	123
H		107		112	119	135	135	152	152
W		51		61	72	76	76	95	95
N.W (kg)	Coil 4	0.86	0.83	1.02	1.42	2.10	1.85	3.80	3.22
	Coil 5	0.95	0.92	1.10	1.51	2.18	1.93	3.88	3.30
	Coil 3E	1.15	1.12	1.30	1.71	2.38	2.13	4.08	3.51

F Flanged (JIS10K)



Model		MWD-F / MWK-F				
Code Dimension (mm)		25	32	40	45	50
AF		90	100	105	105	120
HF		161	174	177	188	195
LF		138	155	155	175	175
T		14	16	16	16	16
WF		125	135	140	140	155
N.W (kg)	Coil 4	3.82	5.21	5.30	7.25	7.34
	Coil 5	3.90	5.30	5.38	7.34	7.43
	Coil 3E	4.10	5.50	5.59	7.54	7.63

MYA / MYS series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

Selection table

Seal material

Caution for safety
(Read before installing)



Specification

- Y type forged brass body.
- IP65 100% ED coil.
- PTB approval EExm II T4 coil.

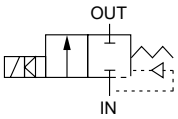
Power consumption

Coil power	4	5	3E
AC (VA)	17.6/15.4	33/23	9.2
DC (W)	15	18.5	10

Dimensions

Model	MYA / MYS	
Code Dimension (mm)	10	15
H	118.0	
L	95.0	
N	59.0	
W	13.0	
N.W (kg)	0.55	

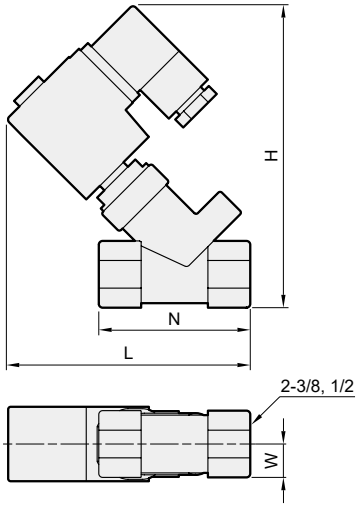
2/2 N.C.



Order example

MYA — 10 — N — 4 — □ — AC110 — □

MODEL	CODE	SEAL MAT'L	COIL	PLUG	VOLTAGE	PORT THREAD
MYA **MYS**	**10**: 3/8 **15**: 1/2	**N**: NBR **J**: EPDM **V**: Viton **T**: Teflon (*1)	**4**: #4 **5**: Bigger **3E**: Explosion-Proof (*2)	Blank: DIN **D**: LED **G**: 1/2" NPT	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V	Blank: Rc thread **G**: G thread **NPT**: NPT thread



*1. When the seal material is (**T**) Teflon, the valve has slight leakage.
*2. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

Model **MYA**: for water, air and high temp. fluids.													
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. 5~°C				Working press. bar					CV
				Coil 4		Coil 5, 3E		Coil 4		Coil 5		Coil 3E	
				N	J, V	N	J, V	AC	DC	AC	DC	AC/DC	
10(3/8)	N, J, V	4, 5, 3E	12	95	120	95	145	0.3~16	0.3~10	0.3~20	0.3~12	0.3~5	1.9
15(1/2)			12					0.3~16	0.3~10	0.3~20	0.3~12	0.3~5	2.6

Model **MYS**: for steam and high temp. fluids.											
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. 5~°C		Working press. bar					CV
				Coil 4, 3E	Coil 5	Coil 4		Coil 5		Coil 3E	
				T	T	AC	DC	AC	DC	AC/DC	
10(3/8)	T*	4, 5, 3E	12	158	185	0.3~5	0.3~2	0.3~10	0.3~7	0.3~5	1.9
15(1/2)			12			0.3~5	0.3~2	0.3~10	0.3~7	0.3~5	2.6

* Teflon seal will have 400 cc/min. down gas leakage.

MZS series

2/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)



Specification

- IP65 100% ED coil.
- PTB approval EExm II T4 coil.

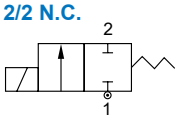
Power consumption

Coil power	4	5	3E
AC (VA)	18.0	24.0	8.6
DC (W)	15.0	18.5	10.0

Dimensions

Model		MZS			
Code / Dimension (mm)		03	06	10	15
L		41		51.5	
W	Coil 4	32			
	Coil 5	36			
	Coil 3E	36			
H		74.5		80.5	
C		66		68	
D		16		19	
M		M3×0.5		M4×0.7	
N.W (kg)	Coil 4	0.37	0.36	0.45	0.43
	Coil 5	0.45	0.44	0.53	0.51
	Coil 3E	0.67	0.66	0.75	0.73

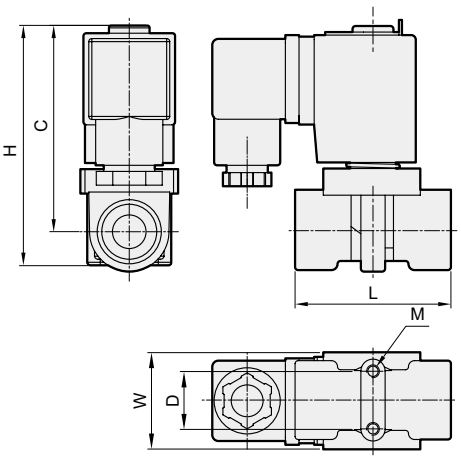
2/2 N.C.



Order example

MZS – 06 – 2 – N – 5 – □ – AC110 – □

- **MODEL**
- **CODE**: **03**: 1/8", **06**: 1/4", **10**: 3/8", **15**: 1/2"
- **FIG.**: **1**, **2**, **3**, **4**, **5**, **6**
- **SEAL MAT'L**: **N**: NBR, **J**: EPDM, **V**: Viton, **T**: Teflon (*1), **R**: RUBY (*1), **Z**: FFKM
- **COIL**: **4**: #4, **5**: Bigger, **3E**: Explosion-Proof (*2)
- **PLUG**: Blank: DIN, **D**: LED, **G**: 1/2" NPT
- **VOLTAGE**: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- **PORT THREAD**: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread



*1. When the seal material is (**T**) Teflon or (**R**) RUBY, the valve has slight leakage.
*2. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

Model **MZS**: Forged brass body, 2/2 way N.C., for water, air, gas, light oil (50cst down), vacuum etc.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp.°C						Max. O.P.D. bar (Min. 0 bar)						CV	VAC. torr
					Coil 4, 3E			Coil 5			Coil 4		Coil 5		Coil 3E			
					N	JV	TRZ	N	JV	TRZ	AC	DC	AC	DC	AC	DC		
03(1/8) 06(1/4) 10(3/8) 15(1/2)	1	N J V T R Z	4 5 3E	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	30	20	40	30	25	20	0.10	10^{-2}
	2			2.0							24	14	30	28	16	12	0.15	
	3			2.5							17	10	24	20	10	8	0.20	
	4			3.0							10	6	16	13	7	6	0.31	
	5			4.0							8	4	12	8	4.5	3.5	0.54	10^{-1}
	6			5.0							6	2	9	5	2.5	2	0.80	

* The max. orifice for seal T = 4.0mm, R = 2.5mm.
* Seal T and R will have slight leakage, so it will not be suitable for vacuum.

MZT series

3/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

mindman

Selection table

Seal material

Caution for safety
(Read before installing)



Specification

- IP65 100% ED coil.
- PTB approval EExm II T4 coil.

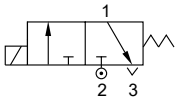
Power consumption

Coil power	4	5	3E
AC (VA)	18	24.0	8.6
DC (W)	15	18.5	10.0

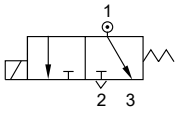
Dimensions

Model		MZT			
Code / Dimension (mm)		03	06	10	15
L		41		51.5	
W	Coil 4	32			
	Coil 5	36			
	Coil 3E	36			
H		74.5		80.5	
C		66		68	
D		16		19	
M		M3×0.5		M4×0.7	
N.W (kg)	Coil 4	0.37	0.36	0.45	0.43
	Coil 5	0.45	0.44	0.53	0.51
	Coil 3E	0.70	0.69	0.78	0.76

3/2 Function 1



3/2 Function 2



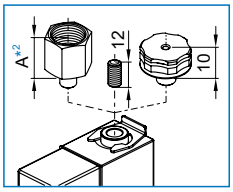
Order example

MZT — 06 — 2 — N — C — 5 — D — AC110 — □

- **MODEL**: MZT
- **CODE**: **03**: 1/8", **06**: 1/4", **10**: 3/8", **15**: 1/2"
- **FIG.**: **1**, **2**, **3**, **4**, **5**, **6**, **7**
- **SEAL MAT'L**: **N**: NBR, **J**: EPDM, **V**: Viton, **Z**: FFKM
- **COIL**: **4**: Standard, **5**: Bigger, **3E**: Explosion-Proof (*1)
- **PLUG**: Blank: DIN, **D**: LED, **G**: 1/2" NPT
- **VOLTAGE**: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- **PORT THREAD**: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

EXHUST ACCESSORIES

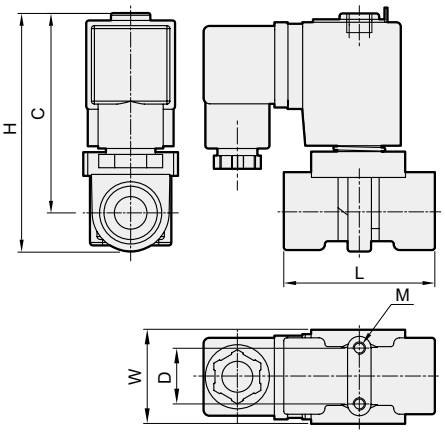
U	–	Without
F		PS female
C		Dust-proof & silencer cap
P		1/8" PS male



*1. Explosion-Proof (**3E**) coil with LED (**D**) plug is not applicable.

*2.

Code	03	06	10	15
A	19	20	22	–



Model **MZT**: Forged brass body, 3/2 way N.C., for water, air, gas, vacuum, light oil (50cst down) etc.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp.°C						Max. O.P.D bar (Min. 0 bar)						CV	VAC. torr
						Coil 4, 3E			Coil 5			Coil 4		Coil 5		Coil 3E			
				Body	Top	N	JV	Z	N	JV	Z	AC/DC, Funtion							
												1	2	1	2	1	2		
03(1/8) 06(1/4) 10(3/8) 15(1/2)	1	N J V Z	4 5 3E	1.3	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	9	10	12	12	8	10	0.05	10^{-2}
	2			1.6								7		8.5		6		0.10	
	3			2.0	2.0							5.5	8	7	10	5	8	0.15	
	4			2.5	2.5							4	6.5	5.5	8	3	6.5	0.20	
	5			3.0								2.5		4		2		0.31	
	6			4.0	3.0							1.5	4.5	2.5	5.5	1.5	4.5	0.51	10^{-1}
	7			5.0								1		1.5		0.8		0.65	

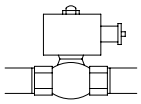
Quick reference chart normally closed & normally open

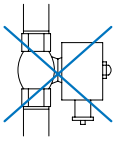
The spot indicated on the effective area present the more the better, ●●● the best, ●● better, good.

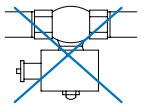
Model	MUD / MUS	MUA	MUDC	MSUS	MUAO	MUW	MUW-NO	MUW-F
Photograph								
Port size	1/8"~3/8"	1/4", 3/8"	1/4"~1"	1/8"~2"	1/4"~1/2"	3/8"~2"	3/8"~2"	1 1/4"~4"
Operating pressure (MPa)	0~2	0~1	0~0.1	0~1	0.05~1.5	0~2	0~0.7	0.02~0.8
Fluid temp. °C	-5~+130°C	-5~+80°C	-5~+80°C	-5~+185°C	-5~+80°C	-5~+80°C	-5~+80°C	-5~+80°C
Steam	●●			●●●				
Water	●●●	●●●	●●●	●●●	●●	●●●	●●●	●●●
Air	●●●	●●●	●●	●●●	●●●	●●●	●●●	●●●
Oil	●●			●●	●●●	●●	●●	●●
Gas	●●			●●			●●	
Vacuum	●●	●●		●●			●●	

Model	MUG / MUV	MUAW	MUS / MUS-F	MSUW	MSUW-F	MUPS
Photograph						
Port size	3/8"~2"	1/2"~2"	1/2"~4"	1/2"~2"	1/2"~2"	1/2"~1"
Operating pressure (MPa)	0~0.7	0.05~1.5	0.05~1	0~2	0~2	0.05~1
Fluid temp. °C	-5~+80°C	-5~+80°C	-5~+185°C	-5~+80°C	-5~+80°C	-5~+185°C
Steam			●●●			●●●
Water	●●	●●●	●●●	●●●	●●●	●●●
Air	●●	●●●	●●●	●●●	●●●	●●●
Oil			●●	●●	●●	●●
Gas	●●●					
Vacuum	●●●			●●	●●	

Prohibition vertical operation ⚠

1


2


3


Caution

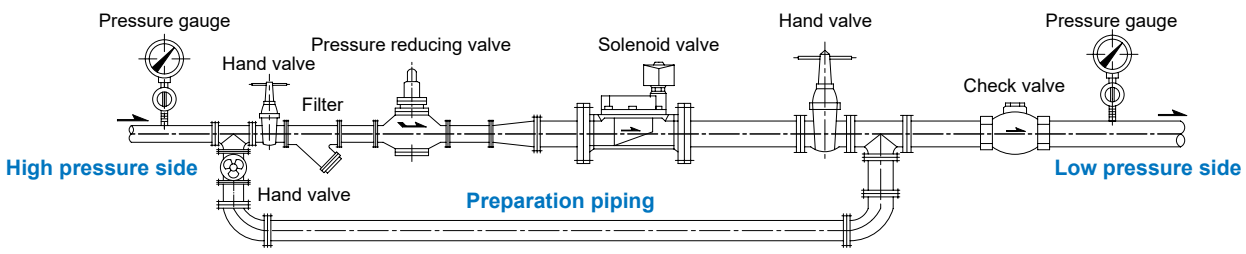
1. Pipes must be washed neat and clean before fitted.
2. A Y-strainer has to installed in the front of solenoid valve, that is best for long life.
3. Before installation, be sure what type of fluid, voltage, pressure and fluid temperature used.

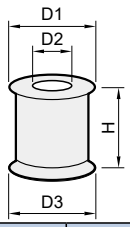
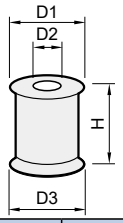
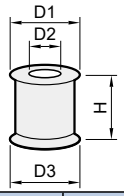
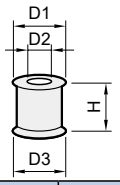
Remark Wire color of outlet coil

Voltage	AC110V	AC220V	Other
Color	Blue	Red	Blue+Red

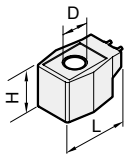
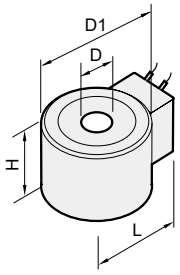
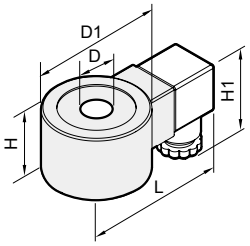
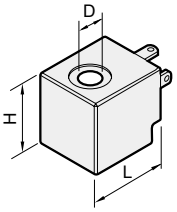
Standard voltage: AC 110V/220V (50/60)Hz

Detailed description of diagram



Type	XL type				L type				M type				S type			
Dimension (mm)																
	D1	D2	D3	H	D1	D2	D3	H	D1	D2	D3	H	D1	D2	D3	H
	ø60.7	ø23	ø63.2	53.1	ø42.3	ø11.6	ø44.4	42.1	ø42.5	ø16.5	ø44.4	34.4	ø37.3	ø14.2	ø37.5	29.2
Model	MUAW-15~50 MUS-15~50 MUDC(TF)-20~25				MUD-15 MUD-10(8mm)				MUA-10 MUS-10 MUD-10(H)(NO) MSUS-10 MUAO-8~15 MUDC-8~15(TF) MUW(F)-10~25(NO) MUW(F)-35-1~50-1(NO) MUV-10~50 MUG-10~50 MSUW(F)-10~25(NO) MSUW(F)-35-1~50-1(NO) MUPS(F)-15~25 MSUS(F)-15~50(NO) MUW-35F~100F(NO)				MUA-8 MUD-6~8(H) MUD-6 NO~8 NO MSUS-6 NO~8 NO			

Waterproof coil

Type	S type			M type				DIN 63650					NASS DIN 63650		
Dimension (mm)															
	D	L	H	D	D1	L	H	D	D1	L	H	H1	D	L	H
	ø14.1	50.5	32.4	ø16.3	ø56	69.3	38.2	ø16.3	ø56	97	38.2	52	ø14.6	71.1	42.3
Model	MUA-8 MUS-6~8 MSUS-6~8 MUD-6~8(H)			MUA-10 MUS-10 MUD-10(H)(NO) MSUS-10 MUAO-8~15 MUDC-8~15(TF) MUW(F)-10~25(NO) MUW(F)-35-1~50-1(NO)				MUV-10~50 MUG-10~50 MSUW(F)-10~25(NO) MSUW(F)-35-1~50-1(NO) MUPS(F)-15~25 MSUS(F)-15~50(NO) MUW-35F~100F(NO)					MUD-10 MSUS-10 MUW(F)-10~25 MUG-10~25 MUV-10~25 MSUW(F)-10~25 MUPS(F)-10~25 MSUS(F)-15~50		

MUD / MUS series

2/2 WAY N.C., N.O. PLUNGER TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

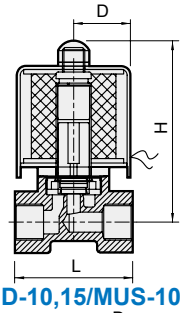
Seal material

Caution for safety
(Read before installing)

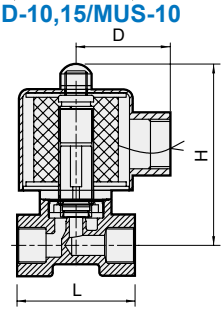
2 way normally closed / normally open solenoid valve.
Available fluid: Water, air, steam, light oil, gas & vacuum.



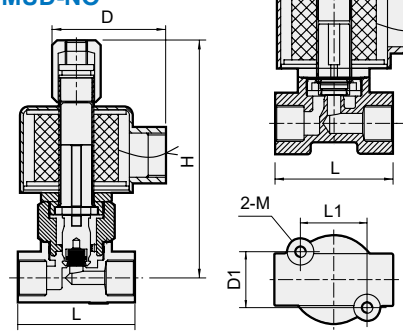
MUD/MUS-6,8



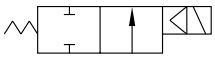
MUD-10,15/MUS-10



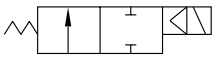
MUD-NO



2/2 N.C.



2/2 N.O.



Specification

- Direct acting, conductive and N.C. / N.O.
- Able to be operated under no pressure.
- MUD: Acceptable for customization: Viton(130°C), Silicon(130°C), EPDM(130°C) for seal plug.
- AC (DC) voltage tolerance: ±10% (±1%)

Material

Parts name	MUD	MUS
Body	Brass	
Coil	Special copper wire (H class)	
Tube	Stainless steel	
Spring	Stainless steel	
Core	Stainless steel	
Plug	NBR	PTFE (Teflon)
O-ring	NBR	PTFE (Teflon)

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- MUD: Viscosity over 20 cst.
- MUS: Viscosity over 50 cst.
- The temperature over 130°C, the waterproof coil casing is prone to deformation.

Order example

MUD — 6 H — NO — □ — G — AC110 — G

MODEL
MUD
MUS

PORT SIZE
6: 1/8"
8: 1/4"
10: 3/8"
15: 1/2"

OPERATING PRESSURE
Blank: Standard
H: High pressure

Blank: Normally closed
NO: Normally open

COIL
Blank: Standard iron shell coil
D: DIN terminal (under 130°C) (*1)
I: Waterpoof terminal (under 130°C) (*1)

FLUID	
W	Water, air
G	Gas
LO	Light oil (*2)
VA	Vacuum

(Only for **MUD**)

T	Steam

(Only for **MUS**)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

	Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa) Water	Air	Steam	Light oil	Gas	Vacuum Torr	Dimensions (mm) L	H	D	L1	D1	M	Weight (kg)
NC	**MUD-6**	◎	Rc1/8"	0.23	2.5	-5~+80	0~0.7	0~0.7	—	0~0.7	0~0.7	$0\sim10^{-3}$	41	66	21.5	23	19.3	M4×0.7	0.32
	MUD-8	◎	Rc1/4"	0.23	2.5	-5~+80	0~0.7	0~0.7	—	0~0.7	0~0.7	$0\sim10^{-3}$	41	66	21.5	23	19.3	M4×0.7	0.31
	MUD-8	◎	Rc1/4"	0.58	4.0	-5~+80	0~0.3	0~0.3	—	0~0.3	0~0.3	$0\sim10^{-3}$	41	66	21.5	23	19.3	M4×0.7	0.31
	MUD-8		Rc1/4"	0.79	6.0	-5~+80	0~0.1	0~0.1	—	0~0.1	0~0.1	$0\sim10^{-3}$	41	66	21.5	23	19.3	M4×0.7	0.31
	MUD-8H		Rc1/4"	0.18	1.2	-5~+130	0~2	0~2	—	0~2	0~2	$0\sim10^{-3}$	41	66	21.5	23	19.3	M4×0.7	0.31
	MUD-10	●	Rc3/8"	0.58	4.0	-5~+80	0~1	0~1	—	0~1	0~1	$0\sim10^{-3}$	53	75	48	20	21.0	M5×0.8	0.53
	MUD-10		Rc3/8"	0.79	8.0	-5~+80	0~0.3	0~0.5	—	0~0.3	0~0.5	$0\sim10^{-3}$	53	90	48	20	21.0	M5×0.8	0.65
	MUD-10H	●	Rc3/8"	0.45	2.0	-5~+130	0~2	0~2	—	0~2	0~2	$0\sim10^{-3}$	53	75	48	20	21.0	M5×0.8	0.54
	MUD-15		Rc1/2"	0.58	8.0	-5~+80	0~0.3	0~0.5	—	0~0.3	0~0.5	$0\sim10^{-3}$	53	90	48	20	21.0	M5×0.8	0.64
	MUS-6	◎	Rc1/8"	0.23	2.5	-5~+185	—	—	0~0.7	—	—	—	41	66	21.5	—	—	—	0.32
	MUS-8	◎	Rc1/4"	0.23	2.5	-5~+185	—	—	0~0.7	—	—	—	41	66	21.5	23	19.3	M4×0.7	0.32
	MUS-10	●	Rc3/8"	0.23	4.0	-5~+185	—	—	0~1	—	—	—	53	75	48	20	21.0	M5×0.8	0.54
NO	**MUD-6-NO**		Rc1/8"	0.23	2.5	-5~+80	0~0.7	0~0.7	—	0~0.7		$0\sim10^{-3}$Torr	41	87	21.5	23	19.3	M4×0.7	0.44
	MUD-8-NO		Rc1/4"	0.23	2.5	-5~+80	0~0.7	0~0.7	—	0~0.7		$0\sim10^{-3}$Torr	41	87	21.5	23	19.3	M4×0.7	0.43
	MUD-8-NO		Rc1/4"	0.58	4.0	-5~+80	0~0.3	0~0.3	—	0~0.3		$0\sim10^{-3}$Torr	41	87	21.5	23	19.3	M4×0.7	0.43
	MUD-8-NO		Rc1/4"	0.79	6.0	-5~+80	0~0.1	0~0.1	—	0~0.1		$0\sim10^{-3}$Torr	41	87	21.5	23	19.3	M4×0.7	0.43
	MUD-8H-NO		Rc1/4"	0.18	1.2	-5~+130	0~2	0~2	—	0~2		$0\sim10^{-3}$Torr	41	87	21.5	23	19.3	M4×0.7	0.43
	MUD-10-NO	●	Rc3/8"	0.58	4.0	-5~+80	0~1	0~1	—	0~1		$0\sim10^{-3}$Torr	53	105	48	20	21.0	M5×0.8	0.7

* ◎ The D/I waterproof coil is customization and requires a separate quotation.
* Connect air source to outlet port for vacuum application.
* MUD-6,8-NO: Voltage at DC24V, H: 79.5mm.

MUA series

3/2 WAY N.C. PLUNGER TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

Seal material

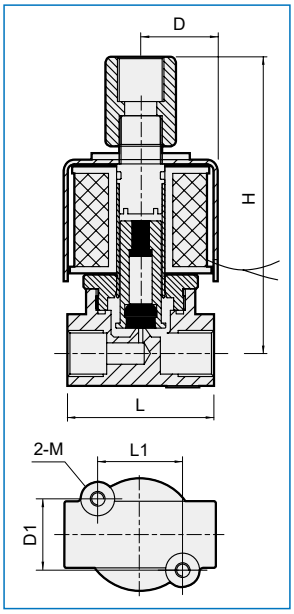
Caution for safety
(Read before installing)

2 way normally closed solenoid valve
Available fluid: Water, air, vacuum.



3/2 N.C.





Specification

- MUA series is direct acting, conductive and normal close.
- Able to be operated under no differential pressure.
- Applied to the equipment need to exhaust after power-off.
- Acceptable for customization : Viton (130°C) for seal plug.
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Forge brass
Coil	Special copper wire (H class)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	NBR
O-ring	NBR

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.
- Temperature over 80°C.

Order example

MUA — 8 — □ — □ — AC110 — G

- MODEL
- PORT SIZE
  8: 1/4"
  10: 3/8"
- COIL
  Blank: Standard iron shell coil
  D: DIN terminal (under 130°C)
  I: Waterproof terminal (under 130°C)
  * D/I coil please order according to the specification sheet.
- FLUID
  W: Water, air
  VA: Vacuum
- VOLTAGE
  AC220V(50/60)Hz
  AC110V(50/60)Hz
  DC24V
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)		Vacuum Torr	Dimensions (mm)						Weight (kg)
						Water	Air		L	H	D	L1	D1	M	
MUA-8	•	Rc1/4"	0.10	1.2	-5~+80	0~1	0~1	$0\sim10^{-3}$	41	87	21.5	23	19.3	M4×0.7	0.38
MUA-10	•	Rc3/8"	0.12	1.5	-5~+80	0~1	0~1	$0\sim10^{-3}$	53	93	48	20	21	M5×0.8	0.57

* Please consult your sales representative for other customization requirement.

MUDC series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

Seal material

Caution for safety
(Read before installing)

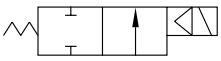
2 way normally closed solenoid valve
Available fluid: Air, water, corrosive fluid

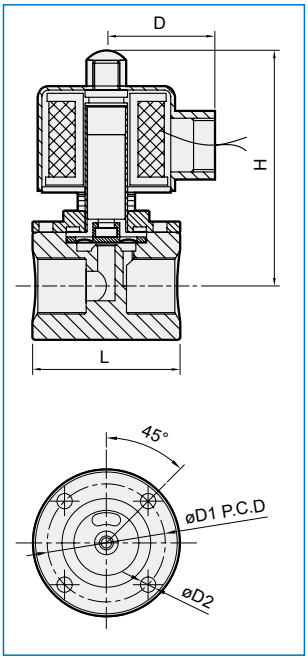


PVC

PTFE
(Teflon)

2/2 N.C.





Specification

- Direct acting, conductive to diaphragm, normal closed.
- Can be operated under no differential pressure.
- PVC valve body is corrosion-resistant (pH 3~11).
- PTFE valve body is corrosion-resistant (pH 0~14).
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Model / Parts name	MUDC	MUDC-TF
Body	PVC	PTFE (Teflon)
Coil	Special copper wire (H class)	
Core	Stainless steel	
Tube	Stainless steel	
Spring	Stainless steel	
Washer	Synthetic rubber	
Diaphragm	PTFE (Teflon)	

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Viscosity over 20 cst.
- Temperature over 80°C.

Order example

MUDC — 8 — □ — □ — AC110 — G

- MODEL
- PORT SIZE: **8**: 1/4", **10**: 3/8", **15**: 1/2", **20**: 3/4", **25**: 1"
- BODY: Blank: PVC; **TF**: PTFE (Teflon)
- COIL: Blank: Standard iron shell coil; **D**: DIN terminal (under130°C)
- VOLTAGE: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- PORT THREAD: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

* Please order according to the specification sheet.

Model	DIN coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)		Dimensions (mm)					Weight (kg)
						Water	Air	L	H	D	D1	D2	
MUDC-8	•	Rc1/4"	0.28	6.5	-5~+80	0~0.1	0~0.1	50	90	48	45	5.2	0.53
MUDC-10	•	Rc3/8"	0.28	6.5	-5~+80	0~0.1	0~0.1	50	90	48	45	5.2	0.52
MUDC-15	•	Rc1/2"	0.28	6.5	-5~+80	0~0.1	0~0.1	55	93	48	45	5.2	0.58
MUDC-20		Rc3/4"	3.5	10	-5~+80	0~0.05	0~0.05	76	119	58	–	–	1.84
MUDC-25		Rc1"	3.5	10	-5~+80	0~0.05	0~0.05	76	119	58	–	–	1.80
MUDC-8-TF	•	Rc1/4"	0.28	6.5	-5~+80	0~0.1	0~0.1	50	90	48	45	5.2	0.53
MUDC-10-TF	•	Rc3/8"	0.28	6.5	-5~+80	0~0.1	0~0.1	50	90	48	45	5.2	0.52
MUDC-15-TF	•	Rc1/2"	0.28	6.5	-5~+80	0~0.1	0~0.1	55	93	48	45	5.2	0.58
MUDC-20-TF		Rc3/4"	4	13.0	-5~+80	0~0.05	0~0.05	76	119	58	–	–	1.76
MUDC-25-TF		Rc1"	4	13.0	-5~+80	0~0.05	0~0.05	76	119	58	–	–	1.73

* Please consult your sales representative for other customization requirement.

MSUS series Low flow

2/2 WAY N.C., N.O. PLUNGER TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

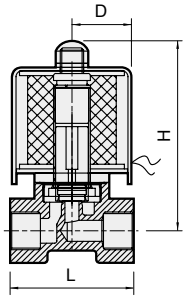
Seal material

Caution for safety
(Read before installing)

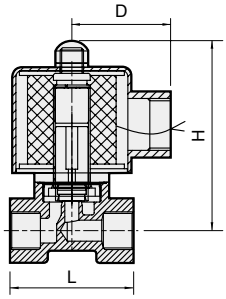
2 way normally closed / normally open solenoid valve.
Available fluid: Water, air, steam, gas, light oil & vacuum.



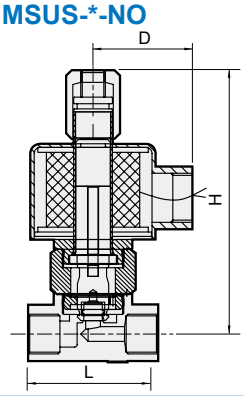
MSUS-6~8

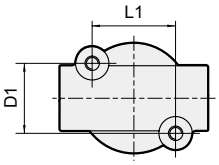


MSUS-10

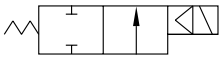


MSUS-*-NO

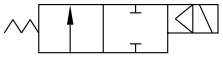




2/2 N.C.



2/2 N.O.



Specification

- Direct acting,conduct and normally closed / normally open
- Able to be operated under no differential pressure.
- Acceptable for customization Viton (130°C), Silicone (130°C) and EPDM (130°C) for seal plug.
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Parts name	MSUS	MSUS-NO
Body	Stainless steel #304 (option #316)	
Coil	Special copper wire (H class)	
Core	Stainless steel	
Tube	Stainless steel	
Spring	Stainless steel	
Plug	PTFE, NBR	Viton
O-ring	PTFE, NBR	NBR

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- N.C.: Viscosity over 50 cst.
  N.O.: Viscosity over 20 cst.
- The temperature over 130°C, the waterproof coil casing is prone to deformation.

Order example

MSUS — 8 — NO — □ — G — AC110 — G

- MODEL
- PORT SIZE
  6: 1/8"
  8: 1/4"
  10: 3/8"
- Blank: Normally closed
  NO: Normally open
- COIL
  Blank: Standard iron shell coil
  D: DIN terminal (under 130°C) (*1)
  I: Waterproof terminal (under 130°C) (*1)
- FLUID
  T: Steam
  G: Gas
  LO: Light oil (*2)
  VA: Vacuum
  W: Water, air
- VOLTAGE
  AC220V(50/60)Hz
  AC110V(50/60)Hz
  DC24V
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

	Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa) (*1)					Vacuum Torr	Dimensions (mm)						Weight (kg)
							Water	Air	Steam	Light oil	Gas		L	H	D	L1	D1	M	
NC	**MSUS-6**	●	Rc1/8"	0.23	2.5	-5~+185	0~0.7	0~0.7	0~0.7	0~0.7	0~0.7	$0\sim10^{-3}$	41	68	21.5	23	19.3	M4×0.7	0.34
	MSUS-8	●	Rc1/4"	0.23	2.5	-5~+185	0~0.7	0~0.7	0~0.7	0~0.7	0~0.7	$0\sim10^{-3}$	41	68	21.5	23	19.3	M4×0.7	0.33
	MSUS-10	●	Rc3/8"	0.58	4.0	-5~+185	0~1	0~1	0~1	0~1	0~1	$0\sim10^{-3}$	53	83	48	20	21	M5×0.8	0.54
NO	**MSUS-6-NO**		Rc1/8"	0.23	2.5	-5~+130	0~0.7	0~0.7	–	0~0.7	0~0.7	$0\sim10^{-3}$	41	87	21.5	23	19.3	M4×0.7	0.34
	MSUS-8-NO		Rc1/4"	0.23	2.5	-5~+130	0~0.7	0~0.7	–	0~0.7	0~0.7	$0\sim10^{-3}$	41	87	21.5	23	19.3	M4×0.7	0.33
	MSUS-10-NO	●	Rc3/8"	0.58	4.0	-5~+130	0~1	0~1	–	0~0.7	0~1	$0\sim10^{-3}$	53	105	48	20	21	M5×0.8	0.54

*1. When the fluid is steam or light oil, the plug material is PTFE; When the fluid is gas or vacuum, the plug material is NBR.
When the fluid is water or air, the plug material is PTFE or NBR. When the plug material is NBR, the Fluid temp. is -5~+80°C.
*2. Connect air source to outlet port for vacuum application.
*3. Please consult your sales representative for other customization requirement.

MSUS series High flow

2/2 WAY N.C., N.O. PISTON TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

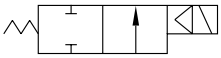
Seal material

Caution for safety
(Read before installing)

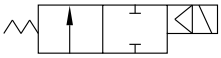
2 way normally closed / normally open solenoid valve.
Available fluid: Water, air, steam & light oil.



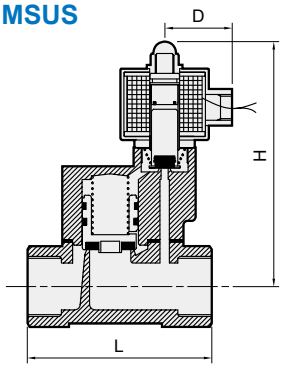
2/2 N.C.



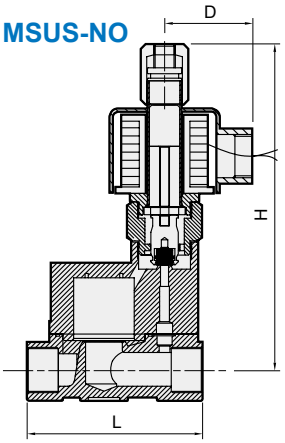
2/2 N.O.



MSUS



MSUS-NO



Specification

- MSUS series is multiplex acting, piston guide, conductive normal close / normal open.
- Acceptable for customize Viton , Silicone and EPDM for seal plug.
- AC voltage tolerance: ±10%, DC voltage tolerance: ±1%

Material

Parts name	MSUS	MSUS-NO
Body	Stainless steel #304 (option #316)	
Coil	Special copper wire (H class)	
Tube	Stainless steel	
Spring	Stainless steel	
Core	Stainless steel	
Plug	PTFE (Teflon)	Viton
Piston spring	Stainless steel	
Piston	Stainless steel	
Piston plug	PTFE (Teflon)	

Caution

- Min pressure to open (N.C.): over 0.05~0.1 MPa
  Min pressure to close (N.O.): over 0.05~0.1 MPa
- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Order example

MSUS — 35 — NO — □ — W — AC110 — G

- **MODEL**
- **PORT SIZE**
  15: 1/2"
  20: 3/4"
  25: 1"
  35: 1 1/4"
  40: 1 1/2"
  50: 2"
- Blank: Normally closed
  NO: Normally open
- **COIL**
  Blank: Standard iron shell coil
  D: DIN terminal (under 130°C) (*1)
  I: Waterproof terminal (under 130°C) (*1)
- **FLUID**
  T: Steam
  LO: Light oil (*2)
  W: Water, air
- **VOLTAGE**
  AC220V(50/60)Hz
  AC110V(50/60)Hz
  DC24V
- **PORT THREAD**
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.
- The temperature over 130°C, the waterproof coil casing is prone to deformation.

	Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)				Dimensions (mm)			Weight (kg)
							Water	Air	Steam	Light oil	L	H	D	
NC	**MSUS-15**	●	Rc1/2"	4	17	-5~+185	0.05~1	0.05~1	0.05~1	0.05~1	84	115	48	1.38
	MSUS-20	●	Rc3/4"	6	17	-5~+185	0.05~1	0.05~1	0.05~1	0.05~1	84	120	48	1.43
	MSUS-25	●	Rc1"	12	22	-5~+185	0.05~1	0.05~1	0.05~1	0.05~1	98	132	48	1.88
	MSUS-35	●	Rc1 1/4"	18	30	-5~+185	0.1~1	0.1~1	0.1~1	0.1~1	123	142	48	2.62
	MSUS-40	●	Rc1 1/2"	22	30	-5~+185	0.1~1	0.1~1	0.1~1	0.1~1	123	146	48	2.72
	MSUS-50	●	Rc2"	48	50	-5~+185	0.1~1	0.1~1	0.1~1	0.1~1	167	173	48	5.45
NO	**MSUS-15-NO**	●	Rc1/2"	4	17	-5~+130	0.05~1	0.05~1	–	0.05~0.8	84	147	48	1.52
	MSUS-20-NO	●	Rc3/4"	6	17	-5~+130	0.05~1	0.05~1	–	0.05~0.8	84	151	48	1.58
	MSUS-25-NO	●	Rc1"	12	22	-5~+130	0.05~1	0.05~1	–	0.05~0.8	98	162	48	2.0
	MSUS-35-NO	●	Rc1 1/4"	18	30	-5~+130	0.1~1	0.1~1	–	0.05~0.8	123	173	48	2.8
	MSUS-40-NO	●	Rc1 1/2"	22	30	-5~+130	0.1~1	0.1~1	–	0.05~0.8	123	175	48	2.9
	MSUS-50-NO	●	Rc2"	48	50	-5~+130	0.1~0.8	0.1~0.8	–	0.05~0.8	167	203	48	5.7

* Please consult your sales representative for other customization requirement.

MUAO series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

Selection table

MU* Reference table

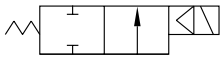
Seal material

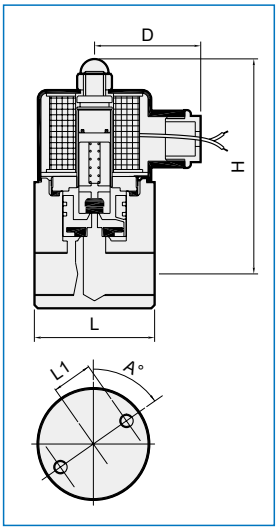
Caution for safety
(Read before installing)

2-WAY normally closed solenoid valve.
Available fluid: Water, air, & oil.



2/2 N.C.





Specification

- Multiplex acting, piston guide, conductive normal close.
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%
- Applied to sand blasting machine and high-pressure air and oil injection system.

Material

Parts name	Material
Body	Brass
Coil	Special copper wire (H class)
Tube	Stainless steel
Spring	Stainless steel
Core	Stainless steel
Plug	NBR
Piston	Brass
Piston plug	NBR

Caution

- Min pressure to open: over 0.05 MPa
- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.
- Temperature over 80°C.

Order example

MUAO — 8 — □ — HO — AC110 — G

- MODEL
- PORT SIZE
  8: 1/4"
  10: 3/8"
  15: 1/2"
- COIL
  Blank: Standard iron shell coil
  D: DIN terminal (under 130°C) (*1)
  I: Waterproof terminal (under 130°C) (*1)
- FLUID
  W: Water, air
  HO: Heavy oil (*2)
- VOLTAGE
  AC220V(50/60)Hz
  AC110V(50/60)Hz
  DC24V
- PORT THREAD
  Blank: Rc thread
  G: G thread
  NPT: NPT thread

*1. Please order according to the specification sheet.
*2. Please indicate the kind.

Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)			Dimensions (mm)						Weight (kg)
						Water	Air	Heavy oil	L	H	D	L1	A	M	
MUAO-8	●	Rc1/4"	2.5	10	-5~+80	0.05~1.5	0.05~1.5	0.05~1.5	50	95	48	18	55°	M6×1.0	1.13
MUAO-10	●	Rc3/8"	2.5	10	-5~+80	0.05~1.5	0.05~1.5	0.05~1.5	50	95	48	18	55°	M6×1.0	1.10
MUAO-15	●	Rc1/2"	2.5	10	-5~+80	0.05~1.5	0.05~1.5	0.05~1.5	54	100	48	18	55°	M6×1.0	1.23

* Please consult your sales representative for other customization requirement.

MUW series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

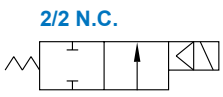
Seal material

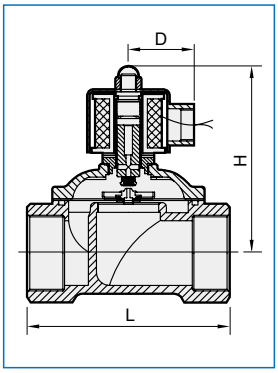
Caution for safety
(Read before installing)

2-WAY normally closed solenoid valve.
Available fluid: Water, air & light oil.



2/2 N.C.





Specification

- Direct and multiplex acting, connected diaphragm, N.O.
- Can be operated directly under low pressure.
- Acceptable for customization Viton (130°C), Silicone (130°C) and EPDM (130°C) for seal plug and diaphragm.
- AC voltage tolerance: ±10%, DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Forged brass
Coil	Special copper wire (H)
Tube	Stainless steel
Spring	Stainless steel
Core	Stainless steel
Plug	NBR
Diaphragm	NBR

Caution

- Pipes must be washed neat and clean before fitted.
- A Y-STRAINER has to be installed in the front of solenoid valve, that is best for long life.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

Order example

MUW — 20 □ — □ — LO — AC110 — G

MODEL

PORT SIZE
10: 3/8"
15: 1/2"
20: 3/4"
25: 1"
35-1: 1 1/4"
40-1: 1 1/2"
50-1: 2"

PRESSURE TYPE
Blank: Standard type
H: High pressure type

COIL
Blank: Standard iron shell coil
D: DIN terminal (under 130°C) (*1)
I: Waterproof terminal (under 130°C) (*1)

FLUID
W: Water, air
LO: Light oil (*2)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)			High pressure type		Dimensions (mm)			Weight (kg)
						Water	Air	Light oil	Water	Air	L	H	D	
MUW-10	●	Rc3/8"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	70	100	48	1.01
MUW-15	●	Rc1/2"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	70	100	48	1
MUW-20	●	Rc3/4"	8.6	20	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	73	107	48	1.14
MUW-25	●	Rc1"	12.0	25	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	100	112	48	1.7
MUW-35-1	●	Rc1 1/4"	24.0	35	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	125	113	48	2.32
MUW-40-1	●	Rc1 1/2"	28.0	40	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	125	118	48	2.53
MUW-50-1	●	Rc2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	167	125	48	4.32

* High pressure type use N/O coil.
* Please consult your sales representative for other customization requirement.

MUW-NO series

2/2 WAY N.O. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

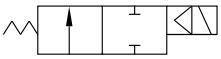
Seal material

Caution for safety
(Read before installing)

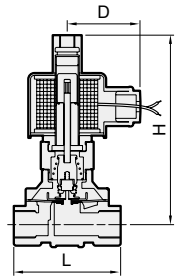
2-WAY normally open solenoid valve.
Available fluid: Water, air, light oil, gas & vacuum.



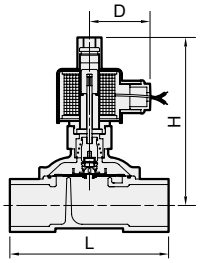
2/2 N.O.



MUW-10~25-NO



MUW-35~50-NO



Specification

- Direct and multiplex acting, connected diaphragm, normal open.
- Can be operated directly under low pressure.
- Acceptable for customization Viton (130°C) , Silicone (130°C) and EPDM (130°C) for seal plug and diaphragm.
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Forge brass
Coil	Special copper wire (H class)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	NBR
Diaphragm	NBR

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

Order example

MUW — 20 — NO — □ — G — AC110 — G

- MODEL: MUW
- PORT SIZE: **10**: 3/8", **15**: 1/2", **20**: 3/4", **25**: 1", **35-1**: 1 1/4", **40-1**: 1 1/2", **50-1**: 2"
- **NO**: Normally open
- COIL: Blank: Standard iron shell coil; **D**: DIN terminal (under 130°C) (*1); **I**: Waterproof terminal (under 130°C) (*1)
- FLUID: **W**: Water, air; **G**: Gas; **LO**: Light oil (*2); **VA**: Vacuum
- VOLTAGE: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- PORT THREAD: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)				Vacuum	Dimensions (mm)			Weight (kg)
						Water	Air	Light oil	Gas		L	H	D	
MUW-10-NO	●	Rc3/8"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	70	128	48	1
MUW-15-NO	●	Rc1/2"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	70	128	48	0.98
MUW-20-NO	●	Rc3/4"	8.6	20	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	73	133	48	1.12
MUW-25-NO	●	Rc1"	12.0	25	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	100	138	48	1.7
MUW-35-1-NO	●	Rc1 1/4"	24.0	35	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	125	139	48	2.5
MUW-40-1-NO	●	Rc1 1/2"	28.0	40	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	125	145	48	2.9
MUW-50-1-NO	●	Rc2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	$0\sim10^{-3}$Torr	167	156	48	4.5

* Connect air source to outlet port for vacuum application.
* Please consult your sales representative for other customization requirement.

MUW-F series

2/2 WAY N.C., N.O. DIAPHRAGM TYPE **SOLENOID VALVE**

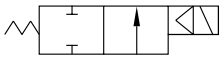
mindman

Selection table
MU* Reference table
Seal material
Caution for safety
(Read before installing)

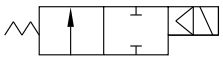
2-WAY normally closed and normally open solenoid valve.
Available fluid: Water, air, light oil.



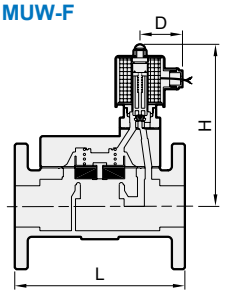
2/2 N.C.



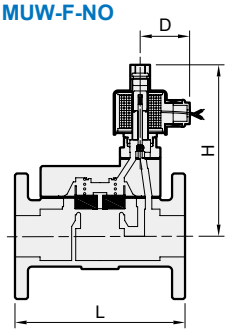
2/2 N.O.



MUW-F



MUW-F-NO



Specification

- Multiplex acting, piston guiding, conductive and normal close / normal open.
- Acceptable for customize Viton (130°C) , Silicone (130°C) and EPDM (130°C) for seal plug and diaphragm.
- Flange: JIS 10K (Option: ANSI 150LB or PN-16)
- AC voltage tolerance: ±10%, DC voltage tolerance: ±1%

Material

Parts name	Material
Body	FC-20
Coil	Special copper wire (H class)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	NBR
Diaphragm	NBR

Caution

- Min pressure to open (N.C.): over 0.05 MPa
  Min pressure to close (N.O.): over 0.05 MPa
- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

Order example

MUW — 40F — NO — □ — W — AC110

- MODEL: MUW
- PORT SIZE: **35**: 1 1/4", **40**: 1 1/2", **50**: 2", **65**: 2 1/2", **80**: 3", **100**: 4"
- Blank: Normally closed; **NO**: Normally open
- COIL: Blank: Standard iron shell coil; **D**: DIN terminal (under 130°C) (*1); **I**: Waterproof terminal (under 130°C) (*1)
- FLUID: **W**: Water, air; **LO**: Light oil (*2)
- VOLTAGE: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

	Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)			Dimensions (mm)			Weight (kg)
							Water	Air	Light oil	L	H	D	
NC	**MUW-35F**	●	Rc1 1/4"	22	35	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	200	164	48	8.9
	MUW-40F	●	Rc1 1/2"	30	40	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	200	164	48	9.6
	MUW-50F	●	Rc2"	40	50	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	210	170	48	11.3
	MUW-65F	●	Rc2 1/2"	68	65	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	240	177	48	15.6
	MUW-80F	●	Rc3"	102	80	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	300	191	48	20.8
	MUW-100F	●	Rc4"	180	100	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	340	207	48	31.7
NO	**MUW-35F-NO**	●	Rc1 1/4"	22	35	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	200	195	48	9.1
	MUW-40F-NO	●	Rc1 1/2"	30	40	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	200	195	48	9.8
	MUW-50F-NO	●	Rc2"	40	50	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	210	208	48	11.5
	MUW-65F-NO	●	Rc2 1/2"	68	65	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	240	213	48	15.8
	MUW-80F-NO	●	Rc3"	102	80	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	300	222	48	21.0
	MUW-100F-NO	●	Rc4"	180	100	-5~+80	0.05~0.8	0.05~0.8	0.05~0.5	340	238	48	31.9

* Please consult your sales representative for other customization requirement.

MUG / MUV series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

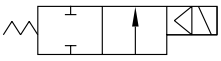
Seal material

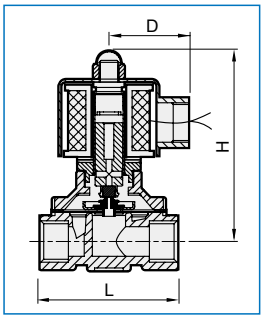
Caution for safety
(Read before installing)

2-WAY normally closed solenoid valve.
Available fluid: Gas, vacuum.



2/2 N.C.





Specification

- Direct and multiplex acting, connected diaphragm, normal close.
- Can be operated under no differential pressure.
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Parts name	MUG	MUV
Body	Forge brass	
Coil	Special copper wire (H)	
Core	Stainless steel	
Tube	Stainless steel	
Spring	Stainless steel	
Plug	NBR	
Diaphragm	NBR for gas use	NBR

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

Order example

MUG — 20 — □ — AC110 — G

MODEL
MUG: Gas
MUV: Vacuum

PORT SIZE
10: 3/8"
15: 1/2"
20: 3/4"
25: 1"
35: 1 1/4"
40: 1 1/2"
50: 2"

COIL
Blank: Standard iron shell coil
D: DIN terminal (under 130°C) (*)
I: Waterproof terminal (under 130°C) (*)

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

* Please order according to the specification sheet.

Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa) for Gas	Vacuum Torr	Dimensions (mm)			Weight (kg)
								L	H	D	
MUG/V-10	●	Rc3/8"	4.5	15	-5~+80	0~0.7	$0\sim10^{-3}$	70	100	48	1.01
MUG/V-15	●	Rc1/2"	4.5	15	-5~+80	0~0.7	$0\sim10^{-3}$	70	100	48	1.00
MUG/V-20	●	Rc3/4"	8.6	20	-5~+80	0~0.7	$0\sim10^{-3}$	73	102	48	1.13
MUG/V-25	●	Rc1"	12.0	25	-5~+80	0~0.7	$0\sim10^{-3}$	100	112	48	1.70
MUG/V-35	●	Rc1 1/4"	24.0	35	-5~+80	0~0.7	$0\sim10^{-3}$	125	113	48	2.32
MUG/V-40	●	Rc1 1/2"	28.0	40	-5~+80	0~0.7	$0\sim10^{-3}$	125	118	48	2.53
MUG/V-50	●	Rc2"	48.0	50	-5~+80	0~0.7	$0\sim10^{-3}$	167	125	48	4.32

* Connect air source to outlet port for vacuum application.
* Please consult your sales representative for other customization requirement.

MUAW series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

Selection table

MU* Reference table

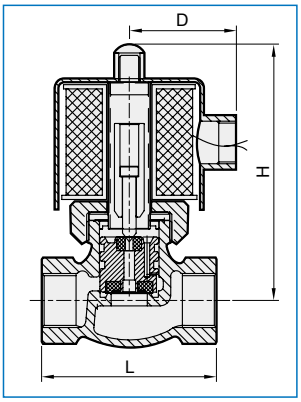
Seal material

Caution for safety
(Read before installing)

2-WAY normally closed solenoid valve.
Available fluid: Water, air.



2/2 N.C.



Specification

- MUAW series is multiplex acting, piston guide, conductive and normal close.
- AC voltage tolerance: ±10%,
  DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Cast bronze
Coil	Special copper wire (H class)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	PTFE+15%GF
Piston	Brass
Piston plug	NBR

Caution

- Min pressure to open: over 0.05~0.1 MPa.
- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.
- Temperature over 80°C.

Order example

MUAW — 25 — AC110 — G

MODEL	PORT SIZE	VOLTAGE	PORT THREAD
	15: 1/2" **20**: 3/4" **25**: 1" **35**: 1 1/4" **40**: 1 1/2" **50**: 2"	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V	Blank: Rc thread **G**: G thread **NPT**: NPT thread

Model	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)		Dimensions (mm)			Weight (kg)
					Water	Air	L	H	D	
MUAW-15	Rc1/2"	4.0	17	-5~+80	0.05~1	0.05~1.5	82	125	58	1.60
MUAW-20	Rc3/4"	6.0	17	-5~+80	0.05~1	0.05~1.5	82	125	58	1.67
MUAW-25	Rc1"	12.0	22	-5~+80	0.05~1	0.05~1.5	91	133	58	2.02
MUAW-35	Rc1 1/4"	18.0	30	-5~+80	0.1~1	0.1~1.5	111	141	58	3.08
MUAW-40	Rc1 1/2"	22.0	30	-5~+80	0.1~1	0.1~1.5	111	144	58	3.10
MUAW-50	Rc2"	48.0	50	-5~+80	0.1~1	0.1~1.5	163	175	58	6.82

MUS / MUS-F series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

mindman

2-WAY normally closed solenoid valve.
Available fluid: Water, air, steam, light oil & heavy oil.

Selection table

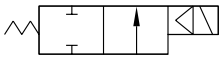
MU* Reference table

Seal material

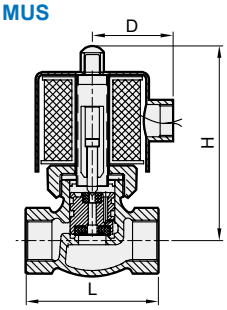
Caution for safety
(Read before installing)



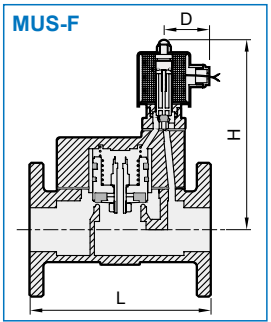
2/2 N.C.



MUS



MUS-F



Specification

- MUS/MUS-F series is multiplex-drive, piston guide, connected normal close.
- Acceptable for customization Viton (130°C) , Silicone (130°C) and EPDM (130°C) for seal plug.
- Flange: JIS 10K (Option: ANSI 150LB or PN-16)
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Model / Parts name	MUS	MUS-F
Body	Cast bronze	Cast Iron (FC-20)
Coil	Special copper wire (H class)	
Tube	Stainless steel	
Spring	Stainless steel	
Core	Stainless steel	
Plug	PTFE+15%GF	PTFE (Teflon)
Piston	Brass	
Piston plug	PTFE (Teflon)	

Caution

- Min pressure to open 0.05 MPa (over 1 1/4" is 0.1 MPa)
- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.
- Temperature over 185°C.
- The temperature over 130°C, the waterproof coil casing is prone to deformation.

Order example

MUS — 35 F — □ — □ — AC110 — G

MODEL

PORT SIZE
15: 1/2"
20: 3/4"
25: 1"
35: 1 1/4"
40: 1 1/2"
50: 2"
65: 2 1/2"
80: 3"
100: 4"

COIL
Blank: Standard iron shell coil
D: DIN terminal (under 130°C) (*1)
I: Waterpoof terminal (under 130°C) (*1)

TYPE
Blank: Standard



F: Flange



FLUID
T: Steam
LO: Light oil (*2)
HO: Heavy oil (*3)
W: Water, air

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread
(Only for standard type)

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.
*3. Please indicate the kind.

Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)				Dimensions (mm)			Weight (kg)
						Steam	Water, air	Heavy oil	Light oil	L	H	D	
MUS-15		Rc1/2"	4.0	17	-5~+185	0.05~1	—	0.05~1	—	82	125	58	1.60
MUS-20		Rc3/4"	6.0	17	-5~+185	0.05~1	—	0.05~1	—	82	125	58	1.67
MUS-25		Rc1"	12.0	22	-5~+185	0.05~1	—	0.05~1	—	91	133	58	2.02
MUS-35		Rc1 1/4"	18.0	30	-5~+185	0.1~1	—	0.1~1	—	111	141	58	3.08
MUS-40		Rc1 1/2"	22.0	30	-5~+185	0.1~1	—	0.1~1	—	111	144	58	3.10
MUS-50		Rc2"	48.0	50	-5~+185	0.1~1	—	0.1~1	—	163	175	58	6.82
MUS-35F	●	1 1/4"	22	35	-5~+185	0.1~1	0.1~1	—	0.1~1	200	189	48	10.7
MUS-40F	●	1 1/2"	30	40	-5~+185	0.1~1	0.1~1	—	0.1~1	200	189	48	10.9
MUS-50F	●	2"	40	50	-5~+185	0.1~1	0.1~1	—	0.1~1	210	202	48	13.2
MUS-65F	●	2 1/2"	68	65	-5~+185	0.1~1	0.1~1	—	0.1~1	240	209	48	19.2
MUS-80F	●	3"	100	80	-5~+185	0.1~1	0.1~1	—	0.1~1	300	228	48	27.0
MUS-100F	●	4"	175	100	-5~+185	0.1~1	0.1~1	—	0.1~1	340	244	48	38.7

* Please consult your sales representative for other customization requirement.

MSUW / MSUW-NO series

2/2 WAY N.C., N.O. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

Seal material

Caution for safety
(Read before installing)

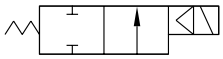
2-WAY normally closed / normally open solenoid valve.
Available fluid: Water, air, light oil, gas and vacuum.



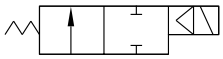
N.O.

N.C.

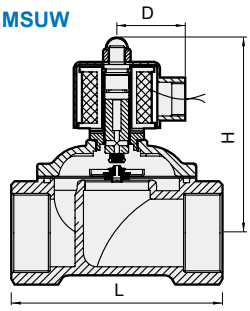
2/2 N.C.



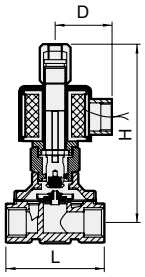
2/2 N.O.



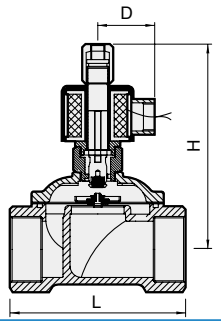
MSUW



MSUW-15~25-NO



MSUW-35~50-NO



Specification

- Direct and multiplex drive, connected diaphragm, normal close / normal open.
- Can be operated directly under low pressure.
- Acceptable for customization Viton (130°C) , Silicone (130°C) and EPDM (130°C) for seal plug and diaphragm.
- AC voltage tolerance: ±10%
- DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Stainless steel #304 (option #316)
Coil	Special copper wire (H class)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	NBR
Diaphragm	NBR

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

Order example

MSUW — 20 □ — NO — □ — W — AC110 — G

- MODEL
- PORT SIZE: **15**: 1/2", **20**: 3/4", **25**: 1", **35**: 1 1/4", **40**: 1 1/2", **50**: 2"
- OPERATING PRESSURE: Blank: Standard type; **H**: High pressure type
- Blank: Normal close; **NO**: Normal open
- COIL: Blank: Standard iron shell coil; **D**: DIN terminal (under 130°C) (*1); **I**: Waterpoof terminal (under 130°C) (*1)
- FLUID: **W**: Water, air; **G**: Gas; **LO**: Light oil (*); **VA**: Vacuum
- VOLTAGE: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- PORT THREAD: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.

	Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)				High pressure type (MPa)		Vacuum Torr	Dimensions (mm)			Weight (kg)
							Water	Air	Light oil	Gas	Water	Air		L	H	D	
NC	**MSUW-15**	●	Rc1/2"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	$0\sim10^{-3}$	70	100	48	1.0
	MSUW-20	●	Rc3/4"	8.6	20	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	$0\sim10^{-3}$	76	100	48	1.1
	MSUW-25	●	Rc1"	12.0	25	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	$0\sim10^{-3}$	100	115	48	1.65
	MSUW-35	●	Rc1 1/4"	24.0	35	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	$0\sim10^{-3}$	123	112	48	2.33
	MSUW-40	●	Rc1 1/2"	28.0	40	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	$0\sim10^{-3}$	123	112	48	2.54
	MSUW-50	●	Rc2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	$0\sim10^{-3}$	167	125	48	4.59
NO	**MSUW-15-NO**	●	Rc1/2"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	$0\sim10^{-3}$	70	126	48	1.0
	MSUW-20-NO	●	Rc3/4"	8.6	20	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	$0\sim10^{-3}$	76	132	48	1.1
	MSUW-25-NO	●	Rc1"	12.0	25	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	$0\sim10^{-3}$	100	139	48	1.65
	MSUW-35-NO	●	Rc1 1/4"	24.0	35	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	$0\sim10^{-3}$	123	140	48	2.5
	MSUW-40-NO	●	Rc1 1/2"	28.0	40	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	$0\sim10^{-3}$	123	140	48	2.7
	MSUW-50-NO	●	Rc2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	$0\sim10^{-3}$	167	150	48	4.73

* High pressure type use N.O. coil. * Connect air source to outlet port for vacuum application.
* Please consult your sales representative for other customization requirement.

MSUW-F series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

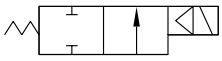
Seal material

Caution for safety
(Read before installing)

2-WAY normally closed solenoid valve.
Available fluid: Water, air, light oil, gas & vacuum.



2/2 N.C.



Specification

- MSUW-F series is direct multiplex acting, connected diaphragm, normal close.
- Able to be operated under low pressure.
- Acceptable for customization Viton (130°C) , Silicone (130°C) and EPDM (130°C) for seal plug and diaphragm.
- Flange: JIS 10K (Option: ANSI 150LB or PN-16)
- AC voltage tolerance: ±10%
  DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Stainless steel
Coil	Special copper wire (H)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	NBR
Diaphragm	NBR

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

Order example

MSUW — 20F□ — □ — W — AC110

MODEL

PORT SIZE
15: 1/2"
20: 3/4"
25: 1"
35: 1 1/4"
40: 1 1/2"
50: 2"

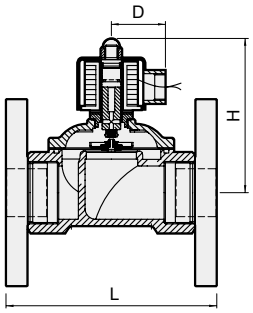
OPERATING PRESSURE
Blank: Standard type
H: High pressure type

COIL
Blank: Standard iron shell coil
D: DIN terminal (under 130°C) (*1)
I: Waterpoof terminal (under 130°C) (*1)

FLUID
W: Water, air
G: Gas
LO: Light oil (*2)
VA: Vacuum

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.



Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure range (MPa)			High pressure type (MPa)		Vacuum Torr	Dimensions (mm)			Weight (kg)
						Water	Air	Light oil	Water	Air		L	H	D	
MSUW-15F	●	1/2"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	$0\sim10^{-3}$	110	100	48	2.2
MSUW-20F	●	3/4"	8.6	20	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	$0\sim10^{-3}$	120	100	48	2.5
MSUW-25F	●	1"	12.0	25	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	$0\sim10^{-3}$	150	115	48	4.1
MSUW-35F	●	1 1/4"	24.0	35	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	$0\sim10^{-3}$	170	138	48	6.1
MSUW-40F	●	1 1/2"	28.0	40	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	$0\sim10^{-3}$	170	138	48	6.7
MSUW-50F	●	2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	0.05~1	0.05~2	$0\sim10^{-3}$	210	156	48	9.51

* High pressure type use N.O. coil.
* Connect air source to outlet port for vacuum application.
* Please consult your sales representative for other customization requirement.

MUPS series

2/2 WAY N.C. PISTON TYPE **SOLENOID VALVE**

mindman

Selection table

MU* Reference table

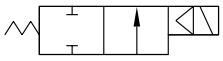
Seal material

Caution for safety
(Read before installing)

2-WAY normally closed solenoid valve.
Available fluid: Water, air, steam & light oil.



2/2 N.C.



Specification

- MUPS series is multiplex acting, piston guide, conductive normal close.
- Acceptable for customization Viton , Silicone and EPDM for seal plug.
- Minimum pressure to open: over 0.05 MPa.
- AC voltage tolerance: ±10%,
  DC voltage tolerance: ±1%

Material

Parts name	Material
Body	Cast bronze
Coil	Special copper wire (H)
Core	Stainless steel
Tube	Stainless steel
Spring	Stainless steel
Plug	PTFE (Teflon)
Piston Spring	Stainless steel
Piston	Brass
Piston plug	PTFE (Teflon)

Caution

- Before pipelining, the pipe line must be very clean without any contaminants or impurity.
- To extend the lifetime, Y-line filter should be installed in the front end of solenoid valve.
- It should be installed horizontally; vertical installation is not advisable.

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.
- Temperature over 185°C.
- The temperature over 130°C, the waterproof coil casing is prone to deformation.

Order example

MUPS — 15 — □ — W — AC110 — G

MODEL

PORT SIZE
15: 1/2"
20: 3/4"
25: 1"

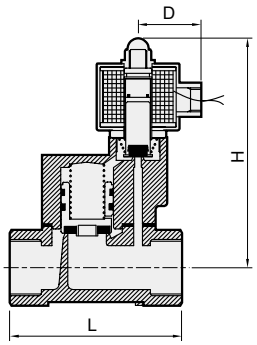
COIL
Blank: Standard iron shell coil
D: DIN terminal (under 130°C) (*1)
I: Waterpoof terminal (under 130°C) (*1)

FLUID
T: Steam
LO: Light oil (*2)
W: Water, air

VOLTAGE
AC220V(50/60)Hz
AC110V(50/60)Hz
DC24V

PORT THREAD
Blank: Rc thread
G: G thread
NPT: NPT thread

*1. Please order according to the specification sheet.
*2. Note, if diesel fuel or gasoline.



Model	D / I coil	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)				Dimensions (mm)			Weight (kg)
						Water	Air	Steam	Light oil	L	H	D	
MUPS-15	●	Rc1/2"	4	17	-5~+185	0.05~1	0.05~1	0.05~1	0.05~1	82	118	48	1.32
MUPS-20	●	Rc3/4"	6	17	-5~+185	0.05~1	0.05~1	0.05~1	0.05~1	82	120	48	1.44
MUPS-25	●	Rc1"	12	22	-5~+185	0.05~1	0.05~1	0.05~1	0.05~1	100	135	48	2.13

* Please consult your sales representative for other customization requirement.

MXAD series

2/2 WAY N.C. PLUNGER TYPE DIRECT ACTING **SOLENOID VALVE**

mindman

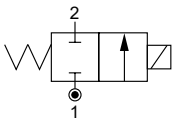
Selection table

Seal material

Caution for safety
(Read before installing)



2/2 N.C.



Caution

- Direct-acting valves are ideally suited to allocate at any angle.
- Voltage drop range is within ± 10%.
- Pressure of voltage DC is 70% of voltage AC only.
- Fluid temp.: -10~+80°C (Naphtha 120°C)

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.

Dimensions

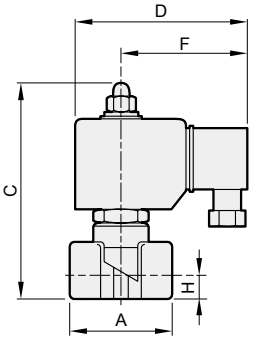
Model	MXAD			
Code / Dimension (mm)	6A/B/C	8A/B/C	10A/B/C	12A/B
A	41		50	55
B	19		25	27
C	90		94	98
D	78		87	87
E	37		42	42
F	58		64.5	64.5
G	15		15	–
H	10.5		11.7	13
N.W (kg)	0.49	0.47	0.73	0.78

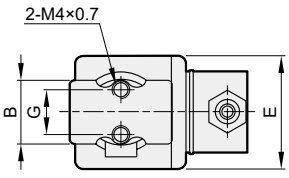
Order example

MXAD□ — 6A — V — G — A — AC110 — G

MODEL	BODY MAT'L	PORT SIZE	SEAL MAT'L	COIL	FLUID	VOLTAGE	PORT THREAD
	Blank: Brass **S**: S.Steel (*1)	**6A**, **6B**, **6C**, **8A**, **8B**, **8C**, **10A**, **10B**, **10C**, **12A**, **12B**	**N**: NBR **V**: Viton **S**: Silicon **J**: EPDM	**G**: Square DIN	**W**: Water **A**: Air **G**: Gas **LO**: Light oil (*2) **VA**: Vacuum	**AC220**V(50/60)Hz **AC110**V(50/60)Hz **DC24**V	Blank: Rc thread **G**: G thread **NPT**: NPT thread

*1. Stainless steel material is custom made.
*2. Note, if diesel fuel or gasoline.





Specification

Model **MXAD**: Forged brass body, for water, air, gas, naphtha, vacuum.									
Code (Port size)	Seal Mat'l	Orifice mm	Max. operating pressure diff. (0~bar)						CV
			Water	Air	Gas	Naphtha	Vacuum	acid & alkali(S.Steel)	
6A(1/8")	N S J V	3	0~10	0~10	0~10	0~7	0~10^{-6}Torr	0~10	0.26
6B(1/8")		4	0~7	0~7	0~7	0~5	0~10^{-6}Torr	0~7	0.58
6C(1/8")		5	0~5	0~5	0~5	0~3	0~10^{-6}Torr	0~5	0.64
8A(1/4")		3	0~10	0~10	0~10	0~7	0~10^{-6}Torr	0~10	0.26
8B(1/4")		4	0~7	0~7	0~7	0~5	0~10^{-6}Torr	0~7	0.58
8C(1/4")		5	0~5	0~5	0~5	0~3	0~10^{-6}Torr	0~5	0.64
10A(3/8")		4	0~10	0~10	0~10	0~7	0~10^{-6}Torr	0~10	0.58
10B(3/8")		6	0~5	0~5	0~5	0~3	0~10^{-6}Torr	0~5	0.79
10C(3/8")		8	0~2	0~2	0~2	0~1	0~10^{-6}Torr	0~2	0.97
12A(1/2")		6	0~5	0~5	0~5	0~3	0~10^{-6}Torr	0~5	0.79
12B(1/2")		8	0~2	0~2	0~2	0~1	0~10^{-6}Torr	0~2	0.97

* Connect air source to outlet port for vacuum application.

MXAD-AF series

2/2 WAY N.C. DIAPHRAGM TYPE DIRECT ACTING **SOLENOID VALVE**

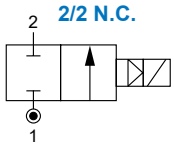
mindman

Selection table

Seal material

Caution for safety
(Read before installing)





Caution

- Direct-acting valves are ideally suited to allocate at any angle.
- Voltage drop range is within ± 10%.
- Pressure of voltage DC is 70% of voltage AC only.
- Fluid temp.: -10~+80°C (Naphtha 120°C)

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.

Dimensions

Model	MXAD						
Code / Dimension (mm)	**14**	**15**	**20**	**25**	**35**	**40**	**50**
A	75	75	85	100	120	120	150
B	52	52	60	70	90	90	120
C	107	107	116	122	142.5	142.5	160
G	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
H	14.5	14.5	18	23	33	33	40.5
N.W (kg)	1.03	1.06	1.24	1.51	2.87	2.77	4.81

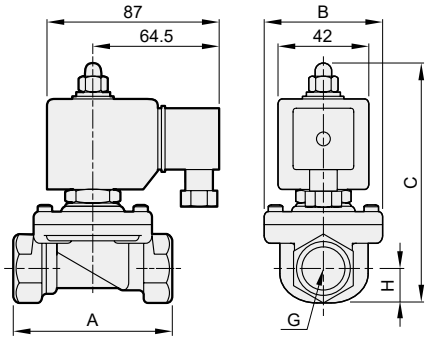
Order example

MXAD□ – 35□ – V – G – A – AC110 – G

- **MODEL**
- **BODY MAT'L**: Blank: Brass; **S**: S.Steel (*1)
- **SEAL MAT'L**: **N**: NBR; **V**: Viton; **S**: Silicon; **J**: EPDM
- **COIL**: **G**: Square DIN
- **FLUID**: **W**: Water; **A**: Air; **G**: Gas; **LO**: Light oil (*2); **VA**: Vacuum
- **VOLTAGE**: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- **PORT THREAD**: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

PORT SIZE		CODE
14	3/8"	–
15	1/2"	
20	3/4"	
25	1"	Blank: Standard **AF**: Flange end (JIS 10K)
35	1 1/4"	
40	1 1/2"	
50	2"	

*1. Stainless steel material is custom made.
*2. Note, if diesel fuel or gasoline.

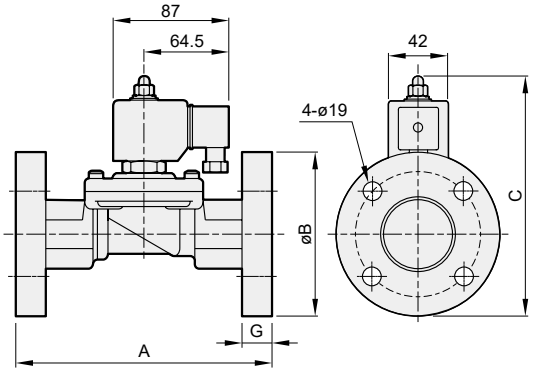


Model	MXAD-**AF			
Code / Dimension (mm)	**25AF**	**35AF**	**40AF**	**50AF**
A	130	160	160	200
B	125	135	140	155
C	165	177	180	195
G	14	16	16	16
N.W (kg)	5.35	7.75	8.0	11.0

Specification

Model **MXAD**: Forged brass body, for water, air, gas, naphtha, Vacuum.									
Code (Port size)	Seal Mat'l	Orifice mm	Max. operating pressure diff. (0~bar)						CV
			Water	Air	Gas	Naphtha	Vacuum (Torr)	acid & alkali (S.Steel)	
14(3/8")	N S J V	15	0~10	0~10	0~10	0~10	$0\sim10^{-6}$	0~10	4.5
15(1/2")		15	0~10	0~10	0~10	0~10	$0\sim10^{-6}$	0~10	4.5
20(3/4")		20	0~10	0~10	0~10	0~10	$0\sim10^{-6}$	0~10	9.3
25(1")		25	0~10	0~10	0~10	0~10	$0\sim10^{-6}$	0~10	13.2
35(1 1/4")		35	0~10	0~10	0~10	0~10	$0\sim10^{-6}$	0~10	26
40(1 1/2")		35	0~10	0~10	0~10	0~10	$0\sim10^{-6}$	0~10	26
50(2")		50	0~7	0~7	0~7	0~5	$0\sim10^{-6}$	0~7	48

* Connect air source to outlet port for vacuum application.



MXCD series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

Selection table

Seal material

Caution for safety
(Read before installing)



Caution

- In order to prolong operating life, it is better to allocate pipe horizontally and coil to face upward.
- Voltage drop range is within ± 10%.
- Pressure of voltage DC is 70% of voltage AC only.
- Combined diaphragm design assures no breaking.
- Fluid temp.: -10~+80°C (Naphtha 120°C)

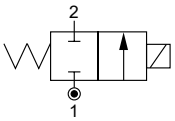
Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.

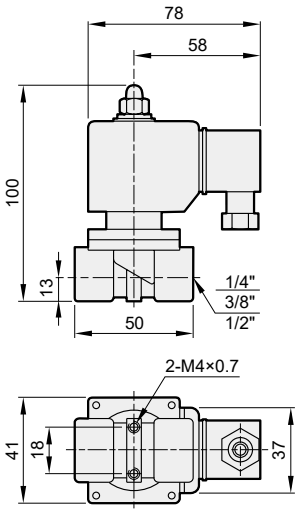
Weight

Model	MXCD		
Code	**8**	**10**	**12**
N.W (kg)	0.61	0.6	0.59

2/2 N.C.



Dimensions



Order example

MXCD□— 10 — N — G — A — AC110 — G

- **MODEL**
- **BODY MAT'L**: Blank: Brass; **S**: S.Steel (*1)
- **PORT SIZE**: **8**: 1/4"; **10**: 3/8"; **12**: 1/2"
- **SEAL MAT'L**: **N**: NBR; **V**: Viton
- **COIL**: **G**: Square DIN
- **FLUID**: **W**: Water; **A**: Air; **LO**: Light oil (*2)
- **VOLTAGE**: **AC220**V(50/60)Hz; **AC110**V(50/60)Hz; **DC24**V
- **PORT THREAD**: Blank: Rc thread; **G**: G thread; **NPT**: NPT thread

*1. Stainless steel material is custom made.
*2. Note, if diesel fuel or gasoline.

Specification

Model **MXCD**: Forged brass body, for water, air, naphtha.							
Code (Port size)	Seal Mat'l	Orifice mm	Max. operating pressure diff. (0~bar)				CV
			Water	Air	Naphtha	acid & alkali (S.Steel)	
8(1/4")	N V	11	0.3~20	0.3~20	0.3~20	0.2~20	2.4
10(3/8")		12	0.3~20	0.3~20	0.3~20	0.2~20	2.7
12(1/2")		12	0.3~20	0.3~20	0.3~20	0.2~20	2.7

MXPV series

2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

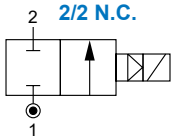
mindman

Selection table

Seal material

Caution for safety
(Read before installing)





Caution

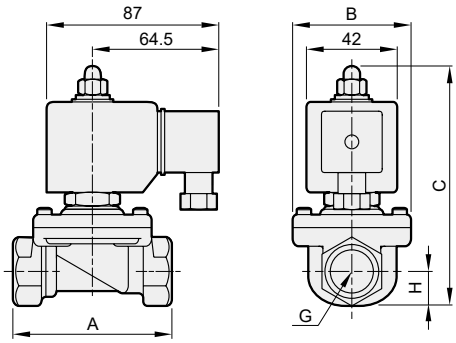
- Direct-acting valves are ideally suited to allocate at any angle.
- Voltage drop range is within ± 10%.
- Pressure of voltage DC is 70% of voltage AC only.
- Fluid temp.: -10~+80°C (Naphtha 120°C)

Not for fluid of

- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.

Dimensions

Model	MXPV		
Code / Dimension (mm)	**14**	**15**	**20**
A	75		85
B	52		60
C	104		113
H	14.5		18
G	3/8"	1/2"	3/4"
N.W (kg)	0.85	0.88	1.06



Order example

MXPV□ — 20 — V — G — W — AC110 — G

- MODEL
- BODY MAT'L: Blank: Brass; **S**: S.Steel (*1)
- PORT SIZE: **14**: 3/8", **15**: 1/2", **20**: 3/4
- SEAL MAT'L: **N**: NBR, **S**: Silicon, **J**: EPDM, **V**: Viton
- COIL: **G**: Square DIN
- FLUID: **W**: Water, **A**: Air, **LO**: Light oil (*2)
- VOLTAGE: **AC220**V(50/60)Hz, **AC110**V(50/60)Hz, **DC24**V
- PORT THREAD: Blank: Rc thread, **G**: G thread, **NPT**: NPT thread

*1. Stainless steel material is custom made.
*2. Note, if diesel fuel or gasoline.

Specification

Model **MXPV**: Forged brass body, for water, air, naphtha.							
Code (Port size)	Seal Mat'l	Orifice mm	Max. operating pressure diff. (0~bar)				CV
			Water	Air	Naphtha	acid & alkali (S.Steel)	
14(3/8")	N, S J, V	15	0.5~10	0.5~10	0.5~10	0.2~20	4.5
15(1/2")		15	0.5~10	0.5~10	0.5~10	0.2~20	4.5
20(3/4")		20	0.5~10	0.5~10	0.5~10	0.2~20	9.3