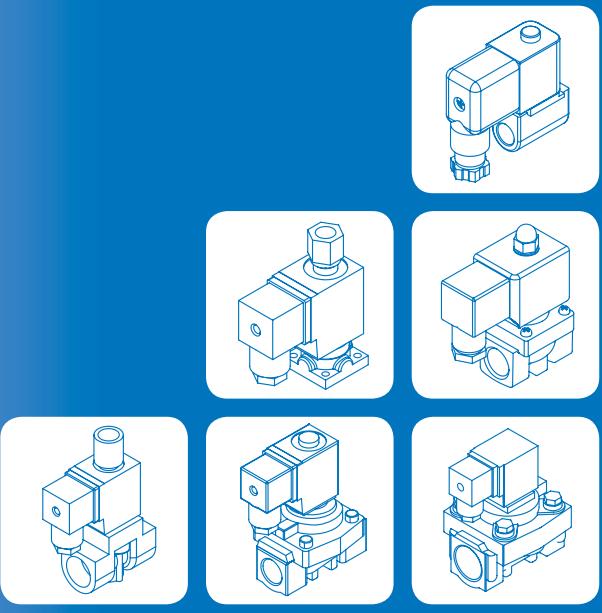
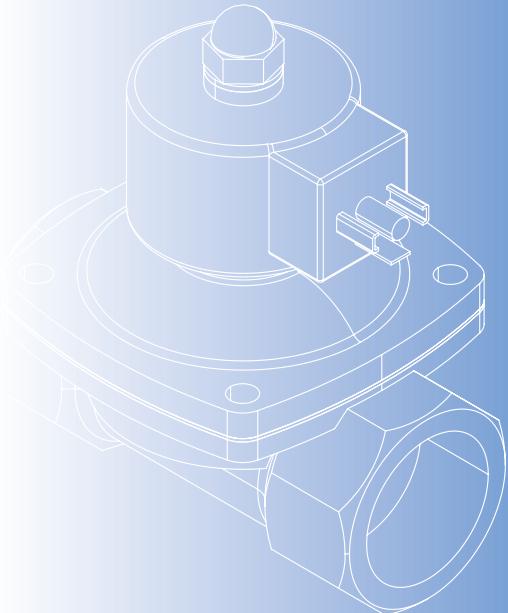


PROCESS VALVE



Selector Table	2-2
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MCT	2-9
MED	2-10
MEP	2-11
MGA / MGS	2-12
MGD	2-13
MJS/R/T, MRJ	2-14
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MUSC	2-18
MUSD	2-19
MUST	2-20
MUT	2-21
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MWD / MWK	2-24
MYA / MYS	2-25
MZS	2-26
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MU* Selector Table	2-28
MUD / MUS	2-30
MUA	2-31
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MSUS	2-33
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MUW-NO	2-37
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MXBD	2-47
MXCD	2-48
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M* series

2/2, 3/2 WAY SOLENOID VALVE



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

Model	Inside structure			N.C.	N.O.	Fluid						Material		Port size	CV	Page	
	Piston	Diaphragm	Plunger			Water / Air	Hot water	Steam	Light oil	Heavy oil	Gas	Vaccum	Body	Seal			
MBS			○	●		●			●		●	●	Brass	N,J,V,T,Z	M5,1/8,1/4	0.03~0.40	2-6
MBD			○	●		●			●		●	●	Forged brass	N,V	1/4~1/2	0.14~0.95	2-7
MCS			○	●		●			●		●	●	Forged brass	N,J,V,T,R,Z	1/4~3/4	0.10~1.30	2-8
MED	○		●		●	●			●		●		Forged brass	N,J,V	1/4~1/2	1.8~2.2	2-10
MEP		○	●			●							Forged brass	N,J,V	3/8,1/2	1.8~2.8	2-11
MGA	○		●			●	●	●					Forged brass	N,J,V	3/8,1/2	1.9~2.6	2-12
MGS	○		●			●	●	●	●				Forged brass	T	3/8,1/2	1.9~2.6	2-12
MGD	○		●			●					●		Forged brass	N,J,V	3/8,2	2.0~31	2-13
MJS		○	●			●			●		●	●	Brass	N,J,V	—	0.08~0.32	2-14
MJR		○	●			●			●		●	●	Brass	N,J,V	—	0.10~0.42	2-14
MPD	○		●			●							PA (Nylon)	N,J,V	1/2~1	4~11	2-17
MPK	○		●			●							PA (Nylon)	N,J,V	1/2~1	4~11	2-17
MRB		○		●		●			●		●		Brass	N,J,V	1/8,1/4	0.05~0.09	2-17
MRC		○		●		●			●		●		Brass	N,J,V	1/8~3/8	0.10~0.31	2-17
MUSC		○	●			●			●		●	●	S.S.#303	N,J,V,T,R,Z	1/8~3/8	0.03~1.30	2-18
MUSD	○		●			●			●		●		SCS14	N,J,V	1/2	2.0	2-19
MWA	○		●			●			●		●		Forged brass	N	3/8~2	3.0~31	2-22
MWH	○		●							●			Forged brass	V	3/8~2	3.0~31	2-22
MWS	○		●			●	●	●	●				Forged brass	T	3/8~2	3.0~31	2-22
MWD	○		●			●					●		Forged brass	N,J,V	3/8~2	3.0~31	2-24
MWK	○		●			●					●	●	Forged brass	N,J,V	3/8~2	3.0~31	2-24
MYA	○		●			●	●	●					Forged brass	N,J,V	3/8,1/2	1.9~2.6	2-25
MYS	○		●			●	●	●	●				Forged brass	T	3/8,1/2	1.9~2.6	2-25
MZS		○	●			●			●	●	●		Forged brass	N,J,V,T,R,Z	3/8~1/2	0.12~0.83	2-26
MUD	○		●	●		●			●		●	●	Brass	N,J,V,S	1/8~1/2	0.23~0.58	2-30
MUS-6~10	○		●					●					Brass	P	1/8~3/8	0.23	2-30
MUDC	○		●										PVC / PTEF	P	1/4~1	0.28~4	2-32
MSUS	○		○	●	●	●			●	●	●	●	S.S.#304	N,P,V,S,J	1/8~2	0.23~48	2-33
MUAO	○			●							●		Brass	N	1/4~1/2	2.5	2-35
MUW	○		●			●				●			Forged brass	N,J,V,S	3/8~2	4.5~48	2-36
MUW-NO	○			●		●			●		●	●	Forged brass	N,J,V,S	3/8~2	4.5~48	2-37
MUW-F	○		●	●		●			●		●		FC-20	N,J,V,S	1 1/4~4	22~180	2-38
MUG	○		●								●		Forged brass	N	3/8~2	4.5~48	2-39
MUV	○		●								●		Forged brass	N	3/8~2	4.5~48	2-39
MUAW	○		●			●							Cast bronze	N	1/2~2	4~48	2-40
MUS	○		●					●	●	●	●		Cast bronze	P	1/2~2	4~48	2-41
MUS-F	○		●			●			●	●			FC-20	P,V,S,J	1 1/4~4	22~175	2-41
MSUW	○		●	●		●					●		S.S.#304	N,J,V,S	1/2~2	4.5~48	2-42
MSUW-F	○		●			●					●		S.S.#304	N,J,V,S	1/2~2	4.5~48	2-43
MUPS	○		●			●			●	●			Cast bronze	P,V,S,J	1/2~1	4~12	2-44
MXAD		○	●	●		●			●		●	●	Forged brass	N,J,V,S	1/8~1/2	0.26~0.97	2-45
MXAD-AF	○		●	●		●			●		●	●	Forged brass	N,J,V,S	3/8~2	4.5~48	2-46
MXBD		○	●	●		●			●		●	●	Forged brass	N,J,V,S	1/4~1/2	0.23~0.79	2-47
MXCD	○		●	●		●			●		●	●	Forged brass	N,V	1/4~1/2	2.4~2.7	2-48
MXPV	○		●	●		●			●		●	●	Forged brass	N,J,V,S	3/8~3/4	4.5~9.3	2-49

Model	Inside structure			N.C.	N.O.	Fluid						Material		Port size	CV	Page	
	Piston	Diaphragm	Plunger			Water / Air	Hot water	Steam	Light oil	Heavy oil	Gas	Vaccum	Body	Seal			
MCT			○	●		●			●		●	●	Forged brass	N,J,V,Z	1/4~3/4	0.02~0.65	2-9
MJT		○	●			●			●		●	●	Brass	N,J,V	—	0.10~0.42	2-14
MRJ		○		●		●			●		●	●	Brass	N,J,V	—	0.10~0.31	2-14
MUST		○	●			●			●		●	●	S.S.#303	N,J,V,Z	1/8~3/8	0.02~0.80	2-20
MUT	○		●	●		●			●		●	●	Forged brass	V	1/8~3/8	0.02~0.31	2-21
MZT	○		●	●		●			●	●	●	●	Forged brass	N,J,V,Z	1/8~1/2	0.08~0.80	2-27
MUA	○		●	●		●					●		Forged brass	N,V	1/4,3/8	0.1~0.12	2-31

3/2 WAY

M* Seal Material – Feature & indication

2/2, 3/2 WAY SOLENOID VALVE



Rubber, plastic

Code	Generic Name	Names	Features
N	NBR -5°C~80°C	Nitrile rubber	<ul style="list-style-type: none"> * 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) -5°C~185°C	Polytetrafluoroethylene	<ul style="list-style-type: none"> * 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 -5°C~130°C	Ethylene propylene rubber	<ul style="list-style-type: none"> * 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) -5°C~130°C	Fluorocarbon rubber	<ul style="list-style-type: none"> * 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 -10°C~200°C	—	<ul style="list-style-type: none"> * 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 -10°C~290°C	Perfluoroelastomer	<ul style="list-style-type: none"> * Excellent air tightness and optimum temperature and chemical resistance in all elastomer materials. * Resistant to corrosion from various chemical products such as strong acids, alkalies, ethers, ketones, esters, lubricants, fats, aromatics, nitrogenous compounds, hydrocarbons, alcohols, aldehydes, oils, vapors, amines, etc.
S	Silicone -5°C~130°C	Silicone rubber	<ul style="list-style-type: none"> * 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.

Solenoid Valve

Process Valve

Pilot & Mechanical Valve

Air Unit

Pressure Switch Compressed Air Dyer

Auxiliary Equipment

PISCO®

PLC Control System

M* Stability for various oil and solvent to rubber & plastic

2/2, 3/2 WAY SOLENOID VALVE



◎: 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 (100°C)		✗	○	○	△	○	○
Hydrochloric acid solution		△	○	○	○	-	○
30% Sulfuric acid solution		✗	○	○	△	-	✗
10%Nitric acid solution		✗	○	○	△	-	✗
40% Sodium hydroxide solution		△	○	○	✗	-	✗
Benzene		✗	○	✗	✗	○	✗
Alcohol		△	○	○	○	○	○
Butanone		✗	○	✗	✗	○	△

M* Stability for various Chemical liquid to rubber & plastic

2/2, 3/2 WAY SOLENOID VALVE



◎: 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	△	○	○	○	○	○
	Hydrochloric acid solution	△	○	○	○	○	○
Inorganic acid	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	△	○	✗	○	-	-

Solenoid Valve

Process Valve

Pilot & Mechanical Valve

Air Unit

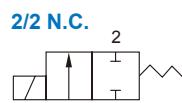
Pressure Switch

Compressed Air Dryer

Auxiliary Equipment

PISCO®

PLC Control System



Order example

MBS – 03 – 2 – N – 2 – D – AC110 – □

MODEL	CODE	FIG.	COIL	VOLTAGE
01: M5	01, 2, 3, 4,		2: #2	AC220V(50/60)Hz
03: 1/8	5, 6, 7		3: Bigger	AC110V(50/60)Hz
04: 1/8			2E: Explosion-Proof (*2)	DC24V
06: 1/4				

SEAL MAT'L	PLUG	PORT THREAD
N: NBR	Blank: DIN	Blank: Rc thread
J: EPDM	D: LED	G: G thread
V: Viton	G: 1/2" NPT	NPT: NPT thread
T: Teflon (*1)	Y: 2 wires (only for coil #2)	
Z: FFKM		

*1. When the seal material is (T) Teflon, the valve has slight leakage.

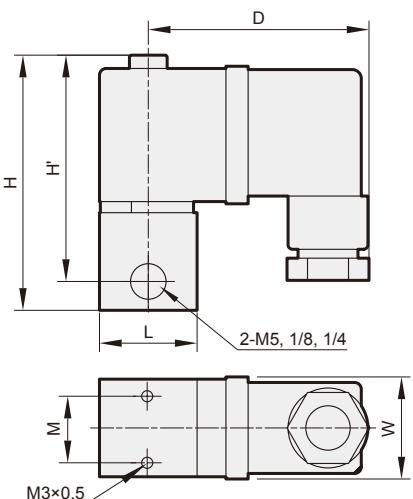
*2. Explosion-Proof (2E) coil with LED (D) plug is not applicable.

Specification

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

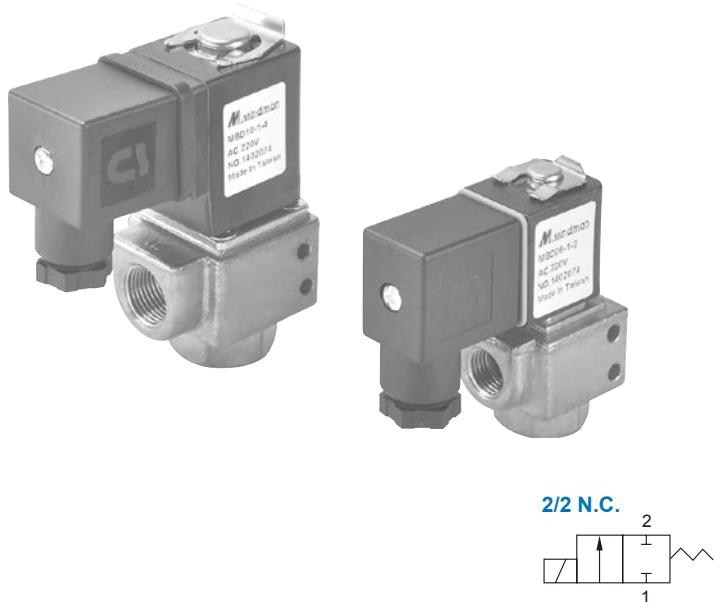
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C								Max. O.P.D bar (Min. 0 bar)						CV	VAC. torr
					Coil 2, 2E				Coil 3				Coil 2		Coil 3		Coil 2E			
					N	J	V	T	Z	N	J	V	T	Z	AC	DC	AC	DC	AC	DC
01(M5)	1	N	2E	1.0											30				0.03	10^{-2}
	2			1.3											30	24	30	30	30	0.05
	3			1.6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

* Only for code 01(M5), 03(1/8).



MBD series

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



Specification

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

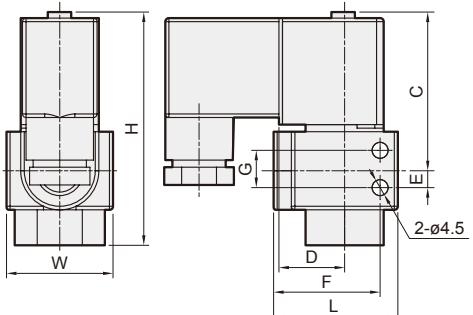
Dimensions

Model Code Dimension (mm)	MBD			
	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		
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

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	COIL 2, 3, 2E 4, 5, 3E (*)	VOLTAGE AC220V(50/60)Hz AC110V(50/60)Hz DC24V	PLUG N: NBR V: Viton	SEAL MAT'L Blank: DIN D: LED G: 1/2" NPT Y: 2 wires (only for coil #2)	PORT THREAD Blank: Rc thread G: G thread NPT: NPT thread



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

Specification

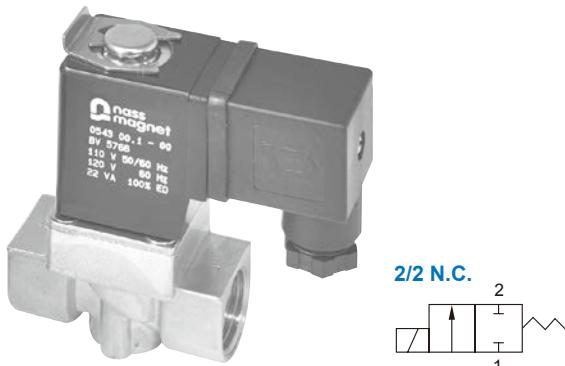
Model **MBD**: Forged brass body, for water, air, gas, light oil, vacuum.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp.°C		Working press. bar					CV		
					Coil 2, 2E		Coil 3		Coil 2		Coil 3			
					N	V	N	V	AC	DC	AC	DC		
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		Working press. bar					CV	
					Coil 4, 5, 3E		Coil 4		Coil 5		Coil 3E		
					N	V	AC	DC	AC	DC	AC	DC	
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

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



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 J=5.0mm, T=4.0mm, R=2.5mm, Z=5.0mm.

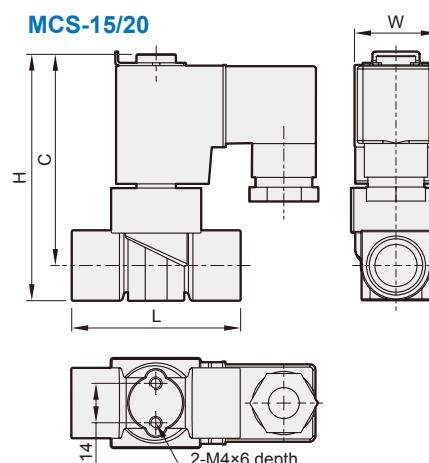
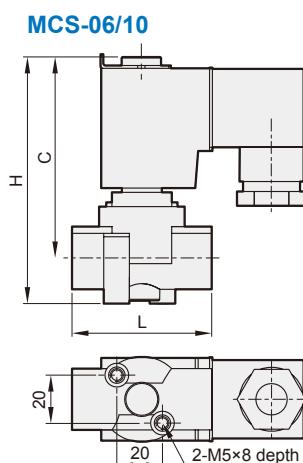
Order example

MCS - 06 - 2 - J - 5 - D - AC110 - □

MODEL	CODE	FIG.	SEAL MAT'L	COIL	PLUG	PORT THREAD
06: 1/4 10: 3/8 15: 1/2 20: 3/4	1, 2, 3, 4, 5, 6, 7, 8, 9	N: NBR J: EPDM V: Viton T: Teflon (*1) R: RUBY (*1) Z: FFKM	Blank: DIN 4: #4 5: Bigger 3E: Explosion-Proof (*2)	Blank: D: LED G: 1/2" NPT	VOLTAGE AC220V(50/60)Hz AC110V(50/60)Hz DC24V	

*1. When the seal material is (T) Teflon or (R) RUBY, the valve has slight leakage, not suitable for vacuum.

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



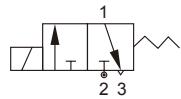
Model MCS: Forged brass body, 2/2 way N.C. Available fluid: water, air, gas, vacuum, light oil (50cst down) etc.																		
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Seal temp. °C							Max. O.P.D bar (Min. 0 bar)						
					Coil 4, 3E			Coil 5				Coil 4		Coil 5		Coil 3E		
					N	J	V	R	T	Z		AC	DC	AC	DC	CV	VAC. torr	
06(1/4) 10(3/8) 15(1/2) 20(3/4)	1	N J V T R Z	4 5 5E	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	30 24 17 10 8 6 4 2 0.8	20	40	30	25	20	0.10	10 ⁻²
	2			2.0								14	30	28	16	12	0.15	
	3			2.5								10	24	20	10	8	0.20	
	4			3.0								6	16	13	7	6	0.31	10 ⁻¹
	5			4.0								4	12	8	4.5	3.5	0.54	
	6			5.0								2	9	5	2.5	2	0.80	
	7			5.5								2	7	4	2	2	0.95	
	8			7.5								0.8	3	2	1	1	1.10	
	9			10.0								0.4	1.6	0.8	0.4	0.4	1.30	10

MCT series

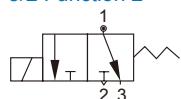
3/2 WAY N.C. PLUNGER TYPE SOLENOID VALVE



3/2 Function 1



3/2 Function 2



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)

Weight

Unit: kg

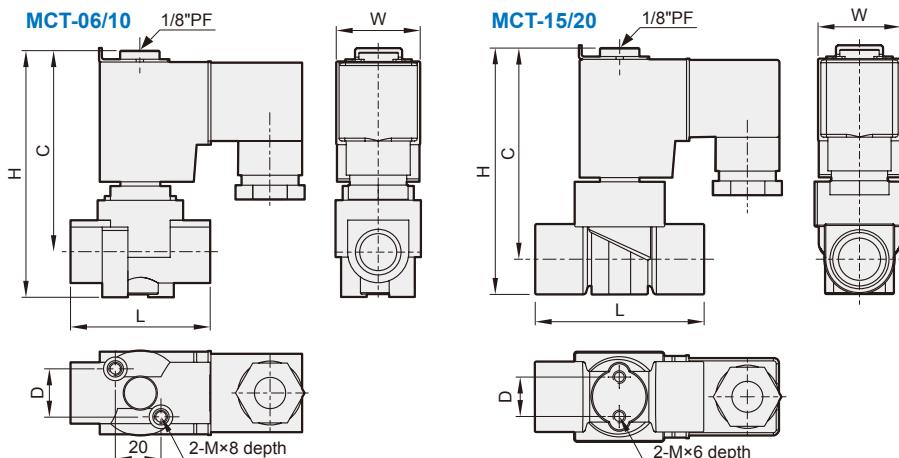
Model	MCT		
	4	5	3E
06	0.43	0.51	0.76
10	0.41	0.49	0.74
15	0.43	0.51	0.76
20	0.55	0.63	0.88

Coil power			
AC (VA)	18	24.0	8.6
DC (W)	15	18.5	10.0

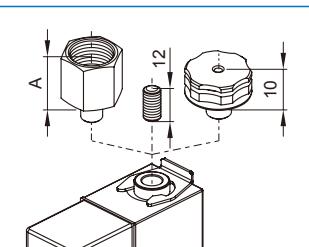
Order example

MCT - 06 - 2 - J - U - 5 - D - AC110 - □									
MODEL	FIG.	SEAL MAT'L	EXHUST ACCESSORIES	PLUG	PORT THREAD				
A, 0, 1, 2, 3, 4, 5, 6,	N: NBR J: EPDM V: Viton Z: FFKM	U - Without	F - PS female	Blank: DIN D: LED G: 1/2" NPT	Blank: Rc thread G: G thread NPT: NPT thread				
CODE		C -	C - Dust-proof & silencer cap	COIL	VOLTAGE				
06: 1/4" 10: 3/8" 15: 1/2" 20: 3/4"		P -	P - 1/8" PS male	4: #4 5: Bigger 3E: Explosion-Proof (*)	AC220V(50/60)Hz AC110V(50/60)Hz DC24V				

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



Exhaust accessories

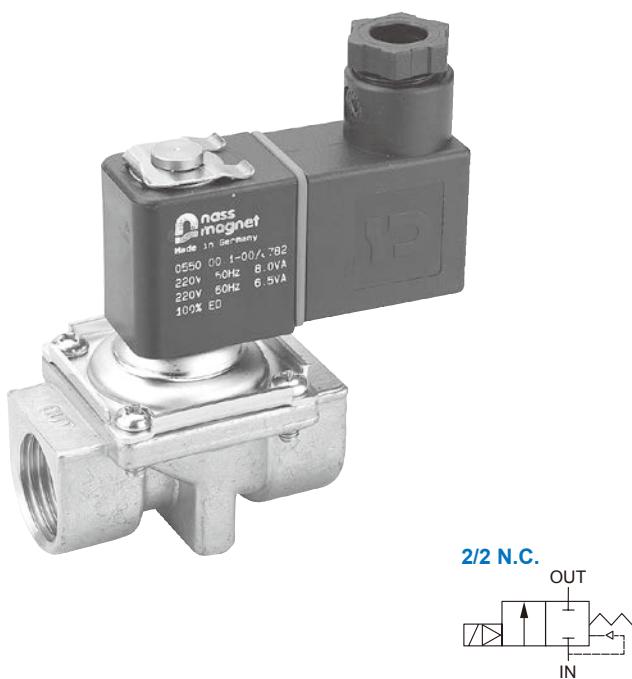


Dimensions

Code Dimension (mm)	06	10	15	20
A	20	22	-	-
L	49	56	60	
H	86	88	91	
C	71	74	74	
D	20	21	14	
W	4	31	32	32
5, 3E			36	
M	M5		M4	

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

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm		Temp. °C			Max. O.P.D bar (Min. 0 bar)						CV	VAC. torr	
				Body	Tube	Coil 4, 3E			Coil 5			Coil 4			Coil 5		
						N	J V	Z	N	J V	Z	1	2	1	2	1	2
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	16 10 8.5 5.5 4 2.5 1.5 1	11 12 6 10 7 5 6.5 5.5 1.5	10 12 8 5 8 2 4.5 4.5 0.8	0.02 0.05 0.10 0.15 0.20 0.31 0.51 0.65	10 ⁻²
	0			1.3													
	1			1.6													
	2			2.0													
	3			2.5													
	4			3.0													
	5			4.0													
	6			5.0													



Specification

- If the working pressure is 5 bar up for air, the operating cycle cannot 10 times/min. over.

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	
D	50.0	50.0	50.0	50.0	
L	40.0	40.0	40.0	40.0	
H	72.0	72.0	72.0	76.5	
M	17.0	17.0	17.0	24.0	
W	32.0	32.0	32.0	38.0	
N.W. (kg)	Coil 2	0.25	0.24	0.37	0.34
	Coil 3	0.30	0.29	0.42	0.39
	Coil 2E	0.57	0.56	0.69	0.66

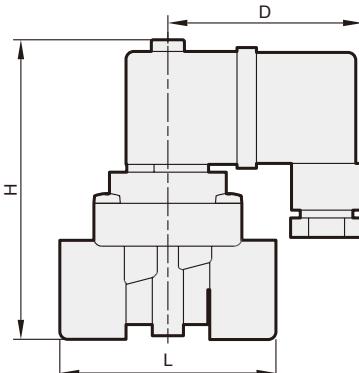
Order example

MED – 10 – □ – N – 2 – □ – AC110 – □

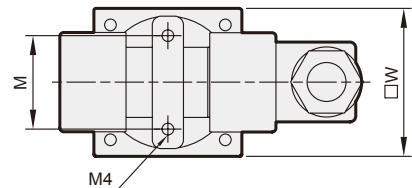
MODEL	CODE	FIG.	COIL	VOLTAGE	PORT THREAD
08: 1/4	A: High pressure		2: #2	AC220V(50/60)Hz	Blank: Rc thread
09: 3/8	B: Big flow		3: Bigger	AC110V(50/60)Hz	G: G thread
10: 3/8			2E: Explosion-Proof (*)	DC24V	NPT: NPT thread
15: 1/2					

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

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



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



Specification

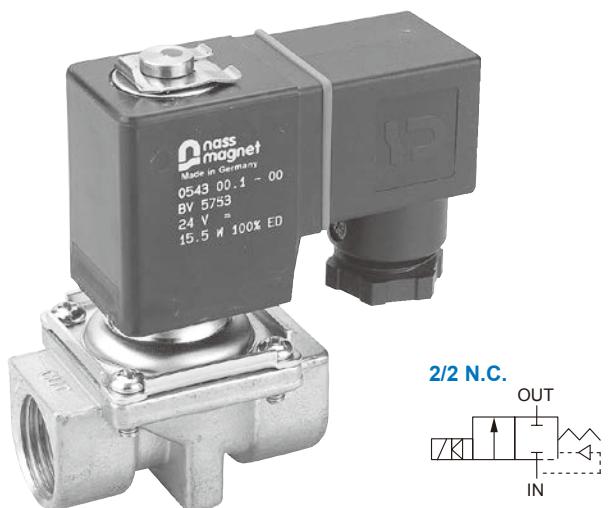
* A: Air, L: Liquid

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			
					N	J	V	N	J	V	AC	DC	AC	DC	AC	DC		
08(1/4)	A	N J V	2 3 2E	10 15	-5	-10		-5	-10		7	4	4	4	10	4	1.1	
09(3/8)	B				~	~		~	~		6	4	2	2	9	4	1.4	
10(3/8)	A	N J V	2 3 2E	15	80	80		80	120		6.5	4.5	0.8	0.4	10	8	5.5	
15(1/2)	B										5.5	3.5	0.2	—	9	6	4.5	

MEP series

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



Order example

MEP - 10 - A - N - 4 - □ - AC110 - □

MODEL 10: 3/8 15: 1/2	CODE 10: 3/8 15: 1/2	SEAL MAT'L N: NBR J: EPDM V: Viton	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
FIG. A: High pressure B: Big flow		COIL 4: #4 5: Bigger 3E: Explosion-Proof (*)			

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

Specification

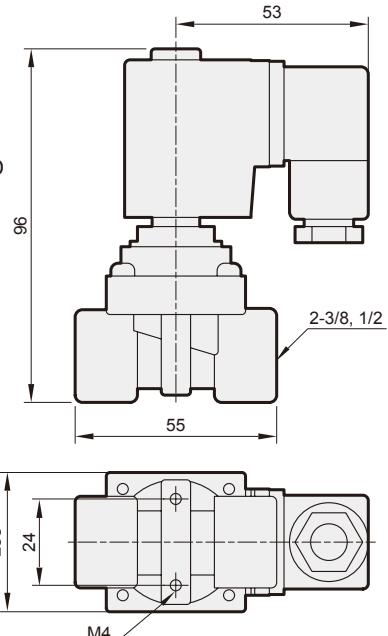
- IP65 100% ED coil

Power consumption

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

Weight

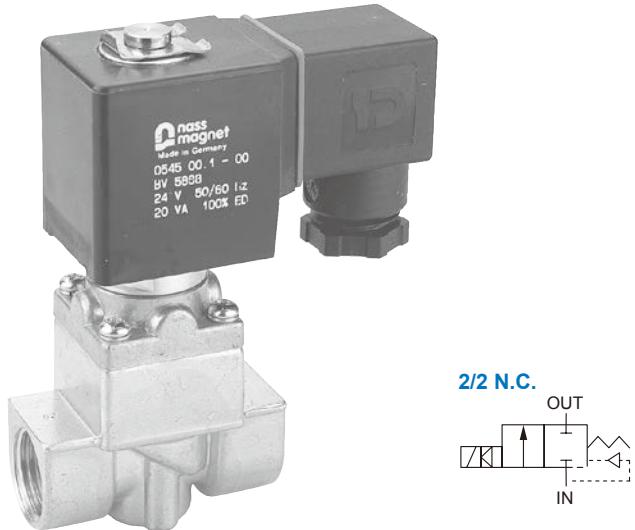
Model	MEP			
	4	5	3E	
Code \ Coil				
N.W (kg)	10	0.45	0.53	0.76
	15	0.44	0.52	0.75



Specification

Model **MEP**: Forged brass body, pressure forming S.S. plate, for water, air. 2/2 way N.C.

Code (Port)	Fig.	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						
					N	J,V	N	J,V	N	J,V	AC	DC	AC	DC	AC	DC	AC	DC	10 15		
10(3/8) 15(1/2)	A	N J V	4 5 3E	15	-5 ~	-10 ~	-5 ~	-10 ~	-5 ~	-10 ~	1.0 0.5	0.5 0.2	1.5 1.0	1.0 0.5	0.3 0.2	10 400	400 600	10 10	500 600	1.8 2.4	2.2 2.8
	B				80	90	80	145	80	145	0.5 0.2	0.2 1.0	1.0 0.5	0.5 0.2	0.2 0.2	400 400	600 600	10 10	500 600	1.8 2.4	2.2 2.8



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

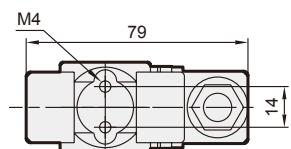
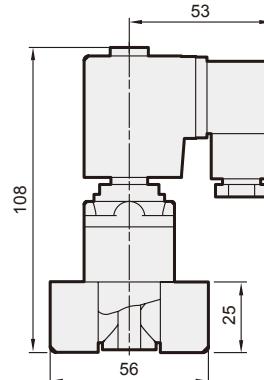
Specification

- 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	



MGD series

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



Specification

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

Power consumption

Coil power	2	2E	3	4	3E
AC (VA)	6.9	8.0	5.7	15.4	9.2
DC (W)	6.2	6.8	5.2	15.0	10.0

Dimensions

Model	MGD										MGD-F				
	10	15	20	25	32	40	45	50	25	32	40	45	50		
A	68.3	72.7	75.5	91.0		97.5	138	155	155	175	175	175	175		
B	81.3	88.7	95	119		132	125	135	140	140	140	155			
C	64	80	90	102		122	138	159	161	168	175				
D	42	51	61	76		95	—	—	—	—	—				
E	22	28	34	—	—	—	—	—	—	—	—				
N.W. (kg)	Coil 2	0.47	0.45	0.70	0.90	1.98	1.67	3.50	2.86	3.22	5.33	4.93	6.76	6.98	
	Coil 2E	0.78	0.75	1.00	1.20	2.29	1.98	3.80	3.17	3.52	5.64	5.24	7.06	7.29	
	Coil 3	0.51	0.48	0.74	0.94	2.02	1.71	3.54	2.90	3.26	5.37	4.97	6.80	7.02	
	Coil 4	0.60	0.57	0.83	1.03	2.11	1.80	3.62	2.98	3.63	5.75	5.35	7.17	7.40	
	Coil 3E	0.89	0.86	1.12	1.32	2.40	2.09	3.91	3.28	3.33	5.46	5.06	6.88	7.10	

Order example

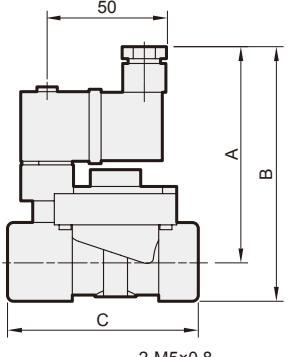
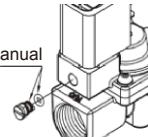
MGD – 25 – N – 3 – D – F – □ – AC110 – □

MODEL	CODE	SEAL MAT'L	COIL	PLUG	CONN.	VOLTAGE	PORT THREAD
10, 15, 20, 25, 32, 40, 45, 50	N: NBR J: EPDM V: Viton	2, 3, 4, 2E, 3E (*)	Blank: DIN D: LED G: 1/2" NPT Y: 2 wires	Blank: Screwed F: Flanged (F type no manual, for code 25~50) (only for coil #2)	AC220V(50/60)Hz AC110V(50/60)Hz DC24V	Blank: Rc thread G: G thread NPT: NPT thread	

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

MANUAL

Blank: Without
M: With (for coil 2, 2E, 3)

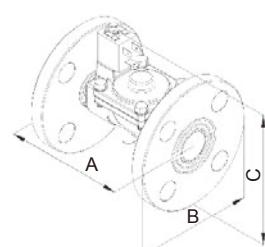


Specification

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

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C			Working press.(0.3~ bar)								CV		
				Coil 2		Coil 3, 2E	Coil 4, 3E	Coil 2		Coil 2E	Coil 3		Coil 4	Coil 3E			
				N	J,V	N	J,V	N	J,V	AC	DC	AC	DC	AC	DC		
10(3/8)			15					10	10	16	15	16	16	—	—	16	2.0
15(1/2)			15					10	10	16	15	16	16	—	—	16	2.5
20(3/4)			20					10	10	14	13	16	16	—	—	16	5.2
25(1)	N	2E	25	-5	-5	-5	-5	10	10	12	10	16	16	—	—	16	8.5
32(1 1/4)	J	3	33	~	~	~	~	10	9	10	8	14	13	16	16	16	16
40(1 1/2)	V	4	33	60	60	100	60	10	9	10	8	14	13	16	16	16	21
45(1 1/2)		3E	44					8	5	8	5	12	10	16	16	16	26
50(2)			44					8	5	8	5	12	10	16	16	16	31

Flanged



MJ* / MRJ series

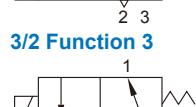
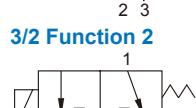
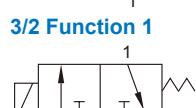
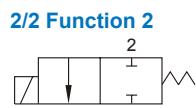
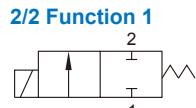
2/2 WAY N.C., N.O. PLUNGER TYPE ACTUATOR VALVE



MJS/MJR



MJT/MRJ



Specification

- IP65 100% ED coil.
- PTB approval EExm II T4 coil.
- For air, water, gas, oil, vacuum (10^{-3} torr).

Power consumption

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

Dimensions

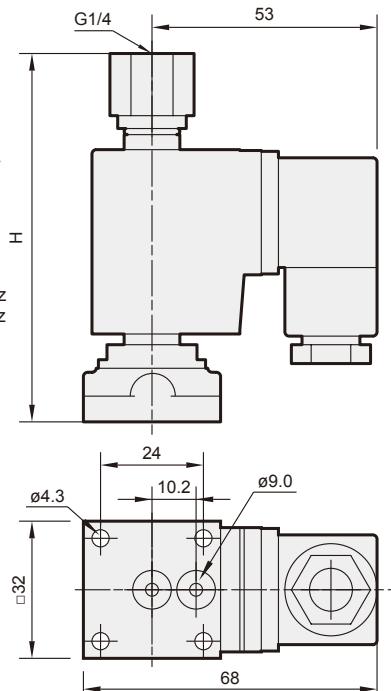
Model	MJS		MJR	MJT / MRJ		
	Body mat'l Dimension (mm)		C	S	—	—
H	68	71	67	86		
4	308	316				
5	394	402	310		320	
3E	614	622				

Order example

MJS – 00 – 1 – N – S – 4 – D – □ – AC110

MODEL	CODE	FIG.	BODY MAT'L	PLUG	VOLTAGE
MJS MRJ MJT MRJ	00	1, 2, 3, 4, 5	C: Brass S: S. Steel	Blank: DIN D: LED G: 1/2" NPT	AC220V(50/60)Hz AC110V(50/60)Hz DC24V
			SEAL MAT'L	COIL	
			N: NBR J: EPDM V: Viton	4: #4 5: Bigger 3E: Explosion- Proof (*)	
				MANUAL	
				Blank: Without M: With manual	

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



Specification

Model **MJS**: Brass body, 2/2 way N.C. actuator valve.

Code	Fig. no.	Mat'l'		Coil	Orifice mm	Temp. °C					Working press. (0~ bar)						CV	Torr
											Coil 4, 3E			Coil 5		Coil 3E		
		Seal	Body			N	J,V	N	J	V	AC	DC	AC	DC	AC	DC		
00	1	N J V	C S*	4 5 3E	1.6 2.0 2.5 3.0 3.5	-5 ~ 80	-10 ~ 145	-5 ~ 80	-10 ~ 145	-10 ~ 160	30	20	40	30	20	14	0.08	10 ⁻²
	2										24	15	30	20	14	10	0.12	
	3										14	10	20	15	10	7	0.18	
	4										10	7	15	10	7	5	0.25	10 ⁻¹
	5										7	4	10	7	5	4	0.32	

Model **MJR**: Brass body, 2/2 way N.C. round trip actuator valve.

Code	Fig. no.	Mat'l'		Coil	Orifice mm	Temp. 5~°C				Working press. (0~ bar)						CV			
										Coil 4		Coil 5		Coil 3E					
		Seal	Body			N	J,V	N	J,V	AC	DC	A/DC	AC	DC	A/DC				
00	1	N J V	C S*	4 5 3E	1.6 2.0 2.4 3.0 3.5	80	150	90	150	30	20	10	40	30	14	20	14	7	0.10
	2									20	14	7	30	20	10	14	10	5	0.15
	3									14	10	5	20	14	7	10	7	4	0.20
	4									10	7	4	14	10	5	7	5	3	0.31
	5									7	5	2	10	7	4	5	4	2	0.42

Model **MJT**: Brass body, 3/2 way N.C. actuator valve.

Code	Fig. no.	Mat'l'		Coil	Orifice mm	Temp. 5~°C				Working press. (0~ bar)						CV	
										Coil 4		Coil 5		Coil 3E			
		Seal	Body			Body	Top	N	J,V	N	J,V	1	2	1	2	1	2
00	1	N J V	C S*	4 5 3E	1.6 2.0 2.4 3.0 3.5	80	150	90	150	10	16	14	20	7	10	0.10	0.10
	2									7	16	10	20	5	10	0.15	
	3									5	13	7	16	4	7	0.20	
	4									4	10	5	13	3	5	0.31	0.31
	5									2	7	4	10	2	3	0.42	

Model **MRJ**: Brass body, 3/2 way N.O. actuator valve.

Code	Fig. no.	Mat'l'		Coil	Orifice mm	Temp. 5~°C				Working press. (0~ bar)						CV
										Coil 4		Coil 5		Coil 3E		
		Seal	Body			Body	Top	N	J,V	N	J,V	1	2	1	2	1
00	1	N J V	C S*	4 5 3E	2.0 2.4 2.4 3.0 3.5	80	150	90	150	7	10	3	0.10	0.10		
	2									5	7	2	0.15			
	3									3	5	1	0.17			
	4									1	3	—	0.20	0.20		
	5									—	1	—	—			

* S.S. body is available.

MPD / MPK series

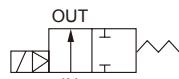


2/2 WAY N.C. DIAPHRAGM TYPE **SOLENOID VALVE**

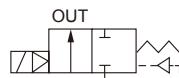


2/2 N.C.

Code 09,14



Code 15~25



Specification

- IP65 waterproof coil.
 - Continuous cycle, 100% ED.
 - Ambient temperature: -5~50°C (No freezing).

Power consumption

Coil power	2	3	4	5
AC (VA)	6.9	8.0	19.5	—
DC (W)	6.2	6.8	15.0	18.5

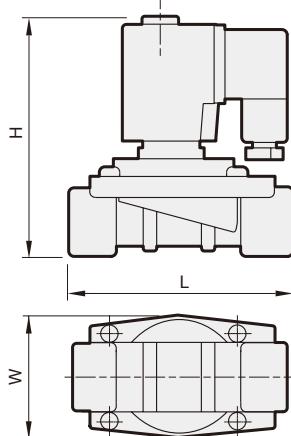
Dimensions

Model	MPD / MPK				
Code Dimension (mm)	09	14	15	20	25
L	56		71	90	90
H		78		114	124
W		38		56	76
N.W (kg)	Coil 2,4	0.185	0.18	0.55	0.75
	Coil 3,5	0.235	0.23	1.1	1.3
					1.2

Order example

MPD-15-J-5-D-AC110-□

MODEL	CODE	COIL	PLUG	VOLTAGE	PORT THREAD
MPD	09: 3/8		Blank: DIN	AC220V(50/60)Hz	Blank: Rc thread
MPK	14: 1/2	2: #2	D: LED	AC110V(50/60)Hz	G: G thread
	15: 1/2	3: #3	G: 1/2" NPT	DC24V	NPT: NPT thread
	20: 3/4	4: #4	Y: 2 wires		
	25: 1	5: Bigger	(G, Y only for coil #2, #3)		
		SEAL MAT'L			
		N: NBR			
		J: EPDM			
		V: Viton			



Specification

Model **MPD**: PA (Nylon) body, N.C., for water, special fluids etc.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C				Max. O.P.D bar (0.2~ bar) (*1,2)					CV	
				Coil 2	Coil 3	Coil 4	Coil 5	Coil 2		Coil 3		Coil 4		
				N,J,V				AC	DC	AC	DC	AC	DC	
09(3/8)	N J V	2	15	4	~	60	4.0	0.8	5.0	3.5	—		1.6	
14(1/2)			15				(3.5)	(3.5)	(3.5)	(3.5)			2.0	
15(1/2)		4	18				—				7	1.5	4	4.0
20(3/4)			28								7	1.0	3	9.8
25(1)			28								7	1.0	3	11.0

Model MPK: PA (Nylon) body, N.C., for water, special fluids etc.

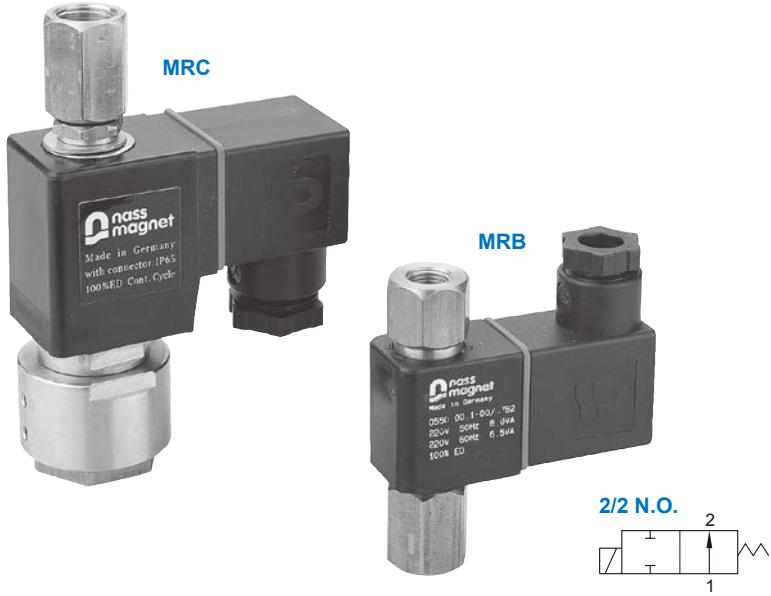
*1. The max O.P.D bar of coil 2, 3 is (0.3~ bar).

*2. () the value is for fluid.



MRB / MRC series

2/2 WAY N.O. PLUNGER TYPE SOLENOID VALVE



Specification

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

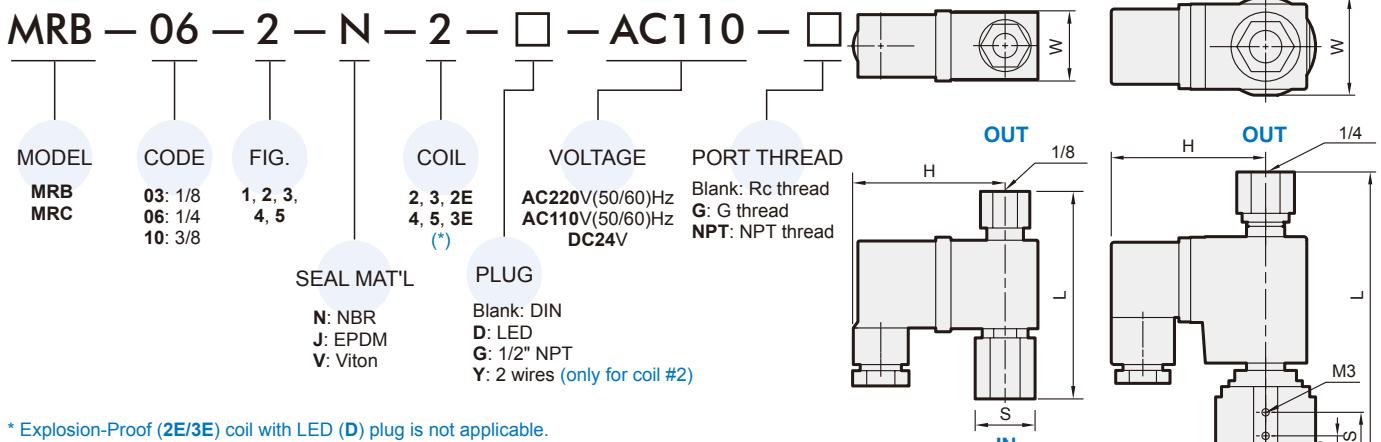
Power consumption

Coil power	2	3	2E	4	5	3E
AC (VA)	8.5/6.9	13/10	4.8	17.6/15.4	33/23	9.2
DC (W)	4.9	6.8	5.2	15	18.5	10

Dimensions

Model	MRB		MRC			
	Code Dimension (mm)	03	06	03	06	10
L		68		98		
H		50		53		
W		23		34		
S		19		16		
S'		—		8		
N.W (kg)		0.20		0.45		

Order example



Specification

Model **MRB**: Mini brass body, 2/2 way N.O., for water, air, gas, light oil.

Code (Port)	Fig. no.	Mat'l		Coil	Orifice mm	Temp. 5~°C			Working press. bar			CV	VAC. torr
						Coil 2, 2E			Coil 3				
		Seal	Body			N	J	V	N	J	V	AC/DC	
03(1/8)	1	N,J,V	C	2,3,2E	1.3	80	90	120	0~14	0~20	0~10	0.05	10 ⁻³
06(1/4)	2				1.5							0~10	0~15

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

Code (Port)	Fig. no.	Mat'l		Coil	Orifice mm	Temp. 5~°C			Working press. bar			CV	VAC. torr			
						Coil 4, 3E			Coil 5							
		Seal	Body			N	J	V	N	J	V	AC/DC				
03(1/8)	1	N J V	C	4 5 2.2 2.5 3.0	1.6	90	120	150	0~16	0~24	0~16	0.10	10 ⁻³			
06(1/4)	2				2.0							0~13	0~20	0~13	0.15	
10(3/8)	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	

MUSC series



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



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	1, 2,	N: NBR	2, 3, 2E			Blank: Opposite	AC220V(50/60)
06: 1/4	3, 4,	J: EPDM	4, 5, 3E			A: Diagonal hole	AC110V(50/60)
08: 1/4	5, 6,	V: Viton	(*2)			(only for code 08, 10)	DC24V
10: 3/8	7, 8,	T: Teflon (*1)					
	9	R: RUBY (*1)					
		Z: FFKM					

*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.

Specification

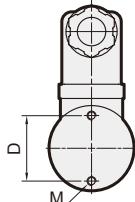
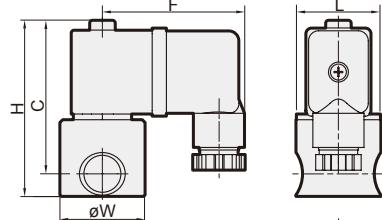
Model MUSC: 303 S.S. body, for water, air, gas, light oil (50cst down), vacuum. 2/2 way N.C.

Model M88C: 303 S.S. body, for water, air, gas, light oil (Suction down), vacuum. 2/2 way N.C.																
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C				Working pressure 0~bar				CV	VAC. torr		
					Coil 2/E		Coil 3		Coil 2		Coil 3					
					N	JV	TZ	N	JVTZ	AC	DC	AC	DC			
03(1/8) 06(1/4)	1	N J V T Z	2 2 3 2E	1.0	-5 80	-10 ~ 80	-20 ~ 80	-5 ~ 80	-10 ~ 145	30	30	30	30	30	0.03	10 ⁻²
	2			1.3						30	24	30	30	30	0.05	
	3			1.6						30	20	30	30	30	0.09	
	4			2.0						16	11	22	20	17	0.14	
	5			2.5						10	7	12	10	10	0.18	10 ⁻¹
	6			3.0						6	4	8	8	7	0.27	
	8			5.0						1	0.2	2	0.5	1	0.1	
										0.40					10	

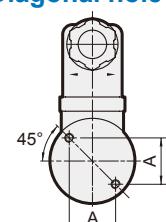
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C						Max. O.P.D. bar (Min. 0 bar)						CV	VAC. torr		
					Coil 4, 3E			Coil 5			Coil 4		Coil 5		Coil 3E					
					N	JV	TRZ	N	JV	TRZ	AC	DC	AC	DC	AC	DC				
08(1/4) 10(3/8)	1	N J V T R Z	4 5 3E	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 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			

* Max. Orifice: 03/06 T=2.5mm, Z=3.0mm., 08/10 J=5.0mm, T=4.0mm, R=2.5mm, Z=5.0mm

* Seal T and R might have below 300cc/min. slight leakage, so it is not suitable for vacuum.

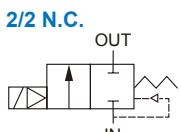


Diagonal hole



MUSD series

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



Order example

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

MUSD – 15 – J – 5 – D – AC110

MODEL	CODE 15: 1/2	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)	VOLTAGE AC220V(50/60)Hz AC110V(50/60)Hz DC24V
SEAL MAT'L N: NBR J: EPDM V: Viton				

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

Specification

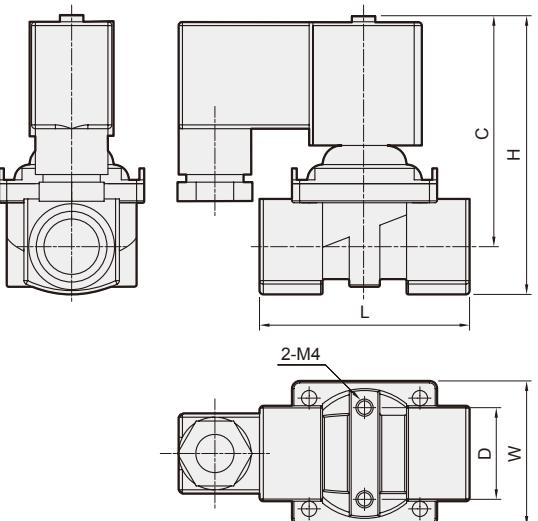
- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 PTB approval.

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	MUSD
Code Dimension (mm)	15
L	55
H	72
W	38
C	60
D	24
N.W (kg)	0.26
Coil 3	0.31
Coil 2E	0.54



Specification

Model **MUSD**: SCS14 body, 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		
				N	J	V	N	J	V	AC	DC	AC	DC	
15(1/2)	N J V	2 3 2E	15	-5 ~ 60	-10 ~ 80		-5 ~ 60	-15 ~ 120		5	1	10	3	5 1 2.0

MUST series

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



Order example

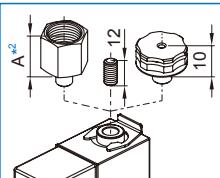
* Standard port thread: Rc thread.
G and NPT thread please contact our sales.

MUST - 06 - 2 - N - C - 5 - D - S - AC110

MODEL	CODE	FIG.	SEAL MAT'L	COIL	PLUG	FIXED HOLE	VOLTAGE
03: 1/8	1, 2, 3,	1, 2, 3,	N: NBR	2, 3, 2E	Blank: DIN	Blank: Opposite	AC220V(50/60)Hz
06: 1/4	4, 5, 6, 7	4, 5, 6, 7	J: EPDM	4, 5, 3E	D: LED	A: Diagonal	AC110V(50/60)Hz
08: 1/4			V: Viton	(*)1	G: 1/2" NPT		DC24V
10: 3/8			Z: FFKM		Y: 2 wires		

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, 10.

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			
				Body	Tube	N	J	V	Z	N	J	V	Z	1	2		
03(1/8) 06(1/4)	2	N J V Z	2 3 2E	1.0	1.2	-5	-10	-20	-5	145	6.5	8.0	5.5	0.03	10 ⁻¹		
	3			1.3													
	4			1.6													
	5			2.0													
	6			2.5													

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			
				Body	Tube	N	J	V	Z	N	J	V	Z	1	2		
08(1/4) 10(3/8)	1	N J V Z	4 5 3E	1.3	1.6	-5	-10	-20	-5	145	9.0	12	8.0	0.05	10 ⁻²		
	2			1.6													
	3			2.0													
	4			2.5													
	5			3.0													
	6			4.0													
	7			5.0													

Specification

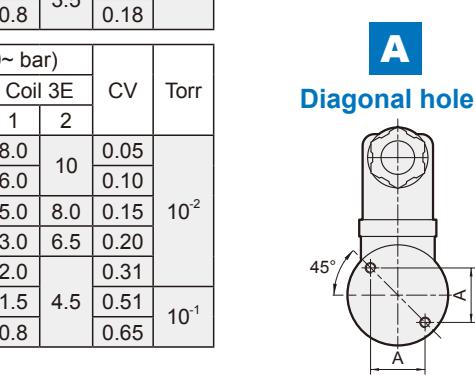
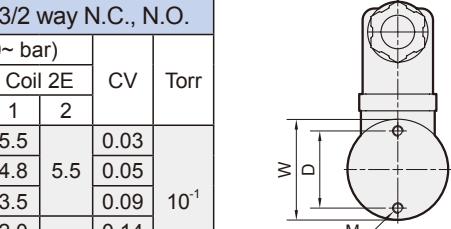
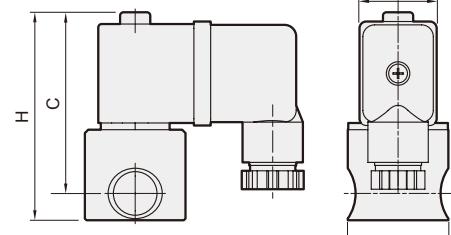
- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.

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

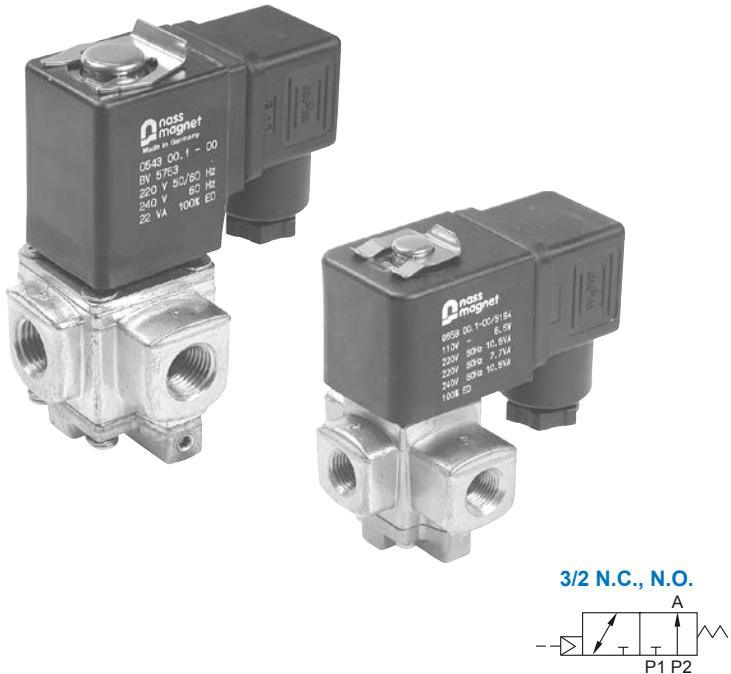
Dimensions

Model	MUST			
Code	03	06	08	10
L	25	30	40	42
W	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	24
N.W (kg)	2, 4	0.18	0.23	0.52
	3, 5	0.23	0.28	0.58
	2E, 3E	0.50	0.55	0.83
				0.85



MUT series

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



Order example

MUT - 10 - 2 - 3 - □ - AC110 - □

MODEL	CODE	FIG.	COIL	VOLTAGE	PORT THREAD
03: 1/8 06: 1/4 08: 1/4 10: 3/8	1, 2, 3, 4, 5	2, 3, 2E 4, 5, 3E (*)	AC220V(50/60)Hz AC110V(50/60)Hz DC24V	Blank: Rc thread G: G thread NPT: NPT thread	
PLUG				Blank: DIN D: LED G: 1/2" NPT	

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

Specification

Model **MUT**: Forged brass body, 3/2 way N.C., N.O., for water, air, gas, light oil, vacuum.

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Mat'l	Max O.P.D. bar (Min. 0 bar)			Cv	VAC. torr
					Temp. °C	Coil 2	Coil 3	Coil 2E		
					V	AC	DC	AC		
03(1/8) 06(1/4)	1	V	2E	1.0	-5~95	6	6	6	0.02	10 ⁻²
	2			1.3		5	5	5	0.03	
	3			1.6		3	3	2.5	0.05	10 ⁻¹
	4			2.0		2	2	1.5	0.09	

Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Mat'l	Max O.P.D. bar (Min. 0 bar)			Cv	VAC. torr
					Temp. °C	Coil 4	Coil 5	Coil 2E		
					V	AC	DC	AC		
08(1/4) 10(3/8)	1	V	3E	1.3	-5~95	10	15	10	0.07	10 ⁻²
	2			1.6		7	12	7	0.10	
	3			2.0		6	10	6	0.15	10 ⁻¹
	4			2.4		5	8	5	0.20	
	5			3.0		3	5	3	0.31	

Specification

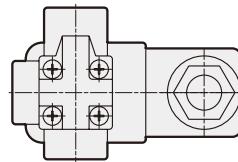
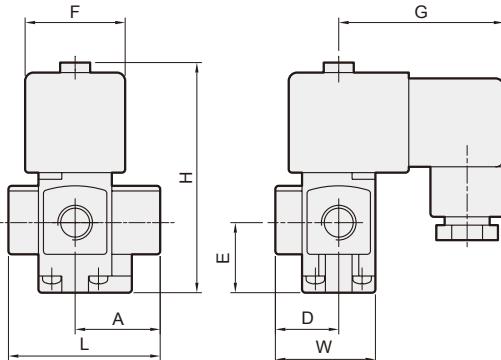
- IP65 waterproof coil.
- Continuous cycle, 100% ED.
- Ex coil is EExm II T4 or EEx ia II C T6 PTB approval.

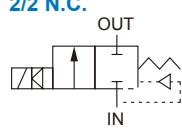
Power consumption

Coil power	3	2E	4	3E
AC (VA)	8.0	4.8	15.4	9.2
DC (W)	6.8	5.2	15.0	10.0

Dimensions

Model	MUT			
	03	06	08	10
A	25.5		28.5	
D	19.0		22.5	
E	21.0		23.0	
F	30.0		30.0	
G	50.0		53.0	
H	69.0		87.0	
L	45.5		51.0	
W	30.5		39.0	
N.W (kg)	2, 4 3, 5 2E, 3E	0.34 0.31 0.58	0.5 0.6 0.8	





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

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

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

CONN.
Blank: Screwed
F: Flanged
RF: Raised face
flanged
(Custom order)

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

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

Specification

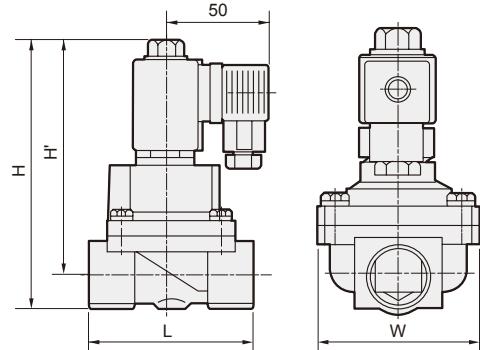
- IP65 waterproof coil.
- Ex coil is EExm II T4 PTB approval.
- Ambient temp.: -15~50°C
- Voltage tolerance: ±8%
- Installing position is free.
(You'd better put the coil upright)
- Pilot piston series.

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	MWA / H / S				
	Code Dimension (mm)	10/15	20	25	32/40
L	71	80	90	97	118
H	136	141	148	171	191
H'	122	114	127	142	156
W	51	61	71	76	95
N.W (kg)	1.3	1.5	1.9	2.9	4.5



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

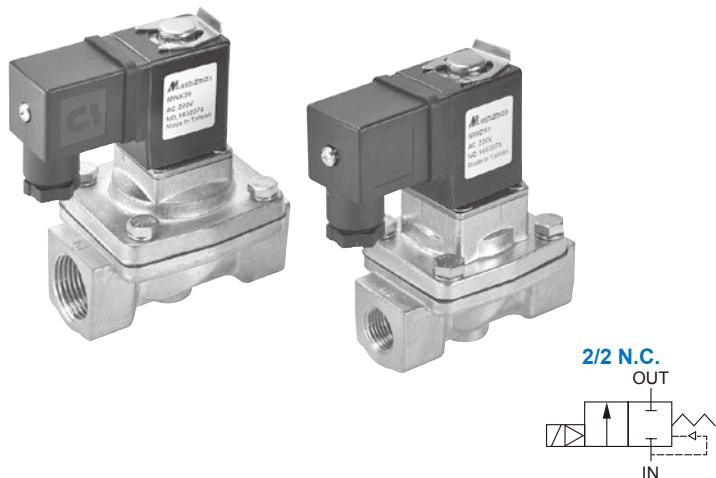
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. °C		Max. O.P.D. bar (min. 0.5 bar)						CV
				Coil 4, 5, 3E		Coil 4		Coil 5		Coil 3E		
				N	AC	DC	AC	DC	AC	DC	AC	DC
10(3/8)	N	4 5 3E	15	-5 ~ 80	12	6	16	10	7	4	3.0	
15(1/2)			15		12	6	16	10	7	4	4.0	
20(3/4)			20		12	6	16	10	7	4	6.8	
25(1)			25		9	3	13	7	5	3	11.0	
32(1 1/4)			31		9	3	13	7	5	3	16.0	
40(1 1/2)			31		9	3	13	7	5	3	21.0	
45(1 1/2)			41		6	2	10	5	3	1	26.0	
50(2)			41		6	2	10	5	3	1	31.0	

Model **MWH**: Forged brass body, 2/2 way N.C. for heavy oil. hight viscosity fluids (Max. 120 cst) etc.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. °C		Max. O.P.D. bar (min. 0.5 bar)						CV
				Coil 4, 5, 3E		Coil 4		Coil 5		Coil 3E		
				V	AC	DC	AC	DC	AC	DC	AC	DC
10(3/8)	V	4 5 3E	15	-10 ~ 145	7	3	15	10	5	3	3.0	
15(1/2)			15		7	3	15	10	5	3	4.0	
20(3/4)			20		7	3	15	10	5	3	6.8	
25(1)			25		5	2	13	7	4	2	11.0	
32(1 1/4)			31		5	2	13	7	4	2	16.0	
40(1 1/2)			31		5	2	13	7	4	2	21.0	
45(1 1/2)			41		3	1	10	5	3	1	26.0	
50(2)			41		3	1	10	5	3	1	31.0	

Model **MWS**: Forged brass body, 2/2 way N.C. for steam. hight temp. fluids etc.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. °C		Max. O.P.D. bar (min. 0.5 bar)						CV	
				Coil 4	Coil 5,3E	Coil 4		Coil 5		Coil 3E			
						T	T	AC	DC	AC	DC		
10(3/8)	T	4 5 3E	15	-10 ~ 155	-10 ~ 185	5	3	10	7	5	3	3.0	
15(1/2)			15			5	3	10	7	5	3	4.0	
20(3/4)			20			5	3	10	7	5	3	6.8	
25(1)			25			4	2	10	5	4	2	11.0	
32(1 1/4)			31			4	2	10	5	4	2	16.0	
40(1 1/2)			31			4	2	10	5	4	2	21.0	
45(1 1/2)			41			3	1	10	3	3	1	26.0	
50(2)			41			3	1	10	3	3	1	31.0	



Order example

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

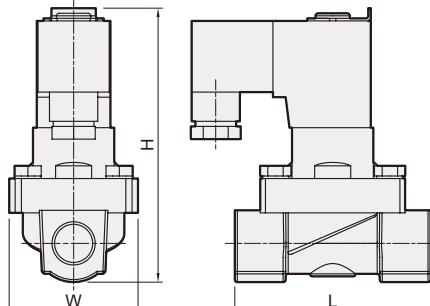
MWD - 15 - J - M - 5 - G - □ - AC110

MODEL	CODE	MANUAL	PLUG	VOLTAGE
MWD MWK	10, 15, 20, 25, 32, 40, 45, 50	Blank: Without M: With	Blank: DIN D: LED G: 1/2" NPT	AC220V(50/60)Hz AC110V(50/60)Hz DC24V
		SEAL MAT'L	COIL	CONN.
		N: NBR J: EPDM V: Viton	4: #4 5: Bigger 3E: Explosion-Proof (*1)	Blank: Screwed

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

Specification

Model MWD: Forged brass body, 2/2 way N.C., O.P.D. 0.2 bar, for water, air, gas.												
Code (Port)	Seal mat'l	Coil	Orifice mm	Temp.°C		Working press. (0.2~ bar)				CV		
				N	J	V	AC	DC	AC			
10(3/8)	N J V	4 5 3E	18	-10 ~ 80	-10 ~ 145	10	1.5	16	4.0	2.5	1.5	3.0
15(1/2)			18			10	1.5	16	4.0	2.5	1.5	4.0
20(3/4)			23			10	1.5	16	3.5	1.5	1.5	6.8
25(1)			28			10	1.5	13	3.0	1.5	1.5	11.0
32(1 1/4)			33			10	1.0	13	3.0	1.2	1.5	16.0
40(1 1/2)			33			10	1.0	13	3.0	1.2	1.5	21.0
45(1 1/2)			44			7.0	0.5	10	1.0	0.5	0.5	26.0
50(2)			44			7.0	0.5	10	1.0	0.5	0.5	31.0

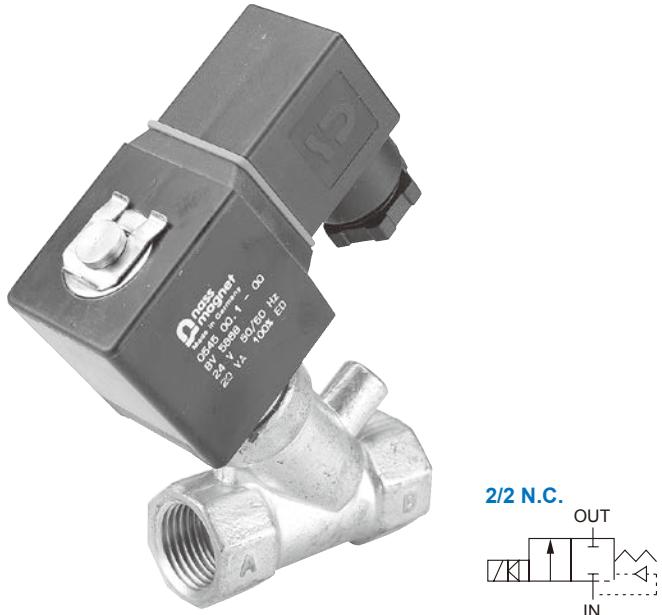


Model MWK: Forged brass body, 2/2 way N.C., O.P.D. 0 bar, for water, air, gas, light oil, vacuum.

Code (Port)	Seal Mat'l	Coil	Orifice mm	Temp.°C		Working press. (0~ bar)			CV	
				N	J	V	AC	DC		
10(3/8)	N J V	4 5 3E	18	-10 ~ 80	-10 ~ 145	10	16	4.0	2.5	3.0
15(1/2)			18			10	16	4.0	2.5	4.0
20(3/4)			23			10	15	3.5	1.5	6.8
25(1)			28			10	12	3.0	1.5	11.0
32(1 1/4)			33			10	12	1.5	1.5	16.0
40(1 1/2)			33			10	12	1.5	1.5	21.0
45(1 1/2)			44			6.0	10	1.0	1.0	26.0
50(2)			44			6.0	10	1.0	1.0	31.0

MYA / MYS series

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



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

Order example

MYA - 10 - N - 4 - □ - AC110 - □

MODEL

MYA
MYS

CODE

10: 3/8
15: 1/2

COIL

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

PLUG

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

VOLTAGE

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

PORT THREAD

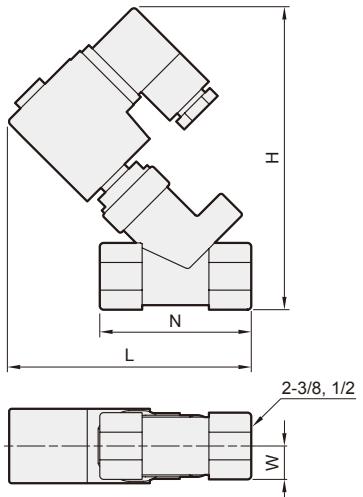
Blank: Rc thread
G: G thread
NPT: NPT thread

SEAL MAT'L

N: NBR
J: EPDM
V: Viton
T: Teflon (*1)

*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.



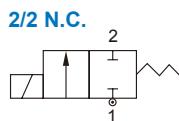
Model **MYA**: for water, air and high temp. fluids.

Code (Port)	Seal mat'l	Coil	Orifice mm	Temp. 5~°C				Working press. bar				CV
				Coil 4		Coil 5, 3E		Coil 4		Coil 5		
				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		
				T	T	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.



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

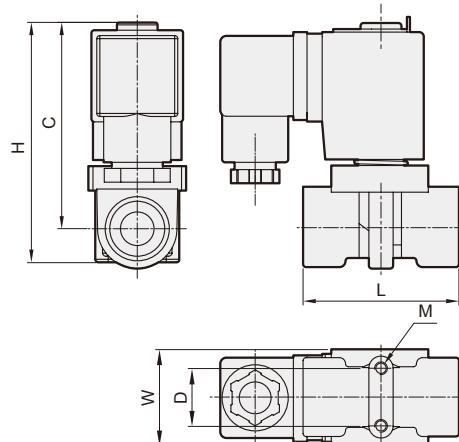
Model	MZS			
	03	06	10	15
L	41		51.5	
W	Coil 4	32		
	Coil 5	36		
	Coil 3E	36		
H	74.5	80.5		
C	66	68		
D	16	19		
M	M3×0.5	M4×0.7		
N.W (kg)	Coil 4	0.37	0.36	0.45
	Coil 5	0.45	0.44	0.53
	Coil 3E	0.67	0.66	0.75
				0.73

Order example

MZS – 06 – 2 – N – 5 – □ – AC110 – □

Below the model number, each part is labeled with its corresponding code:

- MODEL**: 06: 1/4"
- CODE**: 1, 2, 3, 4, 5, 6
- FIG.**: N: NBR, J: EPDM, V: Viton, T: Teflon (*1), R: RUBY (*1), Z: FFKM
- SEAL MAT'L**: N: NBR, J: EPDM, V: Viton, T: Teflon (*1), R: RUBY (*1), Z: FFKM
- PLUG**: Blank: DIN, D: LED, G: 1/2" NPT
- VOLTAGE**: AC220V(50/60)Hz, AC110V(50/60)Hz, DC24V
- COIL**: 4: #4, 5: Bigger, 3E: Explosion-Proof (*2)
- PORT THREAD**: Blank: DIN, D: LED, G: 1/2" NPT



*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.

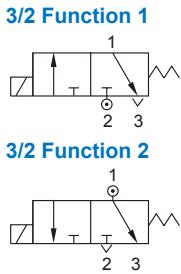
Code (Port)	Fig. no.	Seal mat'l	Coil	Orifice mm	Temp. °C			Max. O.P.D. bar (Min. 0 bar)						CV	VAC. torr		
					Coil 4, 3E			Coil 5			Coil 4		Coil 5				
					N	JV	TRZ	N	JV	TRZ	AC	DC	AC	DC	AC	DC	
03(1/8) 06(1/4) 10(3/8) 15(1/2)	1	N J V T R Z	4 5 3E	1.6	-5 ~ 80	-10 ~ 145	-20 ~ 160	-5 ~ 80	-10 ~ 145	-20 ~ 185	30	20	40	30	25	20	0.10
	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
	6			5.0							6	2	9	5	2.5	2	0.80
																	10 ⁻¹

* 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



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			
	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
	Coil 5	0.45	0.44	0.53
	Coil 3E	0.70	0.69	0.78
	0.43		0.51	
	0.51			
	0.76			

Order example

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

MODEL	CODE	FIG.	SEAL MAT'L	COIL	VOLTAGE	PORT THREAD
03: 1/8"	1, 2, 3,	N:	NBR	4: Standard	AC220V(50/60)Hz	Blank: Rc thread
06: 1/4"	4, 5, 6,	J:	EPDM	5: Bigger	AC110V(50/60)Hz	G: G thread
10: 3/8"	7	V:	Viton	3E: Explosion-Proof (*1)	DC24V	NPT: NPT thread
15: 1/2"		Z:	FFKM			

EXHUST ACCESSORIES

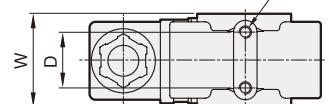
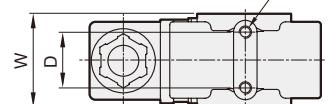
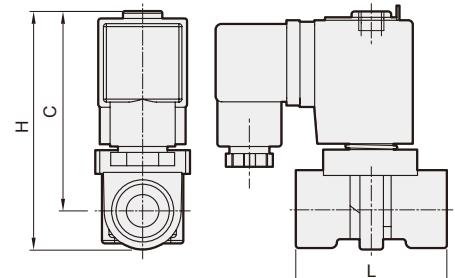
U	-	Without
F		PS female
C		Dust-proof & silencer cap
P		1/8" PS male

PLUG

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

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

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			AC/DC, Funtion																
				Body	Top	N	JV	Z	N	JV	Z	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	-10	-20	-5	-10	-20	9	10	12	8	10	0.05								
	2					1.6													0.10	10 ⁻²								
	3					2.0	2.0	~	~	145	160	~	80	145	185													
	4					2.5	2.5																					
	5					3.0	3.0	3.0	80	145	185																	
	6					4.0					0.51				10 ⁻¹													
	7					5.0																						

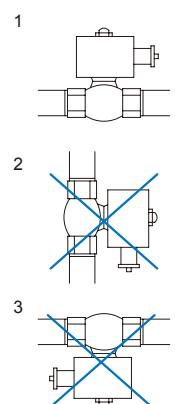
Quick reference chart normally closed & normally open

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 !



Caution

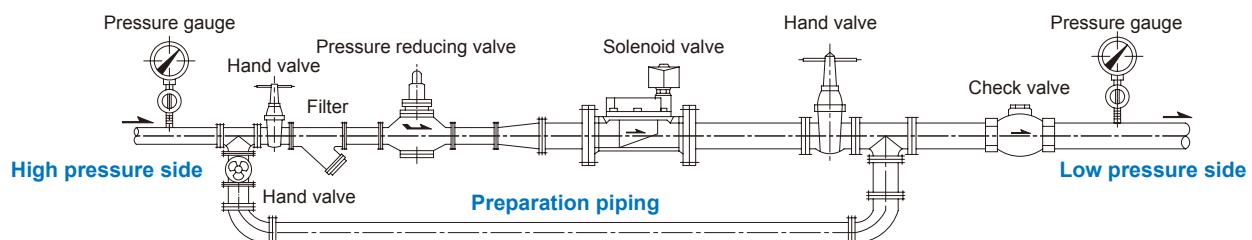
- Pipes must be washed neat and clean before fitted.
- A Y-strainer has to be installed in the front of solenoid valve, that is best for long life.
- Before installation, be sure what type of fluid, voltage, pressure and fluid temperature used.

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 MUV(F)-10~25 MUG-10~25 MUV-10~25 MSUW(F)-10~25 MUPS(F)-10~25 MSUS(F)-15~50		

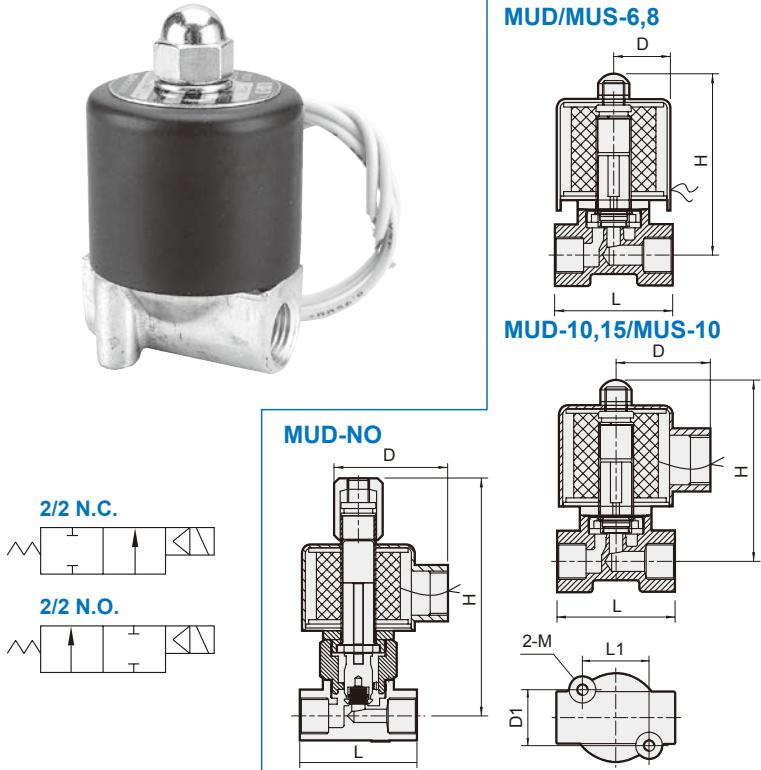
MUD / MUS series

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



2 way normally closed / normally open solenoid valve.

Available fluid: Water, air, steam, light oil, gas & vacuum.



Order example

MUD – 6 H – NO – □ – G – AC110 – G

MODEL	PORT SIZE	Blank: Normally closed NO: Normally open	FLUID	VOLTAGE	PORT THREAD
MUD	6: 1/8"		W Water, air	AC220V(50/60)Hz	Blank: Rc thread
MUS	8: 1/4"		G Gas	AC110V(50/60)Hz	G: G thread
	10: 3/8"		LO Light oil (*2)	DC24V	NPT: NPT thread
	15: 1/2"		VA Vacuum		
OPERATING PRESSURE		COIL	(Only for MUD)	*1. Please order according to the specification sheet.	
Blank: Standard	D: Waterproof DIN (under130°C) (*1)		T Steam	*2. Note, if diesel fuel or gasoline.	

Model	DIN	Port size	CV	Orifice (mm)	Fluid temp. °C	Operating pressure range (MPa)				Vacuum	Dimensions (mm)					Weight (kg)		
						Water	Air	Steam	Light oil		L	H	D	L1	D1			
MUD-6	●	Rc1/8"	0.23	2.5	-5~+80	0~0.7	0~0.7	—	0~0.7	0~0.7	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	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	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	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	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	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	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	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	53	90	48	20	21	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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻³ Torr	53	105	48	20	21.0	M5×0.8	0.7

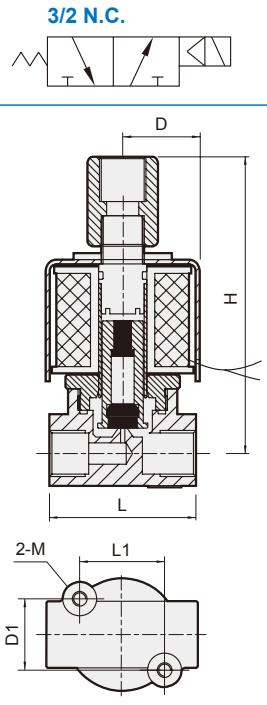
* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

* MUD-6,8-NO: Voltage at DC24V, H: 79.5mm.

MUA series

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

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



Order example

MUA - 8 - □ - □ - AC110 - G					
MODEL	PORT SIZE	FLUID	VOLTAGE	PORT THREAD	
8: 1/4"	W: Water, air	AC220V(50/60)Hz	Blank: Rc thread		
10: 3/8"	VA: Vacuum	AC110V(50/60)Hz	Blank: G thread		
		DC24V	NPT: NPT thread		
	COIL	Blank: Standard coil			
		D: Waterproof DIN (under 130°C)			
		* Please order according to the specification sheet.			

Model	DIN	Port size	CV	Orifice (mm)	Fluid temp. °C	Operating pressure range (MPa)	Vacuum	Dimensions (mm)						Weight (kg)	
								Water	Air	L	H	D	L1	D1	
MUA-8		Rc1/4"	0.10	1.2	-5~+80	0~1	0~1	0~10 ⁻³ Torr	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	0~10 ⁻³ Torr	53	93	48	20	21	M5×0.8	0.57

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

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

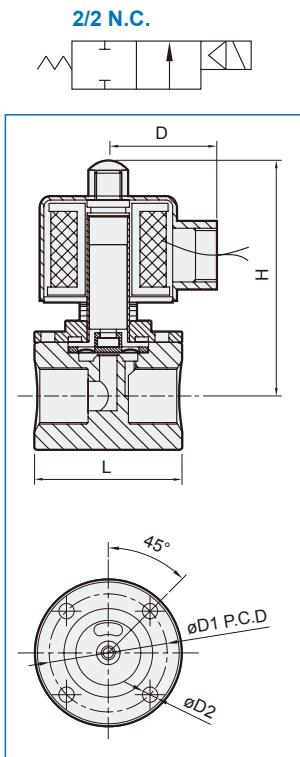
- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.
- Temperature over 80°C.

MUDC series

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



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



Order example

MUDC – 8 – □ – □ – AC110 – G

MODEL	PORT SIZE	BODY	VOLTAGE	PORT THREAD
8: 1/4"	Blank: PVC		AC220V(50/60)Hz	Blank: Rc thread
10: 3/8"	TF: PTFE (Teflon)		AC110V(50/60)Hz	G: G thread
15: 1/2"			DC24V	NPT: NPT thread
20: 3/4"				
25: 1"				
Blank: Standard coil D: Waterproof DIN (under 130°C)				

* Please order according to the specification sheet.

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

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

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	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.

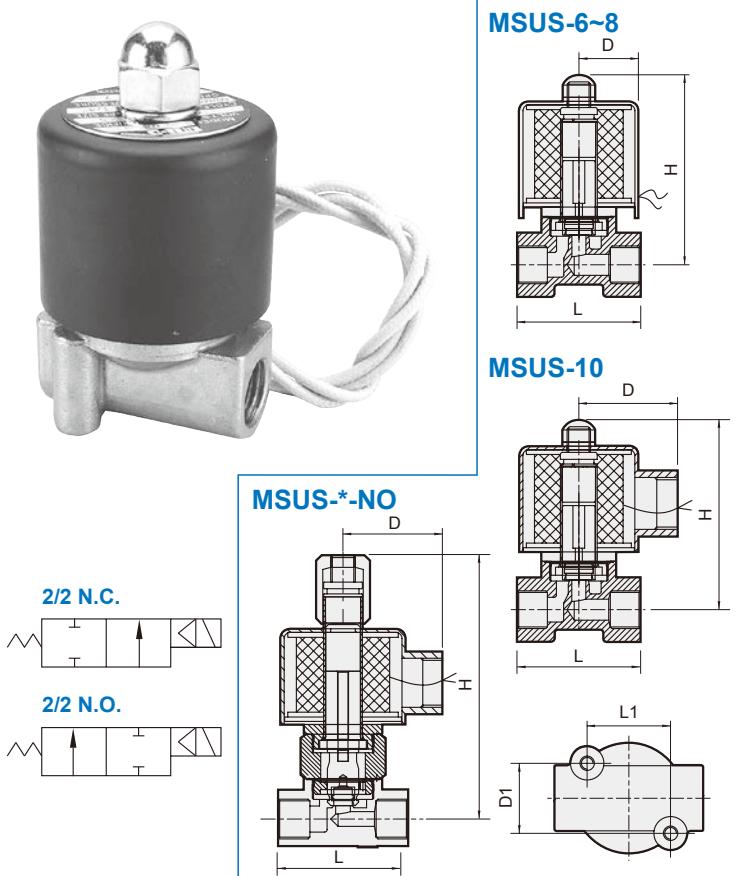
MSUS series Low flow

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



2 way normally closed / normally open solenoid valve.

Available fluid: Water, air, steam, gas, light oil & vacuum.



Order example

MSUS – 8 – NO – □ – G – AC110 – G

MODEL	PORT SIZE	Blank: Normally closed NO: Normally open	FLUID	VOLTAGE	PORT THREAD
	6: 1/8" 8: 1/4" 10: 3/8"		T: Steam G: Gas LO: Light oil (*2) VA: Vacuum W: Water, air	AC220V(50/60Hz) AC110V(50/60Hz) DC24V	Blank: Rc thread G: G thread NPT: NPT thread
COIL					

Blank: Standard coil

D: Waterproof DIN (under 130°C)(*1)

*1. Please order according to the specification sheet.

*2. Note, if diesel fuel or gasoline.

NC	Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure range (MPa) (*1)					Vacuum	Dimensions (mm)						Weight (kg)
							Water	Air	Steam	Light oil	Gas		L	H	D	L1	D1	M	
	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	0~10 ⁻³ Torr	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	0~10 ⁻³ Torr	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	0~10 ⁻³ Torr	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	0~0.7	0~10 ⁻³ Torr	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	0~0.7	0~10 ⁻³ Torr	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	0~0.7	0~1	0~10 ⁻³ Torr	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.

*2. The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

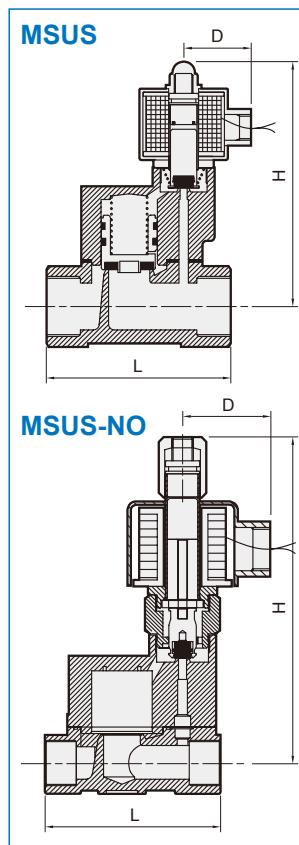
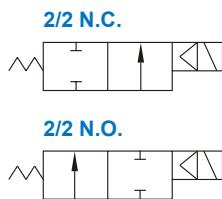
MSUS series High flow

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



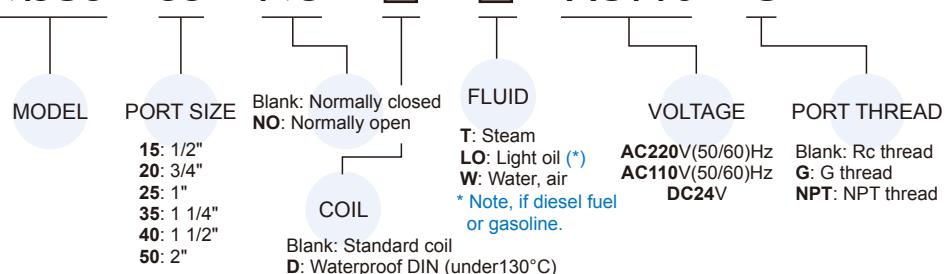
2 way normally closed / normally open solenoid valve.

Available fluid: Water, air, steam & light oil.



Order example

MSUS – 35 – NO – □ – □ – AC110 – G



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.

Not for fluid of

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

NC	Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressuer range (MPa)				Dimensions (mm)			Weight (kg)
							Water	Air	Steam	Light oil	L	H	D	
	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	0.05~1	0.05~0.8	84	147	48	1.52
	MSUS-20-NO	●	Rc3/4"	6	17	-5~+130	0.05~1	0.05~1	0.05~1	0.05~0.8	84	151	48	1.58
	MSUS-25-NO	●	Rc1"	12	22	-5~+130	0.05~1	0.05~1	0.05~1	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	0.1~1	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	0.1~1	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	0.1~0.8	0.05~0.8	167	203	48	5.7

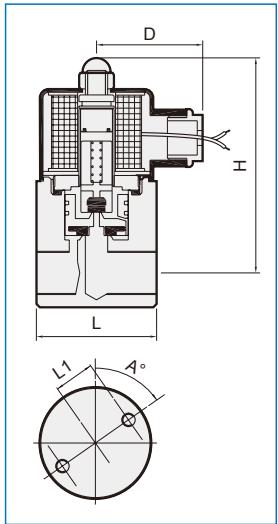
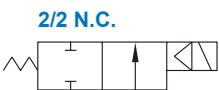
* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MUAO series

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



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



Order example

MUAO – 8 – □ – HO – AC110 – G

MODEL	PORT SIZE	FLUID	VOLTAGE	PORT THREAD
8: 1/4"	W: Water, air	AC220V(50/60)Hz	Blank: Rc thread	
10: 3/8"	HO : Heavy oil (*)	AC110V(50/60)Hz	G: G thread	
15: 1/2"	* Please indicate the kind.	DC24V	NPT: NPT thread	
COIL				
Blank: Standard coil				
D: Waterproof DIN (under130°C)				

Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure range (MPa)			Dimensions (mm)					Weight (kg)	
						Water	Air	Heavy oil	L	H	D	L1	A		
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

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

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

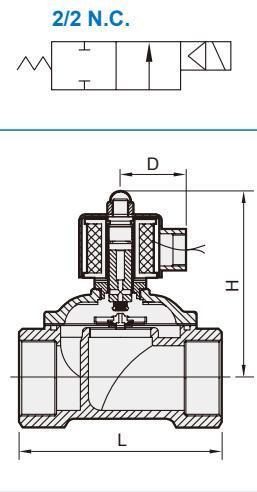
Caution

- 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

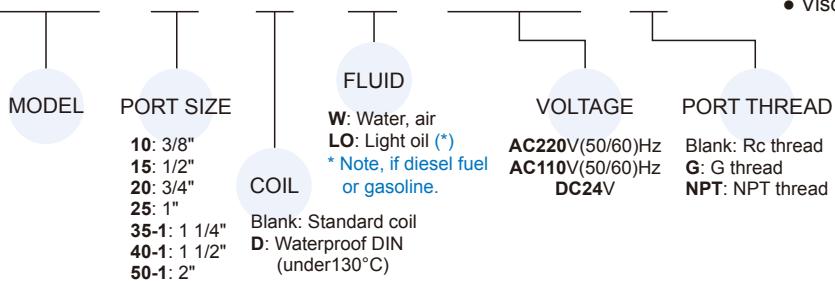
- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.
- Temperature over 80°C.

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



Order example

MUW – 20 – □ – LO – AC110 – G



Specification

- Direct and multiplex acting, connected diaphragm, normal close.
- 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.

Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure 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

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MUW-NO series

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



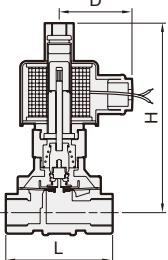
2-WAY normally open solenoid valve.

Available fluid: Water, air, light oil, gas & vacuum.

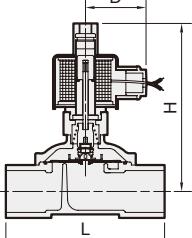
2/2 N.O.



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	PORT SIZE	NO:	Normally open	FLUID	VOLTAGE	PORT THREAD
10: 3/8"				W: Water, air	AC220V(50/60)Hz	Blank: Rc thread
15: 1/2"				G: Gas	AC110V(50/60)Hz	G: G thread
20: 3/4"				LO: Light oil (*)	DC24V	NPT: NPT thread
25: 1"				VA: Vacuum		
35-1: 1 1/4"						
40-1: 1 1/2"						
50-1: 2"						
COIL		Blank: Standard coil		* Note, if diesel fuel or gasoline.		
		D: Waterproof DIN (under130°C)				

Model	DIN	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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻³ Torr	167	156	48	4.5

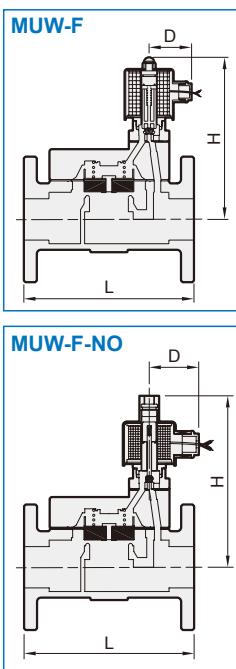
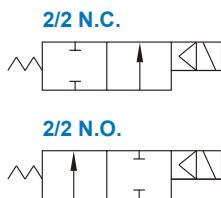
* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MUW-F series

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



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



Order example

MUW – 40F – NO – □ – □ – AC110

MODEL	PORT SIZE	Blank: Normally closed NO: Normally open	FLUID	VOLTAGE
	35: 1 1/4" 40: 1 1/2" 50: 2" 65: 2 1/2" 80: 3" 100: 4"		W: Water, air LO: Light oil (*) * Note, if diesel fuel or gasoline.	AC220V(50/60)Hz AC110V(50/60)Hz DC24V
NC	COIL	Blank: Standard coil D: Waterproof DIN (under130°C)		

Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure range (MPa)			Dimensions (mm)			Weight (kg)
						Water	Air	Light oil	L	H	D	
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
MUW-35F-NO	●	Rc1 1/4"	22	35	-5~+80	0.02~0.8	0.02~0.8	0.05~0.5	200	195	48	9.1
MUW-40F-NO	●	Rc1 1/2"	30	40	-5~+80	0.02~0.8	0.02~0.8	0.05~0.5	200	195	48	9.8
MUW-50F-NO	●	Rc2"	40	50	-5~+80	0.02~0.8	0.02~0.8	0.05~0.5	210	208	48	11.5
MUW-65F-NO	●	Rc2 1/2"	68	65	-5~+80	0.02~0.8	0.02~0.8	0.05~0.5	240	213	48	15.8
MUW-80F-NO	●	Rc3"	102	80	-5~+80	0.02~0.8	0.02~0.8	0.05~0.5	300	222	48	21.0
MUW-100F-NO	●	Rc4"	180	100	-5~+80	0.02~0.8	0.02~0.8	0.05~0.5	340	238	48	31.9

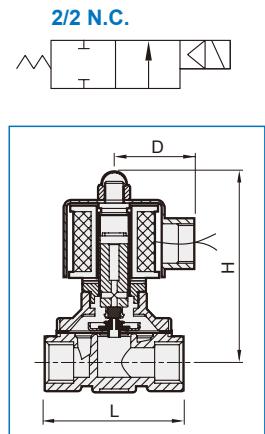
* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MUG / MUV series

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



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



Order example

MUG – 20 – □ – AC110 – G

MODEL	PORT SIZE	VOLTAGE	PORT THREAD
MUG: Gas MUV: Vacuum	10: 3/8" 15: 1/2" 20: 3/4" 25: 1" 35: 1 1/4" 40: 1 1/2" 50: 2"	AC220V(50/60)Hz AC110V(50/60)Hz DC24V	Blank: Rc thread G: G thread NPT: NPT thread
	COIL	Blank: Standard coil D: Waterproof DIN (under130°C)	

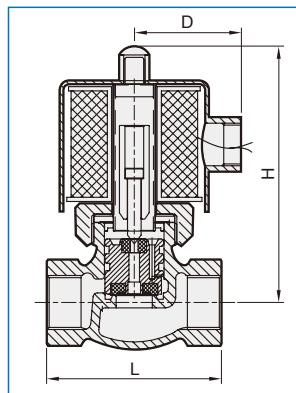
Model	DIN	Port size	CV	Orifice (mm)	Fluid temp. °C	Operating pressure range (MPa) for Gas	Vacuum Torr	Dimensions (mm)			Weight (kg)
								L	H	D	
MUG/V-10	●	Rc3/8"	4.5	15	-5~+80	0~0.7	0~10 ⁻³	70	100	48	1.01
MUG/V-15	●	Rc1/2"	4.5	15	-5~+80	0~0.7	0~10 ⁻³	70	100	48	1.00
MUG/V-20	●	Rc3/4"	8.6	20	-5~+80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

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

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"	AC220V(50/60)Hz	Blank: Rc thread	
20: 3/4"	AC110V(50/60)Hz	G: G thread	
25: 1"	DC24V	NPT: NPT thread	
35: 1 1/4"			
40: 1 1/2"			
50: 2"			

Model	DIN	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	32	-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

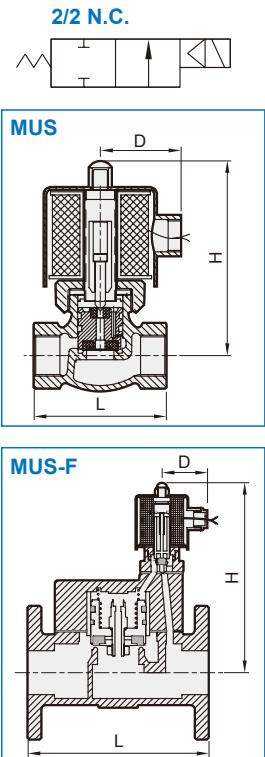
* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MUS / MUS-F series

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

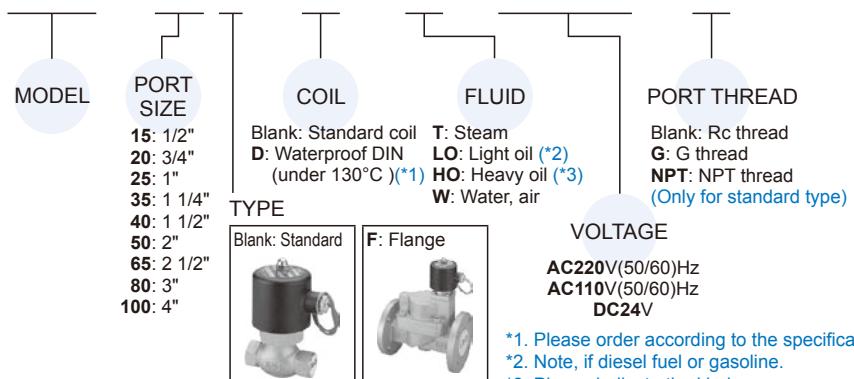


2-WAY normally closed solenoid valve.
Available fluid: Water, air, steam, light oil & heavy oil.



Order example

MUS – 35 F – □ – □ – AC110 – G



Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure 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	0.05~1	82	125	58	1.60
MUS-20		Rc3/4"	6.0	17	-5~+185	0.05~1	—	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	0.05~1	91	133	58	2.02
MUS-35		Rc1 1/4"	18.0	30	-5~+185	0.1~1	—	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	0.1~1	111	144	58	3.10
MUS-50		Rc2"	48.0	50	-5~+185	0.1~1	—	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	11.9
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

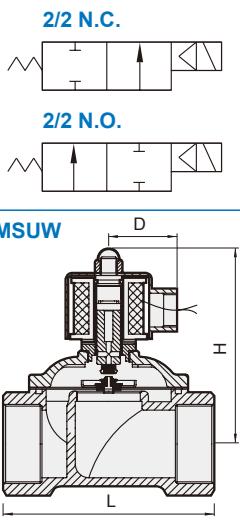
* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MSUW / MSUW-NO series

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

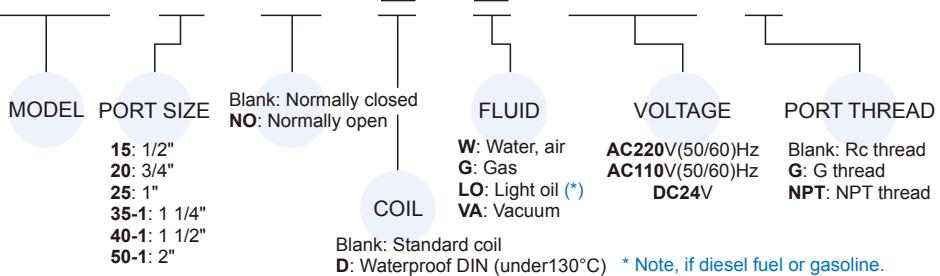


2-WAY normally closed / normally open solenoid valve.
Available fluid: Water, air, light oil, gas and vacuum.



Order example

MSUW – 20 – NO – □ – □ – AC110 – G



NC	Model	DIN	Port size	CV	Orifice (mm)	Fluid temp.°C	Operating pressure range (MPa)				High pressure type	Vacuum	Dimensions (mm)			Weight (kg)	
							Water	Air	Light oil	Gas			L	H	D		
NO	MSUW-15	●	Rc1/2"	4.5	15	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	0~10 ⁻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	0~10 ⁻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	0~10 ⁻³	100	115	48	1.65
	MSUW-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	0~10 ⁻³	123	112	48	2.33
	MSUW-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	0~10 ⁻³	123	112	48	2.54
	MSUW-50-1	●	Rc2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	—	0.05~1	0.05~2	0~10 ⁻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	—	—	0~10 ⁻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	—	—	0~10 ⁻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	—	—	0~10 ⁻³	100	139	48	1.65
	MSUW-35-1-NO	●	Rc1 1/4"	24.0	35	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	0~10 ⁻³	123	140	48	2.5
	MSUW-40-1-NO	●	Rc1 1/2"	28.0	40	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	0~10 ⁻³	123	140	48	2.7
	MSUW-50-1-NO	●	Rc2"	48.0	50	-5~+80	0~0.5	0~0.7	0~0.5	0~0.7	—	—	0~10 ⁻³	167	150	48	4.73

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

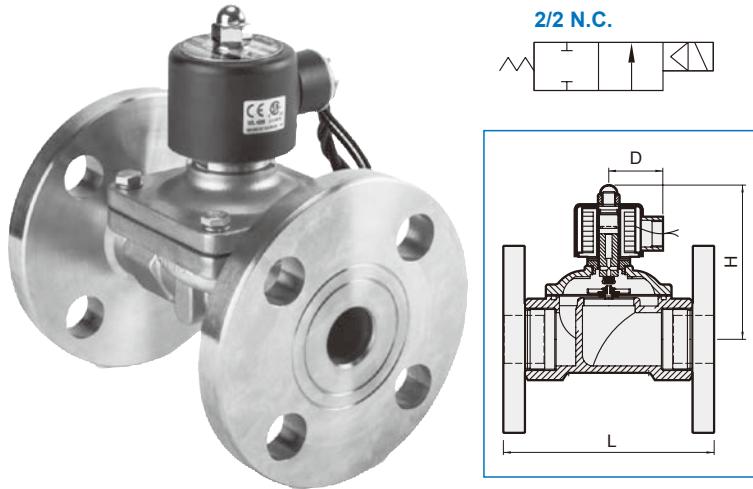
* High Pressure Type Use N/O Coil.

MSUW-F series

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

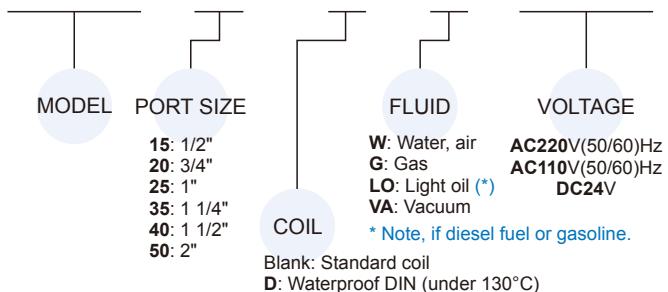


2-WAY normally closed solenoid valve.
Available fluid: Water, air, light oil, gas & vacuum.



Order example

MSUW – 20F – □ – □ – AC110



Model	DIN	Port size	CV	Orifice (mm)	Fluid temp. °C	Operating pressure range (MPa)			High pressure type		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	0~10 ⁻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	0~10 ⁻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	0~10 ⁻³	151	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	0~10 ⁻³	170	112	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	0~10 ⁻³	170	112	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	0~10 ⁻³	211	125	48	9.51

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

* High pressure type use N.O. coil.

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

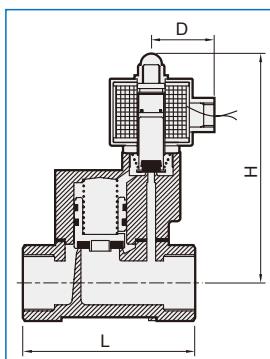
- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.

MUPS series

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



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



Order example

MUPS — 15 — □ — W — AC110 — G

MODEL	PORT SIZE	FLUID	PORT THREAD
15: 1/2"		T: Steam	Blank: Rc thread
20: 3/4"		LO: Light oil (*)	G: G thread
25: 1"		W: Water, air	NPT: NPT thread
		* Note, if diesel fuel or gasoline.	
		VOLTAGE	
		AC220V(50/60)Hz	
		AC110V(50/60)Hz	
		DC24V	
		Blank: Standard coil D: DIN waterproof (under130°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

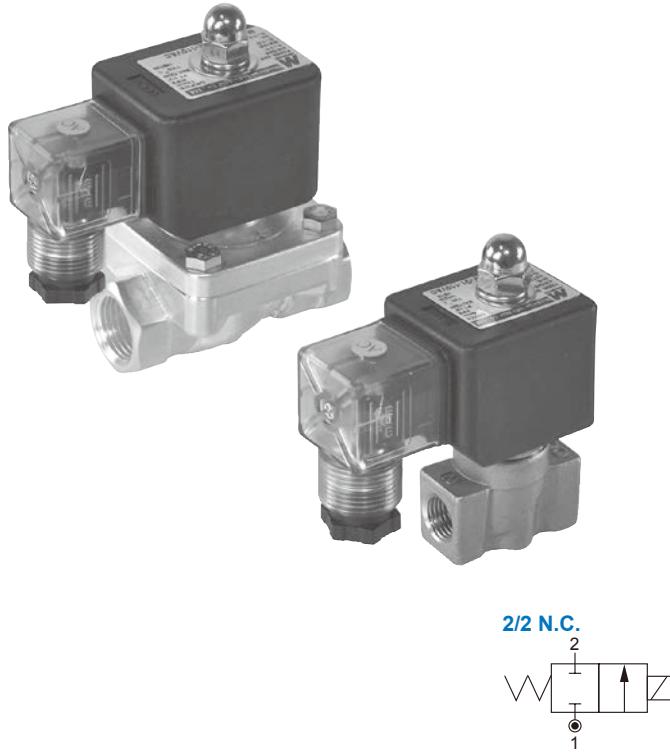
- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 20 cst.
- Temperature over 185°C.

Model	DIN	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

* The pressure ratings indicated above are based on AC110V/220V. The maximum pressure may vary in case on DC/AC24V.

MXAD series

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



Caution

- Direct-acting valves are ideally suited to allocate at any angle.
- Voltage drop range is within $\pm 10\%$.
- 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	PORT SIZE	SEAL MAT'L	COIL	FLUID	VOLTAGE	PORT THREAD
BODY MAT'L	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	AC220V(50/60)Hz AC110V(50/60)Hz DC24V	Blank: Rc thread G: G thread NPT: NPT thread
Blank: Brass						
S: S.Steel (*1)						

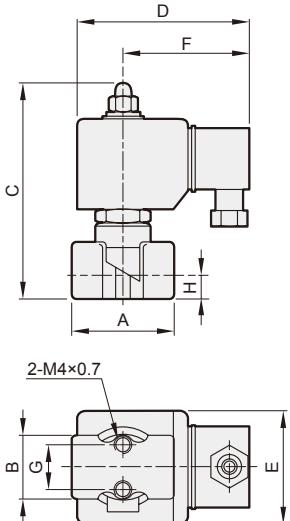
*1. Stainless steel material is custom made.

*2. Note, if diesel fuel or gasoline.

Specification

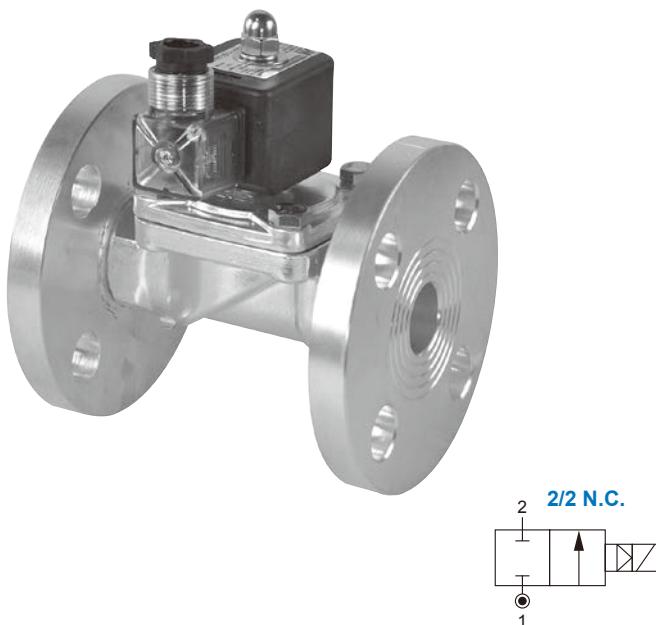
Model **MXAD**: Forged brass body, for water, air, gas, naphtha, vacuum.

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



MXAD-AF series

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



Order example

MXAD□—35□—V—G—A—AC110—G

MODEL	BODY MAT'L	SEAL MAT'L	FLUID	PORT THREAD
Blank: Brass S: S.Steel (*1)				
PORT SIZE	CODE	COIL	VOLTAGE	
14 3/8"			G: Square DIN	
15 1/2"	—		AC220V(50/60)Hz AC110V(50/60)Hz DC24V	
20 3/4"				
25 1"				
35 1 1/4"	Blank: Standard AF: Flange end (JIS 10K)	N: NBR V: Viton S: Silicon J: EPDM	W: Water A: Air G: Gas LO: Light oil (*2) VA: Vacuum	
40 1 1/2"				
50 2"				

*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 (Torr)	acid & alkali (S.Steel)	
14(3/8")	N S J V	15	0~10	0~10	0~10	0~10	0~10 ⁻⁶	0~10	4.5
15(1/2")		15	0~10	0~10	0~10	0~10	0~10 ⁻⁶	0~10	4.5
20(3/4")		20	0~10	0~10	0~10	0~10	0~10 ⁻⁶	0~10	9.3
25(1")		25	0~10	0~10	0~10	0~10	0~10 ⁻⁶	0~10	13.2
35(1 1/4")		35	0~10	0~10	0~10	0~10	0~10 ⁻⁶	0~10	26
40(1 1/2")		35	0~10	0~10	0~10	0~10	0~10 ⁻⁶	0~10	26
50(2")		50	0~7	0~7	0~7	0~5	0~10 ⁻⁶	0~7	48

Caution

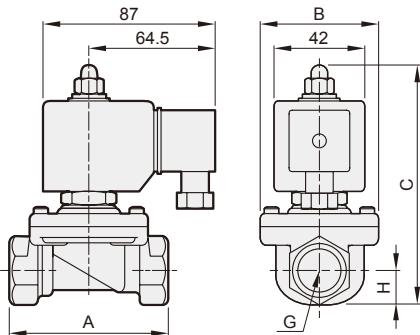
- Direct-acting valves are ideally suited to allocate at any angle.
- Voltage drop range is within ± 10%.
- Pressure of voltage DC is 70% of voltage AC only.
- Fluid temp.: -10~+80°C (Naphtha 120°C)

Not for fluid of

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

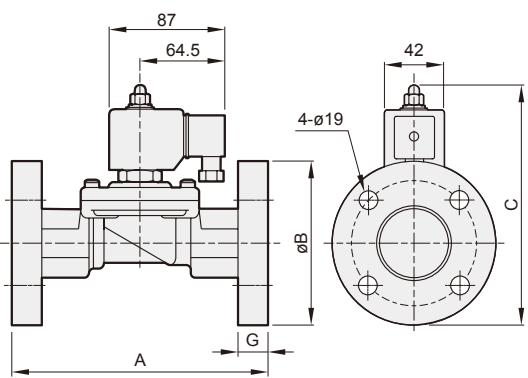
Dimensions

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	



Dimensions

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	



MXBD series

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



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

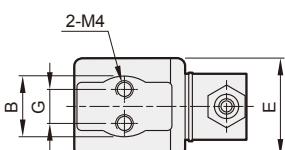
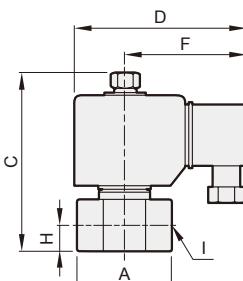
Model	MXBD		
Code Dimension (mm)	8A/B/C	10A/B	12A
A	36	50	55
B	25	25	27
C	67.5	91.3	94.8
D	78	87	87
E	37	37	37
F	58	64.5	64.5
G	15	15	—
H	10.5	11.7	13
I	1/4"	3/8"	1/2"
N.W (kg)	0.35	0.5	0.55

Order example

MXBD- 8A - N - G - A - AC110 - G

MODEL	PORT SIZE	SEAL MAT'L	COIL	FLUID	VOLTAGE	PORT THREAD
8A, 8B, 8C, 10A, 10B, 12A		N: NBR V: Viton S: Silicon J: EPDM	G: Square DIN	W: Water A: Air G: Gas LO: Light oil (*) VA: Vacuum	AC220V(50/60)Hz AC110V(50/60)Hz DC24V	Blank: Rc thread G: G thread NPT: NPT thread

* Note, if diesel fuel or gasoline.



Specification

Model MXBD: 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			
8A(1/4")	N S J V	2.5	0~10	0~10	0~10	0~7	0~10 ⁻⁴ Torr	0.23
8B(1/4")		3.5	0~7	0~7	0~7	0~5	0~10 ⁻⁴ Torr	0.42
8C(1/4")		4.5	0~5	0~5	0~5	0~3	0~10 ⁻⁴ Torr	0.61
10A(3/8")		4.0	0~7	0~7	0~7	0~5	0~10 ⁻⁴ Torr	0.58
10B(3/8")		6.0	0~3	0~3	0~3	0~2	0~10 ⁻⁴ Torr	0.79
12A(1/2")		6.0	0~3	0~3	0~3	0~2	0~10 ⁻⁴ Torr	0.79

MXCD series

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



Caution

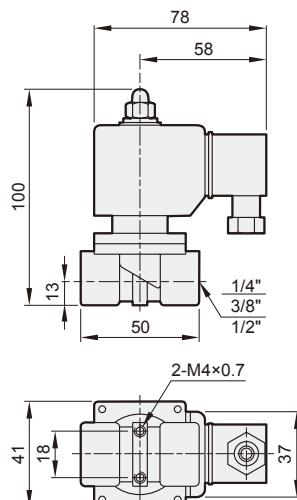
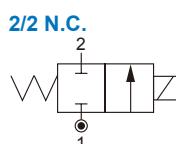
- In order to prolong operating life, it is better to allocate pipe horizontally and coil to face upward.
- Voltage drop range is within $\pm 10\%$.
- Pressure of voltage DC is 70% of voltage AC only.
- Combined diaphragm design assures no breaking.
- Fluid temp.: -10~+80°C (Naphtha 120°C)

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



Order example

MXCD□—10—N—G—A—AC110—G

MODEL

BODY
MAT'L
8: 1/4"
10: 3/8"
12: 1/2"

Blank: Brass
S: S.Steel (*1)

PORT SIZE

SEAL
MAT'L

N: NBR
V: Viton

FLUID

W: Water
A: 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

COIL

G: Square DIN

*1. Stainless steel material is custom made.

*2. Note, if diesel fuel or gasoline.

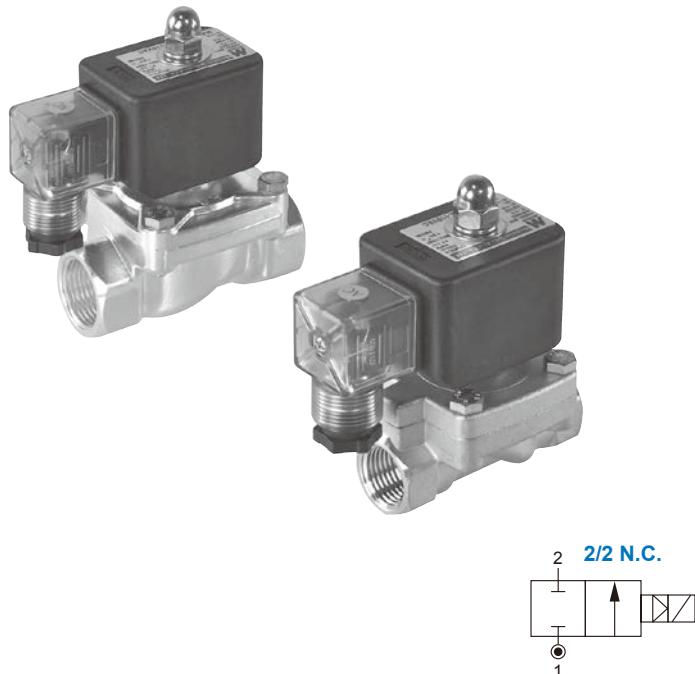
Specification

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



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

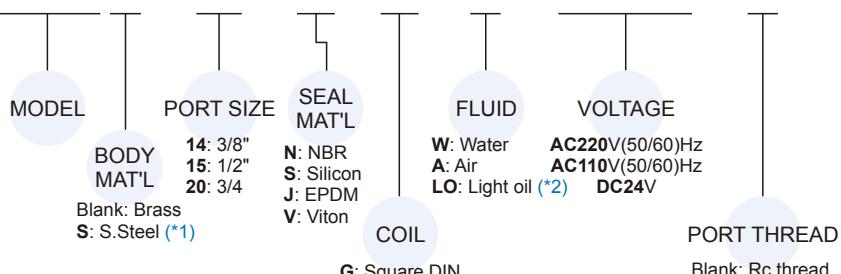
- Liquid when heat, solid when cool.
- Corrosive fluid.
- Viscosity over 50 cst.

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

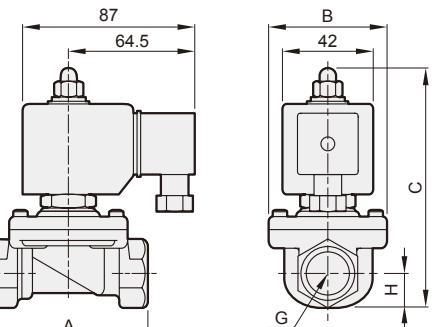
Order example

MXPV□—20—V—G—V—AC110—G



*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

MEMO

NOTE

