

2/2, 3/2 WAY SOLENOID VALVE

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

2/2 WAY

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
MUCL (*1)			○	●		●			●			●	S.S.#303	N,J,V,T,Z	1/8,1/4	0.03~0.27	2-18
MUPH		○		●			Corrosive fluid					PVC / PTEF	T	1/4~3/4	0.11~2.5	2-19	
MUSC			○	●		●			●			●	S.S.#303	N,J,V,T,R,Z	1/8~3/8	0.03~1.30	2-20
MUSD		○		●		●			●			●	SCS14	N,J,V	1/2	2.0	2-21
MUSL (*1)		○		●		●			●			●	SCS14	N,J,V	1/2	2.0	2-22
MWA	○			●		●			●			●	Forged brass	N	3/8~2	3.0~31	2-25
MWH	○			●		●			●				Forged brass	V	3/8~2	3.0~31	2-25
MWS	○			●		●	●	●					Forged brass	T	3/8~2	3.0~31	2-25
MWD		○		●		●						●	Forged brass	N,J,V	3/8~2	3.0~31	2-27
MWK		○		●		●			●			●	Forged brass	N,J,V	3/8~2	3.0~31	2-27
MYA	○			●		●	●						Forged brass	N,J,V	3/8,1/2	1.9~2.6	2-28
MYS	○			●		●	●	●					Forged brass	T	3/8,1/2	1.9~2.6	2-28
MZS			○	●		●			●			●	Forged brass	N,J,V,T,R,Z	3/8~1/2	0.12~0.83	2-29
MUD			○	●	●	●			●			●	Brass	N,J,V,S	1/8~1/2	0.23~0.58	2-33
MUS-6~10			○	●					●				Brass	T	1/8~3/8	0.23	2-33
MUDC		○		●		●	Hydrochloric acid, sulfuric acid					PVC / PTEF	T	1/4~1	0.28~4	2-35	
MSUS	○		○	●	●	●			●	●		●	S.S.#304	N,J,V,T,S	1/8~2	0.23~48	2-36
MUAO	○			●		●			●				Brass	N	1/4~1/2	2.5	2-38
MUW		○		●		●			●				Forged brass	N,J,V,S	3/8~2	4.5~48	2-39
MUW-NO		○			●	●			●			●	Forged brass	N,J,V,S	3/8~2	4.5~48	2-40
MUW-F		○		●	●	●			●				FC-20	N,J,V,S	1 1/4~4	22~180	2-41
MUG		○		●		●						●	Forged brass	N	3/8~2	4.5~48	2-42
MUV		○		●		●						●	Forged brass	N	3/8~2	4.5~48	2-42
MUAW	○			●		●							Cast bronze	N	1/2~2	4~48	2-43
MUS	○			●		●			●	●		●	Cast bronze	T	1/2~2	4~48	2-44
MUS-F	○			●		●			●	●			FC-20	J,V,T,S	1 1/4~4	22~175	2-44
MSUW		○		●	●	●			●			●	S.S.#304	N,J,V,S	1/2~2	4.5~48	2-45
MSUW-F		○		●		●			●			●	S.S.#304	N,J,V,S	1/2~2	4.5~48	2-46
MUPS	○			●		●			●	●			Cast bronze	J,V,T,S	1/2~1	4~12	2-47
MXAD			○	●		●			●			●	Forged brass	N,J,V,S	1/8~1/2	0.26~0.97	2-48
MXAD-AF		○		●		●			●			●	Forged brass	N,J,V,S	3/8~2	4.5~48	2-49
MXBD			○	●		●			●			●	Forged brass	N,J,V,S	1/4~1/2	0.23~0.79	2-50
MXCD		○		●		●			●				Forged brass	N,V	1/4~1/2	2.4~2.7	2-51
MXPV		○		●		●			●				Forged brass	N,J,V,S	3/8~3/4	4.5~9.3	2-52

*1. MUCL, MUSL are Latch valve.

M* Seal material – Feature & indication



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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	2-23
MUT			○	●	●	●			●		●	●	Forged brass	V	1/8~3/8	0.02~0.31	2-24
MZT			○	●		●		●	●		●	●	Forged brass	N,J,V,Z	1/8~1/2	0.08~0.80	2-30
MUA			○	●		●						●	Forged brass	N,V	1/4,3/8	0.1~0.12	2-34

Seal material

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, alkalis, 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.

⊙: 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		×	⊙	×	×	⊙	△

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