

Serial No. DTS227-01

Dymatrix™

AVSDVX

药液用开关阀 2way valve for chemical

> 自动阀 Air actuated

使用说明书 User's Manual

	Contents	(Page)
1	使用上的注意事项 General cautions	··· 1
2	各部件名称 ————————————————————————————————————	···· 7
3	规格 Specifications	8
4	选型表 Ordering code	9
5	尺寸 Dimension	11
6	操作方法 How to operate	· 12
7	安装方法 Method of installation	- 13
8	配管方法 Method of piping	- 15
9	检查项目 ————————————————————————————————————	··· 17
10	不良原因及处理方法 Causes of defects and how to correct them	18
11	剩料•废料的处理方法————————————————————————————————————	19



使用上的注意事项 **1**

General cautions



使用本公司产品时,请遵守产品规格和注意事项等规定。

- ●本公司致力于提高产品的质量和可靠性,但不能保证其完整性。特别是用于可能侵害人的生命、身体或财产 的设备等情况时,请充分考虑通常可能发生的不良情况,实施恰当的安全设计等对策。对于此类使用方式, 如果事前没有得到本公司的式样规格书等书面同意,本公司将不承担责任,敬请谅解。
- ●本公司产品的选定、施工、安装、操作、维保等时,请务必仔细阅读、理解本手册或技术资料中记载的注意 事项,并严格按照相关规定执行。

设计 选定时的注意事项



⚠ 警告

- 请考虑流体、温度、压力及其他等使用条件,在本产品的规格范围内进行设计、选定。
 - (超出允许范围使用时, 阀可能会损坏)
- 关于产品的构成材料和使用流体的适合性,请参考最新版 **Dymatrix™** 综合目录(AV-V-029-EJ)的适合 流体清单,并请确认后再使用。(根据药液种类不同,可能导致零部件受到侵入而破损)。关于列表记载流 体以外的流体,请另外咨询。另外,使用压缩性流体时(气体:空气、N2、臭氧等),本公司不承担其制造 品的责任。
- 使用可能混入异物的流体时, 请设置过滤器。
 - (阀门可能无法密封)
- 使用含有结晶性物质的流体时请咨询本公司。
 - (阀门可能无法密封)
- 请在本手册记载的使用压力范围内使用。 5.
- 请在本手册记载的使用流体温度范围内使用。 6.
- 请在本手册记载的周围温度范围内使用。请在确认产品的构成材料和周围环境的适合性之后使用。另外, 7. 请勿在产品外表面附着流体。
- 关于接头连接部的使用压力、使用流体温度、周围温度等各规格范围,请参照各接头制造商的使用说明书。 8.
- 9. 请在系统上设置泄压阀,避免形成封闭回路。
- 10. 请确保维保所需的空间。



安装 配管时的注意事项



⚠ 警告

- 请在充分理解本手册所述的操作要领后,正确进行安装和配管。 1.
- 2. 安装·配管前请充分冲洗配管内部并清除异物。
- 安装 配管后请进行泄漏检查,确认是否正确实施。(泄漏试验请在水压下确认。如因特殊情况不得不使用 3. 气体进行测试的情况,安全性不做保证)
- 请勿对阀门施加拉伸、压缩、弯曲等应力。
- 5. 请勿将重物放在阀门上。
- 本产品有流动方向。请确保流体流动方向与产品一致。 6.
- 7. 请勿靠近明火 •高温物体。(可能会发生变形 •破损或火灾)
- 8. 请勿在可能发生水淹的场所使用。



🗥 注意

- 1. 请勿因投掷、掉落等给阀门造成冲击。
- 开箱时请不要用锐利的物体(小刀、挂钩等)进行划切、刺穿等。 2.

使用注意事项



⚠ 警告

1. 请考虑流体、温度、压力及其他使用条件等因素,在本产品的规格范围内进行设计与选型。 (使用时超出允许范围,可能导致阀门损坏)

⚠ 注意

- 关于产品的构成材料和使用流体的适合性,请参照最新版的 Dymatrix™ 综合目录(AV-V-029-EJ)的适用 流体清单,确认后使用(可能会因药液种类的不同而损坏部件)。关于记载列表中以外的流体,请另外咨 询。此外,压缩性流体(气体:空气、N2、使用臭氧等)时,本公司不承担其制造物的责任。
- 根据使用条件的不同,可能会产生气蚀现象。请重新评估流体压力和配管条件等。 2.
- 请勿对阀门施加负压。 3.
- 本产品设计用于洁净室环境,经过精密清洗后采用双重洁净包装,使用时敬请注意。 4.
- 5. 操作空气必须使用不含有机溶剂或腐蚀性气体的洁净空气。
- 6. 本产品有流动方向。请确保流体流动方向与产品一致。



维保时的注意事项



- 请事先排出操作空气及流体。 1.
- 请除去残留在阀门及配管内的药液,并用纯水、空气充分置换后再进行作业。 2.
- 3. 请勿拆解产品。如果拆解的话可能导致产品原本的性能及规格受损。拆解后的产品无法质保,敬请谅解。
- 4. 为了确保产品在最佳状态下使用,请定期检查阀门及接头是否存在泄漏。



⚠ Warning

Follow all product specification and warnings when using these products.

- Our company does not guarantee every application, although we are constantly making every effort to improve the quality and reliability of these products. The products used in equipment could cause serious physical damage or property damage, if appropriate and safe design procedures are not followed. We take no responsibility for these products if there was no written agreement regarding the compatibility of the product with the application.
- Please carry it out understanding instructions written in this book or a technical documentation
 if you need assistance on product specification, installation/plumbing, operation and
 maintenance.

Cautions for design of piping and product selection

⚠ Warning

- 1. Please choose from the products within the specification range of the working conditions such as medium, working temperature/pressure and so on.
- 2. Confirm the fluid compatibility with the wetted part of the products in the "Suitability List on Medium" in the latest **Dynatrix** general catalogue (AV-V-029-EJ). (Parts may be damaged by a kind of a medium.) Consult us on any medium, which is not listed in "Suitability List on Medium". Moreover, if you intend to use it with compressed air or gas (such as air, nitrogen, ozone, or other gas), we do not assume product liability of the Product.
- 3. If there are foreign substances in a fluid, please install a filter.

(It would make the valve unable to seal.)

- 4. Please contact us, when use for the fluid containing the crystalline substance. (It would make the valve unable to seal.)
- 5. Use the products within the range of working pressure shown in this user's manual.
- 6. Use the products within the range of working temperature shown in this user's manual.
- 7. Use the products within the range of atmospheric temperature shown in this user's manual. Please use the products upon confirmation of compatibility with material and atmosphere. Do not adhere any fluid to the external surface of product.
- 8. Please refers to the latest instruction manual issued by each fitting maker, and attach the fitting as instructed.
- 9. When preparing the bypath piping, avoid making the circuit a sealed loop, which would cause breakage of the piping material.
- 10. Secure the maintenance space.



Cautions for installation and plumbing

Warning

- 1. Read in this user's manual (IOM-Manual) carefully prior to installation/plumbing.
- 2. Flush the piping completely and make sure that there is no foreign substances in the piping prior to installation/plumbing of our product into it.
- 3. Confirm the leak inspection is carried out correctly after the installation/plumbing.
- 4. Make sure that the valves are free of tensile/compression/bending stresses.
- 5. Do not apply excessive load on valve.
- 6. Confirm the flow direction of the valve matches the flow direction indication on the body.
- 7. Keep the valve away from excessive heat or fire. (It can be deformed or destroyed.)
- 8. Do not use the products in a place where they may become submerged in water.

Caution

- 1. Do not give any impact or drop the products.
- 2. Avoid scratching the products with any sharp object.

Cautions for use of the products



Warning

1. Use the products within the specification range of the working conditions such as medium, working temperature/pressure and so on.



Caution

- 1. Confirm the fluid compatibility with the wetted part of the products in the "Suitability List on Medium" in the latest **Dymatrix** general catalogue (AV-V-029-EJ). (Parts may be damaged by a kind of a medium.) Consult us on any medium, which is not listed in "Suitability List on Medium". Moreover, if you intend to use it with compressed air or gas (such as air, nitrogen, ozone, or other gas), we do not assume product liability of the Product.
- 2. Cavitation could be generated depending on the working condition. If cavitation is observed, review the fluid pressure and piping design.
- 3. Do not use the valve in negative pressure. (It can be damaged.)
- 4. Handle the products carefully to protect the clean (room) packaging.
- 5. Use CDA (Clean Dry Air) for pilot air, which does not contain any organic solvents or corrosive gases.
- 6. Confirm the flow direction of the valve matches the flow direction indication on the body.



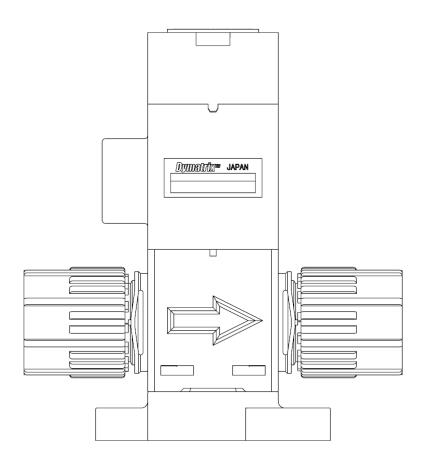
Cautions for maintenance

Marning

- 1. Discharge the fluid and the pilot air prior to the maintenance.
- 2. Start maintenance after medium has been completely flushed by DI Water or air.
- 3. Do not disassemble the product. Disassembled products which may cause them to not keep their original specifications or performance. We cannot guarantee a disassembled product.
- 4. Check the piping periodically to maintain the appropriate condition for the products.



② 各部件名称 Part names



部件名称 Parts	材质 Material	接液部件 Wetted parts
阀体 R. I.	PTFE	0
Body		
隔膜片	PTFE	\circ
Diaphragm	r II L	O
执行器	DVDC 1 DD	
Actuator	PVDF and PP	
底座	PP	
Base parts	FF	
金属部件	CHC204	
Metal parts	SUS304	
密封圈	FEPM	
Sealing ring	r c P IVI	



③ 规格 Specifications

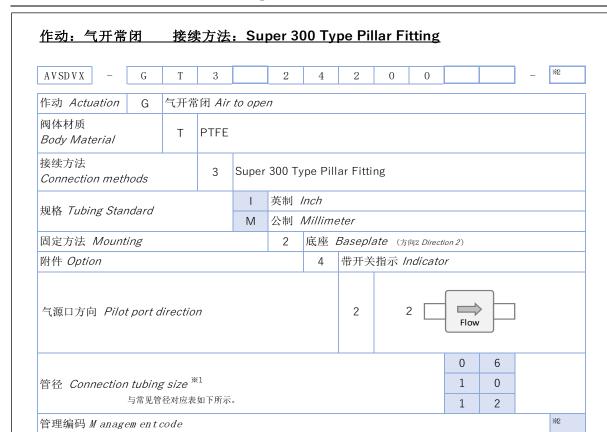
				尺寸 Size	
	项目	单位	□20	□26	□32
	Items	Unit	6 x 4	10 x 8	12 x 10
			6.35 x 3.95	9.53 x 6.33	12.7 x 9.5
作动	Actuation	-	气开常闭 气闭	常开 Air to ope	n • Air to close
	ī体温度 n Temperature	°C		5~90	
	7造耐压 of Pressure	MPa		1.0 <i>145psi</i>	
	月压力范围 Pressure range	MPa		0~0.5 <i>0~72.5ps.</i>	i
	座泄漏量 kage Rate	cm³/min	0 (at	0(水压 23°C) hydraulic pressure	e <i>23°C</i>)
背压 <i>Back Pressure</i>		MPa	0~0.5 <i>0~72.5psi</i>		
周围温度 <i>Ambient Temperature</i>		°C	5~60		
开关频率 Frequency of open/close		times/min	< 20		
安装方向 Installation direction		-	任意方向 Any direction		
Со	接续 nnection	-	Super 300 Type Pillar Fitting		itting
	内部通径 ^{*1} Orifice diameter ^{*1}		φ3.2	φ 5.3	φ 8.6
Cv 值 ^{※1} Cv value ^{※1}		-	0.27 0.77 1.9		1.9
協ル∵☆17	气源压力 Pilot pressure		0.4~0.5 <i>58~72.5psi</i>		
操作部 Pilot	气源口接续 Pilot air consumption	-	Rc1/8		
产品重量	气开常闭 Air to open	l	0.06	0.12	0.21
Weight	气闭常开 Air to close	- kg	0.06	0.13	0.22

※1:此为代表值。It is typical value.



4 选型表

Ordering Code



- ※1: 管径"的编号与常见的对应表如下所示。
- **%1:** The table below shows the "Conneciotn tubing size" numbers and their corresponding common tube diameters.
- ※2: 该编码为敝司内部的管理编码,未填写也可下单。
- ₩2: M anagement code for internal use only. Orders can be placed without specifying the management code.

对应表 Table of Correspondence

		管径 C	onnection tubii	ng size
		06	10	12
常见管径	mm	6 x 4	10 x 8	12 x 10
Common Tube diameters	inch	6.35 x 3.95	9.53 x 6.33	12.7 x 9.5



作动: 气闭常开 接续方法: Super 300 Type Pillar Fitting

AVSDVX -	S	Т	3		2	4	2	0	0		-	0
作动 Actuation	S	气闭常	开 Ain	r to clo	se							
阀体材质 Body Material	T PTFE											
接续方法 Connection methods 3 Super 300 Type Pillar Fitting												
规格 <i>Tubing Star</i>	ndard			I	英制 /	nch						
Tubing old	raara			М	M 公制 Millimeter							
固定方法 Mounting 2					2 底座 Baseplate (方向2 Direction 2)							
附件 Option						4	带开关	指示 //	ndica	tor		
气源口方向 <i>Pilot port direction</i> 2 2 Flow												
管径 Connection tubing size **1												
管理编码 M anage	管理编码 M anagem ent code 0											
W. A. White White White I Walker I Walker I												

※1: "管径"的编号和常见管径尺寸的对应表如下。

 $\divideontimes 1$: The table below shows the "Conneciotn tubing size" numbers and their corresponding common tube diameters.

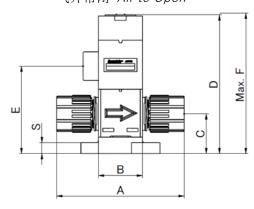
对应表 Table of Correspondence

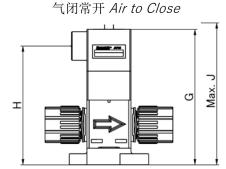
		管径 C	onnection tubii	ng size	
		06	10	12	
常见管径	mm	6 x 4	10 x 8	12 x 10	
Common Tube diameters	inch	6.35 x 3.95	9.53 x 6.33	12.7 x 9.5	

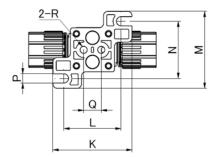


⑤ 尺寸 Dimension

气开常闭 Air to Open







単位(Unit):mm

			Size	
		□20	□26	□32
	Standard	6 × 4 / 6.35 × 3.95	10×8 / 9.53×6.33	12×10 / 12.7×9.5
Α	Super 300 Type Pillar Fitting	58	76	90
	В	□20	□26	□32
	С	18.1	20	21.8
	D	63.1	72	88.7
	Е	39.8	45.7	52.2
	F	63.9	73.5	91.7
	G	61.3	72.2	83.2
	Н	53.8	62.4	73.2
	J	64.3	75.7	88.2
	K	36	43	52
	L	26	34	40
	M	35	41	54
	N	26	31	41
	Р	4.2	5.2	6.3
	Q	8	12	16
	R	M4 L7.5	M5 L7	M5 L6.5
	S	5	5	5

※以上尺寸均为参考值

*All dimensions are for reference.



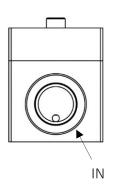
6 操作方法 How to operate

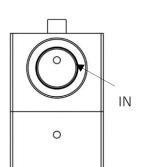
- · 阀门的开关方法(气开常闭)
- 1. 将气管接头安装在气源口(IN)上, 然后连接压缩空气供应用软管。
- 2. 施加规定的操作压力(0.4~0.5MPa)的压缩空气、阀门打开。
- 3. 关闭操作压力(0MPa)后、弹簧的力会将阀门关闭。
- How to open and close the valve (Air to open)
- 1. Connect an air tube to the air coupling screwed into the IN pilot port.
- 2. Open the valve by applying the specified pilot pressure (0.4 to 0.5MPa).
- 3. When you stop the pilot pressure supply(0MPa), the valve will be closed by the spring force
- ・ 阀门的开关方法 (气闭常开)
- 1. 将气管接头安装在气源口(IN)上, 然后连接压缩空气供应用软管。
- 2. 施加规定的操作压力(0.4~0.5MPa)的压缩空气、阀门关闭。
- 3. 关闭操作压力(0MPa)后、弹簧的力会将阀门打开。
- How to open and close the valve (Air to close)
- 1. Connect an air tube to the air coupling screwed into the IN pilot port.
- 2. Close the valve by applying the specified pilot pressure (0.4 to 0.5MPa).
- 3. When you stop the pilot pressure supply(0MPa), the valve will be opened by the spring force



⚠ 注意 Caution

- 操作流体请使用压缩空气(Air),请勿使用油或水等其他液体。 (可能导致执行器故障)。
- 请使用经过过滤器过滤的洁净压缩空气(Air)。 (否则阀门可能无法正常运行)
- 根据使用压力,可能发生水锤现象。请通过调速器等调整开闭速度。
- Always use compressed air. Do not use oil and water or the like.
 (That may break the actuator.)
- Always use cleanlily filtered-compressed air. (If omitted, the product may malfunction.)
- A water hammering may occur at a certain working pressure. Adjust the on/off operating speed with a speed controller or the like.







・开关指示

是用于目视确认阀门开关状态的功能。

※并非开度显示。

Indicator

This function is just to show "Open" or "Close" status of the valve.

*This function does not indicate the opening and closing degree.

安装方法 Method of installation (7)

・固定方法 Clamping method

【通过底面的螺丝孔进行固定】

本产品可以利用设置在产品底部的螺丝孔进行固定。详细尺寸请参考 "⑤尺寸" 的项目。

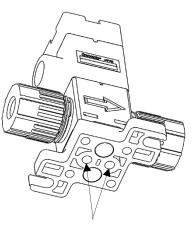
[Fixing with bottom screw hole]

This product can be installed by using the bottom screw holes. For the dimensions, see ⑤ Dimension.



⚠ 注意 Caution

- 请使用 "⑤ 尺寸" 中记载的螺丝。请注意螺丝长度。
 - 请以 0.2~0.4 N·m的扭力拧紧螺丝。
 - ▶ 请勿过度拧紧。
- 由于管道应力等原因导致的强力作用于阀门时,可能导致底座脱 落。请务必避免施加过强的力。
- Use the screws described in "5 Dimension". Be careful about the screw length.
- Fasten the screws to a torque between 0.2 and 0.4 N \cdot m.
- Do not over fasten them.
- If strong force is applied to the valve due to piping stress, etc., the base may come off. Be careful not to apply strong force.



螺丝孔 Screw holes



【通过底座固定】

本产品也可以利用底座上设置的螺丝孔进行固定。详细尺寸请参考 "⑤尺寸" 的项目。

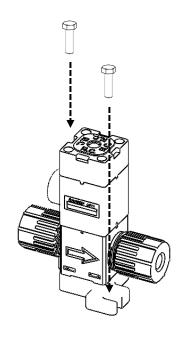
[Fixed with a baseplate]

This product can also be fixed using the screw holes provided on the baseplate. For detailed dimensions, please refer to the "5 Dimensions" section.

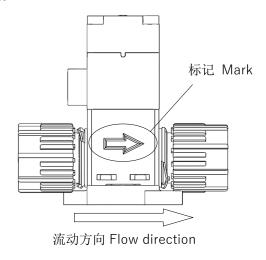


⚠ 注意 Caution

- 固定底座时,请勿给阀门施加拉伸、压缩、弯曲等力或者冲击。
- 由于管道应力等原因导致的强力作用于阀门受时,可能导致底座脱落。 请务必避免施加过强的力。
- Do not apply forces such as tension, compression, or bending, and avoid subjecting the base to impact when securing it.
- If strong force is applied to the valve due to piping stress, etc., the base may come off. Be careful not to apply strong force.



·流动方向 · Flow direction





<u>⚠</u> 注意 Caution

- 请确保流体沿箭头方向流动。(否则可能导致阀门损坏)
- Always flow medium in a specified direction. (If omitted, that may damage the valve.)



配管方法 Method of piping

・接头连接方法

[Super 300 Type Pillar Fitting]

请确认接头制造商的使用说明书,并严格遵照执行。

· How to connect a tube to a fitting

[Super 300 Type Pillar Fitting]

Check and follow the instruction manuals of each fitting manufacturer carefully.



⚠ 注意 Caution

- 详情请参照接头制造商的使用说明书。
- 请勿过度拧紧接头的螺母。(有可能造成损坏)
- 请确认阀门的流动方向是否正确。
- 配管时,请勿给阀门施加拉伸、压缩、弯曲等力以及冲击。
- For further information, see the instruction manuals issued by relevant fitting manufactures.
- Do not over tighten the nuts. (That may damage the fittings and nuts.)
- Confirm the flow direction of valves.
- Do not apply forces such as tension, compression, or bending, and avoid subjecting the main unit to impact when connecting the tube.

Dvmatrix™ 使用说明书 User's Manual

空气配管接头连接方法 ・How to connect air fitting

需准备的物品 Preparation

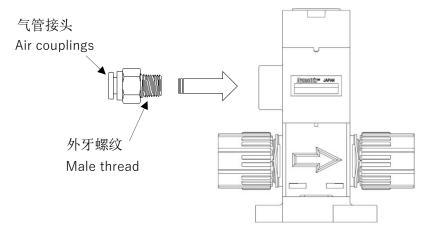
- 树脂制空气配管接头(Rc1/8")
- 生料带 (使用生料带以外的物品可能会导致泄漏)
- Plastic air couplings (Rc1/8")
- Sealing tape (If you use other sealing materials, leakage may occur.)

【步骤】

- 1. 气管接头(外牙)螺纹部分的前端预留 1mm 缠绕生料带。
- 用手将接头拧进执行器的气源口、拧紧。

[Procedures]

- Wind sealing tape on the male thread of a fitting with leaving a space of 1mm from the top.
- 2. Screw a plastic air fitting into a pilot port.





<u>⚠</u> 注意 Caution

- 空气配管用的接头必须使用树脂制的产品,并以 0.2~0.4 (N·m)的扭力拧紧。
 - (用扳手等工具过度拧紧可能会造成损坏)
 - (使用金属制接头可能会导致气源口损坏)
- 请使用生料带。使用生料带以外的物品可能会导致泄漏。
- 若使用液态密封剂及液态密封垫,可能会引发应力开裂(环境应力开裂)。
- 进行空气配管前,请充分冲洗空气配管内部。 (否则可能导致执行器无法正常工作)
- Always use plastic couplings and tighten them to a torque between 0.2 and 0.4 N · m.
 - (Overtightening them by spanner or the like may break the product.)
 - (Metallic couplings may break the pilot ports of the product.)
- Always use sealing tape. If you use other sealing materials, leakage may occur.
- If you use liquid sealing materials or gaskets, environmental stress cracking may occur.
- Fully flush clean the inside of tubes and couplings before tubing them.
 - (If omitted, the actuator may malfunction.)



9 检查项目 Check items

- 请制定计划,定期进行维保(检查) (建议至少每年进行一次维保(检查))
- 发现异常时,请即刻联系我司最近的营业所。
- Check the following items according to the schedule you arrange.(We recommend you to check them at least once a year.)
- O When finding any problem or trouble, call us.

检查位置	检 査 项 目
阀 门	①外观是否有划痕、裂纹、变形、变色 ②阀门是否存在外部泄漏(检查螺母是否松动) ③完全关闭时是否存在泄漏 ④开关操作时是否有异响 ⑤在规定操作压力下,气口处是否有漏气现象

①Appearance: flaw, crack, distortion, discoloration ②Leakage from the valve (Tightness of the union nuts) Valve ③Leakage in the fully closed position.	Check points	Check items
④Abnormal noise when operating⑤Leakage of the pilot air	Valve	②Leakage from the valve (Tightness of the union nuts)③Leakage in the fully closed position.④Abnormal noise when operating



⑩ 不良的原因及处理方法 Causes of defects and how to correct them

不良现象	推测原因	对策•措施
无法通过空气操作进行开关	未供气	请供气
九亿通过工(採作进行开关	气源压力低	请确认气源压力
	隔膜片磨损	
克人英语尼茨伊洲 罗	隔膜片或阀体有划痕	请更换阀门
完全关闭后流体泄漏	阀门内有异物卡住	
	气源压力低	请确认气源压力
	螺母松动	请拧紧螺母
从阀门外部泄漏流体	隔膜片破裂	请更换阀门
执行器工作但阀门不进行开关动作	隔膜片或活塞破损	请更换阀门

Status	Cause	Corrective action
The valve cannot be opened	The pilot air is not applied.	Apply the pilot air.
and closed by actuating.	The pilot pressure is low.	Check the pilot pressure.
	The diaphragm is abraded.	
Leakage in the fully closed	Flaw in the diaphragm or body.	Replace the valve.
position	Foreign matter is caught in the valve.	
	The pilot pressure is low.	Check the pilot pressure.
Leakage from the valve	The union nuts are loose.	Retighten the union nuts.
Leakage Iroin the valve	Rupture of the diaphragm.	Replace the valve.
When the actuator is working,		
the valve cannot be opened	The diaphragm or piston is damaged.	Replace the valve.
and closed.		



剩料 ·废料的处理方法

How to manage debris and waste



⚠ 注意 Caution

- 废弃处理时,必须交由专业废弃物处理机构处置。 (若进行焚烧,会产生有毒气体)
- For scrapping any material, be sure to hand it over to a waste management agent. (Burning it will generate toxic gas.)

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AVSDVX

药液用开关阀 2 way valve for chemical

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【咨询方式】

■管材系统事业部 Dymatrix 营业组 邮编 110-0005 东京都台东区上野 3 丁目 24 番 6 号 Frontier Tower 21 层 TEL.03-(5826)-8832 FAX.03-(3834)-7592

(For inquiries, contact)

■Head Office / Overseas Department
Tel.+81-3-5826-8831 Fax.+81-3-3834-7592
21st Floor, Ueno Frontier Tower 3-24-6 Ueno, Taito-ku, Tokyo 110-0005, Japan

http://www.asahi-yukizai.co.jp