

# (12) United States Design Patent (10) Patent No.:

# Murakami

# US D1,089,308 S

### (45) **Date of Patent:** \*\* Aug. 19, 2025

(54)	SOLENOID VALVE				
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(73)	Assignee:	SMC CORPORATION, Tokyo (JP)			
(**)	Term:	15 Years			
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(52)	U.S. Cl.				
	LICDC			D15/5: D	12/122

# Field of Classification Search

USPC ...... D15/5, 138, 145; D23/206, 233, 249; D13/123

CPC .... F16K 27/003; F16K 27/048; F16K 27/029; F16K 31/0675; F16K 31/05; F16K 35/025; F15B 13/0857; F15B 13/0825; F15B 13/0817; F15B 13/0889; F15B 13/0839; F15B 13/0875; Y10T 137/87885; Y10T 137/87209; Y10T

137/5283; Y10T 137/86614 See application file for complete search history.

### (56)**References Cited**

# U.S. PATENT DOCUMENTS

D409,279 S *	5/1999	Hayashi D23/233
D416,309 S *	11/1999	Hayashi D23/233
D416,980 S *	11/1999	Sato D23/233
D426,615 S *	6/2000	Sato D23/233
6,164,335 A *	12/2000	Hayashi F15B 13/0857
		137/884
D443,030 S *	5/2001	Kaneko D23/233
D459,441 S *	6/2002	Hayashi D23/233
		•

6,425,416 B1	*	7/2002	Narita F15B 13/0825			
			137/884			
D533,254 S	*	12/2006	Miyazoe D23/233			
D533,255 S	*	12/2006	Miyazoe D23/233			
D558,688 S	*	1/2008	Koyama D13/166			
D564,072 S	*	3/2008	Yoshimura D23/233			
D623,270 S	*	9/2010	Fukano D23/233			
D653,308 S	*	1/2012	Senba D23/233			
(Continued)						

### OTHER PUBLICATIONS

AirTACDINGJU, (earliest review date: Aug. 8, 2023), Solenoid Valve 1/4"PT Pneumatic AirTAC 4V210-08, Amazon.com, URL: (https://www.amazon.com/Pneumatic-4V210-08-Pilot-Operated-Connection-DC24V/dp/B09SZJ31Y6/ref=sr\_1\_35\_sspa?crid= undefined&th=1), (Year: 2023).\*

(Continued)

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## **CLAIM**

The ornamental design for a solenoid valve, as shown and described.

### DESCRIPTION

FIG. 1 is a front, top, and right side perspective view of a solenoid valve showing the new design.

FIG. 2 is a rear, bottom, and left side perspective view thereof.

FIG. 3 is a front elevational view thereof.

FIG. 4 is a rear elevational view thereof.

FIG. 5 is a top plan view thereof.

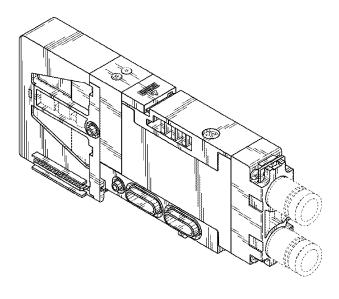
FIG. 6 is a bottom plan view thereof.

FIG. 7 is a left side elevational view thereof; and,

FIG. 8 is a right side elevational view thereof.

The broken lines depict portions of the solenoid valve that form no part of the claimed design.

# 1 Claim, 8 Drawing Sheets



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#### 2019/0277421 A1\* 9/2019 Yoshimura ....... F16K 31/0655 (56)**References Cited** 2021/0332909 A1\* 10/2021 Yoshimura ....... F16K 31/0627 U.S. PATENT DOCUMENTS 2021/0396329 A1\* 12/2021 Mita ...... H01F 7/127 2023/0139784 A1\* 5/2023 Ohki ..... F16K 27/003 251/129.01 D742,481 S \* 11/2015 Inaba ...... D23/233 D892,979 S 8/2020 Kimura ...... D23/233 D961,049 S 8/2022 Yoshida ...... D23/233 OTHER PUBLICATIONS D961,730 S 8/2022 Yoshida ...... D23/233 D963,799 S 9/2022 Yoshida ...... D23/233 SMC, (date retrieved Oct. 28, 2024), SJ4000, 4 Port Solenoid Valve, D973,181 S \* 12/2022 Murakami ..... D23/233 D1,012,240 S \* 1/2024 Iida ...... D23/233 10/2005 Miyazoe ..... F15B 13/0857 Smcusa.com, URL: (https://www.smcusa.com/products/sj4000-4-2005/0236053 A1\* port-solenoid-valve~174811), (Year: 2024).\* 137/625.64 Automation Distribution, (date retrieved Oct. 28, 2024), SMC 2005/0236054 A1\* 10/2005 Miyazoe ...... F15B 13/0857 SJ3160N-5MZ-N7 SJ2000/3000 SeriesNon plug-in Individual Wir-137/625.64 ing Solenoid Valves, Automationdistribution.com, URL: (https:// 2005/0236595 A1\* 10/2005 Miyazoe ...... F15B 13/0825 automationdistribution.com/smc-sj3160n-5mz-n7-pack-of-1/), (Year: 251/129.09 2024).\* 2006/0081802 A1\* 4/2006 Miyazoe ..... F16K 27/003 Coast Pneumatics, (date retrieved Oct. 28, 2024), VOVK-BT6-251/129.15 M32C-MN-5T1P-B3F, Coastpneumatics.com, URL: (https://www. 2/2009 Lee ..... 2009/0045367 A1\* F15B 13/0839 coastpneumatics.com/product/8122788/), (Year: 2024).\* 251/129.15 2018/0128385 A1\* 5/2018 Itoh ..... F16K 37/005 \* cited by examiner 2019/0154166 A1\* 5/2019 Yoshimura ...... F16K 31/0613

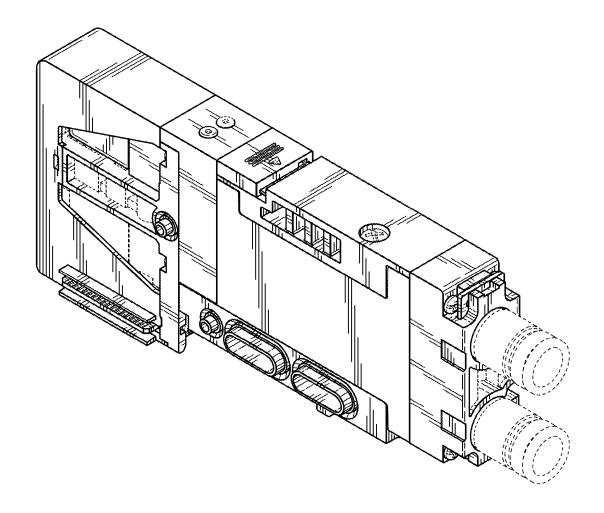


FIG. 1

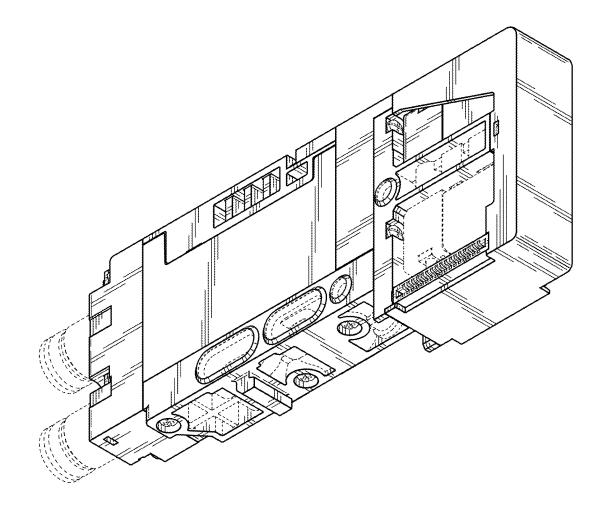


FIG. 2

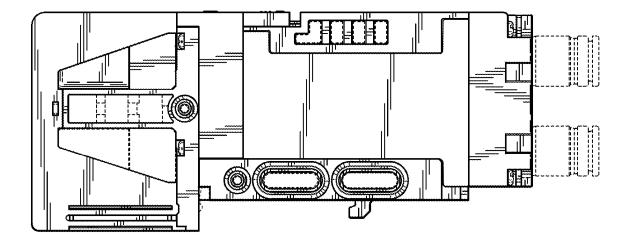


FIG. 3

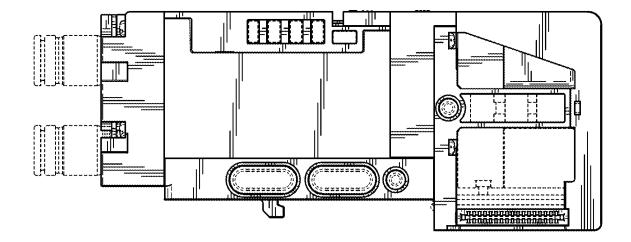


FIG. 4

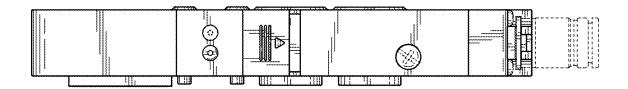


FIG. 5

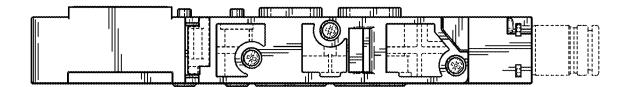


FIG. 6

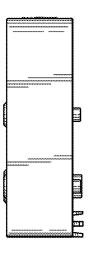


FIG. 7

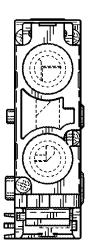


FIG. 8