

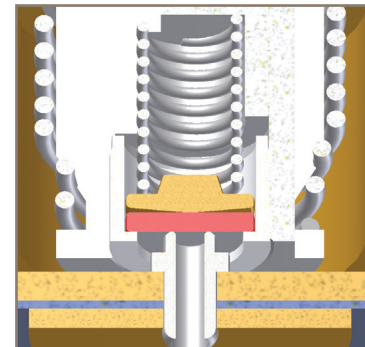


aerospace  
 climate control  
 electromechanical  
 filtration  
 fluid & gas handling  
 hydraulics  
 pneumatics  
 process control  
 sealing & shielding



# Sporlan V-Series Ruby Seat Solenoid Valves

Bulletin 30-10-8, October 2008



ENGINEERING YOUR SUCCESS.

# V-Series Ruby Seat Solenoid Valves

## CONTENTS

### PART 1 – GENERAL INFORMATION

1. Introduction . . . . .	3
2. Ruby seal technology – INNOVATION! . . . . .	3
3. Compliance to European legislation . . . . .	3
4. Nomenclature and Identification . . . . .	3

### PART 2 – TECHNICAL INFORMATION

#### VALVES

• Specifications . . . . .	4
• Drawings & Dimensions . . . . .	5-7
• Capacity Tables . . . . .	8-9
• Construction Materials Details . . . . .	10

#### COILS

• Coil Ratings . . . . .	10
• Drawings & Dimensions . . . . .	11
• Connectors . . . . .	12

### PART 3 – INSTALLATION AND SERVICE

1. Installation Instructions . . . . .	12
2. Spare Parts . . . . .	14
3. Packaging Information . . . . .	14

### EXTRA INFORMATION

• Cross reference table 112, 115, 142 & 145 versus V-series. . . . .	15
--	----

\*To request individual Sporlan Product Bulletins, consult your nearest Sporlan Wholesaler or email [europcold@parker.com](mailto:europcold@parker.com).

Supersedes Bulletin 30-10-8, September 2008.

Copyright 2008 by Parker Hannifin Corporation, Washington, Missouri

**FOR USE ON REFRIGERATION and/or AIR CONDITIONING SYSTEMS ONLY**

# V-Series Ruby Seat Solenoid Valves

## PART 1 - GENERAL INFORMATION

### INTRODUCTION

V-Series is a new range of solenoid valves for the liquid line, suction line and hot gas service for refrigeration and AC applications.

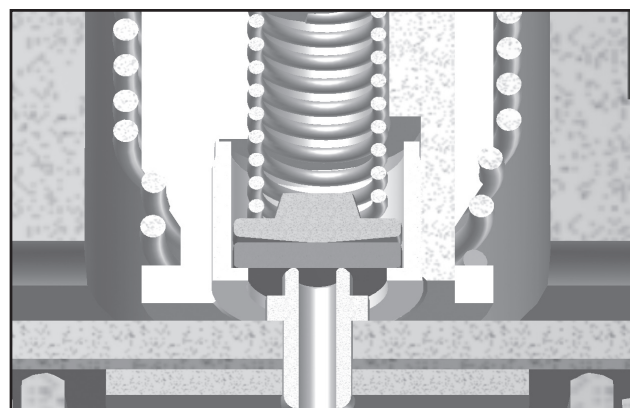
We choose the best, innovative materials for our valves and we assure a perfect control of the manufacturing process with 100% testing in order to offer the best quality product for our customers.

V-series are compatible with all CFC, HCFC and HFC refrigerants and blends and most refrigeration oils in the limit of MRP of 35 bar.

### Ruby seat technology – INNOVATION!

The benefit of the innovation in V series refrigeration solenoid valve design is the use of ruby and stainless steel in the valve seat. Ruby is an industrial stone of unique physicochemical properties. It is extremely hard (just less than a diamond) and inert to acids and other aggressive components that can be present in the refrigeration system. It features perfect mechanical, corrosion, wear and extreme temperature resistance.

The use of the innovating seat technology: hard material (steel) on even harder (ruby), helps to significantly increase the seat tightness, cycle-life and reliability of Sporlan V-series solenoid valves.



**Compliance to European Regulations and Standards** (PED, Low Voltage, RoHS)

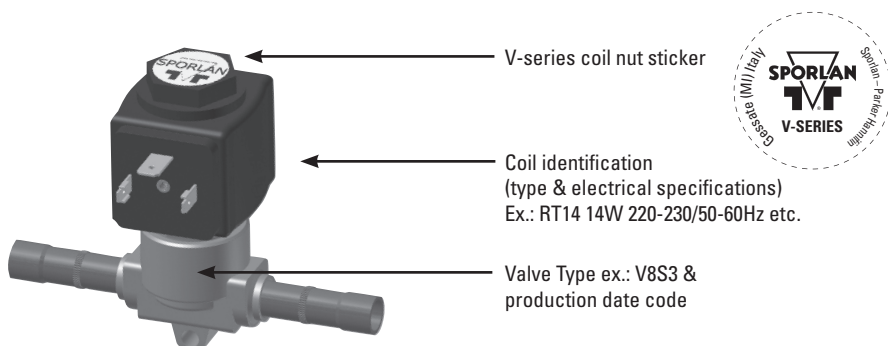
V-series solenoid valves are fully compliant to European regulation including: European Directives 97/23/CE (PED), 2006/95/CE (Low Voltage), RoHS. The declarations of conformity are available from your Sporlan distributor.

## VALVE NOMENCLATURE AND IDENTIFICATION

The nomenclature of V series has been created to help an easy identification of any valve by the port size, fittings size and type, coil type and electrical specifications and other special features.

It is very close to the nomenclature of Sporlan E series valves which should be used in the applications where V series range is not large enough.

<b>V</b>	<b>23</b>	<b>S</b>	<b>M</b>	<b>22</b>	<b>R</b>	<b>230</b>	<b>D11</b>	<b>B</b>
V Series	Port size in 1/32 of an inch	Solder ODF (F – Flare SAE)	Metric Connections	Connection size in mm	R – RT-14 coil, Y – YB-14 coil, C – CD-21 coil	Coil Voltage	D11 – Din connector PG11, D9 – Din Connector PG9	Mounting Bracket
<b>V</b>	<b>8</b>	<b>F</b>	<b>3</b>	<b>Y</b>	<b>230</b>	<b>D9</b>	<b>B</b>	
V Series	Port size in 1/32 of an inch	F – Flare SAE (Solder ODF)	Connection size in 1/8 of an inch	Y – YB-14 coil, R – RT-14 coil, C – CD-21 coil	Coil Voltage	D9 – Din Connector PG9, D11 – Din connector PG11	Mounting Bracket	



# V-Series Ruby Seat Solenoid Valves

## PART 2 – TECHNICAL INFORMATION – VALVES

### SPECIFICATIONS

V series are normally closed refrigeration solenoid valves for liquid line, suction line and hot gas service. V-Series are compatible with all CFC, HCFC and HFC refrigerants and blends and most refrigeration oils in the limit of MRP of 35 bar. Minimum refrigerant temperature is -40°C, maximum refrigerant temperature is +105°C.

### DIRECT ACTING – INCHES

Valve Type	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
	Inches	[mm]	[m³/h]	[bar]	C.A. (~) [bar]	C.C. (=) [bar]	C.A.	C.C.
V3F2	1/4" SAE	2.5	0.185	0	30	21	RT14-YB14	CD21
V4F2	1/4" SAE	3	0.270	0	30	21	RT14-YB14	CD21
V4F3	3/8" SAE	3	0.270	0	30	21	RT14-YB14	CD21
V3S2	1/4" ODF	2.5	0.185	0	30	21	RT14-YB14	CD21
V4S2	1/4" ODF	3	0.27	0	30	21	RT14-YB14	CD21

### DIRECT ACTING – MM

Valve Type	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
	[mm]	[mm]	[m³/h]	[bar]	C.A. (~) [bar]	C.C. (=) [bar]	C.A.	C.C.
V3SM6	6 ODF	2.5	0.185	0	30	21	RT14-YB14	CD21
V4SM6	6 ODF	3	0.270	0	30	21	RT14-YB14	CD21

### PILOT OPERATED – INCHES

Valve Type	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
	Inches	[mm]	[m³/h]	[bar]	C.A. (~) [bar]	C.C. (=) [bar]	C.A.	C.C.
V8F3	3/8" SAE	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V10F3	3/8" SAE	8	1.4	0.1	30	21	RT14-YB14	CD21
V13F4	1/2" SAE	10	1.88	0.1	30	21	RT14-YB14	CD21
V19F5	5/8" SAE	15	3.3	0.1	30	10	RT14-YB14	CD21
V8S3	3/8" ODF	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V10S3	3/8" ODF	8	1.4	0.1	30	21	RT14-YB14	CD21
V13S4	1/2" ODF	10	1.88	0.1	30	21	RT14-YB14	CD21
V19S5	5/8" ODF	15	3.3	0.1	30	10	RT14-YB14	CD21
V23S6	3/4" ODF	18	3.85	0.1	30	10	RT14-YB14	CD21
V23S7	7/8" ODF	18	4.32	0.1	30	10	RT14-YB14	CD21
V23S9	1-1/8" ODF	18	4.32	0.1	30	10	RT14-YB14	CD21

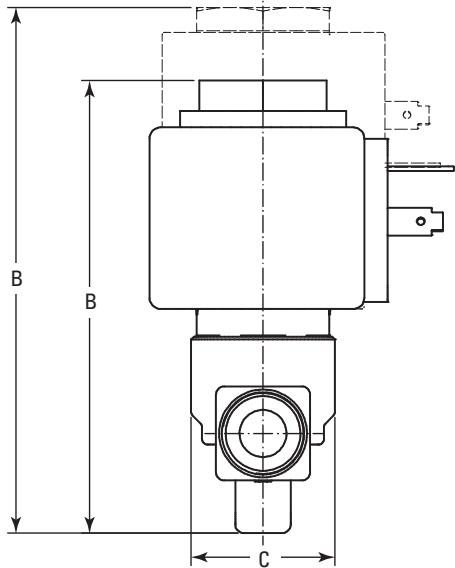
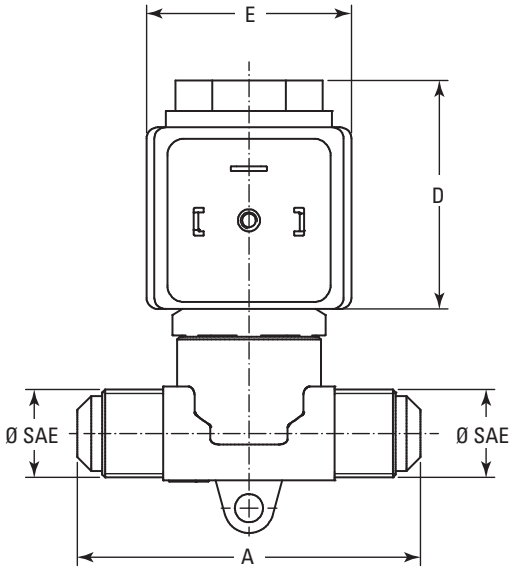
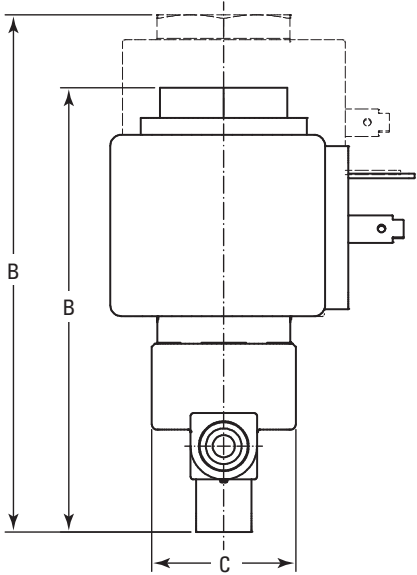
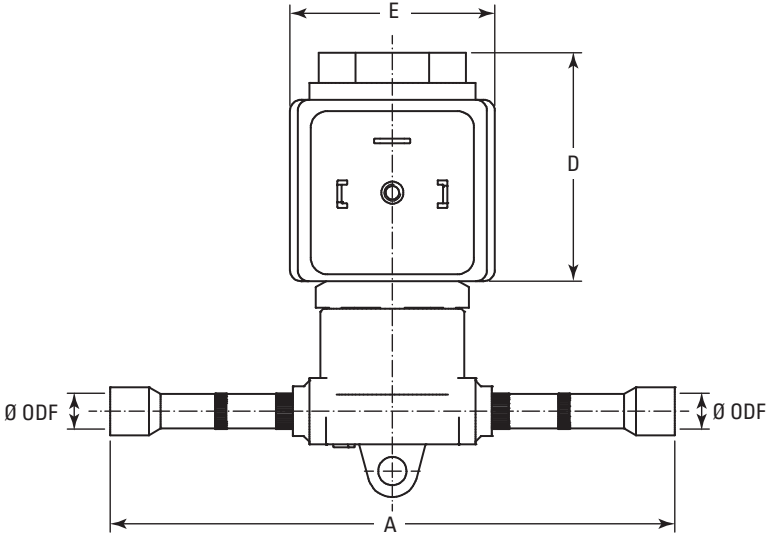
### PILOT OPERATED – MM

Valve Type	Connections SAE or ODF	Port Size Ø	Flow Coefficient Kv	Minimum Pressure Differential	Maximum Pressure Differential M.O.P.D.		Coil Type	
	[mm]	[mm]	[m³/h]	[bar]	C.A. (~) [bar]	C.C. (=) [bar]	C.A.	C.C.
V8SM10	10 ODF	6.5	0.800	0.1	30	21	RT14-YB14	CD21
V10SM10	10 ODF	8	1.4	0.1	30	21	RT14-YB14	CD21
V13SM12	12 ODF	10	1.88	0.1	30	21	RT14-YB14	CD21
V19SM16	16 ODF	15	3.3	0.1	30	10	RT14-YB14	CD21
V23SM18	18 ODF	18	3.85	0.1	30	10	RT14-YB14	CD21
V23SM22	22 ODF	18	4.32	0.1	30	10	RT14-YB14	CD21
V23SM28	28 ODF	18	4.32	0.1	30	10	RT14-YB14	CD21

# V3 & V4 Series Ruby Seat Solenoid Valves

## DIMENSIONS

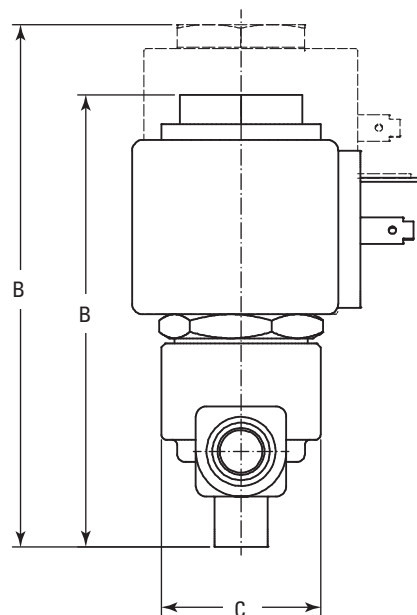
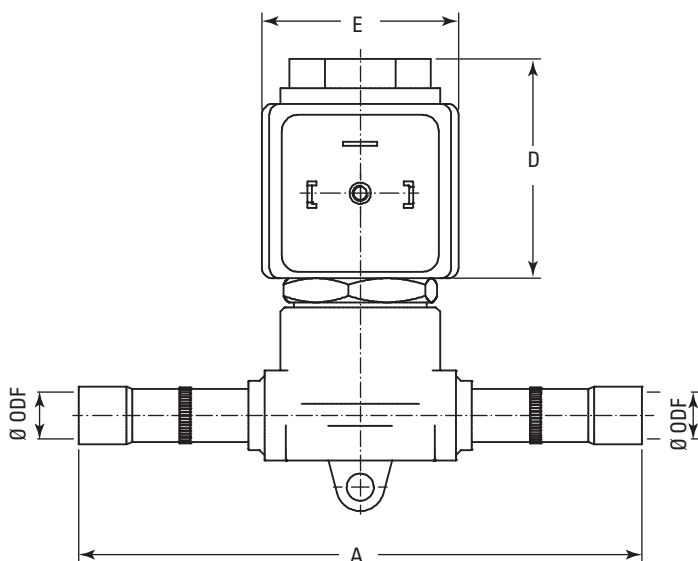
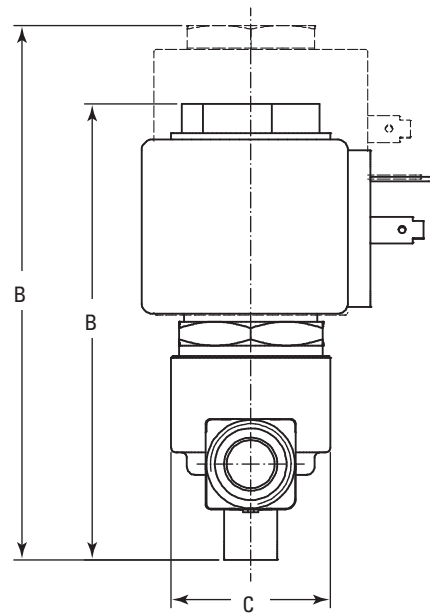
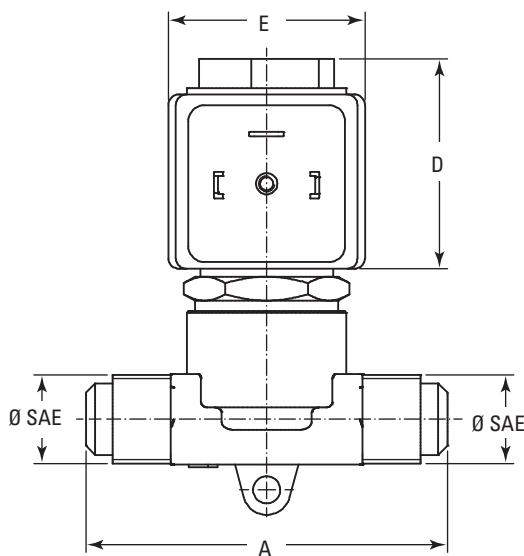
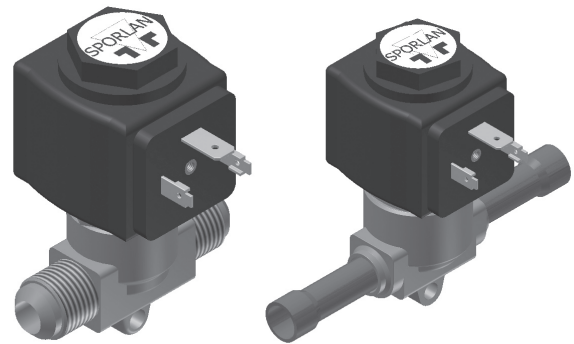
Connections	A	B		C	D		E
		[mm]			[mm]		
["]	[mm]	AC Coil	DC Coil	[mm]	AC Coil	DC Coil	[mm]
1/4" SAE	61	79.8	93.5	26	41.3	55	37
1/4" SAE	61	79.8	93.5	26	41.3	55	37
3/8" SAE	61	79.8	93.5	26	41.3	55	37
6-1/4 ODF	61	79.8	93.5	26	41.3	55	37
6-1/4 ODF	61	79.8	93.5	26	41.3	55	37



# V8 Series Ruby Seat Solenoid Valves

## DIMENSIONS

Connections	A	B		C	D		E
		[mm]	[mm]		[mm]	[mm]	
["]	[mm]	AC Coil	DC Coil	[mm]	AC Coil	DC Coil	[mm]
3/8" SAE	68	85.8	99.5	30	41.3	55	37
10 ODF	106	85.8	99.5	30	41.3	55	37
3/8" ODF	106	85.8	99.5	30	41.3	55	37

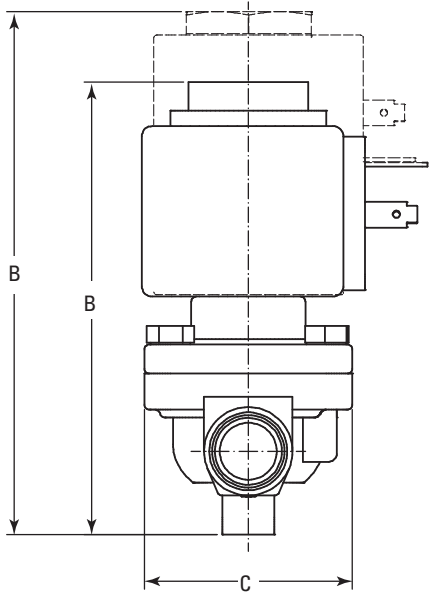
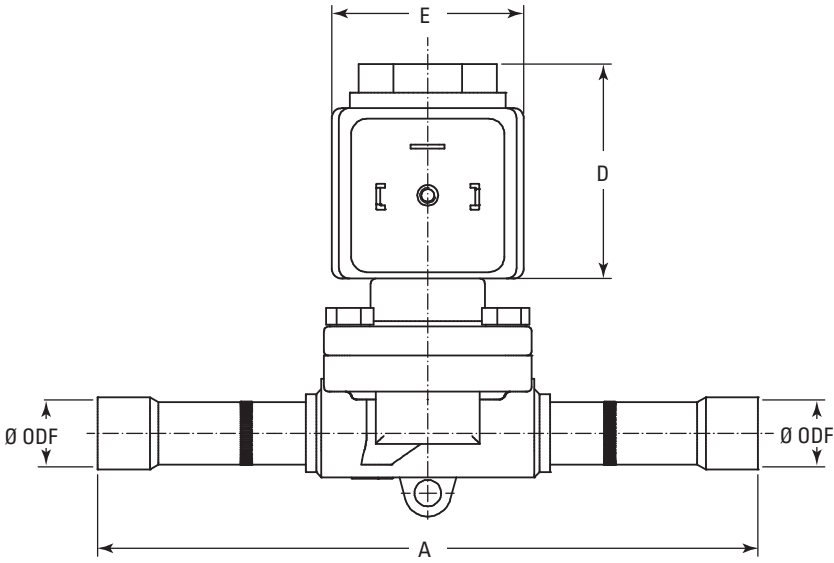
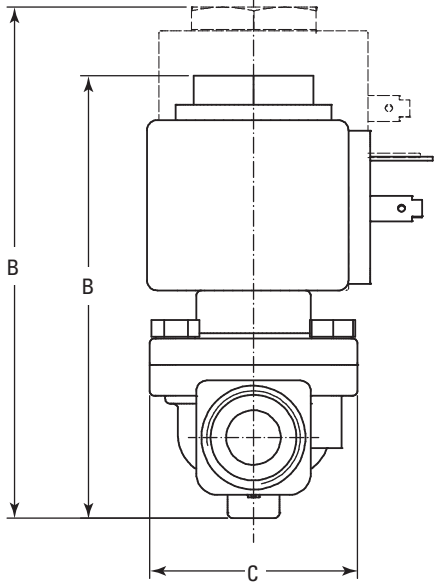
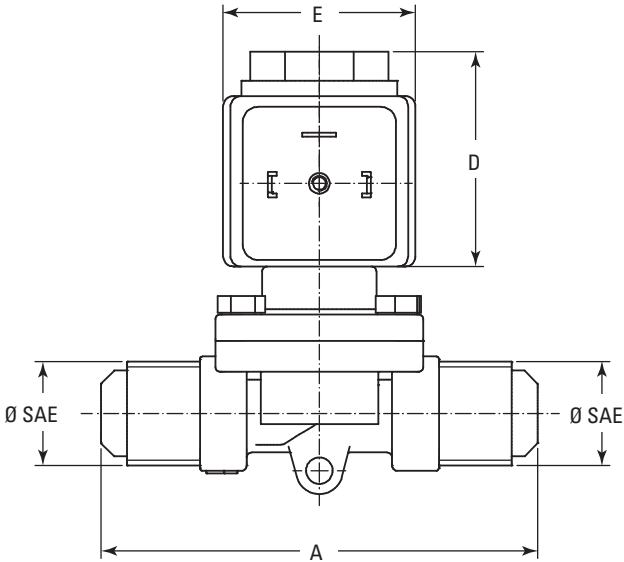




# V10, V13, V19 & V23 Series Ruby Seat Solenoid Valves

**DIMENSIONS**

Connections	A	B		C	D		E
		[mm]	[mm]		[mm]	[mm]	
["]*[mm]	[mm]	AC Coil	DC Coil	[mm]	AC Coil	DC Coil	[mm]
3/8" SAE	80	85.3	99	40	41.3	55	37
1/2" SAE	84	85.3	99	40	41.3	55	37
5/8" SAE	104	85.3	103.5	51	41.3	55	37
10* - 3/8 ODF	111	79.3	193	40	41.3	55	37
12* - 1/2 ODF	127	79.3	93	40	41.3	55	37
16* - 5/8 ODF	153	93.3	107	51	41.3	55	37
18* - 3/4 ODF	160	93.3	107	51	41.3	55	37
22* - 7/8 ODF	170	93.3	107	51	41.3	55	37
28* - 1-1/8 ODF	180	96.3	110	51	41.3	55	37



# V-Series Ruby Seat Solenoid Valves

## CAPACITY TABLES

Type	K [l/min]	Kv [m³/h]	Cv [GPM] (USA)	Refrig.	Liquid Line [kW]				Discharge Line [m³/h]						
					Δp [bar]				Δp [bar]						
					0,10	0,15	0,20	0,30	0,30	0,50	1,00	2,00	3,00	4,00	5,00
V3	3.20	0.19	0.22	R-134a	2.20	2.80	3.10	3.90	0.80	1.00	1.46	1.73	1.96	—	—
				R-22	2.90	3.80	4.20	5.00	0.58	0.72	1.05	1.32	1.55	1.85	2.15
				R-502	2.00	2.40	2.90	3.60	0.47	0.58	0.86	1.05	1.25	1.45	1.65
				R-404A	2.04	2.44	2.95	3.67	0.48	0.59	0.87	1.07	1.27	1.48	1.68
				R-407C	2.93	3.84	4.24	5.05	0.59	0.73	1.06	1.33	1.57	1.87	2.17
V4	4.50	0.27	0.31	R-134a	3.50	4.20	4.90	5.90	1.00	1.46	1.90	2.80	3.60	—	—
				R-22	4.40	5.40	6.20	7.60	0.95	1.20	1.70	2.40	2.70	3.00	3.10
				R-502	3.00	3.70	4.30	5.30	0.60	0.70	1.00	1.40	1.70	1.90	2.10
				R-404A	3.06	3.77	4.38	5.40	0.61	0.71	1.02	1.42	1.73	1.94	2.14
				R-407C	4.44	5.45	6.26	7.68	0.96	1.21	1.72	2.42	2.73	3.03	3.13
V8	13.30	0.80	0.93	R-134a	14.00	14.10	17.70	23.40	4.58	5.20	6.40	9.58	9.70	—	—
				R-22	15.00	15.50	19.60	25.80	4.82	6.10	8.27	11.40	11.80	15.70	19.60
				R-502	10.00	10.40	13.10	17.60	3.79	5.30	6.62	9.22	9.60	12.70	16.00
				R-404A	10.20	10.60	13.30	17.90	3.86	4.87	6.76	9.40	9.79	12.90	16.30
				R-407C	15.15	15.66	19.80	26.06	4.87	6.16	8.35	11.51	11.92	15.86	19.80
V10	23.30	1.40	1.62	R-134a	19.00	24.60	30.40	35.70	5.70	7.30	10.01	13.00	14.00	—	—
				R-22	22.10	29.60	36.50	43.90	4.10	5.20	7.30	9.60	10.50	11.30	12.50
				R-502	15.60	21.00	26.20	31.00	2.40	3.10	4.40	6.20	7.50	8.40	9.20
				R-404A	15.90	21.40	26.70	31.60	2.44	3.16	4.48	6.32	7.65	8.55	9.38
				R-407C	22.32	29.90	36.87	44.34	4.14	5.25	7.37	9.70	10.61	11.41	12.63
V13	31.30	1.88	2.18	R-134a	24.20	29.70	34.50	38.60	7.80	9.40	13.70	20.30	26.20	—	—
				R-22	31.10	38.30	44.20	49.40	5.06	6.80	9.80	14.30	19.00	21.70	25.20
				R-502	21.40	26.20	30.30	33.90	4.70	5.50	7.90	11.50	14.50	17.20	19.80
				R-404A	21.80	26.70	30.90	34.50	4.79	5.61	8.05	11.70	14.70	17.50	20.20
				R-407C	31.41	38.68	44.64	49.89	5.66	6.87	9.90	14.44	19.19	21.92	25.45
V19	55.00	3.30	3.83	R-134a	41.00	54.80	66.70	80.60	11.80	15.00	21.10	27.90	30.40	—	—
				R-22	49.30	65.70	80.30	96.20	8.80	10.80	15.70	21.10	23.80	27.30	28.40
				R-502	34.60	46.50	57.50	69.20	5.00	6.20	8.80	12.90	15.60	16.90	19.40
				R-404A	35.20	47.40	58.60	70.50	5.10	6.32	8.97	13.10	15.10	17.20	19.80
				R-407C	49.79	66.36	81.10	97.16	8.89	10.91	15.86	21.31	24.04	27.57	28.68
V23S6 V23SM18	64.20	3.85	4.47	R-134a	43.90	56.40	68.20	82.20	12.20	15.70	21.90	29.20	32.10	—	—
				R-22	51.70	68.30	82.80	99.00	9.30	11.20	16.20	21.80	24.00	28.20	29.20
				R-502	35.80	47.60	59.00	70.90	5.20	6.50	9.20	13.20	16.50	17.30	20.50
				R-404A	36.50	48.55	60.10	72.30	5.30	6.83	9.38	13.40	16.80	17.60	20.90
				R-407C	52.22	68.98	83.63	99.99	9.39	11.31	16.36	22.02	24.24	28.48	29.49
V23S7 V23S9 V23SM22 V23SM28	72.00	4.32	5.01	R-134a	44.80	59.90	72.90	88.00	13.00	16.30	23.10	30.60	33.20	—	—
				R-22	53.80	71.70	87.60	105.00	9.60	11.80	17.20	23.40	26.00	29.80	31.00
				R-502	37.80	50.80	62.80	75.40	5.50	6.80	9.60	14.10	17.00	18.50	21.20
				R-404A	38.50	51.80	64.00	76.90	5.61	6.93	9.79	14.30	17.30	18.90	21.80
				R-407C	54.34	72.42	88.48	106.05	9.70	11.92	17.37	23.63	26.62	30.10	31.31

For valves with larger capacity, please refer to Sporlan Bulletin 30-10.



# V-Series Ruby Seat Solenoid Valves

## CAPACITY TABLES

Type	K [l/min]	Kv [m³/h]	Cv [GPM] (USA)	Refrig.	Δp [bar]	Suction Line [kW]												
						Evaporation Temperature [°C]												
						+10	+5	0	-5	-10	-15	-20	-30	-40				
V10	23.30	1.40	1.62	R-134a	0.10	3.32	2.92	2.60	2.30	2.14	1.91	1.76	1.31	0.91				
					0.15	4.32	3.83	3.52	3.22	2.84	2.60	2.30	1.83	1.53				
				R-22	0.10	3.54	3.19	2.90	2.61	2.38	2.15	1.92	1.57	1.28				
					0.15	4.71	4.24	3.89	3.37	3.14	2.85	2.50	2.03	1.45				
				R-502	0.10	3.08	2.67	2.32	2.09	1.86	1.74	1.51	1.16	0.87				
					0.15	3.89	3.60	3.14	2.30	2.56	2.32	1.97	1.62	1.33				
				R-404A	0.10	3.35	2.91	2.52	2.27	2.03	1.89	1.65	1.26	0.95				
					0.15	4.24	3.92	3.42	3.16	2.79	2.52	2.14	1.76	1.45				
				R-407C	0.10	3.58	3.22	2.93	2.64	2.40	2.17	1.94	1.59	1.29				
					0.15	4.76	4.28	3.93	3.40	3.17	2.88	2.53	2.05	1.46				
				V13	31.30	1.88	2.18	R-134a	0.10	4.64	4.29	3.76	3.45	3.06	2.84	2.46	1.83	1.37
									0.15	5.64	5.21	4.61	4.56	3.68	3.30	2.92	2.22	1.53
R-22	0.10	5.17	4.59					4.30	3.89	3.49	3.08	2.79	2.21	1.68				
	0.15	6.28	5.75					5.23	4.71	4.30	3.78	3.43	2.67	2.03				
R-502	0.10	4.36	3.94					3.60	3.31	2.90	2.61	2.32	1.80	1.39				
	0.15	5.29	4.71					4.36	3.95	3.54	3.14	2.85	2.21	1.62				
R-404A	0.10	4.75	4.30					3.92	3.60	3.16	2.84	2.53	1.96	1.51				
	0.15	4.76	5.14					4.75	4.30	3.85	3.42	3.11	2.41	1.76				
R-407C	0.10	5.22	4.64					4.34	3.93	3.52	3.11	2.82	2.23	1.70				
	0.15	6.34	5.81					5.28	4.76	4.34	3.82	3.46	2.70	2.05				
V19	55.00	3.30	3.83					R-134a	0.10	7.12	6.44	5.90	5.37	4.83	4.37	3.76	2.84	1.91
									0.15	9.66	8.59	7.75	7.06	6.36	5.76	5.06	3.76	2.38
				R-22	0.10	7.79	7.09	6.45	5.87	5.35	4.82	4.36	3.43	2.44				
					0.15	10.35	9.36	8.54	7.79	7.03	6.39	5.75	4.59	3.31				
				R-502	0.10	6.92	6.10	5.35	4.88	4.36	3.95	3.43	2.79	2.03				
					0.15	9.18	9.08	7.15	6.51	5.87	5.35	4.59	3.72	2.73				
				R-404A	0.10	7.54	6.65	5.83	5.31	4.75	4.30	3.74	3.04	2.21				
					0.15	10.01	9.89	7.79	7.09	6.39	5.83	5.00	4.05	2.97				
				R-407C	0.10	7.87	7.16	6.51	5.93	5.40	4.87	4.40	3.46	2.46				
					0.15	10.45	9.45	8.63	7.87	7.10	6.45	5.81	4.64	3.34				
				V23S6 V23SM18	64.20	3.85	4.47	R-134a	0.10	7.42	6.75	6.22	5.68	5.13	4.67	3.99	3.06	2.07
									0.15	9.97	8.90	8.05	7.37	6.60	5.98	5.29	3.91	2.53
R-22	0.10	8.14	7.38					6.62	6.10	5.58	4.94	4.47	3.54	2.56				
	0.15	10.69	9.59					8.78	8.02	7.26	6.62	5.99	4.76	3.43				
R-502	0.10	7.15	6.33					5.52	5.00	4.47	4.07	3.54	2.90	2.09				
	0.15	9.42	8.25					7.32	6.68	5.99	5.58	4.76	3.83	2.58				
R-404A	0.10	7.79	6.89					6.01	5.45	4.87	4.43	3.85	3.16	2.27				
	0.15	10.26	8.99					7.97	7.28	6.52	6.08	5.18	4.17	3.10				
R-407C	0.10	8.22	7.45					6.69	6.16	5.64	4.99	4.51	3.58	2.59				
	0.15	10.80	9.69					8.87	8.10	7.33	6.69	6.05	4.81	3.46				
V23S7 V23S9 V23SM22 V23SM28	72.00	4.32	5.01					R-134a	0.10	7.73	7.06	6.60	5.83	5.21	4.75	4.14	3.14	2.07
									0.15	10.50	9.36	8.53	7.67	6.90	6.28	5.52	4.14	2.60
				R-22	0.10	8.49	7.73	7.03	6.39	5.87	5.29	4.76	3.78	2.67				
					0.15	11.28	10.23	9.30	8.49	7.67	6.97	6.28	5.00	3.60				
				R-502	0.10	7.56	6.62	5.81	5.35	4.76	4.30	3.72	3.02	2.21				
					0.15	10.00	8.83	7.79	7.09	6.39	5.81	5.00	4.07	3.02				
				R-404A	0.10	8.24	7.21	6.33	5.83	5.18	4.68	4.05	3.29	2.40				
					0.15	10.90	9.62	8.49	7.72	6.96	6.33	5.45	4.43	3.29				
				R-407C	0.10	8.57	7.81	7.10	6.45	5.93	5.34	4.81	3.82	2.70				
					0.15	11.39	10.33	9.39	8.55	7.75	7.04	6.34	5.05	3.64				

For valves with larger capacity, please refer to Sporlan Bulletin 30-10.

## V-Series Ruby Seat Solenoid Valves

### CONSTRUCTION MATERIAL DETAILS

Valve Type	Type of Operation	Body Material	Type of Seating		Diaphragm
			Main Port	Pilot Port	
V3 & V4	Direct Acting	Forged Brass	—	Ruby on the Stainless Steel	—
V8, V10, V13, V19, V23	Pilot Operated	Forged Brass	Ruby on the Stainless Steel	Ruby on the Stainless Steel	Teflon

## PART 2 – TECHNICAL INFORMATION – COILS

### SPECIFICATIONS

We offer three different types of coils for our valves. The preferred coil should be selected depending on the application and based on the required: current, Voltage and IP rating. If the coil with specifications different from those in the table is required, please contact your Sporlan distributor.

All the coils are manufactured with class H copper wire, molded in thermoplastic (polyester) with 30% glass fiber.

### COIL RATINGS

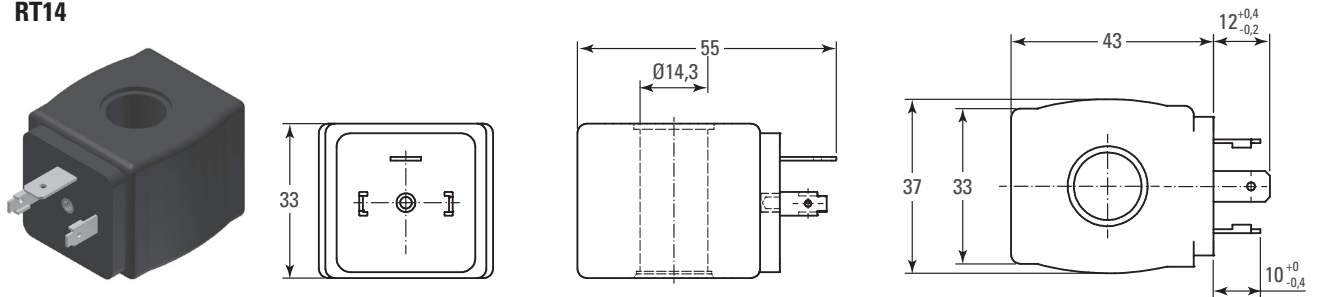
Features	RT14	YB14	CD21
IP Protection	IP65	IP67	IP65
Connector	<b>PG9</b> or PG11	<b>PG9</b> or PG11	<b>PG9</b> or PG11
Class	F (155°C)	F (155°C)	F (155°C)
Current	AC	AC	DC
Available Voltage	24 115 230	24 115 230	12 24
Voltage Tolerances	+/- 10%	+/- 10%	+/- 5%
Cycles	50/60 Hz	50/60 Hz	—
Power	14 Watts	14 Watts	21 Watts
VA rating	25 (33 Inrush)	24 (32 Inrush)	—

Values in bold characters are standard.

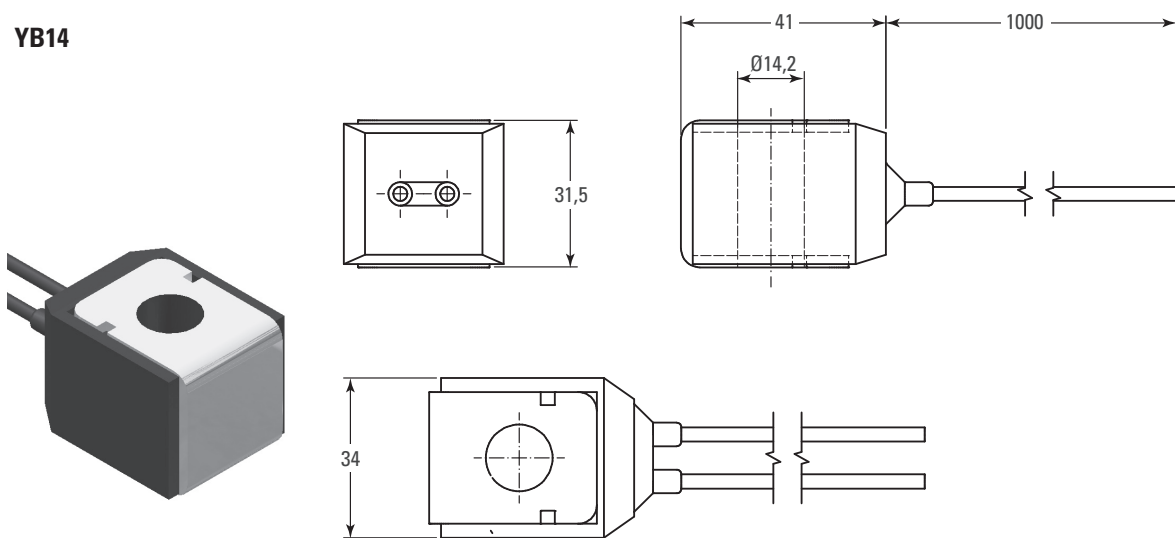
# V-Series Ruby Seat Solenoid Valves

## COIL TECHNICAL DRAWINGS

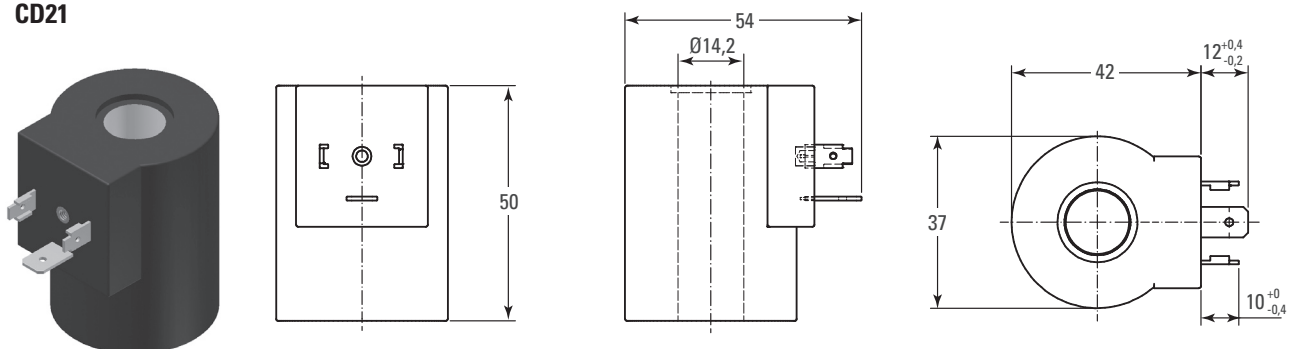
**RT14**



**YB14**



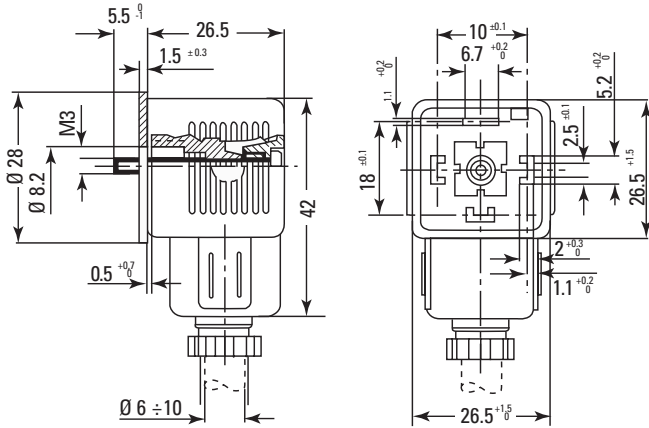
**CD21**



# V-Series Ruby Seat Solenoid Valves

## PART 2 – TECHNICAL INFORMATION – Connectors

### THREE PIN CONNECTOR DIN 43650 A



## SPECIFICATIONS

Connector DIN 43650	
Nominal Voltage	250 -/ 300V=
Max Switch Rating	16 A
Contact Resistance	≤4 m Ohm
Contact Width (Max)	1,5 mm <sup>2</sup>
Protection Class	IP65 - DIN 40050
Insulation Class	Gruppo C - VDE 0110
Gasket Material	NBR (-40°C + 90°C)
Cable Diameter	6 ÷ 8    8 ÷ 10
Gland Nut	PG 9 and PG 11

## PART 3 – INSTALLATION AND SERVICE

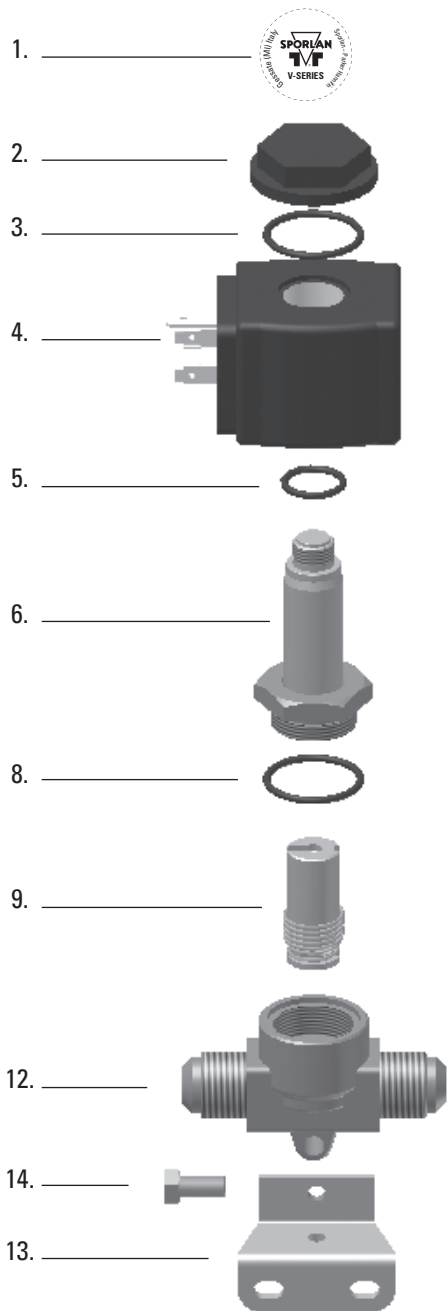
### INSTALLATION INSTRUCTIONS

To ensure the peak performance, solenoid valves must be selected and applied correctly, however, proper installation procedures are equally important. The following are essential points for correct installation:

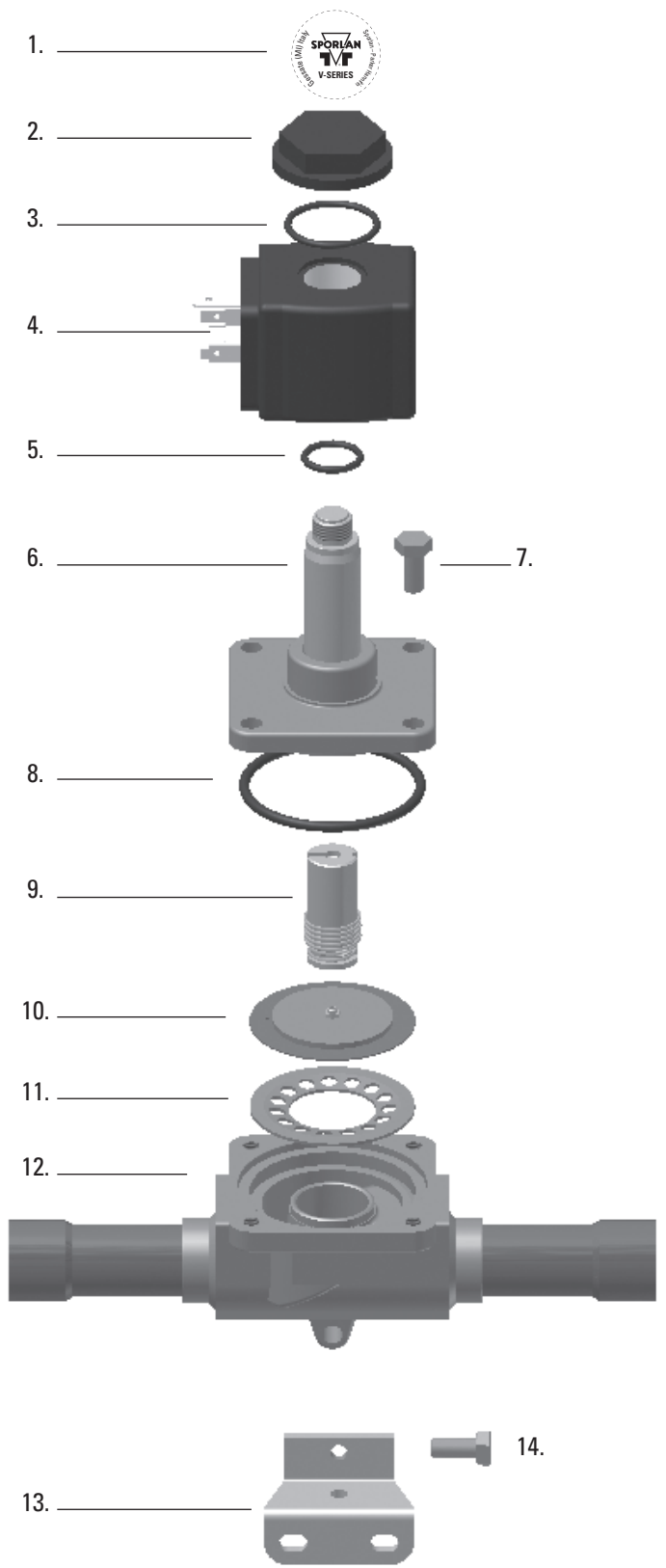
- The valves can be mounted in any position, except with the coil pointing downwards.
- The flow direction is indicated by an arrow on the valve body.
- The V-series valves with ODF solder connections can be installed on the system without disassembling thanks to extended ends copper tube. Nevertheless all necessary precautions, like use of a wet cloth and a solder with low melting point, should be taken to avoid excessive overheating. The flame should always be directed away from the valve body to prevent any damage to the diaphragm and O-ring gasket.
- Parker recommends that the valves should be protected by filters mounted upstream of the valve.
- To allow coil removal, 60 mm clearance is necessary.
- Mounting brackets are available on demand.

# V-Series Ruby Seat Solenoid Valves

## 2-WAY N.C. DIRECT CONTROL



## 2-WAY N.C. PILOT CONTROL



- 1. Label
- 2. Coil Nut
- 3. O-Ring
- 4. Coil
- 5. O-Ring
- 6. Enclosing Tube
- 7. Hexagon Top Screw
- 8. Gasket
- 9. Plunger
- 10. Diaphragm
- 11. Cap for Diaphragm
- 12. Body
- 13. Mounting Bracket
- 14. Screw

## V-Series Ruby Seat Solenoid Valves

### WIRING

Please check the electrical specifications of the coil to be sure they correspond to the available electrical service. Wiring and fusing must comply with the prevailing wiring codes and local legislation.

### SPARE PARTS

The following spare part kits are available for V-series valves:

Spare Part Kit	Valve Type	Parts Included
430360	V8	Diaphragm Plunger Enclosing Tube Gasket
430361	V10 & V13	Diaphragm Plunger Enclosing Tube Gasket
430362	V19 & V23	Diaphragm Plunger Enclosing Tube Gasket

We do not offer spare part kits for direct operated valves.

### PACKAGING INFORMATION

The valves bodies and the coils are delivered in separate boxes. The enclosing tube gasket and the coil nut are included with the valve body.

Approximate Shipping Weights			
Valve Type	Std. Master Carton Qty.	Shipping Weight (kg)	
		Individual Box	Master Carton
V3	20	0.25	5.00
V4	20	0.25	5.00
V8	10	0.30	3.00
V10	10	0.38	3.90
V13	10	0.41	4.30
V19	5	0.60	3.50
V23	5	0.75	3.90
RT-14*	10	0,16	1,68
YB-14	10	0,16	1,70
CD-21*	10	0,26	2,66

\* Coil only without PG DIN connector.



## V-Series Ruby Seat Solenoid Valves

### EXTRA INFORMATION

#### CROSS REFERENCE TABLE

New Ruby Seat Sporlan Series versus old Parker Series 112, 115, 142 & 145:

ODF Solder mm	
New Technology Models	Old Technology Models
V3SM6	VE 142.2 IRS / VE 112.2 ILS / VE112.2
V4SM6	VE 142.2 ARS / VE 112.2 ALS
V8SM10	VE 115.2 IRS / VE 115 ILS
V10SM10	VE 145.6 IRS
V13SM12	VE 145.6 ARS
V19SM16	VE 145.6 BRS
V23SM18	VE 145.6 CRS
V23SM22	VE 145.6 DRS
V23SM28	VE 145.6 ERS

ODF Solder Inch	
New Technology Models	Old Technology Models
V3S2	VE 142.2 IRSP / VE 112.2 ILSP
V4S2	VE 142.2 ARSP / VE 112.2 ALSP
V4S3	VE 112.2 BLSP
V8S3	VE 115.2 IRSP / VE 115.2 ILSP
V10S3	VE 145.6 IRSP
V13S4	VE 145.6 ARSP
V19S5	VE 145.6 BRSP
V23S6	VE 145.6 CRSP
V23S7	VE 145.6 DRSP
V23S9	VE 145.6 ERSP

SAE Flare	
New Technology Models	Old Technology Models
V3F2	VE 142 IR / VE 112 IL
V4F2	VE 142 BR
V4F3	VE 142 AR / VE 112 AL
V8F3	VE 115 IR / VE 115 IL
V10F3	VE 145.5 IR
V13F4	VE 145.5 AR
V19F5	VE 145.5 BR

## CLIMATE CONTROL

- Accumulators
- CO<sub>2</sub> controls
- Electronic controllers
- Filter-driers
- Hand shut-off valves
- Heat exchangers
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves



### AEROSPACE

- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes



### ELECTROMECHANICAL

- AC/DC drives & systems
- Electric actuators, gantry robots & slides
- Electrohydraulic actuation systems
- Electromechanical actuation systems
- Human machine interfaces
- Linear motors
- Stepper motors, servo motors, drives & controls
- Structural extrusions



### FILTRATION

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



### FLUID & GAS HANDLING

- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Quick disconnects
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters



### HYDRAULICS

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Quick disconnects
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters



### PNEUMATICS

- Air preparation
- Brass fittings & valves
- Manifolds
- Pneumatic actuators, grippers, valves, controls & accessories
- Quick disconnects
- Rotary actuators
- Rubber & thermoplastic hose & couplings
- Structural extrusions
- Thermoplastic tubing & fittings
- Vacuum generators, cups & sensors



### PROCESS CONTROL

- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds



### SEALING & SHIELDING

- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management