




For Inert Gas and Vacuum

SP-V CUPLA Type A

For vacuum

<p>Working pressure</p>  <p>3.0 to 7.5 MPa (31 to 76 kgf/cm²)</p>	<p>Valve structure</p>  <p>Two-way shut-off</p>	<p>Applicable fluids</p>  <p>Inert gas, Vacuum Gas Air Water</p>
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Automatic shut-off valves in both socket and plug for vacuum applications. Each can withstand a vacuum of as high as 1.3×10^{-1} Pa even when disconnected.

- Uses automatic shut-off valves with ultra-tight sealed construction in both socket and plug. Ideal for vacuum applications.
- Having automatic shut-off valves in both socket and plug facilitates easy fluid handling. Suitable for a wide range of vacuum applications as high as 1.3×10^{-1} Pa [1×10^{-3} mmHg] even when disconnected.
- Three types of seal material are available to suit any of the diversified production lines for air conditioners, refrigerators or similar.
- Can be connected with SP CUPLA Type A and SP-V CUPLA.



Double sealing structure Double sealing structure improves airtightness. (Size 1/4", 3/8")

Both socket and plug have unique vacuum resistant automatic shut-off valves inside. The valve prevents fluid spill out on disconnection, and also has excellent vacuum resistance even after disconnection.

Straight guide Unique straight guide stabilizes valve movement.

Specifications				
Body material	Brass (Standard material)		Stainless steel (Standard material)	Stainless steel (Made-to-order item)
Size (Thread)	1/4", 3/8"	1/2", 3/4"	1/4", 3/8"	1/2", 3/4"
Working pressure	MPa	5.0	3.0	7.5
	kgf/cm ²	51	31	76
	bar	50	30	75
	PSI	725	435	1090
Seal material	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR	-20°C to +80°C	Standard material
	Fluoro rubber	FKM	-20°C to +180°C	Standard material
	Hydrogenated nitrile rubber	HNBR *2	-20°C to +120°C	Standard material

*1: The operable temperature range depends on the operating conditions.

*2: HNBR which can be used for refrigeration oil and refrigerant applications such as HFC-134a is adopted.

*3: No grease is applied to the O-ring of the socket for HNBR seal material products when shipping.

Be sure to apply refrigerating machine oil before use.

Maximum Tightening Torque				Nm {kgf·cm}
Size (Thread)	1/4"	3/8"	1/2"	3/4"
Torque	Brass	9 {92}	12 {122}	30 {306}
	Stainless steel	14 {143}	22 {224}	60 {612}

Flow Direction

Fluid flow can be bi-directional when socket and plug are connected.

Interchangeability

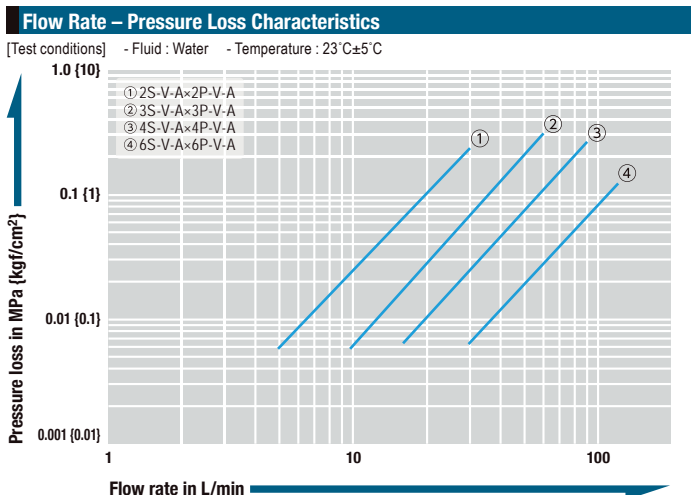
Socket and plug of different sizes cannot be connected. Interchangeable with SP CUPLA Type A, SP-V CUPLA and SP CUPLA of the same size but take heed of flow rate change.

Minimum Cross-Sectional Area				(mm ²)
Model	2S-V-Ax2P-V-A	3S-V-Ax3P-V-A	4S-V-Ax4P-V-A	6S-V-Ax6P-V-A
Minimum cross-sectional area	27	51	73	178

Suitability for Vacuum			1.3×10^{-1} Pa [1×10^{-3} mmHg]
Socket only	Plug only	When connected	
Operational	Operational	Operational	

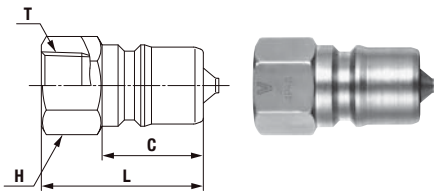
Admixture of Air on Connection				(mL)
Model	2S-V-Ax2P-V-A	3S-V-Ax3P-V-A	4S-V-Ax4P-V-A	6S-V-Ax6P-V-A
Volume of air admixture	1.1	2.7	3.9	11

Volume of Spillage per Disconnection				(mL)
Model	2S-V-Ax2P-V-A	3S-V-Ax3P-V-A	4S-V-Ax4P-V-A	6S-V-Ax6P-V-A
Volume of spillage	0.8	2.1	3.4	9.5



Models and Dimensions

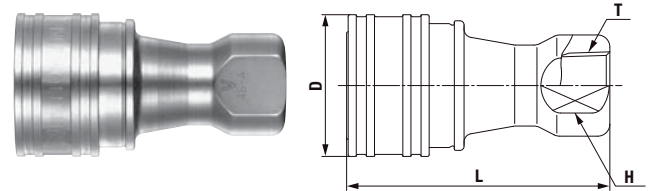
Plug Female thread



Model	Application (Thread)	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	C	H(WAF)	T
2P-V-A	R 1/4	37	32	36	22	Hex.17	Rc 1/4
3P-V-A	R 3/8	63	56	40	25	Hex.21	Rc 3/8
4P-V-A *	R 1/2	118	109	44	28	Hex.29	Rc 1/2
6P-V-A *	R 3/4	201	189	52	36	Hex.35	Rc 3/4

*4P-V-A, 6P-V-A, 4S-V-A and 6S-V-A in Stainless Steel material are made-to-order items.

Socket Female thread



Model	Application (Thread)	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H(WAF)	T
2S-V-A	R 1/4	130	129	58	28	19	Rc 1/4
3S-V-A	R 3/8	202	192	65	35	21	Rc 3/8
4S-V-A *	R 1/2	396	388	72	45	29	Rc 1/2
6S-V-A *	R 3/4	680	644	88	55	35	Rc 3/4

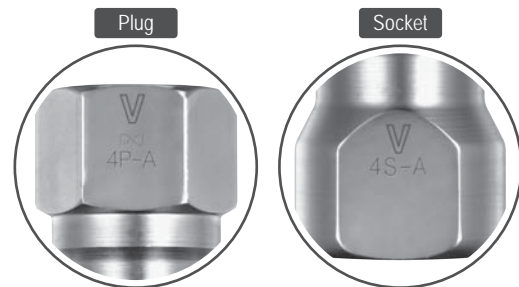
Seal materials for refrigerants

Various eco-friendly refrigerants for air conditioner and refrigerator have been developed. NITTO KOHKI, having invested years in the research and development of excellent seal materials to withstand refrigerants and refrigerant oils, has made early attempts to develop and manufacture the seal materials for these eco-friendly refrigerants.

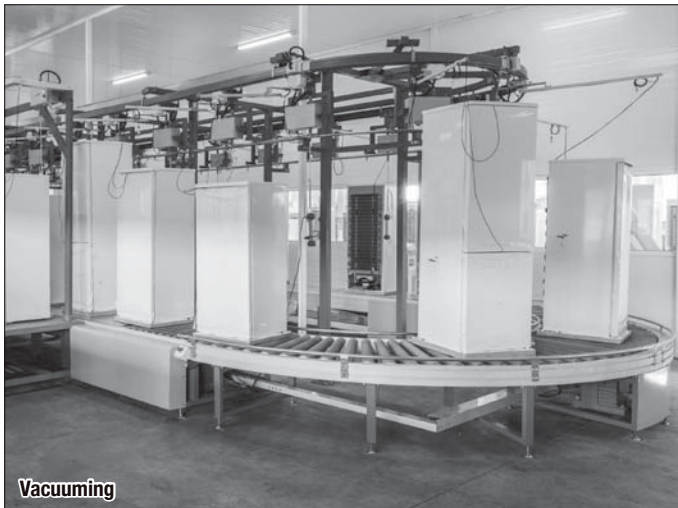
Seal material	Hydrogenated nitrile rubber	Chloroprene rubber
Mark	HNBR	CR
Features	Resistant to hydrofluorocarbons (HFC-134a, HFC-407C, HFC-410A, HFC-404A), and PAG type and ester type oils. Also resistant to heat up to 120°C	Excellent resistance to hydrofluorocarbons (HCFC-22 and HFC-134a)
Application	Refrigerator production lines Air conditioner production lines	Air conditioner production lines

How to distinguish from SP CUPLA Type A

The "V" mark is engraved on the flat part of the plug and the flat part of the socket to distinguish from SP CUPLA Type A.



Application Example



Vacuuming