

For Inert Gas and Vacuum

SP-V CUPLA

For vacuum

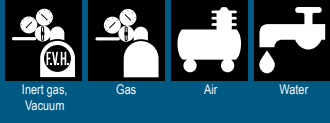
Working pressure



Valve structure

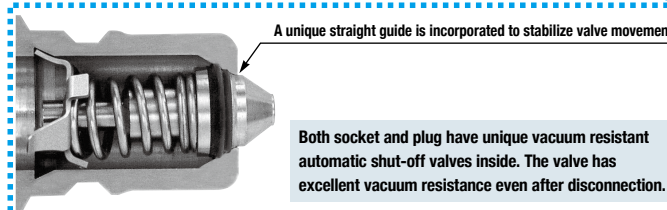
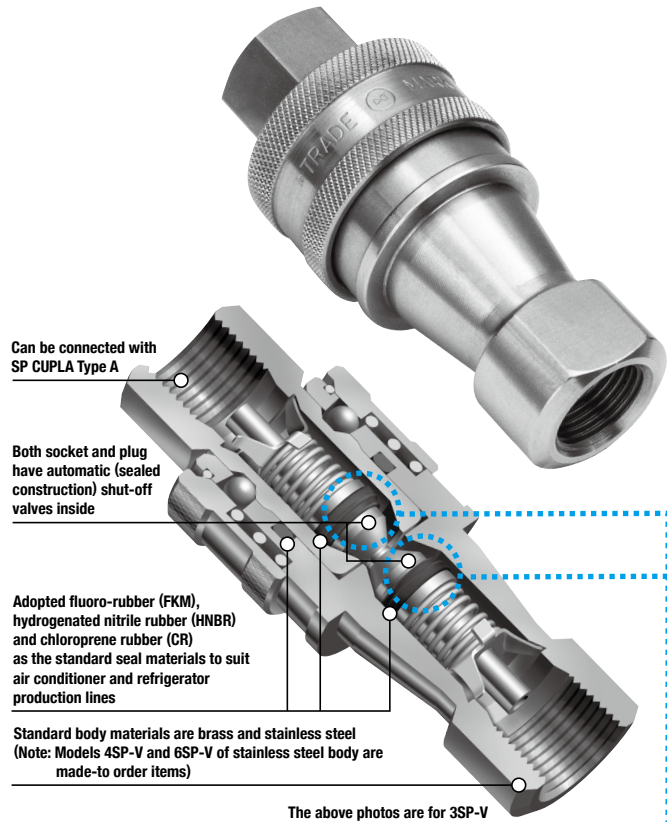


Applicable fluids



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.

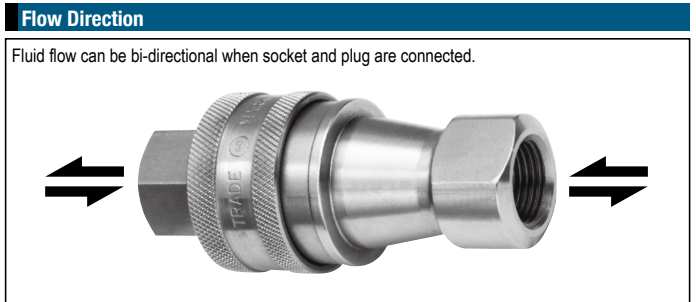
- Uses automatic shut-off valves with ultra-tight sealed construction in both socket and plug. Ideal for vacuum applications.
- Having automatic shut-off valves in both socket and plug facilitates easy fluid handling. Suitable for a wide range of vacuum applications as high as 1.3×10^{-1} Pa [1×10^{-3} 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.



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 4.5
	kgf/cm ²	51	31	76 46
	bar	50	30	75 45
	PSI	725	435	1090 653
Seal material Working temperature range	Seal material	Chloroprene rubber	Mark CR (C308)	Working temperature range -20°C to +80°C
		Fluoro rubber	FKM (X-100)	-20°C to +180°C
		Hydrogenated nitrile rubber	HNBR (H708)	-20°C to +120°C

* 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}	50 {510}
	Stainless steel	14 {143}	22 {224}	60 {612}	90 {918}

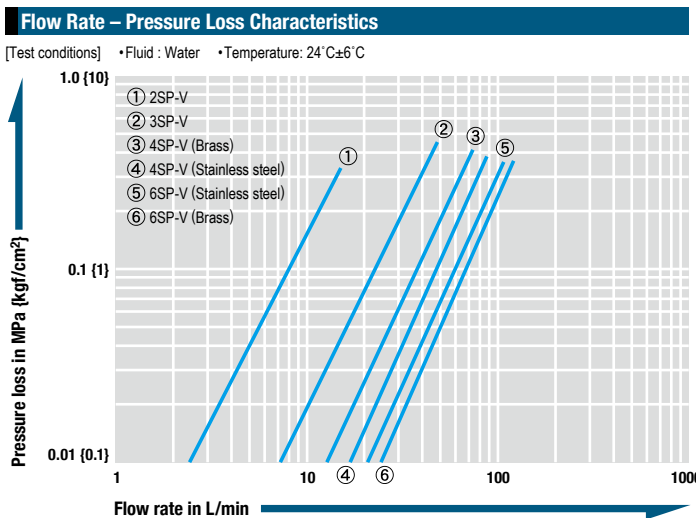


Interchangeability
Socket and plug of different sizes cannot be connected. Interchangeable with SP CUPLA Type A but take heed of flow rate change.

Minimum Cross-Sectional Area		(mm ²)			
Model		2SP-V	3SP-V	4SP-V	6SP-V
Minimum cross-sectional area		18	38	71	110

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		May vary depending upon the usage conditions. (mL)			
Model		2SP-V	3SP-V	4SP-V	6SP-V
Volume of air		1.0	2.4	3.2	10.5



Models and Dimensions

Plug Female thread

Model	Application (Thread)	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	H(WAF)	C	T
2P-V	R 1/4	39	34	36	Hex.17	22	Rc 1/4
3P-V	R 3/8	67	59	40	Hex.21	25	Rc 3/8
4P-V	R 1/2	123	118	44	Hex.29	28	Rc 1/2
6P-V	R 3/4	211	202	52	Hex.35	36	Rc 3/4

Socket Female thread

Model	Application (Thread)	Mass (g)		Dimensions (mm)			
		Brass	Stainless steel	L	øD	H(WAF)	T
2S-V	R 1/4	136	127	58	(28)	19	Rc 1/4
3S-V	R 3/8	217	197	65	(35)	21	Rc 3/8
4S-V	R 1/2	421	393	72	45	29	Rc 1/2
6S-V	R 3/4	709	658	88	55	35	Rc 3/4

* The sleeve shape of 4S-V and 6S-V differs from that of the above photo.

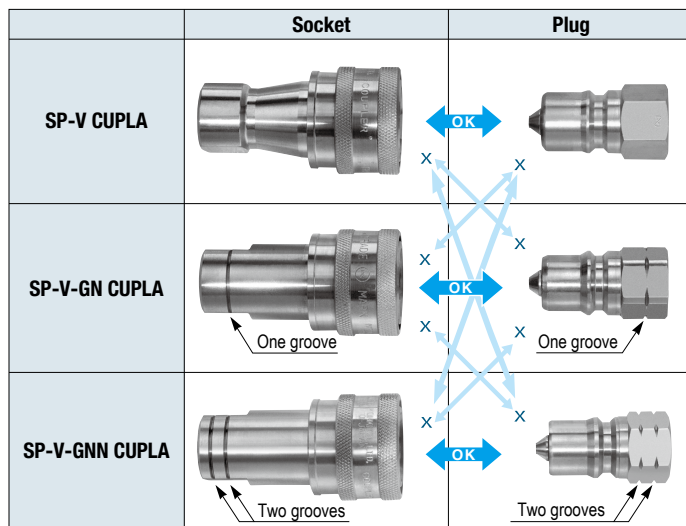
Seal Materials for Refrigerants

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 (H708)	CR (C308)
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

Comparison of External Appearance

When two different gases are used simultaneously in the production lines, SP-V-GN type and SP-V-GNN type (non-interchangeable with standard SP-V and each others) may be required in order to prevent connections to improper lines by mistakes. They are made-to-order items. For details please contact Nitto Kohki direct or its distributor in your country.



X indicates incompatibility.

Application Example

