

For Inert Gas and Vacuum

# SP-V Cupla

For vacuum

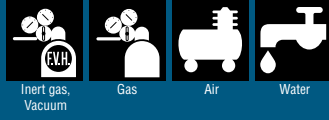
Working pressure



Valve structure

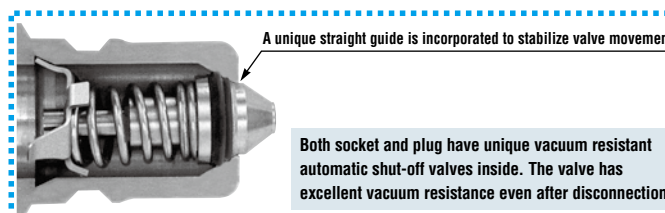
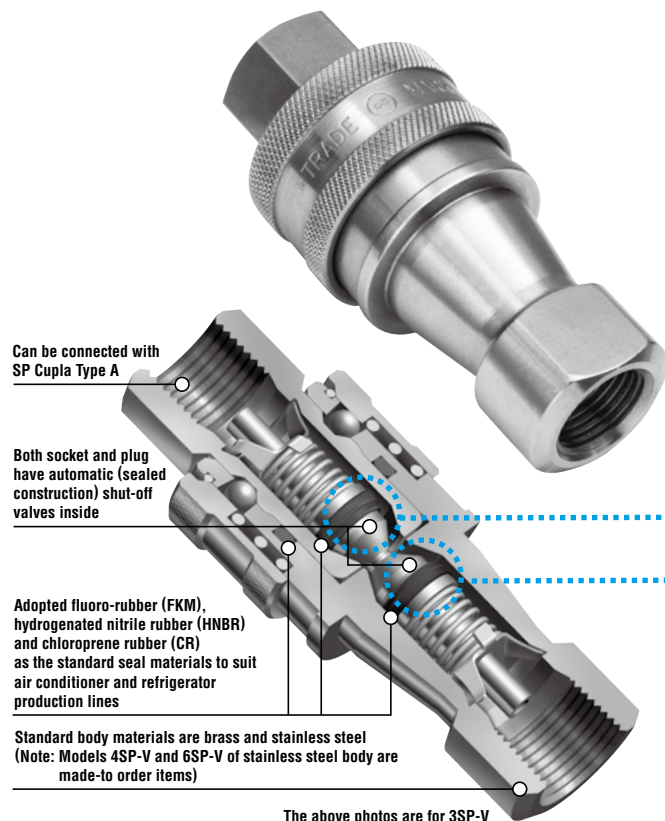


Applicable fluids



Automatic shut-off valves in both socket and plug for vacuum applications. Each can withstand a vacuum of as high as  $1.3 \times 10^{-1}$  Pa even when disconnected.

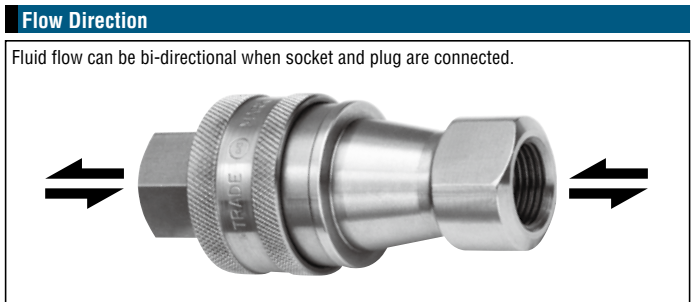
- Uses automatic shut-off valves with ultra-tight sealed construction in both socket and plug. Ideal for vacuum applications.
- Having automatic shut-off valves in both socket and plug facilitates easy fluid handling. Suitable for a wide range of vacuum applications as high as  $1.3 \times 10^{-1}$  Pa ( $1 \times 10^{-3}$  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
	kgf/cm <sup>2</sup>	51	31	76
	bar	50	30	75
	PSI	725	435	1090
Seal material	Seal material	Mark	Working temperature range	Remarks
	Chloroprene rubber	CR (C308)	-20°C to +80°C	Standard material
	Fluoro rubber	FKM (X-100)	-20°C to +180°C	Standard material
	Hydrogenated nitrile rubber	HNBR (H708)	-20°C to +120°C	Standard material

• No lubricant 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.

Max. 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}



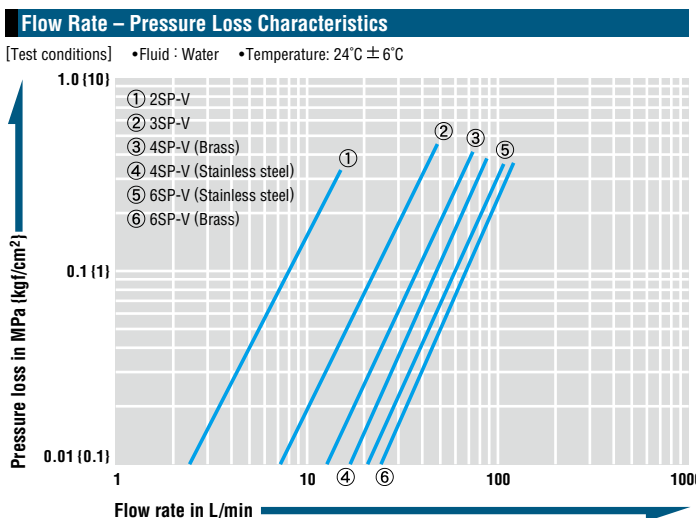
Interchangeability

Socket and plug with different sizes cannot be connected to each other. Interchangeable with SP Cupla Type A but take heed of flow rate reduction.

Min. Cross-Sectional Area	(mm <sup>2</sup> )			
Model	2SP-V	3SP-V	4SP-V	6SP-V
Min. cross-sectional area	18	38	71	110

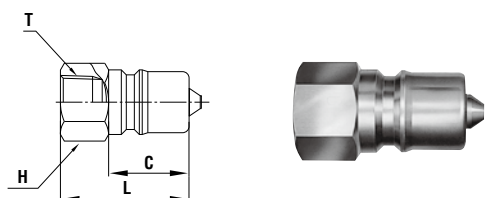
Suitability for Vacuum	$1.3 \times 10^{-1}$ Pa ( $1 \times 10^{-3}$ mmHg)		
Socket only	Plug only	When connected	
Operational	Operational	Operational	

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



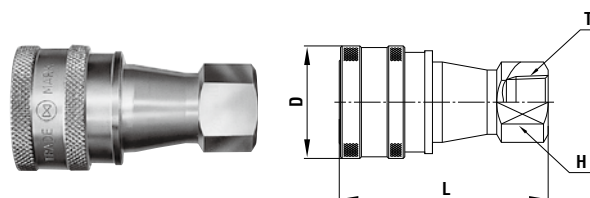
Models and Dimensions

**Plug** Female thread



Model	Application	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	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.

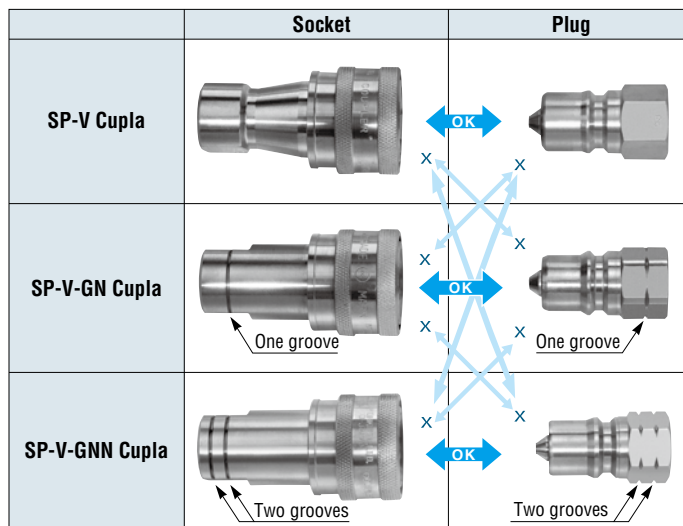
Seal Materials for Refrigerants

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

