

For Medium Pressure

# TSP Cupla

For medium pressure general applications

Working pressure

1.5-7.5

1.5-7.5MPa  
(15-76kgf/cm<sup>2</sup>)

Valve structure



Straight through

Applicable fluids for braided hose connection type depend upon the specifications of braided hoses to be used.

Applicable fluids



Water

Hydraulic oil

Chemicals

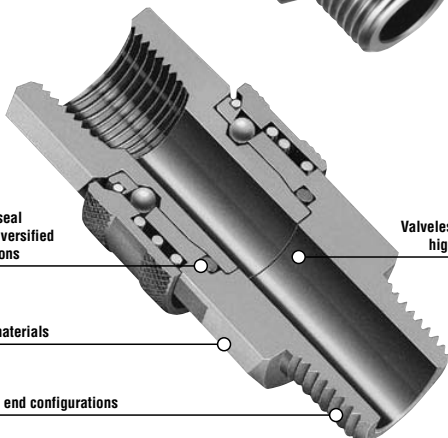
Air

Gas

**Valveless structure suits high viscosity fluids! Various body materials, sizes and end configurations. Braided hose connection types are newly added.**

- Valveless construction drastically saves pressure loss and achieves high flow rate.
- Suitable for high viscosity fluids (such as grease).
- Available in various standard body materials, sizes and end configurations to cope with diversified applications and operating situations.

Note: See the pages of Seal Material Selection Table at the end of this catalog for the suitability of seal materials to fluids.



Wide range of seal materials for diversified fluids applications

Valveless structure suits high viscosity fluids

Various body materials

Wide variety of end configurations

## Specifications

Body material	Brass				Stainless steel•Steel (Nickel-plated)			
Size	1/8" • 1/4" 3/8" • 1/2"	3/4" 1"	1 1/4" 1 1/2"	2"	1/8" • 1/4" 3/8" • 1/2"	3/4" 1"	1 1/4" 1 1/2"	2"
Working pressure MPa (kgf/cm <sup>2</sup> )	5.0 (51)	3.0 (31)	2.0 (20)	1.5 (15)	7.5 (76)	4.5 (46)	3.0 (31)	2.0 (20)
Pressure resistance MPa (kgf/cm <sup>2</sup> )	7.5 (76)	4.5 (46)	3.0 (31)	2.3 (24)	10.0 (102)	6.5 (66)	4.5 (46)	3.0 (31)
Seal material	Seal material		Mark		Working temperature range		Remarks	
	Nitrile rubber		NBR (SG)		-20°C~+80°C		Standard material	
	Fluoro rubber		FKM (X-100)		-20°C~+180°C			
Ethylene-propylene rubber		EPDM (EPT)		-40°C~+150°C				

• Standard stainless steel SUS316 is available as semi-standard body materials.

• Working pressure and working temperature range depend upon the specifications of braided hoses to be used.

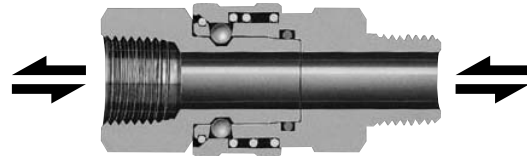
## Max. Tightening Torque

N•m (kgf•cm)

Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"		
Torque	Steel		9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)	500 (5100)
	Brass		5 (51)	9 (92)	12 (122)	30 (306)	50 (510)	65 (663)	150 (1530)	160 (1632)	260 (2652)
	Stainless steel		9 (92)	14 (143)	22 (224)	60 (612)	90 (918)	120 (1224)	260 (2652)	280 (2856)	500 (5100)

## Flow Direction

Fluid may flow in either direction from plug or from socket side when coupled.



## Interchangeability

If the first digit of model number of socket is the same as that of plug, they can be connected regardless of the end configurations.

## Min. Cross-Sectional Area

(mm<sup>2</sup>)

Model	1TSP (1/8")	2TSP (1/4")	3TSP (3/8")	4TSP (1/2")	6TSP (3/4")	8TSP (1")	10TSP (1 1/4")	12TSP (1 1/2")	16TSP (2")
End configurations									
H type (Hose barb)	7 (ø 3)	19.6 (ø 5)	38 (ø 7)	78.5 (ø 10)	176 (ø 15)	283 (ø 19)	530 (ø 26)	804 (ø 32)	1256 (ø 40)
M type / F type (Male thread / Female thread)	15.9 (ø 4.5)	33 (ø 6.5)	78.5 (ø 10)	132 (ø 13)	226 (ø 17)	452 (ø 24)	804 (ø 32)	1134 (ø 38)	1885 (ø 49)
Model	3TSPN-90		4TSPN-120		4TSPN-150		6TSPN-190		
End configurations									
N type (For braided hose connection)	56.7 (ø 8.5)		95.0 (ø 11)		132 (ø 13)		226 (ø 17)		

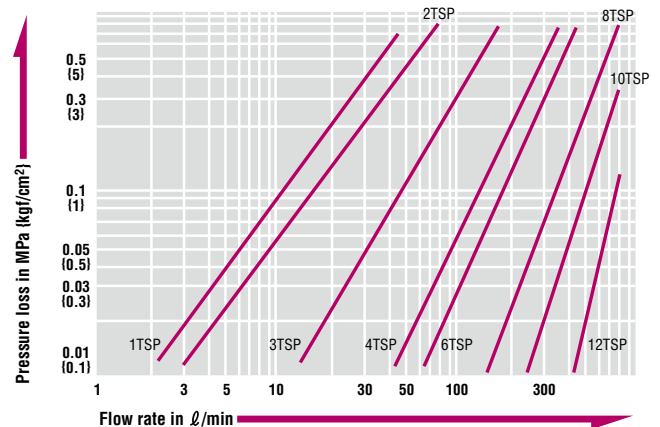
## Suitability for Vacuum

1.3 x 10<sup>-1</sup>Pa (1 x 10<sup>-3</sup>mmHg)

Socket only	Plug only	When connected
—	—	Operational

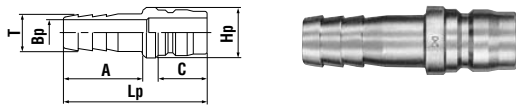
## Flow Rate – Pressure Loss Characteristics

[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ± 10°C  
•Fluid viscosity : 32 x 10<sup>-6</sup>m<sup>2</sup>/s •Density : 0.87 x 10<sup>3</sup>kg/m<sup>3</sup>



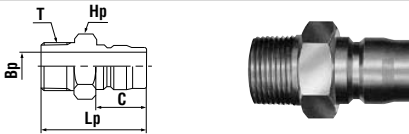
Models and Dimensions

**Plug** TPH type (Hose barb)



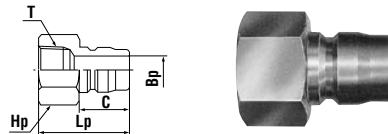
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	øHp	A	C	øT	øBp
1TPH	1/8"	12 +1	13	12	41	12	20	15.5	6.5	3
2TPH	1/4"	21	23	21	53	14	29	18	8	5
3TPH	3/8"	38	41	38	60	18	32	21	11	7
4TPH	1/2"	71	77	71	70	22	39	24	15	10
6TPH	3/4"	134	146	135	84	28	48	28	21	15
8TPH	1"	327	356	329	105	40	57	36	27	19
10TPH	1 1/4"	495	530	500	121	48	70	39	34.5	26
12TPH	1 1/2"	665	715	660	132	55	75	45	41	32
16TPH	2"	1330	1430	1345	142	70	80	51	54	40

**Plug** TPM type (Male thread)



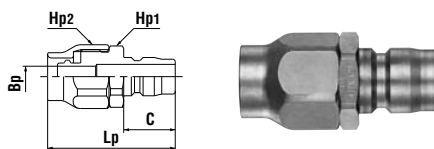
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	C	T	øBp
1TPM	Rc 1/8	16 +1	17	17	32	Hex.12	15.5	R 1/8	4.5
2TPM	Rc 1/4	30	33	30	38	Hex.17	18	R 1/4	6.5
3TPM	Rc 3/8	38	42	38	43	Hex.17	21	R 3/8	10
4TPM	Rc 1/2	81	88	81	52	Hex.22	24	R 1/2	13
6TPM	Rc 3/4	164	179	165	59	Hex.32	28	R 3/4	17
8TPM	Rc 1	273	297	274	73	Hex.41	36	R 1	25
10TPM	Rc1 1/4	520	560	530	83	Hex.50	39	R1 1/4	32
12TPM	Rc1 1/2	655	705	665	93	Hex.54 +2	45	R1 1/2	38
16TPM	Rc 2	1240	1345	1250	102	75 x ø80	51	R 2	50

**Plug** TPF type (Female thread)



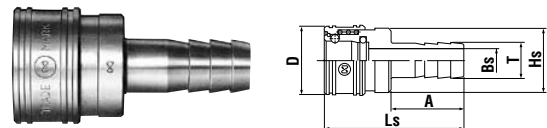
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	C	T	øBp
1TPF	R 1/8	14 +1	15	14	26	Hex.14	15.5	Rc 1/8	4.5
2TPF	R 1/4	28	31	29	34	Hex.17	18	Rc 1/4	6.5
3TPF	R 3/8	43	47	43	38	Hex.21	21	Rc 3/8	10
4TPF	R 1/2	103	113	104	45	Hex.29	24	Rc 1/2	13
6TPF	R 3/4	166	181	167	51	Hex.35	28	Rc 3/4	17
8TPF	R 1	321	350	323	60	Hex.41	36	Rc 1	26
10TPF	R1 1/4	567	615	573	64	Hex.54 +3	39	Rc1 1/4	32
12TPF	R1 1/2	703	763	630	75	Hex.58 +4	45	Rc1 1/2	38
16TPF	R 2	1226	1374	1190	83	77 x ø82	51	Rc 2	50

**Plug** TPN type (For braided hose connection)



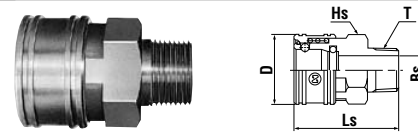
Model	Application (Hose)		Mass (g)	Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)		Lp	Hp1(WAF)	Hp2(WAF)	C	øBp
3TPN-90	ø9 x ø15	3±0.3	93	52	Hex.23	Hex.24	21	8.5
4TPN-120	ø12 x ø18		140	60	Hex.27	Hex.27	24	11
4TPN-150	ø15 x ø22	3.5±0.35	182	68	Hex.30	Hex.30	24	13
6TPN-190	ø19 x ø26		261	76	Hex.35	Hex.35	28	17

**Socket** TSH type (Hose barb)



Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	øBs	A	øT	øBs
1TSH	1/8"	24 +1	26	24	40	17.5	16	20	6.5	3
2TSH	1/4"	63	69	64	55	24	22	29	8	5
3TSH	3/8"	95	104	96	62	28	25	32	11	7
4TSH	1/2"	176	192	177	74	35	32	39	15	10
6TSH	3/4"	348	379	350	90	45	40	48	21	15
8TSH	1"	586	685	633	102	58	52	57	27	19
10TSH	1 1/4"	1330	1385	1335	117	69	64	70	34.5	26
12TSH	1 1/2"	1755	1860	1780	128	75	70	75	41	32
16TSH	2"	2820	3040	2825	141	98	90	80	54	40

**Socket** TSM type (Male thread)



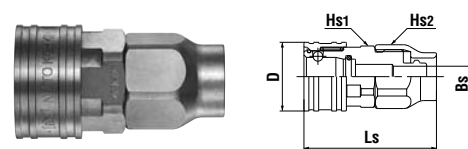
Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	T	øBs
1TSM	Rc 1/8	25 +1	27	26	30	17.5	Hex.14	R 1/8	4.5
2TSM	Rc 1/4	66	72	67	42	24	Hex.19	R 1/4	6.5
3TSM	Rc 3/8	99	108	100	46	28	Hex.23	R 3/8	10
4TSM	Rc 1/2	178	194	179	56	35	Hex.29	R 1/2	13
6TSM	Rc 3/4	343	374	346	65	45	Hex.38	R 3/4	18
8TSM	Rc 1	629	685	633	76	58	Hex.50	R 1	24
10TSM	Rc1 1/4	950	1025	955	86	69	54 x ø64	R1 1/4	32
12TSM	Rc1 1/2	1160	1245	1180	95	75	58 x ø70	R1 1/2	38
16TSM	Rc 2	1990	2110	2000	108	98	77 x ø82	R 2	49

**Socket** TSF type (Female thread)



Model	Application	Mass (g)			Dimensions (mm)			
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	T
1TSF	R 1/8	25 +1	27	25	27	17.5	Hex.14	Rc 1/8
2TSF	R 1/4	57	62	57	32	24	Hex.19	Rc 1/4
3TSF	R 3/8	83	90	83	35	28	Hex.23	Rc 3/8
4TSF	R 1/2	153	167	154	42	35	Hex.29	Rc 1/2
6TSF	R 3/4	288	314	289	48	45	Hex.38	Rc 3/4
8TSF	R 1	557	607	561	59	58	Hex.50	Rc 1
10TSF	R1 1/4	821	888	815	64	69	54 x ø64	Rc1 1/4
12TSF	R1 1/2	1003	1064	980	71	75	58 x ø70	Rc1 1/2
16TSF	R 2	1726	1865	1675	80	98	77 x ø82	Rc 2

**Socket** TSN type (For braided hose connection)



Model	Application (Hose)		Mass (g)	Dimensions (mm)				
	Size (mm)	Hose wall thickness (mm)		Ls	øD	Hs1(WAF)	Hs2(WAF)	øBs
3TSN-90	ø9 x ø15	3±0.3	139	54	28	Hex.23	Hex.24	8.5
4TSN-120	ø12 x ø18		222	62	35	Hex.29	Hex.27	11
4TSN-150	ø15 x ø22	3.5±0.35	255	70.5	35	Hex.30	Hex.30	13
6TSN-190	ø19 x ø26		435	81	45	Hex.38	Hex.35	17

\*1 : 1TSP steel are made-to-order items. \*2 : Stainless steel: 54 x 60mm dia. \*3 : Stainless steel: 54 x 59mm dia. \*4 : Stainless steel: 58 x 65mm dia.