For Gases and Liquids

TSP Cupla

For medium pressure general applications

Working pressure

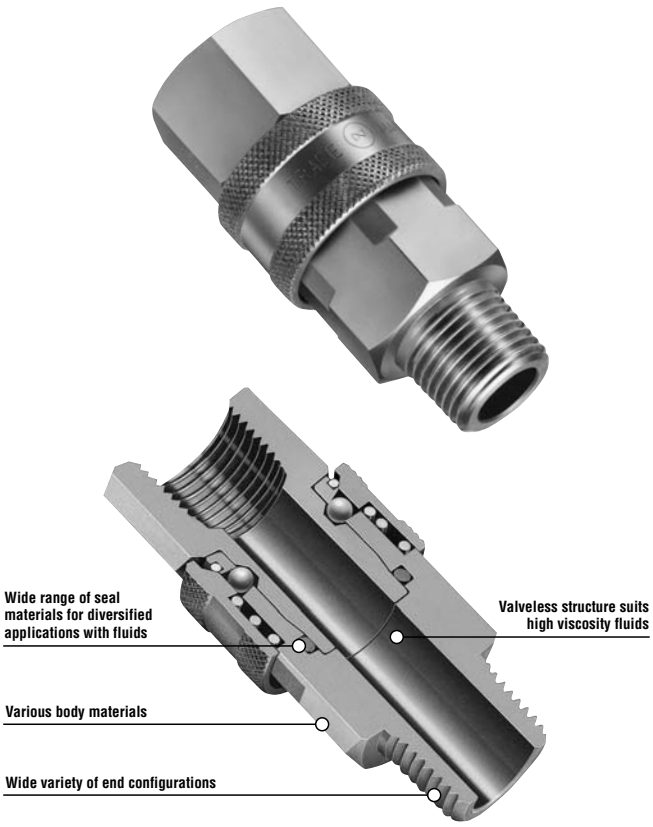
1.5~7.5MPa
{15~76kgf/cm²}

Valve structure

Straight through

Applicable fluids

Water | Hydraulic oil | Steam | chemicals | Air | gas



Valveless structure suits high viscosity fluids! Various body materials, sizes and end configurations.

- 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.

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/cm²}	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/cm²}	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 Working temperature range	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	
	Perfluoroelastomer	P	0°C~+50°C	Available on request
	Ethylene-propylene rubber	EPDM (EPT)	−40°C~+150°C	

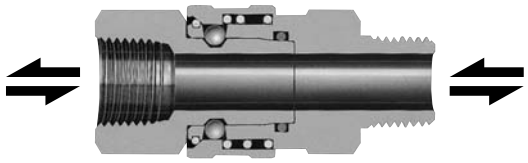
• Standard stainless steel SUS304 and SUS316 are available as semi-standard body materials.

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}	150 {1530}	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

Same size sockets and plugs are interchangeable regardless of end configurations.

Min. Cross-Sectional Area (mm²)

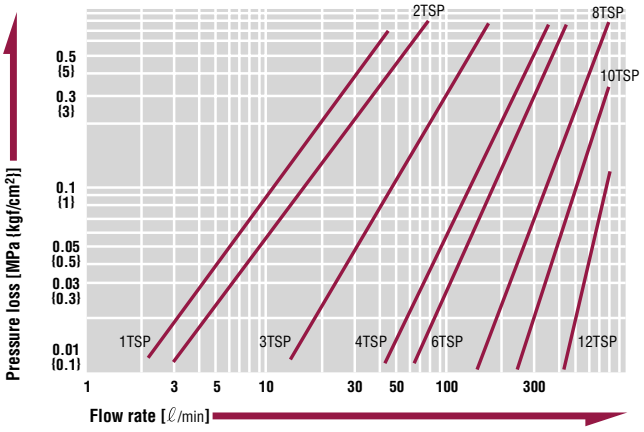
Model / End configurations	1TSP (1/8")	2TSP (1/4")	3TSP (3/8")	4TSP (1/2")	6TSP (3/4")	8TSP (1")	10TSP (1 1/4")	12TSP (1 1/2")	16TSP (2")
H type (Hose barb)	7 (ø 3)	19.6 (ø 5)	38 (ø 7)	78.5 (ø 10)	176 (ø 15)	283 (ø 19)	530 (ø 26)	804 (ø 32)	1256 (ø 40)
M type / F type (Male thread / Female thread)	15.9 (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)

Suitability for Vacuum 1.3 x 10⁻¹Pa {1 x 10⁻³mmHg}

Socket only	Plug only	When connected
—	—	Operational

Flow Rate – Pressure Loss Characteristics

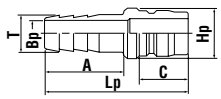
[Test conditions] •Fluid : Hydraulic oil •Temperature : 30°C ±10°C
•Fluid viscosity : 32 x 10⁻⁶m²/s •Density : 0.87 x 10³kg/m³



Models and Dimensions

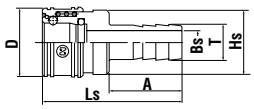
WAF : WAF stands for width across flats.

Plug TPH type (Hose barb)



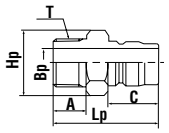
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	øHp	A	C	øT	øBp
1TPH	1/8"	12 *1	13	15	41	12	20	15.5	6.5	3
2TPH	1/4"	21	23	21	53	14	29	18	8	5
3TPH	3/8"	38	41	38	60	18	32	21	11	7
4TPH	1/2"	71	77	71	70	22	39	24	15	10
6TPH	3/4"	134	146	135	84	28	48	28	21	15
8TPH	1"	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

Socket TSH type (Hose barb)



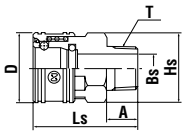
Model	Application (Hose)	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	øHs	A	øT	øBs
1TSH	1/8"	24 *1	26	24	40	17.5	16	20	6.5	3
2TSH	1/4"	63	69	64	55	24	22	29	8	5
3TSH	3/8"	95	104	96	62	28	25	32	11	7
4TSH	1/2"	176	192	177	74	35	32	39	15	10
6TSH	3/4"	348	379	350	90	45	40	48	21	15
8TSH	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

Plug TPM type (Male thread)



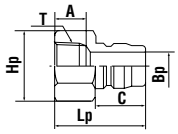
Model	Application	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBp
1TPM	Rc 1/8	16 *1	17	17	32	Hex.12	9	15.5	R 1/8	4.5
2TPM	Rc 1/4	30	33	30	38	Hex.17	13	18	R 1/4	6.5
3TPM	Rc 3/8	38	42	38	43	Hex.17	13	21	R 3/8	10
4TPM	Rc 1/2	81	88	81	52	Hex.22	17	24	R 1/2	13
6TPM	Rc 3/4	164	179	165	59	Hex.32	19	28	R 3/4	17
8TPM	Rc 1	273	297	274	73	Hex.41	22	36	R 1	25
10TPM	Rc1 1/4	520	560	530	83	Hex.50	23	39	R1 1/4	32
12TPM	Rc1 1/2	655	705	665	93	Hex.54 *2	26	45	R1 1/2	38
16TPM	Rc 2	1240	1345	1250	102	Two flats 75 x ø80	27	51	R 2	50

Socket TSM type (Male thread)



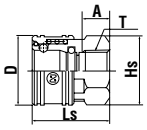
Model	Application	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T	øBs
1TSM	Rc 1/8	25 *1	27	26	30	17.5	Hex.14	9	R 1/8	4.5
2TSM	Rc 1/4	66	72	67	42	24	Hex.19	13	R 1/4	6.5
3TSM	Rc 3/8	99	108	100	46	28	Hex.23	13	R 3/8	10
4TSM	Rc 1/2	178	194	179	56	35	Hex.29	17	R 1/2	13
6TSM	Rc 3/4	343	374	346	65	45	Hex.38	19	R 3/4	18
8TSM	Rc 1	629	685	633	76	58	Hex.50	22	R 1	24
10TSM	Rc1 1/4	950	1025	955	86	69	Two flats 54 x ø64	25	R1 1/4	32
12TSM	Rc1 1/2	1160	1245	1180	95	75	Two flats 58 x ø70	25	R1 1/2	38
16TSM	Rc 2	1990	2110	2000	108	98	Two flats 77 x ø82	29	R 2	49

Plug TPF type (Female thread)



Model	Application	Mass (g)			Dimensions (mm)					
		Steel	Brass	Stainless steel	Lp	Hp(WAF)	A	C	T	øBp
1TPF	R 1/8	14 *1	15	14	26	Hex.14	9	15.5	Rc 1/8	4.5
2TPF	R 1/4	28	31	29	34	Hex.17	13	18	Rc 1/4	6.5
3TPF	R 3/8	43	47	43	38	Hex.21	13	21	Rc 3/8	10
4TPF	R 1/2	103	113	104	45	Hex.29	17	24	Rc 1/2	13
6TPF	R 3/4	166	181	167	51	Hex.35	19	28	Rc 3/4	17
8TPF	R 1	321	350	323	60	Hex.41	22	36	Rc 1	26
10TPF	R1 1/4	567	615	573	64	Hex.54 *3	25	39	Rc1 1/4	32
12TPF	R1 1/2	703	763	630	75	Hex.58 *4	25	45	Rc1 1/2	38
16TPF	R 2	1226	1374	1190	83	Two flats 77 x ø82	29	51	Rc 2	50

Socket TSF type (Female thread)

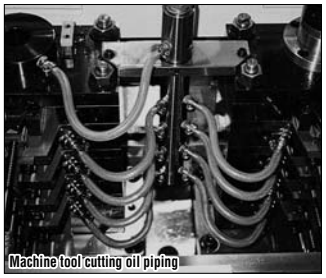


Model	Application	Mass (g)			Dimensions (mm)				
		Steel	Brass	Stainless steel	Ls	øD	Hs(WAF)	A	T
1TSF	R 1/8	25 *1	27	25	27	17.5	Hex.14	9	Rc 1/8
2TSF	R 1/4	57	62	57	32	24	Hex.19	13	Rc 1/4
3TSF	R 3/8	83	90	83	35	28	Hex.23	13	Rc 3/8
4TSF	R 1/2	153	167	154	42	35	Hex.29	17	Rc 1/2
6TSF	R 3/4	288	314	289	48	45	Hex.38	19	Rc 3/4
8TSF	R 1	557	607	561	59	58	Hex.50	22	Rc 1
10TSF	R1 1/4	821	888	815	64	69	Two flats 54 x ø64	23	Rc1 1/4
12TSF	R1 1/2	1003	1064	980	71	75	Two flats 58 x ø70	23	Rc1 1/2
16TSF	R 2	1726	1865	1675	80	98	Two flats 77 x ø82	27	Rc 2

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

• Semi-standard stainless steels (SUS304, 316) have different appearances from the above drawings.

Application example


Machine tool cutting oil piping


Car wash

Before use, please be sure to read "Safety Guide" described at the end of this book and "Instruction Sheet" that comes with the products.