



QUICK COUPLINGS



NAGAHORI INDUSTRY CO.,LTD.

vol.9





QUICK[®] COUPLINGS

vol.9



User safety guide

Improper use of couplings may cause serious injury, so please read the following instructions for your safety. If you have any questions, please make contact with us.

Do not use couplings for applications other than fluid connection.

Do not connect and disconnect couplings under pressure as well as under residual pressure.

Do not rotate couplings as swivel joint. The wrong usages damage the parts and sealings, and then may cause leakage and breakage.

Do not use for fluids other than suitable fluids.

The wrong fluids cause expansion, hardening or wear of the parts, and then may cause leakage and breakage.

Do not use over or under applicable temperature.

The wrong temperature damages the parts of resin or rubber, and then may cause leakage.

Do not exceed the working pressure.

The exceeded pressure makes the fatigue of the parts, and then may cause leakage and breakage.

Please make sure the connection : not only sockets and plugs, but hoses and tubes.

Incomplete connection may cause leakage and unintentional disconnection.

Please tighten the thread at the standard torque.

The wrong torque damages the thread.

Please protect couplings from impact if any impacts happen.

The impact may cause breakage of the parts and the body.

Do not use couplings where metal dust or sand occur.

In this circumstance the parts wear early, and then it may cause leakage and unintentional disconnection.

Please use dust cover on a socket and a plug when disconnected.

The dust cover is recommendable even if couplings are left in the piping.

Do not stick dust on the parts of connection.

The dust damages packing and sealings, and then it may cause leakage.

Do not touch couplings in operation.

The remaining pressure causes a burn on the hand in use of high temperature. It may cause unlocking of the couplings.

Please depressurize the piping before disconnecting a socket and a plug.

The disconnection without depressurization surely causes dangerous outflow of the fluid.

Do not hit the valve of couplings for the depressurization.

It causes malfunction by breakage of the parts of valve, and then may bring serious accidents to the operators.

Do not hit, pull or bent couplings.

It causes the breakage or the transformation, and then may bring the malfunction or the leakage.

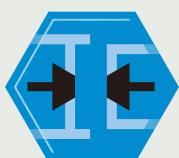
Do not dismantle couplings.

Dismantling and incomplete assembling may cause breakage and leakage.

Specifications, dimensions, figures are subject to change without notice. We may discontinue the manufacture of any products.

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The contents are written as of April 2024.



Twin valve



Nitrile rubber



Single valve



Fluoro rubber



Valveless



Neoprene



Water



Air



Oil



Gas



Steel



Stainless steel (SUS304)



Brass



Special steel

AL TYPE 20 1—5

AL TYPE 40 6—9

AT TYPE 10—12

Multi-Connection 13—14

AL TYPE 10 15—17

TL TYPE 18—22

NS TYPE 23—25

SPE TYPE 26—28

S・P TYPE 29—31

S・P-V TYPE 32—34

HP TYPE 35—37

SH TYPE 38—40

KC TYPE 41—43

Dust cover 44

CH TYPE 45—46

Special couplings 47

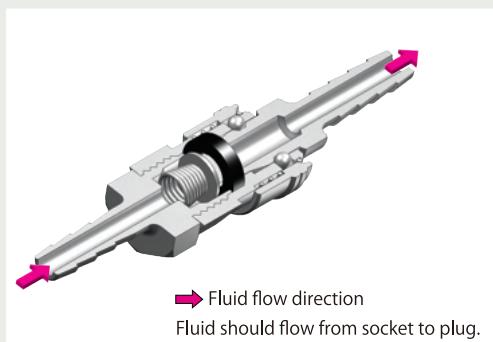
Inquiry form 48

AL TYPE20

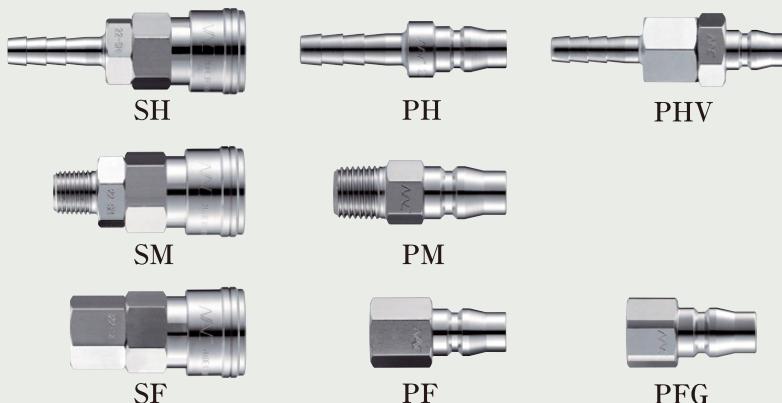
Low pressure
Single valve



Most popularly used model
Particularly useful for factory
air piping and air tool



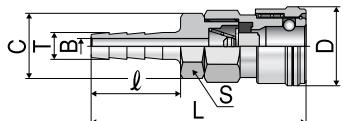
STEEL(Chrome-plated)



STEEL(Chrome-plated)

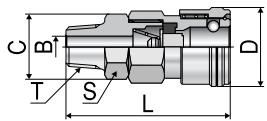
SOCKET

SH(Hose nipple)

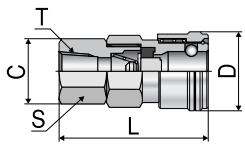


Model	Hose size	Dimensions(mm)						Weight (g)	
		L	phiD	S	C	l	phiB	phiT	
CAL21SH	1/8"	72.5	26.5	19	21.5	30	4.5	7.5	99
CAL22SH	1/4"	72.5	26.5	19	21.5	30	5	9	102
CAL23SH	3/8"	76.5	26.5	19	21.5	34	7.5	11.3	105
CAL24SH	1/2"	78.5	26.5	19	21.5	36	9	15	117

SM (Male thread)

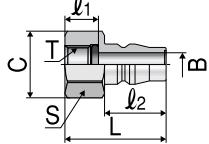


SF (Female thread)



PLUG

PFG (Parallel female thread for pipe)



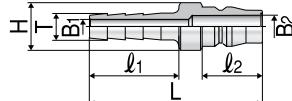
• Inside O-ring is effective for sealing.

* Please read "User safty guide" before operation.

* Attention to products marked "★". They are not
always in stock. Check the delivery time when ordering.

PLUG

PH (Hose nipple)



Model	Hose size	Dimensions(mm)						Weight (g)	
		L	phiH	l1	l2	phiT	phiB1	phiB2	
CAL21PH	1/8"	58	16	30	20	7.5	4.5	7.5	26
CAL22PH	1/4"	58	16	30	20	9	5	7.5	30
CAL23PH	3/8"	62	16	34	20	11.3	7.5	7.5	33
CAL24PH	1/2"	64	20	36	20	15	7.5	7.5	60

PM (Male thread)

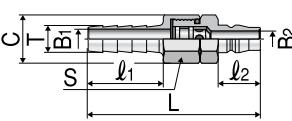
Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	phiB1	phiB2	
CAL21PM	R 1/8"	39	14	16	20	4	7.5	24
CAL22PM	R 1/4"	42	14	16	20	7.5	7.5	26
CAL23PM	R 3/8"	43	19	21.5	20	7.5	7.5	44
CAL24PM	R 1/2"	46	22	25	20	12	7.5	60

PF (Female thread)

Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	phiB1	phiB2	
CAL21PF	Rc 1/8"	33	14	16	20	7.5	22	
CAL22PF	Rc 1/4"	37	17	19.5	20	7.5	30	
CAL23PF	Rc 3/8"	38	21	24	20	7.5	40	
CAL24PF	Rc 1/2"	39	29	33.5	20	7.5	81	

Safety plug PHV

(Hose nipple)

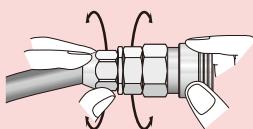


Model	Hose size	Dimensions(mm)						Weight (g)		
		L	S	C	l1	l2	phiT	phiB1	phiB2	
★ CAL22PHV	1/4"	77	21	24	30	20	9	5	7.5	77
★ CAL23PHV	3/8"	81	21	24	34	20	11.3	7.5	7.5	80
★ CAL24PHV	1/2"	83	21	24	36	20	15	9	7.5	95

• Purge mechanism largely eliminates unpleasant noise and reaction of hose when disconnection.

Polyurethane tube connection without tube clamps

- The specifications are the same as AL type20.
- The body material is steel with chrome plated.
- Plugs are interchangeable with AL type20 sockets.

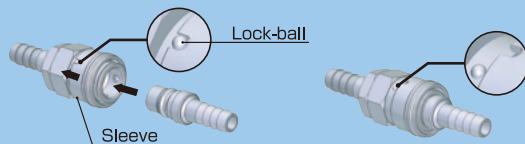


Rotary mechanism

Rotary mechanism is designed to revolve freely and to avoid the twist in tube.

Lock mechanism prevents unexpected disconnection of socket and plug!

Lock mechanism



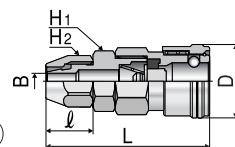
Pull the sleeve, and connect with plug.

When the lock-ball is out of ditch by turning the sleeve, the socket and plug are completely connected.

STEEL (Chrome-plated)

SOCKET

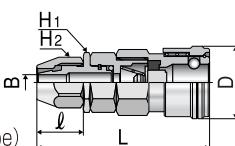
SA・SB (Polyurethane tube connection)



Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
CAL21SA	8x5	57.5	26.5	19	14	15	4	105
CAL22SA	9x6	59.5	26.5	19	17	17	4.8	112
CAL22SB	10x6.5	59.5	26.5	19	17	17	5.3	112
CAL23SA	12x8	62.5	26.5	19	19	20	7	120
CAL23SB	12.5x8.5	61.5	26.5	19	19	19	7	120
CAL24SA	16x11	66.5	26.5	23	24	25	10	162

SAR・SBR

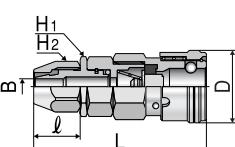
(Polyurethane tube connection & Rotary type)



Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
★ CAL22SBR	10x6.5	64	26.5	19	17	17	5.3	122
★ CAL23SAR	12x8	67	26.5	19	19	20	7	130

SARL・SBRL

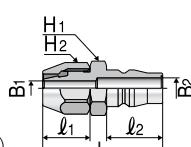
(Polyurethane tube connection & Rotary, Lock type)



Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
★ CAL22SBRL	10x6.5	64	26.5	19	17	17	5.3	122
★ CAL23SARL	12x8	67	26.5	19	19	20	7	130

PLUG

PA・PB (Polyurethane tube connection)



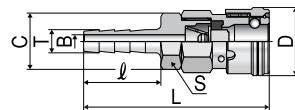
Model	Hose size	Dimensions(mm)						Weight (g)	
		φO.D. X φI.D.	L	φD	H1	H2	l	φB	
CAL21PA	8x5	41.2	14	14	15	20	4	7.5	31
CAL22PA	9x6	43.2	17	17	17	20	4.8	7.5	43
CAL22PB	10x6.5	43.2	17	17	17	20	5.3	7.5	43
CAL23PA	12x8	46.2	19	19	20	20	7	7.5	53
CAL23PB	12.5x8.5	45.2	19	19	19	20	7	7.5	53
CAL24PA	16x11	52.2	23	24	25	20	10	7.5	98

*Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.

SOCKET

SHL

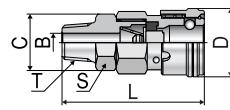
(Hose nipple & Lock type)



Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φD	S	C	l	φB	φT	
★ CAL21SHL	1/8"	72.5	26.5	19	21.5	30	4.5	7.5	99
CAL22SHL	1/4"	72.5	26.5	19	21.5	30	5	9	102
CAL23SHL	3/8"	76.5	26.5	19	21.5	34	7.5	11.3	105
CAL24SHL	1/2"	78.5	26.5	19	21.5	36	9	15	117

SML

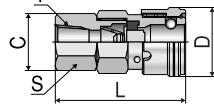
(Male thread & Lock type)



Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
★ CAL21SML	R 1/8"	53.5	26.5	19	21.5	4	98
CAL22SML	R 1/4"	55.5	26.5	19	21.5	7	100
CAL23SML	R 3/8"	56.5	26.5	19	21.5	8	108
CAL24SML	R 1/2"	58.5	26.5	22	25	9	126

SFL

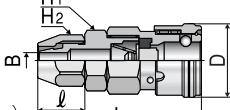
(Female thread & Lock type)



Model	Connection size(T)	Dimensions(mm)				Weight (g)
		L	φD	S	C	
★ CAL21SFL	Rc 1/8"	47.5	26.5	19	21.5	100
CAL22SFL	Rc 1/4"	50.5	26.5	19	21.5	101
CAL23SFL	Rc 3/8"	50.5	26.5	21	24	102
★ CAL24SFL	Rc 1/2"	52.5	26.5	29	33.5	138

SAL・SBL

(Polyurethane tube connection & Lock type)



Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
CAL21SAL	8x5	57.5	26.5	19	14	15	4	105
CAL22SAL	9x6	59.5	26.5	19	17	17	4.8	112
CAL22SBL	10x6.5	59.5	26.5	19	17	17	5.3	112
CAL23SAL	12x8	62.5	26.5	19	19	20	7	120
CAL23SBL	12.5x8.5	61.5	26.5	19	19	19	7	120
CAL24SAL	16x11	66.5	26.5	23	24	25	10	162



Features

- Widely used and accepted for air line connection.
- Sockets have automatic shut-off valve; fluid in the socket does not run out on disconnection.
- Important steel parts are hardened for high durability.
- Available in various body materials, sizes and connection types.

Cautions

- Type20(21, 22, 23 and 24) are interchangeable and type40 are the same, but not interchangeable between type20 and type40.
- Fluid should flow from socket to plug; in the opposite use, please advise us "W TYPE".
- Packing materials should be selected for the applicable fluid.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- Do not impact, hit, pull or bent. Do not dismantle. It causes damage to the couplings.

BRASS



SH



PH



SM



PM



SF

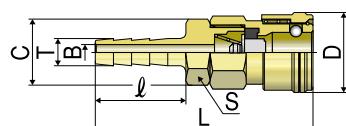


PF

BRASS

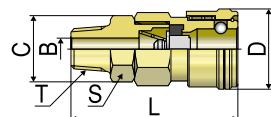
SOCKET

SH (Hose nipple)

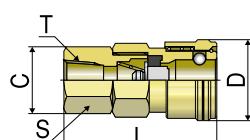


Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φD	S	C	l	φB		
CAL22SH2	1/4"	72.5	26.5	19	21.5	30	5	9	111
CAL23SH2	3/8"	76.5	26.5	19	21.5	34	7.5	11.3	112
CAL24SH2	1/2"	78.5	26.5	19	21.5	36	9	15	127

SM (Male thread)



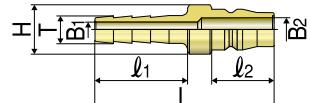
SF (Female thread)



Model	Connection size(T)	Dimensions(mm)				Weight (g)	
		L	φD	S	C		
CAL22SM2	R 1/4"	55.5	26.5	19	21.5	7	110
CAL23SM2	R 3/8"	56.5	26.5	19	21.5	8	117
CAL24SM2	R 1/2"	59.5	26.5	22	25	12	140

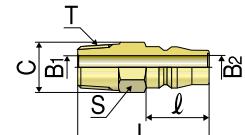
PLUG

PH (Hose nipple)



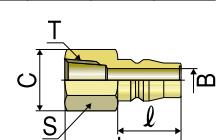
Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φH	l ₁	l ₂	φT	φB ₁		
CAL22PH2	1/4"	57	16	30	20	9	5	7.5	30
CAL23PH2	3/8"	61	16	34	20	11.3	7	7.5	33
CAL24PH2	1/2"	63	20	36	20	15	7.5	7.5	63

PM (Male thread)



Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	φB ₁	φB ₂	
CAL21PM2	R 1/8"	39	14	16	20	4	7.5	25
CAL22PM2	R 1/4"	41	14	16	20	7.5	7.5	29
CAL23PM2	R 3/8"	42	19	21.6	20	7.5	7.5	48
CAL24PM2	R 1/2"	46	22	25	20	12	7.5	65

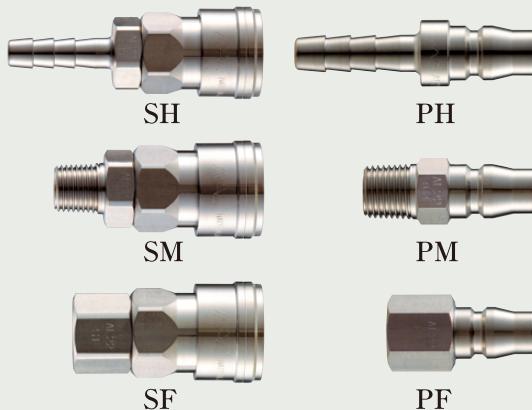
PF (Female thread)



Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	φB		
CAL22PF2	Rc 1/4"	37	17	19.5	20	7.5	32	
CAL23PF2	Rc 3/8"	37	21	24	20	7.5	43	
CAL24PF2	Rc 1/2"	38	29	33.5	20	7.5	79	



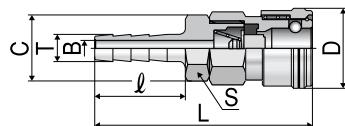
STAINLESS STEEL (SUS304)



STAINLESS STEEL (SUS304)

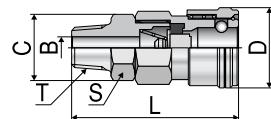
SOCKET

SH (Hose nipple)



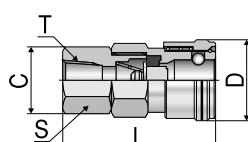
Model	Hose size	Dimensions (mm)						Weight (g)	
		L	φD	S	C	l	φB		
CAL22SH3	1/4"	72.5	26.5	19	21.5	30	5	9	102
CAL23SH3	3/8"	76.5	26.5	19	21.5	34	7	11.3	106
CAL24SH3	1/2"	78.5	26.5	19	21.5	36	7.5	15	125

SM (Male thread)



Model	Connection size(T)	Dimensions (mm)					Weight (g)
		L	φD	S	C	φB	
CAL22SM3	Rc 1/4"	55.5	26.5	19	21.5	6.5	101
CAL23SM3	Rc 3/8"	56.5	26.5	19	21.5	8	107
CAL24SM3	Rc 1/2"	59.5	26.5	22	25	12	124

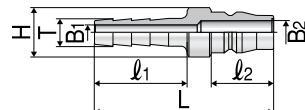
SF (Female thread)



Model	Connection size(T)	Dimensions (mm)				Weight (g)
		L	φD	S	C	
CAL22SF3	Rc 1/4"	49.5	26.5	19	21.5	99
CAL23SF3	Rc 3/8"	50.5	26.5	21	24	100
CAL24SF3	Rc 1/2"	52.5	26.5	29	33.5	138

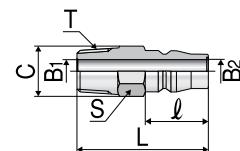
PLUG

PH (Hose nipple)



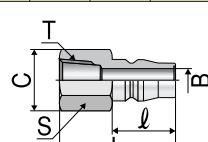
Model	Hose size	Dimensions (mm)						Weight (g)	
		L	φH	l1	l2	φT	φB1		
CAL22PH3	1/4"	57	16	30	20	9	5	7.5	28
CAL23PH3	3/8"	61	16	34	20	11.3	7	7.5	33
CAL24PH3	1/2"	63	20	36	20	15	7.5	7.5	58

PM (Male thread)



Model	Connection size(T)	Dimensions (mm)						Weight (g)
		L	S	C	l	φB1	φB2	
CAL21PM3	Rc 1/8"	39	14	16	20	4	7.5	23
CAL22PM3	Rc 1/4"	41	14	16	20	7.5	7.5	26
CAL23PM3	Rc 3/8"	42	19	21.5	20	7.5	7.5	44
CAL24PM3	Rc 1/2"	46.5	22	25	20	12	7.5	64

PF (Female thread)



Model	Connection size(T)	Dimensions (mm)					Weight (g)
		L	S	C	l	φB	
CAL22PF3	Rc 1/4"	37	17	19.5	20	7.5	31
CAL23PF3	Rc 3/8"	37	21	24	20	7.5	39
CAL24PF3	Rc 1/2"	38	29	33.5	20	7.5	69

Specifications

Model		CAL21	CAL22	CAL23	CAL24
Nominal size		1/8"	1/4"	3/8"	1/2"
Nominal pipe size		6A	8A	10A	15A
Body material		Steel(Chrome-plated), Brass, Stainless steel(SUS304)			
Connection type		Female thread, Male thread, Hose nipple, Polyurethane tube connection			
Packing material	Standard	Nitrile rubber(NBR) : -20°C~+ 80°C			
Temperature range ^{*1}	Option	Fluoro rubber(FKM) : -20°C~+180°C			
Normal pressure	Steel, Stainless steel	Normal pressure 1.5MPa Maximum pressure 2.0MPa			
Maximum pressure	Brass	Normal pressure 1.0MPa Maximum pressure 1.5MPa			
Applicable fluid	Steel	Air, Oil, etc.			
^{*2}	Brass, Stainless steel	Air, Water, etc.			

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

Unit (mm²)

Model	21PH	21PM	21PF	21PA	22PH	22PM,F	22PA	22PB	23PH,M,F,A	24PH,M,F,A
21SH	16	13	16	12.5	16	16	16	16	16	16
21SM	13	13	13	12.5	13	13	13	13	13	13
21SF	16	13	34	12.5	21	34	18	22	34	34
21SA	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
22SH	16	13	21	12.5	21	21	18	21	21	21
22SM,F	16	13	34	12.5	21	34	18	22	34	34
22SA	16	13	18	12.5	18	18	18	18	18	18
22SB	16	13	22	12.5	21	22	18	22	22	22
23SH,M,F,A	16	13	34	12.5	21	34	18	22	34	34
24SH,M,F,A	16	13	34	12.5	21	34	18	22	34	34

Recommended tightening torque

Unit (N·m)

Body material	Size			
	CAL21	CAL22	CAL23	CAL24
	1/8"	1/4"	3/8"	1/2"
Steel	7	14	22	60
Stainless steel	7	14	22	60
Brass	5	9	12	30



AL TYPE40

Low pressure
Single valve



Steel



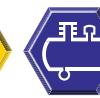
Single valve



Nitrile rubber

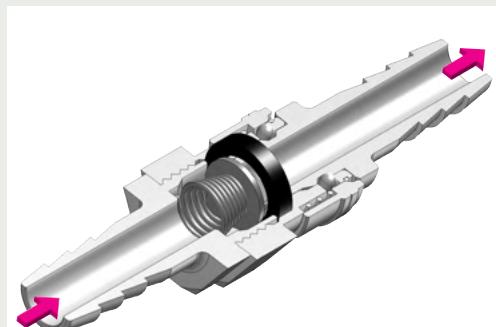


Oil



Air

Larger flow performance in AL series



STEEL (Chrome-plated)



SH



PH



SM



PM



SF

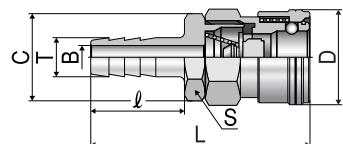


PF

STEEL (Chrome-plated)

SOCKET

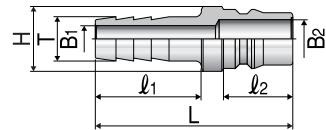
SH (Hose nipple)



Model	Hose size	Dimensions (mm)						Weight (g)	
		L	φD	S	C	l	φB	φT	
CAL44SH	1/2"	84	36.5	29	33.5	36	9	15	234
CAL46SH	3/4"	93	36.5	29	33.5	45	13	21	266
CAL48SH	1"	103	36.5	29	33.5	55	20	27	287

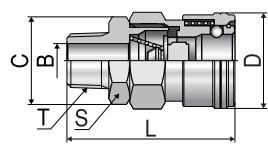
PLUG

PH (Hose nipple)

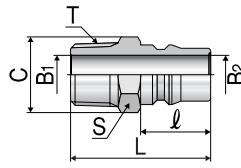


Model	Hose size	Dimensions (mm)						Weight (g)	
		L	φH	l ₁	l ₂	φT	φB ₁	φB ₂	
CAL44PH	1/2"	67	22	36	23	15	9	13	69
CAL46PH	3/4"	76	30	45	23	21	13	13	120
CAL48PH	1"	86	34	55	23	27	20	13	155

SM (Male thread)

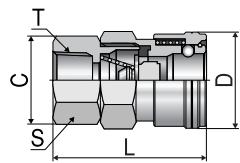


PM (Male thread)

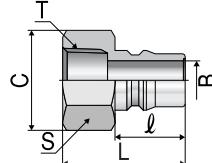


Model	Connection size(T)	Dimensions (mm)						Weight (g)
		L	S	C	l	φB ₁	φB ₂	
CAL44PM	R 1/2"	47	22	25	23	13	13	62
CAL46PM	R 3/4"	49	32	36.5	23	19	13	92
CAL48PM	R 1"	53	35	40	23	22	13	140

SF (Female thread)



PF (Female thread)



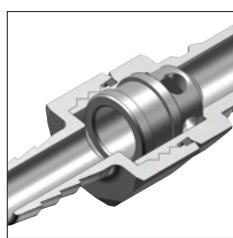
Model	Connection size(T)	Dimensions (mm)						Weight (g)
		L	S	C	l	φB		
CAL44PF	Rc 1/2"	41	29	33.5	23	13	85	
CAL46PF	Rc 3/4"	43	35	40	23	13	117	
CAL48PF	Rc 1"	51	41	47	23	13	191	



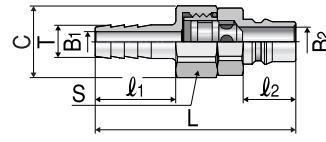
PHV

Purge mechanism

- Purge mechanism largely eliminates unpleasant noise and reaction of hose when disconnection.
- Suitable for the use in a long hose or higher pressure.



Safety plug PHV
(Hose nipple)



Model	Hose size	Dimensions (mm)						Weight (g)		
		L	S	C	l ₁	l ₂	φT	φB ₁	φB ₂	
★ CAL44PHV	1/2"	90	29	32	36	23	15	9	13	174
★ CAL46PHV	3/4"	99	29	32	45	23	21	13	13	208

* Please read "User safety guide" before operation.

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.



Features

- Widely used and accepted for air line connection.
- Sockets have automatic shut-off valve; fluid in the socket does not run out on disconnection
- Important steel parts are hardened for high durability.
- Available in various body materials, sizes and connection types.

Cautions

- Type20(21, 22, 23 and 24) are interchangeable and type40 are the same, but not interchangeable between type20 and type40.
- Fluid should flow from socket to plug; in the opposite use, please advise us "W TYPE".
- Packing materials should be selected for the applicable fluid.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- Do not impact, hit, pull or bent. Do not dismantle. It causes damage to the couplings.

BRASS



SH



PH



SM



PM



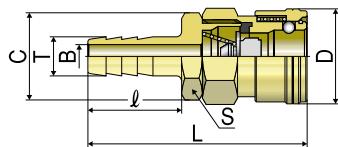
SF



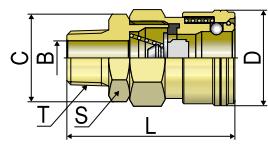
PF

BRASS SOCKET

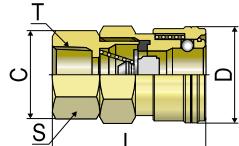
SH (Hose nipple)



SM (Male thread)



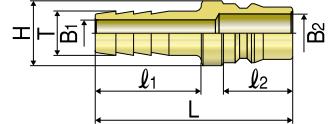
SF (Female thread)



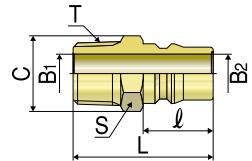
Model	Connection size(T)	Dimensions(mm)					Weight (g)		
		L	φD	S	C	ℓ			
CAL44SH2	R 1/2"	83	35	29	33.5	36	10	15	235
CAL46SH2	R 3/4"	92	35	29	33.5	45	14	21	259
CAL48SH2	R 1"	102	35	29	33.5	54	19	27	293

PLUG

PH (Hose nipple)



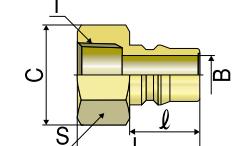
PM (Male thread)



Model	Connection size(T)	Dimensions(mm)						Weight (g)	
		L	φH	ℓ ₁	ℓ ₂	φT	φB ₁	φB ₂	
CAL44PH2	R 1/2"	66	22	36	23	15	10	13	73
CAL46PH2	R 3/4"	77	25	45	23	21	13	13	137
CAL48PH2	R 1"	85	32	54	23	27	19	13	166



PF (Female thread)



Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	ℓ	φB ₁	φB ₂	
CAL44PM2	R 1/2"	50	22	25	23	13	13	76
CAL46PM2	R 3/4"	55	32	36.5	23	19	13	124
CAL48PM2	R 1"	63	35	40	23	22	13	200



STAINLESS STEEL (SUS304)



SH



PH



SM



PM



SF



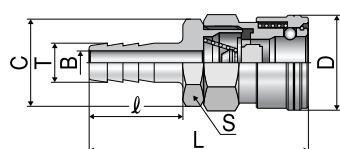
PF



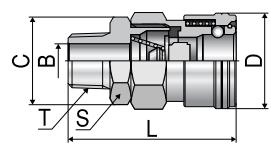
STAINLESS STEEL (SUS304)

SOCKET

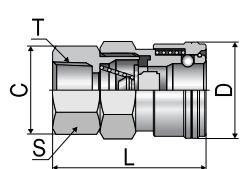
SH (Hose nipple)



SM (Male thread)



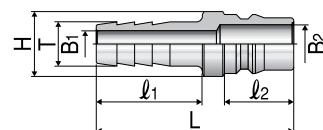
SF (Female thread)



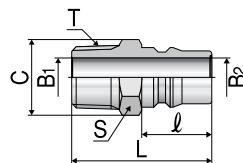
Model	Connection size(T)	Dimensions(mm)					Weight (g)		
		L	phiD	S	C	phiB			
CAL44SH3	1/2"	85	35	29	33.5	38	10	15	213
CAL46SH3	3/4"	88	35	29	33.5	40.5	14	21	239
CAL48SH3	1"	102	35	29	33.5	54	19	27	292

PLUG

PH (Hose nipple)

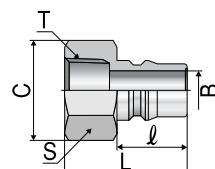


PM (Male thread)



Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	phiB1	phiB2	
CAL44PM3	Rc1/2"	50	22	25	23	13	13	69
CAL46PM3	Rc3/4"	55	29	33.5	23	19	13	107
CAL48PM3	Rc1"	59	35	40	23	22	13	177

PF (Female thread)



Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	S	C	l	phiB	
CAL44PF3	Rc1/2"	41	27	30.5	23	13	71
CAL46PF3	Rc3/4"	45	32	36.5	23	13	95
CAL48PF3	Rc1"	50.5	38	43	23	13	133

Specifications

Model	CAL44	CAL46	CAL48
Nominal size	1/2"	3/4"	1"
Nominal pipe size	15A	20A	25A
Body material	Steel(Chrome-plated), Brass, Stainless steel(SUS304)		
Connection type	Female thread, Male thread, Hose nipple		
Packing material	Standard	Nitrile rubber(NBR) : -20°C~+ 80°C	
Temperature range ^{*1}	Option	Fluoro rubber(FKM) : -20°C~+180°C	
Normal pressure	Steel, Stainless steel	Normal pressure 1.5MPa Maximum pressure 2.0MPa	
Maximum pressure	Brass	Normal pressure 1.0MPa Maximum pressure 1.5MPa	
Applicable fluid ^{*2}	Steel	Air, Oil, etc.	
	Brass, Stainless steel	Air, Water, etc.	

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Model	44PH	44PM,44PF	46PH	46PM,46PF	48PH	48PM,48PF	Unit (mm ²)
44SH	64	64	64	64	64	64	64
44SM,44SF	64	97	97	97	97	97	97
46SH	64	97	97	97	97	97	97
46SM,46SF	64	97	97	97	97	97	97
48SH	64	97	97	97	97	97	97
48SM,48SF	64	97	97	97	97	97	97

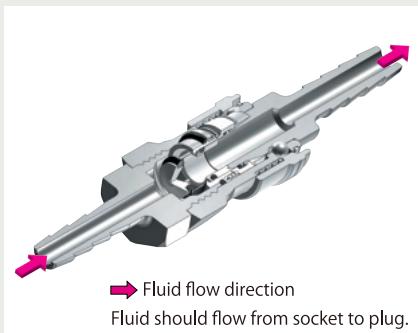


AT TYPE

Low pressure Single valve



Easy connection of model AL type 20



Features

- One hand operation allows fast and easy connection and disconnection.
- This series can be connected to AL type20 plugs.
- Sockets have automatic shut-off valve; fluid in the socket does not run out on disconnection.

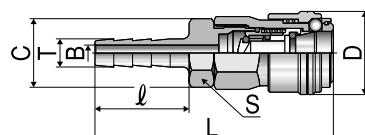
Cautions

- Not interchangeable with AL type40.
- Fluid should flow from socket to plug.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- Do not impact, hit, pull or bent. Do not dismantle. It causes damage to the couplings.

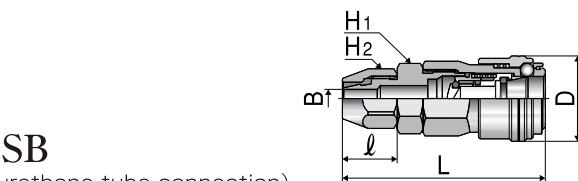
STEEL (Chrome-plated)

SOCKET

SH (Hose nipple)



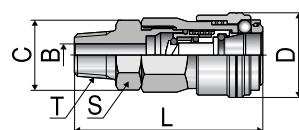
Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φD	S	C	l	φB	φT	
CAT22SH	1/4"	75.5	26.5	19	21.5	30	5	9	106
CAT23SH	3/8"	79.5	26.5	19	21.5	34	7.5	11.3	108
CAT24SH	1/2"	81.5	26.5	19	21.5	36	9	15	120



SA・SB

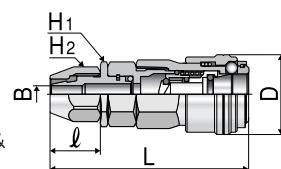
(Polyurethane tube connection)

Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
CAT21SA	8x5	60.5	26.5	19	14	15	4	98
CAT22SA	9x6	62.5	26.5	19	17	17	4.8	115
CAT22SB	10x6.5	62.5	26.5	19	17	17	5.3	114
CAT23SA	12x8	65.5	26.5	19	19	20	7	124
CAT23SB	12.5x8.5	64.5	26.5	19	19	19	7	121
CAT24SA	16x11	69.5	26.5	23	24	25	10	166



SM (Male thread)

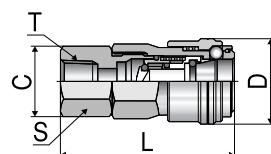
Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
CAT22SM	R 1/4"	58.5	26.5	19	21.5	7	103
CAT23SM	R 3/8"	59.5	26.5	19	21.5	8	110
CAT24SM	R 1/2"	61.5	26.5	22	25	9	129



SAR・SBR

(Polyurethane tube connection & Rotary type)

Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
★ CAT22SBR	10x6.5	67	26.5	19	17	17	5.3	124
★ CAT23SAR	12x8	70	26.5	19	19	20	7	134

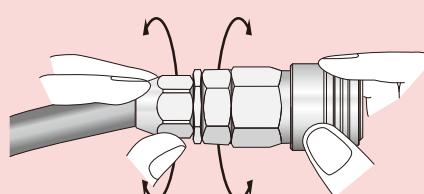


SF (Female thread)

Model	Connection size(T)	Dimensions(mm)				Weight (g)
		L	φD	S	C	
CAT22SF	Rc 1/4"	53.5	26.5	19	21.5	104
CAT23SF	Rc 3/8"	53.5	26.5	21	24	104
CAT24SF	Rc 1/2"	55.5	26.5	29	33.5	143

Rotary mechanism

Rotary mechanism is designed to revolve freely and to avoid the twist in tube.



* Please read "User safty guide" before operation.

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.

STEEL(Chrome-plated)



SH



SA・SB



SM



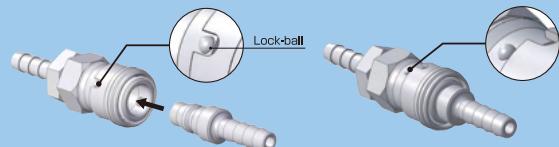
SAR・SBR



SF

Lock mechanism prevents unexpected disconnection of socket and plug!

Lock mechanism



Push to connect the plug into socket.

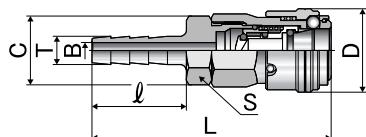
When the lock-ball is out of ditch by turning the sleeve, the socket and plug are completely connected.

STEEL (Chrome-plated)

SOCKET

SHL

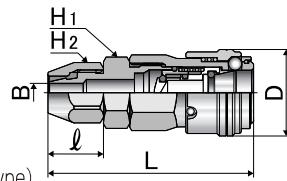
(Hose nipple & Lock type)



Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φD	S	C	l	φB	φT	
★ CAT22SHL	1/4"	75.5	26.5	19	21.5	30	5	9	106
★ CAT23SHL	3/8"	79.5	26.5	19	21.5	34	7.5	11.3	108
★ CAT24SHL	1/2"	81.5	26.5	19	21.5	36	9	15	120

SAL・SBL

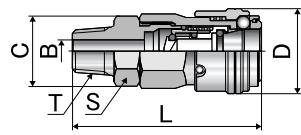
(Polyurethane tube connection & Lock type)



Model	Hose size	Dimensions(mm)						Weight (g)
		φO.D. X φI.D.	L	φD	H1	H2	l	φB
★ CAT21SAL	8 x 5	60.5	26.5	19	14	15	4	98
★ CAT22SAL	9 x 6	62.5	26.5	19	17	17	4.8	115
★ CAT22SBL	10 x 6.5	62.5	26.5	19	17	17	5.3	114
★ CAT23SAL	12 x 8	65.5	26.5	19	19	20	7	124
★ CAT23SBL	12.5 x 8.5	64.5	26.5	19	19	19	7	121
★ CAT24SAL	16 x 11	69.5	26.5	23	24	25	10	166

SML

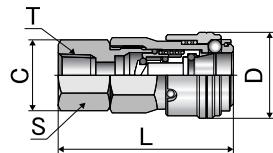
(Male thread & Lock type)



Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
★ CAT22SML	Rc 1/4"	58.5	26.5	19	21.5	7	103
★ CAT23SML	Rc 3/8"	59.5	26.5	19	21.5	8	110
★ CAT24SML	Rc 1/2"	61.5	26.5	22	25	9	129

SFL

(Female thread & Lock type)



Model	Connection size(T)	Dimensions(mm)				Weight (g)
		L	φD	S	C	
★ CAT22SFL	Rc 1/4"	53.5	26.5	19	21.5	104
★ CAT23SFL	Rc 3/8"	53.5	26.5	21	24	104
★ CAT24SFL	Rc 1/2"	55.5	26.5	29	33.5	143



* Attention to products marked “★”. They are not always in stock. Check the delivery time when ordering.

Specifications

Model	CAT21	CAT22	CAT23	CAT24
Nominal size	1/8"	1/4"	3/8"	1/2"
Nominal pipe size	6A	8A	10A	15A
Body material	Steel(Chrome-plated)			
Connection type	Female thread, Male thread, Hose nipple, Polyurethane tube connection			
Packing material Temperature range *1	Nitrile rubber(NBR) : -20°C~+80°C			
Normal pressure	1.0MPa			
Maximum pressure	1.5MPa			
Applicable fluid *2	Air			

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

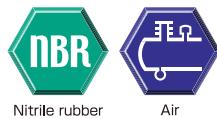
Unit (mm²)

Model	21PH	21PM	21PF	21PA	22PH	22PM,F	22PA	22PB	23PH,M,F	23PA,B	24PH,M,F,A
21SH	16	13	16	12.5	16	16	16	16	16	16	16
21SM	13	13	13	12.5	13	13	13	13	13	13	13
21SF	16	13	42	12.5	21	42	18	22	42	38	42
21SA	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
22SH	16	13	21	12.5	21	21	18	21	21	21	21
22SM	16	13	38	12.5	21	38	18	22	38	38	38
22SF	16	13	42	12.5	21	42	18	22	42	38	42
22SA	16	13	18	12.5	18	18	18	18	18	18	18
22SB	16	13	22	12.5	21	22	18	22	22	22	22
23SH,M,F	16	13	42	12.5	21	42	18	22	42	38	42
23SA,B	16	13	38	12.5	21	38	18	22	38	38	38
24SH,M,F,A	16	13	42	12.5	21	42	18	22	42	38	42



Multi-connection

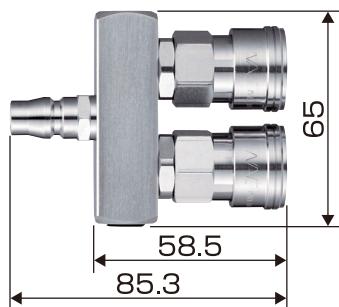
Straight line
Rotary type



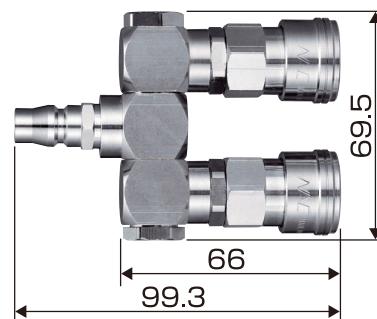
Model for easy branching of air supply
Rotary type is free from twist of hose.

AL TYPE

CAL2L (Straight line)



CAL2WRL (Rotary)



CAL5L (Straight line)



An inlet coupling is CAL44PM, so that it can be connected to AL type40 sockets.

Specifications

Type	Straight line		Rotary		
Model	CAL2L	CAL5L	CAL2WRL		
Size	Inlet	AL type20 Plug	CAL44PM		
	Outlet	AL type20 Socket x2	AL type20 Socket x2		
Body material	Body : Aluminium Coupling : Steel(Chrome-plated)		Body : Brass(Chrome-plated) Coupling : Steel(Chrome-plated)		
Packing material	Standard	Nitrile rubber(NBR) : -20°C~+ 80°C			
Temperature range *1	Option	Fluoro rubber(FKM) : -20°C~+180°C			
Normal pressure	1.5MPa				
Maximum pressure	2.0MPa				

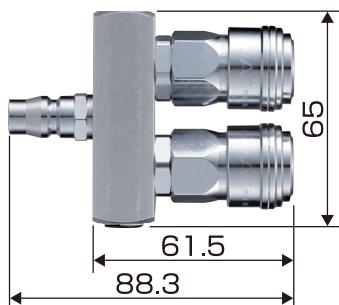
*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*Please read "User safty guide" before operation.

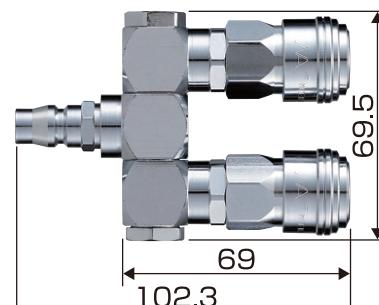


AT TYPE (One touch connection)

CAT2L (Straight line)



CAT2WRL (Rotary)



CAT5L (Straight line)



An inlet coupling is CAL44PM, so that it can be connected to AL type40 sockets.

Specifications

Type		Straight line		Rotary
Model		CAT2L	CAT5L	CAT2WRL
Size	Inlet	AL type20 Plug	CAL44PM	AL type20 Plug
	Outlet	AT type20 Socket x2	AT type20 Socket x4 CAT24SM x 1	AT type20 Socket x2
Body material		Body : Aluminium Coupling : Steel(Chrome-plated)		Body : Brass(Chrome-plated) Coupling : Steel(Chrome-plated)
Packing material Temperature range ¹⁾		Nitrile rubber(NBR) : -20°C~+80°C		
Normal pressure		1.0MPa		
Maximum pressure		1.5MPa		

¹⁾ By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

ALTYPE10

Low pressure
Single valve



Steel



Single valve



Nitrile rubber



Air

Features

- The light weight design reduces pneumatic operators' burden.
- One hand operation allows fast and easy connection and disconnection.
- Used in air piping, the least air leakage leads to longer lifetime of the compressor and then to saving of electricity.
- Sockets have automatic shut-off valve; fluid in the socket does not run out on disconnection.
- Sockets and plugs can be connected in all ALtype10 couplings.
- Fluid can flow from either socket or plug.

Cautions

- Packing material should be selected for the applicable fluid.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- Do not impact, hit, pull or bent.
- Do not dismantle. It causes damage to the couplings.

One hand operation works by lighter weight and one touch connection.



STEEL (Chrome-plated)



PH



PM



PF

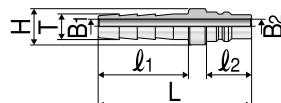


PB

STEEL (Chrome-plated)

PLUG

PH (Hose nipple)

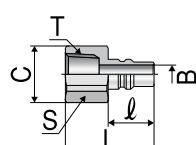


Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φH	l ₁	l ₂	φT	φB ₁	φB ₂	
★ CAL12PH	1/4"	51	12	30	15	8.5	5	5	17



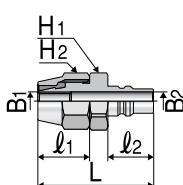
PM (Male thread)

Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	φB ₁	φB ₂	
CAL11PM	R 1/8"	31	12	13	15	6	6	10
CAL12PM	R 1/4"	34	17	18.5	15	6	6	21



PF (Female thread)

Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	φB		
★ CAL12PF	Rc 1/4"	29	17	18.5	15	6	20	



PB (Polyurethane tube connection)

Model	Hose size	Dimensions(mm)						Weight (g)		
		φO.D. X φI.D.	L	H ₁	H ₂	l ₁	l ₂	φB ₁	φB ₂	
★ CAL11PB	8 x 5	37	14	14	15	15	15	4.5	6	23
★ CAL12PB	10 x 6.5	38	17	17	17	15	5.3	6	33	

* Please read "User safty guide" before operation.

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.

BRASS (Chrome-plated)



SH



SM



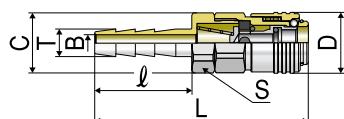
SF



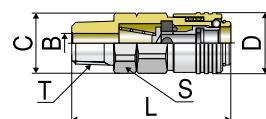
SB



BRASS (Chrome-plated) SOCKET SH (Hose nipple)

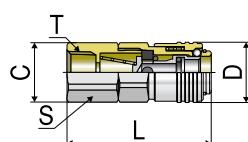


Model	Hose size	Dimensions(mm)						Weight (g)	
		L	φD	S	C	l	φB		
CAL12SH	1/4"	66	19	17	18.5	30	5	8.5	52



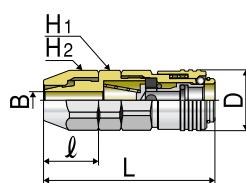
SM (Male thread)

Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	φD	S	C	φB	φT	
☆ CAL11SM	R 1/8"	45	19	17	18.5	5	8.5	48
☆ CAL12SM	R 1/4"	49	19	17	18.5	6	8.5	53



SF (Female thread)

Model	Connection size(T)	Dimensions(mm)				Weight (g)
		L	φD	S	C	
CAL12SF	Rc 1/4"	45	19	17	18.5	54



SB (Polyurethane tube connection)

Model	Hose size φ.O.D. X φ.I.D.	Dimensions(mm)						Weight (g)
		L	φD	H ₁	H ₂	l	φB	
☆ CAL11SB	8 x 5	51	19	17	14	15	4	58
☆ CAL12SB	10 x 6.5	53	19	17	17	17	5.3	64

* Attention to products marked “☆”. They are not always in stock. Check the delivery time when ordering.

Specifications

Model	CAL11		CAL12		
Nominal size	$\frac{1}{8}$ "		$\frac{1}{4}$ "		
Nominal pipe size	6A		8A		
Body material	Socket	Brass(Chrome-plated)			
	Plug	Steel(Chrome-plated)			
Connection type	Female thread, Male thread, Hose nipple, Polyurethane tube connection				
Packing material	Standard	Nitrile rubber(NBR) : $-20^{\circ}\text{C} \sim + 80^{\circ}\text{C}$			
Temperature range ^{*1}	Option	Fluoro rubber(FKM) : $-20^{\circ}\text{C} \sim +180^{\circ}\text{C}$			
Normal pressure	1.0MPa				
Maximum pressure	1.5MPa				
Applicable fluid ^{*2}	Air				

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

Unit (mm²)

Model	11PM	11PB	12PH	12PM	12PF	12PB
11SM	19.6	11.9	19.6	19.6	19.6	19.6
11SB	12.6	11.9	12.6	12.6	12.6	12.6
12SH	21.2	11.9	21.2	21.2	21.2	21.2
12SM	22.1	11.9	21.2	23.8	23.8	22.1
12SF	22.1	11.9	21.2	23.8	23.8	22.1
12SB	22.1	11.9	21.2	22.1	22.1	22.1

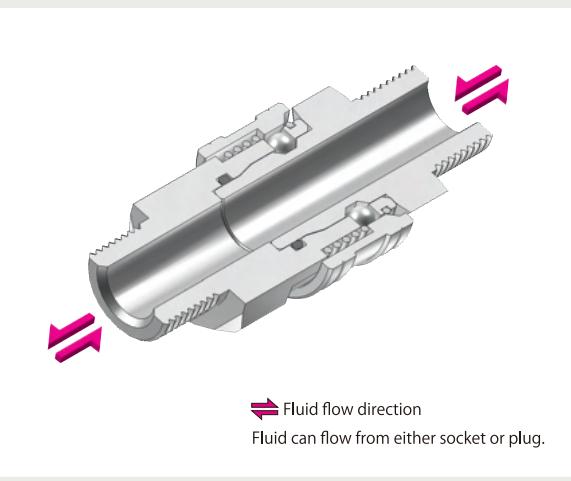


TL TYPE

Medium pressure
Valveless type



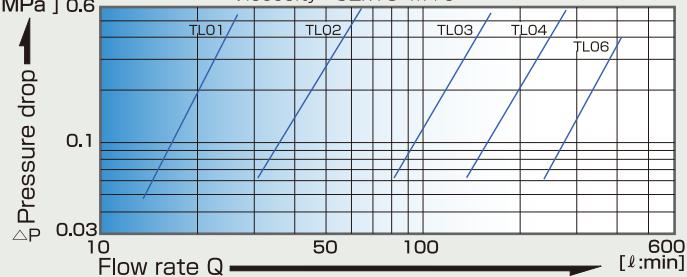
Valveless structure reduces pressure loss
and flow resistance.
Suitable for highly viscous fluid



• Stainless steel (SUS316) is option.

Flow rate - Pressure drop characteristics

[Condition] • Fluid : Operating oil • Temperature : 50°C±5°C
• Viscosity : $32 \times 10^{-6} \text{ m}^2/\text{s}$



STEEL(Zinc-plated)



SM



SF



PM

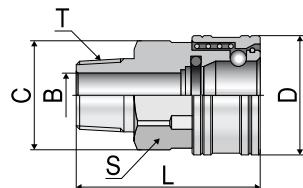


PF

STEEL(Zinc-plated)

SOCKET

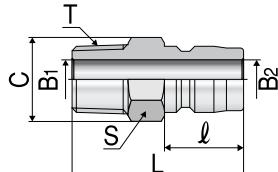
SM (Male thread)



Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
CTL03SM	R $\frac{3}{8}$ "	46	28	23	25.5	10	101
CTL04SM	R $\frac{1}{2}$ "	54	35	29	33	13	172
CTL06SM	R $\frac{3}{4}$ "	65	45	38	42.5	18	349
CTL08SM	R1"	76	58	50	56	24	608

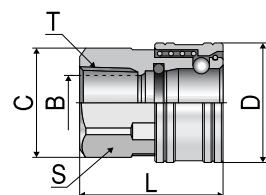
PLUG

PM (Male thread)



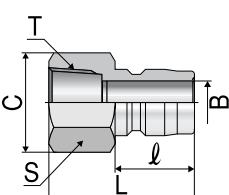
Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	φB ₁	φB ₂	
CTL03PM	R $\frac{3}{8}$ "	43	19	22	21	10	10	42
CTL04PM	R $\frac{1}{2}$ "	52	22	25	24	13	13	86
CTL06PM	R $\frac{3}{4}$ "	59	29	33	28	17	17	138
CTL08PM	R1"	73	38	43.5	36	25	25	274

SF (Female thread)



Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
CTL03SF	Rc $\frac{3}{8}$ "	35	28	23	25.5	12	84
CTL04SF	Rc $\frac{1}{2}$ "	42	35	29	33	16	148
CTL06SF	Rc $\frac{3}{4}$ "	48	45	38	43.5	20	296
CTL08SF	Rc1"	59	58	50	58	27	576

PF (Female thread)



Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	S	C	l	φB	
CTL03PF	Rc $\frac{3}{8}$ "	38	21	24	21	10	43
CTL04PF	Rc $\frac{1}{2}$ "	44	26	28.5	24	13	78
CTL06PF	Rc $\frac{3}{4}$ "	51	35	40	28	17	161
CTL08PF	Rc1"	60	41	46	36	26	255

*Please read "User safty guide" before operation.



BRASS



SH



PH



SM



PM



SF



PF

Packing material and temperature's range

Packing material	Symbol	Temperature *1	Characteristics *2
Nitrile rubber	NBR	-20°C~+ 80°C	Oil resistance
Fluoro rubber	FKM	-20°C~+180°C	Heat, oil resistance
Perfluoro®	P	*3	Chemical resistance
Ethylene propylene	EPDM	-30°C~+130°C	Weathering resistance
Heat resistant FKM	A	+10°C~+200°C	Steam resistance
Kalrez®	K	*4	Chemical, heat resistance

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

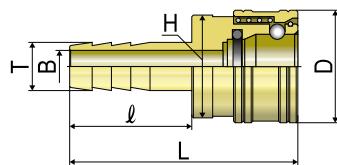
*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

*3 Perfluoro® is registered trademarks from DAIKIN Industries, Ltd.

Please contact us additionally on your order.

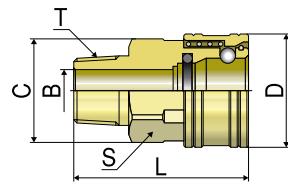
*4 Kalrez® is trademarks or registered trademarks of affiliates of DuPont de Nemours, Inc. Please contact us additionally on your order.

BRASS SOCKET SH (Hose nipple)

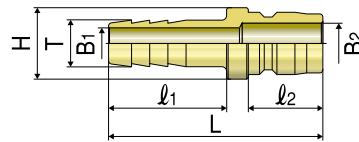


Model	Hose size	Dimensions(mm)						Weight (g)
		L	φD	φH	ℓ	φB	φT	
CTL01SH2	1/8"	40	18	16	20	3	6.5	27
CTL02SH2	1/4"	55	24.5	22	29	5	8	69
CTL03SH2	3/8"	62	28	25	32	7	11	103
CTL04SH2	1/2"	71	35	32	38	10	15	188
CTL06SH2	3/4"	90	45	40	48	15	21	373
CTL08SH2	1"	101	58	52	56	19	27	616
★ CTL10SH2	1 1/4"	117	69	64	70	26	34	922
★ CTL12SH2	1 1/2"	128	75	70	75	32	41	1151
★ CTL16SH2	2"	141	98	90	80	40	54	2307

SM (Male thread)

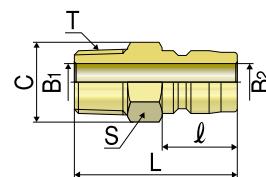


PLUG PH (Hose nipple)



Model	Hose size	Dimensions(mm)							Weight (g)
		L	φH	ℓ ₁	ℓ ₂	φT	φB ₁	φB ₂	
CTL01PH2	1/8"	41	12	20	15.5	6.5	3	5	12
CTL02PH2	1/4"	53	14	29	18	8	5	6.5	24
CTL03PH2	3/8"	60	18	32	21	11	7	10	41
CTL04PH2	1/2"	69	23	38	24	15	10	13	75
CTL06PH2	3/4"	84	28	48	28	21	15	17	141
CTL08PH2	1"	104	40	56	36	27	19	26	351
★ CTL10PH2	1 1/4"	121	48	70	39	34	26	32	524
CTL12PH2	1 1/2"	132	55	75	45	41	32	38	699
★ CTL16PH2	2"	142	70	80	51	54	40	50	1407

PM (Male thread)



Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	φD	S	C	φB	φT	
CTL01SM2	R 1/8"	30	18	14	16	4.5	27	
CTL02SM2	R 1/4"	42	24.5	19	21	6.5	75	
CTL03SM2	R 3/8"	46	28	23	25.5	10	107	
CTL04SM2	R 1/2"	54	35	29	32	13	191	
CTL06SM2	R 3/4"	65	45	38	42.5	18	379	
CTL08SM2	R 1"	76	58	50	56	24	667	
CTL10SM2	R 1 1/4"	86	69	φ62/Face54	32	1023		
CTL12SM2	R 1 1/2"	95	75	φ66/Face58	38	1231		
★ CTL16SM2	R 2"	108	98	φ82/Face68	49	2250		

Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	ℓ	φB ₁	φB ₂	
CTL01PM2	R 1/8"	32	12	14	15.5	4.5	4.5	15
CTL02PM2	R 1/4"	38	17	19.5	18	6.5	6.5	33
CTL03PM2	R 3/8"	43	19	22	21	10	10	46
CTL04PM2	R 1/2"	52	22	25	24	13	13	83
CTL06PM2	R 3/4"	59	29	33	28	17	17	166
CTL08PM2	R 1"	73	38	47	36	25	25	325
CTL10PM2	R 1 1/4"	83	50	58	39	32	32	531
CTL12PM2	R 1 1/2"	93	54	63	45	38	38	674
★ CTL16PM2	R 2"	104	φ80/Face75	51	50	50	50	1313

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.



Brass



Stainless steel (SUS304)



Valveless



FKM



Fluoro rubber



Water



Oil

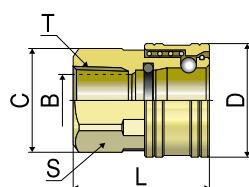


Air



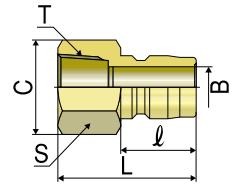
Cautions

- The bigger the size is, the pressure resistance is decreased.
- Packing material should be selected for the applicable fluid.
- Different sizes are not interchangeable.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.



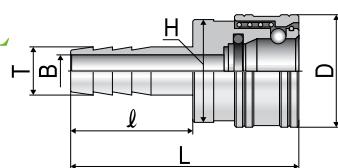
SF (Female thread)

Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
CTL01SF2	Rc 1/8"	27	18	14	16	4.5	27
CTL02SF2	Rc 1/4"	32	24.5	19	21	8	63
CTL03SF2	Rc 3/8"	35	28	23	25.5	12	88
CTL04SF2	Rc 1/2"	42	35	29	32	16	156
CTL06SF2	Rc 3/4"	48	45	38	42.5	20	319
CTL08SF2	Rc 1"	59	58	50	56	27	621
CTL10SF2	Rc 1 1/4"	64	69	φ62/Face54	36	891	
CTL12SF2	Rc 1 1/2"	71	75	φ66/Face58	42	1045	
★ CTL16SF2	Rc 2"	80	98	φ82/Face77	54	1963	

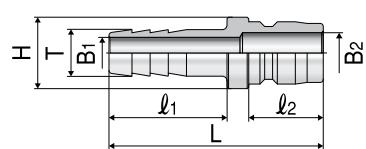


PF (Female thread)

Model	Connection size(T)	Dimensions(mm)						Weight (g)
		L	S	C	l	φB	φT	
CTL01PF2	Rc 1/8"	26	14	16	15.5	5	15	
CTL02PF2	Rc 1/4"	34	17	19.5	18	6.5	31	
CTL03PF2	Rc 3/8"	38	21	24	21	10	47	
CTL04PF2	Rc 1/2"	44	29	33	24	13	114	
CTL06PF2	Rc 3/4"	51	35	40	28	17	168	
CTL08PF2	Rc 1"	60	41	47	36	26	277	
CTL10PF2	Rc 1 1/4"	64	55	63	39	32	469	
CTL12PF2	Rc 1 1/2"	75	58	67	45	38	631	
★ CTL16PF2	Rc 2"	83	φ82/Face76	51	50	1281		

STAINLESS STEEL (SUS304)
SOCKET
SH (Hose nipple)

Model	Hose size	Dimensions(mm)						Weight (g)
		L	φD	φH	l	φB	φT	
★ CTL01SH3	1/8"	40	18	16	20	3	6.5	26
CTL02SH3	1/4"	55	25	22	29	5	8	62
CTL03SH3	3/8"	62	28	25	32	7	11	100
CTL04SH3	1/2"	71	35	32	38	10	15	164
CTL06SH3	3/4"	90	45	40	48	15	21	352
CTL08SH3	1"	101	58	52	56	19	27	571
★ CTL10SH3	1 1/4"	117	69	64	70	26	34.5	868
★ CTL12SH3	1 1/2"	128	75	70	75	32	41	1086
★ CTL16SH3	2"	141	98	90	80	40	54	2140

PLUG
PH (Hose nipple)

Model	Hose size	Dimensions(mm)							Weight (g)
		L	φH	l1	l2	φT	φB1	φB2	
★ CTL01PH3	1/8"	41	12	20	15.5	6.5	3	5	12
CTL02PH3	1/4"	53	14	29	18	8	5	6.5	21
CTL03PH3	3/8"	60	18	32	21	11	7	10	37
CTL04PH3	1/2"	69	23	38	24	15	10	13	71
CTL06PH3	3/4"	84	28	48	28	21	15	17	128
CTL08PH3	1"	104	40	56	36	27	19	26	321
★ CTL10PH3	1 1/4"	121	48	70	39	34	26	32	490
★ CTL12PH3	1 1/2"	132	55	75	45	41	32	38	658
★ CTL16PH3	2"	142	70	80	51	54	40	50	1322

* Attention to products marked “★”. They are not always in stock. Check the delivery time when ordering.



STAINLESS STEEL(SUS304)



SH



PH



SM



PM



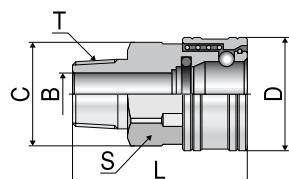
SF



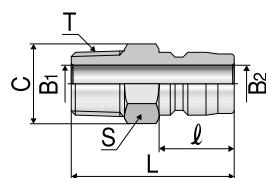
PF



SM (Male thread)

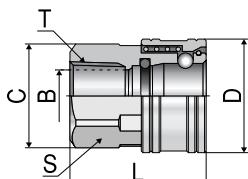


PM (Male thread)

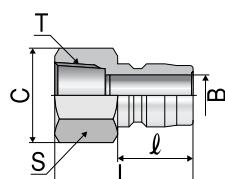


★

SF (Female thread)



PF (Female thread)



★

Model	Connection size(T)	Dimensions(mm)					Weight (g)
		L	φD	S	C	φB	
CTL01SM3	R $\frac{1}{8}$ "	30	18	14	16	4.5	26
CTL02SM3	R $\frac{1}{4}$ "	42	25	19	21	6.5	67
CTL03SM3	R $\frac{3}{8}$ "	46	28	23	25.5	10	101
CTL04SM3	R $\frac{1}{2}$ "	54	35	29	33	13	172
CTL06SM3	R $\frac{3}{4}$ "	65	45	38	42.5	18	354
CTL08SM3	R1"	76	58	50	56	24	627
CTL10SM3	R $1\frac{1}{4}$ "	86	69	φ62/Face54	32	958	
CTL12SM3	R $1\frac{1}{2}$ "	95	75	φ66/Face58	38	1166	
★ CTL16SM3	R2"	108	98	φ82/Face68	49	2026	

Model	Connection size(T)	Dimensions(mm)					Weight (g)	
		L	S	C	l	φB ₁	φB ₂	
CTL01PM3	R $\frac{1}{8}$ "	32	12	14	15.5	4.5	4.5	17
CTL02PM3	R $\frac{1}{4}$ "	38	17	19.5	18	6.5	6.5	30
CTL03PM3	R $\frac{3}{8}$ "	43	19	22	21	10	10	43
CTL04PM3	R $\frac{1}{2}$ "	52	22	25	24	13	13	87
CTL06PM3	R $\frac{3}{4}$ "	59	29	33	28	17	17	137
CTL08PM3	R1"	73	38	43.5	36	25	25	275
CTL10PM3	R $1\frac{1}{4}$ "	83	50	58	39	32	32	503
CTL12PM3	R $1\frac{1}{2}$ "	93	54	62	45	38	38	617
★ CTL16PM3	R2"	104	φ80/Face75	51	50	50	50	1233

• Stainless steel (SUS316) is option.

* Attention to products marked “★”. They are not always in stock. Check the delivery time when ordering.

Specifications

Model	CTL01	CTL02	CTL03	CTL04	CTL06	CTL08	CTL10	CTL12	CTL16			
Nominal size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"			
Nominal pipe size	6A	8A	10A	15A	20A	25A	32A	40A	50A			
Body material	Brass, Stainless steel(SUS304), Steel(Zinc-plated)											
Connection type	Female thread, Male thread, Hose nipple											
Packing material	Brass, Stainless steel	Fluoro rubber(FKM) : -20°C~+180°C										
Temperature range ^{*1}	Steel	Nitrile rubber(NBR) : -20°C~+ 80°C										
Normal pressure	Brass	5.0MPa			3.0MPa		2.0MPa	1.5MPa				
Maximum pressure		7.5MPa			4.5MPa		3.0MPa	2.3MPa				
Normal pressure	Steel, Stainless steel	7.5MPa			4.5MPa		3.0MPa	2.0MPa				
Maximum pressure		10.0MPa			6.5MPa		4.0MPa	3.0MPa				
Applicable fluid ^{*2}	Brass, Stainless steel	Air, Water, Oil, etc.										
	Steel	Air, Oil, etc.										

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

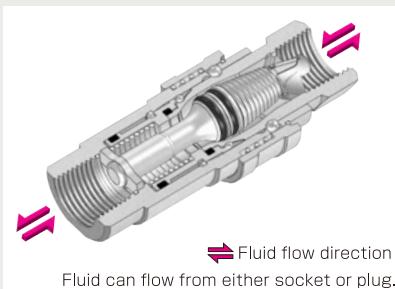
Unit (mm²)

Model	CTL01	CTL02	CTL03	CTL04	CTL06	CTL08	CTL10	CTL12	CTL16
Hose nipple	7	19.6	38	78.5	176	283	530	804	1256
Female thread, Male thread	15.9	33	78.5	132	226	452	804	1134	1885



Non-drip Safety TYPE

Our new sealing method ^(PAT.) reduces the liquid dropping by approx. 99.8% compared with SPE type.



STAINLESS STEEL
(SUS304)



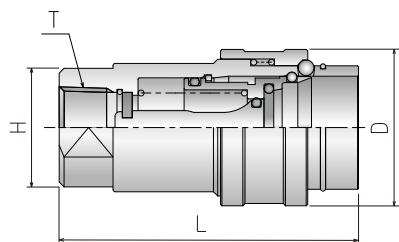
^(PAT.) Non-drip
Clean & Safety

^(PAT.) Large flow and
Low pressure loss
Energy saving

^(PAT.) One touch
connection structure
Better workability

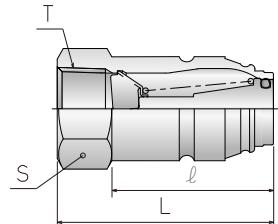
STAINLESS STEEL (SUS304)

SOCKET (Female thread)



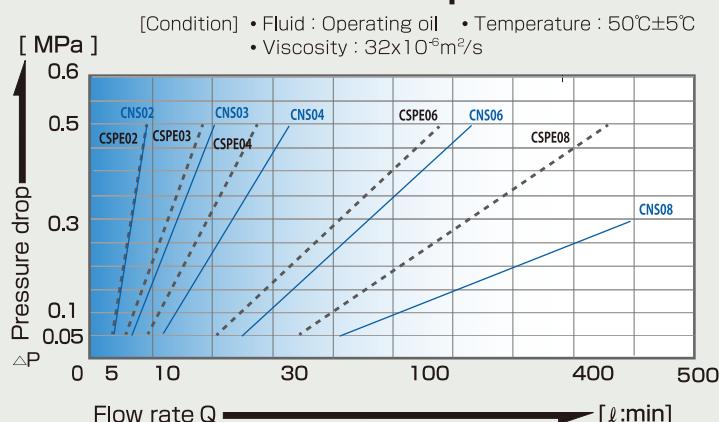
Model	Weight (g)	Connection size	Dimensions(mm)		
			T	L	ØD
CNS02S3	110	Rc 1/4"	56.1	27.9	Face17/Ø19.6
CNS03S3	166	Rc 3/8"	61.1	31.9	Face21/Ø 24.2
CNS04S3	276	Rc 1/2"	66.6	39.9	Face26/Ø 30
CNS06S3	564	Rc 3/4"	81.5	49.9	Face35/Ø 40.4
CNS08S3	854	Rc 1 "	93.5	58.9	Face41/Ø 47.3

PLUG (Female thread)



Model	Weight (g)	Connection size	Dimensions(mm)		
			T	L	S
CNS02P3	38	Rc 1/4"	37.5	H17	27.5
CNS03P3	60	Rc 3/8"	43.5	H21	32.5
CNS04P3	120	Rc 1/2"	49.4	H27	34.4
CNS06P3	240	Rc 3/4"	60.4	H35	40.4
CNS08P3	346	Rc 1 "	69.5	H41	47.5

Flow rate - Pressure drop characteristics



Advantages

- No dripping on the floor
- Save the cleaning process
- Reduce material loss



Comparison *1 Improvements of working fields !

SPE type



NS type



[Condition] • Fluid : Water
• Temperature : Normal temperature

*1 [Cautions]

- Please note the normal pressure of CNS is lower than CSPE type due to the difference of valve's structure. (CSPE is 4.5 to 7.5 MPa.)
- All about that the tip of plug is sealed to minimize drip. Therefore, please be aware of a scratch on the tip may cause leakage or malfunction.

Specifications

Model	CNS02	CNS03	CNS04	CNS06	CNS08
Nominal size	1/4"	3/8"	1/2"	3/4"	1"
Nominal pipe size	8A	10A	15A	20A	25A
Body material	Stainless steel(SUS304)				
Connection type	Female thread only				
Packing material, Temperature range ^{*1}	Fluoro rubber(FKM) : -20°C ~ +180°C				
Normal pressure	3.5MPa				
Maximum pressure	5.3MPa				
Applicable fluid ^{*2}	Air, Water, Oil, etc.				

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table.

Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Drip volume on disconnection		Fluid (Water) Unit (mL)		
Size	1/4"	3/8"	1/2"	3/4"
Drip volume	0.008	0.009	0.012	0.055

*Our own investigation(It depends on using conditions.)

Flow's smallest area					Unit(mm ²)
Size	1/4"	3/8"	1/2"	3/4"	1"
Smallest area	37	72	108	220	327

Air inclusion on connection					Unit (mL)
Size	1/4"	3/8"	1/2"	3/4"	1"
Air inclusion	0.19	0.26	0.45	0.66	1.19

*Theoretical value(It depends on using conditions.)

●Drip volume :

Liquid dripping which occurs when sockets and plugs are disconnected.

●Air inclusion :

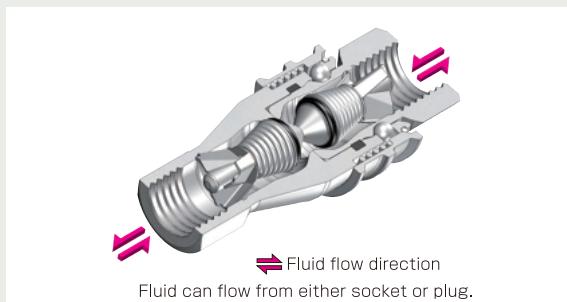
Included air which occurs when sockets and plugs are connected.



SPE (PAT.) TYPE Medium pressure Valveless type

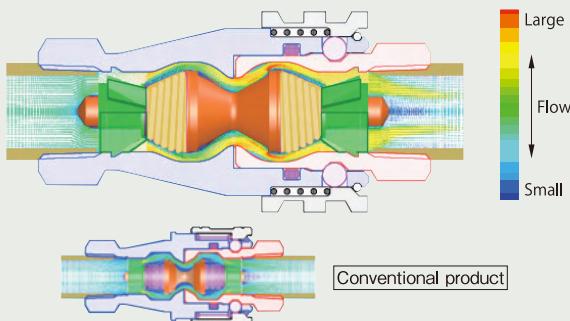


New technology of twin valve model
Large and smooth flow assures efficient works and energy saving.

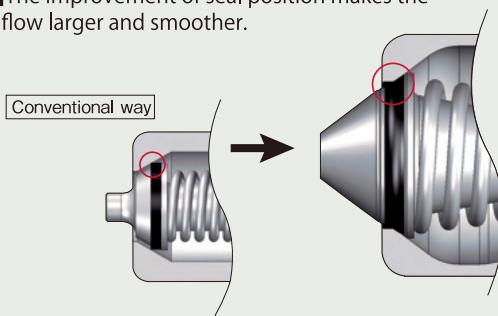


Features

1 Analyzing the factor of resistance to the flow in the inner structure, we found the solutions to reduce the loss.



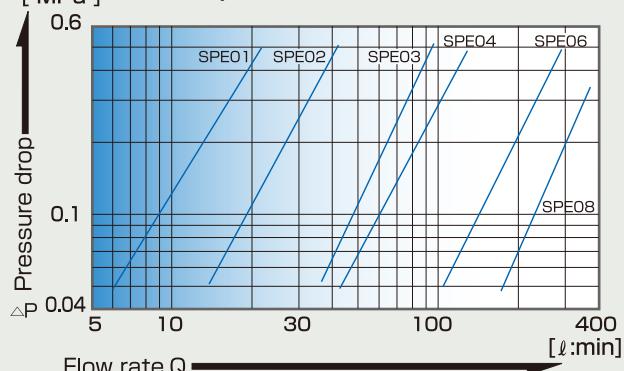
2 The improvement of seal position makes the flow larger and smoother.



Flow rate - Pressure drop characteristics

[Condition] • Fluid : Operating oil • Temperature : 50°C±5°C

[MPa] • Viscosity : $32 \times 10^{-6} \text{m}^2/\text{s}$



Comparison of the average flow

Model	Conventional ratio
CSPE01	130%
CSPE02	183%
CSPE03	160%
CSPE04	164%
CSPE06	188%
CSPE08	169%

*The measuring direction : flow from socket to plug

Packing material and temperature's range

Packing material	Symbol	Temperature*1	Characteristics*2
Nitrile rubber	NBR	-20°C ~ + 80°C	Oil resistance
Fluoro rubber	FKM	-20°C ~ + 180°C	Heat, oil resistance
Perfluoro®	P	*3	Chemical resistance
Ethylene propylene	EPDM	-30°C ~ + 130°C	Weathering resistance
Heat resistant FKM	A	+10°C ~ +200°C	Steam resistance
Kalrez®	K	*4	Chemical, heat resistance

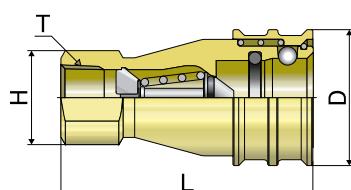
*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

*3 Perfluoro® is registered trademarks from DAIKIN Industries, Ltd. Please contact us additionally on your order.

*4 Kalrez® is trademarks or registered trademarks of affiliates of DuPont de Nemours, Inc. Please contact us additionally on your order.

BRASS SOCKET



Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
CSPE01S2	71	Rc $\frac{1}{8}$ "	48	24	φ15/Face13
CSPE02S2	124	Rc $\frac{1}{4}$ "	58	28	φ20/Face17
CSPE03S2	200	Rc $\frac{3}{8}$ "	65	35	φ24/Face21
CSPE04S2	362	Rc $\frac{1}{2}$ "	72	45	φ30/Face26
CSPE06S2	664	Rc $\frac{3}{4}$ "	88	55	φ40/Face35
CSPE08S2	956	Rc1"	102	65	φ47/Face41



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CSPE01P2	17	Rc $\frac{1}{8}$ "	29	13	15	19
CSPE02P2	33	Rc $\frac{1}{4}$ "	36	17	20	22
CSPE03P2	56	Rc $\frac{3}{8}$ "	40	21	24	25
CSPE04P2	94	Rc $\frac{1}{2}$ "	44	26	30	28
CSPE06P2	203	Rc $\frac{3}{4}$ "	52	35	40	36
CSPE08P2	318	Rc1"	62	41	47	40

* Please read "User safty guide" before operation.



Stainless steel (SUS304)



Twin valve



Fluoro rubber



Water



Oil



Air



Stainless steel (SUS304) is approved for marine use by NIPPON KAIJI KYOKAI(NK).
Approval No. 10FV103B

SOCKET

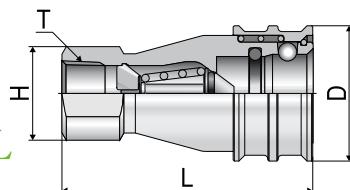


PLUG



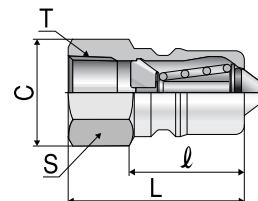
- Interchangeable with conventional SP TYPE.
- Male thread type is option.

STAINLESS STEEL (SUS304)



SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
CSPE01S3	66	Rc 1/8"	48	24	φ15/Face13
CSPE02S3	118	Rc 1/4"	58	28	φ20/Face17
CSPE03S3	192	Rc 3/8"	65	35	φ24/Face21
CSPE04S3	350	Rc 1/2"	72	45	φ30/Face26
CSPE06S3	628	Rc 3/4"	88	55	φ40/Face35
CSPE08S3	900	Rc 1"	102	65	φ47/Face41



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CSPE01P3	15	Rc 1/8"	29	13	15	19
CSPE02P3	31	Rc 1/4"	36	17	20	22
CSPE03P3	54	Rc 3/8"	40	21	24	25
CSPE04P3	94	Rc 1/2"	44	26	30	28
CSPE06P3	193	Rc 3/4"	52	35	40	36
CSPE08P3	299	Rc 1"	62	41	47	40

Specifications

Model	CSPE01	CSPE02	CSPE03	CSPE04	CSPE06	CSPE08	
Nominal size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	
Nominal pipe size	6A	8A	10A	15A	20A	25A	
Body material	Brass, Stainless steel(SUS304)						
Connection type	Female thread only						
Packing material, Temperature range ^{*1}	Fluoro rubber(FKM) : -20°C~+180°C						
Normal pressure	Brass	5.0MPa		3.0MPa			
Maximum pressure		7.5MPa		4.5MPa			
Normal pressure	Stainless steel	7.5MPa		4.5MPa			
Maximum pressure		10.0MPa		6.5MPa			
Applicable fluid	^{*2}	Air, Water, Oil, etc.					

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

Unit (mm²)

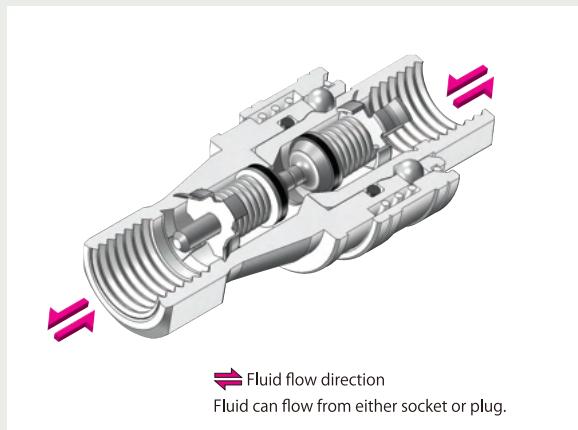
Model	CSPE01	CSPE02	CSPE03	CSPE04	CSPE06	CSPE08
Smallest area	18	33	66	101	214	327



S·P TYPE Medium pressure Twin valve



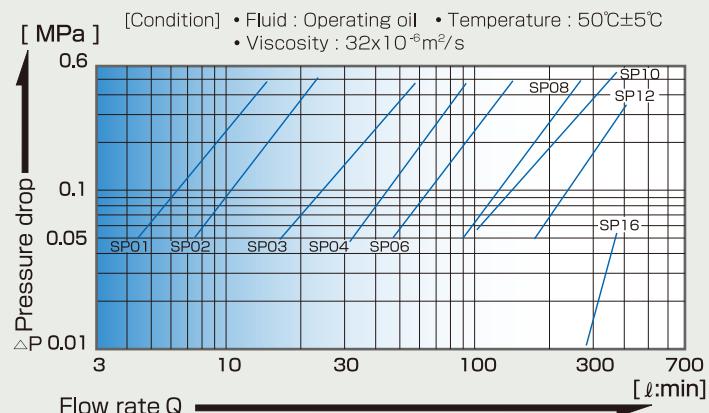
Twin shut off valve makes neither fluid spout nor air mixture.



Features

- Both socket and plug have automatic shut-off valves for medium pressure applications.
- When disconnecting, both socket and plug are sealed by automatic shut-off valves instantly.
- Various packing materials enable a wide range of application.
- SUS316 is available as option.

Flow rate - Pressure drop characteristics



Packing material and temperature's range

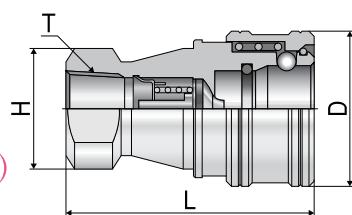
Packing material	Symbol	Temperature *1	Characteristics *2
Nitrile rubber	NBR	-20°C~+80°C	Oil resistance
Fluoro rubber	FKM	-20°C~+180°C	Heat, oil resistance
Perfluoro®	P	*3	Chemical resistance
Ethylene propylene	EPDM	-30°C~+130°C	Weathering resistance
Heat resistant FKM	A	+10°C~+200°C	Steam resistance
Kalrez®	K	*4	Chemical, heat resistance

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

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*4 Kalrez® is trademarks or registered trademarks of affiliates of DuPont de Nemours, Inc. Please contact us additionally on your order.



STEEL (Zinc-plated) SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
★ CSP01S	79	Rc 1/8"	48	24	φ18/Face14
CSP02S	128	Rc 1/4"	58	28	φ22/Face19
CSP03S	195	Rc 3/8"	65	35	φ25/Face21
CSP04S	400	Rc 1/2"	72	45	φ35/Face29
CSP06S	670	Rc 3/4"	88	55	φ41/Face35
CSP08S	1000	Rc 1"	102	65	φ48/Face41
★ CSP10S	1603	Rc 1 1/4"	115	77.5	φ59/Face54
★ CSP12S	2361	Rc 1 1/2"	124	87.5	φ69/Face63
★ CSP16S	3752	Rc 2"	132	109	φ86/Face77



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
★ CSP01P	18	Rc 1/8"	29	14	16	19
CSP02P	33	Rc 1/4"	36	17	19.5	22
CSP03P	58	Rc 3/8"	40	21	24	25
CSP04P	116	Rc 1/2"	44	29	33	28
CSP06P	203	Rc 3/4"	52	35	40	36
CSP08P	341	Rc 1"	62	41	47	40
★ CSP10P	612	Rc 1 1/4"	70	54	62	45
★ CSP12P	878	Rc 1 1/2"	75	65	75	49
★ CSP16P	1572	Rc 2"	80	φ84/Face77		52

* Please read "User safty guide" before operation.

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.



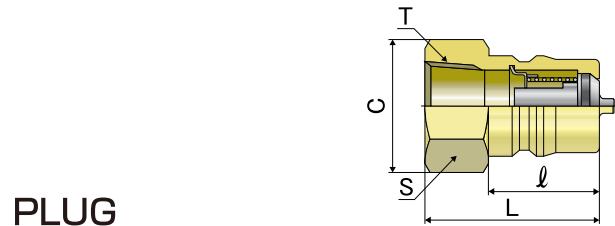
SOCKET



BRASS SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	ØD	H
CSP10S2	1717	Rc1 1/4"	115	77.5	Ø59/Face54
CSP12S2	2526	Rc1 1/2"	124	87.5	Ø69/Face63
CSP16S2	3956	Rc2"	132	109	Ø86/Face77

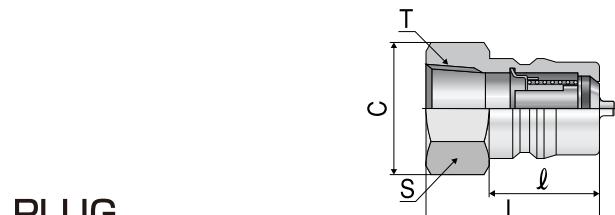
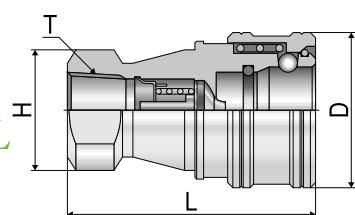
PLUG



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CSP10P2	664	Rc1 1/4"	70	54	62	45
CSP12P2	996	Rc1 1/2"	75	65	75	49
CSP16P2	1638	Rc2"	80	Ø84	Face77	52

STAINLESS STEEL (SUS304) SOCKET



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CSP10P3	612	Rc1 1/4"	70	54	62	45
CSP12P3	878	Rc1 1/2"	75	65	75	49
CSP16P3	1572	Rc2"	80	Ø84	Face77	52

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	ØD	H
CSP10S3	1603	Rc1 1/4"	115	77.5	Ø59/Face54
CSP12S3	2361	Rc1 1/2"	124	87.5	Ø69/Face63
CSP16S3	3752	Rc2"	132	109	Ø86/Face77

Specifications

Model	CSP01	CSP02	CSP03	CSP04	CSP06	CSP08	CSP10	CSP12	CSP16		
Nominal size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"		
Nominal pipe size	6A	8A	10A	15A	20A	25A	32A	40A	50A		
Body material	—							Brass, Stainless steel(SUS304)			
	Steel(Zinc-plated)										
Connection type	Female thread only										
Packing material Temperature range ^{*1}	Brass, Stainless steel Steel	—					Fluoro rubber(FKM): -20°C ~ +180°C				
Normal pressure	Brass	—					2.0MPa	1.5MPa			
Maximum pressure		—					3.0MPa	2.3MPa			
Normal pressure	Stainless steel	—					3.0MPa	2.0MPa			
Maximum pressure		—					4.5MPa	3.0MPa			
Normal pressure	Steel	7.5MPa			4.5MPa		3.0MPa	2.0MPa			
Maximum pressure		10.0MPa			6.5MPa		4.5MPa	3.0MPa			
Applicable fluid ^{*2}	Brass, Stainless steel Steel	—					Air, Water, Oil, etc.				

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

Unit (mm²)

Model	CSP01	CSP02	CSP03	CSP04	CSP06	CSP08	CSP10	CSP12	CSP16
Smallest area	13	23	55	83	143	234	378	536	803



S·P-VTYPE

Medium pressure
Twin valve



Brass



Stainless
steel
(SUS304)



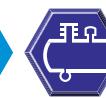
Twin valve



CR

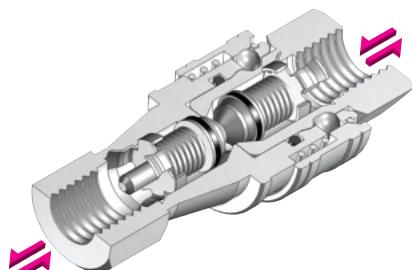


Water



Air

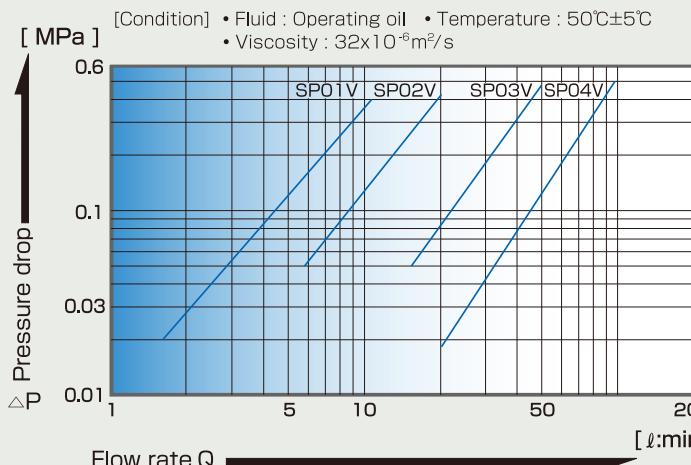
Airtightly automatic shut-off valves apply
for vacuum application.



Fluid flow direction

Fluid can flow from either socket or plug.

Flow rate - Pressure drop characteristics



Features

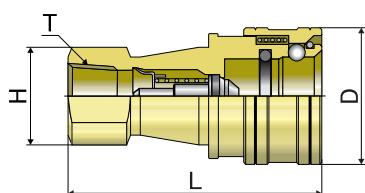
- Both socket and plug have automatic shut-off valves, offering high performance on vacuum applications (1.3x10⁻¹Pa).
- The double O-ring type is available as option.

Packing material and temperature's range

Packing material	Neoprene
Symbol	CR
Temperature *1	-20°C~+80°C
Advantage *2	Resistant to CFC-12, HCFC-22 and HFC-134a
Application	Production line for air conditioner

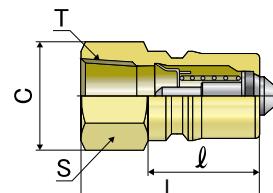
*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.



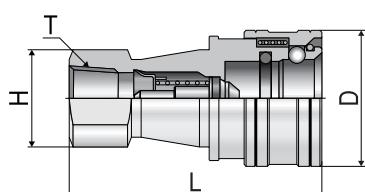
BRASS SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
CSP02S2V	137	Rc 1/4"	58	28	φ22/Face19
CSP03S2V	209	Rc 3/8"	65	35	φ25/Face21



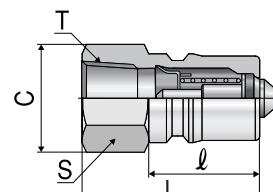
PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CSP02P2V	36	Rc 1/4"	36	17	19.5	22
CSP03P2V	62	Rc 3/8"	40	21	24	25



STAINLESS STEEL (SUS304) SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
CSP02S3V	128	Rc 1/4"	58	28	φ22/Face19
CSP03S3V	195	Rc 3/8"	65	35	φ25/Face21



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CSP02P3V	33	Rc 1/4"	36	17	19.5	22
CSP03P3V	58	Rc 3/8"	40	21	24	25

* Please read "User safty guide" before operation.



Brass

Stainless steel
(SUS304)

Twin valve



Neoprene



Water

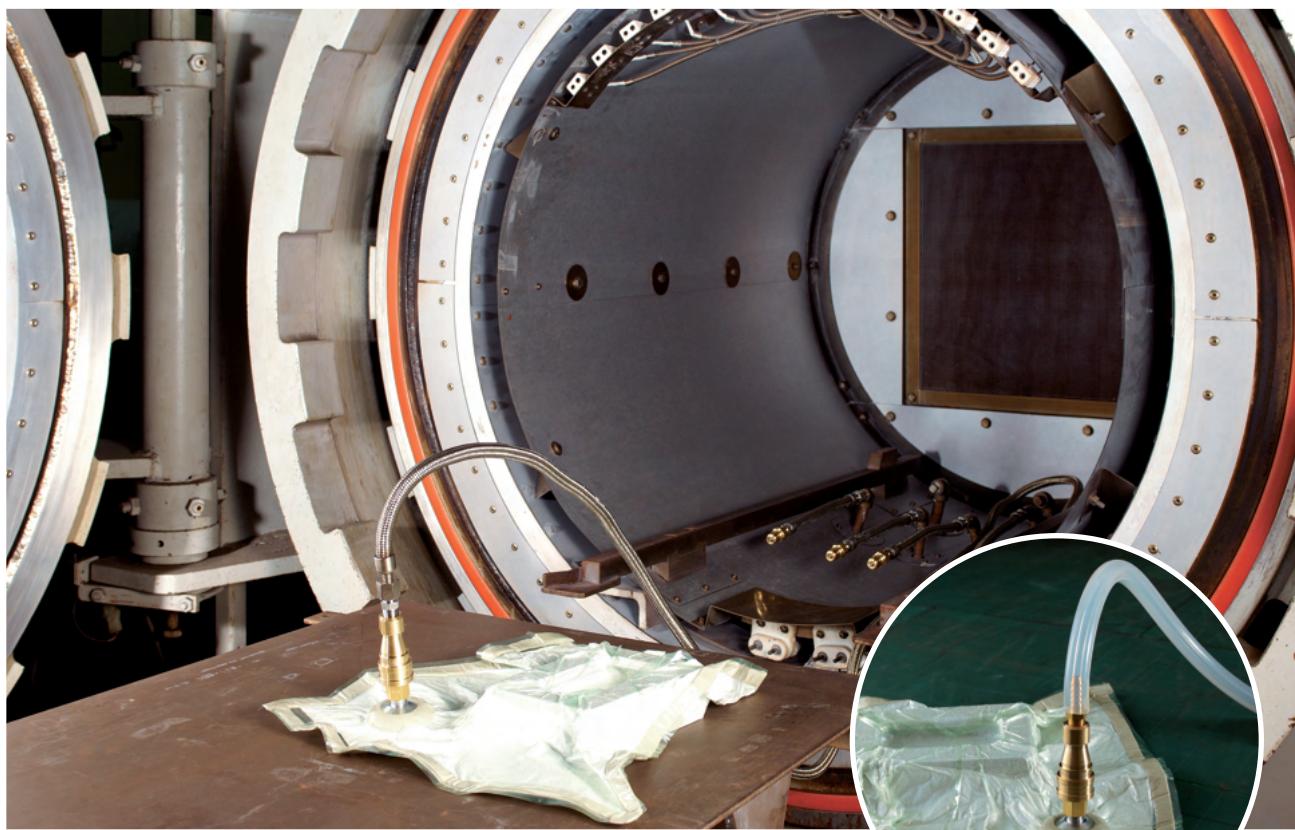


Air



SOCKET

PLUG



Example : Autoclave for advanced composite materials

Specifications

Model	CSP02V	CSP03V
Nominal size	1/4"	3/8"
Nominal pipe size	8A	10A
Body material	Brass, Stainless steel(SUS304)	
Connection type	Female thread only	
Packing material Temperature range *1	Neoprene(CR) : -20°C~+80°C	
Normal pressure Maximum pressure	Brass	5.0MPa 7.5MPa
Normal pressure Maximum pressure	Stainless steel	7.5MPa 10.0MPa
Applicable fluid	*2	Air, Water, Inert gas, etc.

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

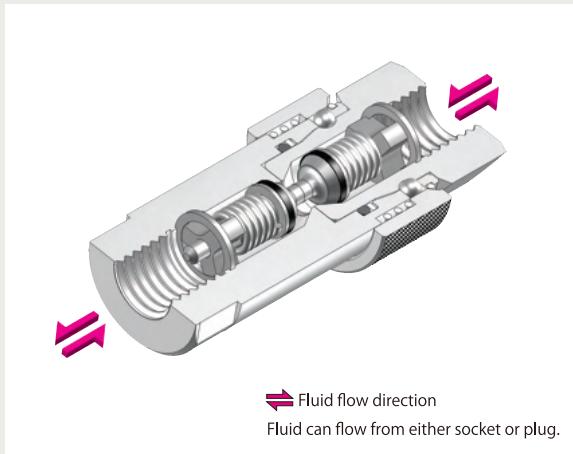
Flow's smallest area

Unit (mm²)

Model	CSP02V	CSP03V
Smallest area	23.1	52



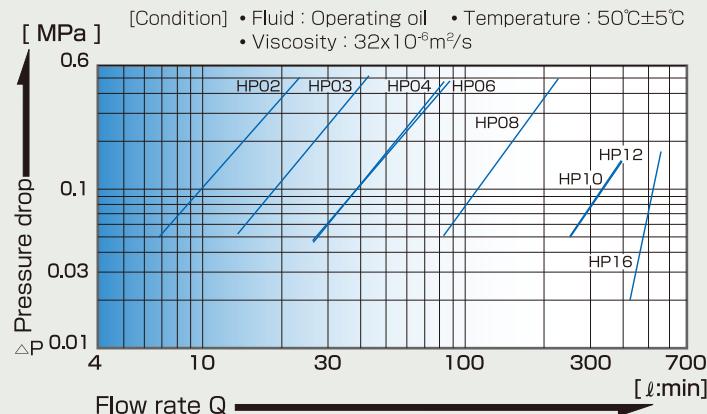
Model for Hydraulic equipment application
Chrome-molybdenum steel body withstands vibration and impact.
The heat treatment assures the durability.



Features

- For preventing unexpected disconnection, single sleeve lock and double sleeve lock are available as option.
- The male type is available as option.
- Please inform us when using for die casting machine in a large pressure variation.

Flow rate - Pressure drop characteristics



Packing material and temperature's range

Packing material	Symbol	Temperature *1	Characteristics *2
Nitrile rubber	NBR	-20°C~+ 80°C	Oil resistance
Fluoro rubber	FKM	-20°C~+180°C	Heat, oil resistance

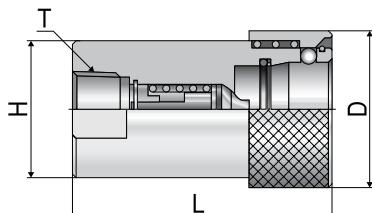
*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Chrome-molybdenum steel(Zinc-plated) SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
CHP02S	148	Rc $\frac{1}{4}$ "	49	30	φ24/Face19
CHP03S	234	Rc $\frac{3}{8}$ "	60	34.5	φ28.5/Face23
CHP04S	498	Rc $\frac{1}{2}$ "	72	44	φ38.5/Face35
CHP06S	470	Rc $\frac{3}{4}$ "	72	44	φ38.5/Face35
CHP08S	1044	Rc 1"	93	58.5	φ52/Face46
CHP10S	2798	Rc $1\frac{1}{4}$ "	138	88	φ64/Face58
CHP12S	2728	Rc $1\frac{1}{2}$ "	138	88	φ64/Face58
CHP16S	7290	Rc 2"	198	123	φ90/Face80

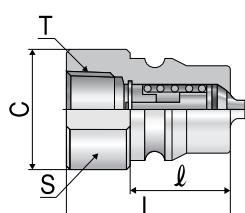
*CHP04 and CHP06, CHP10 and CHP12 can be connected.



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)			
			L	S	C	l
CHP02P	40	Rc $\frac{1}{4}$ "	32	19	20.5	17.5
CHP03P	66	Rc $\frac{3}{8}$ "	38	23	25	22.5
CHP04P	122	Rc $\frac{1}{2}$ "	44	29	32	27.5
CHP06P	144	Rc $\frac{3}{4}$ "	50	32	35	27.5
CHP08P	364	Rc 1"	61	φ47/Face41	36	
CHP10P	884	Rc $1\frac{1}{4}$ "	80	φ64/Face58	58	
CHP12P	812	Rc $1\frac{1}{2}$ "	80	φ64/Face58	58	
CHP16P	3330	Rc 2"	115	φ100/Face90	83	

*CHP04 and CHP06, CHP10 and CHP12 can be connected.



*Please read "User safty guide" before operation.



Special steel



Twin valve



Nitrile rubber

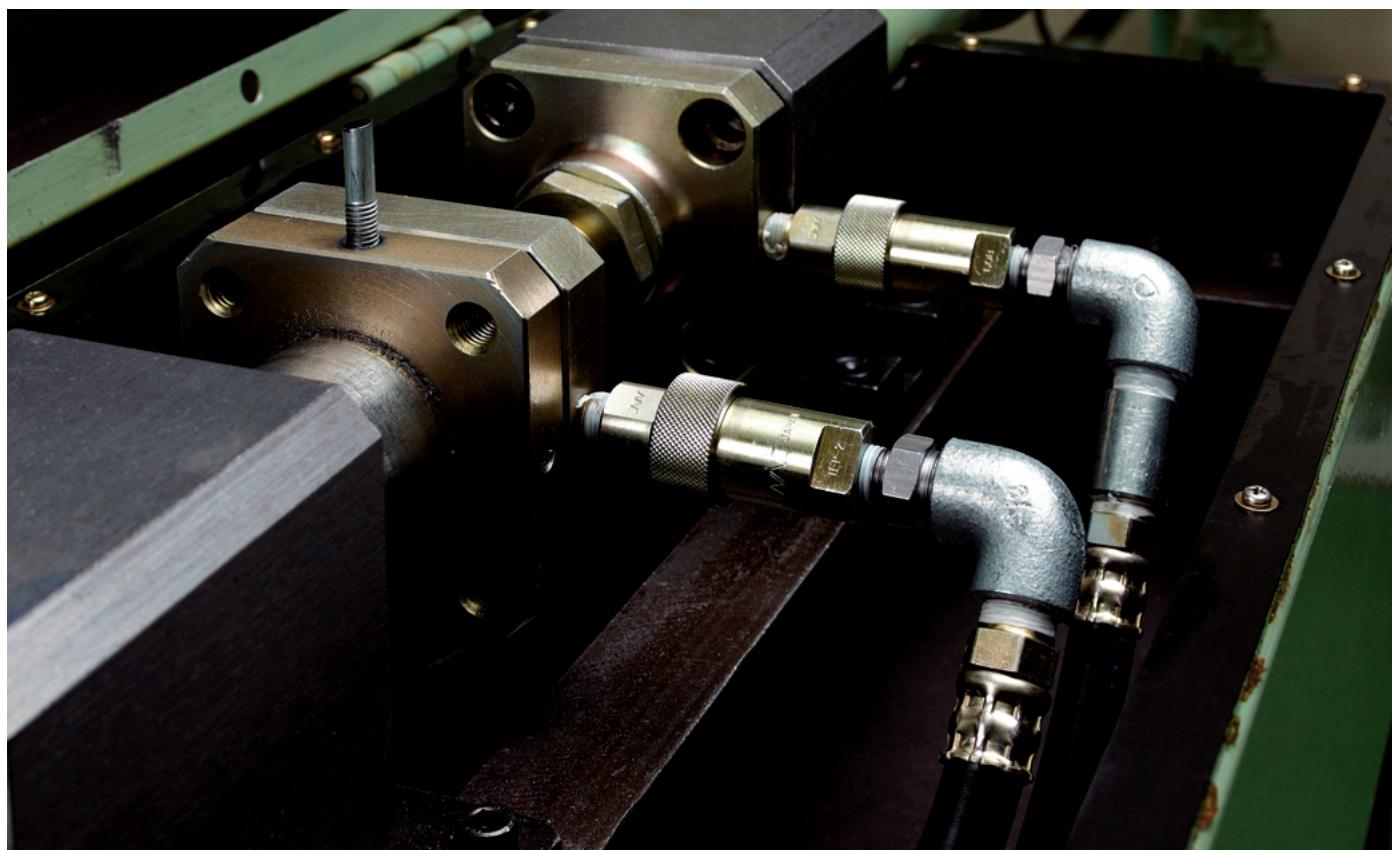


Oil



Cautions

- Packing material should be selected for the applicable fluid.
- Different sizes are not interchangeable.
- When mounting on the male thread, excessive tightening may cause the crack of the couplings.
- Do not apply pressure on a socket or a plug when disconnecting. It may damage the valve.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- When connecting to a female thread or a hose, please use a nipple.

SOCKET**PLUG**

Specifications

Model	CHP02	CHP03	CHP04	CHP06	CHP08	CHP10	CHP12	CHP16
Nominal size	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
Nominal pipe size	8A	10A	15A	20A	25A	32A	40A	50A
Body material	Chrome-molybdenum steel(Zinc-plated)							
Connection type	Female thread only							
Packing material, Temperature range *1	Nitrile rubber(NBR) : -20°C~+80°C							
Normal pressure	20.5MPa			18.0MPa		14.0MPa		
Maximum pressure	31.0MPa			26.5MPa		20.5MPa		
Applicable fluid *2	Oil							

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

Unit (mm²)

Model	CHP02	CHP03	CHP04	CHP06	CHP08	CHP10	CHP12	CHP16
Smallest area	21	37	77	77	203	595	595	1084

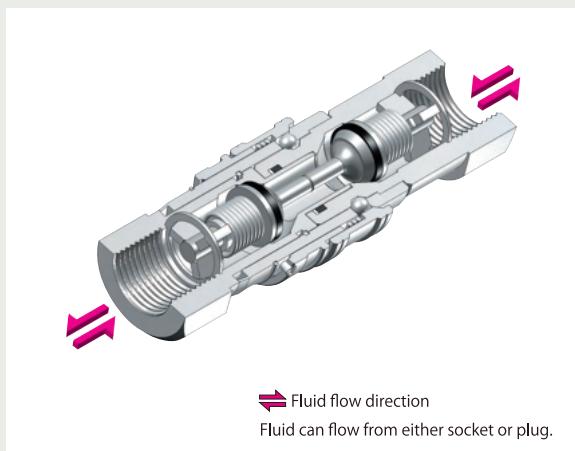


SH TYPE

High pressure Twin valve



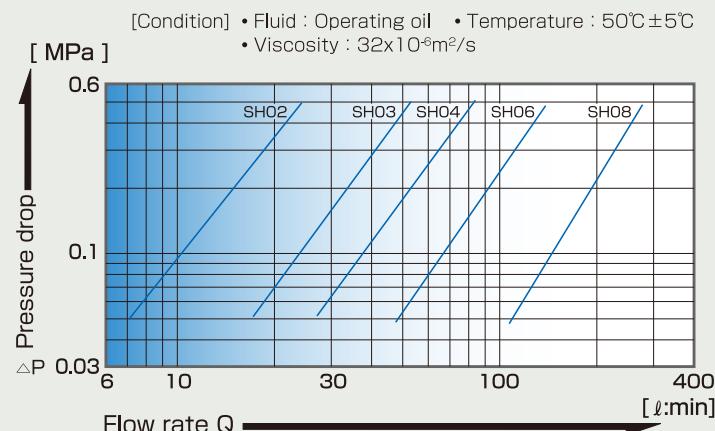
Stainless steel material is excellent resistance to corrosion.
Suitable for hard circumstance : iron works, on board



Features

- Both socket and plug have automatic shut-off valves under working pressure of 20.5MPa.
- Double-sleeve lock mechanism assures tight connection against vibration and impact.
- Putting dust covers on sockets and plugs are recommendable when they are disconnected.

Flow rate - Pressure drop characteristics



Packing material and temperature's range

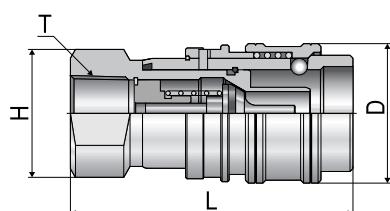
Packing material	Symbol	Temperature *1	Characteristics *2
Fluoro rubber	FKM	-20°C~+180°C	Heat, oil resistance

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

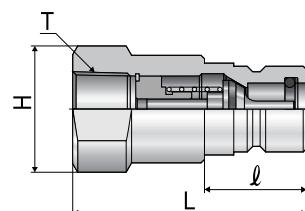
STAINLESS STEEL(SUS304) SOCKET

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	φD	H
CSH02S3	138	Rc 1/4"	59	27	φ22/Face19
CSH03S3	228	Rc 3/8"	68	32	φ28/Face24
CSH04S3	404	Rc 1/2"	81	40	φ35/Face30
CSH06S3	704	Rc 3/4"	97	48	φ44/Face38
CSH08S3	1382	Rc 1"	118	62	φ58/Face50



PLUG

Model	Weight (g)	Connection size(T)	Dimensions(mm)		
			L	H	ℓ
CSH02P3	74	Rc 1/4"	50	φ22/Face19	20
CSH03P3	128	Rc 3/8"	59	φ28/Face24	24
CSH04P3	240	Rc 1/2"	70.5	φ35/Face30	28
CSH06P3	448	Rc 3/4"	81.5	φ44/Face38	35.6
CSH08P3	934	Rc 1"	100	φ58/Face50	47.5



* Please read "User safty guide" before operation.

Stainless steel
(SUS304)

Twin valve



Fluoro rubber



Water



Oil



Gas



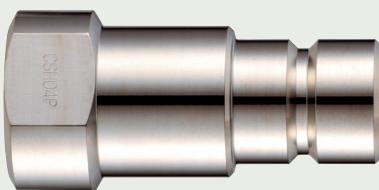
Cautions

- Packing material should be selected for the applicable fluid.
- Different sizes are not interchangeable.
- When mounting on the male thread, excessive tightening may cause the crack of the couplings.
- Do not apply pressure on a socket or a plug when disconnecting. It may damage the valve.
- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- When connecting to a female thread or a hose, please use a nipple.

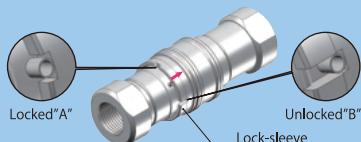
SOCKET



PLUG



Double sleeve lock mechanism



SH type has two ditches. When a pin falls into the small ditch "A" of lock sleeve, the socket and the plug are locked.



Specifications

Model	CSH02	CSH03	CSH04	CSH06	CSH08
Nominal size	1/4"	3/8"	1/2"	3/4"	1"
Nominal pipe size	8A	10A	15A	20A	25A
Body material	Stainless steel(SUS304)				
Connection type	Female thread only				
Packing material, Temperature range ^{*1}	Fluoro rubber(FKM) : -20°C~+180°C				
Normal pressure	20.5MPa				
Maximum pressure	31.0MPa				
Applicable fluid ^{*2}	Water, Oil, Gas				
Accessory	Dust cover				

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard. O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

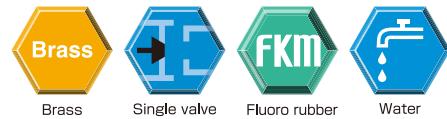
Flow's smallest area

Unit (mm²)

Model	CSH02	CSH03	CSH04	CSH06	CSH08
Smallest area	26	47	84	153	233

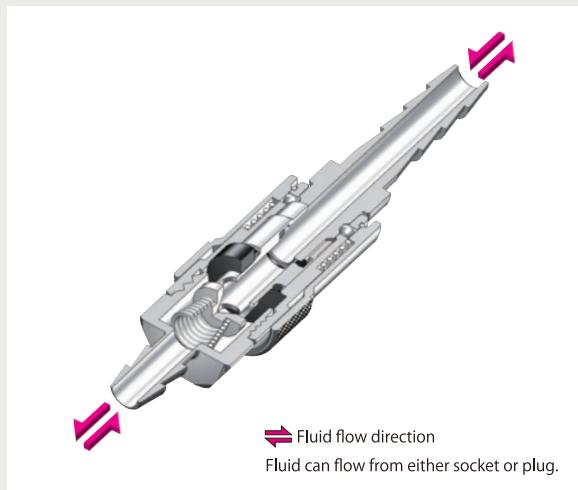


KCTYPE Mold coolant water Single valve

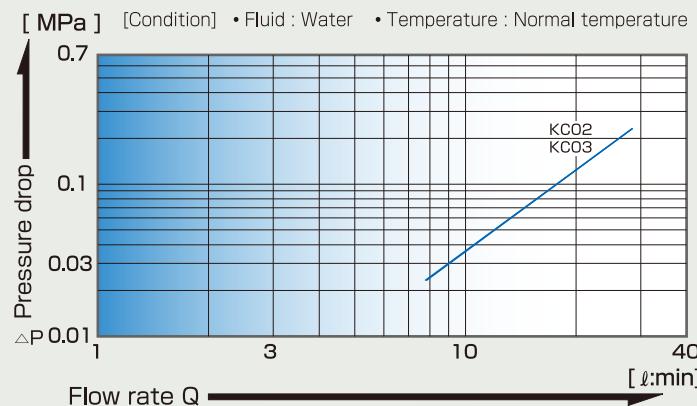


Model for mold coolant

One hand operation with long sleeve of socket makes mold replacement easy.



Flow rate - Pressure drop characteristics



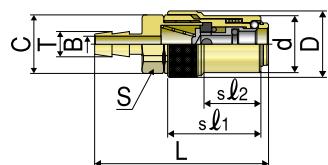
Features

- Easy connection and disconnection of water cooling lines for replacement of molds
- Sockets have automatic shut-off valve; fluid in the socket does not run out on disconnection.
- Fluid can flow from either socket or plug.
- Valveless type is available as option.

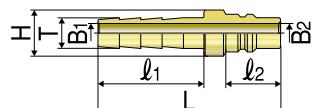
Cautions

- Scraps of the seal tape and dust cause fluid leakage. Be careful not to stick them on the couplings.
- Do not impact, hit, pull or bent.
- Do not dismantle. It causes damage to the couplings.

BRASS SOCKET SH(Hose nipple)

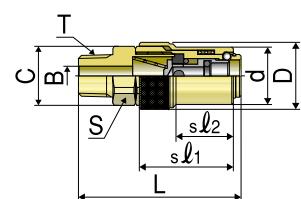


Model	Hose size	Dimensions (mm)								Weight (g)	
		L	φD	φd	S	C	sl1	sl2	φB	φT	
★ CKC02SH2	1/4"	55	21	18	17	18.5	29.5	18	5	8	59
CKC03SH2	3/8"	61	21	18	17	18.5	29.5	18	7	12	65



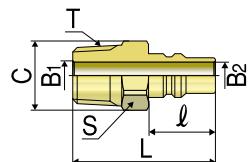
PLUG PH(Hose nipple)

Model	Hose size	Dimensions (mm)								Weight (g)
		L	φH	l1	l2	φT	φB1	φB2		
★ CKC02PH2	1/4"	50	12	29	15	8.5	5	5	17	
★ CKC03PH2	3/8"	50	15.5	29	15	12	6	6	19	



SM (Male thread)

Model	Connection size(T)	Dimensions (mm)								Weight (g)
		L	φD	φd	S	C	sl1	sl2	φB	
CKC02SM2	R 1/4"	51	21	18	17	18.5	29.5	18	6	65
CKC03SM2	R 3/8"	53	21	18	17	18.5	29.5	18	6	75



PM (Male thread)

Model	Connection size(T)	Dimensions (mm)								Weight (g)
		L	S	C	l	φB1	φB2			
CKC01PM2	R 1/8"	31	12	13	15	6	6	12		
CKC02PM2	R 1/4"	34	14	15.5	15	6	6	20		
★ CKC03PM2	R 3/8"	35	19	21	15	9	6	33		

* Please read "User safty guide" before operation.

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.



BRASS

Long sleeve

Automatic shut-off valve

· The valveless type is available as option.



SH



PH



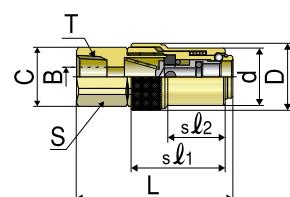
SM



PM



SF



SF (Female thread)

Model	Connection size(T)	Dimensions(mm)						Weight (g)		
		L	φD	φd	S	C	sℓ1	sℓ2		
CKC02SF2	Rc 1/4"	49	21	18	17	18.5	29.5	18	6	67

* Attention to products marked “☆”. They are not always in stock. Check the delivery time when ordering.

Specifications

Model	CKC01	CKC02	CKC03
Nominal size	1/8"	1/4"	3/8"
Nominal pipe size	6A	8A	10A
Body material	Brass		
Connection type	Female thread, Male thread, Hose nipple		
Packing material, Temperature range ^{*1}	Fluoro rubber(FKM) : -20°C~+180°C		
Normal pressure	1.0MPa		
Maximum pressure	1.5MPa		
Applicable fluid ^{*2}	Water		

*1 By the environment of one's using, it has a case that the appropriate temperature differs from this table. Continuous use by above minimum/maximum temperature causes a leakage and so on.

*2 Above characteristics are standard, O-ring durability depends on the temperature of fluid, kinds of chemicals and viscosity.

Flow's smallest area

Unit (mm²)

Model	01PM	02PH	02PM	03PH	03PM
02SH	19.6	19.6	19.6	19.6	19.6
02SM	23.8	19.6	23.8	23.8	23.8
02SF	23.8	19.6	23.8	23.8	23.8
03SH	23.8	19.6	23.8	23.8	23.8
03SM	23.8	19.6	23.8	23.8	23.8



Dust cover (Vinyl chloride resin)

Dust cover is effective for durability of couplings.



(Material : Vinyl chloride resin)

Type	Size	Model		Type	Size	Model	
		For Socket	For Plug			For Socket	For Plug
AL TYPE							
CAL11	1/8"	CAL10SDC	CAL10PDC	CSP01	1/8"	CSP01SDC	CSP01PDC
CAL12	1/4"			CSP02	1/4"	CSP02SDC	CSP02PDC
CAL21	1/8"	CAL20SDC	CAL20PDC	CSP03	3/8"	CSP03SDC	CSP03PDC
CAL22	1/4"			CSP04	1/2"	CSP04SDC	CSP04PDC
CAL23	5/8"			CSP06	5/4"	CSP06SDC	CSP06PDC
CAL24	1/2"			CSP08	1"	CSP08SDC	CSP08PDC
CAL44	1/2"	CAL40SDC	CAL40PDC	CSP10	1 1/4"	★CSP10SDC	★CSP10PDC
CAL46	5/4"			CSP12	1 1/2"	★CSP12SDC	★CSP12PDC
CAL48	1"			CSP16	2"	★CSP16SDC	★CSP16PDC
TL TYPE							
CTL01	1/8"	CTL01SDC	CTL01PDC	CHP02	1/4"	CHP02SDC	CHP02PDC
CTL02	1/4"	CTL02SDC	CTL02PDC	CHP03	3/8"	CHP03SDC	CHP03PDC
CTL03	5/8"	CTL03SDC	CTL03PDC	CHP04	1/2"	CHP04SDC	CHP04PDC
CTL04	1/2"	CTL04SDC	CTL04PDC	CHP06	5/4"	CHP06SDC	CHP06PDC
CTL06	5/4"	CTL06SDC	CTL06PDC	CHP08	1"	CHP08SDC	CHP08PDC
CTL08	1"	CTL08SDC	CTL08PDC	CHP10	1 1/4"	★CHP10SDC	★CHP10PDC
CTL10	1 1/4"	★CTL10SDC	★CTL10PDC	CHP12	1 1/2"	★CHP12SDC	★CHP12PDC
CTL12	1 1/2"	★CTL12SDC	★CTL12PDC	CHP16	2"	★CHP16SDC	★CHP16PDC
CTL16	2"	★CTL16SDC	★CTL16PDC	S·P·V TYPE			
SP TYPE				CSP02V	1/4"	CSPV02SDC	CSPV02PDC
CSPE01	1/8"	CSPE01SDC	CSPE01PDC	CSP03V	3/8"	CSPV03SDC	CSPV03PDC
CSPE02	1/4"	CSPE02SDC	CSPE02PDC	SH TYPE			
CSPE03	5/8"	CSPE03SDC	CSPE03PDC	CSH02	1/4"	CSH02SDC	CSH02PDC
CSPE04	1/2"	CSPE04SDC	CSPE04PDC	CSH03	3/8"	CSH03SDC	CSH03PDC
CSPE06	5/4"	CSPE06SDC	CSPE06PDC	CSH04	1/2"	CSH04SDC	CSH04PDC
CSPE08	1"	CSPE08SDC	CSPE08PDC	CSH06	5/4"	CSH06SDC	CSH06PDC
				CSH08	1"	CSH08SDC	CSH08PDC
A dust cover is the standard accessory for SH TYPE .							

* Please read "User safty guide" before operation.

* Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.



CH TYPE Polyurethane coil tube with couplings

Flexible and light weight polyurethane coil tube improves the operation efficiency.

Products number guide

CCH1208- 5 - L

Tube model

Tube symbol —

Coupling symbol

Symbol	Length
3	2.5m
5	5m
8	7.5m
10	10m

Symbol	Coupling type
L	AL TYPE20
LR	AL TYPE20 (Rotary type)
LB	AL TYPE20 (Lock type)
LRB	AL TYPE20 (Rotary & Lock type)
S	AT TYPE
SR	AT TYPE (Rotary type)
SB	AT TYPE (Lock type)
SRB	AT TYPE (Rotary & Lock type)
X	Without coupling

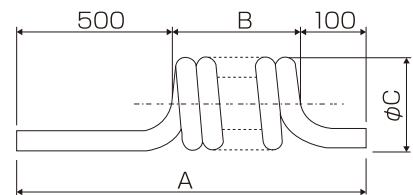
*For tube models, please refer to the dimensions chart as below.

Dimensions chart

Unit(mm)

Model	Tube diameter	Service length	Total length	A	B	ϕC	Color
CCH0805- 3-5-8-10	8 x 5	2000	2500	780	180	42	Yellow
		4000	5000	1000	400		
		6000	7500	1230	630		
		8000	10000	1400	800		
CCH1065- 3-5-8-10	10 x 6.5	2000	2500	785	185	52	Yellow
		4000	5000	1000	400		
		6000	7500	1235	635		
		8000	10000	1400	800		
CCH1208- 3-5-8-10	12 x 8	2000	2500	780	180	65	Yellow
		4000	5000	990	390		
		6000	7500	1190	590		
		8000	10000	1380	780		

↑ Fill in the coupling symbol.



*Dimensions A, B and C are approximation for your reference.



Specifications

Tube material	Polyurethane
Temperature range	-20°C~+60°C
Normal pressure	0.8MPa
Applicable fluid	Air

Cautions

- Please check the twist in coil tube before use.
- Do not exceed the working pressure of coil tube.
- Do not bend coil tube by force.
- Do not use coil tube in the presence of open flames.

*Please read "User safty guide" before operation.

Combination of coil tube and coupling

Coupling symbol		L	LR	LB	LRB	S	SR	SB	SRB	Plugs of AL TYPE20*
Coupling type	AL20	○	○	○	○					* Plugs are interchangeable with all sockets in this chart.
	AT					○	○	○	○	
Lock type				○	○			○	○	
Rotary type		○			○		○		○	
Coupling type										
Tube model & Tube diameter (O.D.XI.D.)	CCH0805 8x5	CAL21SA	—	CAL21SAL	—	CAT21SA	—	CAT21SAL	—	CAL21PA
	CCH1065 10x6.5	CAL22SB	★ CAL22SBR	CAL22SBL	★ CAL22SBR	CAT22SB	★ CAT22SBR	CAT22SBL	★ CAT22SBR	CAL22PB
	CCH1208 12x8	CAL23SA	★ CAL23SAR	CAL23SAL	★ CAL23SAR	CAT23SA	★ CAT23SAR	CAT23SAL	★ CAT23SAR	CAL23PA

*Attention to products marked "★". They are not always in stock. Check the delivery time when ordering.

Special Couplings

Dust cover (Stainless steel)

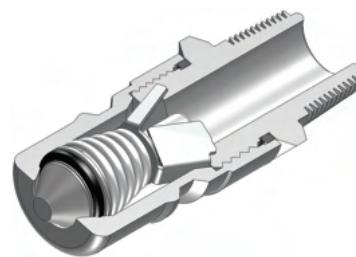
The material is stainless steel for application of SPE and TL type.



Dust cover for plugs

Male thread type of SPE(S·P) and HP type

Using with a female work, an additional male nipple is unnecessary.



CSPE type

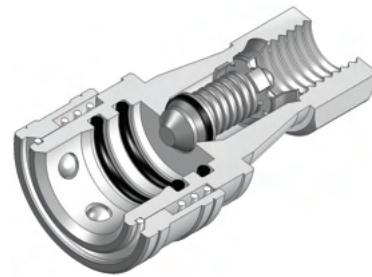
Engine-test coupling

One-touch application with the engine pipe reduces the engine test works.



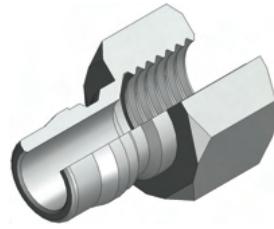
Vacuum coupling with double O-rings

Better airproof and better durability.



Coupling for high-pressure washers and car washers

Valveless type for working pressure up to 15MPa.
Lock type of stainless steel body.



Automatic coupling

Multi-located couplings are connected and disconnected automatically by hydraulic cylinder.



Inquiry form

Usage			
Connection type	Hose nipple, Male thread, Female thread, Unified thread, Special thread, Others		
Connection size			
Coupling model name (Model number)			
Quantity		Location	indoor / outdoor
Body material		Fluid	
Surface treatment		Packing material	
Socket valve	required / not required	Plug valve	required / not required
Normal pressure	MPa	Maximum pressure	MPa
Pressure variation		Maximum flow	ℓ /min
Working temperature	(Maximum °C)	(Normal °C)	(Minimum °C)
Degree of vacuum			
Special notes			



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