

GUIDE FOR COOLING COUPLERS

Specifications of Sockets

Classification	Mold Coupler Series		For Cooling Pipe High Couplers Series		Slim design Sockets Series
	80°C	120°C	80°C	120°C	120°C
Category	80°C	120°C	80°C	120°C	120°C
Part Number	KSH · KTSH KSM · KTSM KFF · KTFE	F120-KSH F120-KTSHBL F120-KSM F120-KFF F120-KSHL	KHSH KHSM KHSF	F120-KHSH F120-KHSHW F120-KHSM F120-KHSF	F120-MKSH F120-MJTSH F120-MJTFF F120-MJTSL
Applicable fluid	Water		Water		Water
Body material	Brass		Brass		Brass
Sealing material	Nitrile rubber	Fluoric rubber	Nitrile rubber	Fluoric rubber	Fluoric rubber
Temperature range to be used	-5°C~80°C	-5°C~120°C	-5°C~80°C	-5°C~120°C	-5°C~120°C
Working pressure kPa (kgf/cm ²)	980 (10)		980 (10)		980 (10)
Maximum pressure kPa (kgf/cm ²)	1470 (15)		1470 (15)		1470 (15)
Vacuum application	Unsuitable		Unsuitable		Unsuitable

Classification	Valveless	Large Flow Mold Couplers Series	Double valves	Compact · Double valves	For Cooling Mold Light Couplers Series
	TSP Coupler Series for Cooling		SP Coupler Series for Cooling	Cooling High Flow Couplers Series	
Category	120°C	80°C	120°C	120°C	80°C
Part Number	F120-TSH SF120-TSH F120-TSF SF120-TSF	K3-KSH K4-KSH	F120-SF SF120-SF	F120-HFLS SF120-HFLS	MP-CPSE MR-CPSE MM-CPSE
Applicable fluid	Water	Water	Water	Water	Water
Body material	Brass · Stainless steel	Brass	Brass · Stainless steel	Brass · Stainless steel	Brass
Sealing material	Fluoric rubber	Nitrile rubber	Fluoric rubber	Fluoric rubber	Fluoric rubber
Temperature range to be used	-5°C~120°C	-5°C~80°C	-5°C~120°C	-5°C~120°C	0°C~80°C
Working pressure kPa (kgf/cm ²)	980 (10)	980 (10)	980 (10)	980 (10)	300 (3)
Maximum pressure kPa (kgf/cm ²)	1470 (15)	1470 (15)	1470 (15)	1470 (15)	500 (5)
Vacuum application	Unsuitable	Unsuitable	Unsuitable	Unsuitable	Unsuitable

Maximum Tightening Torque for Plug Attachment

No.	R (PT)	Max. tightening torque for \square brass (C3604) N · cm(kgf · cm)		Max. tightening torque for \square stainless steel (SUS303) N · cm(kgf · cm)	
		With Hexagonal Wrench	With Spanner · Socket Wrench	With Hexagonal Wrench	With Spanner · Socket Wrench
1	1/8	690N · cm {70kgf · cm}	490N · cm {50kgf · cm}	1370N · cm {140kgf · cm}	880N · cm {90kgf · cm}
2	1/4	1080N · cm {110kgf · cm}	880N · cm {90kgf · cm}	1370N · cm {140kgf · cm}	1370N · cm {140kgf · cm}
3	3/8	1470N · cm {150kgf · cm}	1080N · cm {110kgf / cm}	—	2150N · cm {220kgf · cm}
4	1/2	—	2940N · cm {300kgf / cm}	—	5880N · cm {600kgf · cm}

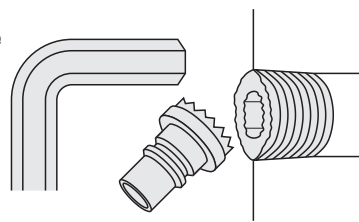
When Using

- Tighten the plug under the maximum tightening torque.
- Keep the water temperature within the specified range.
- Do not use the mold couplers for any other purposes than water cooling.
- Select an appropriate hose and hose band for the socket.

About Plugs (KHPH · JPLH · JPL · LJPL · LJPLH) of High Couplers Series for Cooling Pipe

When use sockets other than F120-KHSHW · F120-MKSH, Embedding in the mold is not appropriate concerning KHPH · JPLH · SUS-JPLH · JPL · LJPL · LJPLH due to the structure of the connecting socket. Use the unit after mounting them outside the mold.

(At the time of attachment/detachment, counterbore diameter that a hand can fully enter is necessary due to its structure in which the socket tip is pulled by hand to attach/detach the socket.)
 ☞ Corresponding to embedding into molds : F120-KHSHW · F120-MKSH



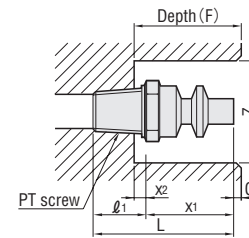
About Plugs for Hexagonal Wrench Installation

Even if the plug is accidentally broken, it can be easily removed as the hole inside shaped hexagonal so that an Allen wrench fits.

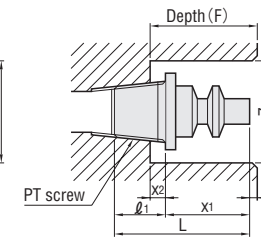
How to Embed Cooling Plugs into Molds

Standard Type

With hexagonal head KPM · JPSH · JPJH



With hole for hexagonal wrench JPS · JPJ

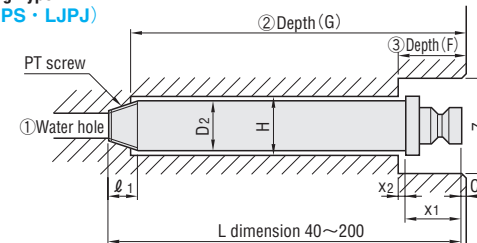


- Notes: 1. Setting C dimension over 3mm will cause the socket to bump on the mold and make attaching/detaching impossible.
 2. (Reference values) Appropriate dimensions vary depending on the hole diameter as well as the tapping depth and finishing level.
 3. JPS, JPJ shown in () indicate the diameter of a counterbore for using a JIS B 4636 socket wrench.

Cooling-use Plug (Standard type)							Attachment Hole					
Part Number	Type	No.	Tapered male thread R (PT)	Full length L	Thread length ℓ_1	x_1	x_2 (reference value)	C	Counterbore depth F (reference value)	Z (Counterbore hole diameter)		Tapered female thread Rc (PT)
										When using hexagonal wrench	When using socket wrench	
KPM		1	1/8	31	10	21	2~4	less than 3mm	21+X2	—	20~	1/8
		2	1/4	34	13	21	2~4		21+X2	—	23~	1/4
		3	3/8	35	14	21	3~5		21+X2	—	29~	3/8
JPS		1	1/8	27	9	18	2~4		18+X2	19~	—	1/8
		2	1/4	29	11	18	2~4		18+X2	19~	—	1/4
		3	3/8	37	12	22	3~5		22+X2	22~	(29~)	3/8
JPSH		1	1/8	29	9	20	2~4		20+X2	19~	20~	1/8
		2	1/4	31	11	20	2~4		20+X2	19~	23~	1/4
JPJ		1	1/8	22.4	9	13.4	2~4		13.4+X2	18~	—	1/8
		2	1/4	24.2	11	13.4	2~4		13.4+X2	18~	—	1/4
JPJH		3	3/8	32.4	12	17.4	3~5	17.4+X2	22~	(29~)	3/8	
		1	1/8	24.4	9	15.4	2~4	15.4+X2	18~	20~	1/8	
		2	1/4	26.4	11	15.4	2~4	15.4+X2	18~	23~	1/4	

Long Type

(LJPS · LJPJ)



- Notes: 1. Setting C dimension over 3mm will cause the socket to bump on the mold and make attaching/detaching impossible.
 2. (Reference values) Appropriate dimensions vary depending on the hole diameter as well as the tapping depth and finishing level.
 3. Because there is no outer hexagonal flange in LJPS, LJPJ, they can not be attached by using socket wrench. Please use an Allen wrench to attach them.
 4. Normally, the boring process takes place in the order of F① water hole, ②H diameter depth (G) processing, ③Z diameter depth, and (F) processing.
 (Reference) Calculation of H diameter hole depth (G) : $G = (L + X_2) - \ell_1$
 ex. When LJPJ1-100: $(100 + 3) - 9 = 94$. ※ This value varies depending the level of finishing on the tap hole.

Cooling-use Plug (Long type)							Attachment Hole							
Part Number	Type	No.	Tapered male thread R (PT)	Full length L	Thread length ℓ_1	Shaft dia. D_2	x_1	x_2 (reference value)	C	Counterbore depth F (reference value)	Z (Counterbore hole diameter)		H (reference value)	Tapered female thread Rc (PT)
											When using hexagonal wrench	When using socket wrench		
LJPS		1	1/8	40~200	9	10	19	2~4	less than 3mm	19+X2	19~	—	11	1/8
		2	1/4	40~200	11	13.2	19	2~4		19+X2	19~	—	14	1/4
LJPJ		1	1/8	40~200	9	10	14.4	2~4		19+X2	18~	—	11	1/8
		2	1/4	40~200	11	13.2	14.4	2~4		19+X2	18~	—	14	1/4