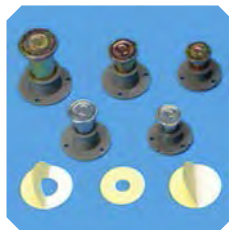


JL Insert series



Pインサート…2



PZインサート…3…



PTインサート…4



PBインサート…5



PKインサート…6



PQインサート…7



PLインサート…8



POインサート…9



PFインサート…10



SUS-Pインサート…11



SUS-Hインサート…12



FCIインサート(吊足場用)…13



FCIインサート(地覆高欄用)…14



FCI-Aインサート…15



TNインサート…15

Allowable Tensile Strength Chart of JL Inserts (Computed Values for Short-term load)

Selection of JL Inserts

At the selection of JL Inserts, please consider below factors and apply the minimum values.

- ① The bolt (Subject to SS400·SUS304)
- ② The Insert
- ③ Concrete's tensile strength

Please apply minimum values of ①②③ and fully consider the safety factors.

Concrete's tensile strength in the chart is base on HANDBOOK of VARIOUS SYNTHETIC CONSTRUCTION DESIGN of Jof Archtecural Institute of Japan.

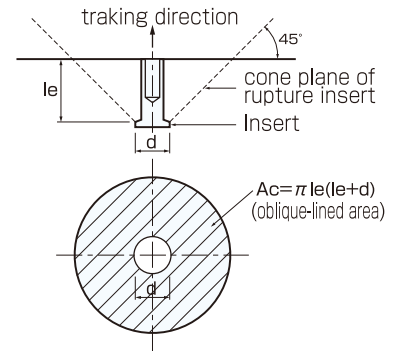
Tensile strength =

$$\phi \times \sqrt{FC} \times \pi \times le(le+d) \times 0.313209$$

(FC = N/mm²)

$$\phi = 0.6 \text{ (short-term load)}$$

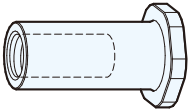
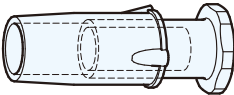
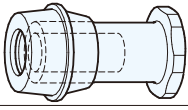
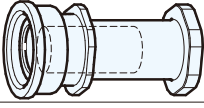
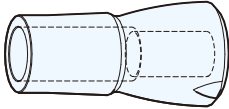
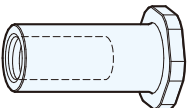
(Conversion factor from MKS system to SI sysytem)



※ Below chart has calculated based on short term load.

Please apply minimum values of ①②③ and fully consider the safety factors.

(Unit : kN)

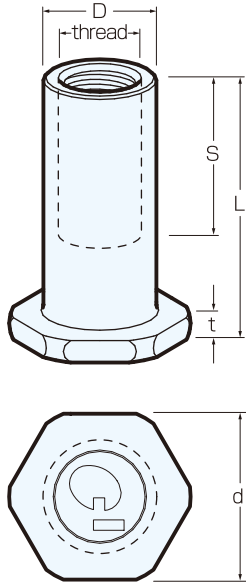
Product name (Shape)	Specification (mm)		① Bolt		② Insert		③ Concrete's tensile strength			Remark
	thread	length	tracting(kN)	Shearing(kN)	tracting(kN)	Shearing(kN)	Fc=12(N)	Fc=30(N)	Fc=60(N)	
P Insert 	M6	30	4.72	2.71	26.46	15.20	2.65	4.19	5.92	Bolt: SS400
	M8	30	8.60	4.94	22.58	12.97	2.65	4.19	5.92	
	M10	20	13.63	7.83	17.55	10.08	1.32	2.08	2.95	
		30					2.65	4.19	5.92	
	M12	40	19.81	11.38	30.43	17.48	4.41	6.98	9.87	
		80					15.54	24.57	34.75	
	M16	35	36.89	21.19	50.80	29.18	3.89	6.16	8.71	
		50					7.21	11.40	16.12	
		75					14.77	23.36	33.04	
		100					24.90	39.37	55.68	
M20	100	57.57	33.07	108.52	62.34	25.95	41.03	58.03		
PT Insert 	M6	45	4.72	2.71	26.46	15.20	5.41	8.55	12.10	Bolt: SS400
	M8	45	8.60	4.94	22.58	12.97	5.41	8.55	12.10	
	M10	45	13.63	7.83	17.55	10.08	5.41	8.55	12.10	
	M12	64	19.81	11.38	30.43	17.48	10.30	16.29	23.04	
	M16	75	36.89	21.19	50.80	29.18	14.77	23.36	33.04	
		95					22.67	35.84	50.69	
PK Insert 	W3/8	35	11.53	6.62	19.64	11.28	3.46	5.48	7.75	Bolt: SUS304
	W1/2	55	20.53	11.79	29.70	17.06	7.82	12.36	17.49	
	W5/8	80	33.81	19.42	53.88	30.95	16.59	26.24	37.11	
	M12	55	19.81	11.38	30.43	17.48	7.82	12.36	17.49	
	M16	80	36.89	21.19	50.80	29.18	16.59	26.24	37.11	
		100					22.67	35.84	50.69	
PQ Insert 	M10	40	13.63	7.83	17.55	10.08	4.38	6.93	9.81	Bolt: SUS304
	M12	40	19.81	11.38	30.43	17.48	4.41	6.98	9.87	
		50					6.58	10.41	14.72	
	M16	45	36.89	21.19	50.80	29.18	6.00	9.49	13.42	
		60					9.93	15.70	22.20	
	FCI Insert 	M10	43	11.89	6.84	-	-	5.28	8.35	
M12		60	17.28	9.94	-	-	9.58	15.15	21.43	
		65					12.53	19.81	28.02	
M16		75	32.18	18.52	-	-	16.00	25.31	35.79	
		85					19.89	31.45	44.48	
M20		100	50.22	28.91	-	-	27.57	43.59	61.65	
M22		110	62.11	35.75	-	-	32.73	51.75	73.19	
M24		120	72.36	41.65	-	-	39.38	62.26	88.05	
SUS-P Insert 	M6	30	4.12	2.37	19.70	11.37	2.57	4.07	5.75	Bolt: SUS304
	M8	30	7.50	4.31	16.81	9.70	2.57	4.07	5.75	
	M10	30	11.89	6.84	13.07	7.54	2.57	4.07	5.75	
		50					6.41	10.14	14.35	
	M12	40	17.28	9.94	22.66	13.07	4.31	6.83	9.65	
		50					6.46	10.22	14.46	
	M16	80	32.18	18.52	39.04	22.53	15.36	24.29	34.35	
		50					6.59	10.42	14.74	
	M16	75	32.18	18.52	39.04	22.53	13.90	21.98	31.09	
		100					23.77	37.59	53.16	
M20	100	50.22	28.91	75.99	43.74	23.66	37.41	52.91		

※③ Concrete pull-out strength(kN) : Formula (P= φ * √FC * π * Le(Le+d)) is based on "Design Recommendations for Composite Coustructions" from Architectural Institute of Japan.

P Insert

Product Features

- The product has strong characteristic at the form of bottom part of insert which provide strong fix level to concrete.
- Line up includes metric screw thread and Whitworth screw thread.
- Material : SWRCH



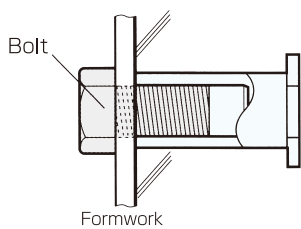
(Unit : mm)

thread	diameter (D)	length(L)												anchor part		Jig (Cap)	
		L	20	30	35	40	50	55	60	65	70	75	80	100	d		t
M6	13.0	Stock	○	○											21	3	-
		Length(S)	10	12													
		Qty	1000	700													
M8	13.0	Stock	○	○			○							21	3	-	
		Length(S)	12	15			20										
		Qty	1000	700			400										
M10	13.0	Stock	○	○			○							21	3	A	
		Length(S)	12	15			20										
		Qty	1000	700			400										
M12	16.5	Stock		○	○	○	○	○	○	○	○	○		24	4	C	
		Length(S)		20		25	30		30		30		30				
		Qty		400		300	300		200		200		150				
M16	21.8	Stock			○	○	○	○	○	○	○	○	○	32	4.5	L	
		Length(S)				25	25	30	30		30		35				40
		Qty				200	150	150	150		100		100				70
M20	30.0	Stock					○					○	○	41	6	J	
		Length(S)											35				40
		Qty											60				40
W5/16	13.0	Stock	○	○										21	3	-	
		Length(S)	12	15													
		Qty	1000	700													
W3/8	13.0	Stock	○	○			○							21	3	A	
		Length(S)	12	15			20										
		Qty	1000	700			400										
W1/2	16.5	Stock		○		○	○	○	○	○	○	○		24	4	C	
		Length(S)		18		25	30		30		30		30				
		Qty		400		300	300		200		200		150				
W5/8	21.8	Stock			*	*	○	*				○	*	32	4.5	R	
		Length(S)				25	25	30	30				35				40
		Qty				200	150	150	150				100				70
W3/4	30.0	Stock												41	6	J	
		Length(S)															
		Qty															

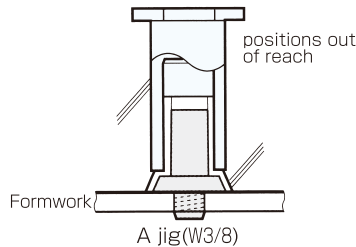
Stock: Stock available, Qty: Quantity per carton
 Surface treatment: M thread/Chromate W thread/Uni-chromate

Mounting Methods

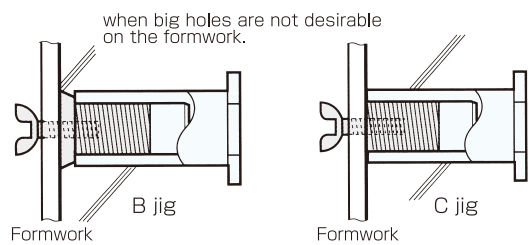
<Use with hexagon head bolt>



<A jig>

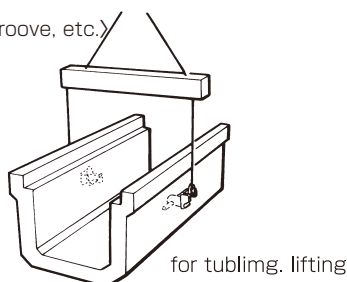


<B · C jig>

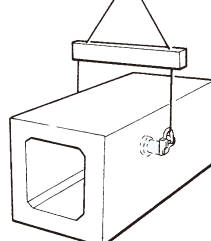


Applications

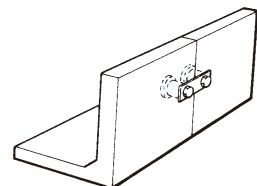
<U groove, etc.>



<Lifting of box, etc.>



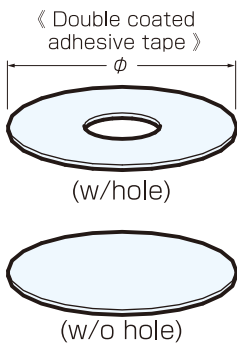
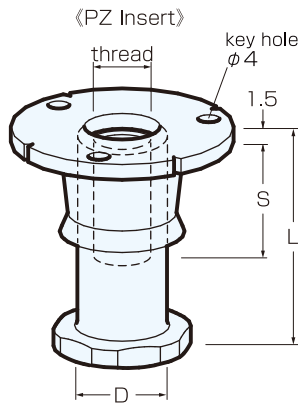
<Joining of products>



PZ Insert

Product Features

- The insert has plastic cover in order to classify the insert by applications.
- The insert attach to form panel via double-coated adhesive tape so no need to put holes for jig on form panels. Which is quite effective for when it need to change locations.
- The form factor of bottom parts will give strong fix level to concrete.
- Line up includes metric screw thread and Whitworth.



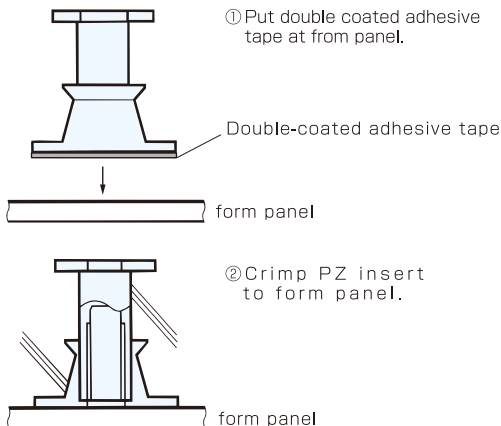
(Unit:mm)

thread	diameter (D)	color of cover		length(L)													double coated adhesive tape(φ)		
				L	22	32	37	42	52	57	62	67	72	77	82	102			
M6	13.0	● ● ● ● ● ●	Stock	※	※													small (w/hole w/o hole)	36
			Length(S)	10	12														
			Qty	400	300														
M8	13.0	● ● ● ● ● ●	Stock	※	※													small (w/hole w/o hole)	36
			Length(S)	12	15														
			Qty	400	300														
M10	13.0	● ● ● ● ● ●	Stock	※	○			※									small (w/hole w/o hole)	36	
			Length(S)	12	15			20											
			Qty	400	300			200											
M12	16.5	● ● ● ● ● ●	Stock		※		○	○		※		※		※			big (w/hole w/o hole)	42	
			Length(S)		20		25	30		30		30		30					
			Qty		200		150	150		120		120		120					
M16	21.8	● ● ● ● ● ●	Stock			※	※	※	※		※		※		※		big (w/hole w/o hole)	42	
			Length(S)			25	25	30	30		30		35		40				
			Qty			150	150	120	120		100		100		70				
W5/16	13.0	● ● ● ● ● ●	Stock	※	※												small (w/hole w/o hole)	36	
			Length(S)	12	15					20									
			Qty	400	300					200									
W3/8	13.0	● ● ● ● ● ●	Stock	○	○			※									small (w/hole w/o hole)	36	
			Length(S)	12	15			20											
			Qty	400	300			200											
W1/2	16.5	● ● ● ● ● ●	Stock		※		※	※		※		※		※			big (w/hole w/o hole)	42	
			Length(S)		18		25	30		30		30		30					
			Qty		200		150	150		120		120		120					
W5/8	21.8	● ● ● ● ● ●	Stock			※	※	※	※		※		※		※		big (w/hole w/o hole)	42	
			Length(S)			25	25	30	30		30		35		40				
			Qty			150	150	120	120		100		100		70				

Stock: Stock available, Qty: Quantity per carton
 color of cover : ●gray, ●red, ○white, ●yellow, ●blue, ●green

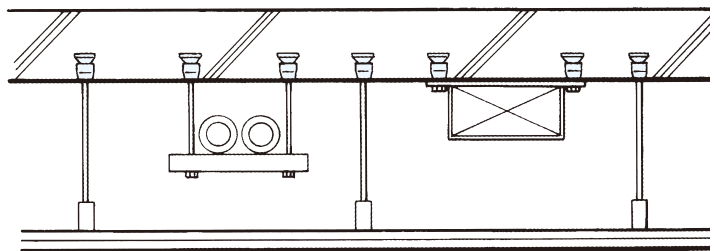
How to apply

⟨Using double-coated adhesive tape⟩



Application

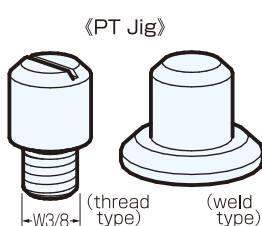
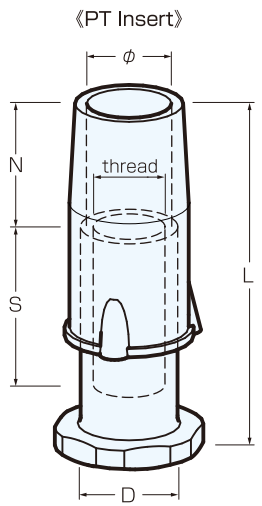
⟨For piping installation, etc.⟩



PT Insert

Product Features

- The insert has plastic cover in order to classify the insert by applications.
- By setting PT jig on form panel, one person can handle all from inside of form panel by oneself.
- The form factor of bottom parts will give strong fix level to concrete.
- Line up includes metric screw thread and Whitworth.

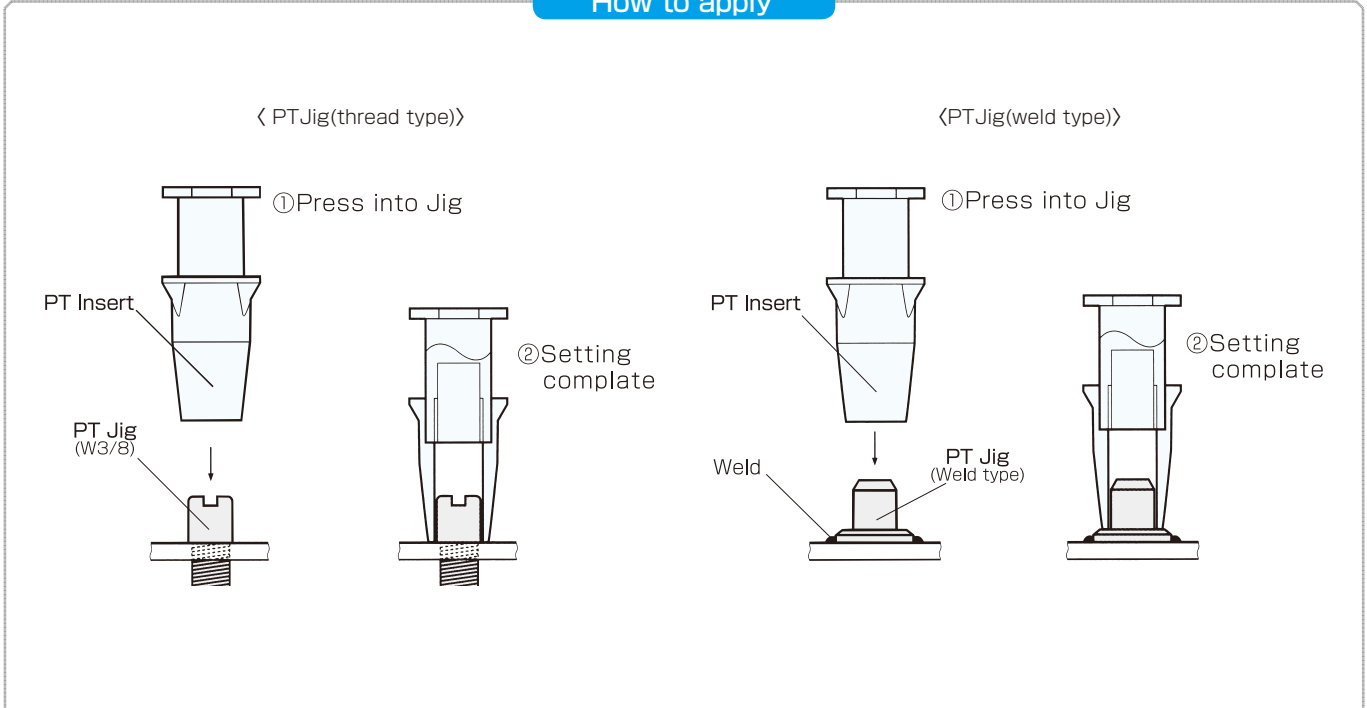


(Unit:mm)

thread	diameter (D)	color of cover	N	L	length(L)										PT jig thread/weld	Jig (Cap)			
					45	45	54	64	64	70	75	75	95	120					
M6	13.0	● (11φ)	15	Stock Length(S) Qty 500	○	12											11φ	C	
M8	13.0	○● (11φ)	15	Stock Length(S) Qty 500	○	15	●										11φ	C	
M10	13.0	●● (11φ)	15	Stock Length(S) Qty 500	○●	15	●			*	20 (L=65)						11φ	C	
M12	16.5	●● (14φ)	24	Stock Length(S) Qty 250	○		○●	○●		*	20 25 25		30 (L=74)				14.4φ	L	
M16	21.8	○● (17φ)	20	Stock Length(S) Qty 120	○					*	25 (L=55)		30	30	30	35	40	17φ	I
W5/16	13.0	○● (11φ)	15	Stock Length(S) Qty 500	○●	15	○										11φ	C	
W3/8	13.0	○● (11φ)	15	Stock Length(S) Qty 500	○●	15	○		*	20 (L=65)							11φ	C	
W1/2	16.5	●● (14φ)	24	Stock Length(S) Qty 250	*		○●	○●		*	18 25 25		30				14.4φ	L	
W5/8	21.8	● (17φ)	20	Stock Length(S) Qty 120	*					*	25 (L=55)		30	30			17φ	I	

Stock: Stock available, Qty: Quantity per carton
 color of cover : ●gray, ●red, ○white, ●yellow, ●blue, ●green, ●orange

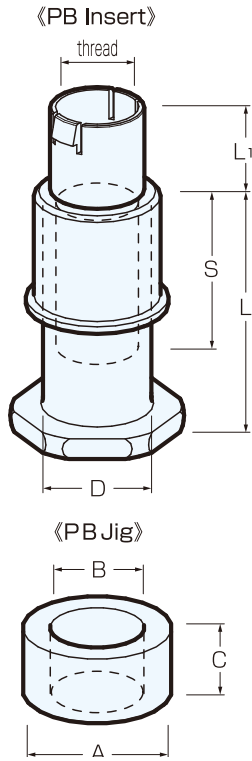
How to apply



PB Insert

Product Features

- The insert has plastic cover in order to classify the insert by applications.
- By setting PT jig on form panel, one person can handle all from inside of form panel by oneself.
- The form factor of bottom parts will give strong fix level to concrete.
- Line up includes metric screw thread and Whitworth.

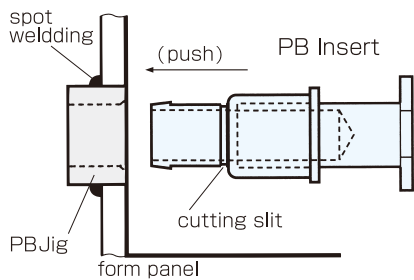


thread	diameter (D)	cover size (L1)	length(L)											PBJig				
			L寸法	32	37	42	52	57	62	67	72	77	82		102			
M10	13.0	20	Stock	◎			*										◎	
			Length(S)	15			20											
			Qty	500			200											
M12	16.5	20	Stock	◎		◎	*		*		*		*		*		◎	
			Length(S)	20		25	30		30		30		30		30			
			Qty	300		250	200		200		150		150		150			
M16	21.8	20	Stock		◎	*	◎	*		*		◎		*		*	◎	
			Length(S)		25	25	30	30		30		35		40				
			Qty		150	120	100	100		100		100		70		70		
W3/8	13.0	20	Stock	*			*										◎	
			Length(S)	15			20											
			Qty	500			200											
W1/2	16.5	20	Stock	*		*	*		*		*		*		*		◎	
			Length(S)	18		25	30		30		30		30		30			
			Qty	300		250	200		200		150		150		150			
W5/8	21.8	20	Stock		*		*	*				*		*		*	◎	
			Length(S)		25		30	30				35		40				
			Qty		150		100	100				100		70		70		

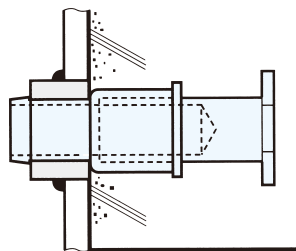
Stock: Stock available, Qty: Quantity per carton
 Surface treatment : M thread/Chromate, W thread/Uni-chromate

How to apply

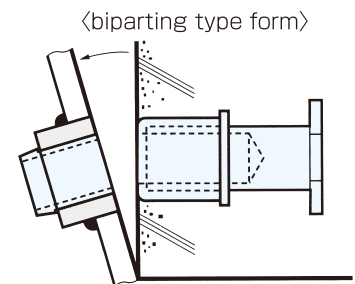
① Install of jig, set the insert.



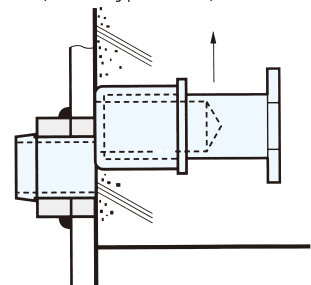
② Setting complete, placement of concrete.



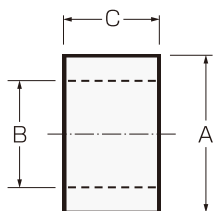
③ Stripping.



<slide type form>



■ PB Jig

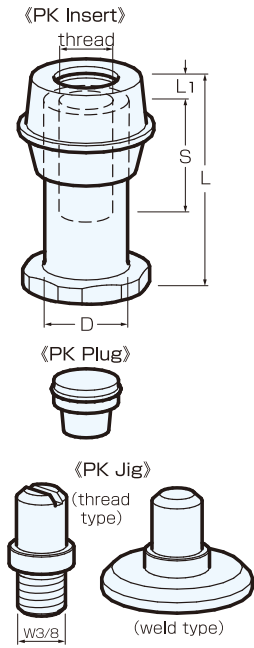


PB Jig spec.		(Unit : mm)		
thread	size	A (φ)	B (φ)	C
M10		19	13.1	13.9
W3/8				
M12		25	15.1	13.9
W1/2				
M16		25	19.1	13.9
W5/8				

PK Insert

Product Features

- It is no need to cover the thread hole by mortar, can be cover by the plug instead.
- Line up includes metric and Whitworth screw thread.
- Application : When it requires water proof to thread hole. When they need to hide thread hole or require good appearance of concrete surface.

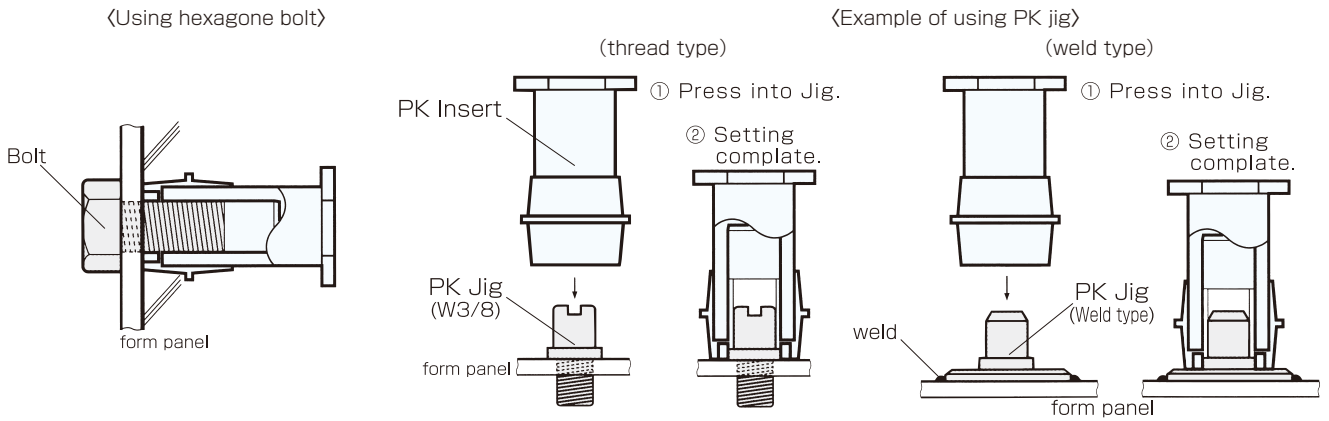


(Unit: mm)

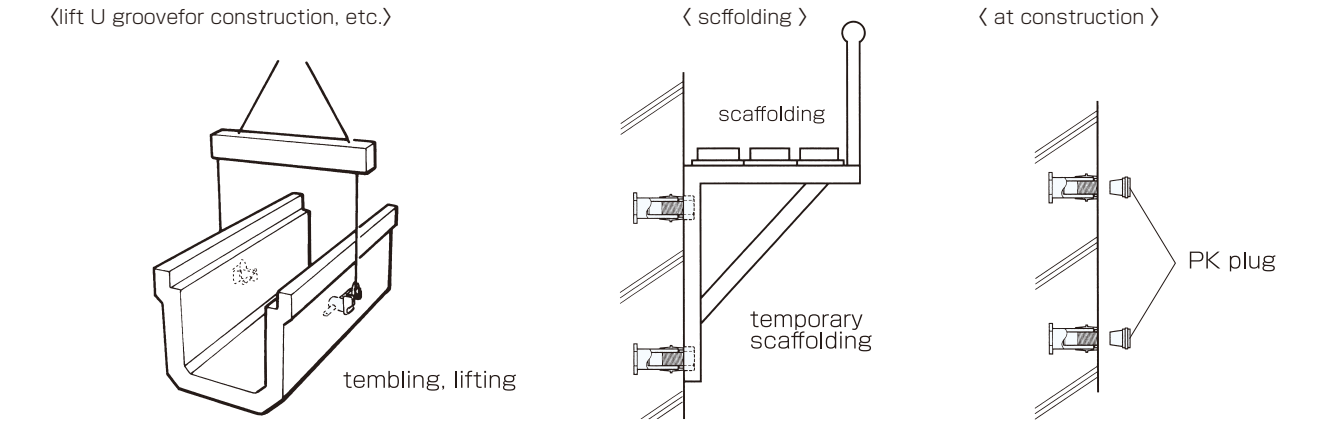
thread	diameter (D)	cover size (L1)	L	length(L)											Plug	PK Jig			
				35	40	45	55	60	65	70	75	80	85	105		thread	weld		
M10	13.0	5	Stock	*			*									○	○	○	
			Length(S)	15			20									-			
			Qty	500			300									100			
M12	16.5	5	Stock	*		○			*		*			○		○	○	○	
			Length(S)	20		25	30		30		30		30		-				
			Qty	300		250	200		200		150		150		100				
M16	21.8	5	Stock		*	*	○	*		*		○		*	○	○	○	○	
			Length(S)		25	25	30	30		30		35		40	-				
			Qty		150	150	120	120		100		100		70	100				
M20	30.0	5	Stock				*					○		○	*	○	*	○	
			Length(S)				30					40		35	-				
			Qty				60					60		35	100				
W3/8	13.0	5	Stock	○			*								○	*	○	○	
			Length(S)	15			20								-				
			Qty	500			300								100				
W1/2	16.5	5	Stock	*		○	*		*		*		*		○	○	*	○	
			Length(S)	18		25	30		30		30		30		-				
			Qty	300		250	200		200		150		150		100				
W5/8	21.8	5	Stock		*	*	*	*		*		*		*	○	○	*	○	
			Length(S)		25	25	30	30		30		35		40	-				
			Qty		150	150	120	120		100		100		70	100				

Stock: Stock available, Qty: Quantity per carton
 Surface treatment : M thread/Chromate, W thread/Uni-chromat

How to use



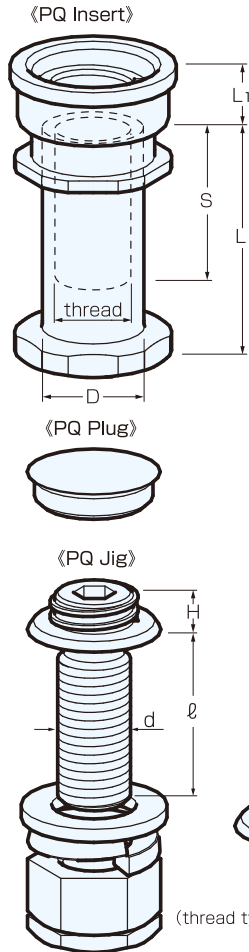
Application



PQ Insert

Product Features

- The attachment with PQ insert with jig is easy, by only single button press.
- Easy to remove mold from concrete block.
- Please use PQ jig for the mold.
- The form factor of bottom parts will give strong fix level to concrete.
- Line up includes metric and Whitworth screw thread.



thread	diameter (D)	cover size (L1)	length (L)										Plug	PQ Jig		
			L	40	45	50	60	70	75	80	85	90		110	thread	weld
M10	13.0	10	Stock	◎			*							◎		
			Length(S)	15			20							-	*	◎
			Qty	500			300							100		
M12	16.5	10	Stock	◎	◎		*		*		*		◎			
			Length(S)	20		25	30	30		30		30		-	◎	◎
			Qty	300		250	200	200		200		150		100		
M16	21.8	10	Stock		◎	◎	◎		◎		◎		*	◎		
			Length(S)		25	25	30		30		35		40	-	◎	◎
			Qty		150	150	120		100		100		70	100		
M20	30.0	10	Stock				◎				*		*	◎		
			Length(S)				30				35		40	-	◎	*
			Qty				60				60		35	100		
W3/8	13.0	10	Stock	*			*							◎		
			Length(S)	15			20							-	*	◎
			Qty	500			300							100		
W1/2	16.5	10	Stock	*		*	*	*		*		*		◎		
			Length(S)	18		25	30	30		30		30		-	◎	◎
			Qty	300		250	200	200		200		100		100		
W5/8	21.8	10	Stock		*	*	*		*		*		*	◎		
			Length(S)		25	25	30		30		35		40	-	◎	◎
			Qty		150	150	120		100		100		70	100		

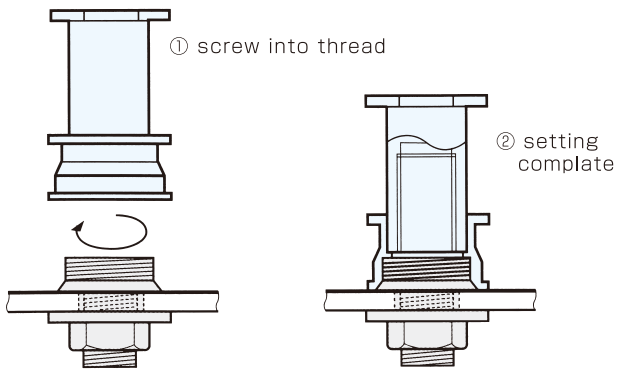
Stock: Stock available, Qty: Quantity per carton
 Surface treatment : M thread/Chromate, W thread/Uni-chromat

PQ jig specification

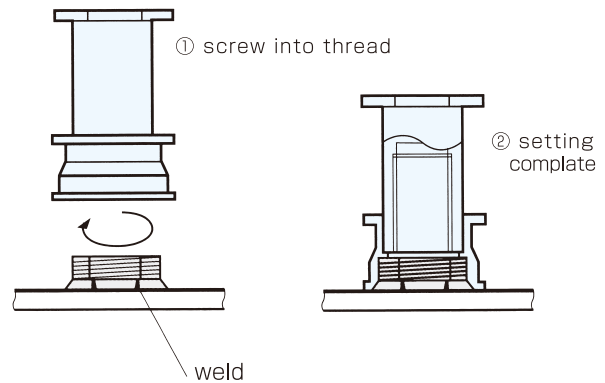
thread	size	d	ℓ	H	inventory		remark
					thread	weld	
M10-W3/8	M12	30	6.5	6.5	*	◎	
M12-W1/2	M12	30	6.5	6.5	◎	◎	
M16-W5/8	M16	30	6.5	6.5	◎	◎	
M20	M20	30	7.5	7.5	◎	*	

How to use

<Using PQ jig (thread type) >



<Using PQ jig (weld type) >

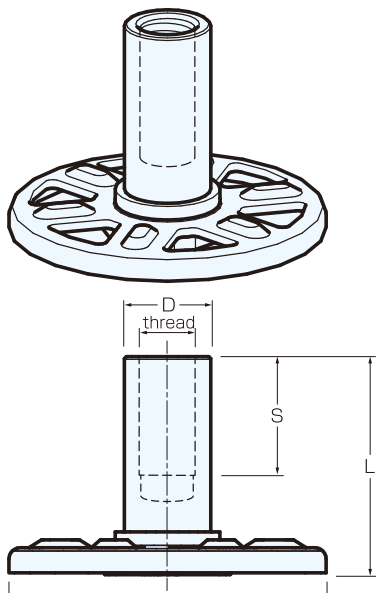


PL Insert

Product Features

- By adding special formed anchor plate at edge of insert, it add up the fix level to concrete.
- Application : It is recommended for thin concrete.

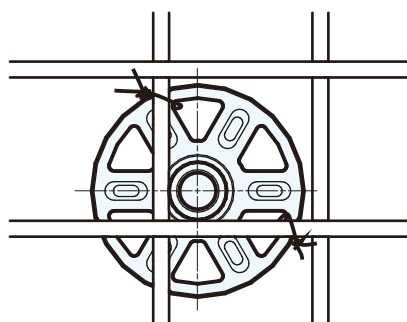
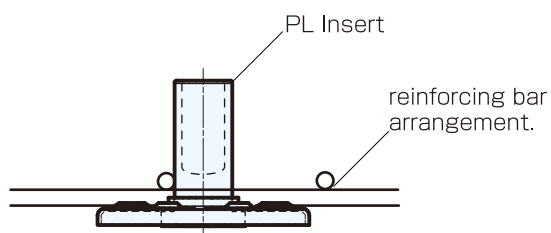
(Unit:mm)



thread	diameter (D)	ring		length(L)											Jig (cap)		
		(φ)	material	L	30	35	40	50	55	60	65	70	75	80		100	
M10	13.0	65	SUS	Stock	*			*									A
				Length(S)	15			20									
				Qty	400			200									
M12	16.5	65	SS	Stock	*		*	*								C	
				Length(S)	20		25	30									
				Qty	200		200	150									
M16	21.8	80 (65)	SS	Stock		*		◎			*		◎		*	L	
				Length(S)		25		30		30		35		40			
				Qty		150		80		100		100		50			
W3/8	13.0	65	SUS	Stock	*			*								A	
				Length(S)	15			20									
				Qty	400			200									
W1/2	16.5	65	SS	Stock	*		*	*								C	
				Length(S)	18		25	30									
				Qty	200		200	150									
W5/8	21.8	80 (65)	SS	Stock		*		*					*		*	R	
				Length(S)		25		30				35		40			
				Qty		150		80				100		50			

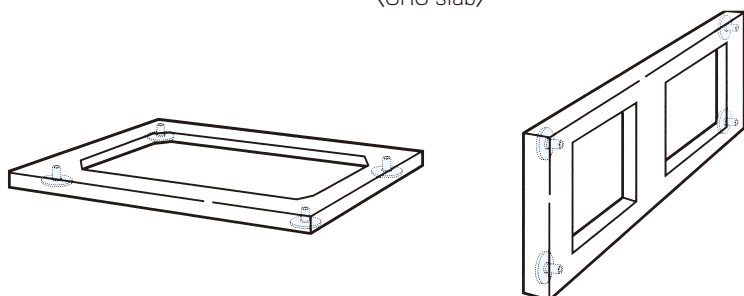
Stock: Stock available, Qty: Quantity per carton
 Surface treatment : M thread/Chromate, W thread/Uni-chromat

How to use

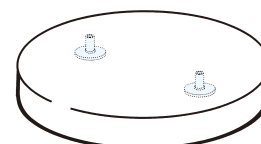


Application

<GRC slab>



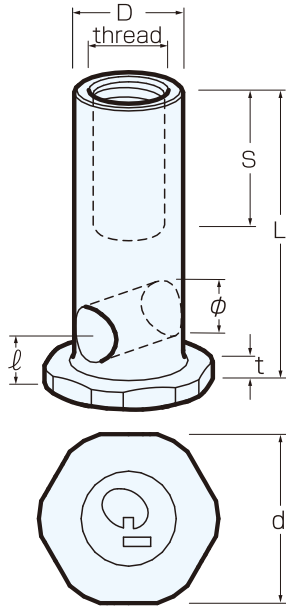
<manhole slab>



PO Insert

Product Features

- By adding special formed anchor plate at edge of insert, it add up the fix level to concrete.
- Length of joint bar needs to be 10 times longer than reinforcing rod diameter.



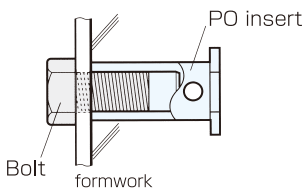
(Unit:mm)

thread	diameter (D)	pin hole		length(L)			anchor part		Jig (cap)	
		φ	ℓ	L	75	80	100	d		t
M12	16.5	8	12	Stock		*		24	4	C
				Length(S)		30				
				Qty		150				
M16	21.8	11.5	13	Stock	◎		◎	32	4.5	L
				Length(S)	35		40			
				Qty	100		70			
M20	30.0	15	18	Stock	◎		◎	41	6	J
				Length(S)	30		40			
				Qty	60		40			
W1/2	16.5	8	12	Stock		*		24	4	C
				Length(S)		30				
				Qty		150				
W5/8	21.8	11.5	13	Stock		*		32	4.5	R
				Length(S)		35				
				Qty		100				

Stock: Stock available. Qty: Quantity per carton
 Surface treatment : M thread/Chromate, W thread/Uni-chromat

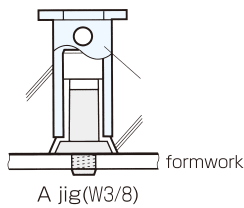
How To use

<Use with hexagon head bolt>



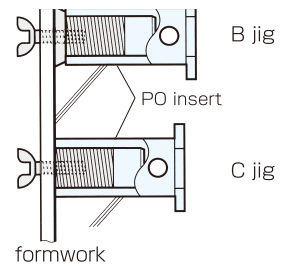
<A jig>

Positions out of reach

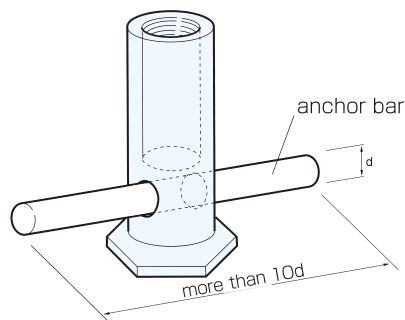


<B · C jig>

When big holes are not desirable on the formwork.



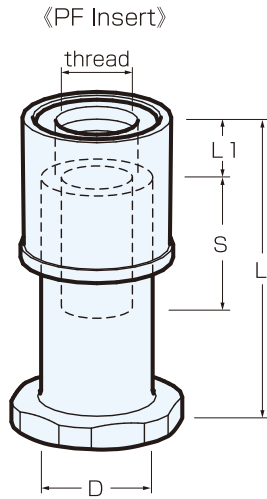
Application



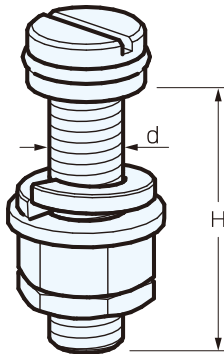
PF Insert

Product Features

- By adding special formed anchor plate at edge of insert, it add up the fix level to complete.
- Easy to install into form panel.
- Line up includes metric and Whitworth screw thread.



《PF Jig》



(Unit:mm)

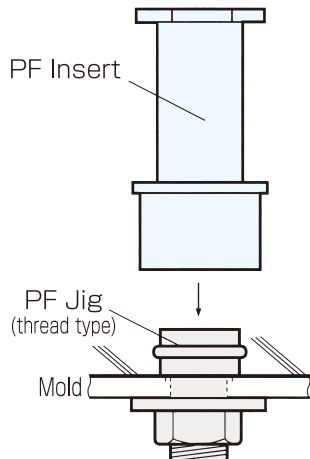
thread	external diameter	cap part (L1)	length(L)							Jig (Cap)	
			L	40	45	50	60	75	85		110
M10	13.0	7	Stock	*							A
			Length(S)	15							
			Qty	500							
M12	16.5	8	Stock	*		*					G
			Length(S)	20		25	30				
			Qty	300		250	200				
M16	21.8	10	Stock		*		*		*		F
			Length(S)		25		30		35		
			Qty		150		150		100		
M20	30.0	10	Stock						*	*	21
			Length(S)						35	40	
			Qty						60	40	
W3/8	13.0	7	Stock	*							A
			Length(S)	15							
			Qty	500							
W5/8	21.8	10	Stock								R
			Length(S)								
			Qty								

Stock: Stock available, Qty: Quantity per carton
Surface treatment : M thread/Chromate, W thread/Uni-chromat

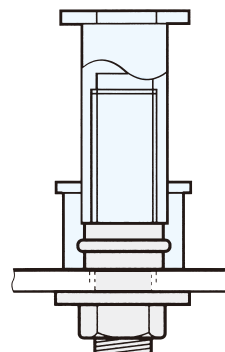
dimension / thread	d	H	inventory	remarks
M10	M8	30	Order made product	Spring washer, Circular washer, Hex nut, Idaringu
M12	M8	30	//	//
M16	M8	30	//	//

Mounting Method

① Press into jig



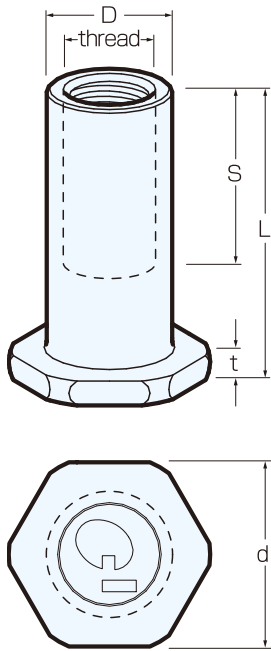
② Complete setting



SUS-P Insert

Product Features

- By adding special formed anchor plate at edge of insert, it add up the fix level to concrete.
- Line up includes metric and Whitworth screw thread.
- Easy to install into mold.
- Material: SUSXM7 (M20 is SUS304)



(Unit:mm)

thread	external diameter	length(L)										d	t	Jig (Cap)
		L	20	30	35	40	50	55	75	80	100			
M6	13.0	Stock	※	◎			※					21	3.5	-
		Length(S)	10	12			12							
		Qty	1000	700			400							
M8	13.0	Stock	※	◎			※				21	3.5	-	
		Length(S)	12	15			20							
		Qty	1000	700			400							
M10	13.0	Stock	※	◎		※	◎				21	3.5	A	
		Length(S)	12	15		18	20							
		Qty	1000	700		400	400							
M12	16.5	Stock	※			◎	◎			◎	24	4.5 (L=80 6.0)	C	
		Length(S)		20		25	30			30				
		Qty		400		300	300			200				
M16	21.8	Stock			◎		◎			◎	32	7	L	
		Length(S)				25		30		35				40
		Qty				200		150		100				70
M20	28.0	Stock									41	11	J	
		Length(S)												40
		Qty												40
W5/16	13.0	Stock	※	※							21	3.5	-	
		Length(S)	12	15										
		Qty	1000	700										
W3/8	13.0	Stock	※	◎			◎				21	3.5	A	
		Length(S)	12	15			20							
		Qty	1000	700			400							
W1/2	16.5	Stock				※	◎				24	4.5 (L=80 6.0)	C	
		Length(S)					25	30						
		Qty					300	300						
W5/8	21.8	Stock					※				32	7	R	
		Length(S)						30						
		Qty						150						

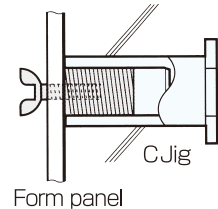
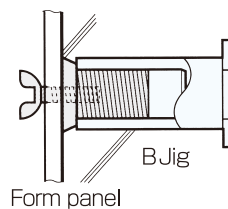
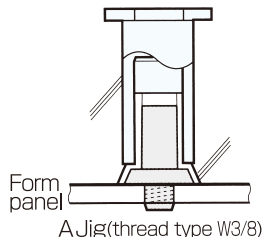
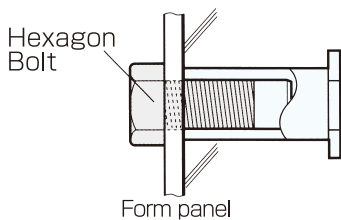
Stock: Stock available, Qty: Quantity per carton
 ◎ Standard inventory ※ Order made product

Mounting Method

< Example of use : Hexagon bolt >

A Jig : Positions out of reach

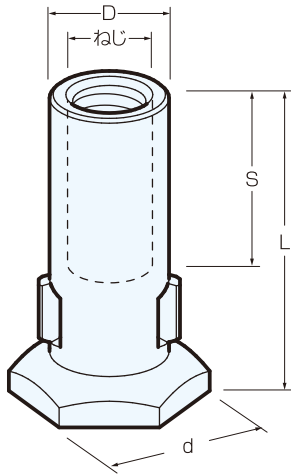
B·C Jig : When big hole is not desirable on form panel.



SUS-H Insert

Product Features

- Stainless steel provide high level dust resistance and durability.
- Shape of hook part provide strong tensile strength and prevent corotation.
- Application: The place of exposed at outside, cable boxes
- Material: SUS304 J3

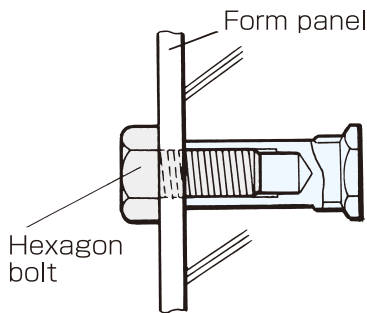


(Unit:mm)

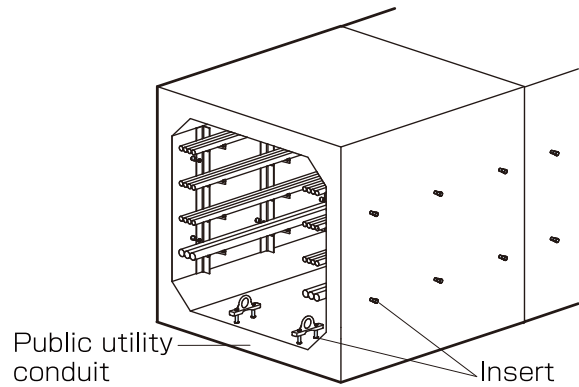
thread	external diameter	hook (d)	L寸法	length(L)								Jig (Cap)		
				30	35	40	45	50	55	60	70		80	
M8	13.0	19	Stock										2	
			Length(S)				20							
			Qty				400							
M10	13.0	19	Stock										A	
			Length(S)					20						
			Qty					300						
M12	16.5	24	Stock						◎		◎		C	
			Length(S)				25		30		30			
			Qty				200		200		150			
M16	21.9	27	Stock							◎	◎	◎	L	
			Length(S)						30		40	40		40
			Qty						150		120	100		80

Stock: Stock available, Qty: Quantity per carton
 ◎ Standard inventory

Mounting Method



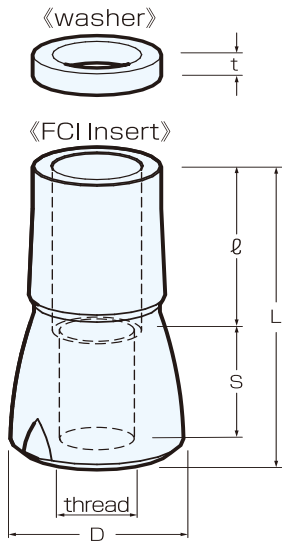
Example of use



FCI Insert PAT.P

- Newly developed insert made by Alumina based Ceramic.
- Compressive strength is higher than 3,000N/mm²
- Will not rust even with bad condition, and also will not make contact corrosion when touching with arrangement of bars.
- High quality by integrating thread part and sleeve part.
- Application: PC bridge, Cable box, curtain wall.

(Unit:mm)



applicable	thread	diameter	sleeve	thread length	total length	case pack quantity	Inventory	washer (t)	remark
FCI M10N×43	M10	22	21.5	18.5	43.0	300	◎	1.5	
FCI M12N×60	M12	24	35.0	21.5	59.5	300	◎	1.5、	
FCI M12N×C84	M12	24	54.5	21.5	79.0	300	◎	5	
FCI M16N×65	M16	33	38.5	24.0	65.5	200	◎		
FCI M16N×75	M16	33	48.5	24.0	75.5	200	◎	2、	
FCI M16N×85	M16	33	58.5	24.0	85.5	200	◎	5	
FCI M16N×C111	M16	33	79.0	24.0	106.0	100	◎		
FCI M20N×100	M20	42	63.0	33.0	100.0	50	◎		
FCI M22N×110	M22	45	69.0	37.0	110.0	50	◎	2	
FCI M24N×120	M24	50	75.0	40.0	120.0	50	◎		

◎ Standard inventory

■ Hexagon bolt dimension

Applicable FCI	Bolt length(mm)
FCI M10N×43	Form panel thickness+40
FCI M12N×60	Form panel thickness+55
FCI M16N×65	Form panel thickness+60
FCI M16N×85	Form panel thickness+80

◎ Standard inventory

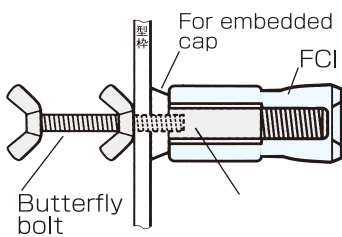
■ Embedding cap (Plastic)



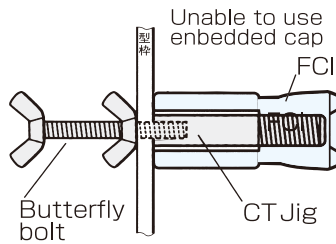
nominal dimension	Inventory
For M12	◎
For M16	◎

Mounting Method

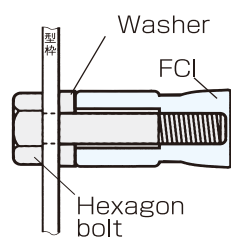
〈 Install E jig 〉



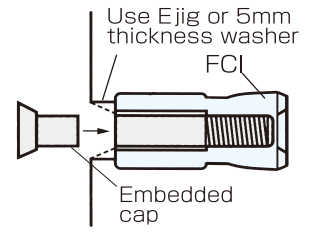
〈 Install CT jig 〉



〈 Install Hexagon bolt 〉

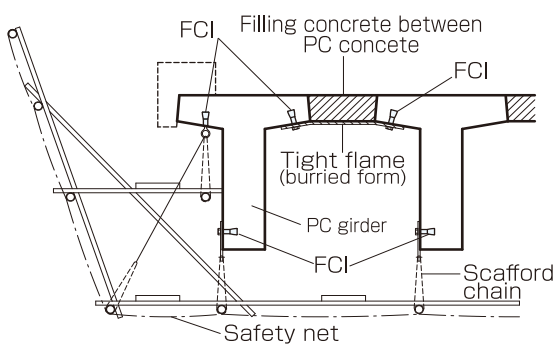


〈 Install Embedded cap 〉

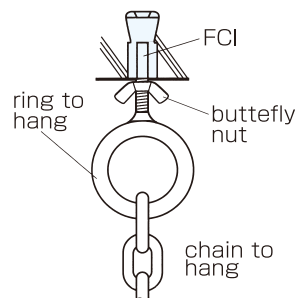


Example of use

〈 Example PC concrete 〉

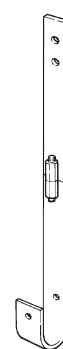


〈 Using the ring to hang 〉

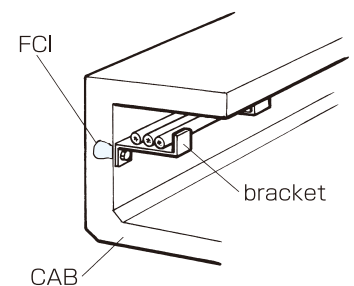


M12	inc. washer and butterfly nut
M16	

〈 Using the plate to hang 〉



〈 Using bracket 〉



FCI Insert (Certified by JPCCA) for scaffold on bridge, wheel

Product Features

- **High corrosion resistance**
The product made by high purity alumina ceramics that it will not get rust.
- **High insulation**
Since the insert itself is insulation property, even touch with steel bar in concrete, it will not get electric erosion.
- **Resistance from fire**
Will not change shape or deteriorate by 1,300degree high temperature. environment, safe even when there are fire disaster.
- **High strength**
Many tests prove the high strength not inferior to steel insert.

- **Compatibility with concrete**
Showing high compatibility with concrete since the material is high purity alumina ceramic and the thermal expansion coefficient is same with concrete.
- **Size of the bolt that can apply**
For the thread for scaffold insert, they are size in meter and inch, we will only use them in meter in order to avoid confusion.
This will apply to the bolts for scaffold inserts.

■ Tensile strength for FCI insert (For calculation at JPCCA)

Product	nominal diameter	effective insertion (mm)	Diameter	effective cross-section area An(mm ²)	Tensile strength of bolt Pa2 (kN)	Tensile strength by Concrete Corn Pa1 (kN)						Remark
						Concrete strength Fck (N/mm ²)						
						24	27	30	40	50	60	
FCI M12N×C84	M12	80	24	84.3	13.5	13.3	14.1	14.9	17.2	19.3	21.1	5mm washer
FCI M16N×C111	M16	107	33	157.0	25.1	24.0	25.5	26.9	31.0	34.7	38.0	5mm washer

■ Design condition in the JPCCA's insert construction manual

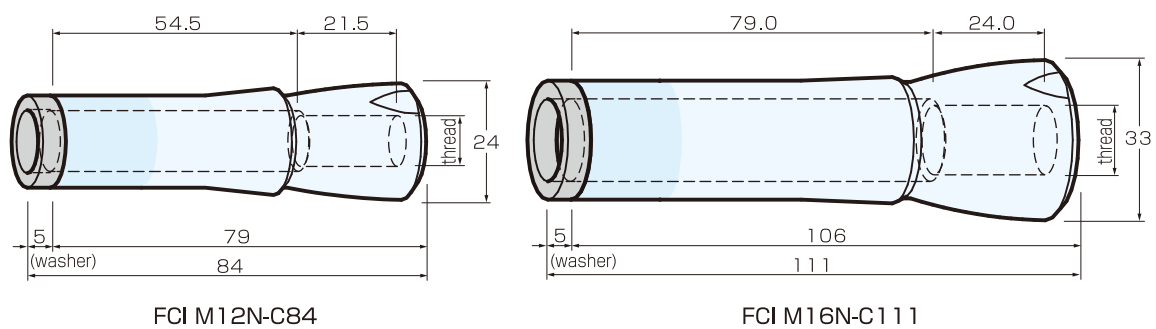
- ① Insertion depth will be defined by yield load of SS400 bolt, not by concrete corn breaking.
Pa1 : Apply the 1/3 of concrete corn breaking load.
Pa2 : Apply the 2/3 of yield load of SS400 bolt. Pa1 > Pa2
- ② Screw thread supposed to be tightned 6 ridges, steel nut strength is more than 5T.
- C: 6Ridges of screw thread of FCI supposed to be tightened.
- D: JIS B1052 steel nut strength is more than 5T. C > D

Concrete strength
 $Pa1 = \phi1 \times \sqrt{Fck \times 10.2} \times 3.14 \times L \times (L+D) \times 0.098 \quad \phi1 = 1/3$

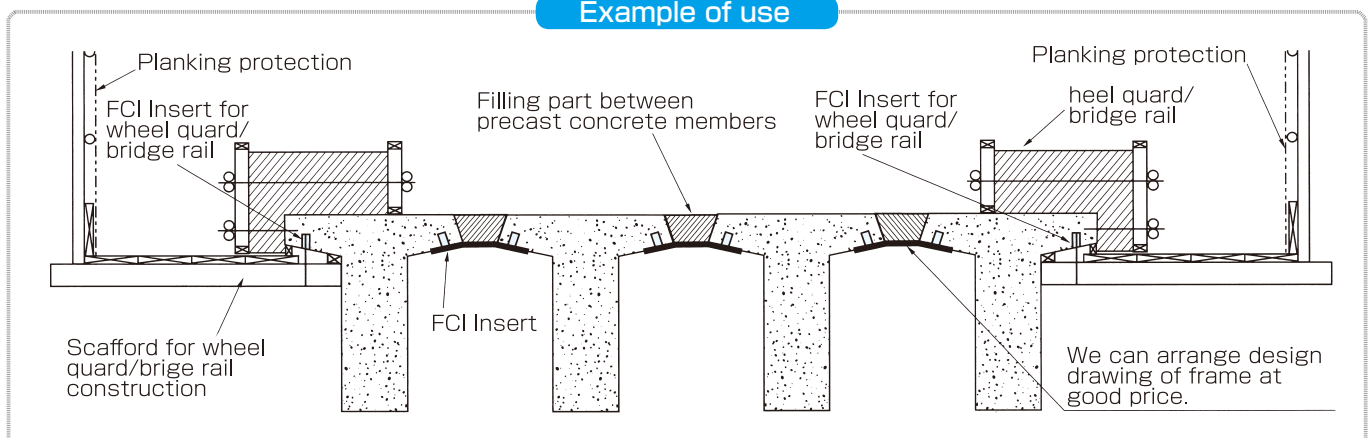
Bolt strength
 $Pa2 = \phi2 \times fys \times As \quad \phi2 = 2/3 \quad fys = 240N/mm^2$

■ Specification of FCI instert

Product	nominal diameter	Length(L)	Diameter (D)	Sleeve(l)	Thread length(S)	Case pack quantity	E jig(L)	Length of hexagon nut	Remark
FCI M12N×C84	M12	84	24	54.5	21.5	300	M12×75	form panel thickness+75	5mm washer
FCI M16N×C111	M16	111	33	79.0	24.0	100	M16×100	form panel thickness+100	5mm washer



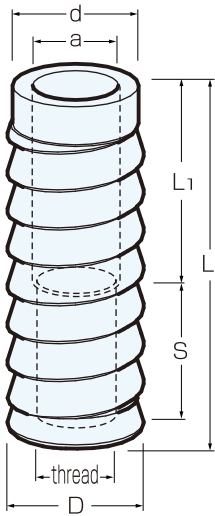
Example of use



FCI-A Insert PAT.

Product Features

- The product made by high purity alumina ceramics that it will not get rust.
- Will not rust even with bad condition, and also will not make contact corrosion when touching with arrangement of bars.
- Released the series from M12 to M24 for after the slab work.
- Application : Mounting a rack for information box, scaffold for PC bridge construction work.



■ Specifications (Unit: mm)

thread	dimension (φ)			Length			Inventory
	D	d	a	L	L1	S	
M12	22	20	13	65	38	22	◎
M16	27	25	17	75	45	24	◎
M20	32	29	21	100	63	31	◎
M24	38	34	25	130	85	38	◎

■ Construction Specifications (Unit: mm)

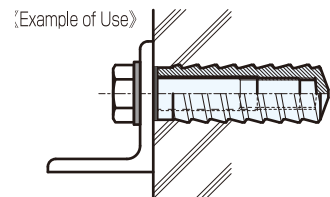
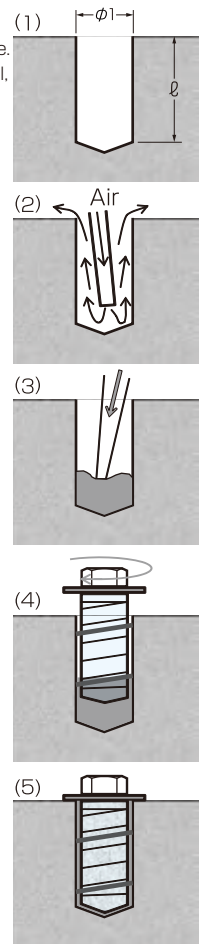
nominal dimension	hole dimension (φ 1)	hole depth (ℓ)	Required amount of Resin(cc/pc)
M12A×65	25	70	10
M16A×75	30	80	14
M20A×100	35	105	30
M24A×130	41	135	50

Resin name: GL-450(NIHON DECOLUXE CO.,LTD.)

※ Dedicated catalogue for the product can be available per request.

Mounting Method

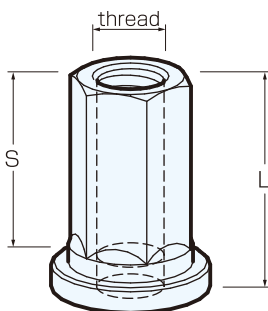
- (1) Drilling**
 - Size of insert as per hole size mentioned above.
 - Mark the position to drill on the concrete surface.
 - Drill into concrete surface by using hammer drill, try not to scratch on surface.
- (2) Cleaning the inside of hole**
 - Remove the chip inside of hole by brush and blow them out.
 - Insert the FCI in the hole to check if its fit the whole length.
 - Wipe off inside the hole by waste.
- (3) Resin injection**
 - Inject GL-450 by using air spray gun, and try not to get entrainment of air.
 - The required amount of resin has mentioned in above table.
- (4) Insert the FCI**
 - By using washer that is bigger than hole dimension, securely screw the bolt on FCI.
 - Inserting FCI into the hole by rotating to the right slowly, and try to let resin to be pouring out around the FCI equally.
 - Inserting quickly cause the risk of the air to be not come out.
- (5) Complete installation**
 - Confirm the washer touches the concrete surface and the resin come out around the washer.
 - Wipe off the resin comes out from washer...



TN Insert

Product Features

- Since the length is 23-35mm which is short, good for hanging light weight product, fixation of connectable plates.
- Reduced the production cost by mass production.



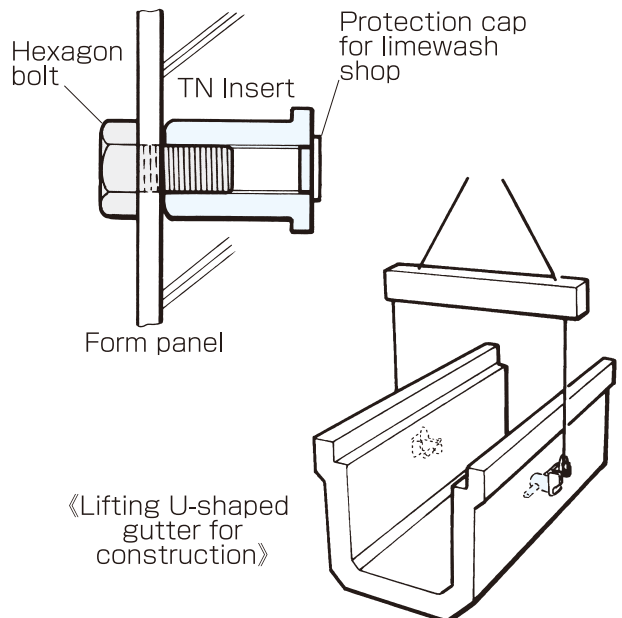
(Include the cap for limewash stop)

(Unit: mm)

thread	length (L)	thread length (S)	Protection cap	Inventory
W3/8	23	18	A	※
W1/2	25	20	G	◎
	35	30	G	◎
M12	35	30	G	◎

Order will be available per case pack quantity.
 ◎ : Standard inventory
 ※ : Made to order product.

Mounting Method





Japan Life Co., Ltd.
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